



**Firmware Release Note**

**Prestige 650H-33**

**Standard version**

**Release 3.40(IT.3)C0**

<b>Date:</b>	<b>Aug 15, 2003</b>
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# **ZyXEL Prestige 650H-33 Standard Version release 3.40(IT.3)C0 Release Note**

**Date:** Aug 15, 2003

## **Supported Platforms:**

ZyXEL Prestige 650H-33

## **Versions:**

ZyNOS Version : V3.40(IT.3) | 8/15/2003 13:34:08  
Bootbase Version : V1.11 | 3/4/2003 10:26:13

## **Notes:**

The P650H-33 is a small-office and home device that will allow a small LAN to access the Internet. By integrating ADSL, WLAN, NAT, P650H-33 provides the ease of installation and Internet access.

The P650H-33 provides an PCMCIA wireless card slot for 802.11b Wireless LAN connectivity, four single auto-sensing, auto-detection 10/100BASE-T Ethernet ports for connection to the user's local network, and a single RJ-11 port for connection to ADSL line.

The version of Alcatel modem code is 4.9.10

## **Known Issues:**

1. Bandwidth Management:  
Not support on-line adding class operation.
2. SIP passthrough:  
Currently, only support single user passthrough.
3. In Web GUI, the help page of Firewall only supports English version currently.
4. Update firmware issue :
  - a. Update firmware by FTP and Web: Can't update firmware from 3.40(IT.0), 3.40(IT.1) and 3.40(IT.2) to 3.40(IT.3) by FTP and Web
  - b. Only update firmware by console

## **Features:**

**Modifications in V 3.40(IT.3)C0 | 08/15/2003**

1. [FEATURE ENHANCED]  
Symptom:Support Firewall

2. [FEATURE ENHANCED]  
Symptom: Support Content filter
3. [FEATURE ENHANCED]  
Symptom: Support IPSec with 10 VPN tunnels
4. [FEATURE ENHANCED]  
Symptom: Support ZyAir B-120 driver
5. [FEATURE ENHANCED]  
Symptom: Support the CI command “ip adjmss [<mss>]” to adjust mss value.
6. [BUG FIXED] SIP pass-through bug fixed  
Symptom: The exception will be occurred if using the Telia puhekaista.msi sip userAgent software.  
Condition: The callID had no ipAddress. This will cause the system get null point for cpOffset[CALLID]

**Modifications in V 3.40(IT.2) | 06/16/2003**

1. Change to FCS version.

**Modifications in V 3.40(IT.2)b2 | 06/02/2003**

1. [NEW FEATURE]  
Support Bandwidth Management. See [Appendix 1](#)
2. [FEATURE ENHANCED]  
Support SIP passthrough.
3. [FEATURE ENHANCED]  
Add time server setup page at eWC.
4. [BUG FIXED]  
Symptom: Can't play Xbox Live via NAT router.
5. [BUG FIXED]  
Symptom: If the traffic for Polycom camera pass our router, the router would be reboot.
6. [FEATURE ENHANCED]  
Symptom: Enhance SPTGEN feature  
Condition:
  - 1) Add RIP direction and version for SMT menu4.
  - 2) Add active and protocol option for SMT menu15 (NAT).
  - 3) Extend filter set from 1 to 2 set.
  - 4) Support ADSL opencmd function.

**Modifications in V 3.40(IT.2)b1 | 04/21/2003**

1. [FEATURE ENHANCED] Support Multi-Lingual Web (English, France, Germany)
2. [FEATURE ENHANCED] Support 802.1X
3. [FEATURE ENHANCED] Add Web pages to configure 802.1x: (1) Local user database and Radius (in Advance Panel) ; (2) Association list and Channel usage ( in Maintenance Panel)
4. [FEATURE CHANGED] Turn off some wireless related web-pages and SMT menu item(menu3.5 Wireless LAN Setup) when wireless card isn't installed in the device.
5. [FEATURE ENHANCED] Enlarge the size of WLAN MAC filter number to be 32

**Modifications in V 3.40(IT.1) | 03/17/2003**

1. Change version to FCS version.

**Modifications in V 3.40(IT.1)b3 | 03/07/2003**

1. [BUG FIXED]  
Symptom: 8 PVCs can't work fine.  
Condition: Not plug wireless card, 8 PVCs test will fail.

**Modifications in V 3.40(IT.1)b2 | 03/04/2003**

1. [BUG FIXED]  
Symptom: Telnet to device cause system reboot.  
Condition: Close adsl line, when adsl up, then telnet to device will cause system reboot.
2. [BUG FIXED]  
Symptom: Can't change UBR to CBR in eWC.
3. [FEATURE ENHANCED]  
Symptom: Add web help for WAN setup page.
4. [BUG FIXED]  
Symptom: In wizard setup, OAM test will fail.  
Condition: Configure device to PPPoA encap. and Nailed up is turn off

**Modifications in V 3.40(IT.1)b1 | 02/25/2003**

1. [FEATURE ENHANCED]  
Symptom: Support SDRAM auto-detect for 8MB-32bit x1 & 8MB-16bit x2  
Condition: Need to update bootbase version to 1.10
2. [FEATURE ENHANCED]  
Symptom: Support generic filter for wireless channel.  
Usage: wlan filter <incoming|outgoing> <generic> [set#1] [set#2] [set#3] [set#4]
3. [FEATURE ENHANCED]  
Symptom: Update wireless available channels for certain countries.
4. [FEATURE ENHANCED]  
Symptom: Support wireless basicrate and txrate.  
Condition: Can't adjust basicrate and txrate for Intersil Card.
5. [FEATURE ENHANCED]  
Symptom: Add WAN setup page in eWC.
6. [BUG FIXED]  
Symptom: Video pixel issue  
Condition: While downstream have multicast traffic(Video stream) and upstream have data traffic(FTP upload). There is pixel occurred every 2~3 mins.

**Modifications in V 3.40(IT.0)C0 | 02/13/2003**

1. Change FCS version.

**Modifications in V 3.40(IT.0)b3 | 01/30/2003**

1. [FEATURE ENHANCED]  
Adopt new compress mechanism to reduce code size.
2. [BUG FIXED]  
Symptom: In sub-menu, press return key continuously will re-enter to sub-menu.  
Condition: In menu 3.2, press return key continuously will re-enter to sub-menu.
3. [BUG FIXED]  
Symptom: Show wrong status in SMT menu 24.1  
Condition: Set an remote node then non-active or delete it in menu 11.1. In menu 24.1 will show Idle not N/A.

**Modifications in V 3.40(IT.0)b2 | 01/07/2003**

1. [FEATURE CHANGED]  
Create new model ID for standard version. Hence, must update bootbase to 1.06

**Modifications in V 3.40(IT.0)b1 | 12/23/2002**

1. Project created.

## Appendix 1 Bandwidth Management

### Introduction

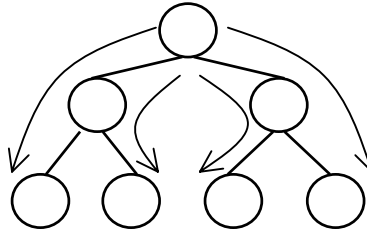


Figure 1.

The typical architecture of CBQ is drawn in figure 1. There are two major components in CBQ configuration. One is “class” and the other is “filter”. Each circle means a class and the hierarchy architecture shows the relation between ancestors and successors. The arrows mean the filters, which classify the incoming packets to the specific class. All of them, classes and filters, are constructed for a “physical” interface. To enable bandwidth management in more than two interfaces, users must configure the settings for each “physical” interface. The word “interface” we mentioned in the rest is meant “physical interface”.

The major mission of bandwidth management is to control the output rate of the flows. To archive this goal, the bandwidth management contains two modules, classifier and scheduler. If there is an outgoing packet, the classifier will classify the packet into a specific class and enqueue it in the queue belong to the class. The scheduler selects one class to dequeue one packet from its queue and makes sure that the output rate for each class is as expected.

There are two schedule mechanisms: Priority Round Robin (PRR) and Weighted Round Robin (WRR). The unused bandwidth will be offered to the class with higher priority under PRR mechanism; the unused bandwidth will be allotted in proportion. PRR is priority-based and WRR is fairness-based. Among these, the action of WRR is confusing. So we use an example to describe the action of WRR mechanism.

	Reserved BW	Actual BW (total bandwidth =100 Mbps)	Actual BW (total bandwidth =10 Mbps)	Actual BW (total bandwidth = 1 Mbps)
Class 1	5 Mbps	5 Mbps	5 Mbps	0.5 Mbps
Class 2	5 Mbps	5 Mbps	5 Mbps	0.5 Mbps

The actual bandwidth for each class should be 5 Mbps when the total bandwidth of the output interface is more than 10 Mbps. But it is impossible to reserve 5 Mbps when the total bandwidth of the output interface is just 1 Mbps. According to the characteristics of

WRR, the actual bandwidth for each class should be 0.5 Mbps. The conclusions are the actual bandwidth will be equal to the reserved bandwidth if the total bandwidth of the output interface is enough, and the actual bandwidth will be decreased in proportion to the total bandwidth of the output interface in the contrast condition. And the behavior is the same as PRR when the actual bandwidth is less than the required bandwidth.

Work-conserving means that the transmission is kept on going. When the work-serving is enabled, the unused bandwidth will be allotted to the classes, which have packets in queue, from the class with high priority to low priority. The work-conserving makes the bandwidth efficient.

## **CI commands**

The basic syntax of command interface (CI) to configure bandwidth management is described below:

```
bm interface if_name enable/disable [wrr/prr] [efficient] [bandwidth bps]  
bm class if_name add/del/mod class [name class_name] [priority X] [borrow on/off]  
[bandwidth bps]  
bm filter if_name add/del class dst_addr [mask xx] dst_port src_addr [mask xx] src_port  
proto  
bm show interface/class/filter/statistics if_name  
bm config save/load/clear  
bm monitor if_name [class_name]
```

For example, the configuration to construct the architecture of figure 1 is as follow:

```
bm interface LAN/WLAN/MPOA enable bandwidth 100m  
  
bm class LAN/WLAN/MPOA add 1 name agencyA bandwidth 30m  
bm class LAN/WLAN/MPOA add 1.1 name TA1_class bandwidth 10m  
bm class LAN/WLAN/MPOA add 1.2 name TA2_class bandwidth 20m  
  
bm class LAN/WLAN/MPOA add 2 name agencyB bandwidth 70m  
bm class LAN/WLAN/MPOA add 2.1 name TB1_class bandwidth 30m  
bm class LAN/WLAN/MPOA add 2.2 name TB2_class bandwidth 40m  
  
bm filter LAN/WLAN/MPOA add 1.1 0 0 0 20 6  
bm filter LAN/WLAN/MPOA add 1.2 0 0 0 30 6  
bm filter LAN/WLAN/MPOA add 2.1 0 0 0 40 6  
bm filter LAN/WLAN/MPOA add 2.2 0 0 0 50 6
```

In the configuration, the output rate of interface LAN/WLAN/MPOA is set 100Mbps. The first level classes, 1 (named agencyA) and 2 (named agencyB), get 30Mbps and 70Mbps. The leaf classes, 1.1 (named TA1\_class), 1.2 (named TA2\_class), 2.1 (named TB1\_class) and 2.2 (named TB2\_class), get 10Mbps, 20Mbps 30Mbps and 40Mbps. The four filters

classify packets into different classes by protocol type and source port. For example, the filter of class 1.1 classifies a packet into class 1.1 if the packet's protocol type is TCP and source port is 20.



## Annex A CI Command List

Command Class List Table		
<a href="#">System Related Command</a>	<a href="#">Exit Command</a>	<a href="#">Ethernet Related Command</a>
<a href="#">IP Related Command</a>	<a href="#">Bridge Related Command</a>	<a href="#">WAN Related Command</a>
<a href="#">WLAN Related Command</a>	<a href="#">Radius Related Command</a>	<a href="#">802.1x Related Command</a>
<a href="#">Bandwidth Management</a>	<a href="#">Firewall Related Command</a>	<a href="#">IPSec Related Command</a>

System Related Command			<a href="#">Home</a>
	Command		Description
sys			
	adjtime		retrive date and time from Internet
	cbuf		
		display	display cbuf a: all f: free u: used
		cnt	cbuf static
			display cbuf static
		clear	clear cbuf static
	baud	<1..5>	change console speed
	callhist		
		add	<phone dir [rate] [uptime]>
		display	add entry to call history
		remove	display call history
			<index>
			remove entry from call history
	clear		clear the counters in GUI status menu
	clock		
		display	display system clock
	countrycode	[countrycode]	set country code
	date	[year month date]	set/display date
	dir		display file directory
	domainname		display domain name
	edit	<filename>	edit a text file
	enhanced		return OK if commands are supported for PWC purposes
	errctl	[level]	set the error control level 0:crash no save,not in debug mode (default) 1:crash no save,in debug mode 2:crash save,not in debug mode 3:crash save,in debug mode
	event		
		display	display tag flags information
		trace	display system event information
			display
			display trace event
		clear <num>	clear trace event
	extraphnum		maintain extra phone numbers for outcalls
		add	<set 1-3> <1st phone num> [2nd phone num]
			add extra phone numbers
		display	display extra phone numbers
		node	<num>
			set all extend phone number to remote node
			<num>
		remove	<set 1-3>
			remove extra phone numbers
		reset	reset flag and mask
	feature		display feature bit
	fid		

		display		display function id list
	firmware			display ISDN firmware type
	hostname		[hostname]	display system hostname
	iface			
		disp	[#]	display iface list
	isr		[all used free]	display interrupt service routine
	interrupt			display interrupt status
	log			
		category		
			access [0:none/1:log]	record the access control logs
			attack [0:none/1:log/2:alert/3:both]	record and alert the firewall attack logs
			display	display the category setting
			error [0:none/1:log/2:alert/3:both]	record and alert the system error logs
			ipsec [0:none/1:log]	record the access control logs
			javablocked [0:none/1:log]	record the java etc. blocked logs
			mten [0:none/1:log]	record the system maintenance logs
			upnp [0:none/1:log]	record upnp logs
			urlblocked [0:none/1:log/2:alert/3:both]	record and alert the web blocked logs
			urlforward [0:none/1:log]	record web forward logs
		clear		clear log
		display		display all logs
		errlog		
			clear	display log error
			disp	clear log error
			online	turn on/off error log online display
		load		load the log setting buffer
		mail		
			alertaddr [mail address]	send alerts to this mail address
			display	display mail setting
			logaddr [mail address]	send logs to this mail address
			schedule display	display mail schedule
			schedule hour [0-23]	hour time to send the logs
			schedule minute [0-59]	minute time to send the logs
			schedule policy [0:full/1:hourly/2:daily/3:weekly/4:none]	mail schedule policy
			schedule week [0:sun/1:mon/2:tue/3:wed/4:thu/5:fri/6:sat]	weekly time to send the logs
			server [domainname/ip]	mail server to send the logs
			subject [mail subject]	mail subject
		save		save the log setting buffer
		syslog		
			active [0:no/1:yes]	active to enable unix syslog
			display	display syslog setting
			facility [local id(1-7)]	log the messages to different files
			server [domainname/ip]	syslog server to send the logs
	log			
		clear		clear log error
		disp		display log error
		online	[on off]	turn on/off error log online display
	map			display whole memory map content
	mbuf			

		link	link	list system mbuf link
		pool	<id> [type]	list system mbuf pool
		status		display system mbuf status
		disp	<address>	display mbuf status
		cnt		
			disp	display system mbuf count
			clear	clear system mbuf count
		debug	[on off]	
	memory		<address> <length>	display memory content
	memwrite		<address> <len> [data list ...]	write some data to memory at <address>
	memwl		<address>	write long word to memory at <address>
	memrl		<address>	read long word at <address>
	memutil			
		usage		display memory allocate and heap status
		mqueue	<address> <len>	display memory queues
		mcell	mid [f u]	display memory cells by given ID
		msecs	[a f u]	display memory sections
		mtstart	<n-mcell>	start memory test
		mtstop		stop memory test
		mtalloc	<size> [n-mcell]	allocate memory for testing
		mtfree	<start-idx> [end-idx]	free the test memory
	model			display server model name
	proc			
		display		display all process information
		stack	[tag]	display process's stack by a give TAG
		pstatus		display process's status by a give TAG
	pwc			sends information to PWC via telnet
	queue			
		display	[a f u] [start#] [end#]	display queue by given status and range numbers
		ndisp	[qid]	display a queue by a given number
	quit			quit CI command mode
	reboot		[code]	reboot system code = 0 cold boot, = 1 immediately boot = 2 bootModule debug mode
	reslog			
		disp		display resources trace
		clear		clear resources trace
	stdio		[second]	change terminal timeout value
	time		[hour [min [sec]]]	display/set system time
	timer			
		disp		display timer cell
		trace	[on off]	set/display timer information online
		start	[tmvalue]	start a timer
		stop	<id>	stop a timer
	trcdisp			monitor packets
	trclog			
		switch	[on off]	set system trace log
		online	[on off]	set on/off trace log online
		level	[level]	set trace level of trace log #:1-10
		type	<bitmap>	set trace type of trace log
		disp		display trace log
		clear		clear trace

		call		display call event
		encapmask	[mask]	set/display tracelog encapsulation mask
	trcpacket			
		create	<entry> <size>	create packet trace buffer
		destroy		packet trace related commands
		channel	<name> [none incoming outgoing bothway]	<channel name>=enet0,sdsl00, fr0 set packet trace direction for a given channel
		string		enable smt trace log
		switch	[on off]	turn on/off the packet trace
		disp		display packet trace
		udp		send packet trace to other system
			switch [on off]	set tracepacket upd switch
			addr <addr>	send trace packet to remote udp address
			port <port>	set tracepacket udp port
		parse	[[start_idx], end_idx]	parse packet content
		brief		display packet content briefly
	syslog			
		server	[destip]	set syslog server IP address
		facility	<facilityno>	set syslog facility
		type	[type]	set/display syslog type flag
		mode	[on off]	set syslog mode
	version			display RAS code and driver version
	view		<filename>	view a text file
	wdog			
		switch	[on off]	set on/off wdog
		cnt	[value]	display watchdog counts value: 0-34463
		dead		let watch dog take place using while loop
	romreset			restore default romfile
	server			
		access	<telnet ftp web icmp snmp dns> <value>	set server access type
		load		load server information
		disp		display server information
		port	<telnet ftp web snmp> <port>	set server port
		save		save server information
		secureip	<telnet ftp web icmp snmp dns> <ip>	set server secure ip addr
	spt			
		dump		dump spt raw data
			root	dump spt root data
			rn	dump spt remote node data
			user	dump spt user data
			slot	dump spt slot data
		set	<offset> <len> <value...>	set spt value in memory address
		save		save spt data
		size		display spt record size
		clear		clear spt data
	cmgr			
		trace		
			disp <ch-name>	show the connection trace of this channel
			clear <ch-name>	clear the connection trace of this channel
		data	<ch-name>	show channel connection related data
		cnt	<ch-name>	show channel connection related counter
	socket			display system socket information
	filter			

		clear		clear filter statistic counter
		disp		display filter statistic counters
		sw	[on/off]	set filter status switch
		rule	<iface>	display iface filter flag
		set	<set>	display filter rule
		addnetbios		add netbios filter
		removenetbios		remove netbios filter
		netbios		
			disp	display netbios filter status
			config <0:lan to wan, 1:wan to lan, 2:lan to dmz, 3:ipsec passthrough, 4:trigger dial> <on/off>	config netbios filter
		blockbc	[on/off]	set/display broadcast filter mode
	ddns			
		debug	<level>	enable/disable ddns service
		display	<iface name>	display ddns information
		restart	<iface name>	restart ddns
		logout	<iface name>	logout ddns
	cpu			
		display		display CPU utilization

## Exit Command

[Home](#)

Command				Description
exit				exit smt menu

## Ethernet Related Command

[Home](#)

Command				Description
ether				
	config			display LAN configuration information
	driver			
		cnt		
			disp <name>	display ether driver counters
			clear <name>	clear ether driver counters
		iface	<ch name> <num>	send driver iface
		ioctl	<ch name>	Useless in this stage.
		mac	<ch name> <mac addr>	Set LAN Mac address
		reg	<ch name>	display LAN hardware related registers
		rxmod	<ch_name> <mode>	set LAN receive mode. mode: 1: turn off receiving 2: receive only packets of this interface 3: mode 2+ broadcast 5: mode 2 + multicast 6: all packets
		status	<ch name>	see LAN status
		init	<ch name>	initialize LAN
	version			see ethernet device type
	pkttest			
		disp		
			packet <level>	set ether test packet display level
			event <ch> [on/off]	turn on/off ether test event display
		sap	[ch_name]	send sap packet
		arp	<ch name> <ip-addr>	send arp packet to ip-addr
		mem	<addr> <data> [type]	write memory data in address
	test		<ch_id> <test_id> [arg3] [arg4]	do LAN test

	pncconfig		<ch_name>	do pnc config
	mac		<src_ch> <dest_ch> <ipaddr>	fake mac address

## IP Related Command

[Home](#)

Command				Description
ip				
	address		[addr]	display host ip address
	alias		<iface>	alias iface
	aliasdis		<0 1>	disable alias
	arp			
		status	<iface>	display ip arp status
		add	<hostid> ether <ether addr>	add arp information
		resolve	<hostid>	resolve ip-addr
		replydif	[<0:no 1:yes>]	reply different interface ip-addr's arp request
		drop	<hostid> [hardware]	drop arp
		flush		flush arp table
		publish		add proxy arp
	dhcp		<iface>	
		client		
			release	release DHCP client IP
			renew	renew DHCP client IP
		mode	<server relay none client>	set dhcp mode
		relay	server <serverip>	set dhcp relay server ip-addr
		reset		reset dhcp table
		server		
			probecount <num>	set dhcp probe count
			dnsserver <ip1> [ip2] [ip3]	set dns server ip-addr
			winsserver <winsip1> [<winsip2>]	set wins server ip-addr
			gateway <gatewayip>	set gateway
			hostname <hostname>	set hostname
			initialize	fills in DHCP parameters and initializes (for PWC purposes)
			leasetime <period>	set dhcp leasetime
			netmask <netmask>	set dhcp netmask
			pool <startip> <numip>	set dhcp ip pool
			renewaltime <period>	set dhcp renew time
			rebindtime <period>	set dhcp rebind time
			reset	reset dhcp table
			server <serverip>	set dhcp server ip for relay
			dnsorder [router isp]	set dhcp dns order
		status	[option]	show dhcp status
		static		
			delete <num> all	delete static dhcp mac table
			display	display static dhcp mac table
			update <num> <mac> <ip>	update static dhcp mac table
	dns			
		query		
			address <ipaddr> [timeout]	resolve ip-addr to name
			debug <num>	enable dns debug value
			name <hostname> [timeout]	resolve name to ip-addr
			status	display dns query status
			table	display dns query table
		server	<primary> [secondary] [third]	set dns server

		stats		
			clear	clear dns statistics
			disp	display dns statistics
		table		display dns table
	httpd			
		debug	[on off]	set http debug flag
	icmp			
		echo	[on off]	set icmp echo response flag
		data	<option>	select general data type
		check		
			cmd [on off]	check icmp echo reply command data
			rsp [on off]	check icmp response
			indication [i r l p]	set icmp indication
		status		display icmp statistic counter
		trace	[on off]	turn on/off trace for debugging
		discovery	<iface> [on off]	set icmp router discovery flag
	ifconfig		[iface] [ipaddr] [broadcast <addr>  mtu <value> dynamic]	configure network interface
	ifdrop		<iface>	check if iface is available.
	ping		<hostid>	ping remote host
	pong		<hostid> [<size> <time-interval>]	pong remote host
	route			
		status	[if]	display routing table
		add	<dest_addr default>[/<bits>] <gateway> [<metric>]	add route
		addiface	<dest_addr default>[/<bits>] <gateway> [<metric>]	add an entry to the routing table to iface
		addprivate	<dest_addr default>[/<bits>] <gateway> [<metric>]	add private route
		drop	<host addr> [/<bits>]	drop a route
		flush		flush route table
		lookup	<addr>	find a route to the destination
		errcnt		
			disp	display routing statistic counters
			clear	clear routing statistic counters
	status			display ip statistic counters
	adjtcp		<iface> [<mss>]	adjust the TCP mss of iface
	udp			
		status		display udp status
	rip			
		accept	<gateway>	drop an entry from the RIP refuse list
		activate		enable rip
		merge	[on off]	set RIP merge flag
		refuse	<gateway>	add an entry to the rip refuse list
		request	<addr> [port]	send rip request to some address and port
		reverse	[on off]	RIP Poisoned Reverse
		status		display rip statistic counters
		trace		enable debug rip trace
		mode		
			<iface> in [mode]	set rip in mode
			<iface> out [mode]	set rip out mode
		dialin_user	[show in out both none]	show dialin user rip direction
	tcp			
		ceiling	[value]	TCP maximum round trip time

		floor	[value]	TCP minimum rtt
		irtt	[value]	TCP default init rtt
		kick	<tc>	kick tcb
		limit	[value]	set tcp output window limit
		max-incomplete	[number]	Set the maximum number of TCP incomplete connection.
		mss	[value]	TCP input MSS
		reset	<tc>	reset tcb
		rtt	<tc> <value>	set round trip time for tcb
		status	[tc] [<interval>]	display TCP statistic counters
		syndata	[on off]	TCP syndata piggyback
		trace	[on off]	turn on/off trace for debugging
		window	[tc]	TCP input window size
	samenet		<iface1> [<iface2>]	display the ifaces that in the same net
	uninet		<iface>	set the iface to uninnet
	tftp			
		support		prtn if tftp is support
		stats		display tftp status
	xparent			
		join	<iface1> [<iface2>]	join iface2 to iface1 group
		break	<iface>	break iface to leave ipxparent group
	anitprobe		<0 1> 1:yes 0:no	set ip anti-probe flag
	igmp			
		debug	[level]	set igmp debug level
		forwardall	[on off]	turn on/off igmp forward to all interfaces flag
		querier	[on off]	turn on/off igmp stop query flag
		iface		
			<iface> grouptm <timeout>	set igmp group timeout
			<iface> interval <interval>	set igmp query interval
			<iface> join <group>	join a group on iface
			<iface> leave <group>	leave a group on iface
			<iface> query	send query on iface
			<iface> rsptime [time]	set igmp response time
			<iface> start	turn on of igmp on iface
			<iface> stop	turn off of igmp on iface
			<iface> ttl <threshold>	set ttl threshold
			<iface> v1compat [on off]	turn on/off v1compat on iface
		robustness	<num>	set igmp robustness variable
		status		dump igmp status
	pr			
		clear		clear ip pr table counter information
		disp		dump ip pr table counter information
		switch		turn on/off ip pr table counter flag
	nat			
		debug	[on off]	turn on/off the nat debug flag
		period	[period]	set nat timer period
		port	[port]	set nat starting external port number
		checkport		verify all server tables are valid
		timeout		
			gre [timeout]	set nat gre timeout value
			iamt [timeout]	set nat iamt timeout value
			generic [timeout]	set nat generic timeout value
			reset [timeout]	set nat reset timeout value
			tcp [timeout]	set nat tcp timeout value



		tcpoother [timeout]	set nat tcp other timeout value
		update	create nat system information from spSysParam
		iamt	display nat iamt information
		iface	<iface>
		lookup	<rule set>
		new-lookup	<rule set>
		loopback	[on off]
		reset	<iface>
		server	
		disp	display nat server table
		load <set id>	load nat server information from ROM
		save	save nat server information to ROM
		clear <set id>	clear nat server information
		edit active <yes no>	set nat server edit active flag
		edit svrport <start port> [end port]	set nat server server port
		edit intport <start port> [end port]	set nat server forward port
		edit remotehost <start ip> [end ip]	set nat server remote host ip
		edit leasetime [time]	set nat server lease time
		edit rulename [name]	set nat server rule name
		edit forwardip [ip]	set nat server server ip
		edit protocol [protocol id]	set nat server protocol
		service	
		irc [on off]	turn on/off irc flag
		resetport	reset all nat server table entries
		incikeport	[on off]
			turn on/off increase ike port flag

**Bridge Related Command**[Home](#)

Command				Description
bridge				
	mode		<1/0> (enable/disable)	turn on/off (1/0) LAN promiscuous mode
	blt			related to bridge local table
		disp	<channel>	display blt data
		reset	<channel>	reset blt data
		traffic		display local LAN traffic table
		monitor	[on off]	turn on/off traffic monitor. Default is off.
		time	<sec>	set blt re-init interval
	brt			related to bridge route table
		disp	[id]	display brt data
		reset	[id]	reset brt data
	cnt			related to bridge routing statistic table
		disp		display bridge route counter
		clear		clear bridge route counter
	stat			related to bridge packet statistic table
		disp		display bridge route packet counter
		clear		clear bridge route packet counter
	disp			display bridge source table

**WAN Related Command**[Home](#)

Command				Description
wan	adsl	bert		ADSL ber
		chandata		ADSL channel data, line rate
		close		Close ADSL line
		coding		ADSL standard current
		ctrlint		ADSL CTRL response command

		defbitmap		ADSL defect bitmap status
		dyinggasp		Send ADSL dyinggasp
		fwav		Test the ADSL F/W available ping
		fwdl		Download modem code, but must reset first
		linedata		
		linedata	near	Show ADSL near end noise margin
		linedata	far	Show ADSL far end noise margin
		open		Open ADSL line
		opencmd		Open ADSL line with specific standard
		opmode		Show the operational mode
		perfdata		Show performance information,CRC,FEC, error seconds..
		rdata	[start] [length]	Read DSP CTRL registers 512 bytes
		reset		Reset ADSL modem, and must reload the modem code again
		selftest		
		selftest	long	ADSL long loop test
		selftest	short	ADSL short loop test
		status		ADSL status (ex: up, down or wait for init)
		version		ADSL version information
		vendorid		ADSL vendor information
		utopia		Show ADSL utopia information
		cellcnt		Show ADSL cell counter
		display		
		display	shutdown	Show the counter of rate adaptive mechanism happening
		display	rateup	Show real status that rate adaptive mechanism happened
		rateadap	[on/off]	Turn on/off rate adaptive mechanism
		dumpcondition	[on/off]	Turn on/off online debug information of rate adaptive mechanism
		sampletime	[mins]	Tune the sample time of rate adaptive mechanism
		noisegt	[db]	if noise margin is 3db greater than before, and rate is worse than before, then system will do “L1 shutdown RA3”, default is 3db
		noisemargin	[db]	if noise margin is greater than this value, and rate is worse than before, then system will do “L1 shutdown RA3”, default is 8db
		persisttime	[time]	when the adaptive condition is matched system will continue to monitor the time period “persisttime” before doing “L1 shutdown RA3”, default is 30 seconds
		timeinterval	[mins]	when “L1 shutdown RA3” is done twice, and still can’t reach the max rate which system recorded, it will delay a time period that the period base time is “timeinterval” before starting again. The time-based default is 2 hrs
		defectcheck	[on/off]	Turn on/off detect table checking, default is on
		txgain	[value]	Set the CTRL register (0xc3), the value is from 0xfa to 0x06
		targetnoise	[value]	Set the CTRL register (0xc4), the value is from 0xfa to 0x06
		maxtonelimit	[value]	Set the CTRL register (0xc5), the value is from 0xfa to 0x06

		rxgain	[value]	Set the CTRL register (0xc6), the value is from 0xfa to 0x06
		txoutputpwr	[value]	Set the CTRL register (0xc7), the value is from 0xfa to 0x06
		rxoutputpwr	[value]	Set the CTRL register (0xc8), the value is from 0xfa to 0x06
		maxoutputpwr	[value]	Set the CTRL register (0xc9), the value is from 0xfa to 0x06
		errorsecond		
		errorsecond	switch [1 0]	Turn on/off error sending to DSLAM side
		errorsecond	sendes	Send current error second information immediately
		dygasprecover		
		dygasprecover	level [value]	By default is 100, after receiving 100 dying gasp system will reboot
		dygasprecover	active [on off]	Turn on/off this mechanism
		rsploss	[1 0]	Turn on means to response signal loss of CTRL immediately, default is off
		watchdog	[1 0]	Watchdog for DSP
	atm	test	[fix rand period oam loopback]	Generate ATM traffic
wan	hwsar	disp		Display hwsar packets incoming/outgoing information
		clear		Clear hwsar packets information
		sendoam		Send OAM packets: <vpi> <vci> <f5> <end-to-end> <type:0(AIS) 1(RDI) 2(LoopBack)>

## WLAN Related Command

[Home](#)

Command				Description
wlan				
	ssid			Configure ESSID
	chid			Configure channel ID
	debug			Turn on /off debug information
	version			Show WLAN AP F/W version
	filter	< incoming   outgoing >	< generic > [set#1][set#2][set#3][set#4]	To set generic filter for wireless channel

## Radius Related Command

[Home](#)

Command				Description
radius				
	auth			show current radius authentication server configuration
	acct			show current radius accounting server configuration

## 802.1x Related Command

[Home](#)

Command				Description
8021x				
	debug	level	[debug level]	set ieee802.1x debug message level
		trace		show all supplications in the supplication table
		user	[username]	show the specified user status in the supplicant table

Command						Description
bm						
	interface	lan	enable	<bandwidth xxx>		Enable bandwidth management in LAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr pr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in LAN
		wlan	enable	<bandwidth xxx>		Enable bandwidth management in WLAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr pr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in WLAN
		mpoa[00~07]	enable	<bandwidth xxx>		Enable bandwidth management in WAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr pr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in WAN
	class	lan	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in LAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow on off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in LAN. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in LAN.
		wlan	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in WLAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow	The class can borrow bandwidth from its parent

					on off>	class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in WLAN. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in WLAN.
		mpoa[00~07]	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in WAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow on off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in WAN. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in WAN.
	filter	lan	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in LAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in LAN.
		wlan	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in WLAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in WLAN.
		mpoa[00~07]	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in WAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in WAN.
	show	interface	lan			Show the interface settings of LAN

			wlan		Show the interface settings of WLAN
			mpoa[0 0~07]		Show the interface settings of WAN
		class	lan		Show the classes settings of LAN
			wlan		Show the classes settings of WLAN
			mpoa[0 0~07]		Show the classes settings of WAN
		filter	lan		Show the filters settings of LAN
			wlan		Show the filters settings of WLAN
			mpoa[0 0~07]		Show the filters settings of WAN
		statistics	lan		Show the statistics of the classes in LAN
			wlan		Show the statistics of the classes in WLAN
			mpoa[0 0~07]		Show the statistics of the classes in WAN
	monitor	lan	<#>		Monitor the bandwidth of class # in LAN. If the class is not specific, all the classes in LAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
		wlan	<#>		Monitor the bandwidth of class # in WLAN. If the class is not specific, all the classes in WLAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
		mpoa[00~ 07]	<#>		Monitor the bandwidth of class # in WAN. If the class is not specific, all the classes in WAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
	config	save			Save the configuration.
		load			Load the configuration.
		clear			Clear the configuration.

## Firewall Related Command

[Home](#)

Command				Description
sys	Firewall			
		acl		
			disp	Display specific ACL set # rule #, or all ACLs.
		active	<yes no>	Active firewall or deactivate firewall
		clear		Clear firewall log
		cnt		
			disp	Display firewall log type and count.
			clear	Clear firewall log count.
		disp		Display firewall log
		online		Set firewall log online.
		pktdump		Dump the 64 bytes of dropped packet by firewall
		update		Update firewall
		tcprst		
			rst	Set TCP reset sending on/off.
			rst113	Set TCP reset sending for port 113 on/off.
			display	Display TCP reset sending setting.

		dos		
			smtp	Set SMTP DoS defender on/off
			display	Display SMTP DoS defender setting.
			ignore	Set if firewall ignore DoS in lan/wan/dmz/wlan
		ignore		
			dos	Set if firewall ignore DoS in lan/wan/dmz/wlan
			triangle	Set if firewall ignore triangle route in lan/wan/dmz/wlan

## IPSec Related Command

[Home](#)

Command				Description
ipsec				
	debug	<1 0>		turn on/off trace for IPsec debug information
	ipsec_log_display			show IPSec log, same as menu 27.3
	route	lan	<on off>	After a packet is IPSec processed and will be sent to LAN side, this switch is to control if this packet can be applied IPSec again.
		wan	<on off>	After a packet is IPSec processed and will be sent to WAN side, this switch is to control if this packet can be applied IPSec again.
	show_runtime	sa		display runtime phase 1 and phase 2 SA information
		spd		When a dynamic rule accepts a request and a tunnel is established, a runtime SPD is created according to peer local IP address. This command is to show these runtime SPD.
	switch	<on off>		As long as there exists one active IPSec rule, all packets will run into IPSec process to check SPD. This switch is to control if a packet should do this. If it is turned on, even there exists active IPSec rules, packets will not run IPSec process.
	timer	chk_my_ip	<1~3600>	- Adjust timer to check if WAN IP in menu is changed
				- Interval is in seconds
				- Default is 10 seconds
				- 0 is not a valid value
		chk_conn.	<0~255>	- Adjust auto-timer to check if any IPSec connection has no traffic for certain period. If yes, system will disconnect it.
				- Interval is in minutes
				- Default is 2 minutes
				- 0 means never timeout
		update_peer	<0~255>	- Adjust auto-timer to update IPSec rules which use domain name as the secure gateway IP.
				- Interval is in minutes
				- Default is 15 minutes
				- 0 means never update
	updatePeerIp			Force system to update IPSec rules which use domain name as the secure gateway IP right away.
	dial	<rule #>		Initiate IPSec rule <#>
	display	<rule #>		Display IPSec rule #
	keep_alive	<rule #>	<on off>	Set ipsec keep_alive flag

	load	<rule #>		Load ipsec rule
	save			Save ipsec rules
	config	netbios	active <on off>	Set netbios active flag
			group <group index1, group index2...>	Set netbios group
		name	<string>	Set rule name
		active	<Yes   No>	Set active or not
		keyAlive	<Yes  No>	Set keep alive or not
		lcIdType	<0:IP   1:DNS   2:Email>	Set local ID type
		lcIdContent	<string>	Set local ID content
		myIpAddr	<IP address>	Set my IP address
		peerIdType	<0:IP   1:DNS   2:Email>	Set peer ID type
		peerIdContent	<string>	Set peer ID content
		secureGwAddr	<IP address   Domain name>	Set secure gateway address or domain name
		protocol	<1:ICMP   6:TCP   17:UDP>	Set protocol
		lcAddrType	<0:single   1:range   2:subnet>	Set local address type
		lcAddrStart	<IP>	Set local start address
		lcAddrEndMask	<IP>	Set local end address or mask
		lcPortStart	<port>	Set local start port
		lcPortEnd	<port>	Set local end port
		rmAddrType	<0:single   1:range   2:subnet>	Set remote address type
		rmAddrStart	<IP>	Set remote start address
		rmAddrEndMask	<IP>	Set remote end address or mask
		rmPortStart	<port>	Set remote start port
		rmPortEnd	<port>	Set remote end port
		antiReplay	<Yes   No>	Set anitreplay or not
		keyManage	<0:IKE   1:Manual>	Set key manage
		ike	negotiationMode <0:Main   1:Aggressive>	Set negotiation mode in phase 1 in IKE
			authMethod <0:PreSharedKey   1:RSASignature>	Set authentication method in phase 1 in IKE
			preShareKey <string>	Set pre shared key in phase 1 in IKE
			certFile <FILE>	Set certificate file if using RSA signature as authentication method.
			p1EncryAlgo <0:DES   1:3DES>	Set encryption algorithm in phase 1 in IKE
			p1AuthAlgo <0:MD5   1:SHA1>	Set authentication algorithm in phase 1 in IKE
			p1SaLifeTime <seconds>	Set sa life time in phase 1 in IKE
			p1KeyGroup <0:DH1   1:DH2>	Set key group in phase 1 in IKE
			activeProtocol <0:AH   1:ESP>	Set active protocol in phase 2 in IKE
			p2EncryAlgo <0:Null   1:DES   2:3DES>	Set encryption algorithm in phase 2 in IKE
			p2AuthAlgo <0:MD5   1:SHA1>	Set authentication algorithm in phase 2 in IKE
			p2SaLifeTime <seconds>	Set sa life time in phase 2 in IKE
			encap <0:Tunnel   1:Transport>	set encapsulation in phase 2 in IKE
			pfs <0:None   1:DH1   2:DH2>	set pfs in phase 2 in IKE
		manual	activeProtocol <0:AH   1:ESP>	Set active protocol in manual
		manual ah	encap <0:Tunnel   1:Transport>	Set encapsulation in ah in manual



			spi <decimal>	Set spi in ah in manual
			authAlgo <0:MD5   1:SHA1>	Set authentication algorithm in ah in manual
			authKey <string>	Set authentication key in ah in manual
		manual esp	encap <0:Tunnel   1:Transport>	Set encapsulation in esp in manual
			spi <decimal>	Set spi in esp in manual
			encryAlgo <0:Null   1:DES   2:3DES>	Set encryption algorithm in esp in manual
			encryKey <string>	Set encryption key in esp in manual
			authAlgo <0:MD5   1:SHA1>	Set authentication algorithm in esp in manual
			authKey < string>	Set authentication key in esp in manual
	swSkipOver lapIp		<on off>	<ul style="list-style-type: none"><li>- When a VPN rule with remote range overlaps with local range, the switch decides if a local to local packet should apply this rule.</li><li>- Default value is “off” which means “no skip”.</li></ul>
	adjTcpMss		<off auto user defined value>	<ul style="list-style-type: none"><li>- After a tunnel is established, system will automatically adjust TCP MSS.</li><li>- After all tunnels are drops, the MSS will adjust to the original value.</li><li>- The default value is auto.</li></ul>