DominoLAN™ Internetwork Analyzer

for the Domino family of Internetwork Analyzers

DA-320

DominoLAN Internetwork Analyzer
for monitoring, troubleshooting, and simulation in internetworking environments

- **Ethernet and Token Ring network interfaces in one box**
- **Dual simultaneous analysis (with multiple Dominos) for testing network devices**
- **Real-time hardware filtering through Layer 3 addresses**
- **Decodes for all major LAN and WAN protocols**
- **Autoconfiguration for fast, easy setup**
- **Easy-to-use Microsoft Windows-based user interface**
- **Lightweight and highly portable**
- **Compatible with all notebook computers running Windows**
- **Full time synchronization with other Domino Analyzers**
- **Intuitive Win95 GUI**

A Field-Service Solution for Internetworks

Field service organizations require an analyzer that can handle the multiple protocols and multiple topologies of today's complex internetworks. They also need one that's easy to carry and easy-to-use.

DominoLAN provides a complete solution in one box. The analyzer can monitor activity, decode all major protocols, and generate network traffic on Ethernet and Token Ring (4 and 16 Mbit/s) interfaces, making it an excellent tool for troubleshooting local area networks.

DominoLAN is more than an analyzer, however. Because it can be linked to DominoWAN, the instrument also performs as an internetwork analyzer, allowing the user to track a problem across your LAN and onto the WAN.

Weighing less than three pounds, DominoLAN connects to and is controlled by a notebook PC. Multiple Domino analyzers can be linked together to perform dual analysis, which makes it well suited for device analysis. By generating and receiving traffic simultaneously, the instrument is an ideal tool for benchmarking routers, bridges, gateways, and other network equipment prior to installation or after an upgrade.

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DominoLAN Solutions Toolbox
The user interface includes a Toolbox of applications software for specialized tasks. Examples include

- **Smart Monitor for Token Ring** – This application monitors MAC frames to report comprehensive information about the network. It can create a ring map and automatically discover and report details of the most common Token Ring anomalies, such as beaconing rings.

- **Filters and Triggers for Ethernet** – This application provides extensive filters based on network addresses, frame types, and byte patterns. Triggers, based on byte patterns, activate specific actions such as starting or stopping capturing. Used separately or in combination, filters and triggers help you quickly isolate the events you need to see.

- **Route Discovery for Token Rings** – This application broadcasts test frames across a Token Ring network to determine all routes, through the rings and bridge, to a specified node. It also calculates the latency for each route. You can use it to verify connectivity or discover the optimal paths for traffic, thus improving network performance.

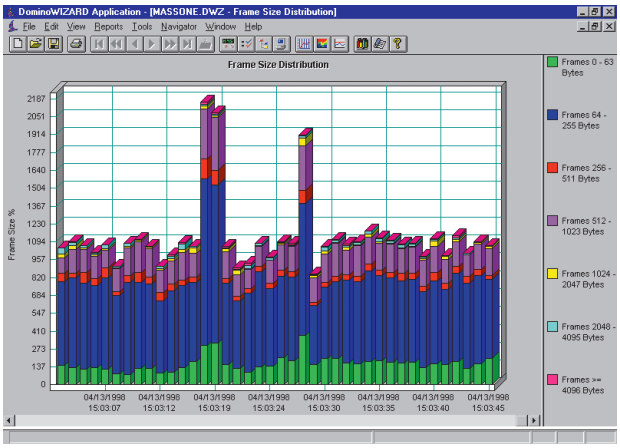
A wide variety of powerful applications software originally developed for the DA-3x family of internetwork analyzers can be incorporated into the toolbox.

High Performance Architecture
DominoLAN is capable of extremely high performance because it employs multiple, independent RISC processors, each dedicated to performing separate functions. For example, separate RISC processors capture and decode traffic. High-speed links connect these processors, thus avoiding bottlenecks between them and allowing the analyzer to analyze network traffic in real time.

Easy Operation and On-Line Help for Fast Troubleshooting
With its colorful screen and Microsoft Windows-based user interface, DominoLAN is as easy-to-use as it is powerful. In addition to pull-down menus and buttons for common monitoring and analysis tasks, DominoLAN also features context-sensitive Help screens to ensure that even infrequent users find DominoLAN easy-to-use. The Microsoft Windows compatibility also provides access to additional Windows applications and utilities such as word processors, spreadsheets, and print managers, making report generation a breeze. Using this facility, the DominoLAN user can embed a dated timed pie chart into a spreadsheet without having to retype the information.

Remote Analysis, Anywhere, Anytime with Domino
Sometimes it just doesn't make sense to send someone into the field. Wandel & Goltermann provides alternatives with DominoServer and DominoREMOTE. Acting in a client/server model, network professionals connect to the DominoServer and control remote Domino analyzers - realizing all the features and functions as if the analyzers were locally attached. Users can connect, start an application, disconnect and return at a later time to view or stop the session - all without interrupting or causing the analysis operation to stop. And since the processing is being done on the Domino analyzers attached to DominoServer, a minimum of traffic is being added to the network or dial-up link when the user is connected. Broaden the remote network analysis base by connecting DominoREMOTE to the DominoServer. Like the DominoServer, but without the processing power, DominoREMOTE allows network or dial-up connections to remotely attached Domino analyzers.

Baseline Document Network Health with Domino
When used with the appropriate Domino Internetwork Analyzers, the WG Wizard Network Baselining System supplies the tools necessary to provide value-added services such as network health checks or capacity planning. It is unsurpassed in its baselining ability to collect critical information about trends, anomalies, and capacity utilization and report all of the network vital statistics with an integrated reporting tool. It also gives the user the ability to schedule baselines around peak periods (time of day, day of week) and run on its own. With a user-friendly architecture and award-winning on-line Help, the bottom line is higher network uptime.



Transportable Network Analysis Kit on Alert with Domino
Domino Attaché is a rugged aluminum case used for safe and secure transportation of Domino Internetwork Analyzers. Domino units are mounted in a small, expandable rack system in the base shell while an optional laptop computer can be secured on top of the rack system with a heavy-duty Velcro strap. The removable case top allows full access for mounting, pre-wiring, and plugging in Domino Internetwork Analyzers - providing an analysis kit ready for immediate use.

Notebook Compatibility and Connection
With it's small footprint and stackable design, Domino accommodates many popular Windows-compatible notebook PCs. This compatibility allows users to choose and upgrade PCs according to needs and desires - so users are not held captive to a proprietary platform or yesterday's PC standard.

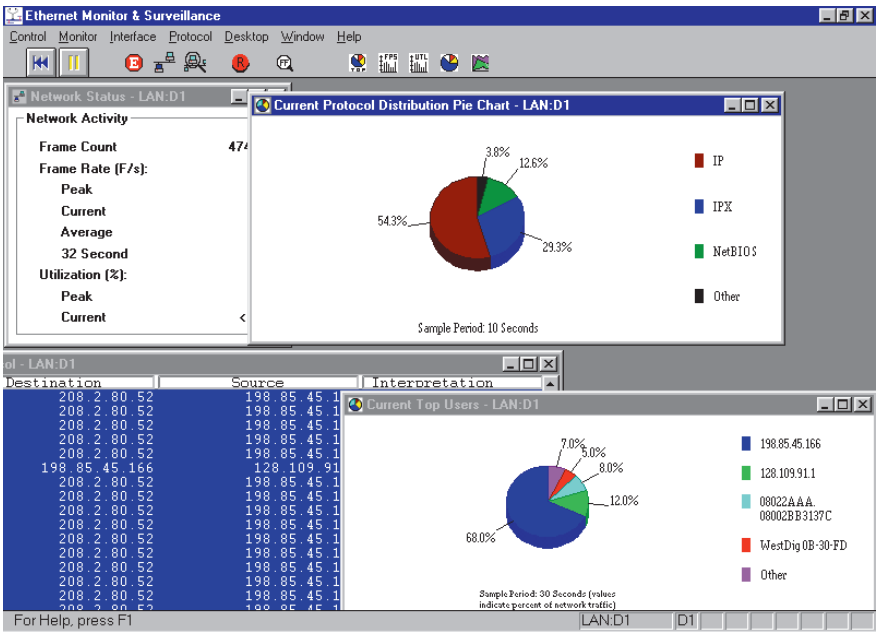
Warranty Information
Domino Internetwork Analyzers come with a one year manufacturer's warranty which covers any defects detected by the customer or Wandel & Goltermann. Domino software is covered under a 90 day manufacturer's warranty.

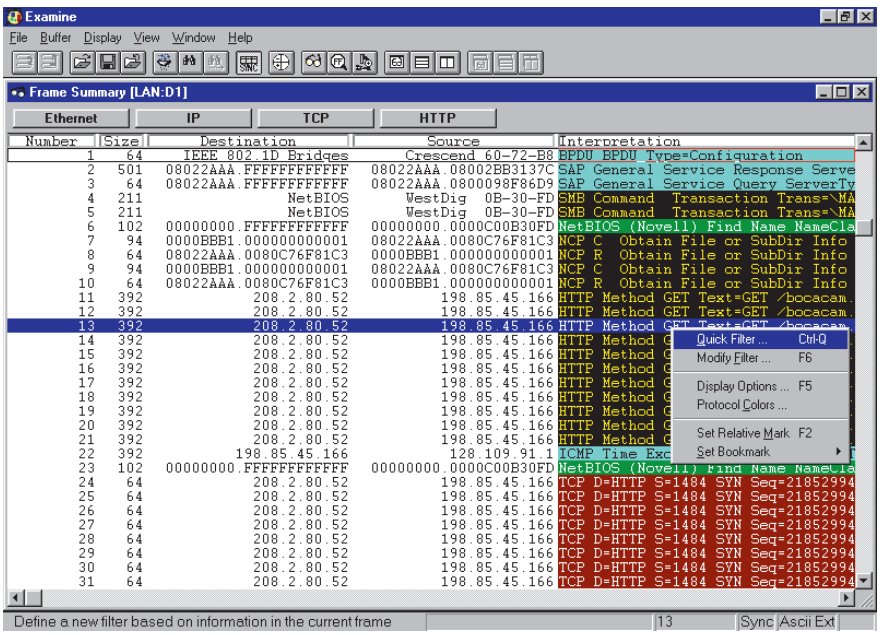
DominoLAN Internetwork Analyzer in Action

For fast, real-time analysis of mission critical internetwork problems, Domino leads the way. If you're looking for a portable, easy-to-use field internetwork analyzer, follow Domino as we track down a problem in a hospital network.

10:15 AM
Several users are complaining about response times for their network applications. You plug their local Ethernet segment into the DominoLAN and click on Monitor to see what's going on.

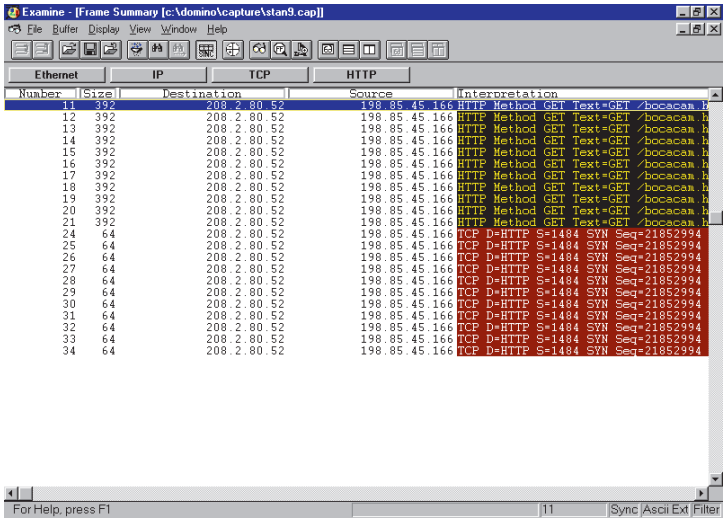
10:16 AM
From the Protocol Distribution you notice that most of the activity on your Novell-based network is IP traffic - normally it is IPX. Also, from the Top Users graph, you quickly see that most of it is coming from the same IP address.





10:18 AM
While still Monitoring the link, you switch over to Examine to look at the packets in more detail.

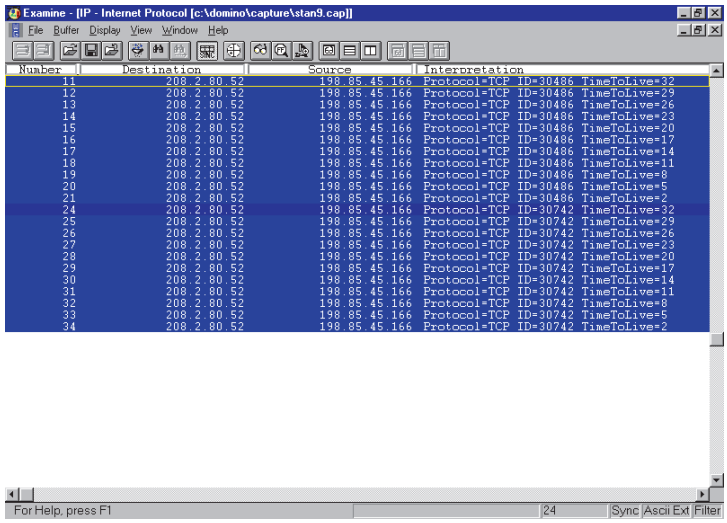
With a simple right click on the offending address you initiate the "Quick Filter", focusing your analysis on the conversation responsible.

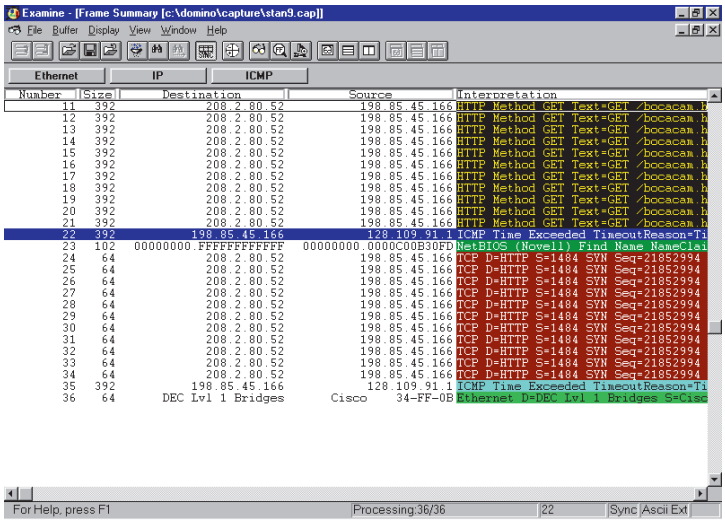


10:19 AM
From the “Quick Filter” you quickly see that many of the packets look very similar.

IP

10:20 AM
You drill down to the IP protocol and find that only the hop count (Time to Live) is changing in the packets. There must be a router loop in the network causing these packets to replicate.





10:25 AM
Back to the Frame Summary. You confirm that after the Time to Live expired, the protocol ICMP sent out an error message, indicating a definite loop. You go to one of the routers in the loop and find that someone configured an incorrect static route. You correct the route. Mission accomplished!

Hardware
Protocol analysis processor .....INMOS T425 transputer,
.....25 Mhz, 32-bit word, RISC architecture
Capture memory.....23.5 Mbyte standard
PC interface.....notebook PC via EPP,
.....bi-directional, or standard parallel port

Data transfer
Data channels .....1 transmit, 1 receive
Compatibility
Ethernet .....Ethernet II, ANSI/IEEE 802.3
.....CSMA/CD
Token Ring.....ANSI/IEEE 802.5
.....IBM Token Ring 4/16 Mbit/s
.....with early Token release
Data encoding/decoding .....Manchester
Control encoding.....CSO, CS1, IDI (Ethernet)
Data rates.....10 Mbit/s (Ethernet)
.....4 Mbit/s or 16 Mbit/s (Token Ring)
Signaling rates.....10 Mbit/s±0.01% (Ethernet)
Time stamping
hardware timer.....32 bit
time resolution .....32 µs
max. time count before wrap-around .....38.17 hours
Counter.....32-bit hardware and software
Filter.....recognition of multiple addresses of 48 bits each,
.....with bit-masking capability

LEDs
Frame rates (f/s).....1, 200, 500, 1k, 1.5k, 2k, 3k, 4k, 5k,
.....6k, 8k, 10k, 14k, 18k, 20k, 30k, 40k
Ethernet.....TX, RX, Jabber, RP, LNK, Collision, SQE
Token Ring.....Insert, Ready, 16M, Open, Short,
.....Beacon, MAC

External trigger input and output
Ext. trigger input .....switchcraft audio jack
Trigger set .....neg. TTL pulse <0.8 V
Trigger off.....input voltage >2.5 V
Minimum input signal pulse .....100 ns
Input impedance.....>3 kΩ
Maximum input voltage.....25 V
Max. input voltage referred to ground .....+42 V
Ext. trigger output .....2.5 mm audio jack
Trigger set .....neg. TTL pulse <0.8 V
No trigger set.....output voltage >4.5 V
Min. output trigger signal pulse.....0.6 µs
Max. output trigger signal pulse.....2 µs
Maximum output current .....10 mA

Interface connectors
Ethernet.....AUI (DB-15), 10Base T (RJ-45),
.....10Base2 (BNC)
Token Ring.....MAU/STP (DB-9), UTP (RJ-45)

Dimensions
Weight.....1.3 kg (2.8 lbs.) per analyzer
Size (L×W×H).....290×230×33 mm
.....11.4×9×1.3 inches

Ambient temperature
Nominal range, use .....+5°C to +40°C
Storage and transport .....-20°C to +60°C

Power supply
Via external AC adapter
Nominal ranges of use,
a.c. line voltage selectable.....100-240 VAC
Nominal range of use, a.c. frequency.....50/60 Hz
Power consumption .....30 VA
.....certified by CSA, UL
Safety .....designed to IEC 1010-1

Recommended minimum notebook specifications
CPU.....133 Mhz Pentium
RAM memory.....≥32 Mbyte (Windows 95)
.....≥64 Mbyte (Windows NT)
Floppy drives.....1.44 Mbyte 3.5″
Hard disk .....500 Mbyte
Parallel port .....EPP, bi-directional or standard
Pointing device.....built-in or standalone
Preinstalled software .....MS Windows 95
CD-ROM Required

Ordering Information

DA-320 DominoLAN Internetwork Analyzer includes software, power supply, notebook/parallel port cable, Ethernet T-connector with 50Ω terminator	**BN 9314/02**	Accessories (charged extra) Domino/Printer cable (1m) Domino trigger cable, BNC-audio Domino/Domino stacking cable Domino to 1284-C peripheral cable 2-Meter Notebook/Parallel port cable	 K9125 K9126 K9194 K9138 K9137
Interface cables (charged extras) Ethernet transceiver Ethernet T-connector with 50Ω terminator Cable, RJ-45 plug-to-plug (4m)	 K9157 S9009 K9136		

A2344 ISO 9001
Wandel & Goltermann Technologies, Inc.

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Communications Test Solutions