

# H3C S6850 & S9850 & S9820-64H

## Control Plane-Based QoS Policy

### Configuration Examples

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# Introduction

This chapter provides examples for configuring control plane-based QoS policies.

## Prerequisites

The configuration examples in this document were created and verified in a lab environment, and all the devices were started with the factory default configuration. When you are working on a live network, make sure you understand the potential impact of every command on your network.

This document assumes that you have basic knowledge of QoS policies.

## Example: Rate limiting ICMP packets

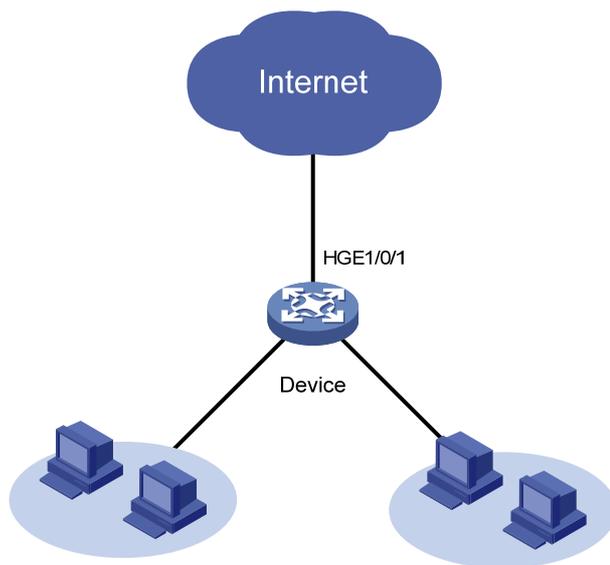
### Network configuration

As shown in [Figure 1](#), the device receives a large number of ICMP packets from the Internet. As a result, CPU usage is high, and device performance degrades.

Configure a control plane-based QoS policy to meet the following requirements:

- Rate limit ICMP packets sent to the control plane to 320 pps.
- Drop excess ICMP packets.

**Figure 1 Network diagram**



### Analysis

To meet the network requirements, you must perform the following tasks:

- Use the `if-match` command to classify ICMP packets into a class.
- Use the `car` command to configure the rate limit value for ICMP packets and drop excess packets.

# Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
S6850 switch series S9850 switch series	Release 6555P01
S9820-64H switch	Release 6555P01

## Restrictions and guidelines

When you configure a control plane-based QoS policy to rate limit ICMP packets, follow these restrictions and guidelines:

- By default, the predefined QoS policy is applied to the control plane. The predefined QoS policy identifies packet types by system index and uses a default rate limit value for each packet type. To display the predefined QoS policy, use the `display qos policy control-plane pre-defined` command.
- You can use the `if-match control-plane protocol` or `if-match control-plane protocol-group` command to classify protocol packets.
- You can only configure the `car` command or a combination of the `car` and `accounting packet` commands in the behavior associated with the class. Only the CIR value in pps in the `car` command takes effect.

## Procedures

# Create a class named **ICMP**, and use the ICMP protocol as the match criterion.

```
<Device> system-view
[Device] traffic classifier ICMP
[Device-classifier-ICMP] if-match control-plane protocol icmp
[Device-classifier-ICMP] quit
```

# Create a behavior named **ICMP**, and configure a CAR action for ICMP packets.

```
[Device] traffic behavior ICMP
[Device-behavior-ICMP] car cir pps 320
[Device-behavior-ICMP] quit
```

# Create a QoS policy named **ICMP**, and associate the class **ICMP** with the behavior **ICMP** in the QoS policy.

```
[Device] qos policy ICMP
[Device-qospolicy-ICMP] classifier ICMP behavior ICMP
[Device-qospolicy-ICMP] quit
```

# Apply the QoS policy **ICMP** to the inbound direction of the control plane.

```
[Device] control-plane slot 1
[Device-cp-slot1] qos apply policy ICMP inbound
[Device-cp-slot1] quit
```

# Verify the configuration

# Verify that the QoS policy is correctly applied to the control plane.

```
[Device] display qos policy control-plane slot 1
Control plane slot 1
  Direction: Inbound
  Policy: ICMP
  Classifier: ICMP
  Operator: AND
  Rule(s) :
    If-match control-plane protocol icmp
  Behavior: ICMP
  Committed Access Rate:
    CIR 320 (pps), CBS 20480 (Bytes), EBS 0 (Bytes)
  Green action : pass
  Yellow action : pass
  Red action   : discard
  Green packets : 0 (Packets)
  Red packets  : 0 (Packets)
```

## Configuration files

```
#
traffic classifier ICMP operator and
  if-match control-plane protocol icmp
#
traffic behavior ICMP
  car cir pps 320 cbs 20480 ebs 0 green pass red discard yellow pass
#
qos policy ICMP
  classifier ICMP behavior ICMP
#
control-plane slot 1
  qos apply policy ICMP inbound
```

## Related documentation

- *H3C S6850 & S9850 Switch Series ACL and QoS Configuration Guide-Release 655x*
- *H3C S6850 & S9850 Switch Series ACL and QoS Command Reference-Release 655x*
- *H3C S9820-64H Switch ACL and QoS Configuration Guide-Release 655x*
- *H3C S9820-64H Switch ACL and QoS Command Reference-Release 655x*