CellPipe 7130 VDSL Residential Gateway 500V series

7130 RG 5Ve.A2000 and 7130 RG 5Ve.B2000

COMMAND LINE INTERFACE MANUAL

401-389-005

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ISSUE 1

Conformance statements

The device complies with Part 68 of the Federal Communications Commission (FCC) statements, Japan VCCI Class B, and the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the member states relating to Electromagnetic Compatibility and 72/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC as stated in the CE Mark Declaration of Conformance for EMI and Safety.

For detailled conformance statements refer to the User Manual.

Contents

About this document

Purpose

The purpose of the *Command Line Interface (CLI) Manual* is to provide configuration information for the 7130 RG 5Ve.A2000/7130 RG 5Ve.B2000 VDSL2 gateway. Additionally the CLI contains option and parameter settings.

The usage of each option or parameter is described in the following sections. You can select every option/parameter by typing the name of the option/parameter.

Reason for revision

This version 0.1 of the *CLI Manual* is the first issue.

Intended audience

The intended audience of the *CLI Manual* primarily is for individuals who install, configure and maintain this customer premises equipment (CPE) and in addition responsible for the supervision of transmission operation.

Supported systems

For the 7130 RG 5Ve.A2000/7130 RG 5Ve.B2000 VDSL2 gateway operation as described in this manual, a specific hardware consists of the following components is required:

- One 7130 RG 5Ve.A2000/7130 RG 5Ve.B2000 VDSL2 gateway
- One standard teleohone cable (2.1 m / 7 ft.)
- One category 5 UTP network cable (1.8 m / 6 ft.)
- One AC power adapter
- One cradle for stand-up mounting
- Quick Installation Guide
- User Manual on CD-ROM.

How to use this document

Each chapter of this *CLI Manual* treats a specific aspect of the 7130 RG 5Ve.A2000/7130 RG 5Ve.B2000 VDSL2 gateway. This ensures that the reader can inform himself according to his special needs. This also means that the *CLI Manual* provides more

information than needed by many of the readers. Before you start reading the manual, it is therefore necessary to assess which aspects or chapters will cover the individual area of interest.

The following information is provided in this information product:

- The Command Line Interface CLI
- Access to the Command Line Interface via Telnet
- Configuration via Command Line Interface (CLI)

Safety information

Important! The following information lists the safety reminders for installation and maintenance personnel.

Read all instructions before attempting to unpack, install, operate, or connect power to this CPE. Please remember the following when you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury.
- To prevent fire or shock hazard, do not expose the CPE to rain, moisture or install this equipment near water. Never spill any form of liquid on or into this product.
- Do not insert any sharp object into the products module openings or empty slots. Doing so may accidentally damage its parts.
- Do not attach the power supply cable on building surfaces or floorings. Rest the power cable freely without any obstacle or heavy items piled on top of it. Refrain from abusing, stepping or walking on the cable.
- To protect the equipment from overheating, do not block the slots and openings in the module housing that provide ventilation.
- Exercise caution when installing or modifying telephone lines. Never install telephone wiring during inclement weather conditions (i.e., storm).
- Electrostatic discharge (ESD) can permanently damage semiconductor devices. Always follow ESD-prevention guidelines for equipment handling and storage.

Eco-environmental statements

The statements that follow are the eco-environmental statements that apply to 7130 RG 5Ve.A2000 products.

Countries, states, localities, or other jurisdictions may require that systems be established for the return and/or collection of packaging waste from the consumer, or other end user, or from the waste stream. Additionally, reuse, recovery, and/or recycling targets for the return and/or collection of the packaging waste may be established.

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1 Connecting via Telnet

Overview

Purpose

This chapter describe how to access to the Command Line Interface on 7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000 for system management and configuration via Telnet or SSH.

Contents

This chapter covers these topics.

The Command Line Interface CLI

Overview

The command-line interface (CLI) is the interface to the software that you use whenever you access the router. It is used to configure the router, including the routing protocols, router interfaces, network management, and user access. You type commands on a single line, and the commands are executed when you press the Enter key.

CLI Menu Structure

The main menu provides thirteen options as follows:

- WAN
- LAN
- WLAN
- NAT
- Route
- QoS
- TR-069
- IGMP Settings
- User
- Save
- Reboot
- Load to default
- Diagnostic
- Exit

The usage of each menu option is described in the chapter 2.

Access to the Command Line Interface via Telnet

Purpose

Use this procedure to access to the **Command Line Interface** (CLI) via Telnet.

Related information

The 7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000 is with following default access settings configured:

- User Name: **admin**
- Password: **admin**

If you are using Microsoft Windows, you already have a telnet client installed on your computer. This procedure will show you how to connect to your CLI via the Windows telnet client.

Before you begin

Make sure that the 7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000 hardware is properly connected and switched on (refer to QIG).

Your PC is configured to the same IP subnet mask as the 7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000.

Configuration example:

7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000:	192.168.2.1
Your PC:	192.168.2.x
Subnet mask:	255.255.255.0

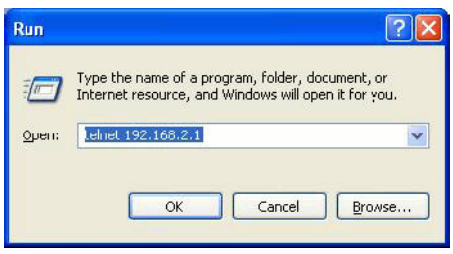
Procedure

Connect via Telnet to the **CLI** from the 7130 RG 5Ve.A2000 or 7130 RG 5Ve.B2000

1 Click the **Start** button from your Windows task bar and select and click **Run**.

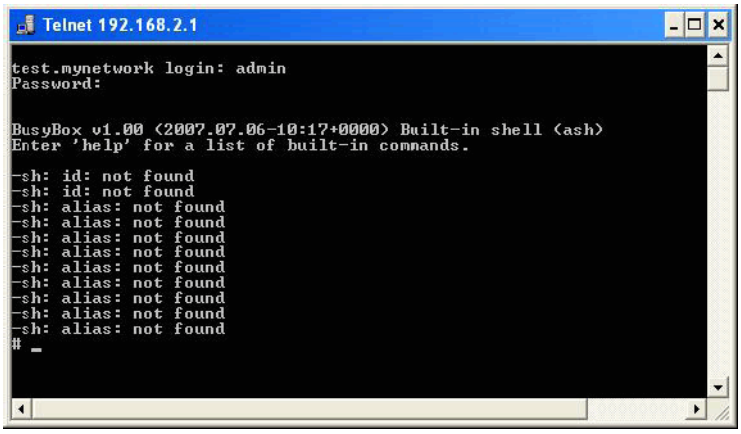
Result: The **Run** window opens.

2 Type in the word **telnet** followed by **192.168.2.1**. Click **OK**.



Result: You should now have your telnet client open and you should see a short message that will contain your server's name and the prompt asking for your account username (login).

3 Type **admin** for the login name and **admin** for the password.



4 After you have connected to the device, type **CLI** (all capital letters) under the "#"system prompt.

END OF STEPS

2 Command Line Interface CLI

Overview

Purpose

This chapter describes how to configure your CPE via the Command Line Interface (CLI) and response messages available in this release of this device. The Command Line Interface is intended for use by personnel involved in system installation and acceptance, technical support, facility provisioning, and remote administration.

Contents

This chapter covers these topics.

Using the Command Line Interface

Overview

This topic describes the command line interface (CLI) that you can use to configure your Router.

Menu Structure

The main menu provides thirteen options as follows:

1. WAN
2. LAN
3. WLAN
4. NAT
5. Route
6. QoS
7. TR-069
8. IGMP Settings
9. User
10. Save
11. Reboot
12. Load to default
13. Diagnostic
14. Exit

The usage of each menu option is described in the following sections. You can select every option by typing the corresponding number of the option.

Example: To obtain the **WAN** configuration menu, type **1**, then press **Enter**.

WAN Interface Configuration Menu

Use this menu to setup the WAN configurations for your gateway's WAN port. For entering in the WAN configuration menu, type **1** in the main menu, then press **Enter**.

Following options in the WAN configuration menu will be displayed:

```
1.   DHCP
2.   PPPoE
3.   2PPPoE + VLAN
4.   Configuration Show
5.   Back
```

DHCP

The command **DHCP** allows you to configure the WAN interface to setup a **DHCP** based connection.

At the prompt enter **1** for **DHCP,** then press **Enter**, following options are displayed:

- Host Name: (enter host name)
- Domain Name: (enter domain name)
- MTU(256~1500, 0->auto): (enter MTU, 256~1500, 0 means auto)
- Vender Class ID(option 61): (enter class ID)
- Client ID(option 61): (enter client ID)
- Manufacturer OUI: (enter manufacturer OUI)
- Product class: (enter product class)
- Model name: (enter model name)
- Serial number: (enter serial number)

Configuration example:

```
select:                          1
Host Name:                       myhostname
Domain Name:                     mynetwork
MTU(256~1500, 0->auto):          0
Vender Class ID(option 61):      61
Client ID(option 61):            61
Manufacturer OUI:                00cf32
Product class:                   product_class
Model name:                      model_name
Serial number:                   3234-3321
```

PPPoE

The command **PPPoE** allows you to configure the WAN interface to setup a PPPoE based connection. Note that you need to configure the username, password, and idle time.

At the prompt enter **2** for **PPPoE,** then press **Enter**, following options are displayed:

- username: (enter PPPoE username)
- password: (enter PPPoE password)
- Mode(1.Connect on demand**;** 2. Keep alive):

  Note: If you select **1** for **Connect on demand**, you have to configure the **maximum idle time** in seconds. Then the server will disconnect by itself when it reaches the maximum idle time.
- Max Idle time:

Other options are:

- Host Name: (enter host name)
- Domain Name: (enter domain name)
- MTU: (enter MTU, 800~1492, 0 means auto)

Configuration example:

```
select:                          2
PPPoE username:                  username@sympatico.ca
PPPoE password:                  password
PPPoE AC name:                   ac_name
PPPoE Service name:              service_name
Connect Model (1.Connect on demand 2.Keep alive):1
Maximum idle time:               600
Host Name:                       myhostname
Domain Name:                     mydomainname
MTU(800~1492, 0->auto):          800
```

2PPPoE + VLAN

You can configure the WAN protocol for using VLAN. At the prompt enter **3** for **2PPPoE+VLAN**, following options are displayed and can be specified:

[Internet]:

- VLAN ID:
- PPPoE Username:
- PPPoE Password:
- PPPoE AC Name
- PPPoE Server Name:
- Mode(1.Connect on demand**;** 2. Keep alive):

  Note: If you select **1.Connect on demand**, you have to configure the **maximum idle time** in seconds. Then the server will disconnect by itself when it reaches the maximum idle time.
- Max Idle time:

Other options are:

- Host Name: (enter host name)
- Domain Name: (enter domain name)
- MTU: (enter MTU, 800~1492, 0 means auto)

[IPTV]:

- VLAN ID:
- PPPoE Username:
- PPPoE Password:
- PPPoE AC Name
- PPPoE Server Name:
- Mode(1.Connect on demand; 2. Keep alive):

  Note: If you select **1.Connect on demand**, you have to configure the **maximum idle time** in seconds.
- Max Idle time:

Other options are:

- Host Name: (enter host name)
- Domain Name: (enter domain name)
- MTU: (enter MTU, 800~1492, 0 means auto)

Configuration example:

```
select:                          3
[Internet]:
VLAN ID:                         20
PPPoE username:                  username1@sympatico.ca
PPPoE password:                  password1
PPPoE AC name:                   ac_name1
PPPoE Service name:              service_name1
Connect Model(1.Connect on demand 2.Keep alive):1
Maximum idle time:               300
Host Name:                       myhostname1
Domain Name:                     mydomainname1
MTU(800~1492, 0->auto):          0
[IPTV]:
VLAN ID:                         30
PPPoE username:                  username2@sympatico.ca
PPPoE password:                  password2
PPPoE AC name:                   ac_name2
PPPoE Service name:              service_name2
Connect Model(1.Connect on demand 2.Keep alive):2
Host Name:                       myhostname2
Domain Name:                     mydomainname2
```

```
MTU(800~1492, 0->auto):          800
```

Configuration Show

This option shows the current WAN configuration setting.

At the prompt enter **4,** then press **Enter**. The CLI will display the current WAN configuration settings.

Back

At the prompt, enter **5,** then press **Enter** for returning to the previous menu.

LAN Interface Configuration Menu

Purpose

Use this menu to setup the LAN configurations for your gateway's LAN port. For entering in the LAN configuration menu, type **2** in the main menu, then press **Enter**.

Following options in the LAN configuration menu will be displayed:

```
1.   Configure LAN interface
2.   Configure DHCP server
3.   Configuration Show
4.   Back
```

Configure LAN interface

If you select **1** for **Configure LAN interface**, you will have to configure the following parameters:

- IP address: (enter LAN IP address)
- Subnet Mask: (enter LAN subnet mask)

Configuration example:

```
select:                          1
IP address                       192.168.2.1
Subnet mask                      255.255.255.0
```

Configure DHCP server

If you select **2**, the **Configure DHCP server** menu is shown. There are six options for specifying:

```
1.   Enable DHCP Server
2.   Disable DHCP Server
3.   Configure DHCP IP pool range
4.   Configure DHCP lease time
5.   Configure DHCP Static Lease
6.   Back
```

Configuration example:

If you want to configure the DHCP server, just type **2** and press **Enter**, in the LAN configuration menu, the CLI will enter the DHCP configuration menu as follows:

```
1. Configure LAN interface
2. Configure DHCP server
3. Configuration show
4. Back

select:                          2
```

```
1. Enable DHCP server
2. Disable DHCP server
3. Configure DHCP IP pool Range
4. Configure DHCP lease time
5. Configure DHCP static lease
6. Back
```

Enable DHCP server

At the prompt enter **1**, then press **Enter** for **Enable DHCP server**, this command allows you to enable the DHCP server.

Disable DHCP server

At the prompt enter **2**, then press **Enter** for **Disable DHCP server**, this command allows you to disable the DHCP server.

Configure DHCP IP pool Range

You can configure the DHCP IP pool range. At the prompt enter **3**, then press **Enter** for **Configure DHCP IP pool Range**, following parameters are displayed and can be specified:

- DHCP Starting IP: (enter DHCP server starting IP address)
- DHCP Ending IP: (enter DHCP server ending IP address) VLAN ID:

Configuration example:

```
select:                    3
DHCP starting IP           192.168.2.10
DHCP ending IP             192.168.2.254
```

Configure DHCP IP lease

You can configure the DHCP lease time. At the prompt enter **4**, then press **Enter** for **Configure DHCP lease time**, following parameter can be specified:

- Lease Time (secs): (enter the lease time in second)

Configuration example:

```
select:                    4
Lease time(secs)           600
```

Note: After applying your changes, you should reboot the unit.

Configure DHCP IP Static lease

You can configure the DHCP static lease. At the prompt enter **5**, then press **Enter** for **Configure DHCP Static lease**, following four options are displayed:

```
1. Add Static Lease
2. Delete Static Lease
3. Show All Static Lease
4. Back
```

Configuration example:

```
1. Enable DHCP server
2. Disable DHCP server
3. Configure DHCP IP pool Range
4. Configure DHCP lease time
5. Configure DHCP static lease
6. Back

select:                          5
1. Add static lease
2. Delete static lease
3. Show all static lease
4. Back

select:                          1 or 2
```

For the options **1. Add static lease** and **2. Delete static lease**, you have to configure the following parameters:

- MAC address: (enter the MAC address)
- IP address: (enter the IP address)

Configuration example:

```
1. Add static lease
2. Delete static lease
3. Show all static lease
4. Back

select:                          1
MAC address:                     11:22:33:44:55:66
IP address:                      192.168.2.10
ADD static lease _mac=11:22:33:44:55:66;_ip=192.168.2.10;


1. Add static lease
2. Delete static lease
3. Show all static lease
4. Back

select:                          2
MAC address:                     11:22:33:44:55:66
IP address:                      192.168.2.10
DELETE static lease _mac=11:22:33:44:55:66;_ip=192.168.2.10;
```

Configuration Show

This option in the LAN configuration menu shows the current LAN configuration setting. If you select **3. Configuration Show**, the CLI will display the current LAN configuration settings.

Back

At the prompt, enter **4**, then press **Enter** for returning to the previous menu.

WLAN Interface Configuration Menu

Use this menu to setup the WLAN configurations for your gateway's WLAN port. For entering in the WLAN configuration menu, type **3** in the main menu, then press **Enter**.

Following options in the WLAN configuration menu will be displayed:

```
1.   WLAN Enable
2.   WLAN Disable
3.   Tx Power
4.   Radio Mode
5.   Auto Channel Select
6.   Channel
7.   Beacon interval
8.   DTIM Period
9.   Configure SSID and Key
10.  Apply Changes
11.  Configuration Show
12.  Back
```

WLAN Enable

At the prompt enter **1**, then press **Enter** for **WLAN Enable,** this command allows you to enable the WLAN functionality.

WLAN Disable

At the prompt enter **2**, then press **Enter** for **WLAN Disable,** this command allows you to disable all WLAN functionality.

Tx Power

At the prompt enter **3**, then press **Enter** for **Tx Power**, following option is displayed:

- WLAN Tx Power (1~100):

Configuration example:

```
select:                          3
WLAN Tx Power(1~100):            100
```

Radio Mode

At the prompt enter **4,** then press **Enter** for **Radio Mode,** this command allows to enter the WLAN Radio Mode (1.b/g 2.b only 3.g only).

Configuration example:

```
select:                                    4
WLAN Radio Mode (1.b/g 2.b only 3.g only): 1
```

Auto Channel Select

At the prompt enter **5**, then press **Enter** for **Auto Channel Select,** this command allows you to turn **on** or **off** the **Auto Channel Select**.

Configuration example:

```
select:                                    5
WLAN Auto Channel Select(1.Now 2.ON 3.OFF):  3
```

WLAN Channel

At the prompt enter **6**, then press **Enter** for **WLAN Channel,** this command allows you to enter the WLAN channel.

Configuration example:

```
select:                          6
WLAN channel (1~11):             10
```

WLAN beacon

At the prompt enter **7**, then press **Enter** for **Beacon interval,** this command allows you to enter the beacon interval.

Configuration example:

```
select:                          7
WLAN beacon interval (20~1023): 25
```

WLAN DTIM Period

At the prompt enter **8**, then press **Enter** for **DTIM Period,** this command allows you to enter your DTIM (Delivery Traffic Indication Map) period. The unit has less burden on buffering frames but the wireless clients has lower power saving capability for a lower DTIM value. And vice versa for a high DTIM value.

Configuration example:

```
select:                          8
WLAN DTIM period (1~255):        255
```

Configure SSID and Encryption

At the prompt enter **9**, then press **Enter** for **Configure SSID and Encryption,** this command allows you to enter which SSID you want to configure.

Following options need to be configured:

- WLAN SSID:
- Hide SSID (1.Enable 2.Disable):
- Authentication Type (1.Open 2.Shared 3.WPAPSK 4.WPA2PSK):
- If you select “1.Open”, it will show the following “Security Type”:

- Security Type (1.None 2.WEP 3.TKIP 4.AES):
- If you select “2. Shared”, it will show the following “Security Type”:
- Security Type (1.WEP 2.TKIP 3.AES)
- If you select “3. WPAPSK” or “4. WPA2PSK”, you have to enter
- WPAPSK Pre-shared key (length 8~64):
- with the following “Security Type” to choose from:
- Security Type (1.TKIP 2.AES):

In the **Security Type** option, if you select **WEP**, you have to enter the following items.

- Key 1: (enter key 1)
- Key 2: (enter key 2, optional)
- Key 3: (enter key 3, optional)
- Key 4: (enter key 4, optional)
- Key index (1~4): (select what key you want to use)

Configuration example:

```
select:                                    9
WLAN SSID:                                 100
Hide SSID(1.Enable 2.Disable):             2
Authentication Type
   (1.Open 2.Shared 3.WPAPSK 4.WPA2PSK):   3
WPAPSK Pre-shared key(length 8~64):        12345678
Security Type(1.TKIP 2.AES):               2
Wlan restart servicesc...
[WLAN restart messages will go on]
```

Apply Changes

At the prompt enter **10**, then press **Enter** for **Apply Changes**, the WLAN will apply the changes immediately.

Configuration Show

At the prompt enter **11**, then press **Enter** for **Configuration Show**, the CLI window will display the current configuration settings.

Back

At the prompt enter **12**, then press **Enter** for **Back,** and you will be return to previous menu.

NAT (Network Address Translation) Menu

Purpose

Use this menu to setup the NAT configurations. For entering in the NAT configuration menu, type **4** in the main menu, then press **Enter**.

Following options in the **NAT** configuration menu will be displayed:

```
1.   Port Range Forwarding
2.   Virtual Server
3.   DMZ & UPnP
4.   Filter
5.   NAT passthrough
6.   Configuration Show
7.   Back
```

Port Range Forwarding

The port forwarding is needed in an instance when some applications use multiple ports. You will have to open these ports in the firewall.

At the prompt enter **1**, then press **Enter** for **Port Range Forwarding**, following options are displayed:

```
1.   Add Rule
2.   Delete Rule
3.   Show All Rules
4.   Back
```

At the prompt enter **1**, then press **Enter** for **Add Rule**, following parameters can be configured:

- Application: (enter application name)
- Start Port: (enter starting port)
- End Port: (enter ending port)
- Protocol (1.TCP 2.UDP 3.Both): (select protocol)
- IP address: (enter your LAN IP address to be applied to this rule)

At the prompt enter **2**, then press **Enter** for **Delete Rule,** this command allows you to delete a rule therefor, enter the application name.

Configuration example:

```
  1. Add Rule
  2. Delete Rule
  3. Show all rules
  4. Back
select:                         1
Application Name:               HTTP
Starting Port:                  80
Ending Port:                    80
```

```
Protocol(1.TCP 2.UDP 3.BOTH):   1
IP address:                     192.168.2.1
[NAT restart message will show up]
  1. Add Rule
  2. Delete Rule
  3. Show all rules
  4. Back
select:                         2
Application Name:               HTTP
[NAT restart message will show up]
```

Virtual Server

The **Virtual Server** will permit certain traffic from the internet to access the servers inside the firewall.

At the prompt enter **2**, then press **Enter** for **Virtual Server**, following options are displayed:

```
1.   Add Rule
2.   Delete Rule
3.   Show All Rules
4.   Back
```

At the prompt enter **1** for **Add Rule**, following parameters can be configured:

- Application: (enter application name)
- Ext. Port: (External port)
- Int. Port: (Internal port)
- Protocol (1.TCP 2.UDP 3.Both) : (select protocol)
- IP address: (enter your LAN IP address to be applied to this rule)

At the prompt enter **2**, then press **Enter** for **Delete Rule,** this command allows you to delete a rule, therefor enter the application name.

Configuration example:

```
  1. Add Rule
  2. Delete Rule
  3. Show all rules
  4. Back
select:                         1
Application Name:               FTP
Ext. Port:                      20
Int. Port:                      20
Protocol(1.TCP 2.UDP 3.BOTH):   1
IP address:                     192.168.2.1
[NAT restart message will show up]
  1. Add Rule
  2. Delete Rule
  3. Show all rules
```

```
  4. Back
select:                          2
Application Name:                FTP
[NAT restart message will show up]
```

DMZ & UPnP

The **DMZ & UPnP** will permit certain traffic from the internet to access the servers inside the firewall.

At the prompt enter **3**, then press **Enter** for **DMZ & UPnP**, to obtain the **DMZ & UPnP** options.

Configuration example:

```
   1.   Port Range Forwarding
   2.   Virtual Server
   3.   DMZ & UPnP
   4.   Filter
   5.   NAT pass-through
   6.   Configuration Show
   7.   Back
select:                          3
   1.   Enable DMZ
   2.   Disable DMZ
   3.   Enable UPnP
   4.   Disable UPnP
   5.   Back
select:                          1
DMZ Host IP address:             192.168.2.1
[NAT restart message will show up]
```

Filter

The **Filter** will permit you to block some applications through the firewall.

At the prompt enter **4**, then press **Enter** for **Filter**, following options are displayed:

```
   1.   Enable Filter
   2.   Disable Filter
   3.   Add Rule
   4.   Delete Rule
   5.   Enable MAC Filter
   6.   Disable MAC Filter
   7.   Add MAC Filter Rule
   8.   Delete MAC Filter Rule
   9.   Show All Rules
   10.  Back
```

At the prompt enter **3**, then press **Enter** for **Add Rule**, following parameters can be configured:

- Application: (enter application name)

- Starting IP address: (enter starting LAN IP address to be applied to this rule)
- Ending IP address: (enter ending LAN IP address to be applied to this rule)
- Protocol (1.TCP 2.UDP 3.Both) : (select protocol)
- Starting Port: (enter starting port)
- Ending Port: (enter ending port)

At the prompt enter **4** for **Delete Rule,** this command allows you to delete a rule, therefor enter the application name.

At the prompt enter **5** for **Enable MAC Filter,** this command allows you to enable the MAC filter.

- MAC Filter Mode (1. Deny 2. Allow): (select MAC filter mode)

At the prompt enter **7**, then press **Enter** for **Add MAC Filter Rule** or **8** for **Delete MAC Filter Rule,** this command allows you to add or delete the MAC filter Rules.

Configuration example:

```
   1.   Enable Filter
   2.   Disable Filter
   3.   Add Rule
   4.   Delete Rule
   5.   Enable MAC filter
   6.   Disable MAC filter
   7.   Add MAC filter rule
   8.   Delete MAC filter rule
   9.   Show all rules
   10.  Back
select:                          3
Application Name:                test
Starting IP address:             192.168.2.10
Ending IP address:               192.168.2.20
Protocol(1.TCP 2.UDP 3.BOTH):    3
Starting Port:                   777
Ending Port:                     999
[NAT restart message will show up]
```

NAT Passthrough

The **NAT Passthrough** will permit you to enable or disable the security protocol NAT Passthrough.

At the prompt enter **5**, then press **Enter** for **Filter**, following options are displayed:

```
   1.   Enable IPSec Pass-through
   2.   Disable IPSec Pass-through
   3.   Enable L2TP Pass-through
   4.   Enable L2TP Pass-through
   5.   Enable PPTP Pass-through
   6.   Enable PPTP Pass-through
```

```
7.   Back
```

Configuration Show

The **Configuration Show** display the current NAT configuration settings individually.

At the prompt enter **6**, then press **Enter** for **Configuration Show**, following options are displayed:

```
1.   Show current NAT settings
2.   Show all Filter rules
3.   Back
```

Note: Each one will show out current NAT configuration setting individually.

Back

At the prompt enter 7, then press **Enter** to return to previous menu.

Route Menu

Overview

Use this menu to specify static route options. For entering in the Route configuration menu, type **5** in the main menu, then press **Enter**.

Following options in the **Route** configuration menu will be displayed:

```
1.   Add Route
2.   Delete Route
3.   Show Routing table
4.   Back
```

At the prompt enter **1** for **Add Route** or **2** for **Delete Route**, following parameters can be configured:

- IP address: (enter the destination IP address)
- Subnet mask: (enter the netmask)
- Gateway: (enter gateway, i.e., the next-hop ip address)
- Metric: (enter metric)
- Interface: (enter interface, 3 choices:
- WAN (internet), LAN, WAN (IPTV))

At the prompt enter **2**, then press **Enter** for **Delete Rule,** this command allows you to delete a rule therefor, enter the application name.

Configuration example:

```
   1.   Add Route
   2.   Delete Route
   3.   Show Routing table
   4.   Back
select:                          1
IP address:                      192.168.2.1
Subnet mask:                     255.255.255.0
Gateway:                         192.168.2.1
Metric:                          5
Interface(1.WAN(Internet)
2.LAN 3.WAN(IPTV)):              2
```

QoS Menu

Overview

Use this menu to setup the **QoS** configuration options. For entering in the **QoS** configuration menu, type **6** in the main menu, then press **Enter**.

Following options in the **QoS** configuration menu will be displayed:

```
1.   Configure QoS Scheduler
2.   Configure Default QoS
3.   Configure QoS Policy
4.   Configure QoS ALG
5.   Configuration Show
6.   Back
```

Configure QoS Scheduler

At the prompt, enter **1** for **Configure QoS Scheduler** in the main menu, following options are displayed:

```
1.   Enable QoS scheduler
2.   Disable QoS scheduler
3.   Configure scheduler type
4.   Configure Upstream Bandwidth
5.   Configure Queue Weight
6.   Show All Queue Weight
7.   Back
```

Enable QoS scheduler

At the prompt, enter **1** for enabling the QoS scheduler.

Disable QoS scheduler

At the prompt, enter **2** for disabling the QoS scheduler.

Configure scheduler type

At the prompt, enter **3** for configuring the **scheduler type**. The following options can be configured:

- 1. Priority Queue: For this method, the lower priority traffic will only be delivered when higher priority traffic have all been delivered.
- 2. Deficit weighted priority fair queue: For this method, you will be able to give **weights** for each priority queue.
- 3. Back

Configure Upstream Bandwidth

At the prompt, select **4** for entering the **Upstream Bandwidth**.

Configure Queue Weight

At the prompt, select **5** for entering the **Queue Weight**. The following options can be configured:

- Queue Number (0~7):
- Weight:
- Borrow (1: Enable 2. Disable):
- Ack Priority (1. Enable 2. Disable):
- Contribute (1. Enable 2. Disable):

Examples for selection of 3, 4, and 5 individually:

```
select:                              3
1. Priority Queue 2.Deficit weighted priority fair queue:1


select:                              4
Upstream Bandwidth(max 50000):       5000


select:                              5
Qoeue Number (0~7):                  0
Weight(0~100):                       50
Borrow (1.Enable 2.Disable):         2
Ack Priority (1.Enable 2.Disabel):2
Contribute (1.Enable 2.Disable):     2

            Weight    Borrow    Ack Priority    Contribute

0.Default   50        0       0         0

1.Medium    0         1       0         1

2.Critical  0         1       0         1

3.Premium   0         1       0         1

4.Low       0         1       0         1

5.High      0         1       0         1

6.Real Time 0         1       0         1

7.Urgent    0         1       0         1
```

The sum of **Queue Weight** must equal to 100.

```
Qoeue Number (0~7):                5
Weight(0~100):                     50
Borrow (1.Enable 2.Disable):       1
Ack Priority (1.Enable 2.Disabel):1
Contribute (1.Enable 2.Disable):   1

            Weight   Borrow   Ack Priority    Contribute

0.Default   50       0      0         0

1.Medium    0        1      0         1

2.Critical  0        1      0         1

3.Premium   0        1      0         1

4.Low       0        1      0         1

5.High      0        1      0         1

6.Real Time 0        1      0         1

7.Urgent    0        1      0         1
```

Show All Queue Weight

At the prompt, select **6** for showing **All Queue Weight**.

Back

At the prompt, enter **7** for returning to the previous menu.

Configure Default QoS

At the prompt, enter **2** for **Configure Default QoS** in the main menu**,** following options are displayed:

```
1.   Configure Internet QoS
2.   Configure IPTV QoS
3.   Back
```

Configure Internet QoS

At the prompt, enter **1** for **Configure Internet QoS.** The following parameters have to configured:

- QoS Mapping by (**1.Original Tos Tag 2.Specified**): If you select **2.Specified**, you have to configure the following parameters:

– Queue Number (0~7):
– Type (**1. Keep Original Tos, 2. New Tos, 3. New DSCP**):
– If you select **2** for **New Tos**, you have to configure the new Tos value:
New Tos value (0~7):
– If you select **3** for **New DSCP**, you have to configure the new DSCP value:
New DSCP value (0~63):

- Set Cos (**1.Enable, 2.Disable**): If you select **1** for **Enable**, you have to enter the following parameters: QoS mark by (**1.Tos, 2. DSCP**, **3.User Specify**):

Configuration example:

```
select:                              1

QoS Mapping by (1.Original Tos Tag 2.Specified):1
Set Cos(1.Enable 2.Disable):                     1
Qos mark by(1.Tos 2.DSCP 3.User Specify):        2


select:                              2

QoS Mapping by (1.Original Tos Tag 2.Specified):2
Queue Number (0~7):                              5
Type (1.Keep Original Tos 2.New Tos 3.New DSCP):2
New Tos value (0~7):                             0
Set Cos(1.Enable 2.Disable):                     1
User Specify(0~7):                               0
```

Configure IPTV QoS

See: *Configure Internet QoS*, the configuration queue is the same.

Back

At the prompt, enter **3** for returning to the previous menu.

Configure QoS Policy

At the prompt, enter **1** for **Configure QoS Policy** in the main menu, following options are displayed:

```
1.   Add QoS Policy
2.   Configure QoS Policy Mapping
3.   Show All QoS Policy
4.   Back
```

Add Qos Policy

At the prompt, enter **1** for **Add QoS Policy.** The following parameters have to configured:

- Source IP:
- Source IP Subnet mask:

- Source Starting Port:
- Source Ending Port:
- Destination IP:
- Destination IP Subnet mask:
- Destination IP Subnet mask:
- Destination Starting Port:
- Protocol (**1.TCP**, **2.UDP**, **3.Both**):
- QoS Mapping by (**1.Original Tos Tag**, **2.Specified**): If you select **2.Specified**, you have to configure the following parameters:
  - Queue Number (0~7):
  - Type (**1. Keep Original Tos, 2. New Tos, 3. New DSCP**):
  - If you select **2** for **New Tos**, you have to configure the new Tos value:

    New Tos value (0~7):
  - If you select **3** for **New DSCP**, you have to configure the new DSCP value:

    New DSCP value (0~63):
- Set Cos (**1.Enable, 2.Disable**): If you select **1** for **Enable**, you have to enter the following parameters: QoS mark by (**1.Tos, 2. DSCP**, **3.User Specify**):

Example for adding QoS policy rule:

```
select:                          1

Source IP:                       192.168.2.1
Source IP Subnet mask:           255.255.255.0
Source Starting Port:            50
Source Ending Port:              55
Destination IP:                  192.168.2.10
Destination IP Subnet mask:      255.255.255.0
Destination Starting Port:       55
Destination Ending Port:         60
Protocoa (1.TCP 2.UDP):          1
QoS Mapping by (1.Original Tos Tag 2.Specified):1
Set Cos(1.Enable 2.Disable):     1
Qos mark by(1.Tos 2.DSCP 3.User Specify):1
```

Configure QoS Policy Mapping

At the prompt, enter **2** for **Configure QoS Policy Mapping.** The following parameters have to be configured:

- Select which rule you want to configure (1~20): After you enter one policy number, you have to choose one operation: (**1.Up**, **2.Down**, **3.Delete**):

Configuration example:

After you set the QoS policy rule like the example above, you can configure the

QoS policy rule as follows:

```
select:                              2

No.SrcIP  Netmask    SrcPort       DstIP    Netmask     DstPort
Prot Priority...

1    192.168.2.1 255.255.255.0   50-55  192.168.2.10  255.255.255.0
   55-60 TCP

Select which rule you want to configure(1~1):1
Operation(1.Up 2.Down 3.Delete):         3
```

Configure QoS ALG

At the prompt, enter **4** for **Configure QoS ALG** in the main menu, following options are displayed:

```
1.   Enable SIP ALG QoS
2.   Disable SIP ALG QoS
3.   Configure SIP Session QoS
4.   Configure RTP Session QoS
5.   Back
```

Enable SIP (Session Initiated Protocol) ALG QoS

At the prompt, enter **1** for enabling the SIP ALG QoS.

Disable SIP ALG QoS

At the prompt, enter **2** for disabling the SIP ALG QoS.

Configure SIP/RTP (Real-Time Protocol) Session QoS

At the prompt, enter **3** or **4** for configuring the **SIP Session QoS** or **RTP Session QoS**. The following options can be configured:

- QoS Mapping by (**1.Original Tos Tag**, **2.Specified**): If you select **2.Specified**, you have to configure the following parameters:
  - Queue Number (0~7):
  - Type (**1. Keep Original Tos, 2. New Tos, 3. New DSCP**):
  - If you select **2** for **New Tos**, you have to configure the new Tos value:

    New Tos value (0~7):
  - If you select **3** for **New DSCP**, you have to configure the new DSCP value:

    New DSCP value (0~63):
- Set Cos (**1.Enable, 2.Disable**): If you select **1** for **Enable**, you have to enter the following parameters: QoS mark by (**1.Tos, 2. DSCP**, **3.User Specify**):

Configuration example selection of 3 and 4 individually:

```
select:                              3

QoS Mapping by (1.Original Tos Tag 2.Specified):1
Set Cos(1.Enable 2.Disable):                     2


select:                              4

QoS Mapping by (1.Original Tos Tag 2.Specified):2
Queue Number (0~7):                              0
Type (1.Keep Original Tos 2.New Tos 3.New DSCP):1
Set Cos(1.Enable 2.Disable):                     1
```

Configuration Show

At the prompt, enter **5** for **Configuration Show** in the main menu, following options are displayed:

```
1.   Show QoS Scheduler
2.   Show Default QoS
3.   Show QoS Policy
4.   Show QoS ALG
5.   Back
```

Note: Each one will show out current QoS configuration setting individually.

Back

At the prompt, enter **5** for returning to the previous menu.

TR-069 Protocol

Use this menu to setup a protocol for the communication between a CPE and an Auto-Configuration Server (ACS), that encompasses secure auto-configuration as well as other CPE management functions within a common framework.

Following options in the TR-069 menu will be displayed:

```
1.   Show current settings
2.   Configure ACS URL
3.   Configure ACS username
4.   Configure ACS password
5.   Configure Connection Request username
6.   Configure Connection Request password
7.   Configure CPE Manufacturer
8.   Configure CPE OUI
9.   Configure CPE Product Class
10.  Configure CPE Serial Number
11.  Enable Inform
12.  Disable Inform
13.  Back
```

Show current settings

At the prompt, enter **1**, the CLI will show the current TR-069 state.

Configure ACS URL

At the prompt, enter **2** for defining the ACS URL.

> **Note:** When initiated by the ACS, the CPE is provided with the location of the file to be transferred, using HTTP or, optionally, HTTPS, FTP, or TFTP as the transport protocol. The CPE then performs the transfer, and notifies the ACS of the success or failure.

Configure ACS username

At the prompt, enter **3** for defining the ACS username for authentication.

Configure ACS password

At the prompt, enter **4** for defining the ACS password for authentication.

Configure Connection Request username

At the prompt, enter **5** for defining the connection request username. The username is used to authenticate an ACS making a connection request to the CPE.

Configure Connection Request password

At the prompt, enter **6** for defining the connection request password. The password is used to authenticate an ACS making a connection request to the CPE.

Configure CPE Manufacturer

At the prompt, enter **7** for defining the CPE manufacturer.

Configure CPE OUI

At the prompt, enter **8** for defining the organizationally unique identifier (OUI) of the device manufacturer.

Note: Represented as a six hexadecimal-digit value using all upper-case letters and including any leading zeros.

Configure CPE Product Class

At the prompt, enter **9** for defining the CPE product class.

Note: This parameter is a 64 string *Identifier* of the class of product for which the serial number applies. That means, that for a given manufacturer this parameter is used to identify the product or class of product over which the *SerialNumber* parameter is unique.

Configure CPE Serial Number

At the prompt, enter **10** for defining the CPE serial number.

Note: This parameter is a 64 string *Identifier* of the particular device that is unique for the indicated class of product and manufacturer.

Examples for selection of 2, 3, 4, 5, 6, 7, 8, 9, and 10 individually:

```
select:                          2
Enter Auto-Config Server URL:    http://www.test.html


select:                          3
Enter Auto-Config Server Username:username


select:                          4
Enter Auto-Config Server Password:password


select:                          5
Enter Connection Request Username:username2
```

```
select:                          6
Enter Connection Request Password:password2


select:                          7
Enter CPE Manufacturer:          manufacturer


select:                          8
Enter CPE OUI:                  0006ac


select:                          9
Enter CPE Product Class:         LinuxCPERef


select:                          10
Enter CPE Serial Number:         1234
```

Enable Inform

At the prompt, enter **11** for enabling the periodic inform request to ACS.

Disable Inform

At the prompt, enter **12** for disabling the periodic inform request to ACS.

Note: Enter inform interval (minimum 30 seconds).

Back

At the prompt, enter **13** for returning to the previous menu.

IGMP Settings

Overview

The Internet Group Management Protocol (IGMP) is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships.

Following options in the IGMP setting menu will be displayed:

```
1.   IGMP v2
2.   IGMP v3
3.   Both
4.   IGMP Statistic Period
5.   IGMP Log Level
6.   Back
```

Configure IGMP v2

At the prompt, enter **1** for setting the IGMP to version 2.

Configure IGMP v3

At the prompt, enter **2** for setting the IGMP to version 3.

Configure both IGMP versions

At the prompt, enter **3** for setting the IGMP to both versions.

Configure IGMP Statistic Period

At the prompt, enter **4** for choosing the IGMP statistic period. There are seven options for specifying:

```
1.   Disable
2.   Fifteen Minutes
3.   Thirty Minutes
4.   One Hour
5.   Six Hours
6.   One Day
7.   One Week
```

Configure IGMP Log Level

At the prompt, enter **5** for choosing the IGMP log level.

- IGMP Log Level (1.NONE 2.ERROR 3.INFO 4.DEBUG):

Example for IGMP log level set to DEBUG and version 2 (IGMP v2):

```
1. IGMP v2
2. IGMP v3
3. Both
```

```
4. IGMP Statistic Period
5. IGMP Log Level
6. Back

select:                          5


IGMP Log Level (1.NONE 2.ERROR 3.INFO 4.DEGUG):

4

1. IGMP v2
2. IGMP v3
3. Both
4. IGMP Statistic Period
5. IGMP Log Level
6. Back

select:                          1


Start IGMP...

waiting 15 seconds...

[After fifteen seconds count down, CLI will display "change IGMP
   to v2"]
```

Back

At the prompt, enter **6** for returning to the previous menu.

User

Overview

In the User menu, you may be able to change your web management's username and password. You may also enable/disable your CPE's Telnet function.

The following options in the User menu will be displayed:

```
1.   Change HTTP username and password
2.   Telnet Enable
3.   Telnet Disable
4.   Configuration Show
5.   Back
```

Change HTTP username and password

At the prompt, enter **1** for changing the HTTP username and password. Following parameters have to be specified:

- New Username: (enter new username)
- Current password: (enter current password)
- New Password: (enter new password)
- Confirm New Password: (enter new password again)

Example for HTTP username and password change:

```
select:                         1
New Username                    admin
Current password                admin
New Password                    new
Confirm New Password            new
```

Telnet Enable

At the prompt, enter **2** for enabling the Telnet function.

Telnet Disable

At the prompt, enter **3** for disabling the Telnet function.

Configuration Show

At the prompt, enter **4** for showing the current HTTP and Telnet username and password.

Back

At the prompt, enter **5** for returning to the previous menu.

Save

Purpose

At the prompt, enter **10** for saving the current configuration values to the flash.

Reboot

Purpose

At the prompt, enter **11** for rebooting the CPE.

Load to default

Purpose

Reset the configuration values to the factory's default.

Important! A restore to the factory defaults will delete all your configuration settings. Any settings you have saved will be lost when the default settings are restored.

At the prompt, enter **12** for loading all setting to default value.

Note: You will see the confirm message.

Example:

```
select:                          12
```

You will see the following confirm message:

```
System will reboot, Do you want to continue?(1.yes 2.no):1
```

Diagnostic

Overview

The following options in the Diagnostic menu will be displayed:

```
1.   System Information
2.   VDSL2
3.   LAN
4.   WAN
5.   WLAN
6.   DHCP Server
7.   NAT/Bridge
8.   DNS
9.   Remote Management
10.  IGMP
11.  Hardware Test
12.  Heavy CPU Usage Simulator
```

System Information

At the prompt, enter **1** for showing the system information parameters. Following parameters are displayed:

- Firmware version: Show the current firmware version
- System up time: Show how long the system has been up and operated
- CPU utilization: Show the current CPU utilization
- Interface show: Show the information of each interface
- Module show: Show the modules loaded to the system
- Thread show: Show the current threads status
- Route show: Show the current routing rules
- Memory utilization: Show the current memory utilization
- Syslog: Show the syslog information.

VDSL2

At the prompt, enter **2** for showing the VDSL2 parameters. Following parameters are displayed:

- Connection status: Check if the VDSL2 connection is active
- Connection time: Show how long the VDSL2 connection has been constructed
- Net data rate: Show the net data rate and would be available once VDSL2 is sync.
- Chain rate: Show the chain rate and would be available once VDSL2 is sync.
- SNR: Show the SNR value and would be available once VDSL2 is sync.
- Error code: Show the error code number and would be available once VDSL2 is not sync. or in some error condition.

LAN

At the prompt, enter **3** for showing the LAN parameters. Following parameters are displayed:

- LAN IP address: Show the LAN IP address
- LAN Subnet Mask: Show the LAN subnet mask
- Statistics: Show out packets/bytes transmitted, received, dropped, collisions
- Switch status: Check, if Switch works properly
- Connection status: Check the connection in LAN port 1 to 4. (Connected/Disconnected)
- Connection mode: Check the connection mode in LAN port 1 to 4. (10/100, Duplex mode).

WAN

At the prompt, enter **4** for showing the WAN parameters. Following parameters are displayed:

- Mode: PPPoE or DHCP mode is enabling
- WAN IP address: Show the WAN IP address
- Subnet mask: Show the WAN subnet mask
- Gateway: Show the WAN gateway
- DNS IP address: Show the WAN DNS IP address
- WAN Host Name: Show the WAN hostname
- WAN Domain Name: Show the WAN domain name.
- WAN MTU: Show the WAN MTU (Maximum Transfer Unit)
- Statistics: Show packets/bytes transmitted, received, dropped, and collisions.

WLAN

At the prompt, enter **5** for showing the WLAN parameters. Following parameters are displayed:

- WLAN module status: Check, if WLAN module is up and works properly
- SSID: Show the configured SSID
- Authentication mode: Show the authentication mode per pair
- Key: Show the key per pair
- Statistics: Show the WLAN transmitted power, packets transmitted/received and dropped
- Associate Table: Show the wireless clients MAC address, time associated, and current transmitted rate.

DHCP Server

At the prompt, enter **6** for showing the DHCP server status. Following parameters are displayed:

- DHCP Server Enable/Disable: Check, if the DHCP server is enabling
- DHCP assign IP list: Show the assigned IP list and would be only available once DHCP server is enabled.

Note: Add also "**lease expires in"** field.

NAT/Bridge

At the prompt, enter **7** for showing the NAT/Bridge status. Following parameters are displayed:

- NAT/Bridge mode : Show NAT or bridge mode is enabling
- NAT type : Show the NAT type
- NAT Statistic : Show the NAT translation history, including protocol, state, original source IP address, original destination IP address, original source port, original destination port, inverted source IP address, inverted destination IP address, inverted source port, and inverted destination port. It will also display the number of current connections through NAT.

DNS

At the prompt, enter **8** for showing the DNS status. Following parameters are displayed:

- DNS functionality Check: Check, if the DNS functionality works properly. (The DNS server's IP address is displayed and show that the DNS can resolve the domain name properly.)
- DNS IP address: Show the DNS IP address that is currently used.

Remote Management

At the prompt, enter **9** for showing the remote management status. Following parameters are displayed:

- TR069 functionality Check: Check, if the functionality status is okay.

IGMP

At the prompt, enter **10** for showing the IGMP parameters. Following parameters are displayed:

- IGMP version: Show the IGMP version
- IGMP Statistic Period: Show the IGMP statistic period
- IGMP Log Level: Show the IGMP log level.

Hardware Test

At the prompt, enter **11** for showing the result of the hardware test.

Heavy CPU Usage Simulator

At the prompt, enter **12** for simulating a heavy CPU usage situation in the system.

The CPE will take as long as 500 minutes and may not respond during this period.

Exit

Purpose

At the prompt, enter **14** for closing the CLI connection to the CPE.