ce – Understanding Inbound and Outbound Dial Peers on Cisc

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Voice − Understanding Inbound and Outbound Dial Peers on Cisco IOS Platforms

Introduction

The primary purpose of this document is to explain the differences between inbound and outbound dial−peers and call legs. Also, it stresses the importance of *inbound* dial peer(s) matching when using non−default services, applications, and/or capabilities to setup and complete voice calls.

Before You Begin

Conventions

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

Prerequisites

This document assumes the reader is familiar with the content presented in Voice − Understanding Dial Peers and Call Legs on Cisco IOS Platforms.

Components Used

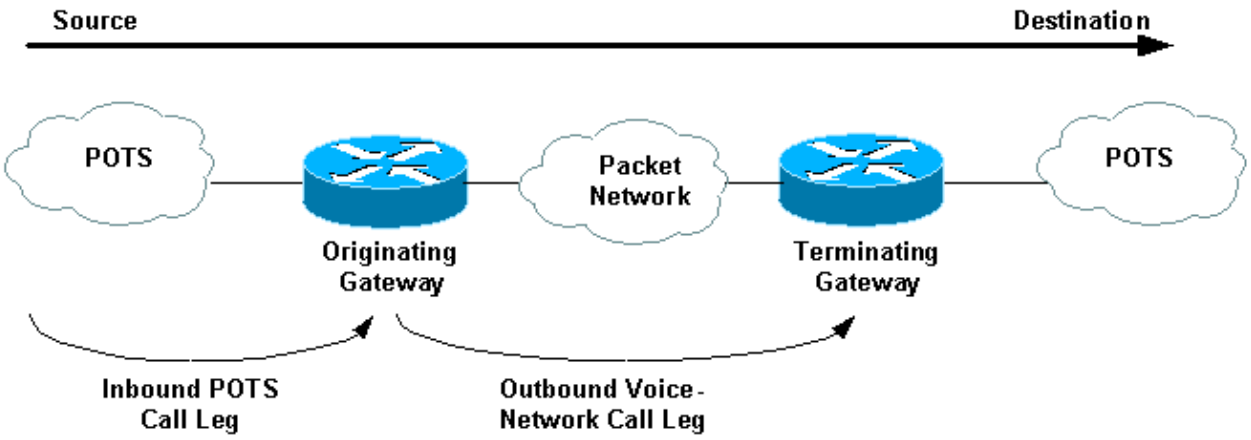
This document is not restricted to specific software and hardware versions.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Inbound and Outbound Dial Peers and Call Legs

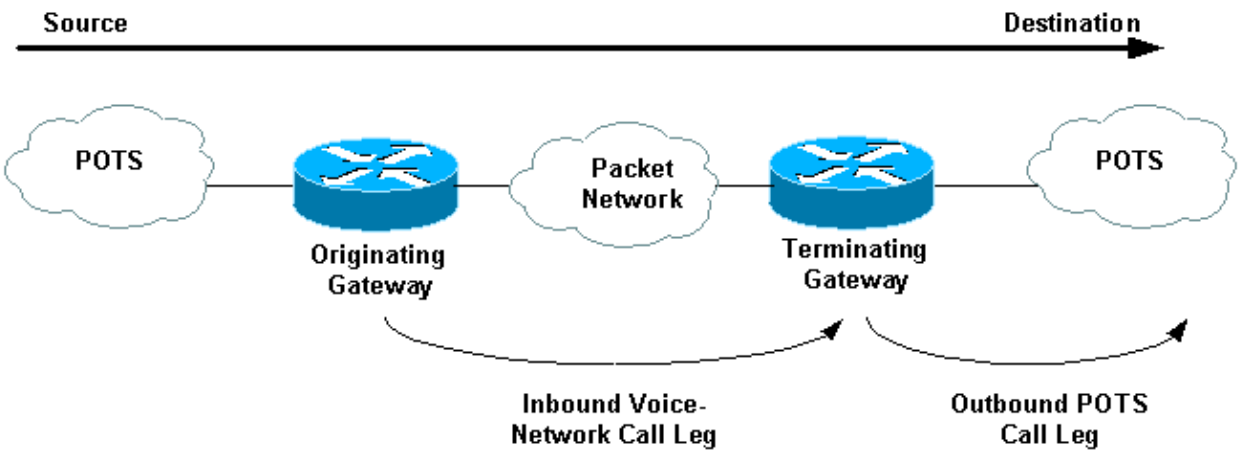
Dial peers are used for both *inbound* and *outbound* call legs. It is important to remember that these terms are defined from the perspective of the router/gateway. An *inbound* call leg originates when an incoming call comes into the router/gateway. An *outbound* call leg originates when a call is placed or bridged from the router/gateway.

Figure 1. Call Legs from the Perspective of the Originating Router/Gateway



For inbound calls from a plain old telephone service (POTS) interface that are destined for the packet network, the originating router/gateway matches an *inbound* POTS dial peer for the *inbound call leg* first. Next, it creates an outbound Voice−Network dial peer such as Voice over IP (VoIP) or Voice over Frame relay (VoFR) for the *outbound call leg*. Following this, the router/gateway bridges the two call legs.

Figure 2. Call Legs from the Perspective of the Terminating Router/Gateway



For inbound calls from a Voice Network interface that are destined for a POTS interface, the terminating router/gateway matches an *inbound* Voice Network dial peer for the *inbound* call leg. Next, an outbound POTS dial peer is created for the *outbound* call leg.

Importance of Inbound Dial Peers

A common misperception with voice dial peers is that they are only configured for *outbound* functionality. That is, to map a dial string to a remote network device (with the Cisco IOS commands **destination−pattern** and **session target**) or a POTS voice port (with the Cisco IOS commands **destination−pattern** and **port**). However, dial peers need to be configured for *inbound* functionality when dealing with scenarios where non−default services, applications, and/or capabilities are present.

On *inbound* POTS call legs received at the originating router/gateway some non−default services and applications of incoming calls include:

- Direct−inward−dial (DID). For more information on this subject, refer to: Voice − Understanding Direct−Inward−Dial (DID) on Cisco IOS Digital (T1/E1) Interfaces
- Tool Command Language (TCL) Based Applications: Interactive Voice Response (IVR), VoIP Session Initiation Protocol (SIP) transfer, On−Ramp Faxing (in the context of store and forward fax).

When using such services or applications, it is important to be certain that the correct *inbound* POTS dial peer configured with the appropriate service or application is matched. For more information refer to: Understanding How Inbound and Outbound Dial Peers are Matched on Cisco IOS Platforms

When non−default Voice Network capabilities and/or TCL applications are requested by the originating router/gateway, the terminating router/gateway must match those capabilities and/or applications configured with an *inbound* Voice Network dial peer. If the Cisco IOS® Software is unable to match a non−default configured *inbound* dial peer, then it uses an internally defined default dial peer to match the *inbound* voice calls to. The call setup may fail if the incoming call leg has non−default capabilities, services, and/or applications, and is matched to a default dial peer.

Default Voice−Network capabilities include:

- codec g729r8
- vad enable
- dtmf−relay disable
- fax−relay disable
- req−qos best−effort
- acc−qos best−effort
- session protocol cisco (for H.323).

Note: Default capabilities are not displayed on the router/gateway IOS configuration output. Use the command **show dial−peer voice *number*** to view the configured capabilities, services, and applications on POTS and Voice Network dial peers.

For more information and a practical example refer to the Case Study in the document: Understanding How Inbound and Outbound Dial Peers are Matched on Cisco IOS Platforms

Related Information

- **Voice − Understanding Dial Peers and Call Legs on Cisco IOS Platforms**
- **Voice − Understanding How Inbound and Outbound Dial Peers are Matched on Cisco IOS Platforms**
- **Voice − Understanding the Operational Status of Dial−Peers on Cisco IOS Platforms**
- **Voice − Understanding Direct−Inward−Dial (DID) on Cisco IOS Digital (T1/E1) Interfaces**
- **Configuring Dial Plans, Dial Peers, and Digit Manipulation**
- **Voice, Telephony and Messaging Technologies**
- **Voice, Telephony and Messaging Products**
- **Cisco Solutions Voice, Telephony and Messaging**
- **Field Notices**
- **Voice, Telephony and Messaging TAC eLearning Solutions**
- **Technical Support − Cisco Systems**