Basic Network (Wired Products)

FAQ

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. V1.0.3

Forward

This document provides solutions and operation instructions for common device faults, parameter setting questions, and misunderstandings encountered in the actual use.

The description provided in this document is based on the actual device and should be analyzed accordingly. It is not the only solution available. If you have any questions or require further assistance, please contact the relevant technical support personnel.

Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
TIPS	Provides methods to help you solve a problem or save time.
NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.3	Update problems and solutions on switches.	2024.07
V1.0.2	Update problems and solutions on AP and AC.	2024.04
V1.0.1	• Update problems and solutions on the switch parameters. • Update problems and solutions on the switch configuration. • Update problems and solutions on the switch configuration. • Update problems and solutions on the optical module and fiber optical transceiver. • Add problems and solutions on 4G/5G routers.	2022.10
V1.0.0	First release.	2021.01

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Table of Contents

1 Problems on Switch Parameters

1.1 Why virtual ports on managed switches, except the management VLAN, are unable to access the webpage?

VLAN 1 is the management VLAN. Virtual ports other than the management VLAN cannot access the webpage. To enable the access, the management VLAN function must be disabled either through the web interface or via the command line.

1.2 Does DH-S4200 series switches support layer-3 forwarding?

This series of switches does not support Layer 3 forwarding. It can be used as a Layer 2 LAN core.

1.3 What are the types of devices supported by ePoE series switches?

ePoE ports only support the connection of ePoE terminals. Connecting non-ePoE terminals will result in abnormal communication. We recommend connecting the ePoE series switches to PoE ports.

1.4 How to identify whether the 10 Gigabit optical port of the switch is downward compatible with the Gigabit optical port?

Check the switch panel. If the port rate is shown as **1/10 G**, the 10 G optical port can be compatible with the Gigabit optical port.

1.5 How to identify whether the switch supports Gigabit optical ports from its model?

If the switch model contains **GF**, it supports Gigabit optical ports. Example: DH-IS1100-8ET2GF-DC.

1.6 What is the default state of the long-distance DIP switch on PoE 2.0 unmanaged switches?

The DIP switch on the Switch is off by default. We don't recommend turning it on when there is no need for long-distance transmission over 100 meters.

1.7 What do the colors of the ports on PoE switches signify?

- Orange: Hi-PoE port, supporting a maximum output of 60 W.

- Red: Red PoE port, supporting a maximum output of 90 W.

1.8 Can speed negotiation succeed between auto-negotiation mode and forced mode on a switch's optical?

For optical ports to negotiate successfully, the negotiation modes on both sides must be consistent. For example, forced mode corresponds to forced mode; auto-negotiation mode corresponds to auto-negotiation mode.

1.9 What are the functions of the Mode button on the switches?

It supports switching between three modes.

- View link transmission status.
- View PoE-powered ports (this mode allows checking which ports are PoE-enabled through the indicator lights).
- View stack (stack virtualization) links (this mode allows checking the switch stacking model through the indicator lights).

1.10 What are the common baud rate for switches?

38400, 9600, 115200.

1.11 What are the recommended devices for 100Mbps and 1Gbps uplink access switches?

For 100Mbps uplink access switches, we recommend connecting devices with fewer than 5 ports. For 1Gbps uplink access switches, it shall be based on the number of ports on the Switch, for example, 24-port Ethernet switch can connect up to 24 devices.

1.12 What are the maximum power consumption of cameras supported by PoE extenders?

If the total power supply capacity of the two output ports of the PoE extender is rated not to exceed 30 W, for example, when the PoE extender is connected to the Hi-PoE port (60 W) of the Switch, the output will not exceed 30 W. Therefore, the maximum power consumption of the camera that can be connected is 30 W.

1.13 What are the precautions about the long-distance function of PoE unmanaged switches?

In the long-distance power supply mode, the transmission rate drops to 10 Mbps. The actual transmission distance is strongly related to the PoE power supply power and the cable quality. The advertised distance is only the laboratory distance.

1.14 How to identify whether the switch supports PoE-related functions?

Check the model number. Models with suffixes -APWR/-DPWR/-number support the PoE functions.

2 Problems on Switch Configuration

2.1 Can multiple switches be daisy-chained and connected to the core switch via a single Gigabit fiber?

This networking approach is not recommended due to the following risks:

- All traffic from the connected switches will eventually be forwarded through the single uplink of the last switch, potentially causing a bandwidth bottleneck.
- A failure of any switch in the middle of this linear network will cause the entire link to fail.

2.2 What are the possible causes for ERPS configuration failure in forming a ring on managed switches

1. Verify the configurations of VLAN, MEP, and ERPS.
2. The Spanning Tree function must be disabled.
3. Ensure all devices have the same software version.
4. Flow control on ERPS-related ports must be disabled.
5. Do not configure IP addresses on the management VLAN.
6. The VLAN associated with ERPS ports must be added to the private VLAN.

2.3 What are the routing configuration format for managed switches?

Network address, subnet mask, and destination address must be configured.

For example, 192.168.1.110 (network address), 255.255.255.0 (subnet mask), and 192.168.1.254 (destination address).

2.4 What are the solution when the switch's optical port cannot be linked up?

1. Check if the optical port and the optical module's speed are compatible.
2. Verify if the optical modules at both ends are paired correctly.
3. Ensure the fiber optic cable matches the optical module.
   a. A single-mode optical module requires a single-mode fiber.
   b. A multi-mode optical module requires a multi-mode fiber.
4. Test the fiber optic link with a short fiber.
5. If the ceramic core of the module, tail fiber, or optical module is too dirty or faulty, perform a loopback test or replace it for testing.

2.5 How does the BPDU packet handling mechanism work when STP is globally enabled or disabled on managed switches?

- When STP is globally disabled, the device treats BPDU packets as normal Layer 2 packets and floods them within the VLAN.
- When STP is globally enabled but disabled on a specific interface, the interface will discard received BPDU packets.

2.6 What are the common usernames and passwords for webpage-enabled switches?

Username: admin and Password: admin123.

Username: admin and Password: admin.

2.7 How to modify the default MAC address on a managed switch?

Run the following command:

SWITCH# configure terminal /* Set the mac address */

SWITCH(config)# set ethaddr xx:xx:xx:xx:xx:xx /* Save */

SWITCH(config)# save

2.8 What are the precautions about connecting a switch to a cloud storage device?

When connecting a switch to a cloud storage device, ensure that the server bond mode matches the switch aggregation group mode.

2.9 Why does the RSTP status keep switching after configuring RSTP on a managed switch?

Log in to the root bridge configuration to set the maximum-hop as 40.

2.10 Which port on the switch should I use to connect via a serial cable for configuration?

To configure the switch via a serial cable, connect the Console or CLI ports on the switch panel.

2.11 How to confirm slot and port information on a modular switch?

The slot where the card is inserted can be viewed through entering the display device command. The physical ports can be checked using the display interface brief command. For example, gigabit Ethernet 3/0/1 indicates the first port on the third card.

2.12 Why can't terminal cameras or servers that are directly connected to the switch access the network when STP is enabled?

Some terminal devices may send STP protocol packets to the switch port, causing the STP topology to oscillate and the directly connected port to enter the DISCARDING state. This is not a switch issue and can be resolved by configuring the port as an edge port on the switch.

2.13 Why are ports on Switch A blocked by STP when connected to a third-party device's normal port and MGT port?

By default, the MGT port is used for out-of-band management and is usually configured for Layer 3 interconnection. However, some devices may configure it as a Layer 2 interface, which can cause the switch port to be blocked by STP.

2.14 Why does Telnet login show no permission?

When configuring user permissions, you need to specify the level and the permission level. Only specifying the permission level without the level will not cause an error, but it will prevent Telnet login.

3 Problems on Optical Module and Fiber Transceiver

3.1 How to select the appropriate optical transceivers and optical modules?

When selecting optical transceivers and optical modules, pay attention to the following points:

- The optical wavelengths at both ends must match for transmission and reception. For example, if one end is transmitting at 1310nm, the other end must receive at 1310 nm.
- The data rates of both devices must be consistent, either both being Gigabit or both being Fast Ethernet (100 Mbps).
- Both the fiber and the optical module should be either single-mode or multi-mode.
- Ensure the working distance does not exceed the recommended range for the equipment.

3.2 Why is the network inaccessible after interconnecting two switches with optical modules?

When using optical modules, ensure that one end is set to transmit and the other to receive. For example, a GSFP-1310T-20-SMF module must be paired with a GSFP-1310R-20-SMF module; they cannot be used alone.

3.3 Why can't a fiber transceiver transmit data when both ends are set to transmit?

Transmit-only ends cannot function alone; they must be paired with receive ends. For example, DH-IOTE-1ET1FC-20T must be used with DH-IOTE-1ET1FC-20R.

3.4 Can a Gigabit optical module be inserted into a 10-Gigabit optical port?

Check the switch panel to confirm if the 10-Gigabit optical port supports Gigabit modules. For example, a port labeled "1/10G" can accommodate a Gigabit module.

3.5 Why is the optical port on the switch not working and the indicator light not on?

The optical module model, single-mode/multi-mode specifications may not match the fiber or the counterpart module. Problems like excessive optical attenuation (which can be measured with an optical power meter) may occur due to flange, fiber transceiver, or fiber material problems.

3.6 Why can't optical ports negotiate when different models of fiber transceivers are connected?

Fiber transceivers must be selected and used according to their compatibility. If the transceivers or optical modules are not compatible, they may fail to negotiate.

4 Problems on Concept Confusion

4.1 What is the difference between a wireless bridge and a switch?

The basic functions of a LAN switch are similar to those of a wireless bridge, including frame forwarding, filtering, and spanning tree algorithm. However, there are several differences:

- Operation Mode: Switches allow multiple port-to-port channels to operate simultaneously. A switch not only functions as a wireless bridge but also as a collection of multiple wireless bridges. Wireless bridges typically have two ports, whereas switches have high-density ports.
- Segmentation Capability: Switches can support multiple ports, dividing the network into more physical segments, thus providing higher overall bandwidth. Wireless bridges, supporting only two ports, have limited segmentation capability.
- Transmission Rate: Switches generally have a faster data transmission rate compared to wireless bridges.
- Frame Forwarding Method: Wireless bridges use a per-frame forwarding method, where each data frame is received and forwarded to the target network without processing. Switches, equipped with a forwarding table (also known as a MAC address table), forward data frames only to the target port based on the destination MAC address, improving forwarding efficiency.

4.2 What is PoE power management strategy?

The PoE dynamic power management strategy emphasizes real-time detection of the power consumption of PD (Powered Device) devices connected to the ports while the switch is operating normally. It prioritizes powering up PD devices with high priority and without over-power consumption, while powering down PD devices that are over-powered, short-circuited, over-current, or have poor contact.

4.3 What is the difference between Hi-PoE and regular PoE ports?

Hi-PoE ports, marked in orange, support up to 60 W in output, while regular PoE ports can provide a maximum of 30 W in output.

4.4 What is ePoE and how to enable the ePoE functions?

ePoE refers to extended-distance power supply functionality. Managed switches (e.g., DH-S1500C-16ET2GF-APWR) can enable ePoE through the device's web interface, while unmanaged switches (e.g., DH-S1500C-4ET2ET-DPWR) can enable ePoE via a DIP switch. For specific operations, refer to the accompanying user manual.

4.5 Why do identical port MAC addresses appear in the network?

Port MAC = System MAC + Port Number (in hexadecimal). This situation may occur if devices in the network are from the same batch and have similar system MAC addresses.

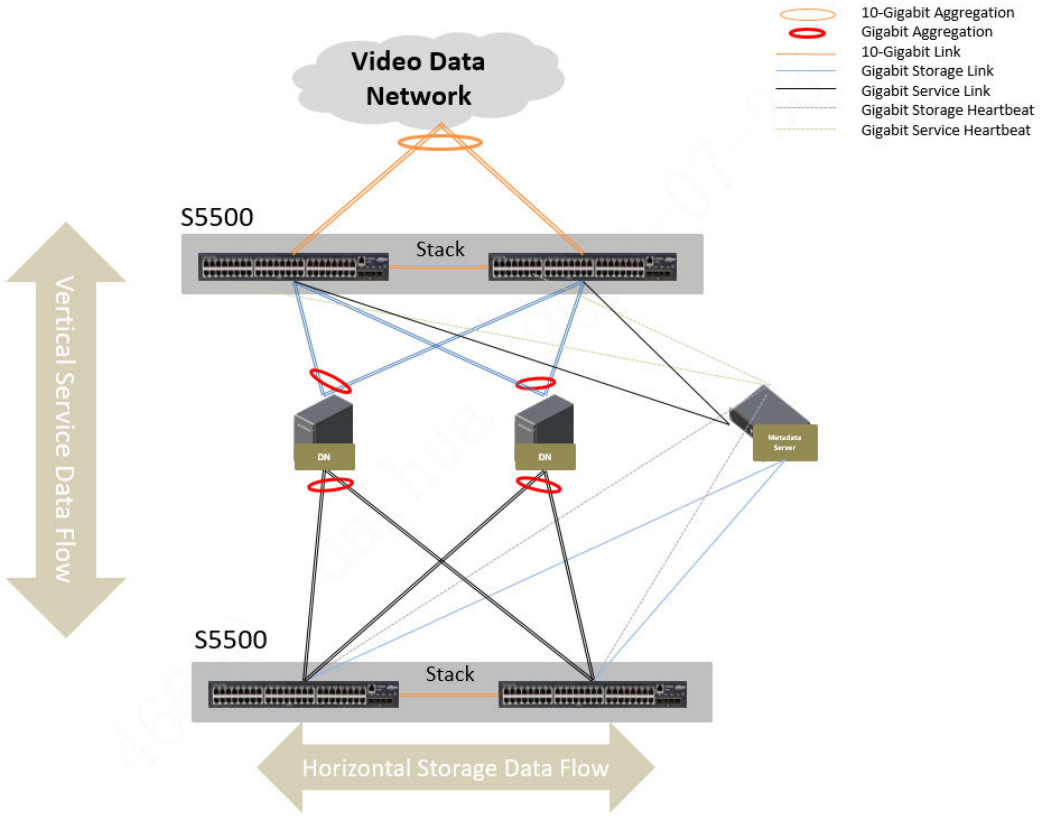
4.6 Why can't a device with the IP address 192.168.1.251 connect to the gateway with the IP address 192.168.1.1 and the subnet mask 255.255.255.128?

The subnet mask determines the range of a network segment. A subnet mask of 255.255.255.128 indicates that the usable IPs in the 192.168.1.0 segment are 192.168.1.1 to 192.168.1.127. Since 192.168.1.251 is outside this range, it cannot connect to the gateway.

4.7 Why are multiple transmission lines and cross-connections of redundant lines used extensively in network design, especially after virtualization of some devices?

Stability and reliability are the primary goals in network architecture planning. When designing interconnection lines, you need to consider not only the bandwidth capacity of the lines but also the ability to maintain temporary normal operation through backup (redundant) lines in case of single-point failures. In virtualized environments, cross-connecting different devices' uplinks and downlinks doubles the number of downstream lines, devices, and uplinks, providing multiple backup routes for traffic flow, thereby significantly enhancing reliability.

Figure 4-1 Multi-line transmission network diagram



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