

INTERNET SERVICE VERIFICATION WITH THE COLT-450P

10

PRODUCT NOTE

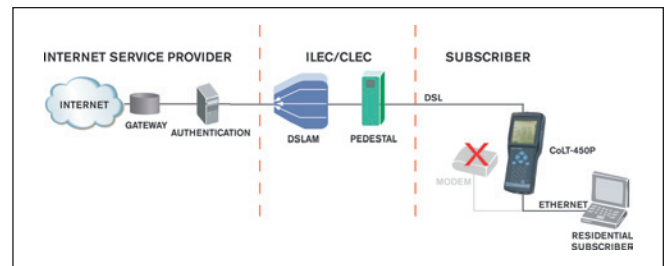
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A common customer complaint to Internet service provider support centers everywhere is: "I cannot surf the Internet". We've all experienced this situation from time to time and we can certainly sympathize with the end user of the service.

The question is – what could service providers do to ensure that their troubleshooting procedure minimizes downtime?

EXFO's CoLT-450P and, more particularly, its Data Analysis application, were designed with this specific problem in mind.

This special application allows for the verification of the Internet connection and traffic while operating in Through Mode – also referred to as the "Golden Modem" or "Golden Router" functionality – by replacing the customer's modem or broadband router. This enables the technician to connect to the Internet via the user's PC over a PPPoE, PPPoA, IPoE (bridged Ethernet) or IPoA connections (the CoLT-450P supports either bridge or routed configurations).



The Data Analysis application, when used in conjunction with the customer PC, allows the technician to conduct five important tests:

- Verify that the customer's Ethernet service is working
- Check the customer's DSL connection to the DSLAM
- Make sure that the customer's user name and password are correct
- Ensure that the customer can connect to Internet
- Confirms important traffic statistics for the connection

Verifying the Ethernet Connection

Every PC and modem has a LED on the Ethernet port indicating connectivity. When the technician looks at the user's PC and/or modem, the status of the LED can help him identify the problem. For example, if the LED is not on, it could mean that the customer is using the wrong Ethernet cable; that the connection is defective; or ultimately that the PC's NIC card needs to be replaced.

The CoLT-450P will help when determining if an Ethernet connection is faulty or not. After successfully establishing a connection with the DSLAM, the unit will immediately display IP and MAC address information of device(s) detected on the Ethernet side of the network (i.e., customer premises). This will confirm that Ethernet connectivity exists between the unit and the end device(s).

Verifying the DSLAM Connection

To check the customer's connection to the DSLAM using the CoLT-450P, the technician first selects the Data Analysis option from the unit's main menu. This will allow the instrument to connect to the DSLAM, once sync is established, and the CoLT-450P will display the ADSL2+ /ADSL connection parameters as follows:

ADSL Parameters		
Op. Mode:	ADSL2PLUS	
Status:	Show Time	
Latency:	Fast	
LimitChk:	PASS	
	Down	Up
MaxBR	22984	1208
ActBR	22016	1128
Cap	95%	93%
SNR	10	6.0
XmPwr	12.0	9.9
Attn	20.5	28.0
Start Setup View		

Figure 1. CoLT-450P's ADSL Parameters screen

This part of the test verifies that the DSLAM is up and running; that the system's internal wiring is acceptable (at least to make a connection to the DSLAM); and that the NID is correctly installed.

The technician needs to verify that the upstream/downstream connection parameters are within acceptable limits. If the signal-to-noise ratio margin (SNRm) is less than 6 dB, or if the capacity approaching 100%, there could be local loop issues, which can eventually lead to the customer losing sync.

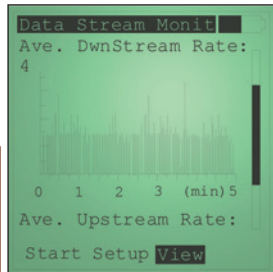


Figure 2. Graphical representation of ADSL2+ /ADSL data rates

Verifying the ISP Connection

The Data Analysis application was designed to allow the user to connect to the Internet using his/her own PC or laptop.

By connecting the Ethernet port (at the bottom of the CoLT-450P) to the Ethernet NIC card in the PC, users will be able to use their PC (i.e. Windows XP) to log onto their Internet service provider network. The user's PC may need to have PPPoE support enabled in Windows with a valid user name and password in order to complete the login.

This part of the process ensures that the customer can connect to the service provider network through the CoLT-450P and ultimately to the Internet. If login fails, it may either mean that the user name and password were not entered correctly, or that the service provider network has not registered the subscriber account. The CoLT-450P will indicate warning or error messages in case of a trouble situation during the login procedure.

If the problem persists while attempting the login from the PC, the CoLT-450P can also be used to log onto the service provider network to verify the customer's settings. By exiting the Data Analysis test, the technician can set up the subscriber's user name and password and confirm any service provisioning issues by running the Auto-Test; the CoLT-450P will automatically connect to the DSLAM and attempt to log onto the service provider network. If the login is successful, the unit will also perform a PING test in order to confirm full access to the service provider network or Internet. A successful test result when connecting to the Internet service provider directly from the CoLT-450P will be an indication that the setup on the PC (during Through Mode connection) had not been properly configured.

Once the connection from the PC is established, the CoLT-450P will display to the user the ADSL2+ /ADSL maximum and current data rates in graphical format as the user browses the Internet (i.e. sends and receives data packets).



Figure 3. Example of the Protocol Statistics screen

Important Traffic Statistics

As the user navigates through the Internet and performs routine functions like sending/receiving e-mail, using messenger services or checking Internet forums, it is important to monitor the amount of traffic and protocols in use by the different network devices.

This type of information is useful, for example, to determine that a specific website or a DHCP server is not responding to requests sent from the PC. Traffic counters, related protocols and origin and destination IP addresses, provide additional visibility to issues that affect the Internet service.

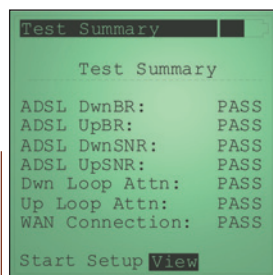


Figure 4. Example of the Test Summary screen

Performing a Quick Verification

The CoLT-450P also provides a Test Summary screen that presents to the user a simplified PASS or FAIL indication of the status of the different items discussed above. If a measured value is out of the range previously set by the user, or if the login (WAN connection) was not completed successfully, the unit will display a FAIL message. This is one of the multiple time-saving features offered by the CoLT-450P.

For more information on how to minimize downtime and on overall testing issues, feel free to visit our website at www.exfo.com/support/technicaldocuments, or simply browse through our newsletter archives at www.exfo.com/support/technicaldocuments.



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