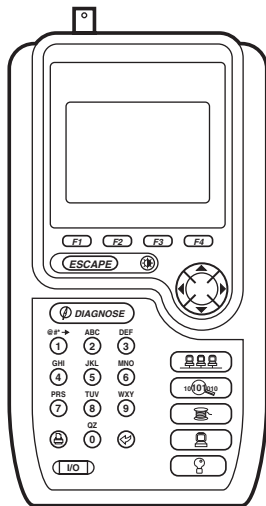# BLACK BOX®
NETWORK SERVICES

NetRanger

Now anyone can find network problems fast—this little box tells you the solutions in plain English.

The NetRanger has all the LAN, NetWare, and Internet connection tests you need—and you don't have to be an expert to use it.

Key Features

All the LAN tests you need in one hand-held tester.

Easy to learn and easy to use—no complicated calculations for you to do.

Graphical display shows connection diagrams, bar charts, graphs, and statistics.

Easy menu interface guides you through all the tests.

Troubleshoot and solve NetWare problems.

Diagnose Internet connection problems.

Overview

Why is the network slow? Why can't I log in? Is this cable OK? Do you know what tests you'd have to run to find the answers to these questions?

Now you don't have to know what tests to run. Just pick a question from the NetRanger's list of common network problems, and the NetRanger automatically runs all the tests. You can run tests on your NetWare® server, local Ethernet (10BASE-T or 10BASE2), or even your Internet connection.

In seconds, you have the answers you're looking for—not a page of indecipherable numbers, but concrete suggestions in plain English.

Who uses the LAN the most? The Top Talkers display shows you exactly which station sent the highest number of bytes in the test period.

Which station has the most trouble with the LAN? Find out from the Top Error Sources display.

Is your network operating near capacity? A glance at the Segment Utilisation screen will tell you.

Not sure how a cable is wired? The Wire Map shows you a diagram of the connections, pin by pin.

If a workstation is having trouble logging in to a server, is it the server's fault or the workstation's? You can use the NetRanger to emulate a server and accept logins from the workstation; then you can emulate a workstation and try to log in to the server. Now you know exactly where the trouble is.

Attach this backlit, handheld tester anywhere on your network—to a work-station, a hub, or a server. It detects the type of

connection, then runs the right tests. If connections should happen to change, you don't get an error message—the NetRanger simply restarts the testing. And if you need to insert the NetRanger between a file server or workstation and a hub, you can— thanks to NetTap, a built-in feature which monitors traffic between any node and a hub.

With its NetWare Loadable Module (NLM), you can use NetRanger to diagnose problems with your NetWare file server. It also assists with protocol problems, serial functions, and cable testing. It verifies the integrity of your cable and tests for length, crosstalk, noise, signal level, and proper connector wiring.

The NetWare tests menu contains the server

14560

Overview (Continued)

summary, IPX Ping, IPX segment information, and emulate NetWare server items.

You can also troubleshoot your corporate Intranet and Internet connections with NetRanger. Determine if hosts, including web servers and e-mail gateways, are available to users worldwide. Easily isolate problems with your corporate routers, Internet connection, or Internet service provider.

The Internet tests menu includes: IP summary, duplicate IP address, IP Ping test, IP trace router, and IP segment info.
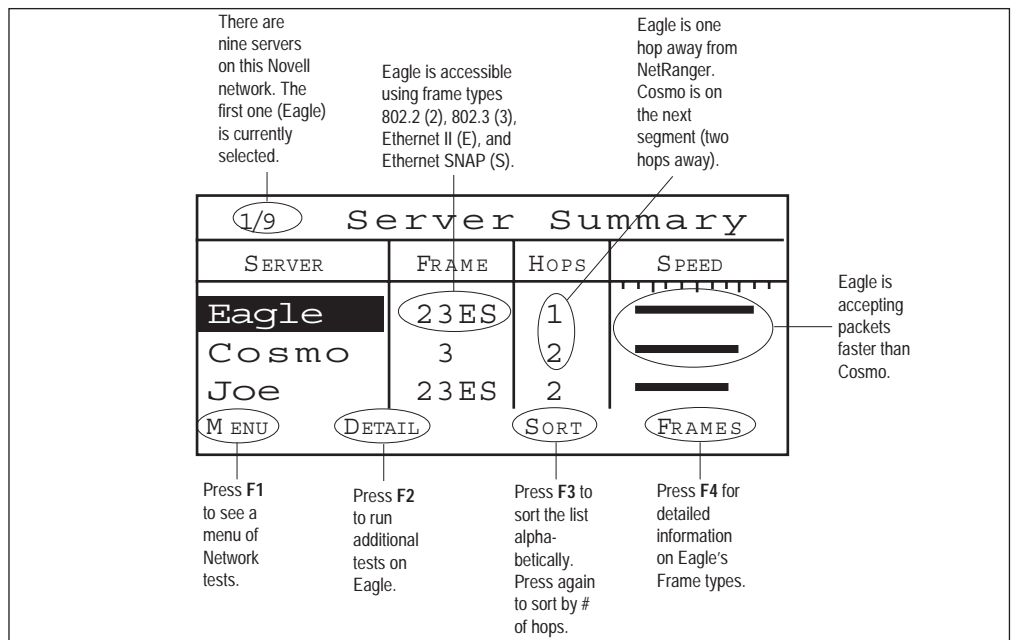
Typical Applications

In the past few weeks, network data has slowed to a crawl. You could hire an army of LAN experts, or you could spend days poring over fat reference books—or you could just choose "Why Is Network Slow?" from the NetRanger's menu, and let NetRanger decide what tests to use.

Installing cables? Find problems <u>before</u> the whole system is plugged in, not after. Choose "Is This Cable OK?" from the menu, and the NetRanger will tell you the answer right away.

Sample Screen Display

The NetRanger gives you complete network information in easy-to-read on-screen charts, like the Server Summary chart at the right.

There are nine servers on this Novell network. The first one (Eagle) is currently selected.

Eagle is accessible using frame types 802.2 (2), 802.3 (3), Ethernet II (E), and Ethernet SNAP (S).

Eagle is one hop away from NetRanger. Cosmo is on the next segment (two hops away).

1/9	Server Summary		
SERVER	FRAME	HOPS	SPEED
Eagle	23ES	1	
Cosmo	3	2	
Joe	23ES	2	
MENU	DETAIL	SORT	FRAMES

Eagle is accepting packets faster than Cosmo.

Press **F1** to see a menu of Network tests.

Press **F2** to run additional tests on Eagle.

Press **F3** to sort the list alphabetically. Press again to sort by # of hops.

Press **F4** for detailed information on Eagle's Frame types.

The complete package
What you get when you order the NetRanger

- The NetRanger
- AC adapter
- RJ-45 patch cable
- Far-end adapter
- NLM™ diskette
- Illustrated instruction manual
- Carrying case

Ordering Information

PRODUCT NAME	ORDER CODE
NetRanger	TS850A-R3-UK

Specifications

General Specifications

User Interface —

- 128 x 64 graphic LCD with backlight
- Elastomeric keypad with dedicated major function keys
- Time of day clock
- Audio tone for alarm functions

Memory —

- Flash program memory allows field-upgrading via serial port

NetWare® Compatibility —

- Versions 2.2, 3.1x, 4.0x
- Frame types: 802.2, 802.3, Ethernet II, SNAP

Internet IP —

- Frame types: Ethernet II, SNAP
- Type A, B, or C (network)

Connections —

- BNC, IEEE 802.3 (Ethernet) compatible
- (2) RJ-45 10BASE-T (Ethernet) compatible
- Automatic selection of BNC and RJ-45 connectors
- Automatic configuration of hub and workstation pairs (TX, RX)
- NetTap RJ-45 circuitry allows insertion between hub and station
- NetTap yields maximum 3 dB signal drip between devices. Active tests (transmitting) in NetTap may result in additional error rates

Serial-Port Specifications —

- Connectors: One male, one female DB9 (pass-through)
- Speed: 300 to 57,600 bps
- Word structure: 8 bits; even, odd, or no parity
- Flow control: RTS/CTS, X-ON/X-OFF

Screen Print Support —

- LaserJet®
- EPSON®
- Flow control: RTS/CTS, X-ON/X-OFF

Printer Test Support —

- PostScript®
- LaserJet
- ASCII Text
- EPSON
- Prints to serial port or network queue

Power — Removable, rechargeable nickel-cadmium battery (approx. 6 hrs. of normal use per charge); 9-V AC adapter

Size — 20.3 x 10.2 x 5.5 cm (8"H x 4"W x 2.15"D)

Weight — 0.8 kg (1.75 lb.)

Measurements and Tests

You can choose feet or metres.

RJ-45 Measurements (either jack) —

- Length: ±4%,±0.6 m (4 ft.); 10 to 1,000 ft., 3 to 300 m (Pairs 12, 36)
- Diagnostic scan: Max. 1000 ft., 300 m (Pairs 12, 36)
- Noise:
  - 10 to 500 mVp-p into 5K termination
  - 12-, 36-, 45-, or 78-pair
  - LTP period measurement: ±1 ms
- Crosstalk: Wide band, ±40 mV
- Wire map (patch cable or to Far-End Adapter):
  - Faults displayed for all 8 wires and shield
  - Max. length 1000 ft., 300 m
- Cable trace

BNC Measurements (Coax) —

- Length: ±4%, ±0.6 m (4 ft.): 10 to 2000 ft., 3 to 600 m
- Diagnostic scan: Max. 600 m. (2,000 ft)
- Impedance

LAN Monitoring —

- Statistics are updated continuously
- Total traffic
- Total errors
- Number of stations
- Protocols seen: IPX™, IP, DEC™, LAVC, DECnet™, DEC LAT™, AppleTalk®, AppleTalk II, Xerox® XNS, Banyan® VINES™, ISO, ARP, and others
- Top Talker
- Top Broadcaster
- Top Error Sources
- Error Summary

Network Functions —

Novell®

- Local segment info
- Server statistics: Frame Types, Speed, Hops to Access, User List, Top Users (by server)
- Diagnostic statistics, including but not limited to: Server Version, Licensed Connections, Segment Utilisation, etc.
- Server Emulation (all frame types)
- Workstation Emulation (all frame types)
- Login
- Server List
- List Print Queues
- Print to Print Queue
- Name-Address Resolution
- IPX Ping
- Detect MAC Address

Internet

- Host Summary
- Duplicate IP Address detected
- IP Ping Test
- IP Trace Route
- IP Segment Info
- Automatic Address selection
- DNS Name Resolution
- Internet Name Resolution