VSG-1200

Vantage Service Gateway

User's Guide

Version 1.08 1/2006



Copyright

Copyright © 2006 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:

- · Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 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

Go to www.zyxel.com

- **1** Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
- **2** Select the certification you wish to view from this page

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 or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been 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 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.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at <u>www.zyxel.com</u> for global products, or at <u>www.us.zyxel.com</u> for North American products.

Safety Warnings

- **1** To reduce the risk of fire, use only No. 26 AWG or larger telephone wire.
- **2** Do not use this product near water, for example, in a wet basement or near a swimming pool.
- **3** Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightening.

Customer Support

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

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

METHOD	SUPPORT E-MAIL	TELEPHONE ^A	WEB SITE	REGULAR MAIL	
LOCATION	SALES E-MAIL	FAX	FTP SITE		
	support@zyxel.com.tw	+886-3-578-3942	www.zyxel.com www.europe.zyxel.com	ZyXEL Communications Corp. 6 Innovation Road II Science Park Hsinchu 300 Taiwan	
(WORLDWIDE)	sales@zyxel.com.tw	+886-3-578-2439	ftp.zyxel.com ftp.europe.zyxel.com		
	info@cz.zyxel.com	+420-241-091-350	www.zyxel.cz	ZyXEL Communications	
CZECH REPUBLIC	info@cz.zyxel.com	+420-241-091-359		Modranská 621 143 01 Praha 4 - Modrany Ceská Republika	
	support@zyxel.dk	+45-39-55-07-00	www.zyxel.dk	ZyXEL Communications A/S	
DENMARK	sales@zyxel.dk	+45-39-55-07-07		2860 Soeborg Denmark	
	support@zyxel.fi	+358-9-4780-8411	www.zyxel.fi	ZyXEL Communications Oy	
FINLAND	sales@zyxel.fi	+358-9-4780 8448		00700 Helsinki Finland	
	info@zyxel.fr	+33-4-72-52-97-97	www.zyxel.fr	ZyXEL France 1 rue des Vergers Bat. 1 / C 69760 Limonest France	
FRANCE		+33-4-72-52-19-20			
	support@zyxel.de	+49-2405-6909-0	www.zyxel.de	ZyXEL Deutschland GmbH.	
GERMANY	sales@zyxel.de	+49-2405-6909-99		Wuerselen Germany	
	support@zyxel.hu	+36-1-3361649	www.zyxel.hu	ZyXEL Hungary	
HUNGARY	info@zyxel.hu	+36-1-3259100		H-1025, Budapest Hungary	
	http://zyxel.kz/support	+7-3272-590-698	www.zyxel.kz	ZyXEL Kazakhstan 43. Dostyk ave. Office 414	
KAZAKHSTAN	sales@zyxel.kz	+7-3272-590-689		Dostyk Business Centre 050010, Almaty Republic of Kazakhstan	
	support@zyxel.com	1-800-255-4101 +1-714-632-0882	www.us.zyxel.com	ZyXEL Communications Inc. 1130 N. Miller St. Anabeim	
	sales@zyxel.com	+1-714-632-0858	ftp.us.zyxel.com	CA 92806-2001 U.S.A.	
	support@zyxel.no	+47-22-80-61-80	www.zyxel.no	ZyXEL Communications A/S	
NORWAY	sales@zyxel.no	+47-22-80-61-81		0667 Oslo Norway	

METHOD	SUPPORT E-MAIL	TELEPHONE ^A	WEB SITE		
LOCATION	SALES E-MAIL	FAX	FTP SITE		
	info@pl.zyxel.com	+48-22-5286603	www.pl.zyxel.com	ZyXEL Communications	
POLAND		+48-22-5206701		00-113 Warszawa Poland	
	http://zyxel.ru/support	+7-095-542-89-29	www.zyxel.ru	ZyXEL Russia	
RUSSIA	sales@zyxel.ru	+7-095-542-89-25		Moscow, 117279 Russia	
	support@zyxel.es +34-902-195-420 www.zyxel.es	www.zyxel.es	ZyXEL Communications		
SPAIN	sales@zyxel.es	+34-913-005-345		1º, 28043 Madrid Spain	
SWEDEN	support@zyxel.se	+46-31-744-7700	www.zyxel.se	ZyXEL Communications A/S	
SWEDEN	sales@zyxel.se	+46-31-744-7701		Sweden	
	support@ua.zyxel.com	+380-44-247-69-78	www.ua.zyxel.com	ZyXEL Ukraine	
UKRAINE	sales@ua.zyxel.com	+380-44-494-49-32		Kiev, 04050 Ukraine	
	support@zyxel.co.uk	+44-1344 303044 08707 555779 (UK only)	www.zyxel.co.uk	ZyXEL Communications UK Ltd.,11 The Courtyard, Eastern Road, Bracknell	
	sales@zyxel.co.uk	+44-1344 303034	ftp.zyxel.co.uk	Berkshire, RG12 2XB, United Kingdom (UK)	

a. "+" is the (prefix) number you enter to make an international telephone call.

Table of Contents

Copyright	2
Federal Communications Commission (FCC) Interference Sta	itement 3
ZyXEL Limited Warranty	4
Safety Warnings	5
Customer Support	6
List of Figures	17
List of Tables	23
Preface	27
Chapter 1 Getting to Know Your VSG	29
1.1 Introducing the VSG	
1.2 Features	
1.3 Applications	
1.3.2 Internet Access in Public Areas	
1.3.3 Hotel Application with PMS	
Chapter 2 Hardware Installation and Connection	35
2.1 Installation Options	35
2.1.1 Desktop Installation	35
2.1.2 Rack Mount Installation	35
2.2 Hardware Connections	
2.2.1 Front Panel	
2.2.1.1 Four LAN 10/100M Ports	
2.2.1.2 The VAN Port	
2.2.1.3 The Console Port	
2.2.1.4 The Planet Rutton	୦ <i>୮</i> ୧ହ
2.2.2 Front Panel LEDs	
2.2.3 Rear Panel	

2.2.4 Turning on the VSG	
2.2.5 Methods of Restoring Factory Defaults	
Chapter 3	
The Web Configurator	
3.1 Introducing the Web Configurator	41
3.2 Accessing the Web Configurator	41
3.3 The Navigation Panels	43
3.3.1 The Configuration Menu Panel	43
3.3.2 Screen Specific Link Panel	43
3.4 Screen Overview	44
3.5 General System Setting	44
3.6 System Login Accounts	47
3.7 Changing System Login Passwords	
3.8 Restarting the VSG	50
3.9 Logging Out of the Web Configurator	51
Chapter 4	
LAN, WAN and Server Setup	
4.1 Factory Ethernet Defaults	53
4.2 LANs and WANs	53
4.3 IP Address Assignment	53
4.4 DHCP Configuration	53
4.4.1 IP Address and Subnet Mask	54
4.4.2 Private IP Addresses	54
4.5 DNS Server Address	55
4.6 LAN Configuration	55
4.7 WAN Configuration	56
4.7.1 Configuring WAN MAC Address	56
4.7.2 MTU	57
4.7.3 WAN IP Address Settings	57
4.7.4 PPPoE	58
4.7.5 PPTP	60
4.8 Server Configuration	61
Chapter 5	
5.1 NAT Introduction	65
5.1.1 NAT Definitions	65
5.1.2 What NAT Does	66
5.1.3 How NAT Works	66
5.2 VPN and NAT	66
5.3 NAT Examples	67

5.3.1 Example 1: One-to-One	67
5.3.2 Example 2: Many-to-One	68
5.3.3 Example 3: One-to-One and Many-to-One	68
5.4 Configuring NAT Pool	69
Chapter 6	
Authentication	71
6.1 Authentication Overview	71
6.1.1 User Agreement	71
6.1.2 CAS (Central Authentication Service)	71
6.1.3 Accounting Methods	72
6.1.4 Built-in Authentication	72
6.1.5 RADIUS	72
6.1.5.1 RADIUS Accounting	72
6.1.5.2 Vendor Specific Attribute	73
6.2 Authentication Settings	73
6.2.1 Scenario Options	76
Chapter 7	
Billing Profiles and PMS Configuration	79
7.1 About Billing Profiles	79
7.1.1 Creating a Billing Profile	79
7.1.2 Editing a Billing Profile	80
7.2 PMS (Property Management System)	
7.2.1 Port-Location Mapping Charge Modes	
7.2.2 PMS Configuration	83
7.3 Types of Subscriber Accounts	84
Chapter 8	
Static Subscriber Accounts	85
8.1 About Static Subscriber Accounts	
8.2 Global Static Account Settings	
8.3 Creating a Static Account	
8.3.1 Generating Static Accounts Automatically	
8.3.2 Creating Static Subscriber Accounts Manually	
8.4 Static Account List Backup and Restore	
8.4.1 Backing Up a Static Account List	
8.4.2 Restoring a Static Account List	91
8.5 Editing Subscriber Accounts	92
8.5.1 Static Account Information Print Preview	93
8.6 Viewing the Static Account List	94

Chapter 9 Dynamic Subscriber Accounts	95
9.1 About Dynamic Subscriber Accounts	
9.2 Dynamic Account General Settings	95
9.3 Creating Dynamic Accounts	97
9.3.1 Dynamic Account Generation Using the Web Configurator	97
9.3.2 Dynamic Account Generation Using a Statement Printer	
9.4 Viewing the Dynamic Account List	
9.4.1 Backing Up the Dynamic Account List	100
Chapter 10 Port-Location Mapping	103
10.1 About Port-Location Mapping	
10.2 Configuring Port-Location Mapping	
Chapter 11	
Credit Card Billing and Customization	107
11.1 Credit Card Billing Overview	107
11.1.1 How Credit Card Billing Works	107
11.1.2 Configuration Steps	107
11.2 Setting up Credit Card Billing Service	108
11.3 Customizing Subscriber Credit Card Information Screen	109
11.3.1 Subscriber Standard Login Page Message	109
11.3.2 Service Selection Page	110
11.3.3 Successful Screen	
11.3.4 Fail Page	115
Chapter 12 Subscriber Login Screen	117
12.1 About the Subscriber Login Screen	
12.2 Customizing Subscriber Login Screen	
12.2.1 Standard Subscriber Login Screen	
12.2.2 Redirect Subscriber Login Screen	
12.2.3 Advanced Subscriber Login Screen	
12.2.4 Frame Subscriber Login Screen	
12.2.5 Service Selection Messages	123
Chapter 13 Subscriber Information Window	125
13.1 About the Information Window	
13.1.1 Customizing the Information Window	

Chapter 14 Account Printout	129
14.1 About the Account Printout	129
14.1.1 Customizing the Account Printout	129
Chapter 15 User Agreement Page	137
15.1 About the User Agreement Page	137
15.2 Customizing the User Agreement Page	137
Chapter 16 Bandwidth Management	141
16.1 Bandwidth Management Overview	141
16.1.1 Bandwidth Allocation	141
16.1.2 Configuring Equal Share Bandwidth Management	142
16.1.3 Configuring Class of Service Bandwidth Management	143
Chapter 17 Portal Page, Advertisement Link and Walled Garden	145
17.1 Introduction	145
17.2 Portal Page	
17.3 Advertisement Links	
17.4 Walled Garden	147
Chapter 18 Passthrough	
18.1 About the Passtbrough	149
18.2 Configuring Passthrough	149
18.2.1 Subscriber Computer Passthrough	
18.2.2 Destination URL and IP Address Passthrough	151
Chapter 19	153
19.1 LAN Devices and NAT Overview	
19.1.1 Port Mapping	
19.2 Configuring LAN Device Port Mapping	
19.2.1 LAN Device Management Example	155
Chapter 20	
Static Route	159
20.1 Static Route Overview	159
20.2 The Static Route Screen	159

Chapter 21 Syslog and Session Trace	
21.1 Syslog	
21.1.1 Syslog Server Setup	
21.1.2 Configure Log Settings	
21.2 Session Trace	
21.2.1 Configuring Session Trace	
21.2.1.1 Session Trace Filename Convention	
Chapter 22	
SNMP	
22.1 SNMP Overview	171
22.1.1 Network Management System (NMS)	172
22.2 Configuring SNMP	
Chapter 23	475
23.1 About the MAC Filter	
23.2 Configuring the MAC Filter	
Chapter 24 System Status	177
24.1 About System Status	
24.2 View System Information	177
24.3 Current User List	
24.4 DHCP Clients	
24.5 Session List	
24.6 NAT Pool Table	
24.7 LAN Device Status	
24.7.1 Accessing the LAN Device	
24.8 Billing Logs	
24.8.1 Billing Logs Backup	
24.9 PMS Transaction	
24.10 Static Route Table	
Chapter 25 Secure Socket Layer	189
25.1 About SSL	
25.1.1 Certificate	
25.1.2 Certificate Authorities	
25.2 Downloading SSL Certificate to the VSG	
25.3 Activating SSL Security	
25.4 Installing SSL Certificate on a Computer	

Chapter 26 The SMT

199
199
201
201
202
203
204
204

Chapter 27 LAN and W

AN and WAN Setup Using the SMT	
27.1 LAN and WAN Overview	207
27.2 WAN Configuration	207
27.2.1 Using a Static/Dynamic WAN IP Address	207
27.2.2 PPPoE Support	208
27.2.3 PPTP Support	
27.3 LAN Configuration	211
27.4 View Current Configuration	212

Chapter 28

Configuration and Firmware Maintenance	
28.1 Filename Convention	215
28.2 Firmware Upgrade	215
28.2.1 Firmware Upgrade Using the Web Configurator	215
28.2.1.1 Manual Firmware Upgrade	216
28.2.1.2 Manual Firmware Upgrade via a TFTP Server	216
28.2.1.3 Scheduled Firmware Upgrade	217
28.2.2 Firmware Upgrade Using SMT	219
28.3 Configuration File Maintenance	220
28.3.1 Backup Configuration Using HTTP	220
28.3.2 Backup Configuration Using TFTP	
28.3.3 Restore Configuration Using HTTP	223
28.3.4 Restore Configuration Using TFTP	224

Chapter 29 Troubleshooting	
29.1 Using the LEDs to Diagnose Problems	
29.1.1 The Power LED	
29.1.2 The LAN Port LEDs	

29.1.3 The WAN Port LEDs	228
29.2 The Console Port	228
29.3 Web Configurator	229
29.4 Internet Access	229
29.5 The Statement Printer	230
Appendix A Product Specifications	231
Appendix B IP Address Assignment Conflicts	233
Appendix C Subscriber Login	237
Appendix D Vendor Specific Attributes	239
Appendix E Report Printing Using the SP-200	243
Appendix F Cable Types and Cable Pin Assignments	249
Appendix G Setting up Your Computer's IP Address	253
Appendix H IP Subnetting	265
Index	273

List of Figures

Figure 1	Application: Internet Access for LAN Networks	33
Figure 2	Application: Internet Access in Public Areas	33
Figure 3	Application: Hotel	34
Figure 4	Rack Mount: Attaching Brackets	36
Figure 5	Rack Mount: Securing to the Rack	36
Figure 6	Front Panel	37
Figure 7	Rear Panel	38
Figure 8	Entering IP Address in Internet Explorer	41
Figure 9	Web Configurator: Login	42
Figure 10	Web Configurator: Main Menu	42
Figure 11	Navigation Panel	43
Figure 12	Navigation Panels: Screen specific Link Panel	43
Figure 13	System Setting: System	45
Figure 14	System Tools: System Account	48
Figure 15	System Tools: Reset	5 0
Figure 16	System Tools: Restart	50
Figure 17	System Tools: Logging Out	51
Figure 18	System Setting: WAN/LAN: LAN Configuration	55
Figure 19	System Setting: WAN/LAN: WAN MAC Address	56
Figure 20	System Setting: WAN/LAN: WAN IP	57
Figure 21	System Setting: WAN/LAN: PPPoE	59
Figure 22	System Setting: WAN/LAN: PPTP	60
Figure 23	System Setting: Server	62
Figure 24	NAT Example: One-to-One	67
Figure 25	NAT Example: Many-to-One	68
Figure 26	NAT Example: One-to-One and Many-to-One	68
Figure 27	System Setting: NAT Pool	69
Figure 28	CAS Example	71
Figure 29	System Setting: Authentication	74
Figure 30	System: Authentication: Scenario Guide	77
Figure 31	Subscriber Login: Scenario A	78
Figure 32	Subscriber Login: Scenario B	78
Figure 33	Subscriber Login: Scenario C	78
Figure 34	System Setting: Billing: Billing Profile	80
Figure 35	System Setting: Billing: Billing Profile Setting	81
Figure 36	System Setting: Billing: PMS Configuration	83
Figure 37	Static Account: Links	85
Figure 38	Static Account Settings: Global Settings	85

Figure 39	System Setting: Create Static Subscriber Account	87
Figure 40	Create Static Subscriber Account: Generate Automatically	88
Figure 41	Create Static Subscriber Account: Manual	89
Figure 42	Static Subscriber Account: Backup and Restore	90
Figure 43	Static Subscriber Account: Backup and Restore: File Download	90
Figure 44	Static Subscriber Account: Backup and Restore: Save As	91
Figure 45	Static Subscriber Account: Backup and Restore	91
Figure 46	Static Account Operator	92
Figure 47	Static Account Information Printout Example	93
Figure 48	Static Account List	94
Figure 49	Dynamic Account: Links	95
Figure 50	Accounting: Dynamic Account Setting	96
Figure 51	SP-200 Button Labels	97
Figure 52	Dynamic Account Operator Panel	98
Figure 53	Dynamic Account Information Printout Example	98
Figure 54	Dynamic Account List	99
Figure 55	Dynamic Account List Backup: File Download	100
Figure 56	Dynamic Account List Backup: Save As	101
Figure 57	System Setting: Port-Location Mapping	104
Figure 58	Advanced Setting: Credit Card	108
Figure 59	Credit Card Customization: Standard Login Screen Message	110
Figure 60	Credit Card Customization: Standard Login Screen Message: Preview	110
Figure 61	Credit Card Customization: Service Selection Page	111
Figure 62	Credit Card Customization: Service Selection Page: Preview	113
Figure 63	Credit Card Customization: Successful Page	114
Figure 64	Credit Card Customization: Successful Page: Preview	115
Figure 65	Credit Card Customization: Fail Page	115
Figure 66	Credit Card Customization: Fail Page: Preview	116
Figure 67	Customization: Login	118
Figure 68	Customization: Login: Standard	119
Figure 69	Subscriber Login Screen Example: Standard	120
Figure 70	Customization: Login Screen: Redirect	120
Figure 71	Customization: Login Screen: Advanced	121
Figure 72	Subscriber Login Screen Example: Advanced	122
Figure 73	Customization: Login Screen: Frame	122
Figure 74	Subscriber Login Screen Example: Frame	123
Figure 75	Customization: Service Selection Customization	124
Figure 76	Subscriber Login Screen Example: Service Selection Messages	124
Figure 77	Customization: Information Window	126
Figure 78	Subscriber Pop-up Information Window Example	127
Figure 79	Customization: Account Printout	130
Figure 80	Static Account Printout Example	132
Figure 81	Static Account with PMS Billing Printout Example	132

Figure 82	Static Account Printout: Statement Printer Example	. 133
Figure 83	Static Account with PMS Billing Printout: Statement Printer Example	. 134
Figure 84	Dynamic Account Printout Example	. 134
Figure 85	Dynamic Account Printout: Statement Printer Example	. 135
Figure 86	Customization: User Agreement Page	. 138
Figure 87	User Agreement Page Example	. 139
Figure 88	Bandwidth Management: Activate	. 142
Figure 89	Bandwidth Management: Equal Share	. 142
Figure 90	Bandwidth Management: Class of Service	. 143
Figure 91	Portal Page	. 145
Figure 92	Advertisement	. 146
Figure 93	Walled Garden	. 147
Figure 94	Subscriber Login Screen with Walled Garden Links Example	. 148
Figure 95	Passthrough: Subscriber IP and MAC Address	. 150
Figure 96	Passthrough: Destination URL and IP	. 151
Figure 97	LAN Devices	. 154
Figure 98	LAN Device Remote Management Example 1	. 155
Figure 99	LAN Devices: Example 1	. 156
Figure 100	LAN Device Remote Management Example 2	. 156
Figure 101	LAN Devices: Example 2	. 156
Figure 102	Sample Static Routing Topology	. 159
Figure 103	Advanced: Static Route	. 160
Figure 104	Logs: Syslog	. 163
Figure 105	Logs: Log Settings	. 165
Figure 106	Advanced: Session Trace	. 168
Figure 107	Session Trace Information Example	. 169
Figure 108	SNMP Management Model	. 171
Figure 109	SNMP	. 172
Figure 110	MAC Filter	. 175
Figure 111	System Status	. 178
Figure 112	Current User List	. 180
Figure 113	DHCP Clients	. 181
Figure 114		. 182
Figure 115	NAT Pool Table	. 182
Figure 116	System Status: LAN Device Status	. 183
Figure 117	System Status: Billing Log	. 185
Figure 118	Billing Log Backup: File Download	. 186
Figure 119	Billing Log Backup: Save As	. 186
Figure 120	Billing Log Backup: Example File Content	. 187
Figure 121	System Status: PMS Iransaction Log	. 187
Figure 122	System Status: Static Route Table	. 188
Figure 123	SSL Certificate Download	. 190
Figure 124	System Setting: Server Configuration: Enable SSL Security	. 191

Figure 125	System Setting: Authentication: Activate SSL Login	. 192
Figure 126	Installing the SSL Security Certificate: First Security Alert	. 193
Figure 127	Installing the SSL Security Certificate: Second Security Alert	. 193
Figure 128	Installing the SSL Security Certificate: View Certificate	. 194
Figure 129	Installing the SSL Security Certificate: Certificate Import Wizard	. 194
Figure 130	Certificate Import Wizard: Location	. 195
Figure 131	Certificate Import Wizard: Finish	. 195
Figure 132	Root Certificate Store	. 196
Figure 133	Certificate Import Wizard	. 196
Figure 134	Certificate: Detailed Information	. 196
Figure 135	Security Alert: Trusted	. 197
Figure 136	HyperTerminal Communication Parameter Settings Example	. 200
Figure 137	SMT: Login Screen	. 200
Figure 138	SMT: Main Menu	. 201
Figure 139	SMT: System Configuration	. 202
Figure 140	SMT: Change Administrator Password	. 203
Figure 141	SMT: Restart	. 204
Figure 142	SMT: Reset to Factory Defaults	. 205
Figure 143	SMT: WAN Configuration: Static or Dynamic IP Address	. 207
Figure 144	SMT: WAN Configuration: PPPoE	. 208
Figure 145	SMT: WAN Configuration: PPTP	. 210
Figure 146	SMT: LAN Configuration	. 211
Figure 147	SMT: System Status	. 212
Figure 148	Firmware Upgrade: Links	. 216
Figure 149	Firmware Upgrade: Manual	. 216
Figure 150	Web Configurator: Firmware Upgrade Successful	. 216
Figure 151	Firmware Upgrade: Manual Using a TFTP Server	. 217
Figure 152	Synchronization File Example	. 217
Figure 153	Scheduled Firmware Upgrade Example	. 218
Figure 154	Firmware Upgrade: Scheduled	. 218
Figure 155	SMT: Utilities Main Menu	. 219
Figure 156	SMT: Firmware Upgrade	. 220
Figure 157	SMT: Firmware Upgrade Process	. 220
Figure 158	System Tools: Configuration: Backup	. 221
Figure 159	Configuration Backup: File Download	. 221
Figure 160	Configuration Backup: Save As	. 222
Figure 161	System Tools: Configuration: Backup using TFTP	. 223
Figure 162	Configuration Backup: TFTP: Successful	. 223
Figure 163	System Tools: Configuration: Restore	. 224
Figure 164	System Tools: Configuration: Restore: TFTP	. 225
Figure 165	IP Address Conflicts: Scenario 1	. 233
Figure 166	IP Address Conflicts: Scenario 2	. 233
Figure 167	IP Address Conflicts: Scenario 3	. 234

Figure 168	IP Address Conflicts: Scenario 4	235
Figure 169	Subscriber Login Screen: Framed Example	237
Figure 170	Subscriber Login: Information Window Example	237
Figure 171	SP-200: Daily Account	244
Figure 172	SP-200: Monthly Account	245
Figure 173	SP-200: System Status	246
Figure 174	SP-200: Network Statistics	
Figure 175	WAN Port Cable Pin Assignments	250
Figure 176	LAN Port Cable Pin Assignments	250
Figure 177	DB25 Male to DB9 Male Connector	251
Figure 178	WIndows 95/98/Me: Network: Configuration	254
Figure 179	Windows 95/98/Me: TCP/IP Properties: IP Address	255
Figure 180	Windows 95/98/Me: TCP/IP Properties: DNS Configuration	256
Figure 181	Windows XP: Start Menu	257
Figure 182	Windows XP: Control Panel	257
Figure 183	Windows XP: Control Panel: Network Connections: Properties	258
Figure 184	Windows XP: Local Area Connection Properties	258
Figure 185	Windows XP: Advanced TCP/IP Settings	259
Figure 186	Windows XP: Internet Protocol (TCP/IP) Properties	260
Figure 187	Macintosh OS 8/9: Apple Menu	261
Figure 188	Macintosh OS 8/9: TCP/IP	
Figure 189	Macintosh OS X: Apple Menu	
Figure 190	Macintosh OS X: Network	263

List of Tables

Table 1	Front Panel LEDs	38
Table 2	Web Configurator Screen Overview	44
Table 3	System Setting: System	46
Table 4	System Tools: System Account	49
Table 5	System Setting: WAN/LAN: LAN Configuration	55
Table 6	System Setting: WAN/LAN: WAN MAC Address	56
Table 7	System Setting: WAN/LAN: WAN IP	57
Table 8	System Setting: WAN/LAN: PPPoE	59
Table 9	System Setting: WAN/LAN: PPTP	61
Table 10	System Setting: Server	62
Table 11	NAT Definitions	65
Table 12	WAN NAT Mapping Types for VPN	67
Table 13	NAT Example: One-to-One	67
Table 14	NAT Example: Many-to-One	68
Table 15	NAT Example: One-to-One and Many-to-One	69
Table 16	System Setting: NAT Pool	70
Table 17	System Setting: Authentication	75
Table 18	System: Authentication: Scenario Guide	
Table 19	System Setting: Billing: Billing Profile	80
Table 20	System Setting: Billing: Billing Profile Setting	81
Table 21	System Setting: Billing: PMS Configuration	84
Table 22	Static Account Settings: Global Settings	86
Table 23	Create Static Subscriber Account: Generate Automatically	88
Table 24	Create Static Subscriber Account: Manual	89
Table 25	Static Account Operator	
Table 26	Static Account List	
Table 27	Accounting: Dynamic Account Setting	
Table 28	Dynamic Account List	
Table 29	System Setting: Port-Location Mapping	104
Table 30	Advanced Setting: Credit Card	108
Table 31	Credit Card Customization: Service Selection Page	112
Table 32	Credit Card Customization: Successful Page	114
Table 33	Credit Card Customization: Fail Page	116
Table 34	Customization: Login: Standard	119
Table 35	Customization: Login Screen: Redirect	120
Table 36	Customization: Login Screen: Advanced	121
Table 37	Customization: Login Screen: Frame	123
Table 38	Customization: Service Selection Customization	124

Table 39	Customization: Information Window	126
Table 40	Customization: Account Printout	131
Table 41	Customization: User Agreement Page	138
Table 42	Bandwidth Management: Equal Share	143
Table 43	Portal Page	145
Table 44	Advertisement	146
Table 45	Walled Garden	148
Table 46	Passthrough: Subscriber IP and MAC Address	150
Table 47	Passthrough: Destination URL and IP	152
Table 48	LAN Devices	154
Table 49	Advanced: Static Route	160
Table 50	Logs: Syslog	163
Table 51	Logs: Log Settings	166
Table 52	Logs: Log Format	166
Table 53	Advanced: Session Trace	1 <mark>68</mark>
Table 54	Session Trace File Fields	169
Table 55	SNMP	173
Table 56	MAC Filter	176
Table 57	System Status	178
Table 58	Current User List	180
Table 59	DHCP Clients	181
Table 60	Session List	182
Table 61	NAT Pool Table	183
Table 62	System Status: LAN Device Status	183
Table 63	System Status: Billing Log	185
Table 64	System Status: Static Route Table	188
Table 65	SSL Certificate Download	190
Table 66	SMT: Main Menu	201
Table 67	SMT: Control Key Descriptions	202
Table 68	SMT: System Configuration	202
Table 69	SMT: WAN Configuration: Static or Dynamic IP Address	208
Table 70	SMT: WAN Configuration: PPPoE	209
Table 71	SMT: WAN Configuration: PPTP	210
Table 72	SMT: LAN Configuration	211
Table 73	SMT: System Status	213
Table 74	Firmware Upgrade: Scheduled	218
Table 75	Troubleshooting the Power LED	227
Table 76	Troubleshooting the LAN LED	227
Table 77	Troubleshooting the WAN LED	228
Table 78	Troubleshooting Console Port	228
Table 79	Troubleshooting Web Configurator	229
Table 80	Troubleshooting Internet Browser Display	229
Table 81	Troubleshooting Internet Access	229

Table 82	Troubleshooting the Statement Printer	230
Table 83	Product Specifications: General	231
Table 84	Product Specifications: Performance and Management	232
Table 85	Product Specifications: Physical and Environmental	232
Table 86	VSG-1200 Supported VSAs	240
Table 87	VSA-related Error Messages	241
Table 88	SP-200: Report Printing Key Combination	244
Table 89	SP-200: System Status	246
Table 90	SP-200: Network Statistics	248
Table 91	Network Cable Types	249
Table 92	WAN Port Cable Ping Assignments	249
Table 93	LAN Port Cable Pin Assignments	250
Table 94	Console Port Pin Assignment	251
Table 95	DB25 Male to DB9 Male Connector Ping Assignment	251
Table 96	Classes of IP Addresses	265
Table 97	Allowed IP Address Range By Class	266
Table 98	"Natural" Masks	266
Table 99	Alternative Subnet Mask Notation	267
Table 100	Two Subnets Example	267
Table 101	Subnet 1	268
Table 102	Subnet 2	268
Table 103	Subnet 1	269
Table 104	Subnet 2	269
Table 105	Subnet 3	269
Table 106	Subnet 4	270
Table 107	Eight Subnets	270
Table 108	Class C Subnet Planning	270
Table 109	Class B Subnet Planning	271

Preface

Congratulations on your purchase of the VSG-1200 Vantage Service Gateway. Your VSG-1200 is easy to install and configure.

About This User's Guide

This manual is designed to guide you through the configuration of your VSG-1200 for its various applications. The web configurator parts of this guide contain background information on features configurable by web configurator. The SMT parts of this guide contain background information solely on features not configurable by web configurator.



Note: Use the web configurator or System Management Terminal (SMT) to configure your VSG-1200. Not all features can be configured through all interfaces.

Related Documentation

• Supporting Disk

Refer to the included CD for support documents.

• ZyXEL Glossary and Web Site

Please refer to www.zyxel.com for an online glossary of networking terms and additional support documentation.

User Guide Feedback

Help us help you. E-mail all User Guide-related comments, questions or suggestions for improvement to techwriters@zyxel.com.tw or send regular mail to The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. Thank you!

Syntax Conventions

- "Enter" means for you to type one or more characters. "Select" or "Choose" means for you to use one of the predefined choices.
- 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.
- Mouse action sequences are denoted using a comma. For example, "click the Apple icon, **Control Panels** and then **Modem**" means first click the Apple icon, then point your mouse pointer to **Control Panels** and then click **Modem**.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".
- The VSG-1200 Vantage Service Gateway may be referred to as the VSG-1200 or, simply, as the VSG in this User's Guide.

Graphics Icons Key

Vantage Service Gateway	Computer	Notebook computer
Server	DSLAM	Firewall
Telephone	Switch	Router
	X	H A
Statement Printer (SP- 200)	Access Point	

CHAPTER 1 Getting to Know Your VSG

This chapter introduces the features and applications of the VSG.

1.1 Introducing the VSG

The VSG (Vantage Service Gateway) is a rack-mountable Internet Service Gateway that provides multiple subscribers easy Internet connectivity. The VSG is ideal for office, hotspot and hotel environments.

Hotspots are public areas, such as airports, hotels, coffee shops, where end users (or subscribers) can access the Internet at any time.

1.2 Features

Your VSG provides the following features to accommodate subscribers with a variety of network configurations with little or no technical support.

Automatic Account Billing with Property Management System (PMS)

Many hotels use a PMS to perform in-room billing of services the guests use such as room service, mini-bar, pay-per-view TV or telephone usage. The VSG supports PMS from Micros Fidelios.

CAS (Central Authentication Service)

The Hilton Group Corporation developed the High Speed Internet Access (HSIA) service to provide Internet access service across its entire Hilton Group hotels. In order to use the HSIA, hotel guest(s) must be authenticated through the proprietary CAS. The CAS performs both user authentication and accounting.

Credit Card Billing

Your VSG is integrated with online secure credit card billing service providers¹ to allow you to use a credit card service to authorize, process, and manage credit transactions directly through the Internet.

^{1.} At the time of writing, the VSG allows online credit card billing through Authorize.net and SecurePay.

SSL Secure Login

With Secure Socket Layer (SSL) security activated upon login, data exchanged between the VSG and client computers is encrypted and protected.

PPPoE Support (RFC2516)

PPPoE (Point-to-Point Protocol over Ethernet) emulates a dial-up connection. It allows your ISP to use their existing network configuration with newer broadband technologies such as ADSL. The PPPoE driver on the VSG is transparent to the computers on the LAN, which see only Ethernet and are not aware of PPPoE; thus saving you from having to manage PPPoE clients on individual computers.

PPTP Support

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using a TCP/IP-based network. PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet. Subscribers can use PPTP to connect to a broadband modem to achieve access to high-speed data networks via a familiar "dialup networking" user interface.

4-Port Switch

A combination of switch and Internet gateway makes your VSG a cost-effective and viable network solution. You can connect up to four computers to the LAN ports on the VSG without the cost of a hub. To connect more than four Ethernet devices, attach a hub or switch.

Reset Button

Use the reset button to restore the VSG back to its factory defaults.

Plug-and-Play Internet Access

The VSG provides Internet access to attached computer(s) without extra software installation or computer configuration. In addition, with transparent proxy, the VSG resolves any incompatible proxy settings.

Port Forwarding

Use this feature to forward incoming service requests to a server on your local network.

DHCP Support

DHCP (Dynamic Host Configuration Protocol) allows the individual computers (DHCP clients) to obtain TCP/IP configuration at start-up from a centralized DHCP server. The VSG has built-in DHCP server capability. It can assign IP addresses, an IP default gateway and DNS servers to DHCP clients. The VSG can also act as a surrogate DHCP server (DHCP Relay) where it relays IP address assignment from another DHCP server to the DHCP clients.

RADIUS (Remote Authentication Dial-In User Service) Client

The VSG allows you to maintain a central subscriber database on an external RADIUS server. Subscriber accounting and authentication is then done through the external RADIUS server. In addition, the VSG supports Vendor Specific Attributes (VSAs) that allows enforcement of upload/download bandwidth limits or specific advertisement web page per subscriber.

Built-in Authentication and Local Subscriber Database

The VSG allows you to maintain a subscriber database on the VSG without setting up an external RADIUS server. Subscriber accounting and authentication can be done using the local subscriber database.

Accounting

Accounting can be done using an external RADIUS server or the built-in accounting feature.

Local Content and Advertising Links

The VSG can redirect subscribers to a specified web site and display advertising links. This can be a source of extra online advertising revenues and increased business exposure.

Access Control (Walled Garden)

With the walled garden feature, subscribers are able to access predetermined web sites without logging in. The VSG blocks other Internet access until the subscribers log in.

E-mail Forwarding

The VSG is able to forward and retrieve e-mail messages when the subscriber's default e-mail server is down or behind a firewall.

DNS Proxy

With DNS proxy, the VSG provides DNS redirection when a subscriber's configured DNS server is behind a firewall or located in a private Intranet.

NAT (Network Address Translation)

NAT (RFC 1631) is the translation of the IP address of a host in a packet, for example, the source address of an outgoing packet, used within one network to a different IP address known within another network.

The VSG automatically performs NAT on the LAN. You can also set the VSG to perform NAT on the WAN for VPN (IPSec and PPTP) connections.

MAC (Media Access Control) Filter

The MAC filter lets you block specific devices from accessing the Internet through the VSG.

Static Route

Static routes tell the VSG how to forward IP traffic when you configure the TCP/IP parameters manually and disable NAT.

Subscriber Login Page Customization

You can customize the subscriber login page according to your business needs. The advanced settings allow you to include welcome messages, a company logo and basic formatting.

Dual-function Console Port

The VSG provides a console port for local management. You can also set this console port to act as the printer port when connected to an external statement printer.

Web Configurator Management

The VSG comes with an embedded web-based configurator. It offers advanced management features and allows you to manage the VSG remotely using Internet Explorer (version 4.0 or above) or Netscape (version 6.0 or later).

System Maintenance

The firmware of the VSG can be upgraded via the web configurator or the SMT menu. The Embedded FTP server is for firmware upgrades as well as configuration file backups and restoration.

Ease of Installation

Your VSG is designed for quick, intuitive and easy installation. It can be mounted on a desktop or standard 19" rack.

1.3 Applications

The following sections describe network application examples in which the VSG is used.

1.3.1 Internet Access for LAN Networks

With a broadband service account set up, the VSG allows the attached computers to enjoy high speed Internet access.

Figure 1 Application: Internet Access for LAN Networks



1.3.2 Internet Access in Public Areas

In public areas, such as a hotel, the VSG provides high speed Internet access to subscribers. Account billing and authentication can be done either using an external RADIUS server or the built-in billing function and local subscriber database.

Connect an access point (AP) to bridge the wired and the wireless network allowing wireless stations to access the Internet through the VSG.





1.3.3 Hotel Application with PMS

The following figure depicts an example where the VSG is used in a hotel to provide Internet service as one of their in-room services. Billing is done through an existing PMS in the hotel.





CHAPTER 2 Hardware Installation and Connection

This chapter shows you how to install the VSG and make hardware connections.

2.1 Installation Options

The following sections describe the different installation options.



Note: Do NOT block the ventilation holes and leave adequate space on the rear and sides of the VSG during hardware installation or when stacking.

2.1.1 Desktop Installation

- **1** Make sure the VSG is clean and dry. Set the VSG on a smooth space strong enough to support the weight of the VSG and the connected cables. Make sure there is a power outlet nearby.
- **2** Make sure there is enough clearance around the VSG to allow air circulation and the attachment of cables and the power cord.
- **3** Attach the rubber feet to each corner on the bottom of the VSG. These rubber feet help protect the VSG from shock or vibration and ensure space between devices when stacking.

2.1.2 Rack Mount Installation

The VSG can be mounted on an EIA standard size, 19-inch rack or in a wiring closet with other equipment. Follow the steps below to mount your VSG on a standard EIA rack using the included rack-mounting kit.

1 Align one bracket with the holes on one side of the VSG and secure it with the bracket screws (smaller than the rack-mounting screws. Similarly, attach the other bracket.



Figure 4 Rack Mount: Attaching Brackets

2 After attaching both mounting brackets, position the VSG in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure the VSG to the rack with rack-mounting screws.



Figure 5 Rack Mount: Securing to the Rack

2.2 Hardware Connections

The following sections describe the hardware connections of the VSG.

2.2.1 Front Panel

The console, LAN and WAN ports, the reset button and the LEDs are located on the front panel.


2.2.1.1 Four LAN 10/100M Ports

Ethernet 10Base-T/100Base-T networks use Ethernet cables with RJ-45 connectors. The LAN ports are auto-crossover, so you may use a crossover Ethernet cable or a straight-through Ethernet cable to connect your VSG to a computer or external switch.

If you want to connect more than four Ethernet devices to your VSG, you must use an external switch or hub. Connect a LAN port on the VSG to a port on the switch using an Ethernet cable.

2.2.1.2 The WAN Port

Connect the VSG to a network with broadband Internet service. The WAN port is autocrossover, so you may use a crossover Ethernet cable or a straight-through Ethernet cable to connect your VSG to a router.

2.2.1.3 The Console Port

You can perform local management of the VSG through the port labeled **CONSOLE**. It requires a direct connection between the VSG and a computer via a console cable. Refer to chapters on SMT configurations for more information.

You can also connect the **CONSOLE** port to a statement printer (the SP-200, sold separately) with a DB25 male to DB9 male adapter. A statement printer allows you to create and print out subscriber accounts automatically. In addition, you can also print the system status and the account and network reports. Set the function of the console port in the web configurator (see Section 3.5 "General System Setting" on page 44).

2.2.1.4 The PMS Port

Use a DB9 console cable to connect the PMS port to a PMS system.

2.2.1.5 The Reset Button

Use a pointed object to press this button in once to reset the VSG back to the factory defaults.



Note: All your custom configuration including the system usernames and passwords will be erased.

This will NOT delete the subscriber database or the port-location mappings.

2.2.2 Front Panel LEDs

The following table describes the LEDs on the front panel. When turned on, all LEDs are green unless otherwise specified.

LED	STATUS	DESCRIPTION
PWR	On	The VSG is receiving power.
	Off	The VSG is not receiving power.
ALARM	On (Red)	There is a hardware failure.
	Blink Once (Red)	The system is starting up.
Off		The system is functioning normally.
LAN or WA	۹N	
LK/ACT	On	The port is connected to an Ethernet device.
	Blinking	The port is receiving or sending data.
	Off	The port is not connected to an Ethernet device.
10/100	On	The port is operating at 100 Mpbs.
	Off	The port is operating at 10 Mpbs.
FDX	On	The port is operating in full-duplex mode.
	Off	The port is operating in half-duplex mode.

	Table	1	Front Panel LEDs
--	-------	---	------------------

2.2.3 Rear Panel

The power socket, the fan and a ventilation hole are located on the rear panel as shown next.



Figure 7 Rear Panel



2.2.4 Turning on the VSG

Connect the female end of the supplied power cord to the power socket on the back of the VSG and the male end to an appropriate power source.

When the power source is turned on, the **PWR** LED on the front panel turns on.

2.2.5 Methods of Restoring Factory Defaults

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

- Use the **RESET** button on the front panel of the VSG (press this button once). Use this method for cases when the username, password and IP addresses of the VSG is not known.
- Use the web configurator to restore defaults (refer to Section 26.8 "Reset the VSG to Factory Defaults" on page 204).



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

CHAPTER 3 The Web Configurator

This chapter introduces how to access the web configurator and perform general system configuration.

3.1 Introducing the Web Configurator

The web configurator is best viewed with Internet Explorer (version 4.0 or above) or Netscape (version 6. or later).



Note: JavaScript support must be enabled.

3.2 Accessing the Web Configurator

Follow the steps below to access the web configurator.



Note: The VSG allows only one web configurator session at a time.

- **1** Make sure your VSG is properly connected (refer to the instructions in Chapter 2, "Hardware Installation and Connection," on page 35).
- 2 Launch your web browser and type the WAN or LAN IP address of the VSG as the web site address. **192.168.1.1** is the default IP address for the WAN port and **10.59.1.1** is the default IP address for the LAN port.
- **3** If you are using a different port number (between 8000 and 8099) for the web server, you must also append the port number to the WAN IP address separated with a colon ":", for example, http://192.168.1.1:8080.

Figure 8 Entering IP Address in Internet Explorer



4 A login screen displays. Type "admin" (default) as the administrator user name and "1234" (default) as the password and click **Get Started**.



Note: The user name and password are case sensitive.

Figure 9 Web Configurator: Login

Version 1.08	Firmware version	
Username:		
Password:		
Get Started		
Best Viewed with Microsoft Internet Explorer 4.0 and above at 800 $\times600$ resolution		

5 You should see the main screen as shown.

Figure 10 Web Configurator: Main Menu

ZyXEL	-		Vantage Service	VSG-1200 Gateway
Configuration Menu Configuration Menu	System/Host Name	System		
 B → Advanced Setting B → System Status B → System Tools 	Domain Name	Date: 2004 v / 7 v / 13 v Time: 17 v : 53 v : 26 v (Get from my Computer	(Year/Month/Day) Hour : Minute : Second) Get from NTP server Irotocol) Time Server	
	Date/Inite	Time Zone Update Time Daylight Saving Time	GMT-12:00 ▼ 0 hours Start Date: 4 × Month / 1 × Day End Date: 10 × Month / 31 × Day	
	(0)	2003 ZyXEL Communications Corporation. All R	ights Reserved.	

Note: Please note that if there is no activity for longer than five minutes after you log in, the VSG will automatically log you out. If this happens, simply log back in again. You can change the timeout period in the web configurator (refer to Section 4.8 "Server Configuration" on page 61).

3.3 The Navigation Panels

The VSG web configurator provides two levels of navigation: the **Configuration Menu** panel and a screen-specific link panel.

3.3.1 The Configuration Menu Panel

The **Configuration Menu** panel on the left of all web pages provides a consistent way to access the configuration screens. Click each heading to expand the menu.

Figure 11 Navigation Panel

Configuration Menu			
Confi	guration Menu		
🗄 🧰 <u>Sys</u>	stem Setting		
🗄 🧰 Adv	vanced Setting		
🗄 🧰 🔤	stem Status		
⊡ <u>Sy</u> s	<u>stem Tools</u>		

3.3.2 Screen Specific Link Panel

In some screens, a link panel displays on the top of the screen that allows you to navigate to advanced configuration screens. An example is shown in the figure below.

Figure 12 Navigation Panels: Screen specific Link Panel

Static Account	Dynam	nic Account			
Static Account Set	tting	Create Static Account	Static Account Operator	Static Account List	

3.4 Screen Overview

The following table lists the various web configurator screens.

 Table 2
 Web Configurator Screen Overview

SYSTEM SETTING	ADVANCED SETTINGS	SYSTEM STATUS	SYSTEM TOOLS
System Setting Image: System Image: System <t< th=""><th>Advanced Setting Image: Credit Card Ima</th><th>Image: System Status Image: System Image: System</th><th>Image: System Tools Image: Configuration Image: System Account Im</th></t<>	Advanced Setting Image: Credit Card Ima	Image: System Status Image: System Image: System	Image: System Tools Image: Configuration Image: System Account Im

3.5 General System Setting

The System screen displays first when you access the web configurator.

The **Domain Name** entry is what is propagated to the DHCP clients on the LAN. If you leave this blank, the domain name obtained by a DHCP server is used. While you must enter the host name (System Name) on each individual computer, the domain name can be assigned from the VSG via DHCP.

System/Host Name Domain Name Domain Name Domain Name Date: 2005 f / 9 / 13 (rear/Month/Day) Time: 16 \$: 50 \$: 52 \$ (rHour: Minute : Second) Get from my Computer Get from NTP server Get from NTP server Use NTP (Network Time Protocol) Time Server Server IP/Domain Name Time Zone GMT-12:00 * Update Time Date/Time Start Date: 4 \$ Month / 1 Day End Date: 10 \$ Month / 1 Day Update Time Date/Time File Prlug and Play (IPnP Technology) File Date: 10 \$ Month / 31 Day User Session Limit: Console State Translation File Prlug and Play (IPnP Technology) File Date: 4 \$ Month / 1 Day User Session Limit: Console Port Rate Bits per second 9660 Data bits 8 \$ Parity None State Set Set Set 9 \$ Parity None Set Set Set 9 \$ Parity None Set Set 9 \$ Parity 1 \$ Pa		System			
Domain Name Date: 2005 / 9 / 13 (YearMonth/Day) Time: 16 9 : 50 9 : 52 (Hour: Minute: Second) Get from my Computer Get from MTP server Use NTP (Network Time Protocol) Time Server Server IP:Domain Name Time: 0 nours Update Time 0 nours Date/filme Start Date: It wonth / 1 = Day End Date: Date/filme Start Date: It wonth / 1 = Day End Date: It wonth / 1 = Day End Date: It wonth / 1 = Day End Date: It wonth / 1 = Day Day It wonth / 1 = Day End Date: It wonth / 1 = Day Day It wonth / 1 = Day End Date: It wonth / 1 = Day Day It wonth / 1 = Day Day <	System/Host Name				
Date: 2005 1 / 9 1 / 13 (YearMonth/Day) Time: 16 : 50 : 52 (Hour: Minute: Second) Get from my Computer Get from NTP server Server IP/Domain Name Image: Server IP/Domain Name Time Zone GMT -12:00 * Update Time 0 hours Update Time 0 hours Daylight Saving Time Etant Date: It opaylight Saving Time Etant Date: It opaylight Saving Time It opaylight Saving Time	Domain Name				
Date/Time Time: 16 \$\\$ 50 \$\\$ 52 \$\\$ (Hour: Minute : Second) Get from my Computer Get from NTP server Use NTP (Network Time Protocol) Time Server Server IP/Domain Name Time Zone GMT -12:00 \$\] Update Time 0 nours Update Time 0 Daylight Baving Time Statt Date: 10 Manual Construction Time Zone Get from NTP server Daylight Baving Time Statt Date: TO Mours Daylight Baving Time Statt Date: TO Month / 31 *> Day Vers Session Limit: Uper Session Limit: Onsole Type Console Type Console Setting © Statement Printer Bits per second 9600 * Data bits Sign bits 1 * Administrator Authorized Access IP \$\$ Sign bits 1 * 2 * 3 * 4 * 5 *<		Date: 2005 • / 9 • / 13 •	(Year/Month/Dav)		
Set from my Computer Get from NTP server Use NTP (Network Time Protocol) Time Server Server IP/Domain Name Time Zone GMT-12:00 • Update Time D Daylight Saving Time Start Date: Image: Start Date: Month / 1 m Daylight Saving Time Start Date: Month / 1 m Daylight Saving Time Image: Start Date: Month / 1 m Daylight Saving Time Start Date: Image: Start Date: Daylight Saving Time Start Date: Daylight Saving Time Start Date: Image: Start Date: Image: Start Date: Daylight Saving Time Cunlimited Image: Start Date: Image: Start Date: Date: Image: Start Date: Console Type Image: Start Date: Console Port Rate Bits per second 9600 m Data bits Bits Image: Start Date: Image: Start Date: Administrator Authorized Access Program Image: Start Date: Image: Start Date: Address		Time: 16 💌 : 50 💌 : 52 💌	(Hour : Minute : Second)		
Date/Time Date/Time Protocol Time Server Server IP/Domain Name Time Zone GMT-12:00 Update Time Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIMe Date/ITIME Date/		Get from my Computer	Get from NTP server		
Date/Time Server IP/Domain Name Imme Zone GMT -12:00 • Update Time 0 hours Update Time 0 hours Daylight Saving Time Start Date: 4 Month / 1 • Day Daylight Saving Time Start Date: 4 Month / 1 • Day NAT (Network Address Translation) Imme Zone Update Time Imme Zone NAT (Network Address Translation) Imme Zone Update Time Imme Zone NAT (Network Address Translation) Imme Zone Update Time Imme Zone Console Type Imme Zone Update Console Setting Imme Zone Imme Zone Console Port Rate Imme Zone Imme Zone Imme Zone Parity None Imme Zone Imme Zone Imme Zone Administrator Authorized Access IP Imme Zone Imme Zone Imme Zone Administrator Authorized Access IP Imme Zone Imme Zone Imme Zone Administrator Authorized Access IP Imme Zone Imme Zone Imme Zone Administrator Authorized Access IP Imme Zone Imme Zone Imme Zone Admeess Imme Zone I		Use NTP (Network Time Pr	otocol) Time Server		
Date Time Imme Zone Imme Zone Imme Zone Imme Zone Imme Zone Imme Zone Imme Zone	DataŒima	Server IP/Domain Name			
NAT (Network Address Translation)	Date/Inne	Time Zone	GMT-12:00 -		
NAT (Network Address Translation)					
NAT (Network Address Translation) NAT (Network Address Translation) NAT (Network Address Translation) Pile Plug and Play (IPNP Technology) Image: Play Play Play Play Play Play Play Play		Opdate Time	lu hours		
Image: Second		Davljakt Pavina Tima	Start Date: 4 Month / 1 Day		
NAT (Network Address Translation)		L Dayight saving Time	End Date: 10 Month / 31 Day		
NAT (Network Address Translation) I P Plug and Play (IPnP Technology) Image: DNS Fake IP Reply User Session Limit: User Session Limit: C Unlimited Image: DNS Fake IP Reply Image: DNS Fake IP Reply Layer 2 Isolation Security Image: DNS Fake IP Reply Console Type Image: DNS Fake IP Reply Data bits Image: DNS Fake IP Reply Data bits Image: DNS Fake IP Reply Data bits Image: DNS Fake IP Reply Address Image: DNS Fake IP Reply		• Enable			
NAT (Network Address Translation) NAT (Network Address Translation) NAT (Network Address Translation) Viser Session Limit: User Session Limit: Outlinited () Otisable Layer 2 Isolation Security Console Setting O Statement Printer Layer 2 Isolation Security Console Port Rate Bits per second Data bits Console Port Rate Bits per second Data bits Console Port Rate Console Port Rate Console Port Rate Console Port Rate Console Port Rate Console Port Rate Console Port Rate Console Port Rate		IP Plug and Play (iPnf	• Technology)		
User Session Limit: C Unlimited © Disable Layer 2 Isolation Security © Enable C Disable Console Type © Console Setting C Statement Printer Console Port Rate Bits per second 9600 ♥ Data bits 8 ♥ Parity None ♥ Stop bits 1 ♥ Administrator Authorized Access IP 1 ♥ Address 0 Multicast Passthrough C Enable C Disable Allow remote user to ping the device © Enable C Disable SSL Certificate © Default C Custom Certificate	NAT (Network Address Translation)	DNS Fake IP Reply			
Address Image: Console C		User Session Limit:	O Unlimited		
C Disable Layer 2 Isolation Security Image: Enable C Disable Console Type Image: Console Setting C Statement Printer Console Port Rate Bits per second 9600 Image: Statement Printer Data bits B Image: Statement Printer Console Port Rate Bits per second 9600 Image: Statement Printer Parity None Image: Statement Printer Stop bits Image: Statement Printer Address Image: Statement Printer Address Image: Statement Printer Multicast Passthrough Image: Statement Printer Allow remote user to ping the device Image: Statement Printer SSL Certificate Image: Console Statement Printer		2.2	€ 64 (1~1024)		
Layer 2 Isolation Security Enable C Disable Console Type Console Setting C Statement Printer Bits per second Data bits Bits per second Data bits Bits Parity None Administrator Authorized Access IP Address Address C Enable C Disable Multicast Passthrough Enable C Disable Enable C Disable Stop Disable Enable C Disable Stop City Enable C Disable Stop Disable C Default C Custom Certificate 		O Disable			
Console Type • Console Setting • Statement Printer Console Port Rate Bits per second 9600 Data bits 8 Parity None Stop bits 1 Administrator Authorized Access IP • Any Specify 1 1 ~ Address 2 Multicast Passthrough • Enable • Disable Allow remote user to ping the • Enable • Disable SSL Certificate • Default • Custom Certificate	Layer 2 Isolation Security	€ Enable C Disable			
Bits per second 9600 • Data bits 8 • Parity None • Stop bits 1 • Administrator Authorized Access IP • Any Specify 1 • 2 • • 3 • • 4 • • 5 • • Multicast Passthrough • Enable • Disable Allow remote user to ping the device • Enable • Disable SSL Certificate • Default • C custom Certificate	Console Type	Console Setting C Statem	nent Printer		
Data bits 8 Parity None Stop bits 1 Administrator Authorized Access IP		Bits per second	9600		
Parity None • Stop bits 1 • Administrator Authorized Access IP • • • • • • • • • • • • • • • • • • •	Console Port Rate	Data bits	8		
Administrator Authorized Access IP • Any • Specify 1 1 2		Parity Ston hits	None		
Administrator Authorized Access IP Address Address Address Address Address Address Address Allow remote user to ping the device SSL Certificate					
Administrator Authorized Access IP 1 ~ Address 2 ~ 3 ~ - 4 ~ - 5 ~ - Multicast Passthrough C Enable © Disable Allow remote user to ping the device © Enable © Disable SSL Certificate © Default © Custom Certificate		C Specify			
Administrator Authorized Access IP Address 2 2 3 2 3 4 7 4 7 4 7 5 7 7 Multicast Passthrough C Enable © Disable Allow remote user to ping the device SSL Certificate © Default © Custom Certificate		1			
Address Addres	O desirable to 0 attaction of 0 and 100	2			
Image: Second system Image: Second system Image: Second	Administrator Authorized Access IP Address				
4 ~ 5 ~ Multicast Passthrough C Enable © Disable Allow remote user to ping the device © Enable © Disable SSL Certificate © Default © Custom Certificate		3			
5 ~ Multicast Passthrough • Enable • Disable Allow remote user to ping the device • Enable • Disable SSL Certificate • Default • Custom Certificate		4			
Multicast Passthrough C Enable © Disable Allow remote user to ping the device © Enable © Disable SSL Certificate © Default © Custom Certificate		5			
Allow remote user to ping the device Enable C Disable SSL Certificate O Default C Custom Certificate	Multicast Passthrough	C Enable Disable			
SSL Certificate © Default © Custom Certificate	Allow remote user to ping the device	● Enable ● Disable			
	SSL Certificate	Oefault C Custom Certific	ate		

Figure 13 System Setting: System

The following table describes the labels in this screen.

 Table 3
 System Setting: System

LABEL	DESCRIPTION			
System/ Host Name	Enter a descriptive name (up to 32 characters) for identification purposes.			
Domain Name	Enter the domain name (if you know it) here. If you leave this field blank, the VSG may obtain a domain name from a DHCP server. The domain name entered by you is given priority over the DHCP server assigned			
	domain name.			
Date/Time	To manually set the system date and time, select the appropriate choices from the Date and Time drop-down list boxes.			
	Click Get from my Computer to set the time and date on the VSG to be the same as the computer that you use to configure the VSG.			
	If you select Use NTP (Network Time Protocol) Time Server option and set the necessary fields, you can click Get from NTP Server to update the time and date on the VSG from the NTP time server.			
Use NTP (Network Time Protocol) Time Server	Select this option to have the VSG get the date and time information from a time server.			
Server IP/ Domain Name	Enter the IP address or the domain name of the time server. Check with your ISP/ network administrator if you are unsure of this information.			
Time Zone	Select your time zone from the drop-down list box. This will set the time difference between your time zone and Greenwich Mean Time (GMT).			
Update Time	Enter the number of hours between updates.			
Daylight Savings	Select this option if you use daylight savings time.			
	Daylight saving is a period from late spring to early fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening.			
Start Date	Specify the month and day that your daylight-savings time starts on if you select Daylight Savings .			
End Date	Specify the month and day that your daylight-savings time ends on if you select Daylight Savings .			
NAT (Network Address Translation)	NAT (RFC 1631) is the translation of the IP address of a host in a packet, for example, the source address of an outgoing packet, used within one network to a different IP address known within another network.			
	Select Enable to activate Network Address Translation (NAT). Enable this feature to set your VSG to map multiple local IP addresses to one global IP address. This is the default selection.			
	Select Disable to deactivate NAT.			
IP Plug and Play (iPnP Technology)	Select this option to allow plug-and-play Internet access which means that subscribers do not have to change their network settings. This feature is activated by default.			
DNS Fake IP Reply	Select this option to assign private IP address to a network device (such as the e- mail server). NAT will translate the private IP address to the public IP address on the WAN.			
User Session Limit	You can set the VSG to limit the number of sessions each user can use at a time. Select Unlimited to allow each user to use any number of sessions at a time. Select the second option and enter the number of sessions (between 1 and 1024) each user is allowed to use at a time.			

Table 3	System Setting:	System	(continued)
---------	-----------------	--------	-------------

LABEL	DESCRIPTION			
Layer 2 Isolation Security	If you activate NAT, select Enable in this field to prevent communication between subscribers. This is the default selection.			
	Select Disable to deactivate layer 2 security and allow communication between subscribers.			
Console Type	Use this field to set the function of the Console port on the front panel of the VSG.Select Console Setting when you connect the console port directly to a computer for local management. This is the default setting. Select Statement Printer when you connect the console port to an SP-200.			
Console Port Rate	Select the fields below to configure the Console port.			
	Note: If you change the console port settings, make sure you also make the same change to the terminal emulator software.			
Bits per second	This field only applies when you select Console Setting in the Console Type field.			
	Select a console port speed from the drop-down list box. Choices are 1200 , 2400 , 4800 , 9600 , 14400 , 19200 , 38400 , 57600 and 115200 . The default selection is 9600 .			
Data bits	Select a data bit from the drop-down list box.			
Parity	Select the parity from the drop-down list box.			
Stop bits	Select the stop bit from the drop-down list box.			
Administrator	Select Any to use any computer to access the web configurator on the VSG.			
Authorized Access IP Address	Select Specify and then enter the IP address(es) or a range of IP addresses of the computer(s) that is allowed to log in to configure the VSG.			
Multicast Pass Through	Select Enable to allow multicast traffic to pass through the VSG. This may affect your network performance.			
	Select Disable to prevent any multicast traffic from passing through the VSG. This is the default setting.			
Allow remote user	Select Enable to respond to Ping requests from the LAN or WAN interface.			
to ping the device	Select Disable to not respond to Ping requests from the LAN or WAN interface.			
SSL Certificate	Certificate Secure Socket Layer (SSL) security allows you to create a secure connection between the VSG and the client computer(s).			
	Select Default to use the default system-generated SSL certificate.			
	Select Custom Certificate to use a certificate obtained from a certificate authority.			
	Refer to Chapter 25, "Secure Socket Layer," on page 189 for more information.			
Apply	Click Apply to save the changes.			

3.6 System Login Accounts

There are four system accounts that you can use to log in to the VSG: administrator, account manager, supervisor and super subscriber.

• The administrator account allows you full access to all system configurations. The default administrator user name is "admin" and password "1234".

- The account manager account is used for subscriber account management only. No system configuration is allowed. This account is useful for front desk personnel (such as in a hotel) for setting up subscriber accounts without tampering with the system configuration. The default user name and password are "account".
- With the supervisor account, you can view the system status and change the supervisor account password. You can also edit the Advanced Setting Portal Page, Advertisement and Walled Garden screens. The default user name and password are "supervisor".
- The super subscriber account is used for testing the Internet connection between the VSG and the ISP. There is no time limitation or billing imposed on this account. Thus anyone who logs in with this account is able to gain Internet access for free. The default super subscriber user name and password are "super".

3.7 Changing System Login Passwords



Note: It is recommended you change the system passwords.

From the Main Menu screen, click System Tools and System Account.

Figure 14 System Tools: System Account

Administrat	tor Account
Username:	admin
Password:	xoxox
Confirm:	
Accountin	g Manager
Username:	account
Password:	soloolook
Confirm:	
Superviso	or Account
Usemame:	supervisor
Password:	Jobeleseleselese
Confirm:	
Super Subsc	riber Account
Usemame:	super
Password:	kokolok
Confirm:	
	Apply

The following table describes the labels in this screen.

 Table 4
 System Tools: System Account

LABEL	DESCRIPTION
Administrator Account	This account permits full access to all system configurations.
Username	Enter the user name for the administrative account. The default is admin .
Password	Enter a new administrative account password.
Confirm	Enter the new administrator password again for confirmation.
Accounting Manager	This account allows you to set up subscriber accounts. No system configuration is allowed.
Username	Enter the user name for the account manager account. The default is account .
Password	Enter a new account manager password.
Confirm	Enter the new account manager password again for confirmation.
Supervisor Account	This account allows you to view system status only.
Username	Enter the user name for the supervisor account. The default is supervisor .
Password	Enter a new supervisor password.
Confirm	Enter the new supervisor password again for confirmation.
Super Subscriber Account	You can use this account to test Internet connection between a computer behind the VSG to the ISP. No time limit or billing is imposed on this account.
Username	Enter the user name for the super subscriber account. The default is super .
Password	Enter a new super subscriber account password.
Confirm	Enter the new super subscriber account password again for confirmation.
Apply	Click Apply to save the changes back to the VSG.

3.8 Resetting the VSG

⇔

Note: All your custom configuration will be erased once you reset the VSG. You may choose to keep the subscriber account information and the portlocation mapping settings.

Follow the steps below to reset the VSG back to the factory default settings.

1 Click **System Tools**, **Configuration** to display the screen as shown next.

Figure 1	5 S	/stem	Tools:	Reset
----------	-----	-------	--------	-------

	Configuration	
This feature can import your saved set	tings to this device or export the stored settings from t	his device to your PC.
Backup		
Click Backup to save the current syst	em configuration to your computer.	
TFTP Server IP Address:	Text File Name:	Apply
Restore		
To restore your stored system configu	rration to this device	
File Path:	Browse	Apply
TFTP Server IP Address:	Text File Name:	Apply
Reset the system back to factory do	faults	
Keep subscriber profile		
Keep port-location mapping profile	9	Apply

- **2** Scroll down to the **Reset the system back to factory defaults** section at the bottom of the screen.
- **3** If you want to keep all subscriber account information, select **Keep subscriber profile** and/or **Keep port-location mapping profile**.
- 4 Click Apply.
- **5** Wait for the VSG to finish restarting before accessing the VSG again.

3.8 Restarting the VSG

Note: You *must* restart the VSG every time you change the system IP address or upload a firmware or configuration file.

In the Main Menu screen, click System Tools, Restart and click Apply.

Figure 16 System Tools: Restart



3.9 Logging Out of the Web Configurator

In the **Main Menu** screen, click **System Tools**, **Logout** and click **Apply** to exit from the web configurator.

Figure 17 System Tools: Logging Out

	Logout	
	To Log out of the web configurator, click Apply	
5	Apply	

CHAPTER 4 LAN, WAN and Server Setup

This chapter shows you how to configure LAN and WAN ports and server settings.

4.1 Factory Ethernet Defaults

The Ethernet parameters of the VSG are preset to the following values:

- **1** WAN IP address of 192.168.1.1 with subnet mask of 255.255.255.0.
- **2** LAN IP address of 10.59.1.1.
- **3** DHCP server enabled on the LAN with a 252 client IP address pool starting from 10.59.1.2

These parameters should work for the majority of installations. If you wish to change the factory defaults or to learn more about TCP/IP, please read on.

4.2 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.

4.3 IP Address Assignment

A static IP is a fixed IP that you configure on the VSG. A dynamic IP is not fixed; the DHCP server provides an IP address to the VSG each time it connects to the network. When an Ethernet device is configured to obtain a dynamic IP address from a DHCP server, it is known as a DHCP client.

4.4 DHCP Configuration

DHCP (Dynamic Host Configuration Protocol) allows the individual clients (Ethernet device) to obtain the TCP/IP configuration from a centralized DHCP server. The VSG has built-in DHCP server capability, which means it can assign IP addresses, an IP default gateway and DNS servers to computer systems that support the DHCP client when this feature is activated. The VSG can also act as a surrogate DHCP server where it relays IP address assignment from the actual DHCP server to the clients.

4.4.1 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.

The Internet Assigned Number Authority (IANA) reserved a block of addresses specifically for private use (refer to Section 4.4.2 "Private IP Addresses" on page 54); 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.

4.4.2 Private IP Addresses

Every machine on the Internet must have a unique address. If your networks are isolated from the Internet, for example, only between your two branch offices, you can assign any IP addresses to the hosts without problems.

However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP addresses specifically for private networks:

10.0.0.0 - 10.255.255.255 172.16.0.0 - 172.31.255.255 192.168.0.0 - 192.168.255.255

You can obtain your IP address from the IANA, from an ISP or it can be assigned from a private network. If you belong to a small organization and your Internet access is through an ISP, the ISP can provide you with the Internet addresses for your local networks. On the other hand, if you are part of a much larger organization, you should consult your network administrator for the appropriate IP addresses.

Regardless of your particular situation, do not create an arbitrary IP address; always follow the guidelines above.

⇔

Note: For more information on address assignment, please refer to RFC 1597, *Address Allocation for Private Internets* and RFC 1466, *Guidelines for Management of IP Address Space.*

4.5 DNS Server Address

DNS (Domain Name System) is for mapping a domain name to its corresponding IP address and vice versa, for example, the IP address of *www.zyxel.com* is 204.217.0.2. The DNS server is extremely important because without it, you must know the IP address of a machine before you can access it. The DNS server addresses that you enter in the DHCP setup are passed to the client machines along with the assigned IP address and subnet mask.

There are two ways that an ISP disseminates the DNS server addresses. The first is for an ISP to tell a customer the DNS server addresses, usually in the form of an information sheet, when s/he signs up. The second is to obtain the DNS server information automatically when a computer is set as a DHCP client.

4.6 LAN Configuration

To configure the LAN settings on the VSG, click **System Setting** and **WAN/LAN** to display the screen as shown.

	WAN/L	AN		
LAN	IP Address: Subnet Mask:	10.59.1.1 255.0.0.0		
WAN MAC Address	 Default Change to: 00 	00 : 00 : 00	:00 :00	
WAN Port Mode	 Get automatically fro MTU Setting: 1500 Use fixed IP address PPPoE PPTP 	(676~1500)		
	'			Apply

Eiguro 19	System	Sotting	\A/A NI/I	ΔΝΙ+Ι	ΛΝ	Configuration	_
Figure 18	System	Setting:	VVAIN/L	.AN: L	AN	Coniiguratio	1

The following table describes the LAN-related fields in this screen.

FIELD	DESCRIPTION
LAN	
IP Address	Enter the LAN IP address of the VSG in dotted decimal notation. The default is 10.59.1.1 .
Subnet Mask	Enter the LAN subnet mask in dotted decimal notation. The default is 255.0.0.0 .

 Table 5
 System Setting: WAN/LAN: LAN Configuration



Note: You must restart the VSG if you change the IP address.

If you set the VSG as a DHCP server on the LAN, the VSG will automatically change the LAN DHCP settings based on the new LAN IP address.

4.7 WAN Configuration

To configure the WAN settings on the VSG, click **System Setting** and **WAN/LAN**. The **WAN/LAN** screen varies depending on the settings in the **WAN Port Mode** field.

4.7.1 Configuring WAN MAC Address

Use the **WAN/LAN** screen to configure the MAC address of the WAN port by either setting the VSG to use the factory default or specify the MAC address of a computer on the LAN.

	WAN/LA	N	
LAN	IP Address: Subnet Mask:	10.59.1.1 255.0.0.0	
WAN MAC Address	Default C Change to: 00	0 : 00 : 00 : 00	
WAN Port Mode	Get automatically from MTU Setting: 1500 Use fixed IP address O PPPoE O PPTP	a DHCP server (6761500)	
	Г	Appl	y)

Figure 19 System Setting: WAN/LAN: WAN MAC Address

The following table describes the related field in this screen.

Table 6	System Setting:	WAN/LAN: W	AN MAC Address
---------	-----------------	------------	----------------

FIELD	DESCRIPTION
WAN MAC Address	Select Default to use the factory assigned MAC address. If your ISP requires MAC address authentication, select Change to and enter the MAC address of a computer on the LAN in the fields provided.

4.7.2 MTU

A maximum transmission unit (MTU) is the largest size packet or frame, specified in octets (eight-bit bytes) that can be sent in a packet- or frame-based network. The Transmission Control Protocol (TCP) uses the MTU to determine the maximum size of each packet in any transmission. Too large an MTU size may mean retransmissions if the packet encounters a router that can't handle that large a packet. Too small an MTU size means relatively more header overhead and more acknowledgements that have to be sent and handled.

4.7.3 WAN IP Address Settings

Use the WAN/LAN screen to change the WAN IP address settings.

	WAN/LAN		
LAN	IP Address: Subnet Mask:	10.59.1.1 255.0.0.0	
WAN MAC Address	Default C Change to: 00 : 00	: 00 : 00 : 00 : 00	
	C Get automatically from a D	HCP server	
	Use fixed IP address		
	IP Address:	192.168.1.1	
	Subnet Mask:	255.255.255.0	
	Default IP Gateway:	192.168.1.254	
WAN Port Mode	Primary DNS Server:	168.95.1.1	
	Secondary DNS Server:		
	MTU Setting:	(\$78~1500)	
	C PPTP		

Figure 20 System Setting: WAN/LAN: WAN IP

The following table describes the related labels in this screen.

Table 7	System Setting:	WAN/LAN: WAN IP
---------	-----------------	-----------------

FIELD	DESCRIPTION
WAN Port Mode	
Get automatically from a DHCP server	Select this option to set the VSG to act as a DHCP client on the WAN. The VSG obtains TCP/IP information (IP address, DNS server information, etc.) from a DHCP server.
MTU Setting	Enter the MTU (Maximum Transfer Unit) size.

FIELD	DESCRIPTION
Use fixed IP address	Select this option to set the VSG to use a static (or fixed) IP address. This is the default setting.
IP Address	Enter the static IP address in dotted decimal notation. The default WAN IP address is 192.168.1.1 .
Subnet Mask	Enter the subnet mask in dotted decimal notation.
Default IP Gateway	Enter the IP address of the default gateway device.
Primary/Secondary DNS Server	Enter the IP addresses of the primary and/or secondary DNS servers.
MTU Setting	Enter the MTU (Maximum Transfer Unit) size.

Table 7 System Setting: WAN/LAN: WAN IP (continued)

4.7.4 **PPPoE**

Point-to-Point Protocol over Ethernet (PPPoE) functions as a dial-up connection. PPPoE is an IETF (Internet Engineering Task Force) draft standard specifying how a host personal computer interacts with a broadband modem (for example DSL, cable, wireless, etc.) to achieve access to high-speed data networks. It preserves the existing Microsoft Dial-Up Networking experience and requires no new learning or procedures.

For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for instance, RADIUS). For the user, PPPoE provides a login and authentication method that the existing Microsoft Dial-Up Networking software can activate, and therefore requires no new learning or procedures for Windows users.

One of the benefits of PPPoE is the ability to let end users access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for specific users.

Operationally, PPPoE saves significant effort for both the subscriber and the ISP/carrier, as it requires no specific configuration of the broadband modem at the subscriber's site.

By implementing PPPoE directly on the VSG (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the VSG does that part of the task. Furthermore, with NAT, all of the LAN's computers will have Internet access.

	WAN/LAN	
LAN	IP Address: Subnet Mask:	10.59.1.1 255.0.0.0
WAN MAC Address	 Default C Change to: 00 : 00 	: 00 : 00 : 00 : 00
	C Get automatically from a	DHCP server
	• PPPoE	
WAN Port Mode	Username:	
	Password:	
	PPP MTU Setting:	1492 (option)
	TCP MSS Setting:	1452 (option)
	Service Name:	(option)
	Connect on Demand	Max Idle Time: 10 Min.
	C Keep alive	Redial Period: 30 Sec.
	о рртр	
		Apply

Figure 21 System Setting: WAN/LAN: PPPoE

The following table describes the related fields in this screen.

Table 8	System Setting: WAN/LAN: PPPoE
---------	--------------------------------

FIELD	DESCRIPTION	
WAN Port Mode	PPPoE Select this option to activate PPPoE support.	
Username	Enter the user name exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.	
Password	Enter the password associated with the user name above.	
PPP MTU Setting	Enter the size of a Maximum Transmission Unit (MTU).	
TCP MSS Setting	Enter the size of the Maximum Segment Size (MSS).	
Service Name	Enter the name of your PPPoE service.	
Connect on Demand	Select this option when you don't want the connection up all the time and specify an idle timeout in the Max Idle Time field (maximum 65535 minutes). This is the default setting with an idle timeout of 10 minutes.	
Keep Alive	Select this option when you want the Internet connection up all the time and specify a redial period in the Redial Period field (maximum 65535 seconds). When disconnected, the VSG will attempt to bring up the connection after the redial period.	

4.7.5 PPTP

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables transfers of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet.

	WAN/LAN		
LAN	IP Address: Subnet Mask:	10.59.1.1 255.0.0.0	
WAN MAC Address	C Change to: 00 : 00 : 00 : 00 : 00 : 00 : 00		
	C Get automatically from a l C Use fixed IP address C PPPoE	DHCP server	
	• РРТР		
	PPTP Local IP Address:	[
	PPTP Local Subnet Mask:		
	PPTP Local Default Getway:	Γ	
WAN Port Mode	PPTP Server IP Address:		
	Username:	[
	Password:	[
	PPP MTU Setting:	1460	(option)
	TCP MSS Setting:	1400	(option)
	Connection ID/Name:	1	(option)
	Connect on Demand	Max Idle Time: 10	Min.
	C Keep alive	Redial Period: 30	Sec.
			Apply

Figure 22 System Setting: WAN/LAN: PPTP

The following table describes the related fields in this screen.

Table 9 System Setting: WAN/LAN: PPTP

FIELD	DESCRIPTION
WAN Port Mode	
PPTP	Select this option to activate PPTP support. Refer to Section 4.7.5 "PPTP" on page 60 for more information.
PPTP Local IP Address	Enter the IP address assigned to you.
PPTP Local Subnet Mask	Enter the subnet mask assigned to you.
PPTP Local Default Gateway	Enter the IP address of the gateway device.
Username	Enter the user name exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the user name above.
PPP MTU Setting	Enter the size of a Maximum Transmission Unit (MTU).
TCP MSS Setting	Enter the size of the Maximum Segment Size (MSS).
Connections ID/Name	Enter your identification name of the PPTP server assigned to you by the ISP.
Connect on Demand	Select this option when you don't want the connection up all the time and specify an idle timeout in the Max Idle Time field (maximum 65535 minutes). This is the default setting with an idle timeout of 10 minutes.
Keep Alive	Select this option when you want the Internet connection up all the time and specify a redial period in the Redial Period field (maximum 65535 seconds). When disconnected, the VSG will attempt to bring up the connection after the redial period.

4.8 Server Configuration

Use the **Server Configuration** screen to set the embedded web server, the LAN DHCP server and specify the e-mail server for e-mail redirection on the VSG.

Click System Setting and Server to display the screen as shown next.

	Server		
Web Server	Server Port: 80 SSL Security Administrator Idle-Timeout: 100 Min(s) (1 - 1440)		
	C Disable C DHCP Relay		
	DHCP Server IP Address		
	DHCP Server(Private)		
DHCP Server	IP Pool Starting Address	10.59.1.2	
	Pool Size:	253 (Max.=1024)	
	Lease Time (Private)	1440 (Minutes)	
	Primary DNS Server	168.95.1.1	
	Secondary DNS Server		
Email Server Redirect	IP Address or Domain Name SMTP Port 25	(25, 2500 - 2599)	
		Apply	

Figure 23	System	Settina:	Server
	0,000	oounig.	001101

The following table describes the labels in this screen.

ing: Server

LABEL	DESCRIPTION	
Web Server		
Server Port	Specify the port number of the embedded web server on the VSG for accessing the web configurator. The default port number is 80 . Enter a number between 8010 and 8060 to access the web configurator behind a NAT-enabled network. If you enter a number between 8010 and 8060, you need to append the port number to the WAN or LAN port IP address to access the web configurator. For example, if you enter "8010" as the web server port number, then you must enter "http:// www.192.168.1.1:8010" where 192.168.1.1 is the WAN or LAN port IP address.	
SSL	Security Secure Socket Layer (SSL) security allows you to create a secure connection between the VSG and the client computer(s). Refer to Chapter 25, "Secure Socket Layer," on page 189 for more information. Select this option to activate SSL security. By default, SSL login security is disabled.	
Administrator Idle-Timeout	Specify how many minutes (between 1 and 1440) the web configuration can be left idle before the session times out. After it times out you have to log in with your username and password again. Very long idle timeouts may have security risks. Note: This does NOT apply to the SMT management session.	

Table 10 Sys	tem Setting: Server	(continued)
--------------	---------------------	-------------

LABEL	DESCRIPTION	
DHCP Server	Select the DHCP mode on the LAN.	
Disable	Select this option to disable DHCP server on the LAN.	
DHCP Relay	Select this option to set the VSG to forward client DHCP requests to a DHCP server on the LAN network. Then configure the DHCP Server IP Address field.	
DHCP Server IP Address	If you select DHCP Relay , enter the IP address of the real DHCP server.	
DHCP Server	Select this option to set the VSG to assign network information (IP address, DNS information etc.) to Ethernet device(s) connected to the LAN port(s). This is the default setting.	
DHCP Pool Start IP Address	Enter the first of the continuous addresses in the IP address pool. The default is 10.59.1.2 (based on the default LAN IP address of 10.59.1.1).	
DHCP Pool Size	This field specifies the size or count of the IP address pool. Enter a number not greater than 1024. The default is 253 .	
Lease Time Specify the time (in minutes between 1 and 71582788) a DHCI allowed to use an assigned IP address. When the lease time ex DHCP client is given a new, unused IP address.		
Primary/Secondary DNS IP Address	Enter the IP address of the DNS server(s) in the Primary DNS IP Address and/or Secondary DNS IP Address fields.	
	Note: You <i>must</i> specify a DNS server.	
E-mail Server Redirect	You can set the VSG to redirect and send subscriber's E-mail via a specified e-mail server. This feature allows subscribers to send E-mail via the local E-mail server when their default e-mail server is not working or prevented by relay restrictions.	
IP Address or Domain Name	Specify the IP address or the domain name of the e-mail server to which the VSG forwards e-mail.	
SMTP Port	Specify the port number (25 is the default) for SMTP (Simple Mail Transfer Protocol). Enter a number between 2500 and 2599.	
Apply	Click Apply to save the settings.	

CHAPTER 5 NAT Pool

This chapter shows how to configure Network Address Translation (NAT) on the WAN for VPN packets.

5.1 NAT Introduction

NAT (Network Address Translation - NAT, RFC 1631) is the translation of the IP address of a host in a packet, for example, the source address of an outgoing packet, used within one network to a different IP address known within another network.

5.1.1 NAT Definitions

Inside/outside denotes where a host is located relative to the VSG, for example, the computers of your subscribers are the inside hosts, while the web servers on the Internet are the outside hosts.

Global/local denotes the IP address of a host in a packet as the packet traverses a router, for example, the local address refers to the IP address of a host when the packet is in the local network, while the global address refers to the IP address of the host when the same packet is traveling in the WAN side.

Note that inside/outside refers to the location of a host, while global/local refers to the IP address of a host used in a packet. Thus, an inside local address (ILA) is the IP address of an inside host in a packet when the packet is still in the local network, while an inside global address (IGA) is the IP address of the same inside host when the packet is on the WAN side. The following table summarizes this information.

ITEM	DESCRIPTION
Inside	This refers to the host on the LAN.
Outside	This refers to the host on the WAN.
Local	This refers to the packet address (source or destination) as the packet travels on the LAN.
Global	This refers to the packet address (source or destination) as the packet travels on the WAN.

Table 11 NAT Definitions

NAT never changes the IP address (either local or global) of an outside host.

5.1.2 What NAT Does

In the simplest form, NAT changes the source IP address in a packet received from a subscriber (the inside local address) to another (the inside global address) before forwarding the packet to the WAN side. When the response comes back, NAT translates the destination address (the inside global address) back to the inside local address before forwarding it to the original inside host. Note that the IP address (either local or global) of an outside host is never changed.

The global IP addresses for the inside hosts can be either static or dynamically assigned by the ISP. In addition, you can designate servers, for example, a web server and a telnet server, on your local network and make them accessible to the outside world. If you do not define any servers, NAT offers the additional benefit of firewall protection. With no servers defined, your VSG filters out all incoming inquiries, thus preventing intruders from probing your network. For more information on IP address translation, refer to *RFC 1631, The IP Network Address Translator (NAT)*.

5.1.3 How NAT Works

Each packet has two addresses – a source address and a destination address. For outgoing packets, the ILA (Inside Local Address) is the source address on the LAN, and the IGA (Inside Global Address) is the source address on the WAN. For incoming packets, the ILA is the destination address on the LAN, and the IGA is the destination address on the WAN. NAT maps private (local) IP addresses to globally unique ones required for communication with hosts on other networks. It replaces the original IP source address in each packet and then forwards it to the Internet. The VSG keeps track of the original addresses and port numbers so incoming reply packets can have their original values restored.

5.2 VPN and NAT

A VPN (Virtual Private Network) provides secure communications between sites without the expense of leased site-to-site lines. A secure VPN is a combination of tunneling, encryption, authentication, access control and auditing technologies/services used to transport traffic over the Internet or any insecure network that uses the TCP/IP protocol suite for communication.

The VSG allows subscribers to create a VPN tunnel to a remote site.

Note: For IPSec, the VSG does not support AH protocol.

By default, the VSG performs NAT on the LAN; mapping multiple private LAN addresses to a single public address on the WAN. This prevents subscribers from creating multiple VPN connections to a remote VPN device that allows only one VPN connection per source IP address.

In order to allow subscribers to establish multiple VPN connections to a remote VPN device with single-connection-per-source limitation, set the VSG to perform NAT on the WAN. You need to configure the NAT address pool for use with VPN connections on the WAN port. The VSG automatically maps one/more private IP addresses to one/more public IP addresses for VPN packets. The following table describes the NAT mapping types on the WAN for VPN packets.

Tahle 1	2	WAN	ΝΑΤ	Manning	Types	for	VPN
	4			wapping	rypes	101	VEN

ТҮРЕ	DESCRIPTION
One-to-One	For VPN connections to the same remote VPN device, the VSG maps each private LAN IP address to one public WAN IP address.
One-to-Many	For VPN connections to different remote VPN devices, the VSG maps multiple private LAN IP address to one public WAN IP address.

5.3 NAT Examples

The following sections describe some NAT address mapping examples for VPN connections.

5.3.1 Example 1: One-to-One

The figure below shows an example where the two subscribers **S1** and **S2** tries to establish secure VPN connections to the same VPN server **V1** at the same time. For example, the VSG is using a public IP address of $211.21.21.1^2$. In this case, the VSG performs One-to-One IP address translation on the WAN.



The following table shows the address mapping.

Table 13 NAT Example: One-to-One

SUBSCRIBER	ORIGINAL SOURCE IP	TRANSLATED SOURCE IP
S1	10.59.1.2	211.21.21.2
S2	10.59.1.3	221.21.21.3

^{2.} All public IP address discussed are for examples only.

5.3.2 Example 2: Many-to-One

The figure below shows an example where the two subscribers **S1** and **S2** try to establish a secure VPN connection to VPN servers **V1** and **V2** respectively at the same time. In this case, the VSG performs Many-to-One IP address translation on the WAN since the destination address is different.





The following table shows the address mapping.

Table 14	NAT	Example:	Many-to-One
----------	-----	----------	-------------

SUBSCRIBER	ORIGINAL SOURCE IP	TRANSLATED SOURCE IP
S1	10.59.1.2	211.21.21.2
S2	10.59.1.3	211.21.21.2

5.3.3 Example 3: One-to-One and Many-to-One

The figure below shows an example where subscriber **S1** tires to connect to VPN server **V1** while subscriber **S2** and **S3** try to connect to the same VPN server **V2** at the same time. In this case, subscribers **S1** and **S2** map to the same WAN IP address since the destination is different while subscriber **S3** maps to a different WAN IP address.



The following table shows the address mapping.

SUBSCRIBER	ORIGINAL SOURCE IP	TRANSLATED SOURCE IP
S1	10.59.1.2	211.21.21.2
S2	10.59.1.3	211.21.21.2
S3	10.59.1.4	211.21.21.3

 Table 15
 NAT Example: One-to-One and Many-to-One

5.4 Configuring NAT Pool



Note: You only need to set the NAT address pool if the remote VPN server(s) allows only one connection per source IP address.



Note: You need to acquire additional public IP address(es) from your ISP to create NAT pool(s).

To set the NAT address pool, click **System Setting** and **NAT Pool** in the navigation panel. A screen displays as shown next.

Figure 27 System Setting: NAT Pool



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Disable	Select this option to deactivate this feature. Subscribers are not be able to establish multiple connections simultaneously to the same VPN server (that has the single-connection-per-source limitation).
Enable	Select this option to perform address translation on the WAN to allow subscribers to establish simultaneous connections to the same VPN server (that has the single-connection-per-source limitation). You must then configure the address pool for VPN connections.
Start/End IP	Specify the beginning and ending IP addresses of the address pool in the fields provided and click Add to List .
	The following shows NAT pool examples if the VSG is using a WAN public IP address of 211.21.21.1:
	Group 1: 211.21.21.2 ~ 211.21.21.6 (five IP addresses)
	Group 2: 211.21.21.20 ~ 211.21.21.29 (ten IP addresses)
	Group 3: 211.21.21.60 ~ 211.21.21.69 (ten IP addresses)
	Group 4: 211.21.21.75 ~ 211.21.21.76 (two IP addresses)
	Note: You can configure up to ten address pools (each pool can contain up to 50 addresses) on the VSG.
No.	This read-only field displays the index number.
Address List	This read-only field displays the address pool.
Delete	Click Delete to remove the selected entry(ies).
Apply	Click Apply to save the changes.

 Table 16
 System Setting: NAT Pool

CHAPTER 6 Authentication

This chapter shows you how to set up subscriber authentication on the VSG.

6.1 Authentication Overview

You can set the VSG to authenticate subscribers in a number of ways:

- User agreement
- CAS (Central Authentication Service)
- Built-in authentication
- Remote RADIUS server

By default, subscriber authentication is disabled. This allows all subscribers to access the Internet without entering account username and password.

6.1.1 User Agreement

In cases where authentication is not required and anyone can access the Internet through the VSG, you can set the VSG to require users to accept a service usage agreement before they can access the Internet.

6.1.2 CAS (Central Authentication Service)

The Hilton Group Corporation developed the High Speed Internet Access (HSIA) service to provide Internet access service across its entire Hilton Group hotels.

In order to use the HSIA, hotel guest(s) must be authenticated through the proprietary CAS. The CAS performs both user authentication and accounting.





The following summarizes the communication steps before Internet access is allowed.

- **1** A hotel guest launches a web browser.
- **2** The VSG redirects the guest's web browser to a login screen at CAS.

- **3** The guest enters the provided access information.
- **4** Once authentication is successful, CAS informs VSG to allow Internet access to the guest.

6.1.3 Accounting Methods

The VSG provides two accounting methods: Accumulation and Time to Finish.

- The Accumulation accounting method allows multiple re-logins until the allocated time period or until the subscriber account is expired. The VSG accounts for the time the subscriber logs in for Internet access.
- The **Time to Finish** accounting method is good for one-time logins. Once a subscriber logs in, the VSG stores the MAC address of the subscriber's computer for the duration of the time allocated. Thus the subscriber does not have to enter the user name and password again for re-login within the allocated time. Once activated, the subscriber account is valid until the allocated time is reached even if the subscriber disconnects Internet access for a certain period within the allocated time. For example, if Joe purchases a one-hour time-to-finish account. He starts using the Internet for the first 20 minutes and then disconnects Internet access to go to a 20-minute meeting. Then he only has 20 minutes left on his account.

6.1.4 Built-in Authentication

The built-in authentication method is useful if you do not have a RADIUS server. You can use the built-in subscriber database to manage the subscribers. With the built-in authentication, the VSG provides three sets of preconfigured scenarios that you can choose for easy and simple setup. For billing, use either a PMS or the built-in billing mechanism to set up accounting information.

6.1.5 RADIUS

The VSG supports Remote Authentication Dial-In user Service (RADIUS). By integrating RADIUS with the VSG, you can set up the subscriber database on the RADIUS server. In addition to subscriber information, the subscriber database may hold the Internet usage time period each subscriber is allocated. For example, when a subscriber logs in, the RADIUS server will send the time allocation information (such as session time-out) to the VSG, which uses this information to control the subscriber's connection.

6.1.5.1 RADIUS Accounting

The VSG sends "accounting start" and "accounting stop" messages to the RADIUS server, which uses these messages to accurately track subscriber Internet usage.
6.1.5.2 Vendor Specific Attribute

With RADIUS server authentication, you can define vendor specific attributes (VSAs) in addition to the set of standard RADIUS attributes defined in RFC 2865 and RFC 2866. A VSA is an attribute-value pair that is sent between a RADIUS server and the VSG. It is necessary you define the VSAs on the RADIUS sever if you want the VSG to perform the following:

- Limit Download bandwidth per subscriber
- Limit Upload bandwidth per subscriber
- Limit Total traffic bandwidth allowed per subscriber
- Specify advertising web site per subscriber
- Enable/disable SMTP redirect



Note: Before you can make use of these functions on the VSG, configure the proprietary VSAs on the RADIUS server. Refer to the documentation that comes with your RADIUS server for more information.

See Appendix D, "Vendor Specific Attributes," on page 239 for more information on the VSAs.

6.2 Authentication Settings

To configure the subscriber authentication method, click **System Setting** and **Authentication** to display the screen as shown next.

		Authentica	ation Configuration
Authentication Type	© N	lo Authentication	
	0.0	lser Agreement	
		C Redirect URL Link	Code
		 Standard User Agreemer 	nt page
	0 0	AS (Hiton HSIA)	
	G	ateway Type: GEN 💌	_
	P	roperty Code:	(5 characters)
	P	roperty ZIP:	(4 ~ 10 characters)
	h	edirect ORL Link Indp.//nsi	a.namptoninn.com/nsia/servie/Aur
	C B	uilt-in Authentication	eeni o zin a-aven a
	n c C	etwork needs. You must her omplete your setup. urrent preset option: Scen	ario C <u>Select option</u>
C		ADIUS	
		 Accumulation Time to Finish (No idle 	timeout)
		Primary RADIUS Server	Server IP address Authentication Port O Accounting Port O Shared Secret
		Secondary RADIUS Server	Server IP address Authentication Port O Accounting Port O Shared Secret
		Retry Attempts when Primary failed	5
		Accounting Service	 Disable Enable Update every: 0 Min(s)
		Authentication Method	CHAP
		Vendor Specific Attribute	Vendor Code 0 Send VSA together with Authentication Request
Idle Time Out	5	Min(s) (1 - 1440)	
Current User Information Backup	10	Min(s) (1 - 1440)	
SSL Login Security	οp	isable O Enable	
			Apply

Figure 29 System Setting: Authentication

 Table 17
 System Setting: Authentication

LABEL	DESCRIPTION
No Authentication	Select this option to disable subscriber authentication. Subscribers can access the Internet without entering user names and passwords.
	This is the default setting.
User Agreement	Select User Agreement to direct a subscriber to an Internet service usage agreement page before accessing the Internet.
Redirect Page URL Link	Select this radio button to send the subscribers to a different web page for authentication. Specify the URL of the user agreement page in the field provided. Click Code to display the HTML source code of a default sample page.
Standard User Agreement page	Select this radio button to use the system's built-in user agreement page.
CAS (Hilton HSIA)	Select this option to use the Hilton Group proprietary CAS (Central Authentication Service) for HSIA. Then specify the fields below.
Gateway Type	Specify the type of this gateway from the drop-down list box. Select ZYL for ZyXEL devices. Otherwise, select GEN .
Property Code	Enter the provided property location code (up to five characters) for the hotel. This identifies the location of the Internet access request.
Property Zip	Enter the provided property zip code (between four and 10 characters).
Redirect Page URL Link	Specify the web site address of the login screen to which the hotel guests are directed for authentication using CAS.
	Note: The default web site address is already entered for you. You don't need to change this unless otherwise instructed by the Hilton HSIA support team.
Built-in Authentication	Select this option to authenticate the subscribers using the local subscriber database. Then click Select option to choose a per-configured setting in the Current Preset option field.
	Note: When you select this option, you <i>must</i> also configure the Billing and Accounting screens.
	Note: Time to finish accounting is available with the Built-in
	Authentication option. The RADIUS option allows you to use accumulation or time to finish accounting.
Current preset option	This field is available when you select Built-in Authentication .
	This field displays the current pre-configured setting for the built-in authentication. To select a predefined option, click Select option to open the Scenario Guide screen (refer to Figure 30 on page 77).
RADIUS	Select this option to authenticate subscribers using a remote RADIUS server. Then configure the following fields.
Accumulation	Select this option for multiple re-login until the time allocated is used up. If a subscriber logs out and accesses the Internet again within the time period specified in the Idle Timeout field, the subscriber does not have to enter the user name and password again to log in.
Time to Finish	Select this option to allow each subscriber a one-time login. If a subscriber logs out before the allocated time expires, the subscriber does not have to enter the user name and password to access the Internet again.
Primary/Secondary RADIUS Server	Server IP Address Enter the IP address of a RADIUS server in dotted decimal notation.

LABEL	DESCRIPTION
Authentication Port	Specify the authentication port of the RADIUS server. The common port numbers are 1645 and 1812.
Accounting Port	Specify the accounting port of the RADIUS server. The common port numbers are 1646 and 1813.
Secret Key	Specify a password (up to 31 alphanumeric characters) as the key to be shared between the RADIUS server and the VSG.
	The key is not sent over the network.
	Note: This key must be the same on the RADIUS server and the VSG.
Retry Attempts when Primary fail	Specify the number of times (1 to 3) the VSG resends an authentication request to the primary and/or secondary RADIUS servers.
Accounting Service	Select Enable from the drop-down list box to activate the accounting feature and enter the time (in minutes) between updates in the Update every field.
	Select Disable to de-activate the accounting feature.
Authentication Method	Select either the CHAP or PAP authentication method from the drop-down list box.
Vendor Specific Attribute	In the Vendor Code field, specify a number for the vendor ID. This is an IANA (Internet Assigned Numbers Authority) assigned number that identifies the vendor or enterprise. Enter 890 for ZyXEL devices.
	Select Send VSA together with Authentication Request to set the VSG to include the VSA information in the authentication requests.
Idle-Timeout	The VSG automatically disconnects a computer from the network after a period of inactivity. The subscriber may need to enter the username and password again before access to the network is allowed.
	Specify the idle timeout between 1 and 1440 minutes. The default is 5 minutes.
Current User Information	This feature is applicable for built-in authentication.
Backup	Select this option to back up account information every time interval specified (between 1 and 1440 minutes). The default time interval is 10 minutes. The account information includes unused dynamic accounts and accounts that are currently in use.
SSL Login Page Security	Select Enable to activate SSL security upon accessing the login screen so that user names and passwords are encrypted before being transmitted to the VSG.
	Select Disable to de-activate SSL security for the subscriber login screen.
	Refer to Chapter 25, "Secure Socket Layer," on page 189 for more information.
Apply	Click Apply to save the changes.

Table 17	System Setting: Authentication	(continued))
----------	--------------------------------	-------------	---

6.2.1 Scenario Options

Note: This feature is for built-in authentication method only.

When you select **Built-in Authentication** in the **Authentication** screen, you must select a pre-configured scenario option by clicking the **Select option** link to display a screen as shown next.

Select a scenario option in the **Items Check** field and click **Apply** to save the settings. Then proceed to configure the billing and accounting settings.

	Scenario	Guide	
	Express way to fit yo	ur business model	
Items check	C Scenario A	C Scenario B	Scenario C
PMS billing system	Yes	Yes	No
Infrastructure	Port-Location Mapping	General	General
Need username/password when guests go to Internet	No	Yes	Yes
Need to create static accounts	Option	Yes	Option
Allow guests to select service when first login	Yes	Yes	No
Billing mode	Time to Finish	Time to Finish	 Time to Finish Accumulation Idle Timeout 5 Min (s).(1 - 1440) Accumulation account will be deleted after logged in 7 days
BillingCharge mode	 Based on Room Based on Subscriber 		
Default Billing Profile	Need to continue configuring "Billing" and choose at lease one active billing profile	Need to continue configuring "Billing" and choose at lease one active billing profile	Allow Credit Card Paymen
Remarks	Need to continue configuring "Port-Location Mapping Table"		

Figure 30 System: Authentication: Scenario Guide

The following table describes each scenario.

OPTION	DESCRIPTION	SAMPLE SUBSCRIBER LOGIN SCREEN
Scenario A	Select this option to use PMS billing with port-location mapping. Once you configure the port- location mappings, subscribers are able to access the Internet without entering usernames and passwords. Subscribers can purchase additional time blocks with different billing plans. You can still create static or dynamic accounts. However, subscribers using the dynamic or static accounts are prompted for usernames and passwords.	Figure 31 Subscriber Login: Scenario A Welcome Please choose from the following service selection 1 day \$10.00 • How many units of Internet access would you like to purchase? 1 • *Please kindly note that there will be no refund once connectivity is confirmed. *Please note that the time block of selected service is based on continuous usage. Please click ENTER to confirm your acceptance of the usage charge or CANCEL to exit. The selected service charge will be posted directly into your guest folio. Enter Cancel
Scenario B	Select this option if you want to use PMS billing without port-location mapping. You must then create the subscriber accounts. Subscribers are prompted for their usernames and passwords before Internet access is allowed. Subscribers can purchase additional time blocks with different billing plans.	Figure 32 Subscriber Login: Scenario B Welcome Username: Password: Please choose from the following service selection 1 day \$10.00 v How many units of Internet access would you like to purchase? *Please kindly note that there will be no refund once connectivity is confirmed. *Please click ENTER to confirm your acceptance of the usage charge or CANCEL to exit. The selected service charge will be posted directly into your guest folio. Enter Cancel
Scenario C	Select this option to use the VSG's built-in or credit card billing function. You can select time to finish or accumulation accounting. No PMS device is needed.	Figure 33 Subscriber Login: Scenario C Welcome Username: Password: Please choose from the following service selection 1 day \$10.00 • How many units of Internet access would you like to purchase? *Please kindly note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. *Please tindty note that there will be no refund once connectivity is confirmed. Enter Cancel Cancel Cancel Concel Cancel Concel Cancel

Table 18 System: Authentication: Scenario Guide

CHAPTER 7 Billing Profiles and PMS Configuration

This chapter shows you how to set up subscriber billing and PMS (Property Management System) configuration.

7.1 About Billing Profiles

A billing profile contains information such as time unit, unit cost and/or account expiration time. You must associate a subscriber account with a billing profile.

In addition, for PMS billing, subscribers may have a choice of purchasing additional time blocks with different billing profiles you set and activate on the VSG.

7.1.1 Creating a Billing Profile

You can create up to ten billing profiles on the VSG. Click **System Setting**, **Billing** and the **Billing Profile** link to display the screen as shown next.

		Bill	ing Profile	
Curr	ency: \$	(Number of decimals	s places: <mark>2</mark>)	
No	Active	Name	Description	Profile Setting
01	N	Profile 1	1 day \$10.00	Edit 🔳
02				Edit 🔳
03				Edit 🔳
04				Edit 🔳
05				Edit 🔳
06				Edit 🔳
07				Edit 🔳
08				Edit 🔳
09				Edit 🔳
10				Edit 📳

Figure 34 System Setting: Billing: Billing Profile

The following table describes the labels in this screen.

 Table 19
 System Setting: Billing: Billing Profile

LABEL	DESCRIPTION
Currency	Specify the type of currency and/or dollar sign for billing.
Number of decimal places	Specify the number of decimal places for the currency. The default is 2 .
No	This field displays the index number of a billing profile.
Active	Select this check box to enable the billing profile.
Name	This field displays the name of a billing profile.
Description	This field displays a description of a billing profile.
Profile Setting	Click Edit to edit the selected billing profile. Refer to Section 7.1.2 "Editing a Billing Profile" on page 80 for more information.
Apply	Click Apply to save the changes.

7.1.2 Editing a Billing Profile

To edit a billing profile, click the **Edit** button in the **Billing Profile** screen to display the configuration screen for the selected billing profile.

		Billing	Frome Setting	
No	2			
Name				
Description				
Price	Duration	Charge	Check Time	Selective Unit
	 I minute 	0	Period Time finish	From: 1 To: 10
	C 1 hour	0	Period Time finish	From: 1 To: 10
	O 1 day	0	Period Time finish	From: 1 To: 10
			C Expire when 00:00 ▼	
	O 1 week	0	 Period Time finish 	From: 1 To: 10
			C Expire when Sun. ▼ 00:00 ▼	
	O 1 month	0	Period Time finish	From: 1 To: 10
			C Expire when 01 ▼ 00:00 ▼	
	C Unlimited	0		
Bandwidth	Note: You must acti	vate the bandwid	th management feature and select a class	s of service
Limit	Maximum Upstream Bandwidth		⊙ 64 Kbps 💌 O 0 Kbps	(64-24576)
	Maximum Downstre	am Bandwidth		(64-24576)

Figure 35 System Setting: Billing: Billing Profile Setting

Tuble Le Oyotom County. Dining: Dining Tromo County	Table 20	em Setting: Bill	ing: Billing Prot	file Setting
---	----------	------------------	-------------------	--------------

LABEL	DESCRIPTION
No	This read-only field displays the index number of the billing profile.
Name	Enter a descriptive name for the billing profile for identification purposes.
Description	Enter a description for this billing profile
Price	

LABEL	DESCRIPTION
Duration	Select a time period (minute , hour , day , week , month or Unlimited) and enter the time unit in the field provided (not available for Unlimited).
Charge	Specify the unit cost in this field.
Check Time	Select Period Time Finish for time-to-finish billing method. Refer to Section 6.1.5 "RADIUS" on page 72 for more information.
	Select Expired when and specify the time from the drop-down list box(es) for the accumulate billing method. The subscriber accounts will be invalid once the allocated time period is used up. This option is only available when you select the Day , Week or Month option in the Period Time field.
Selective Unit	Specify the range of time units (between 1 and 99) a subscriber is allowed to purchase at any one time.
	The range is presented as a drop-down list box in the information pop-up window.
Bandwidth Limit	Note: You must activate bandwidth management to use this feature. Refer to Chapter 16, "Bandwidth Management," on page 141.
	Set the fields below to configure the bandwidth limit for this billing profile.
Uplink Bandwidth	To use a pre-defined option, select the first option and choose a bandwidth from the drop-down list box.
Limitation	To manually set the bandwidth, select the second option and specify the bandwidth in the field provided.
Downlink Bandwidth Limitation	To use a pre-defined option, select the first option and choose a bandwidth from the drop-down list box.
	To manually set the bandwidth, select the second option and specify the bandwidth in the field provided.
Reset	Click Reset to restart configuring this screen again.
Apply	Click Apply to save the changes.

 Table 20
 System Setting: Billing: Billing Profile Setting (continued)

7.2 PMS (Property Management System)

Many hotels use a PMS device to perform in-room billing for services (such as room service, mini-bar, pay-per-view TV or telephone) that the guests use.

With PMS, the VSG allows subscribers to purchase additional time units online. In addition, subscribers can select from a number of different billing plans.

To use PMS for billing, first connect the VSG to a PMS device using the **PMS** port (refer to Chapter 2, "Hardware Installation and Connection," on page 35), then configure the PMS settings on the VSG.

7.2.1 Port-Location Mapping Charge Modes

When you activate port-location mapping and PMS on the VSG, two charge modes are available: per room and per subscriber.

Select **Based on Room** when location is important. If a subscriber disconnects from one location and reconnects in another location, the VSG prompts for the user name and password again.

Select **Based on Subscriber** to allow a subscriber to freely move between different locations without prompting for user name and password.

7.2.2 PMS Configuration

Click **System Setting**, **Billing** and click the **PMS Configuration** link to display the screen as shown next.

PMS Configuration				
Charge Mode (only for Port- Location Mapping enabled)	 Based on Room Based on Subscriber 			
Regenerate password of static account with PMS checkout	Enable 💌 (only for Scenario B)			
	Micros Fidelio Spectrum MK II			
	Revenue Code 1 (1-99)			
	Description Internet			
PMS Type	C Marriott			
	Revenue Code 1 (1-99)			
	Reference Internet			
	O Proprietary			
Speed of PMS interface	Bits per second 9600 💌			
	Data bits 8 💌			
	Parity None 💌			
	Stop bits 1			
	Apply			

LABEL	DESCRIPTION			
Charge Mode (only for Port-Location	When you set up Port-Location Mapping, your VSG offers two billing modes: Based on Room and Based on Subscriber .			
Mapping enabled)	Select Based on Room when location is important. If a subscriber disconnects from one location and reconnects in another location, the VSG prompts for the user name and password again.			
	Select Based on Subscriber to allow a subscriber to freely move between different locations without prompting for user name and password.			
	Note: You must activate the port-location mapping feature. Refer to Chapter 10, "Port-Location Mapping," on page 103.			
Regenerate password of static	This feature is applicable when you select Scenario B with Built-in Authentication in the Authentication screen (see Figure 29 on page 74).			
account with PMS checkout.	Select Enable to automatically generate a new password for the static account when a subscriber checks out.			
	Select Disable to keep the password for the static account unchanged after a subscriber checks out.			
PMS Type	Select a PMS system and specify the fields below (if available). Currently the VSG supports Micros Fidelio , Spectrum MK II , Marriott and Proprietary .			
Revenue Code	Enter a revenue code (between 01 and 99).			
Description	Enter the description for the revenue. Refer to the user's guide that comes with your PMS device.			
Speed of PMS	Set the fields below to configure the PMS port settings on the VSG.			
Interface	Note: Make sure the port settings are the same on the VSG and the connected PMS device.			
Bits per second	Select the speed of the PMS port connection. The default is 9600 .			
Data bits	Specify the data bits.			
Parity	Specify the parity.			
Stop bits	Specify the data stop bits.			
Apply	Click Apply to save the changes.			

7.3 Types of Subscriber Accounts

After you have set up the subscriber authentication methods and billing profile(s), you need to create subscriber accounts. There are two types of subscriber accounts: static and dynamic.

- For static accounts, refer to Chapter 8, "Static Subscriber Accounts," on page 85.
- For dynamic accounts, refer to Chapter 9, "Dynamic Subscriber Accounts," on page 95.

CHAPTER 8 Static Subscriber Accounts

This chapter shows you how to set up and manage static subscriber accounts.

8.1 About Static Subscriber Accounts

Static accounts are useful in locations such as hotels where you can match an account user name to a fixed location for easy management. Once a static subscriber account is created, it stays permanently in the VSG unless deleted manually. You can generate static accounts automatically or manually.

The following figure shows the links for accessing the static account configuration screens when you click **System Setting**, **Accounting** and **Static Accounts**.

Figure 37 Static Account: Links

 Static Account
 Dynamic Account
 I

 Static Account Setting
 Create Static Account
 Static Account Operator
 Static Account List

8.2 Global Static Account Settings

To configure global static account settings, click the **Static Account Setting** link to display the screen as shown.

Static Account Setting				
Static Account Setting				
Concurrent Access	Allow concurrent access with one account Max. concurrent access: 2 -			
Customize Printout	Customize printout text			
Print to	© Statement Printer Q © PC-Connected Printer Q			
		Apply		

Figure 38 Static Account Settings: Global Settings

LABEL	DESCRIPTION			
Concurrent Access	Select Allow concurrent access with one account to allow more than one users to access the Internet using the same account at the same time. Then specify the number of concurrent users from the Max. concurrent access drop-down list box. The default number of concurrent access is 2 users per account.			
Customize Printout	Click Customize printout text to set the account printout page. Refer to Chapter 14, "Account Printout," on page 129.			
Print To	Select Statement Printer if you want to print the account information using a statement printer connected to the CONSOLE port on the VSG.			
	Select PC-Connected Printer if you want to print the account information using a printer connected to a network computer.			
	Click on the ${f Q}$ icon to display a print preview.			
Apply	Click Apply to save the settings.			

 Table 22
 Static Account Settings: Global Settings

8.3 Creating a Static Account

Click System Setting, Accounts, Static Accounting and Create Static Account to display the screen as shown next.

Create Static Account							
Gene	rate a batch of s	tatic accounts	S				
Prefix:		From: 0 (Maximum 5 numbers)		pers)			
Postfi	x:		To:	0	(Max	imum 5 numt	pers)
Billing I	Profile: Profile 1 💌	Random Passwor	rd Length:	8 -			
Note: F	For PMS billing type,	use only numbers	s for subsc	riber accou	ints.		
							Apply
Static	Accounts back	up and restor	e				
Backup	2	Click to save th	ne account	information	n to your cor	mputer.	
Restore	a.	option, locate t	he accoun	t informatio	n file and cli	ick Apply.	system, select this
1.00101	-	File Path:	e Path: B		Browse		
							Apply
		Manually	/ Add Su	ıbscriber	Account	ŧ	
No.	User	name:		Pa	assword:		Billing Profile
1							Profile 1 💌
2							Profile 1 💌
3							Profile 1 💌
4							Profile 1 💌
5							Profile 1 💌
6							Profile 1 💌
7							Profile 1 💌
8							Profile 1 💌
9							Profile 1 💌
10							Profile 1 💌
							Apply

|--|

There are two ways to create static subscriber accounts as described in the following sections.

8.3.1 Generating Static Accounts Automatically

To generate a list of static subscriber accounts automatically, set the fields in **Generate a batch of static accounts** in the **Create Static Subscriber Account** screen.

Generate a batch of sta	tic accounts		
Prefix:	From:	0	(Maximum 5 numbers)
Postfix:	То:	: 0 (Maximum 5 numbers)	
Billing Profile: Profile 1 💌 R	andom Password Length:	8 💌	
Note: For PMS billing type, u	se only numbers for subs	criber acco	ounts.
			Apply

Figure 40 Create Static Subscriber Account: Generate Automatically

The following table describes the related labels in this screen.

LABEL	DESCRIPTION			
Generate a batch of static accounts				
Prefix	Specify the starting characters affixed to the beginning of all account user names.			
Postfix	Specify the characters to append o the end of all account user names.			
From	Enter the first number of the range of static accounts.			
То	Enter the ending number of the range of static accounts.			
Billing Profile	Select a predefined billing profile from the drop-down list box. Note: This drop-down list box displays active profiles only. Refer to Section 7.1.1 "Creating a Billing Profile" on page 79 for more information.			
Random Password Length	The VSG automatically generates a password for each automatically created static account. Specify the length of the password from the drop-down list box.			
Apply	Click Apply to start generating the static accounts based on the above criterion.			

Table 23 Create Static Subscriber Account: Generate Automatically

After you have generated the list of static accounts in this screen click **Static Account List** to display the list of static accounts. Refer to Section 8.6 "Viewing the Static Account List" on page 94.

8.3.2 Creating Static Subscriber Accounts Manually

To create static accounts manually, display the **Create Static Subscriber Account** screen and scroll down to the **Manually Add Static Subscriber Accounts** section as shown next. You can manually create up to 10 static accounts at a time.

Manually Add Subscriber Account				
No.	Username:	Password:	Billing Profile	
1			Profile 1 💌	
2			Profile 1 💌	
3			Profile 1 💌	
4			Profile 1 💌	
5			Profile 1 💌	
6			Profile 1 💌	
7			Profile 1 💌	
8			Profile 1 💌	
9			Profile 1 💌	
10			Profile 1 💌	
Apply				

Figure 41 Create Static Subscriber Account: Manual

The following table describes the related labels in this screen.

LABEL	DESCRIPTION
No	This read-only field displays the index number of an entry.
Username	Enter the user name for a static subscriber account.
Password	Enter the password associated with the user name above. You may also set the VSG to generate a password automatically (refer to Section 8.5 "Editing Subscriber Accounts" on page 92).
Billing Profile	From the drop-down list box, select a billing profile for the static account. Note: This drop-down list box displays active profiles only. Refer to Section 7.1.1 "Creating a Billing Profile" on page 79 for more information.
Apply	Click Apply to create the static account(s) and save the changes.

8.4 Static Account List Backup and Restore

You can back up and restore static account information in the Create Static Account screen.

8.4.1 Backing Up a Static Account List

Follow the steps below to back up static subscriber account information to your computer.

- 1 In the Create Static Subscriber Account screen and scroll down to the Static Accounts backup and restore section.
- 2 Click Backup.

Figure 42 Static Subscriber Account: Backup and Restore

Static Accoun	ts backup and restore
Backup	Click to save the account information to your computer.
Restore	To restore a previously saved account information file to your system, select this option, locate the account information file and click Apply. File Path:Browse
	Apply

3 A File Download window displays. Click Save.

Figure 43 Static Subscriber Account: Backup and Restore: File Download

File Dow	nload			×		
?	Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open save this file.					
	File name:	sta_list.txt				
	File type:	Text Document				
	From:	10.59.1.1				
	Would you like t	o open the file o	rsave it to your con	nputer?		
	<u>O</u> pen	Save	Cancel	More Info		
	Always ask I	before opening t	his type of file			

4 A **Save As** window displays. Specify the filename and/or location and click **Save** to save the backup file.

Save As					<u>?×</u>
Save jn:	🛃 Desktop		-	🗢 🖿 😁 🖽	•
History Desktop My Computer	My Computer My Network F Shortcut to C	Naces indy Bkup Drive			
	File <u>n</u> ame: Save as <u>l</u> ype:	<mark>sta_acc</mark> Text Document		•	<u>S</u> ave Cancel

Figure 44 Static Subscriber Account: Backup and Restore: Save As

You can view the backed up file using any text-editing program.

8.4.2 Restoring a Static Account List

You may restore the static account list if you accidentally reset the VSG back to the factory defaults and erased the subscriber account information.

Follow the steps below to restore a previously backed up subscriber account list.

1 In the Create Static Subscriber Account screen and scroll down to the Static Accounts backup and restore section.

Figure 45 Static Subscriber Account: Backup and Restore

Static Accoun	ts backup and restore
Backup	Click to save the account information to your computer.
Restore	To restore a previously saved account information file to your system, select this option, locate the account information file and click Apply. File Path:Browse
	Apply

- 2 Specify the location and/or file name of the account information file in the File Path field or click Browse to locate it.
- **3** Click **Apply** to start the file transfer process. The VSG automatically restarts after the file transfer is complete.

8.5 Editing Subscriber Accounts

To edit a subscriber account, click **System Setting**, **Accounting** and the **Static Account Operator** link to display the screen as shown next.

Figure 46	Static Account Operator

	Static Account Operator									
refres	refresh ↔ Print List									
No.	Username	Show Password	Re-Generate Password ALL	Status	Print					
1	Cindy		Re-Generate Password	Offline						
2	VIP		Re-Generate Password	Offline	Ē					
HG	HGO 1 Page K First 4 Previous Next > End >									
	Apply									

Table 25	Static Account	Operator
----------	----------------	----------

LABEL	DESCRIPTION					
Refresh	Click this button to update the screen.					
Print List	Click this button to print a list of all subscriber accounts.					
No	This read-only field displays the index number of an entry.					
Username	This read-only field displays the account user name. Click the heading to sort the entries in ascending or descending order.					
Hide Password/ Show Password	Click Hide Password to not display the passwords for the accounts on the screen. Click Show Password to display the passwords for the accounts on the screen.					
Re-Generate Password	You may set the VSG to generate a new password for each account. Click All to set the VSG to generate new passwords for all accounts. Click Re-Generate Password to set the VSG to generate a new password for the corresponding account.					
Status	This field indicates whether the account is currently in use (Online) or not (Offline).					
Print	Click the 🖹 icon to print the account information of the selected account.					
GO Page	Select a page number from the drop-down list box to display the selected page.					
First	Click First to go to the first page.					
Previous	Click Previous to return to the previous page.					
Next	Click Next to go to the next page.					
End	Click End to go to the last page.					
Apply	Click Apply to save the changes.					

8.5.1 Static Account Information Print Preview

To display a printout preview of static account information, click the **Print** icon to display a printout preview window showing the account information. An example is shown in the following figure.

Refer to Section 14.1.1 "Customizing the Account Printout" on page 129 to configure the printout page.

Welcome!
This is your account information, please keep this for your Internet Service.
Username: Cindy
Password: cindy
Usage Time:1 day
Billing: Time to Finish
Profile: 1 day \$10.00
Purchase Unit: 1
Total:\$ 10.00
Thank you very much ! CUTCUTCUT -
Username: Cindy
Password: cindy
Billing: Time to Finish
Profile: 1 day \$10.00
Purchase Unit: 1
Total:\$ 10.00
Signature:
Close Print

Figure 47 Static Account Information Printout Example

8.6 Viewing the Static Account List

To display the static account list, click Static Account List.

	Static Account									
refres	refresh ↔ Backup Print List									
No.	No. Username Password Billing Profile Concurrent Access First Login Expiration Status Delete								Delete	
1	Cindy	cindy	1	Profile 1	1	2004/10/22 12:00:28	2004/10/23 12:00:28	Online		
2	VIP	vip		None	0			Offline		
Delete All										
MG	Page Revious Next > End W									

The following table describes the labels in this screen.

Table 26 Static Account List

LABEL	DESCRIPTION
Refresh	Click Refresh to update this screen.
Backup	Click Backup to backup the account information to a computer.
Print List	Click Print List to print ALL account information on a printer connected to the computer you use to access the web configurator.
	Note: This does NOT display a print preview window.
No	This field displays the index number.
Username	This field displays the account user name. Click the heading to sort the entries in ascending or descending order based on this column.
Password	This field displays the account password.
Billing Profile	This field displays the name of the profile associated to the account.
Concurrent Access	This field displays the number of users are currently using this account for Internet access.
First Login	This field displays the time a subscriber logs in using the account.
Expiration	This field displays the time the account becomes invalid.
Status	This field indicates whether the account is currently is use (Online) or not (Offline).
Delete	Click Delete All to remove all accounts.
	Click Delete to remove the selected account(s).
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.

CHAPTER 9 Dynamic Subscriber Accounts

This chapter shows you how to set up and manage dynamic subscriber accounts.

9.1 About Dynamic Subscriber Accounts

Unlike a static account, a dynamic account is not permanent. Once the time allocated to a dynamic account is used up or a dynamic account remains un-used after the expiration time, the account is deleted from the account list automatically.

Dynamic accounts are automatically generated either by pressing a button on an external statement printer connected to the **CONSOLE** port or using the web configurator (the **Dynamic Account Operator Panel** screen).



Note: You cannot manually add a dynamic account.

The following figure displays the links for accessing the dynamic account configuration screens when you click **System Setting**, **Accounting** and **Dynamic Account**.

Fiq	igure 49 Dynamic Account: Links							
1	Static Account Dynamic Account							
1	Dynamic Account Setting Dynamic Account Operator Dynamic Account List							

9.2 Dynamic Account General Settings

There are two ways you can create dynamic accounts on the VSG:

- using a statement printer connected to the VSG.
- using the web configurator.

Before you create dynamic accounts, you must specify the billing profile(s), the number of printout copies and the number of hours before the VSG automatically deletes an inactive account. Refer to the related sections for more information.

For creating dynamic accounts using a statement printer, make sure you connect the statement printer (sold separately) to the **CONSOLE** port on the VSG. Then, in the **Dynamic Account Setting** screen, select the profile setting for each button on the statement printer (refer to the user's guide that comes with the statement printer).

For web-based dynamic account generation, you can specify up to four billing profiles (one for each of the four buttons you click to generate the accounts automatically on the web-based screen).

Click **System Setting**, **Accounting**, **Dynamic Account**, and then **Dynamic Account Setting** link to display the screen as shown next.

	Dynami	c Account Setting			
Dynamic Accounts c Operator or the State	can be created automatically wh ement Printer.	en you click the button from th	e Web-based Dynamic Account		
Web-based Dynan	nic Account Operator/ Staten	nent Printer Settings			
Web based Button	SP Button	Button name (Max. 12 characters)	Billing Profile:		
Button 1	SP200 Button A	Button 1	Profile 1 💌		
Button 2	SP200 Button B	Button 2	Profile 1 💌		
Button 3	SP200 Button C	Button 3	Profile 1 💌		
Button 4	-	Button 4	Profile 1 💌		
General Settings					
Unused Accounts	Automatically delete after 12 hours				
Printout copy	Number of copies to print: 1 Customize printout text				
Print to	© Statement Printer Q O PC-Connected Printer Q	2			
			Apply		

Figure 50 Accounting: Dynamic Account Setting

 Table 27
 Accounting: Dynamic Account Setting

LABEL	DESCRIPTION		
Web-based Dynam	ic Account Operator/ Statement Printer Settings		
Web-based Button	This read-only field displays the button index number (Button 14). The button numbers correspond to the buttons displayed in the Dynamic Account Operator Panel screen.		
	Refer to Section 9.3.1 "Dynamic Account Generation Using the Web Configurator" on page 97 for more information.		
SP Button	This read-only field displays the button label on the SP-200. Refer to Figure 51 on page 97.		
	Refer to Section 9.3.2 "Dynamic Account Generation Using a Statement Printer" on page 98 for more information on generating dynamic accounts using a statement printer.		
Button name	Specify the name of the web-based button (up to 12 characters) in the field provided. The buttons are displayed in the Dynamic Account Operator Panel screen (see Figure 52 on page 98).		

LABEL	DESCRIPTION
Billing Profile	Select a billing profile to associate to the web-based and SP buttons from the drop- down list box.
	Only the activated billing profiles are displayed. Refer to Section 7.1.1 "Creating a Billing Profile" on page 79 for more information on creating billing profiles.
General Settings	
Unused Accounts	Specify the number of hours to wait before the VSG deletes an inactive dynamic account.
Printout copy	Select the number of copies (1 to 3) to print from the drop-down list box.
	Click Customize printout text to configure the printout page.
Print to	Select Statement Printer if you want to print the account information using a statement printer connected to the CONSOLE port on the VSG.
	Select PC-Connected Printer if you want to print the account information using a printer connected to a network computer.
	Click the 🔍 icon to display a print preview.
	Refer to Chapter 14, "Account Printout," on page 129 for more information.
Apply	Click Apply to save the changes.

 Table 27
 Accounting: Dynamic Account Setting (continued)

The following figure shows the button labels on the SP-200.

Figure 51 SP-200 Button Labels



9.3 Creating Dynamic Accounts

You can only create dynamic accounts automatically. You can create dynamic accounts using either the web configurator screen or the statement printer.

9.3.1 Dynamic Account Generation Using the Web Configurator

Display the Dynamic Account Operator Panel screen as shown next.





Click a button to generate a dynamic account based on the settings you configure for the button in the **Dynamic Account Setting** screen. A window displays showing a printout preview of the dynamic account generated.

The following figure shows an example. Refer to Chapter 14, "Account Printout," on page 129 on account printout to configure the printout page.

Figure 53	Dynamic Account	Information	Printout Example
-----------	-----------------	-------------	------------------

Welcome!				
This is you this for you	r account information, please keep r Internet Service.			
Username:	>00000000			
Password::	000000000			
Usage Tim	e:			
Billing: Tim	e to Finish			
Profile: 1 d	ay \$10.00			
Purchase l	Jnit: 1			
Total: \$ 10	00			
	2005/12/23 17:34:51			
	S/N:000001			
Please act nt before	tive your accou			
	2005/12/24 05:34:51			
	Thank you very much !			

9.3.2 Dynamic Account Generation Using a Statement Printer

Follow the steps below to create dynamic accounts and print the account information using a statement printer.



Note: You have to purchase a statement printer separately.

- 1 Connect the statement printer to the port labeled **CONSOLE**. Refer to Section 2.2 "Hardware Connections" on page 36 for more information.
- **2** Configure the **Console Type** field in the **System** screen. Refer to Section 3.5 "General System Setting" on page 44.
- **3** Turn on the statement printer and make sure there is printing paper.
- **4** Press the button on the statement printer. A dynamic account is generated and the account information should be printed. Refer to Figure 84 on page 134 for a printout example.



Note: The settings of the buttons on the statement printer correspond to the three SP-200 buttons you set in the **Dynamic Account Operator Panel** screen. Refer to Section 9.2 "Dynamic Account General Settings" on page 95.

9.4 Viewing the Dynamic Account List

To display the dynamic account list, click **Dynamic Account List**. Click a heading to sort the entries in ascending or descending order based on the column if applicable.

	,								
	Dynamic Account List								
refresh	Ð						B	ackup Pri	nt List
S/N	Username	Password		Billing Profile	Time Created	First Login	Expiration	Status	Delete
1	bwh2y936	6tj27289	1	Profile 1	2004/10/21 11:53:06		2004/10/21 23:53:06	Not In Use	
Delete All									
MGC	1 - Page					🕊 First	Previous	Next 🕨	End 渊

Figure 54 Dynamic Account List

LABEL	DESCRIPTION
Refresh	Click Refresh to update this screen.
Backup	Click Backup to backup the account information to a computer. Refer to Section 9.4.1 "Backing Up the Dynamic Account List" on page 100.
Print List	Click Print List to print all account information to the local printer connected to the computer that you use to configure the VSG.
	Note: This does NOT display a printout preview window.
S/N	This field displays the serial number (or the Index number) of a dynamic account.
Username	This field displays the account user name. Click the heading to sort the entries in ascending or descending order based on this column.
Password	This field displays the account password.

LABEL	DESCRIPTION
Billing Profile	This field displays the index number and the name of a billing profile the account is using.
Time Created	This field displays the time the account is created.
First Login	This field displays the time a subscriber logs in using the account.
Expiration	When an account is currently in use, this field displays the time before which a subscriber can still use the account to access the Internet.
	When an account is never used, this field displays the time the account becomes invalid.
Status	This field displays In Use when the account is currently in use. Otherwise it displays Not In Use .
Delete	Click Delete All to remove all accounts.
	Click Delete to remove the selected account.
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.

Table 28	Dynamic Account List	(continued))
----------	----------------------	-------------	---

9.4.1 Backing Up the Dynamic Account List

Follow the steps below to backup the dynamic account list to your computer.

- 1 Display the Dynamic Account Setting screen (refer to Figure 50 on page 96).
- 2 Click Dynamic Account List (refer to Figure 54 on page 99).
- **3** Click the **Backup** link.
- 4 A File Download window displays. Click Save.

Figure 55 Dynamic Account List Backup: File Download

Ŷ	Some files can l looks suspiciou: save this file.	narm your computer. s, or you do not fully	If the file inform trust the source	ation below e, do not open o
	File name:	dyn_list.txt		
	File type:	Text Document		
	From:	10.59.1.1		
	Would you like	to apen the file or se	we it to your ca	mputer?
	Open	Save	Cancel	More Info

5 A **Save As** window displays. Specify the filename and/or location and click **Save**.

ve As					?
Save jn	🖸 D esktop		•	🗢 💼 🔂 🧱	
History Desktop	My Computer	r Places Tindy Blup Drive			
y Nelwork P	File <u>n</u> ame:	dın list			<u>S</u> ave
	Save as type:	Text Document		-	Cancel

Figure 56 Dynamic Account List Backup: Save As

You can view the backed up file using any text-editing program.

CHAPTER 10 Port-Location Mapping

This chapter describes the port-location mapping feature.

10.1 About Port-Location Mapping

With port-location mapping, you can map a port on the VSG or a VLAN-enabled switch to a room number in a building (such as a hotel). This is done using IEEE802.1q VLAN tags. The port-location mapping feature is used together with the PMS billing function so charges can be done automatically.

10.2 Configuring Port-Location Mapping



Note: Make sure you select **Built-in Authentication** and **Scenario A** in the **Authentication** screen (see Figure 29 on page 74) and configure the **PMS Configuration** screen (see Figure 36 on page 83).

Click **System Setting** in the navigation panel and the **Port-Location Mapping** link to display the screen as shown.

			Port-Lo	cation M	apping			
Single (Create							
Location	Identifier (ID)				Port Identifi	er (ID)		
Descripti	on							
Status:	O No Charge 💿 Cł	arge for use	C Blocked					Add to List
Batch C	reate							
Location	ID From:		Port ID From	n:		Batch Nun	nbers:	
Status:	🔿 No Charge 💿 Ch	arge for use	C Blocked					Add to List
Note:For	BO2.1q device, use o	nly numbers t	for the Loca	tion Identi	fier field.			
Backup	Restore							
	Backup to Local F	<u>ос</u>						
Backup	Remote TFTP Serv	er IP Address	s:	F	ile Name:			Apply
	Local PC File Path					Brow	se	Apply
Restore	Remote TFTP Serv	er IP Address		F	ïle Name: 🗌			Apply
Port-Loca	ntion Mapping List							
	Location ID	Por	t ID	D	escription		Status	Delete
							Delete	e Delete All
MGO	1 💌 Page				🗮 Fir	st 📢 Pre	vious N	ext 🕨 End 🗰

Figure 57 System Setting: Port-Location Mapping

Table 29	System Setting:	Port-Location	Mapping
----------	-----------------	---------------	---------

LABEL	DESCRIPTION
Single Create	Set the related fields to create a port-location mapping one at a time.
Location Identifier (ID)	Enter an identity (up to 20 characters) for a mapping. This field must match the VLAN ID of a port.
Port Identifier (ID)	Enter the an ID number (between 1 and 999999) of a port for this mapping. This is the location ID number you set in the PMS.
Description	Enter a description (up to 32 characters) for this mapping for identification purposes.

LABEL	DESCRIPTION
Status	Select No Charge if you don't want to bill a subscriber accessing the Internet at this port location.
	Select Charge for use to bill a subscriber accessing the Internet at this port location.
	Select Blocked to stop any subscriber from accessing the Internet at this port location.
Add to List	Click Add to List to insert a new mapping rule.
Batch Create	Set the related fields to create a specified number of port-location mappings.
Location ID From	Enter an identity (up to 20 characters) of the first location for a mapping. This field must match the VLAN ID of a port.
Port ID From	Enter the an ID number (between 1 and 999999) of the starting port for this mapping. This is the location ID number you set in the PMS.
Batch Numbers	Specify the number of port-location mappings you want to create at a time.
Status	Select No Charge if you don't want to bill a subscriber accessing the Internet at this port location.
	Select Charge for use to bill a subscriber accessing the Internet at this port location.
	Select Blocked to stop any subscriber from accessing the Internet at this port location.
Add to List	Click Add to List to insert a new mapping rule.
Backup/ Restore	You can back up or restore the port-location mappings.
Backup	Click Backup to Local PC to save the current port-location mappings to a computer.
	To back up the current port-location mapping to a TFTP server, specify the IP address of the TFTP server and the file name in the fields provided and click Apply .
Restore	Make sure you have previously backed up the port-location mapping.
	Note: All current port-location mappings will be lost.
	To restore from a local computer, specify the name and location of the backup file or click Browse to locate it and click Apply .
	To restore from a TFTP server, specify the IP address of the TFTP server and the file name in the fields provided and click Apply .
Port-Location Mapping List	This table displays a summary of each mapping rule. If applicable, click on a heading to sort the entry.
Location ID	This field displays the ID of a mapping rule.
Port ID	This field displays the port ID.
Description	This field displays a description.
Status	This field displays the status (No Charge , Charge for use or Blocked) of a mapping.
Delete	Click Delete All to remove all accounts.
	Click Delete to remove the selected account.
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.

Table 29 System Setting. Fort-Location Mapping (continu

LABEL	DESCRIPTION
Next	Click Next to go to the next page.
End	Click End to go to the last page.

 Table 29
 System Setting: Port-Location Mapping (continued)

CHAPTER 11 Credit Card Billing and Customization

This chapter shows you how to configure secure online credit card service on the VSG and customize the subscriber credit card information screen.

11.1 Credit Card Billing Overview

Your VSG is integrated with the Authroize.net and SecurePay online secure credit card billing service providers, allowing you to process credit card transactions via the Internet.



Note: You must register with the Authorize.Net credit card service (www.authorizenet.com or www.authorize.net) or the SecurePay credit card service (www.securepay.com.au) before you can configure the VSG to handle credit card transactions.

11.1.1 How Credit Card Billing Works

The following summarizes the process of how a customer pays for a subscriber account using a credit card.

- 1 A customer accesses the subscriber login screen and selects credit card payment.
- **2** The customer selects a service type and enters contact and billing information.
- **3** Customer billing information is processed real-time via the secure online credit card billing service.
- **4** After the transaction is successful, the VSG provides the username and password information so the customer can log in for Internet access.

11.1.2 Configuration Steps

Do the following to allow credit card service.

- **1** Obtain an account with Authorize.net or SecurePay.
- **2** In the **Authentication** screen, select **Built-in Authentication** and allow credit card payment with Scenario C (refer to Section 6.2 "Authentication Settings" on page 73 for more information).
- **3** Enter your account information in the Credit Card screen.

4 Configure the subscriber credit card information screen (see Chapter 12, "Subscriber Login Screen," on page 117 for more information).

11.2 Setting up Credit Card Billing Service

After you have obtained an Authorize.net or SecurePay account, set up the online credit card billing information in the **Credit Card** screen.

Click **Advanced Setting**, **Credit Card** to displays the screen as shown below. Enter your account information in this screen.

Figure 58 Advanced Setting: Credit Card

utionze.net	
Version	3.1
Merchant ID	
Merchant Password	Need Password:
Merchant Transaction Key	
Payment Gateway	https:// secure.authorize.net/gateway/transact.dll
Email Additional Information	Merchant Name: (max. 40 characters) Username and Password Usage Time
Secure Pay	
Merchant ID	(max. 7 characters)
SecurePay Address	https://www.securepay.com.au/securepay/paym
Card icons to be displayed on the	Bogin page

 Table 30
 Advanced Setting: Credit Card

LABEL	DESCRIPTION		
Authorize.net	Select this option to use the Authorize.Net online credit card service for billing subscribers.		
Version	This is the (read-only) software version of the Authorize.Net payment gateway.		
Merchant ID	Enter the IDentification number that you received from Authorize.Net.		
LABEL	DESCRIPTION		
--	--	--	--
Merchant Password	Select Need if a password is required for the Authroize.net account. Then enter the password exactly as you received it from Authorize.Net in the Password field		
Merchant Transaction Key	Enter the transaction key exactly as you received it from Authorize.Net. The transaction key is similar to a password. The Authorize.Net gateway uses t transaction key to authenticate transactions.		
Payment Gateway	Enter the address of the Authorize.Net gateway. The default value is "https:// cardpresent.authorize.net/gateway/transact.dll". Note: You don't need to change this address unless instructed by an Authorize.net administrator.		
Email Additional Information	Select this check box to have the VSG e-mail the subscriber the information that you specify in the following fields.		
Merchant Name	Select this check box to have the VSG include the company name in the e-mail that it sends to the subscriber. Enter the company name (up to 40 characters) in the field provided.		
Username and Password	Select this check box to have the VSG e-mail the subscriber the subscriber user name and password.		
Usage Time	Select this check box to have the VSG e-mail the subscriber the amount of usage time purchased.		
Secure Pay	Select this option to use the Secure Pay online credit card service for billing subscribers.		
Merchant ID	Enter the merchant ID exactly as you received it from SecurePay.		
SecurePay Enter the address of the SecurePay server. The default value is "http www.securepay.com.au/securepay/payments/process2.asp".			
	Note: You don't need to change this address unless instructed by a Secure Pay administrator.		
Credit card icons to be displayed on the login page	Select the check box(es) of the credit card icon(s) that you want the VSG to display on the subscriber login screen (refer to Figure 33 on page 78 for an example).		
Apply	Click Apply to save the changes.		

 Table 30
 Advanced Setting: Credit Card (continued)

11.3 Customizing Subscriber Credit Card Information Screen

After you have entered your account information in the **Credit Card** screen, you may customize the credit card information screen the subscribers use.

Click Advanced, Customization and click the Credit Card link to display the Credit Card Customization screen. Configure the fields in this screen and click Apply to save the changes.

11.3.1 Subscriber Standard Login Page Message

If you use the standard subscriber login screen, you can specify a message to re-direct creditcard-paying subscribers to the credit card information screen. In the **Credit Card Customization** screen, enter the message in the **Credit Card Message** field and click **Apply** to save the changes.

Figure 59 Credit Card Customization: Standard Login Screen Message

Standard Login Page	Customize the addition	al credit card message for the standard login page
	Credit Card Message	or Click here to pay by credit card
		(Max.80 characters)
		Q Preview of Standard Login Page

Click Preview of Standard Login Page to display a preview screen.

Figure 60	Credit Card Customization: Standard Login Screen Message: Preview

		Welcome		
	Username:			
	Password:			
Please choose from the following service selection 1 day \$10.00 How many units of Internet access would you like to purchase? 1 *Please kindly note that there will be no refund once connectivity is confirmed. *Please note that the time block of selected service is based on continuous usage.				
Please click ENTER to confirm your acceptance of the usage charge or CANCEL to exit. The selected service charge will be posted directly into your guest folio.				
Enter Cancel				
	or click here to pay by credit card.			
		VISA		

11.3.2 Service Selection Page

Specify the service selection and credit card messages to display on the subscriber login screen in the **Credit Card Customization** screen.

ce Selection	Customize the message for t	the service selection page
	Service Selection Message	Please choose from the following service selection (Max. 80 characters)
	Purchase Unit Message	How many units of Internet access would you like (Max. 80 characters)
	Notification Message 1	Please kindly note that there will be no refund on (Max. 160 characters)
	Notification Message 2	Please note that the time block of selected servi
	Notification Message 3	(vdax. 160 characters)
	Enter Payment Information	Enter Payment Information (all info is required)
	Enter Credit Card Number	Credit Card Number:
	Card Verification Value	Credit Card Code (vfax. 40 characters)
	Enter Credit Card expiration date	Credit Card Expiration Date: (vtax. 80 characters)
	Enter Email Address	Enter Email Address (vfax. 80 characters)
	Submit Button	Submit Transaction and Login
	Submit Button Additional Customer Data	Submit Transaction and Login (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement Customer ID:
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name	Submit Transaction and Login (Max. 40 obaracters) tional customer information with a transaction, based on their respective requirement Customer ID: (Max. 40 obaracters) First Name: (Max. 20 obaracters) (Max. 20 obaracters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement Customer ID: (Max. 40 characters) First Name: (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters) (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address	Submit Transaction and Login (Max. 40 obaracters) tional customer information with a transaction, based on their respective requirement Customer ID: (Max. 40 obaracters) First Name: (Max. 20 obaracters) (Max. 20 obaracters) Company: (Max. 40 obaracters) (Max. 40 obaracters) Address: (Max. 40 obaracters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address Cuty City	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement Customer ID: (Max. 40 characters) First Name: Last Name: (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address City State/Province	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement [Customer ID: (Max. 40 characters) First Name: Last Name: (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters) (Max. 40 characters) (Max. 40 characters) (Max. 40 characters) State/Province: (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address City State/Province ZIP/Postal Code	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement (Max. 40 characters) First Name: Last Name: (Max. 40 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address City State/Province ZIP/Postal Code Country	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement (Customer ID: (Max. 40 characters) First Name: Last Name: (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters) State/Province: (Max. 40 characters) ZIP/Postal Code: (Max. 40 characters) [Country: (Max. 40 characters)
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address City State/Province ZIP/Postal Code Country Phone	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement
	Submit Button Additional Customer Data Merchants may provide addit Customer ID First/Last Name Company Address City State/Province ZIP/Postal Code Country Phone Fax	Submit Transaction and Login (Max. 40 characters) tional customer information with a transaction, based on their respective requirement (Max. 40 characters) Customer ID: (Max. 40 characters) First Name: Last Name: (Max. 20 characters) (Max. 20 characters) (Max. 20 characters) (Max. 40 characters)

Figure 61	Credit Card	Customization:	Service	Selection	Page

The following table describes the labels in this screen.

LABEL	DESCRIPTION		
Service Selection Page			
Customize the message for the service selection page.	Specify the service selection messages in the fields provided.		
Service Selection Messages	Enter a message to instruct the subscribers to select a billing profile.		
Purchase Unit Message	Enter a message to instruct the subscribers to select the number of time units to purchase.		
Notification Message 1 3	Enter additional message(s) regarding the replenish feature. For example, you may enter a refund policy.		
Enter Payment Information	Enter the heading label name to prompt for the payment information.		
Enter Credit Card Number	Enter the label name of a field in which subscribers enter the credit card number.		
Card Verification Value	Select this check box to display this field if you need the subscriber to enter the credit card's 3 or 4 digit Card Verification Value/Code (CVV or CVC). Specify the label name of a field in which subscribers enter the credit card's CVV.		
Enter Credit Card expiration date	Enter the label name of a field in which subscribers enter the expiration date of the credit card.		
Enter Email Address	Enter the field label for the subscriber's e-mail address. The VSG sends the subscriber account information to this e-mail address if you enable the feature in the Credit Card screen (refer to Section 11.2 "Setting up Credit Card Billing Service" on page 108 for more information).		
Submit Button	Enter the label of the button on which subscribers clicks to send the information in the screen.		
Additional Customer Data	If you want to obtain more information from the subscribers, select the checkbox(es) and specify the corresponding field label(s).		
Customer ID	Select this check box to display this field and enter the field label for customer ID information.		
First/Last Name	Select this check box to display these two fields and specify the field labels for the subscriber to enter the first and last names.		
Company	Select this check box to display this field and specify the label name of a field in which subscribers enter a company name.		
Address	Select this check box to display this field and specify the label name of a field in which subscribers enter their addresses.		
City	Select this check box to display this field and specify the label name of a the field in which subscribers enter the city.		
State/Province	Select this check box to display this field and specify the label name of the field in which subscribers enter the state or province name.		
Zip/Postal Code	Select this check box to display this field and specify the label name of the field in which subscribers enter the ZIP or postal code.		
Country	Select this check box to display this field and specify the label name of the field in which subscribers enter the country.		

 Table 31
 Credit Card Customization: Service Selection Page

LABEL	DESCRIPTION
Phone	Select this check box to display this field and specify the label name of a field in whish subscribers enter the phone numbers.
Fax	Select this check box to display this field and specify the label name of the field in which subscribers enter the fax numbers.
Preview of the Service Selection Page	Click Preview of the Service Selection Page for a preview screen (see Figure 62 on page 113 for an example).

 Table 31
 Credit Card Customization: Service Selection Page (continued)

The following figure shows an example of the subscriber credit card information screen. Field labels display in red are the required fields.

Figure 62 Credit Card Customization: Service Selection Page: Preview

Wei	come
Please choose from the following service selection 1 day How many units of Internet access would you like to purch Please kindly note that there will be no refund once conn Please note that the time block of selected service is bas	\$10.00 💽 nase? 1 💌 ectivity is confirmed. sed on continuous usage.
Enter Payment Information (all info is re	equired)
Credit card number:	
Credit card expiration date:	(MMYY)
Enter Email Address	
First Name:	
Last Name:	
Address:	
City:	
State/Province:	
ZIP/Postal Code:	
Country:	

11.3.3 Successful Screen

You can customize the notification screen to display on the subscriber's computer when the credit card is validated and the transaction is successful.

Scroll down the **Credit Card Customization** screen and configure the **Successful Page** fields and click **Apply** to save the changes.

Successful Page	Customize the message	for the successful page
	Successful Message	You may now use the Internet !
		(Max. 80 characters)
	Notification Message 1	IMPORTANT! Make a note of your username and p
		(Max. 160 characters)
	Notification Message 2	(Max. 160 characters)
	Account Information	This is your account information, please keep this f
		(Max. 160 characters)
	Username	Your username is
		(Max: 5U characters)
	Password	(Max. 80 characters)
	Usage Time	Your usage time is
		(Max. 80 characters)
		Please activate your account before
	Expiration Time	(Max: 80 oharacters) Format: yyyy/mm/dd HH:mm:ss (HH:24h hh:12h tt:AM/PM)
	Email Button	Email this webpage to myself (Max: 40 characters)
	Submit Button	Use this account to LOGIN now
		Q Preview of Successful Page

Figure 63 Credit Card Customization: Successful Page

The following table describes the labels in this screen.

 Table 32
 Credit Card Customization: Successful Page

LABEL	DESCRIPTION
Successful Message	Enter a message to notify the subscribers that the credit card validation is successful.
Notification Message 1 2	Enter additional message(s). For example, you may enter a refund policy.
Account Information	Enter the caption for the account information.
Username	Enter the label name for the username field.
Password	Enter the label name for the password field.
Usage Time	Enter the label name for the usage time field.
Expiration Date	Enter the label name for the expiration date field.
Email Button	Enter the label name for the e-mail button the subscribers click to have the VSG e-mail this information in this screen to the subscribers.
Submit Button	Enter the label name for the button the subscribers click to confirm and log in for I
Preview of Successful Page	Click Preview of Successful Page for a preview screen (see Figure 64 on page 115 for an example).

The following figure shows an example.

Figure 64	Credit Card	Customization:	Successful	Page: Preview
-----------	-------------	----------------	------------	---------------

Welcome		
You may now use the Internet !		
IMPORTANT! Make a note of your username and password for logging in later. This will be your only opportunity to do so. Note upper and lowercase letters.		
Your username is	XXXXXXXX	
Your password is	XXXXXXXX	
Your usage time is	XX:XX:XX	
Please activate your account before XXXX/XX/XX XX:XX:XX		
Email this webpage to myself	Use this account to LOGIN now	

11.3.4 Fail Page

You can customize the notification screen to display on the subscriber's computer when the credit card is not validated or the transaction is not successful.

Scroll down the **Credit Card Customization** screen and configure the **Fail Page** fields and click **Apply** to save the changes.

Figure 65 Credit Card Customization: Fail Page

Fail Page Customize the messa	Customize the message	for the fail page	
	Notification Message 1	SORRY, your card could not be processed at this til	
		(Max. 160 characters)	
	Notification Message 2	Please use your backspace button and try again wi	
	Notification Message 2	(Max. 160 characters)	
	Notification Message 3	Thank you!	
		(Max. 160 characters)	
	Try Again Button	Try Again	
	ny rigan Batton	(Max: 40 characters)	
	Close Button	Close	
	Close Barron	(Max. 40 characters)	
			Q Preview of Fail Page

The following table describes the labels in this screen.

 Table 33
 Credit Card Customization: Fail Page

LABEL	DESCRIPTION
Notification Message 1 3	Enter additional message(s). For example, why the transaction failed.
Try Again Button	Enter the label name for the button subscribers click to display the screen in which the subscribers can enter the credit card information again.
Close Button	Enter the label name for the button subscribers click to close this screen.
Preview of Fail Page	Click Preview of Fail Page for a preview screen (see Figure 66 on page 116 for an example).

The following figure shows an example.

Figure 66	Credit Card Customization: Fail Page: Pre	view
-----------	---	------

Welcome	
Welcome	
Credit Card Number Fail	
SORRY, your card could not be processed at this time. Please use your backspace button and try again with a different credit card. Thank you!	
Try Again Close	

CHAPTER 12 Subscriber Login Screen

This chapter shows you how to customize the subscriber login screen when subscriber control is activated.

12.1 About the Subscriber Login Screen

When subscriber authentication is activated in the **Authentication Configuration** screen, the subscriber login screen is the first screen that all subscribers see when trying to access the Internet. You can configure walled garden web addresses for web sites which all subscribers are allowed to access without logging in (refer to Section 17.4 "Walled Garden" on page 147).

The VSG provides different formats in which you can customize the login screen: **Standard**, **Redirect**, **Advanced** and **Frame**.

12.2 Customizing Subscriber Login Screen

To customize the subscriber login screen, click **Advanced Setting**, **Customization** and then **Login Page** to display the screen as shown next.

		Login Page	
Standard	Title	Welcome	(Max. 80 characters)
	Footnote	Please contact us if yo	ou have any ques (Max. 240 characters)
	Copyright	Copyright (c) 2001, 20	02 All Rights Res (Max: 80 characters)
	Background Color	FFFFFF View Colo	r Grid
			Standard Login Page Previo
C Redirect	Redirect Login Page	URL:	Code
C Advanced	Welcome Slogan	Welcome	
	Page Background	None Background Color FF	FFFF View Color Grid
	Article	C Use User Agreement	s Article
	Article Text Color	000000 View Color	Grid
	Article Background	Color C FFFFF View Co	olor Grid
	Information		
	Comments		
O Frame	Top Frame	URL:	
	Bottom Frame	This frame will show the s	standard login page
ervice Selection cust	omization		
Service Selection Mes	ssage F	Please choose from the following se	IVICE SE (Max: 80 characters)
Purchase Unit Message How many		How many units of Internet access w	Ould you (Max. 80 characters)
Notification Message	tification Message 1		no refut (Max. 160 characters)
Notification Message	2	Please note that the time block of se	elected (Max. 160 characters)
Notification Message	3		(Max. 160 characters)
Additional Remark	Ī	Please click ENTER to confirm vour	accepti (they 240 objectors)

Figure 67 Customization: Login

12.2.1 Standard Subscriber Login Screen

The standard subscriber login screen is the VSG's pre-configured, default simple login screen. You can modify the screen color and title and add copyright information and a footnote.

In the Login Screen Configuration screen, select Standard.

Standard	Title	Welcome (Max. 80 characters)
	Footnote	Please contact us if you have any ques (Max. 240 characters)
	Copyright	Copyright (c) 2001, 2002 All Rights Res (Max. 80 characters)
	Background Color	FFFFF View Color Grid
		E Standard Login Page Preview

Figure 68 Customization: Login: Standard

The following table describes the related labels in this screen.

 Table 34
 Customization: Login: Standard

LABEL	DESCRIPTION
Standard	Select this option to use the standard subscriber login screen.
Title	Enter the login page title (up to 80 characters) in the field provided.
Footnote	Select this check box and enter up to 240 characters in the field provided to add the footnote to the login screen.
Copyright	Select this check box and enter the copyright information (up to 80 characters) in the field provided to add copyright information to the login screen.
Background Color	Specify the color of the registration text. For example, enter '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values. The default is black ("000000").
Standard Login Page Preview	Save the settings and click this link to preview the standard login screen in a new browser window.

The following figure shows an example.

		Welcome	
	Username:		
	Password:		
Please cho How many *Please kindly *Please note	Please choose from the following service selection 1 day \$10.00 How many units of Internet access would you like to purchase? 1 *Please kindly note that there will be no refund once connectivity is confirmed. *Please note that the time block of selected service is based on continuous usage.		
Please clic	Please click ENTER to confirm your acceptance of the usage charge or CANCEL to exit. The selected service charge will be posted directly into your guest folio.		
Enter Cancel			
	or click here to pay by credit card.		
VISA			



Note: For credit card settings, refer to Chapter 11, "Credit Card Billing and Customization," on page 107.

12.2.2 Redirect Subscriber Login Screen

You can set the VSG to redirect the subscribers a to another login screen.

In the Login Screen Configuration screen, select Redirect.

Figure 70	Customization:	Login	Screen:	Redirect
		<u> </u>		

C. D. Hand		
	Redirect Login Page URL:	<u>Code</u>

The following table describes the related fields.

Table 35 Customization: Login Screen: Redirect

FIELD	DESCRIPTION
Redirect	Select this option to redirect the subscriber to another login screen.
Redirect Login Page URL	Specify the web site address to which the VSG directs the subscribers for logins.
Code	Click Code to display the source code of the web page you specify above.

12.2.3 Advanced Subscriber Login Screen

Use the **Advanced** login screen option to customize a login screen where you can create a welcome slogan and add advertising information.

C Advanced	Welcome Slogan	Welcome
	Page Background	None Sackground Color FFFFF View Color Grid
	Article	
	Article Text Color	000000 View Color Grid
	Article Background Color	None IfFFFF View Color Grid
	Information	
	Comments	

Figure 71 Customization: Login Screen: Advanced

The following table describes the related fields.

 Table 36
 Customization: Login Screen: Advanced

FIELD	DESCRIPTION
Advanced	Select this option to set the VSG to display the advanced subscriber login screen.
Welcome Slogan	Enter a welcome message (up to 80 characters long) in the text box provided.
Page Background	Select None to set the background color of the login screen to white ("FFFFF" the default).
	Select Background Color to set the color of the login screen background to the color specified, for example, enter '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.
Article	Select this option to use a custom message on the login screen. Enter a block of text (up to 1024 characters long) in the text box. This is useful for advertisements or announcements.
Use User Agreement's Article	Select this option to use the article from the user agreement page in the login screen.
Article Text Color	Set the color of the article text. For example, use '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.
Article Background Color	Select None to set the background color of the article text block to white ("FFFFF" the default).
	Select Background Color to set the background color of the article text block to the color specified, for example, enter '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.

FIELD	DESCRIPTION
Information	Enter information such address and telephone or fax numbers in the text box provided. Up to 80 characters allowed.
Comments	Enter any comments (up to 80 characters long) in the text box provided.

Table 36	Customization: Login Screen: Advanced	(continued))

The following figure shows an example.

Figure 72	Subscriber	Login Screen	Example: /	Advanced
-----------	------------	--------------	------------	----------

WSG Login - Microsoft Internet Explorer File Edit Yiew Favorites Tools Help ↓ Back × → · ③ ② ③ △ Address ▲	en kanthant anglesen sy of aneg		X
Welc	come to ZyXEL	access the Internet	Welcome Slogan
	Welsome		Article
	Welcome	r.	
Username:			
Password:			
	Enter Clear		
Need help? Cor	fact technical support at Ext. 101.		Information
Your guest account use	er name and password are case sen	sitive 🖌	Comment
	Mit		1.20

12.2.4 Frame Subscriber Login Screen

The **Frame** login screen splits the login screen into two frames: top and bottom. You can specify a web site to be displayed in the top frame with the user name and password prompt displayed in the bottom frame. The frame login screen is useful for you to link to a web site (such as the company web site) as your welcome screen. In addition, you can externally design a web page with images and/or advanced multimedia features.

Figure 73	Customization:	Login	Screen:	Frame
-----------	----------------	-------	---------	-------

○ Frame	Top Frame	URL:	
	Bottom Frame	This frame will show the standard login page	

The following table describes the related fields.

FIELD	DESCRIPTION
Frame	Select this option to configure and set the VSG to display the subscriber login screen in two frames.
Top Frame	Enter a web site address in the URL field, for example, http://www.zyxel.com.
Bottom Frame	The bottom frame of the subscriber login screen displays the default login prompt. You cannot configure this part of the screen.

 Table 37
 Customization: Login Screen: Frame

The following figure shows a framed subscriber login screen example.

Figure 74 Subscriber Login Screen Example: Frame



12.2.5 Service Selection Messages

The service selection messages are available in the subscriber login screen *only* when you configure the VSG to use PMS billing.

Service Selection Message	Please choose from the following service se (Max. 80 characters)
Purchase Unit Message	How many units of Internet access would you (Max. 80 oharacters)
Notification Message 1	*Please kindly note that there will be no refut (Max. 180 characters)
Notification Message 2	*Please note that the time block of selected (Max. 180 characters)
Notification Message 3	(Max. 160 characters)
Additional Remark	Please click ENTER to confirm your accepte (Max. 240 characters)

Figure 75 Customization: Service Selection Customization

The following table describes the related labels.

Table 38 Cust	omization: Service S	Selection Customization
---------------	----------------------	-------------------------

LABEL	DESCRIPTION
Service Selection Customization	
Service Selection Messages	Enter a message to instruct the subscribers to select a billing profile.
Purchase Unit Message	Enter a message to instruct the subscribers to select the number of time units to purchase.
Notification Message 1 3	Enter additional message(s) regarding the replenish feature. For example, you may enter a refund policy.
Additional Remark	Enter any additional information. For example, enter contact information for help.

The following figure shows an example of a standard subscriber login screen with the service selection messages.

Figure 76 Subscriber Login Screen Example: Service Selection Messages

Welcome			
	Username:		
	Password:		
Please choose from the following service selection 1 day \$10.00 How many units of Internet access would you like to purchase? 1 *Please kindly note that there will be no refund once connectivity is confirmed. *Please note that the time block of selected service is based on continuous usage.			
Please click ENTER to confirm your acceptance of the usage charge or CANCEL to exit. The selected service charge will be posted directly into your guest folio.			
Enter Cancel			

CHAPTER 13 Subscriber Information Window

This chapter shows you how to customize the subscriber information window.

13.1 About the Information Window

You can set the VSG to display an information window after a subscriber has successfully logged in. This information window shows the amount of time a subscriber has used or the time the subscriber still has to access the Internet.

The subscriber information window varies depending on the billing and accounting configuration you set on the VSG.

The information window displays the amount of time used for Internet access when you select **Built-in Authentication** in the **Authentication Configuration** screen or when you select **RADIUS Server** and the RADIUS server is configured not to send session timeout messages.

The information window displays the amount of time a subscriber still has to use for Internet access when you select **RADIUS Server** in the **Authentication Configuration** screen and the RADIUS server is configured to send session timeout messages.

13.1.1 Customizing the Information Window

Click Advanced Setting, Customization and the Information Window link to display a screen as shown next.

To display the information window on the subscriber's computer after a successful login, select the **Display Information Window once after the subscriber logs in successfully** check box.

Display Information Windo	w once after a subscriber logs in successfully
Window Name	Information Window (Max. 30 character)
Main message	You can use Internet now! (Max. 30 character)
Message Description	This is an information window to sl (Max. 150 character)
	Standard usage count time/traffic label or RADIUS with session timeout
	Remaining Usage (Max. 30 character)
Usage count label	without session timeout
	Connecting Usage (Max. 30 character)
🗖 Warning/Alarm message	If you don't want to continue using (Max. 150 character)
	Notice Text 1
	Notice! (Max. 150 character)
	Notice Text 2
L Notice Message	If you are going to use VPN, pleas (Max. 150 character)
	Notice Text 3
	(Max. 150 character)
	Preview
	Apply

The following table describes the labels in this screen that you set to customize the information window.

LABEL	DESCRIPTION
Window Name	Enter a descriptive name (up to 30 characters) as the title of the window.
Main message	Enter a short message (up to 30 characters).
Message Description	Enter a short description about the information window.
Usage count label	Enter the label for the field displaying the remaining time in the first text box provided. This field displays when the VSG is set to use proprietary or RADIUS server (without session timeout messages) authentication.
	Enter the label for the field displaying the amount of time used in the second text box provided. This field displays when the VSG is set to use RADIUS (without session timeout messages) authentication.
Warning/Alarm Messages	Select this check box to display the warning message that you enter in the text box provided.
Notice Message	Select this check box to display any additional message(s) that you enter in the test box(es) provided.
	You can specify up to three additional messages (such as discount information) in the information window.
Preview	Click to display a preview of the information window.
Apply	Click Apply to save the changes.

 Table 39
 Customization: Information Window

The following figure shows an information window example.

Figure 78	Subscriber	Pop-up	Information	Window	Example

Information Window
You can use Internet now!
This is an information window to show the usage and notice. You can type http://1.1.1.1/info to open this window again without VPN connection.
Remaining Usage hh:mm:ss

CHAPTER 14 Account Printout

This chapter describes how you can customize and display a preview of the information of an account.

14.1 About the Account Printout

After you have created the subscriber accounts, you can print out the account information. The printout page is different for static and dynamic subscriber accounts.

14.1.1 Customizing the Account Printout

To customize the account printout, click **Advanced Setting**, **Customization** and click the **Account Printout** link to display the screen as shown.

Account Printout Customization			
Title:	Welcome! (Max.=23)		
Subtitle:	This is your account information, please keep this for y (Max.=80)		
Username:	Username:		
Password:	Password:		
Usage Time:	Usage Time:		
Billing Method:	Billing:		
Billing Profile:	Profile:		
Purchase Unit:	Purchase Unit:		
Additional Label 1:	ESSID: Value: (Max.=23)		
Additional Label 2:	WEP: Value: (Max.=23)		
Price:	Total:		
Account Create Time:	yyyy/mm/dd V HH:mm:ss V (HH:24h hh:12h tt:AM/PM)		
Expire	Please activate your account before Description: Date/Time: yyyy/mm/dd HH:mm:ss (HH:24h hh:12h tt:AM/PM) After your first logged- in, please finish your usage time within Accumulation: (Max.=96)		
Ending:	Thank you very much ! (Max.=23)		
Serial Number			
 Preview of PC-connected Preview of account generation Preview of PC-connected Preview of PC-connected Preview of account generation 	d printer for static account printout erator printer with static account printout d printer for dynamic account printout erator printer with dynamic account printout		

Figure 79 Customization: Account Printout

The following table describes the labels in this screen.

 Table 40
 Customization: Account Printout

LABEL	DESCRIPTION
Title	Enter a title (up to 24 characters) for the printout.
Subtitle	Enter a subtitle (up to 80 characters) for the printout.
Username	Enter the label name for the field displaying the account username.
Password	Enter the label name for the field displaying the account password.
Usage Time	Enter the label name for the field displaying the amount of time an account is allowed for Internet access.
Billing Method	Enter the label name for the field displaying the method for billing.
Billing Profile	Enter the label name for the field displaying the name for the billing profile used.
Purchase Unit	Enter the label name for the field displaying the number of time units purchased.
Additional Label 1 2	Select this check box to display the specified label name(s) for the field(s) displaying any additional information.
	For example, you can specify additional information such as ESS ID and/or WEB key for wireless stations when you connect an access point to the VSG.
Price	Select this check box to display the specified label name for the field displaying the total price.
Account Create	Select this check box to display the time an account is created.
Time	Select date and time formats from the drop-down list boxes.
Description	Enter text to explain that the user needs to activate the Internet access account before the expiration date and time.
Date/Time	Select the formats to use when displaying the expiration dates and times.
Accumulation	This description applies with accumulation billing. Enter text to explain that the user needs to finish using the purchased Internet access time before the expiration date and time.
Ending	Select this check box to display a message to display at the end of the printout. Enter the message in the text box provided.
Serial Number	Select this check box to display a serial number on the printout.
Preview of PC- Connected printer for Static Account printout.	Click this link to display a preview of a static account printout as it would print on a printer connected to a computer.
Preview of account generator printer with Static Account printout.	Click this link to display a preview of a static account printout as it would print on an external account generator printer (or the Statement Printer).
Preview of PC- Connected printer for Dynamic Account printout.	Click this link to display a preview of a dynamic account printout as it would print on a printer connected to a computer.
Preview of account generator printer with Dynamic Account printout.	Click this link to display a preview of a dynamic account printout as it would print on an external account generator printer (or the Statement Printer).
Apply	Click Apply to save the changes.

⇔

Note: The account information printout for a static account varies depending on whether PMS billing is used or not.

The following figures show the account printout examples.

Figure 80 Static Account Printout Example

Welc	:ome!
This is your account information, plea	ase keep this for your Internet Service.
Usemame:	X00000000
Password:	X0000000X
Billing:	Time to Finish
Profile:	1 day \$10.00
Purchase Unit:	1
Total:	\$ 10.00
Username:	X000000X
Username:	x0000000K
Billing:	Time to Finish
Profile:	1 day \$10.00
Purchase Unit:	1
Total:	\$ 10.00
Signature:	
	2006/1/11

Figure 81 Static Account with PMS Billing Printout Example

Weld	ome!
This is your account information, plea	ase keep this for your Internet Service
Username:	X0000000X
Password:	X0000000X
Thank you	very much !

This is you this for you	ir account information, please keep ir Internet Service.
Username	
Password	:000000000
Usage Tin	ne:
Billing: Tin	ne to Finish
Profile: 1 d	day \$10.00
Purchase	Unit: 1
Total: \$ 10).00
CUT-	CUTCUTCUT
Username	200000000
Password	
Billing: Tin	ne to ⊢inish
Profile: 1 d	day \$10.00
Purchase	
1 otal: \$ 10	
Signature:	

Figure 82	Static Account Printout: Statement Printer Example
I Iguic oz	Olatio Account i finitout. Olatement i finitei Example

Figure 83 Static Account with PMS Billing Printout: Statement Printer Example

This is yo this for yo	our account information, please keep our Internet Service.
Usernam	e:)00000000
Passwor	d:)00000000

Figure 84 Dynamic Account Printout Example

Welc	ome!
This is your account information, plea	se keep this for your Internet Service.
Username:	X0000000X
Password:	X0000000X
Billing:	Time to Finish
Profile:	1 day \$10.00
Purchase Unit:	1
Total:	\$ 10.00
S/N:000001 Please activate your account before 2006/1/ <i>Thank you</i> Close	2006/1/11 11:07:28 11 23:07:28 very much !

	Welcome!
This is yo this for yo	our account information, please keep our Internet Service.
Usernam	10:00000000
Passwor	rd:x00000000
Usage Ti	ime:
Billing: Ti	ime to Finish
Profile: 1	day \$10.00
Purchase	e Unit: 1
Total: \$ 1	10.00
	2006/1/11 11:08:32
	S/N:000001
Please a ount bef	activate your acc Fore
	2006/1/11 23:08:32
	Thank you very much !
	Close Print

Figure 85 Dynamic Account Printout: Statement Printer Example

CHAPTER 15 User Agreement Page

This chapter describes how you can customize and display a preview of the subscriber user agreement page.

15.1 About the User Agreement Page

In cases where authentication is not required and anyone can access the Internet through the VSG, you can set the VSG to require users to accept a service usage agreement before they can access the Internet. The VSG has a built-in user agreement page that you can customize.

15.2 Customizing the User Agreement Page

To customize the user agreement page, click **Advanced Setting**, **Customization** and click the **User Agreement Page** link to display the screen as shown.

	User #	Agreement Page		
Title	User Agreement Page		(Max. 100	
	characters)			
Title Text Color	000000	View Color Grid		
Article	Example. Typ	e your message text here.	(Max. 12000	
Article Text Color	Ιοοοοο	View Color Grid		
Article Background Color		View Color Grid		
Page Background Color	FFFFF	View Color Grid		
Agree Button	Agree	(Max. 50 characters)		
Disagree Button	Do not agree	(Max. 50 characters)		
		E Standard User	Agreement Page Previe	
			Apply	

Figure 86 Customization: User Agreement Page

The following table describes the labels in this screen.

Table 41	Customization:	User Agreement	Page
----------	----------------	----------------	------

LABEL	DESCRIPTION
Title	Enter a title (up to 100 characters) for the user agreement page.
Title Text Color	Set the color of the title text. For example, use '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.
Article	Enter a block of text (up to 12000 characters long) in the text box. This is the restrictions or conditions that you want the user to agree to before allowing Internet access.
Article Text Color	Set the color of the article text. For example, use '000000' for black. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.

LABEL	DESCRIPTION
Article Background Color	Set the background color for the article. For example, use 'FFFFF' for white. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.
Page Background Color	Set the background color for the page. For example, use 'FFFFFF' for white. Click View Color Grid to display a list of web-friendly colors and corresponding hexadecimal values.
Agree Button	Enter the label name for the button the subscribers click to accept the service usage agreement before they can access the Internet.
Disagree Button	Enter the label name for the button the subscribers click to decline the service usage agreement. They will not be able to access the Internet.
Standard User Agreement Page Preview	Click this link to preview the standard user agreement screen in a new browser window.
Apply	Click Apply to save the changes.

 Table 41
 Customization: User Agreement Page (continued)

The following figure shows a user agreement page example.

Figure 87 User Agreement Page Example

User Agreement Page	
Example. Type your message text here.	
	¥
Agree Do not agree	

CHAPTER 16 Bandwidth Management

This chapter describes the bandwidth feature and shows you how to configure bandwidth control.

16.1 Bandwidth Management Overview

Bandwidth management allows you to control the amount of outbound and inbound traffic on the LAN. This helps reduce delays and dropped packets due to busy network traffic. On the VSG, outbound traffic refers to network traffic coming from a LAN port to the WAN port whereas inbound traffic refers to network traffic coming from the WAN port to a LAN port.

16.1.1 Bandwidth Allocation

The VSG provides two types of bandwidth control based on a subscriber's computer MAC address: equal share or class-based.

With equal share bandwidth allocation, the VSG allocates an equal amount of outgoing and incoming bandwidth for each subscriber on the LAN.

With class-based bandwidth allocation, you can set up bandwidth classes in the billing profiles on the VSG or on a RADIUS server.

13.1.2 Activating Bandwidth Management

To activate bandwidth management, click Advanced Setting, Bandwidth and select the Bandwidth Management check box.

	Ban	dwidth Management
7	Bandwidth Management	
o	Equal bandwidth for all subscriber	S
	Maximum Upstream Bandwidth	
	Maximum Downstream Bandwidth	 € 256Kbps C € Kbps (64-24576)
c	Class of service based on RADIUS	or billing profile settings
		Apply

Figure 88 Bandwidth Management: Activate

16.1.2 Configuring Equal Share Bandwidth Management

To configure the VSG to impose the same bandwidth limits on all subscribers, select **Equal bandwidth for all subscribers** in the **Bandwidth Management** screen and set the related fields.

	Ban	dwidth Management
•	Bandwidth Management	
o	Equal bandwidth for all subscriber	8
	Maximum Upstream Bandwidth	
	Maximum Downstream Bandwidth	 € 256Kbps € 0 Kbps (64-24576)
0	Class of service based on RADIUS	or billing profile settings

Figure 89 Bandwidth Management: Equal Share

The following table describes the related labels in this screen.

LABEL	DESCRIPTION
Maximum Upstream Bandwidth	To use a pre-defined option, select the first option and choose a bandwidth from the drop-down list box.
	To manually set the bandwidth, select the second option and specify the bandwidth in the field provided.
Maximum Downstream	To use a pre-defined option, select the first option and choose a bandwidth from the drop-down list box.
Bandwidth	To manually set the bandwidth, select the second option and specify the bandwidth in the field provided.

 Table 42
 Bandwidth Management: Equal Share

16.1.3 Configuring Class of Service Bandwidth Management

To set the VSG to impose different bandwidth limits based on the configurations in a RADIUS server or a billing profile, select **Class of service based on RADIUS or Billing profile settings** in the **Bandwidth Management** screen.

You must then set the bandwidth management on a RADIUS server or in a billing profile. Refer to Chapter 7, "Billing Profiles and PMS Configuration," on page 79 to set the bandwidth limits in a billing profile.

	Figure 90	Bandwidth	Management:	Class of	Service
--	-----------	-----------	-------------	----------	---------

Bandwidth Management			
✓ Bandwidth Management			
0	Equal bandwidth for all subscriber	andwidth for all subscribers	
	Maximum Upstream Bandwidth		
	Maximum Downstream Bandwidth	 	
• Class of service based on RADIUS or billing profile settings			
		Apply	
CHAPTER 17 Portal Page, Advertisement Link and Walled Garden

This chapter shows you how to set a portal web site, advertisement links and create walled garden web sites.

17.1 Introduction

When you enable subscriber authentication in the **Authentication Configuration** screen, you can set the VSG to redirect a subscriber to a portal web site, display advertisement links or activate the walled garden feature for generating on-line advertising revenue.

17.2 Portal Page

A portal page is the first web site to which a subscriber is redirected after logging in successfully. If you do not specify a portal web site, the subscriber will be directed to the intended web site specified.

Click Advanced and Portal Page to display the screen as shown next.

Figure 91 Portal Page

	Portal Page
This feature allows to redirect	subscriber's browser to a specified portal page after successful login.
URL Link	
	Apply

The following table describes the labels in this screen.

Table 43Portal Page

LABEL	DESCRIPTION
URL Link	Enter the web site address of a portal page.
Apply	Click Apply to save the settings.

17.3 Advertisement Links

You can set the VSG to display an advertisement web page first on the subscriber's computer once connected to the Internet. Click **Advanced** and **Advertisement** to display the screen as shown next.

	Advertisement
Frequency	One Time Only C Every Min(s)
Sequence	 Randomly Orderly (From 1 to 10)
Link 1	
Link 2	
Link 3	
Link 4	
Link 5	
Link 6	
Link 7	
Link 8	
Link 9	
Link 10	
	Apply

Figure 92 Adv	vertisement
---------------	-------------

The following table describes the labels in this screen.

Table 44 Advertisement

LABEL	DESCRIPTION
Frequency	Select One Time Only to display an advertisement web site in a pop-up browser window once after a subscriber logs in successfully.
	Select Every Min(s) to display an advertisement web site in a pop-up browser window once every time period specified (between 1 and 60 minutes) after a subscriber logs in successfully.
Sequence	Select Randomly to display the advertisement web pages in random order.
	Select In Order to display the advertisement web pages in the order as configured.
Link 1 10	Enter the web site addresses in the fields provided.
Apply	Click Apply to save the changes.

17.4 Walled Garden

A subscriber must log in before the VSG allows the subscriber access to the Internet. However, with walled garden, you can define the web site address(es) which all users can access without logging in.



Note: A walled garden web site may not display properly or even be accessible if the domain name contains multiple IP addresses.

Click Advanced and then Walled Garden to display the screen as shown.

Figure 93 Walled Garden

Walled Garden		
Link 1	Name: URL:	
Link 2	Name: URL:	
Link 3	Name: URL:	
Link 4	Name:URL:	
Link 5	Name: URL:	
Link 6	Name: URL:	
Link 7	Name: VRL:	
Link 8	Name: URL:	
Link 9	Name: URL:	
Link 10	Name: URL:	
	4	Apply

The following table describes the labels to configure the walled garden feature.

LABEL	DESCRIPTION
Link 1 10	In the Name field, enter a descriptive name (up to 80 characters) for the walled garden link to be displayed in the web browser.
	In the URL field, enter the web site address (up to 200 characters) of the web site.
Apply	Click Apply to save the changes.

Table 45Walled Garden

The following figure shows a subscriber login screen example with walled garden links.

Figure 94 Subscriber Login Screen with Walled Garden Links Example

Address 🖉 Hittin // 72 20 3 44/ Well 044 Age	▼ (∂ Go
Welcome	<u>×</u>
Username: Password:	
Enter Cancel	
ZyXEL Communications Corp. Google Walled g	arden links
Сору	right (c) 2001, 2002 All Rights Reserved.

CHAPTER 18 Passthrough

This chapter shows you how to set up computer and web site passthrough.

18.1 About the Passthrough

There are two types of pass through you can set up on the VSG: by device or by web site address You can set the VSG to allow specific computers (based on the IP or MAC address) to access the Internet without prompting for a user name and password.

To allow global access to web sites, specify the web site address (by IP address or URL) that any user can access without logging in. This is similar to the walled garden feature, but without displaying the web site link(s) in the subscriber login screen. You have to inform the users about which web sites they can access for free.

18.2 Configuring Passthrough

To configure passthrough on the VSG, click Advanced and then Passthrough.

18.2.1 Subscriber Computer Passthrough

You can specify the IP or MAC address(es) of a computer that can access the Internet without entering a user name and password. This feature is useful, for example, if you want to set up computers to provide free Internet access in the VIP room or for sponsors in events.

Subscriber IP & MAC Address Passthrough					
No.	IP Address	No.	IP Address	No.	IP Address
1		13		25	
2		14		26	
3		15		27	
4		16		28	
5		17		29	
6		18		30	
7		19		31	
8		20		32	
9		21		33	
10		22		34	
11		23		35	
12		24		36	
No.	MAC Address	No.	MAC Address	No.	MAC Address
1		11		21	
2		12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

Figure 95 Passthrough: Subscriber IP and MAC Address

 Table 46
 Passthrough: Subscriber IP and MAC Address

FIELD	DESCRIPTION		
Subscriber IP & MA	Subscriber IP & MAC Address Passthrough		
No.	This read-only field displays the index number of an entry.		
IP Address	Enter the IP address of a computer (in dotted decimal notation) whose packets are allowed to pass through the VSG. For example, 10.59.1.10.		
MAC Address	Enter the MAC address of a computer (in 6 hexadecimal pairs separated by a hyphen "-", for example, 00-50-BA-8D-22-96) whose packets are allowed to pass through the VSG.		

18.2.2 Destination URL and IP Address Passthrough

You can specify the IP address or the URL of the web site(s) that any user can access without entering a user name or password.

Destination IP Address Passthrough					
No.	IP Address	No.	IP Address	No.	IP Address
1		13		25	
2		14		26	
3		15		27	
4		16		28	
5		17		29	
6		18		30	
7		19		31	
8		20		32	
9		21		33	
10		22		34	
11		23		35	
12		24		36	
		Destina	ation URL Passthrou	ıgh	
No.			URL Link Page		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Figure 96 Passthrough: Destination URL and IP

FIELD	DESCRIPTION			
Destination IP Address Passthrough				
No. This read-only field displays the index number of an entry.				
IP Address Enter the IP address of a web site in dotted decimal notation, for example, 192.168.1.10				
Pass Through Dest	Pass Through Destination URL			
No. This read-only field displays the index number of an entry.				
URL Link Page Enter the web site address, for example, http://www.zyxel.com.				

Table 47 Passthrough: Destination URL and IP

CHAPTER 19 LAN Devices

This chapter describes how you can remotely access devices on the LAN through the VSG.

19.1 LAN Devices and NAT Overview

NAT (Network Address Translation - NAT, RFC 1631) is the translation of the IP address of a host in a packet. Form example, the source address of an outgoing packet, used within one network is changed to a different IP address known within another network.

Traditionally, when you have a device (for example, a switch) on a LAN using NAT, you cannot access the device from the WAN since the LAN device is assigned a private IP address.

Your VSG is a NAT-enabled device that makes your whole inside network appear as a single computer to the outside world.

19.1.1 Port Mapping

To make LAN devices behind the VSG visible to the outside world, you configure a mapping between a virtual port on the VSG and a server port on a LAN device. A virtual port is a port on the VSG that appears as a physical port to the attached devices. A server port defines a server to which all specified requests are forwarded.

In addition, centralized LAN device management is possible through the VSG using port mapping. You can access the management interface on the LAN device remotely provided that the LAN device has allowed remote management.

19.2 Configuring LAN Device Port Mapping

Click **Advanced** and **LAN Devices** to display the **LAN Device Management** screen as shown.



Note: You can configure port mapping for up to 300 LAN devices on the VSG.

			LAN Devices			
					Polling Interval: 1	Min(s)
No.	Device Name	Virtual Port (60001~60300)	Device IP Address	Device Server Port	Device MAC Address	Application
1	B-3000	60001	10.59.1.30	80	00A0C5000005	
2	P662HW	60002	10.59.1.62	80	00A0C5012345	
3		0		0		
4		0		0		
5		0		0		
6		0		0		
7		0		0		
8		0		0		
9		0		0		
10		0		0		
11		0				
11.41						
44						
45		0		0		
46		0		0		TCP -
47		0		0		
48		0		0		
49		0		0		TCP -
50		0		0		TCP -
Notice:	The system does not su	pport FTP				Delete All
HGO	1 Page			🗰 First 🔹	Previous Next	End 🕨
						Applu
						мрргу

Figure 97	LAN Devices
-----------	-------------

Table 48 LAN Devices

LABEL	DESCRIPTION
Polling Interval	Specify the time interval (in minutes) between the VSG's probes for device availability.
No.	This read-only field displays the index number of an entry.
Device Name	Enter the name of the LAN device for identification purposes.
Virtual Port	Enter a unique port number between 60001 and 60300 to map to the port number in the Server Port field.

Table 48	LAN Devices	(continued)
----------	-------------	-------------

LABEL	DESCRIPTION
Device IP Address	Enter the IP address of a LAN device in dotted decimal notation. For example, 10.59.1.111.
Device Server Port	Enter the port number of a management service (for example, 80 for HTTP) on the LAN device.
MAC Address	Enter the MAC address of the LAN device in hexadecimal notation in 6 hexadecimal pairs, for example, 0050BA8D2296.
	Note: Make sure you enter the correct MAC address.
Application	Select an application type from the drop-down list box. Choose from TCP or UDP . Only requests for the selected application type are forwarded to the specified server port on the LAN device.
Delete	Click Delete All to remove all accounts.
	Click Delete to remove the selected account.
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.
Apply	Click Apply to save the changes.

19.2.1 LAN Device Management Example

In this example, there is a manageable switch and a wireless access point behind the VSG and you want to be able to remotely access the web-based management interfaces on the manageable switch and access point over the Internet.



Figure 98 LAN Device Remote Management Example 1

You map virtual port 60001 on the VSG to the web server port on the access point and 60002 to the web server port on the manageable switch.

			LAN Devi	ces		
				Pol	ling Interval: 1	Min(s)
No.	Device Name	Virtual Port (60001-60300)	Device IP Address	Device Server Port	Device MAC Address	Application
1	ZYAIR AP	60001	10.59.1.2	80	00A0C5012345	TCP -
2	ES-2008 Switch	60002	10.59.1.3	80	00001C01016C	TCP 💌
з		0		0		TCP -

Figure 99	LAN Devices: Example 1
-----------	------------------------

To access the web-based management interface, enter the WAN IP address of your VSG and the virtual port number of the LAN device separated by a colon. In this example, to access the access point (AP), enter "http:// 192.168.1.1:60001" where 192.168.1.1 is the WAN IP address of the VSG. The login screen of the LAN device management interface should display.

You can also access the LAN devices through the VSG web configurator, refer to Section 24.7.1 "Accessing the LAN Device" on page 184 for more information.

19.2.2 Specifying an Inside Server Example

Let's say you have a web server behind the VSG as shown in the next figure.



Figure 100 LAN Device Remote Management Example 2

In the LAN Device Management screen, you map virtual port 60001 to the server port (80) on the web server.

Figure 101 LAN Devices: Example 2

			LAN Devi	ces		
				Pol	ling Interval: 1	Min(s)
No.	Device Name	Virtual Port (60001~60300)	Device IP Address	Device Server Port	Device MAC Address	Application
1	Web Server	60001	10.591.10	80	0050BA6D2296	TCP -
2	1	0		0		TCP -
				5		James

To access an inside server on the LAN, enter the WAN IP address of your VSG and the virtual port number of the inside server separated by a colon. In this example, to access the web server, enter "http:// 192.168.1.1:9602" where 192.168.1.1 is the WAN IP address of the VSG.

You can also access the server by entering the domain name provided that you specified a DNS server on the VSG. Enter the domain name and the virtual port number separated by a colon, for example, http://www.domainName:60001.

You can also access the LAN devices through the VSG web configurator, refer to Section 24.7.1 "Accessing the LAN Device" on page 184 for more information.

CHAPTER 20 Static Route

This chapter shows you how to configure static routes to specified destinations.

20.1 Static Route Overview

Static routes tell the VSG routing information that it cannot learn automatically through other means. This can arise in cases where RIP is disabled on the LAN or a remote network is beyond the one that is directly connected to a remote node.

Each remote node specifies only the network to which the gateway is directly connected and the VSG has no knowledge of the networks beyond. For instance, the VSG knows about network N2 in the following figure through remote node Router 1. However, the VSG is unable to route a packet to network N3 because it does not know that there is a route through remote node Router 1 (via Router 2). The static routes allow you to tell the VSG about the networks beyond the remote nodes.





20.2 The Static Route Screen

Configure and view static route settings in the Static Route screen.

Click Advanced and Static Route to display the configuration screen.

		Static Rou	te		
No.	Destination IP Address	Destination Subnet N	/lask Gateway IF	Address	Hop Count
1					1 💌
2					1 💌
3					1 🗸
16					11
17					1 💌
18					1 💌
19					1 💌
20					1 💌
					Apply
		Static Route 1	Table		
No.	Destination IP Address	Destination Subnet Mask	Gateway IP Address	Hop Count	Delete

Figure 103 Advanced: Static Route

Table 49 Advanced: Static Route	Table 49	Advanced: Static Route
---------------------------------	----------	------------------------

LABEL	DESCRIPTION
Static Route	Set the fields below to configure static route settings. You can configure up to 20 static routes at a time.
No.	This is the index number of the static route that you chose in menu 12.1.
Destination IP Address	This parameter specifies the IP network address of the final destination. Routing is always based on network number. If you need to specify a route to a single host, use a subnet mask of 255.255.255.255 in the subnet mask field to force the network number to be identical to the host ID.
Destination Subnet Mask	Type the subnet mask for this destination.
Gateway IP Address	Type the IP address of the gateway. The gateway is a router or switch on the same network segment as the device's LAN or WAN port. The gateway helps forward packets to their destinations.
Hop Count	Hop count represents the cost of transmission for routing purposes. IP routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Select a number that approximates the cost for this link. The number need not be precise, but it must be between 1 and 15. In practice, 2 or 3 is usually a good number.
Apply	Click Apply to save the changes. New static route entries display in the table below.
Static Route Table	This table displays the static routes configured.
No.	This field displays the index number.
Destination IP Address	This field displays the IP address of the final destination.

Table 49	Advanced:	Static Route	(continued)
----------	-----------	--------------	-------------

LABEL	DESCRIPTION
Destination Subnet Mask	This field displays the subnet mask of the final destination.
Gateway IP Address	This field displays the IP address of the gateway device.
Hop Count	This field displays the "cost" of this static route.
Delete	Click Delete to remove the selected static route(s).

CHAPTER 21 Syslog and Session Trace

This chapter shows you how to configure syslog logging and set the VSG to send subscriber session information.

21.1 Syslog

Syslog logging allows the VSG to send logs to an external syslog server that is used to store and analyze logs.

21.1.1 Syslog Server Setup

Use the **Syslog** screen to configure to where the VSG is to send logs. To configure the syslog settings, click **Advanced**, **Logs** to display the screen as shown next.

Figure 104 Logs: Syslog

			Syslog	
	C Enable © Disable			
Syslog Server		Syslog on LAN:	Server IP Address: Server MAC Address:	
		Syslog on WAN:	Server 1 IP Address: Server 2 IP Address:	
		P		Apply

Table 50	Logs: Syslog
----------	--------------

LABEL	DESCRIPTION
Syslog Server	Select Enable to activate the syslog function. Select Disable to de-activate the syslog function.
Syslog on LAN	Select this check box to specify a syslog server on the LAN.
Server IP Address	Enter the IP address (in dotted decimal notation) of the syslog server on the LAN.
Server MAC Address	Enter the MAC address of the syslog server on the LAN.
Syslog on WAN	Select this check box to specify a syslog server on the WAN.

LABEL	DESCRIPTION
Server 1 IP Address	Enter the IP address of the first syslog server on the WAN in dotted decimal notation.
Server 2 IP Address	Enter the IP address of the second syslog server on the WAN in dotted decimal notation.
Apply	Click Apply to save the settings.

21.1.2 Configure Log Settings

To specify which logs the VSG is to send and the schedule for when the VSG is to send the logs, click **Advanced**, **Logs** and click the **Log Settings** link.

	Log Settings					
System						
Syslog	Syslog Name	Description	Interval Time	Туре		
	System Information	A log including the system information will be sent according to specified interval time	60 minutes	166		
	System Boot Notice	Once system reboots, the log will be sent	When system reboot	165		
	System Account Activity Information	A log would be sent if system account (Administrator, Supervisor or Account Operator) login to or logout from the device	When system account login or logout.	166		
Account	ling					
Syslog	Syslog Name	Description	Interval Time	Туре		
	Account Created	A log will be sent once after an account is created	When an account is created	166		
	Subscriber Trace	A log including subscribers login/logout time will be sent once after subscriber logout	When subscriber logout	165		
	Logged-in Users	A login users information will be sent according to specified interval time	60 minutes	166		
	User Agreement	A log would be sent when "user agreement" enabled	When subscriber login	166		
Billing		·				
Syslog	Syslog Name	Description	Interval Time	Туре		
	Billing Log	A log would be sent according to specified interval time	When log created	166		
AN Dev	vices Management					
Syslog	Syslog Name	Description	Interval Time	Туре		
	LAN Devices Information	A log including current LAN Devices Status will be sent according to specified interval time	60 minutes	166 164		
	LAN Devices Alarm	A log will be sent if one of the LAN Devices detected result is "Fail"	When device fail	161		
Alert				hr.		
Syslog	Syslog Name	Description	Interval Time	Туре		
	Administration access Fail	A log would be sent when someone failed to access the administration web server	When someone failed to access the system web server	161		
	NAT Pool exhausted(IP/Port)	A log would be sent when IP or Port mapping exhausted	When NAT Pool exhausted	161		
		·		Арр		

Figure 105 Logs: Log Settings

LABEL	DESCRIPTION
Syslog Name	This field displays the name (or type) of the log. Select the check box(es) to send the syslog.
Description	This field displays a short description about the syslog.
Interval Time	This field displays how often the VSG sends the logs. If available, enter the number of minutes the VSG waits between sending the syslog.
Туре	This field displays the type number of a log. This number is read-only.
Apply	Click Apply to save the settings.

The following table describes the log formats.

Table	52	Loas:	Loa	Format
I UDIC		LOgo.	LOG	i onnat

SYSLOG NAME	FORMAT	CREATED
System Information	Id <mac address=""> System Uptime <0 days 00h:04m:00s> WAN <frametxok framerxok ="" frametxerror <br="">FrameRxError> LAN <frametxok framerxok <br="">FrameTxError FrameRxError></frametxok ></frametxok ></mac>	Each time interval specified (between 1 and 10080 minutes).
System Boot Notice	Id <mac address=""> System Up</mac>	Each time when the device reboots.
System Account Activity Information	Id <mac address=""> System Account Activity Information <username, ip,="" status="" user=""> Where: Username = Administrator Supervisor Accounting Operator User IP = IP Address Status = Login Logout Idle Time Out</username,></mac>	Each time when the system account logs in or logs out.
Account Created	Id <mac address=""> Account Create <username, account<br="">usage time, Billing profile information> Where: Username = Single account <username> or Batch account <prefix, from,="" postfix="" to,="">] Billing profile information = index, name</prefix,></username></username,></mac>	When an account is created.
Subscriber Trace	Id <mac address=""> Subscriber Trace <username, ip,<br="" user="">user MAC, interface, login time, logout time, RxData count, TxData count></username,></mac>	When a subscriber logs out.
Logged-in Users	Id <mac address=""> Logged-in Users <number logged-in<br="" of="">users, Start Number, End Number) (Username, user IP, user MAC, interface, login time, RxData count, TxData count> [additional information]</number></mac>	Each time interval specified.

SYSLOG NAME	FORMAT	CREATED
Billing Log	Id <mac address=""> Billing Log <username, bill,="" billing="" charge="" from="" information,="" log="" profile="" time,="" usage=""> Where:</username,></mac>	When a log is created
	Charge From = PMS Dynamic	
	Billing profile name = Name	
	Log time = MM/DD/YYYY HH:MM:SS	
	Usage time = "x minutes" "Expire when 00:00"	
	Billing profile information = index, name	
LAN Devices Information	Id <mac address=""> LAN Devices Information <number of<br="">devices, Start Number, End number> Device name <status> [additional information]</status></number></mac>	Each time interval specified (between 1 and 10080 minutes).
LAN Devices Alarm	Id <mac address=""> LAN Device Alarm <device fail="" name,=""></device></mac>	When the VSG cannot connect to an attached LAN device.
Administrator access Fail	Id <mac address=""> Administration Access Fail <fail message, User IP, Username> Where:</fail </mac>	Each time a system login attempt fails.
	Fail message = Bad Username/Password Unauthorized IP Exceeded Maximum Login	
	Note: If Fail message = Unauthorized IP and no user name can be obtained, then Username = None .	
	If Fail message = Exceeded Maximum Login, then Username = Administrator Supervisor Accounting Operator	
NAT Pool Exhausted (IP/ Port)	Id <mac address="">) NAT Pool Exhausted <type> where: Type = NAT pool IP address NAT Port number</type></mac>	When no IP address or port is available for additional NAT mapping.

Table 52	Logs: Log Format	(continued)
----------	------------------	-------------

21.2 Session Trace

You can set the VSG to send session information of subscribers accessing the Internet. The VSG records the session information and stores it temporary. Once the session trace information reaches a maximum of 50 records or the specified time period is reached, the VSG sends the session information to the specified TFTP server.

21.2.1 Configuring Session Trace

To configure the VSG to send subscriber session information, click **Advanced**, **Session Trace** to display the screen as shown.

	Session Trace
Session Trace	C Enable © Disable
TFTP Server IP Address	Primary TFTP Server IP Address Secondary TFTP Server IP Address
	Send Session Trace log file every 10 minutes. (5 ~ 1440) (Note: Session Trace log file will be sent also when collected 50 logs)
	Apply

Figure 106 Advanced: Session Trace

The following table describes the labels in this screen.

 Table 53
 Advanced: Session Trace

LABEL	DESCRIPTION
Session Trace	Select Enable to set the VSG to record and send subscriber session information. Select Disable to de-activate this feature.
TFTP Server IP Address	Specify the primary and/or secondary TFTP IP address in the Primary TFTP Server IP Address and/or Secondary TFTP IP Address fields.
	Enter the IP address(es) in dotted decimal notation. For example, 192.168.1.10.
	Enter the time interval (in minutes between 5 and 1440) the VSG waits before sending the session information to the TFTP server(s).
	Note: If there are 50 session trace records, the VSG sends the session information to the TFTP server even if the time interval is not up.
Apply	Click Apply to save the settings.

21.2.1.1 Session Trace Filename Convention

The subscriber session information is stored a plain text file with a "txt" filename extension. The general structure of the filename is <hostname>DDMMYYHHMMSS.txt. For example, "MIS221004131543.txt" is the file name of a session information file created at 13:15:43 PM on October 22, 2004 on a VSG with a hostname of "MIS".

You can view the subscriber session trace information using any text editor. The following figure shows an example of the session information file the VSG sends to a TFTP server.

Figure 107 Session Trace Information Example

Host	Name	User	Name	Date	VLANId	Sourc	eIP	Sourc	ceMac	Sour	cePort	Dest	ΙP	Des	stPort
MIS		Cindy	220	ct0413	80403 1	92.168	3.1.2	10 00	85A001	0104	3974	192.1	68.	1.1	80
MIS		Cindy	220	ct0413	80404 1	92.168	3.1.2	10 00	85A001	0104	3977	172.2	0.0	.63	53
MIS		Cindy	220	ct0413	80440 1	92.168	3.1.2	10 00	85A001	0104	3991	172.2	0.0	.27	80

The following table describes the fields in a session information file.

FIELD	DESCRIPTION
Host Name	This is the host (or system) name of the VSG.
User Name	This is the subscriber account username. This field is empty if you disable authentication in the Authentication screen (see Chapter 6, "Authentication," on page 71 for more information).
Date	This is the date and time the VSG creates a session trace record.
VLANId	This is the VID of the VLAN to which a subscriber belongs. This field is empty if no VLAN tag is present (see Chapter 10, "Port-Location Mapping," on page 103 for more information).
SourceIP	This is the IP address of the subscriber.
SourceMac	This is the MAC address of the subscriber's computer.
SourcePort	This is the source port number of the subscriber.
DestIP	This is the destination IP address the subscriber accesses.
DestPort	This is the destination port number for this session.

 Table 54
 Session Trace File Fields

CHAPTER 22 SNMP

This chapter shows you how to set up SNMP.

22.1 SNMP Overview

Simple Network Management Protocol (SNMP) is a protocol used for exchanging management information between network devices. SNMP is a member of the TCP/IP protocol suite. Your VSG supports SNMP version one and version 2. The next figure illustrates an SNMP management operation.





An SNMP managed network consists of two main components: agents and a manager.

An agent is a management software module that resides in a managed device. An agent translates the local management information from the managed device into a form compatible with SNMP. The manager is the console through which network administrators perform network management functions. It executes applications that control and monitor managed devices.

The managed devices contain object variables/managed objects that define each piece of information to be collected about a device. Examples of variables include such as number of packets received, node port status etc. A Management Information Base (MIB) is a collection of managed objects. SNMP allows a manager and agents to communicate for the purpose of accessing these objects.

SNMP itself is a simple request/response protocol based on the manager/agent model. The manager issues a request and the agent returns responses using the following protocol operations:

- Get Allows the manager to retrieve an object variable from the agent.
- GetNext Allows the manager to retrieve the next object variable from a table or list within an agent. In SNMPv1, when a manager wants to retrieve all elements of a table from an agent, it initiates a Get operation, followed by a series of GetNext operations.
- Set Allows the manager to set values for object variables within an agent.
- Trap Used by the agent to inform the manager of some events.

22.1.1 Network Management System (NMS)

An NMS (Network Management System) is a management station that receives traps (the system alerts generated).

If no NMS is defined, then no traps are generated.

22.2 Configuring SNMP

Click Advanced Setting and SNMP to display the screen as shown next.

igure	109	SNMP
-------	-----	------

1		SN	IMP			
SNMP	C Enal	ole 🖸 Disable				
Port	SNMP Port: 161 (161 or 16100 ~ 16199) Trap Port: 162 (162 or 16200 ~ 16299)					
	No	Community Name	NMS Address	Privileges	Status	
	1	public	ANY	Read	Valid 💌	
	2	private	ANY	Write	Valid 💌	
Configuration	3		ANY	Read	Invalid 💌	
	4	[ANY	Read	Invalid 💌	
	5		ANY	Read	Invalid 💌	
e					Apply	

Table	55	SNMP
		•••••••

LABEL	DESCRIPTION
SNMP	Select Enable to activate SNMP support.
	Select Disable to de-activate the SNMP support.
Port	
SNMP Port	Enter a port number on the VSG for SNMP management. The default is 161 . Otherwise enter a port number between 16100 and 16199.
Trap Port	Enter a port number on the VSG for sending SNMP traps.
	The default is 162 . Otherwise enter a port number between 16200 and 16299.
Configuration	
No	This read-only field displays the index number of the entry.
Community Name	Enter the community string (or the password) of the management station.
NMS Address	Enter the IP address of the management station.
Privileges	Select a privilege level from the drop-down list box. Options are Read , Write , Trap Recipient and All .
Status	Select Valid to activate the selected SNMP configuration entry.
	Select Invalid to disable the selected SNMP configuration entry.
Apply	Click Apply to save the changes.

CHAPTER 23 MAC Filter

This chapter describes how you can configure the MAC filter feature.

23.1 About the MAC Filter

The **MAC Filter** screen allows you to configure the VSG to block devices from accessing the Internet through the VSG. Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00A0C5000002. You need to know the MAC addresses of the devices to configure this screen.

23.2 Configuring the MAC Filter

To configure the MAC filter, click **Advanced Setting**, **MAC Filter** to display the screen as shown.

0.	MAC Address	No.	MAC Address	No.	MAC Address
1	12345678901F	11		21	
2	12345678901D	12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

Figure 110 MAC Filter

Table 56 MAC Filter

LABEL	DESCRIPTION
MAC Address	Enter the MAC addresses (in XXXXXXXXXXX format) of the devices that are denied access to the VSG in these address fields.
Apply	Click Apply to save the changes.

CHAPTER 24 System Status

This chapter describes the screens under System Status.

24.1 About System Status

The screens in System Status show the current state of the VSG.

24.2 View System Information

Click **System Status** and **System** to display the screen as shown next. The **System** screen automatically updates every 5 seconds.

System					
		refresh⊖			
	Host Name:				
	Domain Name:				
	Bootrom Version:	1.01			
System Status	Firmware Version:	1.08			
	Concurrent Users Limitation:	1024			
	WAN MAC Address:	00:A0:C5:41:F0:97			
	LAN MAC Address:	00:A0:C5:41:F0:96			
	WAN Port Mode:	Use fixed IP address			
	IP Address:	192.168.1.1			
WAN IP Settings	Subnet Mask:	255.255.255.0			
	Default IP Gateway:	192.168.1.254			
510	Primary DNS Server:	168.95.1.1			
DNS	Secondary DNS Server:				
	DHCP Status	Server			
DUAD	Start IP Address:	10.59.1.2			
DHCP	End IP Address:	10.59.1.254			
	Lease Time:	1440			
E-Mail	Server IP Address:				
	Country	00			
	State	Local State			
	Local City	Local City			
SSL Certificate	Organization	Local Group			
	Organization Un <mark>i</mark> t	Local Host			
	Common Name	1.1.1.1			
	Email Address	mail@1.1.1.1			

Figure 111 System Status

Table 57	System Status
----------	---------------

FIELD	DESCRIPTION
System Status	
Host Name	This field displays the description name of the VSG for identification purposes.
Domain Name	This field displays the domain name of the VSG.
Bootrom Version	This field displays the version of the bootrom.
Firmware Version	This field displays the version of the firmware on the VSG.

FIELD	DESCRIPTION
Concurrent User Limitation	This field displays the maximum number of users that can log in simultaneously for Internet access.
WAN MAC Address	This field displays the MAC address of the VSG on the WAN.
LAN MAC Address	This field displays the MAC address of the VSG on the LAN.
WAN IP Settings	
WAN Port Mode	This field displays the DHCP mode of the WAN port.
IP Address	This field displays the IP address of the WAN port on the VSG.
Subnet Mask	This field displays the subnet mask of the WAN port on the VSG.
Default IP Gateway	This field displays the IP address of the default gateway of the WAN port on the VSG.
DNS	
Primary DNS Server	This field displays the IP address of the primary DNS server.
Secondary DNS Server	This field displays the IP address of the secondary DNS server.
DHCP	
DHCP Status	This field displays the DHCP mode (Server , Relay or Disable) on the LAN.
Server IP Address	This field is visible when the DHCP Status is Server or Relay.
	This field displays the IP address of the DHCP server on the network.
Start IP Address	This field is visible when the DHCP Status is Server or Relay .
	This field displays the first of the continuous addresses in the IP address pool.
End IP Address	This field is visible when the DHCP Status is Server .
Lagas Time	This field is visible when the DUCE Status is Server.
Lease Time	This field displays the time (in minutes) a DHCP client is allowed to use an assigned IP address.
E-mail	
Server IP Address	The field displays the IP address or the domain name of the e-mail server.
SSL Certificate	
Country	This field displays the two-letter abbreviation of your country.
State	This field displays the name of the state or province where your organization is located.
Local City	This field displays the name of the city your organization is located.
Organization	This field displays the name of your organization.
Origination Unit	This field displays additional information about your organization.
Common Name	This field displays the fully qualified domain name of your web server.
Email Address	This field displays your e-mail address.

	Table 57	System Status	(continued)
--	----------	---------------	-------------

24.3 Current User List

The **Current User List** screen displays a list of subscribers currently logged on to the VSG for Internet access.

Click **System Status** and **Current User List** to display the screen as shown. Click a column heading to sort the entries if applicable. The Username, Billing Profile, Login Time, expiration and Disconnect fields and buttons

Figure 112 Current User List

Current User List									
Print List									
No.	Туре	Username		Billing Profile	Login Time	Expiration	IP Address	MAC Address	Disconnect
1	Static	Cindy	1	Profile 1	2004/10/22 12:00:28	2004/10/23 12:00:28	192.168.1.10	00:85:A0:01:01:04	
Disconnect All									
HGO 1 Page K First (Previous Next) End H									

Table 58 Current User Li	st
--------------------------	----

LABEL	DESCRIPTION	
Refresh	Click Refresh to update this screen.	
Print List	Click Print List to print the current user list to a printer. No preview option is available.	
No	This field displays the index number.	
Туре	This field displays the type of subscriber accounts.	
Username	This displays when you are using authentication. This field displays the username of a subscriber account.	
Billing Profile	This field displays the number of concurrent access allowed and the name of the billing profile that the subscriber uses.	
Login Time	This displays when you are using authentication. This field displays the time the subscriber logs in.	
Expiration	This displays when you are using authentication. This field displays the time this account expires.	
	This field displays N/A when total bandwidth limitation is enforced on this account. Refer to Section 6.1.5.2 "Vendor Specific Attribute" on page 73 and Appendix D, "Vendor Specific Attributes," on page 239 for more information.	
IP Address	This field displays the IP address of the subscriber's computer.	
MAC Address	This field displays the MAC address of the computer that is logged in using this account.	
Disconnect	This displays when you are using authentication. Select this check box and click Disconnect to log out the selected subscriber.	
	Click Disconnect All to log out all subscribers.	
GO Page	Select a page number from the drop-down list box to display the selected page.	
Table 58	Current User List	(continued)
----------	-------------------	-------------
----------	-------------------	-------------

LABEL	DESCRIPTION
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.

24.4 DHCP Clients

The DHCP client table shows current DHCP client information of all network clients using the DHCP server on the VSG.

Click **System Status** and **DHCP** to display the screen as shown. The **DHCP Clients** screen automatically updates every 120 seconds.

Figure 113 DHCP Clients

DHCP Clients						
	DHCP Client's Information, including assigned	IP address and MAC address.				
No.	MAC Address	IP Address				
1	00:0F:FE:1E:4A:E0	10.59.1.2				
-	refresh⊕					

The following table describes the labels in this screen.

Table 59 DHCP Clients

LABEL	DESCRIPTION
No.	This field displays the index number of an entry.
MAC Address	This field displays the MAC address of the client computer.
	The MAC (Media Access Control) or Ethernet address on a LAN (Local Area Network) is unique to your computer (six pairs of hexadecimal characters). A network interface card such as an Ethernet adapter has a hard-wired address that is assigned at the factory. This address follows an industry standard that ensures no other adapter has a similar address.
IP Address	This field displays the IP address assigned to the client computer.
refresh	Click this button to manually renew the screen's information display.

24.5 Session List

To display a list of session information, click **System Status** and **Session List**. The **Session List** screen displays up to 2048 entries. When all rows are used, the entries wrap around and the old entries are erased. This screen automatically updates every 5 seconds.

Figure 114	Session List
------------	--------------

<u> </u>								
	Session List							
No.	TCP/UDP	IP Client	Port Client	Port Fake	IP Remote	Port Remote	Idle	
1	тср	192.168.1.10	3129	50002	192.168.1.1	80	128	
HGO I Page H First (Previous Next) End H								

The following table describes the labels in this screen.

Table 60Session List

LABEL	DESCRIPTION
No	This field displays the index number of an entry.
TCP/UDP	This field displays the type of traffic (TCP or UDP).
IP Client	This field displays the IP address of the client computer.
Port Client	This field displays the port number through which the client computer transmits the traffic.
Port Fake	This field displays the virtual port number for a session.
Port Remote	This field displays the port number of a remote device the client computer accesses.
Idle	This field displays the number of seconds of inactivity for a session.
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.

24.6 NAT Pool Table

The VSG provides a NAT address pool feature for use with VPN. It allows subscribers to connect to remote VPN servers that allow only one connection per source IP address.

Click **System Status** and **NAT Pool Table** to open the screen shown next. This screen displays the LAN and WAN IP addresses that are currently being used as well the VPN types.

Figure 115 NAT Pool Table

NAT Pool Table							
NAT Pool information. Source IP address, Source MAC address and Translated IP address							
No. Source IP Address Source MAC Address Translated IP Address VPN Type							

The following table describes the labels in this screen.

LABEL	DESCRIPTION
No	This field displays the index number of an entry.
Source IP Address	This field displays the IP address of the subscriber device on the LAN that is using the VPN.
Source MAC Address	This field displays the MAC address of the subscriber device on the LAN that is using the VPN.
Translated IP Address	This field displays the WAN IP address of the VSG to which the LAN IP address of the subscriber using the VPN was translated.
VPN Type	This field displays the type of VPN connection that is being used (IPSec or PPTP).

24.7 LAN Device Status

The LAN Devices Status screen displays the status of LAN devices configured in the LAN Devices screen (refer to Chapter 19, "LAN Devices," on page 153).

Click **System Status** and **LAN Devices Status** to display the screen as shown next. This screen automatically updates every minute.

Figure 116	System Status:	LAN Device Status
------------	----------------	-------------------

	LAN Devices Status								
No.	No. Device Name Status Virtual Port (60001~60300) Device IP Address Device Server Port Device MAC Address Application								
1	<u>B-3000</u>	ОК	60001	10.59.1.30	80	00:A0:C5:00:00:05	TCP		
2	P662HW	ок	60002	10.59.1.62	80	00:A0:C5:01:23:45	TCP		

The following table describes the labels in this screen.

 Table 62
 System Status: LAN Device Status

LABEL	DESCRIPTION
No	This field displays the index number.
Device Name	This field displays the name of the LAN device. Click the device name to access web-based management interface of the LAN device if the Status field is OK .
	For more information on accessing a LAN device, refer to Section 24.7.1 "Accessing the LAN Device" on page 184.
Status	This field displays the current status of the LAN device. It displays OK when the LAN device is turned on and working properly. Otherwise it displays Fail .
Virtual Port	This field displays the virtual port number.
Device IP Address	This field displays the IP address of the LAN device.
Device Server Port	This field displays the server port number of the LAN device.

LABEL	DESCRIPTION
Device MAC Address	This field displays the MAC address of the LAN device.
Application	This field displays the type of application packet that is forwarded to the LAN device.

 Table 62
 System Status: LAN Device Status (continued)

24.7.1 Accessing the LAN Device

Before you can access a LAN device behind the VSG, the following requirements must be met.

- The LAN device has a web-based management interface and it is enabled.
- You have set up the virtual port mapping to the LAN device server port in the LAN Device Management screen.
- The LAN device status is **OK** in the **LAN Device Status** screen.

There are two methods to access the LAN device: directly or through the web configurator.

- To access the LAN device through the web configurator, open the LAN Device Status screen and click the device name. A new Internet browser should display showing the login screen of the LAN device management interface.
- To directly access the LAN device, enter the WAN IP address of your VSG and the virtual port number of the LAN device separated by a colon. For example, enter "http:// 192.168.1.1:60001" where 192.168.1.1 is the WAN IP address of the VSG. The login screen of the LAN device management interface should display.

24.8 Billing Logs

Click **System Status** and **Billing Log** in the navigation panel to display the screen as shown. Refer to Section 24.8.1 "Billing Logs Backup" on page 185 for information on backing up the billing logs to a computer.

	Billing Log						
refre	refresh 🔂 Export to Txt File						
No.	Username/Location	Billing Profile	Log Time	Usage Time	Bill	Charge from	Status
1	bwh2y936	Profile 1	2004/10/21 11:53:06	1 day(s)	10.00	Dynamic	Expired
2	Cindy	Profile 1	2004/10/22 12:00:28	1 day(s)	10.00	Static	In-Use
3	Cindy	Profile 1	2004/10/22 13:03:59	1 day(s)	10.00	Static	Finished
4	9v269m55	Profile 1	2004/10/28 11:29:55	1 day(s)	10.00	Dynamic	Un-used
5	bwh2y943	Profile 1	2004/10/28 14:11:43	2 day(s)	20.00	Dynamic	Un-used
) H	MGO I Page M First 4 Previous Next > End >						

FIGURE 117 System Status: Billing Loc	Figure 117	System Status:	Billing Log
---------------------------------------	------------	----------------	--------------------

The following table describes the labels in this screen.

Table 63 System Status: Bi	lling Lo	bg
----------------------------	----------	----

LABEL	DESCRIPTION
Refresh	Click Refresh to update the screen.
Export to Txt File	Click Export to File to back the billing logs. Refer to Section 24.8.1 "Billing Logs Backup" on page 185 for instructions.
Clear Log	Click Clear Log to clear all log entries.
No	This field displays the index number of the entry.
Username/ Location	This field displays the user name or the room number (for Dynamic , PMS or Static accounts only).
Billing Profile	This field displays the name of the billing profile an account is using.
Log Time	This field displays the time the subscriber logged in using the account.
Usage Time	This field displays the time period allocated for an account.
Bill	This field displays the amount of money charged for the time unit(s) purchased.
Charge from	This field displays the type of the account billing (Accounting, Dynamic or PMS).
GO Page	Select a page number from the drop-down list box to display the selected page.
First	Click First to go to the first page.
Previous	Click Previous to return to the previous page.
Next	Click Next to go to the next page.
End	Click End to go to the last page.

24.8.1 Billing Logs Backup

Follow the steps below to back up billing logs to a computer.

1 In the **Billing Log** screen, click the **Export to Txt File** link. A **File Download** screen displays.

Figure 118	Billing Log	Backup:	File Download
------------	-------------	---------	---------------

A	
100	What would you like to do with this life?
	 Open this file from its current location Save this file to disk
	$\overleftarrow{\ensuremath{ \mathbf{v}}}$ Algrays ask before opening this type of file

2 Select Save this file to disk and click OK. A Save As window displays.

Save As						? ×
Save jn:	🔄 My Docume	ints	•	+ 🗈 🖻		
History Desktop My Documents My Computer	Adobe Corel User Fil My eBooks My Library My Pictures	es				
	File <u>n</u> ame:	[Save
My Network P	Save as <u>t</u> ype:	Text Document		<u>-</u>]	Cancel

Figure 119 Billing Log Backup: Save As

3 Specify the file name and/or location and click **Save** to start the backup process.

To view the billing logs, open the log file using any text editor. The following figure shows an example.

Figure 120 Billing Log Backup: Example File Content

```
[Billing Log Profile]
NO. Username/Location BillingProfile Log Time Usage Time Bill Charge from Status
1 Cindy Profile 1 2004/10/22 12:00:28 1 day(s) 10.00 Static In-Use
2 Cindy Profile 1 2004/10/22 13:03:59 1 day(s) 10.00 Static In-Use
3 bwh2y936 Profile 1 2004/10/21 11:53:06 1 day(s) 10.00 Dynamic Expired
```

24.9 PMS Transaction

This screen is applicable when account billing is done using a PMS.

To display transaction messages between the VSG and PMS, click **System Status** and **PMS Transaction**.

PMS Transaction Log	
	Clear log
(HST<-MDS) LS DA040726 T1151913	

Figure 121 System Status: PMS Transaction Log

24.10 Static Route Table

You can view the list of static routes configured in the Static Route Table screen.

Click System Status and Static Routing Table to display the screen.

Figure	122	System	Status:	Static	Route	Table

	Static Route Table						
No.	Destination IP Address	Destination Subnet Mask	Gateway IP Address	Hop Count			
1	1.1.1.1	255.255.255.0	1.1.12.1	1			

The following table describes the labels in this screen.

Table 64	System	Status:	Static	Route	Table
----------	--------	---------	--------	-------	-------

LABEL	DESCRIPTION
Static Route Table	This table displays the static routes configured.
No.	This field displays the index number.
Destination IP Address	This field displays the IP address of the final destination.
Destination Subnet Mask	This field displays the subnet mask of the final destination.
Gateway IP Address	This field displays the IP address of the gateway device.
Hop Count	This field displays the "cost" of this static route.

CHAPTER 25 Secure Socket Layer

This chapter shows you how to setup and enable Secure Socket Layer (SSL) security on the VSG.

25.1 About SSL

SSL (Secure Socket Layer) security is a standard Internet protocol for secure communications that uses a combination of certificate-based authentication and public-key encryption. SSL protects data transfer between the web configurator on the VSG and the web browser on a connected computer.

With SSL security activated, data (such as user name and password) transferred between the VSG and the computer is protected when you access the VSG using a web browser that supports SSL.

25.1.1 Certificate

A digital certificate (also referred to as a certificate) contains the key owner's name and public key, the name of the issuing certification authority, the certification authority's digital signature and a certificate validity time limit and other optional information fields.

25.1.2 Certificate Authorities

A Certification Authority (CA) issues digital certificates and guarantees the identity of the certificate owner. When someone requests a certificate from a CA, the CA requires proof of identity. There are both commercial certificate authorities like CyberTrust and VeriSign, as well as government certificate authorities.

25.2 Downloading SSL Certificate to the VSG

After you apply for and receive a certificate from a certificate authority, import the certificate and the private key to the VSG.

Click **System Tools** and **SSL Certificate** in the navigation panel to display the screen as shown next.

S	SL Certificate Download	
Password:		
Certificate File:		Browse
Private Key File:	ļ	Browse
		Apply

Figure 123 SSL Certificate Download

The following table describes the labels in this screen.

Table 65 SSL Certificate Download

LABEL	DESCRIPTION
Password	Enter the secret password you used when applying for the certificate. Note: This password must be the same as the one you entered at the CA's site when creating a certificate.
Certificate File	Specify the certificate sent to you by a CA.
Private Key File	Specify the file that holds the private key.
Apply	Click Apply to start the file transfer process.

25.3 Activating SSL Security

Follow the steps below to activate the SSL security in the VSG.

1 Click System Setting, Servers in the navigation panel and select the SSL Security check box in the Web Server field.

Server				
Server Port: 80 🔽 SSL Security Administrator Idle-Timeout: 5 Min() (s) (1 - 1440)			
C Disable C DHCP Relay				
DHCP Server IP Address				
DHCP Server				
IP Pool Starting Address	10.59.1.2			
Pool Size:	253 (Max.=1024)			
Lease Time	1440 (Minutes)			
Primary DNS Server	168.95.1.1			
Secondary DNS Serv <mark>er</mark>				
IP Address or Domain Name				
	Server Port: 80 SSL Security Administrator Idle-Timeout: 5 Min(C Disable C DHCP Relay DHCP Server IP Address OHCP Server IP Pool Starting Address Pool Size: Lease Time Primary DNS Server Secondary DNS Server			

Figure 124 System Setting: Server Configuration: Enable SSL Security

- **2** Click **Apply** to save the changes and restart the VSG when prompted.
- **3** Click Authentication in the Configuration Menu panel and select Enable in the SSL Login Security field

			-		
			Authentica	tion Configuration	
Authentication Type	œ	• No Authentication			
	O User Agreement				
		Redirect URL Link <u>Code</u> Standard User Agreement page CAS (Hitop HSIA)			
	0				
		Gateway Type: GEN Property Code: (6 characters) Property ZIP: (4 ~ 10 characters)			
		Redirect	URL Link http://h	sia.hamptoninn.com/hsia/servlet/Autł	
	0	Built-in	Authentication		
	c	complete RADIUS	e-conigured options needs. You must th a your setup. preset option: Sc	s are provided for easy setup. Select an option that best suits your nen proceed to configure the "Billing" and "Accounting" settings to cenario C <u>Select option</u>	
		⊙ Ac ⊖ Tir	cumulation ne to Finish (No id	lle timeout)	
		Primar	y RADIUS Server	Server IP address Authentication Port Accounting Port Shared Secret	
		Secono Server	dary RADIUS	Server IP address Authentication Port 0 Accounting Port 0 Shared Secret	
		Retry A Primar	Attempts when y failed	5 -	
		Accour	nting Service	 Disable Enable Update every: 0 Min(s) 	
		Authen	tication Method	CHAP	
		Vendor	Specific Attribute	Vendor Code 0 Send VSA together with Authentication Request	
Idle Time Out	5		Min(s) (1 - 1440)		
Current User Information Backup	10		Min(s) (1 - 1440)		
SSL Login Security	C	Disable	Enable		
				Apply	

Figure 125 System Setting: Authentication: Activate SSL Login

4 Click **Apply** to save the changes and restart the VSG when prompted.

25.4 Installing SSL Certificate on a Computer

After you enable and activate the SSL login security on the VSG, you can access the VSG through a secure connection.

Follow the steps below to view and install the default SSL security certificate on a computer.

1 Access the VSG. A **Security Alert** window displays. Click **OK** to continue and close the window.

Figure 126 Installing the SSL Security Certificate: First Security Alert



2 A second **Security Alert** window displays.

Figure 127 Installing the SSL Security Certificate: Second Security Alert

Aler	t X			
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.				
	The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.			
0	The security certificate date is valid.			
⚠	The name on the security certificate does not match the name of the site.			
Do you want to proceed?				
	Yes No View Certificate			
	Aler Infor chai sect (1) (1) Do y			

3 Click **View Certificate** to display the **Certificate** window as shown. Notice the warning about the untrusted certificate.

tificate ieneral Details Certification Path	?
Certificate Information	
This CA Root certificate is not trusted install this certificate in the Trusted R Authorities store.	. To enable trust, oot Certification
Issued to: www.localhost.com	
Issued by: www.localhost.com	
Valid from 11/5/2002 to 11/2/2012	2
I Install Certifica	te
	ОК

Figure 128 Installing the SSL Security Certificate: View Certificate

4 Click Install Certificate to install the certificate to your computer. A Certificate Import Wizard window displays. Click Next.

Figure 129 Installing the SSL Security Certificate: Certificate Import Wizard

Certificate Import Wizard		×
	Welcome to the Certificate Import Wizard This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store. A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept. To continue, click Next.	
	< Back Next > Cancel	

5 Accept the default or specify the location to store the certificate. Click **Next**.

Figure 130 Certificate Import Wizard: Location

rtificate Import Wizard		
Certificate Store		
Certificate stores are sys	tem areas where certificates are kept.	
Windows can automatical	ly select a certificate store, or you can specify a location for	
Automatically select	t the certificate store based on the type of certificate	
C Place all certificate	s in the following store	
– Certificate store;		
	Browse	
		-
	< <u>B</u> ack <u>N</u> ext > Cano	:el

6 Click Finish to import the certificate.

Figure 131 Certificate Import Wizard: Finish

Completing the Wizard You have successfully comp wizard.	Certificate Import
Certificate Store Selected	Automatically determined by t Certificate
 •	>
< <u>B</u> ack	Finish Cancel

7 A **Root Certificate Store** window displays as shown. Click **Yes** to store the certificate to the computer.



Root Cer	tificate Store
A	Do you want to ADD the following certificate to the Root Store?
ف	Subject : mail@localhost.com, www.localhost.com, Local Host, Local Group, Local City, Local State, 00 Issuer : Self Issued Time Validity : Tuesday, November 05, 2002 through Friday, November 02, 2012
	Serial Number : 00 Thumbprint (sha1) : 95227DB8 13E5FA87 B7F15129 A1A819EB 8EDE0746 Thumbprint (md5) : 883B7AA2 68716213 CACD01AF F38C9C15
	Yes (<u>No</u>

8 When the certificate is saved successfully, a **Certificate Import Wizard** window displays. Click **OK**.



Certificat	e Import Wizard 🛛 🔀
٩	The import was successful.
	ОК

9 A **Certificate** window displays the detailed information. Notice that the certificate is now trusted.

Figure 134 Certificate: Detailed Information

Certifical	te Inform	nation			
This certificate •Ensures the	is intend e identity c	ed to: of a remote (computer		
	www.loc	alhost.com			
Issued by:	www.loc	alhost.com			
¥alid from	11/5/200	2 to 11/2/2	2012		
		S		Terusy	Chatomont

10Click **OK** in the **Certificate** window to return to the **Security Alert** window as shown. Notice that the first item in the list changed to inform you that the certificate is from a trusted host. Click **Yes** to proceed to the login screen in secure mode.

Figure 135 Security Alert: Trusted

Security	Aler		×	
ß	Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.			
	0	The security certificate is from a trusted certifying authority.		
	0	The security certificate date is valid.		
	⚠	The name on the security certificate does not match the name of the site.		
	Do you want to proceed?			
	<u>.</u>	Yes <u>N</u> o <u>V</u> iew Certificate		

⇒

Note: Once you are logged in with SSL security, the URL starts with "https://" instead of "http://".

CHAPTER 26 The SMT

This chapter introduces the SMT (System Management Terminal), describes how to access the SMT and provides an overview of its menus.

26.1 Introduction to the SMT

The System Management Terminal (SMT) is a menu – driven interface that you use to configure the VSG. Access the SMT using the console port.



Note: You can connect the CONSOLE port on the VSG directly to a computer serial port or to a statement printer (also known as an account generator printer). Note: Make sure the CONSOLE port is set to the correct mode. Refer to Chapter 3, "The Web Configurator," on page 41 on system settings using the web configurator.

Use the SMT to set general system settings and upgrade firmware. For advanced configuration, use the embedded web configurator (refer to the corresponding chapters on configuration using the web configuration).

26.1.1 Establishing a Console Port Connection

After the VSG is directly connected to a computer using the console port, turn on the computer and run a terminal emulation program (for example, Hyper Terminal in Windows) and configure its communication parameters as follows:

- 9600 bits per second.
- Parity none
- 8 data bits
- 1 stop bit
- flow-control none.

<u>B</u> its per second:	9600	•
<u>D</u> ata bits:	8	•
<u>P</u> arity:	None	•
<u>S</u> top bits:	1	•
Elow control:	None	•
		<u>R</u> estore Defaults

Figure 136 HyperTerminal Communication Parameter Settings Example

26.2 SMT Login Screen

Press [ENTER] to display the login screen. For your first login, enter the default administrator user name "admin" and default password "1234" and then press [ENTER].



Note: The user name and password are case sensitive.

Figure 137 SMT: Login Screen

VSG-1200
(c) 2003 ZyXEL Communications Corporation. All Rights Reserved.
Version 1.08
Username:
Password:



Note: The VSG automatically logs you out after five minutes of inactivity. Simply log back into the VSG if this happens.

26.3 The SMT Main Menu Summary

The SMT main menu is shown next.

Figure 138 SMT: Main Menu

```
Main Menu

1) System Configuration

2) Wan Configuration

3) Lan Configuration

4) System Status

5) Utilities

6) Restart

7) Logout

8) Factory Defaults

Enter selection:

Enter a numeric between 1 and 8.
```

The following table describes the menu choices in this screen.

NUMBER	MENU TITLE	FUNCTION
1	System Configuration	Use this menu to set up general system setup.
2	WAN Configuration	Use this menu to configure the WAN port.
3	LAN Configuration	Use this menu to configure the LAN port.
4	System Status	Use this menu to view the current configuration of the VSG.
5	Utilities	Use this menu to perform firmware upgrades and change the login password.
6	Restart	Use this menu to restart your VSG.
7	Logout	Use this menu to log out of the SMT.
8	Factory Defaults	Use this menu to reset the VSG back to the factory default settings.

Table 66 SMT: Main Menu

26.4 Navigating the SMT Interface

Familiarize yourself with the SMT operations before you attempt to modify the configuration.

26.4.1 The Navigation Keys

The following table describes the keystrokes that you use in the SMT screens.

 Table 67
 SMT: Control Key Descriptions

KEY	DESCRIPTION
[ENTER]	To go to the selected menu.
[ESC]	Press [ESC] and enter Y to discard any changes and return to the previous screen.
[TAB]	To move to the next configuration field.
[SPACE]	To toggle between field choices.

26.5 General System Setup

The System Configuration menu contains administrative and system-related information.

From the **Main Menu** screen, type 1 and press [ENTER] to display the **System Configuration** menu as shown below.

Figure 139 SMT: System Configuration

	System Configuration
System Name	:
Doamin Name	:
Console Port Speed	:9600
Web Server Port	:80
E-Mail Server Redirect	:

The following table describes the fields in this menu.

 Table 68
 SMT: System Configuration

FIELD	DESCRIPTION
System Name	Enter a descriptive name (up to 32 characters) for identification purposes.
Domain Name	Enter the domain name (if you know it) here. If you leave this field blank, the VSG may obtain a domain name from a DHCP server.
	The domain name you entered is given priority over the DHCP server assigned domain name.
Console Port Speed	Enter 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, or 115200 to set the console port speed.
	The default setting is 9600.
	Note: If you change the console port speed, make sure you also make the same change to the terminal emulator software.

FIELD	DESCRIPTION	
Web Server Port	Specify the port number of the embedded web server on the VSG to access the web configurator. The default port number is 80.	
	Enter a number between 8010 and 8060 to access the web configurator behind a NAT-enabled network.	
	If you enter a number between 8010 and 8060, you need to append the port number to the WAN or LAN port IP address to access the web configurator. For example, if you enter "8010" as the web server port number, then you must enter "http://www.192.168.1.1:8010" where 192.168.1.1 is the WAN or LAN port IP address.	
E-mail Server Redirect	Enter the IP address or domain name of the e-mail server to which the VSG forwards e-mail. This field should be configured if the e-mail server is behind a firewall or on a NAT-enabled network.	
At the "S)ave and return R)eturn without saving M)odify:" prompt, type S and press [ENTER] to save the changes and return to the previous screen, type R and press [ENTER] to discard all changes and return to the previous screen or type M and press [ENTER] to continue configuring the fields. Restart the device when prompted		
Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All changes will be discarded.		

 Table 68
 SMT: System Configuration (continued)

26.6 Changing the System Password



Note: It is recommended you change the default system password.

Follow the steps below to change the system password.

- 1 In the main menu, type 5 and press [ENTER] to display the Utilities menu.
- **2** In the Utilities menu, type 2 and press [ENTER]. The Change Administrator Password menu displays.

Figure 140 SMT: Change Administrator Password

Change Administrator Password Enter the old password : Enter the new password : Confirm the new password:

3 Type your current system password in the **Enter the old password** field, and press [ENTER].

- **4** Type your new system password in the **Enter the new password** field, and press **[ENTER]**.
- **5** Re-type your new system password in the **Confirm the new password** field for confirmation and press [ENTER].
- 6 Save the settings.



Note: Note that as you type a password, the screen displays an asterisk "*" for each character you type.

26.7 Restarting the VSG

Follow the steps below to restart the VSG.

1 In the main menu, type 6 and press [ENTER]. A screen displays prompting you to confirm.

Figure 141 SMT: Restart

Restart System (Y/N)?

2 Type **Y** and press [ENTER] to restart the VSG. Otherwise, type **N** and press [ENTER] to cancel the action and return to the main menu.

26.8 Reset the VSG to Factory Defaults

If you forgot your administrator login user name and password, you have to use the **RESET** button to reset the VSG back to the factory defaults. Refer to Chapter 2, "Hardware Installation and Connection," on page 35.

Resetting the VSG restores all system configuration back to the factory defaults. However, you may retain the subscriber account information.

Note: All system settings will be lost once you reset to the default settings. **Note:** Press [ESC] to return to the Main Menu screen.

Follow the steps below to reset the VSG back to the factory defaults.

- **1** In the main menu, type 8 and press [ENTER]. A screen displays prompting you to confirm.
- 2 Type Y and press [ENTER] to reset the VSG.

- **3** Type **Y** and press [ENTER] to retain the subscriber account information in the local subscriber database. Type **N** and press [ENTER] to delete all subscriber account information.
- **4** Press [ENTER] to reset the VSG. The VSG automatically restarts.

Figure 142 SMT: Reset to Factory Defaults

```
Change to factory defaults and the system will be restarted! Are you sure(Y/N)?
```

CHAPTER 27 LAN and WAN Setup Using the SMT

This chapter shows you how to configure the LAN and WAN settings on the VSG.

27.1 LAN and WAN Overview

Refer to Chapter 4, "LAN, WAN and Server Setup," on page 53 for more information.

27.2 WAN Configuration

From the main menu, type 1 and press [ENTER] to display the **System Configuration** menu. The **WAN Configuration** menu varies depending on the selection in the **WAN Type** field.

27.2.1 Using a Static/Dynamic WAN IP Address

You can set the VSG to use a static (fixed) or dynamic IP address.

Figure 143 SMT: WAN Configuration: Static or Dynamic IP Address

```
WAN Configuration

WAN Type? (D/S/P/T) :S

IP Address :192.168.1.1

Subnet Mask :255.255.255.0

Gateway :192.168.1.254

Primary DNS Server :168.95.1.1

Secondary DNS Server :
```

The follow table describes the fields in this menu.

Table 69	SMT: WAN	Configuration:	Static or D	ynamic IP	Address
----------	----------	----------------	-------------	-----------	---------

FIELD	DESCRIPTION	
WAN Type? (D/S/ P/T)	Enter D (Dynamic) to set the VSG to dynamically obtain an IP address and other network information (IP address, DNS information etc.) from a DHCP server on the WAN network. This is the default setting.	
	Enter ${\bf S}$ (Static) to set the VSG to use a static (or fixed) IP address. Then set the following fields.	
IP Address	This field is available when you select S in the WAN Mode field.	
	Enter the static IP address assigned to you by your ISP or network administrator.	
Subnet Mask	This field is available when you select D in the WAN Mode field.	
	Enter the subnet mask depending on your network needs. The default is 255.255.255.0 . Refer to Appendix H, "IP Subnetting," on page 265 if you are implementing subnetting.	
Default Gateway	Enter the IP address of the default gateway.	
Primary/ Secondary DNS IP Address	Enter the IP address of the DNS server(s) in the Primary DNS IP Address and/or Secondary DNS IP Address fields.	
	The default primary DNS server IP address is 168.95.1.1.	
	You <i>must</i> specify a DNS server if you set the VSG to use a static WAN IP address.	
At the "S)ave and re changes and return to the previous scre device when promp	At the "S)ave and return R)eturn without saving M)odify:" prompt, type S and press [ENTER] to save the changes and return to the previous screen, type R and press [ENTER] to discard all changes and return to the previous screen or type M and press [ENTER] to continue configuring the fields. Restart the device when prompted	
Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All		

Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All changes will be discarded.

27.2.2 PPPoE Support

To activate PPPoE support on the VSG, enter **P** in the **WAN Type** field to display the **WAN Configuration** screen as shown next. Refer to the related web configurator section for background information.

Figure 144 SMT: WAN Configuration: PPPoE

	WAN Configuration
WAN Type? (D/S/P/T)	:P
Username	:
Password	:
Connect Setting? (C/K)	:C
Max idle Time(Min)	:10
Optional Setting	
Service name	:
PPP MTU Setting	:1492
TCP MSS setting	:1452

The following table describes the PPPoE related fields in this menu.

Table 70	SMT: WAN	Configuration:	PPPoE
----------	----------	----------------	-------

FIELD	DESCRIPTION	
WAN Type? (D/S/ P/T)	Enter P to enable PPPoE support.	
Username	Enter the login user name assigned to you by your ISP.	
Password	Enter the password associated with the user name above.	
Connect Setting? (C/K)	Enter C (Connect on demand) when you don't want the connection up all the time and specify an idle time-out in the Max. Idle Timeout Setting field. This is the default selection.	
	Enter K (Keep alive) when you want your connection up all the time and specify the redial time in the Redial Period field to set how long the VSG waits before trying to bring up the connection automatically if it is disconnected.	
Redial Period (Sec)	The field is only visible when you select K in the Connect Setting field.	
	Type the time in seconds that elapses before the VSG automatically attempts to reconnect to the PPPoE server. The default is 30 seconds.	
Max Idle Time (Min)	This field is only visible when you select C in the Connect Setting field.	
	Type the time in minutes that elapses before the VSG automatically disconnects from the PPPoE server. The default is 10 minutes.	
Optional Setting		
Service Name	Enter the name of your Internet service provider.	
PPP MTU Setting	Enter the size of a Maximum Transmission Unit (MTU).	
TCP MSS Setting	Enter the size of the Maximum Segment Size (MSS).	
At the "S)ave and return R)eturn without saving M)odify:" prompt, type S and press [ENTER] to save the changes and return to the previous screen, type R and press [ENTER] to discard all changes and return to the previous screen or type M and press [ENTER] to continue configuring the fields. Restart the device when promoted		

Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All changes will be discarded.

27.2.3 PPTP Support

To activate PPTP support on the VSG, enter **T** in the **WAN Type** field to display the **WAN Configuration** screen as shown next. Refer to the related web configurator section for background information.

Figure 145 SMT: WAN Configuration: PPTP

	WAN Configuration
WAN Type? (D/S/P/T)	:T
Local IP Address	:
Local Subnet Mask	:
Gateway IP Address	:
Server IP Address	:
Username	:
Password	:
Connect Setting? (C/K)	:C
Max idle Time(Min)	:10
Optional Setting	
Connection ID/Name	:
PPP MTU Setting	:1460
TCP MSS setting	:1400

The following table describes the PPTP-related fields in this menu.

FIELD	DESCRIPTION	
WAN Type? (D/S/ P/T)	Enter T to enable PPTP support.	
Local IP Address	Enter the (static) IP address assigned to you by your ISP for the WAN interface.	
Local Subnet Mask	Enter the subnet mask assigned to you by your ISP (if given) for the WAN interface.	
Gateway IP Address	Type the IP address of the gateway device (if given).	
Server IP Address	Enter the IP address of the PPTP server.	
Username	Enter the login user name assigned to you by your ISP.	
Password	Enter the password associated with the user name above.	
Connect Setting? (C/K)	Enter C (Connect on demand) when you don't want the connection up all the time and specify an idle time-out in the Max. Idle Timeout Setting field. This is the default selection.	
	Enter K (Keep alive) when you want your connection up all the time and specify the redial time in the Redial Period field to set how long the VSG waits before trying to bring up the connection automatically if it is disconnected.	
Redial Period	The field is only visible when you select K in the Connect Setting field.	
(Sec)	Type the time in seconds that elapses before the VSG automatically attempts to reconnect to the PPTP server. The default is 30 seconds.	
Max Idle Time	This field is only visible when you select C in the Connect Setting field.	
Setting	Type the time in minutes that elapses before the VSG automatically disconnects from the PPTP server. The default is 10 minutes.	
Optional Setting		
Connection ID/ Name	If your ISP has provided a connection ID name, enter it in this field exactly as provided.	
PPP MTU Setting	Enter the size of a Maximum Transmission Unit (MTU).	

 Table 71
 SMT: WAN Configuration: PPTP

 Table 71
 SMT: WAN Configuration: PPTP (continued)

FIELD	DESCRIPTION	
TCP MSS Setting	Enter the size of the Maximum Segment Size (MSS).	
At the "S)ave and return R)eturn without saving M)odify:" prompt, type S and press [ENTER] to save the		

changes and return to the previous screen, type R and press [ENTER] to discard all changes and return to the previous screen or type M and press [ENTER] to continue configuring the fields. Restart the device when prompted

Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All changes will be discarded.

27.3 LAN Configuration

From the Main Menu screen, enter 3 to display the LAN Configuration menu as shown next.

Figure 146 SMT: LAN Configuration

```
LAN Configuration
DHCP Configuration
DHCP Service? (D/R/S) :S
Start IP Address(Private) :10.59.1.2
DHCP Pool Size (Private) :20
Lease Time (Private) :1440
Primary DNS IP Address :168.95.1.1
Secondary DNS IP Address :
```

The following table describes the fields in this menu.

Table 72	SMT: LAN	Configuration
----------	----------	---------------

FIELD	DESCRIPTION
DHCP Service? (D/R/S)	Enter D (Disable) to deactivate DHCP services on the LAN. Ethernet devices connected to the LAN interface <i>must</i> use static IP addresses.
	Enter R (Relay) to set the VSG to forward network configuration requests to a DHCP server on the LAN network. Then configure the Server IP Address and Agent IP Address fields.
	Enter S (Server) to set the VSG to assign network information (IP address, DNS information etc.) to Ethernet device(s) connected to the LAN port. This is the default setting.
Start IP Address	This field is visible when you enter S in the DHCP Service field.
	Enter the first of the continuous addresses in the IP address pool. The default is 10.59.1.2 .
DHCP Pool Size	This field is visible when you enter S in the DHCP Service field.
	This field specifies the size or count of the IP address pool. Enter a number not greater than 1024. The default is 253 .
Lease Time	This field is visible when you enter S in the DHCP Service field.
	Specify the time (in minutes between 1 and 71582788) a DHCP client is allowed to use an assigned IP address. When the lease time expires, the DHCP client is given a new, unused IP address. The default is 1440 minutes.

FIELD	DESCRIPTION
Relay Server IP Address	This field is only visible when you enter R in the DHCP Service field. If the VSG is set to function as a DHCP relay, enter the IP address of the DHCP server.
Primary/ Secondary DNS IP Address	These fields are visible when you enter S in the DHCP Service field. Enter the IP address of the DNS server(s) in the Primary DNS IP Address and/or Secondary DNS IP Address fields. You <i>must</i> specify a DNS server.
At the "S)ave and return R)eturn without saving M)odify:" prompt, type S and press [ENTER] to save the changes and return to the previous screen, type R and press [ENTER] to discard all changes and return	

Table 72 SMT: LAN Configuration (continued)

changes and return to the previous screen, type R and press [ENTER] to discard all changes and return to the previous screen or type M and press [ENTER] to continue configuring the fields. Restart the device when prompted

Press [ESC] and enter Y to stop any actions in the current screen and return to the previous screen. All changes will be discarded.

27.4 View Current Configuration

From the main menu, enter 4 and press [ENTER] to display the System Status menu as shown next.

Figure 147 SMT: System Status

```
System Status
  System Name
                               :
                              :
 Doamin Name
 Console Port Speed :9600
Web Server Port :80
 E-Mail Server Redirect :
WAN Configuration
 WAN Type? (D/S/P/T) :Static IP
IP Address :192.168.1.1
Subnet Mask :255.255.255.0
Gateway :192.168.1.254
     Gateway :192.168.1.254
Primary DNS Server :168.95.1.1
      Secondary DNS Server :
DHCP Configuration
 DHCP Service? (D/R/S) :Server
  Start IP Address
                              :10.59.1.2
 DHCP Pool Size
                              :253
  Lease Time
                              :1440
  Primary DNS IP Address
                              :168.95.1.1
  Secondary DNS IP Address :
Press any key to return.
```

The following table describes the fields in this screen.

Table 73 SIVER Status	Table 73	SMT: System Status
-----------------------	----------	--------------------

FIELD	DESCRIPTION	
System Name	This field displays the name of the VSG for identification purposes.	
Domain Name	This field displays the domain name.	
Console Port Speed	This field displays the console port speed (1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, or 115200).	
Web Server Port	This field displays the port number for the embedded web server.	
	If the port number is not 80 , then you need to append the port number to the WAN port IP address to access the VSG web configurator. For example, if 8010 is the web server port number, then you must enter "http://www.192.168.1.1:8010" in the address bar on the web browser where 192.168.1.1 is the WAN or LAN port IP address.	
E-mail Server IP Address	This field displays the IP address of the e-mail server to which the VSG forwards the e-mail when the subscriber's e-mail server(s) is behind a NAT-enabled network or firewall.	
WAN Configuration		
WAN Type? (D/S/ P/T)	This field displays the WAN IP address assignment method (Static IP Setting or DHCP Client).	
IP Address	This field displays the WAN IP address of the VSG.	
Subnet Mask	This field displays the subnet mask on the WAN port.	
Gateway	This field displays the IP address of the default gateway.	
Primary DNS Server	This field displays the IP address of the primary DNS server.	
Secondary DNS Server	This field displays the IP address of the secondary DNS server.	
DHCP Configuration		
DHCP Service? (D/R/S)	This field displays the DHCP mode (Server, Relay or Disable) on the LAN port.	
Start IP Address	This field is visible when the DHCP Service field is Server .	
	This field displays the first of the contiguous addresses in the IP address pool.	
DHCP Pool Size	This field is visible when the DHCP Service field is Server . This field displays the size of the DHCP client pool.	
Lease Time	This field is visible when the DHCP Service field is Server . This field displays for how many minutes a DHCP client is allowed to use an assigned IP address.	
Agent Server IP	This field is visible when the DHCP Service field displays Relay.	
Address	This field displays the IP address of the DHCP relay agent.	
Primary/ Secondary DNS IP Address	These fields are visible when the DHCP Service field is Server . These two fields display the IP address(es) of the DNS server(s).	
Press any key at the "Press any to return" prompt to go back to the previous screen.		

CHAPTER 28 Configuration and Firmware Maintenance

This chapter shows you how to maintain the firmware and configuration file.



Warning: Do not interrupt the file upload process as this may PERMANENTLY damage the device.

28.1 Filename Convention

The configuration file contains the factory default settings in the menus such as password, DHCP Setup, TCP/IP Setup, etc. Once you have customized the settings of the VSG, they can be saved back to your computer under a filename of your choosing.

The firmware or the configuration files do not have any filename conventions. There is not a specific file extension or filename conventions that you need to follow. Therefore, you can specify any name or file extension for the firmware and the configuration files.

However, it is recommended to use the ".bin" file extension for the firmware file and ".rom" for the configuration file for management purposes.

28.2 Firmware Upgrade

The following sections show you how to upgrade the firmware using the SMT and the web configurator.

28.2.1 Firmware Upgrade Using the Web Configurator

There are two ways to upgrade the firmware in the VSG: manually or scheduled.

To manually upgrade the firmware, you have to down the latest firmware from www.zyxel.com. With scheduled firmware upgrade, the VSG automatically checks for, downloads and upgrades the latest firmware every time interval specified.

The following figure shows the top links when you click System Tools and Firmware.

Figure 148 Firmware Upgrade: Links

Manual Firmware Upgrade | Scheduled Firmware Upgrade

28.2.1.1 Manual Firmware Upgrade

Follow the steps below to upgrade the firmware manually.

- **1** Download the latest firmware from www.zyxel.com to your computer. Unzip the file if it is zipped.
- **2** Access the web configurator. Refer to the section on accessing the web configurator for instructions.
- **3** Click **System Tools**, **Firmware** and the **Manual Firmware Upgrade** link to display the screen as shown.

Figure 149 Firmware Upgrade: Manual

Manual F	Firmware Upgrade		
To upgrade the firmware, click Browse to locate the firmware file and click Apply. or use remote TFTP server.			
Local PC File Path	Browse	Apply	
TFTP Server IP Address:	Binary File Name:	Apply	

- **4** Specify the firmware file name in the **Local PC File Path** field (or click **Browse** to locate it).
- **5** Click **Apply** to start the file transfer process.
- **6** When the file transfer is completed successfully, the following message displays and the VSG automatically restarts to complete the firmware upgrade process.

Figure 150 Web Configurator: Firmware Upgrade Successful



7 After the VSG finishes restarting, access the web configurator again. Check the firmware version number in the System Status screen.

28.2.1.2 Manual Firmware Upgrade via a TFTP Server

Follow the steps below to upload the firmware using the web configurator.

1 Download the latest firmware from www.zyxel.com and store it in a TFTP server. Unzip the file if it is zipped.
- **2** Run a TFTP server program and specify the location of the firmware file and the communication mode. Refer to the documentation that comes with your TFTP server program for instructions.
- **3** Access the web configurator. Refer to the section on accessing the web configurator for instructions.
- **4** Click **System Tools**, **Firmware** and the **Manual Firmware Upgrade** link to display the screen as shown.

Figure 151 Firmware Upgrade: Manual Using a TFTP Server

Manual Firmware Upgrade				
To upgrade the firmware, click Browse to locate the firmware file and click Apply. or use remote TFTP server.				
Local PC File Path	Browse	Apply		
TFTP Server IP Address:	Binary File Name:	Apply		

- 5 Specify the IP address of the TFTP server in the TFTP Server IP Address field.
- 6 Specify the name of the firmware file in the Binary File Name field.
- 7 Click Apply to start the file transfer process.
- **8** When the file transfer is completed successfully, the following message displays and the VSG automatically restarts to complete the firmware upgrade process.
- **9** After the VSG finishes restarting, access the web configurator again. Check the firmware version number in the **System Status** screen.

28.2.1.3 Scheduled Firmware Upgrade

You can set the VSG to automatically check and download a new firmware from a TFTP server. This allows you to automate the firmware upgrade process if you have more than one VSG on your network. A synchronization file contains information on firmware version and filename. A sample synchronization file is shown next.

Figure 152 Synchronization File Example



You have to manually download the latest firmware from www.zyxel.com to the TFTP server and update the synchronization file.

Figure 153 Scheduled Firmware Upgrade Example



The following describes the automatic firmware upgrade process.

- **1** The VSG checks the synchronization file on the TFTP server for the firmware version number.
- **2** If the synchronization file has the latest firmware version number, VSG retrieves the latest firmware file as specified in the synchronization file.
- **3** VSG upgrades the firmware and restarts.



Note: During the firmware upgrade process, the VSG disconnects all subscriber Internet access. Subscribers need to log in again.

Click **System Tools**, **Firmware** and click the **Scheduled Firmware Upgrade** link to display the screen as shown next.

Figure 154	Firmware	Upgrade:	Scheduled
------------	----------	----------	-----------

Disable Enable		
TFTP Server IP		
Synchronization Check File	Viev	v Sample File
Frequency	© Weekly C Daily C Hourly Sunday ✓ 00 ✓ Hour	00 💌 Min.

The following table describes the labels in this screen.

Table 74	Firmware	Upgrade:	Scheduled
----------	----------	----------	-----------

LABEL	DESCRIPTION
Disable	Select Disable to de-activate scheduled firmware upgrade.
Enable	Select Enable to activate scheduled firmware upgrade. Then set the following fields.
TFTP Server IP	Enter the IP address of the TFTP server where the firmware resides.

LABEL	DESCRIPTION
Synchronization Check File	A Synchronization Check file is a file containing the latest firmware filename and version number on the TFTP server. Click View Sample File to display an example. Enter the name of the check file.
Frequency	Set how often (Weekly , Daily or Hourly) you want to have the VSG check for new firmware and upgrade to new firmware if available (default Weekly).
	Then select the day (applies only when you select Weekly), the hour (applies when you select Daily or Hourly) and the minute that you want the VSG to do the check and upload.
Apply	Click Apply to save the changes.

 Table 74
 Firmware Upgrade: Scheduled (continued)

28.2.2 Firmware Upgrade Using SMT



Note: You *must* run a TFTP server on a computer where a firmware file is stored to perform file upload.

Follow the steps below to configure the TFTP settings in the SMT. You *must* still have a WAN/LAN connection between the VSG and the TFTP server computer at the same time.

- **1** Connect the computer directly to the VSG through the console port. Refer to the section on establishing a console port connection for more information.
- 2 In the SMT main menu, type 5 and press [ENTER] to display the Utilities Menu screen.

Figure 155 SMT: Utilities Main Menu

Utilities Menu 1) Firmware Upgrade 2) Change Password 3) Return to Main Menu Enter selection: Enter a numeric between 1 and 3.

- **3** Type 1 and press [ENTER] to display the Firmware Upgrade screen.
- **4** Enter the IP address of the computer running the TFTP server in the TFTP Server IP Address field.
- **5** Specify the name of the firmware file in the Download Filename field.

Figure 156 SMT: Firmware Upgrade

```
Firmware Upgrade

TFTP Server IP Address :172.21.4.72

Download Filename :VSG1200V108.bin

E) xecute Download R) eturn to Main Menu M) odify

Enter Selection:

Enter the command key and press enter.
```

6 Type E at the "Enter Selection:" prompt to get the firmware file from the TFTP server.

Figure 157 SMT: Firmware Upgrade Process



7 When the file transfer is complete, the VSG automatically reboots. Wait until the VSG finishes rebooting before accessing the VSG again.

28.3 Configuration File Maintenance

You can only use the web configurator to perform configuration file backup and restore.



Warning: DO NOT INTERRUPT THE FILE TRANSFER PROCESS AS THIS MAY PERMANENTLY DAMAGE YOUR DEVICE.

28.3.1 Backup Configuration Using HTTP

Backup is highly recommended once your VSG is functioning properly.

1 Click System Tools and Configuration. A screen displays as shown next.

Figure 158	System	Tools:	Configuration:	Backup
------------	--------	--------	----------------	--------

Configuration				
This feature can import your saved settings to t	this device or export the stored settings from this device to your PC.			
Backup				
Click Backup to save the current system confi	guration to your computer.			
TFTP Server IP Address:	Text File Name:	pply		
Restore				
To restore your stored system configuration to	this device			
File Path:	Browse	pply		
TFTP Server IP Address:	Text File Name:	pply		
Reset the system back to factory defaults				
□ Keep subscriber profile				
□ Keep port-location mapping profile	A	pply		

2 Click Backup. A File Download window displays as shown next.

Figure 159 Configuration Backup: File Download

export.cfg from 10.59.1.1
What would you like to do with this file?
 <u>Open this file from its current location</u> <u>Save this file to disk</u>
Always ask before opening this type of file

3 Select Save this file to disk and click OK. A Save As window displays.

e As						?
Save jn:	My Docume	nts	-	+ 🗈 🕻	• 🎫 •	
History Desktop y Documents	Adobe Corel User Fil My eBooks My Library My Pictures My Webs	es				
ly Computer	File <u>n</u> ame: Save as type:	export .cfg Document			ন ন	<u>Save</u> Cancel

Figure 160 Configuration Backup: Save As

4 Specify the file name and/or location and click Save to start the backup process.

28.3.2 Backup Configuration Using TFTP

- 1 Click System Tools and Configuration. A screen displays as shown next.
- 2 In the **Backup** section, enter the IP address of the TFTP server in dotted decimal notation in the **TFTP Server IP Address** field.
- **3** Specify a file name for the configuration backup in the **Text File Name** field.

	Configuration	
This feature can import your saved sett	ings to this device or export th <mark>e</mark> stored settings from th	nis device to your PC.
Backup		
Click Backup to save the current syste	em configuration to your computer.	
TFTP Server IP Address:	Text File Name:	Apply
Restore		
To restore your stored system configu	ration to this device	
File Path:	Browse	Apply
TFTP Server IP Address:	Text File Name:	Apply
Reset the system back to factory de	faults	
Keep subscriber profile		
□ Keep port-location mapping profile		Apply

Figure 161 System Tools: Configuration: Backup using TFTP

4 Click Apply. When the file transfer process is complete, a screen displays as follows.

Figure 162 Configuration Backup: TFTP: Successful



28.3.3 Restore Configuration Using HTTP

This section shows you how to restore a previously saved configuration.



Note: 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.

1 Click System Tools and Configuration. A screen displays as shown next.

1	Configuration	
This feature can import your saved set	ings to this device or export the stored settings from thi	is device to your PC.
Backup		
Click Backup to save the current syst	em configuration to your computer.	
TFTP Server IP Address:	Text File Name:	Apply
Restore		
To restore your stored system configu	ration to this device	
File Path:	Browse	Apply
TFTP Server IP Address:	Text File Name:	Apply
Reset the system back to factory de	faults	
Keep subscriber profile		
□ Keep port-location mapping profile		Apply

Figure 163 System Tools: Configuration: Restore

- 2 In the **Restore** section, specify the location and filename of a configuration file in the **File Path** field or click **Browse**.
- **3** Click **Apply** to start the configuration restore process. The VSG automatically restarts after the restoration process is complete.

28.3.4 Restore Configuration Using TFTP

This section shows you how to restore a previously saved configuration.



Note: 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.

1 Click System Tools and Configuration. A screen displays as shown next.

	Configuration	
This feature can import your saved setting	are to this device or expert the stored settings from t	this device to your PC
This leader can import your saved settin	igs to this device of export the stored settings north	nis device to your PC.
Backup		
Click Backup to save the current syster	n configuration to your computer.	
TFTP Server IP Address:	Text File Name:	Apply
Restore		
To restore your stored system configura	tion to this device	
File Path:	Browse	Apply
TFTP Server IP Address:	Text File Name:	Apply
Reset the system back to factory defa	ults	
Keep subscriber profile		
□ Keep port-location mapping profile		Apply

Figure 164 System Tools: Configuration: Restore: TFTP

- 2 In the **Restore** section, Enter the IP address of the TFTP server in dotted decimal notation in the **TFTP Server IP Address** field.
- **3** Specify a file name for the configuration backup in the **Text File Name** field.
- **4** Click **Apply** to start the configuration restore process. The VSG automatically restarts after the restoration process is complete.

CHAPTER 29 Troubleshooting

This chapter covers potential problems and possible remedies. After each problem description, some instructions are provided to help you to diagnose and to solve the problem.

29.1 Using the LEDs to Diagnose Problems

The LEDs are useful aides for finding possible problem causes.

29.1.1 The Power LED

The **PWR** LED on the front panel does not light up.

Table 75	Troubleshooting the Power LED
----------	-------------------------------

STEPS	CORRECTIVE ACTION
1	Check the connections from the VSG to the power source. Make sure you are using the supplied power cord and proper power supply. Refer to the appendix on product specifications.
2	Make sure the power source is turned on and that the VSG is receiving sufficient power.
3	If these steps fail to correct the problem, contact your local distributor for assistance.

29.1.2 The LAN Port LEDs

None of the LEDs for the LAN port(s) light up when connected to an Ethernet device.

Table 76	Troubleshooting the LAN LED
----------	-----------------------------

STEPS	CORRECTIVE ACTION
1	Make sure the Ethernet cable is properly connected to the LAN port.
2	Verify that the attached device(s) is turned on and properly connected to the VSG.
3	Verify that Ethernet cable length does not exceed 100 meters.
4	Make sure the network adapters are working on the attached devices.

29.1.3 The WAN Port LEDs

None of the LEDs for the WAN port light up when connected to an Ethernet device.

 Table 77
 Troubleshooting the WAN LED

STEP	CORRECTIVE ACTION
1	Verify that the attached device(s) is turned on and properly connected to the VSG.
2	Verify that Ethernet cable length does not exceed 100 meters.
3	Make sure the network adapters are working on the attached devices.

29.2 The Console Port

I cannot access the VSG through the console port.

Table 78	Troubleshooting	Console Port
----------	-----------------	--------------

STEP	CORRECTIVE ACTION
1	Check to see if the VSG is connected to your computer using a console cable.
2	 Check to see if the communications program is configured correctly. Set the communication parameters as stated here. Emulation: auto detect Baud Rate: 9600 bps No Parity, 8 data bits, 1 stop bit Flow Control: None
3	Make sure you entered the correct username and password. The default administrator username is "admin" and the default password is "1234". The username and password are case sensitive. If you have forgotten the administrator user name and/or password, you must reset the VSG back to the factory defaults using the reset button. Use a pointed object to press the reset button on the front panel to reset the VSG. All your custom configuration will be lost.

29.3 Web Configurator

I cannot access the web configurator.

Table 79	Troubleshooting	Web	Configurator
----------	-----------------	-----	--------------

STEP	CORRECTIVE ACTION
1	Make sure you are using the correct WAN or LAN IP address.
2	Make sure you entered the correct username and password. The default administrator username is "admin" and the default password is "1234". The username and password are case-sensitive.
	If you change the server port number, you need to append the port number to the WAN or LAN port IP address to access the web configurator. For example, if you enter "8010" as the web server port number, then you must enter "http://www.192.168.1.1:8010" where 192.168.1.1 is the WAN or LAN port IP address.
	If you have forgotten the administrator user name and/or password, you must reset the VSG back to the factory defaults using the reset button. Use a pointed object to press the reset button on the front panel to reset the VSG. All your custom configuration will be lost.
3	Ping the VSG from your computer on the WAN or LAN.

The web configurator does not display properly.

Table 80	Troubleshooting	Internet	Browser	Display
----------	-----------------	----------	---------	---------

STEP	CORRECTIVE ACTION
1	Make sure you are using Internet Explorer (version 4.0 and later) or Netscape (version 6.0 or later) with JavaScript support enabled.
2	Delete the temporary web files and log in again. In Internet Explorer, click Tools , Internet Options and then click the Delete Files button. When a Delete Files window displays, select Delete all offline content and click OK . (Steps may vary depending on the version of your Internet browser.)

29.4 Internet Access

A subscriber cannot connect to the Internet through the VSG.

Table 81	Troubleshooting	Internet Access
----------	-----------------	-----------------

STEPS	CORRECTIVE ACTION	
1	Check your Internet settings on your modem and/or router.	
2	Make sure the subscriber enters the correct user name and password to log in to the VSG. The user name and password are case sensitive.	
3	Make sure the account is still valid.	
4	Make sure there is no conflict in IP address assignment. Refer to the appendix.	

29.5 The Statement Printer

(This section is applicable when you purchase an external statement printer, also known as an account generator printer).

I cannot print account information using a statement printer.

 Table 82
 Troubleshooting the Statement Printer

STEP	CORRECTIVE ACTION	
1	Make sure the statement printer is connected to a power source and is turned on.	
2	Check that the statement printer is connected to the port labeled Console .	
3	Make sure there is enough printing paper in the statement printer.	
4	Check that you select Account Generator Device in the Console Type field in the System screen.	
5	4 Make sure you configure and associate a billing profile for the first button in the Dynamic Account Operator Panel screen.	
	The first button corresponds to the button on the statement printer.	

Appendix A Product Specifications

Table 83 Product Specifications: General

Standard	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet	
Interface	One 10/100 Ethernet WAN port (auto-crossover) Four 10/100 Ethernet LAN ports (auto-crossover) One RS232 serial port for console setting or an external statement printer One PMS RS232 serial port One reset button	
Networking	Plug-and-play subscriber Internet access Supports 1024 simultaneous users NAT (RFC1631) LAN DHCP server (with client pool size of 1024) and DHCP relay HTTP proxy SMTP/DNS redirection WAN connection (static IP/DHCP client /PPPoE/PPTP) NAT for VPN (IPSec/PPTP)	
Authentication, Authorization, and Accounting (AAA)	Web-based authentication RADIUS AAA Secondary RADIUS server Proprietary CAS (Central Authentication Service) Global roaming support Built-in Authentication and accounting Vendor Specific Attributes Static/Dynamic Accounting	
Security	Port-based VLAN Layer 2 isolation VPN pass through (PPTP/ L2TP) SSL secure user login process SSL secure web-based administration Authorized remote management	
Billing	Flexible, time-based billing Port-Location Mapping Credit card (via Authorize.net)	
PMS Billing	Supports Micros Fidelio, Spectrum MK II, Marriott and Proprietary. PMS transaction logs Supports IEEE802.1q tag-based VLAN infrastructure	
Local Services	Walled garden Advertisement URL link Login page re-direction Customized subscriber login page MAC/IP/URL passthrough	

Maximum Throughput	15.2Mbps
Concurrent Users	1,024
Management	Web-based management
	TFTP/HTTP firmware upgrade
	Schedules firmware upgrade
	Backup/Restore configuration
	Real-time status list
	Remote authorized management
	Configuration file import/export
	LAN device management
	Syslog
	Session trace
	SNMP v1/v2 (MIB II with traps)

Table 84 Product Specifications: Performance and Management

Table 85	Product Sp	pecifications:	Physical	and	Environmental
----------	------------	----------------	----------	-----	---------------

LED	Power ALARM WAN/LAN: 10/100, LK/ACT, FDX
Dimension	440(W) x 116(L) x 44(H) mm
Temperature	0°C to 50°C
Humidity	10% to 95% (non-condensing)
Power	Internal universal switching power supply 100-220 V AC, 50/60 Hz Maximum power consumption: 10W
Certifications	FCC part 15 Class A CE

Appendix B IP Address Assignment Conflicts

This appendix describes situations where IP address conflicts may occur. Subscribers with duplicate IP addresses will not be able to access the Internet.

Scenario 1: The VSG is using the same LAN and WAN IP addresses

The following figure shows an example where the VSG is using a WAN IP address that is the same as the IP address of a computer on the LAN.





You must set the VSG to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the VSG. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1.

Otherwise, It is recommended the VSG use a public WAN IP address.

Scenario 2: The VSG LAN IP address conflicts with the DHCP client IP address

In the following figure, the VSG is acting as a DHCP server. The VSG assigns an IP address, which is the same as its LAN port IP address, to a DHCP client attached to the LAN.



To solve this problem, make sure the VSG LAN IP address is not in the DHCP IP address pool.

Scenario 3: The Subscriber IP address is the same as the IP address of a network device

The following figure depicts an example where the subscriber IP address is the same as the IP address of a network device not attached to the VSG.





You must set the VSG to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the VSG. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1.

Otherwise, It is recommended the VSG use a public WAN IP address.

Scenario 4: Two or more subscribers have the same IP address.

By converting all private IP addresses to the WAN IP address, the VSG allows subscribers with different network configurations to access the Internet. However, there are situations where two or more subscribers are using the same private IP address. This may happen when a subscriber is configured to use a static (or fixed) IP address that is the same as the IP address the VSG DHCP server assigns to another subscriber acting as a DHCP client.

In this case, the subscribers are not able to access the Internet.



This problem can be solved by adding a VLAN-enabled switch or setting the computers to obtain IP addresses dynamically.

Appendix C Subscriber Login

To log in as a subscriber, enter a web site address such as www.zyxel.com in a web browser.

Depending on the settings, a subscriber login screen displays prompting for a user name and password.

🚰 http://1.1.1.1/http.192.168.1.1/ -	Microsoft Internet Explorer			_ & ×
Eile Edit Yiew Favorites Tools	: Help			
← Back → → → 🙆 😰 🚰 🔕	Search 😨 Favorites 🏼 🖓 History 🛛 🛃 🖬 📃]		Links *
Address 🖉 helip // 1.1.1.1/helip. 0102.044	8.3.3/		•	∂Go SnagIt 😁
ZyXEL				Global
Corporate News Product Supp	port Where to Buy Contact Us		—Select a product——	▼ > Search
ZyXEL Internet Securit	ty Appliance			
New Product	What's New	Award & Review	Solution Cente	r
ZyWALL 5 Internet Security Appliance	October 20, 2004 ZyXEL Announces ZyWALL Remote Security Client October 19, 2004	Basta budgetval SOHO-firewall Be budget award from Mikrodatoro	st Business n //	Residential
	Web	come		-
	Username:			
	Paceword:			
	T dosworu.			
	Enter	Cancel		
	or click here to p	pay by credit card.		
	V	SA		
				-
al Done				🥑 Internet

Figure 169 Subscriber Login Screen: Framed Example

Enter a user name and password and click **Enter**. Depending on the settings in the VSG, either the specified web page or an advertisement web page displays. After a successful login, an information window may display.

Figure 170 Subscriber Login: Information Window Example

Information Window
You can use Internet now! This is an information window to show the usage and notice. You can type http://1.1.1/info to open this window again without VPN connection.
Remaining Usage 23:59:54

Appendix D Vendor Specific Attributes

This appendix describes the format of the vendor specific attributes supported.

Overview

With RADIUS server authentication, you can define vendor specific attributes (VSAs) in addition to the set of standard RADIUS attributes defined in RFC 2865 and RFC 2866. A VSA is an attribute-value pair that is sent between a RADIUS server and the VSG. It is necessary you define the VSAs on the RADIUS sever if you want the VSG to perform any of the additional functions listed below:

- Limit Download bandwidth per subscriber
- Limit Upload bandwidth per subscriber
- Limit Total traffic bandwidth allowed per subscriber
- Specify advertising web site per subscriber
- Enable/disable SMTP redirect



Note: Before you can make use of these functions, configure the proprietary VSAs on the RADIUS server. Refer to the documentation that comes with your RADIUS server for more information.

VSG-1200 Supported VSAs

The following table describes the VSGs specific to the VSG-1200.

NO.	NAME	DESCRIPTION	TYPE	VALUE
1	Traffic-Limit	This attribute defines total bandwidth (in Mbytes) allowed for a subscriber. Internet access is based on the total upload/ download bandwidth regardless of the account expiration time. This attribute is supported when you set the VSG to use an external RADIUS server for user authentication in accumulation mode.	Integer	maximum 4095
2	SMTP Redirect	This attribute indicates whether the VSG is to re-direct E- mails. Values: 0 = do not redirect e-mails. 1 = allow e-mail redirection. Note: To allow e-mail redirection, you <i>must</i> configure the SMTP settings on the VSG. Refer to Section 4.8 "Server Configuration" on page 61 for more information.	Integer	0, 1
3	BW-Up	This attribute defines the upload bandwidth allowed for a subscriber. Internet access is based on the upload bandwidth regardless of the account expiration time. This means that a subscriber is allowed to access the Internet until the total upload bandwidth allocated is reached. This attribute is supported when you enable bandwidth management on the VSG with the class of service based on the RADIUS settings. Refer to Chapter 16, "Bandwidth Management," on page 141 for more information. Note: You <i>must</i> also specify the BW-Down attribute.	Integer	64 -24567
4	BW-Down	This attribute defines the download bandwidth allowed for a subscriber. Internet access is based on the download bandwidth regardless of the account expiration time. This means that a subscriber is allowed to access the Internet until the total download bandwidth allocated is reached. This attribute is supported when you enable bandwidth management on the VSG with the class of service based on the RADIUS settings. Refer to Chapter 16, "Bandwidth Management," on page 141 for more information. Note: You <i>must</i> also specify the BW-Up attribute.	Integer	64 - 24567
5	Portable Page URL	This attribute allows you to specify a different advertising web site for each subscriber after a successful login.	String	maximum 200

Table 86 VSG-1200 Supported VSAs

Error Messages

The following table describes the VSA-related error messages.

 Table 87
 VSA-related Error Messages

ERROR MESSAGE	DESCRIPTION
VSA Error!-Traffic limit- Time to finish is selected	The VSG is set to use the "Time to Finish" mode while the VSA response from the external RADIUS server include the Traffic-limit attribute.
VSA Error!-Traffic limit- Over value	The value for Traffic-limit attribute is more than the maximum allowed (4095).
VSA Error!-SMTP Redirect-no SMTP server setup	No e-mail server configuration is set on the VSG while the VSA response from the external RADIUS server indicates SMTP redirection is activated (with an attribute value of 1).
VSA Error!-BW-up/down- Bandwidth Management =disable	Bandwidth management is not activated on the VSG while the VSA response from the external RADIUS server contains upload and download bandwidth limits.
VSA Error!-BW-up/down-Equal bandwidth for all subscriber selected	Bandwidth management is activated on the VSG with equal bandwidth applied to all subscribers.
VSA Error!-BW-up/down-Class of service is selected but no BW-up/down	Bandwidth management is activated on the VSG with class of service selected while no upload/download bandwidth information is obtained from the external RADIUS server.
VSA Error!-BW-up/down-No BW-down	The external RADIUS server does not send the BW-down attribute value to the VSG.
VSA Error!-BW-up/down-No BW-up	The external RADIUS server does not send the BW-up attribute value to the VSG.
VSA Error!-BW-up/down-BW-up out of range	The value for BW-up attribute is invalid.
VSA Error!-BW-up/down-BW- down out of range	The value for BW-down attribute is invalid.

Appendix E Report Printing Using the SP-200

This appendix shows you how to print reports using the SP-200.

Overview

The SP-200 allows you to print status reports about the subscriber accounts and general VSG system information . Simply press a key combination on the SP-200 to print a report instantly without accessing the web configurator.

The following lists the reports that you can print using the SP-200.

- · Daily account summary
- Monthly account summary
- System status
- Network statistics

Initial Setup

Do the following before you start report printing using an SP-200.

- **1** Purchase an SP-200 from your local dealer if you don't have one.
- **2** Set the function of the console port on the VSG for statement printer connection (see Section 3.5 "General System Setting" on page 44).
- **3** Connect the SP-200 to the CONSOLE port on the VSG (see Section 2.2 "Hardware Connections" on page 36).
- **4** Turn on the power to the SP-200.

Refer to the user's guide that comes with your SP-200 for more information.

Key Combination

The following table lists the key combination to print each report. Refer to Figure 51 on page 97 for button labels on the SP-200.



Note: You must press the key combination on the SP-200 within five seconds to print.

REPORT TYPE	KEY COMBINATION
Daily Account Summary	АВСАА
Monthly Account Summary	АВСВВ
System Status	ABCCC
Network Statistics	АВСАВ

 Table 88
 SP-200: Report Printing Key Combination

The following sections describe each report printout in detail.

Daily Account Summary

This report shows the username and price for the subscriber account(s) that is created for the current day.

Key combination: A B C A A

The following figure shows an example.

Figure 171 SP-200: Daily Account

Daily Account			
2004/1	2004/10/28		
Username 9v269m55 bwh2y943	Price 10.00 20.00		
TOTAL ACCOUTNS: 2 TOTAL PRICE: \$ 30.00			
2004/10/28 14:12:11			
Enc	1		

Monthly Account Summary

This report shows the username and price for the subscriber account(s) that is created for the current month.

Key combination: A B C B B

The following figure shows an example.

Figure 172 SP-200: Monthly Account

```
Monthly Account
  -----
       2004/10
_____
Username
bwh2y936
           Price
           10.00
            10.00
Cindy
            10.00
9v269m55
bwh2y943
            20.00
_____
TOTAL ACCOUTNS: 4
TOTAL PRICE: $ 50.00
_____
   2004/10/28 14:11:26
     ---End---
```

System Status

This report shows the current system information such as the host name and WAN IP address.

Key combination: A B C C C

The following figure shows an example.

Figure 173 SP-200: System Status

	System Status
ITEM I	DESCRIPTION
WAST E SYST (ESTABLISHED D2D:02H:42M:46S
HOST N FRMW 1 BTRM 1 LOCA	/SG-1200 L.05 L.01
WAMA (LAMA (WATP I WAIP 1 WASM 2 WAGW 1 PDNS 1 SDNS 1	00-90-0E-00-4A-29 00-90-0E-00-4A-28 DHCP 172.21.2.67 255.255.0.0 172.21.0.254 172.20.0.63 172.20.0.27
DHCP 1 DHSP 1 DHEP 1 DHLT 1 EMAIL	DHCP SERVER 10.59.1.2 10.59.1.254 1440 /PORT25
2	2004/10/28 11:24:42
	End

The following table describes the labels in this report.

Table 89	SP-200: Syst	em Status
----------	--------------	-----------

LABEL	DESCRIPTION
WAST	This field displays the WAN connection status.
SYST	This field displays the time since the system was last restarted.
HOST	This field displays the description name of the VSG for identification purposes.
FRMW	This field displays the version of the firmware on the VSG.
BTRM	This field displays the version of the bootrom.
WAMA	This field displays the MAC address of the VSG on the WAN.
LAMA	This field displays the MAC address of the VSG on the LAN.
WATP	This field displays the mode of the WAN port.
WAIP	This field displays the IP address of the WAN port on the VSG.
WASM	This field displays the subnet mask of the WAN port on the VSG.
WAGW	This field displays the IP address of the default gateway of the WAN port on the VSG.
PDNS	This field displays the IP address of the primary DNS server.
SDNS	This field displays the IP address of the secondary DNS server.

Table 89 S	SP-200: System Status	(continued)
------------	-----------------------	-------------

LABEL	DESCRIPTION
DHCP	This field displays the DHCP mode (DHCP Server, Relay or DHCP Disable) on the LAN.
DHSP	If the DHCP field is DHCP Server , this field displays the first of the continuous addresses in the IP address pool. If the DHCP field is DHCP Relay , this field displays the DHCP server IP address.
DHEP	This field is visible when the DHCP is DHCP Server . This field displays the end of the continuous addresses in the IP address pool.
DHLT	This field is visible when the DHCP is DHCP Server . This field displays the time (in minutes) a DHCP client is allowed to use an assigned IP address.
EMAIL	The field displays e-mail server port number.

Network Statistics

This report shows the network statistics on the VSG.

Key combination: A B C A B

The following figure shows an example.

Figure 174 SP-200: Network Statistics

	Network
ITEM	DESCRIPTION
WAST SYST	ESTABLISHED 02D:02H:42M:46S
WATD WARD	37 4816
WATE WARE LATD	0 0 1768
LARD LATE	4616 0
LARE	0
	2004/10/28 15:24:42
	End

The following table describes the labels in this report.

LABEL	DESCRIPTION
WAST	This field displays the WAN connection status.
SYST	This field displays the time since the system was last restarted.
WATD	This field displays the number of packets transmitted on the WAN.
WARD	This field displays the number of packets received on the WAN.
WATE	This field displays the number of error packets transmitted on the WAN.
WARE	This field displays the number of error packets received on the WAN.
LATD	This field displays the number of packets transmitted on the LAN.
LARD	This field displays the number of packets received on the LAN.
LATE	This field displays the number of error packets transmitted on the LAN.
LARE	This field displays the number of error packets received on the LAN.

Table 90	SP-200:	Network	Statistics
----------	---------	---------	------------

Appendix F Cable Types and Cable Pin Assignments

RJ-45 Ethernet Port

The following table describes the types of network cable used for the different connection speeds.



Note: Make sure the Ethernet cable length between connections does not exceed 100 meters (328 feet).

Table 91 Network Cable Types

SPEED	NETWORK CABLE TYPE	
10 Base-TX 100	2-pair UTP/STP Category 3, 4 or 5	
100 Base-TX 100	2-pair UTP/STP Category 5	

The WAN Port

The following table describes the Ethernet cable pin assignments for the WAN port.



Table 92 WAN Port Cable Ping Assignments

	PIN NO	RJ-45 SIGNAL ASSIGNMENT	DESIGNATION
	1	Output Transmit Data +	TD+
78	2	Input Transmit Data +	RD+
	3	Input Transmit Data +	RD+
r'	4	Unused	N/U
	5	Unused	N/U
	6	Input Transmit Data -	RD-
	7	Unused	N/U
	8	Unused	N/U

Make sure that the Ethernet cable connection between the VSG and the hub or router conforms to the pin assignments as shown in the following diagram.

ETHERNET DEVICE (SWITCH/HUB/ROUTER ETC.)		VAN	TAGE SERVICE GATEWAY
1	RD+	1	TD+
2	RD-	2	TD-
3	TD+	 . 3	RD+
6	TD-	 6	RD-

Figure 175 WAN Port Cable Pin Assignments

The LAN Port

The following table describes the Ethernet cable pin assignments for the LAN port.

	PIN NO	RJ-45 SIGNAL ASSIGNMENT	DESIGNATION
	1	Input Transmit Data +	RD+
1 2 3 4 5 6 7 8	2	Input Transmit Data -	RD-
	3	Output Transmit Data +	TD+
	4	Unused	N/U
	5	Unused	N/U
	6	Output Transmit Data -	TD-
	7	Unused	N/U
	8	Unused	N/U

Table 93 LAN Port Cable Pin Assignments

Make sure that the Ethernet cable connection between the VSG and a computer or switch uplink port conforms to the pin assignments as shown in the figure.

Figure 176 LAN Port Cable Pin Assignments

ETHERNET DEVICE (COMPUTER/ UPLINK PORT)		VAN	TAGE SERVICE GATEWAY
1	TD+	 1	RD+
2	TD-	 2	RD-
3	RD+	. 3	TD+
6	RD-	 6	TD-

Serial Console Port

The following table describes the console cable pin assignments for the serial console port.

	ļ
PIN-1_ Console	
	ŀ
	l
∠PIN-9	ľ

Table 94	Console	Port Pin	Assignment
----------	---------	----------	------------

	PIN NO	MNEMONIC	FUNCTION
	1	DCD	Received Line Signal Detector to the VSG.
	2	TXT	Transmitted Data from the VSG.
0	3	RXT	Received Data to the VSG.
9	4	DTR	Data Terminal Ready from the VSG.
	5	GND	Signal Ground (Common)
	6	DSR	Data Set Ready to the VSG.
	7	RTS	Request to Send from the VSG.
	8	CTS	Clear to Send to the VSG.
	9	RI	Ring Indicator to the VSG.

DB25 Male to DB9 Male Connector



P1	P2
1	8
2	2
3	3
4	20
5	7
6	6
7	4
8	5
9	22
Appendix G Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

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.

If you manually assign IP information instead of using dynamic assignment, make sure that your computers have IP addresses that place them in the same subnet as the VSG-1200's LAN port.

Windows 95/98/Me

Click Start, Settings, Control Panel and double-click the Network icon to open the Network window

Network					
Configuration Identification Access Control					
The following <u>n</u> etwork components are installed:					
LPR for TCP/IP Printing Scom EtherLink 10/100 PCI TX NIC (3C905B-TX) Dial-Up Adapter USB Fast Ethernet Adapter TCP/IP -> 3Com EtherLink 10/100 PCI TX NIC (3C905B-T					
Add Remove Properties					
Client for Microsoft Networks					
Description TCP/IP is the protocol you use to connect to the Internet and wide-area networks.					
OK Cancel					

Figure 178 WIndows 95/98/Me: Network: Configuration

Installing Components

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:

- 1 In the Network window, click Add.
- 2 Select Adapter and then click Add.
- **3** Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

- 1 In the Network window, click Add.
- 2 Select Protocol and then click Add.
- **3** Select **Microsoft** from the list of **manufacturers**.
- **4** Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

- 1 Click Add.
- **2** Select **Client** and then click **Add**.

- **3** Select **Microsoft** from the list of manufacturers.
- **4** Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.
- **5** Restart your computer so the changes you made take effect.

Configuring

- **1** In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**
- 2 Click the IP Address tab.
 - 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.

Figure 179 Windows 95/98/Me: TCP/IP Properties: IP Address

P/IP Properties			?
Bindings	Advanced	Ne	etBIOS
DNS Configuration	Gateway WINS Confi	guration	IP Address
An IP address can If your network do your network admi the space below.	be automatically assigne es not automatically assig nistrator for an address, a	d to this c n IP addre nd then ty	omputer. esses, ask vpe it in
Obtain an IP	address automatically		
C Specify an IF	Paddress:		
JP Address:			
S <u>u</u> bnet Mas	k:		
☑ <u>D</u> etect conn	ection to network media		
	04		Cancel

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).

TCP/IP Properties			? ×
Bindings DNS Configuration	Advanced Gateway WINS) 6 Configuratio	NetBIOS n IP Address
Disable DNS Disable DNS Disable DNS DNS Server Sea	D <u>o</u> r rch Order	nain: <u>A</u> dd <u>R</u> emove	
Domain Suffix Se	arch Order	Add Remove	
		OK	Cancel

Figure 180 Windows 95/98/Me: TCP/IP Properties: DNS Configuration

- 4 Click the Gateway tab.
 - If you do not know your gateway's 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 VSG-1200 and restart your computer when prompted.

Verifying Settings

- 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.

Windows 2000/NT/XP

1 For Windows XP, click start, Control Panel. In Windows 2000/NT, click Start, Settings, Control Panel.





2 For Windows XP, click Network Connections. For Windows 2000/NT, click Network and Dial-up Connections.

Figure 182 Windows XP: Control Panel



3 Right-click Local Area Connection and then click Properties.



Figure 183 Windows XP: Control Panel: Network Connections: Properties

4 Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and click **Properties**.

Figure 184	Windows	XP: Local Area	Connection	Properties
------------	---------	----------------	------------	------------

	Automication Auvanceu
Connec	st using:
113 /	accton EN1207D-TX PCI Fast Ethernet Adapter
This co	Configure
	File and Printer Sharing for Microsoft Networks QoS Packet Scheduler Internet Protocol (TCP/IP)
	nstall Uninstall Properties
Desc	ription
Tran wide acro	smission Control Protocol/Internet Protocol. The default area network protocol that provides communication ss diverse interconnected networks.
_ Sho	w icon in notification area when connected

- **5** The **Internet Protocol TCP/IP Properties** window opens (the **General tab** in Windows XP).
 - 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. Click **Advanced**.

Figure 185	Windows XP: Advanced TCP/IP Settings
------------	--------------------------------------

(dvanced)	TCP/IP \$	Setting	s	?	X
IP Settings	DNS	WINS	Options		
-IP addre	sses				-
IP ad	dress			Subnet mask	
DHCF	⁹ Enabled				
		4	Add	Edit Remove	
Default	gateways:				
Gate	way			Metric	
		4	\dd	Edit Remove	
Auto	matic metr			1	
Interfac	e metric:				
				OK Cance	1

6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want 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.

7 In the Internet Protocol TCP/IP Properties window (the General tab in Windows XP):

- 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, and 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.

Figure 186 Windows XP: Internet Protocol (TCP/IP) Properties

General	Alternate Configuration	
You ca this cap the app	n get IP settings assigne pability. Otherwise, you n propriate IP settings.	d automatically if your network supports eed to ask your network administrator for
O (btain an IP address auto	matically
OU	se the following IP addre	ss:
IP ad	ddress:	
Subr	net mask:	
Defa	iult gateway:	
0	btain DNS server addres	s automatically
OU	se the following DNS ser	ver addresses:
Prefe	erred DNS server:	
Alter	nate DNS server:	
		Advanced

8 Click OK to close the Internet Protocol (TCP/IP) Properties window.

9 Click OK to close the Local Area Connection Properties window.

10Turn on your VSG-1200 and restart your computer (if prompted).

Verifying Settings

- 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.

Macintosh OS 8/9

1 Click the Apple menu, Control Panel and double-click TCP/IP to open the TCP/IP Control Panel.



Figure 187 Macintosh OS 8/9: Apple Menu

2 Select Ethernet built-in from the Connect via list.

Figure 188 Macintosh OS 8/9: TCP/IP



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 VSG-1200 in the Router address box.
- **5** Close the **TCP/IP Control Panel**.
- 6 Click Save if prompted, to save changes to your configuration.
- 7 Turn on your VSG-1200 and restart your computer (if prompted).

Verifying Settings

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

Macintosh OS X

1 Click the Apple menu, and click System Preferences to open the System Preferences window.

Figure 189 Macintosh OS X: Apple Menu



2 Click **Network** in the icon bar.

- Select Automatic from the Location list.
- Select Built-in Ethernet from the Show list.
- Click the **TCP/IP** tab.
- **3** For dynamically assigned settings, select Using DHCP from the Configure list.

000	Netwo	rk	C
Show All Displays N	etwork Startup Disk		
	Location: Automati	c 😝	
Show: Built-in Ethe	ernet 🗘]	
	TCP/IP PPPoE Ap	pleTalk Proxies	
Configur	e: Using DHCP	*	
		Domain Name Servers (Optional)	
IP Addres	s: 192.168.11.12 (Provided by DHCP Server)	168.95.1.1	
Subnet Mas	k: 255.255.254.0		
Route	r: 192.168.10.11	Search Domains (Optional)	
DHCP Client II	D: Optional)		
Ethernet Addres	s: 00:05:02:43:93:ff	Example: apple.com, earthlink.net	

Figure 190 Macintosh OS X: Network

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 VSG-1200 in the Router address box.
- **5** Click **Apply Now** and close the window.
- 6 Turn on your VSG-1200 and restart your computer (if prompted).

Verifying Settings

Check your TCP/IP properties in the Network window.

Appendix H IP Subnetting

IP Addressing

Routers "route" based on the network number. The router that delivers the data packet to the correct destination host uses the host ID.

IP Classes

An IP address is made up of four octets (eight bits), written in dotted decimal notation, for example, 192.168.1.1. IP addresses are categorized into different classes. The class of an address depends on the value of its first octet.

- Class "A" addresses have a 0 in the left most bit. In a class "A" address the first octet is the network number and the remaining three octets make up the host ID.
- Class "B" addresses have a 1 in the left most bit and a 0 in the next left most bit. In a class "B" address the first two octets make up the network number and the two remaining octets make up the host ID.
- Class "C" addresses begin (starting from the left) with 1 1 0. In a class "C" address the first three octets make up the network number and the last octet is the host ID.
- Class "D" addresses begin with 1 1 1 0. Class "D" addresses are used for multicasting. (There is also a class "E" address. It is reserved for future use.)

IP ADDRESS:		OCTET 1	OCTET 2	OCTET 3	OCTET 4
Class A	0	Network number	Host ID	Host ID	Host ID
Class B	10	Network number	Network number	Host ID	Host ID
Class C	110	Network number	Network number	Network number	Host ID

Table 96 Classes of IP Addresses

Note: Host IDs of all zeros or all ones are not allowed.

Therefore:

A class "C" network (8 host bits) can have $2^8 - 2$ or 254 hosts.

A class "B" address (16 host bits) can have 2^{16} –2 or 65534 hosts.

A class "A" address (24 host bits) can have 2^{24} –2 hosts (approximately 16 million hosts).

Since the first octet of a class "A" IP address must contain a "0", the first octet of a class "A" address can have a value of 0 to 127.

Similarly the first octet of a class "B" must begin with "10", therefore the first octet of a class "B" address has a valid range of 128 to 191. The first octet of a class "C" address begins with "110", and therefore has a range of 192 to 223.

CLASS	ALLOWED RANGE OF FIRST OCTET (BINARY)	ALLOWED RANGE OF FIRST OCTET (DECIMAL)
Class A	0 0000000 to 0 1111111	0 to 127
Class B	10 000000 to 10 111111	128 to 191
Class C	110 00000 to 110 11111	192 to 223
Class D	1110 0000 to 1110 1111	224 to 239

 Table 97
 Allowed IP Address Range By Class

Subnet Masks

A subnet mask is used to determine which bits are part of the network number, and which bits are part of the host ID (using a logical AND operation). A subnet mask has 32 is a "1" then the corresponding bit in the IP address is part of the network number. If a bit in the subnet mask is "0" then the corresponding bit in the IP address is part of the host ID.

Subnet masks are expressed in dotted decimal notation just as IP addresses are. The "natural" masks for class A, B and C IP addresses are as follows.

Table 98"Natural" Masks

CLASS	NATURAL MASK
A	255.0.0.0
В	255.255.0.0
С	255.255.255.0

Subnetting

With subnetting, the class arrangement of an IP address is ignored. For example, a class C address no longer has to have 24 bits of network number and 8 bits of host ID. With subnetting, some of the host ID bits are converted into network number bits. By convention, subnet masks always consist of a continuous sequence of ones beginning from the left most bit of the mask, followed by a continuous sequence of zeros, for a total number of 32 bits.

Since the mask is always a continuous number of ones beginning from the left, followed by a continuous number of zeros for the remainder of the 32 bit mask, you can simply specify the number of ones instead of writing the value of each octet. This is usually specified by writing a "/" followed by the number of bits in the mask after the address.

For example, 192.1.1.0 /25 is equivalent to saying 192.1.1.0 with mask 255.255.255.128.

The following table shows all possible subnet masks for a class "C" address using both notations.

SUBNET MASK IP ADDRESS	SUBNET MASK "1" BITS	LAST OCTET BIT VALUE
255.255.255.0	/24	0000 0000
255.255.255.128	/25	1000 0000
255.255.255.192	/26	1100 0000
255.255.255.224	/27	1110 0000
255.255.255.240	/28	1111 0000
255.255.255.248	/29	1111 1000
255.255.255.252	/30	1111 1100

Table 99 Alternative Subnet Mask Notation

The first mask shown is the class "C" natural mask. Normally if no mask is specified it is understood that the natural mask is being used.

Example: Two Subnets

As an example, you have a class "C" address 192.168.1.0 with subnet mask of 255.255.255.0.

	NETWORK NUMBER	HOST ID
IP Address	192.168.1.	0
IP Address (Binary)	11000000.10101000.00000001.	0000000
Subnet Mask	255.255.255.	0
Subnet Mask (Binary)	11111111.1111111.11111111.	0000000

 Table 100
 Two Subnets Example

The first three octets of the address make up the network number (class "C"). You want to have two separate networks.

Divide the network 192.168.1.0 into two separate subnets by converting one of the host ID bits of the IP address to a network number bit. The "borrowed" host ID bit can be either "0" or "1" thus giving two subnets; 192.168.1.0 with mask 255.255.255.128 and 192.168.1.128 with mask 255.255.255.128.



Note: In the following charts, shaded/bolded last octet bit values indicate host ID bits "borrowed" to form network ID bits. The number of "borrowed" host ID bits determines the number of subnets you can have. The remaining number of host ID bits (after "borrowing") determines the number of hosts you can have on each subnet.

Table 101 Subnet 1

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	0
IP Address (Binary)	11000000.10101000.00000001.	0 000000
Subnet Mask	255.255.255.	128
Subnet Mask (Binary)	11111111.1111111.11111111.	1000000
Subnet Address: 192.168.1.0	Lowest Host ID: 192.168.1.1	
Broadcast Address: 192.168.1.127	Highest Host ID: 192.168.1.126	

Table 102 Subnet 2

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	128
IP Address (Binary)	11000000.10101000.00000001.	1000000
Subnet Mask	255.255.255.	128
Subnet Mask (Binary)	11111111.1111111.11111111.	1000000
Subnet Address: 192.168.1.128	Lowest Host ID: 192.168.1.129	
Broadcast Address: 192.168.1.255	Highest Host ID: 192.168.1.254	

The remaining 7 bits determine the number of hosts each subnet can have. Host IDs of all zeros represent the subnet itself and host IDs of all ones are the broadcast address for that subnet, so the actual number of hosts available on each subnet in the example above is $2^7 - 2$ or 126 hosts for each subnet.

192.168.1.0 with mask 255.255.255.128 is the subnet itself, and 192.168.1.127 with mask 255.255.255.128 is the directed broadcast address for the first subnet. Therefore, the lowest IP address that can be assigned to an actual host for the first subnet is 192.168.1.1 and the highest is 192.168.1.126. Similarly the host ID range for the second subnet is 192.168.1.129 to 192.168.1.254.

Example: Four Subnets

Table 103 Subnet 1

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	0
IP Address (Binary)	11000000.10101000.00000001.	00 000000
Subnet Mask (Binary)	11111111.1111111.11111111.	11 000000
Subnet Address: 192.168.1.0	Lowest Host ID: 192.168.1.1	·
Broadcast Address: 192.168.1.63	Highest Host ID: 192.168.1.62	

Table 104 Subnet 2

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	64
IP Address (Binary)	11000000.10101000.00000001.	01 000000
Subnet Mask (Binary)	11111111.1111111.11111111.	11 000000
Subnet Address: 192.168.1.64	Lowest Host ID: 192.168.1.65	
Broadcast Address: 192.168.1.127	Highest Host ID: 192.168.1.126	

Table 105 Subnet 3

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	128
IP Address (Binary)	11000000.10101000.00000001.	10 000000
Subnet Mask (Binary)	11111111.1111111.11111111.	11 000000
Subnet Address: 192.168.1.128	Lowest Host ID: 192.168.1.129	
Broadcast Address: 192.168.1.191	Highest Host ID: 192.168.1.190	

Table 106 Subnet 4

	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	192
IP Address (Binary)	11000000.10101000.00000001.	11 000000
Subnet Mask (Binary)	1111111.1111111.11111111.	11 000000
Subnet Address: 192.168.1.192	Lowest Host ID: 192.168.1.193	
Broadcast Address: 192.168.1.255	Highest Host ID: 192.168.1.254	

Example Eight Subnets

Similarly use a 27-bit mask to create 8 subnets (001, 010, 011, 100, 101, 110).

The following table shows class C IP address last octet values for each subnet.

SUBNET	SUBNET ADDRESS	FIRST ADDRESS	LAST ADDRESS	BROADCAST ADDRESS
1	0	1	30	31
2	32	33	62	63
3	64	65	94	95
4	96	97	126	127
5	128	129	158	159
6	160	161	190	191
7	192	193	222	223
8	224	225	254	255

 Table 107
 Eight Subnets

The following table is a summary for class "C" subnet planning.

 Table 108
 Class C Subnet Planning

NO. "BORROWED" HOST BITS	SUBNET MASK	NO. SUBNETS	NO. HOSTS PER SUBNET
1	255.255.255.128 (/25)	2	126
2	255.255.255.192 (/26)	4	62
3	255.255.255.224 (/27)	8	30
4	255.255.255.240 (/28)	16	14
5	255.255.255.248 (/29)	32	6
6	255.255.255.252 (/30)	64	2
7	255.255.255.254 (/31)	128	1

Subnetting With Class A and Class B Networks.

For class "A" and class "B" addresses the subnet mask also determines which bits are part of the network number and which are part of the host ID.

A class "B" address has two host ID octets available for subnetting and a class "A" address has three host ID octets (see Table 96) available for subnetting.

The following table is a summary for class "B" subnet planning.

NO. "BORROWED" HOST BITS	SUBNET MASK	NO. SUBNETS	NO. HOSTS PER SUBNET
1	255.255.128.0 (/17)	2	32766
2	255.255.192.0 (/18)	4	16382
3	255.255.224.0 (/19)	8	8190
4	255.255.240.0 (/20)	16	4094
5	255.255.248.0 (/21)	32	2046
6	255.255.252.0 (/22)	64	1022
7	255.255.254.0 (/23)	128	510
8	255.255.255.0 (/24)	256	254
9	255.255.255.128 (/25)	512	126
10	255.255.255.192 (/26)	1024	62
11	255.255.255.224 (/27)	2048	30
12	255.255.255.240 (/28)	4096	14
13	255.255.255.248 (/29)	8192	6
14	255.255.255.252 (/30)	16384	2
15	255.255.255.254 (/31)	32768	1

Table 109 Class B Subnet Planning

Index

Symbols

"natural" mask 266

Numerics

4-Port Switch 30

A

Abnormal Working Conditions 4 Access Control 31 access point (AP) 33 accessing a LAN device 184 methods 184 requirements 184 account expiration 94 account printout 86, 129 customize 129, 137 examples 132 preview 131 account printout preview 93 accounting 31 Accumulation 72 Time to Finish 72 accounting port 76 Accumulation 72, 75 Acts of God 4 advanced subscriber login screen 121 advertisement link 146, 240 frequency 146 sequence 146 applications 33 hotel application with PMS 34 Internet access for LAN networks 33 Internet access in public areas 33 assign IP address to a computer 253 authentication 31, 71 Built-in Authentication 72 CAS 71 RADIUS 72 types 71 User Agreement 71

authentication port 76 authentication setup 73 Authroize.net 107 auto-crossover 37 automate firmware upgrade 217 automatic firmware upgrade process 218

В

back up configuration file 220 backing up billing logs 185 bandwidth control 141 bandwidth limit downlink 82 uplink 82 Bandwidth Management 82, 141 activate 141 class-based 141, 143 equal share 141, 142 RADIUS 143 types 141 bandwidth management 240 billing 29, 79, 231 billing logs 184 backup 185 charge type 185 delete all 185 export 185 opening 186 sample 187 billing profile 79 bandwidth limit 82 create 79 currency 80 duration 82 edit 80 setting 80 Built-in Authentication 75 built-in authentication information window 125 scenario options 76

С

CA 189 CAS 29, 71, 75 CAS (Central Authentication Service) 29, 71 certificate 189 private kev 190 secret password 190 Certification Authority (CA) 189 change system password 203 Charge 4 class of service bandwidth management 143 class-based bandwidth allocation 141 activate 143 community 173 Components 4 Concurrent Access 86 concurrent access 94 concurrent user 86, 232 allowable 179 set 86 Condition 4 configuration file 215 backup 220 backup via TFTP 222 backup via web configurator 220 important note 220 restore 223 restore via TFTP 224 restore via Web Configurator 223 configuration methods 27 Console port 37 console port 32, 36, 199, 250 cable pin assignments 250 change function 47 communication parameters 199 DB25 male connector 251 DB9 male connector 251 establish a connection 199 SMT interface 199 speed 202, 213 statement printer 47 Copyright 2 Cost Of Transmission 160 create billing profiles 79 create dynamic subscriber account 97 create port-location mapping 103 create static subscriber account 86 create static subscriber accounts manually 88 credit card billing 29, 107 authentication scenario option 78 configuration steps 107 credit card icons 109

how it works 107 service selection message 110 setup 108 subscriber information screen 109 subscriber login message 109 successful notification 113 transaction failed message 115 current user list 180 Customer Support 6 customize subscriber login screen 117 Czech Republic, Contact Information 6

D

daily account summary 244 Defective 4 Denmark, Contact Information 6 destination host 265 DHCP 31 lease time 211 DHCP (Dynamic Host Configuration Protocol) 31 DHCP client 31 pool size 231 DHCP client table 181 update interval 181 DHCP pool size 211 DHCP Relay 31 DHCP relay 212 DHCP server 31, 211, 233 DHCP services 211 digital certificate 189 digital signature 189 dimension 232 Discretion 4 display subscriber account 94 DNS 255 DNS proxy 31 DNS server 208, 212 domain name 202, 213 dynamic IP address 208 dynamic subscriber account 95 backup 100 configuration 96 create using statement printer 98 create using web configurator 97 display 99 general settings 95 method to create 95 print 99 SP Button 96 statement printer settings 96

Web-based Button 96

Ε

edit a subscriber account 92 edit billing profiles 80 EIA standard size rack 35 E-mail forwarding 31 e-mail server redirect 203 Equal Value 4 equal-share bandwidth allocation 141 configure 142 error messages 241 Ethernet Cable 227 Ethernet cable length specifications 249 types 249 Ethernet port 249 speed 249 export billing logs 185

F

factory defaults 30 Failure 4 FCC 3 features 29 filename 215 Finland, Contact Information 6 firmware 215 download to TFTP server 217 firmware download 215 firmware upgrade 32, 215 about subscriber connection 218 automatic 217 from a TFTP Server 216 from computer 216 from TFTP server 219 important note on SMT 219 manual 216 methods 215 schedule frequency 219 scheduled 217 using SMT 219 using Web Configurator 215 Firmware version 42 firmware version 178, 246 France, Contact Information 6

FTP server **32** Functionally Equivalent **4**

G

Gateway **160** generate static subscriber accounts automatically Germany, Contact Information God, act of

Η

hardware installation hardwired address High Speed Internet Access (HSIA) **29**, Hilton Group Corporation Hop Count Host ID **265** host ID **265** hotspots **29** HSIA **29**, **71**, Hungary, Contact Information

I

IANA (Internet Assigned Numbers Authority) 76 IEEE802.1q VLAN 103 information window 125 example 127 session timeout messages 125 setup 125 in-room billing 82 install SSL certificate 193 installation desktop 35 options 35 rack mount 35 installation methods 32 interface 231 Introduction to VSG 29 IP Address 160 IP address 233, 265 setup 253 IP address assignment 213, 233 important note 253

IP address conflicts 233 scenario 1 233 scenario 2 233 scenario 3 234 scenario 4 234 IP address setup 253 DNS information 255, 260 install components 254 Macintosh OS 8/9 260 Macintosh OS X 262 verify settings 256, 260, 263 Windows 2000/NT/XP 256 Windows 95/98/Me 253 IP Addressing 265 IP Classes 265 IP Static Route 159 IP subnetting 265 ipconfig 260

K

Kazakhstan, Contact Information 6

L

I abor 4 LAN bandwidth management 141 LAN device accessing via the VSG 184 management example 155 port mapping 153 remote management 153, 184 status 183 LAN device management 153 LAN devices 153 LAN port cable pin assignment 250 LAN port, the 36, 37, 250 LAN ports 37 LED 36 local management 37 Location Identifier 104 log schedule 164 logs 163, 164 formats 166 name 166 time interval 166

Μ

MAC (Media Access Control) 181 MAC (Media Access Control) Filter 32 MAC filter 175 Management Information Base (MIB) 172 manual firmware upgrade 216 mapping profiles to buttons on the statement printer 95 mask 266 Materials 4 Maximum Segment Size (MSS). 211 Maximum Transmission Unit (MTU) 210 merchant password 109 MIB 172 monthly account summary 244 mounting bracket 35

Ν

NAT 65, 153 Definitions 65 How it works 66 on LAN 153 What it does 66 What NAT does 66 NAT (Network Address Translation) 32 NAT address pool 69 NAT examples 67 NAT Mapping Types 67 NAT Pool 69 NAT-enabled device 153 network cable 249 network management 32 Network Management System (NMS) 172 network number 266 network statistics 247 New 4 NMS 172, 173 North America Contact Information 6 Norway, Contact Information 6

0

octet **265** online glossary **27** Operating Condition **4**

Ρ

Parts 4 passthrough 149 destination URL or IP 151 subscriber computer IP or MAC 149 types 149 pin assignment 249 pin assignments 249 Plug-and-Play Internet Access 30 PMS 29, 79, 82 Based on Room 83 Based on Subscriber 83 charge modes 82 connection speed 84 port-location mapping 82 type of 84 PMS billing 79 service selection messages 123 PMS port settings 84 PMS setup 83 PMS transaction 187 PMS transaction messages 187 Point-to-Point Tunneling Protocol (PPTP) 30 Poland, Contact Information 7 Port Forwarding 30 Port Identifier 104 port mapping 153 application type 155 port number 155 portal page 145 portal web site 145 Port-Location Mapping 84, 103 backup 105 configuring 103 create mapping 104, 105 restore 105 power specification 232 PPPoE 30, 208 connect on demand 209 idle timeout 209 keep alive 209 Redial Period 209 PPPoE (Point-to-Point Protocol over Ethernet) 30 PPTP 30, 209 connect on demand 210 connection ID 210 idle timeout 210 keep alive 210 Redial Period 210 print dynamic subscriber account 99 print reports 243 printout preview 97

problems 227 product certifications 232 product specifications 231 environmental 232 general 231 management 232 performance 232 physical 232 Products 4 Proof of Purchase 4 Proper Operating Condition 4 Property Management System (PMS) 29 proxy 30 Purchase, Proof of 4

R

rack-mounting kit 35 rack-mounting screws 35 RADIUS 31, 75 accounting methods 72 secret key 76 RADIUS (Remote Authentication Dial-In User Service) 31 **RADIUS** authentication information window 125 RADIUS server 239 redirect subscriber login screen 120 Registration 4 Regular Mail 6 Related Documentation 27 Re-manufactured 4 Repair 4 Replace 4 Replacement 4 report printing on SP-200 243 daily account summary 244 initial setup 243 key combination 243 monthly account summary 244 network statistics 247 system status 245 reset 204, 228 reset button, the 30, 36 restart the VSG 204 Restore 4 restore configuration file 223 restore factory defaults 204 RFC 1631 32, 65 RFC2516 30

RJ-45 249 rubber feet 35 Russia, Contact Information 7

S

scenario option 77 scheduled firmware upgrade 217 Secure Socket Layer 189 Secure Socket Layer (SSL) 30 security 231 serial console port 250 server port 153 server port number 229 Service 4 service selection messages 123 session information 181 client computer 182 total entries 181 update interval 181 session timeout messages 125 session trace 167 example 169 filename convention 168 number of records 167 setup 167 TFTP server 168 Setting up your computer's IP address 253 Simple Network Management Protocol (SNMP) 171 SMT 199 accessing 199 basic configuration 199 current configuration 212 general system setup 202 idle timeout period 200 LAN setup 211 login 200 main menu 201 menu overview 201 navigating 201 navigation keystrokes 202 system status 212 WAN setup 207 **SNMP 171** community 173 components 171 Get 172 GetNext 172 management model 171 object variables 172 overview 171 privilege 173

protocol operations 172 Set 172 setup 172 Trap 172 versions supported 171 SNMP agent 171 SNMP manager 171 SNMP port 173 SP-200 37, 47, 243 button labels 97 connecting 37 creating dynamic accounts 98 mapping profiles to buttons 95 report printing 243 Spain, Contact Information 7 specifications 231 SSL 76, 189 activate 190 certificate 189 download certificate to VSG 189 install certificate 193 requirement 189 SSL certificate information 179 standard subscriber login screen 118 statement printer 37, 86, 95, 97, 243 static IP address 208 Static Routing Topology 159 static subscriber account 85 auto create 87 backup 89 create 86 display 94 edit 92 global settings 85 manual create 88 printout preview 93 restore 91 status 177 subnet 265 "Natural" mask 266 allowed IP address range 266 Class "A" 265 Class "B" 265 Class "C" 265 Class "D" 265 examples 267 Subnet Mask 160 subnet mask 266 alternative notation 267 Subnetting 266 subnetting 265, 266 subscriber idle-timeout 76 subscriber account 84 backup 89, 100

dynamic 84, 95 expiration 100 printout 129 restore 89 static 84, 85 types 84 subscriber account first login 94 subscriber authentication 117 subscriber database 31 subscriber information window 125 subscriber login 237 information window 237 subscriber login page 32 subscriber login screen 117 advanced 121 credit card billing 109 customize 117 frame 122 redirect 120 standard 118 support documentation 27 Support E-mail 6 Supporting Disk 27 surrogate DHCP server 31 Sweden, Contact Information 7 synchronization check file 219 synchronization file 217, 219 example 217 syslog 163 on the LAN 163 on the WAN 163 syslog server 164 syslog settings 163 system information 177 System Management Terminal (SMT) 199 system status 177, 245

Т

Tampering 4 TCP/IP components 253 TCP/IP protocol 254 TCP/IP settings 253 Telephone 6 TFTP server 218 throughput 232 Time to Finish 72, 75 transaction key 109 trap port 173 traps 172 troubleshooting 227 console port 228 Internet access 229 LAN port LEDs 227 Power LED 227 statement printer 230 WAN port LEDs 228 Web Configurator 229 Web Configurator display 229

U

Ukraine, Contact Information 7 United Kingdom, Contact Information 7 uplink port 250 User Agreement 75 User Guide feedback 27

V

Value 4 Vendor Specific Attribute 239 Vendor Specific Attributes (VSAs) 31 vendor specific attributes (VSAs) 73 ventilation 35 virtual port 153, 154, 183 Virtual Private Network 66 Virtual Private Network (VPN) 30 **VLAN 169** VLAN-enabled switch 103 VPN single-connection-per-source limitation 67, 70 types of connections 32 VSA 31, 73, 76, 239 format 240 related error messages 241 vendor ID 76 VSG reset to factory defaults 204 restart 204 VSG (Vantage Service Gateway) 29

W

Walled Garden 31 walled garden 147 example 148

important note 147 WAN port cable pin assignment 249 WAN port, the 36, 37, 249 Warranty 4 Warranty Period 4 Web Configurator 32 recommended web browser 32 Web configurator Administrator login 42 web server port 203 Web Site 6 web-based configurator 32 winipcfg 256 Workmanship 4 Worldwide Contact Information 6

Ζ

ZyXEL Limited Warranty Note 4