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# VoiceFinder GSM Gateway

[CLI Command Manual]

Oct, 2010

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**AddPac Technology**

[www.addpac.com](http://www.addpac.com)



## AddPac GS3000 GSM Gateway

### **Note.**

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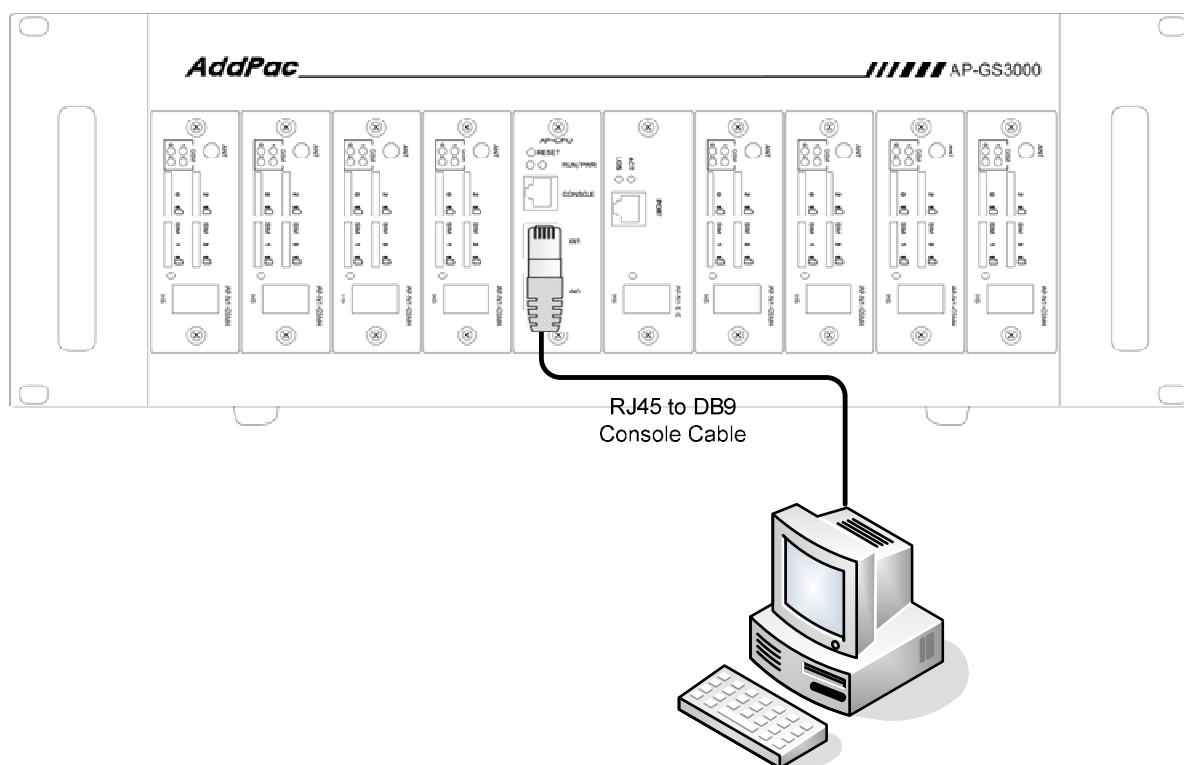
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# Chapter 1. Interface Connection

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## Async Serial Interface Connection

Connect RS-232C Serial Console cable RJ-45 standard connector to console port. Connect serial port such as GS3000 control PC to opposite side serial connector.

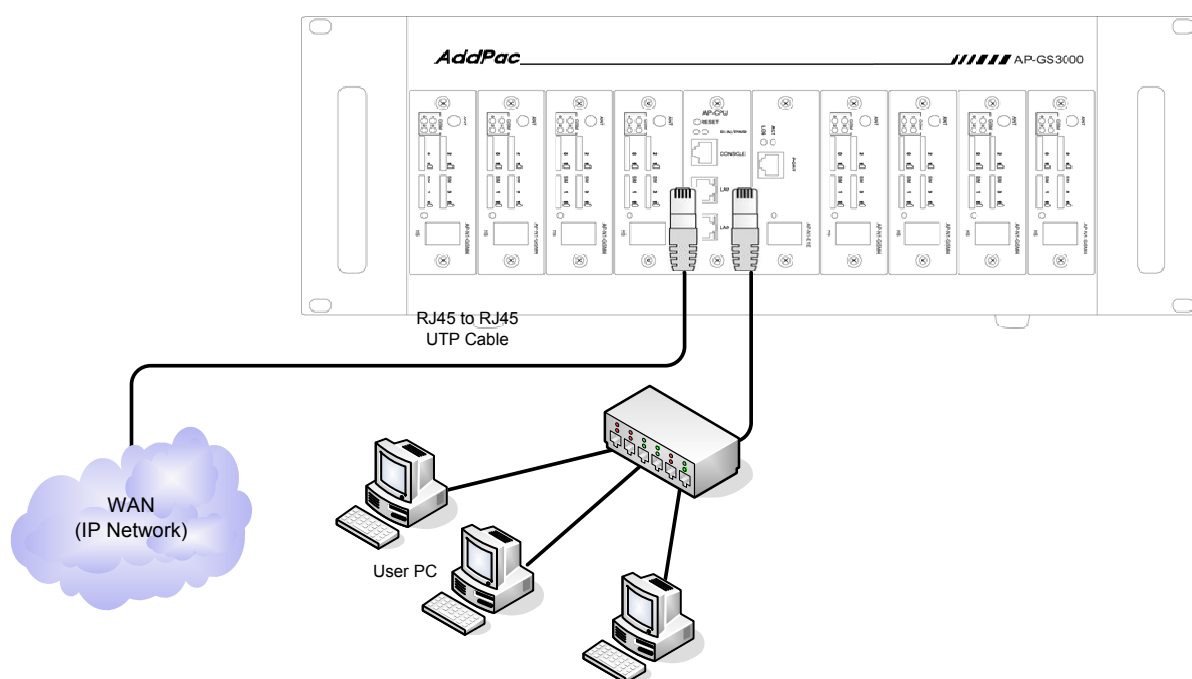


<Picture 1-1> GS3000 Async Serial Interface Connection

## Ethernet Interface Connection

For internet connection WAN interface, connect with WAN device (router or ADSL/cable modem) LAN interface and RJ45 standard UTP cable. Cross over may be used when connecting to the router or modem directly. Use direct-through cable when connecting to HUB.

Connect LAN0/LAN1 fast Ethernet interface by using RJ-45 connector.



<Picture 1-2> GS3000 LAN0/LAN1 Interface connection

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## Chapter 2. Proper Operation check

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### Booting Process and Operation Principle

Following step shows booting process of GS3000.

- Gateway checks the CPU, memory, and interface.
- Boot Loader will be executed and find appropriate gateway s/w image file. Gateway is designed to upload s/w in default configuration.
- If s/w image file cannot be found in flash memory, boot loader will wait in boot mode until it downloads the proper gateway s/w. (Use TFTP or FTP protocol to download proper Next700 s/w)
- After gateway loading, gateway will be operated in accordance with saved information. Gateway will run with initial value if there is no saved setup information. For normal network operation, administrator must setup pertinent details.

After GS3000 installation and interface connection, power must be supplied. Make sure to connect power cable with GS3000. Do not connect GS3000 after providing power cable. Also, use 110V power cable if the power supply is 110V. GS3000 automatically recognizes both 110V and 220V so using proper power cable and additional operation is not necessary.



Following message shows after normal booting.

### **(Example) AP-GS3000 Booting Process**

---

System Bootstrap, Version 1.2

Decompressing the image:

#####[OK]

System Boot Loader, Version 5.2.9

Copyright (c) by AddPac Technology Co., Ltd. Since 1999.

[DUAL-BOOT] Start application (0xf1000100)...

System Bootstrap, Version 1.2

Decompressing the image:

#####  
#####  
#####  
#####[OK]

VoiceFinder Router Series (GS3000\_G2)

Serial Number: GS3000\_G2-fffe30

32BIT RISC Processor With 333MHz Clock

128 Mbytes System Memory

512 Kbytes System Boot Flash Memory

16 Mbytes System Flash Memory

1 RS232 Serial Console Interface

System main board ID is 0x0

GS3000\_G2 System software Revision 8.41.03T

Released at Fri Jul 23 10:11:57 2010

Program is 3497304 bytes, checksum is 0x1bdc47c6

Local Time : Wed Jul 28 11:48:19 2010

Copyright (c) by AddPac Technology Co., Ltd. Since 1999.

SLOT[0] DETECT, ID(0x4)  
SLOT[1] DETECT, ID(0x4)  
SLOT[2] DETECT, ID(0x4)  
SLOT[3] DETECT, ID(0x4)  
SLOT[4] DETECT, ID(0x4)  
SLOT[5] DETECT, ID(0x4)  
SLOT[6] DETECT, ID(0x4)  
SLOT[7] DETECT, ID(0x4)  
SLOT[8] DETECT, ID(0x4)  
Allocating system mbuffer counter: 6144  
Kernel callwheelmask 0x3ff callwheelsize 1024  
Loading file system(ver2.2), flash-base: 0xffff0000 ram-base: 0x038499bc  
System utilization reference (28/28/28/28)  
Start Target Debug Server  
Attach FastEthernet Interface at Slot 0, Port 0-1, <0-0>/<0-1>  
FastEthernet0/0: link is up 100 Mbps (full duplex)  
Interface FastEthernet0/0, changed state to UP  
Interface FastEthernet0/1, changed state to DOWN  
Hardware Revision ID = 0  
Line Card equip status = 0xe00  
Slot (0) cardId=0 subId=4  
Slot (1) cardId=0 subId=4  
Slot (2) cardId=0 subId=4  
Slot (3) cardId=0 subId=4  
Slot (4) cardId=0 subId=4  
Slot (5) cardId=0 subId=4  
Slot (6) cardId=0 subId=4  
Slot (7) cardId=0 subId=4  
Slot (8) cardId=0 subId=4  
Slot (0) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (1) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (2) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (3) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (4) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (5) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (6) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (7) AP-N1-GSM4 : VoIP module 4 GSM (New 1)  
Slot (8) AP-N1-GSM4 : VoIP module 4 GSM (New 1)

Slot (0) Module type : GSM  
Slot (1) Module type : GSM  
Slot (2) Module type : GSM  
Slot (3) Module type : GSM  
Slot (4) Module type : GSM  
Slot (5) Module type : GSM  
Slot (6) Module type : GSM  
Slot (7) Module type : GSM  
Slot (8) Module type : GSM

RTA\_Daemon start

GsSim Start

Start File Transfer Protocol Server (listen tcp/21)

Wait  
init0.....Wait  
init0.....  
.....

VOIP\_INTERFACE\_DOWN

Not Available: status(1) interface(0)

VOIP\_INTERFACE\_UP : (172.17.114.130)

Not Available: status(1) interface(0)

The port is not available

The port is not available

The port is not available

The port is not available

GsSim Ready

Press RETURN to get started.

RTA Module Ready

DSP S/W download (0): .... OK

DSP S/W download (1): .... OK

DSP S/W download (2): .... OK

DSP S/W download (3): .... OK

DSP S/W download (4): .... OK

DSP S/W download (5): .... OK

DSP S/W download (6): .... OK

DSP S/W download (7): .... OK

---

DSP S/W download (8): .... OK

QS (0) install ... OK

QS (1) install ... OK

QS (2) install ... OK

QS (3) install ... OK

QS (4) install ... OK

QS (5) install ... OK

QS (6) install ... OK

QS (7) install ... OK

QS (8) install ... OK

Gatekeeper shutdowned.

VoIP in service.

GSM-0/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-4/2:	MODULE ID =	MULTIBAND	900E	1800
GSM-7/3:	MODULE ID =	MULTIBAND	900E	1800
GSM-1/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-6/2:	MODULE ID =	MULTIBAND	900E	1800
GSM-8/2:	MODULE ID =	MULTIBAND	900E	1800
GSM-2/3:	MODULE ID =	MULTIBAND	G850	1900
GSM-3/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-5/2:	MODULE ID =	MULTIBAND	900E	1800
GSM-6/3:	MODULE ID =	MULTIBAND	G850	1900
GSM-5/3:	MODULE ID =	MULTIBAND	G850	1900
GSM-0/1:	MODULE ID =	MULTIBAND	G850	1900
GSM-3/3:	MODULE ID =	MULTIBAND	900E	1800
GSM-4/3:	MODULE ID =	MULTIBAND	900E	1800
GSM-6/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-8/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-1/1:	MODULE ID =	MULTIBAND	900E	1800
GSM-7/0:	MODULE ID =	MULTIBAND	900E	1800
GSM-8/3:	MODULE ID =	MULTIBAND	900E	1800
GSM-1/3:	MODULE ID =	MULTIBAND	900E	1800
GSM-7/1:	MODULE ID =	MULTIBAND	900E	1800
GSM-8/1:	MODULE ID =	MULTIBAND	G850	1900
GSM-7/2:	MODULE ID =	MULTIBAND	900E	1800
GSM-4/1:	MODULE ID =	MULTIBAND	900E	1800
GSM-1/2:	MODULE ID =	MULTIBAND	900E	1800

---

---

```
GSM-2/0: MODULE ID =  MULTIBAND  900E  1800
GSM-4/0: MODULE ID =  MULTIBAND  900E  1800
GSM-3/1: MODULE ID =  MULTIBAND  900E  1800
GSM-3/2: MODULE ID =  MULTIBAND  900E  1800
GSM-2/1: MODULE ID =  MULTIBAND  900E  1800
GSM-0/2: MODULE ID =  MULTIBAND  G850  1900
GSM-2/2: MODULE ID =  MULTIBAND  900E  1800
GSM-0/3: MODULE ID =  MULTIBAND  900E  1800
GSM-6/1: MODULE ID =  MULTIBAND  900E  1800
GSM-5/1: MODULE ID =  MULTIBAND  900E  1800
GSM-5/0: MODULE ID =  MULTIBAND  900E  1800
GSM-0/0: SIM READY
GSM-0/1: SIM READY
GSM-0/2: SIM READY
GSM-0/3: SIM READY
Interface GSM-0/0, changed state to UP
Interface GSM-0/1, changed state to UP
Interface GSM-0/2, changed state to UP
Interface GSM-0/3, changed state to UP
```

Welcome, APOS(tm) Kernel Version 8.41.03T.

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Login:

Password:

---

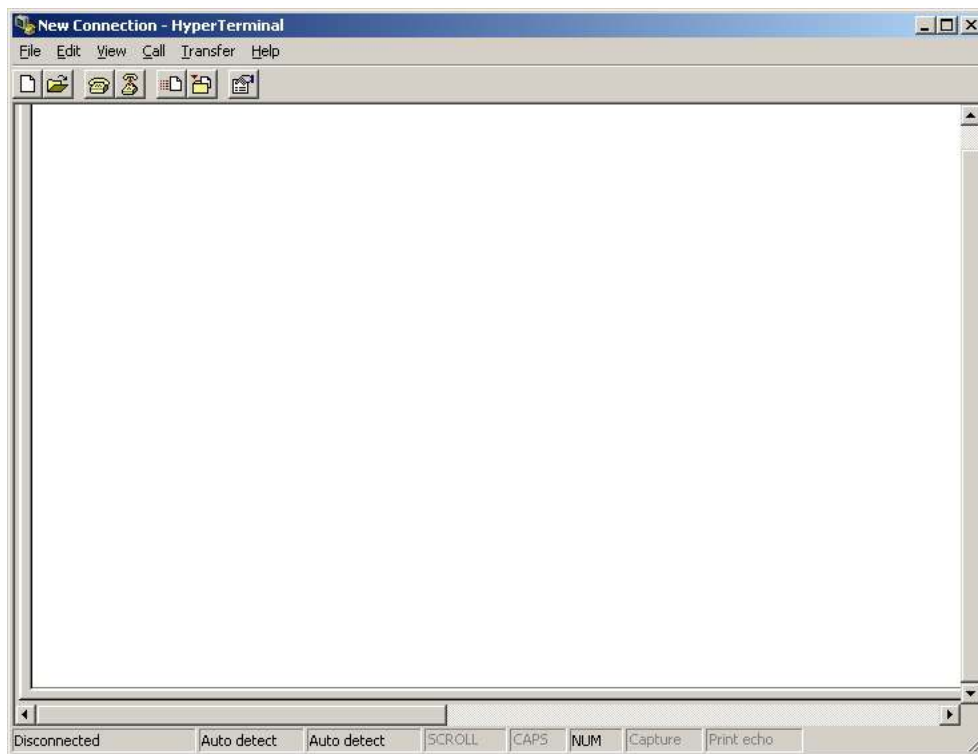
When log-in message shows at the end, enter basic log-in value "**root**" and basic password value "**router**" then log-in is completed. After log-in procedure, prompt "**Router>**" is displayed in console terminal.

Prompt which displays on VoiceFinder GSM Gateway includes: "router>" and "router#". If prompt is displayed as ">", logged-in user has other authority other than "admin". A user cannot use command which changes gateway setup and a user only has minimum authority. If the prompt is displayed as "#", current logged-in user has "admin" authority and uses all gateway functions.

If you log in as Admin, Admin cannot change all gateway setup. So, we recommend to change admin account password basic value for security.

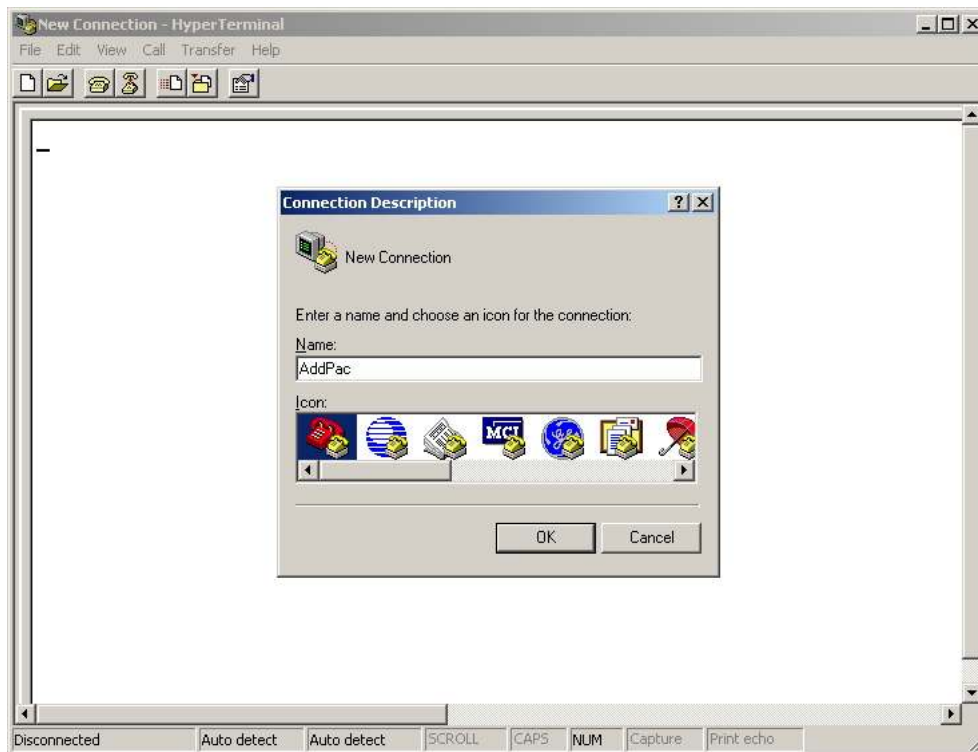
## Use Console Terminal by Using HyperTerminal

Terminal Emulator Application must be setup if PC is being used as console terminal. It uses Hyper Terminal Application when using MS-Windows.



<Picture 2-1> MS-Windows Terminal Emulator HyperTerminal

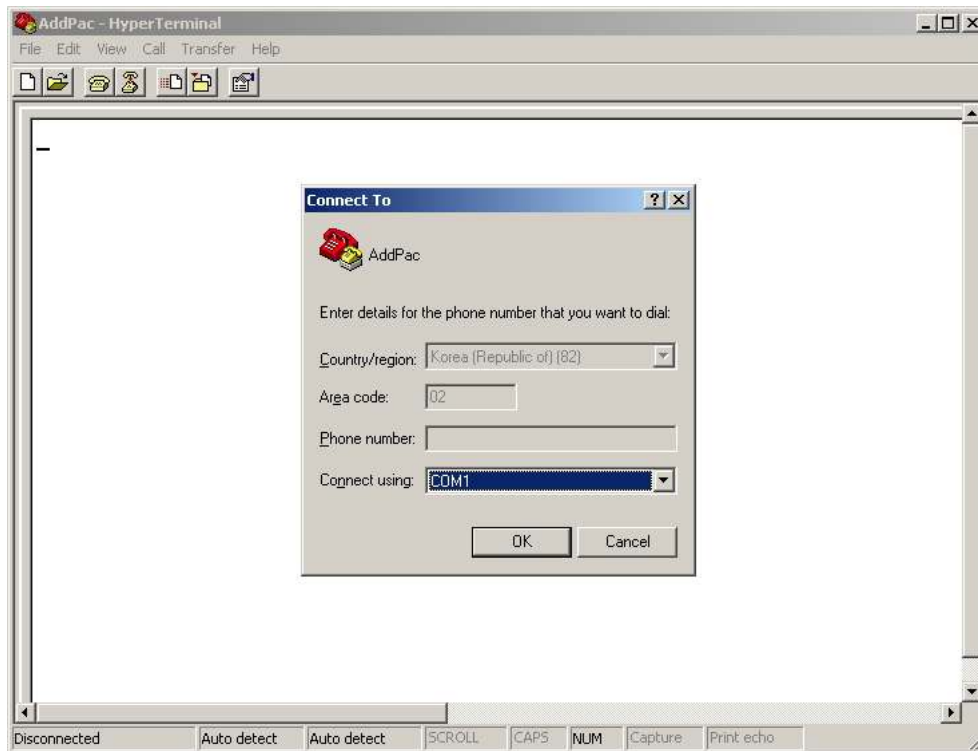
Setup a new connection name after running HyperTerminal. Setup name can be decided as you like. We will decide as AddPac.



**<Picture 2-2> Enter Connecting Name in HyperTerminal**

Now, we setup interface which is connected to console cable.

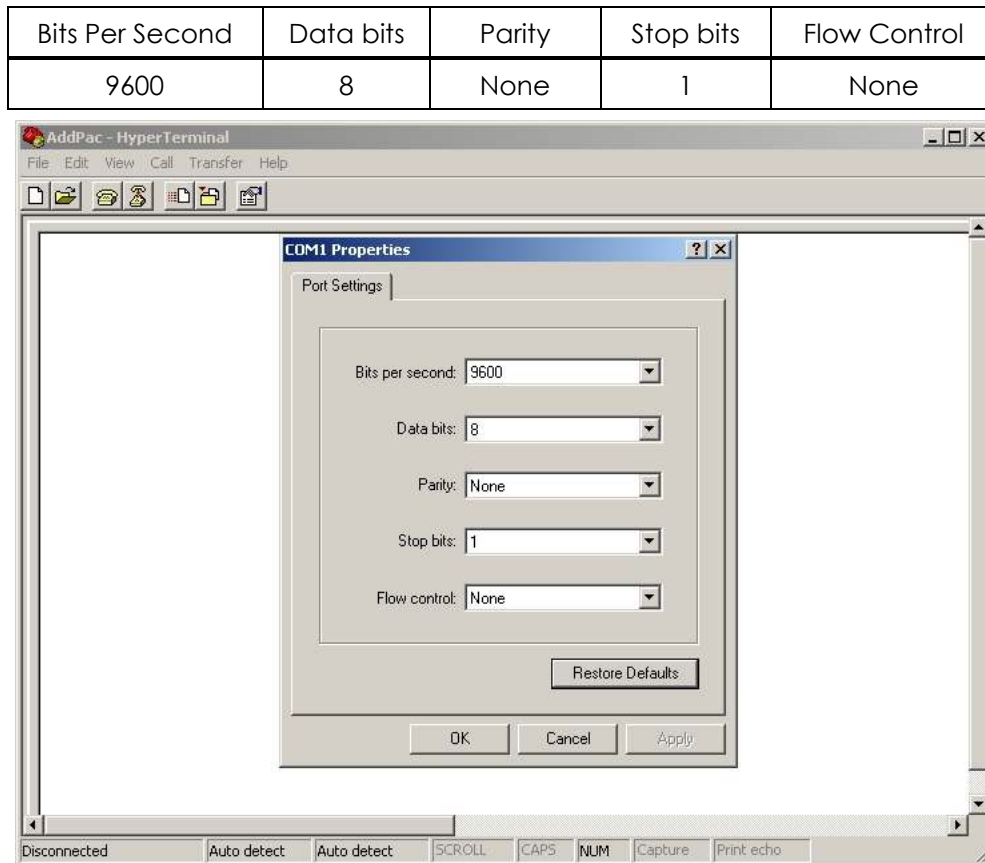
Console Cable is usually connected to PC RS-232C 9Pin Serial Port. Choose a right port in accordance with user environment. We will connect to COM1.



**<Picture 2-3> Setup Value when connecting console cable to serial port**



We setup each setup values in interface registration information. We make COM1 as standard.



**<Picture 2-4> COM1 Port Setup Example**

Booting message shows on Hyper Terminal after setup.

## APOS Command Usage

---

**NOTE** AddPac technology devices are all equipped with APOS (AddPac Operating System). So basic CLI (Command Line Interface) environments are all identical.

---

All command in gateway can be connected to console or telnet terminal (VT-100 terminal). Command provides to view system restriction items, user mode to provide access function, look at the system status. Administrator mode to use system debuggin function and change the setup environment or setup a new environment.

Following characteristics are gateway related command input.

- It automatically recognizes without typing all command. For example, to run "show" command, type "sh" or "sho". It will automatically recognizes as "show"
- It provides on-line help function so that when user enters incorrect system command, possible items and commands will be shown.
- More function provides to display unable information on screen.
- It provides Help and "?" function to display all possible command and explanation.
- It provides "History" function. User may use Prompt number without retyping command.
- System command structures are divided into 3 modes. Each mode has different command. Command for each mode is as below.

## Administrator Mode Command

Administrator mode command can only be used for logged-in administrator. To access system setup mode under looged-in administrator mode. In this mode, it shows more information in accordance with options.

You may use all command in administrator mode.

Administrator mode prompt is displayed as "**GS3000#**".

**<Chart 2-1> Administrator Mode Command**

Command	Explanation
clear	Command to initialize interface counter, statistics
configure	Enter as setup mode
copy	Copy running config as startup config
debug	Overall system debug Command
disconnect	Command to close VTY connection
end	Enter as administrator mode
erase	Delete config file
exit	Move to previous step
ftp	Access ftp client
help	View APOS Help
no	Command to delete current setup
ping	Network connection confirmation tool
reboot	System rebooting command
show	Command to view the system operation status and setup status
telnet	telnet access command
tftp	Command to send file to tftp server
tracert	Command to check IPv4 routing route
who	Command display accessed user with vty
write	Command to save operating configuration
undebug	Command to deactivate the activated debug
user	Command to add/modify/delete system user

## Basic Setup

- **Host Name Setup**

You may change prompt name in CLI environment when you access into console or telnet. Host name considers as very important when you manage several devices with telnet access.

---

```
Router# configure terminal
Router(config)#
Router(config)# hostname {name}
Router(config)#
```

---

- **Clock Setup**

Setup system time. You should set it correctly because this time will be displayed on system operation time, debug and log.

---

```
Router# configure terminal
Router(config)#
Router(config)# clock {Year} {Month} {Day} {Hour} {Minute} {Second}
Router(config)#
```

---

- **User Management**

User management can be used when accessing telnet, FTP, and SAMBA. You may have to use user password/ID which is known to administrator and if it is exposed to others, device would not operate as it is.

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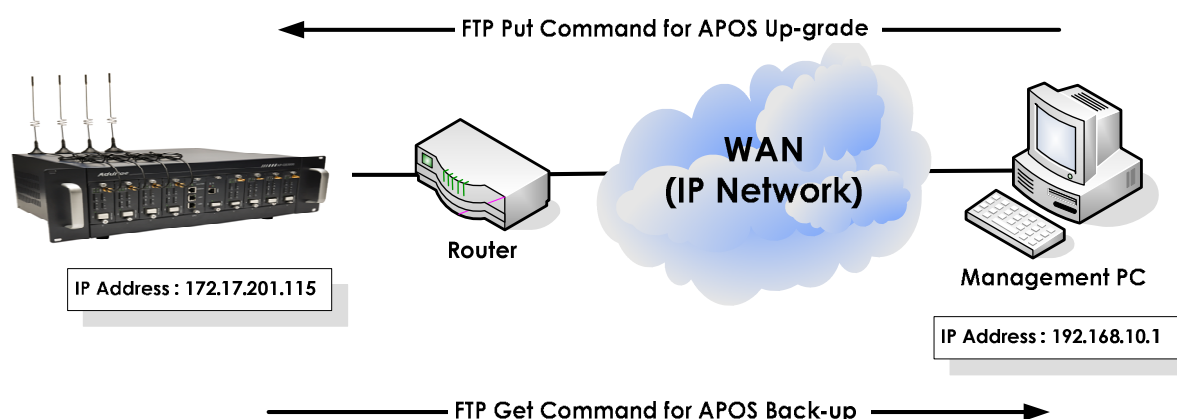
```
Router# configure terminal
Router(config)#
Router(config)# username {add} <login-name> <password> {admin|high|normal|low}
Router(config)#
```

---

## APOS Upgrade

AddPac Gateway products allow FTP method approach for APOS image file transmit. Also, a relevant protocol can independently on/off the service.

AddPac GSM Gateway upload/download network configuration is as below.



<Picture 2-5> APOS Image File Upgrade by Using FTP

- **FTP Service Activation**

Activate FTP service first to execute the APOS upload/download.

---

```
Router# configure terminal
Router(config)#
Router(config)# ftp server
Router(config)#
```

---

## ● APOS Upload

Upload gateway APOS in PC with ftp.

---

```
D:\W>dir
2007-11-15  05:21p      <DIR>      .
2007-11-15  05:21p      <DIR>      ..
2007-11-15  05:21p          3,098,820      GS3000_v8_51_001.bin

D:\W>
D:\W> ftp 172.17.201.115
Connected to 172.17.201.115.
220 GS3000 FTP server (Version 8.51) ready.
User (172.17.201.115:(none)): root
331 Password required for root.
Password:
230 User root logged in.
ftp> binary
200 Type set to I.
ftp>
ftp> put GS3000_g2_v8_51_001.bin
200 PORT command successful.
150 Opening BINARY mode data connection for ' GS3000_g2_v8_51_001.bin '.
226 Transfer complete.
ftp: 3098820 bytes sent in 2.47Seconds 1039.51Kbytes/sec.
ftp> quit
221 Goodbye.
D:\W>
```

---

---

## Chapter 3. Console Command

---

### Basic Command for Network Setup

- **Command to confirm after IP, default route setup**

Following configuration shows network setup for basic communication which identifies the proper network connectivity with default gateway ping test.

---

```
Router# configure terminal
Router(config)# interface FastEthernet 0/0
Router(config-if)# ip address 172.17.201.115 255.255.0.0
Router(config-if)# exit
Router(config)# ip route 0.0.0.0 0.0.0.0 172.17.1.1
Router(config)# end
Router#
Router#
Router# write
Do you want to WRITE configuration ? [y|n] y
Writing configuration....done
Router#
Router# ping 172.17.1.1
PING 172.17.1.1 (172.17.1.1): 56 data bytes
64 bytes from 172.17.1.1: icmp_seq=1 ttl=255 time=2 ms
64 bytes from 172.17.1.1: icmp_seq=2 ttl=255 time=1 ms
64 bytes from 172.17.1.1: icmp_seq=3 ttl=255 time=1 ms
64 bytes from 172.17.1.1: icmp_seq=4 ttl=255 time=1 ms
64 bytes from 172.17.1.1: icmp_seq=5 ttl=255 time=1 ms

--- 172.17.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max   = 1.73/2.027/2.75 ms
Router#
```

---

## ● PPPoE Configuration

Step	Command	Explanation
1	# configure terminal (config)#	Change to APOS command input mode.
2	(config)# interface fastethernet 0/0 (config-if)#	Start fast Ethernet 0/0 setup.
3	(config-if)# no ip address	No IP address setup.
4	(config-if)# pppoe enable	Activate network protocol PPPoEdmf.
5	(config-if)# encapsulation ppp	Assign network protocol as PPP.
6	(config-if)# ppp authentication pap callin	Setup PPP certification method as PAP.
7	(config-if)# ppp ipcp default-router	Setup to receive default router IP address from PPP server.
8	(config-if)# ppp ipcp dns request	Setup to receive DNS IP address from PPP server.
9	(config-if)# ppp pap sent-username addpac password 1234	Setup PAP user ID as "addpac", password as "1234".

## ● DHCP Configuration

Step	Command	Explanation
1	# configure terminal Enter configuration commands, one per line. End with CNTL/Z (config)#	Change to APOS command input mode.
2	(config)# interface fastethernet 0/0 (config-if)#	Start setting up fast Ethernet interface 0/0.
3	(config-if)# ip address dhcp (config-if)#	Setup to assign IP address through DHCP client setup.

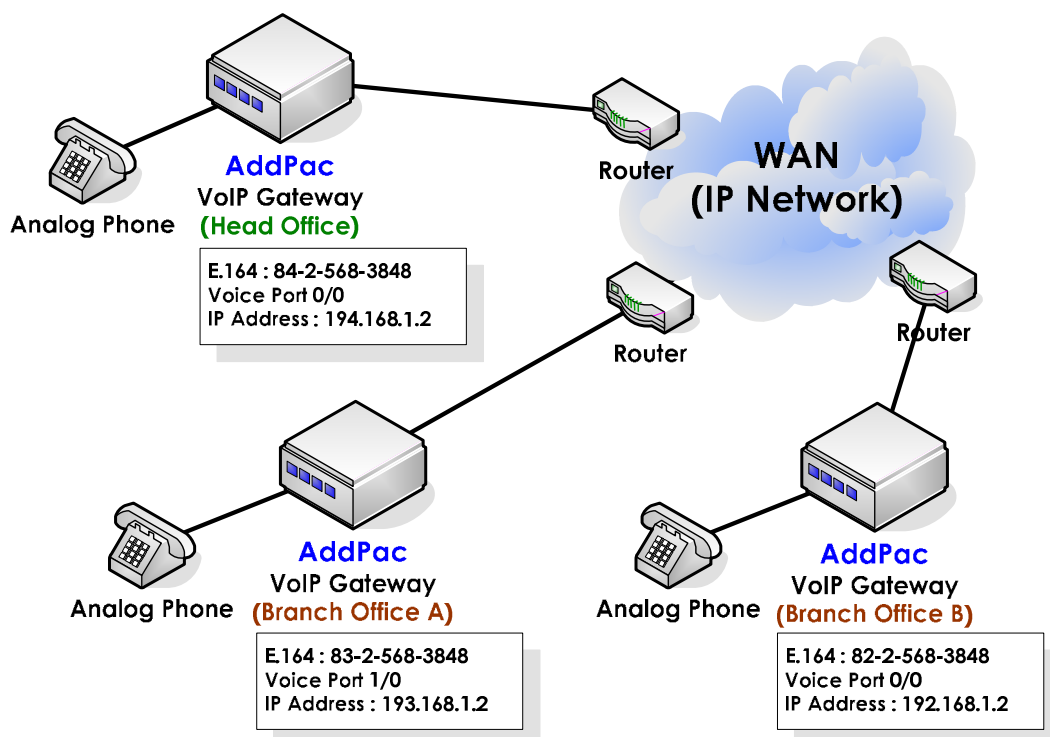


- Static IP Configuration

Step	Command	Explanation
1	# configure terminal Enter configuration commands, one per line. End with CNTL/Z (config)#	Change to APOS command input mode.
2	(config)# interface fastethernet 0/0 (config-if)#	Start setting up fast Ethernet interface 0/0.
3	(config-if)# ip address 192.168.1.2 255.255.255.0	Setup IP address.
4	(config-if)# ip route 0.0.0.0 0.0.0.0 192.168.1.1	Setup default router.

## Command for VoIP Protocol [H.323]

- H.323 – Peer to Peer



A necessary gateway setup parameter is as follow.

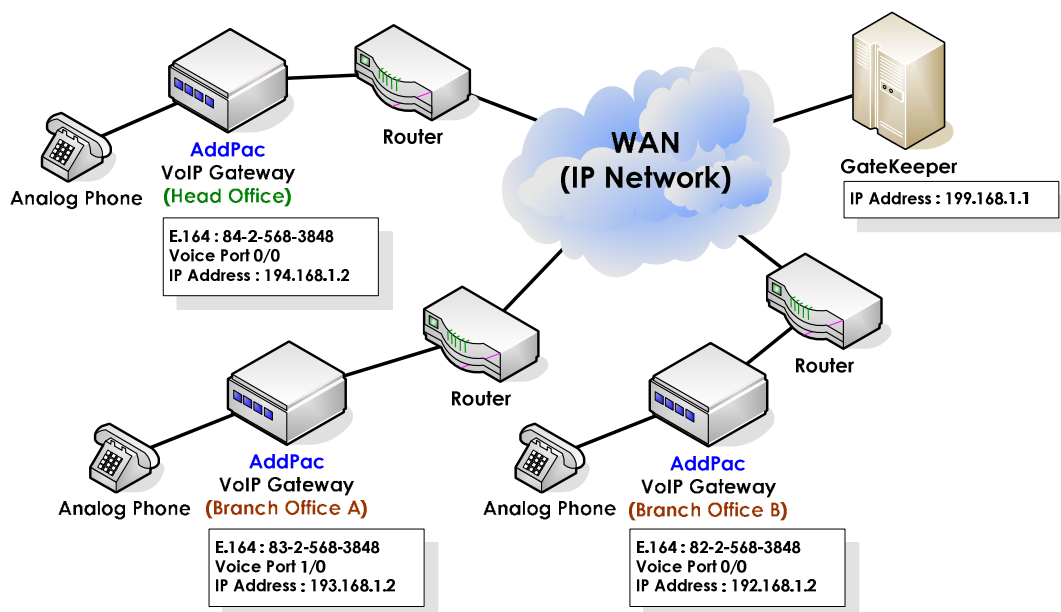
➔ **Gateway 의 IP Address / Dial-peer Voip / Dial-peer Pots / VoIP Interface**

example configuration(HQ)	example configuration(Branch_A)	example configuration(Branch_B)
<pre> hostname HQ interface fastethernet 0/0 ip address 194.168.1.2 255.255.255.0  ip route 0.0.0.0 0.0.0.0 194.168.1.1  dial-peer voice 0 pots destination-pattern 8425683848 port 0/0 ! dial-peer voice 1000 voip destination-pattern 8325683848 session target ip 193.168.1.2 dtmf-relay h245-alphanumeric ! dial-peer voice 1001 voip destination-pattern 82T session target ip 192.168.1.2 dtmf-relay h245-alphanumeric ! voip-interface ip fastethernet 0/0 ! </pre>	<pre> hostname BA interface fastethernet 0/0 ip address 193.168.1.2 255.255.255.0  ip route 0.0.0.0 0.0.0.0 193.168.1.1  dial-peer voice 0 pots destination-pattern 8325683848 port 1/0 ! dial-peer voice 1000 voip destination-pattern 82..... session target ip 192.168.1.2 dtmf-relay h245-alphanumeric ! dial-peer voice 1001 voip destination-pattern 8425683848 session target ip 194.168.1.2 dtmf-relay h245-alphanumeric ! voip-Interface ip fastethernet 0/0 ! </pre>	<pre> hostname BB interface ether0.0 ip address 192.168.1.2 255.255.255.0  ip route 0.0.0.0 0.0.0.0 192.168.1.1  dial-peer voice 0 pots destination-pattern 8225683848 port 0/0 ! dial-peer voice 1000 voip destination-pattern 8425683848 session target ip 194.168.1.2 dtmf-relay h245-alphanumeric ! dial-peer voice 1001 voip destination-pattern 8325683848 session target ip 193.168.1.2 dtmf-relay h245-alphanumeric ! voip-interface ip fastethernet 0/0 ! </pre>

Step	Command	Explanation
1	HQ(config)# dial-peer voice 0 pots HQ(config-dialpeer-pots-0)#	Assign serial number 0 to physical voice interface to set one phone line. (Serial number can be assigned from 0 to 65,535, normally assign from 0 when setting voice interface)
2	HQ(config-dialpeer-pots-0)# destination-pattern 8425683848	Grant phone number to assigned serial number 0.
3	HQ(config-dialpeer-pots-0)# port 0/0	Setup VoIP physical voice port which responds to assigned serial number 0. (voice port types are may vary depending on devices)
4	HQ(config-dialpeer-pots-0)# dial-peer voice 1000 voip HO(config-dialpeer-voip-1000)#	To setup one VoIP call, setup serial number 1000 to VoIP interface serial number. (Serial number can be assigned from 0 to 65535. Assign from 1000 when setting VoIP interface.)
5	HQ(config-dialpeer-voip-1000)# destination-pattern 8325683848	Grant phone number 8325683848 to assigned serial number 1000.
6	HQ(config-dialpeer-voip-1000)# session target ip 193.168.1.2	Send VoIP call setup to assigned serial number 1000 with gatekeeper.
7	HQ(config-dialpeer-voip-1000)# dtmf-relay h245-alphanumeric	Setups DTMF transmit method as H.245 Alphanumeric to assigned serial number 1000.

8	HQ(config-dialpeer-voip-1000)# dial-peer voice 1001 voip	To setup other VoIP call, assign serial number 1001 to VoIP interface.
9	HQ(config-dialpeer-voip-1001)# destination-pattern 82T	Setup if the phone number starts with 82 to assigned serial number 1001.
10	HQ(config-dialpeer-voip-1001)# session target ip 192.168.1.2	Send VoIP call setup with 192.168.1.2 to assigned serial number 1001.
11	HQ(config-dialpeer-voip-1001)# dtmf-relay h245-alphanumeric	Setups DTMF transmit method as H.245 Alphanumeric to assigned serial number 1001 (default).
12	HQ(config)# voip-interface ip fastethernet 0/0	Setup VoIP interface as fast Ethernet port. (Default).
13	HQ(config)# ip route 0.0.0.0 0.0.0.0 192.168.1.1 HQ#	Setup default router as 192.168.1.1.
14	HQ(config)# exit HQ#	Exit from APOS command input mode.

## ● H.323 – Gatekeeper



Example configuration(HQ)  
about Gatekeeper

```
hostname HQ
!
Interface fastethernet 0/0
ip address 194.168.1.2
255.255.255.0
!
dial-peer voice 0 pots
destination-pattern 8425683848
port 0/0
!
dial-peer voice 1000 voip
destination-pattern 8325683848
session target ras
dtmf-relay h245-alphanumeric
!
dial-peer voice 1001 voip
destination-pattern 82T
session target ras
dtmf-relay h245-alphanumeric
!
gateway
  h323-id addpac-HQ
  gk1p 199.168.1.1 1719 128
  security proprietary-option dacom
register
!
voip-Interface Ip fastethernet 0/0
!
```

Example configuration(Branch\_A)  
about Gatekeeper

```
hostname BA
!
Interface fastethernet 0/0
ip address 193.168.1.2
255.255.255.0
!
dial-peer voice 0 pots
destination-pattern 8325683848
port 1/0
!
dial-peer voice 1000 voip
destination-pattern T
session target ras
dtmf-relay h245-alphanumeric
!
gateway
  h323-id addpac-BA
  gk1p 199.168.1.1 1719 128
  security proprietary-option dacom
register
!
voip-interface ip fastethernet 0/0
!
```

Example configuration(Branch\_B)  
about Gatekeeper

```
hostname BB
!
Interface fastethernet 0/0
ip address 192.168.1.2
255.255.255.0
!
dial-peer voice 0 pots
destination-pattern 8225683848
port 0/0
!
dial-peer voice 1000 voip
destination-pattern 8T
session target ras
dtmf-relay h245-alphanumeric
!
gateway
  h323-id addpac-BB
  gk1p 199.168.1.1 1719 128
  security proprietary-option dacom
register
  voip-interface ip fastethernet 0/0
!
```

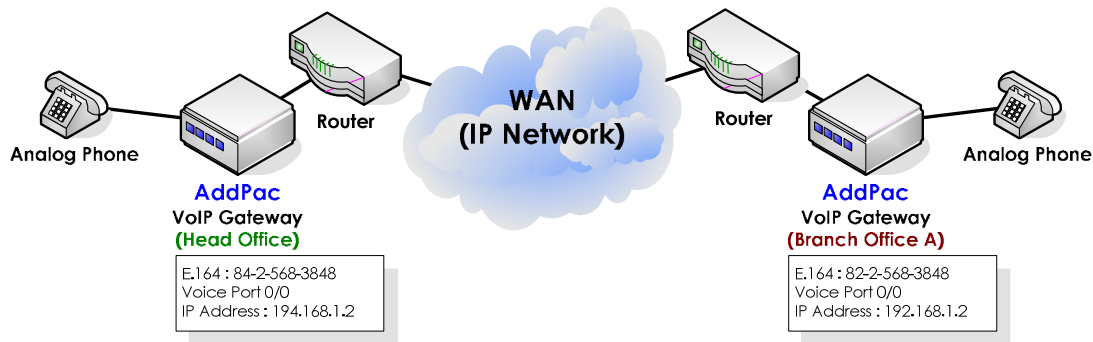
Configuration checking	Configuration checking
<b>HO# show gateway</b> Gatekeeper Registration Information H.323 Id = addpac gatekeeper registration option = enabled gatekeeper security option = disabled Gatekeeper registration status : <b>registered.</b> <b>last registration reject information from gatekeeper</b> <b>ConfigAsNoRegistration (Aug 9 03:02:43)</b> Gatekeeper list : 199.168.1.1 1719 priority(128) by user <b>Local aliases</b> <b>[1] H323ID : addpac-HQ</b> <b>[2] 8425683848</b> Technical prefixes Gateway Information status = Init 1 (waiting for setting IP address on a VoIP Interface) product name = AddPac VoIP product version = 6.12 endpoint type = gateway discovery (send GRQ) = disabled ARQ option = arq default LRQ option = no lrq lightweightIRR = disabled TTL margin = 20 % h323 call start mode = fast h323 call tunneling mode = enabled h323 call channel mode = late h323 response msg = default system fax mode = t38 system fax rate (bps) = 9600 system T.38 fax redundancy = 0 force to send startH245 = enabled dialPeer hunt algorithm = longest - preference - random translate voip incoming called number = -1 translate voip incoming calling number = -1 local ringback tone = normal end of digit = # ip address prefix = * voice confirmed connect on FXO/E&M = disabled number of ports = 1	number of pots peers = 1 number of voip peers = 2 number of number expansions = 0 number of codec classes = 0 number of alternate gatekeepers = 1 number of current calls = 0 Announcement Option language = korean element : delayed dial = disabled element : wrong number = disabled element : connection fail = disabled Timer & Counter parameter value tinit (Initial digit timer) = 10 sec. tring (ring timer) = 30 sec. t301 (alert -> connect) = 180 sec. t303 (setup -> alert) = 20 sec. tras (RAS msg ack timer) = 6 sec. ttti (RAS Time To Live timer) = 60 sec. tidt (Inter digit timer) = 3 sec. trag (GK Registration retry timer) = 20 sec. treg2 (GK Registration retry timer : long period by RRU) = 120 sec. tohd (On Hook Delay Time) = 0 sec. tpoll (polling timer on trunk or polling type connection) = 180 sec. dtmf duration = 150 msec. dtmf guard time = 100 msec. cras (RAS retry counter) = 3 Remote Call Log (syslog) primary server = secondary server = interval = 0 minutes cdr format type = 0 Assigned VoIP TCP/UDP ports minimized assign = no Q.931 signalling port (TCP listen) = 1720 SIP signalling port (UDP listen) = 5060 H.245 control port (TCP src) = 10000 - 10999 Q.931 signalling port (TCP src) = 14000 - 14499 H.245 control port (TCP listen) = 18000 - 18999 RAS port and IRR port (UDP listen) = 22000, 22001 RTP/RTCP port (UDP listen) = 23000 - 24999

Step	Command	Explanation
1	HQ(config)# dial-peer voice 0 pots	Assign serial number 0 to physical voice interface for setting up one phone line. (serial number can be assigned from 0 to 65,535. For voice interface setup, it usually starts from 0)
2	HQ(config-dialpeer-pots-0)# destination-pattern 8225683848	Grant phone number to assigned serial number 0.
3	HQ(config-dialpeer-pots-0)# port 0/0	Set VoIP device physical voice port which responds to assigned serial number 0. (Voice port types/numbers are may vary.)
4	HQ(config-dialpeer-pots-0)# dial-peer voice 1000 voip	Set serial number 1000 to VoIP interface for VoIP call setup. (serial number can be assigned from 0 to 65535. Assign from 1000 for VoIP interface setup.)
5	HQ(config-dialpeer-voip-1000)# destination-pattern 8325683848	Grant phone number 8325683848 to assigned serial number 1000.
6	HQ(config-dialpeer-voip-1000)# <b>session target ras</b>	Send VoIP call setup to assigned serial number 1000 with gatekeeper.
7	HQ(config-dialpeer-voip-1000)# dtmf-relay h245-alphanumeric	Setups DTMF transmit method as H.245 Alphanumeric to assigned serial number 1000.

8	HQ(config-dialpeer-voip-1000)# dial-peer voice 1001 voip	Assign serial number 1001 to VoIP interface for VoIP call setup.
9	HQ(config-dialpeer-voip-1001)# destination- pattern 82T	Setup it the phone number starts with 82 to assigned serial number 1001.
10	HQ(config-dialpeer-voip-1001)# session target ras	Send VoIP call setup to assigned serial number 1001 with gatekeeper.
11	HQ(config-dialpeer-voip-1001)# dtmf-relay h245-alphanumeric	Setup DTMF transmission method as H.245 Alphanumeric to assigned serial number 1001.
12	HQ(config-dialpeer-voip-1001)# gateway	Change to external gatekeeper setup mode.
13	HQ(config-gateway)# h323-id addpac-BB	Setup H.323 ID.
14	HQ(config-gateway)# gkip 199.168.1.1 1719 128	Setup external gatekeeper IP address.
15	HQ(config-gateway)# register	Register in external gatekeeper.
16	HQ(config-gateway)# voip-interface ip fastethernet 0/0	Set VoIP interface as Ethernet 0.0 port.
17	HQ(config)# exit HQ#	Exit from APOS command input mode.

## Command for VoIP Protocol [SIP]

- SIP – Peer to Peer



Sample configuration(HQ)	Sample configuration(Branch_a)
<pre> hostname HQ interface fastethernet 0/0 ip address 194.168.1.2 255.255.255.0 ip route 0.0.0.0 0.0.0.0 194.168.1.1 : : Pots peer configuration. : dial-peervoice 0 pots destination-pattern 8425683848 port 0/0 : : Voip peer configuration. : dial-peer voice 1000 voip destination-pattern T session target ip 192.168.1.2 <b>session protocol sip</b> <b>dtmf-relay rtp-2833</b> : voip-interface ip fastethernet 0/0 : </pre>	<pre> hostname BA interface fastethernet 0/0 ip address 192.168.1.2 255.255.255.0 ip route 0.0.0.0 0.0.0.0 192.168.1.1 : : Pots peer configuration. : dial-peervoice 0 pots destination-pattern 8225683848 port 0/0 : : Voip peer configuration. : dial-peer voice 1000 voip destination-pattern T session target ip 194.168.1.2 <b>session protocol sip</b> <b>dtmf-relay rtp-2833</b> : voip-interface ip fastethernet 0/0 : </pre>

### [View SIP Related Command](#)

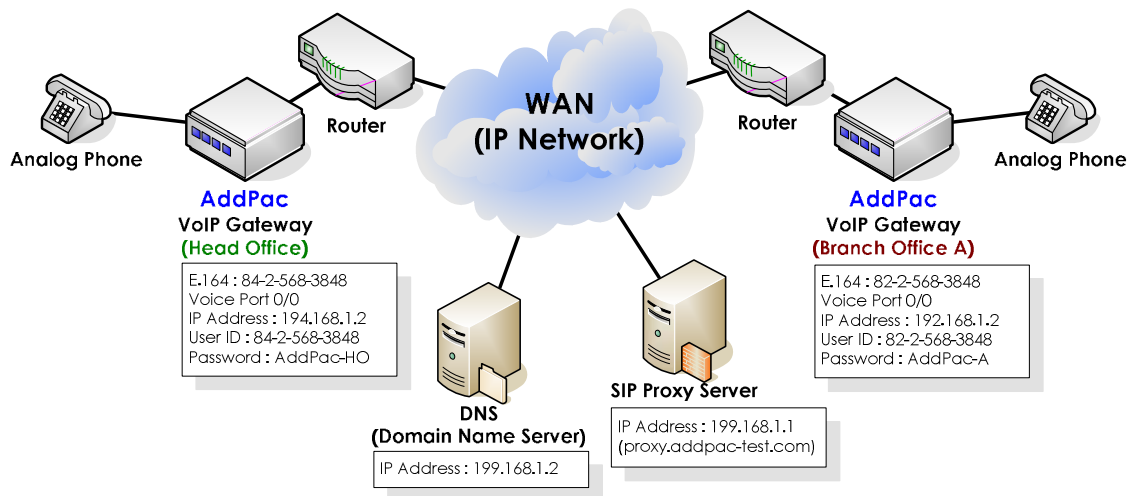
Step	Command		Explanation
1	# config (config)#		Enter as APOS command setup mode.
2	(config)# sip-ua (config-sip-ua)# ?		Enter as SIP user agent command setup mode and confirm command with “?”
	no	set to default configuration	Delete command which is already setup in SIP user agent.
	register	try registration to sip registrar	Try to register in SIP-Server.

	<b>signaling-port</b>	<b>set SIP signaling port (default 5060)</b>	<b>Change SIP signaling port. (Default: 5060)</b>
	<b>sip-server</b>	<b>Configure a SIP Server Interface</b>	<b>Enter SIP Server IP address or DNS server.</b>
	<b>sip-username</b>	<b>Set Username of SIP User Agent</b>	<b>Register SIP user name.</b>
	<b>sip-password</b>	<b>Set Password of SIP User Agent</b>	<b>Register SIP password.</b>
	<b>timeout</b>	<b>Set timeout value</b>	<b>Setup register retry timeout value.</b>
	<b>end</b>	<b>Go to Top menu</b>	<b>Return to administrator mode.</b>
	<b>exit</b>	<b>Exit from the EXEC</b>	<b>Return to APOS command setup mode.</b>

Step	Command	Explanation
1	HQ(config-dialpeer-pots-0)# dial-peer voice 1000 voip	Assign serial number 1000 to VOIP interface for VoIP call setup. (serial number can be assigned from 0 to 65535. Assign from 1000 for VoIP interface setup.)
2	HQ(config-dialpeer-voip-1000)# destination-pattern T	
3	HQ(config-dialpeer-voip-1000)# session target ip 192.168.1.2	Setup VoIP destination address as 192.168.1.2 which responds to destination pattern.
4	HQ(config-dialpeer-voip-1000)# <b>session protocol sip</b>	Setup VoIP protocol as SIP which is relevant to destination pattern. If you setup as “no protocol sip”, it will send to h.323 message.
5	HQ(config-dialpeer-voip-1000)# dtmf-relay rtp-2833	Send DTMF transmission method with RFC2833 RTP payload to assigned serial number 1000. (currently, SIP mode only offers 2833 for dtmf signal).



## ● SIP – SIP Server



Sample Configuration(HQ) about SIP Server	Sample Configuration(Branch_A) about SIP Server
<pre> hostname HQ ! interface fastethernet0/0 ip address 194.168.1.2255.255.255.0 ! ip route 0.0.0.0 0.0.0.0 194.168.1.1 ! <b>dnshost nameserver 199.168.1.2</b> ! ! Pots peer configuration. dial-peer voice 0 pots destination-pattern 8425683848 port 0/0 ! ! ! Voip peer configuration. ! <b>dial-peer voice 1000 voip</b> <b>destination-pattern T</b> <b>session target sip-server</b> <b>session protocol sip</b> <b>dtmf-relay rtp-2833</b> ! ! Gateway configuration. ! SIP UA configuration. ! <b>sip-ua</b> <b>sip-username 8225683848</b> <b>sip-password AddPac-HO</b> <b>sip-server proxy.addpac-test.com</b> <b>register e164</b> ! voip-interface ip fastethernet0/0 </pre>	<pre> hostname BA ! interface fastethernet0/0 ip address 192.168.1.2255.255.255.0 ! ip route 0.0.0.0 0.0.0.0 192.168.1.1 ! dnshost nameserver 199.168.1.2 ! ! Pots peer configuration. dial-peer voice 0 pots destination-pattern 8225683848 port 0/0 ! ! ! Voip peer configuration. ! <b>dial-peer voice 1000 voip</b> <b>destination-pattern T</b> <b>session target sip-server</b> <b>session protocol sip</b> <b>dtmf-relay rtp-2833</b> ! ! Gateway configuration. ! SIP UA configuration. ! <b>sip-ua</b> <b>sip-username 8425683848</b> <b>sip-password AddPac-A</b> <b>sip-server 192.168.1.1</b> <b>register e164</b> ! voip-interface ip fastethernet0/0 </pre>

### SIP Proxy Server Configuration

Step	Command	Explanation
1	HQ(config)# dnshost nameserver 199.168.1.2	Register DNS server IP.
2	HQ(config-dialpeer-pots-0)# dial-peer voice 1000 voip	Assign serial number 1000 to VoIP interface for VOIP call setup. (serial number can be assigned

		from 0 to 65535. Assign from 1000 for VoIP interface setup.)
3	HQ(config-dialpeer-voip-1000)# destination-pattern T	
4	HQ(config-dialpeer-voip-1000)# session target sip-server	Setup VoIP destination address as SIP server which responds to destination pattern.
5	HQ(config-dialpeer-voip-1000)# session protocol sip	Setup VoIP protocol as SIP which is relevant to destination pattern. If you setup “no protocol sip”, it will send to h.323 message.
6	HQ(config-dialpeer-voip-1000)# dtmf-relay rtp-2833	Send DTMF transmission method with RFC 2833 RTP payload to assigned serial number 1000 (Currently, 2833 only provides dtmf signal in SIP mode).
7	HQ(config-dialpeer-voip-1000)# sip-ua	Enter as SIP UA setup mode
8	HQ(config-sip-ua)# sip-username 8425683848	Register SIP user name
9	HQ(config-sip-ua)# sip-password AddPac-HQ	Register password
10	HQ(config-sip-ua)# sip-server 192.168.1.1	Setup SIP server IP (DNS server must be setup if you set up as domain name)
11	HQ(config-sip-ua)# register e164	Register to SIP server as E.164.

## Command for VoIP Protocol [Monitoring]

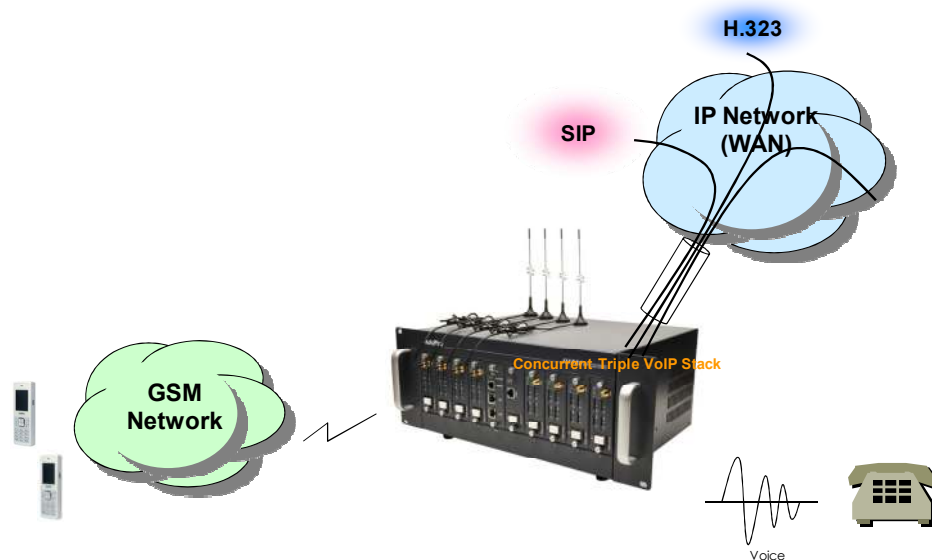
- VoIP – Monitoring command

Step	Command	Explanation
1	Router# show voice port <slot> <port> / all / summary	Check voice port information
2	ROUTER# show run	Check all setup information
3	ROUTER# show sip	Check SIP register status and gateway value
4	ROUTER# show gateway	Check H.323 register status and gateway value
5	ROUTER# show version	Check gateway version
6	ROUTER# show clock	Check gateway current time/running time
7	ROUTER# show interface	Check gateway interface status
8	ROUTER# show dial-peer voice run / summary	Check Dial-peer setup information
9	ROUTER# show username	Check gateway account ID / PW

- VoIP – Debugging command

Step	Command	Explanation
1	ROUTER# debug voip call	Debug On for VoIP call
2	ROUTER# debug rta ipc	Debug On for port
3	ROUTER# debug voip sip	Debug On for SIP
4	ROUTER# debug voip h225-asn1	Debug On for H.225
5	ROUTER# debug voip h245-asn1	Debug On for H.245
5	ROUTER# terminal monitor	Activate monitoring for Debug Commands
5	ROUTER# no debug all	Debug Off

## GSM Command [Call]



- **GSM – FXS to GSM Call**

### Outbound Call (1 Stage)

: Making call to mobile phone from analog phone connected to FXS directly.

### Outbound Call (2 Stage)

: Making call to mobile phone from analog phone connected to FXS after hearing of 2<sup>nd</sup> dial tone from AP-GS1002

1 Stage Call Sample Configuration	2 Stage Call Sample Configuration
<pre>     hostname AP-GS1004   interface fastethernet 0/0   ip address 194.168.1.2 255.255.255.0   ip route 0.0.0.0 0.0.0.0 194.168.1.1     dial-peer voice 0 pots   destination-pattern 1000   port 0/0     dial-peer voice 1 pots   destination-pattern T   Port 1/0   </pre>	<pre>     hostname AP-GS1004   interface fastethernet 0/0   ip address 194.168.1.2 255.255.255.0   ip route 0.0.0.0 0.0.0.0 194.168.1.1     dial-peer voice 0 pots   destination-pattern 1000   port 0/0     dial-peer voice 1 pots   destination-pattern 9 T   Port 1/0   </pre>

Step	Command	Explanation
1	AP-GS1004(config)# dial-peer voice 1 pots AP-GS1004(config-dialpeer-pots-1)#	Assign serial number 1 to physical voice interface for phone line setup (serial number can be assigned from 0 to 65,535. Assign from 0 for voice interface setup.)
2	AP-GS1004(config-dialpeer-pots-1)# destination-pattern T	Grant phone number to assigned serial number1.
3	AP-GS1004(config-dialpeer-pots-1)#Port 1/0	Set physical GSM port which responds to assigned serial number 1. (Voice port types/numbers may vary)
4	AP-GS1004(config)# exit AP-GS1004#	Exit from input mode.

## ● GSM – VoIP to GSM Call

1 Stage Call Sample Configuration (SIP)	1 Stage Call Sample Configuration (H.323)
<pre> ! hostname AP-GS1004 ! interface fastethernet 0/0 ip address 194.168.1.2 255.255.255.0 ! ip route 0.0.0.0 0.0.0.0 194.168.1.1 ! dial-peer voice 0 pots destination-pattern T Port 1/0 ! Voip peer configuration. ! dial-peer voice 1000 voip destination-pattern 1000 session target ip 194.168.1.3 session protocol sip dtmf-relay rtp-2833 ! </pre>	<pre> ! hostname AP-GS1004 ! interface fastethernet 0/0 ip address 194.168.1.2 255.255.255.0 ! ip route 0.0.0.0 0.0.0.0 194.168.1.1 ! dial-peer voice 0 pots destination-pattern T Port 1/0 ! Voip peer configuration. ! dial-peer voice 1000 voip destination-pattern 1000 session target ip 194.168.1.3 dtmf-relay h245-alphanumeric ! </pre>

Step	Command	Explanation
1	<pre> AP-GS1004(config)# dial-peer voice 0 pots AP-GS1004(config-dialpeer-pots-0)# </pre>	Assign serial number 0 to physical voice interface for phone line setup. (serial number can be assigned from 0 to 65,535. Assign from 0 for voice interface setup.)
2	<pre> AP-GS1004(config-dialpeer-pots-0)# destination-pattern T </pre>	Grant phone number to assigned serial number 0.
3	<pre> AP-GS1004(config-dialpeer-pots-0)# port 1/0 </pre>	Set physical GSM port to assigned serial number 0. (Voice port types/numbers are may vary)
5	<pre> AP-GS1004(config)# dial-peer voice 1000 voip AP-GS1004(config-dialpeer-voip-1000)# </pre>	Assign serial number 1000 to VoIP interface for VOIP call setup. (serial number can be assigned from 0 to 65535. Assign from 1000 for VOIP interface setup.
6	<pre> AP-GS1004(config-dialpeer-voip-1000)#destination-pattern T </pre>	It means all input numbers.
7	<pre> AP-GS1004(config-dialpeer-voip-1000)#session target ip 194.168.1.3 </pre>	Setup VoIP destination address as 192.168.1.2 which responds to destination pattern.
8	<pre> AP-GS1004(config)# session protocol sip </pre>	Setup VoIP protocol as SIP which responds to destination pattern. If you setup as “no protocol sip”, it will send to h.323 message.
9	<pre> AP-GS1004(config)# dtmf rtp-2833 </pre>	Send DTMF transmission method as RFC 2833

		RTP payload to assigned serial number 1000 (Currently, 2833 only provides dtmf signal in SIP mode).
10	AP-GS1004(config)# exit AP-GS1004#	Exit from input mode



## GSM Command [Black / White List]

### ● GSM – Black / White List

Black list Sample Configuration	White list Sample Configuration
<pre>     hostname AP-GS1004     interface fastethernet 0/0   ip address 194.168.1.2 255.255.255.0     ip route 0.0.0.0 0.0.0.0 194.168.1.1     Voice port configuration     GSM   Voice-port 1/0   gsm inbound black list-group 0     Dial Pattern Group configuration.     Dialpattern-group 0   pattern 0 1000     </pre>	<pre>     hostname AP-GS1004     interface fastethernet 0/0   ip address 194.168.1.2 255.255.255.0     ip route 0.0.0.0 0.0.0.0 194.168.1.1     Voice port configuration     GSM   Voice-port 1/0   gsm inbound white list-group 1     Dial Pattern Group configuration.     Dialpattern-group 1   pattern 0 2000     </pre>

Step	Command	Explanation
1	AP-GS1004(config)# dialpattern-group 0 AP-GS1004(config-dialpattern-group#0)#	Create Black List Group.
2	AP-GS1004(config-dialpattern-group#0)# pattern 0 1000	Enter pattern number which is relevant to Black List.
3	AP-GS1004(config-dialpattern-group#0)# exit	Return to configuration mode.
4	AP-GS1004(config)# voice-port 1/0	Enter to applicable port.
5	AP-GS1004(config-voice-port-1/0)# gsm inbound black list-group 0	Apply regarding inbound call.
6	AP-GS1004(config-voice-port-1/0)# gsm outbound black list-group 0	Apply regarding outbound call.
7	AP-GS1004(config)# dialpattern-group 1 AP-GS1004(config-dialpattern-group#0)#	Create White List Group.
8	AP-GS1004(config-dialpattern-group#0)# pattern 0 2000	Enter patter number which is relevant to White List.
9	AP-GS1004(config)# voice-port 1/0	Enter to applicable port.
10	AP-GS1004(config-voice-port-1/0)# gsm inbound white	Apply regarding inbound call.

	<b>list-group 1</b>	
<b>11</b>	<b>AP-GS1004(config-voice-port-1/0)# gsm outbound white list-group 1</b>	<b>Apply regarding outbound call.</b>
<b>12</b>	<b>AP-GS1004(config-voice-port-1/0)# exit</b> <b>AP-GS1004(config)#</b>	<b>Exit from input mode.</b>

## GSM Command [Callback Service]

### ● GSM – WEB Callback

#### WEB Callback Sample Configuration

```

!
hostname AP-GS1004
!
interface fastethernet 0/0
 ip address 194.168.1.2 255.255.255.0
!
ip route 0.0.0.0 0.0.0.0 194.168.1.1
! Gateway configuration
!
gateway
  gsm-call-service-white-list-group 2
!
!
! Dial Pattern Group configuration.
!
dialpattern-group 2
  pattern 0      1000
!

```

Step	Command	Explanation
1	AP-GS1004(config)# dialpattern-group 2 AP-GS1004(config-dialpattern-group#0)#	Create WEB Callback Group.
2	AP-GS1004(config-dialpattern-group#0)# pattern 0 1000	Enter the number for WEB Callback
3	AP-GS1004(config-dialpattern-group#0)# exit	Return to configuration mode.
4	AP-GS1004(config)# gateway	Enter to gateway setup.
5	AP-GS1004(config-gateway)# gsm-call-service-white-list-group 2	Apply WEB Callback Group

6	<b>AP-GS1004(config)# gateway</b> <b>AP-GS1004(config-gateway)# gsm-call-service 1000 2000</b>	Execute WEB Callback.
---	---	-----------------------

## ● GSM – GSM Callback

GSM Callback Sample Configuration
<pre> ! hostname AP-GS1004 ! interface fastethernet 0/0   ip address 194.168.1.2 255.255.255.0 ! ip route 0.0.0.0 0.0.0.0 194.168.1.1 ! Voice port configuration ! ! GSM Voice-port 1/0   gsm-call-back-white-list-group 3 ! ! Dial Pattern Group configuration. ! Dialpattern-group 3   pattern 0      2000 ! </pre>

Step	Command	Explanation
1	<b>AP-GS1004(config)# dialpattern-group 3</b> <b>AP-GS1004(config-dialpattern-group#3)#</b>	Create GSM Callback Group.
2	<b>AP-GS1004(config-dialpattern-group#3)# pattern 0</b> <b>2000</b>	Enter GSM callback number.
3	<b>AP-GS1004(config-dialpattern-group#0)# exit</b>	Return to configuration mode.
4	<b>AP-GS1004(config)# voice-port 1/0</b>	Enter to Callback applicable port.
5	<b>AP-GS1004(config-voice-port-1/0)# gsm-call-back-</b>	Apply callback.

	<b>white-list-group 3</b>	
<b>6</b>	<b>AP-GS1004(config-voice-port-1/0)# exit</b> <b>AP-GS1004(config)#</b>	<b>Exit.</b>
<b>7</b>	<b>AP-GS1004(config)# exit</b> <b>AP-GS1004#</b>	<b>Exit from input mode.</b>

## GSM Command [LCR(Least Cost Routing)]

### ● GSM – LCR(Least Cost Routing)

#### LCR Sample Configuration

```

!
hostname AP-GS3000
!
interface fastethernet 0/0
 ip address 194.168.1.2 255.255.255.0
!
ip route 0.0.0.0 0.0.0.0 194.168.1.1
! Time interval Group configuration.
!
time-interval-group 0
  weekdays from 09:00 to 12:00
!
!
! LCR Tariff Group configuration.
!
lcr-tariff-group 0
  time-interval-group 0
  restore-limit daily
  accounting-period first 5 other 10
  free-quota voice 300
  free-quota sms 100

```

Step	Command	Explanation
1	AP-GS3000(config)# time-interval-group 0 AP-GS3000(config-tinterval-group#0)#	Create Time Interval Group.
2	AP-GS3000(config-tinterval-group#0)# weekdays from 09:00 to 12:00	Setup a date and time for LCR.
3	AP-GS3000(config-tinterval-group#0)# exit	Exit.

4	AP-GS3000(config)# lcr-tariff-group 0 AP-GS3000(config-lcr-group#0)#	Create LCR Tariff Group.
5	AP-GS3000(config-lcr-group#0)# time-interval-group 0	Apply previously setup Time Interval Group.
6	AP-GS3000(config-lcr-group#0)# restore daily	Setup Restore. (everyday, every month )
7	AP-GS3000(config-lcr-group#0)# accounting-period first 5 other 10	Create accounting regard of Voice Call.
8	AP-GS3000(config-lcr-group#0)# free-quota voice 300	Setup free phone call time
9	AP-GS3000(config-lcr-group#0)# free-quota sms 100	Setup free SMS number.
10	AP-GS3000(config-lcr-group#0)# exit AP-GS3000(config)#	Exit.

## GSM Command [Rest]

### ● GSM – GSM Port Functions

#### Sample Configuration for GSM Band Selection

```

!
GSM 1/0
  sim pin 1234
  band-select gsm900
  bts bcch 338
  sms-language ascii
!
End

```

Step	Command	Explanation
1	AP-GS3000(config)# gsm 1/0 AP-GS3000(config-gsm1/0)#	Enter to GSM Port.
2	AP-GS3000(config-gsm1/0)# sim pin 1234	Setup PIN Code. (When necessary)
3	AP-GS3000(config-gsm1/0)# band-select gsm900	Setup GSM Bandwidth. (900 , 850, 1800, 1900)
4	AP-GS3000(config-gsm1/0)# bts bcch 338	Setup cell: Auto / Manual.
5	AP-GS3000(config-gsm1/0)# sms-language utf8	Setup SMS language.
6	AP-GS3000(config)# exit	Exit.



## ● GSM – SMS

Step	Command	Explanation
1	AP-GS3000# gsm 1 0 sms message send <phone number> <message>	Send SMS from GSM Port.
2	AP-GS3000# gsm 1 0 message list all	Check SMS Message. (All / Unread / Read / Fail)
3	AP-GS3000# gsm 1 0 sms message delete all	Delete SMS Message. (All / Partially)

## ● GSM – USSD (Balance check of SIM Card)

Step	Command	Explanation
1	AP-GS3000# gsm 1 0 ussd send *123#	Check SIM Card Balance.

## ● GSM – Radius

Sample Configuration for Radius	
<pre> ! radius-server host 192.168.100.254 1813 1812 radius-server key addpac radius-server retransmit 3 radius-server timeout 5 radius-server authentication voip-inbound radius-server authentication username 1234 password 1234 radius-server accounting voip start-stop ! ! End </pre>	

Step	Command	Explanation
1	AP-GS3000(config)# radius-server host <ip address> <accounting port> <authentication port>	Setup Radius Server IP address, Auth port, Accounting port

2	AP-GS3000(config)# radius-server key addpac	Setup Radius Server Password
3	AP-GS3000(config)# radius-server authentication voip-inbound / voip-outbound / voip-bidirectional	Setup VoIP call direction for Radius Authentication. Inbound / Outbound / Both
4	AP-GS3000(config)# radius-server authentication username 1234 password 1234	Setup Authentication Username and password.
5	AP-GS3000(config)# radius-server accounting voip start-stop / stop-only	Setup Accounting Type Start-Stop / Stop-only
6	AP-GS3000(config)# radius-server retransmit 3	Number of retransmit time
7	AP-GS3000(config)# radius-server timeout 5	Setup Timeout (sec)

## Command for GSM [Monitoring]

### ● GSM – Monitoring command

Step	Command	Explanation
1	AP-GS3000# show gsm sim-card	Check sim card status of GSM Gateway
2	AP-GS3000# show gsm module status	Check GSM module information and status
3	AP-GS3000# show gsm <slot> <port> cell-monitor	Display cell information to slot/port
4	AP-GS3000# show gsm <slot> <port> check-dev	Check device status to slot/port
5	AP-GS3000# show gsm <slot> <port> dev-info	Check device information to relevant slot/port (only be seen after debugging)
6	AP-GS3000# show gsm <slot> <port> imei	Check IMEI to relevant slot/port
7	AP-GS3000# show gsm <slot> <port> imsi	Check IMSI to relevant slot/port
8	AP-GS3000# show gsm <slot> <port> net-oper-id	Check GSM Network Operator ID to relevant slot/port
9	AP-GS3000# show gsm <slot> <port> phone-number	Check sim number to relevant slot/port
10	AP-GS3000# show gsm <slot> <port> reg-status	Check GSM registration status to relevant slot/port
11	AP-GS3000# show gsm <slot> <port> rssi	Check cell RSSI to relevant slot/port
12	AP-GS3000# show gsm <slot> <port> serv-cell-info	Display cell information to relevant slot/port
13	AP-GS3000# show gsm <slot> <port> state	Display operation status to relevant slot/port

- GSM - Debugging command

Step	Command	Explanation
1	AP-GS3000# debug gsm <slot><port> all	Debug on regard of all GSM
2	AP-GS3000# debug gsm <slot><port> call	Debug on regarding GSM call
3	AP-GS3000# debug gsm <slot><port> cmd	Debug on regarding GSM command
4	AP-GS3000# debug gsm <slot><port> event	Debug on regarding GSM event
5	AP-GS3000# debug gsm <slot><port> error	Debug on regarding GSM error
6	AP-GS3000# debug gsm <slot><port> sms	Debug on regarding GSM SMS

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# Chapter 4. Appendix

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## Console Port Signal and Pin Out

In this appendix, it explains the cable pin specification of GS3000.

- Console port signal and pin out (RJ-45 to DB9)
- UTP cable (RJ-45 to RJ-45) pin out
- E1/T1 cable (RJ-45 to PBX) pin out

### [ Console Port Signal and Pin Out ]

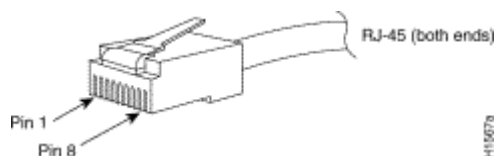
Use built-in RJ-45 to DB9 (Female DTE connector) to connect router console port and PC which terminal emulator software runs.

<Chart 4-1> Console Port Pin Out

Console Port (DTE)	RJ-45	DB-9	Console Device (PC)
Signal	RJ-45 Pin	DB-9 Pin	Signal
RTS	1	8	CTS
DTR	2	6	DSR
TxD	3	2	RxD
GND	4	5	GND
GND	5	5	GND
RxD	6	3	TxD
DSR	7	4	DTR
CTS	8	7	RTS

**[UTP cable (RJ-45 to RJ-45) Pin Out]**

Use RJ-45 to RJ-45 Ethernet cable to connect router and other devices (HUB). RJ-45 connector pin order is shown in Picture 4-1.



**<Picture 4-1> 100Base-TX RJ-45 Connector**

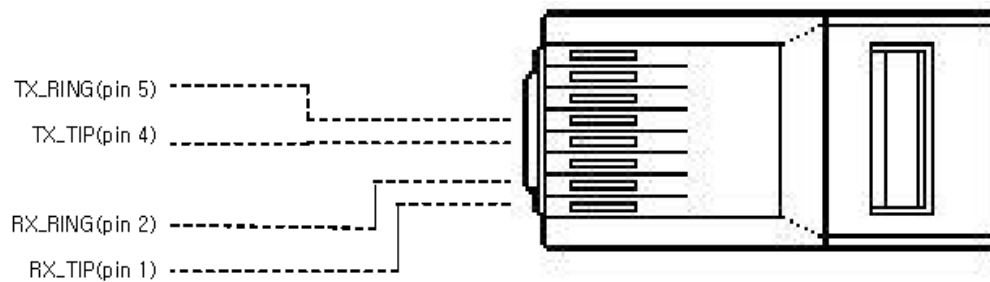
**<Chart 4-2> Series Ethernet Cable Signal and Pin Out**

RJ-45	Signal	Direction	RJ-45 Pin
1	Tx +	→	1
2	Tx -	→	2
3	Rx +	←	3
4	-	-	4
5	-	-	5
6	Rx -	←	6
7	-	-	7
8	-	-	8

1. This specification is cable specification for series cable in between router and hub.
2. Use cross cable to directly connect router to PC or router to router.

**[E1/T1 Cable (RJ-45 to PBX) Pin Out]**

Addpac E1/T1 module can be connected with RJ45 cable. RJ45 pin arrangement is as below. Connect PBX RX with RJ45 1,2 and TX with 3,4.



**<Picture 4-2> Digital E1/T1 RJ45 Pin Out**



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