# H3C S5800_5820X-CMW520-R1206

# Release Notes

# H3C S5800_5820X-CMW520-R1206 Release Notes

Keywords: Version Information, Version changed, Unresolved Problems and Avoidance Measures, List of Solved Problems.

Abstract: Provide all details about the application version file, include: Version Information, Version changed, Unresolved Problems and Avoidance Measures, List of Solved Problems.

Acronyms:

| Acronym | Full spelling |
|---|---|
| IRF | Intelligent Resilient Framework |
| AAA | Authentication, Authorization and Accounting |
| ARP | Address Resolution Protocol |
| CMW | Comware |
| DHCP | Dynamic Host Configuration Protocol |
| GVRP | GARP VLAN Registration Protocol |
| IGMP | Internet Group Management Protocol |
| LACP | Link Aggregation Control Protocol |
| MIB | Management Information Base |
| MSTP | Multiple Spanning Tree Protocol |
| RIP | Routing Information Protocol |
| MPLS | Multi-protocol Label Switching |
| VPLS | Virtual Private LAN Service |
| ISSU | In-Service Software Upgrade |
| IRDP | ICMP Router Discovery Protocol |
| NLB | Network Load Balance |
| DCB | Data Center Bridge |
| DCBX | DCB Capability Exchange Protocol |
| COPP | Control Panel Policy |

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# Version Information

## Version Number

Comware software, Version 5.20, Release 1206

**Note:** You can see the version number with the command **display version** in any view. Please see **Note①.**

## Version History

Table 1 Version history

| Version number | Last version | Release Date | Remarks |
|---|---|---|---|
| S5800_5820X-CMW520-R1206 | S5800_5820X-CMW520-R1110P05 | 2010-10-08 | None |
| S5800_5820X-CMW520-R1110P05 | S5800_5820X-CMW520-R1110P04 | 2010-06-18 | None |
| S5800_5820X-CMW520-R1110P04 | S5800_5820X-CMW520-R1110P03 | 2010-05-27 | None |
| S5800_5820X-CMW520-R1110P03 | S5800_5820X-CMW520-F1110 | 2010-03-30 | None |
| S5800_5820X-CMW520-F1110 | S5800_5820X-CMW520-R1109P01 | 2010-01-25 | None |
| S5800_5820X-CMW520-R1109P01 | S5800_5820X-CMW520-R1109 | 2009-12-11 | None |
| S5800_5820X-CMW520-R1109 | S5800_5820X-CMW520-R1108 | 2009-11-04 | None |
| S5800_5820X-CMW520-R1108 | S5800_5820X-CMW520-E1107 | 2009-10-12 | None |
| S5800_5820X-CMW520-E1107 | S5800_5820X-CMW520-E1106P01 | 2009-06-19 | None |
| S5800_5820X-CMW520-E1106P01 | S5800_5820X-CMW520-E1106 | 2009-07-20 | None |
| S5800_5820X-CMW520-E1106 | First release | 2009-05-25 | None |

# Hardware and Software Compatibility Matrix

Table 2 Hardware and software compatibility matrix

| Item | Specifications |
|---|---|
| Product family | S5800/S5820X Series |
| Hardware platform | H3C S5800-60C-PWR/ H3C S5800-32C-PWR/ H3C S5800-56C-PWR |

| | |
|---|---|
| | H3C S5800-32C/ H3C S5800-56C/ H3C S5800-32F<br>H3C S5820X-28C / H3C S5820X-28S |
| Minimum memory requirements | 512 MB |
| Minimum Flash requirements | 512 MB |
| Boot ROM version | Version 205 or higher (Note: Perform the command display version command in any view to view the version information. Please see Note②) |
| Host software | S5800_5820X-CMW520-R1206.bin |
| iMC version | iMC PLAT 3.20-R2606 + P13+L15<br>iMC UAM 3.60- E6301+P04<br>iMC EAD 3.60-E6301+P04<br>iMC NTA 3.20-F0606<br>iMC QoSM 3.20-F0606<br>iMC UBA 3.20-F0606 |
| iNode version | iNode PC 3.60-E6307 |
| OAA version | Fiber Channel Card： 9.0.6.15.0<br>IPS/AV Card: ESS2110P01<br>Fire Wall Card: R3166P01<br>High Performance Wireless AC Card：B71D007SP06<br>Wireless AC Card：B71D007SP06 |
| Note | H3C S5820X-28C / H3C S5820X-28S don't support iMC UBA |

Sample: To display the host software and Boot ROM version of the S5800/S5820X, perform the following:

```
<H3C>_dis ver
H3C Comware Platform Software
Comware Software, Version 5.20, Release 1206        ------- Note①
Comware Platform Software Version COMWAREV500R002B83D009SP01
H3C S5800-32F Software Version V100R001B02D020SP02
Copyright (c) 2004-2010 Hangzhou H3C Tech. Co., Ltd. All rights reserved.
Compiled Oct  8 2010 19:07:35, RELEASE SOFTWARE
H3C S5800-32F uptime is 0 week, 0 day, 0 hour, 4 minutes

H3C S5800-32F with 2 Processor
512M    bytes SDRAM
4M      bytes Nor Flash Memory
512M    bytes Nand Flash Memory
Config Register points to Nand Flash

Hardware Version is Ver.B
CPLDA Version is 003, CPLDB Version is 003
BootRom Version is 205                                  ------ Note②
[SubSlot 0] 24SFP+4SFP Plus Hardware Version is Ver.B
[SubSlot 1] 16GE Hardware Version is Ver.A
```

# Restrictions and Cautions

1. S5820X works at IPS mirror mode. If the IPS applies “any” rule, the PC connected to the device can not communicate to its gateway.

# Feature List

## Hardware Features

Table 3 S5800 series hardware features

| Item | S5800-60C-PWR | S5800-56C | S5800-56C-PWR | S5800-32C | S5800-32C-PWR | S5800-32F |
|---|---|---|---|---|---|---|
| Dimensions (H × W × D) | 86.1 × 440 × 465 mm (3.39 × 17.32 × 18.31 in.) | 43.6 × 440 × 367 mm (1.72 × 17.32 × 14.45 in.) | 43.6 × 440 × 427 mm (1.72 × 17.32 × 16.81 in.) | 43.6 × 440 × 367 mm (1.72 × 17.32 × 14.45 in.) | 43.6 × 440 × 427 mm (1.72 × 17.32 × 16.81 in.) | 43.6 × 440 × 427 mm (1.72 × 17.32 × 16.81 in.) |
| Weight | <=18 kg (39.68 lb) | <=6.5 kg (14.33 lb) | <=8.5 kg (18.74 lb) | <=6.0 kg (13.23 lb) | <=8 kg (17.64 lb) | <=8.5 kg (18.74 lb) |
| Console port | 1<br>The console port of the S5800-60C-PWR, S5800-32C or S5800-32C-PWR is available on the front panel.<br>The console port of the S5800-56C, S5800-56C-PWR or S5800-32F is available under the logo panel on the front panel. | | | | | |
| Management Ethernet port | — | — | — | — | — | 1, on the rear panel |
| USB interface | 1 (full speed)<br>The USB interface of the S5800-60C-PWR, S5800-32C or S5800-32C-PWR is available on the front panel.<br>The USB interface of the S5800-56C, S5800-56C-PWR or S5800-32F is available under the logo panel on the front panel. | | | | | |
| 10/100/1000Base-T Ethernet port | 48<br>Supports PoE | 48 | 48<br>Supports PoE | 24 | 24<br>Supports PoE | — |
| 100/1000 Base-X SFP interface | 4 | — | — | — | — | 24 |
| SFP+ interface | — | 4. You can plug an SFP+ transceiver, SFP transceiver or SFP+ cable into the SFP interface. An SFP interface plugged in with an SFP+ cable can be used to connect IRF devices. | | | | |
| Number | 2, on the front | 1, on the rear | 1, on the | 1, on the | 1, on the | 1, on the |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| of supported interface cards | | panel | panel | rear panel | rear panel | rear panel | front panel |
| Interface card models supported (optional) | | LSW1SP4P0 (provides four 1 Gbps/10 Gbps SFP+ interfaces, which can be used to connect IRF member devices)<br>LSW1SP2P0 (provides two 1 Gbps/10 Gbps SFP+ interfaces, which can be used to connect IRF member devices)<br>LSW1GP16P0 (provides sixteen 1000 Mbps SFP interfaces)<br>LSW1GT16P (provides sixteen 1000 Mbps Ethernet electrical interfaces) | | | | | |
| OAP card | | IPS/AV card<br>Firewall card<br>Access controller module | — | | | | |
| Hot swappable PoE module | | LSW148POEM | — | | | | |
| Fan | | Hot swappable fan tray (LSW1FAN) | Fixed fans | Fixed fans | Fixed fans | Fixed fans | Hot swappable fan tray (LSW1BFAN) |
| Hot swappable power module models supported | | PSR300-12A<br>PSR300-12D1<br>PSR750-A<br>PSR750-D | — | — | — | — | PSR150-A<br>PSR150-D |
| RPS power module models supported | | RPS1000-A3 | RPS800-A | RPS1000-A3 | RPS800-A | RPS1000-A3 | RPS800-A |
| Input voltage | AC | Rated voltage: 100 VAC to 240 VAC, 50/60 Hz<br>Max voltage: 90 VAC to 264 VAC, 47/63 Hz | | | | | |
| | DC | Rated voltage:<br>300 W DC: –48 VDC to –60 VDC<br>750 W DC: –54 VDC to –57 VDC | — | — | — | — | Rated voltage: –48 VDC to –60 VDC |
| | RPS | Rated voltage: –52 VDC to –55 VDC | Rated voltage: 10.8 VDC to 13.2 VDC | Rated voltage: –52 VDC to –55 VDC | Rated voltage: 10.8 VDC to 13.2 VDC | Rated voltage: –52 VDC to –55 VDC | Rated voltage: –52 VDC to –55 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | VDC |
| Power consumption | DC: 94 W<br>AC: 96 W | 102 W | DC: 107 W<br>AC: 131 W | 67 W | DC: 64 W<br>AC: 85 W | DC: 58 W<br>AC: 67 W |
| Power consumption (full configuration) | Single DC output: 1840 W (1500 W for PoE output)<br>Dual DC outputs: 1840 W (1500 W for PoE output)<br>Single AC output: 714 W (425 W for PoE output)<br>Dual AC outputs: 1147 W (740 W for PoE output) | 163 W | DC: 973 W (740 W for PoE output)<br>AC: 673 W (370 W for PoE output) | 105 W | DC: 870 W (740 W for PoE output)<br>AC: 598 W (370 W for PoE output) | DC: 136 W<br>AC: 146 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) | | | | | |
| Operating humidity (noncondensing) | 10% to 90% | | | | | |

Table 4 S5820X series hardware features

| Item | S5820X-28C | S5820X-28S |
|---|---|---|
| Physical dimensions (H × W × D) | 86 × 440 × 467mm (3.4 × 17.3 × 18.4 in.) | 43.6 × 440 × 426.6mm (1.7 × 17.3×16.8 in.) |
| Weight | < 15.5 kg (34.2 lb.) | < 8.5 kg (18.7 lb.) |
| Management port | 1 console port | 1 console port, 1 out-of-band network management port |
| USB | 1, full speed | 1, full speed |
| Ports on the front panel | 14 × 1/10 G SFP+ port (supporting IRF), 4 × 10/100/1000 M electrical port | 24 × 1/10 G SFP+ port (supporting IRF), 4 × 10/100/1000 M electrical port |
| Optional interface modules | 4-port 1/10 G SFP+ module (supporting IRF)<br>2-port 1/10G SFP+ module (supporting IRF) | None |
| OAA modules | IPS/ Anti-Virus<br>Firewall<br>Wireless AC | None |

| | | | |
|---|---|---|---|
| | | FC | |
| Input voltage | AC | Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz<br>Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz | |
| | DC | Rated voltage range: -48 VDC to -60 VDC | |
| Power consumption (zero load) | | 118 W (Not include OAA) | 132 W |
| Power consumption (full load) | | 178 W (Not include OAA) | 190 W |
| Operating temperature | | 0°C to 45°C (32°F to 113°F) | |
| Relative humidity (noncondensing) | | 10% to 90% | |

# Software Features

Table 5 Software features of the S5800 series

| Feature | | S5800-60C-PWR | S5800-56C | S5800-56C-PWR | S5800-32C | S5800-32C-PWR | S5800-32F |
|---|---|---|---|---|---|---|---|
| Wire speed L2 switching | Switching capacity (full duplex) | 284 Gbps | 256 Gbps | | 208 Gbps | | |
| | Packet forwarding rate (whole system) | 211.3 Mpps | 190.5 Mpps | | 154.8 Mpps | | |
| Forwarding mode | | Store-forward | | | | | |
| IRF | | Support ring topology<br>Support chain Topology<br>Support MAD of BFD/LACP/ARP<br>Support ISSU | | | | | |
| Link aggregation | | Aggregation of GE ports<br>Aggregation of 10-GE ports<br>Static link aggregation<br>Dynamic link aggregation<br>When stacked, supports up to 128 aggregation groups, each supporting up to eight GE ports or eight 10-GE ports<br>Support NLB | | | | | |
| Flow control | | IEEE 802.3x flow control and back pressure | | | | | |
| Jumbo Frame | | Supports maximum frame size of 10000 | | | | | |
| MAC address table | | 32K MAC addresses<br>1K static MAC addresses<br>Blackhole MAC addresses<br>MAC address learning limit on a port | | | | | |
| VLAN | | Port-based VLANs (4094 VLANs) | | | | | |

| | |
|---|---|
| | QinQ and selective QinQ |
| | Voice VLAN |
| | Protocol-based VLANs |
| | MAC-based VLANs |
| | IP subnet-based VLANs |
| | GVRP |
| | Super VLAN |
| VLAN mapping | One-to-one VLAN mapping |
| | Many-to-one VLAN mapping |
| | Two-to-two VLAN mapping |
| ARP | 16K entries |
| | 1K static entries |
| | Gratuitous ARP |
| | Standard proxy ARP and local proxy ARP |
| | ARP source suppression |
| | ARP detection (based on DHCP snooping entries/802.1x security entries/static IP-to-MAC bindings) |
| | Multicast ARP |
| ND | 8K entries |
| | 1K static entries |
| VLAN virtual interface | 1K |
| DHCP | DHCP Client |
| | DHCP Snooping |
| | DHCP Relay |
| | DHCP Server |
| UDP Helper | UDP Helper |
| DNS | Dynamic domain name resolution |
| | Dynamic domain name resolution client |
| | IPv4/IPv6 addresses |
| IPv4 route | 1K static routes |
| | RIP (Routing Information Protocol) v1/2; up to 2K IPv4 routes |
| | OSPF (Open Shortest Path First) v1/v2; up to 16K IPv4 routes |
| | BGP (Border Gateway Protocol); up to 16K IPv4 routes |
| | ISIS (Intermediate System to Intermediate system); up to 16K IPv4 routes |
| | 256 equal-cost routes, each having 8 next hops |
| | Routing policy |
| | VRRP |
| | Policy routing |
| | IRDP |
| IPv6 route | 1K static routes |
| | RIPng; up to 2K IPv6 routes |
| | OSPF v3; up to 8K IPv6 routes |
| | BGP4+ for IPV6; up to 8K IPv6 routes |

| | |
|---|---|
| | ISIS for IPV6; up to 8K IPv6 routes |
| | 256 equal-cost routes, each having 8 next hops |
| | Routing policy |
| | VRRP |
| | Policy routing |
| URPF | Reverse route check |
| MCE | Supported |
| BFD | OSPF |
| | BGP |
| | IS-IS |
| | Static Route |
| | MAD |
| Tunnel | IPv4 over IPv4 Tunnel |
| | IPv4 over IPv6 Tunnel |
| | IPv6 over IPv4 Manual Tunnel |
| | IPv6 over IPv4 6to4 Tunnel |
| | IPv6 over IPv4 ISATAP(Intra-site Automatic Tunneling Protocol) Tunnel |
| | IPv6 Over IPv6 Tunnel |
| | GRE Tunnel |
| MPLS | MPLS |
| | VPLS |
| IPv4 multicast | IGMP (Internet Group Management Protocol) Snooping v1/v2/v3 |
| | Multicast VLAN |
| | Multicast VLAN+ |
| | IGMP v1/v2/v3 |
| | PIM-DM (Protocol Independent Multicast-dense mode) |
| | PIM-SM (Protocol Independent Multicast-sparse mode) |
| | PIM-SSM (PIM Source Specific Multicast) |
| | MSDP (Multicast Source Discovery Protocol) |
| | MBGP |
| | PIM BI-DIR |
| | Multicast VPN |
| | Multicast Over MCE |
| | Mulitcast Over MCE Over Tunnel |
| IPv6 multicast | MLD Snooping v1/v2 |
| | MLD v1/v2 |
| | PIM-DM/SM/SSM for IPv6 |
| | IPv6 multicast VLAN |
| | IPv6 multicast VLAN+ |
| | MBGP for IPv6 |
| Broadcast/multicast/unicast storm control | Storm control based on port rate percentage |
| | PPS-based storm control |
| | Bps-based storm control |

| | |
|---|---|
| MSTP | STP/RSTP/MSTP protocol<br>STP Root Guard<br>BPDU Guard |
| RRPP | RRPP protocol<br>Multi-instance RRPP |
| Smart link | Up to 26 groups supported<br>Multi-instance Smart Link |
| Monitor link | Supported |
| QoS/ACL | Restriction of the rates at which a port sends and receives packets, with a granularity of 8 kbps.<br>Packet redirection<br>Committed access rate (CAR), with a granularity of traffic limit 8 kbps.<br>Eight output queues for each port<br>Flexible queue scheduling algorithms based on port and queue, including strict priority (SP), Weighted Deficit Round Robin (WDRR), Weighted Fair Queuing (WFQ), and SP + WDRR.<br>Remarking of 802.1p and DSCP priorities<br>Packet filtering at L2 (Layer 2) through L4 (Layer 4); flow classification based on source MAC address, destination MAC address, source IP (IPv4/IPv6) address, destination IP (IPv4/IPv6) address, port, protocol, and VLAN.<br>Time range<br>Weighted Random Early Detection (WRED)<br>Traffic shaping<br>User Profile<br>COPP |
| Mirroring | Traffic mirroring<br>Port mirroring<br>Multiple mirror observing port |
| Remote mirroring | Remote port mirroring (RSPAN/ERSPAN) |
| Security | Hierarchical management and password protection of users<br>AAA authentication<br>RADIUS authentication<br>HWTACACS<br>SSH 2.0<br>Port isolation<br>Port security<br>MAC address authentication<br>IP-MAC-port binding<br>IP Source Guard<br>Https<br>SSL<br>PKI<br>Portal |

| | |
|---|---|
| | EAD |
| | Boot ROM access control (password recovery) |
| OAA | IPS |
| | Firewall |
| | Anti-Virus |
| | Wireless access |
| 802.1X | Up to 2,048 users |
| | Port-based and MAC address–based authentication |
| | Guest VLAN |
| | Trunk port authentication |
| | 802.1x-based dynamic QoS/ACL/VLAN delivery |
| Traffic Management | IPFIX (NetStream) |
| Loading and upgrading | Loading and upgrading through XModem protocol |
| | Loading and upgrading through FTP |
| | Loading and upgrading through the trivial file transfer protocol (TFTP) |
| Management | Configuration at the command line interface |
| | Remote configuration through Telnet |
| | Configuration through Console port |
| | Simple network management protocol (SNMP) |
| | Remote monitoring (RMON) alarm, event and history recording |
| | IMC NMS |
| | Web-based network management |
| | System log |
| | Hierarchical alarms |
| | Huawei group management protocol (HGMP) V2 |
| | NTP |
| | Power supply alarm function |
| | Fan and temperature alarms |
| Maintenance | Debugging information output |
| | Ping and Tracert |
| | NQA |
| | Track |
| | Remote maintenance through Telnet |
| | Virtual cable test |
| | 802.1ag |
| | 802.3ah |
| | DLDP |
| | File download and upload through USB port |

Table 6 Software features of the S5820X series

| Feature | | S5820X-28C | S5820X-28S |
|---|---|---|---|
| Wire speed L2 switching | Switching capacity (full duplex) | 488 Gbps | |
| | Packet forwarding rate (whole system) | 363Mbps | |
| Forwarding mode | | Store-forward and cut-through | |
| IRF | | Support ring topology<br>Support chain Topology<br>Support MAD of BFD/LACP/ARP<br>Support ISSU | |
| Link aggregation | | Aggregation of GE ports<br>Aggregation of 10-GE ports<br>Static link aggregation<br>Dynamic link aggregation<br>When stacked, supports up to 128 aggregation groups, each supporting up to eight GE ports or eight 10-GE ports<br>Support NLB | |
| Flow control | | IEEE 802.3x flow control and back pressure | |
| Jumbo Frame | | Supports maximum frame size of 9 KB | |
| MAC address table | | 32K MAC addresses<br>1K static MAC addresses<br>Blackhole MAC addresses<br>MAC address learning limit on a port | |
| VLAN | | Port-based VLANs (4094 VLANs)<br>QinQ and selective QinQ<br>Voice VLAN<br>Protocol-based VLANs<br>MAC-based VLANs<br>IP subnet-based VLANs<br>GVRP<br>Super VLAN | |
| VLAN mapping | | One-to-one VLAN mapping<br>Many-to-one VLAN mapping<br>Two-to-two VLAN mapping | |
| ARP | | 8K entries<br>1K static entries<br>Gratuitous ARP<br>Standard proxy ARP and local proxy ARP<br>ARP source suppression | |

| | |
|---|---|
| | ARP detection (based on DHCP snooping entries/802.1x security entries/static IP-to-MAC bindings)<br>Multicast ARP |
| ND | 4K entries<br>1K static entries |
| VLAN virtual interface | 1K |
| DHCP | DHCP Client<br>DHCP Snooping<br>DHCP Relay<br>DHCP Server |
| UDP Helper | UDP Helper |
| DNS | Dynamic domain name resolution<br>Dynamic domain name resolution client<br>IPv4/IPv6 addresses |
| IPv4 route | 1K static routes<br>RIP (Routing Information Protocol) v1/2; up to 2K IPv4 routes<br>OSPF (Open Shortest Path First) v1/v2; up to 12K IPv4 routes<br>BGP (Border Gateway Protocol); up to 12K IPv4 routes<br>ISIS (Intermediate System to Intermediate system); up to 12K IPv4 routes<br>256 equal-cost routes, each having 8 next hops<br>Routing policy<br>VRRP<br>Policy routing<br>IRDP |
| IPv6 route | 1K static routes<br>RIPng; up to 2K IPv6 routes<br>OSPF v3; up to 6K IPv6 routes<br>BGP4+ for IPV6; up to 6K IPv6 routes<br>ISIS for IPV6; up to 6K IPv6 routes<br>256 equal-cost routes, each having 8 next hops<br>Routing policy<br>VRRP<br>Policy routing |
| URPF | Reverse route check |
| MCE | Supported |
| BFD | OSPF<br>BGP<br>IS-IS<br>Static Route<br>MAD |
| Tunnel | IPv4 over IPv4 Tunnel<br>IPv4 over IPv6 Tunnel |

| | |
|---|---|
| | IPv6 over IPv4 Manual Tunnel |
| | IPv6 over IPv4 6to4 Tunnel |
| | IPv6 over IPv4 ISATAP(Intra-site Automatic Tunneling Protocol) Tunnel |
| | IPv6 Over IPv6 Tunnel |
| | GRE Tunnel |
| IPv4 multicast | IGMP (Internet Group Management Protocol) Snooping v1/v2/v3 |
| | Multicast VLAN |
| | Multicast VLAN+ |
| | IGMP v1/v2/v3 |
| | PIM-DM (Protocol Independent Multicast-dense mode) |
| | PIM-SM (Protocol Independent Multicast-sparse mode) |
| | PIM-SSM (PIM Source Specific Multicast) |
| | MSDP (Multicast Source Discovery Protocol) |
| | MBGP |
| | PIM BI-DIR |
| | Multicast Over MCE |
| | Mulitcast Over MCE Over Tunnel |
| IPv6 multicast | MLD Snooping v1/v2 |
| | MLD v1/v2 |
| | PIM-DM/SM/SSM for IPv6 |
| | IPv6 multicast VLAN |
| | IPv6 multicast VLAN+ |
| | MBGP for IPv6 |
| Broadcast/multicast/unicast storm control | Storm control based on port rate percentage |
| | PPS-based storm control |
| | Bps-based storm control |
| MSTP | STP/RSTP/MSTP protocol |
| | STP Root Guard |
| | BPDU Guard |
| RRPP | RRPP protocol |
| | Multi-instance RRPP |
| Smart link | Up to 26 groups supported |
| | Multi-instance Smart Link |
| Monitor link | Supported |
| QoS/ACL | Restriction of the rates at which a port sends and receives packets, with a granularity of 8 kbps. |
| | Packet redirection |
| | Committed access rate (CAR), with a granularity of traffic limit 8 kbps. |
| | Eight output queues for each port |
| | Flexible queue scheduling algorithms based on port and queue, including strict priority (SP), Weighted Deficit Round Robin (WDRR), Weighted Fair Queuing (WFQ), and SP + WDRR. |
| | Remarking of 802.1p and DSCP priorities |

| | |
|---|---|
| | Packet filtering at L2 (Layer 2) through L4 (Layer 4); flow classification based on source MAC address, destination MAC address, source IP (IPv4/IPv6) address, destination IP (IPv4/IPv6) address, port, protocol, and VLAN.<br>Time range<br>Weighted Random Early Detection (WRED)<br>Traffic shaping<br>User Profile<br>COPP |
| Mirroring | Traffic mirroring<br>Port mirroring<br>Multiple mirror observing port |
| Remote mirroring | Remote port mirroring (RSPAN/ERSPAN) |
| Security | Hierarchical management and password protection of users<br>AAA authentication<br>RADIUS authentication<br>HWTACACS<br>SSH 2.0<br>Port isolation<br>Port security<br>MAC address authentication<br>IP-MAC-port binding<br>IP Source Guard<br>Https<br>SSL<br>PKI<br>Portal<br>EAD<br>Boot ROM access control(password recovery) |
| Data Center Feature | PFC<br>DCBX |
| OAA | IPS<br>Firewall<br>Anti-Virus<br>Wireless access<br>FC |
| 802.1X | Up to 2,048 users<br>Port-based and MAC address–based authentication<br>Guest VLAN<br>Trunk port authentication<br>802.1x-based dynamic QoS/ACL/VLAN delivery |
| Loading and upgrading | Loading and upgrading through XModem protocol<br>Loading and upgrading through FTP<br>Loading and upgrading through the trivial file transfer protocol (TFTP) |

| | |
|---|---|
| Management | Configuration at the command line interface<br>Remote configuration through Telnet<br>Configuration through Console port<br>Simple network management protocol (SNMP)<br>Remote monitoring (RMON) alarm, event and history recording<br>IMC NMS<br>Web-based network management<br>System log<br>Hierarchical alarms<br>Huawei group management protocol (HGMP) V2<br>NTP<br>Power supply alarm function<br>Fan and temperature alarms |
| Maintenance | Debugging information output<br>Ping and Tracert<br>NQA<br>Track<br>Remote maintenance through Telnet<br>Virtual cable test<br>802.1ag<br>802.3ah<br>DLDP<br>File download and upload through USB port |

# Version Updates

## Feature Updates

Table 7 Feature updates

| Version number | Item | Description |
|---|---|---|
| S5800_5820X-CMW520-R1206 | Hardware feature updates | 1. Support 5m stack cable<br>2. Support FC module |
| | Software feature updates | New Features:<br>1. Support DCBX<br>2. Support configuring timer zone with WEB<br>3. Support configuring time parameter of OAM<br>4. ICMP Extension MPLS (RFC 4950)<br>5. Support IPv4 Path MTU adjust(RFC 1191)<br>6. BPDU Drop any |

| | | |
|---|---|---|
| | | 7. Support Supper VLAN<br>8. BFD/OAM/RRPP/CFD dual core supported<br>9. Support multicast ARP<br>10. Support lossless Link-aggregation<br>11. Support NLB<br>12. Support configuring the timeout of LACP<br>13. Support detecting the loop back between multiple ports。<br>14. Support IRDP<br>15. Support configuring the L4 Port range of egress ACL<br>16. Support HQOS<br>17. Support PIM BI-DIR<br>18. Support DHBK-portal<br>19. Support COPP<br>10. Support MPLS<br>21. Support VPLS<br>22. Support L3 rourt port<br>23. Support multicast VPN ; Support multicast over MCE ; Support multicast over MCE over tunnel<br>24. Support ISSU on IRF<br>25. Support modifying the ACL dynamically<br>26. Support DHCPv6 server/Snooping<br>27. Triple authentication function enhanced and support configuring it with WEB<br>28. Support multicast Controlled<br>29. Support ND anti-attack<br>30.Support configuring the jumbo frame size on port<br>31. Support password control<br>32. Support configuring PBR with a single command line<br>Deleted Features:<br>Delete BFD authentication function.<br>Modified Features<br>BFD sessions increased to 32 |
| S5800_5820X-CMW520-R1110P05 | Hardware feature updates | Support 40Km SFP+ fiber module |
| | Software feature updates | New features: |

| | | |
|---|---|---|
| | | 1. Radius authentication supports multi backup server.<br>2. Saving information to log buffer when VRRP priority changes.<br>3. Add the command "ftp/tftp/telnet client source" to specify the source IP.<br>4. Support displaying transceiver diagnosis and traffic statistics on IRF port.<br>5. Support to configure ignoring the first AS number of eBGP.<br>6. Portal authentication support certificate. |
| S5800_5820X-CMW520-R1110P04 | Hardware feature updates | None |
| | Software feature updates | None |
| S5800_5820X-CMW520-R1110P03 | Hardware feature updates | None |
| | Software feature updates | New features:<br>1. SPF+ port supports 1000Base-T module.<br>2. Support CFD trap and MIB.<br>3. Support loopback detection MIB.<br>4. BGP supports importing direct route of OSPF.<br>5. Support anti-attack on management port. |
| S5800_5820X-CMW520-F1110 | Hardware feature updates | None |
| | Software feature updates | New features:<br>1. Support Configuring the minimum number of selected ports in the aggregation group<br>2. The description information configured on ports is added to be shown when press command "display brief interface"<br>3. Support creating IBGP neighbors between PE and CE<br>4. Support VPN on TFTP/SFTP/SSH2/FTP<br>5. Support hash key configuration on IRF ports<br>6. Support mac-vlan trigger enable<br>7. Support mac-vlan PVID disable<br>8. Support VPN based on TUNNEL |

| | | |
|---|---|---|
| | | 9. Support AAA based on VPN<br>10. Support system log based on VPN<br>11. Support Echo packet single-hop detection when using BFD to implement fast fault detection<br>12. Support ACL log<br>13. Support Mixed IRF of S5800 and S5820X<br>14. Support guest vlan based on mac authentication. |
| S5800_5820X-CMW520-R1109P01 | Hardware feature updates | None |
| | Software feature updates | None |
| S5800_5820X-CMW520-R1109 | Hardware feature updates | None |
| | Software feature updates | New features:<br>1.IRF domain function<br>2.BFD multi-hop destination-port |
| S5800_5820X-CMW520-R1108 | Hardware feature updates | New features: none<br>Deleted features: none |
| | Software feature updates | New features:<br>1. Support ARP blank hole route function<br>2. ARP gateway protection and ARP filter protection<br>3. Record software version used on the device to higher end memory<br>4. LLDP TLV support POE+ attributes.<br>5. Support portal escape function<br>Deleted features: none |
| S5800_5820X-CMW520-E1107 | Hardware feature updates | None |
| | Software feature updates | New features:<br>1. MAD detection through LACP and BFD protocol.<br>2. Configure packet buffer flexibly by command<br>3. Support execute ACL command through packet filter command<br>4. ACL support TCP established key word<br>5. Warm reboot and log information recorded to flash.<br>6. Support CPLD auto update function |

| | | |
|---|---|---|
| | | Deleted features: none |
| S5800_5820X-CMW520-E1106P01 | Hardware feature updates | None |
| | Software feature updates | None |
| S5800_5820X-CMW520-E1106 | Hardware feature updates | First release |
| | Software feature updates | First release |

# Command Line Updates

Table 8 Command line updates

| Version number | Item | Description |
|---|---|---|
| S5800_5820X-CMW520-R1206 | New commands | 1. Feature ISSU relate new command refer to < 01 Fundamentals Command Reference ><br>2. Feature Supper VLAN relate new command refer to < 03 Layer 2 - LAN Switching Command Reference ><br>3. Feature IRDP relate new command refer to < 04 Layer 3 - IP Services Command Reference ><br>4. Feature MPLS/VPLS relate new command refer to < 07 MPLS Command Reference ><br>5. Feature PIM BI-DIR relate new command refer to < 06 IP Multicast Command Reference ><br>6. Feature Multicast VPN/Multicast over MCE/Multicast over MCE over tunnel/Multicast Controlled relate new command refer to <06 IP Multicast Command Reference><br>7. Feature password control relate new command refer to < 09 Security Command Reference ><br>8. Feature DHCPv6/Snooping relate new command refer to < 04 Layer 3 - IP Services Command Reference ><br>9. Feature IPsec relate new command refer to < 09 Security Command Reference ><br>10. Policy based route relate new command refer to < 05 Layer 3 - IP Routing Command Reference ><br>11. IP Source Guard support IPv6 relate new command refer to < 09 Security Command Reference ><br>12. Feature DCBX relate new command refer to < 03 Layer 2 - LAN Switching Command Reference ><br>13. Feature DHBK relate new command refer to < 10 High Availability Command Reference ><br>14. Feature IPv6 ND relate new command refer to < 09 Security Command Reference ><br>Others new commands Refer to Details of Added CLI Commands in R1206 |
| | Removed commands | 1. **reset dns** [ **ipv6** ] **dynamic-host** change to **reset dns host** [ **ip** \| **ipv6** \| **naptr** \| **srv** ]<br>Refer to Details of Added CLI Commands in R1206 |
| | Modified commands | 1. **bfd authentication-mode** { **md5** *key-id key* \| **sha1** |

| | | |
|---|---|---|
| | | *key-id key* \| **simple** *key-id password* }<br>**undo bfd authentication-mode** |
| | New commands | 1. **ftp client source** { **interface** *interface-type interface-number* \| **ip** *source-ip-address* }<br>2. **display ftp client configuration**<br>3. **tftp client source** { **interface** *interface-type interface-number* \| **ip** *source-ip-address* }<br>4. **display tftp client configuration**<br>5. **telnet client source** { **ip** *ip-address* \| **interface** *interface-type interface-number* }<br>6. **display telnet client configuration**<br>7. **ignore-first-as**<br>Refer to Details of Added CLI Commands in R1110P05 |
| | Removed commands | None |
| S5800_5820X-CMW520-R1110P05 | Modified commands | 1. **undo secondary accounting** changed to **undo secondary accounting** [*ipv4-address* \| **ipv6** *ipv6-address* ]<br>2. **undo secondary authentication** changed to **undo secondary authentication** [*ipv4-address* \| **ipv6** *ipv6-address* ]<br>3. **primary authentication** { *ip-address* [ *port-number* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* ] } changed to **primary authentication** { *ip-address* [ *port-number* \| **key** *string* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* \| **key** *string* ] * }<br>4. **primary accounting** { *ip-address* [ *port-number* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* ] ] changed to **primary accounting** { *ip-address* [ *port-number* \| **key** *string* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* \| **key** *string* ] * }<br>5. **secondary authentication** { *ip-address* [ *port-number* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* ] } changed to **secondary authentication** { *ip-address* [ *port-number* \| **key** *string* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* \| **key** *string* ] * }<br>6. **secondary accounting** { *ip-address* [ *port-number* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* ] } changed to **secondary accounting** { *ipv4-address* [ *port-number* \| **key** *string* \| **vpn-instance** *vpn-instance-name* ] * \| **ipv6** *ipv6-address* [ *port-number* \| **key** *string*] * }<br>Refer to Details of Added CLI Commands in R1110P05 |
| S5800_5820X-CM | New commands | None |

| | | |
|---|---|---|
| W520-R1110P04 | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-R1110P03 | New commands | 1. **ip binding vpn-instance**<br>2. **tcp syn-cookie enable**<br>Refer to S5800&S5820X Series Ethernet Switches Command Manual(Release 1110) |
| | Removed commands | 1. **undo portal trap server-down** |
| | Modified commands | 1. **display brief interface** changed to **display interface brief**<br>2. **mcms connect slot** *slot-number* **system** *system-name* changed to **oap connect slot** *slot-number* **system** *system-name*<br>3. **mcms reboot slot** *slot-number* **system** *system-name changed to* **oap reboot slot** *slot-number* **system** *system-name* |
| S5800_5820X-CMW520-F1110 | New commands | Refer to S5800&S5820X Series Ethernet Switches Command Manual(F1110) |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-R1109P01 | New commands | None |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-R1109 | New commands | Refer to Details of Added CLI Commands in R1109 |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-R1108 | New commands | Refer to Details of Added CLI Commands in R1108 |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-E1107 | New commands | Refer to Details of Added CLI Commands in E1107 |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CMW520-E1106P01 | New commands | None |
| | Removed commands | None |
| | Modified commands | None |
| S5800_5820X-CM | New commands | First release |

| | | |
|---|---|---|
| W520-E1106 | Removed commands | First release |
| | Modified commands | First release |

# MIB Updates

Table 9 MIB updates

| Version number | Item | MIB file | Module | Description |
|---|---|---|---|---|
| S5800_5820X-CMW520-R1206 | New | rfc3814-mpls-ftn-std.mib | MPLS | MPLS-FTN-STD-MIB |
| | | rfc3815-mpls-ldp-std.mib | MPLS | MPLS-LDP-STD-MIB |
| | | rfc3813-mpls-lsr-std.mib | MPLS | MPLS-LSR-STD-MIB |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1110P05 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1110P04 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1110P03 | New | None | None | None |
| | Modified | hh3c-lpbkdt.mib | Loopback-detection | Support h3cLpbkdtTrapLoopbacked, h3cLpbkdtTrapRecovered, h3cLpbkdtTrapPerVlanLoopbacked, h3cLpbkdtTrapPerVlanRecovered in h3cLpbkdtTrapPrefix. |
| | | IEEE8021-CFM-MIB.mib | Connectivity Fault Management | Support dot1agCfmMdTable, dot1agCfmMaNetTable, dot1agCfmMaCompTable, dot1agCfmMaMepListTable, dot1agCfmMepTable and dot1agCfmMdTableNextIndex. |
| S5800_5820X-CMW520-F1110 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1109P01 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1109 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-R1108 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-E1107 | New | None | None | None |
| | Modified | None | None | None |

| | | | | |
|---|---|---|---|---|
| S5800_5820X-CMW520-E1106P01 | New | None | None | None |
| | Modified | None | None | None |
| S5800_5820X-CMW520-E1106 | New | First release | First release | First release |
| | Modified | First release | First release | First release |

# Operation Changes

## Operation Changes in R1206

1. Modify the forwarding priority of 32bit route from lower to higher than ARP.
2. Modify the default action of PBR (MQC-based) from dropping to forwarding when the next hop of the PBR not exists.
3. The VRRP virtual IP will be advertised as 32bits host route when advertising the VRRP network in old software version. From this version, the Virtual IP will not be advertised any more.
4. The un-authorized user can not get IP address through DHCP in EAD fast deployment with previous version if the DHCP-Snooping is not enabled on device, while with this version, the un-authorized can get IP address even if the DHCP-Snooping is not enabled.
5. The new version will map the 802.1p priority of the customer VLAN to service VLAN in QINQ application while the old version does not do this map and the 802.1p priority of service VLAN is always 0.
6. The old version will add the secondary VLAN to uplink port and add the primary VLAN to downlink port; The new version does not do this only if **port isolate-user-vlan { host | promiscuous }** configured.
7. The new software support dual core application and the patch install is core based. So the file name of patch changed from patchs5800.bin to patch_mpu.bin(Main core) and patch_lpu.bin (assistant core). Patch installing command "patch install flash:/patchs5800.bin" and "patch install flash:" can be used on old version but command "patch install flash:" can only be used on new version.

## Operation Changes in R1110P05

None

## Operation Changes in R1110P04

None

## Operation Changes in R1110P03

None

## Operation Changes in F1110

None

## Operation Changes in R1109P01

1. Enhance the burst ability in default configuration.

## Operation Changes in R1109

2. DHCP relay function's default action is not produce DHCP security table and keeps switch DHCP packets normally. And default action is produce DCHP security table in older version
3. DCHP relay function produce security table only when related authorized ARP, DHCP relay address check and IP source guard function enabled and not relate with other function.
4. DHCP keep switching packets when DHCP relay table reaches max specification or the same IP temporary entry limitation reaches to 2 or more. And drop packets in older version.
5. The DHCP ACK packets are switched normally when not receive DHCP request packets and drop packets in older version.

## Operation Changes in R1108

Reply ARP request packet which's source IP is all zero and judge this packet is valid.

## Operation Changes in E1107

None

## Operation Changes in E1106P01

None

## Operation Changes in E1106

First release

# Open Problems and Workarounds

### LSD49282

- First found-in version: S5800_5820X-CMW520-E1106
- Description: In an IRF network, the device plugged an IPS card works as IRF master. And then the master reboots to do a master to slave switch. After the switch, the configuration related to ACFP lost.
- Workaround: Do not use IPS in IRF network or Do not let the device plugged IPS being IRF master.

# List of Resolved Problems

## Resolved Problems in R1206

### LSD41738

- First found-in version: S5800_5820X-CMW520-E1107
- Description: There is an IRF system MAC change event occur when cluster command switch as a master member in IRF rebooted.
- Description: The cluster function becomes invalid.

### LSD52117

- First found-in version: S5800_5820X-CMW520-E1106
- Description: When the sending interface index of Sflow V5 Sampler is unknown.
- Description: It should filter “0” into the field of the packet in stead of “1” according to the standard.

### LSD53033

- First found-in version: S5800_5820X-CMW520-R1108
- Description: Configure a PBR and set the next hop to a tunnel interface.
- Description: The PBR can’t work properly.

### LSD44944

- First found-in version: S5800_5820X-CMW520-R1108
- Description: IP ttl-expires function does not enabled on device, and the port received packets with TTL = 1.
- Description: The packet would be sent to CPU wrongly.

## Resolved Problems in R1110P05

### LSD49224

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: S5820X works with IPS and configures IPS in mirror mode; Enable MSTP multi instances on device.
- Description: The L2 switched unicast packets matched Mirror rule are dropped.

### LSD48166

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Device works for a long time.
- Description: Login the device with telnet and show info in log buffer, there is error information in log buffer such as “vt0 has got the TCB of task FC0”.

### LSD48127

- First found-in version: S5800_5820X-CMW520-R1110P04

- Condition: Configure a radius primary server which doesn't exist and set it to active manually.
- Description: The server status can't change from active to block automatically.

LSD47296

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Execute the SNMP script to access MIB entry of hh3cRrppPortEntry.
- Description: The device reboots.

TCD02368

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Execute "reset saved-configuration" on device.
- Description: Current startup saved-configuration file is NULL when execute "display startup" and the configuration still exists when execute "display saved-configuration".

LSD47874

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Configure two ports in one IRF-PORT group, one port connects to other device to buildup an IRF system, the other port is added and deleted from the IRF-PORT group repeatedly.
- Description: Size of 2048 byte memory leaks.

LSD49095

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Reboot master device of an IRF group and then delete MAD BFD and reconfigure it.
- Description: BFD session can't create successfully.

LSD48911

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: There are a lot of configurations related to link aggregation on the device and it connects to another device with aggregation link; Reboot the other device.
- Description: The device reboots occasionally.

LSD48912

- First found-in version: S5800_5820X-CMW520-R1110P04
- Condition: There are seven users login the device through SSH and execute "display current-configuration"
- Description: There is nothing displayed for the last user.

LSD48856

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: When link status change and there are a lot of ARP items need to be updated.
- Description: The ARP table can't be updated in a short time.

### LSD48822

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: One user displays the ACL and another user deletes the ACL at the same time.
- Description: The device reboots.

### LSD48776

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Press TAB key at the view which doesn't support key word attaching.
- Description: Memory leaks.

### LSD48486

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Configure "port connection-mode extend" on master device of IRF group and reboot the master device.
- Description: The configuration "port connection-mode extend" lost after the device rebooted.

### LSD48823

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Send VRRP packets to a VLAN-interface which doesn't enable VRRP.
- Description: The status of other VRRP groups changes frequently.

### LSD46979

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Reboot an IRF group with a lot of ports has been configured "mac-vlan" and "voice vlan".
- Description: It costs a long time to recover the IRF system.

### LSD47345

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Send IPV6 L3 packets that destination is unknown.
- Description: The CPU usage is high.

### LSD49724

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: The device works at heavy traffic for a long time.
- Description: There are some parity check errors on chip occasionally.

### HWD25109

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Insert an optical module to a port which the RX power threshold or the actually RX power is lower than -20db, and display the diagnostic info of the module.

- Description: The RX power threshold or the actually RX power displayed is not correctly. It's displayed as -40db.

# Resolved Problems in R1110P04

## LSD42465

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: In IPS application, enable ACFP redirect policy on device and enable portal on L3 interface connected to users.
- Description: The counter of the port may be a large value.

## LSD47541

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Apply ACFP policy on the four GE fiber port or the GE port on sub slot of S5800-60C-PWR.
- Description: The packets can't be redirected to IPS card.

## LSD47217/LSD47620

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: When display information about L3 table and at the same time the device is learning ARP.
- Description: The RX task can't receive packets occasionally and the device may reboot.

## LSD47830

- First found-in version: S5800_5820X-CMW520-R1110P03
- Condition: DLDP up and down frequently for a long time.
- Description: Some tasks hang up and the device can't work properly.

## LSD47104

- First found-in version: S5800_5820X-CMW520-R1110P03
- Condition: Configure the log host in a VPN and configure the source IP to send the log message.
- Description: The device can't send the log message with the configured source IP.

## LSD47000

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Configure the ACFP rule with "gt" or "lt" a L4 port number.
- Description: The traffic "eq" to the configured L4 port number will be redirected or mirrored to the IPS.

## LSD48982

- First found-in version: S5800_5820X-CMW520-R1108

- Condition: When user login the switch through SSH, and execute the display diagnostic-information and select output the result to the screen directly while there is a lot of lot of MAC-ADDRESS, routing entries or VLAN.
- Description: The switch may reboot.

LSD48065

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Apply more then 20 ACFP policies on device, then insert IPS card.
- Description: Some of the policies can't be applied successfully.

LSD48790

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Multi users access the device at the same time. One user adds or deletes port member of a link aggregation group while another user display the link aggregation group.
- Description: The device reboots occasionally.

LSD48023

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: The IPS card works at "redirections" mode.
- Description: The PC connected to the device directly can't communicate its gateway.

LSD48020

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: The IPS card works at "mirror" mode and enable portal at the downlink L3 interface.
- Description: Users can't authenticate successfully.

LSD47878

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: The IPS card works at "mirror" mode.
- Description: The traffic of L2 packets is double and the L3 packets can't be transmitted.

LSD47326

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Enable NTDP on device and execute "ntdp explore" repeat
- Description: The device reboots occasionally.

LSD48971

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Enable OSPF on device and configure import BGP route.
- Description: Some iBGP route can't be imported successfully.

### LSD46943

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: When receiving packets with double tag and the inter VLAN of tag is not configured on the device.
- Description: The packets will be dropped.

# Resolved Problems in R1110P03

### LSD45825

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable MAC-authentication with guest VLAN, when user authentications failed and return to guest VLAN.
- Description: The MAC-VLAN table related to the user has not been deleted.

### LSD45782

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable VRRPE on IRF, the PC connected to master send a gratuitous ARP packet conflict to the virtual IP of VRRP.
- Description: The ARP reply packet from VRRP use a wrong MAC address, users connected to the master can't ping the master successfully.

### LSD45441

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable MAC-authentication on IRF, the authentication users reach to the max number on the slave.
- Description: No more users can get authorized on the master.

### LSD43000

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Insert 100M fiber module to 1000M fixed fiber port on the front panel of S5800-60C-PWR switch.
- Description: The port can't forward packets occasionally.

### LSD46220

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Insert IPS card to the device and enable inline mode to monitor L3 packet flow.
- Description: L3 packet cannot be transmitted.

### LSD45742

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable CFD on a port and shutdown it.
- Description: The trap information of CFD can't be sent out.

### LSD46204

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable loopback detection on device, and generate a loop.
- Description: The device can't send loopback trap message to the trap server.

### LSD45971

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable port-bridge on device.
- Description: Port-bridge can't work properly.

### LSD45888

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Change IRF port to a user port.
- Description: Packets destined to this port probability cannot be forwarded.

### LSD45776

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable MAC-address notifying information function on a port which has enabled MAC max count limit.
- Description: Mac-address notifying information function can't work properly.

### LSD45743

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: When no sampling algorithm configured on a port and monitors the flow with NetFlow.
- Description: Information from NetFlow shows the port configured sampling algorithm.

### LSD46382

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: There is IPv4 ACL and IPv6 ACL with the same ACL number configured on device, and the IPv6 ACL is null, apply packet-filter rule with the IPv6 ACL on L3 interface outbound direction, then add rules to IPv6 ACL.
- Description: The IPv4 ACL with the same ACL number will be applied.

### LSD46062

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: View LACP configuration with Web.
- Description: The port name of slot 10 has no slot information.

### LSD46023

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Apply ACL on TFTP Server worked on VPN.
- Description: TFTP put and get cannot work.

### LSD45807

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Two IRF group connect by LACP with LACP MAD enabled, reboot one of the IRF group.
- Description: The CPU unitization of the other IRF group may be high and the network loss stability with a long time.

### LSD45660

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: In an IRF system, add a 10G port to an aggregation group then configure the port as an IRF port
- Description: The device comes into configuration recovery process and cannot response to CLI for a long time.

### LSD46420

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Apply MQC or packet-filter with IPv6 next-header, SIP, DIP and other IP field.
- Description: The rule applied cannot take into effect.

### LSD46411

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Configure IP precedence field and TOS field in one ACL rule.
- Description: The ACL rule with IP precedence field applied failed.

### LSD46400

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable storm-constrain control block on a port which has configured unicast-suppression or multicast-suppression.
- Description: Storm-constrain control block worked failed.

### LSD46115

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Create a link aggregation group between two IRF groups and enable VRRP function, reboot the backup device that exchanges VRRP protocol packet with the other IRF group.
- Description: The VRRP status of the IRF changes to master from backup and then changes back.

### LSD45875

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable ACL logging function on 10GE port then input traffic match the ACL at wire speed.
- Description: The logging information displayed is wrong.

### LSD45761

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Enable ACL logging function on a port and input traffic match the ACL, copy the rule of the ACL to other ACL number but don't apply the ACL.
- Description: There will be logging information associate the ACL displayed.

### LSD46503

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Configure QOS WFQ and QOS GTS on a port at the same moment, input different size packets to different queues.
- Description: The packet rate of some queues doesn't match the WFQ configured.

### LSD47032

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Configure the guaranteed ratio buffer parameter of all the 8 queues.
- Description: The device reboots after applying the buffer parameter.

### LSD46884

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Repeat execute loopback internal test on port for a long time.
- Description: The CLI will hang up.

### LSD46772

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Apply ip-prefix deny function.
- Description: Ip-prefix deny function works wrong, the static route which mask length less then the configured is denied.

### LSD46144

- First found-in version: S5800_5820X-CMW520-F1110
- Condition: Reboot the IRF group.
- Description: There are a lot of recover configuration failed information about IRF, portal, OAM and CFD etc.

# Resolved Problems in F1110

### LSD42426

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Enable bpdu-tunnel and QinQ VLAN transparent function on a port at the same time.
- Description: Bpdu-tunnel protocol packets passing through the service port are added an outer tag wrongly.

### LSD43636

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Enable dhcp-snooping on device, and the link connected to DHCP server is an aggregation, "dhcp-snooping trust" configured on the link.
- Description: The customer connected to the device can not get IP address from DHCP server.

### LSD44358

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Create tunnel interface on device.
- Description: When pressing "display lldp neighbor-information interface T X/X/X" shows all the ports' LLDP neighbor information wrongly.

### LSD44217

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Two IRF group connect with an aggregation link, and configure MAD LACP on both size of the link aggregation with different domain, then split one of the IRF group.
- Description: MAD LACP can not detect the split.

### LSD44612

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Configure BFD MAD on an IRF, split of the IRF and then recover the IRF.
- Description: IP routing conflict information will be displayed on device.

### LSD45205

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Use Putty to telnet device with SSH mode.
- Description: After a long time running, the device may be reboot probability.

### LSD45107

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Access the device with web mode press a large number of characters in the address frame.
- Description: The device reboots.

### LSD42604

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Delete all the VLANs in a VRRP environment.
- Description: The master of IRF group may be reboot probability.

### LSD44597

- First found-in version: S5800_5820X-CMW520-R1109

- Condition: Configure 115200 baud rate on serial port of the device and access the device with 115200 baud rate.
- Description: Some terminals may display illegible characters.

LSD44126

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Execute “debug port global-info” command on an IRF.
- Description: The master of IRF reboots.

LSD44989

- First found-in version: S5800_5820X-CMW520-E1107
- Condition: Execute “display rps” /”display power” command on S5800-32C/S5800-56C.
- Description: “display rps” returns “not support” and “display power” shows power 2 is absent.

LSD45367

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Configure RRPP primary ring and subring to the max spec, then reboot.
- Description: Protocol packets can not be sent to CPU after reboot.

LSD45467

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Use Saint to scan the IP address of the out-of-band management port.
- Description: The device may be reboot probability.

LSD45354

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Disable lldp on device.
- Description: LLDP protocol packets would be transmitted by the device.

LSD44062

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Ftp to a server as the client and use port mode.
- Description: The device reboots.

LSD43999

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Enable VRRP normal mode on device and ping the virtual IP address with a PC.
- Description: The inner MAC address and outer MAC address of the ARP ACK packet replied by the device are different.

LSD44289

- First found-in version: S5800_5820X-CMW520-R1109

- Condition: Configure “header incoming” on device
- Description: Display configuration shows “header incomming”.

LSD44293

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Enable Sflow on a port, and no packets pass through on the port.
- Description: Some Sflow statistic packets which only contain the header of standard Sflow packet and with the length of 40 bytes are sent to the collector.

LSD44231

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Execute “display patch info” command.
- Description: Word “temporary” is wrongly spelled as “temporaty”.

LSD43959

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Configure “bfd multi-hop destination-port 3784”.
- Description: This configuration can not be saved to configuration file.

LSD44125

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Add a link-up status port to an aggregation.
- Description: The information of the port changing down shows on the device.

LSD45389

- First found-in version: S5800_5820X-CMW520-R1109
- Condition: Get the temperature of the device using MIB.
- Description: The temperature returned is 65535.

LSD46092

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Insert Openxt optical module to 10GE port.
- Description: The port is probability up and down.

# Resolved Problems in R1109P01

LSD44209

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Inset 1G ESFP optic module to 10G port.
- Description: Port would be down and up within one second frequently.

LSD44385

- First found-in version: S5800_5820X-CMW520-E1106

- Condition: Apply “remark drop-precedenc” and “remark qos-local-id” acl rules together.
- Description: Operation failed

LSD44633

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Power off and power on or reboot the devices of a stack in the same time.
- Description: After reboot, the stack ports connected with a stack cable may keep link down on either sides or one end link up but the other end link down.

# Resolved Problems in R1109

LSD43327

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: S5820X device enable IPV6 function
- Description: Qos behavior with car can’t apply successfully.

LSD42320

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Execute “reset unused porttag “command in stack device and then reboot master device.
- Description: Ports interface can’t be created partly.

LSD42292

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Scan device using IPV6 address unreachable packets.
- Description: The device reboots.

LSD43302

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Walk MIB h3cMPortGroupTable node of IGMP group.
- Description: The device reboots.

LSD42979

- First found-in version: S5800_5820X-CMW520-R1108
- Condition: Ping the server which use virtual LACP link-aggregation NIC connected with device.
- Description: The time delay is long.

LSD42422

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Configure multicast load balancing when already exit multicast entry.
- Description: The multicast egress interface can’t be deleted.

# Resolved Problems in R1108

### LSD41882

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Continuous packets flow flush to the management port.
- Description: The console port no reaction or the device reboots.

### LSD42640

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Remove stack configuration on the port and use this port to switch normal packets.
- Description: Multicast packets can't send out from this port.

### LSD42578

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Ftp to the server using IPV6 and execute "dir" command.
- Description: The device reboots.

### LSD42662

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Shut down and undo shut down the 10G Ethernet port.
- Description: 10G port can't link up.

### LSD42753

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Configure forced speed and duplex on the 10G port which inserted 1000M fiber module and reboots the device.
- Description: The port switch packet only in single direction.

### LSD42580

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Plug out fiber or cable in the device which configured link-delay and dynamic link aggregation configuration.
- Description: The port can't switch packets.

### LSD38727

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Configure VPN bind virtual interface in the S5820X-28S or S5820X-28C device.
- Description: The direct IP in VPN can't ping successfully.

### LSD38723

- First found-in version: S5800_5820X-CMW520-E1106

- Condition: Show the current configuration on the device configured loopback interface.
- Description: The loopback interface configuration are behind the info center related configuration

LSTD39672

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Receive telnet packets over 640 Kbps on a port. And the packets are not to the device's CPU port.
- Description: The packets over 640 Kbps will be dropped by the port.

# Resolved Problems in E1107

LSD39253

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Configure cluster and cluster ftp server on the command switch.
- Description: log on ftp server from member switch and failed to get/put file.

LSD39151

- First found-in version: S5800_5820X-CMW520-E1106
- Condition: Configure STP and run LLDP compatible with CDP
- Description: The STP discard port doesn't switch CDP packets.

# Resolved Problems in E1106P01

None

# Resolved Problems in E1106

First release

# Related Documentation

# New Feature Documentation

Table 10 New Feature Documentation

| Feature | Document title |
|---|---|
| ISSU | Refer to < 01 Fundamentals Command Reference >, < 01 Fundamentals Command Reference > |
| Supper VLAN | Refer to < 03 Layer 2 - LAN Switching Command Reference >, < 03 Layer 2 - LAN Switching |

| | |
|---|---|
| | Command Reference > |
| IRDP | Refer to <04 Layer 3 - IP Services Command Reference>,< 04 Layer 3 - IP Services Command Reference > |
| MPLS/VPLS | Refer to <07 MPLS Command Reference>,< 07 MPLS Command Reference > |
| PIM BI-DIR | Refer to <06 IP Multicast Command Reference>,< 06 IP Multicast Command Reference > |
| Multicast VPN/Multicast over MCE/Multicast over MCE over tunnel/Multicast Controlled | Refer to <06 IP Multicast Command Reference>,<06 IP Multicast Command Reference> |
| password control | Refer to <09 Security Command Reference>,< 09 Security Command Reference > |
| DHCPv6/Snooping | Refer to <04 Layer 3 - IP Services Command Reference>,< 04 Layer 3 - IP Services Command Reference > |
| IPsec | Refer to <09 Security Command Reference>,< 09 Security Command Reference > |
| Policy based route | Refer to <05 Layer 3 - IP Routing Command Reference>,< 05 Layer 3 - IP Routing Command Reference > |
| IP Source Guard support IPv6 | Refer to <09 Security Command Reference>,< 09 Security Command Reference > |
| DCBX | Refer to < 03 Layer 2 - LAN Switching Command Reference >, < 03 Layer 2 - LAN Switching Command Reference > |
| DHBK | Refer to <10 High Availability Command Reference>,< 10 High Availability Command Reference > |
| IPv6 ND | Refer to <09 Security Command Reference>,< 09 Security Command Reference > |

For information about other features, see Documentation Set <H3C S5820X&S5800 Series Ethernet Switches Configuration Guides-Release 1206> and <H3C S5820X&S5800 Series Ethernet Switches Command References-Release 1206>.

# Documentation Set

Table 11 Documentation set

| Manual | Version |
|---|---|
| H3C S5820X Series Ethernet Switches Installation Manual | 6W102 |
| H3C S5800 Series Ethernet Switches Installation Manual | 6W103 |
| H3C PSR150-A&PSR150-D Power Modules User Manual | 5W101 |
| H3C PSR300-12A&PSR300-12D1 Power Modules User Manual | 5PW102 |

# Obtaining Documentation

## Downloading Documentation

Take the following steps to get related documents from the H3C website at www.h3c.com.

Table 12 Download documentation from the H3C website

| | |
|---|---|
| How to apply for an account | Access the homepage of H3C at http://www.h3c.com and click Registration at the top right. In the displayed page, provide your information and click Submit to register. |
| How to get documentation | Approach 1:<br>In the homepage of H3C at http://www.h3c.com, select Technical Support & Document > Technical Documents from the navigation bar at the top. Then select a product for its documents.<br>Approach 2:<br>In the Support area of the H3C homepage at http://www.h3c.com, select Technical Documents. Then select a product for its documents. |

The operation and command manuals corresponding to a software version are released along with the software version.

# Software Upgrading

## Introduction

Loading software on the switch involves loading application files and upgrading the Boot ROM program by using the host software package. The host software package of the S5800 series comprises the Boot ROM files and application files with the file name extension **.bin**.

- Loading application files: Download the host software package to the flash memory on the switch and set the attribute (**main**, **backup**, or **none**) of the application files.
- Upgrading the Boot ROM program: Use Boot ROM files in the host software package to upgrade the Boot ROM program of the switch.

NOTE:

Boot ROM files (stored together with application files with name extension .bin in the host software package) used for upgrade are complete Boot ROM files. A complete Boot ROM file includes a basic section and an extended section.

The basic Boot ROM section is the smallest program file used to complete the primary initialization of the system.

With rich human-computer interaction (HCI) functions, the extended Boot ROM section uses Ethernet interfaces for upgrading the applications and the boot system.

# Approaches for Loading Software

You can load application and configuration files of the switch through the Boot ROM menu or the CLI.

Table 13 Approaches for loading software on the switch

| Approach | Section |
|---|---|
| Loading files through the Boot ROM menu | Loading Software Using XMODEM Through Console Port |
| | Loading Software Using TFTP Through Ethernet Port |
| | Loading Software Using FTP Through Ethernet Port |
| Loading files through the CLI | Loading Software through USB Interface |
| | Loading Software Using FTP |
| | Loading Software Using TFTP |

NOTE:

- Each S5800-32F series switch provides a management Ethernet port, which can operate regardless of the working status of the switching chip. To upgrade the Boot ROM program or load application files when the switching chip fails to operate normally, you are recommended to use the management Ethernet port.
- Loading the Boot ROM or application files through the management Ethernet port is similar to that through the common Ethernet port. This manual takes the common Ethernet port as examples in file loading.

# Loading Software through the Boot ROM Menu

To load the Boot ROM and application files through the Boot ROM menu, you need to correctly connect a user terminal to the switch using a console cable.

## Introduction to the Boot ROM Menu

```
Starting......
    ****************************************************************************
    *                                                                          *
    *                H3C S5800-56C BOOTROM, Version 007                        *
    *                                                                          *
    ****************************************************************************
    Copyright (c) 2004-2008 Hangzhou H3C Technologies Co., Ltd.
    Creation Date   : Dec  2 2008,17:43:47
    CPU Clock Speed : 750MHz
    Memory Size     : 512MB
    Flash Size      : 512MB
    CPLD Version    : 001
    PCB Version     : Ver.B
```

```
    Mac Address     : 000ef2005800
Press Ctrl-B to enter Extended Boot menu...4
```

When the system displays "`Press Ctrl-B to enter Extended Boot menu`", press **Ctrl** + **B**. Then, the following prompt is displayed:

```
Please input BootRom password:
```

NOTE:

- By default, the system starts up in normal mode and the waiting time here is five seconds. If you set the startup mode to fast, the waiting time is one second.
- To enter the Boot ROM menu in normal mode, you need to press **Ctrl** + **B** within four seconds when the system displays "Press Ctrl-B to enter Boot Menu". Otherwise, the system starts decompressing the application files.
- You need to restart the switch if you want to enter the Boot ROM menu after the application files are decompressed.

Enter the Boot ROM password (the initial password is null). Then the system displays the Boot ROM menu.

```
BOOT  MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current configuration file
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):
```

The items in the Boot ROM menu are described in Table 14.

Table 14 Description of the Boot ROM menu

| Item | Description |
|---|---|
| 1. Download application file to flash | Download the application file to the flash memory |
| 2. Select application file to boot | Select the application file to boot |
| 3. Display all files in flash | Display all files in the flash memory |
| 4. Delete file from flash | Delete files from the flash memory |
| 5. Modify BootRom password | Modify the Boot ROM password |
| 6. Enter BootRom upgrade menu | Enter the Boot ROM update menu |
| 7. Skip current configuration file | Skip the current configuration file (this configuration is valid once) |
| 8. Set BootRom password recovery | Restore the Boot ROM password |

| | |
|---|---|
| 9. Set switch startup mode | Set the startup mode of the switch |
| 0. Reboot | Restart the switch |

NOTE:

- Currently, Boot ROM files are not provided separately by the S5800 series; instead, they are stored together with the application files with name extension **.bin** in the host software package.
- The procedures for upgrading the Boot ROM program and loading application files are similar except that you need to select different items (1 for loading application files, and 6 for loading Boot ROM files) in the Boot ROM menu. This manual takes upgrading the Boot ROM program as examples.

# Loading Software Using XMODEM Through Console Port

## Introduction to XMODEM

XMODEM is a file transfer protocol widely used for its simplicity. XMODEM transfers files through the console port, supporting data packets of 128 bytes. With respect to reliability, it supports checksum, CRC, and the error packet retransmission mechanism. Normally, the maximum number of retransmission attempts is ten.

XMODEM transfer is completed by receiving and sending programs together. Receiving program initiates packet checking method negotiation by sending the negotiation character. If negotiation passes, the sending program starts packet transfer. Upon receipt of a complete packet, the receiving program checks it using the agreed-upon check method. If the check succeeds, the receiving program sends an acknowledgement character; if the check fails, it sends a reject character. Upon receipt of the acknowledgement, the sending program continues to send the next packet; upon receipt of the reject, it retransmits the packet.

## Setting Terminal Parameters

When setting up the configuration environment through the console port, the terminal or PC can use the terminal emulation program to communicate with the switch. You can run the HyperTerminal of the Windows operating system to connect to other PCs, network devices, and Telnet sites. For detailed information and the use of the HyperTerminal, refer to the HyperTerminal Help documentation in Help and Support Center on the PC running the Windows operating system.

In the following configuration procedure, Windows XP HyperTerminal is used to communicate with the switch.

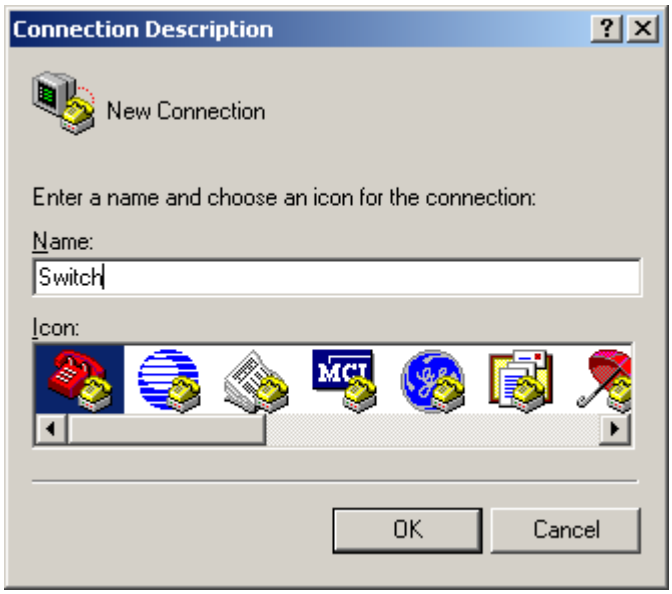
1. Start the PC and run the terminal emulation program.
2. Set terminal parameters as follows:

- Bits per second: 9,600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None
- Emulation: VT100

The specific procedure is as follows:

Step1 Select **Start** > **Programs** > **Accessories** > **Communications** > **HyperTerminal** to enter the HyperTerminal window. The **Connection Description** dialog box appears, as shown below.

Figure 1 Connection description of the HyperTerminal

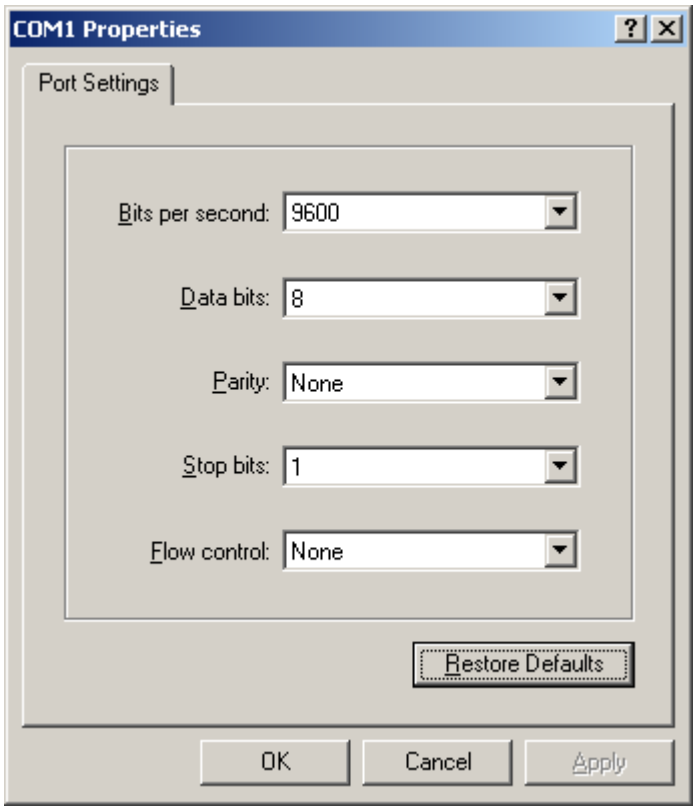



Step2 Type the name of the new connection in the **Name** text box and click **OK**. The following dialog box appears. Select the serial port to be used from the **Connect using** drop-down list.

Figure 2 Set the serial port used by the HyperTerminal connection

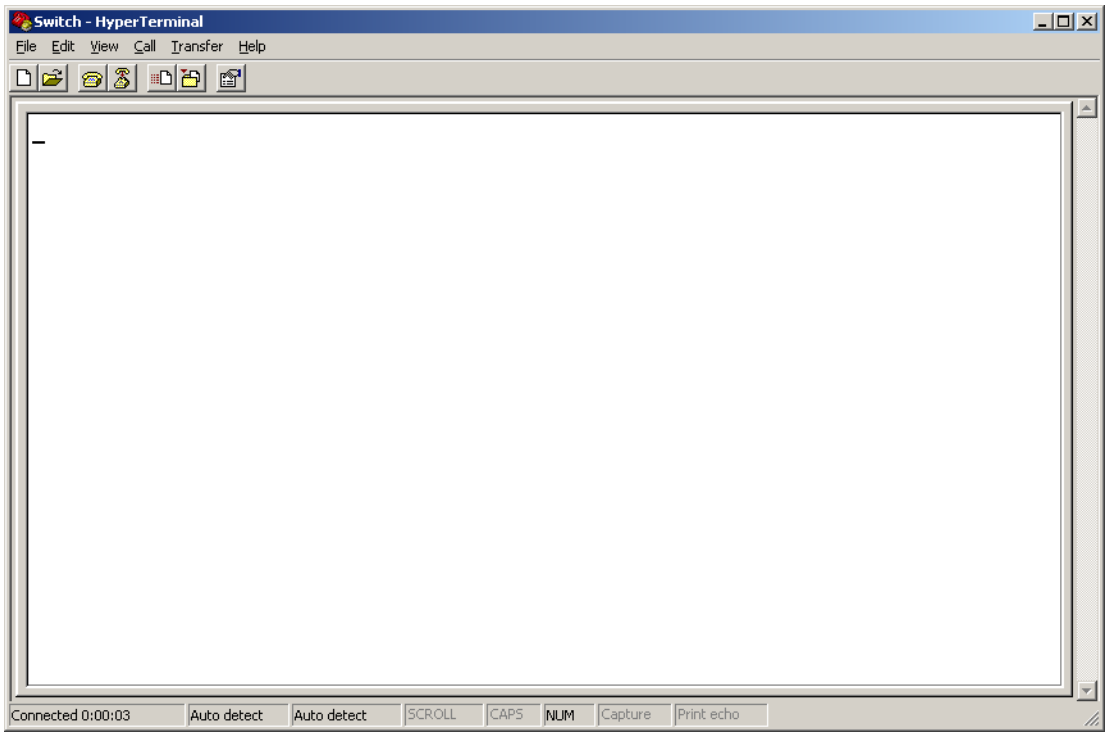

Step3 Click **OK** after selecting a serial port. The following dialog box appears. Set **Bits per second** to **9600**, **Data bits** to **8**, **Parity** to **None**, **Stop bits** to **1**, and **Flow control** to **None**.

Figure 3 Set the serial port parameters



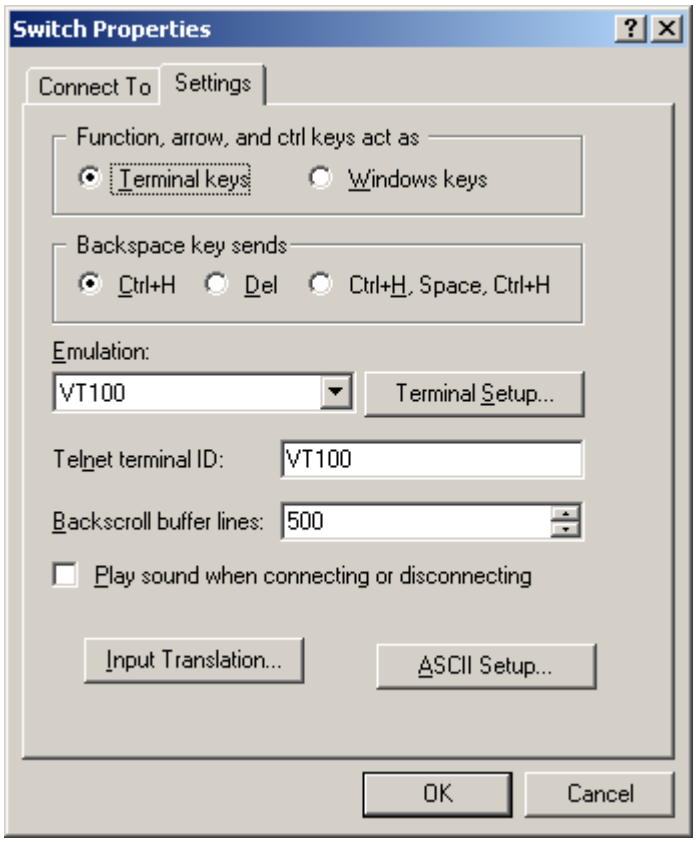

Step4 Click **OK** after setting the serial port parameters and the system enters the HyperTerminal window shown below.

Figure 4 HyperTerminal window



Step5 Click **Properties** in the HyperTerminal window to enter the **Switch Properties** dialog box. Click the **Settings** tab, set the emulation to **VT100**, and then click **OK**.

Figure 5 Set terminal emulation in Switch Properties dialog box




## Upgrading the Boot ROM program

Complete the following tasks to update the Boot ROM program using XMODEM through the console port (For details about the HyperTerminal, refer to Setting Terminal Parameters:

| Task | Remarks |
|---|---|
| Enter the Boot ROM update menu on the switch | Required<br>Log in to the switch through the HyperTerminal and then configure the protocol used for loading files. |
| Enter the protocol parameter setting menu | |
| Configure the switch to download files using XMODEM | |
| Set the download rate of the console port on the switch | Required<br>Log in to the switch through the HyperTerminal and then set the download rate of the console port on the switch. |
| Change the rate of the serial port on the terminal | Optional<br>Set the baud rate of the serial port on the terminal to be consistent with that of the console port on the switch. |
| Establish a connection between the terminal and the switch using the changed rate | Optional |
| Upload an application file from the terminal to the switch | Required<br>Transmit a file from the terminal to the switch |

| | |
|---|---|
| | using the changed connection rate. |
| Update the Boot ROM file on the switch | Required<br>Update the Boot ROM file on the switch. |
| Restore the download rate to the default | Optional<br>Set the baud rate of the serial port on the terminal to be consistent with the default rate of the console port on the switch. |
| Restart the switch to make the updated Boot ROM file effective | Required |

1. Enter the Boot ROM update menu on the switch

Enter the Boot ROM menu, and then enter **6** or press **Ctrl** + **U** after the system displays "Enter your choice(0-9):" to enter the Boot ROM update menu.

```
Enter your choice(0-9): 6


1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

The items in the Boot ROM update menu are described in Table 15 .

Table 15 Description of the Boot ROM update menu

| Item | Description |
|---|---|
| 1. Update full BootRom | Update the complete Boot ROM file |
| 2. Update extended BootRom | Update the extended Boot ROM section |
| 3. Update basic BootRom | Update the basic Boot ROM section |
| 0. Return to boot menu | Return to the Boot ROM menu |

2. Enter the protocol parameter setting menu

After the system displays "Enter your choice(0-3):", enter **1** to enter the protocol parameter setting menu.

NOTE:

All the Boot ROM files used for upgrade are complete Boot ROM files.

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu

Enter your choice(0-3):
```

The items in the protocol parameter setting menu are described in Table 16 .

Table 16 Description of the protocol parameter setting menu

| Item | Description |
|---|---|
| 1. Set TFTP protocol parameter | Set TFTP parameters |
| 2. Set FTP protocol parameter | Set FTP parameters |
| 3. Set XMODEM protocol parameter | Set XMODEM parameters |
| 0. Return to boot menu | Return to the Boot ROM menu |

3. Configure the switch to download files using XMODEM

Enter **3** to enter the download rate setting menu.

```
Please select your download baudrate:
1.* 9600
2. 19200
3. 38400
4. 57600
5. 115200
0. Return
Enter your choice (0-5):
```

4. Set the download rate of the console port on the switch

Select an appropriate download rate. For example, if you select 115200 bps, that is, enter **5**, the following information is displayed:

```
Download baud rate is 115200 bps
```

Please change the terminal's baud rate to 115200 bps and select XMODEM protocol

Press enter key when ready

Now that the console communication baud rate of the switch has been changed to 115200 bps while that of the terminal is still 9600 bps, the two sides cannot communicate with each other. According to the prompt, you need to change the baud rate of the terminal to 115200 bps.

NOTE:

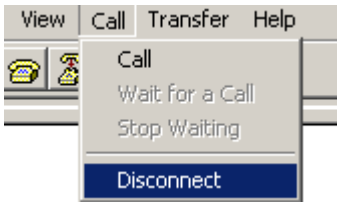
- Typically, the size of a .bin file is over 10 MB. Even at a baud rate of 115200 bps, the update takes tens of minutes.
- If you select 9600 bps as the download rate, you can skip the step Change the rate of the serial port on the terminal.

5. Change the rate of the serial port on the terminal

To ensure communication between the terminal and the switch, the baud rate of the serial port on the terminal should be consistent with that of the console port on the switch.

Step1 Select **Call** > **Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 6 Disconnect the terminal from the switch




Step2 Select **File** > **Properties**. In the **Properties** dialog box, click **Configure** (as shown in Figure 7), and then select **115200** from the **Bits per second** drop-down list box (as shown in Figure 8 **错误！未找到引用源。**).

Figure 7 Properties dialog box

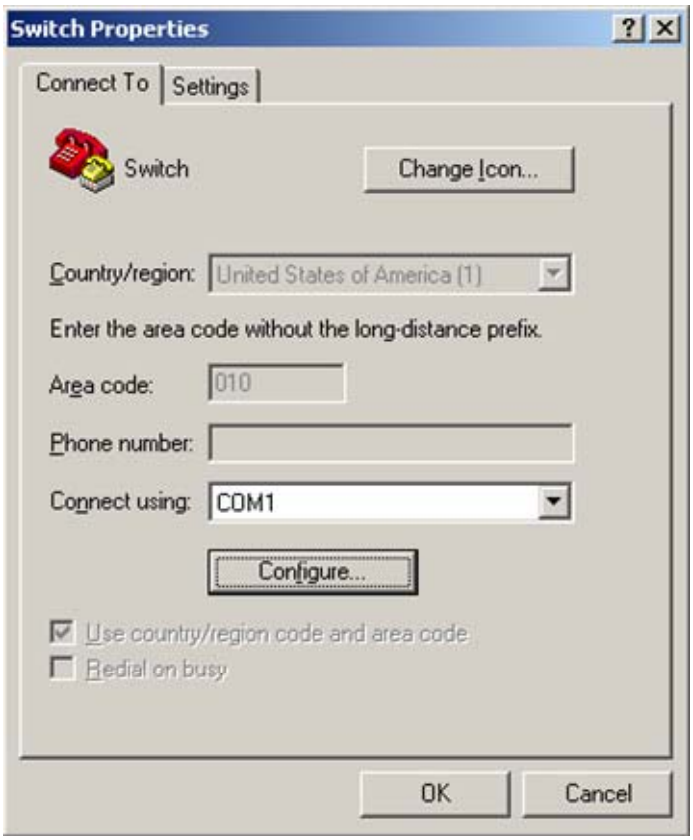
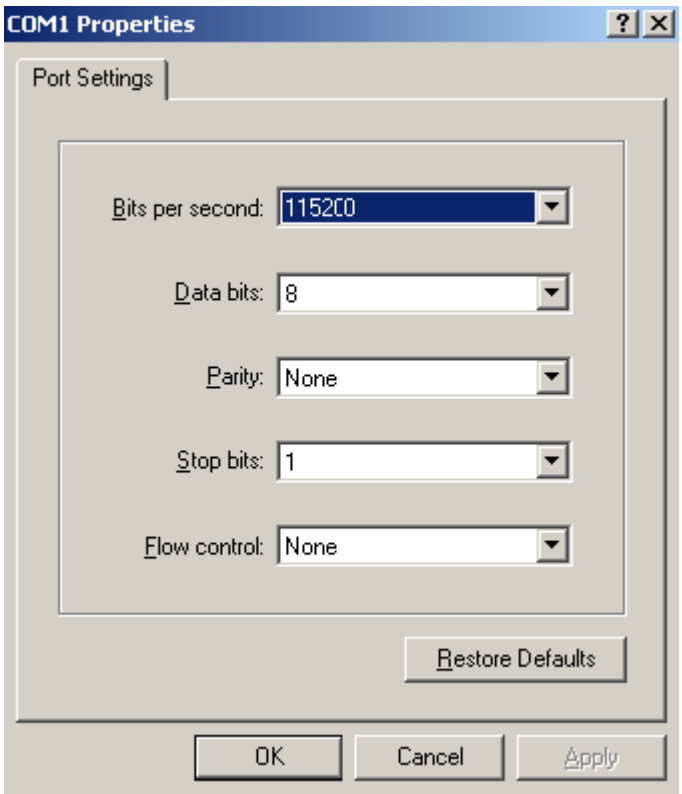
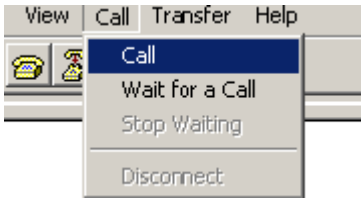



Figure 8 Modify the baud rate




Step3 Select **Call** > **Call** to reestablish the connection.

Figure 9 Reestablish the connection




NOTE:

The new settings can take effect only after you reestablish the connection.

6. Establish a connection between the terminal and the switch using the changed rate

Press **Enter** to reestablish the connection between the terminal and the switch and download the application file at 115200 bps. The following information is displayed:

```
Now please start transfer file with XMODEM protocol.
If you want to exit, Press <Ctrl+X>.
Loading ...CCCCCCCCCC
```

NOTE:

Press **Ctrl** + **X** to quit downloading files; otherwise, proceed as follows.

7. Upload an application file from the terminal to the switch

Step1 Select **Transfer** > **Send File** in the HyperTerminal window (as shown in Figure 10 ). Click **Browse** in the pop-up dialog box (as shown in Figure 11 ) to select the application file to be downloaded (for example, **update.bin**), and select **Xmodem** from the **Protocol** drop-down list.

Figure 10 Transfer menu

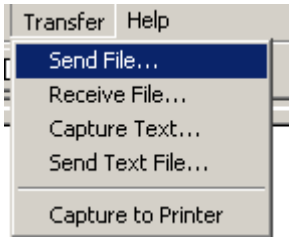
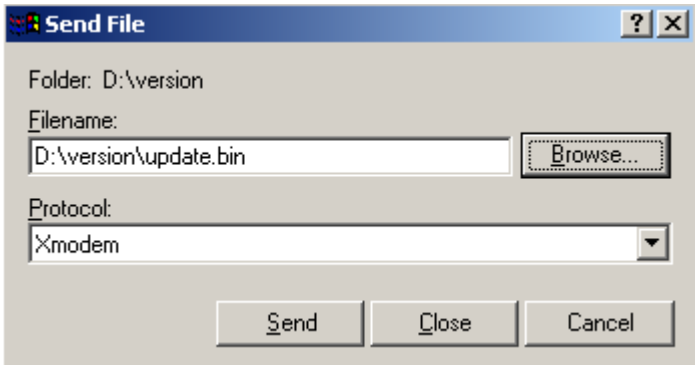
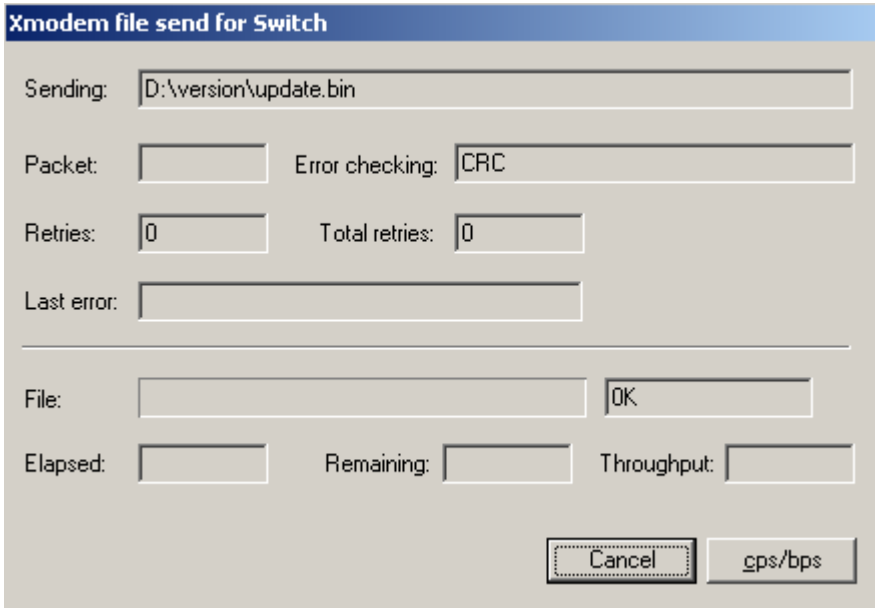



Figure 11 File transmission dialog box




Step2 Click **Send.** The following dialog box appears:

Figure 12 Send the application file using XMODEM




8. Update the Boot ROM file on the switch

After the Boot ROM file is downloaded, the terminal displays the following information:

```
Loading ...CCCC Done!
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y** and then the system displays the following information after the update is completed.

```
Updating Basic BootRom..........Done!
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y**. Then the system displays the following information after the update is completed:

```
Updating extended BootRom.........Done!
Please change the terminal's baudrate to 9600 bps, press ENTER when ready.
```

9. Restore the download rate to the default

Set the baud rate to 9600 bps (refer to Change the rate of the serial port on the terminal for detailed operation).

NOTE:

If you select 9600 bps as the download rate, skip this step, that is, you do not need to modify the baud rate of the HyperTerminal.

10. Restart the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
Enter your choice(0-3):
```

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

### Loading an application file

To load the application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):3
```

Select an appropriate protocol in Table 16 to load the application file.

The procedure of loading an application file is similar to that of upgrading the Boot ROM program. The difference lies in that the system displays the prompt of loading the application file rather than the upgrading the Boot ROM program.

After the application file is loaded, the switch displays that you should set the application attribute, that is, **main**, **backup**, or **none**. Type a specific attribute to complete loading the application file.

```
Writing flash...............................................................
...............Done!
Please input the file attribute (Main/Backup/None) M
Done!
```

NOTE:

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

# Loading Software Using TFTP Through Ethernet Port

### Introductin to TFTP

Trivial File Transfer Protocol (TFTP) is a TCP/IP protocol used for file transfer between client and server. It provides a simple and low-overhead file transfer service. TFTP provides unreliable data transfer over UDP.

### Upgrading the Boot ROM program

Complete the following tasks to upgrade the Boot ROM program using TFTP through an Ethernet port (For details about the HyperTerminal, refer to Setting Terminal Parameters:

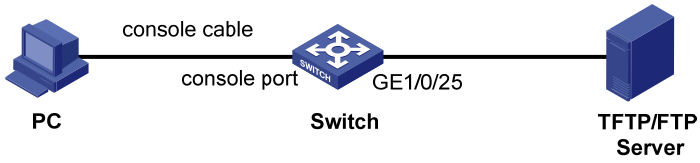
| Task | Remarks |
|---|---|
| Set up the configuration environment | Required<br>Connect the switch to the TFTP server through an Ethernet port, and to a PC through the console port. The PC and the TFTP server can be the same device. |
| Run the TFTP Server program on the sever | Required |
| Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu. Then enter the protocol parameter setting menu. | Required<br>Log in to the switch through the HyperTerminal and configure the protocol for uploading the Boot ROM file. |
| Enter the protocol parameter setting menu | |

| | |
|---|---|
| Configure the switch to upload the Boot ROM file through TFTP | |
| Update the Boot ROM file on the switch | Required<br>Update the Boot ROM file on the switch. |
| Restart the switch to make the updated Boot ROM file effective | Required<br>Restart the switch to make the updated Boot ROM file effective. |

1. Set up the configuration environment

Connect an Ethernet port (GigabitEthernet 1/0/25, for example) of the switch to the server (whose IP address is available) that provides the file (usually the **.bin** file) to be downloaded, and connect the console port of the switch to a PC, as shown in Figure 13 .

Figure 13 Load software using TFTP/FTP through Ethernet port




CAUTION:

- The PC and the TFTP/FTP server can be the same device.
- Each S5800-32F series switch provides a management Ethernet port, which can operate regardless of the working status of the switching chip. To upgrade the Boot ROM program or load application files when the switching chip fails to operate normally, you are recommended to use the management Ethernet port.
- The TFTP/FTP server program is not provided with the S5800 series. Make sure that it is available by yourself.

2. Run the TFTP Server program on the sever

Run TFTP Server on the server connected with the switch's Ethernet port, and specify the path of the application file to be downloaded.

3. Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu. Then enter the protocol parameter setting menu.

If you want to load the Boot ROM file, enter **6** in the Boot ROM menu after the system displays "Enter your choice(0-9):" to enter the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

Enter your choice(0-3):
```

4. Enter the protocol parameter setting menu

Enter **1** to update the complete Boot ROM file, and then enter the protocol parameter setting menu.

```
Bootrom update menu:
```

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu

Enter your choice(0-3):
```

5. Configure the switch to upload the Boot ROM file through TFTP

Enter **1** to update the Boot ROM file using TFTP, and then set the TFTP parameters.

```
Load File Name     :update.bin
Server IP Address  :10.10.10.2
Local IP Address   :10.10.10.3
Gateway IP Address :
```

The parameters are described in Table 17 .

Table 17 Description of the TFTP parameters

| Item | Description |
|---|---|
| Load File Name : | Name of the file to be downloaded (for example, update.bin) |
| Server IP Address : | IP address of server (for example, 10.10.10.2) |
| Local IP Address : | IP address of the switch (for example, 10.10.10.3) |
| Gateway IP Address : | IP address of the gateway (suppose it is not specified) |

NOTE:

- Enter the file name and IP addresses based on the actual condition.
- If the switch and the server are on the same network segment, you can specify any unused IP address of the network for the switch without specifying the gateway's IP address; if they are not on the same segment, you need to specify the gateway's IP address so that the switch can communicate with the server.

6. Update the Boot ROM file on the switch

Enter the corresponding parameters based on the actual condition. The system displays the following information:

```
Loading..........................................................................
..........................................................................
.............................Done!
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y**. Then the system displays the following information after the update is complete:

```
Updating Basic BootRom..........Done!
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y**. Then the system displays the following information after the update is complete:

```
Updating extended BootRom.........Done!
```

7. Restart the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

```
Press enter key when ready
```

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
Enter your choice(0-3):
```

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

### Loading an application file

To load an application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):3
```

You can enter **1** to load the application file.

The procedure of loading an application file is similar to that of upgrading the Boot ROM program. The difference lies in that the system displays the prompt of loading the application file rather than upgrading the Boot ROM program.

After loading the application file, the switch displays that you should configure the application attribute, that is, **main**, **backup**, or **none**. Type a specific attribute to complete loading the application file.

```
Writing flash.....................................................................
.............Done!
Please input the file attribute (Main/Backup/None) M
Done!
```

NOTE:

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

# Loading Software Using FTP Through Ethernet Port

### Introduction to FTP

The switch can serve as either an FTP server or an FTP client by using its Ethernet port to download the system application and configuration files. The switch serves as an FTP client in the following examples.

### Upgrading the Boot ROM program

NOTE:

When upgrading the Boot ROM program, the switch can serve only as an FTP client.

Complete the following tasks to upgrading the Boot ROM program using FTP through an Ethernet port (For details about the HyperTerminal, refer to Setting Terminal Parameters:

| Task | Remarks |
|---|---|
| Set up the configuration environment | Required<br>Connect the switch to the TFTP server through an Ethernet port, and to a PC through the console port. The PC and the TFTP server can be the same device. |
| Run the FTP Server program on the server | Required |
| Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu, and then enter the protocol parameter setting menu. | Required<br>Log in to the switch through the HyperTerminal and configure the protocol for uploading the Boot ROM file. |
| Enter the protocol parameter setting menu | |
| Configure the switch to load the Boot ROM file through FTP | |
| Update the Boot ROM file on the switch | Required<br>Update the Boot ROM file on the switch. |
| Restart the switch to make the updated Boot ROM file effective | Required<br>Restart the switch to make the updated Boot ROM file effective. |

1. Set up the configuration environment

Connect an Ethernet port (GigabitEthernet 1/0/25, for example) of the switch to the server (whose IP address is available) that provides the file (usually the **.bin** file) to be downloaded, and connect the console port of the switch to a PC, as shown in Figure 13 .

2. Run the FTP Server program on the server

Run FTP Server on the server connected with the switch's Ethernet port, configure the FTP username and password, and specify the path of the application file to be downloaded.

3. Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu, and then enter the protocol parameter setting menu.

If you want to load the Boot ROM file, enter **6** in the Boot ROM menu after the system displays "Enter your choice(0-9):" to enter the Boot ROM update menu.

```
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
Enter your choice(0-3):
```

4. Enter the protocol parameter setting menu

Enter **1** to update the complete Boot ROM file.

```
Bootrom update menu:

1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
```

```
Enter your choice(0-3):
```

5. Configure the switch to load the Boot ROM file through FTP

In the protocol parameter setting menu, enter **2** to update the Boot ROM file using FTP, and then set the FTP parameters.

```
Load File Name      :update.bin
Server IP Address   :10.10.10.2
Local IP Address    :10.10.10.3
Gateway IP Address :0.0.0.0
FTP User Name       :5800
FTP User Password   :123
```

The parameters are described in Table 18.

Table 18 Description of the FTP parameters

| Item | Description |
|---|---|
| Load File Name : | Name of the file to be downloaded |
| Server IP Address : | IP address of the PC |
| Local IP Address : | IP address of the switch |
| Gateway IP Address : | IP address of the gateway |
| FTP User Name | Username for logging in to the FTP server, which should be consistent with that configured on the FTP server. |
| FTP User Password | Password for logging in to the FTP server, which should be consistent with that configured on the FTP server. |

NOTE:

- Enter the file name and IP addresses based on the actual condition.
- If the switch and the server are on the same network segment, you can specify any unused IP address of the network for the switch without specifying the gateway's IP address; if they are not on the same segment, you need to specify the gateway's IP address so that the switch can communicate with the server.

6. Update the Boot ROM file on the switch

Enter the corresponding parameters based on the actual condition. The system displays the following information:

```
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y**. The system displays the following information after the update is complete:

```
Updating Basic BootRom..........Done!
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y** and then the system displays the following information after the update is complete:

```
Updating extended BootRom.........Done!
```

7. Restart the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

```
Press enter key when ready
1. Update full BootRom
```

```
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
Enter your choice(0-3):
```

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

### Loading an application file

To load an application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):3
```

You can enter **2** to load the application file.

The procedure of loading an application file is similar to that of upgrading the Boot ROM program. The difference lies in that the system displays the prompt of loading the application file rather than upgrading the Boot ROM program.

After loading the application file, the switch displays that you should configure the application attribute, that is, **main**, **backup**, or **none**. Type a specific attribute to complete loading the application file.

```
Writing flash...............................................................
..............Done!
Please input the file attribute (Main/Backup/None) M
Done!
```

NOTE:

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

# Loading Software Through CLI

By connecting a terminal to the switch, you can upgrade the Boot ROM program and load application files of the switch remotely through CLI.

## Loading Software through USB Interface

Each S5800 series switch provides a USB interface on its front panel. You can download the Boot ROM and application files to a removable storage device (such as a USB flash disk), and load the file through the USB interface.

Suppose the Boot ROM and application files are stored in the file named **update.bin**, follow these steps to load the files from the USB flash disk.

Step1 Plug the USB flash disk containing the **update.bin** file in the USB interface of the switch.

Step2 Copy the **update.bin** file to the flash memory of the switch.

```
<H3C> cd flash:
```

```
<H3C> copy usba:/upadate.bin update.bin
```

Step3 Remove the USB flash disk, and then load the Boot ROM file.

```
<H3C> bootrom update file update.bin slot 1
  This command will update bootrom file on the specified board(s), Continue? [Y/
N]:y
  Now updating bootrom, please wait...
```

Step4 Load the application file, and specify the file as the main program file.

```
<H3C> boot-loader file update.bin slot 1 main
  This command will set the boot file of the specified board. Continue? [Y/N]:y
  The specified file will be used as the main boot file at the next reboot on slot 1!
<H3C> display boot-loader
Slot 1
The current boot app is:  flash:/update.bin
The main boot app is:     flash:/update.bin
The backup boot app is:   flash:/update.bin
<H3C> reboot
```

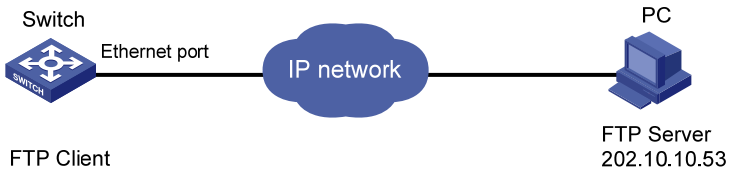
NOTE:

- After loading the application file, use the **reboot** command to restart the switch to make the update take effect (make sure you have saved other configurations before restart).
- If the flash memory does not have enough space, you can load the Boot ROM file first, and then delete certain application files from the flash memory (you are recommended to delete the unused host program files); then, load the application file to the switch through FTP for update.
- Avoid any power failure during the loading process.

# Loading Software Using FTP

As shown in Figure 14 , run FTP Server on the local host, configure username **admin** and the password, and specify the path of the file to be downloaded (suppose the IP address of the FTP server is 202.10.10.53). Then, telnet to the switch and send the host program file to the switch using FTP.

Figure 14 Load software through FTP




Suppose the Boot ROM and application files are stored in the file named **update.bin**, follow these steps after you telnet to the switch.

Step1 Download the file to the switch using FTP.

```
<H3C> ftp 202.10.10.53
Trying ...
Press CTRL+K to abort
```

```
Connected.
220 WFTPD 2.0 service (by Texas Imperial Software) ready for new user
User(none):admin
331 Give me your password, please
Password:
230 Logged in successfully
[ftp] get update.bin update.bin
[ftp] bye
```

Step2 Upgrade the Boot ROM program.

```
<H3C> bootrom update file update.bin slot 1
  This command will update bootrom file on the specified board(s), Continue? [Y/
N]:y
  Now updating bootrom, please wait...
```

Step3 Load the application file, and specify the file as the main program file.

```
<H3C> boot-loader file update.bin slot 1 main
  This command will set the boot file of the specified board. Continue? [Y/N]:y
  The specified file will be used as the main boot file at the next reboot on slot 1!
<H3C> display boot-loader
Slot 1
The current boot app is:  flash:/update.bin
The main boot app is:     flash:/update.bin
The backup boot app is:   flash:/update.bin
<H3C> reboot
```

NOTE:

- After loading the application file, use the **reboot** command to restart the switch to make the update take effect (make sure you have saved other configurations before restart).
- If the flash memory does not have enough space, you can load the Boot ROM file first, and then delete certain application files from the flash memory (you are recommended to delete the unused host program files); then, load the application file to the switch through FTP for update.
- Avoid any power failure during the loading process.

# Loading Software Using TFTP

Loading a file through TFTP is similar to loading a file through FTP. The switch can serve only as a TFTP client that downloads the file from the TFTP server to its flash memory. The procedure after download is the same as loading the file remotely through FTP.