



# Cisco IOS IP SLAs Features Roadmap

---

**First Published: July 11, 2008**

**Last Updated: February 20, 2009**

This feature roadmap lists the Cisco IOS features documented in the Cisco IOS IP SLAs Configuration Guide and maps them to the documents in which they appear. The roadmap is organized so that you can select your release train and see the features in that release. Find the feature name you are searching for and click on the URL in the “Where Documented” column to access the document containing that feature.

## **Configuration Guide and Command Reference Documentation**

Cisco IOS IP SLAs configuration guide and command reference documentation can be found at the following locations:

- Cisco IOS IP SLAs Configuration Guide, Release 12.2SR  
[http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12\\_2sr/sla\\_12\\_2sr\\_book.html](http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12_2sr/sla_12_2sr_book.html)
- Cisco IOS IP SLAs Configuration Guide, Release 12.2SX  
[http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12\\_2sx/sla\\_12\\_2sx\\_book.html](http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12_2sx/sla_12_2sx_book.html)
- Cisco IOS IP SLAs Configuration Guide, Release 12.4T  
[http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12\\_4t/sla\\_12\\_4t\\_book.html](http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/12_4t/sla_12_4t_book.html)
- Cisco IOS IP SLAs Configuration Guide, Release 12.4  
[http://www.cisco.com/en/US/docs/ios/12\\_4/ip\\_sla/configuration/guide/hsla\\_c.html](http://www.cisco.com/en/US/docs/ios/12_4/ip_sla/configuration/guide/hsla_c.html)
- Cisco IOS IP SLAs Command Reference  
[http://www.cisco.com/en/US/docs/ios/ipsla/command/reference/sla\\_book.html](http://www.cisco.com/en/US/docs/ios/ipsla/command/reference/sla_book.html)

For information about all Cisco IOS commands, use the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or the *Cisco IOS Master Command List, All Releases*, at [http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all\\_book.html](http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all_book.html).



---

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

© 2009 Cisco Systems, Inc. All rights reserved.

## Feature and Release Support

Table 1 lists IP SLAs feature support for the following Cisco IOS software release trains:

- [Cisco IOS Release 12.2SR](#)
- [Cisco IOS Release 12.2SX](#)
- [Cisco IOS Release 12.4T](#)

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

Table 1 lists the features in alphabetical order within the release.

**Table 1 Supported Cisco IOS IP SLAs Features**

Release	Feature Name	Feature Description	Where Documented
<b>Cisco IOS Release 12.2SR</b>			
12.2SR	Overview	Overview of the Cisco IOS IP SLAs technology.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html</a>
12.2SR	DHCP Operation	The Cisco IOS IP SLAs Dynamic Host Control Protocol (DHCP) operation allows you to schedule and measure the network response time between a Cisco device and a DHCP server to obtain an IP address.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html</a>
12.2SR	DNS Operation	The Cisco IOS IP SLAs Domain Name System (DNS) operation allows you to measure the difference between the time taken to send a DNS request and receive a reply.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html</a>
12.2SR	Ethernet Operation	The Cisco IOS IP SLAs for Metro-Ethernet feature provides the capability to gather Ethernet-layer network performance metrics. Available statistical measurements for the IP SLAs Ethernet operation include round-trip time, jitter (interpacket delay variance), and packet loss.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_metro_ethernet.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_metro_ethernet.html</a>
12.2SR	FTP Operation	The Cisco IOS IP SLAs File Transfer Protocol (FTP) operation allows you to measure the network response time between a Cisco device and an FTP server to retrieve a file.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html</a>
12.2SR	HTTP Operation	The Cisco IOS IP SLAs Hypertext Transfer Protocol (HTTP) operation allows you to measure the network response time between a Cisco device and an HTTP server to retrieve a web page.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html</a>
12.2SR	ICMP Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html</a>

**Table 1** Supported Cisco IOS IP SLAs Features (continued)

Release	Feature Name	Feature Description	Where Documented
12.2SR	ICMP Path Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path echo operation allows you to measure end-to-end and hop-by-hop network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html</a>
12.2SR	ICMP Path Jitter Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path jitter operation allows you to measure hop-by-hop jitter (inter-packet delay variance).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html</a>
12.2SR	IP SLAs for IPv6	The Cisco IOS IP SLAs UDP jitter, UDP echo, ICMP echo, and TCP connect operations are supported for IPv6.	<a href="http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mng_apps.html">http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mng_apps.html</a>
12.2SR	LSP Health Monitor	The Cisco IOS IP SLAs label switched path (LSP) Health Monitor feature provides the capability to proactively monitor Layer 3 Multiprotocol Label Switching (MPLS) Virtual Private Networks (VPNs).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html</a>
12.2SR	LSP Health Monitor with LSP Discovery	This enhancement to the IP SLAs - LSP Health Monitor feature provides automated end-to-end verification in the control plane and data plane for all LSPs between the participating Provider Edge (PE) routers.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html</a>
12.2SR	Multioperation Scheduler	The IP SLAs Multioperation Scheduler feature provides a highly scalable infrastructure for Cisco IOS IP SLAs by allowing you to schedule multiple IP SLAs operations using a single command.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html</a>
12.2SR	Proactive Threshold Monitoring	Cisco IOS IP SLAs proactive threshold monitoring capability allows you to configure an IP SLAs operation to react to certain measured network conditions.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html</a>
12.2SR	TCP Connect Operation	The Cisco IOS IP SLAs Transmission Control Protocol (TCP) connect operation allows you to measure the network response time taken to perform a TCP Connect operation between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html</a>
12.2SR	UDP Echo Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html</a>
12.2SR	UDP Jitter Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) jitter operation allows you to measure round-trip delay, one-way delay, one-way jitter, one-way packet loss, and connectivity in networks that carry UDP traffic.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html</a>

**Table 1 Supported Cisco IOS IP SLAs Features (continued)**

Release	Feature Name	Feature Description	Where Documented
12.2SR	UDP VoIP Operation	The Cisco IOS IP SLAs Voice over IP (VoIP) User Datagram Protocol (UDP)UDP jitter operation allows you to proactively monitor VoIP quality levels in your network, allowing you to guarantee VoIP quality levels to your users.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html</a>
12.2SR	VCCV Operation	The Cisco IOS IP SLAs VCCV operation supports Virtual Circuit Connectivity Verification (VCCV) for Pseudo-Wire Emulation Edge-to-Edge (PWE3) services across MPLS networks.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html</a>
<b>Cisco IOS Release 12.2SX</b>			
12.2SX	Overview	Overview of the Cisco IOS IP SLAs technology.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html</a>
12.2SX	DHCP Operation	The Cisco IOS IP SLAs Dynamic Host Control Protocol (DHCP) operation allows you to schedule and measure the network response time between a Cisco device and a DHCP server to obtain an IP address.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html</a>
12.2SX	DNS Operation	The Cisco IOS IP SLAs Domain Name System (DNS) operation allows you to measure the difference between the time taken to send a DNS request and receive a reply.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html</a>
12.2SX	FTP Operation	The Cisco IOS IP SLAs File Transfer Protocol (FTP) operation allows you to measure the network response time between a Cisco device and an FTP server to retrieve a file.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html</a>
12.2SX	HTTP Operation	The Cisco IOS IP SLAs Hypertext Transfer Protocol (HTTP) operation allows you to measure the network response time between a Cisco device and an HTTP server to retrieve a web page.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html</a>
12.2SX	ICMP Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html</a>
12.2SX	ICMP Path Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path echo operation allows you to measure end-to-end and hop-by-hop network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html</a>
12.2SX	ICMP Path Jitter Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path jitter operation allows you to measure hop-by-hop jitter (inter-packet delay variance).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html</a>

**Table 1 Supported Cisco IOS IP SLAs Features (continued)**

Release	Feature Name	Feature Description	Where Documented
12.2SX	LSP Health Monitor	The Cisco IOS IP SLAs label switched path (LSP) Health Monitor feature provides the capability to proactively monitor Layer 3 Multiprotocol Label Switching (MPLS) Virtual Private Networks (VPNs).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html</a>
12.2SX	Multioperation Scheduler	The IP SLAs Multioperation Scheduler feature provides a highly scalable infrastructure for Cisco IOS IP SLAs by allowing you to schedule multiple IP SLAs operations using a single command.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html</a>
12.2SX	Proactive Threshold Monitoring	Cisco IOS IP SLAs proactive threshold monitoring capability allows you to configure an IP SLAs operation to react to certain measured network conditions.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html</a>
12.2SX	TCP Connect Operation	The Cisco IOS IP SLAs Transmission Control Protocol (TCP) connect operation allows you to measure the network response time taken to perform a TCP Connect operation between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html</a>
12.2SX	UDP Echo Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html</a>
12.2SX	UDP Jitter Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) jitter operation allows you to measure round-trip delay, one-way delay, one-way jitter, one-way packet loss, and connectivity in networks that carry UDP traffic.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html</a>
12.2SX	UDP VoIP Operation	The Cisco IOS IP SLAs Voice over IP (VoIP) User Datagram Protocol (UDP)UDP jitter operation allows you to proactively monitor VoIP quality levels in your network, allowing you to guarantee VoIP quality levels to your users.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html</a>
<b>Cisco IOS Release 12.4T</b>			
12.4T	Overview	Overview of the Cisco IOS IP SLAs technology.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_overview.html</a>
12.4T	DHCP Operation	The Cisco IOS IP SLAs Dynamic Host Control Protocol (DHCP) operation allows you to schedule and measure the network response time between a Cisco device and a DHCP server to obtain an IP address.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dhcp.html</a>
12.4T	DLSw+ Operation	The Cisco IOS IP SLAs Data Link Switching Plus (DLSw+) operation allows you to schedule and measure the DLSw+ protocol stack and network response time between DLSw+ peers.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dlsw.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dlsw.html</a>

**Table 1 Supported Cisco IOS IP SLAs Features (continued)**

Release	Feature Name	Feature Description	Where Documented
12.4T	DNS Operation	The Cisco IOS IP SLAs Domain Name System (DNS) operation allows you to measure the difference between the time taken to send a DNS request and receive a reply.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_dns.html</a>
12.4T	Ethernet Operation	The Cisco IOS IP SLAs for Metro-Ethernet feature provides the capability to gather Ethernet-layer network performance metrics. Available statistical measurements for the IP SLAs Ethernet operation include round-trip time, jitter (interpacket delay variance), and packet loss.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_metro_ethernet.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_metro_ethernet.html</a>
12.4T	FTP Operation	The Cisco IOS IP SLAs File Transfer Protocol (FTP) operation allows you to measure the network response time between a Cisco device and an FTP server to retrieve a file.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_ftp.html</a>
12.4T	HTTP Operation	The Cisco IOS IP SLAs Hypertext Transfer Protocol (HTTP) operation allows you to measure the network response time between a Cisco device and an HTTP server to retrieve a web page.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_http.html</a>
12.4T	ICMP Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_echo.html</a>
12.4T	ICMP Jitter Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) Jitter operation allows you to generate a stream of ICMP packets between a Cisco IOS device (source) and any other IP device (destination) to gather network performance-related statistics.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_jitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_jitter.html</a>
12.4T	ICMP Path Echo Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path echo operation allows you to measure end-to-end and hop-by-hop network response time between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathecho.html</a>
12.4T	ICMP Path Jitter Operation	The Cisco IOS IP SLAs Internet Control Message Protocol (ICMP) path jitter operation allows you to measure hop-by-hop jitter (inter-packet delay variance).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_icmp_pathjitter.html</a>
12.4T	IP SLAs for IPv6	The Cisco IOS IP SLAs UDP jitter, UDP echo, ICMP echo, and TCP connect operations are supported for IPv6.	<a href="http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mng_apps.html">http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mng_apps.html</a>
12.4T	LSP Health Monitor	The Cisco IOS IP SLAs label switched path (LSP) Health Monitor feature provides the capability to proactively monitor Layer 3 Multiprotocol Label Switching (MPLS) Virtual Private Networks (VPNs).	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_lsp_mon_autodisc.html</a>

**Table 1** Supported Cisco IOS IP SLAs Features (continued)

Release	Feature Name	Feature Description	Where Documented
12.4T	Multioperation Scheduler	The IP SLAs Multioperation Scheduler feature provides a highly scalable infrastructure for Cisco IOS IP SLAs by allowing you to schedule multiple IP SLAs operations using a single command.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_multi_scheduler.html</a>
12.4T	Proactive Threshold Monitoring	Cisco IOS IP SLAs proactive threshold monitoring capability allows you to configure an IP SLAs operation to react to certain measured network conditions.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_threshold_mon.html</a>
12.4T	RTP Based VoIP Operation	The IP SLAs Real-Time Transport Protocol (RTP)-based Voice over IP (VoIP) operation allows you to set up and schedule a test call and use Voice gateway digital signal processors (DSPs) to gather network performance-related statistics for the call.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_rtp_voip.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_rtp_voip.html</a>
12.4T	TCP Connect Operation	The Cisco IOS IP SLAs Transmission Control Protocol (TCP) connect operation allows you to measure the network response time taken to perform a TCP Connect operation between a Cisco device and other devices using IP.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_tcp.html</a>
12.4T	UDP Echo Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) echo operation allows you to measure end-to-end network response time between a Cisco device and other devices using IP	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_echo.html</a>
12.4T	UDP Jitter Operation	The Cisco IOS IP SLAs User Datagram Protocol (UDP) jitter operation allows you to measure round-trip delay, one-way delay, one-way jitter, one-way packet loss, and connectivity in networks that carry UDP traffic.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter.html</a>
12.4T	UDP VoIP Operation	The Cisco IOS IP SLAs Voice over IP (VoIP) User Datagram Protocol (UDP)UDP jitter operation allows you to proactively monitor VoIP quality levels in your network, allowing you to guarantee VoIP quality levels to your users.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_udp_jitter_voip.html</a>
12.4T	VoIP Call Setup (Post Dial Delay) Monitoring	The Cisco IOS IP SLAs Voice over IP (VoIP) call setup operation allows you to measure network response time for setting up a VoIP call.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_call_setup.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_call_setup.html</a>
12.4T	VoIP Gatekeeper Delay Monitoring	The Cisco IOS IP SLAs Voice over IP (VoIP) gatekeeper registration delay operation allows you to measure the average, median, or aggregated network response time of registration attempts from a VoIP gateway to a VoIP gatekeeper device.	<a href="http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_gatekpr_voip.html">http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_gatekpr_voip.html</a>

CCDE, CCENT, CCSI, Cisco Eos, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Lumin, Cisco Nexus, Cisco Nurse Connect, Cisco Pulse, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Flip for Good, Flip Mino, Flipshare (Design), Flip Ultra, Flip Video, Flip Video (Design), Instant Broadband, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn, Cisco Capital, Cisco Capital (Design), Cisco:Financed (Stylized), Cisco Store,

and Flip Gift Card are service marks; and Access Registrar, Aironet, AllTouch, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSF, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, Continuum, EtherFast, EtherSwitch, Event Center, Explorer, Fast Step, Follow Me Browsing, FormShare, GainMaker, GigaDrive, HomeLink, iLYNX, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, Laser Link, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerKEY, PowerPanels, PowerTV, PowerTV (Design), PowerVu, Prisma, ProConnect, ROSA, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo 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. (0908R)

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.

© 2009 Cisco Systems, Inc. All rights reserved.