



# **VP TERMINAL EMULATION OF IBM 3270**

***VP Series Training Guide  
Version 1.0***

*This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of this publication.*

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# 1. Introduction

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In today's office, professionals frequently use information stored in databases on mainframe computers. Such information may range from payroll data to the totals on last month's sales orders. Since these databases may be rather large and shared by many users, the information cannot be stored on your workstation. Instead, the information is stored in a mainframe computer and accessed through terminals that communicate directly with that computer.

You can access data stored on a mainframe computer without leaving your workstation. This process is called **terminal emulation**. Your workstation can emulate International Business Machines (IBM) 3270, Digital Equipment Corporation (DEC) VT100, and Teletype Model 35 terminals.

You may want to use your workstation's terminal emulation capabilities if

- You have easier access to a workstation than to a 3270 terminal
- You want to have more than one session on the same host computer at the same time
- You want to have several sessions with several computers at one time
- You want to transfer information from the mainframe to your workstation, or vice versa

This study guide shows how your workstation can be used to emulate a 3270 terminal. It is designed to provide you with the general concepts and practice necessary to exchange information in your workstation documents with information on the mainframe computer.

When you complete this self study guide, you should be able to:

- Retrieve a 3270 icon from the directory
- Set properties for the 3270 icon
- Start an emulation session
- Enter data in the 3270 emulation window
- Use the main and alternate 3270 keyboards
- Transfer information to and from a host computer
- Stop an emulation session

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## Getting started

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To complete this self study guide, you need a networked 6085 Professional Computer System or 8010 Information System.

In order to use 3270 emulation, the External Communication Service must be running on a Xerox network server, and the 3270 emulation software must be running on your workstation. Figure 1-1 shows the network configuration necessary to run 3270 emulation. These are special options that are not purchased with every workstation and network.

You need a logon account to communicate with the mainframe computer. This logon account should consist of your name and a password. If you do not have a logon account, ask your System Administrator about getting one.

You also need a terminal emulator icon. Ask your System Administrator for the name of the terminal emulator icon for the mainframe that you wish to use. Additionally, you need to know the organization and domain of the icon.

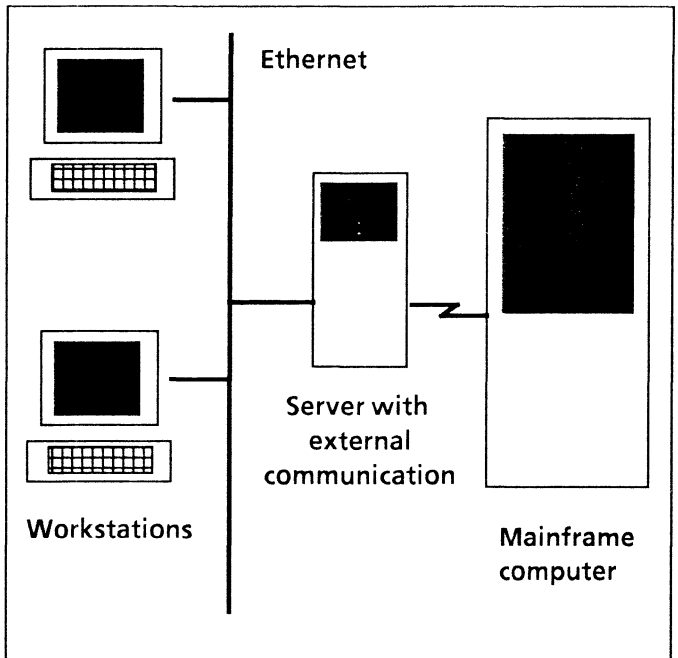


Figure 1-1 Network configuration

If you wish to transfer information from a host computer to a workstation document, the VP Document Editor software must be running on your workstation.

**NOTE:** This study guide does not teach you how to use the software available on the host computer. It focuses on how to make your workstation emulate a 3270 terminal. For information on using host software, check with your System Administrator.

To verify that 3270 emulation software is installed and running on your workstation, open the application loader, which is located in the workstation divider of the directory. If "IBM 3270 Emulation" is not displayed when you open the application loader, or if its status is set to Idle, refer to the "Application Loader" chapter of the "Xerox ViewPoint" self study guide.

This self study guide is divided into chapters. Each chapter introduces a number of related concepts. When these concepts involve on-line practice, practice exercises are included. At the end of your training, you review all the skills taught with a final progress check.

When a term that is new or unique is introduced, it is italicized and placed in boldface type. You can find a more detailed explanation of each term in the "Glossary" tab of the VP Series reference library.

Beginning with this introduction, continue through each chapter sequentially, at your own pace, until you have mastered the skills taught. When it becomes necessary to put your training aside, stop the emulation session (refer to Chapter 7). Log on again when you are ready to resume your training.

Your training should take approximately two hours.

While you are completing this self study guide, it is advisable that you have the tab titled "VP 3270 Emulation" in the VP Series reference library available for easy reference.



## 2. Retrieving a 3270 icon

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### Overview

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Before you can communicate with a mainframe computer, you need to place a 3270 emulator icon on your desktop.

Each 3270 emulator icon represents an access path from your network to one or more host computers. If an icon is associated with a phone, any host can be dialed up. However, if the icon is associated with a specific host computer, only that computer can be accessed.

When you complete this chapter, you should have a 3270 emulator icon on your desktop that you can use in subsequent chapters of this self study guide.

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### Retrieving the 3270 icon

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In the following exercise, you retrieve the 3270 icon from the directory.

1. Open the directory icon.
2. Open the network divider.

You will need the organization, domain, and name of a 3270 emulator icon. Get this information from your System Administrator.

3. Open the organization divider.

#### 4. Open the domain divider.

A list of dividers appears (refer to Figure 2-1).

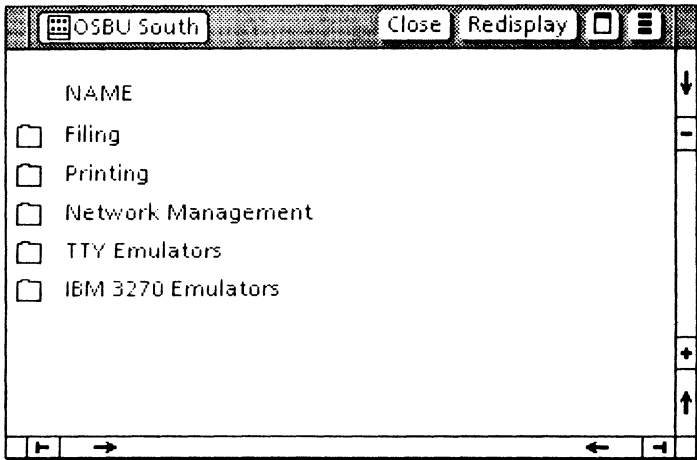


Figure 2-1 IBM 3270 emulator divider

If you do not see the IBM 3270 emulator divider, the 3270 emulator software may not be installed and running. Refer to the sub-tab titled "Application Loader" in the VP Series reference library for more information.

**5. Open the IBM 3270 emulator divider.**

A list of 3270 emulator icons appears (refer to Figure 2-2 for an example).

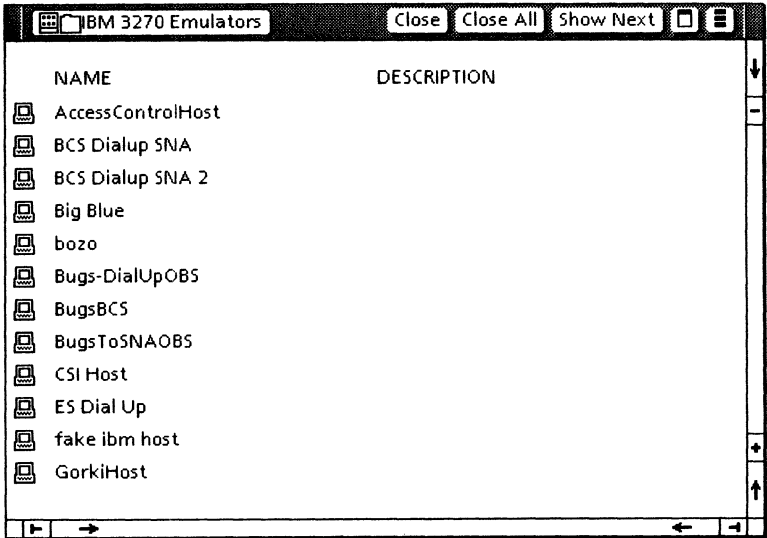


Figure 2-2 IBM 3270 emulator icons

6. Select the 3270 emulator icon you wish to use. If you do not find it listed, see your System Administrator.
7. Copy the icon to your desktop.

## Summary

In this chapter, you studied how to retrieve a 3270 emulator icon from the directory.

Do not delete the icon from your desktop. It will be used in the following chapters.

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### 3. Setting properties for a 3270 icon

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#### Overview

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The 3270 property sheet is used to display and modify the properties of the 3270 emulator icon.

When you complete this chapter, you should be able to access the 3270 property sheet.

#### Accessing the 3270 property sheet

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In the following exercise, you open the 3270 property sheet and study its contents.

1. Select the 3270 emulator icon.
2. Press <PROP'S>.

The property sheet appears (see Figure 3-1).

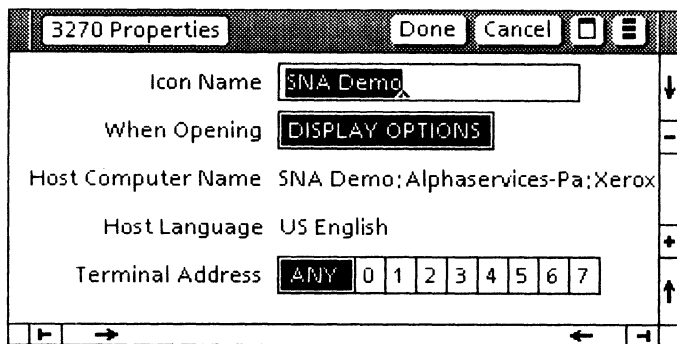


Figure 3-1 3270 property sheet

3. **Study** the properties. They are discussed below.
4. **Change** the Terminal Address property if necessary.
5. **Select [DONE]** on the property sheet when you have finished studying the properties.

The following is a list of the available properties. For additional information on these properties, refer to the tab titled "VP 3270 Emulation" in the VP Series reference library.

**Icon Name**

Used to change the name of the emulator icon on your desktop. This allows each 3270 icon to be uniquely named.

**When Opening**

Selecting [DISPLAY OPTIONS] causes the option sheet to be displayed when the 3270 icon is opened, allowing you to change options before starting the emulation session. If the 3270 icon is opened with [DISPLAY OPTIONS] not selected, the 3270 option sheet does not appear. In this case, the properties set on the 3270 property sheet are used in the emulation session.

**Host Computer Name**

Lists the name of the host computer as entered in the Clearinghouse Service. This name cannot be changed.

**Host Language**

Allows the 3270 emulator to translate codes sent from the host computer and interpret the 3270 keyboard keys to emulate one of the 27 supported language keyboards. This property cannot be changed in the property sheet, since it is controlled by the host computer.

## Terminal Address

Specifies the terminal (device) address used when establishing a connection to the host. If the terminal address is unimportant, selecting [ANY] requests the first available address to be assigned.

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## Summary

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In this chapter, you studied how to access the 3270 property sheet.

If you need more practice, complete the exercise again. Do not delete the 3270 emulator icon from your desktop.

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## 4. Starting an emulation session

### Overview

Now that you have retrieved a 3270 emulation icon and viewed its property sheet, you are ready to start an emulation session.

When you complete this chapter, you should be able to access the 3270 option sheet and open the emulation window.

### Accessing the 3270 option sheet

In the following exercise, you access the 3270 option sheet.

1. Select the 3270 emulator icon.
2. Press <OPEN>.

The 3270 option sheet (refer to Figure 4-1) has the same contents as the 3270 property sheet, except for the Icon Name and When Opening options.

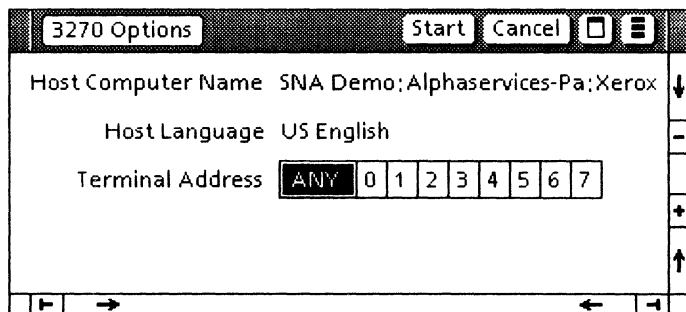


Figure 4-1 3270 option sheet

Settings defined on the option sheet are used only for the current emulation session. Closing the emulation window resets the options to the settings previously defined on the 3270 property sheet.

3. **Change** the Terminal Address option if necessary.
4. **Select** [START] on the option sheet.

After [START] is selected, an attempt is made to connect with the host computer. If a connection is made, the emulation window opens. If any problems occur with the External Communication Service or host computer, an error message appears, and the connection to the host computer is not made. If you fail to make a connection, report the problem to your System Administrator and try again later.

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## The emulation window

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The emulation window (refer to Figure 4-2) is divided into two areas, the *screen data area* and the *screen status area*.

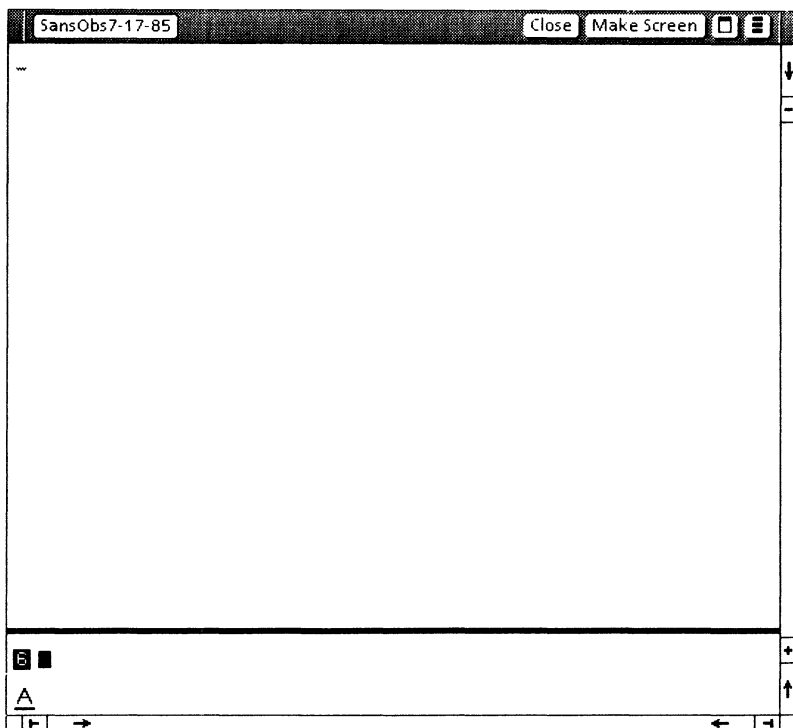


Figure 4-2 3270 window

The large central area is the screen data area, which consists of 24 lines of 80 characters each. This area is used to exchange data with the host.

The small area beneath the screen data area is the screen status area, which contains all the status indicators and messages. The graphic figures and messages in this area are identical to those used in an actual 3270 display. Their meanings can be found in Appendix A of the *IBM 3270 Information Display System* component description.

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## Summary

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In this chapter, you studied how to access the 3270 option sheet, which opens the emulation window.

If you need more practice, complete the exercise again. Keep the emulation window open. You will use it in the next chapter.

## 5. Using the 3270 keyboard

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### Overview

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Whenever the selection is in the 3270 emulation window, your workstation keyboard is redefined as a 3270 keyboard. This gives you full access to all characters available on the 3270 keyboard. The function keys across the top of your keyboard are also redefined.

When you complete this chapter, you should be able to access the redefined function keys as well as the main and alternate 3270 keyboards.

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### Accessing the function keys

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In the following exercise, you access the function keys.

1. **Log on** to the host computer, using your assigned name and password.
2. **Point** the mouse inside the text area of the emulation window.
3. **Click** the left mouse button.

When you select inside the emulation window, your keyboard is redefined to a 3270 keyboard. The function keys are also redefined.

The function key window appears (refer to Figure 5-1). <RESET> is used like the actual RESET key found on the 3270 terminal. <3270> and <ALT> are used to access the 3270's two keyboards. The four keys on the right control the cursor.

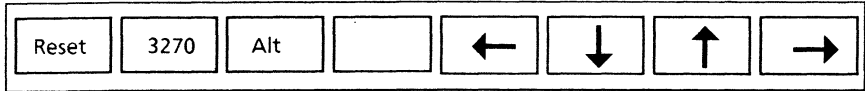


Figure 5-1 3270 function keys

## Accessing the 3270 keyboards

There are two keyboards available in 3270 emulation. In the following exercise, you view these two keyboards.

1. Hold down <KEYBOARD>.
2. Press the function key corresponding to <SHOW>.

The keyboard window appears, showing the main 3270 keyboard (refer to Figure 5-2).

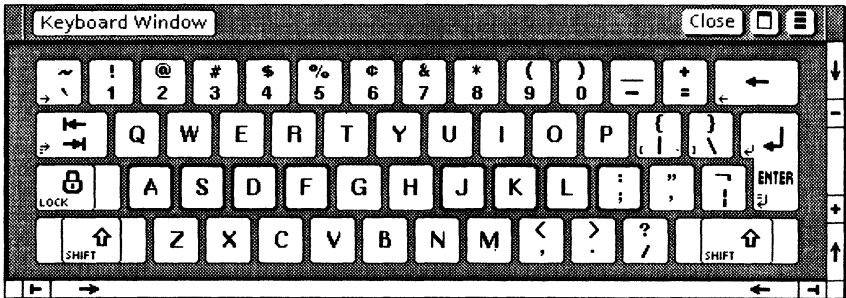


Figure 5-2 3270 main keyboard

3. Release <KEYBOARD>.

4. Press the function key corresponding to <ALT>.

The keyboard window is now displaying the alternate 3270 keyboard (refer to Figure 5-3).

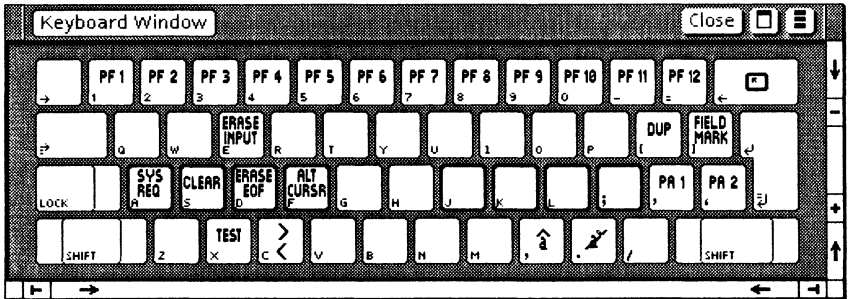


Figure 5-3 3270 alternate keyboard

5. Press the function key corresponding to <3270>.

You are back to the main 3270 keyboard.

## Using the alternate keyboard

When typing from either keyboard, you can easily access the other keyboard for a few characters.

In the following exercise, you access the alternate keyboard.

1. Hold down the function key corresponding to <ALT>.

The keyboard window is now displaying the alternate keyboard.

2. Press <f>. (This key changes the shape of the cursor.)
3. Release the function key corresponding to <ALT>.

As you can see from the keyboard window, the keyboard interpretation is back to the main 3270 keyboard.

If you press one or more keys while holding down the appropriate key, the keyboard interpretation is changed temporarily.

4. Select [CLOSE] in the keyboard window.

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## Using the cursor

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Text entered into the window appears at the cursor position. The cursor can be moved by using the mouse to select inside the window, or by the cursor control keys.

The current selection must be in the emulator window for text to be entered. The current selection is set in the emulation window by selecting inside the emulation window. When the current selection is in the window, the cursor is solid. Otherwise, the cursor is gray.

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## Summary

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In this chapter, you studied how to:

- Access the redefined function keys for 3270 emulation
- Access the main and alternate 3270 keyboards

If you need more practice, complete the exercise again. Keep the emulation window open. It will be used in the next chapter.



## 6. Exchanging data with a host computer

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### Overview

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Your workstation provides an easy means of transferring information between a document and a host computer. For example, you can transfer a list of commands from a document to the host for execution, or you can transfer data from a document to be stored in a database on the host computer. Commands and data can also be transferred from the host to any document on your workstation.

When you complete this chapter, you should be able to transfer information to and from a host computer.

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### Transferring data to a host computer

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Existing text from a document can be copied or moved into a 3270 emulation window. To transfer text into the window, select the destination in the window, select the text in the document, press <COPY> or <MOVE>, and then select inside the 3270 emulation window. The copied or moved text appears at the destination you previously selected.

The characters appear exactly as if they had been typed into the 3270 emulation window. All text attributes (such as font or size) are ignored.

Characters that are unknown (foreign) to the host are converted to hyphens.

If you are copying or moving text into the emulation window and wish to cancel the transmission, press <STOP>.

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## Transferring data to a document

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You cannot copy or move information directly out of a 3270 emulation window into a document by using <COPY> or <MOVE>. Instead, you must select [MAKE SCREEN] in the emulation window header.

When you select [MAKE SCREEN], the text in the emulation window is captured and placed in a document. The document icon containing the captured information appears on your desktop.

That document icon is the same as any other workstation document. It can be renamed, opened, reformatted, and copied or moved into a folder.

The document is named with the 3270 icon's name, followed by a time stamp. For example, a document created from a 3270 icon labeled LA Bldg1 might be named as follows:

LA Bldg1 of 4 Feb-86 11:46:52PST

In the following exercise, you transfer information to and from a document. If you are familiar with the programs on your host computer, complete the exercise. If you are not yet familiar with using the application programs for your office, do not complete the exercise.

1. **Prepare** a document containing text that can be used by the program on your host computer. For example, you could write the command that would initiate a session.
2. **Select** the text you want to copy into the emulation window from the document.
3. **Press** <COPY>. Copying information into the window ensures that the correct information is

entered and eliminates rekeying existing information.

4. Select a destination inside the emulation window. The text appears inside the emulation window.
5. Select [MAKE SCREEN] in the emulation window header. An icon should appear on your desktop in a short time.

**NOTE:** The icon may appear behind the emulation window, so you may have to move the window to see the icon.

6. Open the icon. The icon contains the text that appears in the emulation window.
7. Delete the practice documents (the document you created and the one resulting from [MAKE SCREEN]).

**NOTE:** It is not possible to copy or move information from one place in the emulation window to another, just as it is not possible to copy or move information on the actual 3270 terminal.

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## Summary

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In this chapter, you studied how to transfer information to and from a host computer.

If you need more practice, complete the exercise again. Keep the emulation window open. It will be used in the next chapter.

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# 7. Stopping an emulation session

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## Overview

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To stop an emulation session, you log off from the host computer and then close the emulation window. Merely closing the emulation window does not automatically log you off from the host computer. This is very important because some host computers will continue to charge you for logon time if you fail to log off.

When you complete this chapter, you should be able to stop an emulation session.

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## Stopping the emulation session

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In the following exercise, you stop the emulation session.

1. Log off from the host computer.
2. Select [CLOSE] in the emulation window.

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## Summary

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In this chapter, you studied how to stop the emulation session.

If you need more practice, complete the exercise again.

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## 8. Progress check

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In this self study guide, you used your workstation to emulate a 3270 terminal. Now you are going to test your knowledge by completing each of the following tasks. Refer to the following pages for detailed information on how to perform this exercise. When you are finished, close and delete all practice documents.

1. Open a connection with a host computer through a 3270 emulation window.
2. Display the 3270 keyboard through the keyboard window.
3. Run one of the programs available on your host computer through the emulation window.
4. Move all of the information in the emulation window into a document.
5. End the emulation session.

## Answers to progress check

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The numbers in parentheses indicate the sections in which you will find details on each procedure.

**1. To open a connection: (4)**

Select the 3270 icon.

Press <OPEN>.

Select [START] in the emulation window option sheet.

Log on to the host computer.

**2. To display the 3270 keyboard: (5)**

Select inside the emulation window.

Hold down <KEYBOARD>.

Press the function key corresponding to <SHOW>.

Release <KEYBOARD>.

**3. To run a program on the host computer: (6)**

The steps here depend on the particular program you are running.

**4. To move information from a window to a document: (6)**

Select [MAKE SCREEN] in the emulation window.

**5. To end the emulation session: (7)**

Log off from the host computer.

Select [CLOSE] in the emulation window.