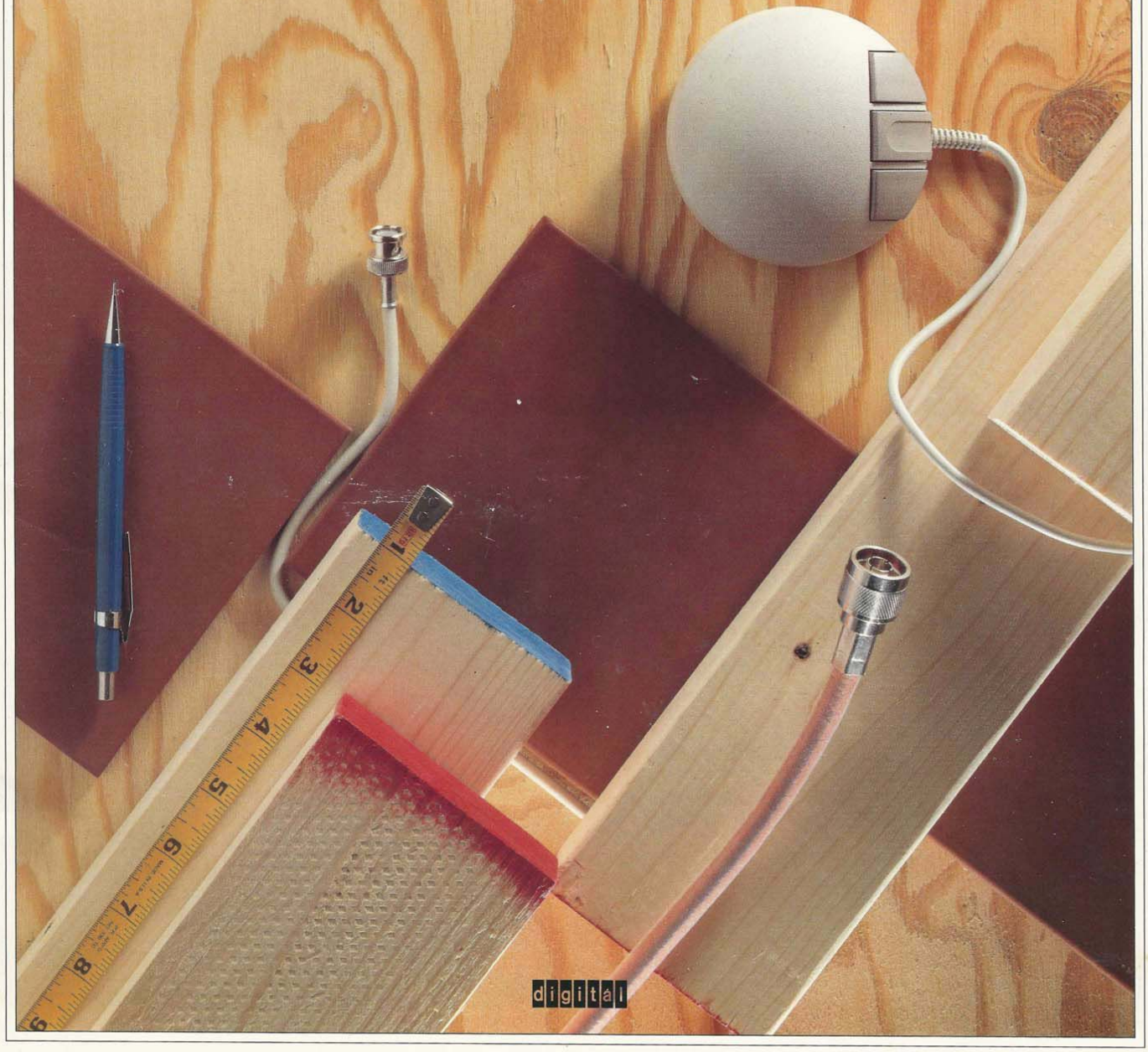
DISTRIBUTED COMPUTING SOLUTIONS

How To Build Digital's Local Area Networks And VAXcluster Systems



digital

NETWORKS THAT WORK... FOR EVERYBODY

Digital makes it easy to build effective networks... for every size business

Today, networking is for businesses of all sizes—any business, in fact, that recognizes that advanced network solutions offer more than standalone computing systems can provide.

THE NETWORK IS THE SYSTEM

A business may have only a few computers, or thousands. A Digital network makes them work together as one, insuring that the work of each system is done in the way that's best for the organization as a whole. Technology is harnessed, to be placed in the hands of the people who need it, when they need it.

PROTECTION FOR INVESTMENT

Hardware and software never have to become obsolete in a Digital network. Customers never have to face the tough choice imposed on them by other vendors: should I abandon my old system to get the benefits of new technology? Instead, they face a more positive decision: what new products can I add to make my network even more productive?

BUILD WITH SOLID ARCHITECTURES

Digital networks are built on a proven combination of hardware, software, and communications architectures that are helping to set the industry standards. Thanks to this commitment to compatible architectures, you can implement the technology you need now—with the confidence that you'll be able to incorporate tomorrow's technology without losing today's investments.

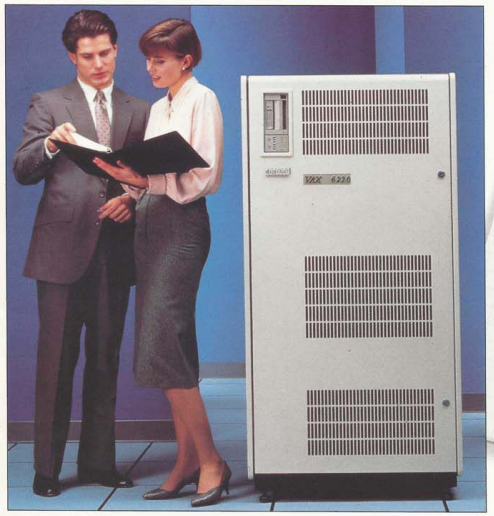
Close adherence to standards begins with VAX and VMS—the hardware and software standards that ensure that new Digital network products will be compatible with existing ones. So new systems can be easily added when more computing power is needed. And there's no need to rewrite software when the new addition arrives—and no need to worry about expensive, time-consuming retraining, either.

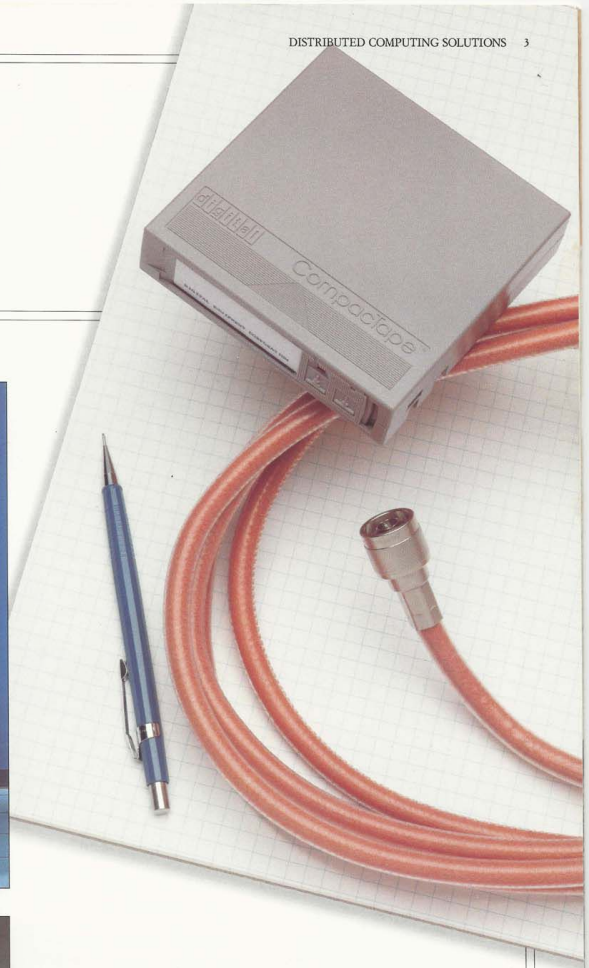
The Digital Network Architecture (DNA) forms a single, unified framework for the broadest range of compatible network products, both hardware and software, in the computer industry. DNA is based on the widely accepted International Standards Organization (ISO) model for Open Systems Interconnect (OSI). While other vendors have developed proprietary networks based on "closed" architectures, DNA is a standards-based architecture that gives users the ability to build networks with the components—Digital or non-Digital—that best meet their needs.

BUILD ON DIGITAL'S DECnet

DECnet—the networking software that connects all Digital systems—provides for multiple capabilities across a wide range of operating environments. These include:

- Remote file access, which enables users to store and retrieve information from locations anywhere on the network.
- File transfer, for speeding information flow and decreasing paperwork.
- Remote resource access, for sharing expensive peripherals and large databases.
- Program-to-program communication, which allows data exchange between programs running under the same or different operating systems and written in different languages.
- Network management utilities, for controlling, monitoring, and testing network functions.
- New DECnet Systems Services, providing the enhanced file and printer access and system management features required for distributing network applications.





BUILD WITH DIGITAL'S ETHERNET

Ethernet, Digital's chosen method for local area networking, is today's most widely used LAN medium. Ethernet provides for high-speed (10 megabits per second) network connections and gives every networked user easy access to all networked resources.

The original "thickwire" Ethernet cabling has been used successfully at thousands of customer sites. Now Digital's ThinWire Ethernet delivers the same high—and highly dependable—performance at substantially lower costs. ThinWire Ethernet is a smaller diameter, more flexible coaxial cable, well-suited for offices and other local work areas.

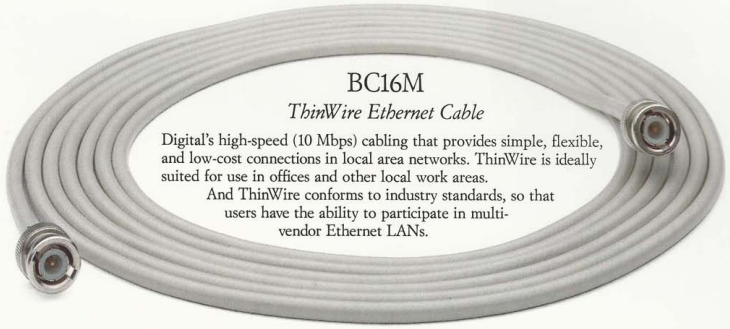
No matter what the business, local area networks go to work immediately:

- Giving all users fast, easy access to critical information.
- Providing for electronic interchange of files and documents such as budgets, spreadsheets, and reports.
- Letting users share expensive peripherals like laser printers, large data storage facilities, and sophisticated communications devices.

And that's just the start.

STARTING WITH THE RIGHT TOOLS

Digital's network products let you build for today...and for the future



BC16M

ThinWire Ethernet Cable

Digital's high-speed (10 Mbps) cabling that provides simple, flexible, and low-cost connections in local area networks. ThinWire is ideally suited for use in offices and other local work areas.

And ThinWire conforms to industry standards, so that users have the ability to participate in multi-vendor Ethernet LANs.

ThinWire Ethernet Terminator

Installed to provide electrical cable termination at the ends of ThinWire cable segments that are not connected to other cable segments.

DESTA

ThinWire Ethernet Station Adapter

A compact, inexpensive transceiver used to connect networked devices to ThinWire Ethernet backbone cabling. The connected stations may be terminal servers, workstations, or larger computing systems equipped with Ethernet Communications Controllers such as the DELQA.

DESPR

ThinWire Ethernet Singleport Repeater

Connects a single ThinWire segment to a standard Ethernet network. The ThinWire segment connected to the DESPR can be up to 185 meters in length and can accommodate connection of up to 29 stations.

BNE

Transceiver Cable

Connects the H4000 Transceiver to an Ethernet Communications Controller such as the DELQA. Standard BNE cable is complemented by a thinner, more flexible version suitable for connecting office Ethernet devices.

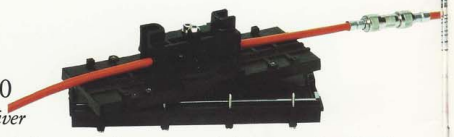
DELNI

Local Network Interconnect

A low-cost desktop device for connecting up to eight Ethernet stations to form a local area network.

A complete Ethernet implementation in a single "box," the DELNI can be used as the foundation of a self-contained network. Or it can be connected to a main Ethernet cable to become part of a larger local area network.

DELNI units can be linked together by transceiver cable to create economical and highly flexible LAN configurations.



H4000

Transceiver

The physical connection between networked systems and traditional, "thickwire" Ethernet cable. The H4000 clamps into the cable in a unique, non-intrusive way so that installation, repair or removal can be accomplished without cutting the cable or disrupting network traffic.

Standard "thickwire" Ethernet cable

Ethernet Communications Controllers

DEBNA

Ethernet Interface for VAXBI Systems

This high-speed interface connects VAXBI systems to a local area network via standard Ethernet cable. The DEBNA also allows a VAXBI system to be used as a boot member of a local area VAXcluster system.

DELQA

Ethernet Interface for Q-bus Systems

High-performance interface that connects MicroVAX and Q-bus systems to the Ethernet local area networks. The DELQA controller ensures maximum network throughput with minimum host processor intervention. A dual size module saves on backplane space.

DEPCA

Ethernet PC Adapter

An Ethernet communications interface for connecting IBM® PCs to Ethernet networks.

Unshielded Twisted-Pair Ethernet Office Adapter

Now customers can turn to a new Ethernet option: the unshielded twisted-pair wiring used for telephone links. Twisted-pair is the answer for installations where standard Ethernet wiring can't be used: where wiring conduits are already full, for instance, or where other types of Ethernet connections would disrupt the business environment. Ethernet using twisted-pair connections is limited to relatively short distances (under 200 feet).

...AND MORE

Digital offers a host of additional options for configuring extended LANs and larger Wide Area Networks. See the Networks and Communications Buyer's Guide for details.

For information on installing ThinWire networks see "DECconnect System Standalone ThinWire Networks: Planning & Installation Guide" (EK-DECSY-TG).

ETHERNET TERMINAL SERVERS

DECserver 200

Terminal Servers provide a convenient, cost-effective way to connect terminals, personal computers, and printers to host computers in Ethernet LANs.

Activity is funneled from multiple terminals to a single, high-speed Ethernet interface on each host—reducing the number of terminal interfaces needed on host systems and cutting power consumption and cabling costs.

In addition, terminal servers' load balancing capability maximizes CPU performance and enhances configuration flexibility.

SUMMARY OF LOCAL AREA NETWORK COMPONENTS

Component	Order Code
ThinWire Ethernet Cable (orderable in various lengths)	BC16M
BNE Transceiver Cable	BNE4C
ThinWire Ethernet Terminator	H8225
DEBNA Communications Controller for VAXBI Systems	DEBNA
DELQA Communications Controller for Q-bus Systems	DELQA
DEPCA Ethernet Interface for IBM PCs	DEPCA-AA
DESTA Ethernet Station Adapter	DESTA-AA
H4000 Transceiver	H4000
DECserver 200 Ethernet Terminal Server	DSRVB-AA
DELNI Local Network Interconnect	DELNI-AA
DESPR Ethernet Singleport Repeater	DESPR-AA
Unshielded Twisted-Pair Ethernet Office Adapter	H3310-AA

THE GROUND FLOOR

Building a DECnet/Ethernet Local Area Network

DECnet software and ThinWire Ethernet cabling make it easy to build local area networks with versatile distributed processing capabilities.

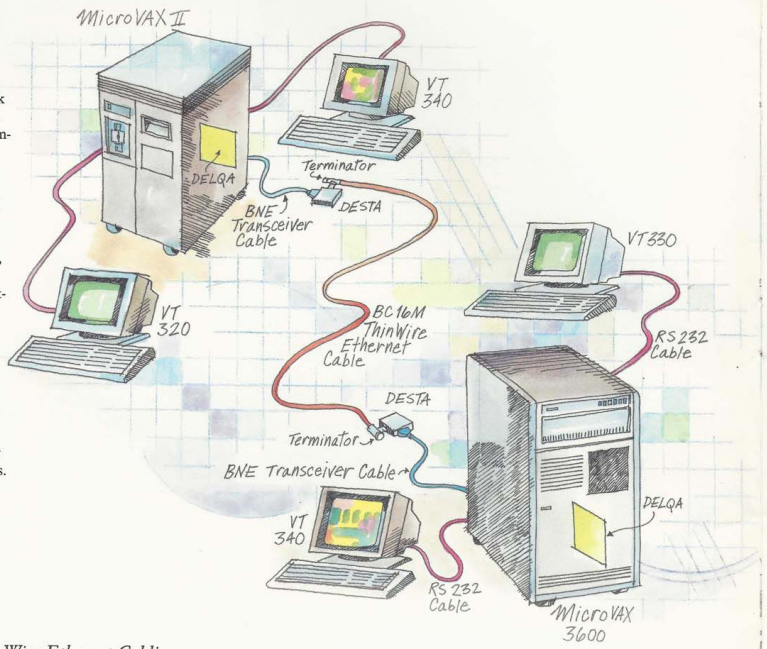
DECnet/Ethernet networking with powerful MicroVAX systems is an ideal option for customers who want to link up departments or work teams for enhanced information and data sharing. When the need for compute power increases, it's easy to tie together two or more MicroVAX processors—including the powerful new MicroVAX 3500 and MicroVAX 3600 systems.

Growing with new peripherals and new system functionality is easy, too. New devices, systems, and services can be added—without disrupting the network—through simple "plug-in" connections.

For VAX and MicroVAX systems, DECnet software is available in "full-function" and "end-node" versions.

Full-function DECnet includes a routing capability that allows for the transit of data destined for other networks or other networked devices. Full-function DECnet is required whenever there is more than one line between the system and the network.

End-node DECnet is used when there is only one line between the node and the network, and therefore no need for routing capability.

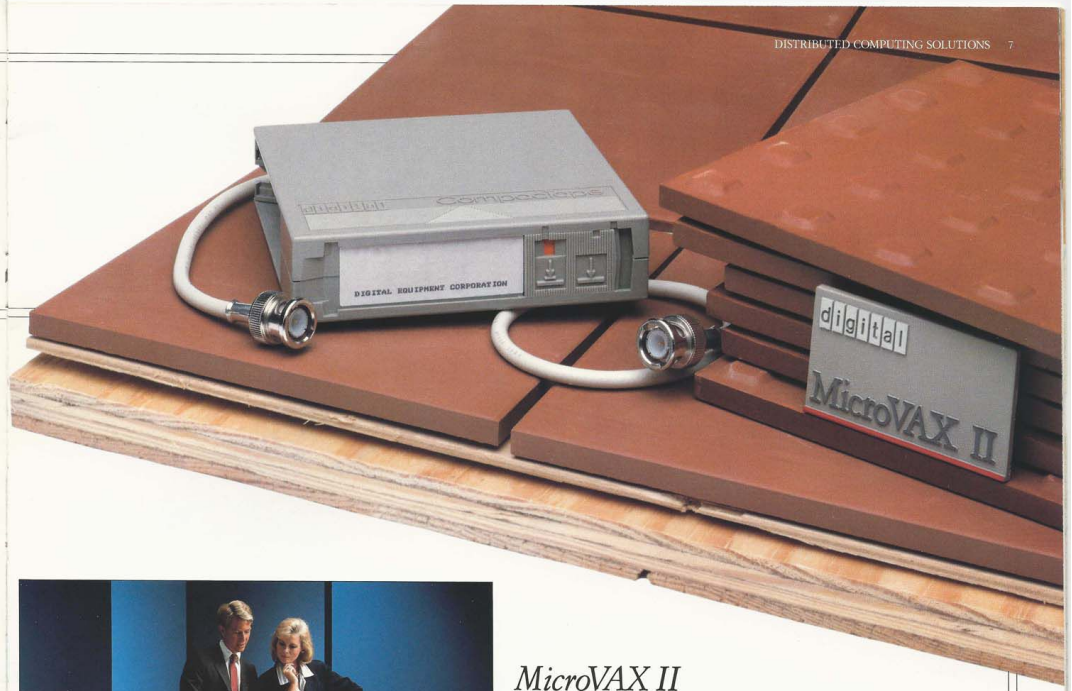


Network Medium: RG58 ThinWire Ethernet Cabling

BC16M	ThinWire Ethernet Cable
H8225	ThinWire Ethernet Terminator (Required for any ThinWire network. Order 2 Terminators for this configuration.)

Required Network Components for this Configuration

DELQA	Ethernet Communications Controller
BNE4C	Transceiver Cable
DESTA	Ethernet Station Adapter (includes T-connector)
QL-D04AN-AA	DECnet-VAX Communications Software—Single-system End-node License for MicroVAX II
QL-D04AB-AA	DECnet-VAX Communications Software—Single-system End-node License for MicroVAX 3600



MicroVAX II

The industry's leading 32-bit computer on a chip.

Digital's MicroVAX II supermicro delivers full 32-bit performance in applications ranging from office automation to realtime process control to software development.

Packing true VAX/VMS power in a compact desk-side design, the MicroVAX II is an ideal server system in a local area network or a local area VAXcluster configuration.

And VMS's comprehensive set of languages, utilities, and easy-to-use development tools creates an extraordinarily rich environment for applications development.

MicroVAX 3500 and MicroVAX 3600

Powerful systems for demanding departmental workloads.

With three times the processor speed of the MicroVAX II, the new MicroVAX 3500 and 3600 systems are powerful enough to provide complete computing support for a large work group or department in commercial or technical environments.

In addition, tightly coupled ECC memory and an advanced caching system speed application performance through reduced disk I/O processing. Large applications can reside entirely in the 32-Megabyte ECC memory of the MicroVAX 3600.

Choose between the desk-height office enclosure of the MicroVAX 3500, or the MicroVAX 3600 computer room/laboratory cabinet.

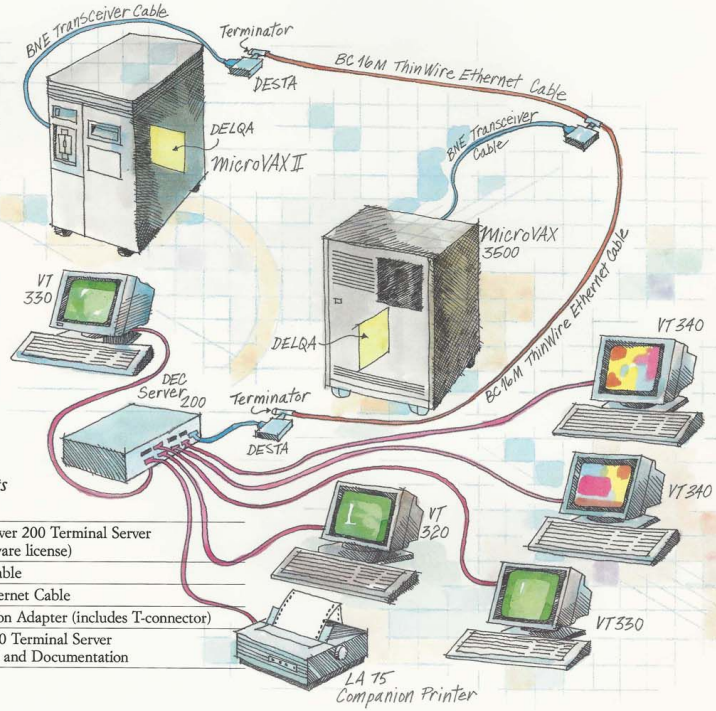
EXPANDING THE BASE WITH TERMINAL SERVERS

A flexible, cost-saving expansion alternative.

Terminal servers provide a convenient, cost-effective way to expand your Ethernet local area network and boost its performance and flexibility.

Terminal servers linked via ThinWire Ethernet enable terminal users to access applications, programs, and utilities on a MicroVAX host as if they were wired directly to the MicroVAX. Server software, including diagnostics, resides on the host and is downline loaded when the server is powered up.

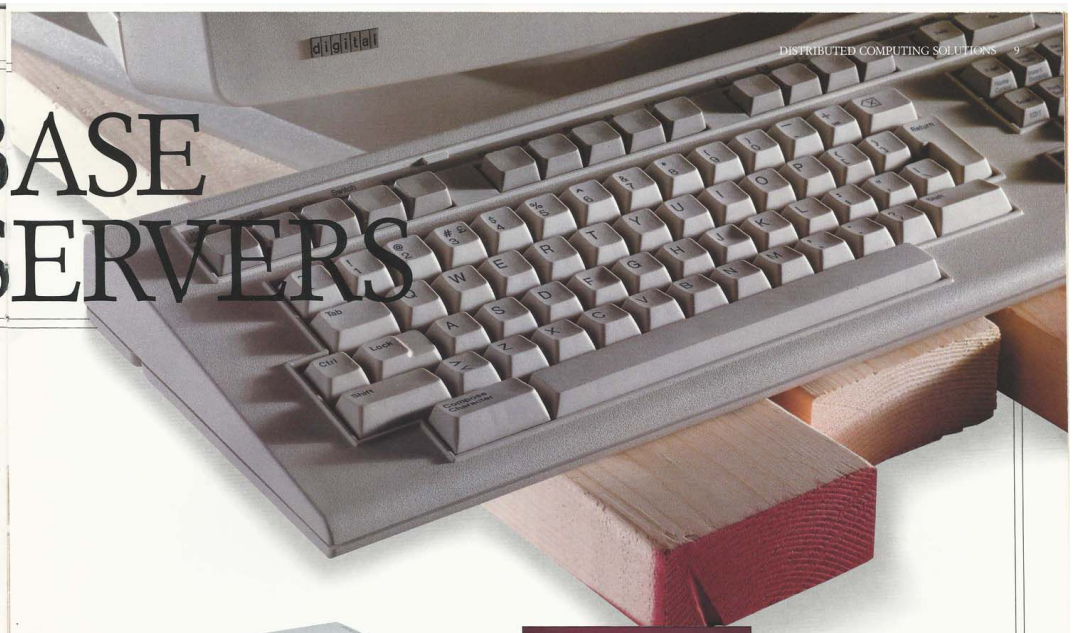
Using terminal servers becomes particularly advantageous in local area networks with multiple host systems. Terminal servers boost performance through a load balancing function that connects users to systems with the greatest available processing capacity, while increasing system availability by allowing users to access alternative hosts in the event of system failure.



Required Network Components for Adding Terminal Servers

DSRVB-AA	8-line DECserver 200 Terminal Server (includes software license)
BNE4C	Transceiver Cable
BC16M	ThinWire Ethernet Cable
DESTA	Ethernet Station Adapter (includes T-connector)
QA-VCBAA-H5	DECserver 200 Terminal Server Media (TK50) and Documentation

Digital's newest video terminals: VT320, VT330, and VT340.



DECserver 200

For simple efficient network expansion.

Available in two versions, Digital's DECserver 200 gives you an easy way to establish high-speed communications for up to eight terminals or printers on an Ethernet LAN.

The DECserver 200/MC is designed for applications requiring modem control signals where terminal users are located within the 50-foot RS-232 signalling distance limitation. The DECserver 200/DL permits terminal users to communicate at greater distances (up to 1,000 feet) and at higher data speeds.

DECserver 500

Offering the same simple, efficient network operation and expansion capabilities of the DECserver 200, the DECserver 500 supports 16 times the total number of device connections of the smaller device. Useful for both extended LANs and large conventional LANs, the DECserver 500 supports the simultaneous operation of up to 128 terminals or printers.

BUILDING FROM THE DESKTOP

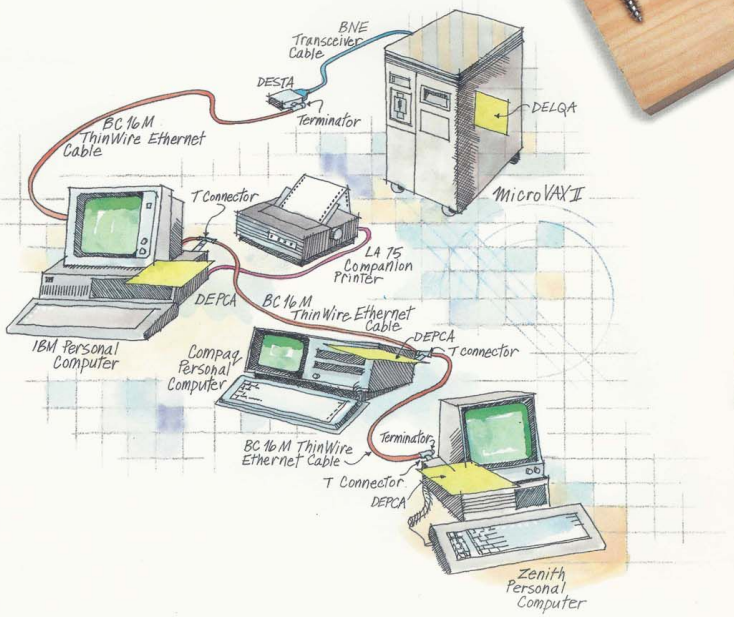
Integrating personal computing.

The commitment to standards of DNA and DECnet, and Ethernet's flexibility, help Digital networks work well with personal computers from other vendors.

Safeguard your investment in existing desktop devices by integrating them into a multivendor DECnet network. Digital's DECnet-DOS products allow MS™-DOS-based personal systems from such vendors as IBM, COMPAQ®, Zenith®, and Olivetti® to participate as end nodes in local area networks. DECnet-DOS supports task-to-task communications, remote file access, and network resource sharing.

In addition, this integration strategy allows the entire range of VAX processors to be used as personal computer servers. With VAX/VMS services for MS-DOS any VAX system can support the sharing of applications, data, and resources by the mixed-vendor personal computers of the network.

Now, customers can start their network building process anywhere. No matter what vendor or what system their current desktop computing environment system is based upon, the advantages of Digital networking are within their reach.

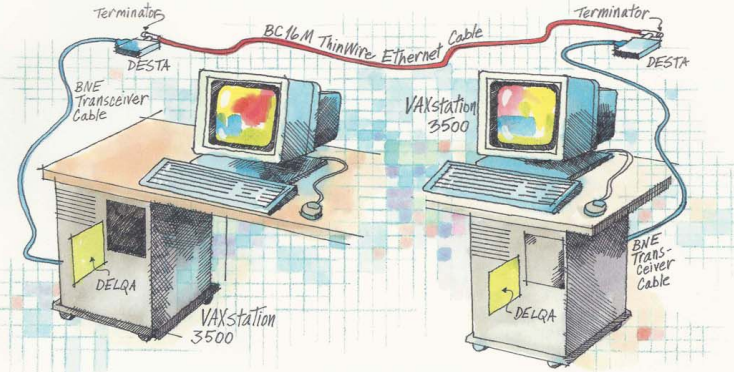


Required Components for this Configuration

DEPCA-KA	Network Services Package includes DEPCA-AA ThinWire Ethernet communications controller, ThinWire assembly kit, mouse, keyboard, PCSA/PC Client single-use software license, DECnet-DOS single-use software license
QBZF7-HI	PCSA/PC Client Software Distribution and Documentation
QBZP3-HI	VAX/VMS Services for MS-DOS Distribution and Documentation
BNE4C	Transceiver Cable
DESTA	Ethernet Station Adapter (includes T-connector)
QL-D04AN-AA	DECnet-VAX Communications Software—Single System License

ADDING WORKSTATIONS

Network flexibility, standalone power.



Digital's VAXstation series of workstations comes standard with a built-in ThinWire Ethernet Interface for easy connection to local area network configurations. Adding diskless* or disk-based VAXstation systems to an Ethernet LAN yields a host of cost-saving, productivity-boosting benefits:

- Compute-intensive tasks can be off-loaded to the host, allowing VAXstation users consistently fast and reliable workstation response.
- Low cost data storage.
- Updating, maintenance, backup, and other system management tasks are centralized and simplified.

Required Components for Connecting VAXstations

BC16M	ThinWire Ethernet Cable
H8225	ThinWire Ethernet Terminators
BNE4C	Transceiver Cable
DESTA	Ethernet Station Adapter (includes T-connector)
	DECnet-VAX Communications Software—Single-System End-Node License (included as part of system)

*Diskless VAXstation systems require VAXcluster software. See page 14.

VAXstation 3200 and VAXstation 3500

Powerful new workstations with built-in network hardware.

With up to four times the processing speed of previous VAXstations, the VAXstation 3200 and VAXstation 3500 are ideal for mechanical and electrical computer-aided design, computer-aided manufacturing, computer-aided software engineering, artificial intelligence system development, financial trading, and laboratory environments involving simulation and modeling.

Both new VAXstations incorporate an integral Ethernet Interface for easy connection to a local area network or a VAXcluster system. The VAXstation 3500 also features a new system enclosure with enhanced resistance to electrical noise and temperature extremes, for reliable performance in the most demanding environments.

BUILDING BIGGER BUILDING WITH VAXcluster SYSTEMS

A framework for expansion.

With Digital networking, there's almost no limit to growth . . . and since all of our systems network with each other, there's no reason to replace equipment when needs change. Adding compute power, users, peripherals —whenever and wherever they're needed—is fast and easy. Companies with installed Digital networks are the best customers for all kinds of Digital systems, because cost-effective growth strategies like VAXclusters let them meet new needs as they develop.

When multiple users require a single VMS system environment, Digital's VAXcluster systems are an ideal alternative to conventional local area networking.

VAXcluster systems provide for:

- **Centralized system management.** On the VAXcluster system operations, performance, and security are easy to manage. System management tasks are accomplished from the Boot Member, relieving Satellite Member users of this responsibility.
- **Cluster-wide data sharing.** Authorized users can access any database residing on any clustered member's disk as if the disk were physically connected to the user's processor. In addition, clustered systems allow record-level sharing among several users as if all users were executing on the same VAX/VMS processor.
- **Cluster-wide resource sharing.** Batch and print queues may be set up to include all system members.
- **Open-ended growth and investment protection.** As requirements expand, new processors can be added to the systems as easily as new disk, memory, or terminal connections. And, as a general rule, there's no need to rewrite existing applications to run in the VMS environment.

VAXcluster SYSTEMS IN A LOCAL AREA

Every installed MicroVAX system represents an opportunity to expand to a dual-computer local area VAXcluster system. Moving up to a clustered system increases computing power and gives more users system-wide access to common resources.

VAXcluster Systems link VAX and MicroVAX-based computers—including the new MicroVAX 3500/3600 and VAXstation 3200/3500—to form a single, closely coupled multi-computer system. This capability offers a cost-effective way to transform isolated computing resources into an integrated processing environment.

Up to 42 VMS systems can be connected in a VAXcluster configuration. All Satellite Members boot from a VMS system disk(s) on a central system, called a Boot Member(s). Satellite systems also have shared access to all languages, tools, and other layered products and applications maintained on the Boot Member.

Software licensing requirements are key elements in any system implementation. Each member (processor) of a VAXcluster system must have a separate license to use VMS and any VMS system integrated product. However, the software installation needs to be done only on each Boot Member's system disk.

VMS

All VAX or MicroVAX systems in a VAXcluster environment must be licensed to run VMS. For MicroVAX systems, user level licensing is available. This allows a more cost-effective solution by licensing a system for only the number of users desired.

DECnet

DECnet on VMS systems is packaged with either a Full Function (F/F) or End Node (E/N) capability. In a VAXcluster system all Member processors must be licensed to run DECnet, but only the Boot Member must have the Full Function capability. Satellite Members require only End Node licenses.

An upgrade option is available for installed systems. This allows the use of DECnet F/F for a VAX processor previously licensed to use the E/N capability only. This license upgrade should be ordered only when you wish to use a currently installed VAX system as a Boot Member.

VAXcluster Software

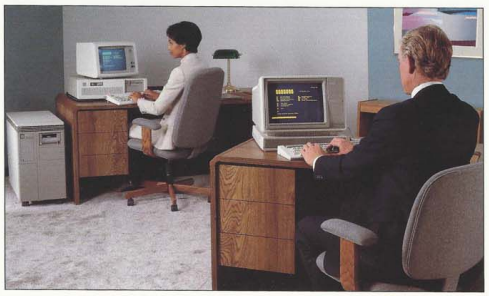
Each processor in the local area VAXcluster system must have a license to run VAXcluster software.

VAX Workstation Software (VWS)

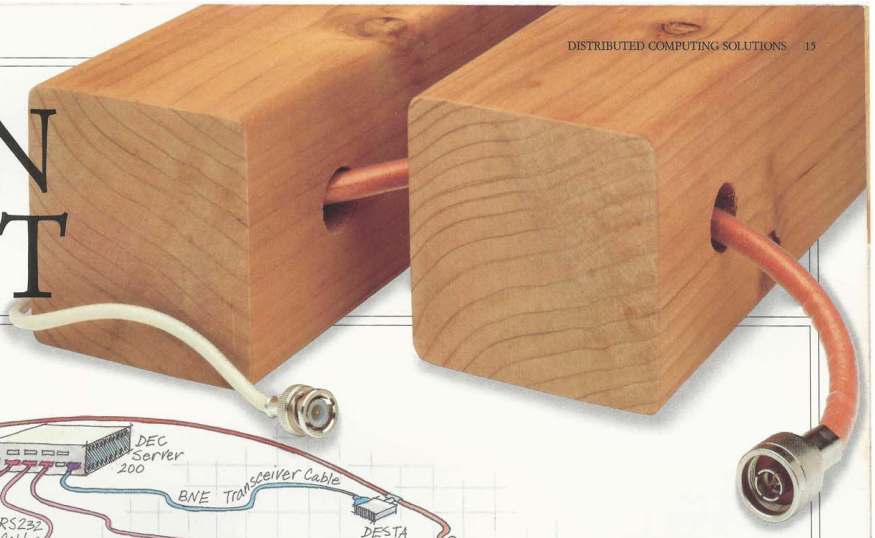
Any VAXstation functioning as a Member of a local area VAXcluster system must be licensed to run VMS Workstation Software.

Layered Products

Languages, tools, or other layered products have traditionally been licensed to just those members (processors) that execute them. The recently announced ClusterWide license has made it easier and more economical to license the entire VAXcluster.



A POWERFUL SOLUTION IN ANY ENVIRONMENT



VAXcluster Systems

VAXcluster SYSTEM TO GROW A TIMESHARING ENVIRONMENT

An existing MicroVAX II system can be expanded to meet growing needs by adding a MicroVAX 3500 system. The new processor becomes the Boot Member in a clustered system with the MicroVAX II as its satellite.

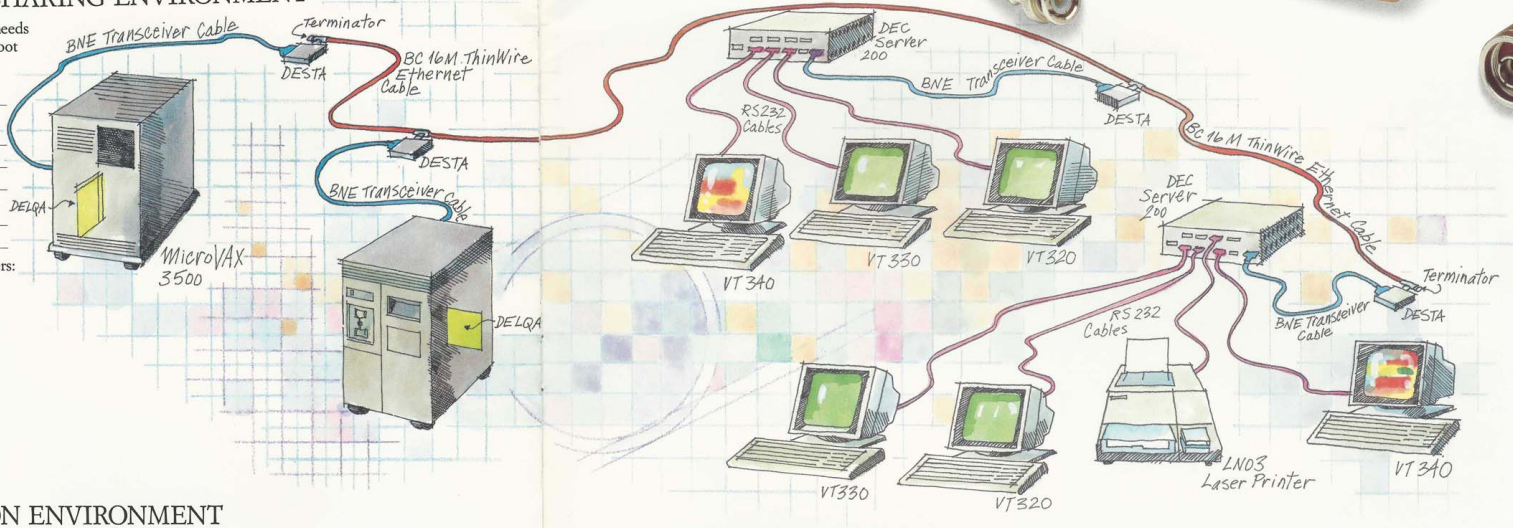
MicroVAX 3500 Boot Member

DV-350T1-A2	Package includes VMS user License and DECnet End Node License
QL-D09A0-AA	DECnet Full Function Upgrade License
QL-VBRA0-AA	VAXcluster Software License

The existing MicroVAX II as a Satellite Member

QL-VBRAZ-AA	VAXcluster Software License

The VAXcluster system in this example supports up to a total of 36 users:
20 on the MicroVAX 3500,
and 16 on the MicroVAX II.



VAXcluster SYSTEM IN A WORKSTATION ENVIRONMENT

This cluster system is built by using a MicroVAX 3600 system as a Boot Member connected to Digital's VAXstation workstations running as satellites.

MicroVAX 3600 Boot Member

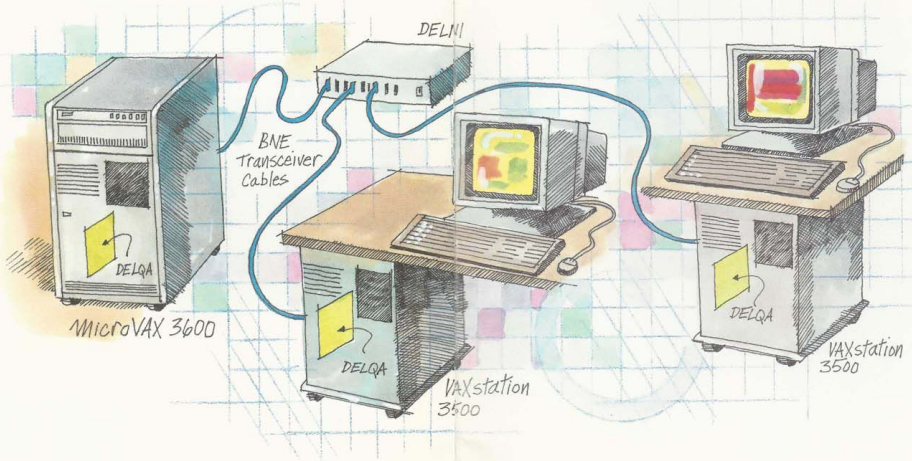
DV-360T1-A2	Package includes VMS user License and DECnet End Node License
QL-VBRA0-AA	VAXcluster Software License
QL-D09A0-AA	DECnet Full Function Upgrade License
QA-A96AA-H5	VMS Workstation Software media and documentation TK50

VAXstation 3200 Satellite Members can be any of the following:

VS300-AA	monochrome, 4-plane, diskless
VS305-AA	color, 8-plane, diskless
VS310-AA	monochrome, 4-plane, RD54
VS315-AA	color, 8-plane, RD54

Each VAXstation 3200 package includes:

QL-001AC-BB	VMS 1-2 user License
QL-D04A1-AA	DECnet End Node License
QL-VBRA1-AA	VAXcluster Software License
QL-A96A1-AA	VMS Workstation SW License



VAXcluster Systems or Local Area Networking

Both Local Area Networking and VAXcluster Systems provide state-of-the-art distributed computing functionality.

In fact, a VAXcluster system can exist as a node in a local area network configuration.

The following guidelines should help you decide which approach best meets your needs.

VAXcluster software is the way to grow VMS Systems...

- In a single system VMS environment
- When there is a need for transparent, record-level information sharing.

A Local Area Network is the way to grow an entire installation...

- By integrating VMS, RSX, RSTS, ULTRIX, MS-DOS environments
- By integrating IBM and MacIntosh™ systems
- In a distributed system environment.

See your sales representative for further details.

BUILDING NETWORK POWER

Network expansion with Digital's new mid-range systems

EXTENDING VAXcluster PERFORMANCE

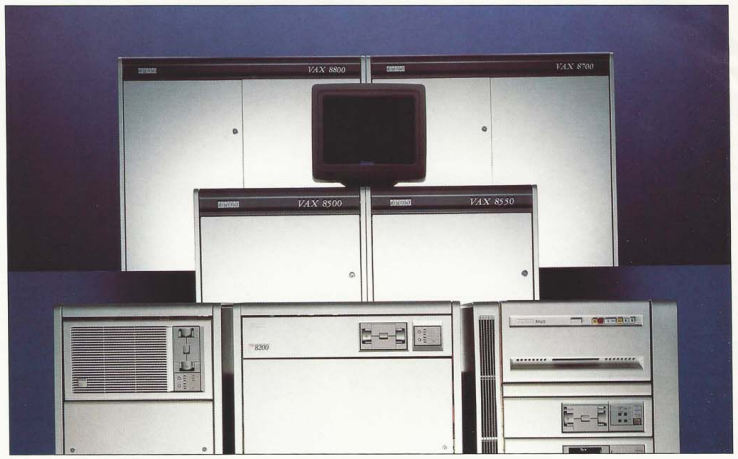
. . . with the power of larger VAX systems.

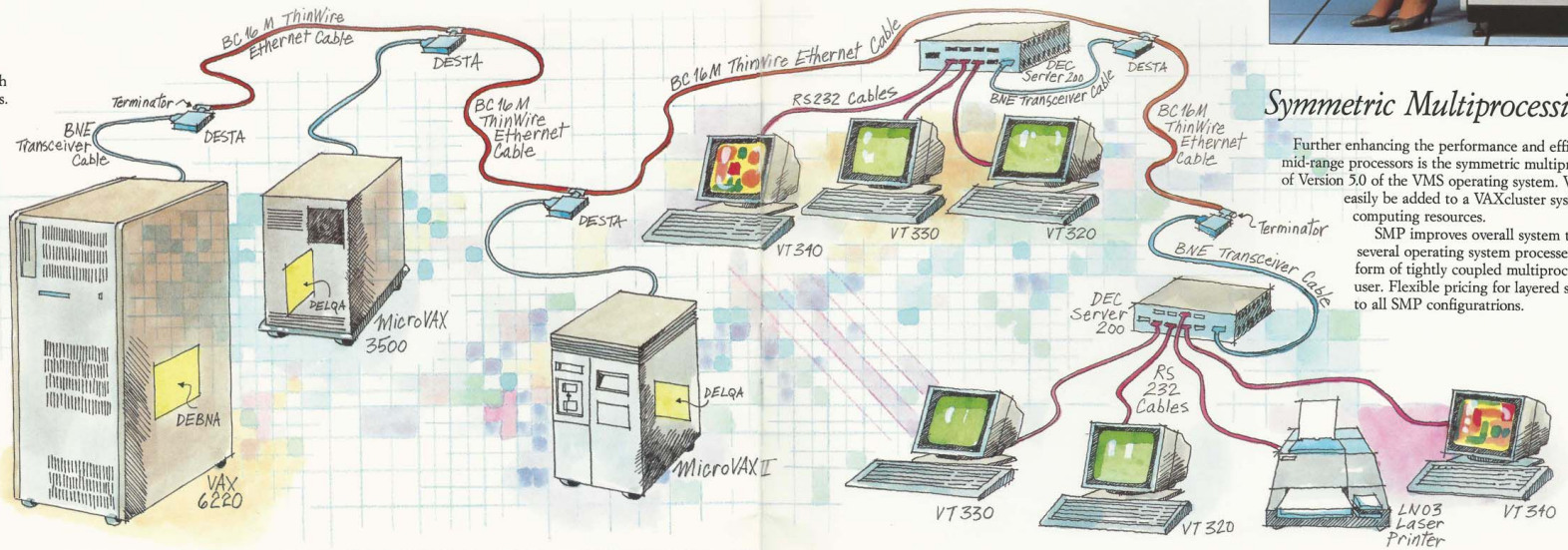
VAXclusters can connect the full range of VAX systems, from the MicroVAX all the way up to the mainframe-sized VAX 8800 Series. This is accomplished by simultaneously supporting both Ethernet cluster connections and the Computer Interconnect (CI) used by large VAX systems.

In this mixed VAXcluster environment, mid-range VAX systems can serve as a bridge—allowing terminal and workstation users to share many more resources, and to off-load their most compute-intensive jobs.

The power potential of these VAXclusters is truly staggering: up to 42 systems can be supported, including up to 16 of the large CI VAX systems. VAXclusters which include larger VAX systems offer a new range of benefits, as well:

- High Capacity—of the largest VAX systems, working together.
- Continuous Data Access—through shared redundant storage resources.
- High Availability—if one system fails, the others keep working, and loads are automatically transferred to the operating cluster members.





A New Dimension— The VAX 6200 Series

Digital's Most Expandable System for Departmental and Company-wide Computing

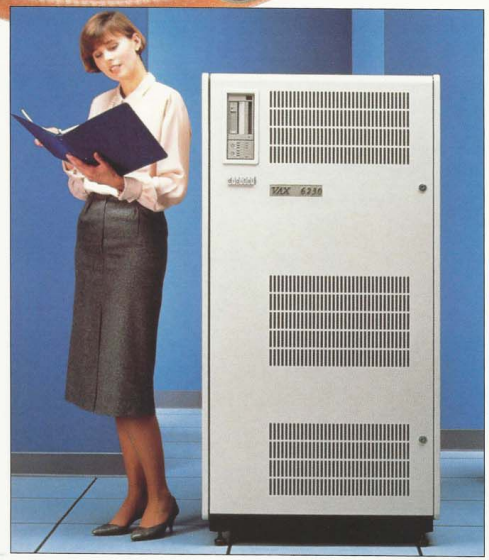
Digital's new mid-range computing systems can expand dramatically in power and memory as user's needs expand—without increasing space requirements. The VAX 6200 Series are Digital's new mid-range performance leaders, and the most expandable mid-range offering in the industry.

Processor performance ranges from three to twelve times the MicroVAX II. An efficient multiprocessor architecture and modular components mean you can expand easily and economically within the same cabinet whenever your needs grow.

Modularity also insures workload balance is maintained as the system is upgraded—whether two, three, or four processors are used. And the VAX 6200s are built to connect easily to VAXclusters, to provide real large-system capacity.

If your applications require high system throughput, or if you want extra performance to offload intensive computing tasks, the VAX 6200s can deliver the power you need right now. No other mid-range series can match their mix of performance and flexibility:

- A broad performance range, with the top of the line system offering almost four times the power of the entry-level system, in the same cabinet.
- Easy growth, with CPUs and memory that can be quickly inserted into the original cabinet.
- Efficient system throughput, with a combination of symmetric multiprocessing, VAXBI buses, and a new high-speed system bus handling your heaviest processing and I/O demands with ease.



Symmetric Multiprocessing

Further enhancing the performance and efficiency of Digital's powerful mid-range processors is the symmetric multiprocessing (SMP) capabilities of Version 5.0 of the VMS operating system. VAX multiprocessing can easily be added to a VAXcluster system to provide additional computing resources.

SMP improves overall system throughput by executing several operating system processes simultaneously. This new form of tightly coupled multiprocessing is transparent to the user. Flexible pricing for layered software products applies to all SMP configuratrions.

BUILDING FOR THE FUTURE

Start with Digital Local Area Networks, and the sky's the limit...

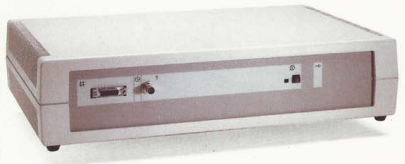
The power of the VAX, the speed of Ethernet, and the flexibility of DECnet are technologies that can work for you. Huge installations with hundreds, even thousands of users have been developed using LAN and VAXcluster technology at a single site.

Still, standard Ethernet cabling has a length limitation of a little more than a quarter of a mile. Today, many businesses are facing the requirement for effective networking of two or more installations, geographically separated.

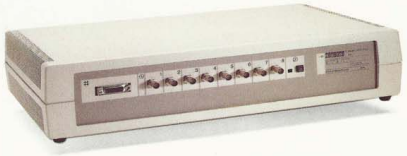
When you need networking power that isn't constrained by the limitations of immediate proximity, virtually unlimited growth and configuration flexibility is possible:

- Add terminal servers, peripherals, repeaters and transceivers to connect a virtually unlimited number of users.
- Build larger networks by including repeaters, bridges, and routers.

ETHERNET REPEATERS



DESPR



DEMPR

DEREP

These devices are designed to retime, amplify, and relay all signals received from one Ethernet cable segment before passing them on to another. A repeater enables the connected segments to function as if they were one cable.

DESPR ThinWire Ethernet Singleport Repeater

This repeater connects a single ThinWire segment to a standard Ethernet segment. The ThinWire segment can be up to 185 meters in length and can accommodate connection of up to 29 stations.

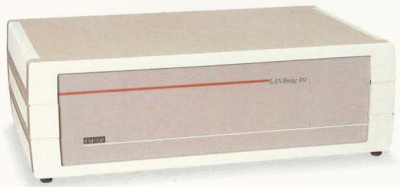
DEMPR ThinWire Ethernet Multiport Repeater

Providing ports for connection of eight ThinWire Ethernet segments and one standard segment, the DEMPR can be used as a standalone device in ThinWire environments or connected globally to standard Ethernet.

DEREP Ethernet Repeater

Extends the effective range of Ethernet-based local area networks to more than a mile and a half. The DEREP is available in two models: the Local Ethernet Repeater, with a range of 100 meters (328 feet) between cable segments, and the Remote Ethernet Repeater, with a range of 1,000 meters (3,280 feet) between segments. Up to three Ethernet "thickwire" segments can be connected in a series.

LAN BRIDGES



LAN BRIDGE 100

These devices also transparently connect two or more Ethernet LANs, but are more sophisticated than a repeater. The LAN Bridge 100 permits greater expansion in the physical limits of Ethernet, including geographical extent, number of stations, and aggregate bandwidth.

Utilizing a Store and Forward feature to receive, regenerate and transmit packets of data, these bridges permit users to build extended LANs several times larger than previous Ethernet guidelines permitted. Up to 8 Ethernets may be interconnected in series, to create an extended LAN that spans distances of over 12 miles.

On such an extended local area network, the LAN Bridge 100 could handle more than 8,000 node addresses, while delivering full 10Mbs throughput across the network.

Only data destined to different LANs passes through the bridge and continues on to the appropriate remote destination. Thus, while the bridge is transparent to the nodes communicating through it, the LAN Bridge 100 improves Ethernet performance by reducing traffic between LANs.

Standard Bridge

LANs up to 100 meters (328 feet) apart can be linked using this interface between two transceiver drop cables.

Fiber Optic Bridge

Two of this option can bridge two LANs separated by distances of up to 1,000 meters (3,280 feet), each connecting one transceiver drop cable with a fiber optic link.

METROWAVE Bridge

The METROWAVE Bridge uses microwave technology to connect geographically separated Ethernet local area networks within a metropolitan or campus environment in which cable cannot be economically strung or leased.

METROWAVE connects two Ethernet LANs separated by such obstacles as streets, highways, and waterways. The bridge provides high-speed transmission via a wideband frequency modulated microwave link, over line-of-sight distances of up to 4.5 miles.

DECnet ROUTERS

DECnet Routers permit great flexibility in configuring a network. A network can start with two nodes on an Ethernet and be expanded to a wide area network, with systems distributed in different cities across the country and even in other countries or continents.

DECnet Routers should be considered to connect LANs into wide area networks. Routers are required on an Ethernet for communications with systems off the Ethernet.

DIGITAL'S STRATEGIC NETWORKING VISION

A framework for the future...

In the future, the recently announced DECnet Phase V will provide even greater connectivity, compatibility, ease-of-use, and comprehensive management functionality. As the DECnet Phase V product set is fully developed over the next three to five years, Digital networking will become fully integrated with the OSI model.

For More Information...

Networking is the future of computing.
And Digital has it NOW.

Contact your sales representative for detailed information on opportunities with Digital's local area networks and VAXcluster systems.

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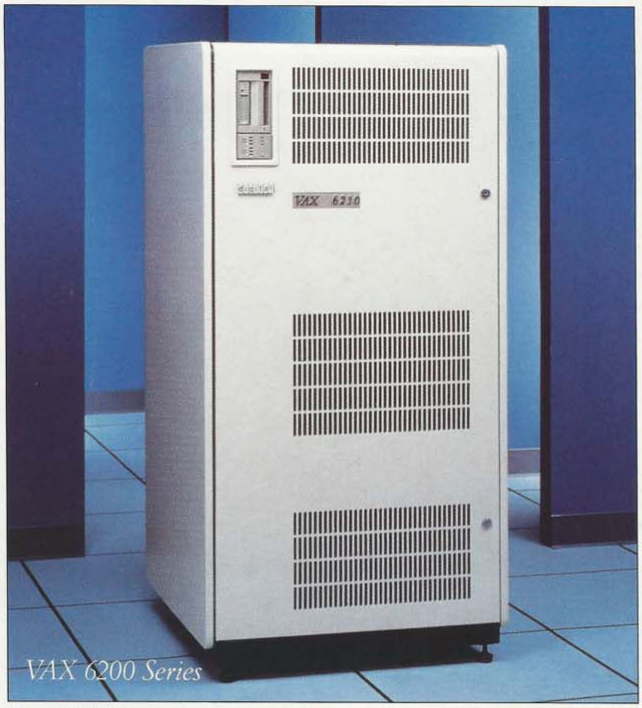
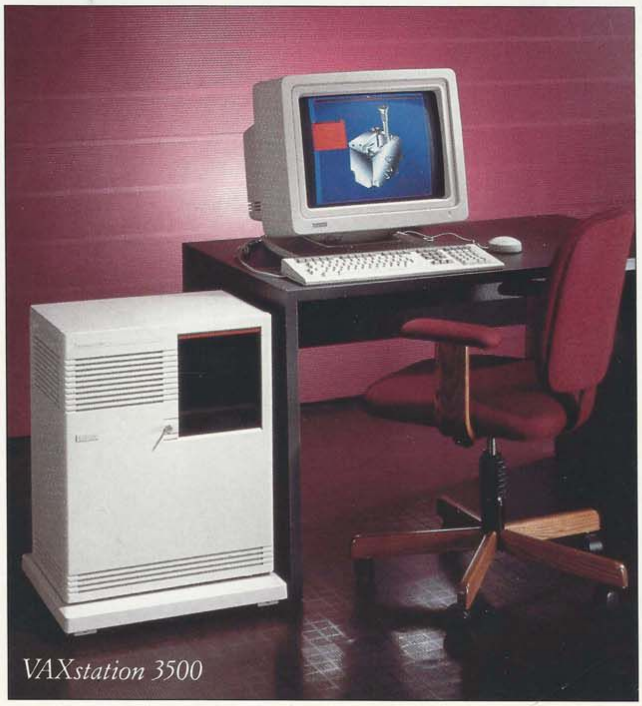


VAX 6200 Series

MicroVAX 3600



VAXstation 3500

MicroVAX II