



NAT Optimized SIP Media Path with SDP

The NAT Optimized SIP Media Path with SDP feature allows the creation of a shorter path for Session Initiation Protocol (SIP) media channels by distributing endpoint IP addressing information with Session Description Protocol (SDP) of SIP messages. This feature allows endpoints to communicate directly by using standard routing and eliminates the need for them to traverse through upstream NAT routers.

The Message Digest 5 (MD5) algorithm is supported.

History for the NAT Optimized SIP Media Path with SDP Feature

Release	Modification
12.4(2)T	This feature was introduced.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Contents

- [Information About the NAT Optimized SIP Media Path with SDP Feature, page 2](#)
- [How to Configure NAT Optimized SIP Media Path with SDP, page 2](#)
- [Configuration Examples for NAT Optimized SIP Media Path with SDP, page 4](#)
- [Additional References, page 5](#)
- [Command Reference, page 6](#)



Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

© 2007 Cisco Systems, Inc. All rights reserved.

Information About the NAT Optimized SIP Media Path with SDP Feature

Before enabling the NAT Optimized SIP Media Path with SDP feature, be sure you understand the following concepts:

- [Restrictions for NAT Optimized SIP Media Path with SDP, page 2](#)
- [Benefits of NAT Optimized SIP Media Path with SDP, page 2](#)
- [NAT Optimized SIP Media Path with SDP Feature Design, page 2](#)

Restrictions for NAT Optimized SIP Media Path with SDP

SIP messages may or may not have SDP. This feature processes SIP messages with SDP only. If a call exchange with SDP is certain to occur, this feature should be used.

Use the “[NAT - Optimized SIP Media without SPD](#)” feature for SIP messages without SPD. This feature processes all packets sent through the NAT-enabled router but is more CPU intensive than processing SIP messages with SPD.

Benefits of NAT Optimized SIP Media Path with SDP

- The media path can be shortened, decreasing voice delay.
- More control of voice policy is possible because the media path is closer to the customer domain and not deep within the service provider cloud.

NAT Optimized SIP Media Path with SDP Feature Design

The NAT Optimized SIP Media Path with SDP feature provides the ability to optimize the media path taken by a SIP VoIP session when NAT is used. NAT forces the VoIP traffic to take at least one extra hop in the network, which usually results in several additional hops being added to the path between two IP hosts.

Cisco IOS NAT will add the relevant translation information per SIP session within the SIP protocol messages. The SIP Application Layer Gateway support within Cisco IOS NAT will extract this translation information from the SIP packets and create NAT table entries.

The “piggybacking” of NAT translation information within the SIP call flows, the design of how users interact with the application when they talk to it, will allow the media path of a SIP VoIP session between two calling parties to take the optimized routing path between each other.

How to Configure NAT Optimized SIP Media Path with SDP

This section contains the following procedures:

- [Configuring a NAT Optimized SIP Media Path with SDP Messages Including MD5 Authentication, page 3](#)

- [Configuring a NAT Optimized SIP Media Path with SDP Messages Without MD5 Authentication, page 3](#)

Configuring a NAT Optimized SIP Media Path with SDP Messages Including MD5 Authentication

Perform this task to configure SDP messages with a NAT optimized SIP Media path including MD5 authentication.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip nat piggyback-support sip-alg sdp-only router *router-id* [md5-authentication *md5-authentication-key*]**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	ip nat piggyback-support sip-alg sdp-only router <i>router-id</i> md5-authentication <i>md5-authentication-key</i> Example: Router(config)# ip nat piggyback-support sip-alg sdp-only router 100 md5-authentication md5-key	Enables SDP messages with a NAT optimized SIP Media path including MD5 authentication.

Configuring a NAT Optimized SIP Media Path with SDP Messages Without MD5 Authentication

Perform this task to configure SDP messages with a NAT optimized SIP Media path without MD5 authentication.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip nat piggyback-support sip-alg sdp-only router *router-id***

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	ip nat piggyback-support sip-alg sdp-only router <i>router-id</i> Example: Router(config)# ip nat piggyback-support sip-alg sdp-only router 100	Enables SDP messages with a NAT optimized SIP Media path without MD5 authentication.

Configuration Examples for NAT Optimized SIP Media Path with SDP

This section provides the following configuration examples:

- [Configuring a NAT Optimized SIP Media Path with SDP Including MD5 Authentication: Example, page 4](#)
- [Configuring a NAT Optimized SIP Media Path with SDP Without MD5 Authentication: Example, page 5](#)

Configuring a NAT Optimized SIP Media Path with SDP Including MD5 Authentication: Example

The following example shows how to configure a NAT optimized SIP media path with SDP including MD5 authentication:

```
ip nat piggyback-support sip-alg sdp-only router 100 md5-authentication md5-key
```

Configuring a NAT Optimized SIP Media Path with SDP Without MD5 Authentication: Example

The following example shows how to configure a NAT optimized SIP media path with SDP without MD5 authentication:

```
ip nat piggyback-support sip-alg sdp-only router 100
```

Additional References

The following sections provide references related to the NAT Optimized SIP Media Path with SDP feature.

Related Documents

Related Topic	Document Title
NAT commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	Cisco IOS IP Addressing Services Command Reference
NAT Optimized SIP Media Path without SDP configuration tasks and conceptual information	“NAT - Optimized SIP Media without SPD” module

Standards

Standard	Title
None	—

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

The following commands are introduced or modified in the feature or features documented in this module. For information about these commands, see the *Cisco IOS IP Addressing Command Reference* at http://www.cisco.com/en/US/docs/ios/ipaddr/command/reference/iad_book.html. For information about all Cisco IOS commands, go to the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or to the *Cisco IOS Master Commands List*.

- **clear ip nat translation**
- **debug ip nat**
- **ip nat piggyback-support**

CCVP, the Cisco logo, and Welcome to the Human Network are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networkers, Networking Academy, Network Registrar, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0711R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

© 2007 Cisco Systems, Inc. All rights reserved.