

Agilent RouterTester

Powered by QA Robot Technology

## MPLS Conformance Test Suite (LDP/CR-LDP)

E7868A

Technical Datasheet



Agilent Technologies automated LDP/CR-LDP conformance test suite provides comprehensive verification of signaling conformance to the industry's evolving LDP/CR-LDP standards.



Agilent Technologies

## Key Features

- **Comprehensive conformance testing to the IETFs evolving LDP/CR-LDP standards**
- **Fully automated stimulus-and-response test suite**
- **Controllable debug level for detailed diagnostics**
- **Clear verdict assignment for each test case**
- **Customizable test scripts**

## Product Overview

The Agilent Technologies' LDP/CR-LDP Conformance Test Suite has been designed to verify, quickly and comprehensively, the conformance of network devices to the various IETF drafts on the LDP/CR-LDP protocol, which have been listed later in this document.

It provides more than 300 automated test cases, covering all key aspects of LDP/CR-LDP signaling conformance.

All test cases provide clear 'Pass' and 'Fail' verdicts. Flexible reporting and debugging features allows test engineers to identify the detailed course of errors.

The conformance software provides test engineers with access to test script source code, for easy test customization.

Router manufacturers and service providers can expect to achieve a higher confidence with regard to their signaling implementation with Agilent's automated LDP/CR-LDP conformance test software.

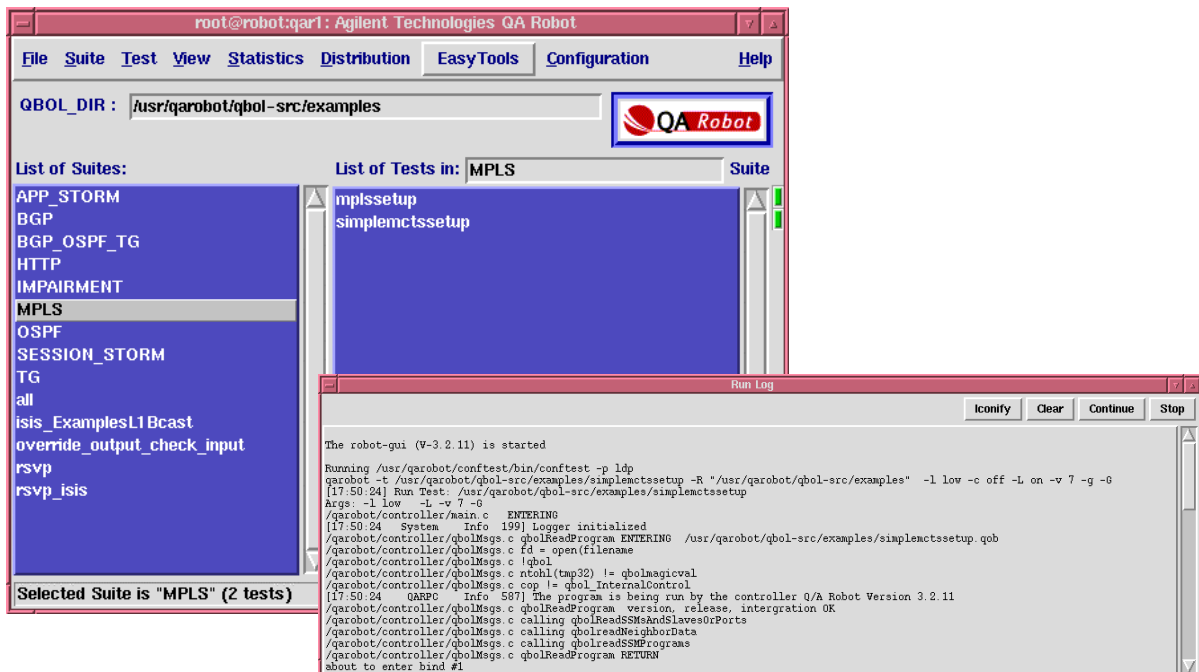
The LDP/CR-LDP Conformance Test suite is a complementary product to Agilent's LDP/CR-LDP Protocol Software, which can simulate LDP/CR-LDP label-switched paths (LSPs) at Internet-scale for comprehensive stress testing

## Applicable Standards

The LDP/CR-LDP Conformance Test Suite will provide verification of conformance to all key aspects of the following IETF drafts:

- Draft-ietf-mpls-ldp-xx
- Draft-ietf-mpls-ldp-state-yy
- Draft-ietf-mpls-cr-ldp-zz

Please note that due to the evolving nature of the protocol, the version numbers on these drafts are changing, and the test suite will be regularly updated to keep it abreast of the latest versions.

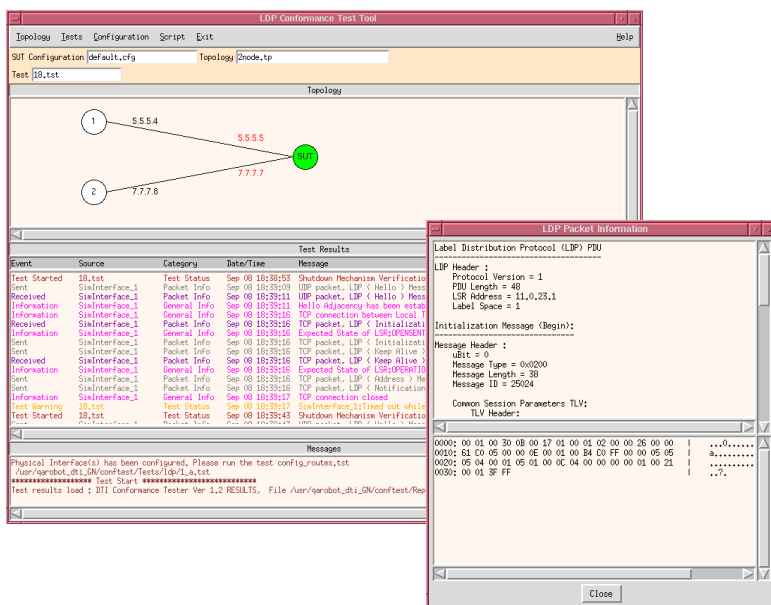
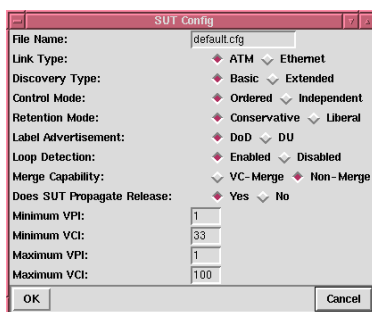


## Product Features

### LDP/CR-LDP Conformance Tests

The suite provides automatic conformance verification to evolving LDP/CR-LDP signaling protocol standards through more than 300 test cases. All common signaling protocol behaviors can be verified including:

- Discovery Mechanism
- Session Establishment
- Adjacency Maintenance
- Label Distribution and Management
- Label Retention
- Label Advertisement
- Loop Detection
- Verification of all Label message types
- Type-Length-Value Encoding
- Robustness Constraint-based Routing
- Verification of all types of CR-LDP TLVs



### Test Methodology

Agilent's conformance suite directly reflects the LDP/CR-LDP protocol specifications as detailed in various IETF drafts on the LDP/CR-LDP protocol.

Close alignment with these drafts will ensure your signaling implementations conform to the evolving LDP/CR-LDP industry standards and maximize interoperability.

### Diagnostics

Clear verdict assignments for each test case run (such as 'Pass'/'Fail') can help quickly identify implementation errors.

More detailed diagnostics can be used to pinpoint the course of any 'Fail' indicators. It is possible to view the 'Pass'/'Fail' results from an entire test suite at a glance.

Details of each test case can then be further analyzed to identify faults. Still, further detail can be analyzed at the signaling protocol PDU level for both 'incoming' and 'outgoing' packets.

### Test Customization

All of Agilent's Conformance Test Suites provide users with open access to test scripts from all of the over 300 test cases. Test engineers can easily edit the scripts to create their own customized test cases using Tcl. The QBOL scripting license is also included.

### Complete LDP/CR-LDP Solution

Agilent's LDP/CR-LDP Conformance Test Suite, when combined with Agilent's LDP/CR-LDP Protocol Software, provides the fastest and most comprehensive verification of your LDP/CR-LDP implementation available.

## Technical Specifications

Routing Protocol Behavior Tested	Applicable Standard
Discovery Mechanism <ul style="list-style-type: none"> <li>Basic Discovery</li> <li>Extended Discovery</li> </ul>	draft-ietf-mpls-ldp-xx
Session Establishment <ul style="list-style-type: none"> <li>Transport Connection Establishment</li> <li>Session Initialization</li> </ul>	draft-ietf-mpls-ldp-xx
Adjacency Maintenance <ul style="list-style-type: none"> <li>Hello Adjacencies</li> <li>LDP Sessions</li> </ul>	draft-ietf-mpls-ldp-xx
Label Distribution and Management <ul style="list-style-type: none"> <li>Independent Label Distribution Control</li> <li>Ordered Label Distribution Control</li> </ul>	draft-ietf-mpls-ldp-xx
Label Retention <ul style="list-style-type: none"> <li>Conservative Label Retention Mode</li> <li>Liberal Label Retention Mode</li> </ul>	draft-ietf-mpls-ldp-xx
Label Advertisement <ul style="list-style-type: none"> <li>Downstream on Demand mode</li> <li>Downstream Unsolicited mode</li> </ul>	draft-ietf-mpls-ldp-xx
Loop Detection	draft-ietf-mpls-ldp-xx
Verification of all Label message types <ul style="list-style-type: none"> <li>Label Request, Label Mapping etc.</li> </ul>	draft-ietf-mpls-ldp-xx
Type-Length-Value Encoding	draft-ietf-mpls-ldp-xx
Robustness <ul style="list-style-type: none"> <li>Handling malformed PDU or message</li> <li>Handling unknown or malformed TLV</li> </ul>	draft-ietf-mpls-ldp-xx
Constraint-based Routing <ul style="list-style-type: none"> <li>Strict and Loose Explicit Routes</li> <li>Traffic Characteristics</li> <li>Pre-emption</li> <li>Route Pinning.</li> <li>Resource Class</li> </ul>	draft-ietf-mpls-cr-ldp-zz
Verification of all types of CR-LDP TLVs	draft-ietf-mpls-cr-ldp-zz
Behavior due to route changes <ul style="list-style-type: none"> <li>Changes advertised by routing protocol</li> </ul>	draft-ietf-mpls-ldp-xx draft-ietf-mpls-cr-ldp-zz

### Types of Lable Switch Routers

- Ingress
- Egres
- Intermediate

### Network Interface Types

- ATM 155 Mb/s, 622 Mb/s
- POS 155 Mb/s, 622 Mb/s, 2.4 Gb/s
- Ethernet 10/100, Gigabit

### Routing Protocols Supported

- OSPF
- BGP
- IS-IS

This page intentionally left blank.

This page intentionally left blank.

This page intentionally left blank.

## Agilent's RouterTester system

Agilent's RouterTester system offers a powerful and versatile test platform to address the evolving test needs of metro/edge platforms, core routers and optical switches. RouterTester provides Network Equipment Manufacturers and Service Providers with the industry's leading tools for wire speed, multiport traffic generation and performance analysis of today's networking devices.

## Warranty and Support

### Hardware Warranty

All RouterTester and QA Robot hardware is warranted against defects in materials and workmanship for a period of 3 years from the date of shipment.

### Software Warranty

All RouterTester and QA Robot software is warranted for a period of 90 days. The applications are warranted to execute and install properly from the media provided. This warranty only covers physical defects in the media, whereby the media is replaced at no charge during the warranty period.

### Software Updates

With the purchase of any new system controller Agilent will provide 1 year of complimentary software updates. At the end of the first year you can enroll into the Software Enhancement Service (SES) for continuing software product enhancements.

### Support

Technical support is available throughout the support life of the product. Support is available to verify that the equipment works properly, to help with product operation, and to provide basic measurement assistance for the use of the specified capabilities, at no extra cost, upon request.

### Ordering Information

To order and configure the test system consult your local Agilent field engineer.

### United States:

Agilent Technologies  
Test and Measurement Call Center  
P.O. Box 4026  
Englewood, CO 80155-4026  
1-800-452-4844

### Canada:

Agilent Technologies Canada Inc.  
5150 Spectrum Way  
Mississauga, Ontario  
L4W 5G1  
1-877-894-4414

### Europe:

Agilent Technologies  
European Marketing Organisation  
P.O. Box 999  
1180 AZ Amstelveen  
The Netherlands  
(31 20) 547-2323  
  
United Kingdom  
07004 666666

### Japan:

Agilent Technologies Japan Ltd.  
Measurement Assistance Center  
9-1, Takakura-Cho, Hachioji-Shi,  
Tokyo 192-8510, Japan  
Tel: (81) 426-56-7832  
Fax: (81) 426-56-7840

### Latin America:

Agilent Technologies  
Latin American Region Headquarters  
5200 Blue Lagoon Drive, Suite #950  
Miami, Florida 33126  
U.S.A.  
Tel: (305) 269-7500  
Fax: (305) 267-4286

### Asia Pacific:

Agilent Technologies  
19/F, Cityplaza One, 1111 King's Road,  
Taikoo Shing, Hong Kong, SAR  
Tel: (852) 3197-7777  
Fax: (852) 2506-9233

### Australia/New Zealand:

Agilent Technologies Australia Pty Ltd  
347 Burwood Highway  
Forest Hill, Victoria 3131  
Tel: 1-800-629-485 (Australia)  
Fax: (61-3) 9272-0749  
Tel: 0-800-738-378 (New Zealand)  
Fax: (64-4) 802-6881

[www.agilent.com/comms/RouterTester](http://www.agilent.com/comms/RouterTester)

