

# *Prestige 650M-17*

*ADSL Modem*

## *User's Guide*

Version 3.40

August 2002

**ZyXEL**

TOTAL INTERNET ACCESS SOLUTION

# Copyright

Copyright © 2002 by ZyXEL Communications Corporation.

The contents of this publication may not be reproduced in any part or as a whole, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without the prior written permission of ZyXEL Communications Corporation.

Published by ZyXEL Communications Corporation. All rights reserved.

## **Disclaimer**

ZyXEL does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. ZyXEL further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

## **Trademarks**

ZyNOS (ZyXEL Network Operating System) is a registered trademark of ZyXEL Communications, Inc. Other trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

# Federal Communications Commission (FCC) Interference Statement

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

If this equipment does cause harmful interference to radio/television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

## **Notice 1**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **Certifications**

Refer to the product page at [www.zyxel.com](http://www.zyxel.com).

# ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

## **Note**

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind of character to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

# Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.
- Information in **Menu 24.2.1 – System Information**.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

METHOD	E-MAIL SUPPORT/SALES	TELEPHONE/FAX	WEB SITE/ FTP SITE	REGULAR MAIL
LOCATION				
WORLDWIDE	<a href="mailto:support@zyxel.com.tw">support@zyxel.com.tw</a>  <a href="mailto:sales@zyxel.com.tw">sales@zyxel.com.tw</a>	+886-3-578-3942  +886-3-578-2439	<a href="http://www.zyxel.com">www.zyxel.com</a>  <a href="http://www.europe.zyxel.com">www.europe.zyxel.com</a>  <a href="http://ftp.europe.zyxel.com">ftp.europe.zyxel.com</a>	ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu 300, Taiwan
NORTH AMERICA	<a href="mailto:support@zyxel.com">support@zyxel.com</a>  <a href="mailto:sales@zyxel.com">sales@zyxel.com</a>	+1-714-632-0882 800-255-4101  +1-714-632-0858	<a href="http://www.zyxel.com">www.zyxel.com</a>  <a href="http://ftp.zyxel.com">ftp.zyxel.com</a>	ZyXEL Communications Inc., 1650 Miraloma Avenue, Placentia, CA 92870, U.S.A.
SCANDINAVIA	<a href="mailto:support@zyxel.dk">support@zyxel.dk</a>  <a href="mailto:sales@zyxel.dk">sales@zyxel.dk</a>	+45-3955-0700  +45-3955-0707	<a href="http://www.zyxel.dk">www.zyxel.dk</a>  <a href="http://ftp.zyxel.dk">ftp.zyxel.dk</a>	ZyXEL Communications A/S, Columbusvej 5, 2860 Soeborg, Denmark
GERMANY	<a href="mailto:support@zyxel.de">support@zyxel.de</a>  <a href="mailto:sales@zyxel.de">sales@zyxel.de</a>	+49-2405-6909-0  +49-2405-6909-99	<a href="http://www.zyxel.de">www.zyxel.de</a>	ZyXEL Deutschland GmbH, Adenauerstr. 20/A4 D-52146 Wuersele, Germany



# Table of Contents

Copyright.....	ii
Federal Communications Commission (FCC) Interference Statement.....	iii
ZyXEL Limited Warranty.....	iv
Customer Support.....	v
List of Figures.....	x
List of Tables.....	xi
Preface.....	xii
What is DSL?.....	xiv
<b>Chapter 1 Getting To Know Your Prestige.....</b>	<b>1-1</b>
1.1 Prestige 650M-17 ADSL Modem.....	1-1
1.2 Features of the Prestige.....	1-1
1.3 Applications for the Prestige.....	1-4
1.3.1 Internet Access.....	1-4
1.3.2 LAN to LAN Application.....	1-4
<b>Chapter 2 Hardware Installation and Initial Setup.....</b>	<b>2-1</b>
2.1 Front Panel LEDs of the Prestige.....	2-1
2.2 Rear Panel and Connections of the Prestige.....	2-2
2.2.1 DSL Port.....	2-3
2.2.2 LAN 10/100M Port.....	2-3
2.2.3 Power Port.....	2-4
2.2.4 Reset Button.....	2-4
2.3 Additional Installation Requirements.....	2-4
2.4 Connecting an ISDN Splitter.....	2-4
2.5 Turning On Your Prestige.....	2-5
2.6 Configuring Your Prestige For Internet Access.....	2-5
2.6.1 Connect to Your Prestige Using Telnet.....	2-5
2.6.2 Entering Password.....	2-6
2.7 Resetting the Prestige.....	2-6
2.7.1 Methods of Restoring Factory–Defaults.....	2-6
2.7.2 Procedure To Use The Reset Button.....	2-7
2.8 Prestige SMT Overview.....	2-7
2.9 Navigating the SMT Interface.....	2-8
2.9.1 System Management Terminal Interface Summary.....	2-10
2.10 Changing the System Password.....	2-10
2.11 General Setup.....	2-11
<b>Chapter 3 Internet Access.....</b>	<b>3-1</b>
3.1 Factory Ethernet Defaults.....	3-1
3.2 LANs and WANs.....	3-1
3.2.1 LANs, WANs and the Prestige.....	3-1

3.3	TCP/IP Parameters .....	3-2
3.3.1	IP Address and Subnet Mask .....	3-2
3.4	Ethernet Setup .....	3-2
3.5	Protocol Dependent Ethernet Setup .....	3-2
3.6	TCP/IP Ethernet Setup .....	3-2
3.7	VPI and VCI .....	3-3
3.8	Multiplexing .....	3-3
3.8.1	VC-based Multiplexing .....	3-3
3.8.2	LLC-based Multiplexing .....	3-4
3.9	Encapsulation .....	3-4
3.9.1	PPPoA .....	3-4
3.9.2	RFC 1483 .....	3-4
3.10	IP Address Assignment .....	3-4
3.11	Internet Access Configuration .....	3-4
3.11.1	Traffic Shaping .....	3-5
<b>Chapter 4 Remote Node Configuration .....</b>		<b>4-1</b>
4.1	Remote Node Setup .....	4-1
4.1.1	Remote Node Profile .....	4-1
4.1.2	Encapsulation and Multiplexing Scenarios .....	4-2
4.1.3	Outgoing Authentication Protocol .....	4-4
<b>Chapter 5 Filter Set Configuration .....</b>		<b>5-1</b>
5.1	About Filtering .....	5-1
5.2	Configuring a Filter Set .....	5-3
5.2.1	Filter Rules Summary Menus .....	5-4
5.3	Generic Filter Rule .....	5-5
5.3.1	Example Generic Filter Rule Configuration .....	5-5
5.4	Filter Configuration Example .....	5-6
5.5	Applying Filters .....	5-8
5.5.1	Remote Node Filters .....	5-9
<b>Chapter 6 System Information and Diagnosis .....</b>		<b>6-1</b>
6.1	System Status .....	6-1
6.2	System Information and Console Port Speed .....	6-3
6.2.1	System Information .....	6-4
6.3	Diagnostic .....	6-5
6.4	Command Interpreter Mode .....	6-5
<b>Chapter 7 Firmware and Configuration File Maintenance .....</b>		<b>7-1</b>
7.1	Filename Conventions .....	7-1
7.2	Backup Configuration .....	7-2
7.2.1	Backup Configuration .....	7-3
7.2.2	Using the FTP Command from the Command Line .....	7-3
7.2.3	Example of FTP Commands from the Command Line .....	7-3



---

7.2.4	GUI-based FTP Clients .....	7-4
7.2.5	Backup Configuration Using TFTP .....	7-4
7.2.6	TFTP Command Example.....	7-5
7.2.7	GUI-based TFTP Clients.....	7-5
7.3	Restore Configuration .....	7-6
7.3.1	Restore Using FTP .....	7-6
7.3.2	Restore Using FTP Session Example.....	7-7
7.4	Uploading Firmware and Configuration Files.....	7-8
7.4.1	Firmware File Upload .....	7-8
7.4.2	Configuration File Upload .....	7-8
7.4.3	FTP File Upload Command from the DOS Prompt Example .....	7-9
7.4.4	FTP Session Example of Firmware File Upload.....	7-9
7.4.5	TFTP File Upload .....	7-10
7.4.6	TFTP Upload Command Example .....	7-11
<b>Chapter 8</b>	<b>Troubleshooting.....</b>	<b>8-1</b>
8.1	Problems Starting the Prestige .....	8-1
8.2	Power Problems .....	8-1
8.3	Problems Connecting with the LAN .....	8-2
8.4	Problems Connecting with the WAN or Remote Node/ISP .....	8-2
8.5	Problems Accessing SMT Menus.....	8-3
8.6	Problems Accessing the Internet .....	8-3
<b>Appendix A</b>	<b>Power Adapter Specifications.....</b>	<b>A</b>
<b>Appendix B</b>	<b>Virtual Circuit Topology.....</b>	<b>C</b>
<b>Appendix C</b>	<b>TCP/IP .....</b>	<b>E</b>
<b>Index.....</b>		<b>K</b>

# List of Figures

Figure 1-1 Internet Access Application.....	1-4
Figure 1-2 LAN-to-LAN Application.....	1-5
Figure 2-1 Prestige Front Panel.....	2-1
Figure 2-2 Prestige Rear Panel and Connections.....	2-3
Figure 2-3 Prestige with ISDN.....	2-5
Figure 2-4 Password Screen.....	2-6
Figure 2-5 Prestige SMT Menu Overview.....	2-8
Figure 2-6 SMT Main Menu.....	2-10
Figure 2-7 Menu 23 – System Password.....	2-11
Figure 2-8 Menu 1–General Setup.....	2-11
Figure 3-1 LAN & WAN IPs.....	3-1
Figure 3-2 Menu 3–Ethernet Setup.....	3-3
Figure 3-3 Example of Traffic Shaping.....	3-6
Figure 3-4 Internet Access Setup.....	3-6
Figure 4-1 Menu 11–Remote Node Setup.....	4-1
Figure 4-2 Menu 11.1–Remote Node Profile.....	4-2
Figure 5-1 Outgoing Packet Filtering Process.....	5-1
Figure 5-2 Filter Rule Process.....	5-2
Figure 5-3 Menu 21–Filter Set Configuration.....	5-3
Figure 5-4 Menu 21.1–Filter Rules Summary.....	5-4
Figure 5-5 Menu 21.5.1–Generic Filter Rule.....	5-5
Figure 5-6 Sample Filter– Menu 21.3.1.....	5-7
Figure 5-7 Sample Filter Rules Summary – Menu 21.3.....	5-8
Figure 5-8 Filtering Remote Node Traffic.....	5-9
Figure 6-1 Menu 24 – System Maintenance.....	6-1
Figure 6-2 Menu 24.1 – System Maintenance – Status.....	6-2
Figure 6-3 Menu 24.2 – System Information and Console Port Speed.....	6-3
Figure 6-4 Menu 24.2.1 – System Maintenance – Information.....	6-4
Figure 6-5 Menu 24.4 – System Maintenance – Diagnostic.....	6-5
Figure 6-6 Command Mode in Menu 24.....	6-6
Figure 6-7 Valid Commands.....	6-6
Figure 7-1 Telnet in Menu 24.5.....	7-3
Figure 7-2 FTP Session Example.....	7-4
Figure 7-3 Telnet into Menu 24.6.....	7-7
Figure 7-4 Restore Using FTP Session Example.....	7-7
Figure 7-5 Telnet Into Menu 24.7.1 - Upload System Firmware.....	7-8
Figure 7-6 Telnet Into Menu 24.7.2 - System Maintenance.....	7-9
Figure 7-7 FTP Session Example of Firmware File Upload.....	7-10

# List of Tables

Table 2-1 Front Panel LED Description .....	2-1
Table 2-2 Main Menu Commands .....	2-9
Table 2-3 Main Menu Summary.....	2-10
Table 2-4 General Setup Menu Fields .....	2-12
Table 3-1 TCP/IP Ethernet Setup Menu Fields.....	3-3
Table 3-2 Internet Account Information .....	3-5
Table 3-3 Internet Access Setup Menu Fields .....	3-7
Table 4-1 Remote Node Profile Menu Fields .....	4-3
Table 5-1 Abbreviations Used in the Filter Rules Summary Menu .....	5-4
Table 5-2 Rule Abbreviations Used.....	5-5
Table 5-3 Menu 21.5.1 – Generic Filter Rule Fields .....	5-6
Table 5-4 Filter Set Types.....	5-8
Table 6-1 System Maintenance – Status Menu Fields .....	6-2
Table 6-2 Fields in System Maintenance.....	6-4
Table 6-3 System Maintenance Menu – Diagnostic .....	6-5
Table 7-1 Filename Conventions .....	7-2
Table 7-2 General Commands for GUI-based FTP Clients .....	7-4
Table 7-3 General Commands for GUI-based TFTP Clients.....	7-5
Table 8-1 Problems Starting the Prestige.....	8-1
Table 8-2 Problems With the Power Source .....	8-1
Table 8-3 Problems Connecting with the LAN .....	8-2
Table 8-4 Problems Connecting with the WAN or Remote Node/ISP .....	8-2
Table 8-5 Problems Accessing SMT Menus.....	8-3
Table 8-6 Problems Accessing the Internet .....	8-3

# Preface

Congratulations on your purchase of the Prestige 650M-17 ADSL Internet Access modem.

The Prestige 650M-17 is an ADSL modem used for Internet/LAN access via an ISDN line. The Prestige can run maximum upstream transmission rates of up to 832Kbps and maximum downstream transmission rates of 8Mbps. The actual rate depends on the copper category of your ISDN wire, distance from the central office and the type of ADSL service subscribed to. See the *What is DSL* section for more background information on DSL and ADSL.

The Prestige's 10/100M auto-negotiating LAN interface enables fast data transfer of either 10Mbps or 100Mbps in either half-duplex or full-duplex mode depending on your Ethernet network.

Your Prestige is easy to install and configure. All functions of the Prestige are software configurable via the SMT (System Management Terminal) using Telnet. Advanced users may configure the Prestige using CLI (Command Line Interface) commands.

**Register your Prestige online at [www.zyxel.com](http://www.zyxel.com) for free future product updates and information.**

## About This User's Guide

This User's Guide covers all aspects of Prestige operations and shows you how to get the best out of the multiple advanced features of your ADSL Internet access modem using SMT menus. It is designed to guide you through the correct configuration of your Prestige for various applications.

## Related Documentation

### ➤ Supporting Disk

More detailed information and examples can be found in our included disk (as well as on the [zyxel.com](http://zyxel.com) web site). This disk contains information on configuring your Prestige for Internet Access, general and advanced FAQs, Application Notes, Troubleshooting, a reference for CI Commands and bundled software.

### ➤ Read Me First

Our Read Me First is designed to help you get up and running right away. It contains a detailed easy-to-follow connection diagram, default settings, handy checklists and information on setting up your network and configuring for Internet access.

### ➤ ZyXEL Glossary and Web Site

Please refer to [www.zyxel.com](http://www.zyxel.com) for an online glossary of networking terms and additional support documentation.

## Syntax Conventions

- “Type” means for you to type one or more characters and press the carriage return. “Select” or “Choose” means for you to select one from the predefined choices.
- The SMT menu titles and labels are in **Bold Times New Roman** font. Predefined field choices are in **Bold Arial** font. Command and arrow keys are enclosed in square brackets. [ENTER] means the Enter, or carriage return key; [ESC] means the Escape key and [SPACE BAR] means the Space Bar.
- For brevity’s sake, we may use “e.g.,” as shorthand for “for instance”, and “i.e.,” for “that is” or “in other words” in this manual.
- The Prestige 650M-17 ADSL modem may be referred to as the Prestige in this User’s Guide.

**The following section offers some background information on DSL. Skip to Chapter 1 if you wish to begin working with your modem right away.**

# What is DSL?

DSL (Digital Subscriber Line) enhances the data capacity of the existing twisted-pair wire that runs between the local telephone company switching offices and most homes and offices. While the wire itself can handle higher frequencies, the telephone switching equipment is designed to cut off signals above 4,000 Hz to filter noise off the voice line, but now everybody is searching for ways to get more bandwidth to improve access to the Web - hence DSL technologies.

There are actually seven types of DSL service, ranging in speeds from 16 Kbits/sec to 52 Mbits/sec. The services are either symmetrical (traffic flows at the same speed in both directions), or asymmetrical (the downstream capacity is higher than the upstream capacity). Asymmetrical services (ADSL) are suitable for Internet users because more information is usually downloaded than uploaded. For example, a simple button click in a web browser can start an extended download that includes graphics and text.

As data rates increase, the carrying distance decreases. That means that users who are beyond a certain distance from the telephone company's central office may not be able to obtain the higher speeds.

A DSL connection is a point-to-point dedicated circuit, meaning that the link is always up and there is no dialing required.

## **What is ADSL?**

It is an asymmetrical technology, meaning that the downstream data rate is much higher than the upstream data rate. As mentioned, this works well for a typical Internet session in which more information is downloaded, for example, from Web servers, than is uploaded. ADSL operates in a frequency range that is above the frequency range of voice services, so the two systems can operate over the same cable. What are the advantages of ADSL from the point of view of the Network Service Provider (NSP) and the end user?

# Chapter 1

## Getting To Know Your Prestige

*This chapter describes the key features and applications of your Prestige.*

### 1.1 Prestige 650M-17 ADSL Modem

Your Prestige integrates a high-speed 10/100Mbps auto-negotiating LAN interface and one high-speed ADSL port into a single package. The Prestige is ideal for high-speed Internet browsing and making LAN-to-LAN connections to remote networks.

### 1.2 Features of the Prestige

Your Prestige is packed with a number of features that give it the flexibility to provide a complete networking solution for almost any user.

- **High Speed Internet Access**

Your Prestige supports downstream transmission rates of up to 8Mbps and upstream transmission rates of 832 Kbps. Your Prestige also supports rate management.

- **10/100M Auto-negotiation Ethernet/Fast Ethernet Interface**

This auto-negotiation feature allows the Prestige to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 10 Mbps or 100 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network.

- **Multiple PVC (Permanent Virtual Circuits) Support**

Your Prestige supports up to 8 PVCs.

### ● **ADSL Transmission Rate Standards**

- ◆ Full-Rate (ANSI T1.413, Issue 2; G.dmt (G.992.1) with line rate support of up to 8 Mbps downstream and 832 Kbps upstream.
- ◆ Supports Multi-Mode standard (ITU G.992.1, G.994.1, G.997.1).
- ◆ TCP/IP (Transmission Control Protocol/Internet Protocol) network layer protocol.
- ◆ ATM Forum UNI 3.1/4.0 PVC.
- ◆ Multiple Protocol over AAL5 (RFC 2684).
- ◆ PPP over AAL5 (RFC 2364).
- ◆ EOC specified in ITU-T G.992.1
- ◆ Dying Gasp
- ◆ Bridge Mode

### ● **Protocol Support**

- ◆ PPP (Point-to-Point Protocol) (RFC 1144, 1332, 1334, 1570, 1661, 1994, 1998 (plus amendments))
- ◆ Multiprotocol Encapsulation over ATM (MpoA) (RFC 1483/2684)
- ◆ Transparent bridging for unsupported network layer protocols

### ● **Networking Compatibility**

Your Prestige is compatible with the major ADSL DSLAM (Digital Subscriber Line Access Multiplexer) providers, making configuration as simple as possible for you.

### ● **Multiplexing**

The Prestige Series supports VC-based and LLC-based multiplexing.

### ● **Encapsulation**

The Prestige Series supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5) and RFC 1483 encapsulation over ATM.



## **Network Management**

- ◆ Menu driven SMT (System Management Terminal) management
  - ◆ CLI (Command Line Interpreter)
  - ◆ Remote SMT session via Telnet
  - ◆ Local SMT session via Telnet
  - ◆ Built-in Diagnostic Tools
  - ◆ Syslog
  - ◆ Telnet Support (Password-protected telnet access to internal configuration manager)
  - ◆ TFTP/FTP server, firmware upgrade and configuration backup/support supported
  - ◆ Supports OAM F4/F5 loop-back, AIS and RDI OAM cells
- **Diagnostics Capabilities**

The Prestige can perform self-diagnostic tests. These tests check the integrity of the following circuitry:

- FLASH memory
- ADSL circuitry
- RAM
- LAN port

- **Filters**

The Prestige's packet filtering functions allows added network security and management.

- **Ease of Installation**

Your Prestige is designed for quick, intuitive and easy installation.

- **Housing**

Your Prestige's all new compact and ventilated housing minimizes space requirements making it easy to position anywhere in your busy office. The Prestige is easy to mount on your wall.

## 1.3 Applications for the Prestige

### 1.3.1 Internet Access

The Prestige is the ideal high-speed Internet access solution. Your Prestige supports the TCP/IP protocol, which the Internet uses exclusively. It is compatible with all major ADSL DSLAM (Digital Subscriber Line Access Multiplexer) providers. A DSLAM is a rack of ADSL line cards with data multiplexed into a backbone network interface/connection (for example, T1, OC3, DS3, ATM or Frame Relay). Think of it as the equivalent of a modem rack for ADSL. A typical Internet Access application is shown below.

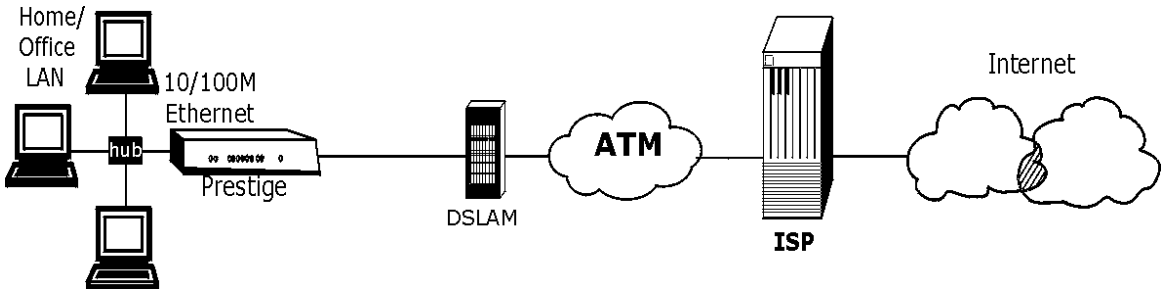


Figure 1-1 Internet Access Application

### 1.3.2 LAN to LAN Application

You can use the Prestige to connect two geographically dispersed networks over the ADSL line. A typical LAN-to-LAN application for your Prestige is shown as follows.

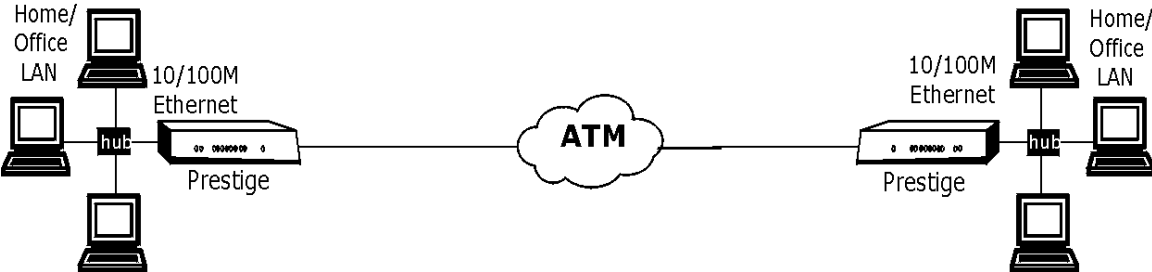


Figure 1-2 LAN-to-LAN Application



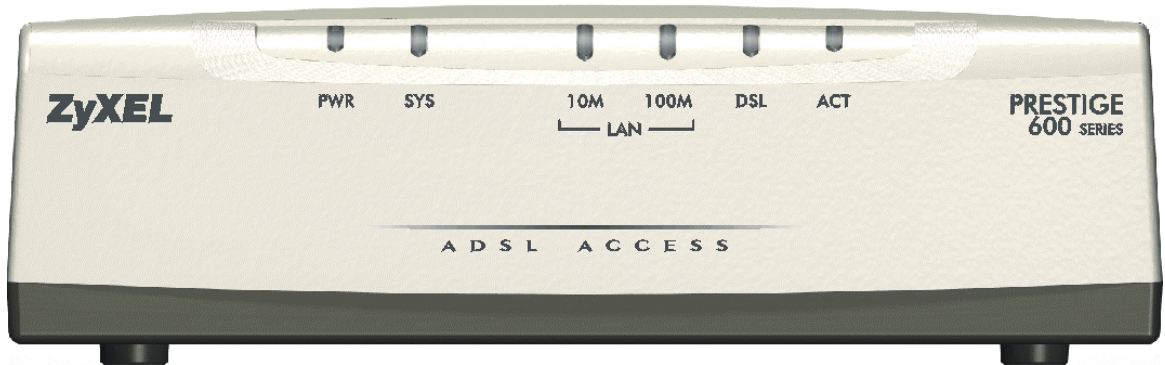
# Chapter 2

## Hardware Installation and Initial Setup

*This chapter describes the physical features of the Prestige and how to make cable connections.*

### 2.1 Front Panel LEDs of the Prestige

The LEDs on the front panel indicate the operational status of your Prestige



**Figure 2-1 Prestige Front Panel**

**Table 2-1 Front Panel LED Description**

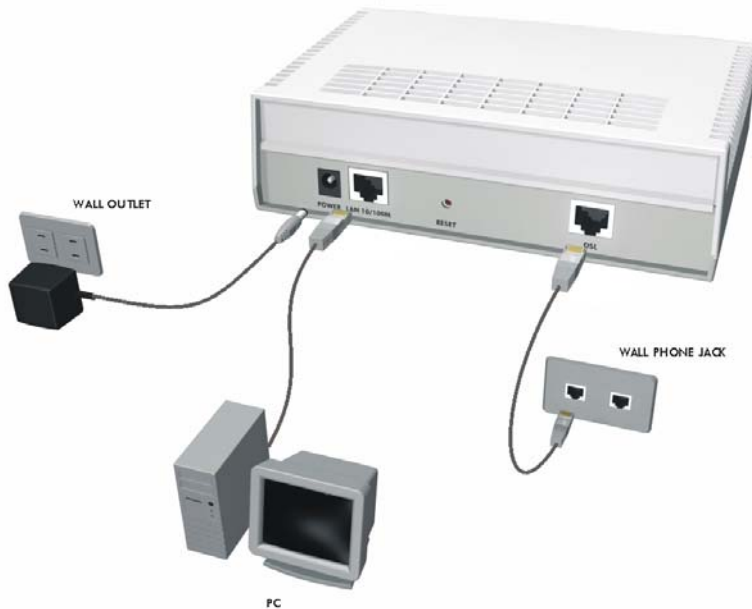
LED	COLOR	STATUS	DESCRIPTION
PWR	Green	On	The Prestige is receiving power.
		Off	The Prestige is not receiving power.
SYS	Green	On	The Prestige is functioning properly.
		Blinking	The Prestige is rebooting.
		Off	The Prestige is not ready or has malfunctioned.
	Red	On	Prestige power is low and consequently may be disconnected from the ADSL line.

**Table 2-1 Front Panel LED Description**

<b>LED</b>	<b>COLOR</b>	<b>STATUS</b>	<b>DESCRIPTION</b>
LAN 10M	Green	On	The Prestige has a successful 10Mb Ethernet connection.
		Blinking	The Prestige is sending/receiving data.
		Off	The Prestige does not have 10Mb Ethernet connection.
LAN 100M	Orange	On	The Prestige has a successful 100Mb Ethernet connection.
		Blinking	The Prestige is sending/receiving data.
		Off	The Prestige does not have 100Mb Ethernet connection.
DSL	Green	On	The Prestige is linked successfully to a DSLAM.
		Blinking (slow)	The Prestige is synchronizing.
		Blinking (fast)	The Prestige is sending/receiving data.
		Off	The DSL link is down.
ACT	Green	Blinking	The Prestige is sending/receiving data.
		Off	The Prestige is not sending/receiving data.

## 2.2 Rear Panel and Connections of the Prestige

The following figure shows the rear panel and connections of your Prestige.



**Figure 2-2 Prestige Rear Panel and Connections**

### **2.2.1 DSL Port**

Connect the Prestige directly to the wall jack using the included ADSL cable (with RJ-45 connectors). Make sure you connect an ISDN splitter between the wall jack and your telephone(s) and computer(s).

### **2.2.2 LAN 10/100M Port**

Ethernet 10Base-T/100Base-T networks use Shielded Twisted Pair (STP) cable with RJ-45 connectors that look like a bigger telephone plug with 8 pins. Use the crossover cable or a straight-through Ethernet cable

to connect your Prestige to a computer or an external hub. If the Prestige is connected directly to a hub, connect one end of the straight-through cable from the hub to the NIC on the computer.

**When the Prestige is on and properly connected to a computer or a hub, the corresponding LAN LED on the front panel turns on.**

### 2.2.3 Power Port

Connect the power adapter to the port labeled **POWER** on the rear panel of your Prestige.

**To avoid damage to the Prestige, make sure you use the correct power adapter. Refer to the *Power Adapter Specification Appendix* for this information.**

### 2.2.4 Reset Button

Refer to section 2.7 for information on the **RESET** button.

## 2.3 Additional Installation Requirements

- A computer with an Ethernet 10Base-T/100Base-T NIC (Network Interface Card).

After the Prestige has been successfully connected to your network, you can make future changes to the configuration via Telnet.

## 2.4 Connecting an ISDN Splitter

This device keeps the ISDN and ADSL signals separated, giving them the capability to provide simultaneous Internet access and ISDN service on the same line. Splitters also eliminate the destructive interference conditions caused by telephone sets. The purchase of an ISDN splitter is optional.

Noise generated from a telephone in the same frequency range as the ADSL signal, can disrupt the ADSL signal. In addition the impedance of a telephone when off-hook may be so low that it shunts the strength of the ADSL signal. When an ISDN splitter is installed at the entry point, where the line comes into the home, it will filter the ISDN signals before combining the ADSL and ISDN signals transmitted and received. The issues of noise and impedance are eliminated with a single ISDN splitter installation.

An ISDN splitter is easy to install as shown in the following figure.



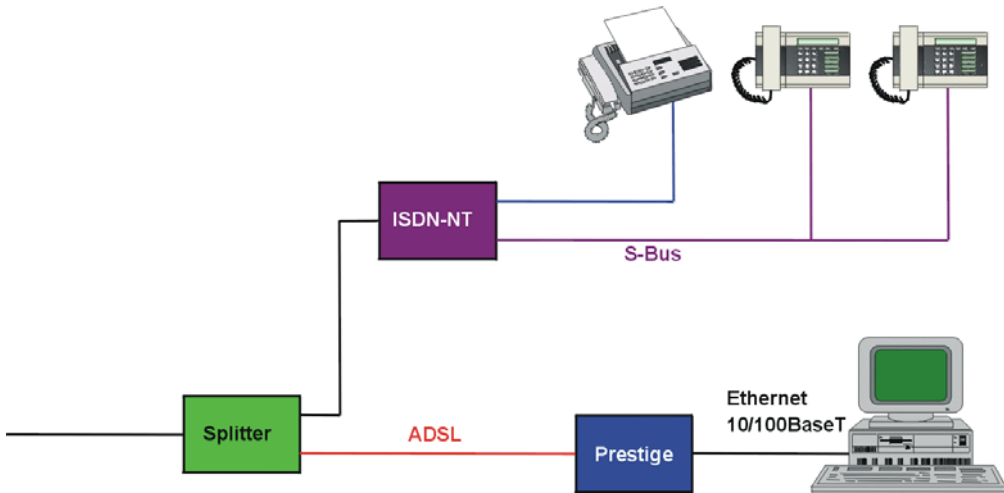


Figure 2-3 Prestige with ISDN

## 2.5 Turning On Your Prestige

At this point, you should have connected the DSL, LAN 10/100M and power ports to the appropriate devices. Make sure the power adapter is plugged into an appropriate power source.

## 2.6 Configuring Your Prestige For Internet Access

Configure your Prestige for Internet access using the SMT (System Management Terminal) screens. Access the SMT via LAN or WAN using Telnet

### 2.6.1 Connect to Your Prestige Using Telnet

The following procedure details how to telnet into your Prestige.

- Step 1.** In Windows, click **Start** (usually in the bottom left corner), **Run** and then type “telnet 192.168.1.1” (the default IP address) and click **OK**.
- Step 2.** Enter 1234 in the **Password** field.

After entering the password you will see the main menu.

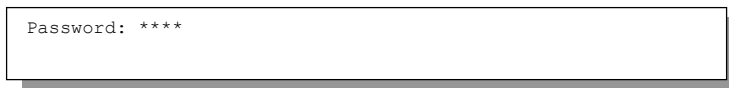
The remainder of this user’s guide shows you how to configure the Prestige for Internet access using SMT screens.

## 2.6.2 Entering Password

When you turn on your Prestige, it performs several internal tests as well as line initialization. After the initialization, the Prestige asks you for the password, as shown next.

For your first login, enter the default password “1234”. As you type the password, the screen displays an “\*” for each character you type.

Please note that if there is no activity for longer than five minutes after you log in, your Prestige will automatically log you out.



**Figure 2-4 Password Screen**

## 2.7 Resetting the Prestige

If you forget your password or cannot access the Prestige, you will need to reload the factory-default configuration file. Uploading this configuration file replaces the current configuration file with the factory-default configuration file. This means that you will lose all previous configurations; the password will be reset to “1234” and the LAN IP address to 192.168.1.1.

To obtain the default configuration file, download it from the ZyXEL FTP site, unzip it and save it in a folder.

To upload the configuration file, follow the instructions in menu 24.6. For more information, refer to the *Firmware and Configuration File Maintenance* chapter.

**All custom settings will be lost once you reset to the default settings.**

### 2.7.1 Methods of Restoring Factory–Defaults

You can erase the current configuration and restore factory defaults in two ways:

1. Upload the default configuration file via Telnet as described above. Refer to *Chapter 7* in this User’s Guide for more information on how to transfer a configuration file to your Prestige using the SMT menus.
2. Use the **RESET** button on the rear panel of the Prestige (see the next section).

### **2.7.2 Procedure To Use The Reset Button**

Make sure the **SYS LED** is on (not blinking) before you begin this procedure.

1. Press the **RESET** button for ten seconds, then release it.
2. If the **SYS LED** begins to blink, the defaults have been restored and the Prestige restarts.

## **2.8 Prestige SMT Overview**

The following figure gives you an overview of the various SMT menu screens of your Prestige.

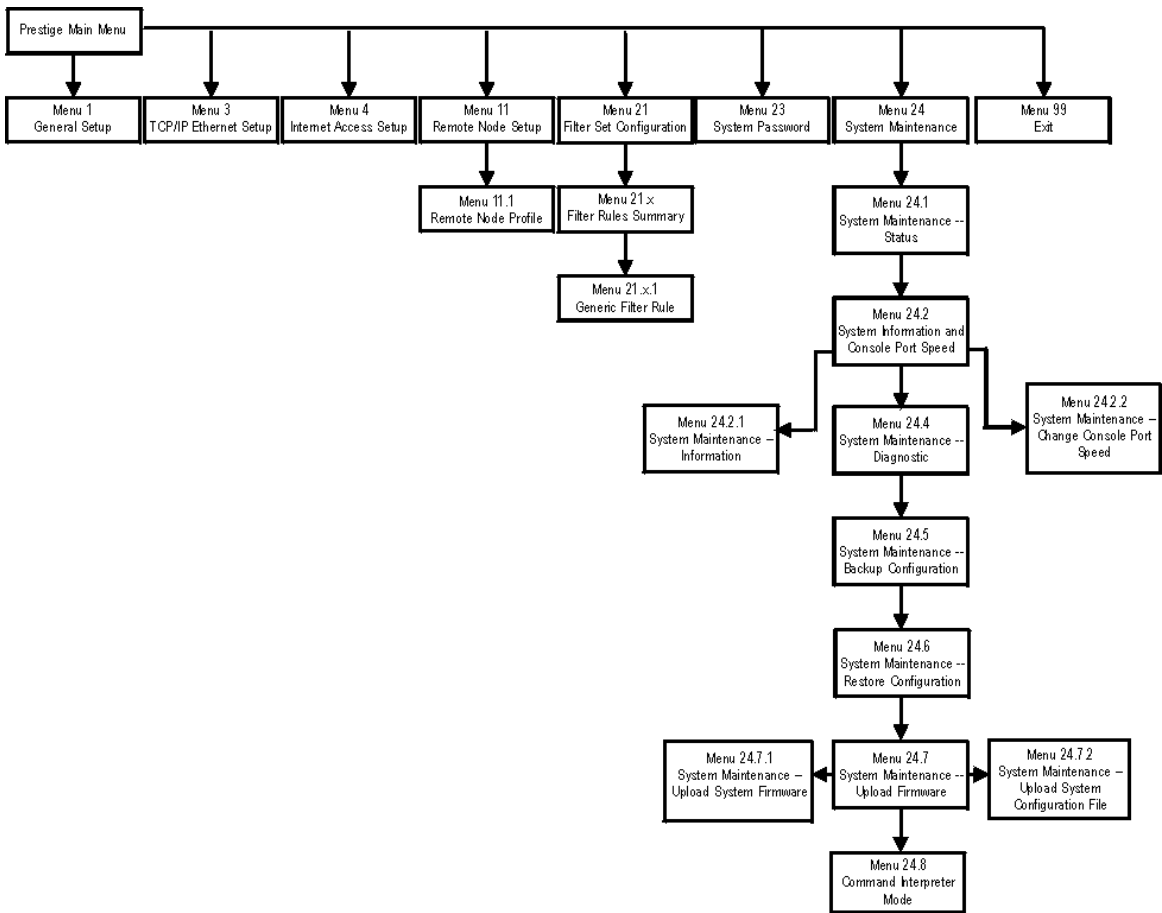


Figure 2-5 Prestige SMT Menu Overview

## 2.9 Navigating the SMT Interface

The SMT (System Management Terminal) is the interface that you use to configure your Prestige.

Several operations that you should be familiar with before you attempt to modify the configuration are listed in the table below.

**Table 2-2 Main Menu Commands**

OPERATION	KEYSTROKE	DESCRIPTION
Move down to another menu	[ENTER]	To move forward to a submenu, type in the number of the desired submenu and press [ENTER].
Move up to a previous menu	[ESC]	Press [ESC] to move back to the previous menu.
Move to a "hidden" menu	Press [SPACE BAR] to change <b>No</b> to <b>Yes</b> then press [ENTER].	Fields beginning with "Edit" lead to hidden menus and have a default setting of <b>No</b> . Press [SPACE BAR] once to change <b>No</b> to <b>Yes</b> , then press [ENTER] to go to the "hidden" menu.
Move the cursor	[ENTER] or [UP]/[DOWN] arrow keys.	Within a menu, press [ENTER] to move to the next field. You can also use the [UP]/[DOWN] arrow keys to move to the previous and the next field, respectively.
Entering information	Type in or press [SPACE BAR], then press [ENTER].	You need to fill in two types of fields. The first requires you to type in the appropriate information. The second allows you to cycle through the available choices by pressing [SPACE BAR].
Required fields	<?>	All fields with the symbol <?> must be filled in order to be able to save the new configuration.
N/A fields	<N/A>	Some of the fields in the SMT will show a <N/A>. This symbol refers to an option that is Not Applicable.
Save your configuration	[ENTER]	Save your configuration by pressing [ENTER] at the message "Press ENTER to confirm or ESC to cancel". Saving the data on the screen will take you, in most cases to the previous menu.
Exit the SMT	Type 99, then press [ENTER].	Type 99 at the main menu prompt and press [ENTER] to exit the SMT interface.

After you enter the password, the SMT displays the main menu, as shown next.

```

                Copyright (c) 1994 - 2002 ZyXEL Communications Corp.

                Prestige 650M Main Menu

Getting Started                                Advanced Management
  1. General Setup                               21. Filter Set Configuration
  3. TCP/IP Ethernet Setup                       23. System Password
  4. Internet Access Setup                       24. System Maintenance

Advanced Applications
  11. Remote Node Setup                          99. Exit

                Enter Menu Selection Number:_
    
```

**Figure 2-6 SMT Main Menu**

The SMT menu continually improves and changes with new firmware upgrades. Check the release notes at [www.zyxel.com](http://www.zyxel.com) to find the most recent upgrades and information.

## 2.9.1 System Management Terminal Interface Summary

**Table 2-3 Main Menu Summary**

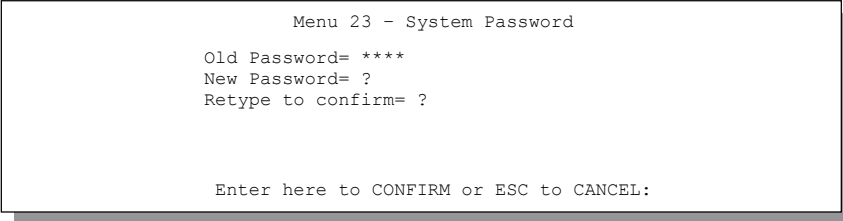
#	MENU TITLE	DESCRIPTION
1	General Setup	Use this menu to set up your general information.
3	TCP/IP Ethernet Setup	Use this menu to set up your LAN connection.
4	Internet Access Setup	A quick and easy way to set up an Internet connection.
11	Remote Node Setup	Use this menu to set up the Remote Node for LAN-to-LAN connection, including Internet connection.
21	Filter Set Configuration	Use this menu to set up filters to provide security, etc.
23	System Password	Use this menu to change your password.
24	System Maintenance	This menu provides system status, diagnostics, software upload, etc.
99	Exit	Use this to exit from SMT and return to a blank screen.

## 2.10 Changing the System Password

Change the Prestige default password by following the steps shown next.

**Step 1.** Enter 23 in the main menu to display **Menu 23 – System Password**, as shown next.

- Step 2.** Type your existing system password in the **Old Password** field, for example “1234”, and press [ENTER].



```
Menu 23 - System Password

Old Password= ****
New Password= ?
Retype to confirm= ?

Enter here to CONFIRM or ESC to CANCEL:
```

**Figure 2-7 Menu 23 – System Password**

- Step 3.** Type your new system password in the **New Password** field (up to 30 characters), and press [ENTER].
- Step 4.** Re-type your new system password in the **Retype to confirm** field for confirmation and press [ENTER].

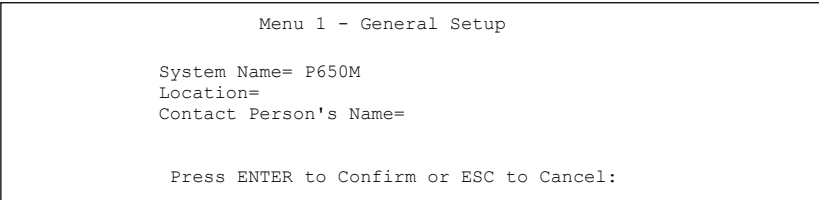
Note that as you type a password, the screen displays an “\*” for each character you type.

## 2.11 General Setup

**Menu 1 – General Setup** contains administrative and system-related information.

To enter menu 1 and fill in the required information, follow these steps:

- Step 1.** Enter 1 in main menu to display **Menu 1 – General Setup**.



```
Menu 1 - General Setup

System Name= P650M
Location=
Contact Person's Name=

Press ENTER to Confirm or ESC to Cancel:
```

**Figure 2-8 Menu 1–General Setup**

- Step 2.** The **Menu 1 – General Setup** screen appears, as shown next. Fill in the fields following the explanation provided in the table shown next.

**Table 2-4 General Setup Menu Fields**

<b>FIELD</b>	<b>DESCRIPTION</b>	<b>EXAMPLE</b>
System Name	Choose a descriptive name for identification purposes. This name can be up to 30 alphanumeric characters long. Spaces are not allowed, but dashes "-" and underscores "_" are accepted.	Prestige
Location (optional)	Enter the geographic location (up to 31 characters) of your Prestige.	MyHouse
Contact Person's Name (optional)	Enter the name (up to 30 characters) of the person in charge of this Prestige.	JohnDoe



# Chapter 3

## Internet Access

*This chapter shows you how to configure the LAN and WAN of your Prestige for Internet access.*

### 3.1 Factory Ethernet Defaults

The Ethernet parameters of the Prestige are preset in the factory with the following values:

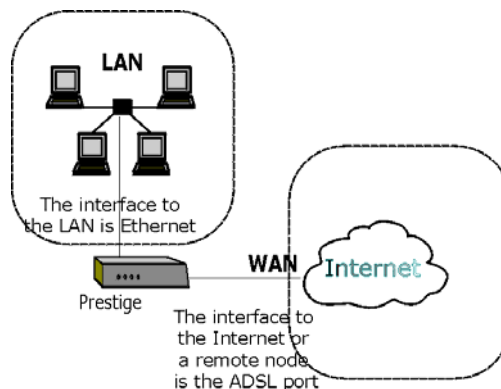
- ◆ IP address of 192.168.1.1 with subnet mask of 255.255.255.0 (24 bits).

### 3.2 LANs and WANs

A LAN (Local Area Network) is a computer network limited to the immediate area, usually the same building or floor of a building. A WAN (Wide Area Network), on the other hand, is an outside connection to another network or the Internet.

#### 3.2.1 LANs, WANs and the Prestige

The actual physical connection determines whether the Prestige ports are LAN or WAN ports. There are two separate IP networks, one inside, the LAN network; the other outside: the WAN network as shown next:



**Figure 3-1 LAN & WAN IPs**

## 3.3 TCP/IP Parameters

### 3.3.1 IP Address and Subnet Mask

Like houses on a street that share a common street name, the computers on a LAN share one common network number.

Where you obtain your network number depends on your particular situation. If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask.

If the ISP did not explicitly give you an IP network number, then most likely you have a single user account and the ISP will assign you a dynamic IP address when the connection is established. If this is the case, it is recommended that you select a network number from 192.168.0.0 to 192.168.255.0 (ignoring the trailing zero) and you must enable the Single User Account feature of the Prestige. The Internet Assigned Number Authority (IANA) reserved this block of addresses specifically for private use; please do *not* use any other number unless you are told otherwise. Let's say you select 192.168.1.0 as the network number; which covers 254 individual addresses, from 192.168.1.1 to 192.168.1.254 (zero and 255 are reserved). In other words, the first three numbers specify the network number while the last number identifies an individual computer on that network.

The subnet mask specifies the network number portion of an IP address. Your Prestige will compute the subnet mask automatically based on the IP address that you entered. You don't need to change the subnet mask computed by the Prestige unless you are instructed to do otherwise.

## 3.4 Ethernet Setup

This section describes how to configure the Ethernet using **Menu 3-Ethernet Setup**. From the main menu, enter 3 to display menu 3. Settings configured in **Menu 3-Ethernet Setup** apply to the LAN side of the modem only, please read the *Filter Set Configuration* chapter first, then return to this menu to define the filter sets.

## 3.5 Protocol Dependent Ethernet Setup

Depending on the protocols for your applications, you need to configure the respective Ethernet setup, as outlined next.

## 3.6 TCP/IP Ethernet Setup

This section describes how to configure the Ethernet (or LAN) using **Menu 3-TCP/IP Ethernet Setup**.

From the main menu, enter 3 to display the menu shown next.

```

Menu 3 - TCP/IP Ethernet Setup

TCP/IP Setup:
  IP Address: 192.168.1.1
  IP Subnet Mask: 255.255.255.0

Enter Menu Selection Number:

```

**Figure 3-2 Menu 3–Ethernet Setup**

**Table 3-1 TCP/IP Ethernet Setup Menu Fields**

FIELD	DESCRIPTION	EXAMPLE
TCP/IP Setup		
IP Address	Enter the (LAN) IP address of your Prestige in dotted decimal notation	<b>192.168.1.1</b> (default)
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.	<b>255.255.255.0</b> (default)
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.		

## 3.7 VPI and VCI

Be sure to use the correct Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) numbers supplied by your telephone company. The valid range for the VPI is 0 to 255 and for the VCI is 32 to 65535 (0 to 31 is reserved for local management of ATM traffic). Please see the appendix on *Virtual Circuit Topology* for more information.

## 3.8 Multiplexing

There are two conventions to identify what protocols the virtual circuit (VC) is carrying. Be sure to use the multiplexing method required by your ISP.

### 3.8.1 VC–based Multiplexing

In this case, by prior mutual agreement, each protocol is assigned to a specific virtual circuit, for example, VC1 carries IP, etc. VC-based multiplexing may be dominant in environments where dynamic creation of large numbers of ATM VCs is fast and economical.

## **3.8.2 LLC-based Multiplexing**

In this case one VC carries multiple protocols with protocol identifying information being contained in each packet header. Despite the extra bandwidth and processing overhead, this method may be advantageous if it is not practical to have a separate VC for each carried protocol, for example, if charging heavily depends on the number of simultaneous VCs.

## **3.9 Encapsulation**

Be sure to use the encapsulation method required by your ISP. The Prestige supports the following methods.

### **3.9.1 PPPoA**

Please refer to RFC 2364 for more information on PPP over ATM Adaptation Layer 5 (AAL5). Refer to RFC 1661 for more information on PPP.

### **3.9.2 RFC 1483**

RFC 1483 describes two methods for Multiprotocol Encapsulation over ATM Adaptation Layer 5 (AAL5). The first method allows multiplexing of multiple protocols over a single ATM virtual circuit (LLC-based multiplexing) and the second method assumes that each protocol is carried over a separate ATM virtual circuit (VC-based multiplexing). Please refer to the RFC for more detailed information.

## **3.10 IP Address Assignment**

A static IP is a fixed IP that your ISP gives you. A dynamic IP is not fixed; the ISP assigns you a different one each time.

## **3.11 Internet Access Configuration**

Menu 4 allows you to enter your Internet Access information in one screen. Menu 4 is actually a simplified setup for one of the remote nodes that you can access in menu 11. Before you configure your Prestige for Internet access, you need to collect your Internet account information from your ISP and telephone company.

Use the following table to record your Internet Account Information. Note that if you are using PPPoA encapsulation the only ISP information you need is a login name and password. If you are using RFC 1483, you do not need a login name or password.

**Table 3-2 Internet Account Information**

FIELD	DESCRIPTION	YOUR INFO
ISP's Name	Name of your ISP (optional).	
Encapsulation	<b>PPPoA</b> or <b>RFC 1483</b> .	
Multiplexing	<b>LLC-based</b> or <b>VC-based</b> . If this information is not given, use the default.	
VPI	Enter your Virtual Path Identifier here.	
VCI	Enter your Virtual Channel Identifier here.	
My Login	Enter the login name assigned by your ISP (for PPPoA only).	
My Password	Enter the password associated with your ISP assigned <b>My Login</b> (for PPPoA only).	

### 3.11.1 Traffic Shaping

Traffic Shaping is an agreement between the carrier and the subscriber to regulate the average rate and “burstiness” or fluctuation of data transmission over an ATM network. This agreement helps eliminate congestion, which is important for transmission of real time data such as audio and video connections.

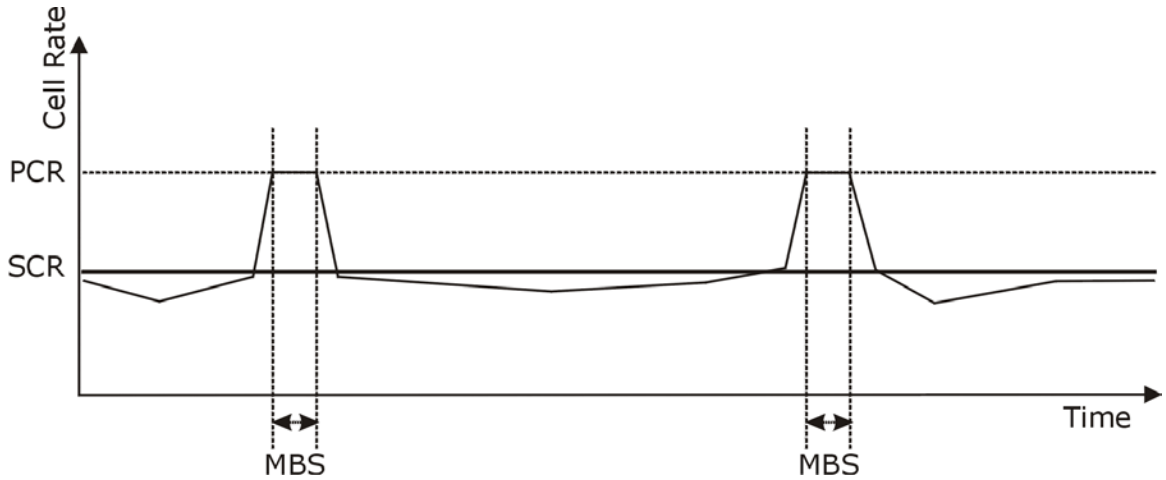
Peak Cell Rate (PCR) is the maximum rate at which the sender can send cells. This parameter may be lower (but not higher) than the maximum line speed. 1 ATM cell is 53 bytes (424 bits), so a maximum speed of 832 Kbps gives a maximum PCR of 1962 cells/sec. This rate is not guaranteed because it is dependent on the line speed.

Sustained Cell Rate (SCR) is the mean cell rate of a bursty, on-off traffic source that can be sent at the peak rate, and a parameter for burst-type traffic. SCR may not be greater than the PCR; the system default is 0 cells/sec.

Maximum Burst Size (MBS) is the maximum number of cells that can be sent at the PCR. After MBS is reached, cell rates fall below SCR until cell rate averages to the SCR again. At this time, more cells (up to the MBS) can be sent at the PCR again.

**If the PCR, SCR or MBS is set to the default of “0”, the system will assign a maximum value that correlates to your upstream line rate.**

The following figure illustrates the relationship between PCR, SCR and MBS.



**Figure 3-3 Example of Traffic Shaping**

**If the PCR is set to the default of “0”, the system will assign a maximum value that correlates to your upstream line rate.**

From the main menu, enter 4 to display **Menu 4–Internet Access Setup**, as shown next.

```
Menu 4 - Internet Access Setup

ISP's Name= Change Me
Encapsulation= RFC 1483
Multiplexing= LLC-based
VPI #= 0
VCI #= 33
ATM QoS Type= UBR
  Peak Cell Rate (PCR)= 0
  Sustain Cell Rate (SCR)= 0
  Maximum Burst Size (MBS)= 0
My Login= N/A
My Password= N/A

Press ENTER to confirm or ESC to cancel:
```

**Figure 3-4 Internet Access Setup**

The following table contains instructions on how to configure your Prestige for Internet access.

**Table 3-3 Internet Access Setup Menu Fields**

<b>FIELD</b>	<b>DESCRIPTION</b>	<b>EXAMPLE</b>
ISP's Name	Enter the name of your Internet Service Provider. This information is for identification purposes only.	Change Me
Encapsulation	Press [SPACE BAR] to select the method of encapsulation used by your ISP. Choices are <b>PPPoA</b> or <b>RFC 1483</b> .	<b>RFC 1483</b> (default)
Multiplexing	Press [SPACE BAR] to select the method of multiplexing used by your ISP. Choices are <b>VC-based</b> or <b>LLC-based</b> .	<b>LLC-based</b> (default)
VPI #	Enter the Virtual Path Identifier (VPI) that the telephone company gives you.	0
VCI #	Enter the Virtual Channel Identifier (VCI) that the telephone company gives you.	33
ATM QoS Type	Press [SPACE BAR] and select <b>CBR</b> (Continuous Bit Rate) to specify fixed (always-on) bandwidth. Select <b>UBR</b> (Unspecified Bit Rate) for applications that are non-time sensitive, such as e-mail.	<b>UBR</b> (default)
Peak Cell Rate (PCR)	This is the maximum rate at which the sender can send cells. Type the PCR.	0
Sustain Cell Rate (SCR)= 0	Sustained Cell Rate is the mean cell rate of a bursty, on-off traffic source that can be sent at the peak rate, and a parameter for burst-type traffic. Type the SCR; it must be less than the PCR.	0
Maximum Burst Size (MBS)= 0	Refers to the maximum number of cells that can be sent at the peak rate. Type the MBS. The MBS must be less than 65535.	0
My Login	Enter the login name that your ISP gives you.	N/A
My Password	Enter the password associated with the login name above.	N/A
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.		

If all your settings are correct your Prestige should connect automatically to the Internet. If the connection fails, note the error message that you receive on the screen and take the appropriate troubleshooting steps.





# Chapter 4

## Remote Node Configuration

*This chapter covers the parameters that are protocol-independent.*

### 4.1 Remote Node Setup

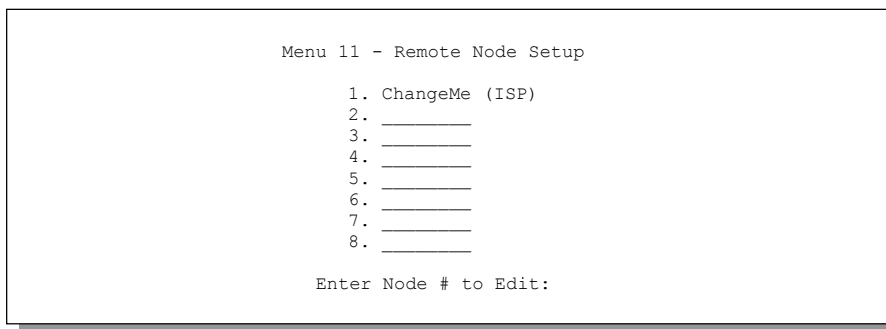
A remote node is required for placing calls to a remote gateway. A remote node represents both the remote gateway and the network behind it across a WAN connection. When you use menu 4 to set up Internet access, you are configuring one of the remote nodes.

This section describes the protocol-independent parameters for a remote node.

#### 4.1.1 Remote Node Profile

To configure a remote node, follow these steps:

- Step 1.** From the main menu, enter 11 to display **Menu 11-Remote Node Setup**.
- Step 2.** When menu 11 appears, as shown in the following figure, type the number of the remote node that you want to configure.



**Figure 4-1 Menu 11–Remote Node Setup**

## 4.1.2 Encapsulation and Multiplexing Scenarios

For Internet access you should use the encapsulation and multiplexing methods used by your ISP. For LAN-to-LAN applications, e.g., branch office and corporate headquarters, prior agreement on methods is necessary because encapsulation and multiplexing cannot be automatically determined. Which methods to use depends on how many VCs you have and how many different network protocols you need. Here are some examples of more suitable combinations in such an application.

Scenario 1. One VC, Multiple Protocols

**PPPoA** (RFC-2364) encapsulation with **VC-based** multiplexing is the best combination because no extra protocol identifying headers are needed. The **PPPoA** protocol already contains this information.

Scenario 2. One VC, One Protocol (IP)

Selecting **RFC 1483** encapsulation with **VC-based** multiplexing requires the least amount of overhead (0 octets). However, if there is a potential need for multiple protocol support in the future, it may be safer to select **PPPoA** encapsulation instead of **RFC 1483**, so you do not need to reconfigure either computer later.

Scenario 3. Multiple VCs

If you have an equal number (or more) of VCs than the number of protocols, then select **RFC 1483** encapsulation and **VC-based** multiplexing.

```
Menu 11.1 - Remote Node Profile

Rem Node Name= ChangeMe          Bridge:
Active= Yes                       Ethernet Addr Timeout(min)= 0
                                   VPI #= 0
Encapsulation= RFC 1483          VCI #= 32
Multiplexing= LLC-based

Incoming:                          ATM QoS Type= UBR
  Rem Login= N/A                  Peak Cell Rate (PCR)= 0
  Rem Password= N/A              Sustain Cell Rate (SCR)= 0
Outgoing:                          Maximum Burst Size (MBS)= 0
  My Login= N/A                  Filter Sets:
  My Password= N/A               Input Device Filters=
  Authen= N/A                    Output Device Filters=

Press ENTER to Confirm or ESC to Cancel:
```

**Figure 4-2 Menu 11.1-Remote Node Profile**

In **Menu 11.1–Remote Node Profile**, fill in the fields as described in the following table.

**Table 4-1 Remote Node Profile Menu Fields**

<b>FIELD</b>	<b>DESCRIPTION</b>	<b>EXAMPLE</b>
Rem Node Name	Type a unique, descriptive name of up to eight characters for this node.	Change Me
Active	Press [SPACE BAR] and then [ENTER] to select <b>Yes</b> to activate or <b>No</b> to deactivate this node. Inactive nodes are displayed with a minus sign “-“ in SMT menu 11.	<b>Yes</b> (default)
Encapsulation	<b>PPPoA</b> refers to RFC-2364 (PPP Encapsulation over ATM Adaptation Layer 5). If you select <b>RFC 1483</b> (Multiprotocol Encapsulation over ATM Adaptation Layer 5) then <b>Rem Login</b> , <b>Rem Password</b> , <b>My Login</b> and <b>My Password</b> fields are not applicable ( <b>N/A</b> ).	<b>RFC 1483</b> (default)
Multiplexing	Press [SPACE BAR] and then [ENTER] to select the method of multiplexing that your ISP uses, either <b>VC-based</b> or <b>LLC-based</b> .	<b>LLC-based</b> (default)
Incoming: Rem Login	Type the login name that this remote node will use to call your Prestige. The login name and the <b>Rem Password</b> will be used to authenticate this node.	
Rem Password	Type the password used when this remote node calls your Prestige.	
Outgoing: My Login	Type the login name assigned by your ISP when the Prestige calls this remote node.	
My Password	Type the password assigned by your ISP when the Prestige calls this remote node.	
Authen	This field sets the authentication protocol used for outgoing calls. Options for this field are:  <b>CHAP/PAP</b> – Your Prestige will accept either <b>CHAP</b> or <b>PAP</b> when requested by this remote node.  <b>CHAP</b> – accept <b>CHAP</b> (Challenge Handshake Authentication Protocol) only.  <b>PAP</b> – accept <b>PAP</b> (Password Authentication Protocol) only.	CHAP/PAP
Bridge:		
Ethernet Addr Timeout(min)	Type the time (in minutes) for the Prestige to retain the Ethernet Address information in its internal tables while the line is down. If this information is retained, your Prestige will not have to recompile the tables when the line comes back up.	0

**Table 4-1 Remote Node Profile Menu Fields**

FIELD	DESCRIPTION	EXAMPLE
VPI #	Enter the Virtual Path Identifier (VPI) that the telephone company gives you.	0
VCI #	Enter the Virtual Channel Identifier (VCI) that the telephone company gives you.	32
ATM QoS Type	Press [SPACE BAR] and select <b>CBR</b> (Continuous Bit Rate) to specify fixed (always-on) bandwidth. Select <b>UBR</b> (Unspecified Bit Rate) for applications that are non-time sensitive, such as e-mail.	<b>UBR</b>
Peak Cell Rate (PCR)	This is the maximum rate at which the sender can send cells. Type the PCR.	0
Sustain Cell Rate (SCR)= 0	Sustained Cell Rate is the mean cell rate of a bursty, on-off traffic source that can be sent at the peak rate, and a parameter for burst-type traffic. Type the SCR; it must be less than the PCR.	0
Maximum Burst Size (MBS)= 0	Refers to the maximum number of cells that can be sent at the peak rate. Type the MBS. The MBS must be less than 65535.	0
Filter Sets:		
Input Device Filters	Apply filters for incoming traffic. See <i>Chapter 5</i> for information on filters.	
Output Device Filters	Apply filters for traffic leaving the Prestige. See <i>Chapter 5</i> for information on filters.	
When you have completed this menu, press [ENTER] at the prompt "Press [ENTER] to confirm or [ESC] to cancel" to save your configuration or press [ESC] to cancel and go back to the previous screen.		

### 4.1.3 Outgoing Authentication Protocol

For obvious reasons, you should employ the strongest authentication protocol possible. However, some vendors' implementation includes specific authentication protocol in the user profile. It will disconnect if the negotiated protocol is different from that in the user profile, even when the negotiated protocol is stronger than specified. If the peer disconnects right after a successful authentication, make sure that you specify the correct authentication protocol when connecting to such an implementation.

# Chapter 5

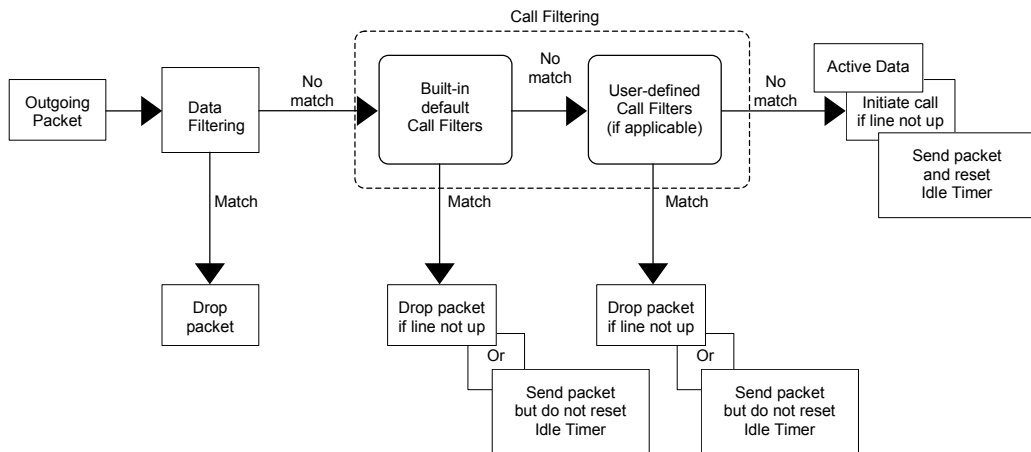
## Filter Set Configuration

*This chapter shows you how to create and apply filters.*

### 5.1 About Filtering

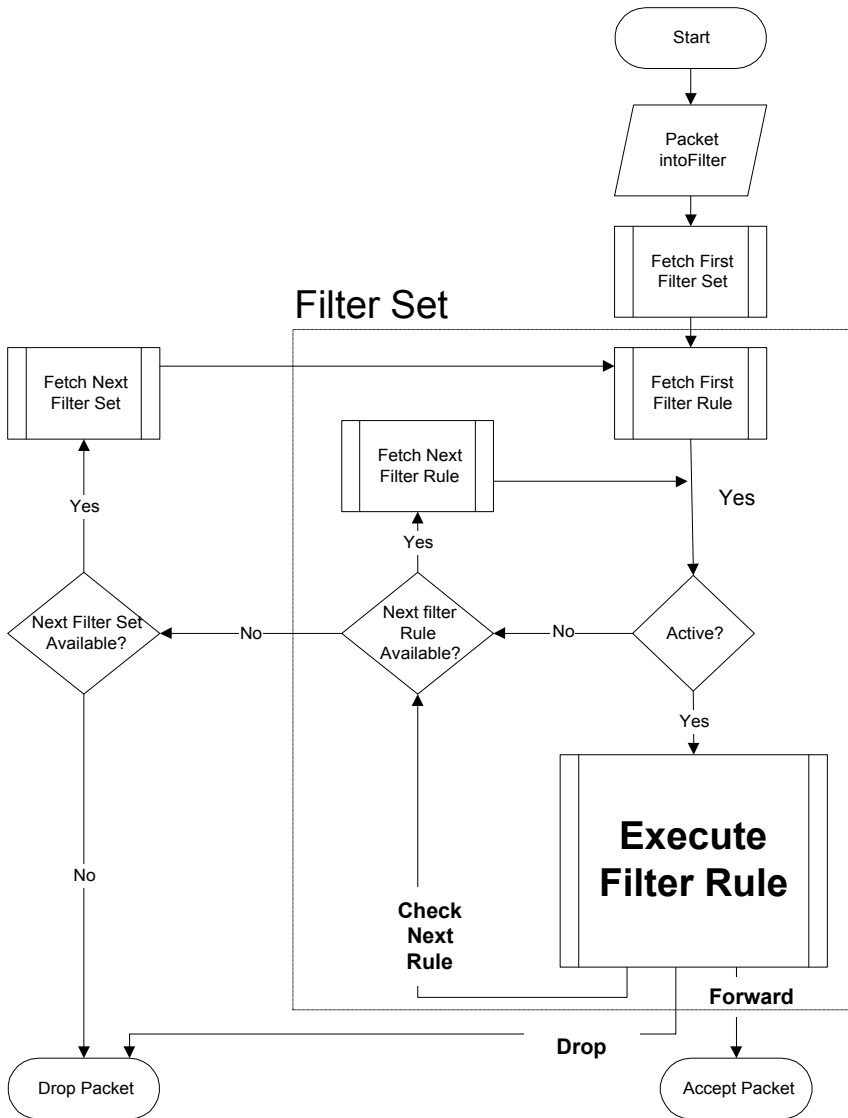
Your Prestige uses filters to decide whether or not to allow passage of data packets. Data filtering examines the data to determine if the packet should be allowed to pass. Data filters are divided into incoming and outgoing filters, depending on the direction of the packet relative to a port. Data filtering can be applied on either the WAN side or the Ethernet side.

Outgoing packets undergo data filtering before they encounter call filtering. Call filters are divided into two groups, the built-in call filters and user-defined call filters. Your Prestige has built-in call filters that prevent administrative, for example, RIP packets from triggering calls. These filters are always enabled and not accessible to you. Your Prestige applies the built-in filters first and then the user-defined call filters, if applicable, as illustrated in the figure shown next.



**Figure 5-1 Outgoing Packet Filtering Process**

The following figure illustrates the logic flow when executing a filter rule.



**Figure 5-2 Filter Rule Process**

You can apply up to four filter sets to a particular port to block various types of packets. Because each filter set can have up to six rules, you can have a maximum of 24 rules active for a single port.

For incoming packets, your Prestige applies data filters only. Packets are processed depending on whether a match is found. The following sections describe how to configure filter sets.

## 5.2 Configuring a Filter Set

To configure a filter set, follow the steps shown next.

**Step 1.** Enter 21 in the main menu to display **Menu 21-Filter Set Configuration**

```

Menu 21 - Filter Set Configuration

Filter          Filter
Set #          Set #
-----          -----
1              7
2              8
3              9
4              10
5              11
6              12

Enter Filter Set Number to Configure= 0

Edit Comments= N/A

Press ENTER to Confirm or ESC to Cancel:

```

**Figure 5-3 Menu 21–Filter Set Configuration**

- Step 2.** Type the filter set to configure (no. 1 to 12) and press [ENTER].
- Step 3.** Type a descriptive name or comment in the **Edit Comments** field and press [ENTER].
- Step 4.** Press [ENTER] at the message “Press ENTER to confirm...” to display **Menu 21.1–Filter Rules Summary** (that is, if you selected filter set 1 in menu 21).

```

Menu 21.1 - Filter Rules Summary

# A Type                Filter Rules                M m n
-----
1 N
2 N
3 N
4 N
5 N
6 N

Enter Filter Rule Number (1-6) to Configure:

```

**Figure 5-4 Menu 21.1–Filter Rules Summary**

## 5.2.1 Filter Rules Summary Menus

The following tables briefly describe the abbreviations used in menus 21.1 and 21.2.

**Table 5-1 Abbreviations Used in the Filter Rules Summary Menu**

FIELD	DESCRIPTION
#	The filter rule number: 1 to 6.
A	Active: “Y” means the rule is active. “N” means the rule is inactive.
Type	The type of filter rule: “GEN” for Generic
Filter Rules	These parameters are displayed here.
M	More. “Y” means there are more rules to check which form a rule chain with the present rule. An action cannot be taken until the rule chain is complete.  “N” means there are no more rules to check. You can specify an action to be taken for instance, forward the packet, drop the packet or check the next rule. For the latter, the next rule is independent of the rule just checked.
m	Action Matched. “F” means to forward the packet immediately and skip checking the remaining rules. “D” means to drop the packet. “N” means to check the next rule.
n	Action Not Matched. “F” means to forward the packet immediately and skip checking the remaining rules. “D” means to drop the packet. “N” means to check the next rule.



**Table 5-2 Rule Abbreviations Used**

FILTER TYPE	DESCRIPTION
GEN	
Off	Offset
Len	Length

## 5.3 Generic Filter Rule

The purpose of generic rules is to allow you to filter non-IP packets. For generic rules, the Prestige treats a packet as a byte stream as opposed to an IP packet. You specify the portion of the packet to check with the Offset (from 0) and the Length fields, both in bytes. The Prestige applies the Mask (bit-wise ANDing) to the data portion before comparing the result against the Value to determine a match. The Mask and Value are specified in hexadecimal numbers.

Two hexadecimal digits represent a byte, so if the length is 4, the value in either field will take 8 digits, e.g., FFFFFFFF.

### 5.3.1 Example Generic Filter Rule Configuration

- Step 1.** Type a filter set number in **Menu 21–Filter Set Configuration**, (“5” in this example), and press [ENTER] to display menu 21.5.
- Step 2.** Type a filter rule number in **Menu 21.5–Filter Rules Summary**, (“1” in this example), and press [ENTER] to display **Menu 21.5.1–Generic Filter Rule** (shown next).

```

Menu 21.5.1 - Generic Filter Rule

Filter #: 5,1

Active= No
Offset= 0
Length= 0
Mask= N/A
Value= N/A
More= No           Log= None
Action Matched= Check Next Rule
Action Not Matched= Check Next Rule

Press ENTER to Confirm or ESC to Cancel:

Press Space Bar to Toggle.

```

**Figure 5-5 Menu 21.5.1–Generic Filter Rule**

The table, shown next, describes the fields in **Menu 21.5.1 –Generic Filter Rule**.

**Table 5-3 Menu 21.5.1 – Generic Filter Rule Fields**

<b>FIELD</b>	<b>DESCRIPTION</b>	<b>EXAMPLE</b>
Filter #	This is the filter set, filter rule coordinates, for instance, 2, 3 refers to the second filter set and the third rule of that set.	5,1
Active	Select <b>Yes</b> to turn on or <b>No</b> to turn off the filter rule.	<b>No</b> (default)
Offset	Type the starting byte of the data portion in the packet that you want to compare. The range for this field is from 0 to 255.	0 (default)
Length	Type the byte count of the data portion in the packet that you want to compare. The range for this field is 0 to 8.	0 (default)
Mask	Type the mask (in Hexadecimal) to apply to the data portion before comparison.	
Value	Type the value (in Hexadecimal) to compare with the data portion.	
More	If <b>Yes</b> , a matching packet is passed to the next filter rule before an action is taken or else the packet is disposed of according to the action fields.  If <b>More</b> is <b>Yes</b> , then <b>Action Matched</b> and <b>Action Not Matched</b> will be <b>N/A</b> .	<b>No</b> (default)
Log	Select the logging option from the following:  <b>None</b> – No packets will be logged. <b>Action Matched</b> – Only matching packets and rules will be logged. <b>Action Not Matched</b> – Only packets that do not match the rule parameters will be logged. <b>Both</b> – All packets will be logged.	<b>None</b>
Action Matched	Select the action for a matching packet. Choices are <b>Check Next Rule</b> , <b>Forward</b> or <b>Drop</b> .	<b>Check Next Rule</b> (default)
Action Not Matched	Select the action for a packet not matching the rule. Choices are <b>Check Next Rule</b> , <b>Forward</b> or <b>Drop</b> .	<b>Check Next Rule</b> (default)
When you have completed this menu, press [ENTER] at the prompt “Press [ENTER] to confirm or [ESC] to cancel” to save your configuration or press [ESC] to cancel and go back to the previous screen.		

## 5.4 Filter Configuration Example

Let us look at a sample filter.

**Step 1.** Enter 21 from the main menu to open **Menu 21-Filter Set Configuration**.

- Step 2.** Enter the index of the filter set you want to configure (in this case 3).
- Step 3.** Enter a descriptive name or comment in the **Edit Comments** field (in this case, test).
- Step 4.** Press [ENTER] at the message “Press [ENTER] to confirm or [ESC] to cancel” to open **Menu 21.3-Filter Rules Summary**.
- Step 5.** Enter 1 to configure the first filter rule. When you press [ENTER] to confirm, the following screen appears. Note that there is only one filter rule in this set. Make the entries in this menu as shown next.

The screenshot shows the following text:

```

Menu 21.3.1 - Generic Filter Rule
Filter #: 3,1
Active= Yes
Offset= 9
Length= 4
Mask= 789abcde
Value= 789abcde
More= No
Log= None
Action Matched= Drop
Action Not Matched= Forward
Press ENTER to Confirm or ESC to Cancel:

```

Callout boxes provide the following explanations:

- Active= Yes:** Select **Yes** to make the rule active.
- Offset= 9:** This is the first byte of the data portion in the packet that you want to compare.
- Length= 4:** This is the length (in bytes) of the data portion in the packet that you want to compare.
- Mask= 789abcde:** The Mask is applied to the data portion before comparing the result against the Value to determine a match. It is specified in hexadecimal, and it takes two hexadecimal digits to represent a byte i.e., Length is 4, therefore there are 8 hex numbers.
- Value= 789abcde:** Enter the value (in hex) to compare with the data portion.
- Log= None:** This setting logs all packets that match these rule parameters.
- Action Matched= Drop:** Select **Drop** here so that the packet will be dropped if the action is not matched.
- Action Not Matched= Forward:** Select **Forward** here so that the packet will be forwarded if the action is matched.

Additional callouts include:

- There are no more rules to check in this filter set.
- Press ENTER to Confirm or ESC to Cancel:

**Figure 5-6 Sample Filter– Menu 21.3.1**

When you press [ENTER] to confirm, you will see the next screen. Note that there is only one filter rule in this set.

Menu 21.3 - Filter Rules Summary

#	A	Type	Filter Rules	M	m	n
1	Y	Gen	Off=9, Len=4, Mask=789abcde, Value=789abcde	N	F	D
2	N					
3	N					
4	N					
5	N					
6	N					

Enter Filter Rule Number (1-6) to Configure: 1

This shows what you configured in the previous menu.

**M = N** means an action can be taken immediately. The action is to drop the packet (**m = D**) if the action is matched and to forward the packet immediately (**n = F**) if the action is not matched no matter whether there are more rules to be checked (there are not in this example).

**Figure 5-7 Sample Filter Rules Summary – Menu 21.3**

After you have created the filter set, you must apply it.

- Step 1.** Enter 11, in the main menu, to display menu 11.
- Step 2.** Enter the remote node number to edit.
- Step 3.** Make sure the **Edit Filter Sets** field is set to **Yes** and press [ENTER] to display menu 11.5.
- Step 4.** Apply the example filter set (for example, filter set 3) in this menu as shown in the next section.

## 5.5 Applying Filters

This section shows you where to apply the filters after you design them. Filter rules may be configured in menu 21.

**Table 5-4 Filter Set Types**

FILTER SETS	DESCRIPTION
Input Filter Sets:	Apply filters for incoming traffic. You may apply device filter rules. See earlier in this chapter for information on filters.
Output Filter Sets:	Apply filters for traffic leaving the Prestige. You may apply device filters. See earlier in this section for information on filters.

## 5.5.1 Remote Node Filters

Go to menu 11.1 (shown next) and type the number(s) of the filter set(s) as appropriate. You can cascade up to four filter sets by typing their numbers separated by commas.

```
Menu 11.1 - Remote Node Profile

Rem Node Name= Change Me      Bridge:
Active= Yes                   Ethernet Addr Timeout(min)= 0
                               VPI #= 0
Encapsulation= RFC 1483      VCI #= 33
Multiplexing= LLC-based      ATM QoS Type= CBR
Incoming:                     Peak Cell Rate (PCR)= 0
  Rem Login= N/A              Sustain Cell Rate (SCR)= 0
  Rem Password= N/A           Maximum Burst Size (MBS)= 0
Outgoing:
  My Login= N/A               Filter Sets:
  My Password= N/A            Input Device Filters=
  Authen= N/A                 Output Device Filters=

Press ENTER to Confirm or ESC to Cancel:
```

**Figure 5-8 Filtering Remote Node Traffic**



# Chapter 6

## System Information and Diagnosis

*This chapter covers the information and diagnostic tools in SMT menus 24.1 to 24.4 and 24.8.*

These tools include updates on system status, port status and upgrades for the system software. This chapter describes how to use these tools in detail.

Enter 24 in the main menu to display **Menu 24 – System Maintenance**, shown next.

```
Menu 24 - System Maintenance

1. System Status
2. System Information and Console Port Speed
4. Diagnostic
5. Backup Configuration
6. Restore Configuration
7. Upload Firmware
8. Command Interpreter Mode

Enter Menu Selection Number:
```

**Figure 6-1 Menu 24 – System Maintenance**

### 6.1 System Status

System Status displays status and statistics of the Prestige. **Menu 24.1 – System Maintenance – Status** is meant for diagnostic purposes.

From the main menu, enter 24 to display **Menu 24 – System Maintenance**. Enter 1 to display **Menu 24.1 – System Maintenance – Status**, shown next.

```

Menu 24.1 - System Maintenance - Status                                01:30:36
                                                                    Thu. Jan. 01, 1970

Node-Lnk Status      TxPkts    RxPkts    Errors  Tx B/s  Rx B/s    Up Time
1-1483  N/A           0          0         0       0        0      0:00:00
2       N/A           0          0         0       0        0      0:00:00
3       N/A           0          0         0       0        0      0:00:00
4       N/A           0          0         0       0        0      0:00:00
5       N/A           0          0         0       0        0      0:00:00
6       N/A           0          0         0       0        0      0:00:00
7       N/A           0          0         0       0        0      0:00:00
8       N/A           0          0         0       0        0      0:00:00

My WAN IP (from ISP): 0.0.0.0

Ethernet:                               WAN:
Status: 100M/Full Duplex Tx Pkts: 483   Line Status: Wait for Init
Collisions: 0                Rx Pkts: 581   Upstream Speed: 0 kbps
CPU Load = 2.76%             Downstream Speed: 0 kbps

                                Press Command:
                                COMMANDS: 1-Reset Counters  ESC-Exit
    
```

**Figure 6-2 Menu 24.1 – System Maintenance – Status**

The following table describes the fields present in **Menu 24.1 – System Maintenance – Status**.

**Table 6-1 System Maintenance – Status Menu Fields**

FIELD	DESCRIPTION
Node-Lnk	This is the node index number and link type. Link types are: <b>PPPoA</b> and <b>1483</b> .
Status	Shows the status of the remote node.
TxPkts	The number of transmitted packets to this remote node.
RxPkts	The number of received packets from this remote node.
Errors	The number of error packets on this connection.
Tx B/s	Shows the transmission rate in bytes per second.
Rx B/s	Shows the receiving rate in bytes per second.
Up Time	Time this channel has been connected to the current remote node.
My WAN IP (from ISP)	Shows the WAN IP address you entered from your ISP.
Ethernet	Shows statistics for the LAN.
Status	Shows the current status of the LAN.
Collisions	Number of collisions.



**Table 6-1 System Maintenance – Status Menu Fields**

FIELD	DESCRIPTION
CPU Load	Specifies the percentage of CPU utilization.
WAN	Shows statistics for the WAN.
Tx Pkts	The number of transmitted packets to the LAN.
Rx Pkts	The number of received packets from the LAN.
Line Status	Shows the current status of the xDSL line which can be <b>Up</b> or <b>Down</b> .
Upstream Speed	Shows the current upstream rate.
Downstream Speed	Shows the current downstream rate.
Commands	
1	Enter 1 to reset the counters
ESC	Press [ESC] to display the previous screen.

## 6.2 System Information and Console Port Speed

This section describes your system and allows you to choose different console port speeds. To display the System Information and Console Port Speed menu, follow the steps shown next.

- Step 1.** Enter 24 to display **Menu 24 – System Maintenance**.
- Step 2.** Enter 2 to display **Menu 24.2 – System Information and Console Port Speed**.
- Step 3.** From this menu you have two choices as shown in the next figure:

```

Menu 24.2 - System Information and Console Port Speed
  1. System Information
  2. Console Port Speed

Please enter selection:

```

**Figure 6-3 Menu 24.2 – System Information and Console Port Speed**

**Console port speed is included here for use by experienced technicians only.**

## 6.2.1 System Information

Enter 1 in menu 24.2 to display the screen shown next.

```

Menu 24.2.1 - System Maintenance - Information

Name: P650M
Routing: BRIDGE
ZyNOS F/W Version: V3.40(FI.1)b3 | 08/06/2002
ADSL Chipset Vendor: Alcatel, Version 4.9.2
Standard: Multi-Mode

LAN
Ethernet Address: 00:a0:c5:01:23:45
IP Address: 192.168.1.1
IP Mask: 255.255.255.0
DHCP: None

Press ESC or RETURN to Exit:
    
```

**Figure 6-4 Menu 24.2.1 – System Maintenance – Information**

**Table 6-2 Fields in System Maintenance**

FIELD	DESCRIPTION
Name	Displays the system name of your Prestige. This information can be changed in <b>Menu 1 – General Setup</b> .
Routing	This field shows the kind of routing used by the Prestige.
ZyNOS F/W Version	Refers to the ZyNOS (ZyXEL Network Operating System) system firmware version. ZyNOS is a registered trademark of ZyXEL Communications Corporation.
ADSL Chipset Vendor	This is the chipset used in the Prestige.
Version	Displays the ADSL Chipset version.
Standard	This refers to the operational protocol the Prestige and the DSLAM (Digital Subscriber Line Access Multiplexer) are using.
LAN	
Ethernet Address	Refers to the Ethernet MAC (Media Access Control) of your Prestige.
IP Address	This is the IP address of the Prestige in dotted decimal notation.
IP Mask	This shows the subnet mask of the Prestige.
DHCP	This field shows the DHCP setting of the Prestige.

## 6.3 Diagnostic

The diagnostic facility allows you to test the different aspects of your Prestige to determine if it is working properly. Menu 24.4 allows you to choose among various types of diagnostic tests to evaluate your system. Follow the procedure next display menu 24.4.

**Step 1.** From the main menu, enter 24 to display **Menu 24 – System Maintenance**.

**Step 2.** Enter 4 to display **Menu 24.4 – System Maintenance – Diagnostic**, shown next.

```

Menu 24.4 - System Maintenance - Diagnostic

xDSL                               System
1.  Reset xDSL                       21. Reboot System
                                       22. Command Mode

TCP/IP
12. Ping Host
Enter Menu Selection Number:

Host IP Address= N/A

```

**Figure 6-5 Menu 24.4 – System Maintenance – Diagnostic**

The following table describes the diagnostic tests available in menu 24.4 for and the connections.

**Table 6-3 System Maintenance Menu – Diagnostic**

FIELD	DESCRIPTION
Reset xDSL	Type 1 to re-initialize the xDSL link to the telephone company.
Reboot System	Type 21 to reboot the Prestige.
Ping Host	Enter 12, enter the IP address of the host in the <b>Host IP Address</b> field and then press [ENTER] to ping a host IP address.
Host IP Address	Enter the host IP address that you want to ping.
Command Mode	Type 22 to test and diagnose your Prestige using specified commands.

## 6.4 Command Interpreter Mode

The Command Interpreter (CI) is a part of the main system firmware. The CI provides much of the same functionality as the SMT, while adding some low-level setup and diagnostic functions. Access the CI by using Telnet. See the included disk or the zyxel.com web site for more detailed information on CI commands.

Enter 8 from **Menu 24 – System Maintenance**. A list of valid commands can be found by typing `help` or `?` at the command prompt. Type “`exit`” to return to the SMT main menu when finished.

```
Menu 24 - System Maintenance

1. System Status
2. System Information and Console Port Speed
4. Diagnostic
5. Backup Configuration
6. Restore Configuration
7. Firmware Update
8. Command Interpreter Mode

Enter Menu Selection Number:
```

**Figure 6-6 Command Mode in Menu 24**

```
Copyright (c) 1994 - 2002 ZyXEL Communications Corp.
P650M> ?
Valid commands are:
sys          exit          device        ether
wan          ip            ppp           bridge
hdap
P650M>
```

**Figure 6-7 Valid Commands**

# Chapter 7

## Firmware and Configuration File Maintenance

*This chapter shows you how to back up and restore your configuration file as well as upload new firmware and a new configuration file.*

### 7.1 Filename Conventions

The configuration file (often called the romfile or rom-0) contains the factory default settings in the menus such as password, DHCP Setup, TCP/IP Setup, etc. It arrives from ZyXEL with a “rom” filename extension. Once you have customized the Prestige's settings, they can be saved back to your computer under a filename of your choosing.

ZyNOS (ZyXEL Network Operating System sometimes referred to as the “ras” file) is the system firmware and has a “bin” filename extension. With many FTP and TFTP clients, the filenames are similar to those seen next.

```
ftp> put firmware.bin ras
```

This is a sample FTP session showing the transfer of the computer file " firmware.bin" to the Prestige.

```
ftp> get rom-0 config.cfg
```

This is a sample FTP session saving the current configuration to the computer file “config.cfg”.

If your (T)FTP client does not allow you to have a destination filename different than the source, you will need to rename them as the Prestige only recognizes “rom-0” and “ras”. Be sure you keep unaltered copies of both files for later use.

The following table is a summary. Please note that the internal filename refers to the filename on the Prestige and the external filename refers to the filename not on the Prestige, that is, on your computer, local network or FTP site and so the name (but not the extension) may vary. After uploading new firmware, see the **ZyNOS F/W Version** field in **Menu 24.2.1 – System Maintenance – Information** to confirm that you have uploaded the correct firmware version. The AT command is the command you enter after you press “y” when prompted in the SMT menu to go into debug mode.

**Table 7-1 Filename Conventions**

FILE TYPE	INTERNAL NAME	EXTERNAL NAME	DESCRIPTION
Configuration File	Rom-0	This is the configuration filename on the Prestige. Uploading the rom-0 file replaces the entire ROM file system, including your Prestige configurations, system-related data (including the default password), the error log and the trace log.	*.rom
Firmware	Ras	This is the generic name for the ZyNOS firmware on the Prestige.	*.bin

## 7.2 Backup Configuration

**The Prestige displays messages explaining how to backup, restore and upload files via Telnet in menus 24.5, 24.6, 24. 7.1 and 24.7.2.**

Enter 5 from **Menu 24 - System Maintenance** to backup the current Prestige configuration on your computer. Backup is highly recommended once your Prestige is functioning properly. FTP is the preferred methods for backing up your current configuration to your computer since it is fastest. Any serial communications program should work fine; however, you must use Xmodem protocol to perform the download/upload and you don't have to rename the files.

Please note that terms "download" and "upload" are relative to the computer. Download means to transfer from the Prestige to the computer, while upload means from your computer to the Prestige.

## 7.2.1 Backup Configuration

Follow the instructions as shown in the next screen.

```
Menu 24.5 - Backup Configuration

To transfer the configuration file to your computer, follow the procedure
below:

1. Launch the FTP client on your computer.
2. Type "open" and the IP address of your system. Then type "root" and
   SMT password as requested.
3. Locate the 'rom-0' file.
4. Type 'get rom-0' to back up the current system configuration to your
   computer.

For details on FTP commands, please consult the documentation of your FTP
client program. For details on backup using TFTP (note that you must remain
in this menu to back up using TFTP), please see your user manual.
```

**Figure 7-1 Telnet in Menu 24.5**

## 7.2.2 Using the FTP Command from the Command Line

- Step 1.** Launch the FTP client on your computer.
- Step 2.** Enter “open”, followed by a space and the IP address of your Prestige.
- Step 3.** Press [ENTER] when prompted for a username.
- Step 4.** Enter your password as requested (the default is “1234”).
- Step 5.** Enter “bin” to set transfer mode to binary.
- Step 6.** Use “get” to transfer files from the Prestige to the computer, for example, “get rom-0 config.rom” transfers the configuration file on the Prestige to your computer and renames it “config.rom”. See earlier in this chapter for more information on filename conventions.
- Step 7.** Enter “quit” to exit the ftp prompt.

## 7.2.3 Example of FTP Commands from the Command Line

```

331 Enter PASS command
Password:
230 Logged in
ftp> bin
200 Type I OK
ftp> get rom-0 zyxel.rom
200 Port command okay
150 Opening data connection for STOR ras
226 File received OK
ftp: 16384 bytes sent in 1.10Seconds 297.89Kbytes/sec.
ftp> quit
    
```

**Figure 7-2 FTP Session Example**

## 7.2.4 GUI-based FTP Clients

The following table describes some of the commands that you may see in GUI-based FTP clients.

**Table 7-2 General Commands for GUI-based FTP Clients**

COMMAND	DESCRIPTION
Host Address	Enter the address of the host server.
Login Type	<p>Anonymous.</p> <p>This is when a user I.D. and password is automatically supplied to the server for anonymous access. Anonymous logins will work only if your ISP or service administrator has enabled this option.</p> <p>Normal.</p> <p>The server requires a unique User ID and Password to login.</p>
Transfer Type	Transfer files in either ASCII (plain text format) or in binary mode.
Initial Remote Directory	Specify the default remote directory (path).
Initial Local Directory	Specify the default local directory (path).

## 7.2.5 Backup Configuration Using TFTP

The Prestige supports the up/downloading of the firmware and the configuration file using TFTP (Trivial File Transfer Protocol) over LAN. Although TFTP should work over WAN as well, it is not recommended.

To use TFTP, your computer must have both telnet and TFTP clients. To backup the configuration file, follow the procedure shown next.



- Step 1.** Use Telnet from your computer to connect to the Prestige and log in. Because TFTP does not have any security checks, the Prestige records the IP address of the telnet client and accepts TFTP requests only from this address.
- Step 2.** Put the SMT in command interpreter (CI) mode by entering 8 in **Menu 24 - System Maintenance**.
- Step 3.** Enter command “sys stdio 0” to disable the SMT timeout, so the TFTP transfer will not be interrupted. Enter command “sys stdio 5” to restore the five-minute SMT timeout (default) when the file transfer is complete.
- Step 4.** Launch the TFTP client on your computer and connect to the Prestige. Set the transfer mode to binary before starting data transfer.
- Step 5.** Use the TFTP client (see the example below) to transfer files between the Prestige and the computer. The file name for the configuration file is “rom-0” (rom-zero, not capital o).

Note that the telnet connection must be active and the SMT in CI mode before and during the TFTP transfer. For details on TFTP commands (see following example), please consult the documentation of your TFTP client program. For UNIX, use “get” to transfer from the Prestige to the computer and “binary” to set binary transfer mode.

### 7.2.6 TFTP Command Example

The following is an example TFTP command:

```
tftp [-i] host get rom-0 config.rom
```

where “i” specifies binary image transfer mode (use this mode when transferring binary files), “host” is the Prestige IP address, “get” transfers the file source on the Prestige (rom-0, name of the configuration file on the Prestige) to the file destination on the computer and renames it config.rom.

### 7.2.7 GUI-based TFTP Clients

The following table describes some of the fields that you may see in GUI-based TFTP clients.

**Table 7-3 General Commands for GUI-based TFTP Clients**

COMMAND	DESCRIPTION
Host	Enter the IP address of the Prestige. 192.168.1.1 is the Prestige’s default IP address when shipped.
Send/Fetch	Use “Send” to upload the file to the Prestige and “Fetch” to back up the file on your computer.
Local File	Enter the path and name of the firmware file (*.bin extension) or configuration file (*.rom extension) on your computer.

**Table 7-3 General Commands for GUI-based TFTP Clients**

<b>COMMAND</b>	<b>DESCRIPTION</b>
Remote File	This is the filename on the Prestige. The filename for the firmware is "ras" and for the configuration file, is "rom-0".
Binary	Transfer the file in binary mode.
Abort	Stop transfer of the file.

## 7.3 Restore Configuration

This section shows you how to restore a previously saved configuration. Note that this function erases the current configuration before restoring a previous back up configuration; please do not attempt to restore unless you have a backup configuration file stored on disk.

FTP is the preferred method for restoring your current computer configuration to your Prestige since FTP is faster. Please note that you must wait for the system to automatically restart after the file transfer is complete.

### **WARNING!**

**DO NOT INTERRUPT THE FILE TRANSFER PROCESS AS THIS MAY PERMANENTLY DAMAGE YOUR PRESTIGE. WHEN THE RESTORE CONFIGURATION PROCESS IS COMPLETE, THE PRESTIGE WILL AUTOMATICALLY RESTART.**

### 7.3.1 Restore Using FTP

For details about backup using (T)FTP please refer to earlier sections on FTP and TFTP file upload in this chapter.

## Menu 24.6 - System Maintenance - Restore Configuration

To transfer the firmware and configuration file to your workstation, follow the procedure below:

1. Launch the FTP client on your computer.
2. Type "open" and the IP address of your system. Then type "root" and SMT password as requested.
3. Type "put backupfilename rom-0" where backupfilename is the name of your backup configuration file on your workstation and rom-0 is the remote file name on the system. This restores the configuration to your system.
4. The system reboots automatically after a successful file transfer

For details on FTP commands, please consult the documentation of your FTP client program. For details on backup using TFTP (note that you must remain in this menu to back up using TFTP), please see your user manual.

**Figure 7-3 Telnet into Menu 24.6**

- Step 1.** Launch the FTP client on your computer.
- Step 2.** Enter "open", followed by a space and the IP address of your Prestige.
- Step 3.** Press [ENTER] when prompted for a username.
- Step 4.** Enter your password as requested (the default is "1234").
- Step 5.** Enter "bin" to set transfer mode to binary.
- Step 6.** Find the "rom" file (on your computer) that you want to restore to your Prestige.
- Step 7.** Use "put" to transfer files from the Prestige to the computer, for example, "put config.rom rom-0" transfers the configuration file "config.rom" on your computer to the Prestige. See earlier in this chapter for more information on filename conventions.
- Step 8.** Enter "quit" to exit the ftp prompt. The Prestige will automatically restart after a successful restore process.

### 7.3.2 Restore Using FTP Session Example

```
ftp> put config.rom rom-0
200 Port command okay
150 Opening data connection for STOR rom-0
226 File received OK
221 Goodbye for writing flash
ftp: 16384 bytes sent in 0.06Seconds 273.07Kbytes/sec.
ftp>quit
```

**Figure 7-4 Restore Using FTP Session Example**

## 7.4 Uploading Firmware and Configuration Files

This section shows you how to upload firmware and configuration files. You can upload configuration files by following the procedure in the previous *Restore Configuration* section or by following the instructions in **Menu 24.7.2 - System Maintenance - Upload System Configuration File**.

**WARNING!**  
**DO NOT INTERRUPT THE FILE TRANSFER PROCESS AS THIS MAY PERMANENTLY DAMAGE YOUR PRESTIGE.**

### 7.4.1 Firmware File Upload

FTP is the preferred method for uploading the firmware and configuration. To use this feature, your computer must have an FTP client.

When you telnet into the Prestige, you will see the following screens for uploading firmware and the configuration file using FTP.

```
Menu 24.7.1 - System Maintenance - Upload System Firmware

To upload the system firmware, follow the procedure below:

1. Launch the FTP client on your computer.
2. Type "open" and the IP address of your system. Then type "root" and
   SMT password as requested.
3. Type "put firmwarefilename ras" where "firmwarefilename" is the name
   of your firmware upgrade file on your workstation and "ras" is the
   remote file name on the system.
4. The system reboots automatically after a successful firmware upload.

For details on FTP commands, please consult the documentation of your FTP
client program. For details on uploading system firmware using TFTP (note
that you must remain on this menu to upload system firmware using TFTP),
please see your manual.

Press ENTER to Exit:
```

**Figure 7-5 Telnet Into Menu 24.7.1 - Upload System Firmware**

### 7.4.2 Configuration File Upload

You see the following screen when you telnet into menu 24.7.2.

```
Menu 24.7.2 - System Maintenance - Upload System Configuration File

To upload the system configuration file, follow the procedure below:

1. Launch the FTP client on your computer.
2. Type "open" and the IP address of your system. Then type "root" and
   SMT password as requested.
3. Type "put configurationfilename rom-0" where "configurationfilename"
   is the name of your system configuration file on your workstation, which
   will be transferred to the "rom-0" file on the system.
4. The system reboots automatically after the upload system configuration
   file process is complete.

For details on FTP commands, please consult the documentation of your FTP
client program. For details on uploading system firmware using TFTP (note
that you must remain on this menu to upload system firmware using TFTP),
please see your manual.

Press ENTER to Exit:
```

**Figure 7-6 Telnet Into Menu 24.7.2 - System Maintenance**

To upload the firmware and the configuration file, follow these examples

### 7.4.3 FTP File Upload Command from the DOS Prompt Example

- Step 1.** Launch the FTP client on your computer.
- Step 2.** Enter “open”, followed by a space and the IP address of your Prestige.
- Step 3.** Press [ENTER] when prompted for a username.
- Step 4.** Enter your password as requested (the default is “1234”).
- Step 5.** Enter “bin” to set transfer mode to binary.
- Step 6.** Use “put” to transfer files from the computer to the Prestige, for example, “put firmware.bin ras” transfers the firmware on your computer (firmware.bin) to the Prestige and renames it “ras”. Similarly, “put config.rom rom-0” transfers the configuration file on your computer (config.rom) to the Prestige and renames it “rom-0”. Likewise “get rom-0 config.rom” transfers the configuration file on the Prestige to your computer and renames it “config.rom.” See earlier in this chapter for more information on filename conventions.
- Step 7.** Enter “quit” to exit the ftp prompt.

### 7.4.4 FTP Session Example of Firmware File Upload

```
331 Enter PASS command
Password:
230 Logged in
ftp> bin
200 Type I OK
ftp> put firmware.bin ras
200 Port command okay
150 Opening data connection for STOR ras
226 File received OK
ftp: 1103936 bytes sent in 1.10Seconds 297.89Kbytes/sec.
ftp> quit
```

**Figure 7-7 FTP Session Example of Firmware File Upload**

More commands (found in GUI-based FTP clients) are listed earlier in this chapter.

### 7.4.5 TFTP File Upload

The Prestige also supports the uploading of firmware files using TFTP (Trivial File Transfer Protocol) over LAN. Although TFTP should work over WAN as well, it is not recommended.

To use TFTP, your computer must have both telnet and TFTP clients. To transfer the firmware and the configuration file, follow the procedure shown next.

- Step 1.** Use telnet from your computer to connect to the Prestige and log in. Because TFTP does not have any security checks, the Prestige records the IP address of the telnet client and accepts TFTP requests only from this address.
- Step 2.** Put the SMT in command interpreter (CI) mode by entering 8 in **Menu 24 - System Maintenance**.
- Step 3.** Enter the command “sys stdio 0” to disable the timeout, so the TFTP transfer will not be interrupted. Enter “command sys stdio 5” to restore the five-minute timeout (default) when the file transfer is complete.
- Step 4.** Launch the TFTP client on your computer and connect to the Prestige. Set the transfer mode to binary before starting data transfer.
- Step 5.** Use the TFTP client (see the example below) to transfer files between the Prestige and the computer. The file name for the firmware is “ras”.

Note that the telnet connection must be active and the Prestige in CI mode before and during the TFTP transfer. For details on TFTP commands (see following example), please consult the documentation of your TFTP client program. For UNIX, use “get” to transfer from the Prestige to the computer, “put” the other way around, and “binary” to set binary transfer mode.

## 7.4.6 TFTP Upload Command Example

The following is an example TFTP command:

```
tftp [-i] host put firmware.bin ras
```

where “i” specifies binary image transfer mode (use this mode when transferring binary files), “host” is the Prestige’s IP address and “put” transfers the file source on the computer (firmware.bin – name of the firmware on the computer) to the file destination on the remote host (ras - name of the firmware on the Prestige).

Commands that you may see in GUI-based TFTP clients are listed earlier in this chapter.





# Chapter 8

## Troubleshooting

*This chapter covers potential problems and the corresponding remedies.*

### 8.1 Problems Starting the Prestige

**Table 8-1 Problems Starting the Prestige**

PROBLEM	CORRECTIVE ACTION
No LEDs are on when the Prestige is turned on.	<p>Make sure that the Prestige's power adapter is connected to the Prestige and plugged in to an appropriate power source.</p> <p>Make sure the Ethernet device connected to the LAN port is on and working properly.</p> <p>Turn the Prestige off and on again.</p> <p>If error persists, it may be a hardware problem. Contact technical support.</p>

### 8.2 Power Problems

**Table 8-2 Problems With the Power Source**

PROBLEM	CORRECTIVE ACTION
The SYS LED is red.	<p>Prestige power is low and consequently may be disconnected from the ADSL line. This is a "dying gasp" warning signal.</p> <ol style="list-style-type: none"> <li>1. Make sure you are using the correct power adapter.</li> <li>2. Make sure you have sufficient power for the operation of your Prestige. Make sure you do not have too many electrical appliances connected to the same power source.</li> <li>3. Check the power connections between the Prestige and your power source.</li> </ol>

## 8.3 Problems Connecting with the LAN

**Table 8-3 Problems Connecting with the LAN**

<b>PROBLEM</b>	<b>CORRECTIVE ACTION</b>
Cannot ping any station on the LAN.	<p>Check the LAN LEDs on the front panel. The LED should be on for a port that has a station connected. If it is off, check the cables between your Prestige and the station.</p> <p>Make sure your computer NIC (Network Interface Card) is working properly.</p> <p>Check the TCP/IP configuration on your computer. Make sure that the IP address and the subnet mask of the Prestige and the LAN computer(s) are on the same subnet.</p>

## 8.4 Problems Connecting with the WAN or Remote Node/ISP

**Table 8-4 Problems Connecting with the WAN or Remote Node/ISP**

<b>PROBLEM</b>	<b>CORRECTIVE ACTION</b>
Cannot initialize the PVC connection.	<p>Verify the xDSL port/wall jack cable connection. The xDSL LED should be on. If not, verify in menu 24.1 that the <b>Line Status</b> field reads <b>Down</b>. Wait 10 minutes until the PVC synchronizes and the field reads <b>Up</b>.</p> <p>If problems persist, check with the telephone company, ISP and/or the peer modem (in a LAN-to-LAN application).</p>
Cannot connect to a remote node or ISP.	<p>Check menu 4 or menu 11.1 to verify the <b>Encapsulation</b> for the remote node.</p>
I cannot get a WAN IP address from the ISP.	<p>The WAN IP is provided after the ISP verifies the MAC address, host name or user ID. Find out the verification method used by your ISP and configure the corresponding fields.</p>

## 8.5 Problems Accessing SMT Menus

**Table 8-5 Problems Accessing SMT Menus**

PROBLEM	CORRECTIVE ACTION
I cannot access the SMT menu.	The default SMT password is "1234". If you have changed the password and have now forgotten it, you will need to upload the default configuration file (see <i>User's Guide</i> ).

## 8.6 Problems Accessing the Internet

**Table 8-6 Problems Accessing the Internet**

PROBLEM	CORRECTIVE ACTION
I cannot access the Internet.	<p>Make sure the Prestige is turned on and connected to the network.</p> <p>If the Prestige's DSL LED is off, check the cable between the Prestige and the telephone wall jack.</p> <p>Make sure you entered your user name correctly. A user name may be case-sensitive.</p>
The DSL LED is off.	Check the connection between the Prestige DSL port and the wall jack.



# Appendix A

## Power Adapter Specifications

SPECIFICATION	NORTH AMERICA	EUROPEAN UNION	CHINA
<b>AC Power Adapter model</b>	DV-121AACS	DV-121AACUP-5716	DV-121AACCP-5720
<b>Input power</b>	AC120Volts/60Hz/23W	AC230Volts/50Hz/19 W	AC220Volts/50Hz/18 W
<b>Output power</b>	AC12Volts/1.0A	AC12Volts/1.0A	AC12Volts/1.0A
<b>Power consumption</b>	10 W	10 W	10 W
<b>Plug Standards</b>	North American	European Union	Chinese
<b>Safety standards</b>	UL, CUL (UL 1310, CSA C22.2 No.223)	TUV, CE (EN 61558)	CCEE (GB8898)

**Diagram 1 Power Adapter Specifications**

### Safety Requirements:

- ◆ To reduce the risk of fire, use only No. 26 AWG or larger telephone line.
- ◆ Do not use this product near water, for example, in a wet basement.
- ◆ Avoid using this product during an electrical storm. There may be a risk of electric shock from lightning.

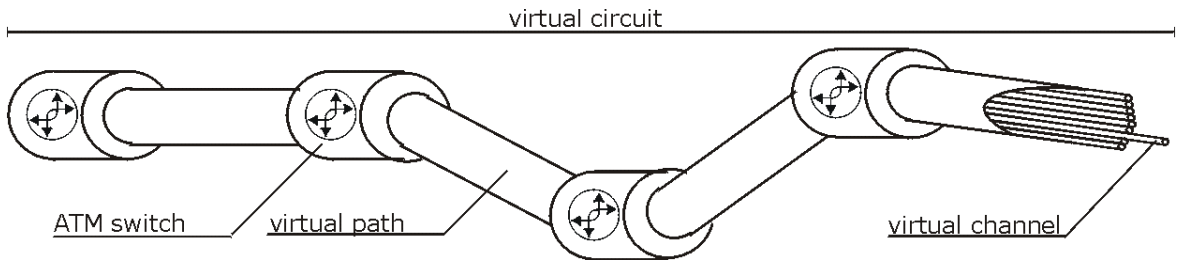


# Appendix B

## Virtual Circuit Topology

ATM is a connection-oriented technology, meaning that it sets up virtual circuits over which end systems communicate. The terminology for virtual circuits is as follows:

- **Virtual Channel**                      Logical connections between ATM switches
- **Virtual Path**                         A bundle of virtual channels
- **Virtual Circuit**                      A series of virtual paths between circuit end points



**Diagram 2 Virtual Circuit Topology**

Think of a virtual path as a cable that contains a bundle of wires. The cable connects two points and wires within the cable provide individual circuits between the two points. In an ATM cell header, a VPI (Virtual Path Identifier) identifies a link formed by a virtual path; a VCI (Virtual Channel Identifier) identifies a channel within a virtual path.

The VPI and VCI identify a virtual path, that is, termination points between ATM switches. A series of virtual paths make up a virtual circuit.

Your service provider should supply you with VPI/VCI numbers.





# Appendix C

## TCP/IP

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed. Use straight-through Ethernet cables to connect your computer's Ethernet adapter to a hub or switch and to connect the hub or switch to the Prestige's LAN port. Otherwise, connect your computer's Ethernet adapter directly to the LAN port with a crossover Ethernet cable.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to "communicate" with your network.

### Setting up Your Windows 95/98/Me Computer

#### Installing TCP/IP Components

1. Click **Start, Settings, Control Panel** and double-click the **Network** icon.

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

- a. In the **Network** window, click **Add**.
- b. Select **Adapter** and then click **Add**.
- c. Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

- a. In the **Network** window, click **Add**.
- b. Select **Protocol** and then click **Add**.
- c. Select **Microsoft** from the list of manufacturers.
- d. Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

- a. Click **Add**.

- b. Select **Client** and then click **Add**.
- c. Select **Microsoft** from the list of manufacturers.
- d. Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.
- e. Restart your computer so the changes you made take effect.

### **Configuring TCP/IP**

1. In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**.
  - If your IP address is dynamic, select **Obtain an IP address automatically**.
  - If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.
3. Click the **DNS Configuration** tab.
  - If you do not know your DNS information, select **Disable DNS**.
  - If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).
4. Click the **Gateway** tab.
  - If you were not given a gateway IP address, remove previously installed gateways.
  - If you have a gateway IP address, type it in the **New gateway** field and click **Add**.
5. Click **OK** to save and close the **TCP/IP Properties** window.
6. Click **OK** to close the **Network** window. Insert the Windows CD if prompted.
7. Turn on your Prestige and restart your computer when prompted.

### **Verifying TCP/IP Properties**

1. Click **Start** and then **Run**.
2. In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.
3. Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

## Setting up Your Windows NT/2000 Computer

### Configuring TCP/IP

1. Click **Start, Settings, Network and Dial-up Connections** and right-click **Local Area Connection** or the connection you want to configure and click **Properties**.
2. Select **Internet Protocol (TCP/IP)** (you may need to scroll down) and click **Properties**.
3. The **Internet Protocol TCP/IP Properties** window opens.
  - If your IP address is dynamic, click **Obtain an IP address automatically**.
  - If you have a static IP address click **Use the following IP Address** and fill in the **IP address, Subnet mask, and Default gateway** fields.
4. In the **Internet Protocol TCP/IP Properties** window:
  - Click **Obtain DNS server automatically** if you do not know your DNS server IP address(es).
  - If you know your DNS server IP address(es), type them in the **Preferred DNS server** and **Alternate DNS server** fields. If you have previously configured DNS servers, click **Advanced** and then the **DNS tab** to order them.
5. Click **Advanced**:
  - If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.
6. Click **OK** to save and close the **Internet Protocol (TCP/IP) Properties** window.
7. Click **OK** to close the **Local Area Connection Properties** window.
8. Turn on your Prestige and restart your computer (if prompted).

### Verifying TCP/IP Properties

Click **Start, Programs, Accessories** and then **Command Prompt**.

In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. The window will display information about your connection-specific DNS suffix, IP Address, Subnet Mask and Default Gateway.

## Setting up Your Windows XP Computer

### Configuring TCP/IP

1. Click **start, Control Panel, Network and Internet Connections** and then **Network Connections**.
2. Right-click the network connection you want to configure and then click **Properties**.
3. Under the **General** tab, select **Internet Protocol (TCP/IP)** (you may need to scroll down) and click **Properties**.

4. The **Internet Protocol TCP/IP Properties** window opens.
  - If you have a dynamic IP address click **Obtain an IP address automatically**.
  - If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields. To configure advanced static address settings for a local area connection, click **Advanced**, and do one or more of the following to configure additional IP addresses:
    - In the **IP Settings** tab, in **IP addresses**, click **Add**.
    - In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
    - Repeat the above two steps for each IP address you want to add.
    - Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
    - In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
    - Click **Add**.
    - Repeat the previous three steps for each default gateway you want to add.
    - Click **OK** when finished.
5. In the **Internet Protocol TCP/IP Properties** window's **General** tab:
  - Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).
  - If you know your DNS server IP address(es), click **Use the following DNS server addresses**, type them in the **Preferred DNS server** and **Alternate DNS server** fields. If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.
6. Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
7. Click **OK** to close the **Local Area Connection Properties** window.
8. Turn on your Prestige and restart your computer (if prompted).

### Verifying TCP/IP Properties

1. Click **Start, All Programs, Accessories** and then **Command Prompt**.
2. In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support tab**.

## Setting up Your Macintosh Computer

### Configuring TCP/IP Properties

1. Click the **Apple** menu, **Control Panel** and double-click **TCP/IP** to open the **TCP/IP Control Panel**.
2. Select **Ethernet** from the **Connect via** list.
3. For dynamically assigned settings, select **Using DHCP Server** from the **Configure:** list.
4. For statically assigned settings, do the following:
  - From the **Configure** box, select **Manually**.
  - Type your IP address in the **IP Address** box.
  - Type your subnet mask in the **Subnet mask** box.
  - Type the IP address of your Prestige in the **address** box.
5. Close the **TCP/IP Control Panel**.
6. Click **Save** if prompted, to save changes to your configuration.
7. Turn on your Prestige and restart your computer (if prompted).

### Verifying TCP/IP Properties

Check your TCP/IP properties in the **TCP/IP Control Panel**.



# Index

## *A*

ADSL, what is it? .....	xiv
AT Command.....	7-1
Authentication .....	4-3, 4-4
Auto-Negotiation.....	1-1

## *B*

Back Panel	
Connections Description .....	2-3
Backup.....	7-2

## *C*

Call Filters	
Built-In .....	5-1
User-Defined .....	5-1
CHAP .....	4-3
Collision .....	6-2
Command Interpreter Mode.....	6-5
Command Mode.....	6-6
Connections	
Additional Requirements.....	2-4
ADSL Line .....	2-3
Power Adapter.....	2-4
Console Port Speed .....	6-3
Copyright.....	ii
CPU Load.....	6-3
Customer Support.....	v

## *D*

DHCP .....	6-4
------------	-----

Diagnostic .....	6-5
Diagnostic Tools .....	6-1
Digital Subscriber Line Access Multiplexer ...	1-4
DSL (Digital Subscriber Line) .....	xiv
DSL, what is it?.....	xiv
DSLAM..... See Digital Subscriber Line Access Multiplexer	

## *E*

Encapsulation .....	1-2, 3-4, 3-7, 4-2
PPPoA .....	3-4
RFC 1483 .....	3-4

## *F*

FCC .....	iii
Filename Conventions.....	7-1
Filter .....	3-2, 5-1
Applying Filters .....	5-8
Example .....	5-6
Filter Rules .....	5-4
Generic Filter Rule .....	5-5
Remote Node Filters .....	5-9
Sample.....	5-7
Filter Rule Process .....	5-2
Filter Rule Setup .....	5-5
Filter Rules Summary	
Sample.....	5-8
Filter Set Configuration.....	5-3
Filtering.....	5-1
Frame Relay .....	1-4
FTP File Transfer .....	7-8

**G**

General Setup ..... 2-11

**H**

Hidden Menus ..... 2-9

**I**

IANA ..... 3-2

Initialization ..... 2-6

Internet Access.. xii, 1-1, 1-4, 2-10, 3-1, 3-4, 3-6,  
3-7

IP Address ..... 3-3, 6-4

IP Address Assignment ..... 3-4

IP Network Number ..... 3-2

IP Packet ..... 5-5

**L**

LAN ..... 6-2, 6-3

Link type ..... 6-2

Logging Option ..... 5-6

Login ..... 4-3

**M**

Main Menu ..... 2-9

MBS (Maximum Burst Size) ..... 3-5, 3-7.

Multiplexing

    LLC-based ..... 3-4

    VC-based ..... 3-3

Multiplexing ..... 1-2, 3-3, 3-7, 4-2

Multiprotocol Encapsulation ..... 3-4

**N**

Network Management ..... 1-3

NIC ..... 2-4

**P**

Packet

    Error ..... 6-2

    Received ..... 6-3

    Transmitted ..... 6-3

Packets ..... 6-2

PAP ..... 4-3

Password ..... 2-6, 2-10, 4-3

Point-to-Point ..... xiv

PPPoA ..... 4-2

PVC Connection

    Fail ..... 8-2

**R**

RAS ..... 6-4

Rate

    Receiving ..... 6-2

    Transmission ..... 6-2

Read Me First ..... xii

Related Documentation ..... xii

Remote Node ..... 4-1, 6-2

    Remote Node Index Number ..... 6-2

    Remote Node Profile ..... 4-2

    Remote Node Setup ..... 4-1

Remote Node Traffic ..... 5-9

Required Fields ..... 2-9

RESET Button ..... 2-4

Restore Configuration ..... 7-6

RFC-1483 ..... 4-2

RFC-2364 ..... 4-2, 4-3



**S**

SCR See Sustain Cell Rate. See Sustain Cell Rate  
 Service..... iv  
 Splitters .....2-4  
 STP.....2-3  
 Subnet Mask..... 3-2, 3-3, 6-4  
 Support Disk..... xii  
 Supporting Disk..... xii  
 Syntax Conventions..... xii  
 System  
     Diagnostic .....6-5  
     System Information .....6-4  
     System Status .....6-1  
 System Information .....6-3  
 System Information and Diagnosis .....6-1  
 System Maintenance 6-1, 6-3, 6-6, 7-2, 7-5, 7-10  
 System Management Terminal.....2-8

**T**

TCP/IP Parameters .....3-2

TFTP File Transfer.....7-10  
 To avoid damage to the Prestige .....2-4  
 Transmission Rates .....xii, 1-1

**U**

Upload Firmware .....7-8

**V**

VC-based Multiplexing.....4-2  
 VPI and VCI.....3-3

**X**

XMODEM Protocol.....7-2

**Z**

ZyNOS .....7-1, 7-2  
 ZyNOS F/W Version.....7-1  
 ZyXEL Limited Warranty  
     Note..... iv