

ZyXEL Prestige 310

ZyNOS v2.51(M.02) | 05/17/2000

Release Notes & Manual Supplement

Date: May 17, 2000

Supported Platform:

ZyXEL Prestige 310

Versions:

ZyNOS F/W Version : v2.51(M.02) | 5/17/2000

Checksum information (after flashing the binary „p310.bin“ (ras) firmware file:

Version: RAS p310, start: 02021030

Length: 10D1E8, Checksum: 38F5

Compressed Length: 9266D, Checksum: 27B2

The file "p310_default_rom.zip" contains following factory default settings:

p310_CABLE.rom default settings for P310 using Ethernet encapsulation.

p310_PPpOE.rom default settings for P310 using the PPpOE encapsulation.

p310_PPTP.rom default settings for P310 using the PPTP encapsulation.

following files are copies from above mentioned *.rom files and renamed according to the countries. (It might be easier for some customers in case they won't know which protocol is used in their countries for the current ADSL deployments):

p310_Germany_T-DSL.rom default settings for P310 and German T-DSL (PPpOE)

p310_Italy_ADSL.rom default settings for P310 and Italian ADSL (PPpOE)

p310_Austria_ADSL.rom default settings for P310 and Austrian ADSL (PPTP)

p310_France_ADSL.rom default settings for P310 and French ADSL (PPTP)

Notes:

1.Please upload the default configuration file.

2.Telnet and FTP incoming from the WAN port is disabled in default configuration romfile. You can make it work by turning off the TELNET_FTP_WAN filter in WAN port (SMT Menu 11.5)

3.If you use NetMeeting application behind SUA to connect to an outside user the outside user will see two identical users in screen.

4.We need to register MIRC to make the DCC work at version 5.31. So far, we don't support MIRC DCC after version 5.31.

5.If you can not get an IP address from your ISP. Please do the following.

** Your ISP will check your PC's hostname.

➔ Please set your PC's computer name to Prestige in Menu 1. (Appendix 2)

** Your ISP will check the MAC address.

➔ Please inform your ISP that you have bought a new network device.

Or Use Menu 2 to clone the PC's MAC address to WAN. (Appendix 2)

** Your ISP only allows one MAC to connect to Internet.

➔ Please power down your cable modem and let Prestige 310's WAN port connects to cable modem directly.

** Your ISP needs a special login program.

- ➔ We support the Times Warner Road Runner login program. Please select the correct service type in Menu 4. We support two kinds of RoadRunner login method. The first one is the Toshiba authentication method and the other one is RoadRunner Manager authentication method. Please make sure which login method you are using.

Known Bugs:

1. Sometime the LAN will stop receiving about 10 seconds.

Features:

Modification in V2.51(M.02) 2000/5/17

1. Bug: RemoteNode will bind two ifaces in PPTP encapsulation. Fixed
2. Bug: DHCP will drop line frequently if the leased time is infinite. Fixed
3. Added: We added the P312 hardware support which means that this P310 firmware v2.51(M.02) can run on P312 hardware but the Prestige Network Commander (PNC) application will not support it. If you run PNCv2.30 on this firmware it may crash the device.

Modification in V2.51(M.01)

1. Added IP alias support. (see appendix 13).
2. Added IP multicast support.(see appendix 14).
3. Added SNMP management support (SMT 22). (see appendix 15).
4. Added PPTP client support for ANT 1000 (xDSL model only) (see appendix 16).
5. Added Internet Time Calibration (SMT 24.10). (see appendix 17).
6. Added Call schedule.(SMT26). (see appendix 18).
7. Added DDNS support.(see appendix 19).
8. Added trigger call decode support. (SMT 24.3.4).
9. Added SMT 4 Internet Setup Testing.
10. Added SMT 24.4.4 Internet Setup Testing.
11. Added Date Time display in SMT 24.1
12. Bug: Internet connect doesn't smooth. Fixed.
13. Bug: DHCP server will change first incoming client 's ARP table. Fixed.
14. Bug: Netmeeting LDAP will cause system hang. Fixed.
15. Bug: Menu 24.5 and Menu 24.6 will display the Prestige & ZyNOS from the telnet connection. Fixed.

Modification in V2.50(M.02)

1. Bug: Menu 24.7.1 and Menu 24.7.2 will display the Prestige & ZyNOS. Fixed.
2. Bug: DHCP will ignore no end option packets. Fixed.
3. Bug: SUA for QUAKE support send the wrong port number. Fixed.

Modification in V2.50 (M.01)

1. Bug: Cisco uses the wrong MRU problem. Fixed.
2. Bug: Real Player will cause memory leak when it has error condition. Fixed.

Modification in V2.50 (M.00)

1. Added PPPoE support. (see appendix 7)
2. Added FTP firmware uploading support. (see appendix 8)
3. Added SMT Menu 11.1, SMT Menu 11.3, SMT Menu 11.5. (see appendix 9)
4. Modified SMT Menu 4, SMT Menu 4.1, SMT Menu 24.3.2, SMT Menu 2. (see appendix 9)
5. Modified TELNET_WAN filter to TELNET_FTP_WAN filter. (see appendix 10)
6. Added: SMT Menu 24.9, SMT Menu 24.9.1, SMT Menu 24.9.2 to display call control information. (see appendix 11)
7. Modified SMT Menu 24.3.2 to enhance Unix syslog. (see appendix 12)

8. Modified default configuration file's "autoexec.net" setting.

Modification in V2.30 (M.03)

1. Bug: DHCP client will only send nine characters of hostname in the DHCP hostname option. Fixed.
2. Bug: DHCP client can not receive unicast packets in discover and request state. Fixed
3. Added Domain Name assignment support in SMT 1.(see appendix 3)
4. Added "ip sua timeout <value>" to modify SUA idle timeout. (see appendix 4)
5. Modified default SUA UDP idle timeout to 180 seconds to solve ICQ problems. (see appendix 5).
6. Added WAN DHCP Client Renew and WAN DHCP Client Release in SMT Menu 24.4.
7. Modified SMT Menu 24.2.1 and SMT Menu 24.1's name field as <System Name>.<Domain Name>
8. Added the filter set deleting mechanism in SMT 21. (see appendix 6)

Modification in V2.30 (M.02)

1. RoadRunner client/server session Manager protocol support included.
2. WAN MAC address attached by LAN IP address support included.
3. Bug: If the DHCP server and DHCP client are not in the same network then DHCP client renewal will fail. Fixed
4. Bug: If the IP address requested by the PC is the same as the LAN IP address then the PC can not always get an IP address. Fixed.
5. Bug: NMAP will crash the system. Fixed
6. Enhanced Routing performance.
7. Bug: If you remove the LAN cable then the LAN LED will flash every 10 seconds. Fixed
8. Bug: SNMP packets will cause system crash. Fixed
9. Bug: Unix syslog will send the wrong port number. Fixed
10. Bug: Data abort will enter debug mode. Fixed

Modification in V2.30 (M.01)

1. Bug: Sometimes FTP will lose command. Fixed
2. Add Quick Time streaming support.
3. Bug: DNS proxy lookup fail problem. Fixed
4. Bug: DHCP Client will send the correct hostname. Fixed
5. Bug: If you enter Menu 24.2.1 then the P310 will crash. Fixed
6. Bug: Removing the console port in SMT 24.1 will not close the SMT session. Fixed
7. Bug: Trace route fail problem. Fixed

Modification in V2.30 (M.00)

1. First release.

Appendix:

1.SUA Support Table

The required settings of Menu 15 for some applications are listed in the following table.

ZyXEL SUA Support Table

Traffic Type	Application Version	Required Settings in Menu 15 Port/IP	
		Outgoing Connection	Incoming Connection
HTTP	Netscape, IE	None	80/client IP
FTP	Windows FTP, Cuteftp	None	21/client IP
TELNET	Windows Telnet, Neterm	None	23/client IP (and remove Telnet filter in WAN port)
POP3	Eudora	None	110/clinet IP
SMTP	Eudora	None	25/client IP
IRC	mIRC,Microsoft Chat	None for Chat.	None

		DCC support: MIRC < 5.31	
PPTP	Windows PPTP	None	1723/client IP
ICQ	ICQ 99a	None for Chat. For file transfer, we must enable ICQ-preference-connections-firewall and set the firewall time out to 80 seconds in firewall setting.	Default/client IP
Cu-SeeMe	Cornell 1.1	None	7648/client IP
	White Pine 3.1.2	7648/client IP & 24032/client IP	Default/client IP
	White Pine 4.0 (CuSeeMe Pro)	7648/client IP & 24032/client IP	Default/client IP
NetMeeting	Microsoft NetMeeting 2.1 & 2.11	None	1720/client IP 1503/client IP
Cisco IP/TV	Cisco IP/TV 2.0.0	Default/client IP	
RealPlayer	RealPlayer G2	None	
VDOLive		None	
Quake	Quake1.06	None	Default/client IP
QuakeII	QuakeII2.30	None	Default/client IP
QuakeIII	QuakeIII1.05beta	None	
StartCraft		6112/client IP	
Quick Time	Quick Time 4.0	None	

2. DHCP Problems.

The Dynamic Host Configuration Protocol (DHCP) provides a framework for passing configuration information to hosts on a TCP/IP network. We implement the DHCP server in the LAN port to manager the local LAN IP address and the DHCP client in the WAN port to acquire the configuration from the ISP. There are many configuration information carried by DHCP option. We will process the following information coming for the ISP: IP address, Gateway, Network Mask, Domain Name, Domain Name Server and Lease Time of DHCP client.

The traditional dial up networking will provide the user name and password for the ISP to manage the client by using the PPP. The DHCP doesn't provide this kind of mechanism. However, the ISP still can authorize the client by using the following method.

a. The ISP can check client PC's MAC address.

When you install the Cable/xDSL service, the ISP will record the MAC address of your NIC card.

Thus, any unrecorded MAC address will be silently discarded. We can solve this problem by one of the following methods.

- Tell you ISP that you have bought a new NIC card and you want to change the MAC address.
- Clone the PC's MAC address to the WAN site. You can connect your network like the following.

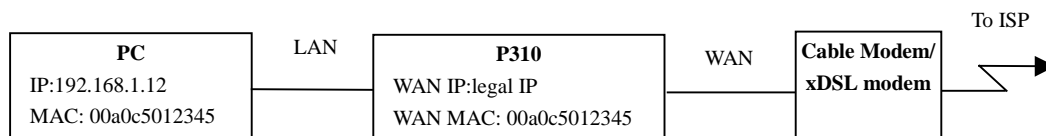


Figure 1 Clone MAC Address

Configure the SMT Menu 2 as following.

Menu 2 - WAN Setup

MAC Address:

Assigned By= **IP address attached on LAN**

IP Address= **192.168.1.12**

If you configure correctly then it will clone the PC's MAC address to the WAN port. This MAC address will be saved in the configuration file and will not be lost unless you reconfigure the Menu 2 or unload a configuration file.

- b. The ISP can check hostname options in the DHCP option.** When you install the Cable/xDSL service, the ISP will record your PC computer name or assign a new computer name to your PC. The Windows DHCP client will send the PC's computer name to DHCP server. Any unrecorded hostname option will be silently discarded.

We can solve this problem by setting the PC's computer name to P310's system name in Menu 1.

3. Domain name support.

The Prestige is enhanced to provide the domain suffix to its DHCP clients. The domain suffix may be provided by the ISP via the DHCP or statically configured by the user. If it is provided by the ISP, the Prestige assigns it to the clients via the DHCP over LAN. Otherwise, we can enter the domain suffix in menu 1 directly if we know the domain suffix already. In case the domain suffix is set in menu 1 and the ISP also provides one using DHCP, the Prestige will take the settings in menu 1 to assign to the client. You can go to SMT Menu 24.8 by typing "sys domainname" to see the current domain name using by the router.

Menu 1 - General Setup

System Name= **P310** ← Your PC's computer name.

Domain Name=**zyxel.com.tw** ← Your domain name

Before this feature is available, one has to enable DNS in the network settings of every client and list xx.yy.zz.com as a default domain suffix. Now, with this new feature, whenever you use mail or news or even www, your PC will add the default domain suffix after these and route you properly to the ISP intranet addresses.

4. SUA Idle Timeout Value.

We modify the default value of SUA UDP idle timeout value to 180 seconds. It will solve part of ICQ problems.(see Appendix 5).

New command "ip sua timeout <value>"

This command will modify three values.

SUA UDP idle timeout = <value> (seconds)

SUA TCP opened idle timeout = <value> * 100 (seconds)

SUA TCP other idle timeout = <value> * 3 (seconds)

Where

SUA UDP idle timeout : The time to drop the UDP entry in SUA table when there is no traffic on this connection.

SUA TCP opened idle timeout: The time to drop the TCP connection in SUA table at the open state when there is no traffic on this connection.

SUA TCP other idle timeout : The time to drop the TCP connection in SUA table at none open state, none wait state and none reset state when there is no traffic on this connection.

Notes: Improper configuration may make the system work impropriety. We strongly suggest to use the default values.

5. ICQ problems.

What is ICQ?

ICQ stands for 'I seek you'. It's originally developed by Mirabilis, an Israeli software company. Then it's bought by America On-Line. ICQ is an Internet messaging tool. You can use ICQ to send messages to your friends, and see if he/she is online. Every ICQ user has one ID called UIN in ICQ. It's an identifier for ICQ.

How ICQ works?

When you launch ICQ, it will try to logon a server which is operated by AOL by the UIN. After the logon is completed, ICQ will try to ask server if any selected UIN is logon too. This process is done periodically, so you will know your friend is online when he launch his ICQ client. To ensure the link, ICQ will send a keep-alive packet periodically to inform the server the user is still here, and send current status if there is anything changed. The default time of keep-alive packet is 120 seconds. And all client/server communication are through UDP port 4000. Whenever a user-to-user communication is requested, there is a TCP session established. The port is negotiated by the client/server session.

How to make ICQ work with ZyXEL's SUA?

As described above, ICQ will communicate with server with port 4000 and send keep-alive packets to inform server it's online. The keep-alive packet is sent every 120 seconds. The default SUA UDP session timeout in Prestige is 90 seconds. It will cause problem because the keep-alive will be sent to different port translation due to session timeout. To fix it, you need to specify your ICQ client to shorten its keep-alive timer. It's in the connection tab under firewall setting. Set the keep-alive timer to 80 seconds to ensure the session is not timeout in Prestige. Because the user-to-user communication is negotiated by the first connection, set the ICQ connection behind the firewall. It will inform ICQ to perform operation friendly with firewall such as SUA in Prestige.

I have done the above setting, but it doesn't work perfectly. Why?

As ICQ is a proprietary protocol, it's not published. As we know, there are many versions of ICQ protocols and some of them are encrypted during communication. With some experiment, we suspect the ICQ doesn't work reliably with different keep-alive timer other than default value. The new SUA will prolong the session timeout period to 180 seconds to cover the default time of ICQ. So the keep-alive timer is not necessary to be altered later. However, the connection is still set to behind firewall because we do not know how to alter the packet at this time. We will try our best to find out the protocol details in ICQ in the future. It's not easy job since the protocol is encrypted and may be changed in the future. We can not promise any firm date on that support.

6. Delete the Filter Set in the SMT Menu 23

Go the SMT Menu 23 and select the right filter set. Leave the Edit Comment field as a blank and you can delete the filter set.

7. PPP over Ethernet (PPPoE)

What is PPPoE?

Point-to-Point Protocol over Ethernet is an IETF Draft standard that specifies how to connect multiple hosts at a remote site through common customer premises equipment (CPE). It facilitates the interaction of a host with a broadband modem (xDSL, cable, wireless, etc.), to achieve access to the growing number of high-speed data networks, via a familiar "dial-up networking" user interface. PPPoE provides a major advantage for service providers by maximizing integration with - and minimizing disruption of - service providers' existing dial network infrastructures. PPPoE supports a broad range of existing applications and service including authentication, accounting, secure access and configuration management.

PPPoE Protocol Overview.

- PPPoE has two distinct stages.
 - ◆ Discovery State
 - ◆ PPP Session State

- Discovery stage
 - ◆ ETHER_TYPE field in Ethernet frame is set to 0x8863.
 - ◆ Stateless client-server protocol
 - ◆ Required whenever a client wishes to establish a PPP connection.
 - ◆ The host can discover all Access Concentrators and then select one.
 - ◆ Use peer MAC address and PPPoE session ID to identify the unique PPPoE session.
 - ◆ Four steps of Discovery stage.
 - The host broadcasting an Initiation packet.
 - One or more Access Concentrators sending Offer packets.
 - The host sending a unicast Session Request packet.
 - The selected Access Concentrator sending a Confirmation packet.
- PPP Session stage.
 - ◆ PPP data is sent as in any other PPP encapsulation.
 - ◆ Maximum-Receive-Unit (MRU) must be less than 1492.
 - ◆ All Ethernet packets are unicast.
 - ◆ ETHER_TYPE field in Ethernet frame is set to 0x8864.

How can I make PPPoE work on P310.

- a. You must enter Service Name for PPPoE discover stage.(SMT Menu 4 or SMT Menu 11.1)
- b. You must configure User Name and Password for PPP session stage.(SMT Menu 4 or SMT Menu 11.1)

8. Added FTP firmware uploading support.

We build in an FTP server in P310. You can use FTP client to upload the ZyNOS code or configuration file.

Requirement:

You must have FTP client and you must have the ability to connect to the P310.

You must have the upgrade firmware - the ZyNOS code or Configuration file.

You must rename the filename of ZyNOS code to "ras" and configuration file to "rom-0".

Connect IP : The P310's LAN IP from LAN or WAN IP from WAN.

Username : P310

Password : <P310 Telenet Password>

Procedure:

Open your FTP client to connect to P310. After you login to P310, you will see two list files - the "rom-0" and "ras". You can upload and download the ZyNOS code or configuration file.

notes:

The upload file should be the same filename in the P310 listing according to ZyNOS code or configuration file. **The upload file is binary file.**

9. SMT modify

SMT Menu 2:

Remove Half/Full duplex setting in WAN port. It will always be in the half duplex mode.

Menu 2 - WAN Setup

MAC Address:

Assigned By= Factory default/IP address attached on LAN

IP Address= N/A /a.b.c.d

SMT Menu 4:

We add Encapsulation field to distinguish from Ethernet connection to PPPoE connection. The Edit Filter, RIP direction and RIP version are moved to SMT Menu 11.1 and SMT Menu 11.3. We will have different screen layout according to different Encapsulation.

Menu 4 - Internet Access Setup

ISP's Name= ChangeMe
Encapsulation= Ethernet
Service Type= Standard
My Login= N/A
My Password= N/A
Login Server IP= N/A

IP Address Assignment= Dynamic
IP Address= N/A
IP Subnet Mask= N/A
Gateway IP Address= N/A
Single User Account= Yes

Menu 4 - Internet Access Setup

ISP's Name= ChangeMe
Encapsulation= PPPoE
Service Type= N/A
My Login=ras@poellc
My Password= *****
Idle Timeout= 100 ← Connection idle timeout for dialup service.

IP Address Assignment= Dynamic
IP Address= N/A
IP Subnet Mask= N/A
Gateway IP Address= N/A
Single User Account= Yes

SMT Menu 11.1, SMT Menu 11.3, SMT Menu 11.5.:

The IP address setting is moved to SMT Menu 11.3. If you change the Encapsulation then we will request you to check the IP address setting in SMT Menu 11.3. It will also have different SMT menu layout according to different Encapsulation.

Menu 11.1 - Remote Node Profile

Rem Node Name= ChangeMe	Route= IP
Active= Yes	
Encapsulation= Ethernet	Edit IP= No
Service Type= Standard	Session Options:
Service Name= N/A	Edit Filter Sets= No
Outgoing=	
My Login=N/A	
My Password= N/A	
Server IP= N/A	

Menu 11.3 - Remote Node Network Layer Options

IP Address Assignment= Dynamic

IP Address= N/A

IP Subnet Mask= N/A

Gateway IP Addr= N/A

Single User Account= Yes

Metric= N/A

Private= N/A

RIP Direction= None

Version= N/A

Menu 11.5 - Remote Node Filter

Input Filter Sets:

protocol filters= 3

device filters=

Output Filter Sets:

protocol filters= 1

device filters=

If the Encapsulation is set to PPPoE then we add the budget management.

Menu 11.1 - Remote Node Profile

Rem Node Name= ChangeMe

Route= IP

Active= Yes

Encapsulation= PPPoE

Edit IP= No

Service Type= Standard

Telco Option:

Service Name= poellic

Allocated Budget(min)= 0

Outgoing=

Period(hr)= 0

My Login= ras@poellic

My Password= *****

Session Options:

Edit Filter Sets= No

Idle Timeout(sec)= 100

Menu 11.3 - Remote Node Network Layer Options

IP Address Assignment= Dynamic

Rem IP Addr: N/A

Rem Subnet Mask= N/A

My WAN Addr= 0.0.0.0

Single User Account= Yes

Metric= 1

Private= No

RIP Direction= None

Version= N/A

Menu 11.5 - Remote Node Filter

Input Filter Sets:
protocol filters= 3
device filters=
Output Filter Sets:
protocol filters= 1
device filters=
Call Filter Sets:
protocol filters=
device filters=

10. Modified TELNET_WAN to TELNET_FTP_WAN

We block the Telnet and FTP connection request from the WAN side.

Menu 21.3 - Filter Rules Summary

#	A	Type	Filter Rules	M	m	n
1	Y	IP	Pr=6, SA=0.0.0.0, DA=0.0.0.0, DP=23		N	D N
2	Y	IP	Pr=6, SA=0.0.0.0, DA=0.0.0.0, DP=21		N	D F
3	N					
4	N					
5	N					
6	N					

11. SMT Menu 24.9, SMT Menu 24.9.3, SMT Menu 24.9.4

We add SMT Menu 24.9.3 to monitor the budget and you can reset the budget in this menu. The call history are shown in the SMT Menu 24.9.4. The PPPoE service name are shown in the phone number field. In SMT Menu 24.9.3 you can press “1” to clear budget and press “0” to update screen.

Menu 24.9 - System Maintenance - Call Control

1. Budget Management
2. Call History

Menu 24.9.3 - Budget Management

Remote Node	Connection Time/Total Budget	Elapsed Time/Total Period
1.ChangeMe	0:06/1:00	0:06/24:00

Menu 24.9.4 - Call History

	Phone Number	Dir	Rate	#call	Max	Min	Total
1.	poellc	OUT		1	0:00:48	0:00:48	0:00:48
2.							
3.							
4.							
5.							

- 6.
- 7.
- 8.
- 9.
- 10.

Enter Entry to Delete(0 to exit):

12. Enhance Unix Syslog feature.

We add the function to select the syslog type in SMT Menu 24.3.2.

Notes: You must do the following to enable filter log.

1. Enable Filter log in SMT 24.3.2.
2. Setting correct filter rule and enable log in SMT Menu 21.x.x.
3. Apply the filter log to correct interface.(SMT Menu 3.1 or SMT Menu 11.5).
4. You must have syslog server and the packets must match the log condition .

Menu 24.3.2 - System Maintenance - UNIX Syslog

Syslog:

Active= No

Syslog IP Address= 192.168.1.3

Log Facility= Local 1

Types:

CDR= No

Packet triggered= No

Filter log= YES

PPP log= No

13. IP Alias Support.

The IP Alias feature can let you use three logical LAN interfaces via its single physical Ethernet interface. The Prestige is the gateway for all the LAN networks. You can also route packets from one network to another. The IP alias feature allows your Prestige to have extra IP addresses that may be in completely different subnets than the first IP address. The ability to partition physical network into logical network over the same Ethernet interface is referred to as IP Alias functionality.

You can configuraion the IP Alias feature in the Menu 3.2.1 by selecting the Menu 3.2 **Edit IP Alias field** to **YES**.

Menu 3.2 - TCP/IP and DHCP Ethernet Setup

DHCP= Server

Configuration:

Client IP Pool Starting Address= 192.168.1.33

Size of Client IP Pool= 32

Primary DNS Server= 0.0.0.0

Secondary DNS Server= 0.0.0.0

TCP/IP Setup:

IP Address= 192.168.1.1

IP Subnet Mask= 255.255.255.0

RIP Direction= Both

Version= RIP-1

Multicast= None

Edit IP Alias= Yes

Menu 3.2.1 - IP Alias Setup

IP Alias 1= Yes
IP Address= 192.168.2.1
IP Subnet Mask= 255.255.255.0
RIP Direction= None
Version= RIP-1
Incoming protocol filters=
Outgoing protocol filters=
IP Alias 2= Yes
IP Address= 192.168.3.1
IP Subnet Mask= 255.255.255.0
RIP Direction= None
Version= RIP-1
Incoming protocol filters=
Outgoing protocol filters=

Field	Description	Example
IP Alias	Choose Yes to configure the LAN network for the Prestige.	Yes
IP Address	Enter the IP address of your Prestige in dotted decimal notation	192.168.2.1
IP Subnet Mask	Your Prestige will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the Prestige	255.255.255.0
RIP Direction	Press the space bar to select the RIP direction from Both/In Only/Out Only .	Both
Version	Press the space bar to select the RIP version from RIP-1/RIP-2B/RIP-2M .	RIP-1
Incoming Protocol Filters	Enter the filter set(s) you wish to apply to the incoming traffic between this node and the Prestige.	
Outgoing Protocol Filters	Enter the filter set(s) you wish to apply to the outgoing traffic between this node and the Prestige.	
When you have completed this menu, press [Enter] at the prompt [Press ENTER to Confirm...] to save your configuration, or press [Esc] at any time to cancel.		

14. IP multicast.

Traditionally, IP packets are transmitted in two ways - unicast or broadcast. Multicast is a third way to deliver IP packets to a group of hosts. Host groups are identified by class D IP addresses, i.e., those with "1110" as their higher-order bits. In dotted decimal notation, host group addresses range from 224.0.0.0 to 239.255.255.255. Among them, 224.0.0.1 is assigned to the permanent IP hosts group, and 224.0.0.2 is assigned to the multicast routers group.

IGMP (Internet Group Management Protocol) is the protocol used to support multicast groups. The latest version is version 2 (see RFC2236). IP hosts use IGMP to report their multicast group membership to any immediate-neighbor multicast routers so the multicast routers can decide if a multicast packet needs to be forwarded. At start up, the Prestige queries all directly connected networks to gather group membership. After that, the Prestige updates the information by periodic queries. The Prestige implementation of IGMP is also compatible with version 1. The multicast setting can be turned on or off on Ethernet and remote nodes.

Menu 3.2 - TCP/IP and DHCP Ethernet Setup

DHCP= Server

Configuration:

Client IP Pool Starting Address= 192.168.1.33

Size of Client IP Pool= 32

Primary DNS Server= 0.0.0.0

Secondary DNS Server= 0.0.0.0

TCP/IP Setup:

IP Address= 192.168.1.1

IP Subnet Mask= 255.255.255.0

RIP Direction= Both

Version= RIP-1

Multicast= None

Edit IP Alias= No

Menu 11.3 - Remote Node Network Layer Options

IP Address Assignment= Dynamic

IP Address= N/A

IP Subnet Mask= N/A

Gateway IP Addr= N/A

Single User Account= Yes

Metric= N/A

Private= N/A

RIP Direction= None

Version= N/A

Multicast= None

15. SNMP support.

SNMP (Simple Network Management Protocol) is a protocol used for exchanging management information between network devices. SNMP is a member of TCP/IP protocol suite. Your Prestige supports SNMP agent functionality, which allows a manager station to manage and monitor the Prestige through the network. The Prestige supports SNMP version two (SNMPv2).

Note: Keep in mind that SNMP is only available if TCP/IP is configured on your Prestige .

Menu 22 - SNMP Configuration

SNMP:

Get Community= public

Set Community= public

Trusted Host= 192.168.1.15

Trap:

Community= public

Destination= 192.168.1.15

Field	Description	Option
Get Community	Enter the Get Community, which is the password for the incoming Get- and GetNext- requests from the management station.	Public
Set Community	Enter the set community, which is the password for incoming Set- requests from the management station.	Public

Trusted Host	If you enter a trusted host, your Prestige 1600 will only respond to SNMP messages from this address. If you leave the field blank (default), your Prestige 1600 will respond to all SNMP messages it receives, regardless of source.	Blank
Trap: Community	Enter the trap community, which is the password sent with each trap to the SNMP manager.	Public
Trap: Destination	Enter the IP address of the station to send your SNMP traps to.	Blank
Once you have completed filling in Menu 22 - SNMP Configuration , press [ENTER] at the message [Press ENTER to Confirm...] to save your configuration, or press [ESC] to cancel.		

16. PPTP support.

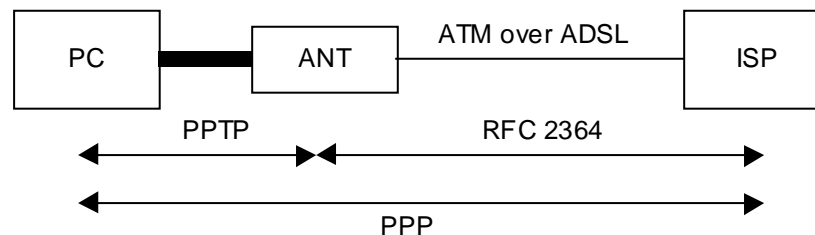
PPTP (Point-to-Point Tunneling Protocol) is a protocol to tunnel PPP frames over an IP substrate and thus is a layer 1 protocol in the OSI scheme of things. PPTP is a Microsoft's proprietary protocol; even though there is an RFC 2637 for PPTP, it's only informational. What Microsoft calls "VPN" is in essence tunneling through PPTP.

This implementation of PPTP is specifically for the French market where Alcatel's ANT (ADSL Network Termination) is deployed. Most, if not all, broadband modems (ADSL and cable modem) are equipped with Ethernet instead of RS-232 because RS-232 is too slow. It is therefore impossible to use them in the same way as the traditional analog modem and ISDN TA.. A mechanism is needed to transport the PPP frames from a PC to the broadband modem over Ethernet. Before PPPoE was formalized, Alcatel came up with the idea of building PPTP into their ANT for this purpose.

Instead of using the Internet to transport PPP frames anywhere in the world as originally envisioned, Alcatel's solution uses PPTP only over the short haul between the PC and the modem over Ethernet. For the rest of the connection, the PPP frames are transported with PPP over AAL5 (RFC 2364). The PPP connection, however, is still between the PC and the ISP.

The drawback of this solution is that it requires one separate ATM VC per destination. It is understood that this is a temporary solution, because the industry is moving toward PPPoE that allows multiple PPP sessions over a single VC.

The various connections in this setup are depicted in the following diagram.



When the P-310 is deployed in such a setup, it must appear as a PC to the Alcatel modem. Therefore, our implementation will mimic a Windows workstation and not a full-blown PPTP stack.

Menu 4 - Internet Access Setup

ISP's Name= ChangeMe

Encapsulation= PPTP

Service Type= N/A

My Login= username

<= select encapsulation

My Password= ***** <= username
Idle Timeout= 100 <= password

IP Address Assignment= Dynamic
IP Address= N/A
IP Subnet Mask= N/A
Gateway IP Address= N/A
Single User Account= Yes

Press ENTER to Confirm or ESC to Cancel:

Menu 11.1 - Remote Node Profile

Rem Node Name= ChangeMe Route= IP
Active= Yes

Encapsulation= PPTP Edit IP= No
Service Type= Standard Telco Option:
Service Name= N/A Allocated Budget(min)= 0
Outgoing= Period(hr)= 0
My Login= username Schedules=
My Password= *****

Session Options:

PPTP: Edit Filter Sets= No
My IP Addr= 10.0.0.140 Idle Timeout(sec)= 100
Server IP Addr= 10.0.0.138
Connection ID/Name= N:MyISP

Press ENTER to Confirm or ESC to Cancel:

To configure a PPTP client, you must configure username & password for PPP connection and My IP Address & Server IP Address for PPTP connection. Where the connection ID/Name is optional. It will depend on your xDSL modem requirement.

17. Time and Date Setting

There is no Real Time Chip (RTC) chip in the Prestige, so we have a software mechanism to get the current time and date from an external server when you power up your Prestige. **Menu 24.10** does just that – it allows you to update the time and date settings of your Prestige.

Menu 24.10 - System Maintenance - Time and Date Setting

Use Time Server when Bootup= Daytime (RFC-867)
Time Server IP Address= 192.168.1.15

Current Time: 15 : 54 : 09
New Time (hh:mm:ss): 15 : 54 : 09

Current Date: 2000 - 01 - 26
New Date (yyyy-mm-dd): 2000 - 01 - 26

Time Zone= GMT

Field	Description
Use Time Server when Bootup=	Enter the time service protocol that your timeserver will send when the Prestige powers up. Choices are Daytime (RFC 867), Time (RFC-868), NTP (RFC-1305) and None. The main differences between them are the format, e.g., the Daytime (RFC 867) format is day/month/date/year/time zone of the server while the Time (RFC-868) format gives a 4-byte integer giving the total number of seconds since 1/1/1970 at 0:0:0. The NTP (RFC-1305) format is similar. Not all timeservers support all protocols, so you may have to check with your ISP/network administrator or use trial and error to find a protocol that works. If you select None (this is the default value), you can enter the time manually but each time the system is booted, the time & date will be reset to: 1/1/1970 0:0:0
Time Server IP Address=	Enter the IP address of the your timeserver. Check with your ISP/network administrator if you are unsure of this information.
Current Time: New Time	Enter the new time in hour, minute and second format.
Current Date: New Date	Enter the new date in month, date and year format.
Time Zone= GMT+0800	Press the [SPACE BAR] to set the time difference between your time zone and Greenwich mean Time (GMT). Be aware how daylight savings time affects the time difference for your time zone.
Once you have filled in the new time and date, press [ENTER] to save the setting and press [ESC] to return to Menu 24.	

Note:

1. If your Time Server is put on the internet that it will cause a trigger dial when the wan link is not on.
2. A Time Server may have 3 protocols installed, or only 1. Select anyone protocol that works.
3. If select Daytime protocol, you don't have to configure the field 'Time Zone', and Prestige will update the date, time, and time zone from Daytime server. But if select 'time' or 'NTP' protocol, you have to change the 'Time Zone' manually because Prestige will get GMT (Greenwish Mean Time) from the Time server or NTP server.
4. After you configure the time protocol and IP address of its server, Prestige will ask you "Do you wish to calibrate system clock with time server now[y/n]". You can choose 'y' to adjust the time immediately. If you select 'n', it doesn't mean Prestige will not update the time. He will do it a few time later.

18. Call Schedule Support

Call scheduling feature schedules the Prestige to run the remote node automatically. This feature is just like the scheduler in a video recorder (record the program you want in a specified time). You can select 1 to 4 schedule set in **Menu 11 - Remote Node Setup**, and configure each schedule in **Menu 26 - Schedule Setup**.

Menu 11.1 - Remote Node Profile

Rem Node Name= ChangeMe	Route= IP
Active= Yes	
Encapsulation= PPTP	Edit IP= No
Service Type= Standard	Telco Option:
Service Name= N/A	Allocated Budget(min)= 0
Outgoing=	Period(hr)= 0

My Login= username	Schedules=1
My Password= *****	
Session Options:	
PPTP:	Edit Filter Sets= No
My IP Addr= 10.0.0.140	Idle Timeout(sec)= 100
Server IP Addr= 10.0.0.138	
Connection ID/Name= N:MyISP	
Press ENTER to Confirm or ESC to Cancel:	

As we can have multiple sets, the sets have priority based on their position. For example, if we program the sets as 1,2,3,4 in remote node, then set 1 will override set 2,3,4. Set 2 will override set 3,4, and so on. This design is very similar to Filter & IP policy routing. You can design 12 sets for schedule and apply these schedule in remote node setting.

Note: If you want to delete a schedule set, choose the set number and leave the name empty.

To setup a schedule set select the schedule set you want to setup from **Menu 26** (no. 1-12) and press [Enter]. You will enter **Menu 26.1 - Schedule Set Setup** as shown next.

Menu 26.1 Schedule Set Setup	
Active=	Yes
Start Date(yyyy-mm-dd)=	2000 - 01 - 26
How Often=	Once
Once:	
Date(yyyy-mm-dd)=	2000 - 01 - 26
Weekdays:	
Sunday=	N/A
Monday=	N/A
Tuesday=	N/A
Wednesday=	N/A
Thursday=	N/A
Friday=	N/A
Saturday=	N/A
Start Time(hh:mm)=	15 : 00
Duration(hh:mm)=	00 : 30
Action=	Forced On

Field	Description
Active	If this field is set to No then the next set will be applied.
Start Date	Start date of this schedule rule. It can refute weekday setting. For example, if Start Date is 1999/10/15 (FRIDAY), Friday setting in weekday can be No . The Valid date value is from January 1, 1990 to February 5, 2036.
How Often	Now it can be set as once and weekly . Both these options are mutually exclusive. If once is selected, then all weekday settings will be marked as N/A. And when the schedule rule is completed, it will be deleted automatically.
Duration	Duration of the schedule set.
Action	You can choose Forced On, Forced Down, Enable Dial-On-Demand , or Disable Dial-On-Demand .
Forced On	During this period, the P310 will dial the remote node and persist for the time period specified in the field Duration .
Forced Down	During this period, the P310 will shut connection to the remote node. If the remote node is already connected, then it will be dropped.
Enable Dialing-on-demand	During this period, this remote node will accept dial on demand.

Disable Dial-on-demand	During the period, this remote node will deny any demand dial. If a connection has been already established, it will not drop it. Once the connection is dropped manually or because of idle timeout period, then that remote node can't be triggered up until the end of the Duration .
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19. Dynamic DNS support

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname, allowing the host to be more easily accessed from various locations on the internet.

We support two DDNS clients in our router – WWW.DDNS.ORG, WWW.DYNDNS.ORG.

How to configure it?

1. First, you must go to the WWW.DDNS.ORG or WWW.DYNDNS.ORG to register an account. After successful registration you will receive a password from email. You can key in the hostname, email address, username, password..
2. Put the corresponding information to Menu 1.1.

Menu 1.1 - Configure Dynamic DNS

Service Provider= WWW.DDNS.ORG
Active= Yes
Host= p310.ddns.org
EMAIL= yourmail@yourmailserver
User = p310
Password= *****
Enable Wildcard = YES/NO

Notes:

1. We only support the basic feature and login in with insecure password in WWW.DDNS.ORG.
2. We will update the IP address when we configure Menu 1, DHCP client renew, or ipcp open.
3. It will have problems if your wan ip address are private.
4. Please read the FAQ provided by the DDNS service provider. It will have great help to trouble shooting your problem.

20. Reference Home Page

<http://www.zyxel.com/html/product/wan/p310.html>