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Configuring cloud connections

About cloud connections

A cloud connection is a management tunnel established between a local device and the H3C cloud server. It enables you to manage the local device from the cloud server without accessing the network where the device resides.

Multiple subconnections

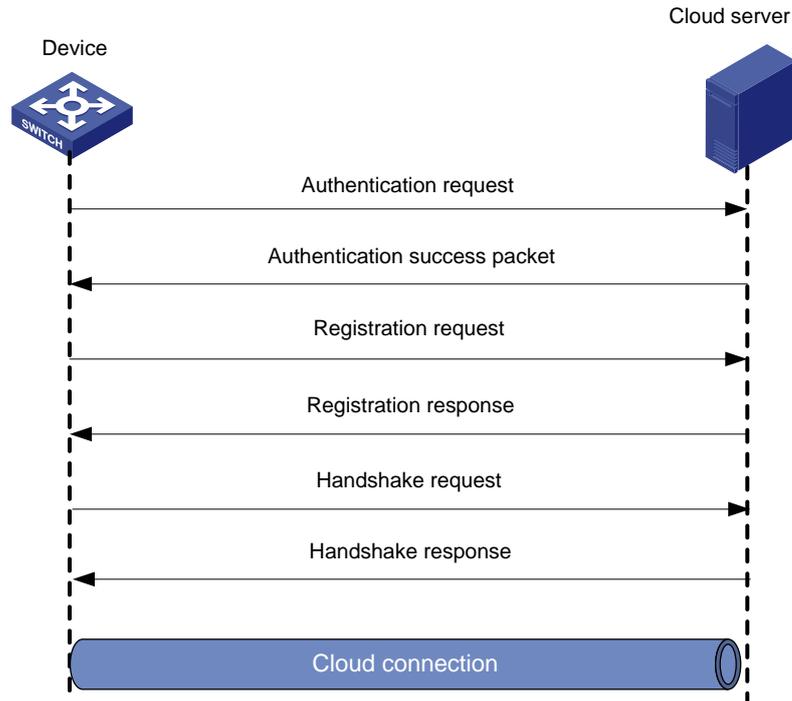
After a local device establishes a connection with the cloud server, service modules on the local device can establish multiple subconnections with the microservices on the cloud server. These subconnections are independent from each other and provide separate communication channels for different services. This mechanism avoids interference among different services.

Cloud connection establishment

The cloud connection is established as follows:

1. The device sends an authentication request to the cloud server.
2. The cloud server sends an authentication success packet to the device.
The device passes the authentication only if the serial number of the device has been added to the cloud server. If the authentication fails, the cloud server sends an authentication failure packet to the device.
3. The device sends a registration request to the cloud server.
4. The cloud server sends a registration response to the device.
The registration response contains the uniform resource locator (URL) used to establish a cloud connection.
5. The device uses the URL to send a handshake request (changing the protocol from HTTP to WebSocket) to the cloud server.
6. The cloud server sends a handshake response to the device to finish establishing the cloud connection.
7. The device sends a subconnection URL request to the cloud server.
8. The cloud server sends a response that contains the microservice list and all subconnection URLs to the device.
9. The service module registers on the cloud connection management module.
10. The cloud connection management module sends the corresponding URLs to the service module.
11. The service module establishes subconnections with the cloud server.

Figure 1 Establishing a cloud connection



Configuring a cloud connection

About configuring a cloud connection

For a device to establish a cloud connection to the cloud server, perform either of the following tasks:

- Specify the domain name of the cloud server on the device through CLI.
- Configure VLAN interface 1 of the device as a DHCP client and the cloud server as the DHCP server. The device obtains the IP address of the DHCP server and parses the option 253 field in the DHCP packets to obtain the domain name of the cloud server.

After establishing the cloud connection, the local device sends keepalive packets to the cloud server periodically. If the device does not receive a response from the cloud server within three keepalive intervals, the device sends a registration request to re-establish the cloud connection.

Restrictions and guidelines

The domain name obtained through DHCP has a higher priority than the domain name configured manually.

If a device obtains the domain name of the cloud server through DHCP after establishing a cloud connection to the cloud server with the manually configured domain name, the device performs the following tasks:

- If the automatically obtained and manually configured domain names are identical, the device retains the cloud connection.
- If the automatically obtained and manually configured domain names are different, the device tears down the cloud connection and then establishes a cloud connection to the cloud server with the automatically obtained domain name.

Prerequisites

Add the serial number of the device to be managed to the cloud server.

Configure DNS to ensure that the domain name of the cloud server can be translated into an IP

address.

To obtain the domain name of the cloud server automatically, first configure the option 253 field as the domain name of the cloud server.

Procedure

1. Enter system view.

```
system-view
```

2. Configure the domain name of the cloud server.

```
cloud-management server domain domain-name
```

The default settings are as follows:

- o The domain name of the cloud server is not configured for the S5560S-EI switch series.
- o For other switch series:
 - The domain name of the cloud server is not configured for a switch that starts up with the initial configuration.
 - The domain name of the cloud server is **oasis.h3c.com** for a switch that starts up with the factory defaults.

For more information about the initial configuration and factory defaults, see configuration file management in *Fundamentals Configuration Guide*.

3. (Optional) Set the keepalive interval.

```
cloud-management keepalive interval
```

By default, the keepalive interval is 180 seconds.

Display and maintenance commands for cloud connections

Execute **display** commands in any view and **reset** commands in user view.

Task	Command
Display cloud connection state information.	<code>display cloud-management state</code>
Re-establish the cloud connection to the cloud server.	<code>reset cloud-management tunnel</code>

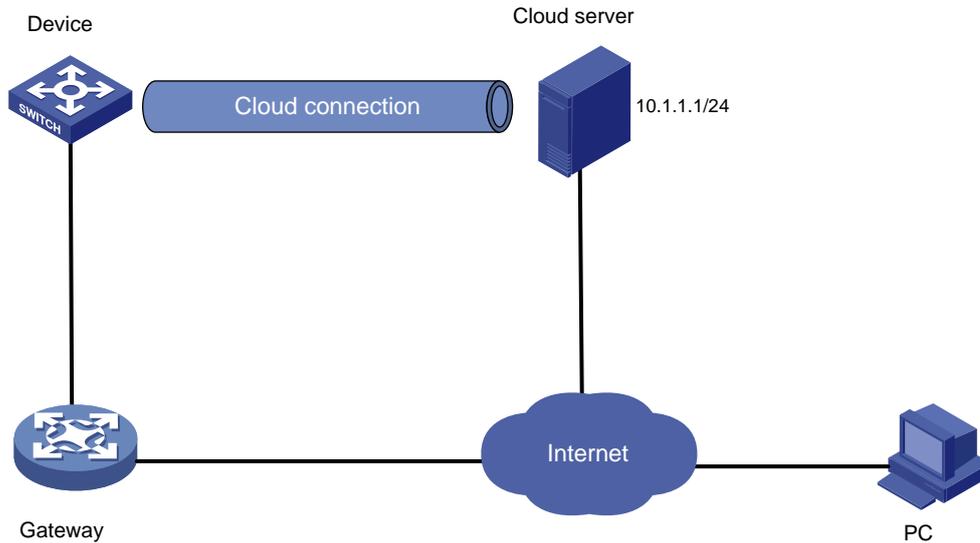
Cloud connection configuration examples

Example: Configuring a cloud connection

Network configuration

As shown in [Figure 2](#), configure the device to establish a cloud connection with the cloud server.

Figure 2 Network diagram



Procedure

1. Configure IP addresses for interfaces, and configure a routing protocol to ensure that the devices can reach each other. (Details not shown.)
2. Log in to the cloud server to add the serial number of the device to the server. (Details not shown.)

The IP address of the cloud server is 10.1.1.1/24 and the domain name is **cloud.com**.

3. Configure the domain name of the cloud server as **cloud.com**.

```
<Device> system-view
[Device] cloud-management server domain cloud.com
# Map IP address 10.1.1.1 to host name cloud.com.
[Device] ip host cloud.com 10.1.1.1
```

Verifying the configuration

Verify that the device and the cloud server have established a cloud connection.

```
[Device] display cloud-management state
Cloud connection state   : Established
Device state             : Request_success
Cloud server address     : 10.1.1.1
Cloud server domain name : cloud.com
Cloud server port        : 443
Connected at             : Wed Jan 27 14:18:40 2016
Duration                  : 00d 00h 02m 01s
```