Xerox ViewPoint and VP Series Product Descriptions

XEROX

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Some of the software features described in this booklet may not be immediately available in all areas at this time. Please consult your sales representative to confirm product availability.

Product and information are subject to change without notice.

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1. Overview

Within the office, various groups of people create, process, and distribute information relating to their day-to-day business activities. These activities may require document creation, a graphics or spreadsheet facility, or the ability to communicate with a remote host.

Xerox has developed software packages to meet these diverse needs. They provide sophisticated communication architecture, superior window management, consistent user interface, and incremental loading of application packages that operate separately or together. These packages are called Xerox ViewPoint (system) software and the VP Series (application) software.

This modular approach to software provides increased manageability by allowing the incremental release, licensing, and installation of application software modules. In addition, it extends the capabilities provided because new applications and enhancements to existing applications can be easily added.

It also supports software developed by independent software vendors and customers, using the Xerox Development Environment.

Xerox ViewPoint and the VP Series are additions to the entire array of Team Xerox products and are compatible with our current network hardware and software. They are designed to run effectively on powerful multi-functional workstations.

Workstations

ViewPoint and the VP Series application software can run on the 6085 Professional Computer System and the 8010 Information System. Each of these systems is configured from a large selection of hardware components that include a rigid disk drive, display, and processor.

The processor unit controls the operation of the workstation and houses the rigid disk used for storing the system software and user data. A selection of different sized disks provides the flexibility to configure workstations to suit individual application needs.

Both the 8010 and the 6085 include a large, high resolution bitmap display for character forming images. These high resolution screens enable the display of multiple keyboards, a range of character fonts and styles, and image representations, together with lines, graphics, shades and textures.

The hardware features, combined with the ViewPoint software packages, complement one another to provide the user with maximum capabilities on workstations configured as networked, remote, or standalone systems.

ViewPoint system software

Xerox ViewPoint is the foundation software and provides the underlying system structure and the framework for all VP Series application packages. It supports independently loadable, fully integrated applications, as well as other market applications. It provides the operating system, window package, diagnostics, and the application loading facility.

The windows management facility contained in Xerox ViewPoint supports multiple overlapping or tiled windows, available in all applications. It provides a facility for transferring information between windows on the desktop, or accessing network services using a consistent user interface. It also allows you to control window placement and size.

The overlapping facility allows window placement anywhere on the desktop without movement or size restrictions. You can position and size windows to meet the needs of applications with the system retaining the information over multiple openings and closings. Each window has an individual message area used by applications to communicate information to the user.

Simultaneous execution of applications on the same desktop, with information exchanged between applications, is possible because of the windows package. The windows package, combined with the network access facility and open architecture of Xerox ViewPoint, provide modularity, manageability, and extensibility.

VP Series

The VP Series is a group of software applications that provide an extensive array of capabilities to suit the individual needs of each user. Three of the VP packages are used to configure workstations as networked, remote, or standalone systems for accessing shared or local resources. You must select one of these based on your requirements.

Access to resources

VP Local Printing: This application enables a standalone or remote workstation to print documents on an attached printer.

VP NetCom: This application gives you access to network functions such as, print, file, mail, and communications, as well as access to local resources. The actual functions available depend upon the individual network or workstation resources.

VP RemoteCom: This application enables a remote workstation to gain access to a wide assortment of network functions via a phone line. This connection to the internet provides full network citizenship and is achieved through an RS-232-C connection. The actual functions available depend upon the individual network's configuration.

VP Standalone: This application gives you access to local resources and provides the user interface to these resources, such as local printing. Applications requiring access to the network may not be used in this configuration.

Applications

Applications can range from simple text editing facilities to providing the ability to type in Japanese, Arabic or Cyrillic. All workstations can utilize a single application or a combination of applications.

Listed below are the available application packages with a brief description of each. All, with the exception of PC Emulation, can be used on the 8010 or the 6085 workstation. (PC Emulation can only be used with the 6085.)

VP Document Editor: *Document Editor* provides the VP Document structure and brings to your desktop a wide array of text creation capabilities and document preparation and layout facilities. Documents can be created in English and other international languages, and contain graphics, text, charts, and tables.

VP Free-Hand Drawing: *Free-Hand Drawing* allows you to create and modify bitmap illustrations to produce professional looking graphics. They can be incorporated into any VP document.

VP Data-Driven Graphics: *Data-Driven Graphics* provides you with the ability to automatically transform data into graphic forms such as bar charts, line-charts, and pie-charts. By applying tabular data to a graphic form, creation and editing are simplified.

VP Equations: *Equations* provides a full range of special symbols and constructs frequently needed in scientific and mathematical documentation. Thus, equations can be created and displayed on the screen in their final form.

VP Spelling Checker: *Spelling Checker* enables you to locate and correct spelling errors in documents. It checks all text in the document, including text contained in frames.

VP List Manager: *List Manager* allows you to create and maintain a small to medium collection of information using a powerful, yet flexible data structure and retrieval mechanism. This information is maintained and processed on your desktop.

VP Spreadsheet: *Spreadsheet* offers a powerful decision-support tool for quantitative modeling, while taking advantage of major features of the ViewPoint user interface. It brings to the workstation the capability to create an electronic spreadsheet, or worksheet, that facilitates the statistical manipulation of information normally presented in columns and rows.

VP Office Accessories: The *Office Accessories* software application contains: a calculator for doing computations using the workstation, a workstation clock that supports both analog and digital displays, and a workstation calendar that contains yearly, monthly, and daily views, and a Keyboard Accelerators option that enables you to customize keyboards.

VP Long Document Options: The *VP Long Document Options* software application provides the capability for generating specialized front and back matter, tables of contents and indexes, footnotes, and shared books for document creation.

VP Integrated Financial Management: The *Integrated Financial Management* software application provides you with a way to automate many routine tasks that are performed in financial departments. This includes features such as the automatic generation of exhibits and tables.

VP CUSP Buttons: This application is workstation software that provides you with **CU**Stomer **S**oftware **P**rogramming capabilities, but it does not require extensive training. CUSP programs let you create

customized office applications and automate work processes normally carried out manually on the desktop.

Conversion

VP File Conversion: VP Series includes several conversion applications to increase the exchange of information between devices. Each conversion package has been tailored to meet the specific needs of different users. The following conversion packages are available:

- *VP File Conversion of 860 Record File* (from 860 record files to VP List Manger files)
- *VP File Conversion of 860 Documents* (to and from VP document structure)
- *VP File Conversion of ASCII Documents* (to and from VP document structure)
- *VP File Conversion of Document Inter-change Format (DIF)* (to and from VP document structure)
- *VP File Conversion of WordStar® Documents* (to and from VP document structure)
- *VP File Conversion of Lotus 1-2-3™ Spreadsheet* (to and from VP spreadsheets)
- *VP File Conversion of VisiCalc® Spreadsheet* (to and from VP spreadsheets)
- *VP File Conversion of IBM DCA Documents* (to and from VP document structure)
- *VP File Conversion of Wang Documents* (to and from VP document structure)
- *VP File Conversion of IGES Files* (to VP documents containing Xerox Pro Illustrator frames)

VP Data Capture: *Data Capture* enables you to copy text that is in an unstructured form from a host or non-Xerox document into a 6085/8010 table. The table consists of structured rows and columns and is supported by tables feature in Document Editor. As such, it can be manipulated as any other table so it can be used in a document, made into a record file for further manipulation, or made into a bar, line, or pie chart for graphic display.

PC Emulation

VP PC Emulation (6085 only): *PC Emulation* for the 6085 Professional Computer System enables you to run industry-standard PC software, through an emulation window, as though you were using an IBM PC . (This software package requires the 6085 PC hardware option to function. For more information, refer to the 6085 technical product description.)

Terminal Emulation

The VP Series provides four terminal emulation packages that can be used on the 8010 or 6085 workstation. They allow you to connect to a host and conduct multiple sessions concurrently, while still retaining access to the full range of workstation features and capabilities.

VP Asynchronous Terminal Emulation: The Asynchronous Terminal Emulation applications allow you to connect to the host using a networked, standalone, or remote workstation. Asynchronous Terminal Emulation includes:

- *VP Terminal Emulation of TTY* that enables you to connect to a host computer and conduct a session as though the user were at a teletype-like terminal.
- *VP Terminal Emulation of DEC® VT100* that enables you to connect to a host computer and conduct a session as though the user were at a DEC VT100 terminal.
- *VP Terminal Emulation of Tektronix® 4014* that enables you to connect to a host computer and conduct a session as though the user were at a Tektronix 4014 terminal.
  - VT640 Graphics Emulator that enables you to emulate a VT640 terminal on your ViewPoint desktop. Graphics are fully supported and and its text mode parallels a DEC VT100 terminal.

VP Terminal Emulation and File Transfer for IBM® 3270: The IBM 3270 applications allow you to connect to an IBM host using a networked, standalone, or remote workstation. You can conduct several sessions concurrently yet still use the full range of workstation features and capabilities. Offerings for the IBM 3270 include:

- *VP IBM 3270 Emulation* enables a you to connect to an IBM, or other host computer, and conduct a terminal session as though you were using an IBM 3278 display station communicating with the host.
- *VP IBM 3270 File Transfer*, supported by IBM 3270 Terminal Emulation, enables you to transfer files to and from a host computer, from your ViewPoint desktop.

Languages

You will find it easy to work in the language alphabets contained in the VP Document Editor. Additionally, there are four available text packages that provide another 24 foreign languages. The *VP Extended Language Option* is required for the Japanese and Chinese software applications.

VP Languages contain the following software applications:

- *VP European Text Package* that provides the ability to enter text in the following languages: Czech, Hungarian, Polish, Portuguese, Romanian, Serbo-Croation, and Slovak.
- *VP Extended Latin Text Package* that provides the ability to enter text in the following languages: Albanian, Estonian, Indonesian, Latvian, Lithuanian, Slovene, U.S. Turkish, European Turkish, and Uzbek.
- *VP Extended Cyrillic Text Package* that provides the ability to enter text in the following languages: Bulgarian, Russian, and Ukrainian.
- *VP Arabic Text Package* that provides you with the ability to enter text in Arabic and Persian.
- *VP Extended Language Option* that allows the full range of software to unite with the intricacies of far eastern writing systems. It allows all VP Series features--from word processing to spreadsheets to advanced graphics—to be used with Japanese and Chinese characters while building on the successful western model of touch typing.
  - *VP Japanese Text Capability* that provides you with the option to use either the Japanese or English physical keyboard, romanized spelling (Romaji) of Kana syllables with automatic conversion for faster touch-typing, multiple Japanese look-up dictionaries, and automatic dictionary look-up for phonetic conversions from Hiragana to Kanji.
  - *VP Chinese Text Capability* that provides you with the ability to enter text in the Mandarin Chinese language. Text can be entered in the Mandarin phonetic alphabet (Bopomofo), in romanized letters using Pinyin-Plus spelling, or using telegraph codes that are converted to Chinese characters. Chinese numbers can be entered either phonetically or directly from the keyboard. Units of text and text using tone numbers can also be entered decreasing the number of lookups for faster Chinese typing.

Workstation fonts

A system font is provided with the ViewPoint software package. It is not applicable for document creation. Therefore, several optional font packages can be acquired for use on the workstation.

VP Fonts: The Font packages include: Xerox Classic, Xerox Modern, Printwheel (which has a number of different fonts found among electronic typewriters. Terminal, Helvetica 300™, Times 300™, Univers 300, Xerox Quartz, Optima 300™ and PC Emulation. They provide regular, bold, italic, and bold-italic styles (for some fonts), in different sizes and contain different symbols and characters. All packages provide an image resolution of 72 dots per inch.

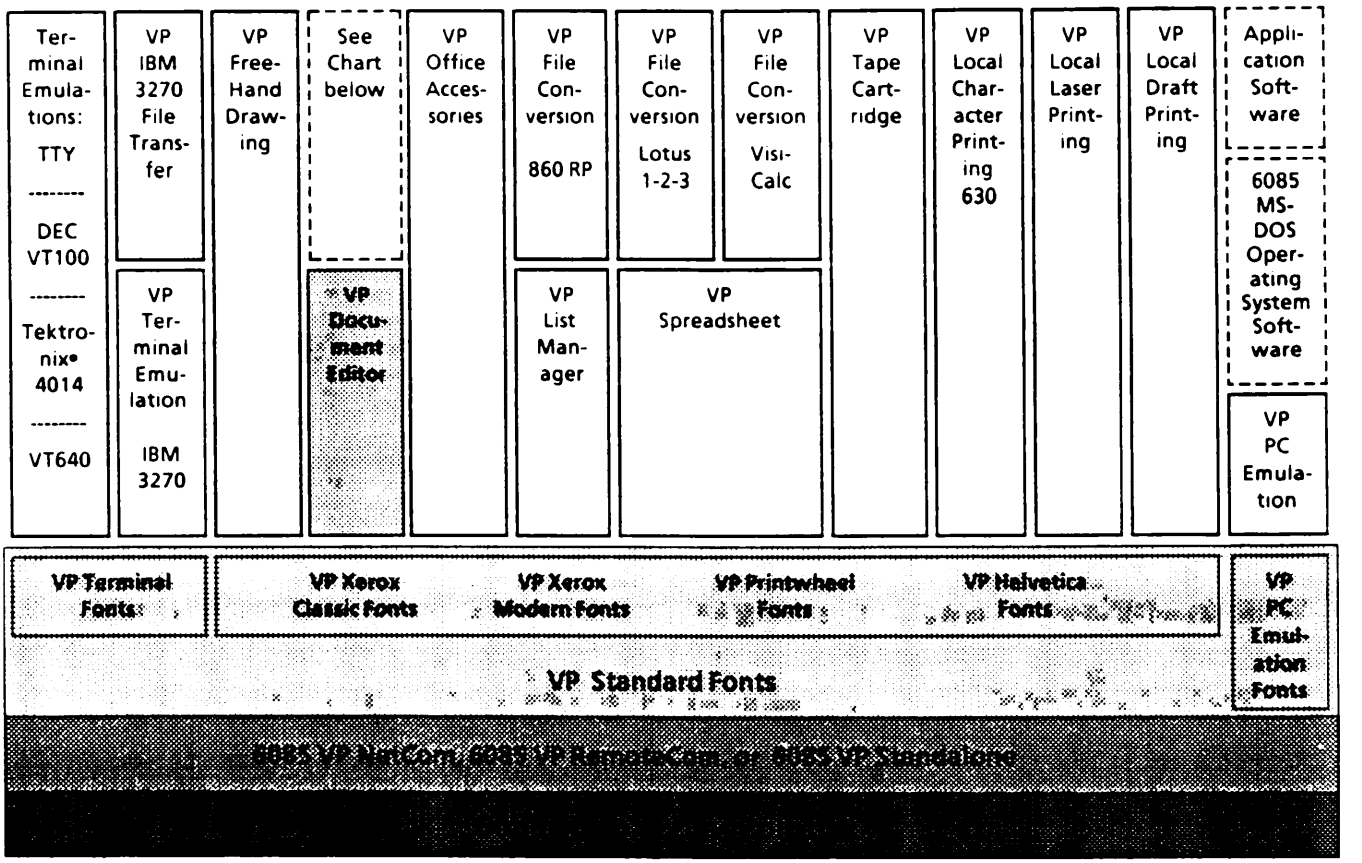
Software packaging

Each application is packaged on floppy disks or cartridge tapes, and can be loaded, updated and replaced separately. Although these packages are relatively independent of each other, some rely on the *VP Document Editor* for their document structure. The detailed descriptions found in the following chapters will discuss any dependencies that exist between applications.

For an idea of how the Xerox VP software is structured, refer to the diagrams on the next page.

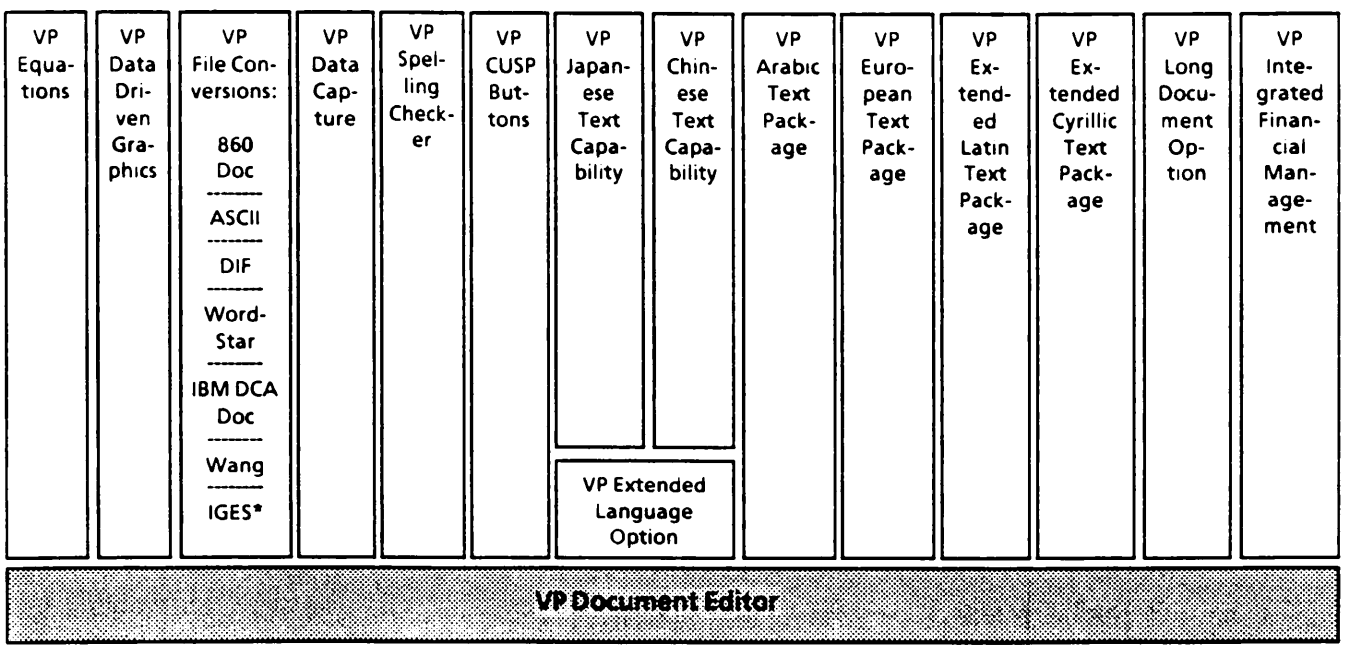
Table 1-1.

Software Dependencies

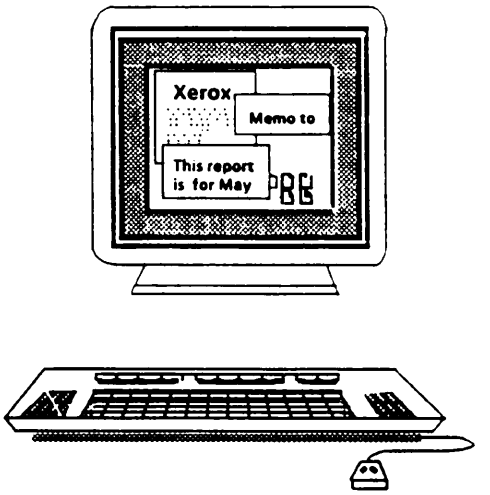


Note: Any application with a "Make Document" or "Make Table" capability requires VP Document Editor.

VP Series Applications Dependent on Document Editor



2. Xerox ViewPoint



Features

- Memory management, file management, network communication facilities
- Consistent user interface
- Overlapping and tiled window environment
- User profiles
- Diagnostics package
- Facility for loading applications
- Facility for file conversion
- Ability to run multiple applications simultaneously.

Description

Xerox ViewPoint is the foundation software for the 6085 Professional Computer System and the 8010 Information System. It provides the multiple-window environment in which applications are used, and the software for a set of alternate virtual keyboards. It contains the operating system, diagnostics, and the application loading facility. Understanding the full capabilities of the workstation software requires surveying the operating system, called Pilot.

The operating system, Pilot

The Pilot operating system enables workstation software to operate through its memory management, file management, and network communication facilities.

Memory management

To use the full capability of its addressing scheme, Pilot employs virtual memory-swapping techniques. Pilot moves data back and forth between main memory and on-line disk storage as it needs it. This can effectively increase the amount of usable "virtual" memory from 8 to 32 megabytes depending on system configuration. By means of this technique, Pilot is able to work in the background to provide the workstation software with the memory requirements it needs. This is in contrast to many personal computing systems that require you to explicitly request a new program be loaded.

File management

Because Pilot's design supports a variety of different applications and services, it has a very flexible approach to file management. In particular, Pilot allows files to grow or shrink in a fluid, efficient manner. By doing so, Pilot can allocate disk space on an "as-needed" basis. This also eliminates the need to specify the size of files, thereby ensuring an efficient use of available disk space.

Network communication

The communication software included in the Pilot operating system allows the workstation to use Xerox standard Ethernet protocols to receive and transmit data anywhere in the internet. Pilot works to guarantee the accurate transmission and reception of messages on the internet when the appropriate software is used and the workstation has network access. VP NetCom or VP RemoteCom must be installed and run to access network resources. See their product descriptions for details.

User interface

A system's user interface is seen in the way a person operates the system, and it involves both a conceptual model and physical skills. In ViewPoint, there is a new design solution for many problems associated with traditional computer user interfaces. The ViewPoint conceptual model, the desktop, is simple, and the physical operations are logical and easy.

Desktop metaphor

The ViewPoint user interface presents workstation workspace in familiar terms, the office. It looks at the overall display screen as the user's desktop. On that desktop can be electronic representations of familiar office objects: paper, folders, and printers.

This metaphor is expressed through easily recognizable objects, seen on the screen, that represent your work world. It uses pictures on the display rather than file names on a disk. These pictures (called icons) can be moved, copied, and deleted. See figure 2-1.

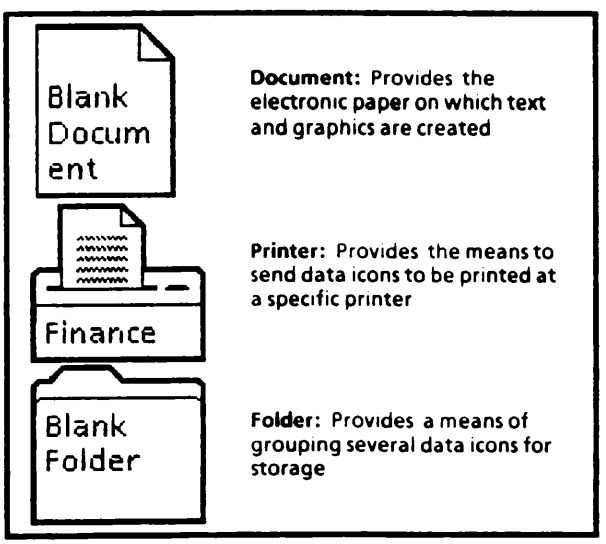


Figure 2-1. **Examples of icons**

(On a programming level, this allows the system to be truly object-oriented. Each icon or object carries with it a set of properties (characteristics or descriptors) that govern its appearance and actions.)

Each of these icons can be opened by using the mouse and keyboard. When opened, the icon expands into a window. This window displays the contents of that icon. For example, an opened document icon shows the contents typed in that document. An opened folder icon displays a list of the objects in that folder. See figure 2-2.

Every window has an area at its top that displays both the name of the object and certain commands that can be applied to that window or to objects in it. For example, one window command usually found is [CLOSE]. The small boxes with lines, found at the upper righthand corner of the window, are the auxiliary menus. When selected, they display additional commands.

Advantages of desktop metaphor

The desktop metaphor with its icons and windows is easy to learn and use. Instead of entering commands from the keyboard, you point at the desired object and then click the mouse button. The desktop metaphor gives the following advantages:

Consistent use of function keys

The basic function keys work in the same manner for all objects on the desktop, regardless of which icon is involved. The principle of selecting the object, and then pressing a key for the desired action, is applied throughout the interface.

Consistent use of properties

Each object found on the desktop, ranging from text inside a document icon to the icon itself, has a set of properties. These properties are the attributes or characteristics assigned to the object and can be changed through the use of property sheets. See figure 2-3.

Consistent use of option sheets

Actions, such as finding a pattern of text in a document, have parameters associated with them. Each time the action is initiated, you may want to specify different parameters for that instance. For example, one time you may want to search the entire document, at other times only the current selection. Such options affecting an action are always chosen in the same manner, through option sheets that appear automatically when the action is initiated. See figure 2-4.

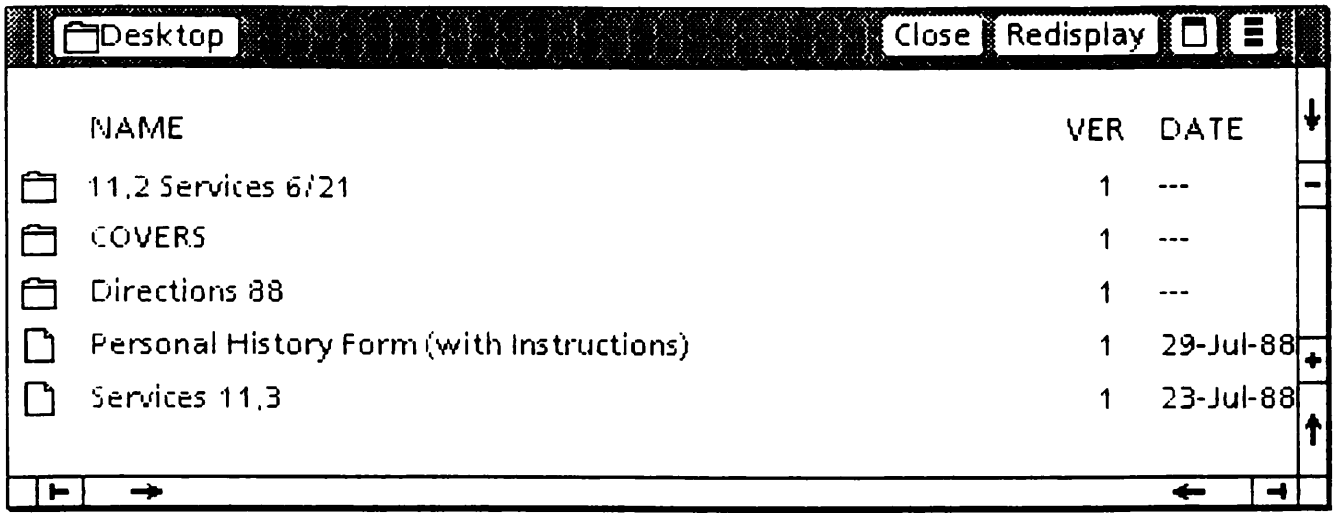


Figure 2-2. Sample folder window

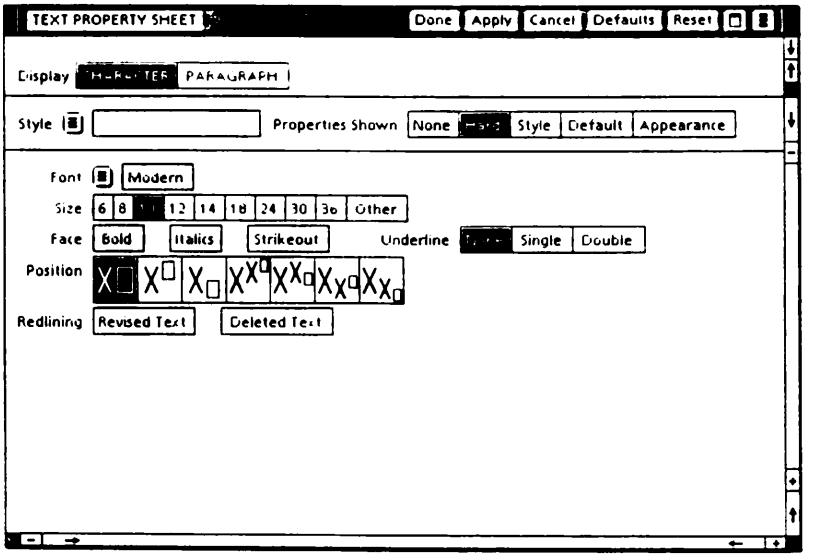


Figure 2-3. Sample property sheet

Frequent and friendly feedback

The system provides you with feedback, including prompts for how to complete actions, feedback when actions are completed, and error messages. Methods of providing feedback include:

- screen highlighting
- messages posted at the top of the screen
- tone generator
- cursor changing shape.

Support for advanced users

The user interface is ideally suited for the new user, and its consistent interface makes it easy to learn new features. For accomplished users, there are performance accelerators.

- You can type (or select items on the screen) ahead of the system's real-time response as the system recalls, up to certain limits, actions not yet fulfilled.
- Special function keys and window commands provide quick ways of making the more common property changes.
- Default options for common actions can be set, thus eliminating the need to fill out an option sheet each time an action is done.
- In certain situations, you can choose to save special formats to speed up later work. In

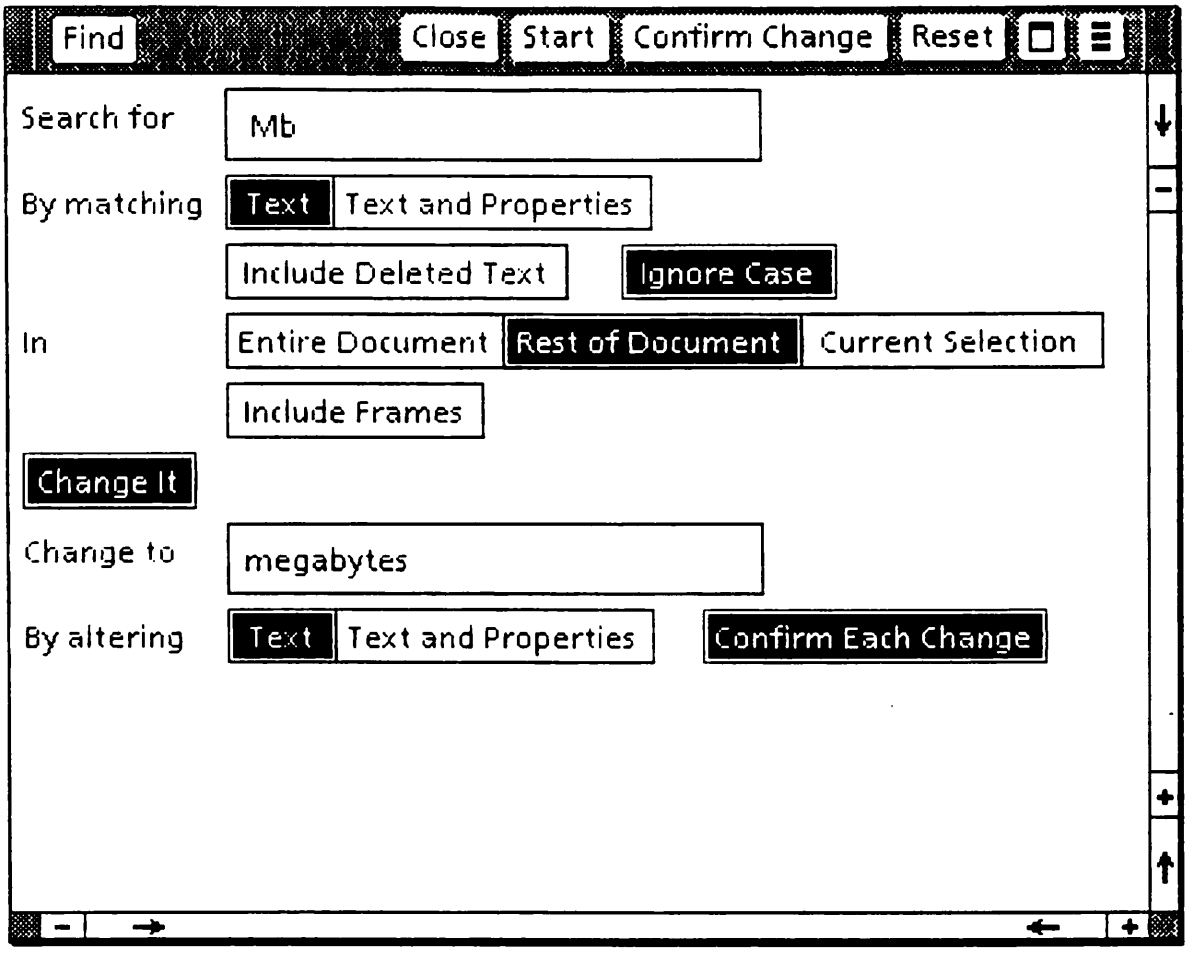


Figure 2-4. **Sample option sheet**

particular, a special printing master can be retained for fast reprints of the information.

Windows

The windows package in ViewPoint is used by all applications. Information can be transferred between windows using a consistent user interface regardless of the application being used.

Window placement on the desktop is also controlled by ViewPoint. Although window appearance may change slightly from application to application, the behavior remains consistent. You can position, overlap, and size windows as needed, with the system retaining the information over multiple openings and closings.

Alternate keyboards

The alternate keyboard facility provided in ViewPoint allows the keyboard meaning to be changed quickly and easily. You can change the keyboard interpretation by pressing just a few keys. You can also request that the new keyboard layout be displayed on the screen in a window.

The keyboard software supports numerous alternate keyboards for entering multilingual text, office symbols, legal symbols, or special characters when using the graphics or equations software.

You may also elect to license an application, VP Office Accessories, that has a special option called Keyboards Accelerator. It provides you with the capability of toggling back and forth quickly between the standard default keyboard and a customized default keyboard

User profiles

Xerox ViewPoint contains a mechanism for you to customize the appearance and function of your desktop. This facility is represented by an icon called "User Profile." It is used to store attributes of certain applications, as well as environment characteristics such as window appearance and behavior and desktop background.

Desktops are modified by information contained in the User Profile, which can be edited, mailed, copied, and printed.

Background processing

By performing certain workstation tasks in the background, the workstation is freed for other activities. The background processing facility allows users to perform more than one task at a time. Processes such as paginating open and closed documents, automatically generating indexes and tables of contents, and purging your wastebasket are performed in the background.

Background functions allow you to continue working while the workstation is paginating or performing other tasks. You can queue any number of background tasks, but only one foreground task can be performed at a time.

Diagnostics

Occasionally, machine problems may be encountered. To help solve these malfunctions, a diagnostics package is included in Xerox ViewPoint.

The diagnostics package supports tests that check the processor, display, keyboard, mouse, and Ethernet for problems.

Application loading

Because everyone's needs are different, ViewPoint and the VP Series of software allow each workstation to be loaded with just the applications that are required. They can be loaded to provide one application or a combination of applications.

The facility for loading the different applications is contained in Xerox ViewPoint and allows you to load several different application packages, as needed. Some of the available packages include a Document Editor, Data-Driven Graphics, Equations, Spreadsheets, Terminal Emulations, and Spelling Checker. Each available package or grouping of similar applications is described in a separate product description.

Conversion utilities

ViewPoint contains a conversion utility for upgrading VP 1.x documents stored on a File Service to ViewPoint 2.0 documents. The conversion utility eliminates the need for you to retrieve the documents to the desktop, convert them one by one, and store them back on the File Service. This facility converts the file drawer's contents without your intervention.

The ViewPoint 2.0 software automatically converts any VP 1.x document to the VP 2.0 format when opening, paginating, or printing it on a desktop. You can also use a desktop auxiliary command to upgrade documents to the VP 2.0 level. Additionally, a special upgrader tool can be installed and run on a ViewPoint 2.0 workstation to upgrade OS 5.0 documents to the VP 2.0 format.

Converter icon

To make it possible to use files created on other workstations, a converter icon is provided. This icon is used with licensed file conversion packages to convert documents and spreadsheets to ViewPoint format, so that they can be used on the 6085 and 8010. For more information on the available conversion packages, see the product description on conversion.

Help facility

The ViewPoint software contains a Help folder that is displayed next to the desktop message area after the first logon. You may copy Xerox-supplied Help documents into the folder, as well as unique help documents of your own. This on-line help feature is available to all users of a workstation and it supplies them with concise reminders about ViewPoint operations. While there are documents on basic operations and on each of the VP Series applications, they are not a substitute for either the VP Series Training Guide, with its practice exercises and self-checks, or the VP Series Reference Library, with its comprehensive detail on ViewPoint software.

Help documents are delivered on floppy disk or cartridge tape, and you only need to copy to the Help folder those documents that pertain to the individual workstation. For example, if Japanese typing is not used at a workstation, there is no need to load the Japanese help documents.

Prerequisites

6085 Professional Computer System
or
8010 Information System

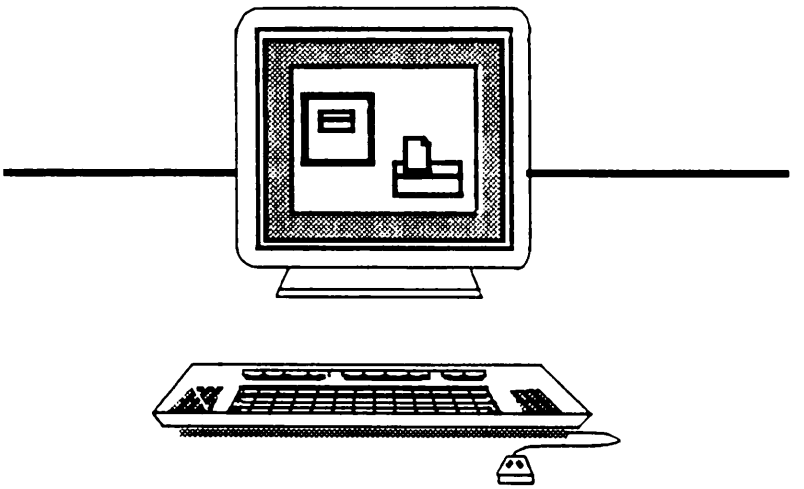
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

3. VP NetCom



Features

- User authentication for networked workstations
- Full access to the network mailing, printing, and filing facilities.

Description

VP NetCom provides you with a wide assortment of network functions, as well as access to local resources. The actual functions available depend, of course, upon each network's configuration. The software provides any user with five major functions:

- authentication
- electronic mail
- electronic printing
- electronic filing
- consistent network access.

NetCom is a licensed workstation configuration option that builds on Xerox ViewPoint software and is required for network access. It is compatible with the VP application software packages.

Authentication

An authentication facility is provided by the NetCom package that verifies your access rights. This includes the right to use the workstation and to access network facilities, such as file drawers.

Authentication for networked workstations

While logging onto the workstation, the system checks with a network service called the Clearinghouse to determine if you have valid access rights to recall your electronic desktop. (For more information on the Clearinghouse, refer to the Network Services Product Descriptions.) If for any reason the Clearinghouse is unavailable, the workstation allows you to create a temporary desktop, but does not allow access to any of the protected network resources.

After your first logon, the software maintains a record of desktops stored at the local workstation. If the Clearinghouse is unavailable when you logon again, the workstation can authenticate your right to use a locally stored desktop.

Having once logged onto the workstation, there is no need to give a password again during the session. If during the work session you try to access protected files, the system automatically provides a check on your right to access those particular files.

Electronic mail

VP NetCom provides access to an electronic mail service that includes the ability to send and receive messages from ViewPoint users and non-ViewPoint users. The interface uses two icons, an inbasket and

an outbasket, to represent the functions of receiving and sending mail.

The basic element of the mail system is a specialized document called the mail note. Information sent through a mail note can be read at any workstation with access to the mail service. In addition, any data icon can be sent as mail. (This includes documents, folders, spreadsheets, record files, printers, and file drawers.) Data icons can be opened and read at a 6085 or an 8010 workstation, but only the cover sheet can be read at other workstations.

You send mail by moving or copying a mail note or other data icons to the outbasket icon. An option sheet automatically appears asking for the names of the intended recipients. Distribution lists can be used when mailing to groups of individuals. The mailed icons are accumulated for each user at the server running network mail service.

On the desktop, new mail is indicated by an envelope in the inbasket. You receive mail by opening the inbasket and selecting the window command for new mail. The selection of the command moves your new mail from the network mail service to your workstation. This operation takes place in the background, thus allowing you to do other operations while the mail is being retrieved. Once on your desktop, the mailed items can be opened and their contents handled like any other text.

The inbasket contains several commands to facilitate the use of electronic mail:

- [NewForm] provides you with a blank mail note
- [Answer] provides you with a mail note automatically addressed to the sender of the message being answered
- [Forward] provides you with a copy of the object to forward to another user
- [Discard] deletes the opened message and opens the next message in the inbasket.

Electronic printing

You gain access to network printing functions through printer icons. Information is printed by moving or copying the relevant data icon to a printer icon on the desktop or in the printing divider. An automatic option sheet prompts you for the relevant parameters of the print job, including number of copies, pages to be printed, phone number for transmission to a remote facsimile machine, and (if available) use of various paper sizes and a local graphics printer. Double-sided printing and automatic stapling appear as options, if the printer hardware has these features.

Before being sent to the printer, the workstation software automatically converts the contents of the document to the Xerox proprietary printing protocol format, Interpress. This printing format conversion process takes place in the background, freeing the workstation for other activities.

Once formatted, the document is queued to be transmitted to the print service; this transmittal also takes place in the background. The system repeatedly tries to send the file until successful. If it has not been successful after five minutes, a message is posted allowing you to decide whether to continue trying to send the file or cancel the attempt.

Opening a printer icon displays a status window that contains a list of your print requests and the status of each request (queued for sending, being sent, in progress, and completed). Requests can be manipulated within the printer queue by moving or copying them to another spot within the queue, or by deleting them from the queue. You can also stop the transmission of objects to a printer by selecting [Suspend].

If the attempt to print is canceled, the system automatically preserves a special form of the document, called a Print Format Document icon. This icon can be sent directly to the printer without going through the formatting step. The print format icon also may be saved to expedite future reprints of the same document.

Electronic filing

With VP NetCom, you can file any data icon on a file service that is remote from your workstation. You perform filing functions using the file drawer icons.

To file a data icon, move or copy it to the relevant file drawer icon. To retrieve it, move or copy it from that drawer back to the desktop. Filing operations can be performed as background or foreground tasks.

Access rights to the file drawers are set up at the file drawer level by the System Administrator. These access rights give you the ability to read, add, remove, and change the file drawer's access rights for other users. The NetCom software authenticates your rights and other user's rights to access the file without any explicit action other than attempting to open the file drawer. If you have insufficient access rights to the file drawer, a message is posted.

Consistent network access

All network functions are represented through the use of icons that fulfill the desktop metaphor. You locate these icons through a master icon called the directory. The directory includes a window into the network service called Clearinghouse, which provides you with a list of all available services registered in that Clearinghouse. You can then gain access the desired icons and use the services.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

Signed Software License Agreement.

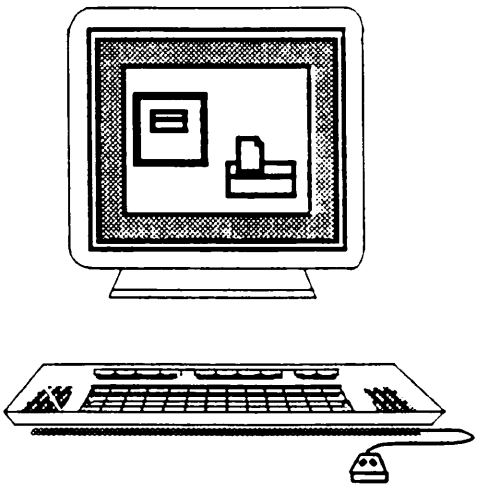
Documentation

VP Series Training Guide

VP Series Reference Library

Network Services Product Descriptions.

4. VP RemoteCom



Features

- User authentication for remote workstations
- Full access to the network mailing, printing and filing facilities for remote workstations
- Facility for file conversion.

Description

VP RemoteCom allows a remote workstation, connected to the internet via a phone line, to access a wide assortment of network functions. The connection to the internet is achieved by using the local RS-232-C port. The actual functions available depend, of course, upon each network's configuration. The software provides you with five major functions:

- authentication
- electronic mail
- electronic printing
- electronic filing
- network access

RemoteCom is a licensed application that builds on Xerox ViewPoint software and is required for access to the network by a remote workstation. It is compatible with the VP application software packages.

Authentication

An authentication facility is provided by the RemoteCom package to verify your access rights. This includes the right to access network facilities such as file drawers.

Unlike the networked workstation, all remote workstation desktops are created by a workstation administrator; therefore, network authentication is not required when logging on, but is required when attempting to use its services. The system checks with a network service called the Clearinghouse to verify access rights. (For more information on the Clearinghouse, refer to the Network Services Product Descriptions.)

Electronic mail

VP RemoteCom provides access to an electronic mail service that includes the ability to send and receive messages from ViewPoint and non-ViewPoint users. The interface uses two icons, an inbasket and an outbasket, to represent the functions of receiving and sending mail.

The basic element of the mail system is a specialized document called the mail note. Information sent through a mail note can be read at any workstation with access to the mail service. In addition, any data icon can be sent as mail. (This includes documents, folders, record files, and spreadsheets.) When a data icon is sent as mail, a cover sheet is automatically attached. Data icons can be opened and read at a

6085 or an 8010 workstation, but only the cover sheet can be read at other workstations.

Mail is sent by moving or copying a mail note or other data icons to the outbasket icon. An option sheet automatically appears prompting you for the names of the recipients. Distribution lists can be used when mailing to groups of individuals. These mailed icons are accumulated from each user at the network mail service.

On the desktop, new mail is represented by an envelope in the inbasket. You receive mail by opening the inbasket and selecting the window command for new mail. The selection of the command moves your new mail from the network mail service to your workstation. This operation takes place in the background, thus allowing you to do other operations while the new mail is being retrieved. Once on your desktop, the mailed items can be opened and their contents handled like any other text.

The inbasket contains several commands to facilitate the use of electronic mail:

- [New Form] provides you with a blank mail note
- [Answer] provides you with a mail note addressed to the sender of the message being answered
- [Forward] provides you with a copy of the object to forward to another user
- [Discard] deletes the opened message and opens the next message in the inbasket.

Electronic printing

You gain access to network printing functions through printer icons. Information is printed by moving or copying the selected icon to the printer icon on the desktop or in the printing divider. An automatic option sheet then prompts you for the relevant parameters of the print job, including number of copies, pages to be printed, phone number for transmission to a remote facsimile machine, and (if available) use of various paper sizes and a local graphics printer. Double-sided printing and automatic stapling appear as options if the printer hardware has these features.

Before the document is sent to the printer, the workstation software automatically converts the contents of the document to the Xerox proprietary printing protocol format, Interpress. This printing format conversion process takes place in the background, freeing the workstation for other activities.

Once formatted, the document is queued to be transmitted to the print service; this transmittal also takes place in the background. The system repeatedly tries to send the file until successful. If it has not been successful after five minutes, a message is posted allowing you to decide whether to continue trying to send the file or cancel the attempt.

Opening a printer icon displays a status window that contains a list of print requests and the status of each request (queued for sending, being sent, in progress, and completed). Requests can be manipulated within the printer queue by moving or copying them to another spot within the queue, or by deleting them from the queue. You can also stop the transmission of objects to a printer by selecting [Suspend].

If the attempt to print is canceled, the system automatically preserves a special form of the document, called a Print Format Document icon. This icon subsequently can be sent directly to the printer without going through the formatting step. The Print Format Document icon also may be saved to expedite future reprints of the same document.

Electronic filing

With VP RemoteCom you can file any data icon on a file service that is remote from your workstation. You perform filing functions using the file drawer icons.

To file an icon, move or copy it to the relevant file drawer icon. To retrieve it, move or copy it from that drawer back to the desktop.

Access rights to the file drawers are set up at the file drawer level by the System Administrator. These access rights give you the ability to read, add, remove, and change the file drawer's access rights for other users. The RemoteCom software authenticates your rights and other user's rights to access the file without any explicit action other than attempting to open the file drawer. If you have insufficient access rights to the file drawer, a message is posted.

Network access

All network functions are represented through icons that fulfill the desktop metaphor. You locate these icons through a master icon called the Directory. The Directory includes a window into the network service called Clearinghouse, that provides you with a list of all available services registered in that Clearinghouse. You can then access the desired icons and use the services.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

Signed Software License Agreement.

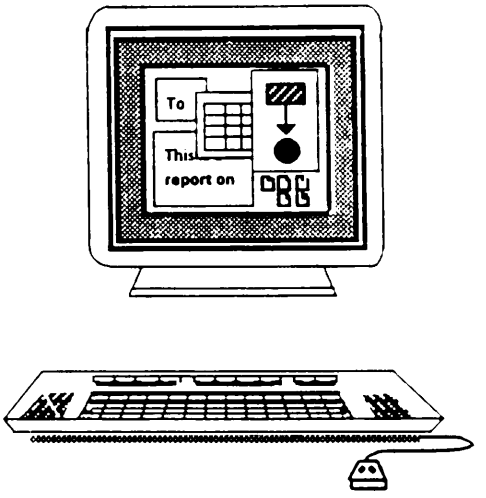
Documentation

VP Series Training Guide

VP Series Reference Library

Network Services Product Descriptions.

5. VP Standalone



Features

- Full bitmap display permits multiple windows
- Supports non-networked application packages
- Supports local printing
- Supports host connection via local RS-232-C port.

Description

The 6085 Professional Computer System and the 8010 Information System are high performance workstations designed for the office environment. These systems offer varying amounts of storage and processing memory, and can function either on a standalone basis or with access to network services.

(This document describes the capabilities and features of the VP Standalone software for the workstation. If network access is desired, see the product descriptions for VP NetCom or VP RemoteCom.)

Because VP Standalone builds on the ViewPoint software, it has the same consistent user interface, multiple window facility, and the same foundation for loading applications as networked systems. Being a standalone workstation does not change how the system works, it only limits the applications that can be used. (For more information see the ViewPoint product description.)

Standalone applications

The following applications do not require network access and can be used on a standalone system.

- Text creation capabilities: Traditionally part of word processing and electronic typing systems, these features support iterative typings of the same information (as in an editing process) or the use of boilerplate material.
- Document preparation and layout: These features and capabilities, including type fonts and layout options, are used to prepare high-quality documents.
- Illustrations and graphics: These features and capabilities allow users to draw lines and shadings to produce high-quality artwork.
- Data-driven graphics: This feature allows bar, line, and pie charts to be created from information contained in a table.
- Forms creation: This feature allows both the creation of forms (as might currently be done in an art department) and the electronic use of such forms.
- Local TTY or VT100 emulation: Allows a standalone workstation to connect to a host computer through the workstation's RS-232-C port.

VP Standalone also supports record files (List Manager), equations, free-hand drawing, spreadsheets, spelling checker, multilingual typing, and local printing. These features, licensed as

individual software options, are described in separate product descriptions.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint, 2.0

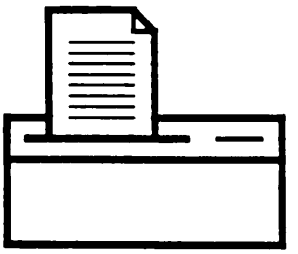
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

6. VP Local Printing



Features

- Supports local printing on remote and standalone workstations
- Supports local printing on networked workstations as a convenience and security feature.

Description

In addition to accessing a remote printer through the network, you have the option of attaching a local printer to your workstation. Both the 8010 Information System and the 6085 Professional Computer System support attachment of a printer for local printing of VP documents.

If a local printer is being used, the appropriate software package must be licensed and loaded on the workstation to support the printer. The VP software series include three packages for use in conjunction with the printers they support. The packages are:

- VP Local Draft Printing
- VP Local Character Printing
- VP Local Laser CP Printing.

These printing packages provide local printing of VP documents and are compatible with the other VP software packages.

VP Local Draft Printing

The VP Local Draft Printing software supports the Diablo P32 CQI printer on the 8010 and the 6085 workstations with the 9R88333 Communication Kit, which contains the serial-to-parallel print buffer and cable. The P32 CQI printer is a high-speed matrix printer that supports the printing of text and graphics with a resolution of 72 x 72 dots per inch. Printing is a background process, allowing users to continue additional workstation operations.

The local draft printer can print any font displayed on the workstation, including multilingual fonts, on sprocket-edge fanfolded paper. It can print 8.5" x 11" and 11" x 8.5" images on 8.5" x 11" continuous fanfold paper, or 11" x 14" images on 8.5" x 11" continuous sheet paper.

VP Local Character Printing

The VP Local Character Printing software supports the Xerox 630/635 character printers on 6085 or 8010 workstations. The workstations are capable of supporting printers with a tractor feed or a single bin automatic paper feeder.

Local character printing produces documents with letter quality text (no graphics), using mounted print wheels. Documents with multiple fonts can be printed in one of three ways:

- with the currently mounted print wheel,

- stopping the printer when a font switch occurs to mount the proper print wheel, or,
- using the multi-pass method. All characters in the first font are printed, the font wheel is changed, and then the partially printed pages of the document are re-entered to print the characters from the second print wheel.

Character printing supports 10 languages that include French, Italian, Danish, and Spanish, and 21 print wheels that include Bold PS, Bold Italics 12, Cubic PS, Scientific, OCR-B 10, and Titan 12.

VP Local Laser Printing

The VP Local Laser Printing software supports the Xerox 4045 Laser CP printer on 6085 workstations with 1.1 megabytes of memory and a 40 megabyte rigid disk. The 4045 printer is a versatile, high-quality laser printer that can be used as a printer or as a single-sided convenience copier. It can print up to 10 pages a minute with a resolution of 300 x 300 dots per inch. Printing is a background process, thereby freeing the workstation for other tasks.

The Laser printer will print any VP document created by applications capable of producing documents in Interpress format. It supports the printing of documents on either legal- or letter-sized paper and a full line of workstation fonts in a wide range of type styles and sizes.

User interface

Using any of the local printing options is the same as using remote printing. Documents are moved or copied to the local printer icon, which can be found in the directory under the workstation divider. The printer icons can be copied to the desktop or used within the divider.

When documents are placed on the printer icon, a property sheet is displayed for setting the options for that particular printing task. The printer icon can be opened at any time to check on the status of each object in the queue.

Limitations

The local draft printer only supports printing of multi-page tables if the document is 8.5" x 11". If the document is 11" x 8.5" and consists of multi-page tables, only the first page of the table will be printed.

The local character printer only supports printing of text. Documents with graphics are printed with white space to replace the graphics.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

Required Fonts (either loaded on the workstation or available on print wheels)

Signed Software License Agreement.

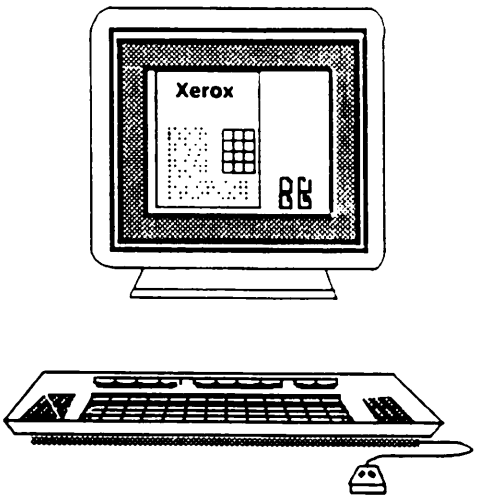
Documentation

VP Series Training Guide

VP Series Reference Library

P32 CQI Local Draft Printer Installation Manual.

7. VP Document Editor



Features

- Integrated text with graphics, including structured and free-form graphics with straight and curvilinear lines, shaded and unshaded shapes
- Define/Expand, Styles, and Mail Merge for advanced text creation
- Fields and programmed fill-in rules for forms creation
- Tables for presentation and manipulation of information in columns and rows.

Description

VP Document Editor brings a wide array of computing power to the ViewPoint desktop. When you are using a workstation, the Document Editor provides you with four major areas of capabilities and support, all based on a sound and friendly user interface.

- Text creation capabilities: Traditionally part of word processing and electronic typing systems, these features support iterative typings of the same information (as in an editing process) or the use of standalone boilerplate material. Multilingual or scientific text can be created by using an alternate keyboard.
- Document design and layout: These features and capabilities are used to prepare high-quality documents, including type fonts and layout options.
- Illustrations and layout: These features and capabilities allow you to draw lines and shadings to produce high quality artwork.
- Forms creation: These features and capabilities allow you to create and use forms electronically.

The VP Document Editor supports a number of other software applications. These applications allow you to use or create equations, tables of contents and indexes, list management, automatic generation of bar, line and pie charts, spelling checker, and type in certain non-Roman alphabets (such as Russian, Japanese, Chinese, Arabic, and Hebrew). VP Document Editor supports the use of computer peripherals, and allows you to attach a local printer for printing VP documents. These features, licensed as individual software options, are described in separate product descriptions.

Creating text

Commonly, Document Editor is used for both the typing of original text and the subsequent editing of it, as occurs in the early stages of a document preparation cycle.

This involves six major aspects of the software:

- a basic text creation model
- advanced text creation
- entering tabular information
- moving about within created text
- editing within created text
- working on multiple documents.

Basic text creation model

At the heart of text creation is the document icon shown in figure 7-1. The document icon provides

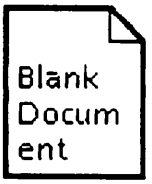


Figure 7-1. **Blank Document icon**

the electronic paper on which text and graphics are entered. As an object, the document icon can be given a unique name. It can be moved, printed, or copied. It can be opened, either to view the text contained within it, or to edit the text already there. Basic text creation is accomplished using the Blank Document icon.

To create a new document, you copy a Blank Document icon, give it an appropriate name, and open it. After opening the document and selecting the [EDIT] command, it is ready for input or editing. To save edits, select the [SAVE] command.

The Blank Document icon is set with defaults for an 8½-by-11-inch page with 1-inch margins on all sides.

Paragraph text defaults are single line spacing, ragged right margins in a single column and in 12-point Modern font. You can change these properties. You can also lay out a document using uneven columns and column balancing.

You can change the appearance of individual characters in terms of type font, size, and face. You can also change the relative position to the character's baseline by adding sub- or super-scripting to the text. You can change paragraphs in terms of justification and flush left, right, or centered alignment, as well as in terms of inter-line and inter-paragraph spacing. Spacing and types of tabs can also be changed. All of these changes can be made during type-in and are displayed as soon as the property changes are applied.

When entering text, a caret appears in the document window. This indicates where the next typed character is to appear. The caret, through its shape, also indicates whether certain properties (such as bold or italics) are active.

As you enter text, the system provides automatic line wrap by beginning a new line whenever one is necessary. The Document Editor's Autohyphenation feature decreases excessive white space between words (rivers of white), a problem that is frequently encountered in justified text.

Text is entered into a continuous scroll of information and broken into pages only when you request the system to paginate the scroll. At that time, the text is not only broken into pages, but page numbers, headings, and the like are also added. (Additional details on pagination are found under formatting.)

As you type, you can quickly switch among the various alternate keyboards to assist in document creation. You can choose from several multilingual keyboards that include French, German, Italian, and Spanish, or from special-purpose keyboards, such as legal, math, logic, and office. (For information on additional multilingual facilities, see the product description for VP Languages.) If you must switch between alternate keyboards frequently, the system facilitates this task in one of two ways. The first is through a special option in the User Profile. Alternatively, additional software, named Keyboard Accelerators, may be used. (See the product description for VP Office Accessories to find out more about keyboard switching and your ViewPoint reference manual for details.)

One keyboard of particular importance to you is the Special keyboard. This keyboard supports the ability to enter non-breaking spaces (to keep words together during line wraparound), discretionary hyphens (shown by the system only when a word is broken across lines to improve line justification), and non-breaking hyphens (to keep hyphenated words together during line wrap-around). It is also used for entering special graphics, footnotes, text, and equations frames, tables, and fields.

While entering text, you can edit it by using the backspace key, which erases the character immediately adjacent to the caret, or the backword key (the shifted backspace key), which erases the adjacent word. (For more information about the Document Editor's text editing capabilities, refer to the section titled Editing within created text.)

Advanced text creation

The Document Editor provides you with advanced means of creating and editing text: the Define/Expand features, Styles, and Mail Merge.

The Define/Expand capability enables you to recall any object used in a ViewPoint document (with the exception of fields), with two or three keystrokes. (This is commonly referred to as "phrase recall" in other text processing systems.) With the Define/Expand feature, you can create a data file (an expansion dictionary) to recall objects such as: words, sentences, paragraphs, signature blocks, addresses, tables, graphic frames with specially designed borders, page format characters, and any other expression or "boilerplate" which you frequently incorporate in your documents. Because the number of expansion dictionaries you may have is unlimited, complex text may be created quickly and easily.

Styles is another advanced feature of the Document Editor that allows you to control text appearance. With Styles you can create rules to specify text appearance quickly and easily. Styles can be used to indicate font type, size, and face (such as bolding or italics), as well as paragraph characteristics like line height, spacing, right-to-left or left-to-right text entry, justification, and indention. Styles may be applied to any existing text within a document to specify or revise its appearance. Styles can be shared among any number of users to standardize document production and simplify document creation of even the most complex formats.

Mail Merge allows you to create repetitive letters, mailing labels, and mailing lists by merging tabular data with a formatted template (a boilerplate document). Mail Merge is an advanced feature which expedites document production and user productivity.

Entering tabular information

To facilitate the typing of tabular information, the Document Editor software contains two features—tabs and tables.

The workstation provides tabs like those you would use on a typewriter. You can change default tabs (which are set a quarter of an inch apart), to other locations by using a property sheet or a special visual aid called the Carriage window. Four types of tab alignments are available: left flush, right flush, centered, and decimal aligned. The left and right flush tabs can have a dot leader property associated with them which fills the white space preceding the tab stop with a pattern of alternating periods and spaces. The keyboard has both a normal tab key and a special paragraph tab key. The latter is used to achieve various paragraph indentations by causing all succeeding lines of the paragraph to be indented to the same tab point.

Tables are a special construction of rows and columns that can exist within a document. You can specify the number of rows and columns, their width and margins, the use of ruling lines, ruling line appearance, and the type of tabs contained within each cell. Tables provide an accelerated way to set up tabular information and simplify subsequent editings. Because tabular information is subject to frequent revision and editing, tables may be sorted by rows in ascending or descending order, using some or all of the columns. Tables may be used inside graphics frames and shading added to highlight information. More details on tables are found later under formatting and forms creation.

Moving within text

Since a document can be far longer than the length of the workstation screen, you need a way to move about in the document's contents during editing. The Document Editor software provides four methods: cursor keys, turning pages, scrolling, and the <FIND> key. Cursor keys allow you to move up, down, left, or right in text without using the mouse. Cursor keys can move the selection one character or line at a time, move to the beginning or end of a page, move forward or backward one page at a time, or return to the 'home position'—the beginning of the document.

The software provides you with several different ways of moving through a document. You can scroll and move the text up or down, in a smooth flow, line by line. If the document is paginated, you can move to a specific page by turning one or several pages at a time. In addition, the Document Editor allows you to randomly access any part of a displayed page.

Since it is possible to create a document wider than the screen, you can also scroll to the right margin, to the left margin, or scroll continuously in either the left or right direction.

Finally, one of the function keys, labeled <FIND>, can be used to designate a specific string of characters and a specific set of text and properties. When activated, the system displays and highlights the first instance of the string or set of text and properties designated.

Editing text

The editing capabilities allow you to change, move, copy, or delete any character sequence, make global substitutions of one string for another, copy properties from one selection to another, and repeat an action just completed.

After the [EDIT] command of an opened document has been selected, it is ready for editing. The first step in any editing action is to select the text to be changed and then press the function key that indicates what you want to do.

When selecting text, you can select a specific set of characters by indicating the start and end points of the selection, or you can select a character, word, sentence, or paragraph through multiple clicking of the left mouse button.

The option sheet associated with the <FIND> key allows you not only to find specific instances of text (there is no limit to the number of characters), but also to change each instance found to the character string or properties specified on the option sheet. A global replacement can be completed on a specified section of the document or the entire document.

There is also a function key that allows you to copy a set of properties from one object within a document to another object of the same type that is in either the same or a different document. This <SAME> key is particularly useful in duplicating character or paragraph properties like point size, line height, and so forth.

Another function key, the <CASE> key, allows you to change alphabetic characters to upper or lower case without deleting and retyping letters. The <CASE> key can be used by itself (to change a letter or letters to the lower case), or in conjunction with the <SHIFT> key (to change a letter or letters to the upper case). This function minimizes errors during the editing process.

Redlining is another advanced editing feature. It is particularly useful when it is necessary to track and coordinate all changes made to a document, during its various editing cycles, by one or more individuals. Redlining is so named because it is similar to editing a document with a red pencil. Text to be deleted is struck out but it can still be read. Text which is to be added to the document is readily distinguished from the existing text, in one of five ways. The new text may be:

1. double underlined,
2. bolded and double underlined,
3. ***bolded and italicized***,
4. ***bolded, italicized and singled underlined***, or
5. ***bolded, italicized, and double underlined.***

These textual characteristics assist in distinguishing the various revisions when working on the document. Redlined documents can be printed for interim publication and all revisions can be finalized with one command.

Finally, the <AGAIN> key lets you make a new selection and repeat the same actions made previously. This is particularly useful for repetitive deletion and insertion tasks.

Working on multiple documents

Because it is possible to open multiple windows at one time, you can work on multiple documents concurrently.

A special User Profile option allows setting of window behavior. You can have overlapping windows or tiled windows which do not overlap. The tiled window option permits six windows to be opened while overlapping allows as many as desired. In addition, you have control over window placement and size by moving, shortening, or lengthening the windows using the mouse. Window cover sheets may also be sized.

Document design and layout

With its wide range of font faces and sizes coupled with the layout options, the ViewPoint Document Editor is well suited for preparing documents in formats that are used either as the final copy or as camera-ready copy for offset printing. The Document Editor supports preparing documents in a format that goes beyond what can be achieved with a typewriter or typical word processing system in several ways.

- Layout control through pagination: Pagination is the process by which the system determines where to place elements as it lays out individual pages. Basically, pagination takes the long scroll of typing (formatted only on the character and paragraph level) and breaks it into pages. During pagination, the system tracks whether a page is a lefthand or righthand page for two-sided printing. Paginating documents occurs in

the background, freeing the workstation for other activities.

- Specialized formats through the use of frames: Frames are reserved areas within the document in which specialized objects appear. Different frames exist for tables, graphic objects, text, bitmaps, footnotes, and equations. During pagination, a frame is placed on the page in a specific area (such as the top of the page), based on the properties specified for it. Text frames can be logically linked together allowing you to design layouts wherein text flows around illustrations and tabular data.

You have total control over the typefaces to choose for text, the size of those typefaces, and their stress. You can also decide whether paragraphs are centered, justified, triple-spaced, and so forth. All of these features appear in the text as soon as the property changes are applied.

Controlling layout through pagination

The layout features described in the following list, however, affect layout on a page level and are shown only after the pagination process.

- You can automatically generate page numbers. Also, you can control where those numbers appear on the page, their typestyle, and whether they are part of a pattern.

- Page heading and footing information can be specified as well as page placement, and paragraph and character properties for the headings' and footings' text. Uniform headings and footings or alternating headings and footings for left and right pages allow flexible placement of headings and footings on multiple page documents.

- Pages can be made into multiple column formats. A page can have several columns of varying widths. During pagination, the first column is filled with text before the next column begins. Column balancing, which lines up the bottom edges of multi-columns, is also provided.

- Page size can be changed. Options exist for standard landscape and portrait orientations of both letter and legal size paper. Other page sizes may also be specified.

- You can change page margins on all four sides (top, bottom, left, and right).

With the Document Editor, all the features just described can be changed for each new page through the insertion of page layout characters, or the same set of properties can be applied to all or a specified set of pages in a document. For example, you can specify both single- and multi-column text while using vertical and horizontal page orientation in a single document.

Layout control provides added support for two-sided printing by allowing you to specify a binding edge to be added to the inner margin for two-sided printing. In addition, placement of page numbers and wording and placement of headings and footings can be set differently for left and right pages.

Pagination also provides automatic widow and orphan control. As a result, the last line of a paragraph does not appear by itself at the top of a column or page, nor does the first line of a paragraph appear by itself at the bottom of a column or page. Two additional features give you greater control over widow and orphan control:

- A paragraph can be forced to be on the same page as the paragraph that follows it. This is particularly useful for single line paragraphs used as headings.

- Page and column breaks can be inserted at any point.

The pagination procedure contains several options to save time and aid in evaluating the layout quickly. You can choose to paginate displayed or specific pages while a document is open. Pagination is a background process that allows you to perform other desktop tasks while paginating a document.

A special Book feature treats a collection of documents as one long document when paginated. This feature provides continuous page numbering and heading and footing appearance across several documents placed in a Blank Book icon and paginated. The book icon, shown in figure 7-2, is found in the directory and can also be used when creating a table of contents or index. For more information on the book feature and its uses, refer to the VP Long Document Options product description.

Figure 7-2. **Blank Book icon**

Specialized formats through frames

The Document Editor frames mechanism allows graphics, equations, and tables to be fully integrated with text. This is true both for viewing and editing documents on a screen, as well as for printing them.

Graphics frames can be inserted at any point in a text document. Information on the use and function of graphics is provided in the illustrations and layout section.

Tables can be inserted for presenting statistical or tabular information where rows of information are to stay together across columns. Tables can be contained within graphics frames and their contents shaded to highlight important data.

Frames reserved for text can also be entered. These are particularly useful for creating varying column formats on a single page; for example, a text frame across the top of a page could provide a way to insert a single column that would be centered over two-column text below it. Linked text frames help you create attractive, professional-quality documents, reports, brochures, newsletters, and magazine-like layouts.

All frames can have their boundaries displayed in varying line thicknesses or be given invisible borders; they can also have areas reserved for captions on any side. These provide you with annotation areas to accompany your diagrams and illustrations.

Illustrations and layout

The Document Editor software also includes a graphics package. When combined with its word processing and document layout capabilities, this software provides the professional with a rich array of tools for the electronic creation of illustrations, diagrams, tables, and overhead transparencies.

The electronic preparation of illustrations for use in text documents or as standalone products is supported in three ways:

- basic tools for graphics
- creation of more complex figures
- integration of text and graphics.

Basic tools

Fundamental to graphics is its common interface with the rest of the ViewPoint world. There is no graphics editor in the traditional sense. All graphic editing capabilities are available whenever a document is in the editing mode. As with the rest of the software, graphics uses an object-oriented method of organizing software.

All graphic objects exist within specially reserved areas of documents called anchored graphics frames. Frames can be adjusted in size and location on the page.

All graphic objects contained within frames are handled like text, they can be moved, copied, or deleted with the same function keys. They can have their properties changed in the same manner as text. Figure 7-3 shows examples of various property settings for a rectangle.

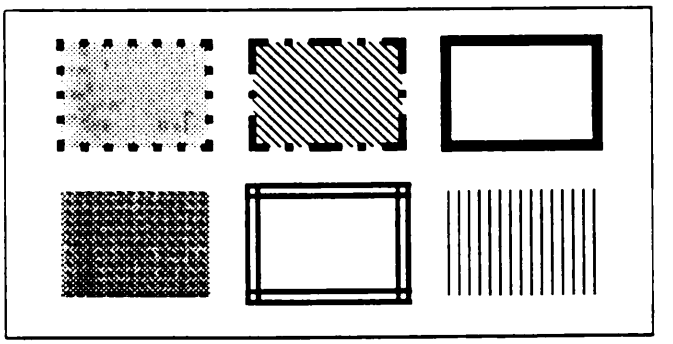


Figure 7-3. **Rectangles with different properties**

Graphics are entered into graphics frames in one of three ways. You can:

- draw a series of individual lines,
- create graphics from a template of standard shapes which you copy and manipulate, or
- enter graphic objects from a special keyboard.

To draw graphics using individual lines, you indicate the beginning and ending points, and the system draws a straight line between those two points. When you want to draw curved lines, you must also indicate the apex of the curve's angle. Once drawn,

lines can be moved, copied, or have their properties changed to create exactly the appearance desired.

When graphics are created from the template, you work from a system-provided document that contains master forms of points, lines, curves, triangles, rectangles, circles, ellipses, and other standard graphic objects. Desired objects are copied into graphics frames. These same objects can also be entered from a special graphics keyboard that is activated whenever the white space of a graphics frame is selected. Once they are there, special function keys can be used to shrink, enlarge, or stretch the objects to the size and shape desired. Again, you can move, copy, or change the properties of these objects.

Certain objects, such as bar-, line-, or pie-charts, can be automatically generated from data provided. This method of creating graphics requires the Data-Driven Graphics software package described in a separate product description.

A single graphics frame can contain graphic objects created by any of the methods described above.

Creating complex figures

The graphics software has several features that facilitate the creation of complex figures. They are:

- layering graphic objects
- manipulating selected objects
- bitmap graphics frame.

Graphic objects can be placed atop one another. To understand the importance of layering graphic objects, consider that certain objects (such as graphics frames) are opaque, while others (such as rectangles) are transparent. Objects created beneath a transparent object appear through the transparent object, while objects created beneath an opaque object essentially disappear from view. Figure 7-4 shows two examples that illustrate the difference in the order of layering graphic objects.

This ability to layer graphics provides you with greater control over shading and complexity of figures. To assist in manipulating these overlapping figures, the workstation has a special function key for graphics that positions the selected object on the bottom or top of the stack of graphic objects in which it is contained.

A special frame is provided to hold arbitrary bitmaps in documents. These complex bitmaps can be scanned graphics, copied screen bits, or graphics created and edited using the Free-Hand Drawing software package. (For more information on Free-Hand Drawing, refer to that product description.)

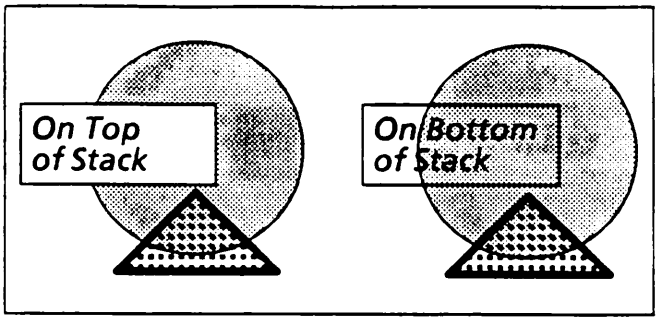


Figure 7-4. Layered objects

Other features that assist you in creating graphics are:

- A grid pattern within a graphics frame can be turned on to assist in the exact placement and alignment of objects within that frame.
- More than one graphic object can be selected, using the left mouse button for the first selection and the right mouse button for each additional selection.
- Multiple objects can also be selected by using a selection method that essentially encloses the desired objects within a box.
- When multiple objects are selected, you can bind those objects together in a cluster. The system treats clustered objects as a single object when moving, copying, stretching, deleting, or changing properties.

Integrating text and graphics

Text and graphics can be integrated in either of two ways: first, graphics can exist within text, and second, text can exist within a graphics frame.

All graphic objects exist within a graphics frame, and a graphics frame can be inserted at any point inside a document. In other words, any text document can have graphics contained within it.

A special graphic object, called an embedded text frame, is required when you add text to graphics. Such a frame can be placed anywhere within a graphics frame, and it occurs automatically as you begin to type. Multiple text frames can be placed within a graphics frame, and graphic objects can overlap a text frame.

Text frames may have certain characteristics which enhance their usefulness in integrating text and graphics. Embedded text frames may be linked together logically so that text flows from one frame to the next upon pagination. A text frame may be either opaque, and obscure the graphics beneath it, or transparent, so that the artwork shows through.

Text entered within a text frame is identical to text entered in a document. It can have the same character, paragraph, and tab properties as text outside of a graphics frame.

An embedded text frame cannot contain other frames (such as tables and equations). Therefore, tables and equations cannot be placed inside a text frame.

Text and graphics can also be combined through the use of caption areas. All frames can have areas specified on any or all four sides of the frame as caption areas. As with text frames, the text entered in a caption area can have any of the character, paragraph, or tab properties available to text outside a caption area.

Creating forms

In addition to basic documents, the Document Editor lets you create forms by inserting fields into a document that can be filled in by the form's user, or automatically by the system, at a later time. Forms make it easy to prepare documents that are used over and over again. Each time the document is needed, the key information is inserted into blank spaces in the form instead of creating the entire document from scratch.

There are two main tasks involved in using forms: creating the form initially and subsequently inserting information each time it is used. The first task is accomplished by using ViewPoint's basic document, table, or graphics features to create a standard form. Once created and printed, this can be used like any other paper form.

The real power of the forms creation facility lies in using the workstation's VP Document Editor to accomplish the second task: inserting information into its fields. An electronic form can be filled out on the workstation, and instructions can be given to the user via the workstation to help them fill it in. These instructions, specified during the initial creation of the form, allow the 6085 or 8010 to:

- automatically take the user from one field or part of a table in the form to the next when the <NEXT> key is pressed
- set fill-in order to specify order of input
- display instructions on what to put into a field when it is entered
- check to make sure that the format or structure of the information contained in a field is correct and provide feedback when format differs from that specified in the field's properties
- automatically fill in fields using information located in another field in the form, or in another document on the desktop.

Using a form

A created form can be stored on a desktop, in a file drawer, or on a floppy disk; then, whenever the form is needed, a copy of the form can be retrieved, opened on a desktop, and completed.

There are two ways to fill in the fields of a form:

- select the field and insert or delete text, and
- press the <NEXT> key to automatically advance from one field to another.

The user receives guidance in filling in each field of the form from the instructions the form creator wrote in the description section of the field's property sheet. These instructions appear at the top of the screen when a field is activated by pressing <NEXT>. You can also specify (in the Type, Format, Range, and Length sections of the property sheet) what the field should contain. This allows the workstation to notify the user when a field is not filled in correctly and thus helps to make the completed form accurate.

If the form creator specified fill-in rules for any of the fields in the form, the workstation automatically fills in those fields (when the user presses the <NEXT> key) and skips ahead to the next field that needs to be filled in. Or, if the user selects the [UPDATE FIELDS] command in the document's auxiliary menu, all the fields that have fill-in rules are updated automatically.

Filling-in fields automatically

VP Document Editor lets you use data from table cells and fields to complete information for other cells or fields. The data can reside either in the same

document or in a different document on the desktop. For example, the software can take the contents of a field in an expense report form (such as the number of miles driven), compute how much money should be reimbursed, and then automatically fill in the result in another field. By specifying the fill-in rule in the field's property sheet, you control the calculation.

You express fill-in rules in terms of values and operations performed on those values. A fill-in rule may be simply a single value with no operations. For example, if an address appears several times in a document, fields could be inserted in the appropriate places in the document, a description written in the first field's property sheet instructing the user to fill in the proper address, and then the name of the first field typed as the fill-in rule for the other fields. The workstation software would then fill in the address in the other fields automatically.

The following types of values are available to you when writing fill-in rules:

- field names, which cause the contents of the specified field to be used in the rule
- constants, which cause a specified alphanumeric constant to be used in the rule
- icon references, which cause the fill-in rule to use contents of fields in other documents on the desktop
- built-in values, which cause the fill-in rule to use one of the specified system-computed values of current date, current time, or user currently logged onto the desktop.

More complex instructions with multiple values can be used. A variety of operations can be used to manipulate values in a fill-in rule, including arithmetic, logic, concatenation, and aggregate operations. These operations allow fill-in rules to be written that modify information so that it can be better understood. For example, the fill-in rule "Total * .06" would automatically compute and fill into a field 6% of the number contained in a different field named "Total." This means that neither the user of the form nor the subsequent readers of the completed form need to make the calculation; it is done for them.

The software also provides a set of operators that compares two values. These comparison operators are used to set up choice expressions. Choice expressions allow different fill-in rules to be used in different situations. For example, the contents of the Tax Rate field on a property tax form may depend on which county the taxpayer lives in. A rule to fill in this field might be:

```
Choose
    County = "Allen" -> .6;
    County = "Dubage" -> .45;
    Otherwise -> .5
```

The tax rate would be .6 if the contents of the field named "County" is Allen, .45 if the county is Dubage, and .5 if the county is neither Allen nor Dubage.

Using tables in forms

A table is a special construction of cells and ruling lines that is frequently used in creating forms. Since all tables share certain characteristics, these characteristics can be pre-specified. This allows the user to determine what the table contains and what it looks like, without actually constructing the table. Based on high-level specifications, such as the number of columns and rows, the table can be automatically constructed on the workstation. The appearance of the table can then be manipulated by changing specifications in property sheets associated with different parts of the table.

Like filling in form fields, the workstation software also helps the user fill in table fields. Fill-in rules can be specified that result in automatic filling in of table columns. All the operations that can be performed in field fill-in rules (discussed in the Creating forms section) can also be performed in column fill-in rules. The fill-in rules are specified for a column in a property sheet that is similar to the property sheet for a form field.

Creating a table

Each table is contained in an anchored frame (or an embedded frame within an anchored frame), which reserves space in a document for the table. A basic two-row-by-two-column table can be entered in a document through the keyboard or by copying an existing table. In either case, additional rows or columns can then be created, and table characteristics, such as borders and lines, can be manipulated.

There are a number of ways you can fill in a table's cells.

- Select with the mouse and type information into any cell in a table.

- Use the <NEXT> key to move from one cell to another, inserting information along the way.
- Use the <SKIP> key to pass over cells that are not often changed.
- Move or copy entire rows or columns of information from one table to another table with a similar construction.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

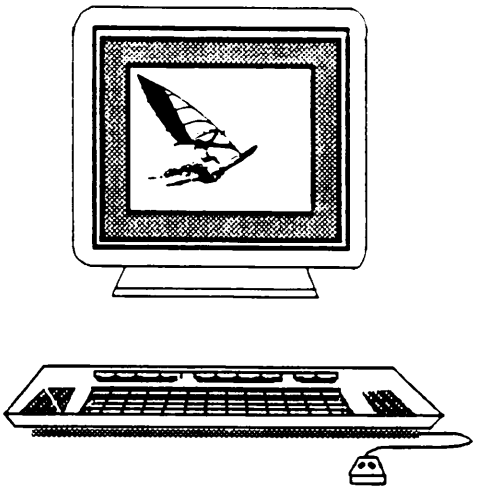
Signed Software License Agreement

Documentation

VP Series Training Guide

VP Series Reference Library

8. VP Free-Hand Drawing



Features

- Allows creation of bitmap illustrations
- Supports the ability to draw and modify a collection of bits to create illustrations
- Supports different shapes, shading, and textures
- Allows you to create your own brush for drawing
- Integrates text and graphics
- Allows you to capture an image on the screen.

Description

VP Free-Hand Drawing software lets you create and modify bitmap illustrations to produce professional-looking graphics. These illustrations can be incorporated into any VP Document Editor document containing other graphics, text, charts, and tables. Free-Hand Drawing is an enhanced graphics package that allows more flexibility and creativity than the graphics contained in the VP Document Editor or Data-Driven Graphics. It provides a variety of paint modes, brush sizes, textures, and shapes, and allows you to create any desired shape.

Free-Hand Drawing is a licensed application that builds on the Xerox ViewPoint software, and is compatible with the other VP software packages.

Bitmap illustrations

Bitmap illustrations are created using an electronic canvas, a special bitmap window. It is displayed when the icon is copied from the directory and opened (refer to figure 8-1). The canvas has commands and a menu associated with it that contain a variety of tools. Actions are performed by selecting options from a menu and using a mouse button to draw with a brush or pen point. The user interface and wide array of electronic tools provide a facility for graphics creation that is easy to use.

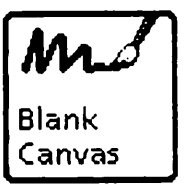


Figure 8-1. **Free-Hand Drawing icon**

You can either copy an image into the canvas or capture illustrations from documents on the desktop or from images on the desktop. These illustrations (or portions of them), can be copied, shaded, edited, and even fine-tuned bit by bit. Professional-looking graphics, such as logos, can be created using different lines, shapes, pen sizes, textures, and editing tools.

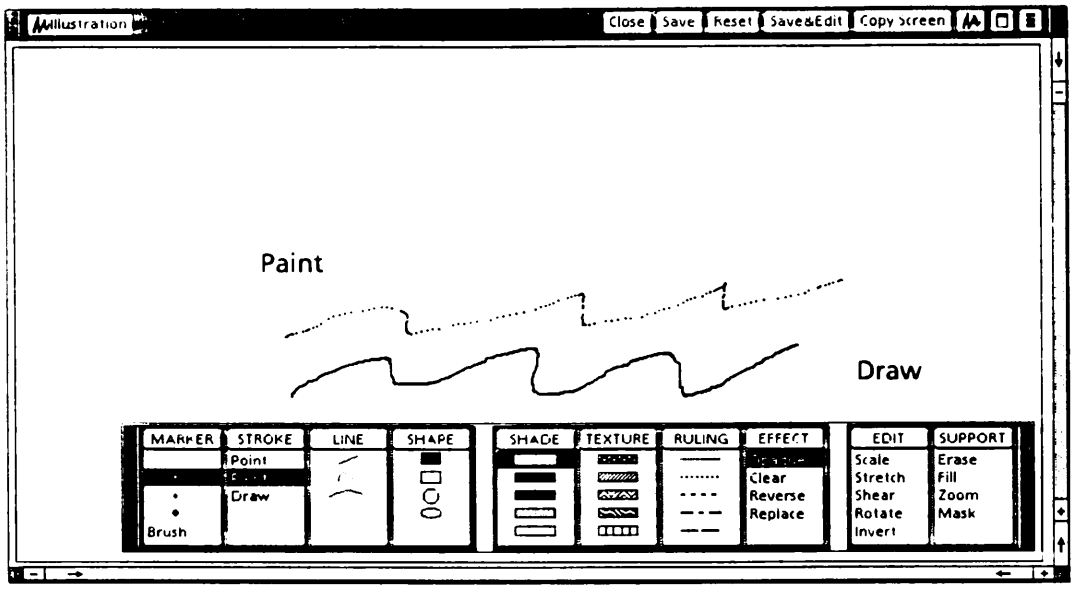


Figure 8-2. An open canvas and its menu

Tools

VP Free-Hand Drawing software provides you with an array of markers to draw and edit your illustrations. A marker is accessible through a menu (illustrated in figure 8-2), and can be a pen point or a brush. Pen points have round shapes and vary from one to five screen dots in width. You can also capture any rectangular area of the canvas to use as a brush. You can paint, draw, make lines, or create a number of geometric shapes with a marker. As you paint or draw, you can choose from a number of different shadings and textures and employ different ruling lines or marker effects.

One feature of Free-Hand Drawing is the ability to draw a continuous line, giving the visual effect of freehand drawing.

In addition to drawing there is also a painting facility. By holding down the mouse button and moving the marker along a desired path, the marker's image is repeated until the button is released. The faster you move the mouse, the farther apart the marks appear.

The difference between the draw and paint options is the way the system fills in the marker's path. With draw, the bits are connected as the marker travels over the canvas and with paint, the bits are not connected. (Figure 8-2 illustrates the differences between paint and draw.)

Free-Hand Drawing offers a third marking option: Point. This allows you to place a marker on the canvas with absolute precision—making only one mark regardless of how long you hold a mouse button down or how far you move the cursor. This can be advantageous when adding text or precise markings to your illustrations.

Lines can be straight or curved and can have different weights, shadings, and textures. Your choice of options from the Ruling menu affects the line's structure by generating a line that is solid, dotted, dashed, or a combination of dots and dashes. You can also create blocks, circles, triangles, and polygons with different shadings and textures to customize your illustrations.

Free-Hand Drawing offers five different shading options, which range from white to black. Also, you can fill in any shape that has a solid boundary with a texture, such as cross-hatched or striped.

You can use a marker to obtain five different effects: opaque, clear, reverse, replace, and mask. **Opaque** lets you draw any shade or texture over a previously drawn image; **Clear** lets you layer shades and textures; **Reverse** lets you overlay shades and textures in reverse video; **Replace** lets you overlay lines, shapes, or the brush image on other marks on the canvas; and **Mask** lets you replace or overlay with the enclosed areas of the brush, rather than the entire brush. You can fill in any shape that has a solid boundary with a texture, such as cross-hatched or striped.

Using the Symmetry option, you can set either a cyclic or a mirror mode when marking. When you use this option, the marker is reproduced at the number of points you designate. This provides a quick and easy way to generate designs with identical sections.

Free-Hand Drawing also has a Copy Screen option that allows you to capture any portion of your desktop and add it to an illustration. This option is useful when documenting workstation procedures.

If desired, you can add text to your illustration. A special Add Text option lets you enter text, make it into a brush, and use it to customize your illustrations.

Bitmap manipulation

Bitmap illustrations can be edited or manipulated using the user interface that is consistent throughout ViewPoint. For detailed editing, you can enlarge a rectangular area of the graphic. Any editing that you do in the enlarged area is simultaneously reflected in the original area (real-time processing).

Bitmap illustrations can also be made by altering your brush using special graphics options, such as stretch, shear, rotate, or invert. This modified brush is then used for drawing or adding text.

After completion, you can transfer the illustration into a bitmap graphics frame contained in a VP document, allowing the integration of bitmap images with other applications. (For more information, see the VP Document Editor chapter.) The illustration can be mailed, stored on a file service, and printed with a resolution of 72 to 300 spots per inch.

Prerequisites

6085 Professional Computer System
or
8010 Professional System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

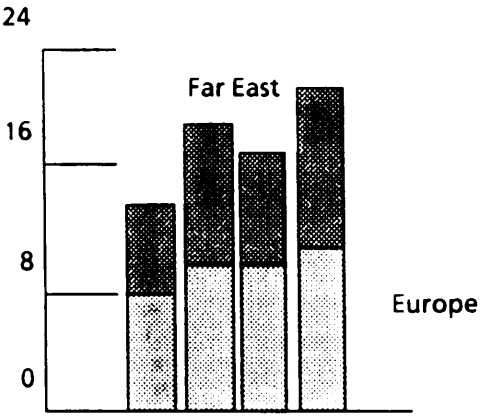
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

9. VP Data-Driven Graphics



Features

- Automatic templates for bar chart, line chart, and pie chart construction
- Data-driven bar charts, line charts, and pie charts
- Property sheet facility for changing chart appearance
- Automatic key production

Description

VP Data-Driven Graphics software provides you with the ability to transform data automatically into graphic forms. These forms, bar charts, line charts, and pie charts (shown in figure 9-1), are referred to as data-driven graphics.

This software application builds on the Xerox ViewPoint software package providing a consistent user interface, and is compatible with other VP software packages.

User interface

The user interface for the basic graphics capabilities does not change when using the Data-Driven Graphics application. (For more information, refer to the VP Document Editor product description.) Because this interface is consistent, the following statements are true, both for data-driven graphics and graphics in general:

- Bar charts, line charts, and pie charts exist within graphics frames. Any graphics frame can contain any type of graphic object. Graphics frames can be placed in any ViewPoint document.
- Elements of data-driven graphics, like any graphic object, can be moved, copied, deleted, or stretched by using the appropriate keyboard key.
- Elements of data-driven graphics, like any graphic object, have associated properties that can be changed.
- Data-driven graphics, like any graphic object, can rest under or over other graphic objects, and their placement in a graphics frame can be simplified through the use of an automatic grid.

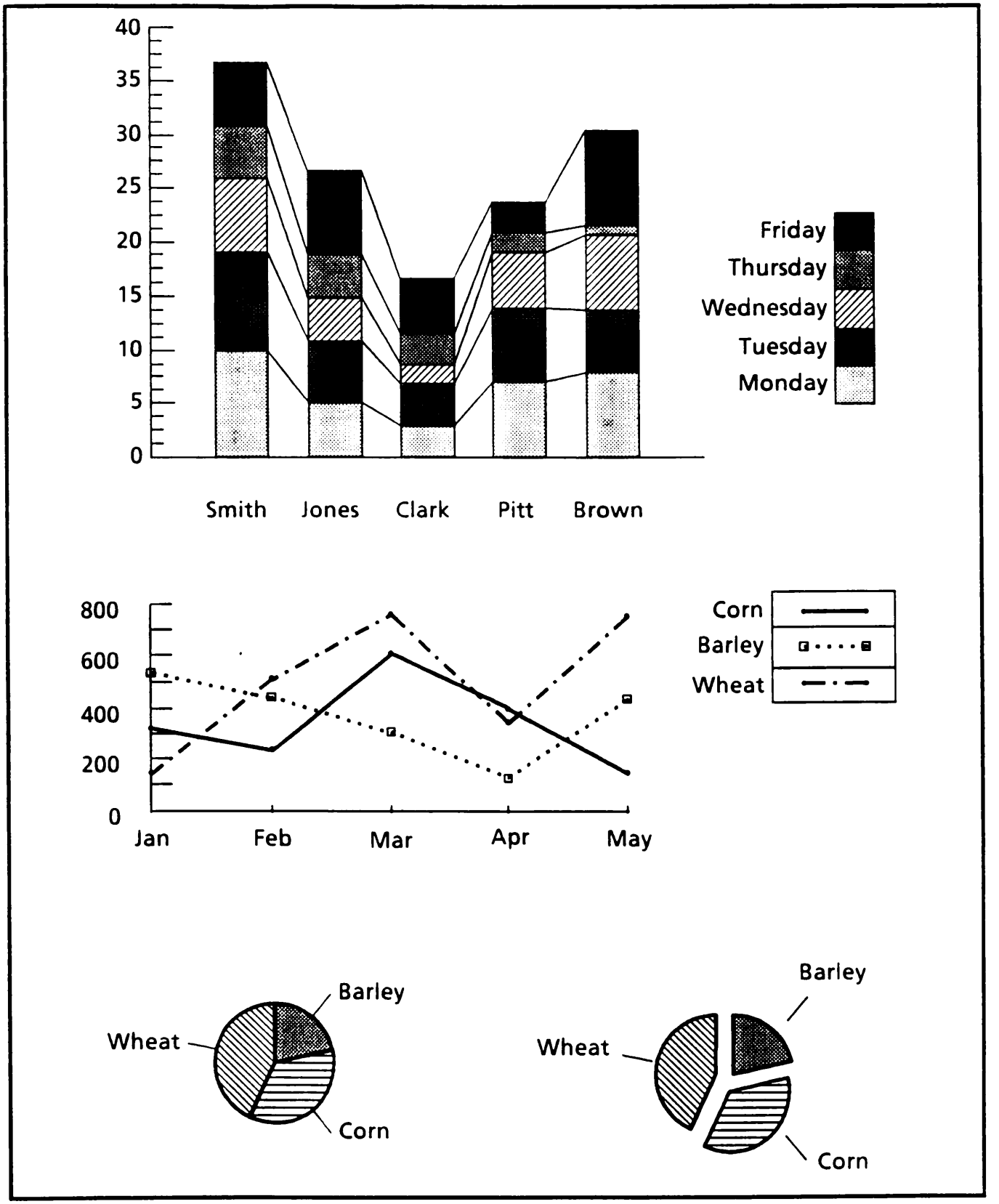


Figure 9-1. **Sample bar chart, line chart, and pie chart**

Creating charts

Like any other graphic object, a basic bar, line, or pie chart is an integral part of a special template called the Basic Graphics Transfer Document. Alternatively, these charts can be accessed via the graphics Special keyboard. To create a specific graphic chart, the basic chart is either copied from the template or entered via the Special keyboard into a graphics frame, and then modified to create the desired object.

It is important to note that data-driven charts graphically represent the sets of values you create or specify. These values are used by the system when it automatically redraws the basic chart.

Values in charts are represented by the following graphic objects:

- horizontal or vertical bars when using a bar chart,
- straight lines, in a series, that either connect each point or pass as close as possible to all points (a straight-line best-fit chart), or a scattergram, when using a line chart, and
- wedge-shaped portions of a circle when using a pie chart.

The system can use data from either of two sources: a chart's property sheet or a table elsewhere within the document.

- Charts, like all ViewPoint objects, have property sheets. The values for each of the bars, lines, or wedges can be specified in a property sheet. The system then redraws the chart to represent those values.
- A table within the same document as the chart can be used to specify data. The data in the table is then used and the chart is redrawn with these values.

  For example, a table drawn using the List Manager application can also be used to generate charts. Therefore, Data-Driven Graphics has software integration features with (directly or indirectly) List Manager, Tables (contained in documents), Data Capture, and Spreadsheets.

Modifying charts

By specifying the values to be used in creating a chart, you indicate how many bars, lines, or wedges exist on the chart, and their relation to each other. Additionally, Data-Driven Graphics provides simple ways to enhance the appearance of charts through the use of property sheets.

Charts can be modified through property sheets in the following ways:

- controlling bar and line chart orientation, either vertical or horizontal for bar charts, and any orientation for line charts
- controlling the way bars are stacked or grouped and if pie wedges are adjoining or separated
- controlling the use of tick marks and numbers on both the vertical and horizontal axes for bar and line charts
- controlling the use of labels and keys on bar and line charts
- controlling the shading and texture of the various bars on a bar chart or wedges on a pie chart
- controlling the point and line structure on line charts

During the creation and manipulation of charts with their many separate lines, bars, and text labels, they are treated as single graphics elements. Thus you can move, copy, and delete them as one object.

The chart can also be split into separate elements. This allows changing the properties of the individual elements to fine-tune the chart. The chart can be recombined into a single object at any time.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

Signed Software License Agreement.

The NetCom Software package is required to print items that were created using Data-Driven Graphics.

Documentation

VP Series Training Guide

VP Series Reference Library.

$$\int_{-1}^{1} f(x)dx = \sum_{k=1}^{m} H_k f(x_k) + E$$

where x_i is the ith zero of the Legendre polynomial $P_m(x)$, and

$$H_i = \frac{2(1-x_i^2)}{(m+1)^2[P_{m+1}(x_i)]^2}$$

and E is the error term

Features

- Automatic positioning of symbols within an equation
- Automatic handling of subscripts, superscripts, and typestyle based on equation typesetting standards
- Integration with text, requiring no special text-merging operation
- Altering of the standard font face and element sizes in an equation structure
- Full screen display of equations
- Integration with other keyboards found on the workstation (such as Greek and Math).

Description

The Equations software package provides a full range of special symbols and constructs frequently needed in equations. Most of these symbols do not appear on typewriters or on most word processors. Consequently, in order to incorporate them into documents, people have found it necessary to draw them by hand or typesetters have been required to produce them.

This software is a licensed application that builds on the Xerox ViewPoint package, and is compatible with the other VP software packages.

Equation structures

The Equations software provides not only the symbols needed to create equations, but it also adjusts the size and placement of symbols and constructs according to mathematical notation standards. Other equation packages require their users to take a much more active part in determining placement. For example, some systems might require specifying boxes, entering symbols into each box, then positioning the boxes accordingly, and merging the resulting image into text, using a separate software package. Other systems operate like a typewriter, using the shift key to place symbols at half or third lines.

How the Xerox Equations software handles all symbol size, face, and placement adjustments is vividly illustrated in the following example.

A summation structure has two possible argument fields: the summation's lower limit (below the summation sign in small type), and the upper limit (above in small type). The summand follows the sign in normal size type. When you enter a summation structure on the workstation, you are not just entering the summation sign, but are actually entering the entire structure, including the two empty argument fields.

You are guided through these two positions by the Equations software. The software automatically changes the font size and face to be appropriate for

the position text is entered. There is no need to manipulate the format.

The equation in figure 10-1 is an example of a summation symbol and the three positions of its argument fields. When an equation structure is filled, the software enters the correct size of the arguments.

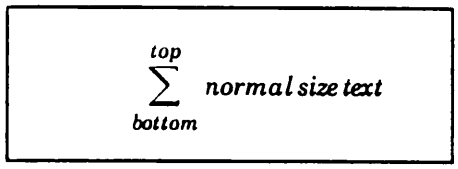


Figure 10-1. **Sample equations structure in bordered frame**

A border was added to the above equation frame, just as various widths and types of borders can be added to graphics frames. Further examples in this document show equations integrated into text with no visible border. In addition to borders, caption areas can be added for annotation or numbering purposes.

Automatic adjustment

The examples below show that the Equations software adjusts the size and placement of equation structures and their elements as you type an equation.

The first example is a simple fraction. Although most text processing systems allow you to type only the most common fractions, the Equations software allows for any numeral in the numerator to be separated from any denominator by a horizontal bar.

$$\frac{2}{47}$$

When adding a summation sign, the Equations software automatically adjusts the numeral and bar to accommodate the addition to the numerator.

$$\frac{2\sum}{47}$$

When adding a lower limit to the summation, the software automatically adjusts the bar to make room.

$$\frac{2\sum_{i=0}^{\infty}}{47}$$

After entering the upper limit, you are guided back to the standard baseline to complete the equation.

The mathematical expression below, created with Equations software, shows the integration of braces, brackets, superscript, subscript, and fractions into an equation with their correct typographical rendering.

$$A_k = \frac{1}{k!}\left\{D_x^k\left[\frac{(Nx)}{G(x)}\right]\right\} \quad x = a$$

Entering an equation

To enter an equation into a ViewPoint document, an area in which to work must first be provided. This area is called an equation frame. A frame is a reserved area in which specialized constructions can be entered. (An equation frame is comparable to a graphics frame, which is an area in a ViewPoint document reserved for graphics.)

Selecting an area within the equation frame, you are able to access a keyboard that displays available equation symbols. The method of temporarily changing the keyboard meaning is identical to the way the keyboard changes meanings to other alphabets (Greek), or to special symbols (mathematical symbols).

Pressing the appropriate keys causes equation structures to be entered, rather than the keycap name printed on the physical key. For example, when logical "S" on the special Equations keyboard is pressed, a summation structure is entered in the equation frame. The keycap mappings in figure 10-2 represent all equation structures.

Once an equation structure is entered, the caret automatically appears in the first logical position for an element of that structure. Each time the <NEXT> key is pressed, the caret progresses to the next logical position. Whatever text is entered at each of those positions is automatically formatted, appropriately based on typographical standards for equations.

While typing within the equation frame, you can move among several different keyboards. For example, the following equation was typed using the Equations, English, Math, and Greek keyboards. Only one keystroke is needed to change keyboards.

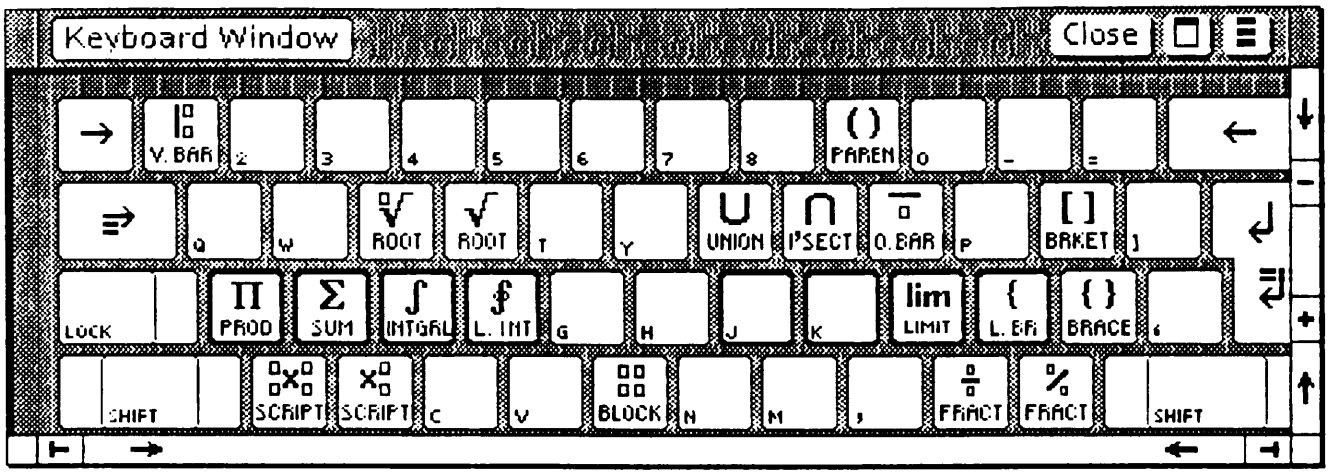


Figure 10-2. Equations keyboard

$$\int_{-1}^{1} f(x)dx \geq \sum_{k=1}^{m} H_k f\pi + E$$

Equation Using Multiple Keyboards

Individual elements within the equation may be edited, much as text in paragraphs can be edited. For example, material can be copied or moved within an equation and between equations. The Equations software performs the necessary adjustments to the surrounding material. You can also copy material contained in the frame itself.

An example of the copy feature is shown in the "continued fraction." The Equations software allows you to select the initial fraction structure, then copy it to a logical place within the structure. (Multiple clicking selects a structure, just like multiple clicking selects a word in text.) The software expands the fraction bars and correctly positions all symbols without user help. The example below shows a partial initial fraction, then the fraction copied into itself at the point of the $\wedge$ symbol. (The arrows denote the sequence.) The final symbol (1) is added after the multi-copying process.

$$\frac{1}{x+\wedge} \rightarrow \frac{1}{x+\dfrac{1}{x+\wedge}} \rightarrow \frac{1}{x+\dfrac{1}{x+\dfrac{1}{x+1}}}$$

Limitations

The following limitations apply to the current implementation of equations:

- Because the system determines the character properties of the equation based on typesetting conventions, the ability to change properties of text within an equation frame is limited to two sizes, (8 and 10), three faces (normal, bold, and italic), and one font (classic).
- An equation frame currently cannot be entered into a graphics or text frame, nor can a graphics or text frame be entered into an equation frame.
- Line numbering of equations can be achieved through the manual use of the frame's caption area.
- An equation within an equation frame is limited to a single line. Multiple-line equations must be entered through the insertion of a comparable number of equations frames or the use of block structures.
- All equations are centered within their frames. Other alignment choices, such as left or right flush, are not yet available (though they may be achieved by adding blank spaces).
- The left brace, diagonal fractions, four argument scripts, and "growing" square root structures are not yet implemented, although a simple square root character is available on the mathematics keyboard.
- Symbols, numbers, and letters can be entered only in Classic font, since the typographical standards for equations requires a serif font.
- The text software does not allow equation frames to reside on the same line as text. Descriptive text can be typed in an equation frame, but is constrained by the same formatting standards as are equations. The caption areas around the equation frame can be used for descriptive text to the left, right, top, or bottom of the equation frame.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

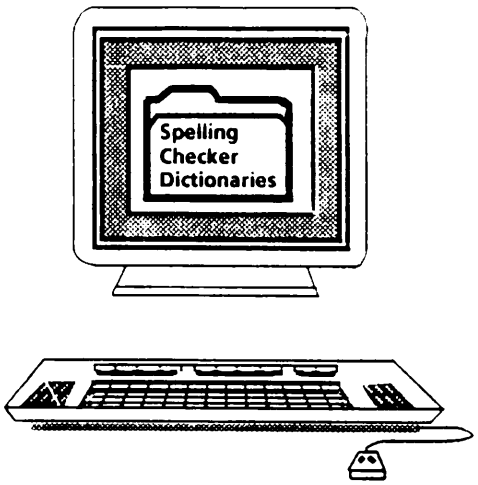
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

11. VP Spelling Checker



Features

- Locates and corrects spelling errors
- Contains a standard dictionary of 104,617 words
- Contains legal terms from Black's Law Dictionary®
- Supports development of custom dictionaries up to 22,000 words each
- Supports multinational characters.

Description

VP Spelling Checker lets you locate and correct spelling errors in VP documents, including text in frames.

VP Spelling Checker software is a licensed application that builds on the Xerox ViewPoint software, and is compatible with other VP software packages.

The user interface

The VP Spelling Checker runs easily and efficiently on any VP document to locate spelling errors. You can elect to have either all or only a portion of a document checked. Frames and their captions can be included in the checking process as well.

When you activate the VP Spelling Checker, the system readies all the dictionaries contained in a special folder for your use, and opens the Spelling Checker window.

This window has several uses. Through it you can specify: the range parameters for checking (either part or all of the document), which of the dictionaries are to be used, and how they are to be used (whether they are to be edited by adding to them or only used for look-up). You can also instruct the Spelling Checker to correct the word automatically, throughout the entire document, based on how the first occurrence of the word is corrected. Finally, you use this window to make all the corrections to the document. (See figure 11-1.)

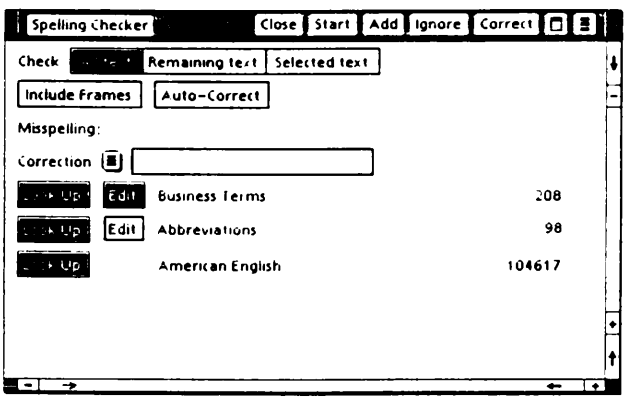


Figure 11-1. **Spelling Checker window**

When a word is found that is not contained in the designated dictionaries, it is displayed in the Spelling Checker window. If the word is misspelled, you have

two methods of correcting it. You can make the correction interactively, either by correcting it in the window (using standard text editing methods), or by looking up a possible correction in the alternative spellings auxiliary menu. You then instruct the system to correct it in the document. The corrected word appears in the document with the font style of the first character of the original word.

If the word is spelled correctly, it can either be added to your user-created dictionary or be placed in a list of ignored words and skipped over whenever encountered. Two kinds of dictionaries can be used: the standard dictionary (which comes with the Spelling Checker), and the user-created or custom dictionaries.

Standard dictionary

Contained within the Spelling Checker software is a standard dictionary. This dictionary has 104,617 American English words, including legal terms from Black's Law Dictionary, and it cannot be changed. Although this provides you with a large collection of words, some types of words are not included.

They are:

- variations of root words, such as possessives
- technical terms
- slang or foreign phrases.

However, you can satisfy special needs by creating your own dictionaries.

Custom dictionaries

You can create as many different dictionaries as you need. They can contain foreign words, abbreviations, or additional words not found in the standard dictionary.

The VP Spelling Checker provides you with an empty dictionary icon with which to create your custom dictionaries. It can be copied to your desktop, as often as you need, and named to reflect its intended use, for example, Abbreviations or Business Terms. While using the VP Spelling Checker, any words not found in the standard dictionary can be added to the special dictionaries. Each user-created dictionary can hold up to 22,000 entries (depending on word length), and can be used in any combination with the standard dictionary. Words can be added to or deleted from these dictionaries through Spelling Checker's batch check and add mode.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

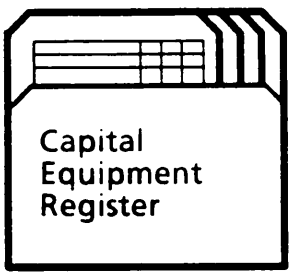
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

12. VP List Manager



Features

- Multiple views for one record file that specify a filter, display form, and sort order
- Record selection through filtering on the basis of one or more fields; multiple sort levels
- Field validation and error documentation
- Full multinational support
- Full integration with the user interface
- Input and output via user-defined forms
- User-defined data structure
- Record file icon contains a base view, errors folder, and forms folder
- Repetitive letter capability.

Description

Frequently, as a professional, you may be called upon to manage structured data on a moderate scale. Often, the processing of the data is repetitious even though some parameters may change. The VP List Manager capabilities are designed to meet your needs in such circumstances. List Manager software is a licensed software application that builds on Xerox ViewPoint, and is compatible with other VP software packages.

Record files

The VP List Manager facility is designed to create and maintain a collection of information, called a record file, for manipulation on your desktop.

This record file is a means of structuring and storing information in a manner that supports easy retrieval of data. Each record file contains one or more records. Each record is a set of information divided into fields (or subsets) of information. Within a single record file, each record has the same number and type of fields.

For example, a record file containing information about a company's employees might have a record set up for each employee. Each record might contain four fields: name, address, supervisor, and salary. Each record in the file would contain one particular employee's name, address, supervisor, and salary. These concepts are illustrated in figure 12-1.

You might query this record file to find information about a specific entry, such as calling up the record for Pat Stripe to determine Pat's salary. Or you might query the record file to find out which records match a certain field of information, such as all the employee records whose supervisor field reads "Rodriguez."

The List Manager supports your information management and retrieval efforts by making it easy to:

- store information in a structured way

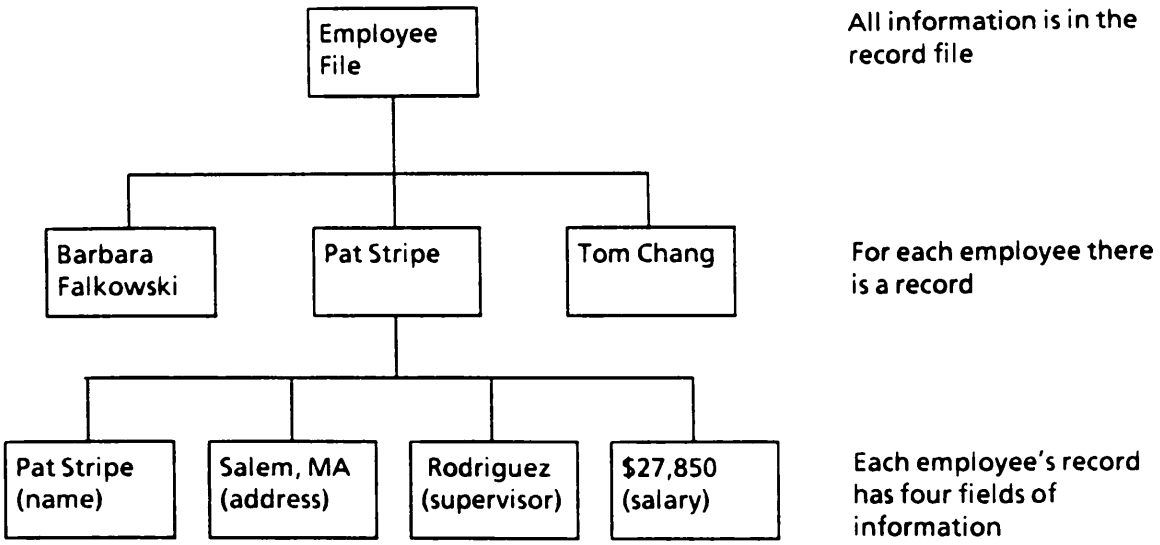


Figure 12-1. **Concept of record file, records, and fields**

- view specific portions of the entire set of information
- transfer information to and from VP documents.

Since the List Manager software is meant to be a personal record file management facility on the desktop, data within the record file is shared only in the sense that the record file may be mailed or filed (like a VP document).

Emphasis has been placed on conceptual simplicity and integration with the overall VP user interface. List Manger supports the organization and management of data, for moderate-size applications, and the integration of the output with other VP documents.

Defining the record file

The record file appears as an icon on the desktop (see figure 12-2). Like other icons, the record file opens into a window, and displays three objects: a forms folder containing display templates, an error folder for storing rejected input, and a base view. An opened base view displays the data stored in a record file. You determine the data structure for each icon. Once the structure is specified for an icon, it cannot be changed.

You specify the structure by creating a document with fields or tables. (For more information on fields and tables, see the Xerox ViewPoint product description.) Each field (or each column of the table) within that document defines the structure of a field within the record. For example, if the defining

Figure 12-2. **Record file icon**

document has six fields, each record in the record file will contain six fields.

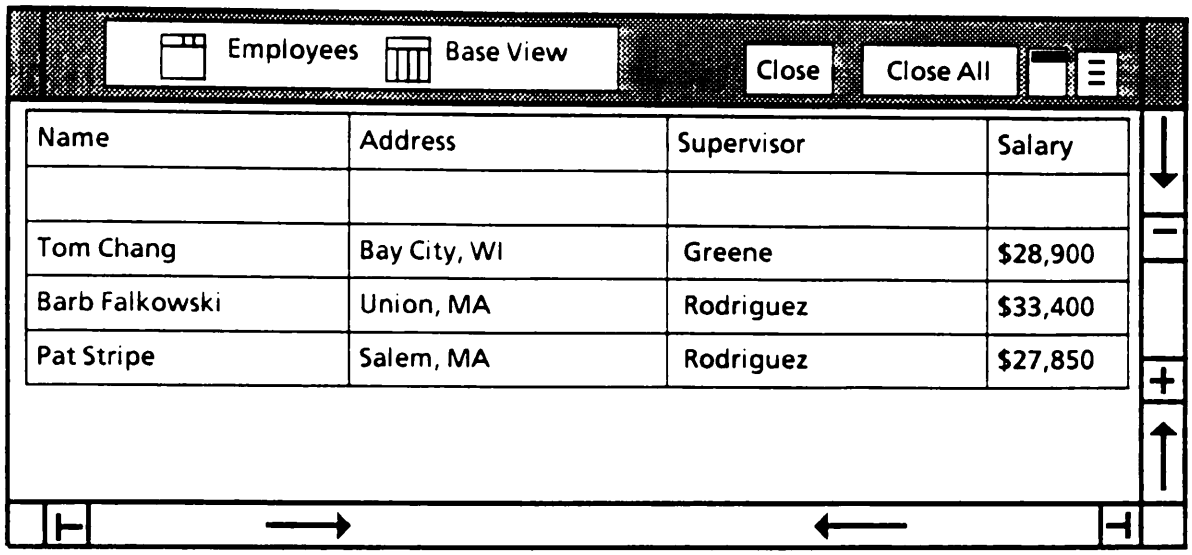
Relevant properties for the defining fields, such as names and length, also determine the properties for the fields within the records of the record file.

Once the structure is defined, the records are displayed in the tabular base view with a column for each field. Each new record added to the record file is displayed in a new row within the table. See figure 12-3.

This method of defining record files connects List Manager with the rest of the ViewPoint world. For example, it permits existing tables or documents with fields to be used in defining new record files. It also permits information stored in such documents to be easily moved into record files for storage and manipulation.

Maintaining the record file

Information can be entered into the record file either by directly typing in information with the



Name	Address	Supervisor	Salary
Tom Chang	Bay City, WI	Greene	$28,900
Barb Falkowski	Union, MA	Rodriguez	$33,400
Pat Stripe	Salem, MA	Rodriguez	$27,850

Figure 12-3. **An opened view**

keyboard, or by transferring the contents of document fields, tables, or other record files into record files.

Once a record file's structure is defined, you can open its base view (or any other view) and enter information for a new record by using standard VP text editing procedures. You can type directly into the entry row (a special blank row that automatically appears at the top of the table). When the last field in the entry row is reached and the entry is confirmed, the system automatically adds this new record to the record file. Then, the entry row is reset to blanks so another record's information can be added. You can confirm newly entered information either by selecting the [CONFIRM] command or by pressing <NEXT> when in the record's last field.

Information can be entered from any of the many keyboards available on the workstation, including Russian, Arabic, Hebrew, and Japanese. Therefore, a single record file is able to handle multilingual needs.

Information can also be entered into a number of fields in a record file simultaneously by moving or copying a document, a folder of documents, or another record file onto the record file icon. The contents of the document's fields or table's columns are copied to the record fields with corresponding names. If any problems occur during the transfer, the object (such as a record) is placed in a special folder labeled "Error Folder." The errors can be resolved after the transfer is complete.

You can open the record file at any time to view and edit the information. Text can be edited using the move, copy, or delete operations.

Querying the record file

The system automatically generates a base view that displays all fields of all records in a table. Other views can be created that display subsets of the records or of the fields.

There are three different mechanisms used to determine the information displayed: filters, display forms, and sort orders.

Filtering

You can determine whether records are displayed based on one or more of their fields matching certain criteria. For example, you might want to see only those records for employees with the last name of Jones. Using a combination of text and special characters, retrieval criteria can be specified easily, even by novice users. This process of determining which records are displayed is called *filtering*. Through filtering, you have use of a powerful retrieval mechanism.

Display form

You can determine which fields of the record are displayed. In the base view, all records and their fields are displayed. But in other tabular views you can dynamically specify which fields are displayed. Other (non-tabular) views can be displayed using a *display form*, which is a document containing fields but no tables. In the display form you can include those fields to be displayed and the format in which

they are to be displayed. For example, you might want to prepare a mailing to employees and have each record complete the address and heading of a letter. So the display form would contain the letter and fields for the address and heading.

Sort order

You can determine the order in which records are displayed. You can choose from: ascending or descending, and alphanumeric or chronological orders. For example, if you were looking at employee salaries, you might want to list the records, high to low, based on the salaries field's contents. This is called setting the *sort order*. It is possible to sort a maximum of four fields, with the choice of order specified independently for each field.

Creating a unique view

When referring to similar information frequently, you can create a unique *view* that filters, sorts, and displays your information to suit your needs. A single record file can have multiple views allowing rapid access to several subsets of the stored data.

For applications in which a view must be opened quickly, the system can maintain an index to display records, in a specific order, for that view. Each time the record file is amended, this index is updated. (Maintaining the index slows down the entry time, but speeds up retrieval time.)

You can also take any view and temporarily change its retrieval filter to look at different sets of information on a case-by-case basis.

Integration with the desktop

List Manager integrates ViewPoint's human interface to provide you with:

- VP editing capabilities in the record file
- multilingual applications and capabilities for record files
- document fields that can both define structure and display data for record files.

Once the information is in a record file, you can use the data by generating different types of output and by integrating it with other VP documents. You can print any view within a record file by specifying the view and printing the record file icon. Data from any view, either opened or closed, can be copied into a new document by using a [MAKE DOCUMENT] command. (For those documents with more than 3,300 cells in the resulting table, List Manager generates an overflow document that contains the remaining data.) For example, a view might be used to prepare a table that would later be entered into a document or report. For tabular views you can specify a document to be used as a template for the new document. Or, the information in the record could be used to fill in specific data when generating repetitive letters or forms. Document generation, table generation, forms fill-in, and the generation of periodic reports are just a few of the ways that you can use output from the record file.

Limitations

The following limitations apply to the current implementation of List Manager:

- the practical maximum number of records in a record file is 1,000
- the practical maximum number of fields in a record is 30
- the practical maximum size of a record is 1,000 characters (theoretical maximum is 8,000 characters)
- the practical maximum size of a field is 100 characters (theoretical maximum is 4,000 characters)
- the [MAKE DOCUMENT] command cannot support resulting documents that would be wider than 25 inches.

Certain applications that go beyond the stated practical limits may be possible, but these must be analyzed on a case-by-case basis by a Xerox Systems Analyst.

List Manager *is a single file records management system* and is not a relational data base manager; therefore:

- keys cannot be defined for a record file (that is, a field that is guaranteed to contain unique values)
- several record files cannot be linked or joined for a single logical operation
- record files do not have shared access; two users cannot access a given record file at the same time
- only record files currently on the desktop can be accessed; there is no remote access.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

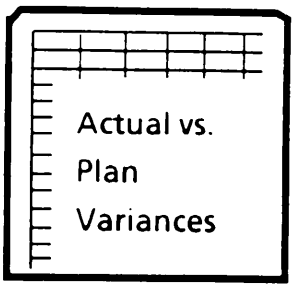
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

13. VP Spreadsheet



Features

- Uses a matrix comprised of 255 rows by 63 columns
- Includes built-in functions such as present value, count, and average
- Supports printing of specified cells, rows, and columns
- Supports report generation as a table integrated with other documents, or used to create table-driven bar, line or pie charts, or record files
- Supports simultaneous viewing of many columns and rows on the large display
- Supports manual or automatic recalculation.

Description

The Spreadsheet software application offers a powerful decision-support tool for quantitative modeling that takes advantage of major features of the ViewPoint user interface. It brings to the workstation the capability to create an electronic spreadsheet, or worksheet, that facilitates the statistical manipulation of information normally presented in columns and rows.

This software is a licensed option that builds on the Xerox ViewPoint software and is compatible with other VP software packages. When combined with a conversion package, VisiCalc and Lotus 1-2-3 spreadsheets can be used for exchanging information with 6085 and 8010 workstation users.

Purpose and function

Electronic spreadsheet programs are one of the most popular applications for personal computing. With spreadsheets, you can easily calculate results from rows of information, reformat data, and perform "what if " calculations.

The electronic spreadsheet consists of a matrix that can have up to 255 rows, with up to 63 columns in each row.

The intersection of a row and column is a cell. A single spreadsheet can have a maximum of 16,065 cells. A cell can be used to contain text as a label for a column or row, as a place to present data, or as a formula that takes information in specified cells and performs desired calculations on them.

User interface and desktop integration

VP Spreadsheet has the same capabilities as many of the standalone spreadsheet packages offered today. At the same time, some of those capabilities are enhanced by taking advantage of ViewPoint's user interface.

For example, the spreadsheet program appears as a separate spreadsheet icon. Opening the icon automatically readies the spreadsheet software.

Spreadsheet windows can be split into two windows so that different parts of the same spreadsheet can be seen simultaneously. Or, multiple windows can be opened at once, allowing you to work among spreadsheets, without using special commands. You also can have spreadsheet windows and document windows open at the same time. Closing the spreadsheet icon automatically stores the data.

To further illustrate the convience of the consistent user interface, you select any cell in the spreadsheet using the mouse, which is the same way you select a character in a document. To select a cell, there is no need to initiate a 'Go To' command, enter a cell address, and then execute the command.

Existing text from a ViewPoint document can be copied or moved into a spreadsheet.

Consistent with ViewPoint's emphasis on avoiding the need to remember complex code keys, the workstation automatically reprograms its top row of keys and displays the new function (such as cursor keys) whenever there is a selection in the spreadsheet window.

Also, you have the option of using all the alternate keyboards supported by your workstation's software. These keyboards can include languages, special function keys, cursor keys, and a 10-key pad (on the 6085) for numeric input. The workstation's alternate language keyboards can support English, European, Middle- and Far-Eastern languages, and any multi-directional typing required. This allows spreadsheet labels to be in any of the supported languages.

VP Spreadsheet also provides a status line, a prompt line, and an entry line, which are visible at all times in each open spreadsheet. This command area displays the formula for a cell, provides screen prompts for user commands, and posts the current keyboard entry.

Spreadsheet icons can be mailed, printed, or filed in the same manner as any other workstation icon. Printing of specified cells, rows, and columns is an available feature.

Screen handling aids

The Spreadsheet application provides many features to support the viewing of data stored in the spreadsheet.

With the large format display of the 6085 and the 8010, spreadsheets can be shown in either a 6½-inch width or a 13-inch width. The full 13-inch width could be used to display a full year of data.

In addition to the width of the window, there are three features that affect how the data is seen:

- the window can be split horizontally so that two non-contiguous sections of columns are displayed simultaneously
- the window can be split vertically so that two non-contiguous sections of rows are displayed simultaneously
- titles for rows and/or columns can be "locked" in place while the rows or columns of data are scrolled.

When windows are split, you can also arrange to scroll the two sections of the windows in either a synchronized or unsynchronized manner.

Finally, to move from one cell to another, you can:

- select the desired cell with the mouse
- use the <NEXT> key to advance to the next cell (with the ability to specify in which direction the cell progression occurs)
- use a command which scrolls to and highlights a cell at specified coordinates
- use the special cursor keys (that are found in two locations: on the top row of special function keys, and on a special alternate keyboard for spreadsheets).

Formatting features

A spreadsheet's cells have default formats set for them, but you can specify others. You can specify a column width either for a single column or for all columns collectively. You can also determine whether column data is uniformly aligned to the left or right, and specify data as being in a money, integer, or graph format.

These format changes can occur on either a cell-by-cell, or an entire spreadsheet basis.

Editing features

Spreadsheets can be edited on several different levels. Information in individual cells can be edited by deleting the current contents and retyping them by initiating a special edit function. When in the entry mode, text in the status area can be edited using the select/adjust method. Information on a column or row level can also be edited; entire columns or rows can be moved or deleted. All computation rules are automatically adjusted when a column or row is moved or deleted. The contents of an entire spreadsheet can also be cleared with a single command. Additionally, a replicate command

exists to copy information stored for a cell or range of cells from one area to another. This command is particularly useful when copying complex formulas.

To save the results of an editing session, you can close the spreadsheet window or select the [SAVE] command in the spreadsheet menu.

Formula and computation rules

VP Spreadsheet provides the ability to specify formulas, which take information from various cells and manipulate that information. A formula can be used to add the contents of a row in order to find a total, to search a column to find the greatest value, and to count the number of entries that are not blank.

The categories of commands available for writing such rules are:

- Arithmetic
- Trigonometric
- Boolean
- Logical operators
- "If" statements
- Look-ups
- Miscellaneous, including such tasks as averaging, finding the net present value, and so forth.

When writing a formula, you can specify the order of operation through the use of parentheses.

A spreadsheet's formulas can be computed automatically, either upon a change in a cell's data or on your command.

You can also control whether computation occurs either by row or column, and whether either the formula or the results of applying the formula are displayed in the cells. A special command displays the formulas for each cell instead of the cell's values. This view of the entire spreadsheet can be printed.

A list of commands is found in table 13-1.

Report formatting

A variety of commands are available for formatting the cells inside a spreadsheet. At some point, you may wish to take portions of the spreadsheet's cells and use them to create reports. You can accomplish this task using the simple [MAKE TABLE] command.

[MAKE TABLE] is a special command that copies specified rows and columns into a system-created document containing a table with the same number of rows and columns. Both the document and the table in it can then be edited and formatted as any other ViewPoint document, using text editing capabilities. The document can also be sent directly to the printer.

To enhance your productivity, the table resulting from this operation could be used to define an automatically drawn chart, as described in the Data-Driven Graphics software product description. For your convenience, the process is illustrated below, and the results are demonstrated in figure 13-1. The resulting table can also be used to set up and input data into a record file.

In addition, any VisiCalc spreadsheet can be converted to the ViewPoint format for use on the 6085 Professional Computer System or 8010 Information System. Likewise, any ViewPoint spreadsheet can be converted to the VisiCalc format. This is accomplished by using the converter software package. Spreadsheets converted from one form to another may vary slightly, since some functions may be implemented differently on other systems.

Table 13-1. **Spreadsheet categories and commands**

Category	Types of Commands
Arithmetic	Addition, subtraction, multiplication, division, powers, exponents, absolute value, integers, natural logarithm, base 10 logarithm, square roots
Trigonometric	Sine, cosine, tangent, arc sine, arc cosine, arc tangent
Logical functions	And, or, not, if
Logical operators	Equal to, not equal to, less than, less than or equal to, greater than, greater than or equal to
Miscellaneous	Pi, net present value, count number of entries, maximum value, minimum value, sum, average, lookup, choose from a list of values

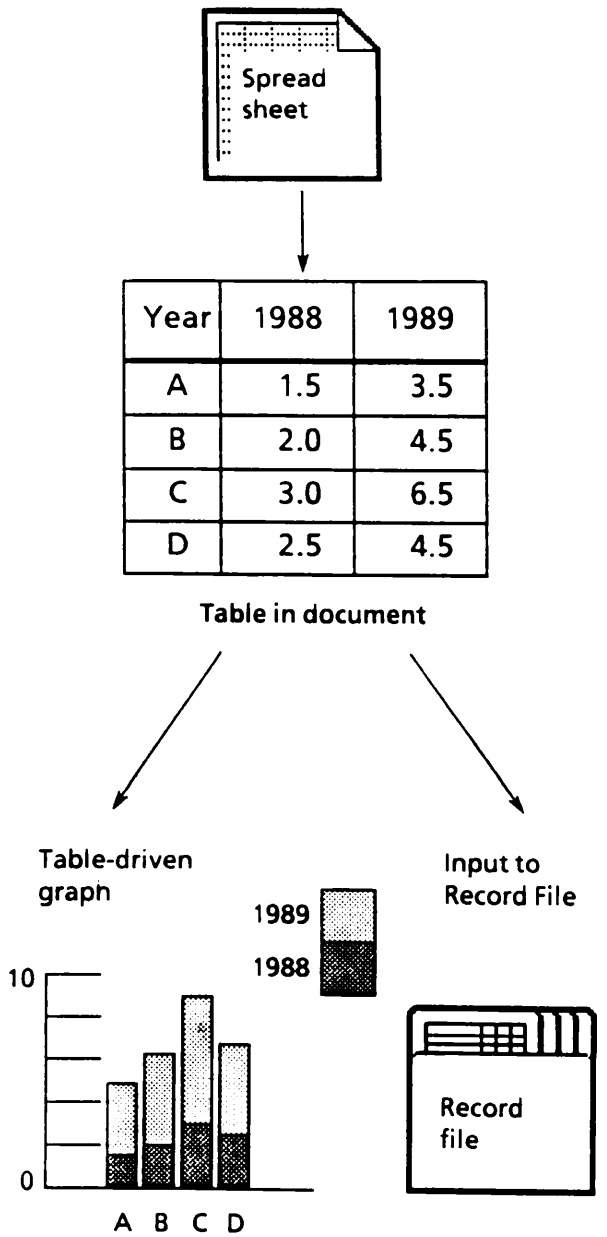


Figure 13-1. Spreadsheet information flow

Limitations

The following limitations should be noted:

- integrating data into another document requires a special "make table" operation
- cells are not protected
- protection/backup of spreadsheets is under user control via copying icons
- conversion facility does not check to determine if the object to be converted is a valid spreadsheet
- spreadsheets converted from one form to another may differ slightly.

Prerequisites

6085 Professional Computer System
or
8010 Information System.

Xerox ViewPoint Software, 2.0

Signed Software License Agreement

To use spreadsheets with documents and tables, VP Document Editor 2.0 software is required.

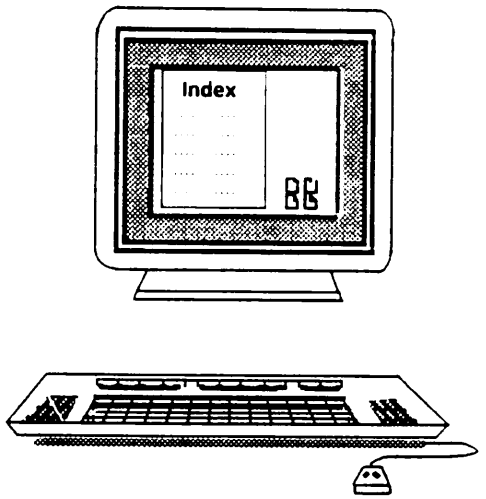
To convert spreadsheets to and from PC format, VP File Conversion 2.0 software is required.

Documentation

VP Series Training Guide

VP Series Reference Library.

14. VP Long Document Options



Features

- Automatic table of contents generation
- Automatic index generation
- Document generation by workgroups through Shared Books
- Automatic footnote generation and manipulation
- Background performance, freeing the workstation for other activities.

Description

The VP Long Document Options software application can be used on a networked, standalone (with the exception of Shared Books), or remote 6085 Professional Computer System or 8010 Information System. VP Long Document Options contains a text extraction facility for creating documentation front and back matter. It has a Shared Books facility that allows members of a workgroup exclusive access to a document's use, and a footnoting feature that supports both conventional footnotes and endnotes. The VP Long Document Options features perform in the background and are compatible with other VP software packages. Its user interface is consistent with ViewPoint.

Front and back matter generation

After you research, design, create, edit, and finally complete a document, there is still one more task to do—create the front and back matter. The VP Long Document Options simplifies this task with its automatic generation of table of contents and/or index. In addition to being easy to use, these text extraction facilities operate in the background and free the workstation so you can perform other tasks.

Table of contents

Either during document creation or on a final pass, you can indicate the text to be included in a table of contents. Text sequences for entry into a table of contents are marked by special bounding characters. Five levels of indention are available.

When all of the text is marked and you activate the table of contents generator, the system extracts the indicated text and produces a table of contents document. It includes leader dots and page numbers, and can be edited and formatted just as any other VP text document.

Index

The VP Long Document Options software includes a tool to automatically generate a sophisticated index for a document or book. This easy-to-use tool processes the document or book and generates an index in a format you control.

The Index Generator allows you to index words, phrases, special characters (such as † or %), and synonyms. Additionally, the Index Generator allows

you to use special capitalization features and comments. You may easily design the appearance of an index' parts:

- Prologue: Introductory material, such as a title, explanatory text, or an illustration
- Section Breaks: Paragraphs typically containing a section heading letter, perhaps with additional text such as brackets
- Entries: Paragraphs containing an indexed item, a separator, and usually a page-number list (whose punctuation you may control)
- Subentries: Entries listed under other entries. Subentries are usually indented, and they can have subentries of their own. These in turn can have their *own* subentries.
- Epilogue: Ending material, such as a copyright notice, security classification, or legal disclaimer.

Refer to figure 14-1 for examples of index parts.

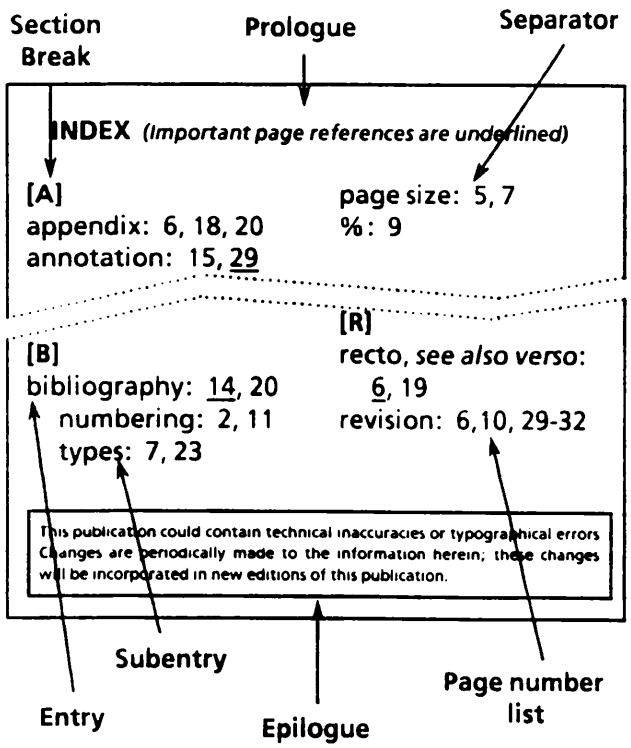


Figure 14-1: **Index layout features**

The Index Generator allows you to mark text, such as particular occurrences of index terms or, alternatively, portions of text you do not *want* to be indexed.

Additionally, the Index Generator has three tools index and to indicate terms to be indexed. They are: the Layout Guide, Index Tables, and Dictionaries.

Layout Guide: This document is a powerful tool used to define the index' appearance. Use it to specify:

- Page layout properties
- Character and paragraph properties
- Separators (punctuation or spacing)
- Section headings
- Page range treatment
- Subentry treatment
- Prologue and epilogue materials
- Unique appearances for special page numbers, such as the underlined numbers in figure 14-1

Index Tables: These tables are used to specify phrases and subentries for your index. You may also use Index Tables to specify that variations on index terms be indexed as a single item. This allows you to indicate that "count," "counts," and "counting" all be indexed as "count." You can also alter how an item is sorted. Note in figure 14-1 that "%" is sorted as if it read as "percent."

The character properties of an Index Table item are used when generating the index. Therefore you can create entries with special effects, such as italicized comments (note figure 14-1's "recto" entry), items in a special font, and superscripted items, by entering their properties in the table.

Dictionaries: To conveniently index words, you may use special dictionaries and place them in inclusion or exclusion folders. Dictionaries in the inclusion folder contain words you want in your index; dictionaries in the exclusion folder contain words you do not want in your index.

The Index Generator also provides three standard exclusion dictionaries, with more than 10,000 words. You can use these dictionaries to exclude common words like "a" and "the" along with common proper nouns like "John" and "Mike."

The Index Generator creates an index in the background while you do other workstation tasks. When the index is completed, its document is placed on the desktop and is entitled INDEX followed by the name of the original document or book. The index document can be opened and edited as any other ViewPoint document.

Using the book feature

The book feature in the VP Document Editor software package treats a collection of documents as one long document when any action is performed on them. This facility is valuable when creating

either a table of contents or an index that covers multiple documents.

Use the book feature by copying the Blank Book icon, shown in figure 14-2, from the directory to the desktop. Place the collection of documents into the book icon, and select the desired action. The documents in the book icon are treated as one long document when the icon is paginated, or when the index or table of contents generator is run. By using the book feature, you can easily generate continuous page numbers, continue heading and footing patterns across the document boundaries, and create front and back matter for multiple documents.

Figure 14-2. **Blank Book icon**

In addition, you can generate a separate table of contents and/or index for individual documents on your desktop.

Shared Books

Often a long document (either of multiple- or single-part form), is not produced by an individual, but rather by a workgroup with a common purpose. When several individuals work to produce the same document, it is difficult to ensure that all edits are performed on the latest version, and significant errors can occur.

Shared Books builds on the Document Editor's Books capability, and is a feature of VP Long Document Options. Shared Books is specially designed to help in the collaborative production of a document. It allows multiple individuals to work on different portions of the same document simultaneously. Shared Books employs a locking mechanism to prevent more than one person from editing the same portion of the shared book at the same time. This helps to ensure the integrity of the whole document. A Blank Shared Book icon is displayed in figure 14-3.

Like the book feature described above, Shared Books allows pagination, table of contents generation, and index generation to be performed on the document as a whole. These operations can also be done on individual entries (which may represent separate chapters in a single manual, for example) by opening the Shared Book and selecting the desired entries.

Figure 14-3. **Blank Shared Book icon**

Footnote generation

A common characteristic in creating long documents is footnoting—the process of citing references or commenting on designated portions of text. VP Long Document Options contains a feature which expedites creation, management, and printing of footnotes.

With this feature, you can automatically number or sequence footnotes. Renumbering or resequencing footnotes is supported as well, should you have reason to add or delete other footnotes.

Footnotes can be placed at the bottom of the page or at the end of the document (called endnotes). You can specify what reference marks are used to indicate footnotes (such as the asterisk, dagger and double dagger sequence, numerals, or ascending letters of the alphabet in lower or upper case), how they look (font and type size), and whether the sequences begin anew on each page or continue throughout the entire document.

You can enter footnotes via the Special keyboard during a document's creation or after it is complete. Footnotes assume their proper position within the text upon pagination.

Finally, within footnotes all text functions are available, including multilingual text, and you can use the Find and Spelling Checker features.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

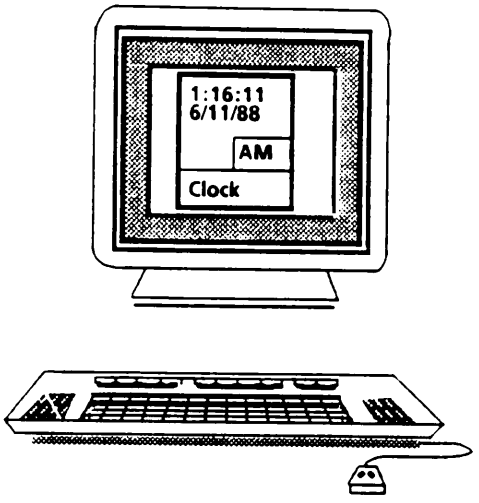
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

15. VP Office Accessories



Features

- A calculator that provides basic trigonometric and arithmetic operations, as well as user programmability
- A personal calendar with yearly, monthly, daily, and event views
- An international clock with both digital and analog displays
- A folder of templates, tools, and transfers useful for document production
- A tool that customizes keyboards, Keyboard Accelerators.

Description

The VP Office Accessories package can be used on a networked, standalone, or remote 6085 Professional Computer System or 8010 Information System, and supports a user interface that is consistent with ViewPoint. It contains four desktop applications: calculator, personal calendar, clock, and keyboard accelerators. This package is compatible with the other VP software packages.

Calculator

The need to do arithmetic calculations is common in office environments. Typical calculations range from adding two numbers together to averaging a column of figures. The VP Office Accessories calculator provides a flexible means for doing such computations using the workstation.

The VP calculator is represented by an icon, shown in figure 15-1, that can be copied from the directory to the desktop. Each calculator icon contains a log of all previous calculations made by that calculator, a series of user-defined storage variables, a fixed set of calculator-defined functions, and a set of user-programmable function buttons. When the calculator icon is open, a window displays. It is through this window that all calculations are performed and permanently recorded.

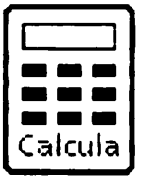


Figure15-1. **Calculator icon**

Storage variables

Twenty user-selectable storage variables are provided by the calculator. This feature allows you to store values within the calculator and represent those values with symbolic names. In any expression, you can use the symbolic name in place of a numerical value. Before an expression is evaluated, the current values associated with the names are obtained and used in the calculation.

Command buttons

The VP calculator has twenty functions or operators. You can enter these functions into an expression by typing them from the keyboard or by selecting the appropriate command button in the calculator window.

Function buttons

You can easily store and retrieve frequently used expressions and equations through any of the VP calculator's 20 user-programmable function buttons. A programmed function can be used in the same way as calculator-defined functions or operators.

Function buttons are programmed and named using the button's property sheet. You can execute the function in one of two ways:

- by typing the function name directly into the window, or
- by selecting the desired function button.

When using the calculator, calculations are displayed in a 'paper tape' subwindow. For trigonometric functions, you can designate the notation style and use fixed, floating, or scientific in either [DEGREES] or [RADIANS]. The computation results, as well as previous evaluations, can be moved or copied into VP documents for inclusion in reports.

Calendar

Every office needs to keep track of meetings, appointments, and schedules. Some individuals have a large desk calendar, others have a pocket version that can be carried with them, while others have little pieces of paper in their pockets with important dates. Frequently, notes are lost and carry-along calendars get left behind. With the VP Office Accessories calendar, everything can be recorded in one place and readily available—on the workstation.

The VP calendar, shown in figure 15-2, can be updated quickly and easily using the text editing facilities, and a clean copy is always available. It can be mailed to other users, such as a secretary or boss, or printed for meetings. If the printed copy gets lost, you can just print it again.

The VP calendar provides daily, monthly, and yearly views for scheduling appointments, and is represented by an icon found in the directory. It contains a database that keeps a record of all events, a facility for automatically scheduling recurring

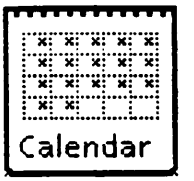


Figure15-2. **Calendar icon**

items, and a facility for reminding you of certain scheduled activities.

Daily views

The daily view has four categories: place, time, duration, and title. Time is listed in hourly increments from 7:00 to 5:00. Events in the daily view can be deleted, moved, or copied by selecting a time slot and pressing the appropriate key. Events can be edited through an event view window, accessible when a time slot is open.

At the event level, you can add additional time slots, create, change, move, and designate an event as a repeating event. Repeating events repeat from the day they are created to the last day the calendar supports. You have several options to choose from for repeating events: weekly, monthly, last day of the month, yearly, etc.

You can also set a reminder facility for individual events at the event level. You can choose to have a mail note delivered, a reminder window displayed on the workstation, or use both of these methods. In this way, you are sure to make those special meetings on time. (**Note**: Standalone workstations only display a reminder window.)

Selecting menu commands on the event view displays the previous or following event, or returns to the daily view. Selecting menu commands on the daily view, displays the previous or following day's view, or the monthly view. Closing the event or daily view returns the calendar to its icon state.

Monthly views

In the monthly view, each day is represented by a square with a list of events for that day. A rectangular section at the top of the day contains a number; the current day has this rectangular area shaded. Days with scheduled events also have an auxiliary menu displayed. Selecting the auxiliary menu displays the day's events. When a specific event is selected the event window is displayed.

Selecting and opening a square that represents a day in the monthly view displays the daily view. Selecting menu commands on the monthly view displays views of previous or following months, or

the yearly view. Closing the monthly view returns the calendar to its icon state.

Yearly views

The yearly view displays the entire year. Each month is represented by a square containing numbers with a rectangular section on the top containing the name of the month. The current month has the rectangular section shaded, and an asterisk beside each day that has an activity scheduled. Selecting and opening the square that represents a month displays the view for the month. Selecting menu commands displays views of previous or following years, and closing the yearly view returns the calendar to its icon state.

Clock

Most offices run on a very tight schedule with meetings or customer appointments that cannot be missed. The VP Office Accessories clock helps you to stay on schedule, and provides an updated view of the current date and time in all parts of the world.

The VP clock is an icon that resides on the desktop and can have the following properties:

- analog or digital display
- second hand
- 12- or 24-hour type
- date
- time zone indicators
- alarm
- AM/PM indicator.

Copy the clock icon, shown in figure 15-3, to your desktop from the directory. It continually updates to display the current time (accuracy is displayed in 100^{ths} of seconds for the digital version). Each icon has a property sheet associated with it to allow individual customization. The properties vary according to whether the clock is digital or analog. The digital clock can be set to either a 12- or 24-hour format, to show the date, and to display an AM/PM indicator.

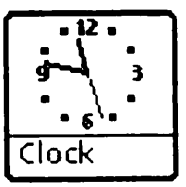


Figure15-3. **Clock icon**

Both the digital and analog versions have an alarm feature. You can set one alarm per clock down to the nearest minute, and select to have the icon flash and/or beep. The alarm goes off at the indicated time and continues to go off at 24 hour intervals until you delete the time from the property sheet. If you are logged off when the alarm is due to go off, it does not go off until you log on again.

The VP clock can be set to any one of 15 time zones. It can support five time formats and six date formats. You can have multiple clock icons on your desktop, each with different characteristics.

Templates, tools, and transfers

Many office documentation requirements go beyond traditional text. Often expense reporting, purchase ordering, and financial reporting require standard forms. In addition, labeling, special lettering, and artwork may be needed. VP Office Accessories provides you with a variety of templates, tools, transfer letters and symbols, and electronic "paste-up" art that can add meaning to your documents as well as simplify their production. Obtain these tools and templates by copying only those you need from the Office Accessories folder to your desktop, as seen in figure 15.4. Instructions for their use can be found in the individual documents.

Figure15-4. **VP Office Accessories of templates, tools, and transfers**

Keyboard Accelerators

Frequently, office needs exceed the standard (default) keyboard's capabilities. Often, characters that are accented or are part of another alphabet must be used from different keyboards in order to complete a document. The Keyboard Accelerators tool allows you to modify an existing keyboard or create a personal keyboard, using any of the characters you need from the available keyboard set (except those from the [Special] keyboard), to expedite your document processing.

By using the special keyboard modification tool in Keyboard Accelerators, you can rearrange the placement of existing characters and import different characters from other virtual keyboards. Characters supported by the workstation's software can be entered into a customized keyboard. This includes Extended Language characters, scientific, and mathematic characters.

Another Keyboard Accelerators' option is the ability to specify a second default keyboard and then toggle between the two keyboards quickly. With Keyboard Accelerators you can also determine the order in which the keyboards are presented within the Keyboard Selection window on your desktop. (Specifying a secondary default keyboard and determining the order in which the keyboards are presented in the selection window are done by changing the User Profile.)

The keyboard modification portion of Keyboard Accelerators is represented by an icon copied from the directory onto the desktop. See figure 15-5.

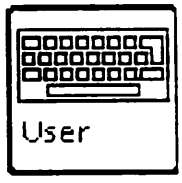


Figure15-5. **User Keyboard** icon

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint, 2.0

Mail Service for calendar reminders

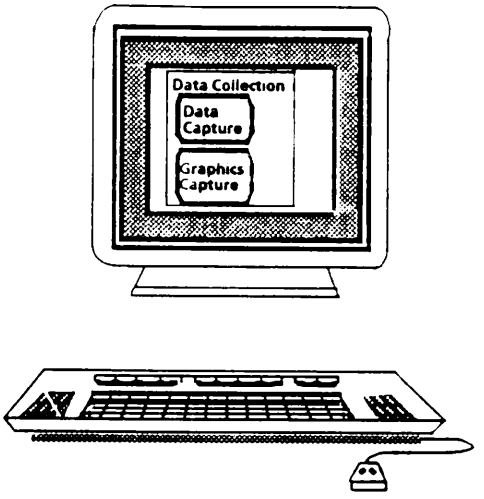
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

16. VP Integrated Financial Management



Features

- Collects data automatically
- Generates exhibits and tables automatically
- Integrates documents automatically
- Supports automatic distribution, filing, and communication.

Description

The VP Integrated Financial Management software package provides a way to automate many routine tasks performed in financial departments. The VP Integrated Financial Management software package consists of template documents, sample forms, and automated routines.

The VP Integrated Financial Management software package is a licensed application that is compatible with the other VP software packages. It can be used on a networked, standalone, or remote 6085 Professional Computer System or 8010 Information System. The VP Financial software:

- Performs field fill-in
- Converts documents to and from the VP format
- Creates structured tables from unstructured data
- Moves documents through the network
- Applies new data against current graphics
- Distributes finished documents.

The VP Integrated Financial Management documents contain preprogrammed automated routines. These routines implement:

- Data collection facilities by automatically executing a VP Data Capture preamble on a source document to create a table, convert a file or document, retrieve a document or mail note from a folder or file drawer
- Exhibit and table generation by automatically copying information from one or more tables to a destination table, updating fields in a document, or updating line, pie, or bar charts in a document
- Document integration by automatically placing documents on the desktop into a folder
- Automatic printing, mailing, and filing by distributing documents or folders throughout the network to mailboxes, file drawers, and printers.

All automated routines in the VP Integrated Financial Management software are preprogrammed with locked-in buttons. This means that you cannot see or change the automated routines, and you are not responsible for writing any routines. An illustration of a button containing an automated routine is shown in figure 16-1.

Figure 16-1. **Automated routine button**

Using automated functions

When the VP Integrated Financial Management software is installed on the workstation, a folder containing the desired software, templates, routines, etc. is displayed on the desktop. The automated routine software can be activated after you have tailored the appropriate target and source documents.

After identifying the appropriate target and source documents, you activate the VP Financial Management software by opening the folder and the document containing the desired financial routine, and then selecting the button for the desired function. The system automatically processes the desired function by using the information table associated with the automated routine. For example, selecting the data capture button can initiate:

- Selection of the source document
- Selection of the data capture document
- Execution of the data capture preamble on the source document.
- Generation of a ViewPoint table which could, for example, be used with data-driven graphics

You may customize a button's routine by using different values in the associated table. For example, a routine could be written to copy a document whose name was specified in a table element (call it cell1) to a printer whose name was specified in another table element (call it cell2). This routine could be customized by simply changing the name of the document and printer in cell1 and cell2. This allows customization without requiring you to write automated routines.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint, 2.0

VP Document Editor, 2.0

Signed Software License Agreement.

Optional software packages

VP Data Capture, 2.0

VP Terminal Emulation of DEC VT100, 2.0

VP Terminal Emulation of TTY, 2.0

VP Terminal Emulation of IBM 3270, 2.0

VP Terminal Emulation of Tektronix 4014, 2.0

VP PC Emulation, 2.0

VP Data-Driven Graphics, 2.0

VP Free-Hand Drawing, 2.0

VP File Conversion 2.0 packages

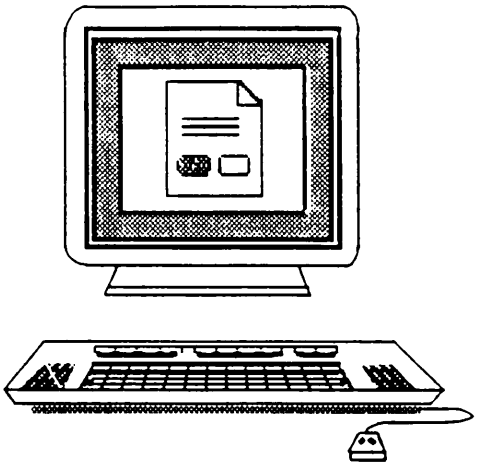
VP Spreadsheet, 2.0.

Documentation

VP Series Training Guide

VP Series Reference Library.

17. VP CUSP Buttons



Features

- Manipulates icons just as they are manipulated by the user
- Manipulates document fields and tables
- Performs menu commands available in window header, auxiliary menu, and attention window
- Provides graphic "button" user interface.

Description

With VP CUSP Buttons software, you can execute and program CUSP applications on the 6085 Professional Computer System and the 8010 Information System. These application programs can manipulate information on the desktop and on the network, and benefit you by:

- Operating unattended
- Automatically repeating ViewPoint document management tasks
- Simplifying complex tasks and reducing errors
- Customizing workstation applications.

The VP CUSP Buttons software package is a licensed application that is compatible with the other VP software packages. This package comes with a reference manual and a diskette containing VP CUSP Buttons software.

CUSP buttons

CUSP buttons are graphic objects that can be associated with a user-defined CUSP program. These programs are associated with a button by writing statements in the button's property sheet, much like writing a fill-in rule for a field. (For more information on fill-in rules, refer to the VP Document Editor product description.) CUSP buttons can accomplish anything that can be implemented with a fill-in rule, but are more powerful. CUSP buttons carry out a sequence of actions, and are used to implement complex applications involving VP documents and desktop icons.

CUSP buttons exist in a document and are entered by one of two methods:

- copied from another document or the Basic Graphics Transfer Document
- inserted using the keyboard.

CUSP buttons are either enabled or disabled (see figure 17-1). When enabled, the button is ready to execute its program, which runs when you select the button. Disabled CUSP buttons behave like a graphics object when selected.

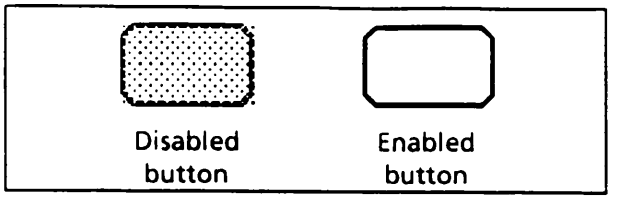


Figure 17-1. **CUSP buttons**

You can move, copy, stretch, and delete the button, or display its property sheet. A CUSP program is contained in the button's property sheet.

CUSP button statements

CUSP statements manipulate icons on the desktop, process the content of fields in documents, and determine the order of statement execution. CUSP statements are divided into many categories, see table 17-1 below.

CUSP programs are either *field fill-in* rules, which calculate a ViewPoint field value, or *graphic buttons*, which carry out simple or complex operations. CUSP fill-in rules can contain several sophisticated arithmetic operators, such as those used for exponential notation, pi, as well as trigonometric and logarithmic functions.

You start the buttons either by clicking with the mouse or by using other enabled CUSP buttons. Buttons can be sized as well as given text labels and graphics overlays, thus forming a customized user interface layer to guide a user in performing specific tasks.

CUSP statements are used singly or in combination to create a complex automated program. For example, you can program a button to open a form, fill in the fields of the form, close the form, store a copy of the form in a file drawer, send a copy to a printer, and then delete the original from the desktop. This would all take place with only one action from you, selecting the CUSP button.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint, 2.0

VP Document Editor, 2.0

Signed Software License Agreement.

Table 17-1. **CUSP button functions**

Categories	Statement Examples	Results
Icon-related	Open, Copy to, Move to, Delete, Close, Select	Manipulates icons on the desktop.
System	Pause, Comment, Error, Post Comment, Stop	Allows you to check the status of a program or to interrupt a program.
Variable Declaration	Reserve Field, Reserve Icon	Reserves system memory for temporary storage of computed results and icon variables. Names such memory "fields" or "icons" for later use.
Data Transfer	Store Into	Transfers the results of evaluating a *fill-in-rule* into a field or table, or associates a particular icon with an icon variable.
Block	Do...End, Do...End on Error	Groups statements together.
Subroutine	Execute	Calls other CUSP buttons from within a CUSP program (subroutines).
Loop	While, For Each, For Each Row, For Each Field	Causes a specified series of statements to be executed as long as a specified criteria condition is true.
Conditional	Choose, If...Then	Specifies conditions for the execution of a program to branch one of several directions.
Menu	Perform	Enables a CUSP program to execute commands found in the menus of the desktop's attention window, in window headers, and in auxiliary menus.

Documentation

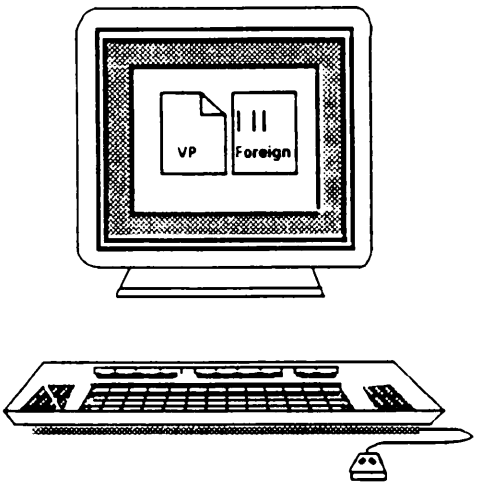
VP CUSP Buttons Reference Manual.

Training

A three-day CUSP Programming Course is offered at the DSBU training facilities in Sunnyvale, California, at the Leesburg Training Center, and at customer sites by special request.

For further information on the class content, schedule, and enrollment procedures, call the Customer Education Coordinator at (408) 737-4418.

18. VP File Conversion



Features

- Supports interchange of documents and spreadsheets between various types of information processing devices
- Requires little rekeying of information.

Description

The 6085 Professional Computer System and the 8010 Information System support several conversion applications to increase the exchange of information between information processing devices. Each conversion package has been tailored to meet the specific needs of different users. The following conversion packages are available:

- VP File Conversion of 860 Record Files
- VP File Conversion of 860 Documents
- VP File Conversion of ASCII Documents
- VP File Conversion of Document Interchange Format (DIF)
- VP File Conversion of IBM DCA Documents
- VP File Conversion of WordStar Documents
- VP File Conversion of Lotus 1-2-3 Spreadsheet (versions 1.0, 1A, 2.0, and 2.01)
- VP File Conversion of VisiCalc Spreadsheet
- VP File Conversion of Wang documents
- VP File Conversion of IGES Files.

All of the conversion packages are compatible with the other VP software packages and use the converter icon (shown in figure 18-1). (Xerox ViewPoint software contains the converter icon software.)

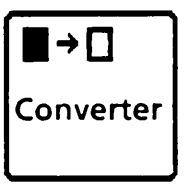


Figure 18-1. **Converter icon**

Converter icon

The converter icon, found in the directory, is used with any conversion package. When you place an object on it for conversion, a property sheet appears, as shown in figure 18-2. For example, if you are converting Lotus 1-2-3 Spreadsheets, the option sheet lets you determine the desired format for the converted object.

When the conversion is complete, a new icon appears on the desktop, with the desired format, and the original object is retained in its original format. (Figure 18-3 illustrates these different icons.) Each converter icon produces a record of all conversions performed and you can view this conversion history by opening the converter icon.

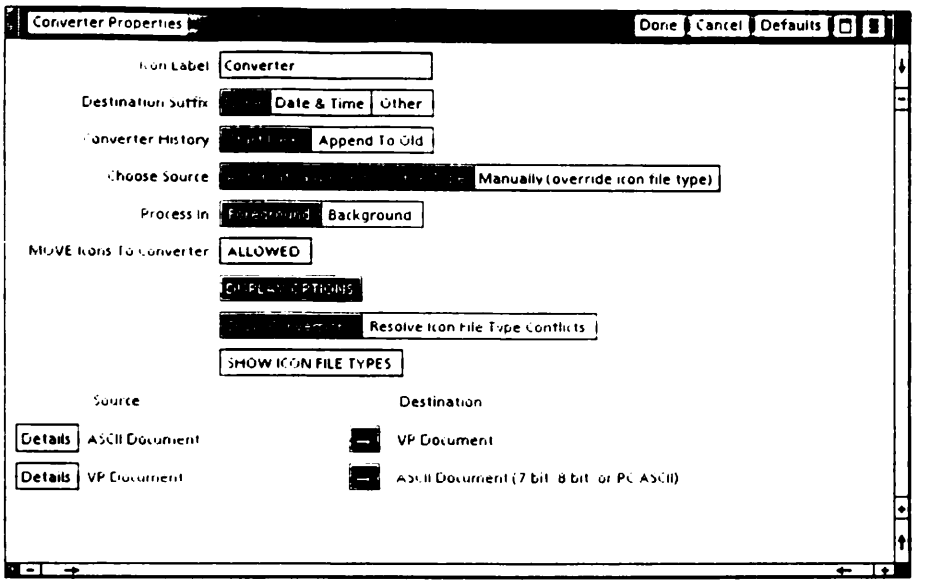


Figure 18-2. **Converter option sheet**

860 conversion

There are two software packages available for 860 conversion: one to convert documents to and from 860 format, and one to convert record files from 860 format to VP format. These application packages allow users of 850 and 860 workstations to exchange information with users of the 6085 and the 8010.

Note: VP List Manager software is needed to display and use the resulting record files.

Document conversion

The document conversion packages allow you to use 6085 and 8010 workstations to exchange information with several popular information processing devices, such as Wang, DEC, IBM, and others. Each package supports one conversion utility and allows conversion to and from VP format.

The following conversion packages are available:

- WordStar file conversion
- ASCII file conversion, which supports:
  - — Conversion of VP documents to 7-bit or 8-bit ASCII characters
  - — Differentiation between line ending and paragraph. When converting from ASCII to VP you can set paragraph breaks, and when converting from VP to ASCII you can set both line-ending and paragraph breaks
  - — Conversion of any non-recognizable Office keyboard character, such as bullet, dagger, or section symbol, into a user-definable character(s)
  - — Specification of fixed or proportional spacing when converting to ViewPoint
  - — Deletion of trailing/padding spaces
  - — Full support for PC ASCII, and 7- and 8-bit ISO character encoding
- DIF conversion (document interchange encoding conventions developed by a group of companies at the request of the U. S. Navy)

  Note: Using the DIF conversion package requires that you have access to the network and Remote Batch and File Services to transfer the documents between the workstation and the communicating device. (For more information on Remote Batch and File Services, see the Network Services product descriptions.)

- DCA file conversion (supports text compatibility between VP documents and IBM's Document Content Architecture, which is also supported by other text editing software packages)

- Wang conversion allows you to import Wang WP documents into the ViewPoint environment and send ViewPoint documents in the Wang WP format. This application converts both text and format features produced by the Wang Word Processing editor running on Wang OIS, WPS, and Alliance systems for the WP format.

  Note: Xerox Remote Batch Service software (using the 2780/3780 mode) is needed to transport Wang documents into the ViewPoint environment, and Wang WPS protocol must be used to maintain the internal structure of all

Wang data. (This application does not support Wang WP +, WP PC, or WITA formats.)

In addition to the above document conversion packages, the ViewPoint software package contains a conversion facility for upgrading 6085 and 8010 documents stored on a File Service to the latest ViewPoint version. For more information, refer to the ViewPoint section.

Spreadsheet conversion

The spreadsheet conversion packages allow you to use 6085 or 8010 workstations to exchange VisiCalc and Lotus 1-2-3 spreadsheet information with other VP users. The conversion process can go both ways, to or from VP spreadsheet format and PC spreadsheet format. Figure 18-3 shows converted and foreign spreadsheet icons.

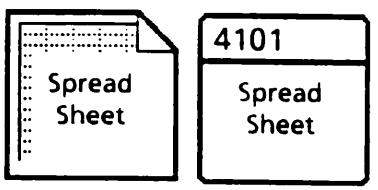


Figure 18-3. **Converted and foreign spreadsheet icons**

There are two spreadsheet conversion packages available:

- VisiCalc spreadsheet conversion
- Lotus 1-2-3 spreadsheet conversion. (**Note:** This package does not convert Lotus 1-2-3 graph/picture or print files.)

Note: VP Spreadsheet software is needed to display and use the resulting VP spreadsheet.

Conversion uses

Conversion facilities offer a wide variety of options. You can send documents created on other workstations to the 6085 or 8010. You can enhance these documents with graphics, then print and distribute them electronically. Additionally, conversion facilities allow collaboration between individuals who would otherwise be unable to integrate their individual efforts.

Limitations

Because some functions are implemented differently on other devices, objects converted from one form to another may vary slightly. Specific details are found in the user documentation supplied with the conversion products.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP NetCom, 2.0
or
VP RemoteCom, 2.0 or VP StandAlone, 2.0

To use converted items with documents and tables, VP Document Editor, 2.0 software is required

Signed Software License Agreement.

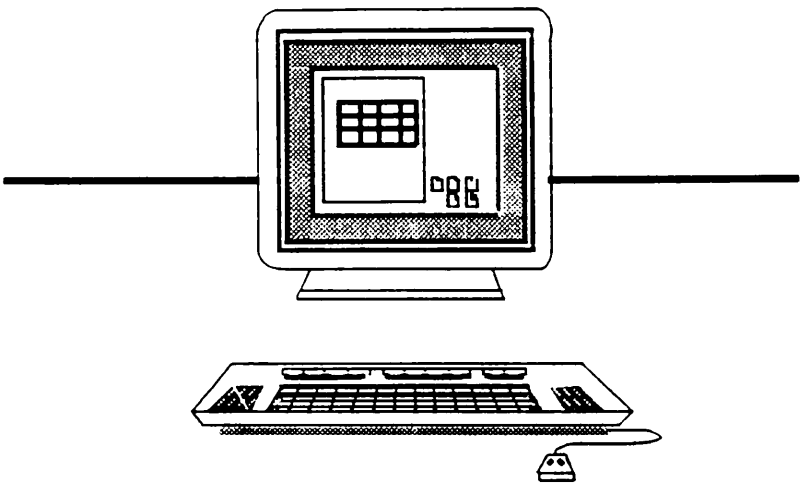
Documentation

VP Series Training Guide

VP Series Reference Library

Services Product Descriptions.

19. VP Data Capture



Features

- Places unstructured text from the terminal emulation window into a table within a document
- Uses information to generate a record file or a chart (bar, line, or pie)
- Supports documents and folders as the source.

Description

VP Data Capture lets you copy unstructured text from either a host or a non-Xerox document into a ViewPoint table. The table consists of structured columns and rows and is supported by the VP Document Editor's tables facility. It can be manipulated like any other table, like one used in a document, made into a record file for further manipulation, or made into a bar, line or pie chart for graphic display.

Data Capture is a licensed application that builds on Xerox ViewPoint software. It is compatible with other VP software packages and can be used on both the 6085 Professional Computer System and the 8010 Information System.

What is Data Capture

In a general sense, VP Data Capture is a step toward integrating office systems with data processing systems. It does not rely on the cooperation of the data processing system or on any special connection. Two practical uses for Data Capture are:

- For applications and data bases that are maintained on a host data processing system, Data Capture is used to take data base snapshots and to manipulate the information at the workstation.
- For applications that are to be moved onto and maintained solely at a workstation, Data Capture can be used to convert an existing data base and manipulate it as required.

Source document

The source document is a VP document or table that contains the data to be used in the Data Capture operation. The source document can be created either through document conversion or from the [MAKE DOCUMENT] command in an emulation window. Reference icons can also be used as source documents. Data capture works only with plain text—that is, text without tabs, margins, or paragraphs.

Using Data Capture

After creating the source document, a set of instructions is written that specify which columns and rows should be copied to a table. These instructions are referred to as the "preamble" and are placed at the beginning of the source document. Once the preamble has been written, it can be saved by selecting [SET PREAMBLE]. This allows the same

preamble to be used repeatedly until you either log off, reboot the system, or select [DISCARD PREAMBLE].

To activate Data Capture, the source document(s) is closed and selected, and [COPY TEXT TO TABLE] is selected in the desktop auxiliary menu. The software does the rest, placing a new document on the desktop when the process is complete. The table produced is an ordinary table in a typical document, which can be manipulated in all the standard ways. Data Capture can also be applied to a folder, with the resulting folder having the same structure and substructure as the original, duplicating all levels.

Prerequisites

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

VP NetCom Software, 2.0

Standard Services Software

Asynchronous Communication Protocol or 3270 BSC or SNA Communication Protocol to use emulation

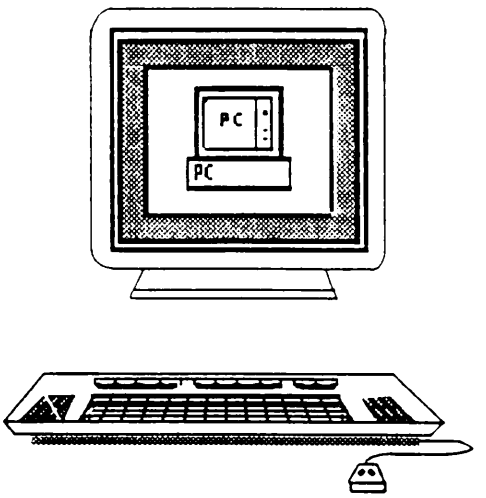
Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

20. VP PC Emulation



Features

- Allows a Xerox 6085 to run MS-DOS 3.x software and most other PC software
- Supports software designed for either a monochrome or a color/graphics display adapter
- Emulates the IBM keyboard, including the complete IBM 256 character set, during PC Emulation
- Through the windowing facility, integrates the PC and ViewPoint environments on the 6085 workstation
- Permits PC application programs to run concurrently with other ViewPoint software.

Description

PC Emulation software is a licensed application that builds on the Xerox ViewPoint software and coresides with other 6085 VP software. Along with a PC option board, the PC Emulation software allows you to use the 6085 workstation to enter the PC world and run most IBM PC compatible programs while retaining the capabilities and features of the Xerox 6085 workstation.

The Xerox ViewPoint environment provides the windowing facility for each VP series application. PC Emulation software provides a unique window that allows you to interface with the PC hardware and PC software. It is through this emulation window that you initiate a PC session (simulate turning on the PC), run PC programs, interact with the programs by entering commands and data through use of the keyboard and mouse, and view the results on the emulated PC display. (**Note**: VP PC Emulation software is not available for the 8010 because of the hardware dependency.)

You begin an emulation session by opening the PC Emulation icon (see figure 20-1). When the emulation window is open and the cursor selection is inside the window, you can enter commands and data with the keyboard and mouse; the results display in the window.

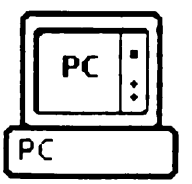


Figure 20-1. **PC icon**

You control the configuration of the PC being emulated by setting options that the VP PC Emulation software provides. These options include:

- the number of floppy disk drives
- the presence of a fixed disk
- the size of the fixed disk
- the PC main memory size
- the presence of a local printer
- the type of simulated screen (color or monochrome).

Most common business application packages written for the IBM PC run without modification in the PC Emulation window. Xerox has contracted with an independent testing firm (the National Software

Testing Laboratories) to certify which programs run correctly on the 6085 with VP PC Emulation. This list of programs, found in the Certified software section, is also published and available from your Xerox marketing representative. As the testing firm certifies more programs, the list will be updated.

Emulation window

All of your interaction with IBM PC programs occurs inside the emulation window, shown in figure 20-2. The emulation window appears when you select the emulation icon and press <OPEN>. Copy the PC Emulation icon to the desktop from the directory (as with all system resources), and open the emulation window to "turn it on."

You can enter text directly into the emulation window either by using the keyboard or by copying it from a VP document. The software also allows you to store or print information in the window through actions you perform in the window.

The emulation window includes PC commands, the emulated PC screen, and a message subwindow in which status and error messages display. There is also a device subwindow which contains graphic representations of configured resources, such as disk drives and printers.

Two types of PC displays are emulated: monochrome and color/graphics. The monochrome display supports 25 rows of 80 characters with black or white text.

The color graphics display can operate in either a text or a graphics mode. The text mode supports 40 column and 80 column text. The graphics mode supports medium- and high-resolution graphics. Medium-resolution graphics support sixteen colors that are represented by shades of grey; high-resolution graphics are displayed in black and white.

Device subwindow

The device subwindow, within the PC Emulation window, identifies the available resources for the PC session. The subwindow contains symbols for the configured resources, such as the physical floppy drive, the emulated floppy drives, the emulated fixed disk, and local or Interpress printers. You can specify these resources by setting options in the emulation window property sheet.

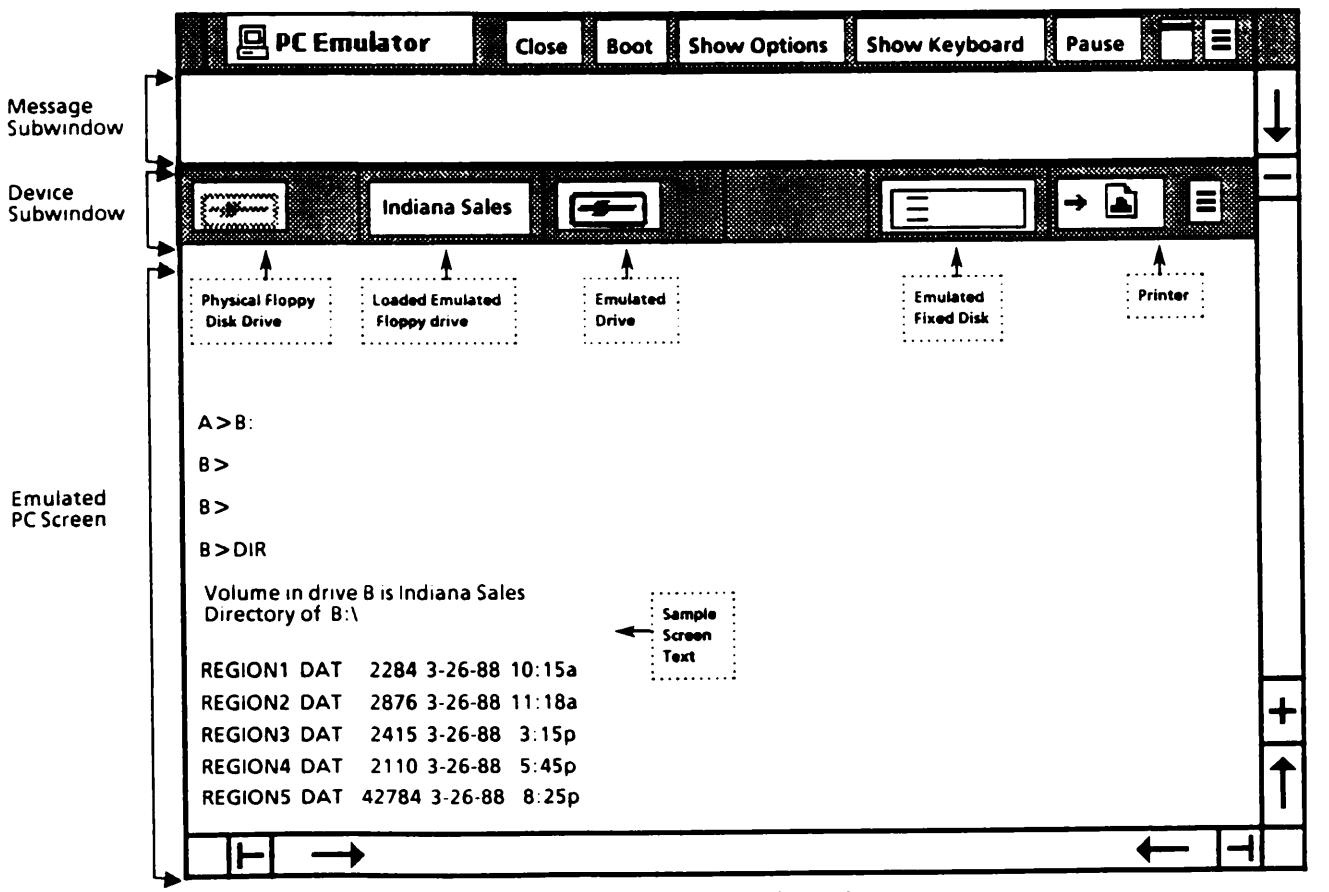


Figure 20-2. **Sample PC emulation window**

Physical floppy disk drive

The 6085's physical floppy disk drive is accessible for use by PC programs and is represented by a symbol in the subwindow. PC programs can use this drive when you turn on the "physical floppy disk drive" option.

Emulated floppy disk drive

The emulated floppy disk drive symbol in the device subwindow is used as the destination for virtual floppy disks. Virtual floppy disks are desktop icons that you use either with PC Emulation or on the VP desktop. When used by PC Emulation, they function the same as a floppy disk. When used on the desktop, they function the same as a folder. You can configure the PC Emulator to support up to four emulated floppy disk drives.

Emulated fixed disk

The emulated fixed disk symbol in the device subwindow indicates that an IBM PC XT's fixed disk is being emulated. PC programs that normally expect to find their data on the fixed disk will find their data on this device. As with the PC, you may elect to use this device instead of a floppy disk. You can configure the emulated fixed disk (EFD) with up to 32 Mb of storage, which is the maximum amount of storage memory DOS can handle.

Printing

PC emulation allows you to direct the printed output of PC programs either to the local printer or to a networked Interpress (Xerox Print Format Standard) printer. Your choice is indicated by a symbol in the subwindow. When you select Interpress, the text characters and bitmap graphics that PC Emulation sends to the printer generate the Interpress master. Otherwise, the output appears on the locally attached impact printer.

RS-232-C port

PC Emulation allows you to send and collect data from a variety of sources using the RS-232-C port capability. The RS-232-C port provides a direct link between host machines and the 6085 workstation. By attaching an asynchronous modem for external communication, you can gather information from mainframes, PCs, and data services, and analyze it using various PC applications.

Data input devices

You can input data and move around in the PC Emulation window using two devices: the virtual keyboard, and the mouse emulation.

Virtual Keyboard

When the cursor selection is in the PC window, the software interprets the 6085's keyboard as an IBM PC keyboard. Rather than the traditional keyboard overlay, a diagram of this interpretation (called a virtual keyboard) displays on the screen.

All 83 IBM PC keys are emulated. However, since the IBM and PC keyboards have different layouts, a few IBM keys were relocated. You can check the new layout by displaying the virtual keyboard.

Mouse emulation

PCE mouse emulation works with many software packages written to use the PC mouse and that adhere to the MicroSoft® standard mouse interface. The 6085 mouse functions in both the ViewPoint and the PC worlds, but not concurrently.

User interface

The time and date clock, and the PCE property sheet command line are features that make starting a PCE program less time-consuming.

Time and date clock

The system's real-time clock is responsible for obtaining the time, setting the PCE's system date, and displaying the Xerox copyright, date, and time messages. PCE automatically retrieves the time when PCE boots, and at user-determined intervals.

PCE property sheet command line

The PCE property sheet command line eliminates many of the repetitious commands used to boot PCE and start the application program. The PC icon property sheet allows you to store keystrokes in the command line necessary to start a PC application program. After customizing the PC icon property sheet, you simply open the icon to start the PC program. Multiple icons can be set up to load specific application programs, as well as enter commands within applications.

Integrating VP and PC

The PC window is an integrated part of the VP desktop. That is, you can copy text and data to and from the PC window and into a VP window.

Integrating text and graphics

You can copy text-mode characters to other VP applications. VP Free-Hand Drawing allows you to integrate graphic images from the PC Emulation window within ViewPoint documents. You can also copy or move characters from VP documents into the PC window.

Integrating data files

The virtual media icons (virtual floppy disk and emulated fixed disk) provide an important link between the two software worlds. You can open either a virtual floppy disk icon or an emulated fixed disk icon just as though you were opening a file folder. Once the icon is open, you can copy either a file onto the desktop or a document from the desktop to the icon. The appropriate conversion facility allows you to convert files from either world into a format needed by the other world.

Integrating other ViewPoint applications

ViewPoint's ability to run several applications concurrently, including the PC Emulation window, provides you with a powerful tool. For example, while a PC program is calculating a departmental budget, you might run an active communication session with a remote host, edit a VP document, or create graphics in the VP Free-Hand Drawing window. You can integrate data from each of these applications into a single document, which you can then mail, print, or file.

Certified software

The National Software Testing Laboratories (NSTL) has certified the compatibility of major PC software packages that run concurrently with Xerox ViewPoint and VP series software on the 6085. To date, the NSTL has certified the following PC programs:

ChartMaster 6.2
Crosstalk XVI 3.61
dBase III Plus 1.1
Framework 1.1
Freelance 2.0
Harvard Presentation Graphics 2.0
Lotus 1-2-3 2.01
MicroSoft Word 3.1
MS Project 3.3
Multimate Advantage 1.0
Multiplan 3.0
Paradox 1.1
Pfs: Professional File 1.01
R:base System V 1.1
Relay Gold 2.0
Sidekick 1.56A
Smartcom II 2.2
SuperCalc4 1.0
Superkey 1.16A
Symphony 1.2
Wordstar Propak 4.0.

Prerequisites

6085 Professional Computer System with a minimum 1.1 Mb of memory (for IBM XT configuration). 1.6 Mb of memory is recommended if 640K of memory is allocated to PCE. If heavy usage of concurrent document, host interface, and PC applications are planned, additional memory should be considered.

Xerox ViewPoint Software, 2.0

VP Document Editor Software, 2.0

Xerox MS-DOS

VP PC Emulation Fonts

Signed Software License Agreement

PC Option Board.

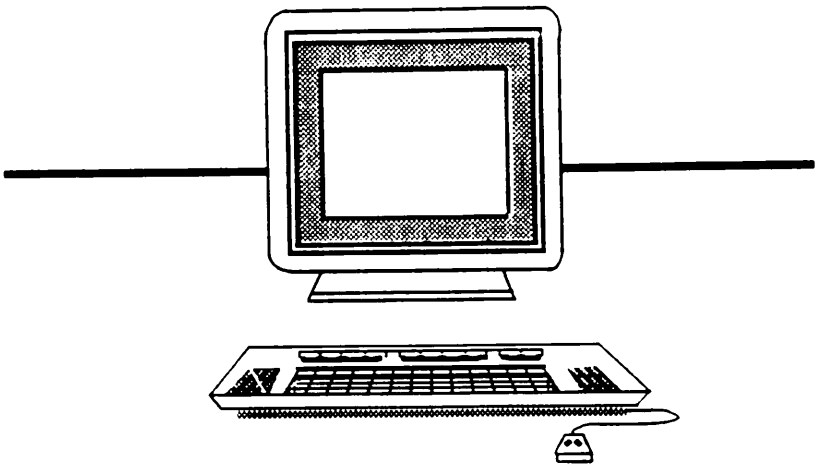
A modem and PC Communications software package are required if you want to communicate with other systems.

Documentation

VP Series Training Guide

VP Series Reference Library.

21. VP Asynchronous Terminal Emulation: TTY, DEC VT100, VT640, and Tektronix 4014



Features

- Supports Teletypewriter Model 35 (KSR) terminal emulation
- Supports DEC VT100 or DEC VT52 terminal emulation
- Supports Retro-Graphics VT640 terminal emulation
- Supports 4014 model of the Tektronix 4010 Series Graphics Terminal
- Conducts multiple emulation sessions at one workstation simultaneously
- Consistent with the workstation's user interface
- Handles information captured through the emulation process like any other VP document
- Automatically remaps keyboard during emulation sessions to support emulation capabilities.

Description

The 6085 Professional Computer System and the 8010 Information System support several asynchronous emulation applications to facilitate the exchange of information between these systems and a wide variety of other processors. Each emulation package has been tailored to meet the specific needs of different users. The following VP emulation applications are available:

- VP Terminal Emulation of TTY
- VP Terminal Emulation of DEC VT100
- VP Terminal Emulation of Tektronix 4014
- VP Terminal Emulation of VT640.

All of the asynchronous emulation packages build on the ViewPoint software and are compatible with the other VP Series software packages. They can be used on networked, remote, or standalone workstations.

Asynchronous communication protocol

In the computer industry, Model 35 Teletypewriter terminals, video terminals, and Tektronix 4014 terminals are used for interactive communication with many different types of host processors that employ asynchronous communication protocols. Typically, these terminals communicate with host computers, using modems and dial-up telephone lines, to establish and maintain an interactive session. (Refer to the illustration in figure 21-1.)

In the Xerox world, the workstation takes the place of these terminals. Because the workstation uses the ViewPoint environment, it retains a user interface that is substantially richer than that which is available on any TTY terminal. You can integrate your TTY activities with other VP applications, and make use of the large display and all the conveniences of the desktop metaphor. In order to

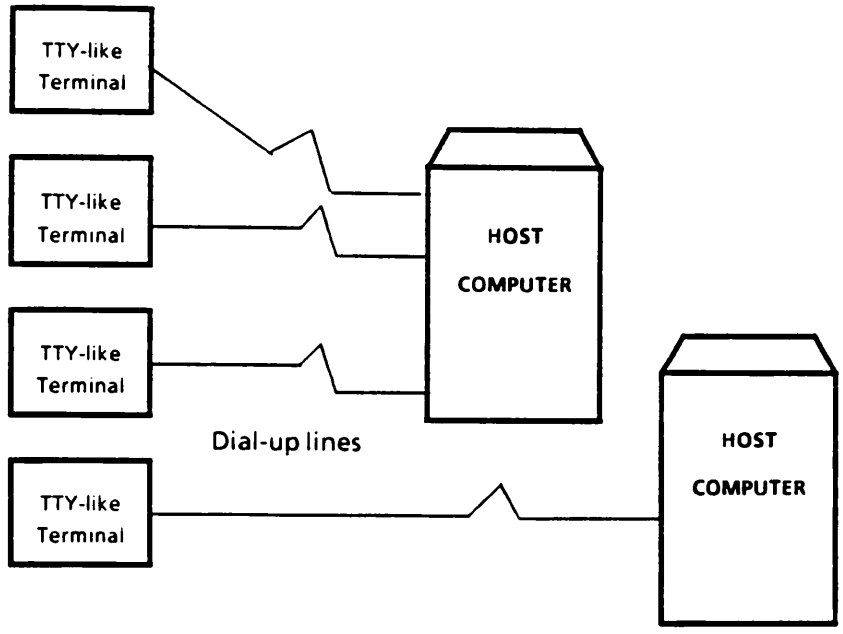


Figure 21-1. Typical Asynchronous Communication installation

conduct asynchronous terminal emulation at the workstation, two things must happen. First, data flowing to and from the workstation and the host computer must be converted from Ethernet standard protocols to asynchronous communication protocols, and vice versa. Second, information received at the workstation must be converted for terminal-like presentation, and user-input must be handled as it would be by a TTY terminal.

The conversion between Ethernet protocols and asynchronous protocols can be handled either by the network or by the workstation. If it is handled on the network level, a service called the External Communication Service is used and it requires the licensing of Asynchronous Communication Protocol. (For information on the External Communication Service or Asynchronous Communication Protocol, refer to the Network Services product descriptions.)

The resulting Xerox network that supports terminal emulation is illustrated by the example in figure 21-2.

Optionally, conversion between Ethernet protocols and asynchronous protocols can be handled by the workstation's RS-232-C port connected to a modem

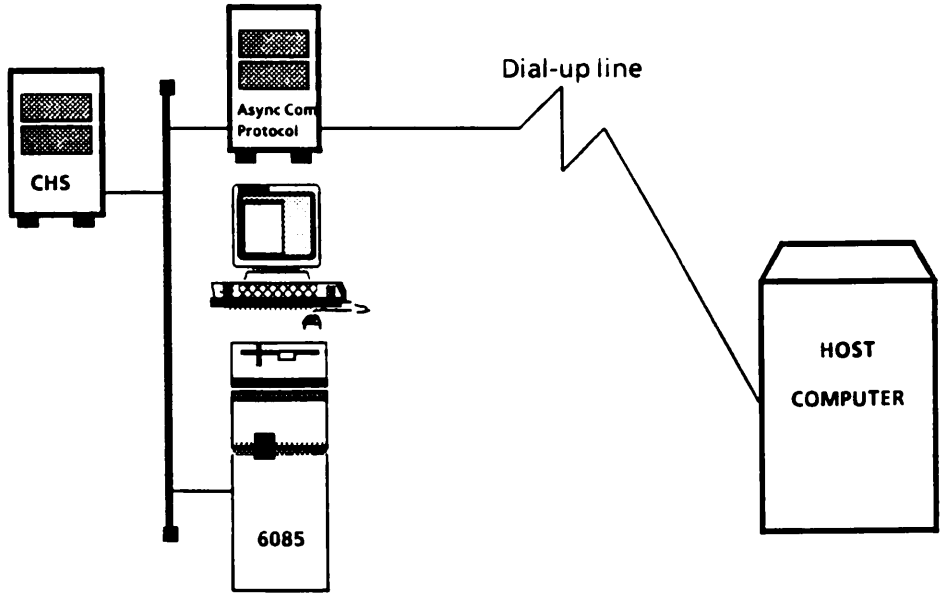


Figure 21-2. Typical Xerox Asynchronous Communication Emulation installation

with a phone line connection to the host. This is illustrated in figure 21-3.

When using the RS-232-C port as the conversion facility, the Local RS-232-C Communication Access software must be loaded. This option is available for either a networked or a standalone workstation.

Emulation using the workstation's RS-232-C port provides the same advantages as networked emulation, with the added benefit of freeing the workstation from a communication server for host access. With networked emulation, the control is at the server running the External Communication Service. When using the workstation's RS-232-C port, the control is at the workstation. This eliminates the cost of a server dedicated to running communications exclusively, and provides emulation facilities to non-networked devices.

Data handling, presentation, and input transmissions are managed at the workstation level.

Using asynchronous emulation

The VP asynchronous emulation software applications allow you to conduct a terminal session, as though you were using a TTY, DEC VT100, VT640, or Tek4014 terminal, connected to a host computer using asynchronous communication.

The emulation software packages provide you with one further advantage for your networked workstation: You can conduct a number of emulation sessions because of the multiple window capabilities of ViewPoint. This allows you to conduct several emulation sessions concurrently, either with the same host or different ones. Each emulation window behaves like a separate terminal so that one workstation can support various emulators, simultaneously, in any combination. This allows for data comparison and exchange, as well as for simultaneous access to different hosts, based on the network configuration. Additionally, while the host is busy processing emulation requests, you can use any of the other workstation functions, such as mailing or printing.

Using the 6085 or 8010 workstation with the emulation software is both similar to and different from using an actual TTY, VT100, VT640, or Tek4014 terminal. It is the same in that it provides you with the same keys, commands, and basic interface. It is different in that it gives you a display screen and provides access to the full range of workstation capabilities.

Terminal emulation icons

Like other VP applications, terminal emulation uses desktop icons. Because communications can be divided into two physical entities, a terminal and a transmission medium, terminal emulation uses two icons: the Port icon and the Terminal icon. (Refer to figure 21-4.) The Port icon carries all properties associated with asynchronous communication, such as a host's phone number, line speed, parity, character length, duplexity, and number of stop bits. The Terminal icon carries properties and menu options that vary from one terminal to another, such as screen width, screen height, and transmission properties.

In order to use a Terminal icon, you copy one or more Port icons into it. This enables the specified host connection to be made at the proper speed.

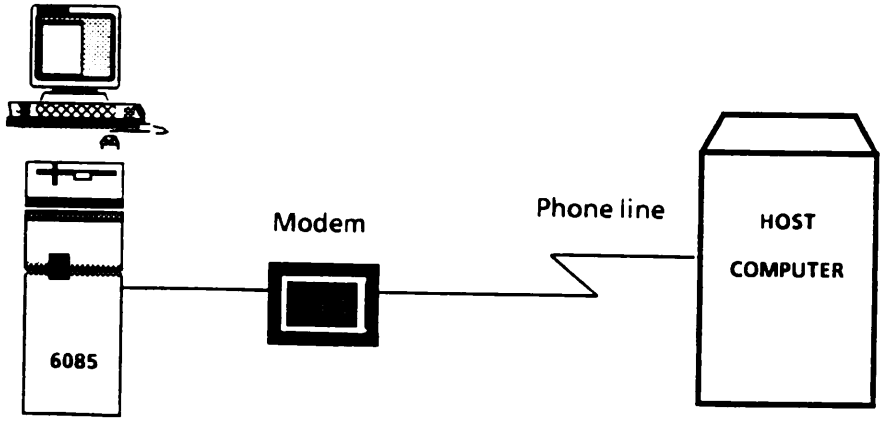
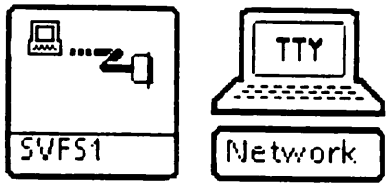


Figure 21-3. **Standalone workstation with Xerox Asynchronous Communication Emulation and VP Local RS-232-C Communication Access**



Port icon Terminal icon

Figure 21-4. **Port and Terminal icons**

This also offers one further advantage: When a terminal icon is opened to start an emulation session, each enabled port is tried in order, allowing one action to initiate multiple attempts at a single connection.

You can have multiple emulation icons on a desktop and each can be used to gain access from the Xerox network to a specific host computer. For example, one icon may represent a Xerox port set up to support communication to a company's own computer, while another might represent a port supporting a connection to an outside data base, such as The Source.

Using Terminal emulation

To begin an emulation session, open a terminal icon that contains at least one port icon, and specify the communication options on the displayed option sheet. Some of the parameters for making the connection are set by the System Administrator and are either transparent to you or act as defaults. Depending on the type of emulation session you are conducting, you can set parameters for screen width, screen height, use of autowrap, local echo, line terminators, formatting, and "X on" and "X off " flow control or line-by-line flow control. In addition, the user specifies what type of terminal is to be emulated: TTY, VT100, VT 640, or 4014.

After starting an emulation session, the terminal icon opens into a window that displays the data traveling to and from the host computer. The window is divided into two areas: a status area and a main text area. The status area always displays current emulation information to provide active feedback. Information in the status area is displayed in a read-only format, and you may not scroll in this area. The main text area is part of the window in which you transfer data to and from the host. Each terminal emulator has certain characteristics. Once a session is established you can enter data into this area directly, via the keyboard, or copy or move data from an open document on the desktop.

At the point of initiating a session, the workstation becomes bound to the particular port with its modem and phone line for the duration of the session. Prior to or after the session, that port can be used by any other networked workstation with emulation.

TTY user interface

Once the terminal options for a TTY session are chosen, selecting [START] initiates the host connections and opens an emulation window that matches your specifications. The TTY-emulated terminal can support up to 100 rows and a fixed-pitch terminal font in both 8- and 12-point sizes.

When you select within the emulation window, the workstation's keyboard is remapped by the terminal emulation software to represent the keyboard and functions normally found at a TTY device. The keyboard's new representations and functions are displayed on the screen in a virtual keyboard window. This gives you full access to all ASCII control codes, plus the "break" key, and a ten-key pad. Information already typed in an existing VP document can be copied or moved into a TTY emulation window.

A session ends when you logoff and close the emulation window. At any time during the session, you can use the [MAKE DOCUMENT] or [MAKE SCREEN] commands. [MAKE DOCUMENT] causes all of the information displayed in the emulation window during that session (or since the last [MAKE DOCUMENT] action, whichever came last) to be copied and made into a VP document. [MAKE SCREEN] causes all of the information displayed in the window to be made into a VP document.

Once information is captured through the [MAKE DOCUMENT] process, it can be manipulated as any other VP document. This includes printing, filing, formatting, editing, and mailing.

Through the VP Data Capture application, such information can be run through a program that will format it as a VP table, thus permitting easy transfer of data into VP record files or charts. (Refer to the Data Capture chapter for more information.)

DEC VT100 user interface

Once you begin a VT100 session, you can choose a number of options, such as screen dimensions (80 or 132 characters), autowrap, uppercase always, mouse tracking, record data, local echo, line termination sequence, alternate keyboard, delete or backspace key usage, display options, language and formatting. Additionally, through a setup sheet, you can control the cursor shape, margin bell and other options.

Selecting [START] initiates the host connection and opens an emulation window that meets your specifications. When you make a selection within the emulation window, the workstation's keyboard

is remapped by the terminal emulation software to represent the keyboard and functions normally found at a DEC VT100. The keyboard's new representations and functions are displayed on the screen in a virtual keyboard window. This gives you full access to all ASCII control codes, the "break" key, the repeating arrow key, and a ten-key pad. An alternate keyboard provides some additional codes. Information already typed in an existing VP document can be copied or moved into a VT100 emulation window.

A session ends when you logoff and close the emulation window. At any time during the session, you can initiate the [MAKE DOCUMENT] or [MAKE SCREEN] commands. [MAKE DOCUMENT] creates a VP document using all the information displayed in the emulation window during that session (or since the last [MAKE DOCUMENT] action, whichever came last). [MAKE SCREEN] causes all of the information displayed in the window to be made into a VP document.

Once information is captured through the [MAKE DOCUMENT] or [MAKE SCREEN] process, you can manipulate it as in any other VP document. This includes printing, filing, formatting, editing, and mailing.

Through the VP Data Capture application, such information can be run through a program that will format it as a table, thus permitting easy transfer of data into record files or bar charts. (Refer to the Data Capture chapter for more information.)

VT640 user interface

Once you begin a VT640 session, selecting [START] initiates the host connection and opens an emulation window that meets your specifications. It provides the same available keys, commands, and basic interface, including graphics capability as a VT640, and its text mode parallels a DEC VT100 terminal.

When a selection is made within the emulation window, the workstation's keyboard is remapped by the terminal emulation software to represent the keyboard and functions normally found at a VT640 device. The keyboard's new representations and functions are displayed on the screen in a virtual keyboard window. This gives you full access to all ASCII control codes, plus the "break" key, and a ten-key pad. When the emulated terminal is in Graphics Input Mode, the cursor appears in the form of crosshairs, which can be moved via the mouse. (The Light Pen Mode is not supported by the emulator.)

A session ends when you logoff and close the emulation window. At any time during the session, the [MAKE SCREEN] command can be initiated. [MAKE SCREEN] causes all of the information displayed in the window to be made into a VP document. The document contains a single graphics frame, in which up to about 3000 vectors and/or points are represented by lines and dots, and text is represented by text frames.

Once information is captured through the [MAKE SCREEN] process, it can be manipulated as any other VP document. The graphics and text can be edited, and the document can be formatted, printed, filed, and mailed.

Tektronix 4014 user interface

Once you begin a Tektronix 4014 session, selecting [START] initiates the host connection and opens an emulation window that meets your specifications. It provides the same available keys, commands, and basic interface (excluding the write-thru and defocused modes in the Enhanced Graphics Module) as a 4014.

When a selection is made within the emulation window, the workstation's keyboard is remapped by the terminal emulation software to represent the keyboard and functions normally found at a 4014 device. The keyboard's new meanings are displayed on the screen in a virtual keyboard window. This gives you full access to all ASCII control codes, plus the "break" key, and a ten-key pad. When the emulated terminal is in Graphics Input Mode, the cursor appears in the form of crosshairs, which can be moved via the mouse.

A session ends when you logoff and close the emulation window. At any time during the session, the [MAKE SCREEN] command can be initiated. [MAKE SCREEN] causes all of the information displayed in the window to be made into a VP document. The document contains a single graphics frame, in which up to about 3000 vectors and/or points are represented by lines and dots, and text is represented by text frames.

Once information is captured through the [MAKE SCREEN] process, it can be manipulated as any other VP document. The graphics and text can be edited, and the document can be formatted, printed, filed, and mailed.

Prerequisites when using the network

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor, 2.0 (to use the Make Document or Make Screen facility)

VP NetCom or RemoteCom Software, 2.0

Standard Services Software

Asynchronous Communication Protocol

Signed Software License Agreement.

Prerequisites when using the workstation port

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP Document Editor, 2.0 (to use the Make Document or Make Screen facility)

VP NetCom or StandAlone Software, 2.0

VP Terminal Emulation Software, 2.0 (TTY, DEC VT100, Tektronix 4014, and VT640)

Standard Services Software

Local RS-232-C Communication Access Software, 2.0

Modem

RS-232-C Communication Kit when using the 8010

Signed Software License Agreement.

Documentation

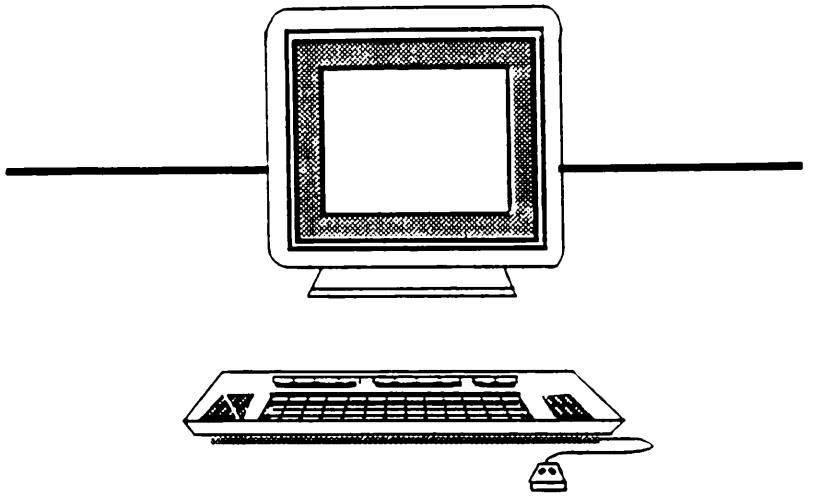
VP Series Training Guide

VP Series Reference Library

Services Product Descriptions

Related documentation concerning the network side of supporting emulation is found in the Network Administration Library.

22. VP Terminal Emulation Of IBM 3270



Features

- Supports IBM 3270 BSC (Bisynchronous) or IBM 3270 SNA (System Network Architecture) emulation, by emulating the IBM 3278-2 Display Station for BSC and the IBM 3278-2, -3, -4, and -5 Display Stations for SNA, at the workstation level
- Supports multiple sessions at an individual workstation, with up to eight sessions supported on the network services level
- Maintains consistency with the workstation user interface
- Remaps the workstation keyboard during an emulation session automatically to create a Model 3278 virtual keyboard.

Description

VP Terminal Emulation of IBM 3270 enables you to use your workstation to connect to an IBM, or other host computer, and conduct a terminal session as though you were using an IBM 3278 display station communicating with the host. In addition, the workstation retains access to the full range of workstation features and capabilities.

The IBM 3270 Emulation software is a licensed application that builds on the Xerox ViewPoint Software, and is compatible with other VP software packages.

To use the IBM 3270 Emulation software at a 6085 Professional Computer System or 8010 Information Processing System, you must have access to the network and additional communication software must be running on a Xerox network server.

The IBM and Xerox worlds

In a typical computer installation running IBM 3270 communications, there is a central processing unit. Attached to this processor is a 3705 communications controller, which controls all communication between the processor and remote devices. The 3705, in turn, manages one or more 3276-2 (for BSC) or 3276-12 (for SNA) cluster controllers, each of which can control up to eight 3278 display stations.

The display station can be used only for input to the host computer, which can transmit data back to the receiving terminal as output.

Each of the display stations is connected by cable (up to 2,000 feet) to the cluster controller. Each cluster controller is connected to the 3705 controller (and thus the host computer) through a high-speed, leased telecommunications line. This is illustrated in figure 22-1.

The Xerox emulation model has similar components. The IBM 3270 emulation software allows you to interact with a host computer. This is accomplished through two software packages: one runs on the workstation, the other runs on a server located anywhere on the user's internetwork.

The workstation software package emulates the IBM 3278 display stations. The network services software package emulates either a "dedicated or multi-dropped" IBM 3276-2 or 3276-12 cluster controller.

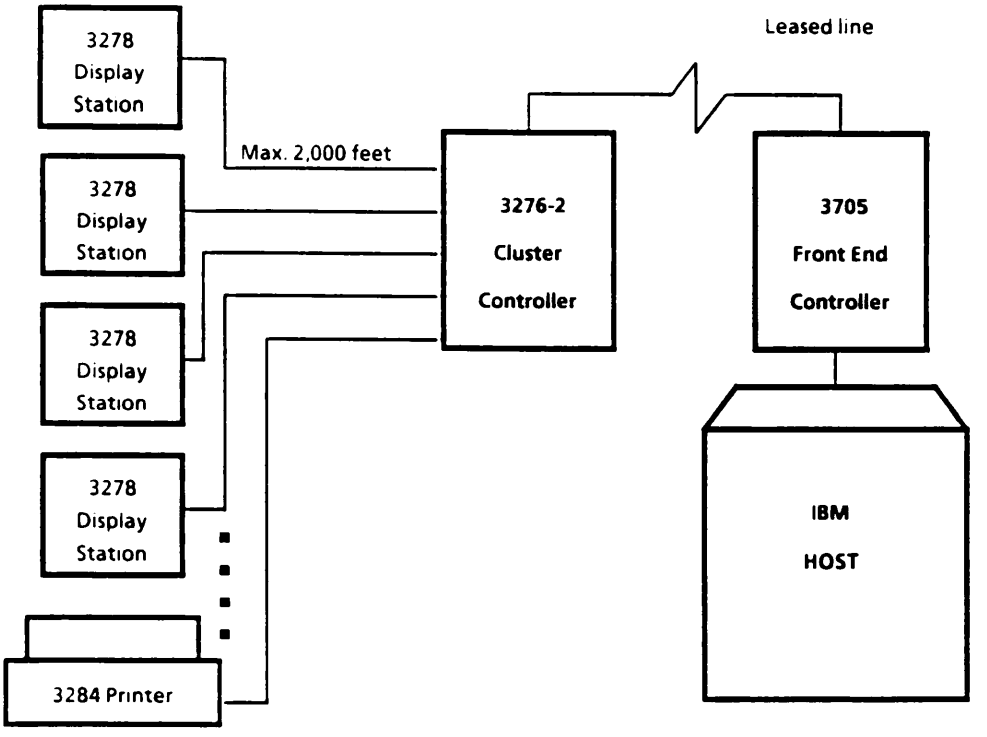


Figure 22-1. **Typical IBM 3270 BSC installation**

More specifically, the network services' 3270 communication protocol maintains communication with the IBM host using the Xerox implementation of the IBM bisynchronous (BSC) or System Network Architecture (SNA) communication protocol that an actual IBM cluster controller would use. It also converts information from IBM protocols to Ethernet protocols for transmission to the 6085 workstation. (For more information on 3270 Communication Protocol, see the Network Services product descriptions.)

VP IBM 3270 emulation software allows the workstation to receive information from the host and to accept your input much like a real 3278 display station. This information is then sent via Ethernet to the network's 3270 communication server, which converts it into IBM protocols for transmission to the host over a dedicated communication line. This is illustrated in figure 22-2.

The user interface

Using the workstation as an IBM 3270 emulator is both similar to and different from the IBM 3278 display stations. It is the same in that it gives the user the same available keys, commands, and basic interface; it is different in that it provides access to the full range of workstation capabilities.

You can access IBM 3270 capabilities through an icon on the desktop. Each emulation icon on the desktop represents a potential emulation session with a specific host computer. You can have multiple emulation icons on the desktop, with each representing a different host.

To begin an emulation session, open the emulation icon and specify the communication options on the displayed option sheet. Selecting the [START] command on this sheet initiates the host connection and opens an emulation window.

When using 3270 SNA, the emulation window always opens with a 24 row by 80 column format. When the logical-unit session starts, the 3270 host sends the terminal presentation data, which contains the window dimension for the logical-unit session. When the information is received, the emulation window size adjusts accordingly. When the session is over, the window adjusts to the default dimensions of 24 by 80.

When a selection is made within the emulation window, the workstation keyboard is remapped by the emulation software to represent the keyboard and functions available at a 3278 display station. The keyboard's new representations and functions are displayed on the screen through a virtual keyboard window. There are two virtual keyboards available: the 3270 Main keyboard and the 3270 Alternate keyboard. Additionally, a ten-key pad is available which can be configured to send ten-key pad numbers, PF key sequences, or both.

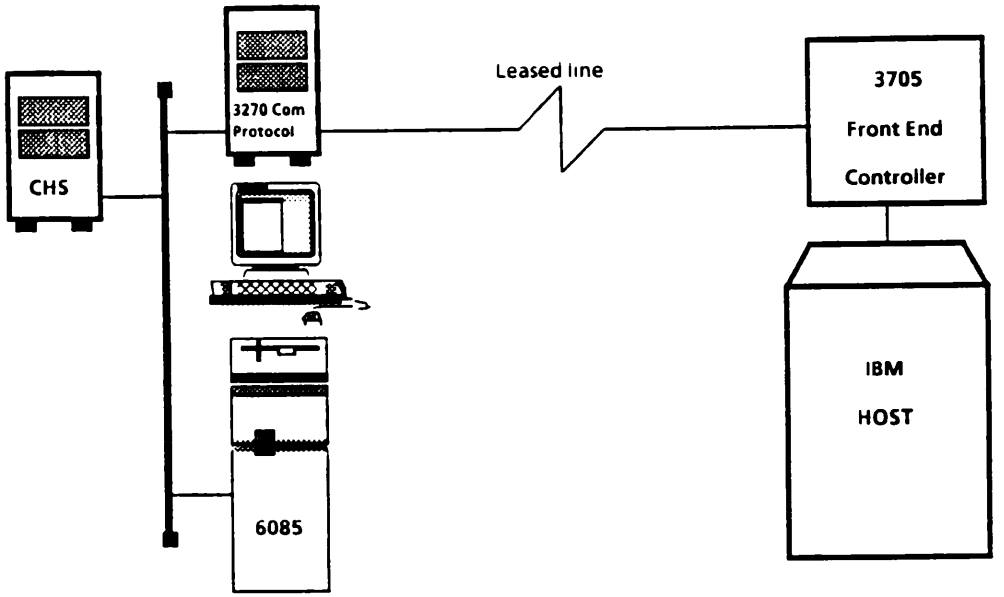


Figure 22-2. Typical Xerox installation with IBM 3270 emulation

The function of the cursor keys found on a 3278 display station is activated by using the workstation's mouse. (Options for a light pen or joystick on a 3278 terminal are not supported in the emulation package.)

Information entered in the window is sent to the host computer through the network server running the emulation package. This information is sent to the host computer at the conclusion of each command.

All of the parameters involving the nature of the communication link are set by the System Administrator and are transparent at the workstation. You can specify a particular terminal address, if necessary, for your applications.

A session ends when you close the emulation window. At any time during the session, you can initiate either the [SNAPSHOT] or the [MAKE DOCUMENT] commands. Selecting [SNAPSHOT] creates a new read-only display window that contains an exact copy of the current 3270 screen display. The contents of the snapshot window are fixed, and changes to the 3270 display do not affect it. This feature is useful for tracking intermediate results in a series of database accesses without going through the process of creating a ViewPoint document.

Because the snapshot window is read-only, the contents cannot be altered. However, information can be copied from the snapshot window into any editable window. The snapshot is intended for temporary storage and is destroyed when you close the snapshot window.

[MAKE DOCUMENT] creates a VP document from the information currently displayed in the emulation window. Once information is captured through the make document process, it can be manipulated as any other VP document. This includes printing, filing, formatting, editing, and mailing.

Through the VP Data Capture application, such information can be run through a program that will format it as a table, thus permitting you to transfer data into record files or charts easily. (For more information on Data Capture, see the specific chapter.)

Information already entered in an existing VP document can be copied or moved into an IBM 3270 emulation window. This provides further software integration and multifunctionality of the workstation.

The ViewPoint interface allows multiple windows to be opened at once, including emulation windows. Therefore, you can work either with more than one session on the same host computer, or, depending on the network configuration, with several sessions on several different host computers. (Due to the nature of the network's system architecture, a workstation user with access rights has access to any host computer connected to any server on any of the networks within that organization's internetwork.)

Features of the Xerox model

The Xerox software package for IBM 3270 emulation introduces to the IBM 3270 world three advantages not found in the actual IBM 3270 environment.

These advantages involve terminal location, user convenience, and multiple access.

Terminal location

In the standard IBM installation, the 3278 display station must be located within 2,000 feet of the cluster controller for physical connection. Often this creates problems with terminal placement, especially in organizations in a campus or multiple city environment.

With a single network server supporting up to eight concurrent sessions anywhere on the internet (whether in the same building or across the country), this physical connectivity is replaced by logical connectivity through the Ethernet and network services.

User convenience

Because of the cable length restriction in an IBM environment and a terminal dedicated to input/output operations to the host computer, it is often impractical to give each person an IBM 3270 or 3278 terminal. As a result, users typically share terminals located in a common area.

When the IBM 3270 emulation package is added to a multifunctional workstation, you can do all of your work at your own workstation using the powerful document preparation functions of the ViewPoint software.

Multiple access

Perhaps the single most valuable attribute of IBM 3270 emulation is its multiple window capability. This allows you to have more than one active IBM 3270 session at one time. Each IBM 3270 window behaves like a separate terminal so that one workstation can support multiple sessions. This enables data comparison and exchange as well as simultaneous access to different hosts, based on the network configuration. Additionally, while the host is busy processing IBM 3270 user requests, you have access to any of the other workstation functions, such as mailing or printing.

IBM 3270 display commands

Application programs communicate with the host via commands and orders. The following commands (both chained and unchained) are supported by the emulation software:

— ERASE ALL UNPROTECTED

— WRITE

— ERASE/WRITE

— ERASE/WRITE ALTERNATE

— READ MODIFIED

— READ BUFFER

— READ MODIFIED ALL.

The following orders are acted on by the emulation software:

— SET BUFFER ADDRESS (SBA)

— START FIELD (SF)

— INSERT CURSOR (IC)

— PROGRAM TAB (PT)

— REPEAT TO ADDRESS (RA)

— ERASE ALL UNPROTECTED TO ADDRESS.

Limitations

Although the IBM 3270 emulation software supports a number of IBM 3270 features, the following limitations currently exist:

- IBM 3274 cluster controllers, which allow a maximum of 32 connections instead of 8, are not supported at this time
- Magnetic strip reading devices, printers, and light pen options are not supported
- Certain commands are not supported by the emulation software at this time:
  - The PRINT command, which would allow IBM 3270 output to be sent directly to a printer, such as the IBM 3284 model, is not supported. To print information received in an emulation session, the user must create a VP document through the [MAKE DOCUMENT] command.
  - COPY
  - SELECT (all select commands)
  - READ commands such as CHAINED READ
  - TEST REQUEST.

Prerequisites

6085 Professional Computer
or
8010 Information System

Xerox ViewPoint Software, 2.0

VP NetCom Software, 2.0

Standard Services Software

3270 BSC or SNA Communication Protocol

Signed Software License Agreement.

Documentation

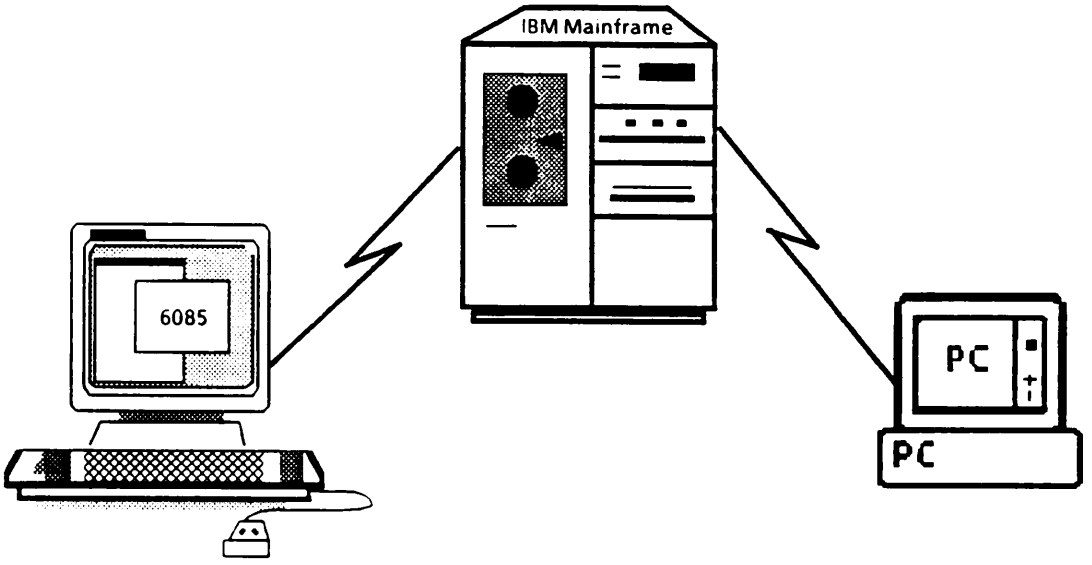
VP Series Training Guide

VP Series Reference Library

Services Product Descriptions.

Related documentation concerning the network side of supporting IBM 3270 emulation is found in the Network Administration Library.

23. VP IBM 3270 File Transfer



Features

- Provides a more interactive solution to transferring files, by minimizing the use of floppy disks and electronic mail
- Provides a more direct file transfer without using Remote Batch Service
- Provides access to low-cost file storage
- Allows 6085 and 8010 users to exchange files with a broad spectrum of users.

Description

VP IBM 3270 File Transfer is an optional software application that works in conjunction with VP Terminal Emulation of IBM 3270 version 2.0. Xerox' IBM 3270 terminal emulation software appears to the host as a 3278 Model 2, and the External Communication Service appears as a 3276-12. (Up to eight ports can be defined using either BSC or SNA/SDLC protocol.) When using VP IBM 3270 File Transfer, the Xerox 6085 Professional Computer System and the 8010 Information System appear to the host as an IBM 3270 PC issuing a file transfer request to send or receive files. VP IBM 3270 File Transfer software allows you to upload files to the IBM host, as well as download files that are stored on the mainframe. Retrieving files from the IBM host reduces retyping of documents and information, and allows you to use the ViewPoint desktop publishing features to edit text and data.

The VP IBM 3270 File Transfer software package broadens the community of users who can exchange data, by using the IBM host as the point of exchange. The 6085 and 8010 workstations can exchange files with 3270 PCs or non-networked PCs which have 3270 access to the host.

Users can exchange ASCII files or MS-DOS binary files (including DCA text files) between Xerox workstations and PCs with 3270 option boards, using an ASCII mode or transparent mode of file transfer. You can also transfer ViewPoint text as an EBCDIC file via the VP Text transfer mode. This eliminates retyping between EBCDIC editors.

Additionally, when 6085 and 8010 users are on separate networks without any internetwork links, they can still exchange files using VP Icon mode file transfer. The only requirement is that both must have 3270 access to mutual host accounts.

VP IBM 3270 File Transfer requires VP Terminal Emulation of IBM 3270 software to provide the 3270 host connection. The 3270 emulator icon property sheet supports VP IBM 3270 File Transfer, as well as 3270 terminal emulation.

IBM host

VP IBM 3270 File Transfer receives and sends files in the three most prevalent IBM 3270 system environments:

- MVS/TSO
  (Multiple Virtual Storage/Time Sharing Option)

- VS/CICS
  (Virtual Storage/Customer Information Control System)
- VM/CMS
  (Virtual Machine/Conversational Monitor System).

The VP file transfer software initiates an IBM host program called IND$FILE module, which establishes the file transfer protocol for the session. See the Prerequisite section for more specific information.

File transfer modes

Four modes of 3270 file transfer are available:

- ASCII
- Transparent
- VP Text
- VP Icon.

ASCII mode

The ASCII mode allows you to transfer ASCII text files from the VP desktop to an EBCDIC file on the 3270 host. The host translates the ASCII text (7-bit or 8-bit ASCII character codes, depending on how the host is set up) into the appropriate EBCDIC character codes. You should use only the ASCII option with ASCII text files. Examples of ASCII files are WordStar and MicroSoft Word text files.

Transparent mode

Transparent mode allows you to transfer binary files to the host without EBCDIC character translation. The software sends only the file content, while ignoring the icon properties and filing structures. You should use this option when sending non-ViewPoint objects, such as WordStar text files, DCA text files, and MS DOS programs.

VP Text mode

The VP Text mode allows you to transfer text from a ViewPoint document to an EBCDIC file on the 3270 host. The Xerox character set 0 is compatible with the ASCII/ISO/CCITT character set standard. File transfer sends the ASCII equivalent of a VP text character to the host for translation into an EBCDIC character. Those characters that are not part of the Xerox character set 0 are translated into hyphens.

Documents transferred to and from the host may require minor editing after you complete the transfer.

VP Icon mode

To take advantage of the immense storage facility of an IBM host, the VP Icon mode allows you to transfer ViewPoint icon objects to the host without losing ViewPoint icon properties. To ensure that the ViewPoint icon retains its properties and content, the workstation converts the icon into a special format prior to transferring it to the host. You must not alter the transferred file once it resides on the host. Any changes to the file may destroy critical components and cause unpredictable results when you transfer the file back to the workstation.

3270 icon

To run the file transfer application, load VP IBM 3270 File Transfer software in your loader, and retrieve a VP 3270 Terminal Emulation icon (figure 23-1) from the directory to your desktop. (Note: VP Terminal Emulation of IBM 3270 version 2.0 also must be loaded and running.)

Figure 23-1. 3270 icon

Select the 3270 Terminal Emulation icon and press <PROP'S>. This opens the property sheet and allows you to set options for file transfer routines. The user interface of the VP IBM 3270 File Transfer software consists of selecting property sheet options with the mouse, which is faster than typing in long string-oriented commands.

3270 property sheet

Changes have been made to the 3270 property sheet to support VP IBM 3270 File Transfer. As shown in figure 23-2, the 3270 emulator icon properties display as a linked property sheet, which joins together several property sheets within one property sheet.

The property sheet is divided into two areas: a selection area and a parameters area. The selection area, located at the top of the property sheet, contains three choice selections:

- Terminal Characteristics
- File Transfer Receive
- File Transfer Send.

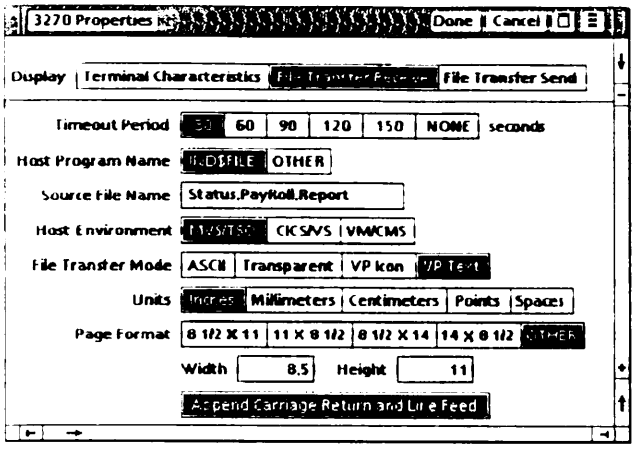


Figure 23-2. 3270 property sheet

The user interface

You initiate all file transfers through the auxiliary menu in the 3270 emulation window.

3270 emulation window

The two file transfer capabilities available via the 3270 auxiliary menu of the emulation window are:

- Download to workstation via the [Receive] command.
- Upload to host via the [Send] command.

The 3270 Emulation window, shown in figure 23-3, appears when you select the 3270 icon and press <OPEN>. The icon window is divided into two screen areas:

- Data display area
- Status information area.

When a 3270 file transfer is in progress, the data display area shows the file name, system messages, and byte counts throughout a file transfer operation.

The status information area displays graphic symbols as file transfers occur. These symbols are representative of those used on the IBM 3278, with the addition of two file transfer symbols unique to VP IBM 3270 File Transfer, the Upload symbol and the Download symbol.

File transfer [Receive]

Transferring a file from the 3270 host to the workstation is a four step process:

1. Establish a 3270 session in a 3270 Terminal Emulation window.
2. Select [Receive] in the auxiliary menu of the 3270 window. This opens up the Receive option sheet and allows you to select or enter the details before starting the receive operation.

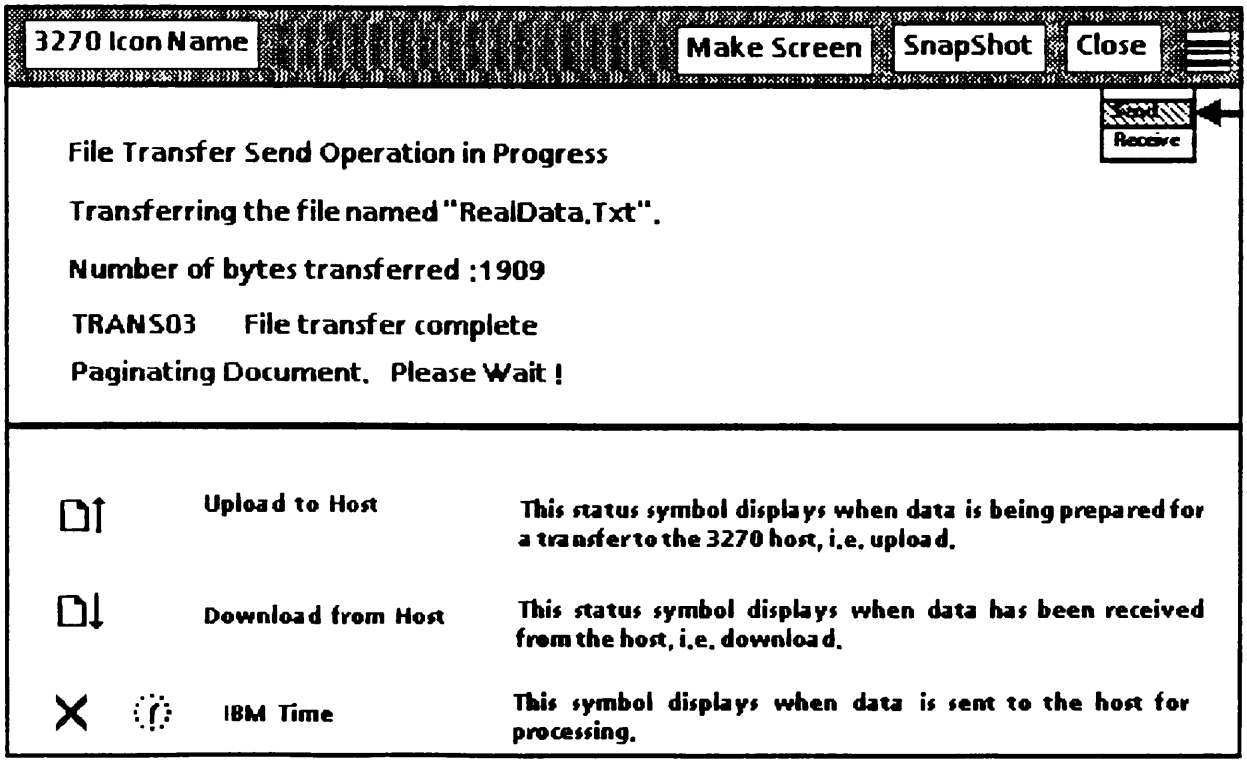


Figure 23-3. 3270 emulation window

3. In the host file name field, enter the name of the source file you want to transfer to the workstation.
4. After setting all parameters, select [Start]. The Receive option sheet closes and sets the file transfer operation in progress.

Downloading a file does not delete the host file; the workstation receives a copy of the file from the host.

File transfer [Send]

Transferring files from the workstation to the 3270 host is a four step process:

1. Select the file or files on the workstation desktop you want to transfer.
2. Select [Send] in the auxiliary menu of the 3270 window. The Send option sheet appears on the desktop.
3. Set the parameters inside the option sheet based on the type of files or mode you select to transfer.
4. Once you set all parameters, select [Start]. The Send option sheet closes and initiates the file transfer operation.

Consider the mode another user will select to retrieve the file and transfer the file using the appropriate mode. Files must reside on the workstation desktop for transfer to the host.

Prerequisites

Xerox workstation

6085 Professional Computer System
or
8010 Information System

Xerox ViewPoint software, 2.0

VP NetCom or VP RemoteCom, 2.0

VP Document Editor software, 2.0

VP Terminal Emulation of IBM 3270 software, 2.0

Signed Software License Agreement.

Network services

The Xerox workstation communicates over the Ethernet with the External Communication Service (ECS). The ECS emulates an IBM 3276 controller and can handle up to 8 terminal emulation sessions. Either 3270 SDLC/SNA communication protocol or 3270 BSC communication protocol can be used on the server.

IBM mainframe

The IBM mainframe must have one of the following file transfer applications installed (IND$FILE program module):

- CICS/VS #5798-DQH, Version 1.00 for CICS environments
- VM/SP #5664-281, Version 1.00 for a VM/CMS environment
- MVS #5665-311, Version 1.00 for an MVS/TSO environment.

Parameters for Send and Receive operations, naming conventions and types of file transfers, and the amount of mainframe storage needed should all be specified initially by the host system manager.

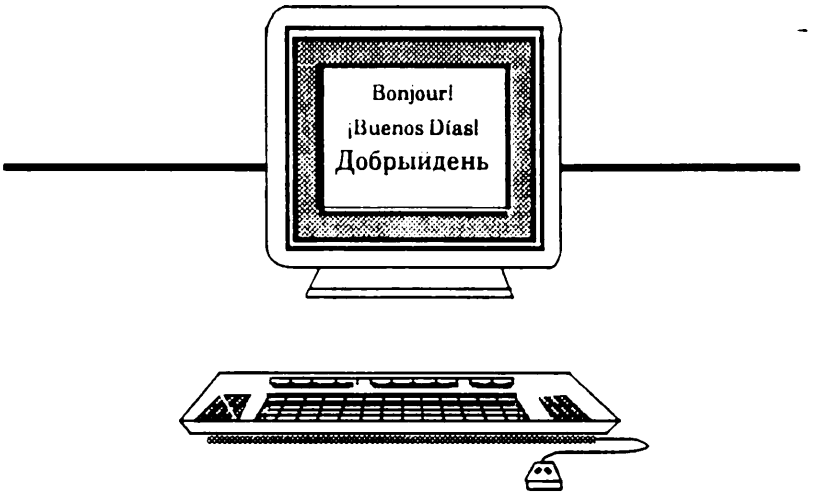
Documentation

VP Series Training Guide

VP Series Reference Library

Services Product Descriptions.

24. VP Languages 1.x



Features

- Unlimited mix of languages in a document
- Full integration of languages with other VP applications like spreadsheets, graphics, and tables
- Electronic communications of multilingual documents around the world
- High-quality laser output.

Description

ViewPoint and the VP Series of software provide you with the ability to create multilingual text. You can enter text in over 30 languages, including French, Polish, Uzbek, Bulgarian, Arabic, Japanese, and Chinese. The language capabilities can be fully integrated with the document preparation capabilities, which include text, graphic, and table creation. You can create single-language or multilingual forms, documents, manuals, and brochures that are used either within the United States or internationally.

There are several features available to you when creating multilingual text. One ViewPoint feature, virtual keyboards, lets you type in the following languages: French, French-Canadian, German, Italian, Spanish, U.S. Russian, and other European languages. (For more information on ViewPoint, refer to the specific chapter.)

If you require virtual keyboards other than those in the ViewPoint package, you can license other VP Language software packages in addition to your workstation software. The seven additional software packages available for licensing to support multilingual text are:

- VP European Text Package
- VP Extended Latin Text Package
- VP Extended Cyrillic Text Package
- VP Arabic Text Package
- VP Extended Language Option for use with
  - VP Japanese Text Capability
  - VP Chinese Text Capability.

These VP Language applications consist of virtual keyboards, screen fonts, as well as any additional software, and are compatible with the other VP application packages. They operate on 6085 Professional Computer Systems around the world.

This product description includes a description of each of these software packages. Illustrations of the keyboards are found in a separate section at the end of the descriptive text.

VP European Text Package

The VP European Text Package provides language-specific virtual keyboards allowing you to type text in the following languages: Czech, Hungarian, Polish, Portuguese, Brazilian-Portuguese, Romanian, Serbo-Croatian, and Slovak. This package includes

both the Brazilian (QWERTY mapping) and European (National Standard mapping) layouts for Portuguese. Illustrations for the VP European Text keyboards begin with figure 24-1.

VP Extended Latin Text Package

The VP Extended Latin Text Package provides language-specific virtual keyboards allowing you to type text in the following languages: Albanian, Estonian, Indonesian, Latvian, Lithuanian, Slovene, Turkish, U.S. Turkish, and Uzbek. This package includes both the U.S. (QWERTY mapping) and European (National Standard mapping) layouts for Turkish. Illustrations for the VP European Text keyboards begin with figure 24-9.

VP Extended Cyrillic Text Package

The VP Extended Cyrillic Text Package provides language-specific virtual keyboards allowing you to type text in the following languages: Bulgarian, Russian, Ukrainian. Illustrations for the VP Extended Cyrillic Text keyboards begin with figure 24-18.

VP Arabic Text Package

The VP Arabic Text Package provides language-specific virtual keyboards allowing you to type text in the following languages: Arabic and Persian. This package consists of cor-responding display fonts and underlying software that let you type the text of these languages in a natural manner. Sophisticated software performs contextual analysis of Arabic and Persian characters, allowing you to enter independent forms of each character from the virtual keyboard. The software automatically inserts correct forms of the character, based on the position of the character in the word. Likewise, subsequent edits produce correct forms of the characters. Unlike the other VP Languages, you write and read Arabic and Persian text from right to left; underlying software enables switching of text direction with minimal user intervention. Arabic and Persian text may be mixed with the text of any other VP Language, as well as with most other VP Application software packages. Illustrations for the VP Arabic Text keyboards begin with figure 24-21.

The user interface

You can create multilingual documents just as easily as you can create English documents. You do not have to load and unload software each time you require different language documents or text. You simply set the keyboard to the desired language and type the information. If you are in the middle of a document and you need to switch languages, you simply change keyboards to create text in another language.

The language software packages contain all the keyboards and screen fonts, making it easy to switch from one language to another. When you need a new language, press <KEYBOARD>, which displays a desktop window that lists all the available languages on that workstation. Select the desired language, and press <SET> to set the keyboard to the selected language. Now text will be entered in the selected language. You can enter single characters by holding down <KEYBOARD>, selecting a language, and pressing the key for the character. When you release <KEYBOARD>, the keyboard mapping returns to the language that you set originally.

Not only can you switch between languages, but you can also change the font size and style to create professional-looking documents. Once you create the document, you can print it on a high-quality laser printer or local draft printer, mail it to other users, or place it in a file drawer for storage.

Prerequisites

6085 Professional Computer System

Xerox ViewPoint Software, 1.x

VP Document Editor, 1.x

Signed Software License Agreement.

Documentation

VP Series Training Guide

VP Series Reference Library.

VP Extended Language Option

The VP Extended Language Option lets you incorporate the richness of the software packages with the intricacies of other writing systems. It supports:

- typing of all Japanese Industrial Standard (JIS) Level I and II characters with phonetic input in romanized Japanese ("Romaji") or Hiragana, or with JIS-Code typing

- typing of Chinese characters with phonetic Mandarin input in Pinyin or Bopomofo, or Standard Telegraph Code.

The VP Extended Language Option lets you use all ViewPoint features, from word processing to spreadsheets to advanced graphics, with Japanese and Chinese characters, while building on the successful Western model of touch typing.

The VP Extended Language Option software is a licensed application that builds on the Xerox ViewPoint software and is compatible with other VP software packages. It provides the foundation for either the Japanese or Chinese Text Capability packages, which the user may license.

VP Japanese Text Capability

The VP Japanese Text Capability software package provides the following features to workstation users:

- romanized spelling (Romaji) of Kana syllables with automatic conversion for faster touch-typing
- multiple Japanese look-up dictionaries, including an installation dictionary with 110,000 entries, and a user supplemental dictionary for personalization
- automatic dictionary look-up for phonetic conversions from Hiragana to Kanji
- three alternate keyboards for entering Japanese office symbols (JSyms), circled alphabet (JSym2), and Gaiji (JSym3)
- an option to use Japanese Hiragana or English physical keyboard.

Workstation users find it easy to work in most languages' alphabets; they simply select the option that changes their software-encoded keyboard to function in the appropriate language. However, Japanese does not rely on a single alphabet but actually uses four different types of characters.

The first is the Roman alphabet, the same alphabet used for English. Japanese frequently uses Roman characters in expressing brand names or foreign words. In addition, you can spell any Japanese word with Roman letters. Japanese written with Roman letters is referred to as Romaji.

Japanese also makes use of two syllabic alphabets, one called Hiragana, the other called Katakana. Unlike the Roman alphabet in which each character represents a single consonant or vowel sound, these two syllabic alphabets have characters that represent basic syllables of sound, such as *su* or *shi*. As a result, Hiragana and Katakana have about 170 characters. Both of these alphabets are referred to as Kana.

Hiragana characters are curvilinear and simple in appearance and are used for normal text. Figure 24-23 illustrates the characters that appear on the Hiragana keyboard. Katakana characters are squarish in appearance and are used primarily to depict foreign words. Katakana characters are the Japanese equivalent of italicized text. Figure 24-24 illustrates the characters that appear on the Katakana keyboard.

Finally, Japanese makes use of over 6,000 ideograms from the Chinese writing system. These ideograms are called Kanji. Each Kanji symbol represents an idea or object, and the symbol does not necessarily have any relationship to the sound of the spoken word it represents.

An educated Japanese writer or reader would not be surprised to use or find all four types of characters within a single passage of writing; indeed, an educated person is expected to be fluent in the use of the total 6,600 Japanese characters.

As a result, any satisfactory documentation system for Japanese must be able to handle all four types of characters in a unified way. It is this union of multiple writing symbols that the VP Extended Language Option and VP Japanese Text Capability provide.

Use of Hiragana and Katakana

The user solves the need to present information in either Hiragana or Katakana text by remapping the keyboard at their request to the desired Kana alphabet. Since both Kana alphabets have more characters than will fit on a standard American keyboard, use either of the shift keys to access a different character.

Because you can express the sound of every Hiragana character by an equivalent set of Roman characters, it is possible to type any Japanese word in the Roman alphabet. This Roman syllable is then transliterated into its Hiragana character.

For example:

す is equivalent to "su", and
み is equivalent to "mi"

Building on this capability, VP software can monitor typing as it occurs and automatically perform this phonetic conversion. Thus, as soon as you type a *u* following an *s*, the system recognizes it as *su* and converts the *su* to す. This method of typing conversion is referred to as Romaji-Kana typing.

Since many users, both in Japan and in the United States, have some degree of typing skill on a keyboard with an American layout, the Romaji-Kana typing method can improve typing speeds.

Whether you choose to type in the Romaji-Kana method, or directly in Hiragana or Katakana, a typing feedback area always appears. This area provides feedback on the typing method you are currently using. In addition, the message area at the top of the screen provides relevant screen prompts and messages.

In addition to Hiragana or Katakana, you also have access to any of the other keyboards available on the workstation, such as Russian, Italian, or Spanish.

Use of Kanji

Providing alternate keyboard mapping, together with Romaji-Kana conversion, solves the problem of the Hiragana and Katakana text, but clearly it cannot solve the problem of Kanji. You would need a large number of shift keys just to get the 46 keys of a standard keyboard to cover the complete JIS (Japanese Industrial Standard) character set that an educated Japanese writer is expected to be able to use.

To solve this problem, VP software took the phonetic conversion used in the Romaji-Hiragana typing method and carried it one step further. The software can convert a series of Hiragana characters to Kanji characters.

After typing a word in Hiragana, press the space bar. This action causes the system to scan its dictionary of Japanese words for all possible Kanji words that have the same spoken sound as the characters just typed, and presents the options on the screen. The software first presents the most likely homophones (based on frequency of use). With a keystroke or a mouse selection, you can indicate which Kanji character was intended, and the Hiragana characters convert to that Kanji character. (If there is only one possibility, the software automatically enters that possibility.)

You can enter new Kanji words into the look-up dictionaries, as well as alter the order in which the homophones appear.

Through this model of Kana-Kanji conversion, you can quickly enter Kanji characters and thus maintain fast typing speeds.

Japanese dictionaries and grammatical processing

Given the basic model of how Japanese typing can occur on the workstation, two major features enhance that interaction:

- multiple look-up dictionaries
- grammatical processing.

Multiple look-up dictionaries

The software uses an on-line dictionary containing over 110,000 Japanese basic root words (requiring 2 Mb of workstation storage) for the Kanji look-up. The on-line dictionary is divided into several subsets:

- Common Dictionary
- Japanese Industrial Standard (JIS)-1 Kanji Dictionary
- JIS-2 Kanji Dictionary
- JIS-2 Word Dictionary
- Gaiji Dictionary (office symbols and high frequency Kanji)
- Personal Name Dictionary
- Place Name Dictionary
- Other Proper Name Dictionary (for example, company names).

You can select a specific dictionary to be active at any given time. For instance, selecting only the Personal Name Dictionary while typing an employee list expedites the correct Kanji for an entry like *Yamada*. On the other hand, you can activate the Other Proper Name Dictionary during business correspondence for company names such as Toyota, Mitsubishi, Nissan, and so forth.

You can add, delete, and reprioritize your dictionaries through property sheets connected with special user dictionaries.

Grammatical processing

Many Japanese words have grammatical endings somewhat similar to European languages. For example, *aruku* means "to walk," but *aruita* means "walked," while *arukanai* means "not walk," and *arukitai* means "want to walk." You can add these endings onto each other indefinitely, like cars on a freight train. For instance, the form

arukitakunaiyouda is a polite way of saying that someone "does not seem to want to walk."

The roots of words are usually quite short and also grammatically ambiguous. For example, *nekomu* means "to fall asleep," but *neko* is also a noun meaning "cat." Grammatical processing means that the inflected forms like *nekono* "cat's" or *nekonda* "fell asleep" can simply and unambiguously be looked up whole instead of piecemeal.

Grammatical processing occurs through a parsing program that analyzes the sound that you typed in based on a complete morphological grammar of Japanese words. This allows the system to discover the grammatically possible word-roots, which are the forms stored in the dictionary. For example, when you type

-arukaseraretagarimasumai,

the system discovers that an allowable dictionary root is *aru-* "walk-," so it substitutes the *Kanji* for just *aru-* and retains the Hiragana inflection

-kaseraretagarimasumai.

VP Chinese Text Capability

Users who license the Chinese Text Capability can enter text in the Mandarin Chinese language. The VP Chinese Text Capability software package provides:

- support of Pinyin Plus (romanized spelling), and the Bopomofo and telegraph codes alternate typing methods
- a 100,000 word look-up dictionary built from 4,126 of the most common Chinese characters, available in both simplified and traditional style characters
- conversion from phonetic Bopomofo to appropriate Chinese characters.

You can enter text in the Mandarin Taiwanese phonetic alphabet (Bopomofo) or in romanized letters using Pinyin spelling, which the software converts to Chinese characters. The telegraph code method can also be used for entering Chinese characters. Chinese numbers can be entered either phonetically or directly from the keyboard. You can also enter text using tone numbers, decreasing the number of lookups for faster Chinese typing.

With VP Chinese Text Capability:

- extended language typing modes appear in the feedback area as you select them on the Extended Language property sheet found in the auxiliary menu. Choosing the Mandarin input allows you to select Pinyin, Bopomofo, or Telegraph Code.
- the software uses a generic "user dictionary" record file when creating new user dictionaries.
- you set the part of speech to [OTHER] when adding Chinese entries to a user dictionary, either directly into an external user dictionary or via the "Add Dictionary Entry" option sheet.

Chinese typing methods

Bopomofo

You can enter Chinese text directly, using either Pinyin spellings (romanized Chinese words) or Bopomofo letters, by setting the desired typing mode and selecting the typing method. When using Bopomofo, type using the Bopomofo keyboard layout (see figure 24-29). When using the Pinyin spelling, the keyboard layout is similar to the American English keyboard layout (see figure 24-28).

Pinyin

Pinyin typing is entering Mandarin Chinese phonetically using standard Pinyin spellings. The software automatically converts correctly spelled syllables to Bopomofo letters as you type your document. The workstation accepts not only the standard Pinyin spellings, but any reasonable variation for spelling Chinese words. The software then converts typed text to Chinese characters through a dictionary lookup procedure.

For faster Chinese typing, you can type tone numbers after single syllables to specify a unique character to be entered into your document, or you can convert units of text in a single lookup.

Telegraph codes

When you select the Telegraph Code typing method, you can type approximately the first 4,100 of the total 9,776 Chinese characters contained in the Standard Telegraph Code, as used in both the People's Republic of China and Taiwan. By entering the appropriate four-digit numeric code, the system looks up the entered code number and displays the corresponding Chinese character.

In cases where the People's Republic of China standard differs from the Taiwanese standard, the system presents you with a homophone choice. As in other VP Chinese typing methods, the display font selection determines the style of the Chinese character: simplified (Modern) or traditional (Classic).

Conversion to Chinese characters

Chinese words are written in units called "ci." Conversion can be done at the end of each Chinese word or after a phrase or expression.

Many Chinese words share the same phonetic spellings, so there may be more than one word for the phonetic entry. You must select the intended word from a set of alternate homophone choices presented during lookup. To perform a lookup, press the spacebar, which displays a virtual keyboard with eight keys containing the available choices. Cycle through all the sets by repeatedly pressing the spacebar until the correct choice is visible. Press the key that corresponds to the choice to enter the character into the document.

When a phonetic word has only one choice in Chinese characters, the system automatically enters the unique entry into the text when you invoke a lookup. The entered Chinese characters will be either simplified or traditional, depending on the display font that you are using. (Modern is the simplified style; Classic is the traditional style.)

Chinese dictionaries and grammatical processing

As with the Japanese model, Chinese typing occurs because of two major features:

- multiple look-up dictionaries
- grammatical processing.

Multiple look-up dictionaries

The software provides an on-line dictionary that contains over 100,000 words written with 4,136 of the most common individual Chinese characters. You can also create special vocabulary dictionaries to supplement the Chinese character entries in the installation dictionary. By selecting the dictionaries needed, you can involve any or all of the dictionaries in your dictionary file look-up process. You can also add, delete, and reprioritize your special user dictionaries.

Grammatical processing

The software converts Chinese text in units consisting of one or more characters that belong together. The workstation looks for these units or patterns in the document before searching the Chinese dictionaries for the correct character conversions. This conversion is called "grammatical processing."

The units or patterns that the system recognizes for conversion are basic words (usually nouns or verbs) followed by word endings. These endings can be particles, punctuation, verbs, and adverbs that you identify as having only one possible phonetic meaning when you place them after the basic word. For example, "daxiongmaoshi" (basic word + ending) meaning, "the panda is," is an acceptable unit. "Zaijiali" (ending + basic word) meaning, "is at home," is not an acceptable unit.

Software and network integration

In general, you can use Japanese and Chinese throughout the range of workstation capabilities, both at the desktop level and at the network level.

Desktop

You can intermix multilingual Japanese or Chinese text with other languages within the same document. This intermixture can occur in all elements that appear within a document – text, fields, graphics, captions, and tables.

With the electronic spreadsheet, you must limit the use of Japanese and Chinese to the text label area and use Arabic numerals for its data values.

Contents of record files can be in either Japanese or Chinese. You can sort record files alphabetically, based on either English or Japanese characters.

You can give icons Japanese or Chinese names. You can also file, mail, or print data icons with Japanese or Chinese names.

Network

When users of a workstation with extended language options begin to access network services, some restrictions appear because the network facilities are set up to work with English, not Japanese or Chinese. As a result, both user names and file drawer names must be in English.

For example, you must log on in English to be consistent with the clearinghouse data base of the Network. File drawers must have English names for consistency with the file service. (For information on the Clearinghouse or File Service, see the Network Services product descriptions.)

You can mail data icons that have Japanese or Chinese titles. The body of the mail note may contain Japanese or Chinese characters; these are, however, visible only to those recipients with the Japanese or Chinese software option.

Finally, you can send documents created on a Japanese or Chinese workstation to any print service; however, the Japanese or Chinese characters only print on a print service loaded with the relevant Japanese or Chinese fonts.

Limitations

The software does not support vertical writing.

Prerequisites

6085 Professional Computer System with a configuration of 1152 Kb of memory and 40 Mb of storage for both Japanese and Chinese (20 Mb for Japanese or Chinese only)

8010 Information System with a minimum configuration of 768 Kb of memory (1024 is recommended) and at least 29 Mb of storage

Xerox ViewPoint Software, 1.x

VP Document Editor Software, 1.x

VP Extended Language Option Software, 1.x

VP Japanese or Chinese Text Capability Software, 1.x

Signed Software License Agreement.

You can print material created with Japanese or Chinese characters on a print service loaded with Japanese. Such a print service requires 768 Kb of memory and 80 Mb of storage, if it contains both Japanese Classic and Modern fonts. A 42 Mb print server with 768 Kb of memory supports either Japanese Modern or Japanese Classic fonts, if you install only one style.

Documentation

VP Series Training Guide

VP Series Reference Library

All training is available in English only.

VP European Text Package Keyboards

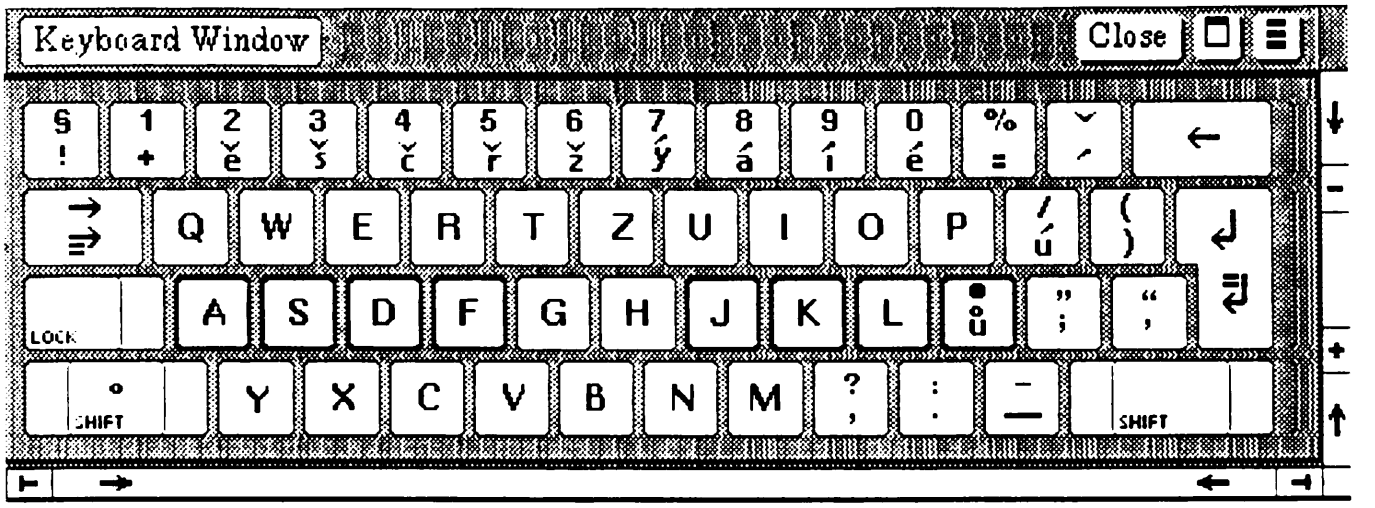


Figure 24-1. **Czech keyboard**

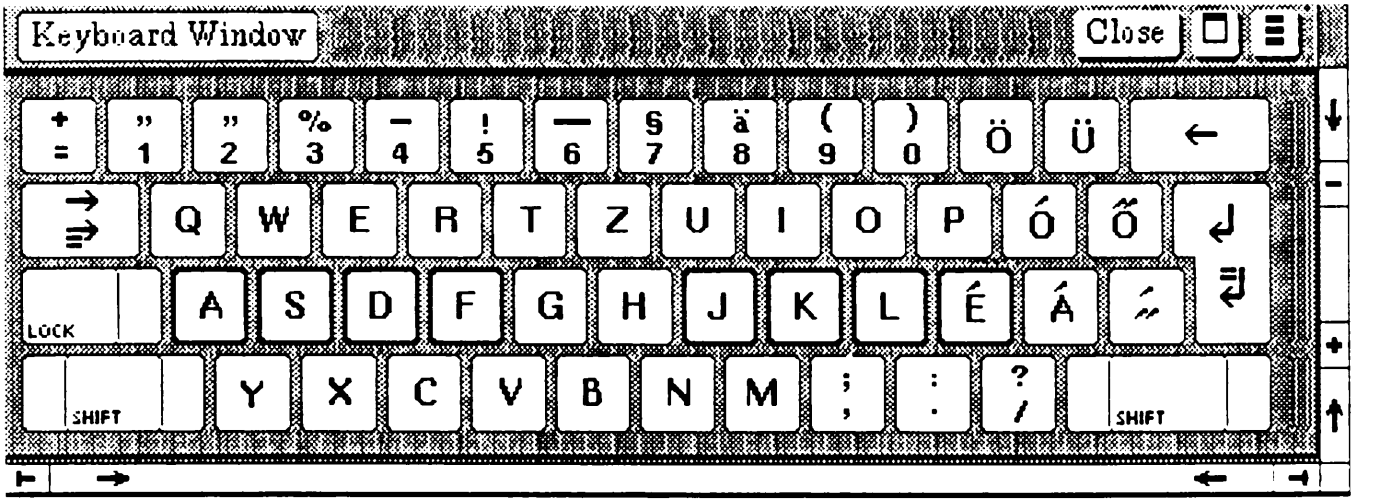


Figure 24-2. **Hungarian keyboard**

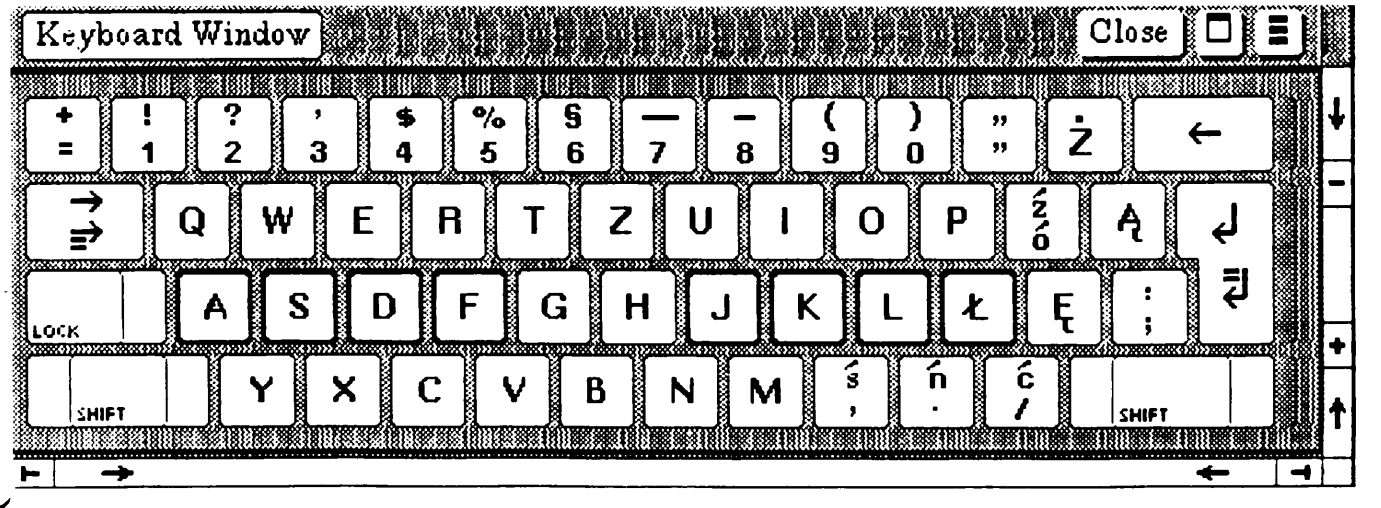


Figure 24-3. **Polish keyboard**

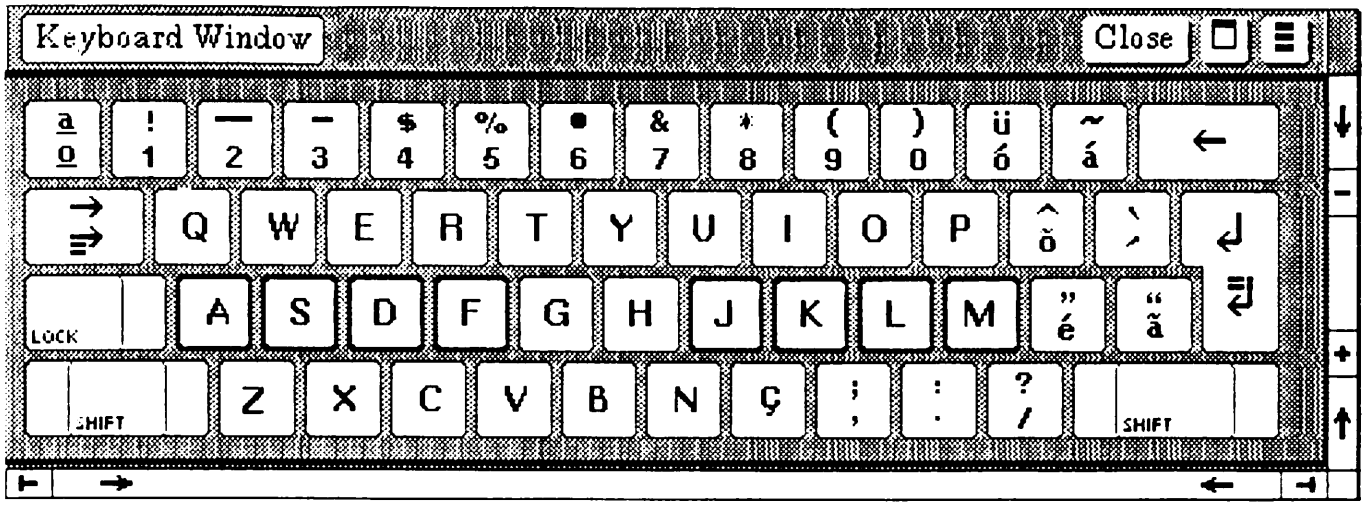


Figure 24-4. **Portuguese (Brazilian) keyboard**

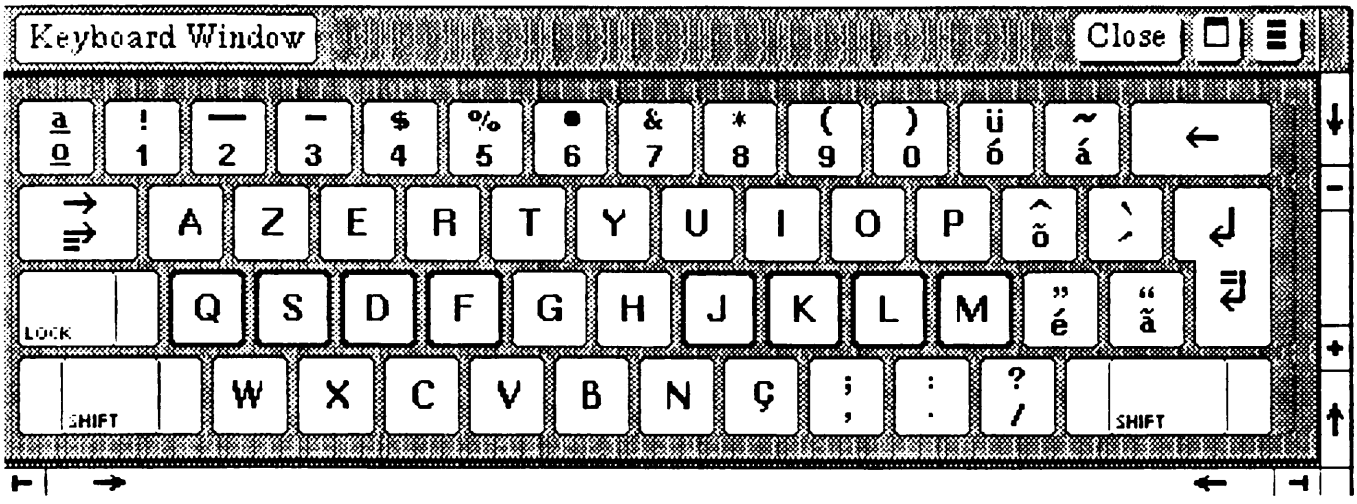


Figure 24-5. **Portuguese keyboard**

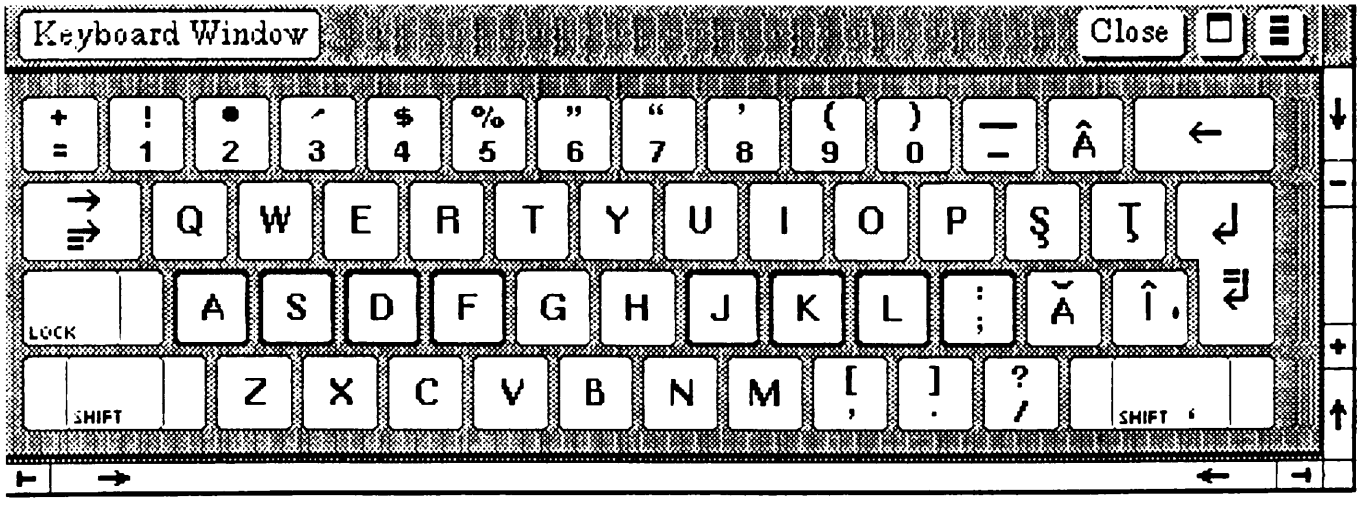


Figure 24-6. **Romanian keyboard**

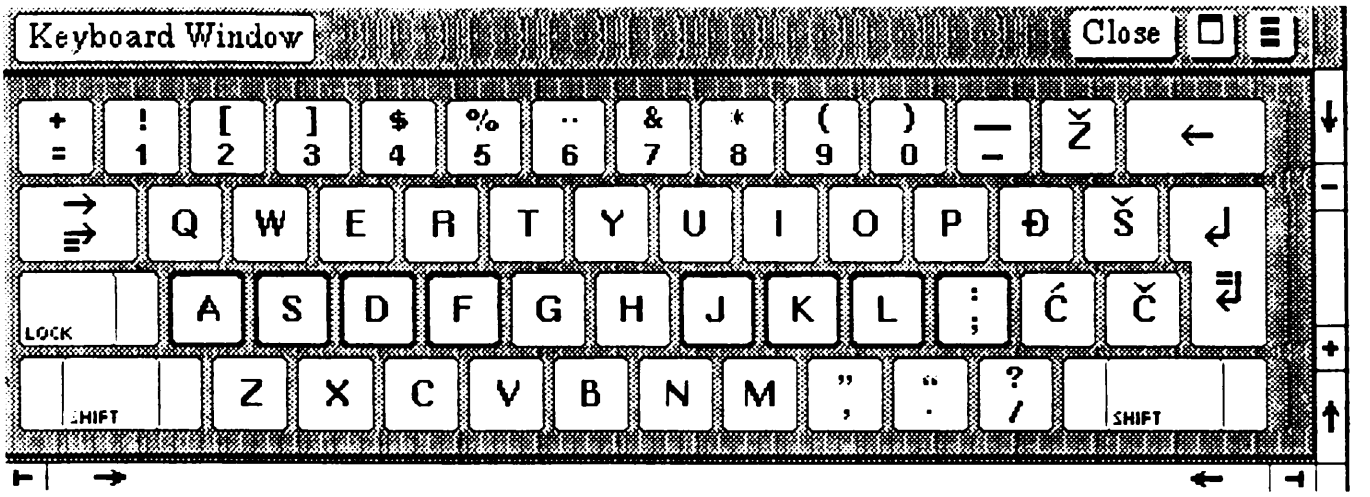


Figure 24-7. Serbo-Croatian keyboard

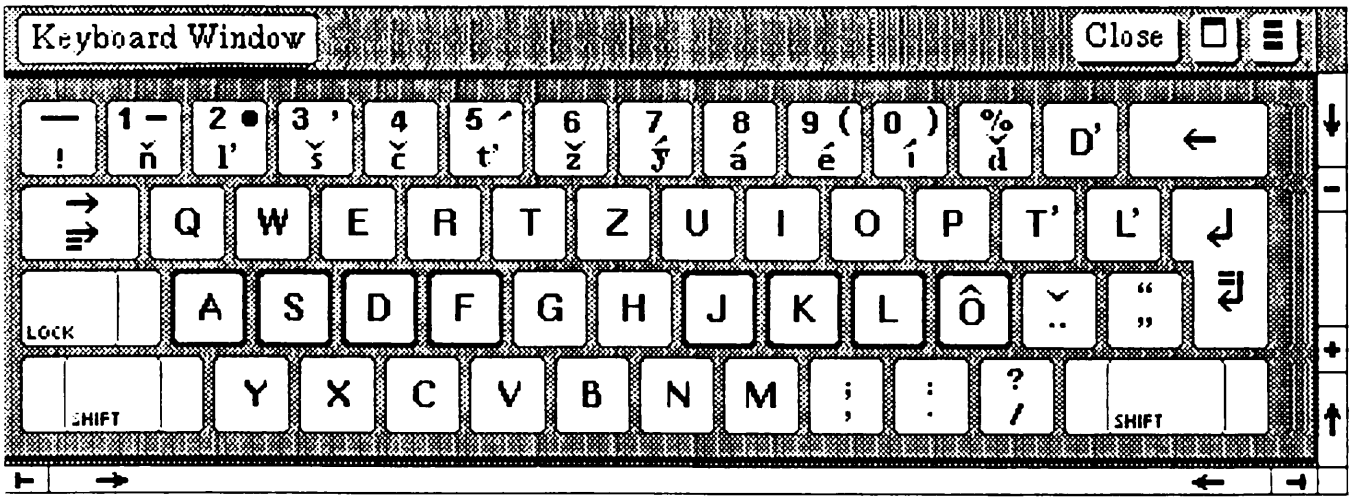


Figure 24-8. Slovak keyboard

VP Extended Latin Text Package Keyboards

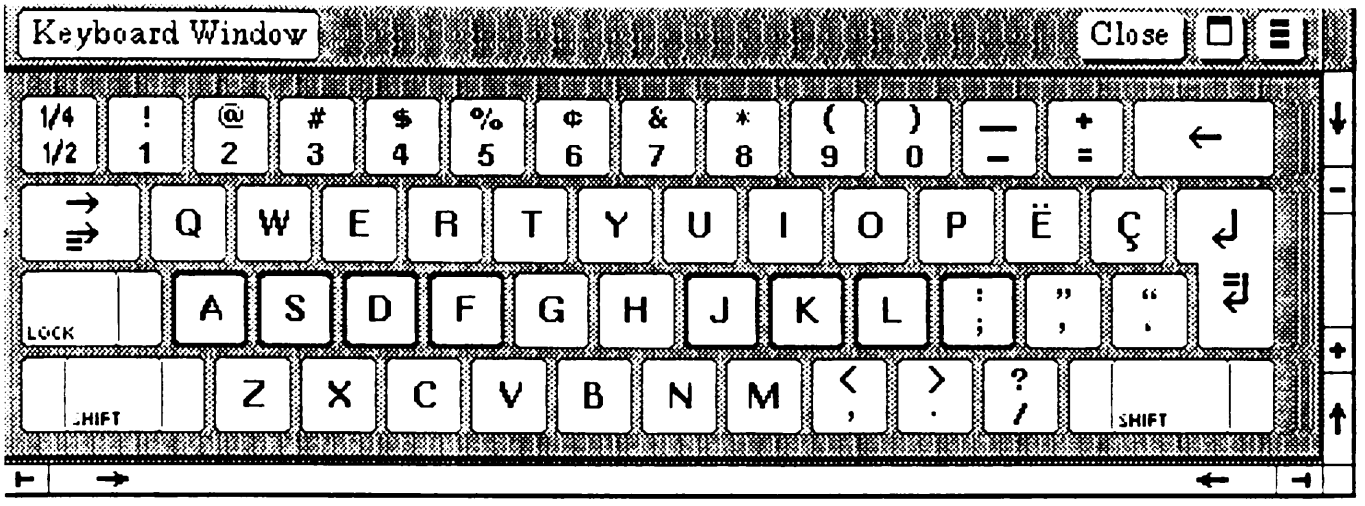


Figure 24-9. **Albanian keyboard**

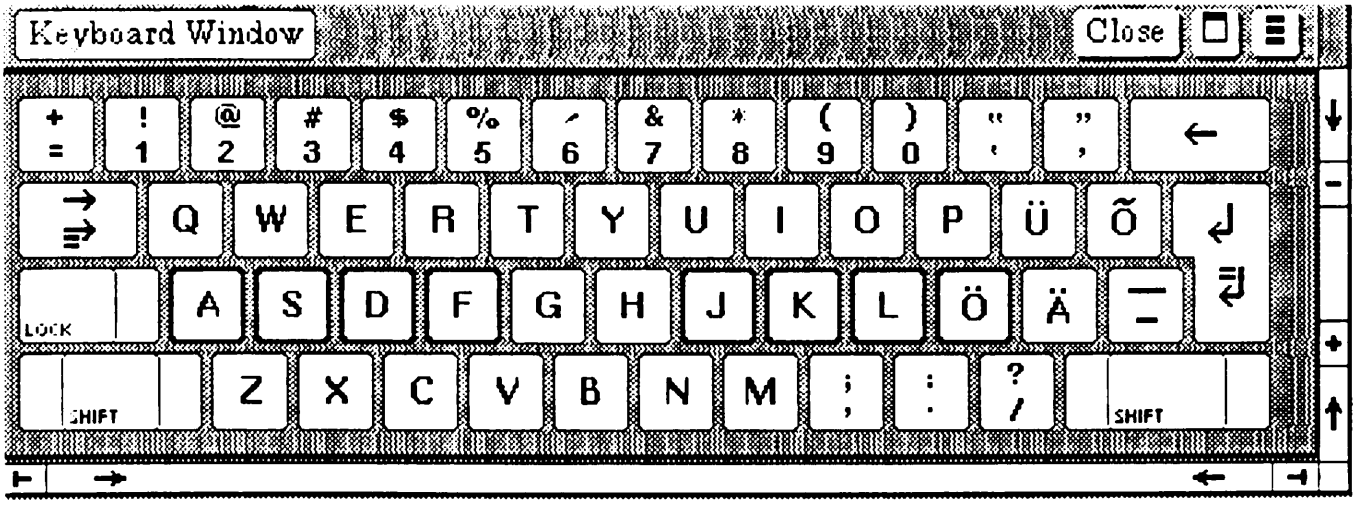


Figure 24-10. **Estonian keyboard**

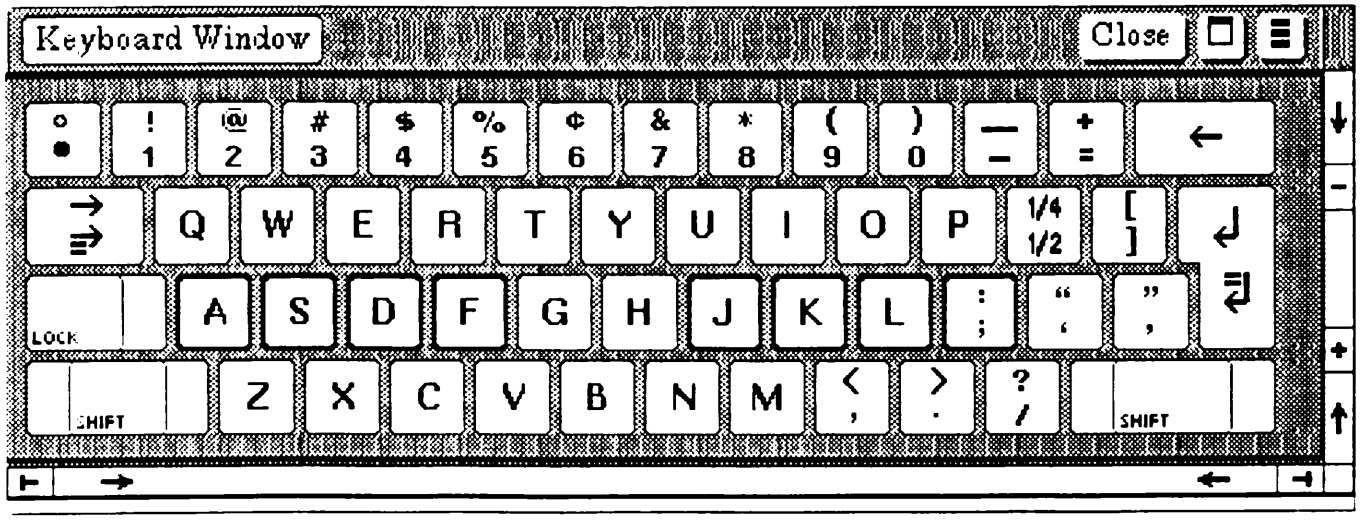


Figure 24-11. **Indonesian keyboard**

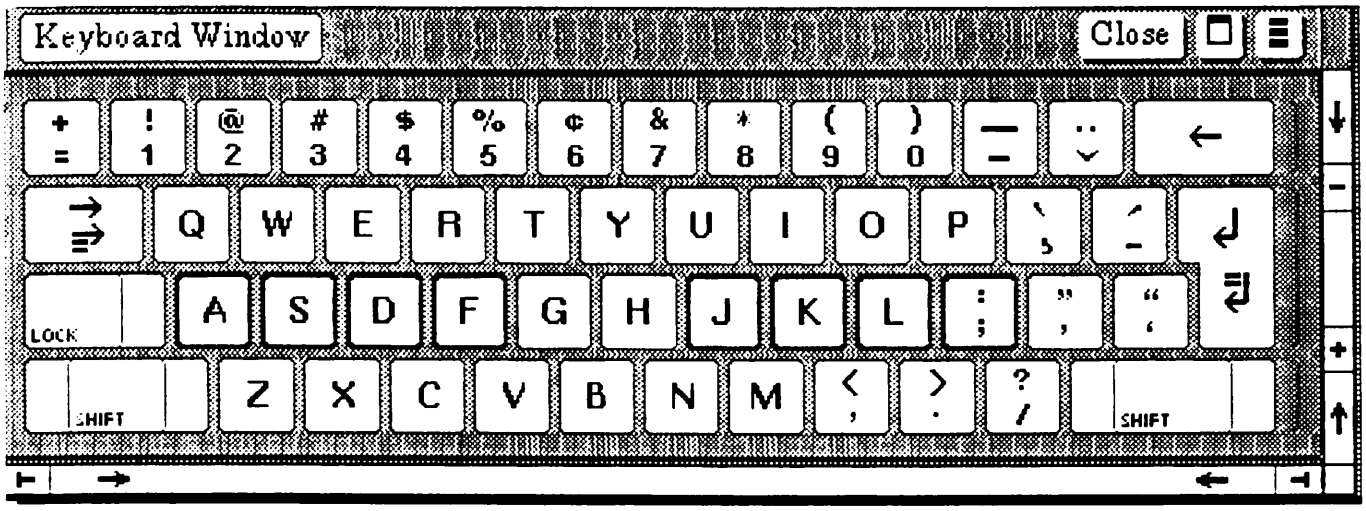


Figure 24-12. Latvian keyboard

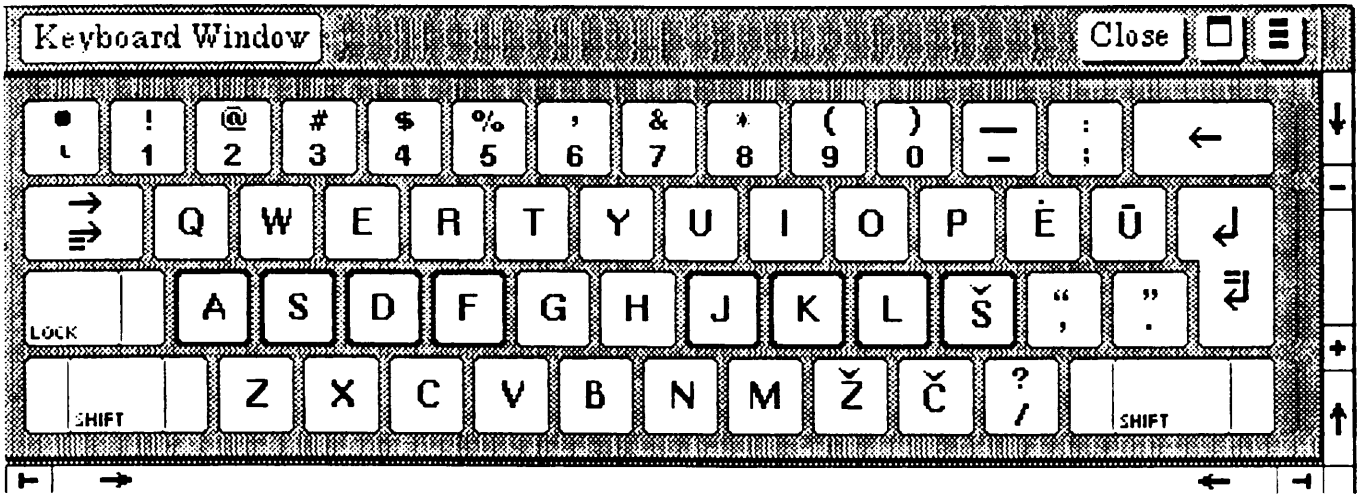


Figure 24-13. Lithuanian keyboard

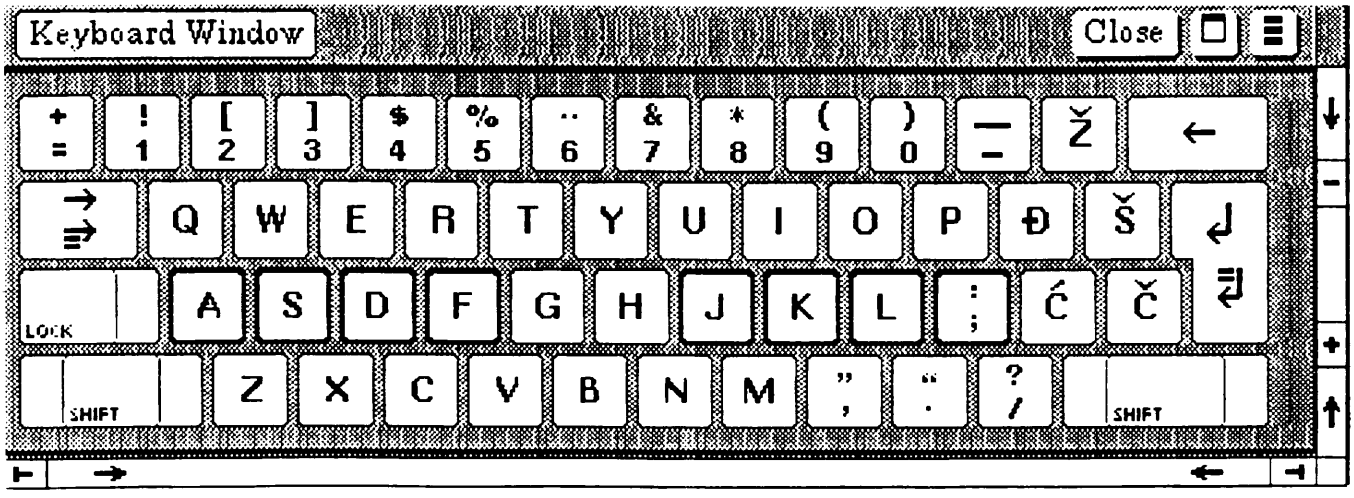


Figure 24-14. Slovene keyboard

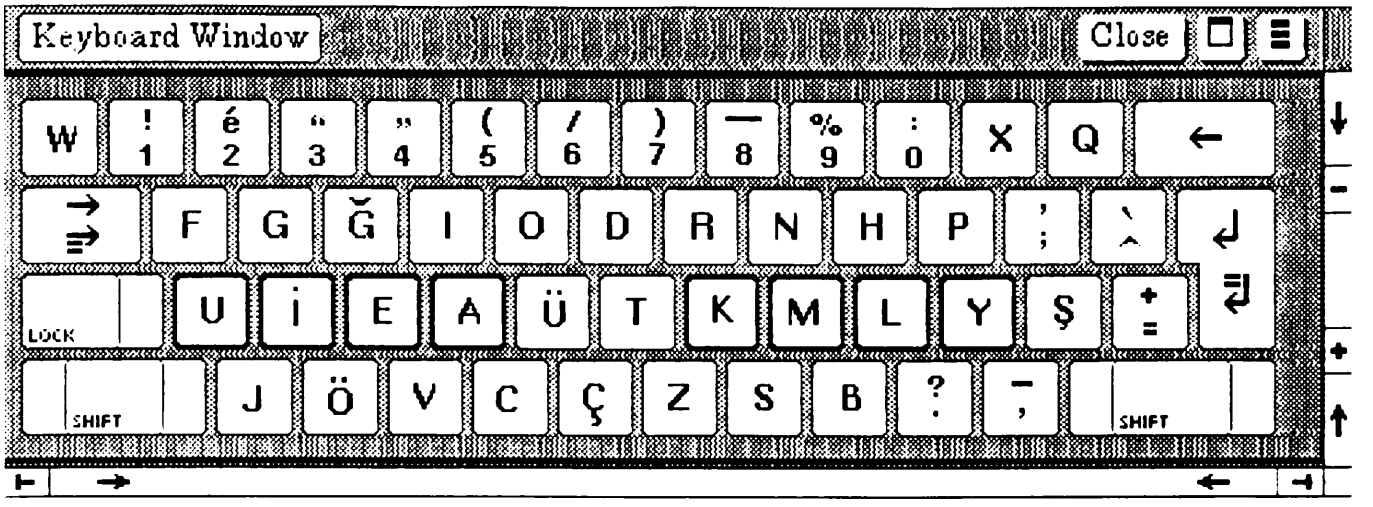


Figure 24-15. Turkish keyboard

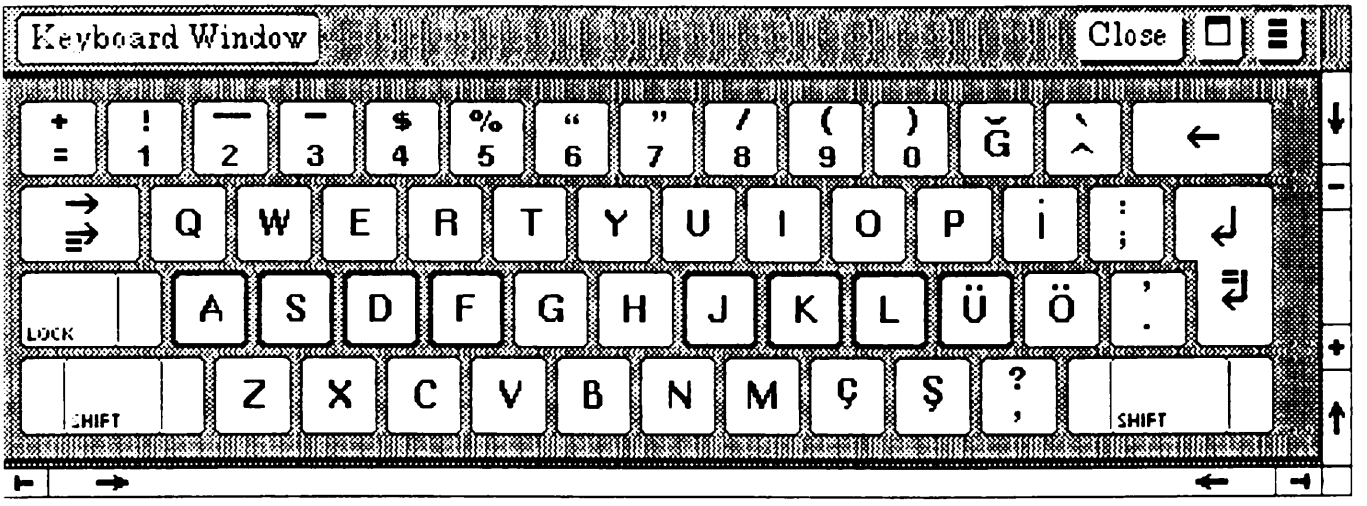


Figure 24-16. U.S. Turkish keyboard

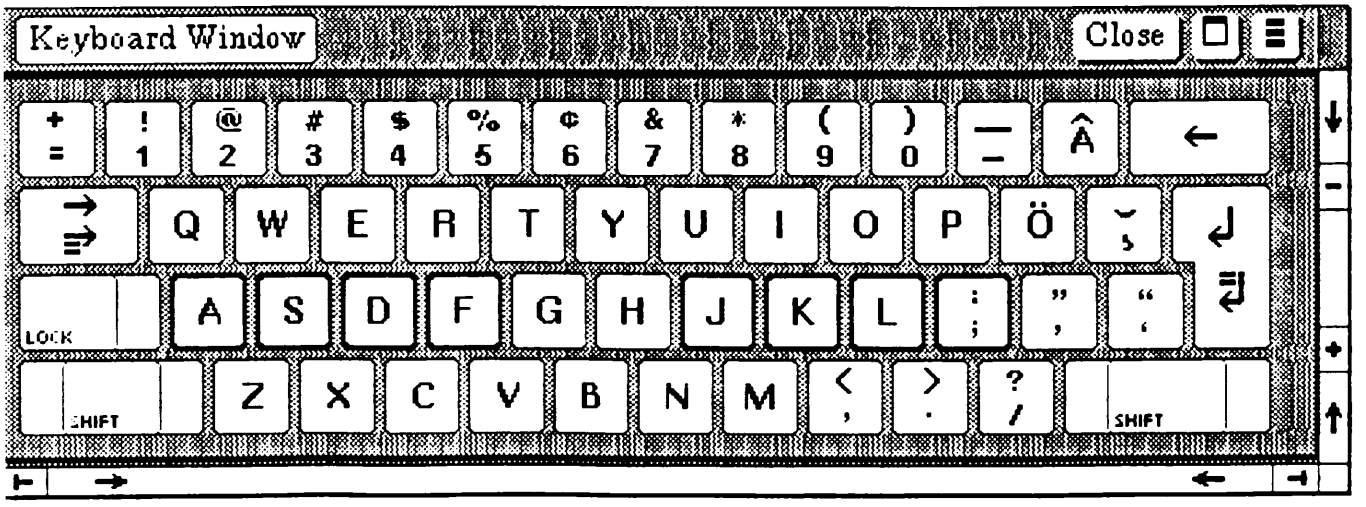


Figure 24-17. Uzbek keyboard

VP Extended Cyrillic Text Package Keyboards

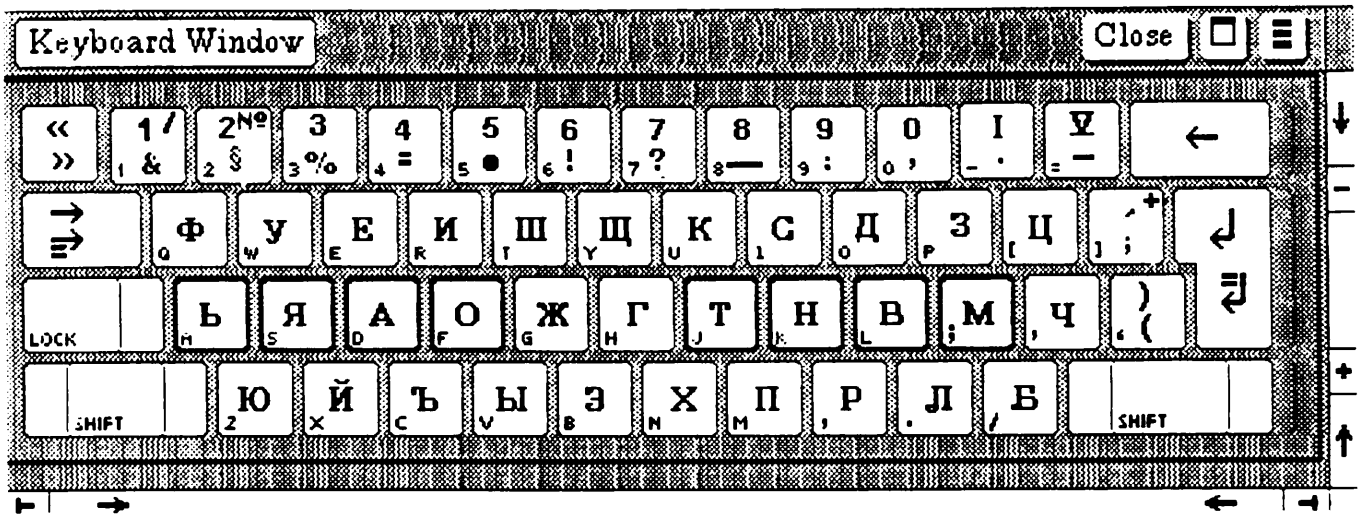


Figure 24-18. Bulgarian keyboard

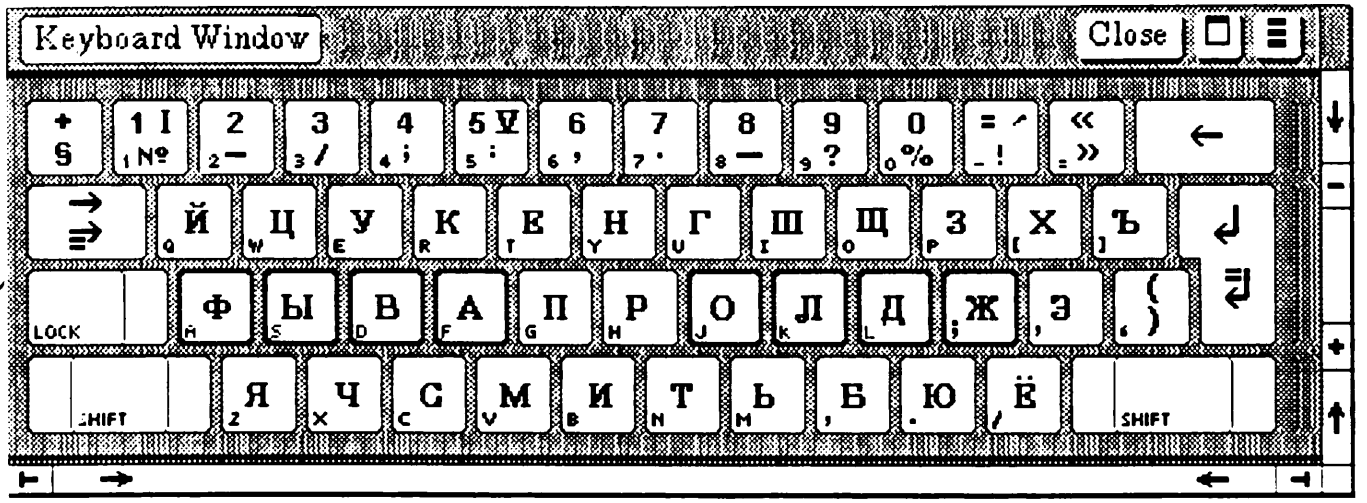


Figure 24-19. Russian keyboard

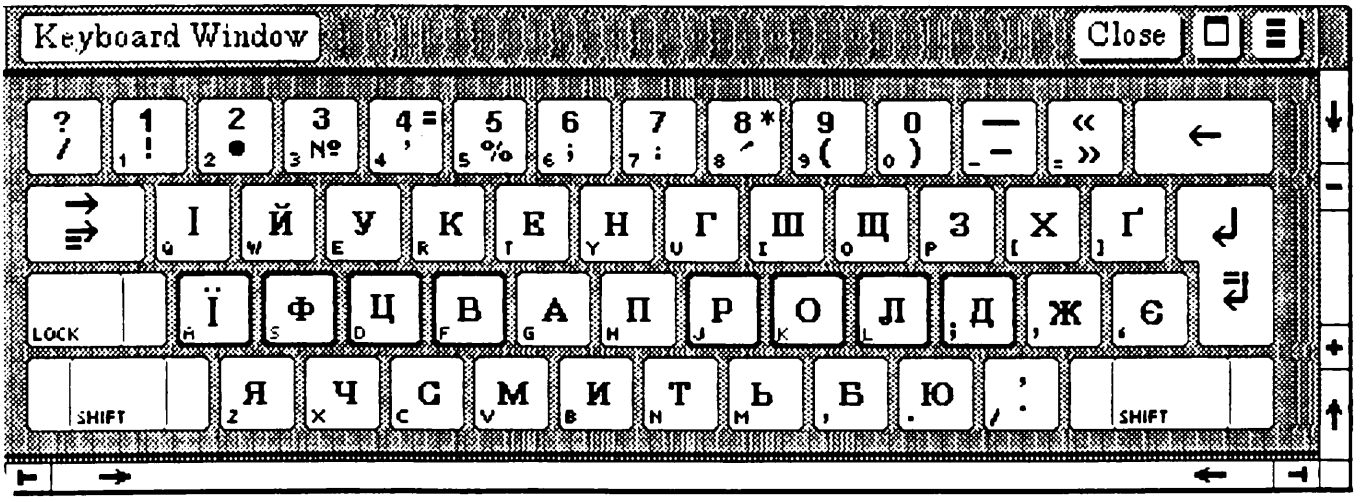


Figure 24-20. Ukrainian keyboard

VP Arabic Text Capability Keyboards

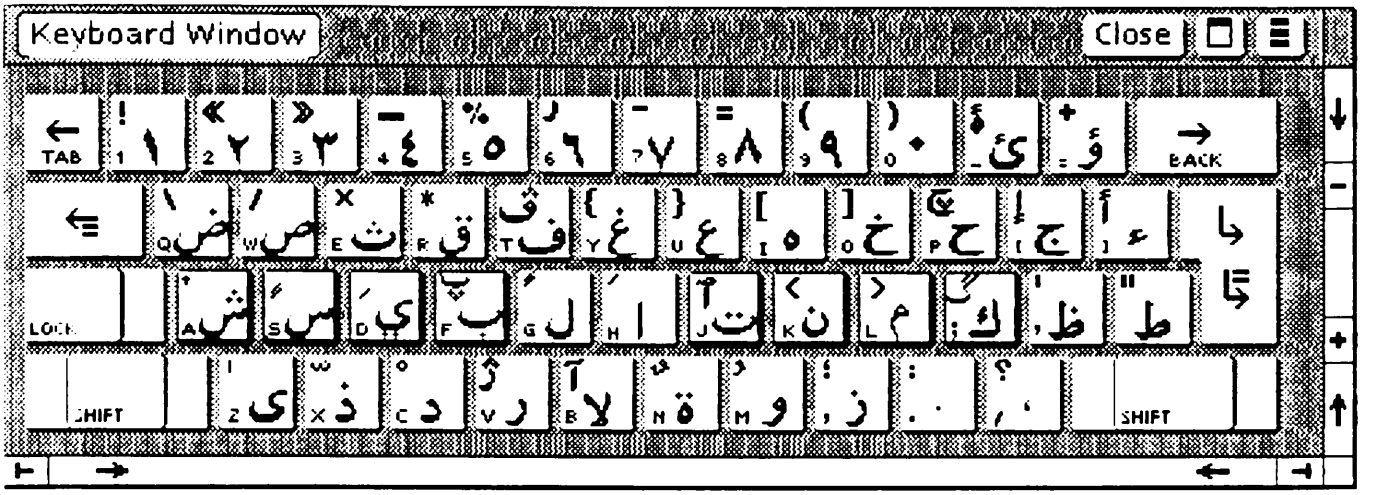


Figure 24-21. Arabic keyboard

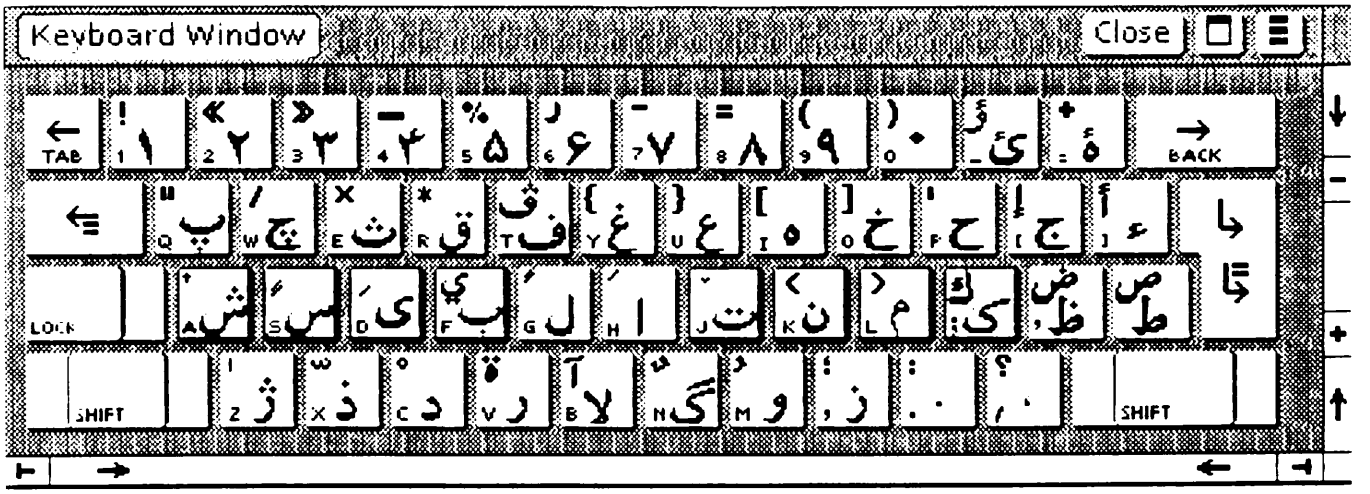


Figure 24-22. Persian keyboard

VP Japanese Text Capability Keyboards

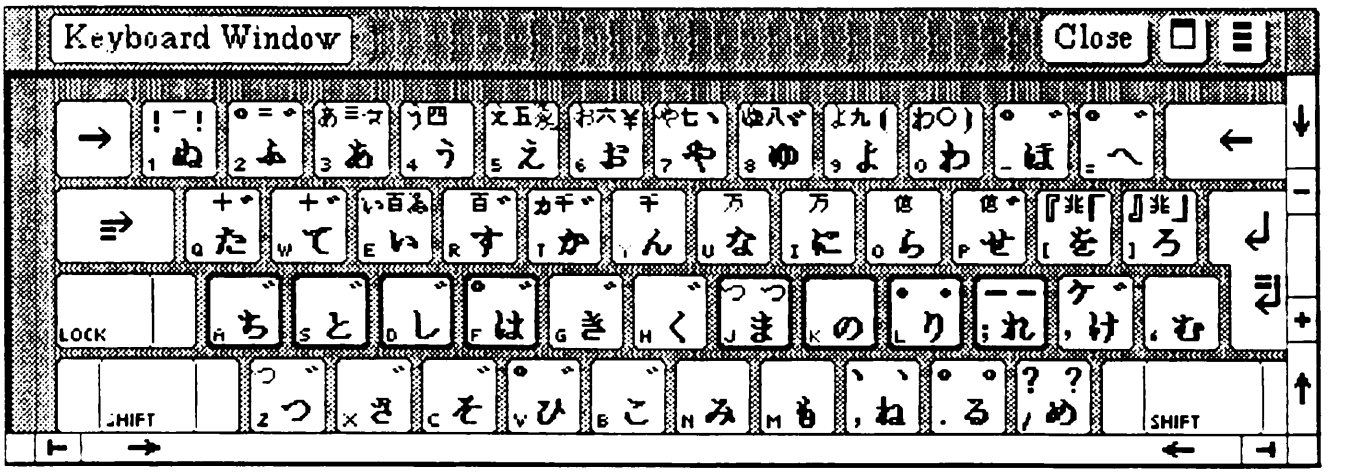


Figure 24-23. Japanese Hiragana keyboard

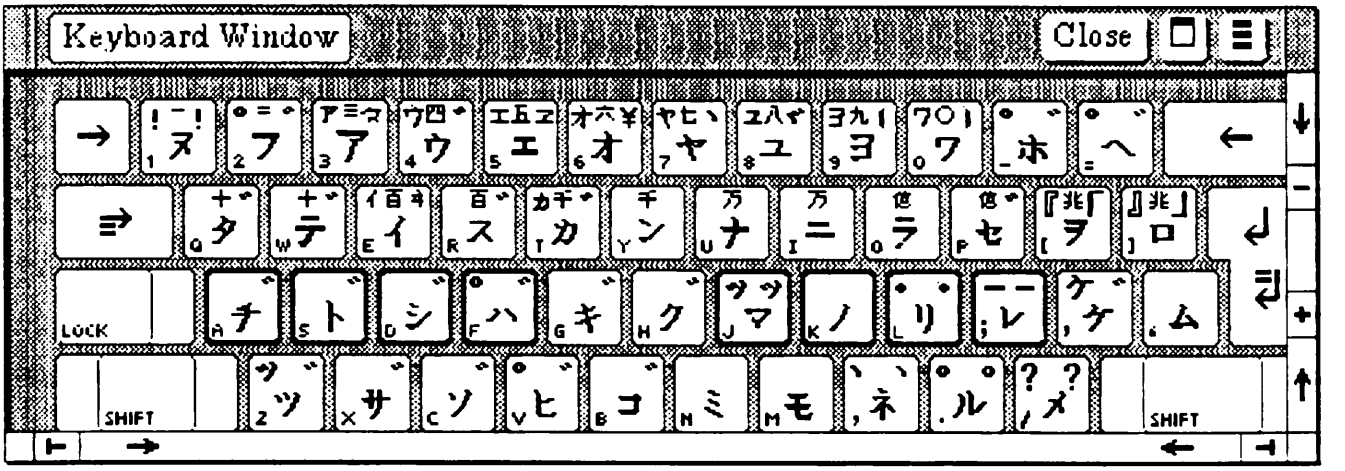


Figure 24-24. Japanese Katakana keyboard

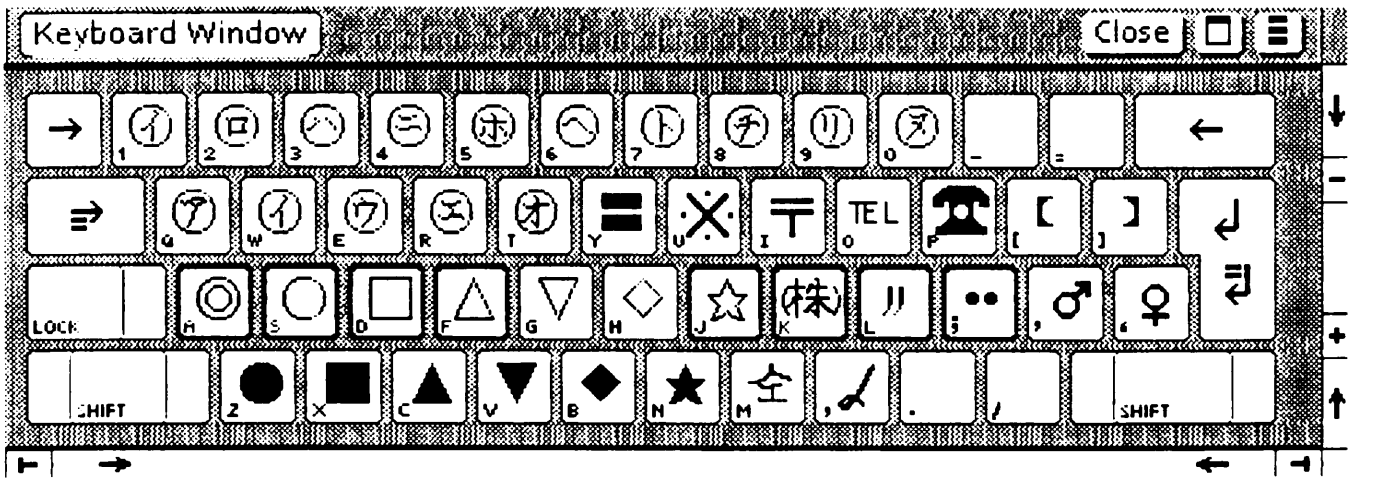


Figure 24-25. Japanese JSyms keyboard

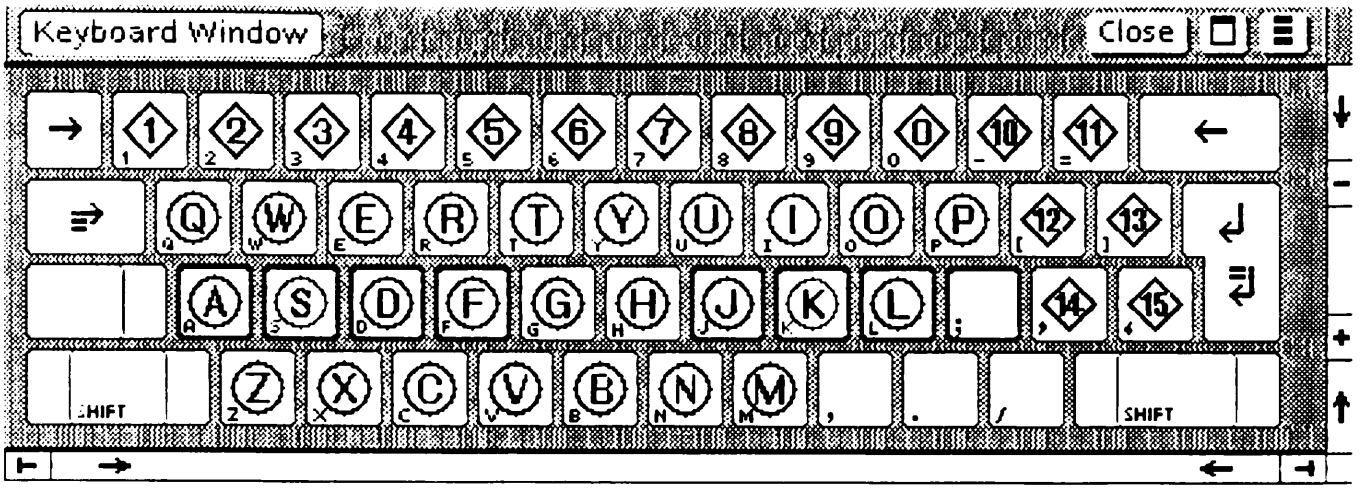


Figure 24-26. **Japanese JSym2 keyboard**

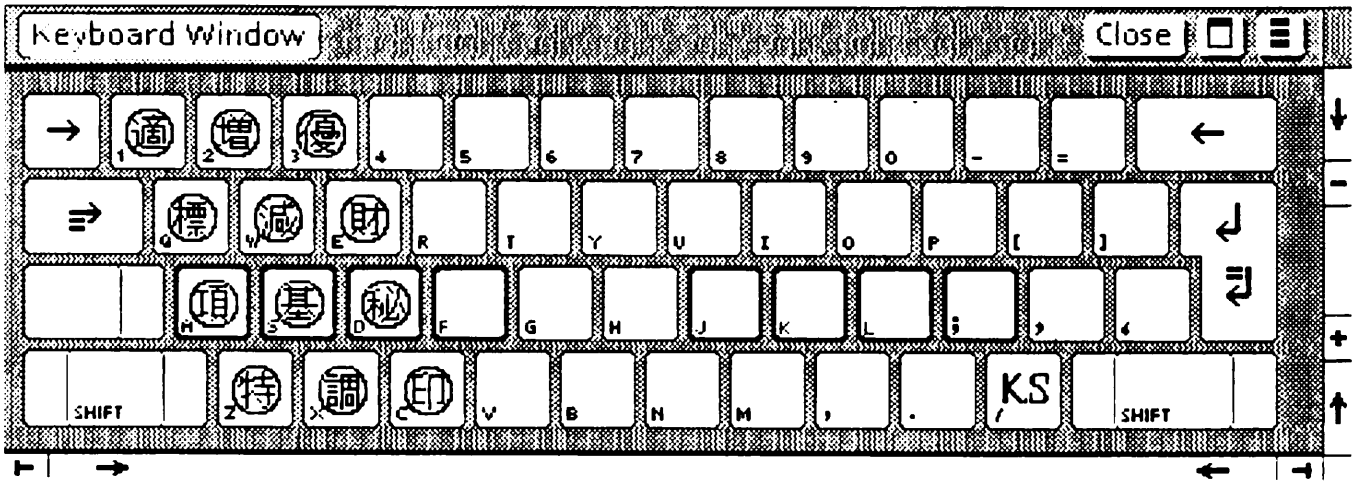


Figure 24-27. **Japanese JSym3 keyboard**

VP Chinese Text Capability Keyboards

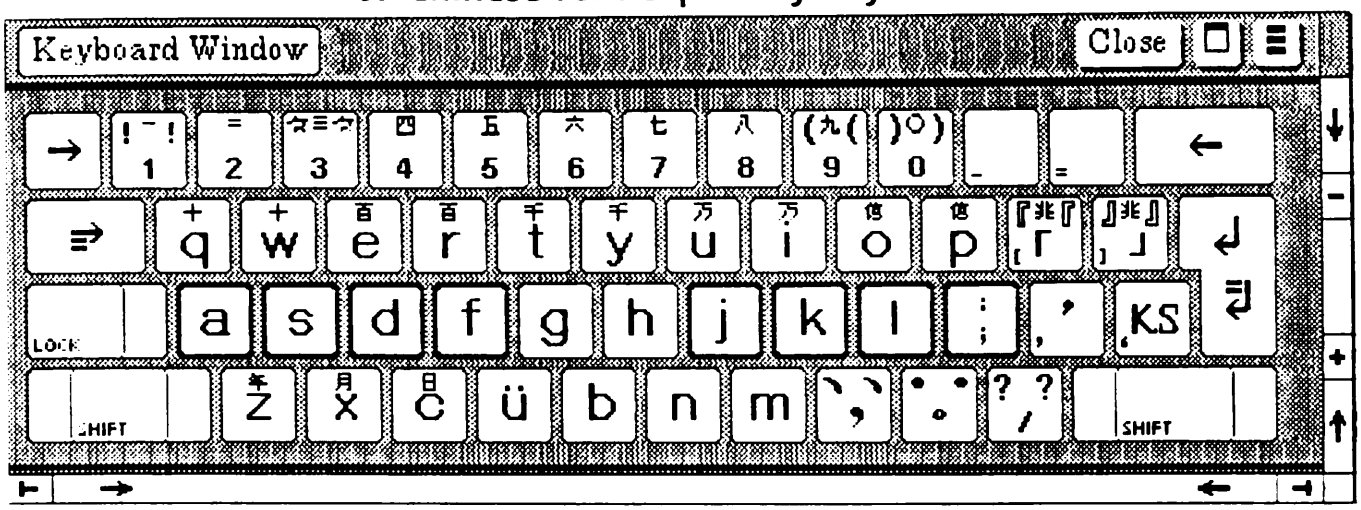


Figure 24-28. Chinese Pinyin-Plus keyboard

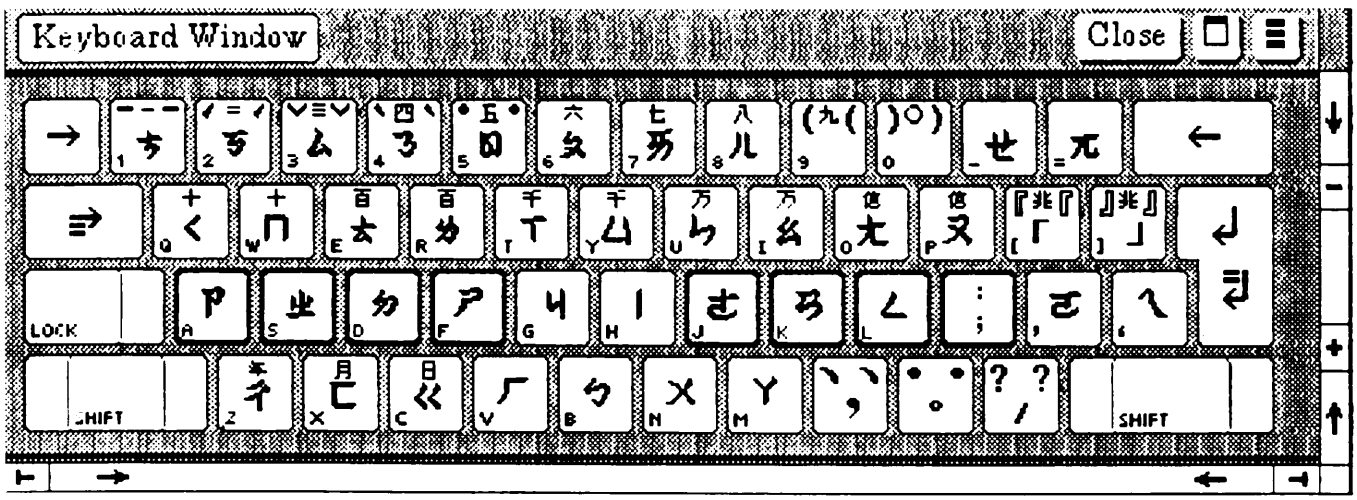


Figure 24-29. Chinese Bopomofo keyboard

25. VP Fonts

6 point regular VP Xerox Modern

7 point bold VP Optima

8 point bold Terminal

9 point Xerox Quartz

10 point italic Titan

10 point regular Letter Gothic

11 point bold italic VP Optima

12 point regular Spokesman

14 point regular Xerox Classic

18 point bold italic Modern

24 point bold Xerox Classic

36 point bold Modern

Features

- Regular, bold, italic, and bold italic styles
- Point sizes from 6 to 36
- Logic and office symbols
- Greek, French, German, and Cyrillic characters
- Mathematic symbols

Description

The 8010 Information System and the 6085 Professional Computer System can support document creation with characters ranging from mathematics and scientific symbols to office and foreign languages. A single document can contain several different font styles, in different sizes, with varying stresses, and graphics representations. Quality documents can be achieved by accurate digitization of the loaded fonts, and the office-quality resolution capabilities of the printer.

The VP Font software series provides 10 font packages that can be licensed and used on the 8010 and 6085 workstations. All of the screen font packages provide an image of 72 dots per inch and are packaged on floppy disks or cartridge tape. The fonts are loaded individually allowing users to license and load only those that are relevant to their needs. The VP series includes the following font packages:

- VP Xerox Classic Fonts
- VP Xerox Modern Fonts
- VP Printwheel Fonts
- VP Terminal Fonts
- VP Helvetica 300 Fonts
- VP PC Emulation Fonts
- VP Times 300 Fonts
- VP Optima 300 Fonts
- VP Univers 300 Fonts
- VP Xerox Quartz Fonts
- VP Xerox Enhanced Modern Fonts
- VP Xerox Enhanced Classic Fonts

VP Xerox Classic

VP Xerox Classic Fonts consist of a digitized representation of a *serif* typeface in 6, 8, 10, 12, 14, 18, and 24 point sizes and regular (medium), bold, and italic style variations. Classic includes a set of Classic Thin fonts in 16, 20, 26, and 30 point sizes, regular (medium) and bold style variations, to

support equations. Classic Fonts may be used on a workstation in conjunction with the other VP Fonts.

The character collection represented in the Classic Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, Italian, and Scandinavian languages. Xerox Classic represents the Greek and Cyrillic alphabet and an extended selection of logic and office characters in several size and style combinations. A comprehensive mathematic character set is also included in 8, 10 and 12 point. Examples of these in Classic 10 point regular are shown below:

① VI ¶ § † ‡ № ₱ £ ₲ ₣ ¢ ƒ ™ ½ ⅓ % ™

⇐⇔⇒∅∪∩⊆⊇⊂⊃⊄⊉⊄⊅⊊ℓ∨∧∀∈∋∃⊨∴∵⊣⊢

± C ∞ ≤ ≥ ≤ ≥ ≡ ‖ ≈ ∫ ⇄ ← √ ⊥ ÷ ∝ ↝ ⊕ ⊗ ⌈ ⌉

VP Xerox Modern

VP Xerox Modern Fonts consist of a digitized representation of a *sans serif* typeface in 6, 8, 10, 12, 14, 18, 24, 30, and 36 point sizes and regular (medium), bold, italic, and bold italic style variations. They may be used on a workstation in conjunction with the other VP Fonts.

The character collection represented in the Modern Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, and Italian. A wide selection of logic, office, and mathematic symbols is provided in a variety of sizes and styles. Examples of these are given below in Modern 10 point regular:

° ƒ ¢ £ ¶ § † ‡ • ₣ VII ⑨ ¥ № ☒ ™ $

± × \ ÷ ~ | ← ↑ + = C ∇ ≐ √ ∫ ∞ ∀ ∉ ⇐ ∴

VP Printwheel

VP Printwheel Fonts consist of a digitized representation of a set of printwheel and typewriter typefaces, principally in 10 and 12 point sizes (12 pitch and 10 pitch, respectively). Regular (medium), bold, italic, and bold italic style variations are included. They may be used on a workstation in conjunction with the other VP Fonts.

Some combinations of typeface, size, and style offer different language character sets.

Table 25-1 lists the fonts in the Printwheel package, and examples of these fonts follow.

Table 25-1. **Printwheel fonts**

	Regular	Bold	*Italic and Bold Italic*
Bold PS	10	10	10
Elite (12 pitch)	10	10	
Letter Gothic (12 pitch)	10	10	
Master (12 pitch)	10	10	
OCR-A (10 pitch)	12		
OCR-B (10 pitch)	12		
Pica (10 pitch)	12	12	
Scientific (12 & 10 pitch)	10/12	10/12	
Scientific Thin	16/18	16/18	
Spokesman (10 pitch)	12	12	
Titan (12 & 10 pitch)	10/12	10/12	10
Trend PS	10	10	
Trojan (10 pitch)	12	12	
Vintage (12 & 10 pitch)	10/12	10/12	

Bold PS - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

Elite - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

Letter Gothic - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

Master - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

OCR-A - 12 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt
Uu Vv Ww Xx Yy Zz ! ? # $ & (
) "

OCR-B - 12 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt
Uu Vv Ww Xx Yy Zz ! ? # $ & (
) "

Pica - 12 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt
Uu Vv Ww Xx Yy Zz ! ? # $ & (
) " "

Scientific - 10 point regular

( ) _ + 1 2 3 4 5 6 7 8 9 0 { } <
>

Scientific Thin - 16 point regular

( ) { }

Spokesman - 12 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt
Uu Vv Ww Xx Yy Zz ! ? # $ & (
) " "

Titan - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) "

Trend PS - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

Trojan - 12 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt
Uu Vv Ww Xx Yy Zz ! ? # $ & (
) "

Vintage - 10 point regular

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

VP Terminal

VP Terminal Fonts consist of a digitized representation of a *sans serif* typeface in 8 and 12 point sizes and regular (medium) and bold style variations. They may be used on a workstation in conjunction with the other VP Fonts and should be used with the VP Terminal Emulation software packages.

The character collection represented in the Terminal Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, and Italian. A selection of office and mathematic symbols is provided. Examples of these are given below in Terminal 12 point regular:

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk
Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv
Ww Xx Yy Zz ! ? # $ & ( ) " "

° ƒ ¢ £ § ¥ $ ± \ ÷ ~ | ← ↑ + =

VP Helvetica 300™

VP Helvetica 300 Fonts consist of font widths files. Font widths render representations of a *sans serif* typeface in 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24 point sizes on the printed page. They support regular (medium), bold, italic, and bold italic style variations.

The Helvetica Fonts collection contains 283 characters. Included are the alphabet and punctuation requirements for U.S. English, French, German, Spanish, and Italian and each character is available in every size, weight, and stress. Additionally, every character found in the Helvetica Fonts character collection has a counterpart in the Times, Optima, Univers, and Quartz Fonts packages. A selection of commonly used symbols and characters is provided. Examples of these are given below in Helvetica 10 point regular:

° ƒ ¢ £ ¶ § † ‡ • ₣ $ ± × \ ÷ ~ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp
Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP PC Emulation

VP PC Emulation Fonts consist of a fixed pitch, 12 point, *serif* typeface in regular (medium) and bold variations. They may be used on a workstation in conjunction with the other VP Font packages and should be used with the VP IBM PC Emulation software.

The character collection represented in VP PC Emulation Fonts includes the full 256 characters represented by the IBM ASCII set. A selection of commonly used office and mathematic symbols and the alphabet is provided. Examples of VP PC Emulation 12 point regular follow:

° ƒ ¢ £ ¶ § • $ ± \ ÷ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP Times 300™

The VP Times 300 Fonts package consists of font widths files. Font widths render representations of a *serif* typeface in 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24 point sizes on the printed page. It can support a regular (medium), bold, italic, and bold italic weight and stress variations.

There are 283 characters represented in the Times Fonts collection; each is available in every size, weight, and stress. Additionally, every character found in the Times Fonts character collection has a counterpart in the Helvetica, Optima, Univers, and Xerox Quartz Fonts packages.

The character collection represented in the Times Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, and Italian. A selection of commonly used office and mathematic symbols and the alphabet is provided. Examples of Times 10 point regular follow:

° ƒ ¢ £ ¶ § † ‡ • Fr $ ± × \ ÷ ~ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP Optima 300™

The VP Optima 300 Fonts package is available as a digitized representation (bitmap files) and font widths files of a *sans serif* typeface. It is available in 10 different point sizes: 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24. It supports a regular (medium), bold, italic, and bold italic weight and stress variations.

There are 283 characters represented in the Optima Fonts collection; each is available in every size, weight, and stress. Additionally, every character found in the Optima Fonts character collection has a counterpart in the Helvetica, Times, Univers, and Xerox Quartz Fonts packages.

The character collection represented in the Optima Fonts includes the alphabet and punctuation requirements of English, French, German, Spanish, and Italian. A selection of commonly used office and mathematic symbols and the alphabet is provided. Examples of Optima 10 point regular follow:

° ƒ ¢ £ ¶ § † ‡ • $ ± × \ ÷ ~ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP Univers 300

The VP Univers 300 Fonts package consists of font widths files. Font widths render representations of a *serif* typeface in 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24 point sizes on the printed page. It supports a regular (medium), bold, italic, and bold italic weight and stress variations.

There are 283 characters represented in the Univers Fonts collection; each is available in every size, weight, and stress. Additionally, every character found in the Univers Fonts character collection has a counterpart in the Helvetica, Times, Xerox Quartz, and Optima Fonts packages.

The character collection represented in the Univers Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, and Italian. A selection of commonly used office and mathematic symbols and the alphabet is provided. Examples of Univers 10 point regular follow:

° ƒ ¢ £ ¶ § † ‡ • Fr $ ± × \ ÷ ~ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP Xerox Quartz

The Xerox Quartz Fonts package is a digitized representation (bitmap files) and font widths files of a *serif* typeface. It is available in 10 point sizes: 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24. It supports a regular (medium), bold, italic, and bold italic weight and stress variations.

There are more than 350 characters represented in the Xerox Quartz Fonts collection. It contains all characters available in Times 300, Optima 300, Univers 300, and Helvetica 300 fonts collections with the addition of the Greek alphabet.

The character collection represented in the Xerox Quartz Fonts includes the alphabet and punctuation requirements of U.S. English, French, German, Spanish, and Italian. Xerox Quartz also contains a large selection of commonly used office, mathematic, and scientific symbols. Examples of Xerox Quartz 10 point regular follow:

° ƒ ¢ £ ¶ § † ‡ • Fr $ ± × \ ÷ ~ | + =

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz ! ? # $ & ( )

VP Xerox Enhanced Fonts

The VP Xerox Enhanced Classic and VP Xerox Enhanced Modern Font families can be used on the 6085 or 8010, instead of the standard VP Xerox Classic and VP Xerox Modern fonts.

- VP Xerox Enhanced Classic Fonts 2.0
- VP Xerox Enhanced Modern Fonts 2.0

VP Xerox Enhanced Classic Fonts

The VP Xerox Enhanced Classic Fonts are true *serif* bitmaps and are available in 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30, and 36 point sizes. The typeface can support a regular (medium), bold, italic, and bold italic weight and stress variations.

Over 700 characters are represented in the VP Xerox Enhanced Classic Fonts collection; each is available in every size, weight, and stress. When compared to the standard Xerox Classic Fonts, the Enhanced Classic Fonts package provides you with a larger array of technical symbols, more graphic and pi characters, and an additional 52 publishing characters. Additionally, every character found in the Enhanced Classic Fonts collection has a counterpart in the Enhanced Modern Fonts package. This makes the two fonts completely interchangeable.

The VP Xerox Enhanced Classic Fonts package is a factorable product that can be loaded incrementally at the workstation using ViewPoint 2.0 software. This allows you to load only those point sizes and stresses that you require.

VP Xerox Enhanced Modern Fonts

The VP Xerox Enhanced Modern Fonts are true *sans serif* bitmaps and are available in 12 point sizes: 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30, and 36. The VP Enhanced Modern typeface can support a regular (medium), bold, italic, and bold italic weight and stress variations.

There are over 700 characters represented in the VP Xerox Enhanced Modern Fonts collection; each is available in every size, weight, and stress. When compared to the standard Xerox Modern Fonts, the VP Xerox Enhanced Modern Fonts package provides you with a larger array of technical symbols, more graphic and pi characters, and an additional 52 publishing characters. Additionally, every character found in the VP Xerox Enhanced Modern Fonts collection has a counterpart in the Enhanced Classic Fonts package.

The VP Xerox Enhanced Modern Fonts package is a factorable product that can be loaded by point size at the workstation using ViewPoint 2.0 software. This allows you to load only those point sizes and stresses that you require.

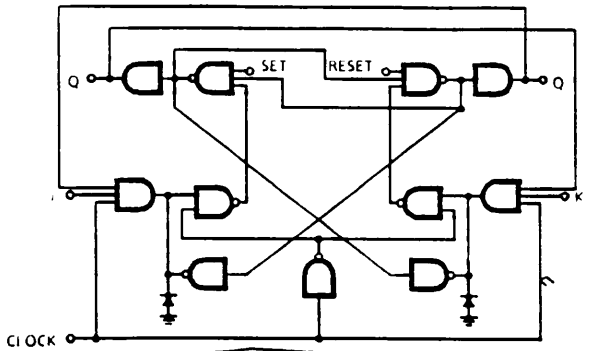
Prerequisites

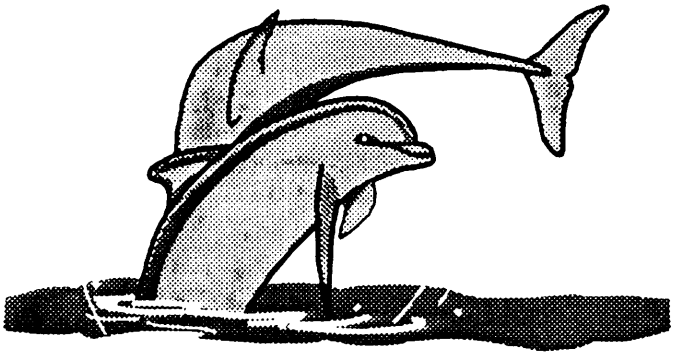
- 6085 Professional Computer System
  or
  8010 Information System
- Xerox ViewPoint Software, 2.0
- Signed Software License Agreement
- Corresponding fonts loaded on the server running Print Service

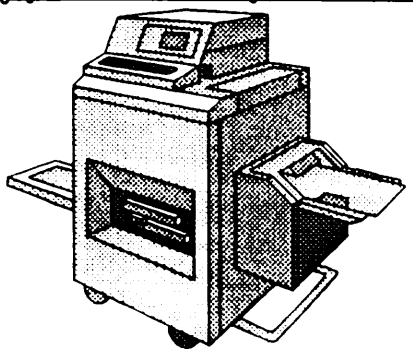
Documentation

VP Series Reference Library

26. Xerox Pro Illustrator







Team EMS Xerox
ENERGY MANAGEMENT SYSTEM
SUNNYVALE

Features

- Basic Objects - Point shapes, line, rectangle, ellipse, circle, square, and nested clusters.
- Chains - Objects drawn with connected segments made of straight lines, arcs and bezier curves. Closed chains can be filled with tints and textures.
- Gravity - Provides "snap" to object control points, making it fast and easy to connect objects.
- Tonality - Tints from 0 to 100%, white to black, plus 12 textures that can be used separately or in combination.
- Geometric transformations - Scale, stretch, rotate, shear, and flip. Optional constraints: rotate and shear by exact degrees, scale by percentage.
- Copy and move - Option to constrain objects to move or copy horizontally or vertically.
- View windows - Multiple editing windows enlarge or reduce the image to virtually any scale. Edits are updated in all views.
- Grids - Linear grid with separate intervals horizontally and vertically. Angular (radiating) grid shows distance and angle. Grid origin can be specified.
- Text - Full power of VP Document Editor, plus alignment aids.
- Measure window - Measure and move objects precisely. Horizontal, vertical, direct distance and angle.
- Cycling softkeys - Command panel. Accelerates changing object properties and system parameters. Softkeys can be customized.
- Quick Art folder - Extensive pre-made art ranging from electronic symbols and decorative borders to arrows, rulers and dingbats. Includes three display fonts.
- Conversion packages - VP File Conversion of IGES Files is an optional software package that converts CAD/CAM drawings to Pro Illustrator. Included with Pro Illustrator is a conversion package which upgrades Basic Graphics frames to Pro Illustrator frames in VP Documents.

Description

Xerox Pro Illustrator is an easy to use, two-dimensional vector illustration package designed for the professional artist, and includes many graphic objects and transformations, measurement tools and layout accelerators, plus a Quick Art folder. The user interface and wide array of electronic tools provide a facility for graphics creation.

Typical applications for this package are forms, diagrams, logos (as shown above), technical drawings and pictorial illustrations for technical manuals, reference guides, promotional materials, and illustrated brochures.

Xerox Pro Illustrator is a licensed application that builds on the Xerox ViewPoint software, and is compatible with the other VP software packages.

Pro Illustrator illustrations

Pro Illustrator graphics are created in a Pro Illustrator frame (similar to a graphics frame). This frame is entered into your document via the special board (letter j). Figure 26-1 shows some examples of Quick Art which can be copied into a frame.

Cycling softkeys

Cycling softkeys appear when you place your cursor inside a Pro Illustrator frame and click the left mouse

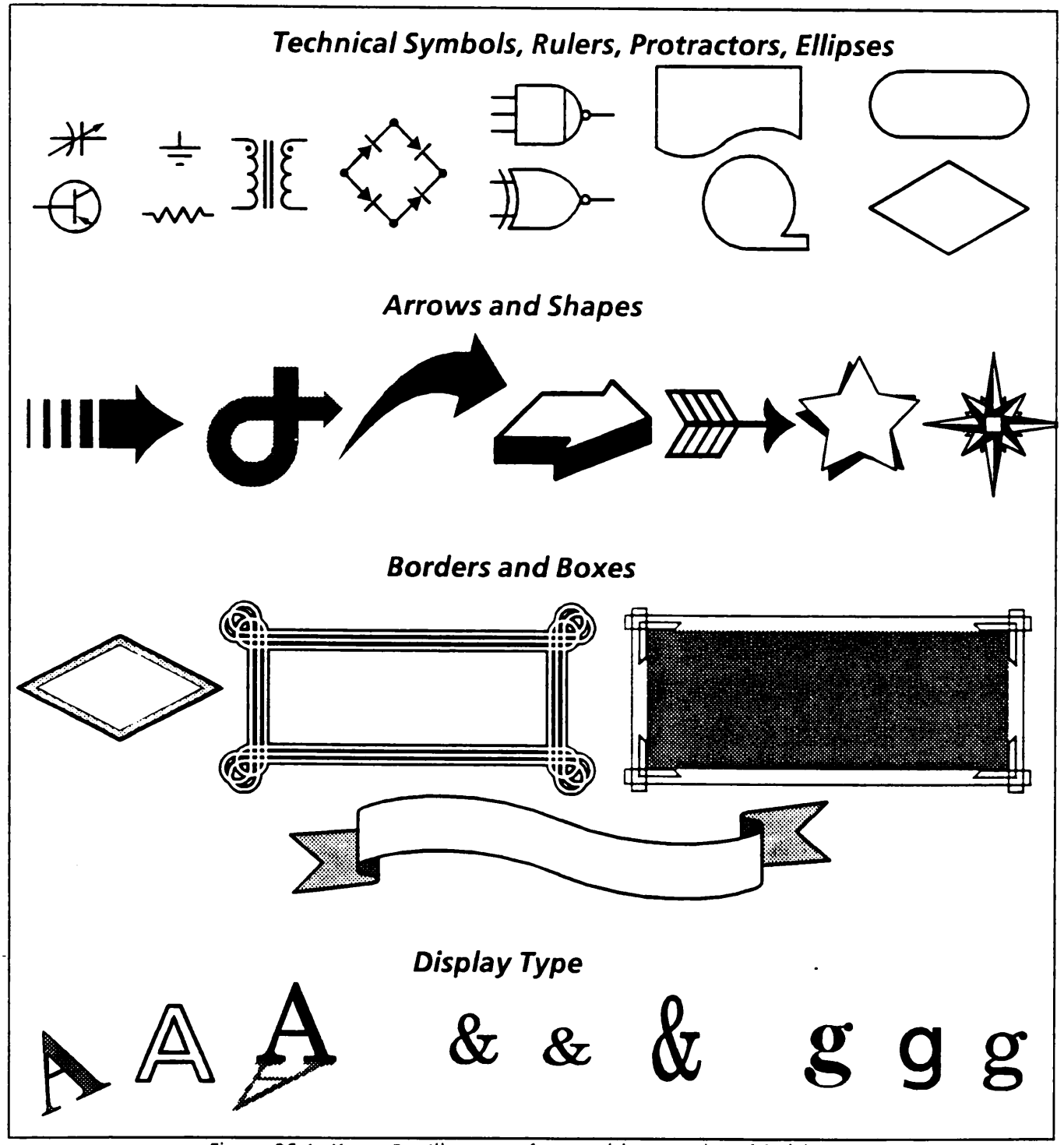


Figure 26-1. Xerox Pro Illustrator frame with examples of Quick Art

button. These keys correspond to the function keys across the top of your keyboard. Actions are performed by selecting commands from the softkeys menu, and using the mouse buttons to draw or edit.

Each time you select a command from one of the softkeys, the system gives you a set of choices that apply to that option. These choices are displayed on the last six softkeys which are called changing softkeys.

The softkeys menu is similar to that of VP Free-Hand Drawing and XPI Raster Editor but is much more robust. Figure 26-2 is an illustration of the softkeys for Pro Illustrator.

Objects and properties

Xerox Pro Illustrator is made up of combinations of the following objects.

- Points
- Straight Lines
- Curves and arcs
- Rectangles (includes squares)
- Shapes and polygons
- Ellipses (includes circles)
- Text

Objects have a set of properties that you can control. For example, you can select the following properties for a line: Pattern, Line Width, Line Tint, and End 1 and End 2 which give the size and shape of the two end points.

Each softkey has a maximum of five choices. You can customize the softkeys so they display the choices you use most often. The object property sheet contains all the available choices for all objects.

Constraints are special softkey choices to help you draw objects more easily and accurately. Constraints are available only on softkeys (for example, horizontal, vertical, 45 degree lines, and rectangles that are square), not on the object property sheet.

Chains

You can draw shapes made up of combinations of straight lines, single and double curves, and arcs. These shapes are drawn using a feature called chains. All segments can be linked together to make open and closed chains. A closed chain is a shape made up of chain segments which you can fill with tints and textures (see illustration of Dolphin on page 1).

Text

Pro Illustrator drawings can contain text using a text frame. These text frames include features such as separate inner margins on all four sides, rectangle properties, and special alignment points. This text is created and edited using the VP Document Editor.

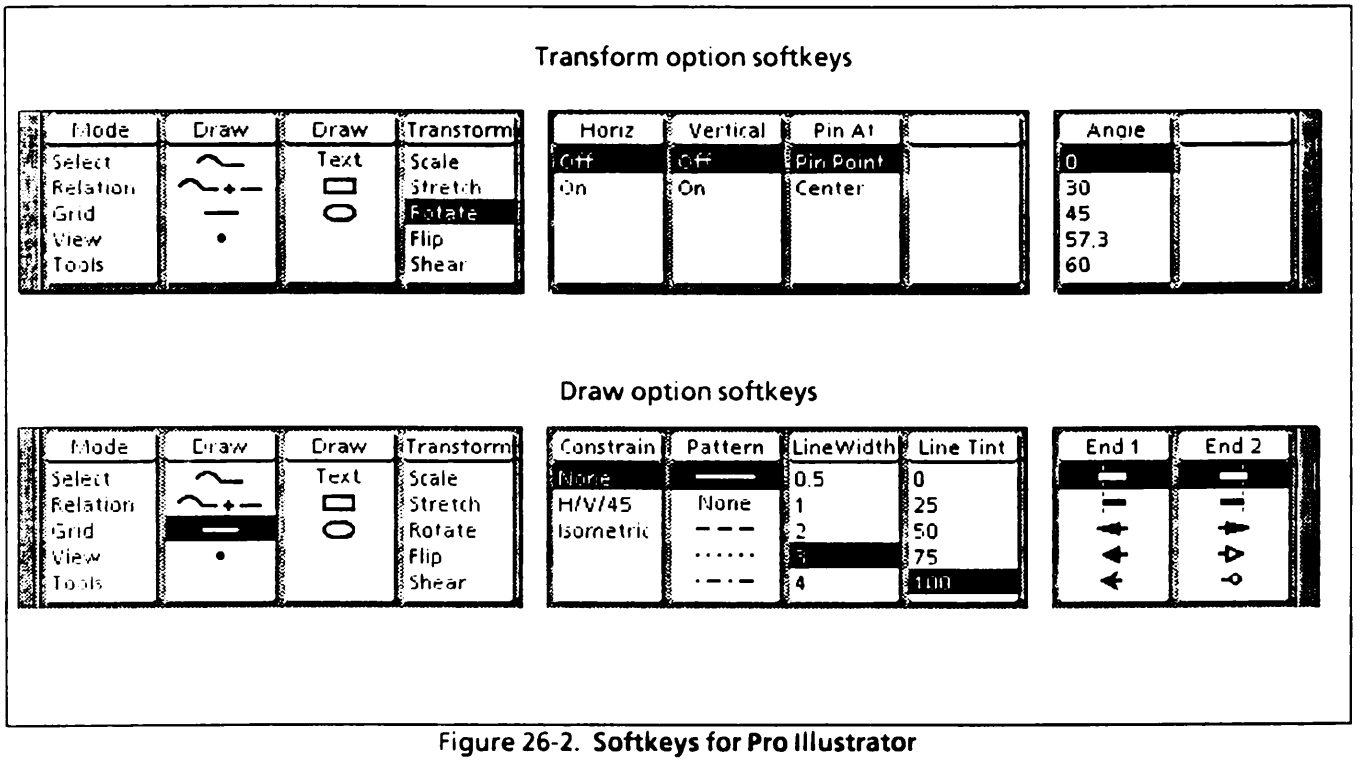


Figure 26-2. **Softkeys for Pro Illustrator**

Tools

Xerox Pro Illustrator software provides many tools for the creation and editing of your illustrations.

View windows

Using the View Window feature you can create multiple views of an illustration. These views allow you to work at varying locations and scales (zooming in for enlargements and zooming out for reductions) within your illustration. When you change the illustration in one View Window, all of the View Windows are updated. You can have any number of View Windows open at a time. View Window also has special commands that are not available in the main document view of a Pro Illustrator frame. These commands are:

- Center - Places the location of any left mouse click including the guide point of an object in the center of the View Window. This allows you to bring any location in the Pro Illustrator frame to the center of the View Window.
- Reduce - Makes the scale of the view smaller (zooms out).
- Enlarge - Makes the scale of the view larger (zooms in).
- Set scale - Accesses a pull-down menu of view scales that you select to change the scale of the illustration in the View Window.
- Close - Deletes the View Window. To see the view again, you must recreate it.

Layout tools

Xerox Pro Illustrator provides a variety of electronic tools to help you position objects within the frame and align objects with respect to one another. These layout tools include:

- Gravity - Allows you to align objects with respect to one another. Gravity causes object control points to act like magnets; when you move the cursor close to a control point, gravity "snaps" the cursor to the control point. Objects can be aligned without having to make precise mouse movements.
- Horizontal and vertical constraints - Allow you to COPY or MOVE objects horizontally or vertically. When the horizontal constraint is on, the system responds only to the horizontal portion of mouse movement and the vertical portion is ignored. The same applies to the vertical constraint.
- Grids - There are two types of grids to help you draw, align, and transfer objects. These grids are the linear (Cartesian) grid which shows horizontal and vertical positions, and the angular (polar) grid which shows distance and angle from a point of origin. The grids appear as dot patterns. When the linear or angular grid is turned on, the grid points have gravity control and attract the cursor ("snap"). The grid origin can be changed to any location within the frame, and the horizontal and vertical spacing of the grid can be set separately.
- Cross hairs - There are two types of cross hairs which match the style of grid. The linear cross hairs (intersecting horizontal and vertical lines), and angular cross hairs (an angled line and a circle).

Measuring tools

Xerox Pro Illustrator contains measuring tools which include Frame Units and a Measure Window.

- Frame Units - Pro Illustrator provides the following units of measure: Pica, Point, Didot (the unit of European point measurement), inch, Mil (1/1000 of an inch), centimeter, millimeter and mica (1/1000 of a centimeter). These units are set separately for each frame and apply to the frame grid and all objects within the frame.
- Measure Window - This is used to measure positions and sizes and to move objects and control points. The Pin Point is the origin of measure. Measures shown are horizontal distance (X), vertical distance (Y), direct distance in any direction (D), and angle.

Quick art

A folder of quick art comes with the Xerox Pro Illustrator software. This folder contains:

- Arrows and Compass Points
- Banners, Boxes & Flashes
- Borders
- Brackets, Braces & Numbers
- Chemicals
- Electronic
- Ellipses and Isometric Aids
- Flow Chart
- Font Sausalito
- Font Xerox Classic
- Font Xerox Modern
- Forms Elements
- Office Layout
- Print Level Test
- Protractors
- Rulers
- Shapes, Stars, and Dingbats
- Tints, Textures, Points, and Lines.
- Quick Art Contents and Size

Prerequisites

6085 Professional Computer System or

8010 Information System

Xerox ViewPoint 2.0 Software

VP Document Editor 2.0 Software

Signed Software License Agreement

Services 11.0 Print Service with Complex Printing activated and a minimum of 1.5 Mb of memory is required.

Pro Illustrator requires a minimum 20 Mb of storage and 1 Mb of memory.

The recommended configuration for a 6085 Professional Computer System is 40 Mb storage and 1.6 Mb of memory. For IGES conversion or complex illustrations, 2.6 Mb of memory is required. For good performance, a Processor Control Store Memory Kit 4 Kw is strongly recommended.

The recommended configuration for an 8010 Information System is 42 Mb of storage and 1.5 Mb memory.

Also available for both the 8010 and 6085 workstations is the Xerox Pro Illustrator Enhancement option. It is recommended that this option be used unless the user cannot give up the additional 3,200 disk pages required by this option. The enhancement option is available through the installer scripts.

Documentation

VP Series Training Guide

VP Series Reference Library

A. Glossary

Access List:
A list of users and/or groups of users who have been granted specific rights to a particular computer, application, or service.

Alternate Keyboard:
Families of characters divided into groups that allow switching of the meanings of one keyboard for another (for example, Greek or French).

Application:
A software package that is loaded individually onto the workstation from floppy disks or cartridge tape, or downloaded from a file server.

ASCII (American Standard Code for Information Interchange):
A digital code set which represents each character of the standard typewriter keyboard as a 7-bit digital code. It is used for information interchange among data processing systems, data communication systems, and associated equipment.

Asynchronous Communication Protocol:
Optional software running with the External Communication Service (ECS) that supports compatible information exchange between a workstation, with emulation software, and a TTY-oriented host.

Authentication:
Verification of the user's access rights.

Automatic Fill-in:
The process in which the Document Editor evaluates a fill-in rule and automatically places the result in the field or table column that contains the rule.

Auxiliary Menu:
A set of commands that appear on the display when the auxiliary menu is selected. Auxiliary menus are located on the desktop and in every window.

Background Processing:
The automatic execution of a task such as, paginating or printing, that allows other operations to be performed simultaneously.

Bitmap Illustration:
A collection of screen pixels which can be shaded, moved, copied, and edited using the VP Free-Hand Drawing application.

Boot:
The act of restarting the system software by pressing the B RESET button on the front of the 6085/8010 processor.

BSC (Binary Synchronous Communication):
A data link control procedure developed by IBM. A variation of synchronous data communication protocol that includes specific control characters and procedures for controlling the establishment of a valid connection and the transfer of data. Also called bisync and bisynchronous.

Caret:
The flashing inverted v that indicates where text will be entered. Each character that is typed appears at the point of the caret.

Cartridge Tape:
A magnetic medium used for data storage and software loading onto the workstation or server.

Cursor:
The pointer displayed on the screen that corresponds with the movements of the mouse. The normal cursor shape is an upward-pointing arrow that changes shape to indicate which action is being performed.

Desktop:
Term used for the workstation display screen. It represents an electronic version of the office desk.

Distribution List:
A list of recipients for electronic mail represented by a user group registered in the Clearinghouse Service.

ECS (External Communication Service):
This service provides data communication protocol translation and controls the RS-232-C ports on the server or on a Communication Interface Unit (CIU).

Electronic Printer:
Transfers a digital image to paper by producing pulses of light, which are cast onto an electrically charged photoreceptor.

Emulation:
The process by which workstations behave like other types of terminals. Emulation provides access to other host systems in a way familiar to users of that system.

Ethernet:
The high-speed local area network that provides the main communication vehicle of the Xerox Network System.

Field:
1. An object that reserves a position in a document for later manual or automatic entry of data.
2. In Data Capture, a single unit of data in a column of source data.
3. In List Manager record files, a position reserved for entry of a particular kind of data related to a record.

Floppy Disk:
A flexible removable disk medium used for storage of data and loading of software onto the workstation and server.

Font:
Typographical design applied to a collection of letters and graphic symbols that share certain characteristics such as style, weight, and stress.

Formatting:
The process by which the user determines exactly how text in a document, including page layout, will appear. (Examples: **Bold**, *Italic*, Underlined.)

Frame:
A reserved area in a document that can contain text, graphics, tables, and equations.

Graphics Transfer Document:
A special graphics template that contains objects that can be copied into documents.

Grid:
In a graphics frame or canvas, a background of evenly spaced horizontal and vertical points used to assist in the placement of objects.

Icon:
A pictorial representation of a familiar office object (document, folder, and printer) displayed on the workstation screen.

Local Printer:
A printer attached directly to the workstation and available only to users of that workstation.

Logoff:
The process of ending a ViewPoint session on the workstation.

Logon:
The process of beginning a ViewPoint session on the workstation.

Main Memory:
Usually the fastest storage device of a computer and the one from which instructions are executed.

Menu:
Commands that are displayed on the screen and can be selected with the mouse. There are two kinds of menus: those which are at the top of documents, property sheets, and options sheets; and those that appear only after the auxiliary menu is selected with the mouse.

Mouse:
A small box with two buttons that is connected to the keyboard. It is used for positioning the caret and selecting text, graphic objects, icons, and menu items.

Network:
Physical and logical connection of system elements. A network allows information to flow between workstations and servers.

Network Architecture:
The philosophy and organizational concept for enabling devices at multiple locations to communicate over common carrier transmission facilities. The network architecture specifies the processors, workstations, and terminals; and it defines the protocols and software that must be used to accomplish accurate data communications.

Option Sheet:
A window that is used to specify the parameters for an action. For example, the Printing option sheet allows the user to specify how many copies to print and whether to print specified pages or all pages.

Page Break Character:
A structure character entered from the keyboard. The page break character forces a new page or new column to be generated.

Page Format Character:
A structure character used to set the formatting properties of a document. The page format character controls the appearance of page

layout, page headings, page footings, and page numbering.

Pagination:
The process in which the Document Editor turns a long scroll of text into individual pages. Pagination also determines the placement of text, frames, and other objects on the pages of a document.

Pilot:
The operating system used on Xerox servers and 6085 and 8010 workstations.

Print Device:
The actual device that executes the Interpress master and transfers the image to the medium.

Property Sheet:
A window that is used to set the descriptors or attributes of an object such as an icon, a string of text, or a graphic object.

Protocol:
Formal set of rules governing the format of data and control information exchange between two communicating devices.

Reboot:
The process of restarting the software loaded on the workstation by pressing B RESET.

Remote Access:
Communication with a data processing facility through a data link.

Rigid Disk:
A hard disk medium used as the main storage device for software and data on workstations and servers.

RS-232-C Port:
The physical connector between the server or workstation and the data communication equipment (usually a modem).

SDLC (Synchronous Data Link Control):
An IBM communications line discipline or protocol associated with System Network Architecture (SNA).

Select:
The process of placing the pointer and pressing the mouse button to highlight text, icons, graphic objects, menu items, and properties.

Select-adjust Method:
For graphic objects, icons, or text, a method of selecting several objects at one time. The first object is selected with the left mouse button, and successive objects are each selected with the right mouse button.

SNA (System Network Architecture):
The description of the logical structure, formats, and protocols of operation sequences for transmitting information units through the communication system. SNA was developed by IBM for distributed processing networks.

System Administrator:
A user, with specific network privileges, who is responsible for setting up and maintaining the services and the organization of network services.

System Element:
Any computer on a network, regardless of role. It includes workstations and servers.

System-created Dictionary:
The default dictionary provided by an application such as Index Generator or Spelling Checker.

3270 Communication Protocol:
Optional software that runs with the External Communication Service (ECS). 3270 Communication Protocol supports compatible information exchange between workstations, with 3270 emulation software, and an IBM host.

Transmission:
The sending of data to one or more locations or recipients.

User Profile:
A text file that allows the user to customize the appearance and functionality of his or her desktop.

Virtual Memory:
A mechanism (hardware and software) that provides the illusion of a large memory by combining a small memory with a large disk. This technique permits the user to treat secondary storage as an extension of main memory, thus giving the virtual appearance of a larger main memory.

Virtual Terminal Circuits:
Allow interactions to occur between various network citizens for many applications that require asynchronous ASCII communication.

Window:
The area on the display screen in which the contents of an opened object are displayed.

XModem:
An asynchronous communication protocol used

personal computers and mainframes, and as well as between personal computers and the Interactive Terminal Service (ITS).

XNS (Xerox Network System):
A combination of hardware and software that unites specialized devices into a network in which the capabilities of a variety of workstations are enhanced by distributed services.