For Immediate Release

XEROX ANNOUNCES SYSTEM LINKING OFFICE EQUIPMENT INTO NETWORK

DALLAS, Nov. 18 -- Xerox Corporation today announced a business information system that allows users to assemble a completely integrated office network.

The Xerox 8000 network system lets users create, process, file, print and distribute information electronically.

It includes an electronic office file that stores up to 10,000 pages of information, a compact electronic laser printer and several communications units that link different types of office equipment--including competitive equipment--into a single integrated network.

The initial office workstation for the new 8000 equipment is the previously announced Xerox 860 information processing system that combines processing of text, business records and data.

Designed for Use With Ethernet

All of the equipment is designed for use with the company's office communications Ethernet network. Specifications for this local area network were developed jointly by Digital Equipment Corporation, Intel Corporation and Xerox and were published in September.

David E. Liddle, vice president, Office Products Division, said the new 8000 system "provides users with a logical next step in the evolution of information management in the office.

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"By linking many types of office equipment into a single system, and having the equipment communicate, we have increased the user's ability to manage and exchange information within an office and between offices," Liddle said.

He said information can be sent via the Ethernet office network from one location to another, at the rate of about a million characters per second, and can be displayed and printed on demand.

The newly announced units are called "servers," because they provide services to users at workstations on the office network. The 8000 series servers are controlled by a standard Xerox-developed processor. The processor can be configured to control different office systems functions--such as printing, filing and communications--by using the appropriate software and adding peripheral devices. Future enhancements to the network system also will use this processor.

"The flexibility provided to the user by this processor," Liddle said, "permits configurations to meet tomorrow's needs as well as today's office requirements."

File Server Options

The file server is available with several sizes of magnetic disk units for office filing. Additional storage options are planned. Just as an office manager might order one or half a dozen file cabinets, a disk size can be chosen to fit the needs of a particular office. The largest disk includes storage space of about 10,000 pages of information, more than can be stored in a four-drawer filing cabinet. A file server allows workstation users to have the same access to an electronic filing cabinet as they would to a manual file. For example, they can display a catalog of the file contents, open a new file and assign a name to it, and add or delete information.

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A file server is also used as a "post office" for electronic mail ications. Workstation users can check their assigned "mail boxes," have the displayed, and have it printed if needed. They can also delete mail or keep the electronic file. The user can send mail to a single recipient or a list of pients.

A print server includes an electronic printer that runs about 12 times r than a conventional daisywheel printer and disk storage for font and print etention. This low cost printer is for use by small office groups. Like the r Xerox 5700 electronic printing system, introduced in September this , the printer uses a laser scanner and the xerographic process.

The electronic printer can produce a variety of type fonts and print r vertically (portrait) or horizontally (landscape) on the page. In addition, n change fonts anywhere on the page without operator intervention or ng the printing rate.

Two Types of Communications Servers

There are two types of communications servers available with the new m.

The 8000 communications server gives the workstation user access to Ethernet network systems. It also allows communicating Xerox 860 ms to exchange information with other Ethernet network systems. When r more Ethernet networks are connected by these servers, documents, files ny other material can be transferred among different office sites.

The 872 and 873 communications servers provide a variety of ntional communications interfaces. In combination with software used by the 8000 series file or communications servers, these interfaces allow ment connected by an Ethernet network to exchange information with non- units, such as terminals and large computers.

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Order taking for the new equipment will begin immediately in the United States. Deliveries will begin in the first quarter of 1981, with availability of different capabilities scheduled through the fourth quarter.

Purchase price of system units ranges from $13,995 (including software) for the smallest communications server to $29,995 for a print server package. Lease prices for the same units are $605 and $1,135 per month for a one-year agreement.

Except for the print server, hardware and software are priced separately. There is also a monthly maintenance charge for the software to ensure that users have the most current system software performance.

The Xerox 8000 network systems are manufactured and marketed by the Office Products Division, 1341 Mockingbird Lane, Dallas, Texas 75247.

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USING THE XEROX 8000 NETWORK SYSTEM

INTRODUCTION

The Xerox 8000 network system hardware and software are based on the results of a research project designed to simplify office work by substituting electronic handling of information for manual operations.

For more than five years, the Xerox Corporation has been developing experimental office systems (Alto) and installing them for everyday use within the company and at some outside test sites.

These Alto systems, developed at the company's Palo Alto Research Center (PARC), consist of workstations, electronic filing systems, communications units, and electronic printers. They are tied together by the Ethernet local communications network.

First installed at PARC, they are now being used at several Xerox sites, including the Electronics Division in El Segundo, Calif., the training facility in Leesburg, Va., and the headquarters of the Office Products Division in Dallas.

The Ethernet network at each site is connected to those at the other sites by outside communications lines. As the office systems are used, the results achieved--and the reactions of those using them--have been recorded for the guidance of the design groups responsible for future products.

THE NEW SYSTEMS

The systems now being announced are the first commercial products based on that experience. In conjunction with the Ethernet network, they form office information networks that are very different from the familiar separate office machines. They are not just simpler, faster, more efficient office equipment. They actually change the way that office work is done.

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To understand how they work, it may be useful to delay describing in this section the equipment and programs that make the various functions possible. In the jargon of the industry, the system is "transparent" to those who use it. They don't have to be concerned with the details of its internal operation or the programming.

The procedures followed by the user are quite similar to present methods. The big change is in how the information is handled electronically--accumulated, transferred, processed and printed--under the user's control but without most conventional manual operations.

The single most important change is that nothing has to be printed until it's wanted in that form. A memo can be written, distributed, and filed without ever being put on paper. A report can be created, filed, retrieved, and revised--but is only printed at the request of those receiving it.

As an example, consider the preparation of a report that must be approved by people at several widely separated sites--a typical project in any large organization. This is how it's done now.

Present Methods

The writer first produces a rough draft, using a typewriter, dictating, or even writing it out by hand. The result goes to a typist or word processing operator for a clean draft, the first of a long series of exchanges. Copies of this draft are made. Then they are distributed, either hand-carried or by internal mail, at the writer's site. The outside mail or facsimile is used for those at other locations. The distribution is usually accompanied by several telephone calls to verify receipt.

Each person who received a copy of the draft adds comments or changes and the whole procedure starts again--copies for the file, mailing, and the associated phone calls.

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How many exchanges must be made, and how many drafts must be retyped, depends on the nature of the report. But everyone who has been through the process recognizes the problems and the delays. Eventually all the changes are captured in one place, the writer does some editing, and a final draft is prepared. It must then be duplicated at the central site and distributed through the mail. Extra copies are made for the files and for later requests.

Here's how the same project would be done electronically, using Xerox 8000 network systems.

With the 8000 System

The document is prepared using a workstation keyboard instead of a typewriter. If help is needed, participants can transfer material back and forth via the file system between their workstations. Each can see a copy of the other's work on the display screen and words, paragraphs, or pages can easily be rearranged. If the user wants to see a reference document, it can be called up on the screen instantly from the electronic filing system.

When a draft is ready, it can be transferred immediately to the screen of a workstation at another site. The recipient transmits any comments just as quickly. When the writer has received responses from all the people involved, a final draft is prepared.

All this has been done without anyone handling a piece of paper. The system has eliminated handwritten copy or comments, several intermediate printed drafts, the cost and delays of the mail, the phone calls, and probably some local or long-distance traveling. The time saved is at least several days.

When it's time to distribute the final report, it can be produced by an electronic printer--locally for the writer and associates, remotely for those at other sites. Only

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the number of copies needed at the time need be printed. The report is then filed electronically and anyone using the system can get one or more copies as the need arises or display part of it for reference. If the writer wants to modify it later, or use a section for insertion in another report, it's available whenever it's wanted.

There is another significant difference implied by this before-and-after example, one that should lead to increased efficiency in handling office work. When information can be exchanged immediately, it becomes possible to complete a single job while the facts are fresh. As it is now, especially with mail delays, it's necessary to do large jobs in separate stages over days or weeks. The intervals of time left over may or may not be long enough for other jobs. The result is a segmentation of working time that makes planning difficult for the individual and workloads uneven for the group.

Combination Products

The changes described here, although substantial, are evolutionary. The equipment and software that form the 8000 system are a combination of existing and new products. More details on the new equipment are provided separately in this press kit but the functional units are the following:

Ethernet -- The local area communications network that links all the elements of the 8000 system. It accepts transmission of information from the transceivers associated with the elements attached to the network. The rate of transmission is so high that the user of a workstation will notice no delay between transmission and reception.

Workstation -- The initial workstation for the 8000 network system is the Xerox 860 information processing system. It includes a keyboard, display, microprocessor controller, and disk storage.

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File Server -- Consists of a high-speed processor, a keyboard/display terminal, and a choice of disk storage units. The processor is pre-programmed to control the disk unit so that it appears to the workstation user as the electronic equivalent of a filing cabinet.

Print Server -- A combination of disk storage unit, controlling processor, and electronic printer, with a keyboard/display. The printer uses a laser scanner to create images, which are reproduced on paper by xerography.

Communications Server -- This element of the system, available in two models, handles communications between Ethernet networks and between an Ethernet network and outside communications lines or devices.

Up to 1,024 of these elements can be used with one Ethernet network. Most of them, of course, will be workstations, with the number of file, print, and communications servers depending on the application.

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XEROX 8000 NETWORK SYSTEM FILE SERVER

The 8000 NS file server provides storage for documents and is a central point on the Ethernet network for receiving, holding, and forwarding electronic mail.

Three models are available, differing in storage capacity. Each model includes a processor, floppy disk storage, and a keyboard/display terminal. Rigid disks can be ordered with capacities of 10, 29, or 58 megabytes, allowing storage of approximately 1,000, 4,500, or 10,000 pages of text. Additional capacities are planned.

To the workstation user, the file server is analagous to a filing cabinet. It provides levels of storage, like the file drawer, folder, and document categories of an office filing system.

The user can request a file drawer catalog, listing the file drawers on the workstation display. New files can be set up and names assigned, documents can be retrieved for display, and the file contents can be modified or deleted. When a document is transferred from a workstation floppy disk to the file server, its name is added to the file catalog.

For electronic mail storage and distribution, the file server provides similar capabilities. There is a post office catalog that lists all the mailbox names as well as levels for mail folders and individual mailed documents.

The material stored by the file server may be various types of programs as well as conventional documents.

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XEROX 8000 NETWORK SYSTEM PRINT SERVER

The 8000 NS print server provides electronic printing for users of the Xerox Ethernet network at a rate of 12 pages per minute. For average double-spaced text, this is the equivalent of about 3,000 words per minute.

The print server consists of a high-speed processor to control operations, floppy and rigid disk storage, a keyboard/display terminal, and the printer itself. Images are created from stored digital fonts by a scanning laser and printed by a xerographic process.

Resolution is 90,000 dots per square inch, the same as the Xerox 5700 and 9700 electronic printing systems. The electronic printer provides a variety of fonts, available in 10 and 12 point and with proportional spacing. Multiple fonts can be used on a page under program control, without operator intervention.

Printing can be done either in portrait or landscape modes using standard-size plain paper. Paper input is from one of two cassettes, each holding 250 sheets. The output bin has a capacity of 125 sheets.

In normal operation, documents sent to the printer through the Ethernet network are stored on a disk, then printed in the order received. Pages are printed in normal collated sequence.

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XEROX 8000 NETWORK SYSTEM COMMUNICATION SERVER

The 8000 NS communication server provides three communication-related services. First, it enables remote Xerox 850 and 860 systems to exchange electronic mail with 860 systems attached to an Ethernet network. Second, it permits several, geographically separated Ethernet networks to be interconnected by means of leased or manually dialed telephone lines. And third, it enables users to refer to file and print servers, attached to any of the connected Ethernet networks, by textual names, rather than by their internal network addresses.

The three communication services described above can be provided by either a single, dedicated processor or by the file server. In either case, their operation is controlled from a keyboard/display terminal attached to the server. The communication server supports both half- and full-duplex modems and data rates of up to 9,600 bits per second. Additional capacities are planned.

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XEROX 872 AND 873 COMMUNICATION SERVERS

The 872 and 873 communication servers provide the external communication interface to remote workstations, terminals and host computer systems, allowing them to communicate with the Ethernet network.

The two models of this communication server provide different communications port capacity. Model 872 provides for four outside connections, while the Model 873 provides for eight outside connections. Data transmission rates are at up to 9,600 bits per second. These servers, in conjunction with 8000 network system servers, provide communications with Xerox products, such as the Xerox 860 information processing system, and those from other manufacturers using Teletype, IBM 2770, IBM 2780 or IBM 3270 communication protocols.

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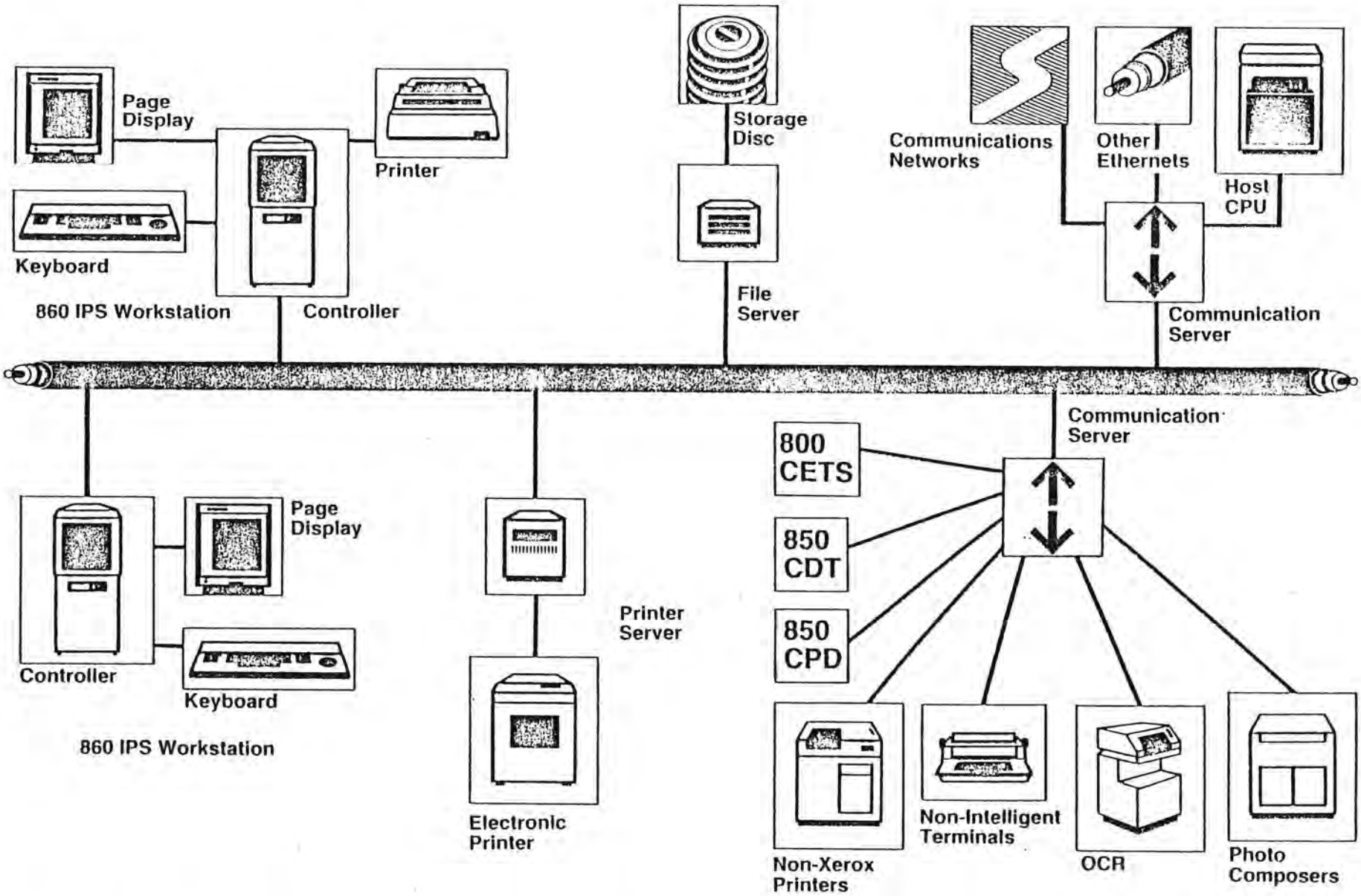
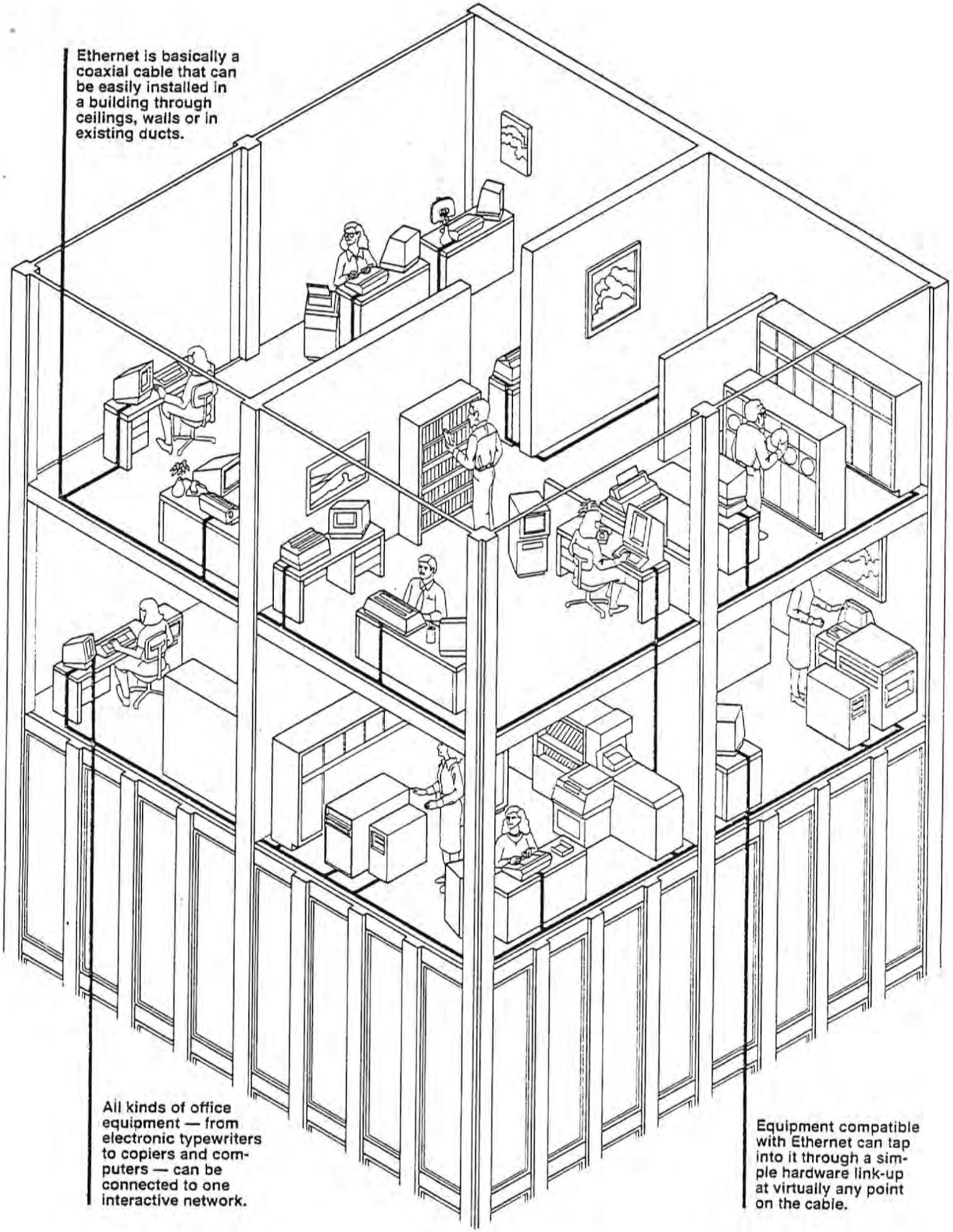
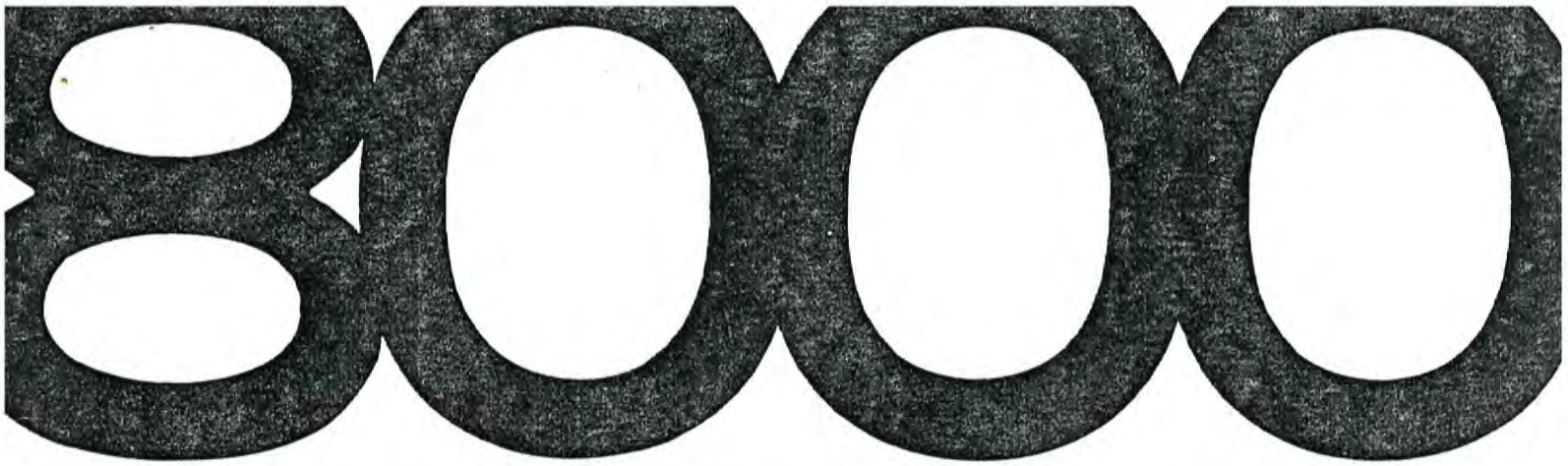


- Intra/Inter Office Communications
- Multi Function Workstations
- Electronic Mail
- File Management
- Electronic Printing
- Xerox Compatibility
- Non Xerox Device Compatibility
- Host Computer Interface


Ethernet is basically a coaxial cable that can be easily installed in a building through ceilings, walls or in existing ducts.
All kinds of office equipment — from electronic typewriters to copiers and computers — can be connected to one interactive network.
Equipment compatible with Ethernet can tap into it through a simple hardware link-up at virtually any point on the cable.



Xerox 8000 Network Systems

Price List Effective November 18, 1980

XEROX

Network Systems Pricing
File Server Products

Model #	Description	Price: Outright Sale	Price: Rental 12 Mo.	Price: Rental 24 Mo.	FSMA
8000	Processor	$13,020	$ 540	$ 490	$ 1,200
Series 8030					
8031	8000 NS Processor	13,020	540	490	1,200
	File Module (10MB)	4,035	170	155	900
	File Svcs Software	3,600	185	185	360
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network File System (10MB)	20,995	895	830	2,460
8032	8000 NS Processor	13,020	540	490	1,200
	File Module (29MB)	8,035	315	290	1,140
	File Svcs Software	3,600	185	185	360
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network File System (29MB)	24,995	1,040	965	2,700
8034	8000 NS Processor	13,020	540	490	1,200
	File Module (58MB)	11,035	460	425	1,320
	File Svcs Software	3,600	185	185	360
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network File System (58MB)	27,995	1,185	1,100	2,880

Placement/Removal Charges

8000	Processor	$150
8031	File Module (10MB)	$ 40
8032	File Module (29MB)	$ 80
8034	File Module (58M)	$ 80

*Optional lengths available

Network Systems Pricing
Print Server Products

Model #	Description	Price			
		Outright Sale	Rental 12 Mo.	Rental 24 Mo.	FSMA
8000	Processor	$13,020	$ 540	$ 490	$ 1,200

Series 8040

8044	8000 NS Processor	13,020	540	490	1,200
	Print Module A (4 fonts included)	16,635	595	505	2,100
	Software (Optional Fonts)	(See Software Price List)			
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network Printing System	29,995	1,135	995	3,300

Page Volume Charge	FSMA
Up to 5,000 - Included in price 5001 + @ .032/Page	FSMA for purchased equipment - Includes 5000 pages. 5001 + @ .015/Page

Placement/Removal Charges

8000	Processor	$150
8044	Print Module A	$300

*Optional lengths available

Network Systems Pricing
Communications Server Products

Model #	Description	Price			
		Outright Sale	Rental 12 Mo.	Rental 24 Mo.	FSMA
8000	Processor	$13,020	$ 540	$ 490	$ 1,200
Series 8070					
8071	8000 NS Processor	13,020	540	490	1,200
	Communications Module	4,035	170	155	900
	Basic Comm Service	3,600	185	185	360
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network Communications System	20,995	895	830	2,460
872	Comm. Module	12,155	510	465	1,140
	Protocol Emulation Svc	1,500	95	95	180
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network Comm System (4 Ports) Total	13,995	605	560	1,320
873	Comm. Module	16,655	695	630	1,560
	Protocol Emulation Svc.	3,000	190	190	300
	Transceiver/Drop Cable (20')*	340	N/A	N/A	N/A
	Network Comm System (8 Ports)	19,995	885	820	1,860

Placement/Removal Charges

8000	Processor	$150
8071	Comm. Module	$ 40
872/873	Comm. Module	$125

*Optional lengths available

Network Systems Pricing
Software Products

Package	One-Time Licensing	Monthly Licensing	Monthly Software Maintenance**
File Servers			
*Basic File System	$3,600	$185	$ 30
Electronic Mail	$ 995	$ 65	$ 10
Internetwork Routing	$1,500	$ 95	$ 15
Print Server			
Print Options			
Fonts	$ 100	$ 10	$ 5
Communications Servers			
*Basic Communications	$3,600	$185	$ 30
Communications Protocols (Each)	$ 375	$ 25	$ 10
*Protocol Emulation Service I	$1,500	$ 95	$ 15
*Protocol Emulation Service II	$3,000	$190	$ 25

*Mandatory software
**Applicable to One-Time Licensing Agreements

Network Systems Pricing
Ethernet Network Components

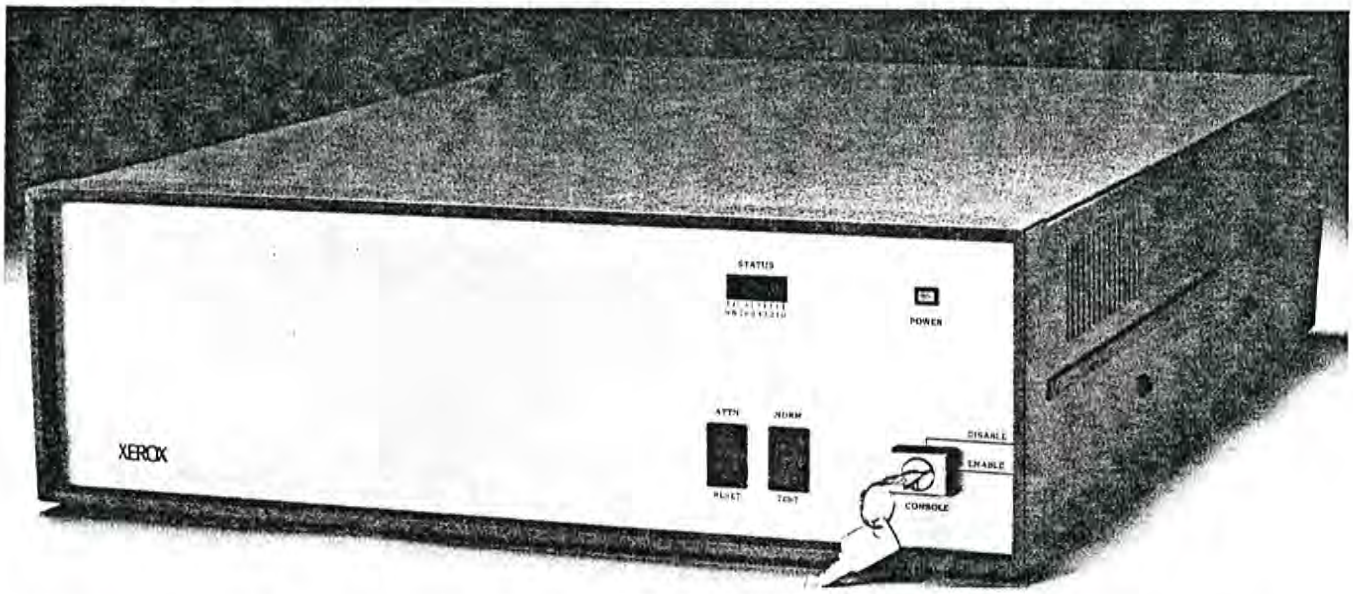
Description	Price		
	Outright Sale	Rental	FSMA
Network Cable			
RG8U (Teflon)	$2.70/ft.	N/A	T&M
RG8U (PVC)	$0.50/ft	N/A	T&M
Drop Cable			
- 20'	$ 140	N/A	Included
- 25'	170	N/A	with
- 50'	285	N/A	Mainframe
- 100'	520	N/A	
Connector	$ 20	N/A	Supply Item
Terminator	$ 20	N/A	Supply Item
Transceiver	$ 200	N/A	Included with Mainframe
Repeater	$1,285	N/A	$80
860 Ethernet Interface Board (EIB) Kit	$ 655	$ 30	$ 100
Installation	Special Quote	N/A	N/A

Placement/Removal Charges

Repeater	$25
Transceiver	$15
860 EIB Kit	$25 (No removal)

Xerox 872 and 873 Communications Servers

XEROX



In conjunction with the development of the Xerox Ethernet, an advanced intrafacility network, Xerox now introduces sophisticated communications server devices to enhance the shared resource office concept.

The Communications Servers are an important facet of the Ethernet shared resource network. Like other Xerox network servers, the Communications Servers incorporate hardware/software technology and applications to help users achieve cost-efficient information management through total office integration.

Specifically, the Communications Servers extend the communications services made possible by the Xerox Ethernet network and the 8000 Network Systems Communications Server. They do so by adding shared resource RS232C ports to the system, which allows local and remote devices requiring and RS232C port to interface with the network and to access network resources and information. The Communications Servers require the cooperative support of the Gateway Service provided by the 8000 Communications Server.

The basis of the Communications Servers is a set of powerful microprocessors with exceptional versatility, which support four RS232C ports on Model 872, and eight RS232C ports on Model 873. These ports provide full duplex interfaces for interconnecting the Communications Servers with local/remote devices, terminals and host computers.

Each port can be configured to present a DTE interface (which appears as a terminal requiring an external modem), or a DCE interface (which has a built-in capability that eliminates the need for an external modem), so that equipment can be connected with or without the use of a modem.

The data transmission mode can be asynchronous, byte synchronous or bit synchronous with data rates up to 9600 bits per second (bps).

More than one Communications Server can be connected to a Xerox Ethernet network, depending on user applications and needs. Because of advanced modular configuration, the Communications Servers lend themselves to step-by-step office expansion. They facilitate the integration of remote networks, terminals, workstations and host computers into a fully automated facility, and at the same time, they contribute to the evolution of advanced office information systems.

Features

Shared Resource Applications

As a shared resource component, the Communications Servers are a cost-effective way to offer the benefits of resource extension and shared applications to local and remote devices which cannot be connected directly to the Ethernet network.

Protocol Emulation

The Communications Servers enable protocol support for most existing communications equipment to help you achieve maximum network compatibility on a cost-effective basis. The protocol support includes Teletype; IBM 2780 remote job entry base binary synchronous; IBM 2770 binary synchronous; IBM 3270 multi-point bisynch; and Xerox 850/860 point-to-point.

Asynchronous Transmission

The Servers provide parity of odd, even or none; character sizes of 5, 6, 7, or 8 bits; and asynchronous speeds up to 9600 bps, covering almost all available asynchronous speeds in operation today.