ZyXEL GS2210-48HP V4.10(AAHW.5)C0

Release Note/Manual Supplement

Date: May. 5, 2015

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.5)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.5)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.5) | 05/05/2015 16:46:15
BootBase Version: V1.05 | 12/19/2013 16:57:54

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.5)	05/05/2015 16:46:15
Bootbase Version	V1.05	12/19/2013 16:57:54
Serial Number	xxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	8fcb
SNMP MIB level & OID	060102030405060708091011121314151617181920
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

1.   44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
2.   4 dual personality GbE
3.   2 100/1000 Base-X SFP interface for uplink
4.   PWM Fan module
5.   Locator LED
6.   48 PoE ports with 802.3af and 802.3at compliant.
7.   16K layer 2 MAC addresses table
8.   Jumbo frame length 9K
9.   IEEE 802.1D transparent bridging

10. IEEE 802.1w, RSTP
11. IEEE 802.1s, MSTP
12. ZyXEL MRSTP
13. Rule-based bandwidth control
14. Port-based egress traffic shaping
15. IEEE 802.3x flow control.
16. DSCP to 802.1p priority mapping
17. Port-based VLAN
18. Protocol-based VLAN
19. IP subnet based VLAN
20. IEEE 802.1Q Static VLANs
21. IEEE 802.1Q dynamic VLANs
22. VLAN trunking
23. GVRP
24. IEEE 802.3ad LACP
25. Port mirroring
26. Support rate limiting, minimum step 64K both ingress and egress
27. Broadcast Storm Control
28. Layer 2 MAC filtering
29. Layer 3 IP filtering
30. Layer 4 TCP/UDP socket filtering
31. DHCP snooping
32. DHCP client
33. DHCP relay/DHCP relay per VLAN
34. DHCP option 82
35. IGMP v1/v2/v3 snooping
36. Static multicast forwarding
37. 802.1x port authentication
38. Port Security
39. Static MAC filtering/forwarding
40. Multiple RADIUS servers
41. Multiple TACACS+ servers
42. AAA by RADIUS / TACACS+
43. SSH v1/SSH v2/SSL
44. Intrusion Lock
45. MAC Freeze
46. ARP Inspection
47. Static IP/MAC/Port binding
48. Policy-based security filtering
49. IEEE 802.1Q VLAN port isolation
50. IP Source Guard
51. Guest VLAN
52. ACL packet filtering
53. PPPoE IA and option 82
54. CPU protection
55. Recovery mechanism for Error disable port/reason
56. Loop guard
57. Dual configuration files
58. Dual images
59. IGMP snooping fast leave
60. IGMP snooping statistics
61. IGMP throttling
62. SNMP v1, v2c, v3
63. SNMP trap group
64. Interface related trap can be enable/disable by port
65. RMON
66. ICMP echo/echo reply
67. Syslog
68. DHCPv6 client and relay
69. NDP: host

70. IPv6 address stateless auto-configuration
71. ZyXEL clustering management
72. Management through console, telnet, SNMP or web management
73. Firmware upgrade by FTP/WEB/TFTP
74. Configuration saving and retrieving by WEB/TFTP/FTP
75. Support Multiple login
76. Configure Clone
77. Multilevel CLI
78. Daylight Saving
79. NTP
80. RS232 console port
81. Service Access Control Timeout
82. IEEE 802.1AB LLDP
83. IEEE 802.1AB LLDP-MED
84. Authorization on console
85. Password encryption
86. User access right
87. ZyXEL Feature-based private MIB
88. ZyXEL ESBU common MIB
89. Green Ethernet
90. Cable diagnostics
91. Support PoE/Voltage/Temperature/Fan Fault Trap
92. Support show PoE per port power consumption information, and classification
93. SNMP trap for error recovery
94. MAC aging time
95. MAC-based VLAN
96. Voice VLAN
97. Private VLAN
98. MLD snooping proxy
99. ZyXEL One Network (ZON)
100. ZyXEL Neighbor Management

Enhanced Features:

1. PoE Power Up Mode command

Bug Fix:

1. **[System]** Copy running-config cause DUT CPU high and records lots of port link down/up logs.
2. **[System]** "Show tech-support" that will make switch crash or hang.
3. **[System]** "Show tech-support" or "show tech-support memory" via ssh (uses putty) will cause DUT crash.
4. **[System]** System crash with exception on eventCmdProc or Memory cookies destroyed.
5. **[System]** System will encounter socket error, when socket leakage.
6. **[System]** Run RompagerPOCCookie, RompagerPOCCookies2 will cause DUT crash.
7. **[System]** When all port's transceiver-ddmi inserts, the switch may happen CPU High every hours.
8. **[System]** "Show tech-support" cannot display "show run config" via web
9. **[MGMT]** Ping to switch but no response when doing firmware upgrade.
10. **[MGMT]** Switch cannot access via HTTPs by Chrome.
11. **[MGMT]** Cpu threshold cannot be set over 20.
12. **[WebGUI]** Configure VLAN Port Setting by WebGUI, selecting one of acceptable frame types to "*", the selected item cannot be applied for all ports.
13. **[Port]** When enable igmp-snooping, traffic may not be able to forward on port 28.
14. **[LLDP]** Fix the incompatibility issue with some IP Phones that will cause the switch loss of management.
15. **[802.1x]** Dynamic VLAN Assignment approved for VLAN10 in the Juniper server, but VLAN100 approved in the switch.
16. **[STP]** Fix switch may drop BPDU packets.

17.　**[PoE]** Fix PoE classification mode calculated incorrect total allocated power issue.

Known Issue:

1.　Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2.　Fake IP traffic cannot be filtered when a static IP binding existed.
3.　The cable length resolution of Cable Diagnostic is about +-15 meter.
4.　The fault distance of Cable Diagnostic displays wrong information when no cable inserted.
5.　When RSTP is enabled with ring topology, LACP can't be activated at the same ports.

Limitation of Settings:

1.	802.1Q Static VLANs	1K
2.	Static MAC forwarding entry	256
3.	MAC filtering entry	256
4.	Cluster member	24
5.	Protocol based VLAN entries per port	7
6.	Port-security max address-limit number	16K
7.	Syslog server entry	4
8.	IP source guard entry	512
9.	IP subnet based VLAN entry	16
10.	DHCP snooping binding table	16K
11.	Multicast group	512
12.	ACL	256
13.	DHCP Entry	16
14.	Trunk groups	8
15.	Per trunk group port number	8
16.	MSTP instance	0-15
17.	MAC-based VLAN	50
18.	Voice VLAN OUI entry	6
19.	ZON neighbor per-port maximum clients	10

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW5C0.bin ras-0
ftp> bye


Where
   • User name: the management user name, admin by default.
   • Password: the management password, 1234 by default.
   • 410AAHW5C0.bin: the name of firmware file you want to upgrade.
   • ras-0: the internal firmware name in GS2210-48HP. (store at first
       flash).
   • ras-1: the internal firmware name in GS2210-48HP. (store at second
       flash).
```

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW5C0.rom rom-0
ftp> bye
```

```
Where
    • User name: the management user name, admin by default.
    • Password: the management password, 1234 by default.
    • 410AAHW5C0.rom: the name of configuration file you want to upgrade.
    • rom-0: the internal configuration name in GS2210-48HP.
```

ZyXEL GS2210-48HP V4.10(AAHW.4)C0

Release Note/Manual Supplement

Date: Sep. 16, 2014

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.3)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.4)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.4) | 09/16/2014 16:03:07
BootBase Version: V1.05 | 12/19/2013 16:57:54

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.4)	09/16/2014 16:03:07
Bootbase Version	V1.05	12/19/2013 16:57:54
Serial Number	xxxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	fa0a
SNMP MIB level & OID	0601020304050607080910111213141516171819 20
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

101. 44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
102. 4 dual personality GbE
103. 2 100/1000 Base-X SFP interface for uplink
104. PWM Fan module
105. Locator LED
106. 48 PoE ports with 802.3af and 802.3at compliant.
107. 16K layer 2 MAC addresses table
108. Jumbo frame length 9K
109. IEEE 802.1D transparent bridging
110. IEEE 802.1w, RSTP

111. IEEE 802.1s, MSTP
112. ZyXEL MRSTP
113. Rule-based bandwidth control
114. Port-based egress traffic shaping
115. IEEE 802.3x flow control.
116. DSCP to 802.1p priority mapping
117. Port-based VLAN
118. Protocol-based VLAN
119. IP subnet based VLAN
120. IEEE 802.1Q Static VLANs
121. IEEE 802.1Q dynamic VLANs
122. VLAN trunking
123. GVRP
124. IEEE 802.3ad LACP
125. Port mirroring
126. Support rate limiting, minimum step 64K both ingress and egress
127. Broadcast Storm Control
128. Layer 2 MAC filtering
129. Layer 3 IP filtering
130. Layer 4 TCP/UDP socket filtering
131. DHCP snooping
132. DHCP client
133. DHCP relay/DHCP relay per VLAN
134. DHCP option 82
135. IGMP v1/v2/v3 snooping
136. Static multicast forwarding
137. 802.1x port authentication
138. Port Security
139. Static MAC filtering/forwarding
140. Multiple RADIUS servers
141. Multiple TACACS+ servers
142. AAA by RADIUS / TACACS+
143. SSH v1/SSH v2/SSL
144. Intrusion Lock
145. MAC Freeze
146. ARP Inspection
147. Static IP/MAC/Port binding
148. Policy-based security filtering
149. IEEE 802.1Q VLAN port isolation
150. IP Source Guard
151. Guest VLAN
152. ACL packet filtering
153. PPPoE IA and option 82
154. CPU protection
155. Recovery mechanism for Error disable port/reason
156. Loop guard
157. Dual configuration files
158. Dual images
159. IGMP snooping fast leave
160. IGMP snooping statistics
161. IGMP throttling
162. SNMP v1, v2c, v3
163. SNMP trap group
164. Interface related trap can be enable/disable by port
165. RMON
166. ICMP echo/echo reply
167. Syslog
168. DHCPv6 client and relay
169. NDP: host
170. IPv6 address stateless auto-configuration

171. ZyXEL clustering management
172. Management through console, telnet, SNMP or web management
173. Firmware upgrade by FTP/WEB/TFTP
174. Configuration saving and retrieving by WEB/TFTP/FTP
175. Support Multiple login
176. Configure Clone
177. Multilevel CLI
178. Daylight Saving
179. NTP
180. RS232 console port
181. Service Access Control Timeout
182. IEEE 802.1AB LLDP
183. IEEE 802.1AB LLDP-MED
184. Authorization on console
185. Password encryption
186. User access right
187. ZyXEL Feature-based private MIB
188. ZyXEL ESBU common MIB
189. Green Ethernet
190. Cable diagnostics
191. Support PoE/Voltage/Temperature/Fan Fault Trap
192. Support show PoE per port power consumption information, and classification
193. SNMP trap for error recovery
194. MAC aging time
195. MAC-based VLAN
196. Voice VLAN
197. Private VLAN
198. MLD snooping proxy
199. ZyXEL One Network (ZON)
200. ZyXEL Neighbor Management

Enhanced Features:

None

Bug Fix:

1. [MGMT] The switch crashes when getting the IPv6 address with max length and clicking IPv6 index via the web GUI.
2. [MGMT] Fix the incompatibility issue with Microsoft Windows OS 8.1 LLDP that will cause the switch loss of management.
3. [MGMT] Fix the web loss of management on the switch.

Known Issue:

1. Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2. Fake IP traffic cannot be filtered when a static IP binding existed.
3. The cable length resolution of Cable Diagnostic is about +-15 meter.
4. The fault distance of Cable Diagnostic is less than 1 meter without cable inserted.
5. When RSTP is enabled with ring topology, LACP can't be activated at the same ports.

Limitation of Settings:

20.	802.1Q Static VLANs	1K
21.	Static MAC forwarding entry	256
22.	MAC filtering entry	256
23.	Cluster member	24

24.	Protocol based VLAN entries per port	7
25.	Port-security max address-limit number	16K
26.	Syslog server entry	4
27.	IP source guard entry	512
28.	IP subnet based VLAN entry	16
29.	DHCP snooping binding table	16K
30.	Multicast group	512
31.	ACL	256
32.	DHCP Entry	16
33.	Trunk groups	8
34.	Per trunk group port number	8
35.	MSTP instance	0-15
36.	MAC-based VLAN	50
37.	Voice VLAN OUI entry	6
38.	ZON neighbor per-port maximum clients	10

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW4C0.bin ras-0
ftp> bye
```

```
Where
```
  - User name: the management user name, admin by default.
  - Password: the management password, 1234 by default.
  - 410AAHW4C0.bin: the name of firmware file you want to upgrade.
  - ras-0: the internal firmware name in GS2210-48HP. (store at first flash).
  - ras-1: the internal firmware name in GS2210-48HP. (store at second flash).

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW4C0.rom rom-0
ftp> bye
```

Where
- User name: the management user name, admin by default.
- Password: the management password, 1234 by default.
- 410AAHW4C0.rom: the name of configuration file you want to upgrade.
- rom-0: the internal configuration name in GS2210-48HP.

ZyXEL GS2210-48HP V4.10(AAHW.3)C0

Release Note/Manual Supplement

Date: Aug. 20, 2014

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.3)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.3)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.3) | 08/20/2014 10:33:34
BootBase Version: V1.05 | 12/19/2013 16:57:54

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.3)	08/20/2014 10:33:34
Bootbase Version	V1.05	12/19/2013 16:57:54
Serial Number	xxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	d4e6
SNMP MIB level & OID	060102030405060708091011121314151617181920
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

1.   44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
2.   4 dual personality GbE
3.   2 100/1000 Base-X SFP interface for uplink
4.   PWM Fan module
5.   Locator LED
6.   48 PoE ports with 802.3af and 802.3at compliant.
7.   16K layer 2 MAC addresses table
8.   Jumbo frame length 9K
9.   IEEE 802.1D transparent bridging

10. IEEE 802.1w, RSTP
11. IEEE 802.1s, MSTP
12. ZyXEL MRSTP
13. Rule-based bandwidth control
14. Port-based egress traffic shaping
15. IEEE 802.3x flow control.
16. DSCP to 802.1p priority mapping
17. Port-based VLAN
18. Protocol-based VLAN
19. IP subnet based VLAN
20. IEEE 802.1Q Static VLANs
21. IEEE 802.1Q dynamic VLANs
22. VLAN trunking
23. GVRP
24. IEEE 802.3ad LACP
25. Port mirroring
26. Support rate limiting, minimum step 64K both ingress and egress
27. Broadcast Storm Control
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31. DHCP snooping
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39. Static MAC filtering/forwarding
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43. SSH v1/SSH v2/SSL
44. Intrusion Lock
45. MAC Freeze
46. ARP Inspection
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52. ACL packet filtering
53. PPPoE IA and option 82
54. CPU protection
55. Recovery mechanism for Error disable port/reason
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57. Dual configuration files
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60. IGMP snooping statistics
61. IGMP throttling
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65. RMON
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77. Multilevel CLI
78. Daylight Saving
79. NTP
80. RS232 console port
81. Service Access Control Timeout
82. IEEE 802.1AB LLDP
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91. Support PoE/Voltage/Temperature/Fan Fault Trap
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93. SNMP trap for error recovery
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95. MAC-based VLAN
96. Voice VLAN
97. Private VLAN
98. MLD snooping proxy
99. ZyXEL One Network (ZON)
100. ZyXEL Neighbor Management

Enhanced Features:

None

Bug Fix:

1. Download tech-support all cause DUT crash.

Known Issue:

1. Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2. Fake IP traffic cannot be filtered when a static IP binding existed.
3. The cable length resolution of Cable Diagnostic is about +-15 meter.
4. The fault distance of Cable Diagnostic is less than 1 meter without cable inserted.
5. When RSTP is enabled with ring topology, LACP can't be activated at the same ports.

Limitation of Settings:

1.	802.1Q Static VLANs	1K
2.	Static MAC forwarding entry	256
3.	MAC filtering entry	256
4.	Cluster member	24
5.	Protocol based VLAN entries per port	7
6.	Port-security max address-limit number	16K
7.	Syslog server entry	4

8.	IP source guard entry	512
9.	IP subnet based VLAN entry	16
10.	DHCP snooping binding table	16K
11.	Multicast group	512
12.	ACL	256
13.	DHCP Entry	16
14.	Trunk groups	8
15.	Per trunk group port number	8
16.	MSTP instance	0-15
17.	MAC-based VLAN	50
18.	Voice VLAN OUI entry	6
19.	ZON neighbor per-port maximum clients	10

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW3C0.bin ras-0
ftp> bye
```

```
Where
  • User name: the management user name, admin by default.
  • Password: the management password, 1234 by default.
  • 410AAHW3C0.bin: the name of firmware file you want to upgrade.
  • ras-0: the internal firmware name in GS2210-48HP. (store at first
       flash).
  • ras-1: the internal firmware name in GS2210-48HP. (store at second
       flash).
```

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW3C0.rom rom-0
ftp> bye
```

```
Where
  • User name: the management user name, admin by default.
```

- Password: the management password, 1234 by default.
- 410AAHW3C0.rom: the name of configuration file you want to upgrade.
- rom-0: the internal configuration name in GS2210-48HP.

ZyXEL GS2210-48HP V4.10(AAHW.2)C0

Release Note/Manual Supplement

Date: July. 18, 2014

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.2)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.2)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.2) | 07/18/2014 16:02:46
BootBase Version: V1.05 | 12/19/2013 16:57:54

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.2)	07/18/2014 16:02:46
Bootbase Version	V1.05	12/19/2013 16:57:54
Serial Number	xxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	7e06
SNMP MIB level & OID	0601020304050607080910111213141516171819 20
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

1.   44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
2.   4 dual personality GbE
3.   2 100/1000 Base-X SFP interface for uplink
4.   PWM Fan module
5.   Locator LED
6.   48 PoE ports with 802.3af and 802.3at compliant.
7.   16K layer 2 MAC addresses table
8.   Jumbo frame length 9K
9.   IEEE 802.1D transparent bridging

10. IEEE 802.1w, RSTP
11. IEEE 802.1s, MSTP
12. ZyXEL MRSTP
13. Rule-based bandwidth control
14. Port-based egress traffic shaping
15. IEEE 802.3x flow control.
16. DSCP to 802.1p priority mapping
17. Port-based VLAN
18. Protocol-based VLAN
19. IP subnet based VLAN
20. IEEE 802.1Q Static VLANs
21. IEEE 802.1Q dynamic VLANs
22. VLAN trunking
23. GVRP
24. IEEE 802.3ad LACP
25. Port mirroring
26. Support rate limiting, minimum step 64K both ingress and egress
27. Broadcast Storm Control
28. Layer 2 MAC filtering
29. Layer 3 IP filtering
30. Layer 4 TCP/UDP socket filtering
31. DHCP snooping
32. DHCP client
33. DHCP relay/DHCP relay per VLAN
34. DHCP option 82
35. IGMP v1/v2/v3 snooping
36. Static multicast forwarding
37. 802.1x port authentication
38. Port Security
39. Static MAC filtering/forwarding
40. Multiple RADIUS servers
41. Multiple TACACS+ servers
42. AAA by RADIUS / TACACS+
43. SSH v1/SSH v2/SSL
44. Intrusion Lock
45. MAC Freeze
46. ARP Inspection
47. Static IP/MAC/Port binding
48. Policy-based security filtering
49. IEEE 802.1Q VLAN port isolation
50. IP Source Guard
51. Guest VLAN
52. ACL packet filtering
53. PPPoE IA and option 82
54. CPU protection
55. Recovery mechanism for Error disable port/reason
56. Loop guard
57. Dual configuration files
58. Dual images
59. IGMP snooping fast leave
60. IGMP snooping statistics
61. IGMP throttling
62. SNMP v1, v2c, v3
63. SNMP trap group
64. Interface related trap can be enable/disable by port
65. RMON
66. ICMP echo/echo reply
67. Syslog
68. DHCPv6 client and relay
69. NDP: host

70. IPv6 address stateless auto-configuration
71. ZyXEL clustering management
72. Management through console, telnet, SNMP or web management
73. Firmware upgrade by FTP/WEB/TFTP
74. Configuration saving and retrieving by WEB/TFTP/FTP
75. Support Multiple login
76. Configure Clone
77. Multilevel CLI
78. Daylight Saving
79. NTP
80. RS232 console port
81. Service Access Control Timeout
82. IEEE 802.1AB LLDP
83. IEEE 802.1AB LLDP-MED
84. Authorization on console
85. Password encryption
86. User access right
87. ZyXEL Feature-based private MIB
88. ZyXEL ESBU common MIB
89. Green Ethernet
90. Cable diagnostics
91. Support PoE/Voltage/Temperature/Fan Fault Trap
92. Support show PoE per port power consumption information, and classification
93. SNMP trap for error recovery
94. MAC aging time

Enhanced Features:

1. MAC-based VLAN
2. Voice VLAN
3. Private VLAN
4. MLD snooping proxy
5. ZyXEL One Network (ZON)
6. ZyXEL Neighbor Management
7. LLDP enabled by default

Bug Fix:

1. LACP sync fail but still can ping to device from LACP port.
2. Set MIB traceroute IP address entry, the IP address could not set successfully.
3. Modify the management VLAN without gateway setting while there is default gateway setting in original management VLAN. Save the configuration and reboot DUT, part of configuration will be disappeared.
4. DUT will crash when the "no multi-login" command is issued when multiple users login.
5. In web page, when setting ipv6 and dhcpv6 client information refresh minimum to 4294967295 seconds, it could not apply successfully.
6. In spanning tree and static trunk environment, the host's mac will be learned to wrong port.
7. Send two LLDP packets (with system description length = 255) to an LLDP enabled port will cause DUT crash.
8. User can't be authorized when privilege of account is Cisco attribute and privilege level is 15.
9. LLDP-MED doesn't work with some IP phones.
10. When enable trunk and group two or more ports, and then just link up one of these ports, DUT sends out those LLDP packets which is in the trunk group from the link-up port.
11. If subtype of remote Port ID is mac-address. It can't be showed on LLDP remote device information.
12. When we use ipv6 link-local URL to access the switch web UI on windows XP, pages with indirect URL are inaccessible. User cannot access the error.html when configuration is wrong.

13. When enabled IGMP snooping, IGMP general query received by DUT will be replaced with its own source mac.
14. Fix IGMP snooping group-specific queries(GSQ) with source MAC address 00: 00: 00: 00: 00: 00.

Known Issue:

1. Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2. Fake IP traffic cannot be filtered when a static IP binding existed.
3. The cable length resolution of Cable Diagnostic is about +-15 meter.
4. The fault distance of Cable Diagnostic is less than 1 meter without cable inserted.

Limitation of Settings:

1.	802.1Q Static VLANs	1K
2.	Static MAC forwarding entry	256
3.	MAC filtering entry	256
4.	Cluster member	24
5.	Protocol based VLAN entries per port	7
6.	Port-security max address-limit number	16K
7.	Syslog server entry	4
8.	IP source guard entry	512
9.	IP subnet based VLAN entry	16
10.	DHCP snooping binding table	16K
11.	Multicast group	512
12.	ACL	256
13.	DHCP Entry	16
14.	Trunk groups	8
15.	Per trunk group port number	8
16.	MSTP instance	0-15
17.	MAC-based VLAN	50
18.	Voice VLAN OUI entry	6
19.	ZON neighbor per-port maximum clients	10

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW2C0.bin ras-0
ftp> bye
```

```
Where
   • User name: the management user name, admin by default.
   • Password: the management password, 1234 by default.
   • 410AAHW2C0.bin: the name of firmware file you want to upgrade.
   • ras-0: the internal firmware name in GS2210-48HP. (store at first
      flash).
   • ras-1: the internal firmware name in GS2210-48HP. (store at second
      flash).
```

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW2C0.rom rom-0
ftp> bye


Where
```
  - User name: the management user name, admin by default.
  - Password: the management password, 1234 by default.
  - 410AAHW2C0.rom: the name of configuration file you want to upgrade.
  - rom-0: the internal configuration name in GS2210-48HP.

ZyXEL GS2210-48HP V4.10(AAHW.1)C0

Release Note/Manual Supplement

Date: May. 21, 2014

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.1)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.1)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.1) | 05/21/2014 10:04:58
BootBase Version: V1.04 | 08/23/2013 19:05:12

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.1)	05/21/2014 10:04:58
Bootbase Version	V1.04	08/23/2013 19:05:20
Serial Number	xxxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	b8ad
SNMP MIB level & OID	060102030405060708091011121314151617181920
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

1.   44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
2.   4 dual personality GbE (100/1000Base-X SFP + 100/1000Base-T, Auto MDI/MDI-X) interfaces for uplink
3.   2 100/1000 Base-X SFP interface for uplink
4.   PWM Fan module (3 fans)
5.   Support 100M/1000M mini GBIC interface
6.   LED indications for link status (Locator LED)
7.   48 PoE ports with 802.3af and 802.3at compliant.
8.   16K layer 2 MAC addresses table

9. 9K jumbo frame
10. IEEE 802.1w Rapid Spanning Tree Protocol, RSTP
11. IEEE 802.1s Multiple Spanning Tree Protocol, MSTP
12. MRSTP
13. 802.1p with 8 CoS per port. SPQ, WRR, and WFQ, SPQ/WFQ combination capable
14. Rule-based bandwidth control (ingress traffic metering/dropping 64Kb stepping)
15. Port-based egress traffic shaping
16. IEEE 802.3x flow control.
17. DSCP to 802.1p priority mapping
18. Port-based VLAN
19. Protocol-based VLAN [exclusive with Guest VLAN]
20. IP subnet based VLAN [exclusive with Guest VLAN]
21. IEEE 802.1Q tag-based VLAN
22. IEEE 802.1Q Static VLANs
23. IEEE 802.1Q dynamic VLANs
24. GVRP for dynamic registration
25. IEEE 802.3ad LACP LACP algorithm of
Source-MAC/Source-IP/Destination-MAC/Destination-IP/Source-Destination-MAC/Source-Dest
ination-IP (per system support choose 4 hash algorithm)
26. Port mirroring (mirror for CPU port)
27. Support rate limiting, minimum step 64K both ingress and egress
28. Broadcast Storm Control 1pps stepping (Broadcast, Multicast, DLF storm control)
29. Layer 2 MAC filtering
30. Layer 3 IP filtering
31. Layer 4 TCP/UDP socket filtering
32. Support rate limit per IP/TCP/UDP per port
33. DHCP client
34. DHCP relay/DHCP relay per VLAN
35. DHCP option 82
36. IGMP snooping per VLAN (IGMPv1/v2/v3 up to 16 VLAN user configurable), up to 1K groups
37. Static multicast forwarding
38. 802.1x port authentication
39. Port Security
40. Static MAC filtering/forwarding
41. Multiple RADIUS servers
42. Multiple TACACS+ servers
43. AAA by RADIUS / TACACS+ (Backup round robin mode TACACS+ server)
44. 802.1x VLAN and bandwidth assignment by RADIUS
45. SSH v1/SSH v2/SSL
46. Intrusion Lock
47. MAC Freeze
48. DHCP snooping
49. ARP Inspection
50. Static IP/MAC binding
51. Policy-based security filtering
52. IEEE 802.1Q VLAN port isolation
53. IP Source Guard
54. Guest VLAN (port based/MAC based)[5 MAC Per port, exclusive with protocol-based & IP subnet-based VLAN]
55. ACL packet filtering (IPv4/IPv6)
56. PPPoE-IA (with option82)
57. CPU protection (ARP/IGMP/BPDU, inactive port/inactive reason/rate-limitation)
58. CPU protection, Error disable over rate limit with lower priority
59. Recovery mechanism for error-disabled port/reason
60. IEEE 802.1D transparent bridging
61. Loop guard
62. Dual configuration files
63. Dual RAS images
64. VLAN trunking
65. L2 Multicast

66. IGMP snooping (v1,v2,v3)
67. IGMP snooping fast leave
68. IGMP snooping statistics
69. IGMP snooping immediate leave
70. IGMP throttling
71. IGMP proxy mode & snooping mode selection
72. Configurable IGMP snooping timer and priority
73. IGMP snooping group client (add client up time field for display)
74. SNMP v1, v2c, v3
75. SNMP trap group
76. SNMP interface related trap can be enable/disable by port
77. RMON (1,2,3,9)
78. ICMP echo/echo reply
79. Syslog
80. RFC 2464 IPv6 over Ethernet
81. RFC 4291 IPv6 addressing architecture
82. RFC 4213 Dual stack
83. RFC 4884 ICMPv6
84. RFC 1981 Path MTU
85. RFC 5905 Minimum Path MTU size of 1280
86. RFC 4861 Neighbor Discovery
87. Encapsulation for minimum PMTU size of 1500
88. DHCPv6 client and relay
89. NDP: host
90. IPv6 address stateless auto-configuration: host and router
91. ZyXEL clustering management (iStacking)
92. Management through console, telnet, SNMP or web management
93. Firmware upgrade by FTP/WEB/TFTP
94. Configuration saving and retrieving by WEB/TFTP
95. Multiple login supported (Support concurrent telnet sessions up to 9)
96. Configure Clone
97. Multilevel CLI
98. Daylight Saving
99. NTP
100. RS232 console port
101. Service Access Control Timeout
102. IEEE 802.1ab Link Layer Discovery Protocol, LLDP
103. IEEE 802.1ab LLDP-MED
104. Authorization on console
105. Password encryption
106. User access right
107. RFC 1066   TCP/IP-based MIB
108. RFC 1213, 1157 SNMPv2c/v3 MIB
109. RFC 1493   bridge MIB
110. RFC 1643   Ethernet MIB
111. RFC 1757   RMON group 1,2,3,9 MIB
112. RFC 2011,2012,2013   SNMP MIB
113. RFC 2233   SMI MIB
114. RFC 2358   Ethernet-like MIB
115. RFC 2674   bridge MIB extension
116. RFC 2819, 2925 Remote management MIB
117. RFC 3621   Power Ethernet MIB
118. RFC 4293   MIB for IP
119. RFC 4292   IP forwarding table MIB
120. RFC 4022   MIB for TCP
121. RFC 4113   MIB for UDP
122. ZyXEL Feature-based private MIB
123. ZyXEL ESBU common MIB
124. Standard Ping MIB, IP address format 192 168 1 1 -> c0 a8 01 01
125. Green Ethernet (Port 49、50 not support)

126. Cable diagnostics
127. Support PoE/Voltage/Temperature/Fan Fault Trap
128. Support show PoE per port power consumption information, and classification
129. Self adjust fan speed control
130. MAC Quantity in MRD
131. SNMP trap for error recovery
132. MAC aging time
133. PoE MAX power mode

Enhanced Features:

None

Bug Fix:

1. Improve the manufacturing efficiency, no feature changed.

Known Issue:

1. Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2. Fake IP traffic cannot be filtered when a static IP binding existed.
3. The cable length resolution of Cable Diagnostic is about +-15 meter.
4. The fault distance of Cable Diagnostic is less than 1 meter without cable inserted.

Limitation of Settings:

1.	802.1Q Static VLANs	1K
2.	Static MAC forwarding entry	256
3.	MAC filtering entry	256
4.	Cluster member	24
5.	Protocol based VLAN entries per port	7
6.	Port-security max address-limit number	16K
7.	Syslog server entry	4
8.	IP source guard entry	512
9.	IP subnet based VLAN entry	16
10.	DHCP snooping binding table	16K
11.	Multicast group	512
12.	ACL	256
13.	DHCP Entry	16
14.	Trunk groups	8
15.	Per trunk group port number	8
16.	MSTP instance	0-15

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW1C0.bin ras-0
ftp> bye
```

```
Where
```
- User name: the management user name, admin by default.
- Password: the management password, 1234 by default.
- 410AAHW1C0.bin: the name of firmware file you want to upgrade.
- ras-0: the internal firmware name in GS2210-48HP. (store at first flash).
- ras-1: the internal firmware name in GS2210-48HP. (store at second flash).

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW1C0.rom rom-0
ftp> bye
```

```
Where
```
- User name: the management user name, admin by default.
- Password: the management password, 1234 by default.
- 410AAHW1C0.rom: the name of configuration file you want to upgrade.
- rom-0: the internal configuration name in GS2210-48HP.

ZyXEL GS2210-48HP V4.10(AAHW.0)C0

Release Note/Manual Supplement

Date: **Oct. 04, 2013**

This document describes the features in the GS2210-48HP product for its 4.10(AAHW.0)C0 release.

Support Platforms:

ZyXEL GS2210-48HP V4.10(AAHW.0)C0 supports models: ZyXEL GS2210-48HP.

Version:

OS Version: V4.10(AAHW.0) | 10/03/2013 20:30:15
BootBase Version: V1.04 | 08/23/2013 19:05:12

Default Bootbase Setting:

ZyNOS Version	V4.10(AAHW.0)	10/03/2013 20:30:15
Bootbase Version	V1.04	08/23/2013 19:05:20
Serial Number	xxxxxxxxxxxxxxx
Vendor Name	ZyXEL
Product Model	GS2210-48HP
ZyNOS Code Model	GS2210
ZyNOS ROM address	b40a0000
System Type	8
First MAC Address	0019CB000001
Last MAC Address	0019CB000033
MAC Address Quantity	51
Default Country Code	FF
Boot Module Debug Flag	00
CPLD Version	N/A
RomFile Version	27
RomFile Checksum	0481
ZyNOS Checksum	64cb
SNMP MIB level & OID	060102030405060708091011121314151617181920
Main Feature Bits	C0
Other Feature Bits	
02 4B 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00-00 13 00 00 00 00	

Main Features:

1. 44 Auto MDI/MDI-X 10Base-T/100Base-TX/1000Base-T
2. 4 dual personality GbE (100/1000Base-X SFP + 100/1000Base-T, Auto MDI/MDI-X) interfaces for uplink
3. 2 100/1000 Base-X SFP interface for uplink
4. PWM Fan module (3 fans)
5. Support 100M/1000M mini GBIC interface
6. LED indications for link status (Locator LED)
7. 48 PoE ports with 802.3af and 802.3at compliant.
8. 16K layer 2 MAC addresses table

9. 9K jumbo frame
10. IEEE 802.1w Rapid Spanning Tree Protocol, RSTP
11. IEEE 802.1s Multiple Spanning Tree Protocol, MSTP
12. MRSTP
13. 802.1p with 8 CoS per port. SPQ, WRR, and WFQ, SPQ/WFQ combination capable
14. Rule-based bandwidth control (ingress traffic metering/dropping 64Kb stepping)
15. Port-based egress traffic shaping
16. IEEE 802.3x flow control.
17. DSCP to 802.1p priority mapping
18. Port-based VLAN
19. Protocol-based VLAN [exclusive with Guest VLAN]
20. IP subnet based VLAN [exclusive with Guest VLAN]
21. IEEE 802.1Q tag-based VLAN
22. IEEE 802.1Q Static VLANs
23. IEEE 802.1Q dynamic VLANs
24. GVRP for dynamic registration
25. IEEE 802.3ad LACP LACP algorithm of Source-MAC/Source-IP/Destination-MAC/Destination-IP/Source-Destination-MAC/Source-Destination-IP (per system support choose 4 hash algorithm)
26. Port mirroring (mirror for CPU port)
27. Support rate limiting, minimum step 64K both ingress and egress
28. Broadcast Storm Control 1pps stepping (Broadcast, Multicast, DLF storm control)
29. Layer 2 MAC filtering
30. Layer 3 IP filtering
31. Layer 4 TCP/UDP socket filtering
32. Support rate limit per IP/TCP/UDP per port
33. DHCP client
34. DHCP relay/DHCP relay per VLAN
35. DHCP option 82
36. IGMP snooping per VLAN (IGMPv1/v2/v3 up to 16 VLAN user configurable), up to 1K groups
37. Static multicast forwarding
38. 802.1x port authentication
39. Port Security
40. Static MAC filtering/forwarding
41. Multiple RADIUS servers
42. Multiple TACACS+ servers
43. AAA by RADIUS / TACACS+ (Backup round robin mode TACACS+ server)
44. 802.1x VLAN and bandwidth assignment by RADIUS
45. SSH v1/SSH v2/SSL
46. Intrusion Lock
47. MAC Freeze
48. DHCP snooping
49. ARP Inspection
50. Static IP/MAC binding
51. Policy-based security filtering
52. IEEE 802.1Q VLAN port isolation
53. IP Source Guard
54. Guest VLAN (port based/MAC based)[5 MAC Per port, exclusive with protocol-based & IP subnet-based VLAN]
55. ACL packet filtering (IPv4/IPv6)
56. PPPoE-IA (with option82)
57. CPU protection (ARP/IGMP/BPDU, inactive port/inactive reason/rate-limitation)
58. CPU protection, Error disable over rate limit with lower priority
59. Recovery mechanism for error-disabled port/reason
60. IEEE 802.1D transparent bridging
61. Loop guard
62. Dual configuration files
63. Dual RAS images
64. VLAN trunking
65. L2 Multicast

66. IGMP snooping (v1,v2,v3)
67. IGMP snooping fast leave
68. IGMP snooping statistics
69. IGMP snooping immediate leave
70. IGMP throttling
71. IGMP proxy mode & snooping mode selection
72. Configurable IGMP snooping timer and priority
73. IGMP snooping group client (add client up time field for display)
74. SNMP v1, v2c, v3
75. SNMP trap group
76. SNMP interface related trap can be enable/disable by port
77. RMON (1,2,3,9)
78. ICMP echo/echo reply
79. Syslog
80. RFC 2464 IPv6 over Ethernet
81. RFC 4291 IPv6 addressing architecture
82. RFC 4213 Dual stack
83. RFC 4884 ICMPv6
84. RFC 1981 Path MTU
85. RFC 5905 Minimum Path MTU size of 1280
86. RFC 4861 Neighbor Discovery
87. Encapsulation for minimum PMTU size of 1500
88. DHCPv6 client and relay
89. NDP: host
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99. NTP
100. RS232 console port
101. Service Access Control Timeout
102. IEEE 802.1ab Link Layer Discovery Protocol, LLDP
103. IEEE 802.1ab LLDP-MED
104. Authorization on console
105. Password encryption
106. User access right
107. RFC 1066   TCP/IP-based MIB
108. RFC 1213, 1157 SNMPv2c/v3 MIB
109. RFC 1493   bridge MIB
110. RFC 1643   Ethernet MIB
111. RFC 1757   RMON group 1,2,3,9 MIB
112. RFC 2011,2012,2013   SNMP MIB
113. RFC 2233   SMI MIB
114. RFC 2358   Ethernet-like MIB
115. RFC 2674   bridge MIB extension
116. RFC 2819, 2925 Remote management MIB
117. RFC 3621   Power Ethernet MIB
118. RFC 4293   MIB for IP
119. RFC 4292   IP forwarding table MIB
120. RFC 4022   MIB for TCP
121. RFC 4113   MIB for UDP
122. ZyXEL Feature-based private MIB
123. ZyXEL ESBU common MIB
124. Standard Ping MIB, IP address format 192 168 1 1 -> c0 a8 01 01
125. Green Ethernet (Port 49、50 not support)

126. Cable diagnostics
127. Support PoE/Voltage/Temperature/Fan Fault Trap
128. Support show PoE per port power consumption information, and classification
129. Self adjust fan speed control
130. MAC Quantity in MRD
131. SNMP trap for error recovery
132. MAC aging time
133. PoE MAX power mode

Enhanced Features:

None

Bug Fix:

None

Known Issue:

1. Ingress rate limit of TCP traffic might have inaccuracy with some criteria.
2. Fake IP traffic cannot be filtered when a static IP binding existed.
3. The cable length resolution of Cable Diagnostic is about +-15 meter.
4. The fault distance of Cable Diagnostic is less than 1 meter without cable inserted.

Limitation of Settings:

1.	802.1Q Static VLANs	1K
2.	Static MAC forwarding entry	256
3.	MAC filtering entry	256
4.	Cluster member	24
5.	Protocol based VLAN entries per port	7
6.	Port-security max address-limit number	16K
7.	Syslog server entry	4
8.	IP source guard entry	512
9.	IP subnet based VLAN entry	16
10.	DHCP snooping binding table	16K
11.	Multicast group	512
12.	ACL	256
13.	DHCP Entry	16
14.	Trunk groups	8
15.	Per trunk group port number	8
16.	MSTP instance	0-15

Firmware Upgrade:

The GS2210-48HP uses FTP to upgrade firmware in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Firmware:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW0C0.bin ras-0
ftp> bye
```

```
Where
```
- User name: the management user name, admin by default.
- Password: the management password, 1234 by default.
- 410AAHW0C0.bin: the name of firmware file you want to upgrade.
- ras-0: the internal firmware name in GS2210-48HP. (store at first flash).
- ras-1: the internal firmware name in GS2210-48HP. (store at second flash).

Configuration Upgrade:

The GS2210-48HP uses FTP to upgrade configuration in run-time through its built-in FTP server. You can use any FTP client (for example, ftp.exe in Windows) to upgrade GS2210-48HP. The upgrade procedure is as follows:

Upgrade GS2210-48HP Configuration:

```
C:\> ftp <GS2210-48HP IP address>
User name: admin
Password: 1234
230 Logged in
ftp> put 410AAHW0C0.rom rom-0
ftp> bye
```

```
Where
```
- User name: the management user name, admin by default.
- Password: the management password, 1234 by default.
- 410AAHW0C0.rom: the name of configuration file you want to upgrade.
- rom-0: the internal configuration name in GS2210-48HP.