

Understanding the DLSw+ Introduction of the UDP Unicast Feature

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Introduction

This document describes the introduction of the Data-link Switching Plus (DLSw+) User Data Protocol (UDP) Unicast feature in Cisco IOS® Software Release 11.2(6)F. Prior to this release, Data-link Switching (DLSw) used a TCP session to send explorer traffic. In Cisco IOS Software Release 11.2(6)F, this was changed to use UDP frames by default, and an option was added to manually configure the router to use TCP as before.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco IOS Software Release 11.2(6)F.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

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

DLSw+ and UDP

DLSw circuit establishment problems can occur when you upgrade from a Cisco IOS Software Releases earlier than 11.2(6)F. Peers connect, but circuits do not. If the peers are not configured, issue the **dlsw local-peer** command (required) and the **dlsw remote-peer** command (optional) to configure the peers. When DLSw+ was added to Release 11.2.(6)F, this caused explorer frames and unnumbered information frames to be sent via UDP rather than TCP.

The UDP Unicast feature eliminates the retransmission of explorer frames and unnumbered information frames that occur during congestion. In Cisco IOS Software Release 11.2.(6)F, DLSw UDP support was introduced; however, because DLSw now uses UDP, certain problems can occur in the explorer process. A TCP connection must exist before packets are sent via UDP in Release 11.2(6)F UDP Unicast. Because the TCP session is up and capabilities are exchanged, the peers have information that allows the reduction of the explorer frame load on the network.

In contrast, DLSw+ sends UDP/IP multicast and Unicast *before* the TCP connection exists. DLSw+ uses IP multicast service when address resolution packets (CANUREACH_EX, NETBIOS_NQ_ex, NETBIOS_ANQ, and DATAFRAME) are sent to multiple destinations. The response frames (ICANREACH_ex and NAME_RECOGNIZED_ex) are sent via UDP Unicast.

In most cases where circuit establishment problems occurred, the user had set up a firewall to allow DLSw TCP ports. DLSw+ uses UDP port 0 to send information. Firewalls identify this as an invalid port and drop the packets, which prevents a DLSw circuit from coming up. To prevent the firewall from dropping packets, add the **dlsw udp-disable** command to your configuration:

1. Issue the **dlsw udp-disable** command, to disable the UDP Unicast feature.
2. Issue the **no dlsw udp-disable** command, to return to the default UDP Unicast feature.

Command Mode Global Configuration Usage Guidelines

The **dlsw udp-disable** command first appeared in Cisco IOS Software Release 11.2 F. If the **dlsw udp-disable** command is configured, then a DLSw+ node does not send packets via UDP Unicast and it does not advertise UDP Unicast support in its capabilities exchange message.

Note: Refer to the Bridging and IBM Networking Overview section of the Cisco IOS Release 12.0 Bridging and IBM Networking Configuration Guide for more information about the UDP Unicast feature.

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