

Cisco Broadband Troubleshooter 3.3

Cisco Broadband Troubleshooter is an easy-to-use tool with a GUI that helps network administrators and technicians to streamline RF problem resolution. The tool dynamically monitors RF characteristics on a per-modem or per-upstream basis, provides a measurement interface for the upstream that looks and feels like a spectrum analyzer, decentralizes RF monitoring and analysis, and automatically sorts and categorizes RF problem conditions. This improves staff effectiveness and helps ensure a stable return path, thereby increasing service and subscriber satisfaction.

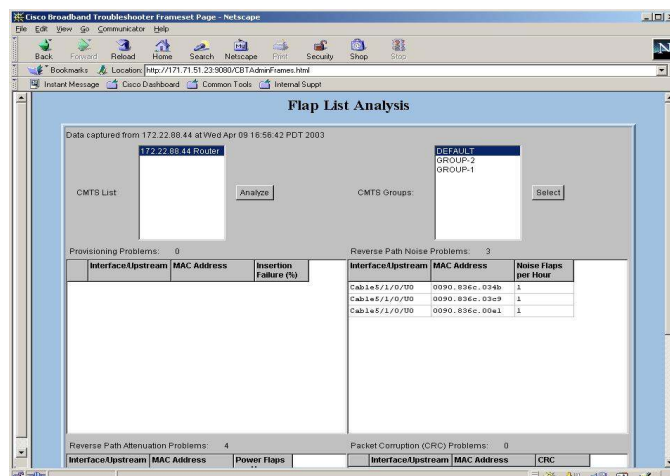
Cisco Broadband Troubleshooter 3.3 provides you with up-to-date client and server hardware platform support. This new release also supports new line cards now available for the Cisco Cable Modem Termination System (CMTS). In addition, with improved security and scalability, Cisco Broadband Troubleshooter continues to provide a cost-effective operational tool to locate any equipment or connection problem within your HFC plant.

Product Overview

The Cisco Broadband Troubleshooter provides a fault-analysis tool that enables network managers and RF technicians to isolate performance, cable plant, and cable modem problems in quick and efficient fashion. Cisco Broadband Troubleshooter 3.3 supports both on-demand and scheduled diagnostics. It automates reporting and expert analysis of the measured RF statistics. Diagnostics are available from both customer-account and network-event perspectives.

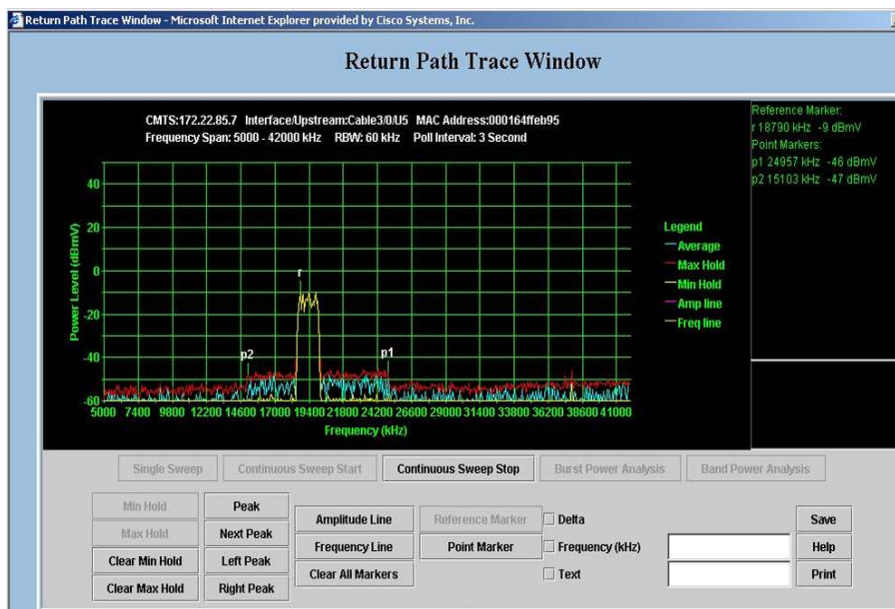
Cisco Broadband Troubleshooter 3.3 automates the analysis and interpretation of the Cisco patented "flap list" (Figure 1) maintained in Cisco CMTS products: the Cisco uBR10012, Cisco uBR7200 Series, and Cisco uBR7100 Series Universal Broadband Routers. A flap is defined as a cable modem being registered with the CMTS, deregistering, and then immediately reregistering. The flap list helps isolate problems between the cable plant such as ingress noise or incorrect power levels, and specific cable modems.

Figure 1. Flap List View



Reverse path ingress is considered one of the greatest obstacles to deploying two-way services. Using Cisco Broadband Troubleshooter 3.3, technicians can quickly assess the quality of an RF signal, including signal strength, carrier-to-noise ratio, and other characteristics of specific cable modems or upstream ports. Using the tool's integrated upstream spectrum analyzer, technicians can take measurements and diagnose faults in real time. Spectrum data is extracted from the Cisco line cards using Simple Network Management Protocol (SNMP) via spectrum management MIBs and the data is displayed in Cisco Broadband Troubleshooter 3.3 screens.

Figure 2. Return Path Spectrum Analysis View



New Features Introduced in Cisco Broadband Troubleshooter 3.3

- With the addition of the 500 Cisco CMTS license for Cisco Broadband Troubleshooter 3.3, each Cisco Broadband Troubleshooter installation can now support up to 500 Cisco CMTS headends, with 40,000 cable modems per Cisco CMTS
- Supports 50 simultaneous client browser sessions or users.
- Supports troubleshooting of the new Cisco MC5x20H Broadband Processing Engine on the Cisco uBR10012 router.
- Supports troubleshooting of DOCSIS 3.0 Wideband Channel Bonding-capable hardware on the Cisco uBR10012 router.
- Supports instantaneous CPU usage monitoring on the Cisco CMTS during spectrum operations.
- Supports improved security by appropriately masking user information from the Cisco Broadband Troubleshooter GUI.

The following features have been introduced since Release 3.0 and they will continue to be supported in Release 3.3:

- Supports Cisco MC5x20S, MC5x20U, MC28U, MC28X, MC16U, and MC16X Broadband Processing Engine line cards with remote spectrum analysis.
- Supports EURO- and J-DOCSIS frequency ranges.

- Supports Secure Shell (SSH) communication from the Cisco Broadband Troubleshooter server to the CMTS.
- Secures HTTPS support between the Web clients and Cisco CMTS server. Supports HTTPS defaults to Port 9443.
- Supports scheduling-based and threshold-based spectrum data polling.
- Displays up to three traces in the same trace window for monitoring and for playback.
- Saves and loads markers for trace windows playback.
- Purges collected spectrum data.
- Supports real-time continuous modem Carrier-to-Noise Ratio (CNR) and Upstream CNR.
- Supports Subscriber Traffic Management (STM), which allows service providers to identify and control subscribers who exceed the maximum bandwidth allowed under their registered quality-of-service (QoS) profiles. This feature supplements current techniques such as Network-Based Application Recognition (NBAR) and access control lists (ACLs) to prevent users from consuming more than their allowable bandwidth, without impacting network performance or other users that are abiding by their service agreements. Additional functions include the following:
 - Scheduling-based STM 1.0 data polling
 - Real-time display of STM 1.0 violators
 - Historical display of STM 1.0 violators along with the enforce-rules violated
 - Search for violators based on MAC address
 - STM data purge

Features that were introduced in releases prior to Cisco Broadband Troubleshooter 3.3 continue to be supported in Cisco Broadband Troubleshooter 3.3.

Features and Benefits

Cisco Broadband Troubleshooter 3.3 is built on a Web-based, client-server architecture, and provides flexibility and scalability. It supports concurrent multi-user access, as well as remote access to the server that hosts the application. Because only a single instance of Cisco Broadband Troubleshooter 3.3 needs to be administered for installation, support, and upgrade, ease of management is achieved. Table 1 captures some of the key benefits that Cisco Broadband Troubleshooter 3.3 delivers.

Table 1. Features and Benefits

Feature	Benefit
Automated analysis and interpretation of Cisco's patented flap list	Simplifies troubleshooting because the system automatically sorts, isolates, and categorizes RF problems as provisioning, noise, attenuation, or CRC errors
Views of network health, CMTS, and cable modem through CiscoView application	Increases visibility into the network Promotes "at-a-glance" problem identification
Scheduled and on-demand query and capture of network health	Supports trend analysis to enable better network planning and performance monitoring
Diagnostics available from both customer account and network-event perspectives	Promotes proactive problem isolation
Pinpointing of cable modems experiencing problems to geographic locations through third-party mapping tool (option)	Improves staff effectiveness because the system visually depicts and isolates problems to address and street levels

Feature	Benefit
Advanced upstream spectrum management capabilities including trace window, spectrogram, carrier-to-noise ratio analysis, and data playback for Cisco CMTS line cards	Quickly identifies what is wrong, where, and why, making it easy to correct upstream RF problems Reduces need and reliance on external spectrum analyzers, increasing efficiency and lowering costs Eliminates inefficient use of resources or time
Client-server architecture that supports concurrent multi-user and remote access	Increases maintenance efficiency Offers flexibility, scalability, and ease of management because technicians at the NOC or in the field can distribute troubleshooting workload
Subscriber traffic management support	Identifies and controls subscribers who exceed the maximum bandwidth allowed as defined in their QoS profiles

Minimum System Requirements

Table 2. Minimum System Requirements

Server	Client
<p>Recommended Linux server requirements: For 10, 50, 100 Cisco CMTS Headend Systems</p> <ul style="list-style-type: none"> • 3.2-GHz Pentium Processor 4-based workstation • Linux Red Hat Enterprise Edition installed • 20 GB of available disk space • 2 GB of memory • CD-ROM drive • SNMP connectivity between the server and the managed CMTSs • Connectivity between the server and the location of subscriber and provisioning information 	<p>Recommended Linux client requirements:</p> <ul style="list-style-type: none"> • 3.2-GHz Pentium Processor 4-based machine • Red Hat 10 or 9 installed • 1 GB of memory • Netscape 7.0 with JRE5 • IP connection to the Cisco Broadband Troubleshooter Manager server
<p>Recommended Solaris server requirements: For 10 Cisco CMTS Headend Systems</p> <ul style="list-style-type: none"> • UNIX Server Sun Fire Systems with Solaris 10 or Sun Fire V100 Server small • UltraSPARC Ili Processor—one at 550 MHz • 256 MB of memory—one at 256 MB DIMM • 7200 RPM IDE disk drive—one at 80 GB • SNMP connectivity between the server and the managed CMTSs • Connectivity between the server and the location of subscriber and provisioning information <p>For 50–100 Cisco CMTS Headend Systems</p> <ul style="list-style-type: none"> • Sun Fire V210 Server medium • UltraSPARC Ilii Cu Processor—two at 1.34 GHz • Layer 2 cache per processor—1 MB • 2 GB of memory—four at 512 MB DIMMS • 10000 RPM Ultra 3 SCSI LVD disk drive—two at 73 GB • SNMP connectivity between the server and the managed CMTSs • Connectivity between the server and the location of subscriber and provisioning information <p>For 500 Cisco CMTS Headend Systems</p> <ul style="list-style-type: none"> • Sun Fire V440 Server small • UltraSPARC Ilii Processor—two at 1.593 GHz • Internal cache per processor—1 MB • 4 GB of memory—eight at 12-MB DIMMS • 10,000 RPM Ultra320 SCSI disk drive—four at 73 GB • SNMP connectivity between the server and the managed CMTSs • Connectivity between the server and the location of subscriber and provisioning information 	<p>Recommended Solaris client requirements:</p> <ul style="list-style-type: none"> • Sun Fire V100 Server small • UltraSPARC Ili Processor—one at 550 MHz • 256 MB of memory—one at 256 MB DIMM • Netscape 7.0 with JRE5 • IP connection to the Cisco Broadband Troubleshooter server

Server	Client
<p>Recommended Windows server requirements: For 10, 50, 100 Cisco CMTS Headend Systems</p> <ul style="list-style-type: none"> • 3.2-GHz Pentium Processor 4-based workstation • Windows 2000 or XP installed • 20 GB of available disk space • 2 GB of memory • CD-ROM drive • SNMP connectivity between the server and the managed CMTSs • Connectivity between the server and the location of subscriber and provisioning information 	<p>Recommended Windows client requirements:</p> <ul style="list-style-type: none"> • Pentium 4 CPU 3.20 GHz • Windows 2000 or XP installed • 1 GB of memory • Netscape 7.0 with JRE5 or Internet Explorer 6.0 with JRE5 • IP connection to the Cisco Broadband Troubleshooter server

Supported Network Elements

- Cisco uBR10012, uBR7200 Series, and uBR7100 Series Universal Broadband Routers
- DOCSIS-compliant and Euro-DOCSIS-compliant cable modems

Ordering Information

Cisco Broadband Troubleshooter 3.3 is available for ordering through Cisco sales and distribution channels worldwide. To place an order, visit the [Cisco Ordering Homepage](#). To download software, visit the Cisco Software Center.

Service and Support

Service and support for Cisco Broadband Troubleshooter 3.3 is available through the Cisco Software Application Support program. These services provide 24-hour technical assistance, full access to the information and support resources on the Cisco.com Website, and software maintenance updates within a single release.

Available as an option is advanced Software Application Support plus Upgrades (SASU), which include proactive shipment of all minor (update) and major (upgrade) product releases.

For More Information

For more information about the Cisco Broadband Troubleshooter, visit <http://www.cisco.com/en/US/products/sw/netmgtsw/ps530/index.html>, or contact your local account representative. To try out this product, please send an e-mail to cbt-license to request a demo license.



Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCVP, the Cisco logo, and the Cisco Square Bridge logo 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, BPX, 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, Networking Academy, Network Registrar, Packet, 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. (0705R)