

# Output Queue Overflow on an Interface

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## Introduction

This document describes the output queue overflow on an interface.

## Before You Begin

### Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

### Prerequisites

There are no specific prerequisites for this document.

### Components Used

This document is not restricted to specific software and hardware versions.

## Output Queue Overflow

Each interface owns an output queue onto which the Routing Processor (RP) places outgoing packets to be sent on the interface. Sometimes the rate of outgoing packets placed on the output queue by the RP exceeds the rate at which the interface can send the packets.

Each output queue has a size that indicates the maximum number of packets that may be held on the queue. Once the output queue becomes full (the max number of packets is on queue), the RP drops additional outgoing packets. The output queue overflow scenario occurs most often when the RP tries to send many packets at once.

Example.

Assume a remote source–route bridging / Transmission Control Protocol (RSRB/TCP) local–ack configuration:

- The RP is responsible for flow control of the Logical Link Control, type 2 (LLC2) sessions.
- If the RP is local–acking 50 LLC2 sessions and the TCP pipe is suddenly closed, the RP sends disconnect requests (DISCs) for each LLC2 session.
- 50 DISCs are placed on the output queue of the output interface, but some may be dropped if the

output queue overflows.

The following **show interface** <interface-identifier> output shows the current output queue levels and the number of outgoing packets dropped:

```
dspu-7k#show interface channel 4/2

Channel4/2 is up, line protocol is up
  Hardware is cxBus IBM Channel
  MTU 4472 bytes, BW 98304 Kbit, DLY 100 usec, rely 255/255, load 1/255
  Encapsulation CHANNEL, loopback not set, keepalive not set
  Virtual interface
  Last input 1:09:19, output 1:10:29, output hang never
  Last clearing of "show interface" counters never
  Output queue 35/40, 67 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    7668 packets input, 252270 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    7661 packets output, 258070 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets, 0 restarts
    0 output buffer failures, 0 output buffers swapped out
```

The **show interface** <interface-identifier> output provides the following information:

- The **output queue x/y** counter shows the current number of packets on the output queue "x" and the current size of the output queue "y".
- The **drops** counter indicates the number of outgoing packets dropped.
- If the current number of packets on the output queue is consistently at or greater than 80 percent of the current size of the output queue, the size of the output queue may require tuning to accommodate the outgoing packet rate.
- Even if the current number of packets on the output queue never seems to approach the size of the output queue, bursts of packets may still overflow the queue.
- If the **drops** counter increments at a high rate, the size of the output queue may require tuning to accommodate the bursts.

**Note:** The size of the output queue may be tuned using the **hold-queue** interface configuration command, as shown in the example below.

```
interface channel 4/2
  hold-queue 125 output
```

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