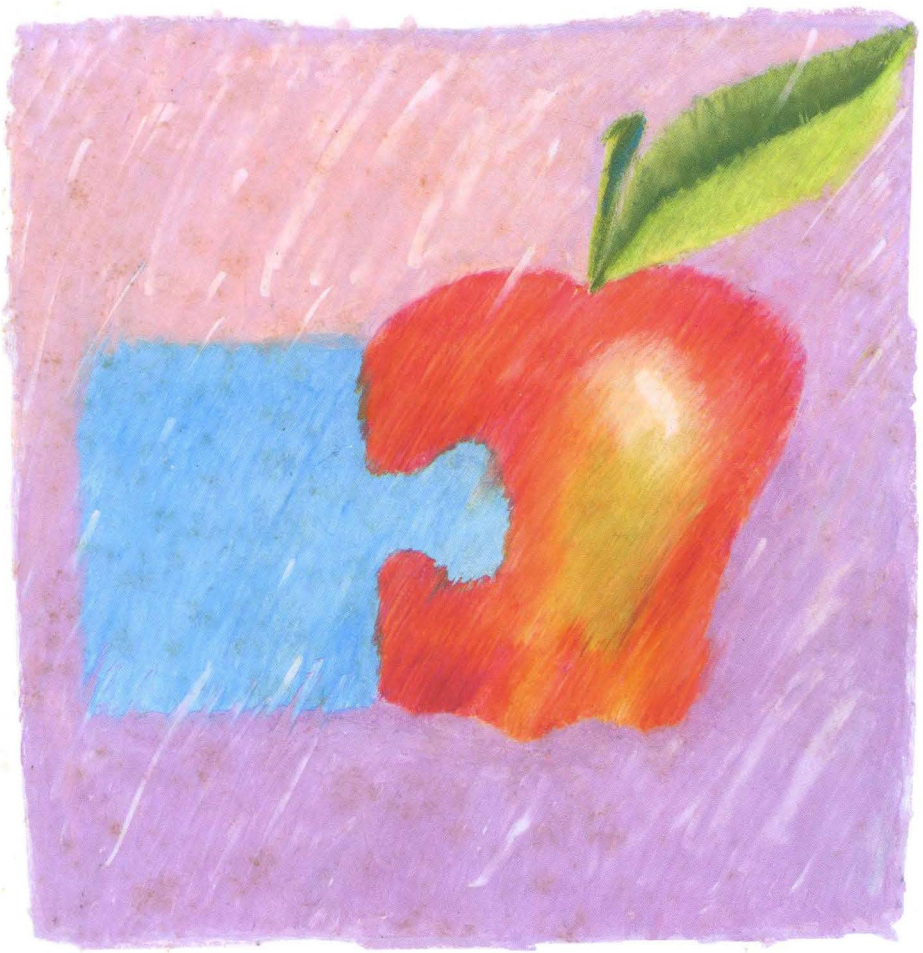
Avatar.

MacMainFrame™ Series
Macintosh-to-Mainframe Link

Coax/Token-Ring/SDLC
Workstation
User Guide



MacMainFrame™ Series

Macintosh to Mainframe Link

Coax/Token-Ring/SDLC Workstation

User Guide

Avatar.

65-2500-100

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65 South Street
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(508) 435-3000

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WARNING: This equipment is a Class A digital apparatus which complies with the Radio Interference Regulations, CRC c. 1374.

MacMainFrame Series
Part # 65-2500-100-AA

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Preface

This manual shows you how to use Avatar's MacMainFrame Series Workstation software on your Apple™ Macintosh computer.

This book is for all MMF Workstations — Coax Workstations, Token-Ring Workstations, and SDLC Workstations.

Audience

This book is for people who use MacMainFrame Workstation machines.

How To Use This Book

If you've never used MacMainFrame Workstation before, follow the chapters in order.

If you have used MacMainFrame Workstation before, turn to the section you need and follow the instructions there.

Chapter 1 — Introduction

Chapter 2 — Start-Up And Shut-Down

Chapter 3 — Operating MMF Workstation

Chapter 4 — The 3270 Window

Chapter 5 — The Keyboard

Chapter 6 — Introduction to File Transfer

Chapter 7 — How to Transfer a File

Chapter 8 — File Transfers To/From CICS

Chapter 9 — File Transfers To/From VM/CMS

Chapter 10 — File Transfers To/From TSO

Chapter 11 — Batching Your File Transactions

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Appendix A — MMF Workstation's Menus

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Related Documents

The MacMainFrame Series *Coax Workstation Installation Guide*

The MacMainFrame Series *Token-Ring Workstation Installation Guide*

The MacMainFrame Series *SDLC Workstation Installation Guide*

The MacMainFrame Series *Graphics Option User Guide*

For More Help

Contact Avatar Customer Support: 1-800-282-8276

Chapter 1

Introduction to MacMainFrame Workstation

The MacMainFrame Series Workstation hardware and software package lets your Macintosh computer connect to an IBM host computer. Once the connection is established, MacMainFrame Workstation emulates IBM 3278/3279-style terminals on your Macintosh. Using the MacMainFrame Workstation, you can conduct several logical unit (LU) sessions at once with the host. (The number of LU sessions depends on your MacMainFrame Workstation machine and the availability of LU sessions at the host.)

The following sections explain some of the things you'll need to know to use the MacMainFrame Series Workstation.

Terminology: For convenience, we'll refer to any MacMainFrame Series Workstation (which includes Coax Workstations, Token-Ring Workstations, and SDLC Workstations) as a MMF Workstation hereafter.

Components

Each MMF Workstation consists of the Workstation hardware and software. (Some Coax workstations have the option of an external hardware unit, called the DX Unit, which is a separate component.)

- For Workstations that use internal boards, you install the board and the software onto your Macintosh. The MMF Workstation comes with complete software documentation.

  Since the board may not be an Avatar board, you may need additional documentation to install it and verify it before you can use the MMF Workstation software.

  Make sure you follow the vendor's documentation for your board, and make sure your MMF Workstation hardware and software are properly installed before you follow the instructions in the manual you're reading now.

- For Workstations that use an Avatar DX Unit, you may install the DX Unit locally or remotely. Software installation is the same as for Workstations that use internal boards..

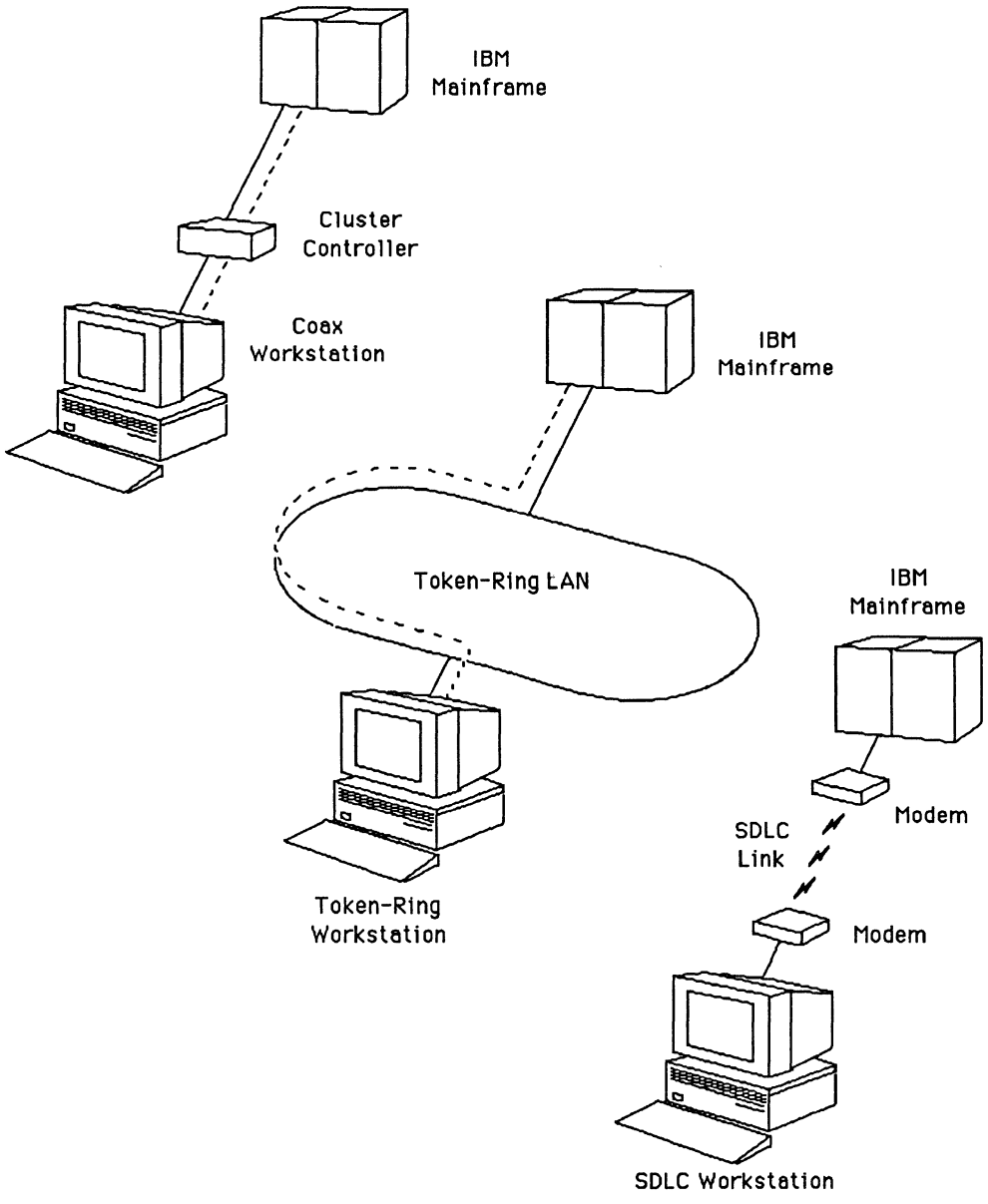
  For information on the DX Unit, see the MacMainFrame Series *Coax Workstation Installation Guide.*

Connectivity

MMF Workstation offers three different types of connectivity to the IBM host:

Coax	Via a coax cable, which leads to a cluster controller that is connected to the IBM host.
Token-Ring	Via direct access to a token-ring LAN, which leads to the IBM host.
SDLC	Via an SDLC data communications line, which leads to the IBM host.

The diagram below shows three typical MMF Workstation setups:



Single-Session and Multi-Session Terminals

IBM provides various kinds of access to its machines. The two kinds that concern us here are single-session terminals and multi-session terminals. Single-session means the terminal can use a single LU session at a time; multi-session means that the terminal can use more than one LU session at the same time.

The MMF Coax DFT Workstation, the MMF Token-Ring Workstation, and the MMF SDLC Workstation all offer multi-session functionality.

Coax Workstations

In the case of **Coax Workstations**, the distinction between single- and multi-session terminals is important, as follows:

- IBM terminals that can use only a single LU session at a time are called **Control Unit Terminals — CUT** for short.
- IBM terminals that can use more than one LU session at a time are called **Distributed Function Terminals — DFT** for short.

To obtain **only single-session** functionality on your MMF Coax Workstation, you order the **CUT version** of MMF Coax Workstation. To obtain **both single-session and multi-session** functionality, you order the **DFT version.**

Differences Between CUT and DFT Workstations

Occasionally, the differences between Coax CUT Workstations and Coax DFT Workstations are important as far as setting up and operating your Workstation are concerned. In these cases, we have noted the differences in the text of this manual with two markers:

CUT terminals only:	✓ CUT
Not for CUT terminals:	✘ CUT

If you see a marker, follow the marker. If you don't see a marker, you can assume the text applies to your MMF Workstation no matter what kind of a Workstation it is.

Operations

The MMF Workstation requires some set-up and configuring.

Set-Up Procedures

To set up the MMF Workstation, you install the board into the Workstation machine, then install the software on the Workstation machine. (For Workstations that use the DX Unit, which is an external hardware unit, the hardware installation procedures are slightly different.)

During first-time start-up, you configure the basic parameters of your Workstation, including initial LU session settings and the Workstation's address on the IBM network. After that, you need only alter your Workstation's settings as your IBM operating environment changes.

Day-to-Day Operations

After you've installed the MMF Workstation hardware and software and performed a first-time start-up, you invoke MMF Workstation as you would any Macintosh application.

As it starts running, MMF Workstation automatically sets up the basic network connections with the IBM host and you can then use the host connections as you wish.

Terminal Emulation, Screen and Keyboard Features

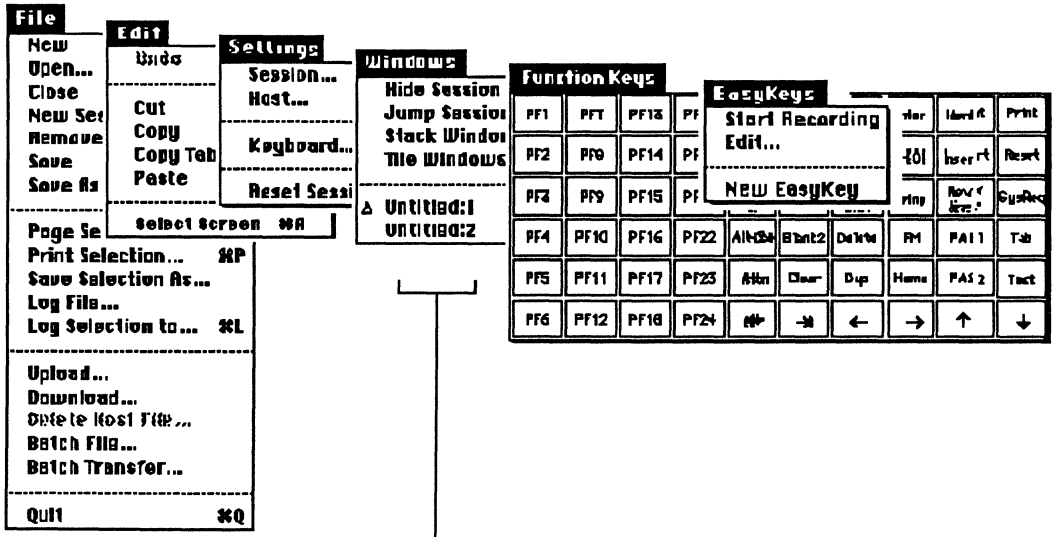
Once you have started the MMF Workstation software running on your Macintosh, you see a standard IBM 3270 screen, and your Macintosh keyboard behaves like a 3270-style keyboard. (Your Macintosh keyboard will function as a 3270 keyboard whenever you're in a 3270 window.) MMF Workstation also offers comfort features — scroll bars, font palette, LU indicator, and Keyboard Help button.

The screen and keyboard are described in detail in Chapters 4 and 5.

If you are running under the MultiFinder, you can also step out of the Workstation's 3270 screen, perform Macintosh tasks or use other applications, and then return to the 3270 screen and resume 3270 work.

Menus

MMF Workstation has six pull-down menus:

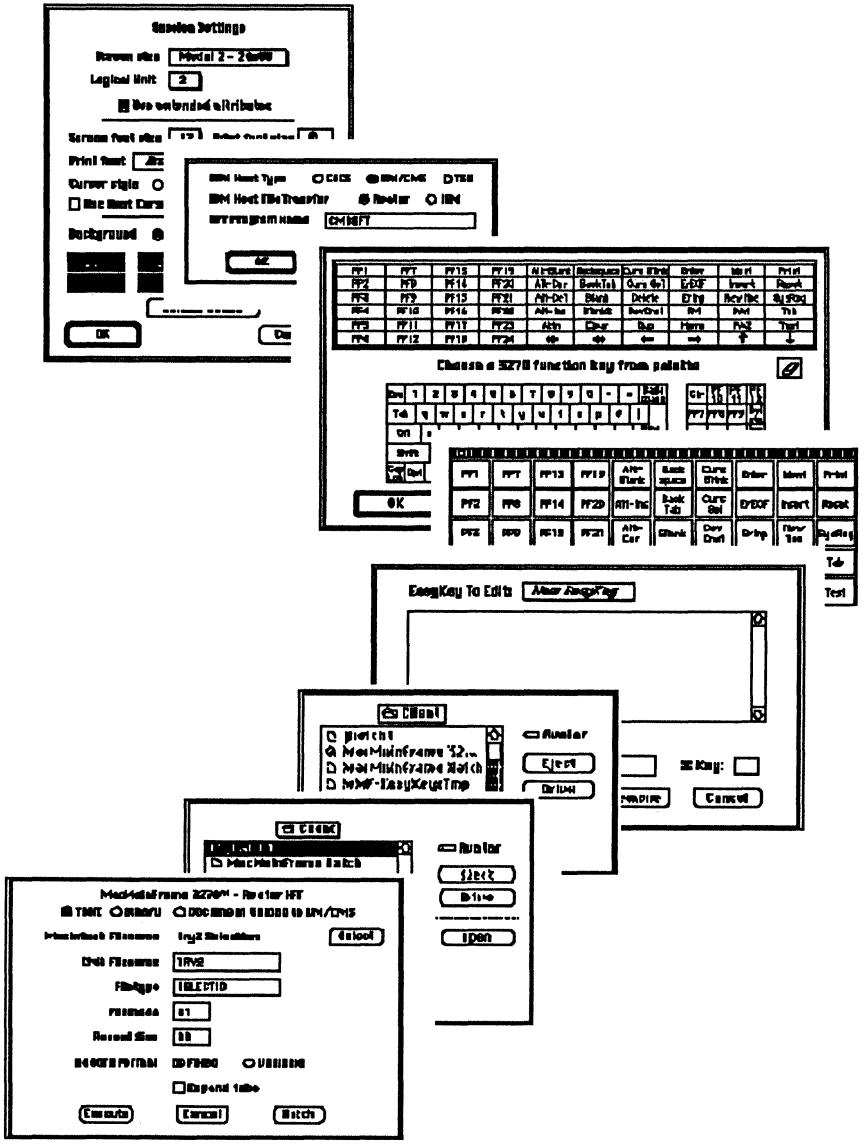


✘ CUT

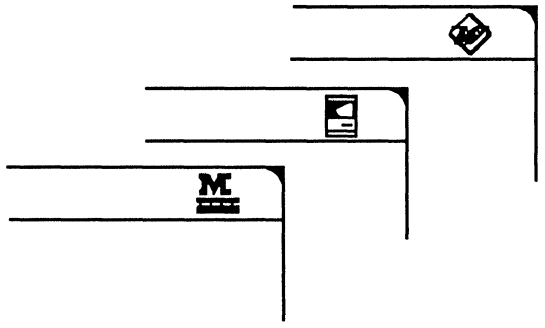
The menus let you manage your LU sessions, save data from the 3270 window, transfer files to and from the host, and reconfigure your keyboard.

Dialog Boxes

The basic dialog boxes you'll use are shown below. (You don't need to read them here; they're fully documented throughout the book.)



And you can use the MultiFinder to step out to other applications and back into MMF Workstation again ...



Saving Your MMF Workstation Session Settings

MMF Workstation lets you save the way you set up your screen and keyboard for your LU sessions, as well as information about your IBM host environment, by recording the set-up in a Macintosh document.

The documents, called **Session Settings documents**, let you start up quickly and easily and restore your Macintosh to the way you left it the last time you ran MMF Workstation.

LU Sessions

An **LU session** is the basic unit of connectivity to IBM hosts. LU (logical unit) and session are IBM network software terms that refer respectively to network nodes (like your MMF Workstation-equipped Macintosh) and ongoing network communication between a node and an IBM mainframe host. There are various types of LU sessions; the types are defined by the IBM host.

Since the number of nodes with which an IBM host can communicate is limited, the host allocates LU sessions on a limited basis.

Depending on the type of Workstation and the host, a single MMF Token-Ring or MMF SDLC Workstation can get up to eight LU sessions. A MMF Coax DFT Workstation can get up to five LU sessions; a MMF Coax CUT

Workstation gets one LU session. (Other factors may limit the practical number of sessions per Workstation.)

File Transfer

You can transfer files to and from the IBM host using MMF Workstation's file transfer capability. The file transfer commands are selections in the Workstation's pull-down menus. You must be logged on to the host to transfer files, but you may transfer them in one LU session while you work in another, or you can transfer them in batch.

For complete information on transferring files with MMF Workstation, see Chapters 6 through 11.

3287 Printer Emulation

✘ CUT MMF 3287 is not available on MMF CUT terminals.

The MMF 3287 software, which comes with the MMF Workstation software, emulates an IBM 3287-style printer. MMF 3287 lets your Workstation machine receive an IBM print stream on one of its LU Sessions and route the print stream to its Chooser printer. (The printer can be directly attached to your Macintosh or it can be elsewhere on the local AppleTalk network.)

For complete information on MMF 3287, see Chapter 12.

MacMainFrame Graphics

✘ CUT MMF Graphics is not available on MMF CUT terminals.

When you're running the MMF Workstation software on your Macintosh, you can also use the MMF Graphics software. MMF Graphics emulates IBM 3179G and 3192G color graphics terminals and lets users upload and download color graphics files into Macintosh-compatible files.

For complete information on the MMF Graphics option, contact your Avatar representative.

Other Tools

The MMF Workstation software offers a programming interface, called the API (Application Programming Interface), which complies with Avatar's MMF 3270 API. You can write programs in many languages to use this interface, including Pascal, C, and HyperTalk.

For complete information on the MMF 3270 API, see the *MacMainFrame 3270 Series Application Program Interface Programmer's Guide*, or contact your Avatar representative.

Chapter 2

Start-Up and Shut-Down

Introduction to Start-Up

There are two ways to start the MMF Workstation software, first-time start-up and everyday start-up.

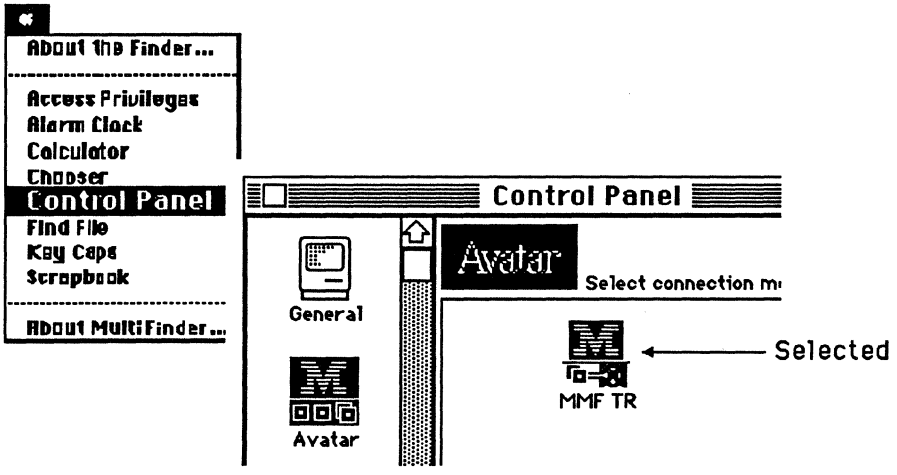
- If you've never started MMF Workstation before, do the first-time start-up.
- If you have started MMF Workstation before and you have a Session Settings document, then you can do an everyday start-up.

The first part of this chapter describes the two start-up methods and the last part describes shut-down.

Before You Start

Make sure the MMF Workstation software is installed:

1. Pull down the Apple menu and select the Control Panel.
2. In the Control Panel, select the Avatar icon.
3. In the Avatar panel, make sure the correct MMF Workstation driver icon is already selected. Here, the MMF Token-Ring driver is selected:



(See below for a list of possible driver icons.)

If the correct driver icon is *not* selected, select it and then restart your Macintosh. (See your Workstation installation guide for complete information on installing your MMF Workstation.)

Selected Driver Icons

The MMF Workstation driver icons look like this when they're selected:

MMF COAX Drivers:	MMF Token-Ring Driver:	MMF SDLC Driver:
Mac SE CUT Mac SE DFT SE/30 CUT SE/30 DFT Mac II CUT Mac II DFT DX CUT	MMF TR	MMF SDLC

First-Time Start-Up

Make sure you've installed the MMF Workstation software. See the installation guide for your Workstation. (The MacMainFrame Series *Coax Workstation Installation Guide*,*Token-Ring Workstation Installation Guide*, or *SDLC Workstation Installation Guide*.)

The first time you start MMF Workstation, you must start it from the application icon. The icons are slightly different for each:

Token-Ring, SDLC:	**Coax DFT:**	**Coax CUT:**
MacMainFrame Workstation	MacMainFrame Workstation	MacMainFrame Workstation

Later you can start it from a Session Settings document.

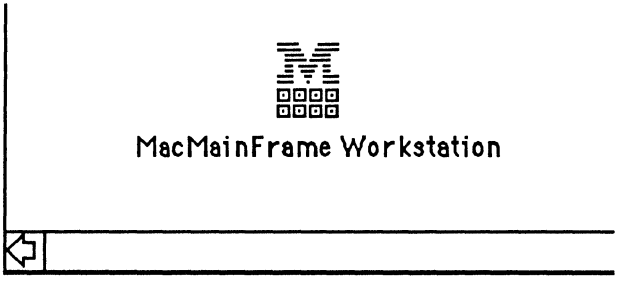
At first-time start-up, MMF Workstation will ask you to supply some information about yourself and your terminal (that is, about your Macintosh) and to pick an LU session.

When you finish using MMF Workstation after this first-time start-up, you can save the information you supplied plus all the settings — color, position of 3270 windows, number of LUs, and so on — in a Session Settings document. Later, you can use that document to re-start MMF Workstation.

The following steps describe how to perform first-time start-up.

1. Open the MMF Workstation application.

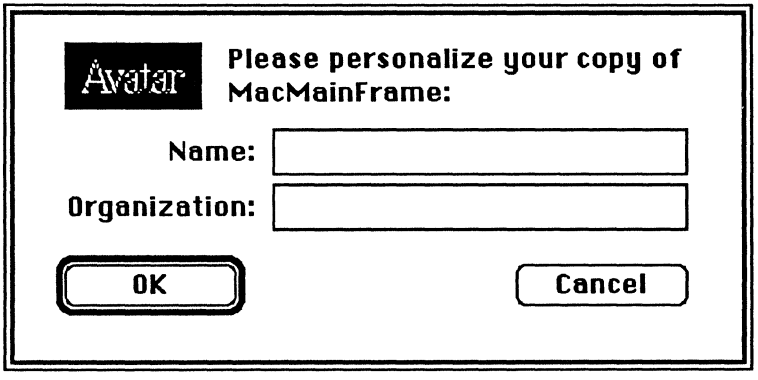
Start the software by double-clicking on the MMF Workstation icon. (We'll use the Token-Ring and SDLC Workstation icon to stand for all Workstations from now on.)



The software will present you with a personalize box.

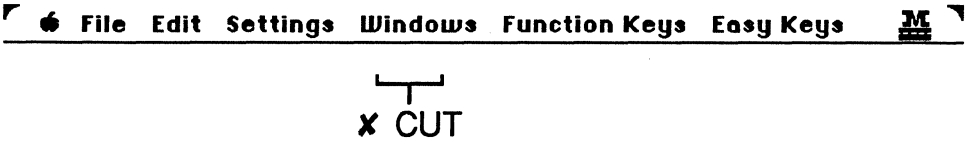
2. Fill out the Personalize box.

This personalizes your copy of the MMF Workstation software:



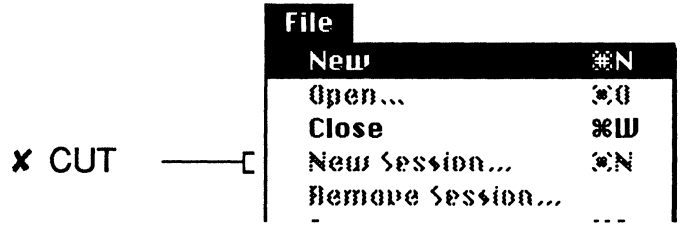
After you click OK, you'll see the menu bar change from the Finder's:

to MMF Workstation's:



3. Open a Session Settings document.

Pull down the File menu and select **New:**



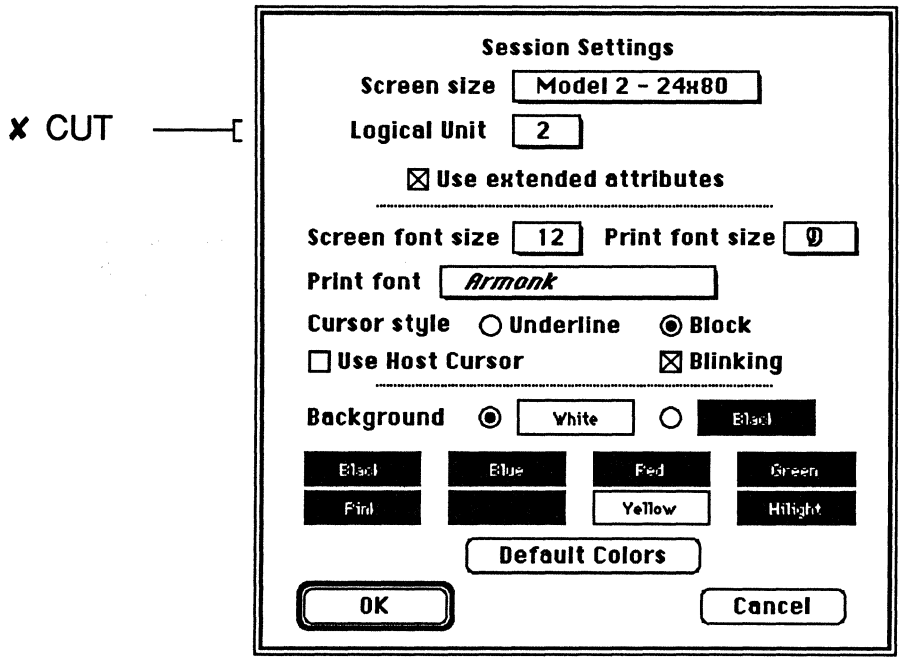
This will cause MMF Workstation to start recording a new set of session settings. It will also start the first LU session for you, and to do so it will first present you with the Session Settings dialog box.

Session Settings Dialog Box

The Session Settings dialog box contains different items depending on your Macintosh and how the MMF Workstation(s) are configured.

If this is the first time you've run MMF Workstation, we suggest you just leave the box as is and click OK. (Naturally, if your network administrator has a specific LU he or she would like you to use, use that.) Later, you can go back and reset the parameters you want by pulling down the Settings menu and selecting **Session...**, which will give you the Session Settings box again.

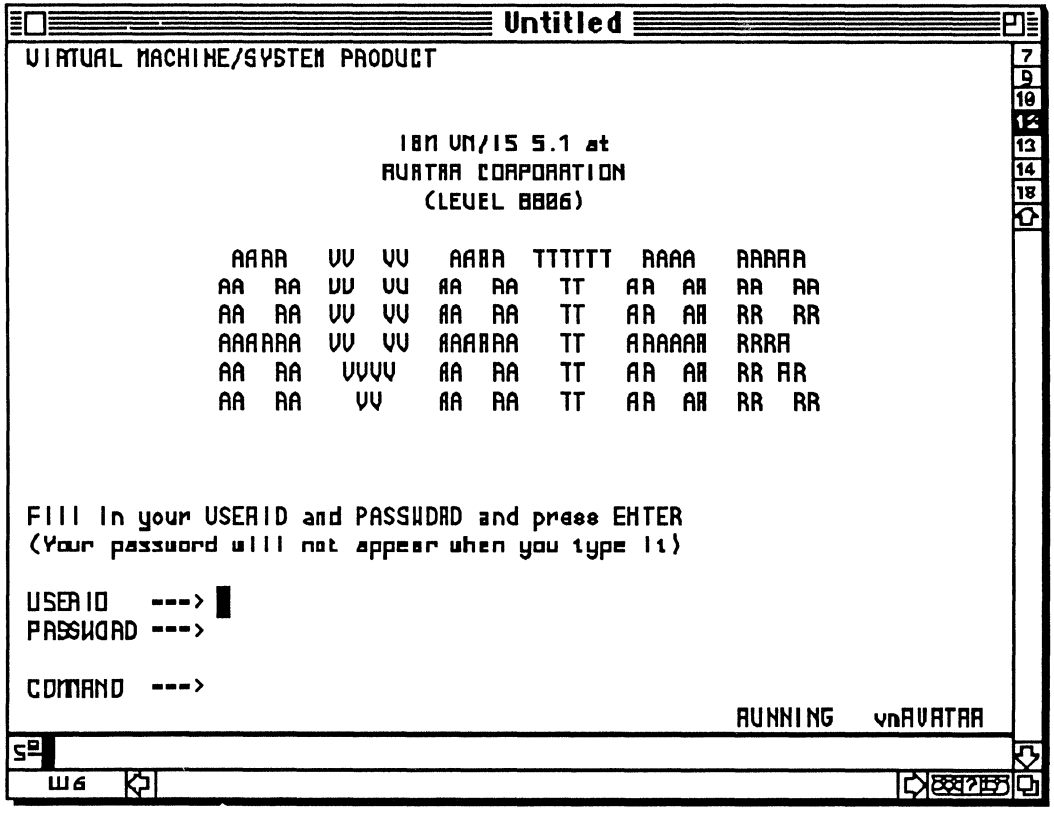
Here's a sample Session Settings dialog box:



For complete information on how to fill out the Session Settings box, see the Session Settings section at the end of this chapter.

After you click OK in the Session Settings box, MMF Workstation will automatically establish connection to your IBM host.

You'll see the initial host screen, and you can then log on to the IBM host.



(This screen is from one of Avatar's IBM machines; yours will surely look different.)

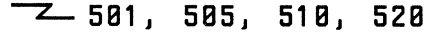
Irregular Start-Up

Occasionally, there are delays and you'll usually see status messages about them:

With Coax Workstations: Delays may be due to problems on the host or the cluster controller.

With Token-Ring Workstations: If the Token-Ring is busy, there may be a delay while your Workstation comes up.

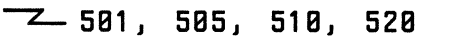
After your 3270 windows appear, you may see one or more of the following message numbers on the 3270 windows' status lines:



These numbers refer to conditions on the networking and communications layer of the software.

- If the message number persists for one minute, check the settings in the 802.5 Setup panel in the Avatar Control Panel to make sure they're correct.
- If the Control Panel settings are correct and you still can't reach the IBM host, see your network administrator.

With SDLC Workstations: These message numbers may appear on the status lines of your 3270 windows:



These numbers may indicate that modems are not functioning properly or that there are problems on the intervening SDLC link(s).

- If the message number persists for one minute, check the settings in the SDLC Setup panel in the Avatar Control Panel to make sure they're correct.
- If the Control Panel settings are correct and you still can't reach the IBM host, see your network administrator.

If delays persist, see your network administrator.

4. Use MMF Workstation.

You're ready to start working.

For more information on how to change MMF Workstation's Session Settings, see Chapter 3.

For detailed information on using MMF Workstation's screen and keyboard, see Chapters 4 and 5.

For information on how to transfer files with MMF Workstation, see Chapters 6 through 11.

For information on how to use the MMF 3287 Printer Emulator software, see Chapter 12.

5. Shut Down.

When you're finished working with MMF Workstation, pull down the File menu and select either **Close** or **Quit**.

Make sure to save your MMF Workstation settings. Either

- Select **Save** or **Save As...** from the File menu before you shut down, or
- Answer **Yes** when MMF Workstation asks you if you want to save them as you shut down.

If you don't do this, you will lose the Session Settings document that MMF Workstation created for you (at the beginning of this invocation of MMF Workstation), and you will have to do a first-time start-up again.

For complete information on shut-down, see the "Shut-Down" section at the end of this chapter.

Everyday Start-Up

When you do an everyday start-up of MMF Workstation you just double-click on a Session Settings document. The Session Settings document icons are slightly different for each workstation:

Token-Ring, SDLC: **Coax DFT:** **Coax CUT:**

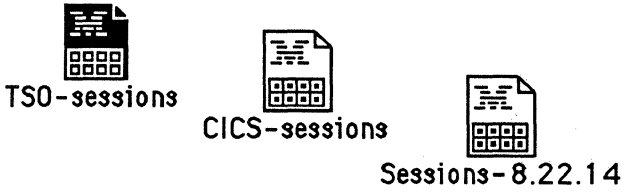
The following steps explain how to start MMF Workstation from a Session Settings document.

1. Go to the Session Settings document.

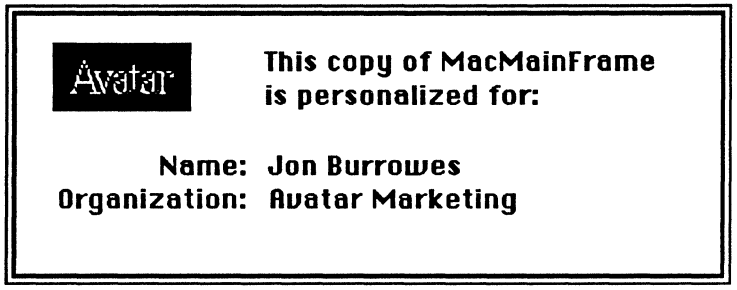
Choose the Session Settings document that contains the settings you want.

2. Double-click on the document's icon.

Here, we double-clicked on TSO-sessions. (Again,we're using the icons for Token-Ring and SDLC Workstations to stand for all Workstations.)

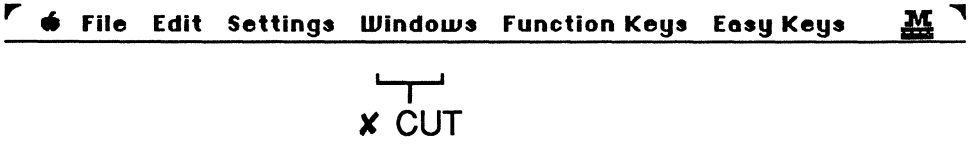


MMF Workstation will start running, first displaying your personalize box:



Then you'll see the menu bar change from the Finder's:

to MMF Workstation's:



MMF Workstation will automatically open 3270 windows for your LU sessions. It will place them where they were on the screen when you last used this document.

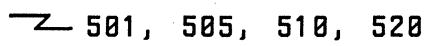
Irregular Start-Up

Occasionally, there are delays and you'll usually see status messages about them:

With Coax Workstations: Delays may be due to problems on the host or the cluster controller.

With Token-Ring Workstations: If the Token-Ring is busy, there may be a delay while your Workstation comes up.

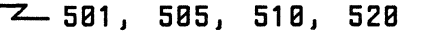
After your 3270 windows appear, you may see one or more of the following message numbers on the 3270 windows' status lines:



These numbers refer to conditions on the networking and communications layer of the software.

- If the message number persists for one minute, check the settings in the 802.5 Setup panel in the Avatar Control Panel to make sure they're correct.
- If the Control Panel settings are correct and you still can't reach the IBM host, see your network administrator.

With SDLC Workstations: These message numbers may appear on the status lines of your 3270 windows:



These numbers may indicate that modems are not functioning properly or that there are problems on the intervening SDLC link(s).

- If the message number persists for one minute, check the settings in the SDLC Setup panel in the Avatar Control Panel to make sure they're correct.
- If the Control Panel settings are correct and you still can't reach the IBM host, see your network administrator.

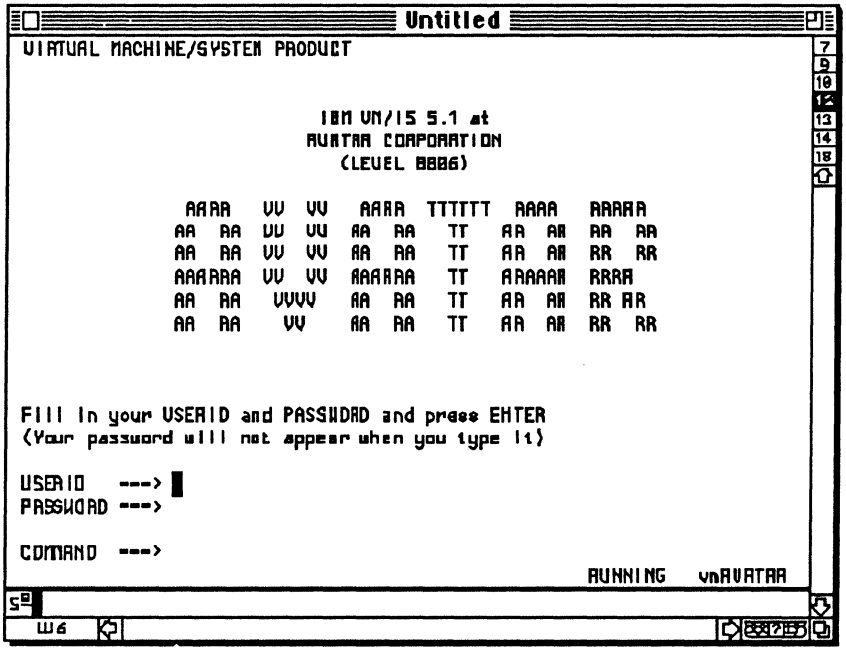
If delays persist, see your network administrator.

3. Use MMF Workstation.

Use MMF Workstation. Chapters 3 through 11 describe how to use all MMF Workstation's features.

✘ CUT To get a new LU session, pull down the File menu and select **New Session....**

MMF Workstation will start a new LU session for you (providing one is available) by presenting you with the Session Settings dialog box, which is described in the next section. After you fill out the dialog box, you'll see the initial host screen, and you can then log on to the IBM host.



(This initial screen is from one of Avatar's IBM machines; yours will surely look different.)

You can get as many new LU sessions as there are sessions available; when there are no more LU sessions, **New Session...** will be grayed out.

4. Shut-Down.

When you're finished working with MMF Workstation, pull down the File menu and select either **Close** or **Quit**.

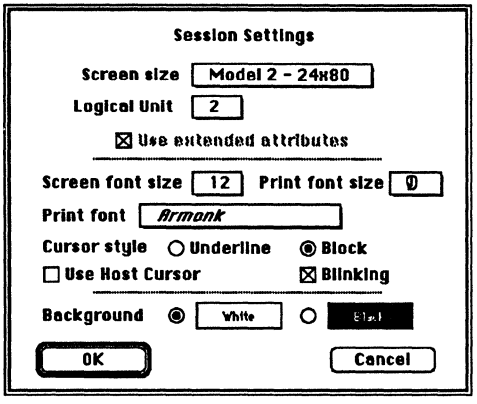
For complete information on shut-down, see the "Shut-Down" section at the end of this chapter.

The Session Settings Dialog Box

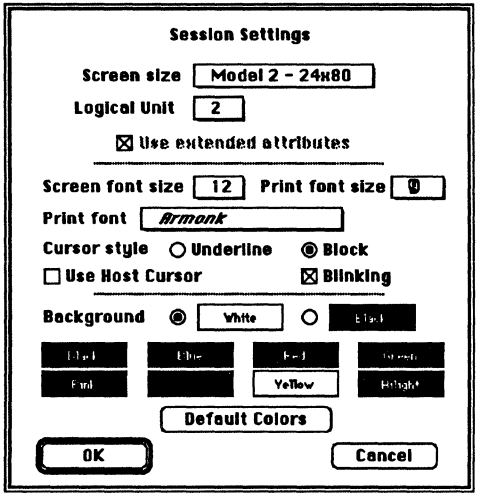
The Session Settings dialog box lets you tell MMF Workstation how to set up your screen and keyboard and what kind of LU sessions to use.The contents of the Session Settings box will change depending on the kind of Macintosh you have and the LU sessions you select.

It will also change if you're using the MacMainFrame Graphics software. For information on MacMainFrame Graphics, see your Avatar representative.

Here are the boxes for Macintoshes with monochrome and color monitors, respectively:



For monochrome monitors



For color monitors

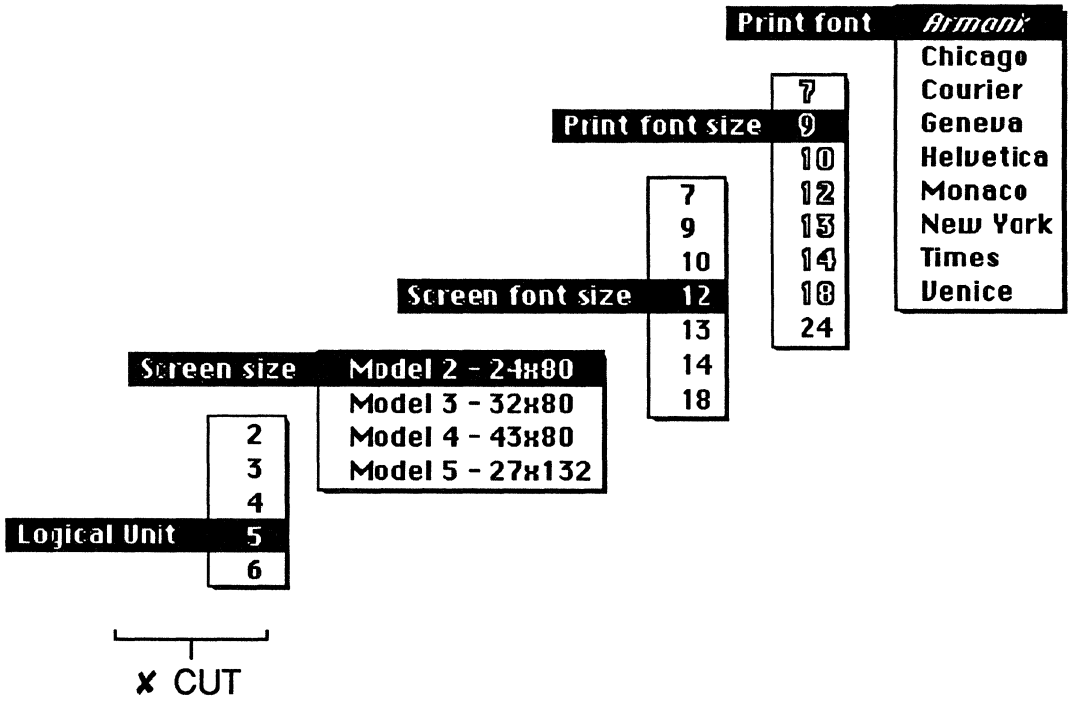
✘ CUT (Since MMF CUT Workstations provide only one session, the Logical unit pop-up menus do not appear in MMF CUT Session Settings dialog boxes.)

Session Settings Box: Pop-Up Menus

The five items with shaded boxes — **Screen size, Logical Unit, Screen font size, Print font**, and **Print font size** — have pop-up menus.

To get these menus, click the mouse on the item, and then while holding the mouse down, scroll up or down the resulting menu and release on the selection you want.

To select nothing, slide the mouse off the menu before releasing or leave the item as is.



Session Settings Dialog Box: Items

The following sections describe how to fill out the items in the Session Settings dialog box. If you skip an item, MMF Workstation will use the default value that appears in the item's field.

Screen size

Select the screen size that the host will use when it sends and receives data on your LU sessions. For more information on these screen sizes, see the host system manager.

Logical Unit

✘ CUT This item is not available on MMF CUT Workstations.

Scroll through and release on a logical unit (LU).

When an LU name is grayed, it means that LU session is currently unavailable.

REMEMBER: See your host system manager or network administrator for up-to-date information about the kinds of LU sessions that are available from the host.

☐ Use extended attributes

Specify here whether or not the LU session will transmit and display the following kinds of data:

☐ Do not display any graphics or extended attributes. (This is the default.)

☒ Display extended attributes when they arrive at the Workstation.

(Extended attributes are sometimes referred to as EABs. EAB stands for Extended Attribute Buffer. Examples of extended attributes are:

underlining, blinking, reverse video, and three additional colors. For more information on EABs, see Chapter 3.)

REMEMBER: You should specify the LU session the same way the host configures it.

Screen font size

The size that will appear in your 3270 window. The font sizes are: 7-, 8-, 9-, 10-, 12-, 13-, 14-, and 18-point type. (The screen font is Armonk™, Avatar's proprietary font for MMF applications.)

Default: 12 point for large Macintosh monitors, 9 point for small Macintosh monitors.

Print font size

The size of the font that will appear on your printer when you print your screen.

For Armonk font, the sizes are: 7-, 8-, 9-, 10-, 12-, 13-, 14-, 18-, and 24-point type. (To see the sizes for the other fonts, click on the **Print Font** field to pop-up the font menu, scroll down the menu and select a font, then click on the screen font size field to pop up the font sizes menu.)

Print font

The font that will appear on your local printer when you print your screen. The font choices are Armonk and whatever fonts you have in your System. Use the Font/DA Mover to change the fonts in your System.

Cursor style

Pick the cursor style you're comfortable with, either Underline/Block or Blinking.

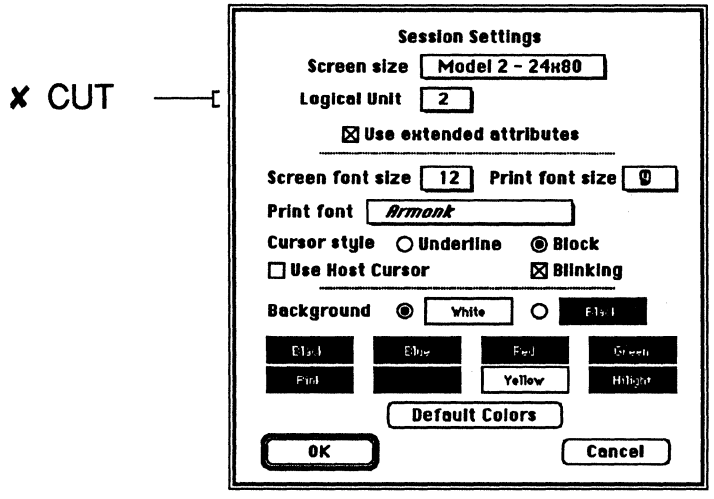
If you select **Use Host Cursor**, the host will control the cursor's appearance. **Use Host Cursor** overrides the other cursor selections.

Color

If your Macintosh monitor supports color, the Session Settings box will show four color blocks and a highlight-color block.

If the LU session you pick supports extended attributes (EABs, explained in Chapter 3), you'll see eight color boxes.

Here's an example of a Session Settings dialog box with all the color items:



The color blocks themselves will change depending on the kind of color support the IBM LU session offers. (Extra colors are one of the extended attributes that characters can have.)

The following sections describe the color items.

Background

Select the background color the screen will have. (The other colors change, too, when you select a different background color.)

NOTE: The background color doesn't have to be literally black or white — you can set the hue to suit yourself. Double-click on either color block and

then use the resulting color wheel to set the background color the way you want.

The color blocks show how MMF Workstation displays IBM colors.

There is a black block and a white block for the background colors.

For the remaining colors, the Session Settings box displays color blocks according to the LU session. (This, in turn, depends on what the IBM host offers. For example, LU sessions that don't support extended attributes will show only 4 color blocks.)

Default colors

Click on this button to have MMF Workstation restore the IBM colors to your 3270 window.

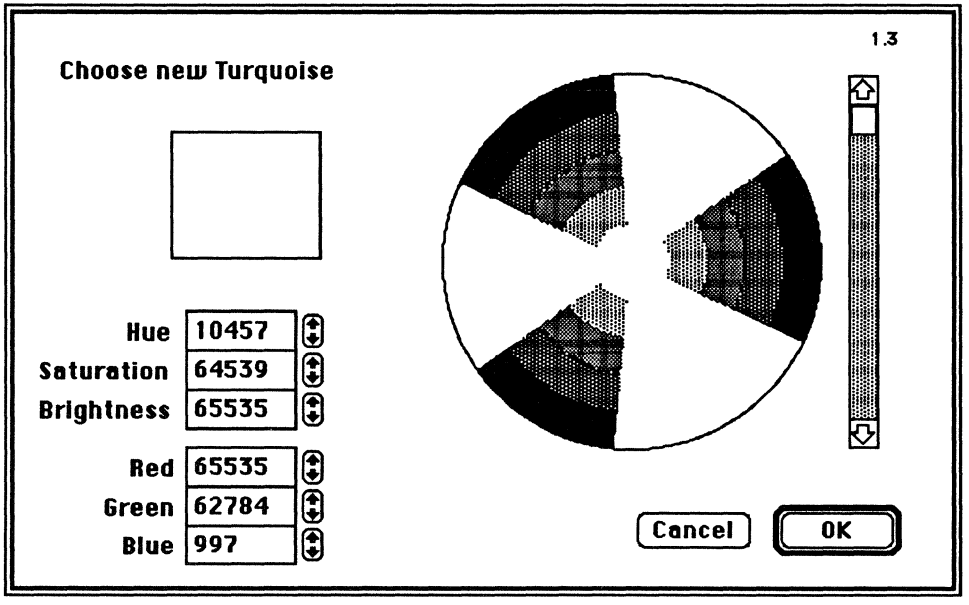
This button is useful if you've modified the colors (see below) and want to change them back to the host's default colors.

Changing Colors

You can change the way the IBM colors appear in your 3270 window, and you can do so on a per-session basis. (And MMF Workstation will save a separate set of colors for each LU session.)

1. Go to the Session Settings box.
2. Double click on any color block in the Session Settings box.

   MMF Workstation will then present you with the color wheel:



3. When the color wheel appears, set the color as you wish. (The color wheel works the same way as the Macintosh Control Panel color device. For complete information, see your Macintosh system documentation.)

   When you're done, click **OK**.

When you return to your 3270 window, the items that take their color from the color block you double-clicked will now have the new color.

Saving Your Settings

Don't forget to save the changes you've made in the Session Settings box. To save your settings, select **Save** or **Save As...** from the File pull-down menu.

For complete information on saving your settings, see the "Shut Down" section below.

Shut-Down

When you're finished using your current LU sessions, you can either release your LU sessions and leave MMF Workstation running, or you can stop MMF Workstation running, which automatically releases your LU sessions.

Most importantly you should save your settings. This saves you work the next time you start-up and it allows you to tune your MMF Workstation set-up over several sessions to be the way you want it.

The following sections tell you how to save your settings and then perform the various shut-downs. A couple of reminders:

REMEMBER: Closing windows (by clicking in the close box) does not release sessions or stop MMF Workstation.

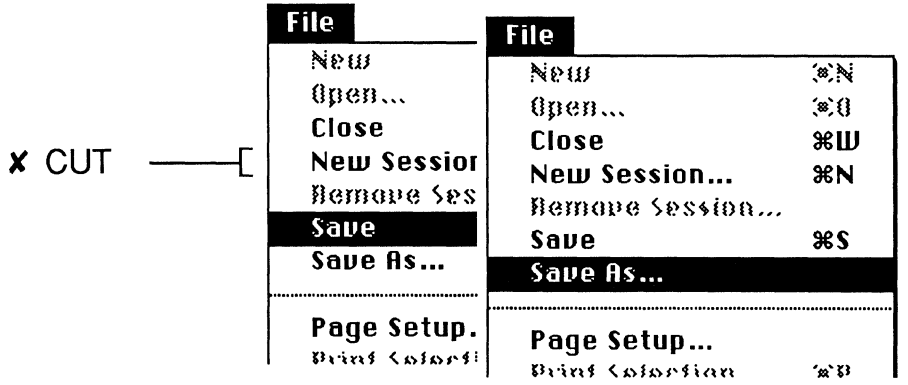
> GOOD PRACTICE:
>
> *DON'T FORGET TO LOG OFF THE IBM HOST FIRST!*

Saving Your Settings

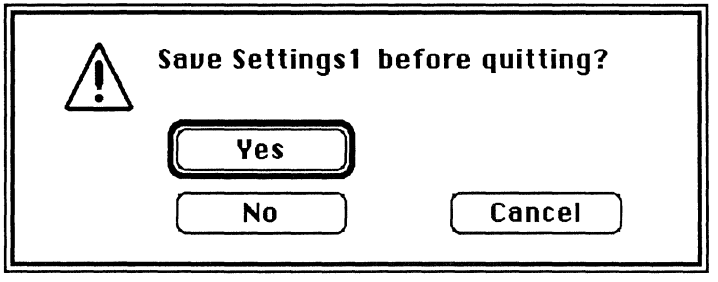
As we've mentioned, saving your settings can save you work the next time you start MMF Workstation.

To save your Session Settings, either:

- Select **Save** or **Save As...** from the File pull-down menu while you're still running MMF Workstation:



- Or, after you select **Quit** or **Close** from the MMF Workstation File menu, click on **Yes** in the following dialog box:



(If this is for a new document, you'll have to supply a filename.)

MMF Workstation saves your settings in a Session Settings document, whose icon looks like this, depending on your Workstation:

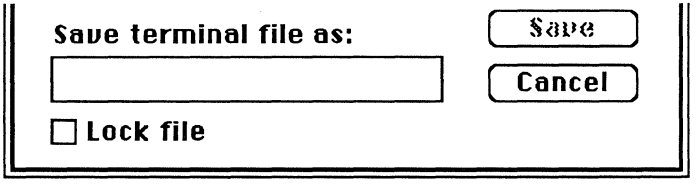
Token-Ring, SDLC:

Coax DFT:

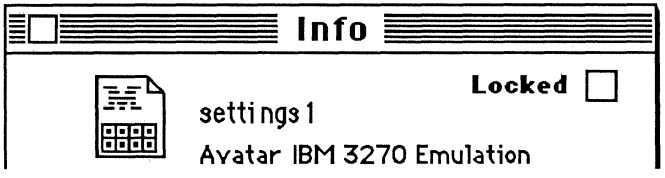
Coax CUT:

The Lock Box

The **Lock** check-box in the **Save As...** dialog box prevents you from making any further changes to the Session Settings document or saving it again.



To unlock a locked Sessions Settings document, you must go to the Finder, pull down the File menu, and select **Get Info**. Then click the Locked box to unlocked:



What Is A Session Settings Document?

A Session Settings document is a record of the way you set up your MMF Workstation program. It lets you start running again the way you were running when you shut down: this includes the positions of the 3270 windows you were using, the colors you were using, and so on.

A Session Settings document also lets MMF Workstation keep track of the LU session(s) that you used; so you can get the same LU sessions each time you use the document. (If you had four LU sessions running the last time you used this document, you'll still see four 3270 windows, but there will be only two with LU sessions running; the other two windows will have messages on their 3270 status lines. (Exceptions: On Coax DFT Workstations you'll see only see two windows; and Coax CUT Workstations are single-session.) You can still go to work in the two LU sessions you do get.)

And finally the Session Settings document is a quick and easy way to start the MMF Workstation application running

Contents of Session Settings Documents

The Session Settings document includes:

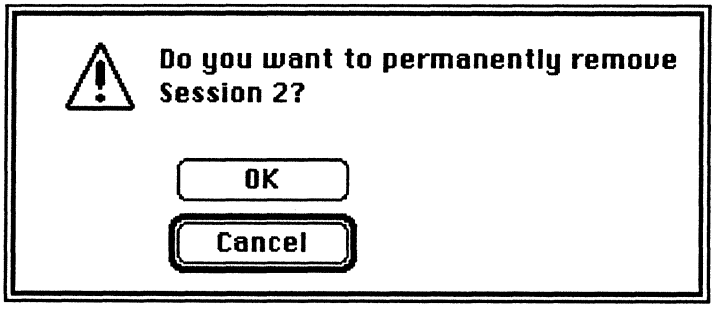
- Number and screen position of your 3270 windows.
- Configurations of your keyboard and function key palette.
- EasyKeys you created.
- LU sessions you used.
- Colors, on a per-LU-session basis.
- Information about the IBM host environment (e.g., CICS, VM/CMS, TSO) that you supplied.
- Screen log and batch file names.

And other information. While you're working, MMF Workstation saves this information in a temporary file; to save it permanently, see the "Saving Your Settings" section above.

To Release One LU Session But Not Shut Down

✘ CUT This feature is not available on MMF CUT Workstations.

1. Go to the LU session's 3270 window.
2. Select **Remove Session...** from the File menu. You'll see the following dialog box:



3. Click **OK**.

MMF Workstation will now terminate the LU session and release it to the host. It will also remove the session settings from your current Session Settings document.

MMF Workstation remains running.

To Release All LU Sessions But Not Shut Down

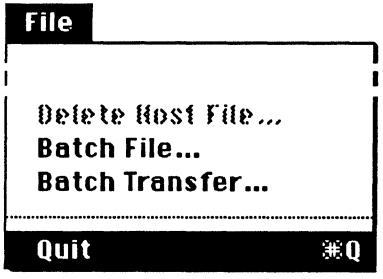
Close the current Session Settings document by selecting **Close** from the File menu.

This terminates all your current LU sessions and releases them to the host. It also leaves MMF Workstation running, so you can open another existing Session Settings document, create a new Session Settings document, or go to another application for a while and return.

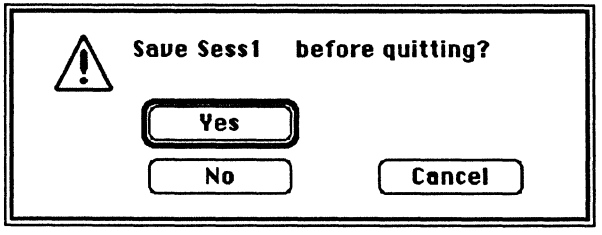
To Release All LU Sessions and Shut Down

Select **Quit** from the File menu.

This terminates all your current LU sessions and releases them to the host. It also shuts down MMF Workstation.



REMEMBER: If you've made any modifications to your session settings while you were working, MMF Workstation asks you if you want them saved permanently:



Answer as you wish. If you don't want to save them under the same file name, click **Cancel**, then pull down the File menu and select **Save As...** to save them under another name.

Chapter 3

Operating MacMainFrame Workstation

Introduction

Most of your time with MMF Workstation will be spent using your Macintosh like a 3270-style terminal. This chapter mentions these basic operations, which are described in more detail in their respective chapters.

While you're working, you can change the way MMF Workstation behaves. This chapter focuses on:

- How to manage your LU sessions — how to open them, switch from one session to another, and close them, and
- How to make changes to your Session Settings document.

For information on transferring files with MMF Workstation, see Chapters 6 through 11.

Basic Operations

The basic operations you'll perform with MMF Workstation are: using the screen and keyboard, moving back and forth between MMF Workstation and other applications, and transferring files.

Using Your Screen And Keyboard

When you're in a MMF Workstation 3270 window, you can use the window and your Macintosh keyboard together the way you would use a 3270-style terminal.

For complete information on MMF Workstation's screen and keyboard features, see Chapters 4 and 5.

Using Other Macintosh Windows

You can leave the MMF Workstation application entirely, go to other windows and do other work, and then return to your MMF Workstation 3270 windows. You can leave your LU sessions idle as long as you wish until you shut down MMF Workstation; MMF Workstation will not release them to the host.

NOTE: You must be running the MultiFinder on your Macintosh to use this feature.

File Transfers

To transfer files between your Macintosh and an IBM host with MMF Workstation, follow these steps:

- Specify the host environment characteristics by pulling down the Settings menu, selecting **Host...**, and filling out the resulting box.
- Pull down the File menu, select **Upload** or **Download**, and fill out the resulting dialog box.

For complete information on file transfer, see Chapters 6 through 11.

Printer Emulation

✘ CUT This feature is not available on MMF CUT Workstations.

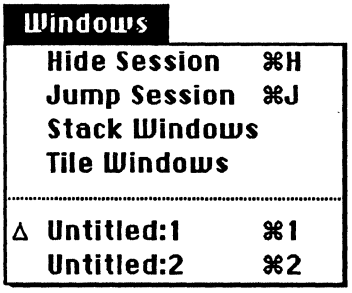
You can use your MMF Workstation-equipped Macintosh to emulate an IBM 3287-style printer. To do this, you use MMF 3287. For information on using MMF 3287 on your MMF Workstation machine, see Chapter 12.

How to View LU Sessions

✘ CUT This feature is not available on MMF CUT Workstations.

To see a list of the LU session windows that your MMF Workstation is currently using, pull down the Windows menu. The bottom panel shows the current sessions.

Here, two LU sessions are running, Untitled:1 and Untitled:2:



The triangle beside session Untitled:1 means Untitled:1's 3270 window is hidden from view. To bring it into view again, select Untitled:1 here.

To find out whether the sessions are running or not, go to each session's 3270 window and view the messages on the 3270 status line.

Extended Attributes (EAB)

EAB stands for Extended Attribute Buffer. An EAB is a mechanism by which IBM machines store and transmit character data.

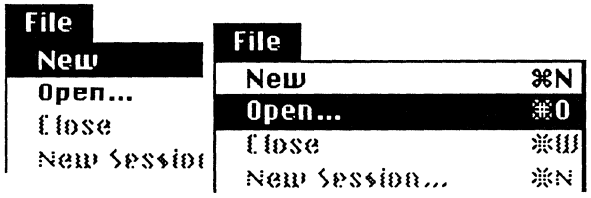
Normally, each character on an IBM display screen has an attribute byte associated with it. Attribute bytes (which are part of the main character buffer) specify basic information about their characters; attributes include the character's protection and four basic colors. Extended attribute bytes (which are part of an extended buffer) specify additional attributes; extended attributes include blinking, reverse video, underlining, and three additional colors.

How to Get an LU Session

This section explains the various ways to get LU sessions.

To Start The First LU Session

If you haven't opened a Session Settings document yet, pull down the File menu and select **New** or **Open**:



Both selections will start recording Session Settings; **Open** will ask you for the name of an existing Session Settings document, and **New** will start a new Session Settings document and send you to the Session Settings dialog box.

If you have opened a Session Settings document already:

- MMF Workstation will open any existing LU session window(s) automatically (except for the hidden windows).
- To open the hidden windows, pull down the Windows menu and select the windows with triangles next to their names.
- To get LU sessions in addition to the sessions in the above windows, select **New Session...** in the File menu. (If there are no more LU sessions available at the host or because you've reached the sessions-per-Workstation limit, **New Session...** will be grayed out in the File menu.)

✘ CUT (The **New Session...** feature is not available on MMF CUT Workstations.)

To Start The Next LU Session

✘ CUT This feature is not available on MMF CUT Workstations.

To get an additional LU session, select **New Session...** from the File menu.

New Session... sends you to the Session Settings box. Fill out the box, and MMF Workstation will then start your LU session.

If there are no more LU sessions available at the host or because you've reached the sessions-per-Workstation limit, **New Session...** will be grayed out in the File menu.

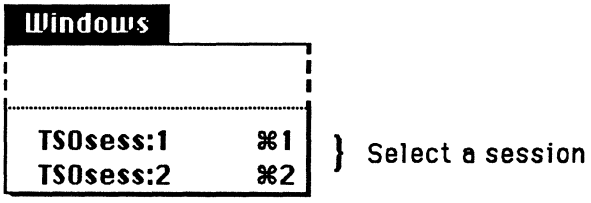
To Switch LU Sessions

✘ CUT This feature is not available on MMF CUT Workstations.

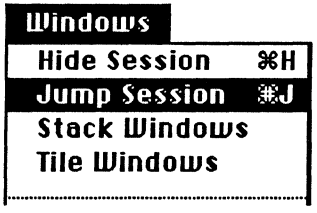
There are several ways to change from one ongoing LU session to another:

- Click on the window of that session.

- Pull down the Windows menu and select the LU session you want:



- Pull down the Windows menu and select **Jump Session**; this rotates through the windows in order.



- Go directly to window 1 by pressing **⌘-1**, to window 2 by pressing **⌘-2**, and so on.

How Many LU Sessions Can I Get?

The number of LU sessions you can use depends on

- How many LU sessions are available from the host.
- How many LU sessions the MMF Workstation allows:

MMF **Coax CUT** Workstations	**1** LU session
MMF **Coax DFT** Workstations	Up to **5** LU sessions
MMF **Token-Ring** Workstations	Up to **8** LU sessions
MMF **SDLC** Workstations	Up to **8** LU sessions

To get the maximum number of LU sessions, pull down the File menu and select **New Session...** until **New Session...** appears grayed out.

How To End LU Sessions

Generally, you'll end your LU sessions at the same time you shut down MMF Workstation. For information on ending your LU sessions then, see the Shut-Down section in Chapter 2.

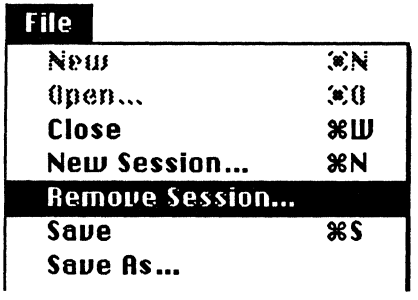
This section describes other ways that LU sessions can end.

To End A Single LU Session

✘ CUT This feature is not available on MMF CUT Workstations.

Ending a single LU session isn't a very frequent occurrence, but if you need to do it, here's how:

1. Go to that that session's window.
2. Log off the IBM host.
3. Select **Remove Session** from the File menu.



This terminates the LU session, and it also removes it from your Setting Sessions document.

REMEMBER: Closing a 3270 window by clicking on the close box or leaving a 3270 window *does not terminate an LU session.* It just hides the window.

How To Change Your Session Settings

This section assumes you've gone through first-time start-up at least once and that you have at least one Session Settings document. See Chapter 2 for complete information on First-time start-up.

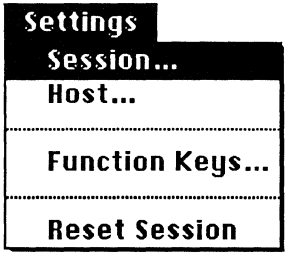
The Session Settings document's main purpose is to save your set-up of MMF Workstation so you can start it again quickly and easily. You can change these settings by using any of the selections in the Settings menu — they give you access not only to the Session Settings dialog box but to the parameters concerning the host environment, the keyboard, and your EasyKeys.

All these items are stored in the Session Settings document.

To Change The Open Session Settings Document

To make changes to the Sessions Settings document that's currently open:

1. Select **Session...** from the Settings pull-down menu:



   Session... will give you the Session Settings box again.

2. Fill out the Session Settings box as you normally would.(Remember, you can also change the host environment settings, your keyboard configuration, and your EasyKeys.)

After you click OK in the dialog box you've selected, the new settings you've made go into effect in your current LU session.

To keep these new settings so you can use them the next time you start MMF Workstation, either select **Save** or **Save As...** from the File menu,

or answer yes after you quit when MMF Workstation asks you if you want to save them.

To Change An Unopened Session Settings Document

To make changes to a Session Settings document that's not open:

1. Make sure you're in the MMF Workstation application.

   Make sure you have an active MMF connection to the IBM host. (It's not necessary to be able to log on to the IBM host, though.)

2. Select **Open** from the File menu and supply the name of the Session Settings document you want to change.

   MMF Workstation will open the document and set up your screen and keyboard as in normal operation.

3. You can now make changes to this open Session Settings document — use the Session Settings box, Host settings box, keyboard windows, etc.

4. When you're finished making changes, select **Save** or **Save As...** from the File menu to preserve the changes, then select **Close** from the File menu to close the document.

Chapter 4

The 3270 Window

Introduction

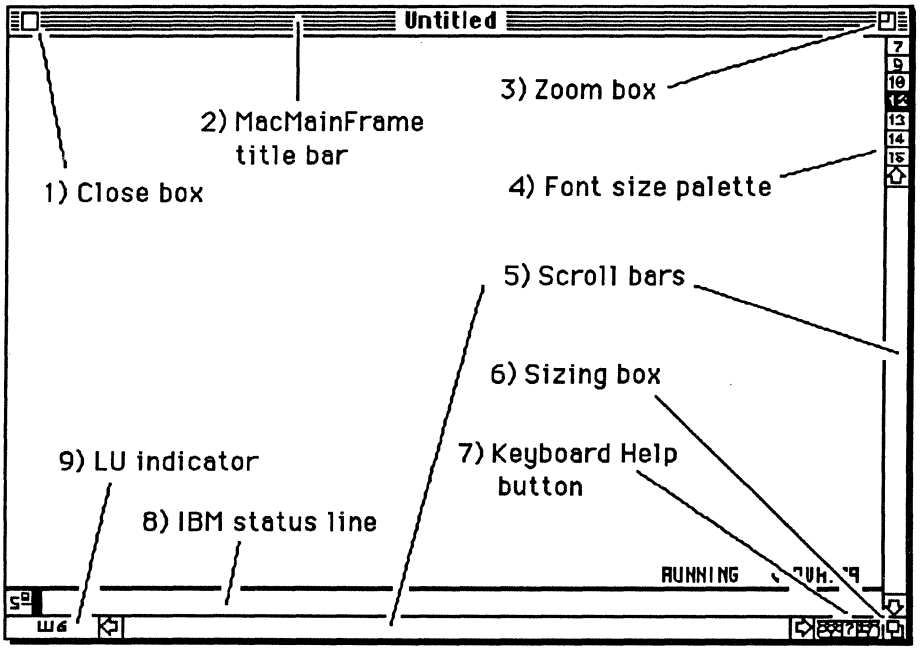
MMF Workstation's 3270 window fully emulates a 3278/3279 terminal screen You'll see the status line at the bottom, and as you work, the 3270 symbols will appear there. You can use the 3270 window the same way you would use an IBM terminal screen.

In addition to 3270 screen emulation, the MMF Workstation 3270 window offers:

- Standard Macintosh features such as sizing boxes, zoom boxes, and scroll bars.
- A font size palette, which lets you quickly change the font size on your screen. Useful when you're emulating a 132-character-per-line or 44-line-screen terminals.
- An LU indicator, which shows your current logical unit (LU) number.
- A keyboard HELP button, which lets you find function keys quickly on your Macintosh keyboard.
- Rearranging multiple windows into a neat side-by-side or overlapping display.

You can have up to eight 3270 windows open at once (depending on your Workstation and the availability of LU sessions from the IBM host.)

Elements of the 3270 Window



(1) **Close box** — Hides the LU session in this window but does not terminate the session.

(2) **MMF title bar** — Works the same as a regular Macintosh window title bar. Click to select the window or move the window; use the sizing boxes in the right-hand corners to size the window.

REMEMBER: Closing the window hides the window but does not terminate the LU session. To see hidden windows, pull down the Windows menu; the hidden windows have triangles next to them.

(3) **Zoom box** — Works the same as a regular Macintosh zoom box.

(4) **Font Size Palette** — Selects the font size in which data will appear in your 3270 window.

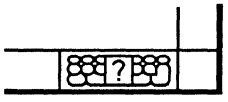
The initial font size comes from the **Screen Font Size** item in the Session Settings dialog box.

NOTE: MMF never saves setting changes you make here; it saves only the setting changes you make to the **Screen Font Size** item in the Session Settings dialog box.

(5) **Scroll bars** — Work the same as regular Macintosh scroll bars

(6) **Sizing box** — Works the same as a regular Macintosh sizing box.

(7) **Keyboard Help Button** — (Click the question mark:)



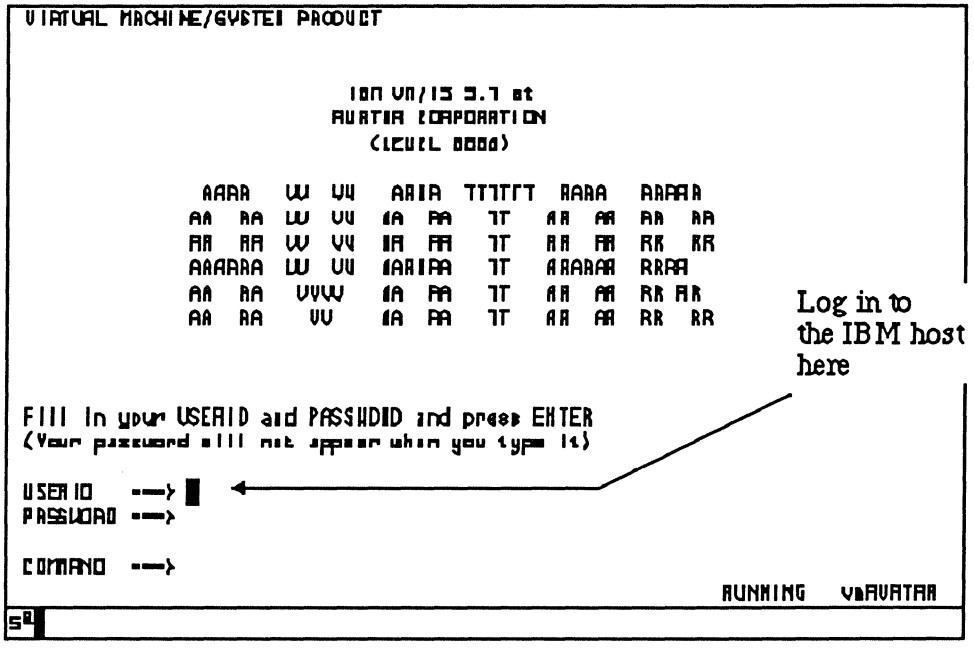
Displays a box that shows the positions of the IBM 3270 keys on your keyboard. (You can use this box to type keys — just click the mouse once on the desired key. For more information on function keys, see Chapter 5.)

(8) **IBM status line** — Displays information from the IBM host about your LU session. (MMF Workstation keeps the status line visible regardless of how you size the window.)

(9) **LU indicator** — Displays the logical unit (LU) number that this 3270 window's host session is using.

Using the 3270 Window

Use the 3270 window just like you would use a normal 3270-style terminal screen. Type commands, press ENTER to send them to the host, and so on.



(This screen shows an Avatar initial screen; your IBM host's initial screen will surely be different.)

Positioning the Cursor

By mouse — Move the cursor as you normally do on the Macintosh; click once to position the cursor.

By keyboard — Here are the default actions of some basic keys:

Key:	Moves the cursor:
← and →	Along a line, character by character.
↑ and ↓	Up and down.
HOME	On an unformatted screen, to the upper left corner of the screen. On a formatted screen, to the first input character on the screen.
RETURN	To the first input character on the next line.
TAB	To the first character in the next input field.
BACKTAB	To the first character in the current or previous input field.

Like a light pen alternative — To use your cursor like an IBM terminal light pen in the MMF Workstation 3270 window:

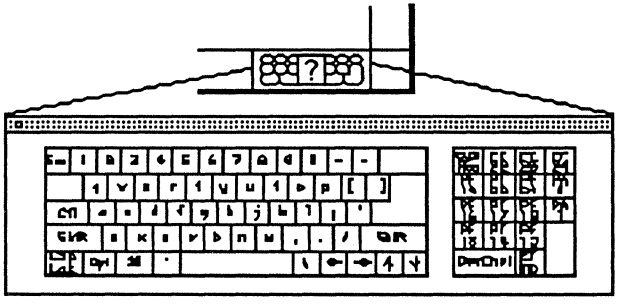
1. Move the mouse cursor to where you want it.
2. Hold down the ⌘ key.
3. Click the mouse.

MMF Workstation moves the host cursor and selects the item.

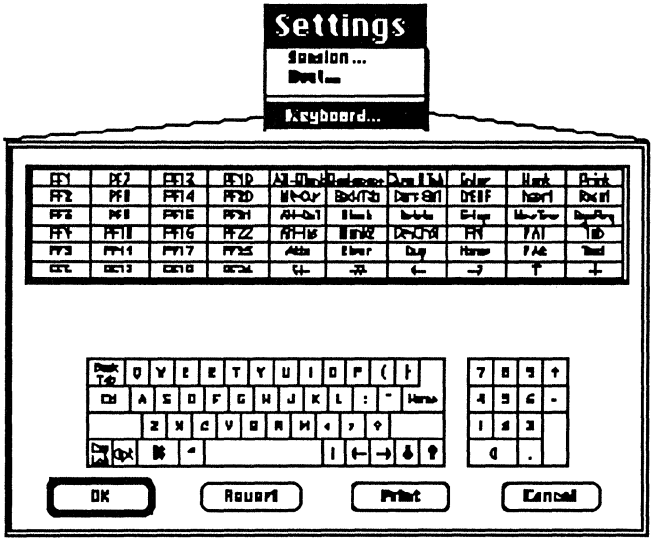
For more on MMF Workstation's light pen feature, see Chapter 5.

How to Find the 3270 Function Keys

Click on the Keyboard Help icon:



Or use the **Keyboard** selection in the Settings pull-down menu. (This selection also shows reconfiguration possibilities.)

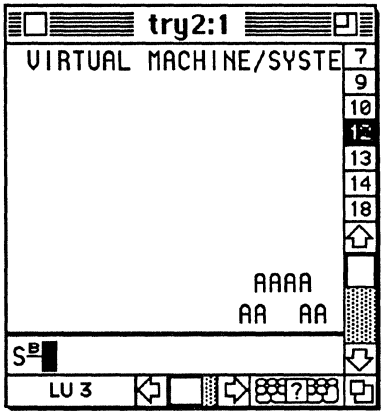


Changing the 3270 Window's Characteristics

You can modify several of the 3270 window's characteristics:

- Font sizes — Use the font size palette on the right side of the 3270 window.
- Colors — Go to the Session Settings box.
- Size, shape, and position of the 3270 window — use the scroll bars, size boxes, and the Windows pull-down menu.

  Notice that the palettes, scroll bars, and Keyboard Help button remain even when you size the window down:



Using Multiple 3270 Windows

✘ CUT This feature is not available on MMF CUT Workstations.

You can have up to eight 3270 windows open at once (depending on your Workstation and the availability of LU sessions from the IBM host.)

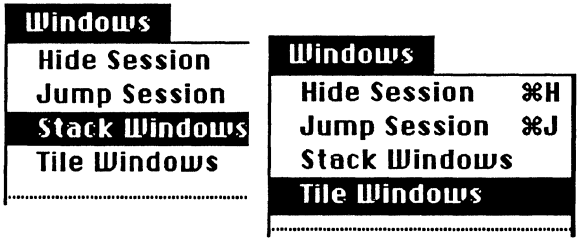
Once you have more than one 3270 window, you can use the Windows menu to manipulate the windows. The following sections explain how.

REMEMBER:

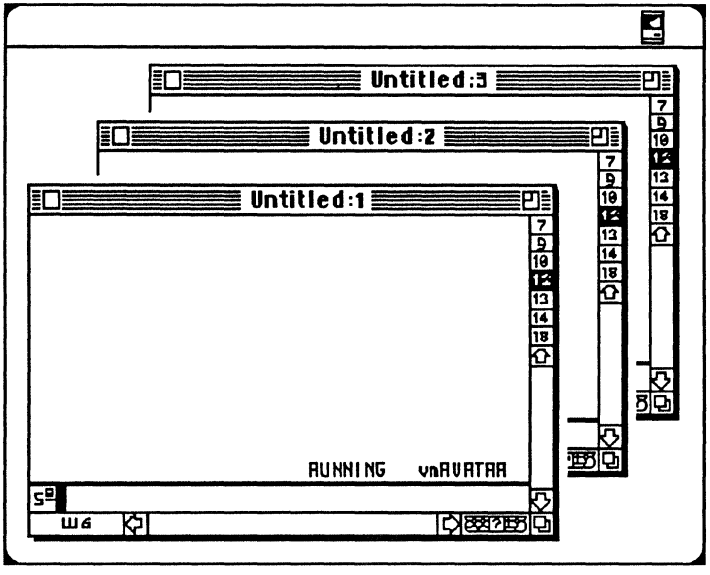
- To get a new window, you must start a new LU session. (Each time you start a new session, you automatically get a new window.) Use the **New Session...** selection in the File menu.
- Closing a 3270 window (either with the close box or the **Hide Session** selection in the Windows menu) removes the window from view but does not terminate the LU session.

Stacking and Tiling the 3270 Windows

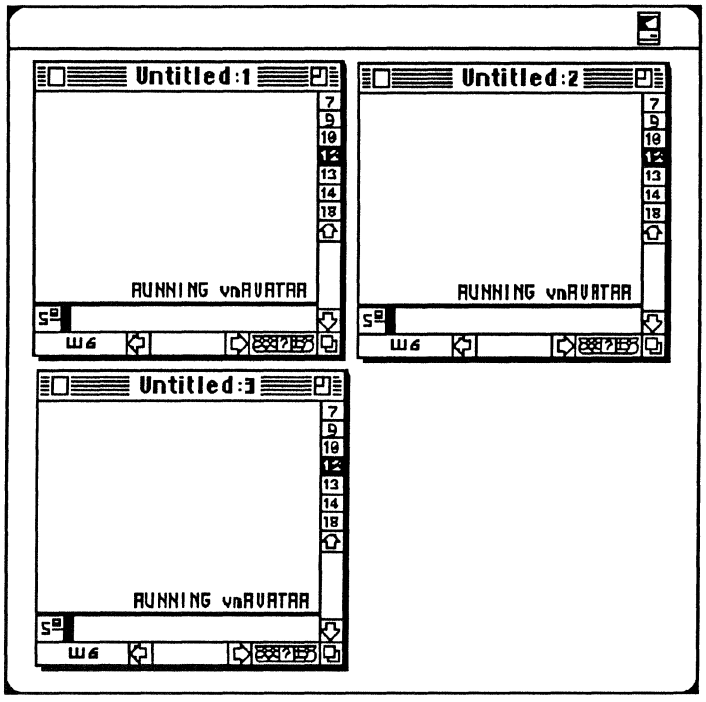
When you have more than one 3270 window open on your screen, you can arrange the windows neatly on your screen by using the **Stack Windows** and **Tile Windows** selections in the Windows pull-down menu:



Stack Windows will rearrange all your 3270 windows into a neat overlapping stack of same-sized windows:



And **Tile Windows** will rearrange your 3270 windows into a side-by-side display of same-sized windows:



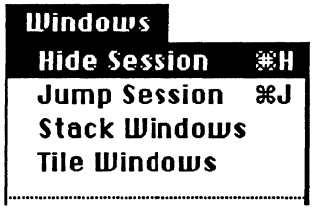
Stack Windows and **Tile Windows** do not affect the way your network connections work or the way you enter or select data in your 3270 windows.

Hiding 3270 Windows

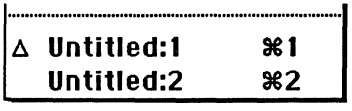
Sometimes it's useful to clean up your MMF Workstation screen; you might have several LU session running but you're using only one at the moment.

MMF Workstation lets you hide 3270 windows from view but not terminate their LU sessions. To do this:

1. Select the window to hide.
2. Go to the Windows menu and select **Hide Session**.



Example: we had two LU sessions; we hid Untitled:1. Untitled:1 now shows up in the Windows menu with a triangle beside it to indicate that it is a hidden window:



(Clicking the 3270 window's close box does the same thing as **Hide Session**.)

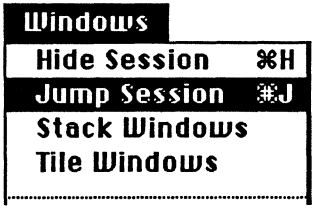
To Restore A Hidden 3270 Window

Use the panel at the bottom of the Windows menu; the name of each hidden window has a triangle beside it.

To retrieve retrieve a hidden window, we can select it here with the mouse or we can press ⌘ and the window's number. For example, to get Untitled:1 in the illustration above, we would select **Untitled:1** in the panel, or we would press **⌘1**.

Visiting Windows In Order

You can visit your 3270 windows in the order of the numbers in their title bars. To do this, use the **Jump Session** selection in the Windows menu.



Jump Session goes only to active 3270 windows; it does not go to hidden 3270 windows.

REMEMBER: To go to any window directly, either

- Click on the window with the mouse; or
- Pull down the Windows menu, go to the bottom panel, and select the specific 3270 window you want; or
- Press **⌘1**, **⌘2**, etc., according to the number in the window's title bar.

Selecting and Using Data From the 3270 Screen

MMF Workstation lets you copy data from the 3270 window and

- Paste it elsewhere in the window,
- Paste it into another 3270 window.
- Log it to a file, or
- Paste it to another application's window.

The following sections explain how to do these things.

Selecting Data

First, make sure you're in the 3270 window.

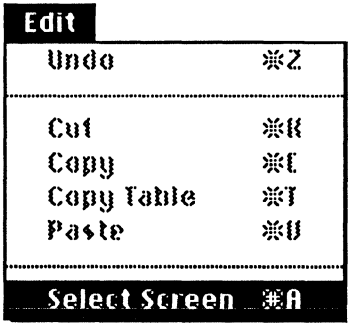
To select a small area of the 3270 screen

1. Highlight the area by dragging the mouse across it.
2. Release the mouse.

MMF Workstation will copy the data and will preserve the font size.

To select the entire 3270 screen

Pull down the Edit menu and select **Select Screen**:

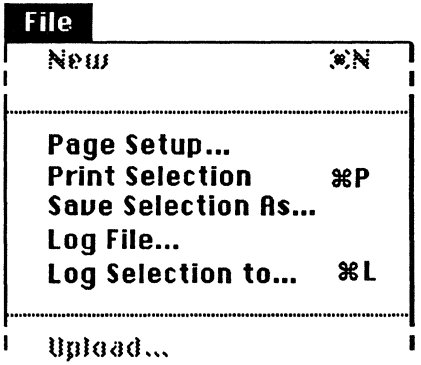


MMF Workstation will copy the data and will preserve the font size.

Logging Selected Data To A File

After you've selected data, you can send a copy of the data to the MMF Workstation screen log file.

The menu selections for logging screen data are:



Follow these steps:

1. Select the data, as described in the previous section.
2. Pull down the File menu and select **Log Selection to...**.

The data goes to the screen log file.

Save Selection As..., Log Selection To...

Both **Save Selection As...** and **Log Selection To...** perform the following modifications:

- Insert CR (carriage return) characters at the end of the IBM line.
- Convert all white space (SPACEs, TABs, NULLs, attribute bytes) to SPACEs.

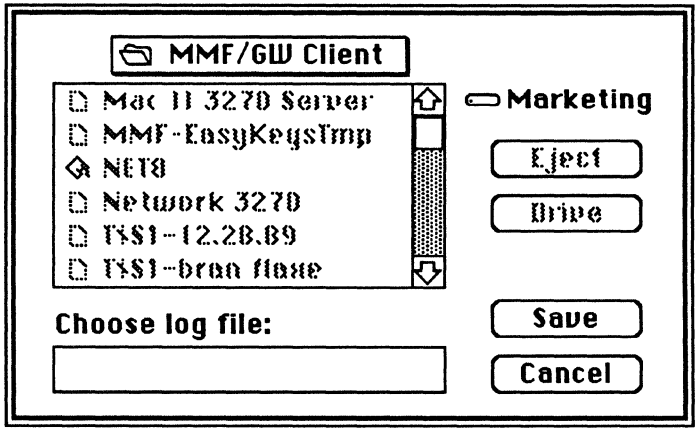
The Screen Log File

The screen log file is useful for:

- Building a collection of screen captures — you can put them all in one file, one after the other.
- Recalling long command lines, then pasting them in at the cursor.

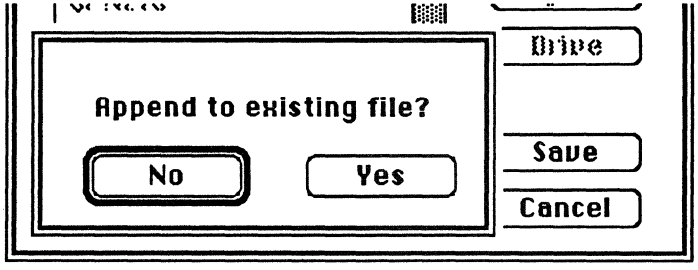
To open a new Screen Log file or to change the name of the file to which MMF Workstation should log selected screen data, select **Log File** from the File menu.

You'll see this file box:



Type in the name for the Screen Log file under **Choose log file:**.

If the new file already exists, MMF Workstation will ask you:



Answer yes or no.

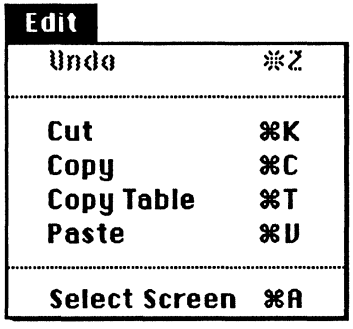
- **Yes** means MMF Workstation will append the new data to the existing data in the file.
- **No** will cause MMF Workstation to send you back to file box for a new file name.

  Supply a new file name.

Copying And Pasting Selected Data

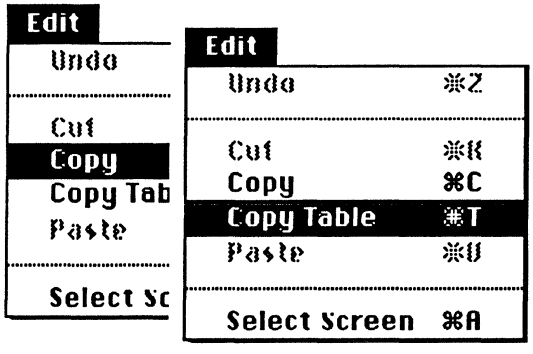
To send selected data to a location other than the Screen Log file, you must also copy the data in addition to selecting it.

The menu selections for copying and pasting screen data are:



Copying Selected Data

Pull down the Edit menu again and select **Copy** or **Copy table**.



A copy of the data now goes to the Macintosh clipboard.

Copy

Copy performs the following modifications:

- Converts all white space (SPACEs, TABs) to SPACEs.

Copy does not insert any extra CR (carriage return) characters; this helps to preserve the text's original line-wrapping.

Copy Table

Copy Table performs the following modifications:

- Strips leading and trailing SPACEs.
- Converts two or more SPACEs to TABs.
- Inserts a CR (carriage return) character at the end of the IBM line.

Copy Table is useful for copying data into spreadsheets.

Pasting Selected Data

You can paste selected data back into the 3270 window, to another 3270 window, or to another application's window. The following sections explain how.

Pasting to a 3270 window

1. Select the data, as described above.
2. Copy the data, using either **Copy** or **Copy table**, as described above.
3. Position the cursor in the MMF Workstation 3270 window where you want the upper left corner of the data to start.

   REMEMBER: This position must be a valid input field.
4. Select **Paste** from the Edit menu.

MMF Workstation inserts the data at the cursor.

Pasting to Other Applications

1. Make sure you're running the MultiFinder.
2. Select the data, as described above.
3. Copy the data, using either **Copy** or **Copy table**, as described above.
4. Go to the other application's window and paste the data, using whatever paste facility the application offers.

Chapter 5

Using the MacMainFrame Workstation Keyboard

Introduction

Whenever you're in a MMF Workstation 3270 window, your Macintosh keyboard acts like a 3270-style keyboard.

When you pause in your work in the 3270 window, you can make some changes to the way your keyboard works. For example, you can rearrange the 3270 key functions on your Macintosh keyboard.

This chapter shows you how to:

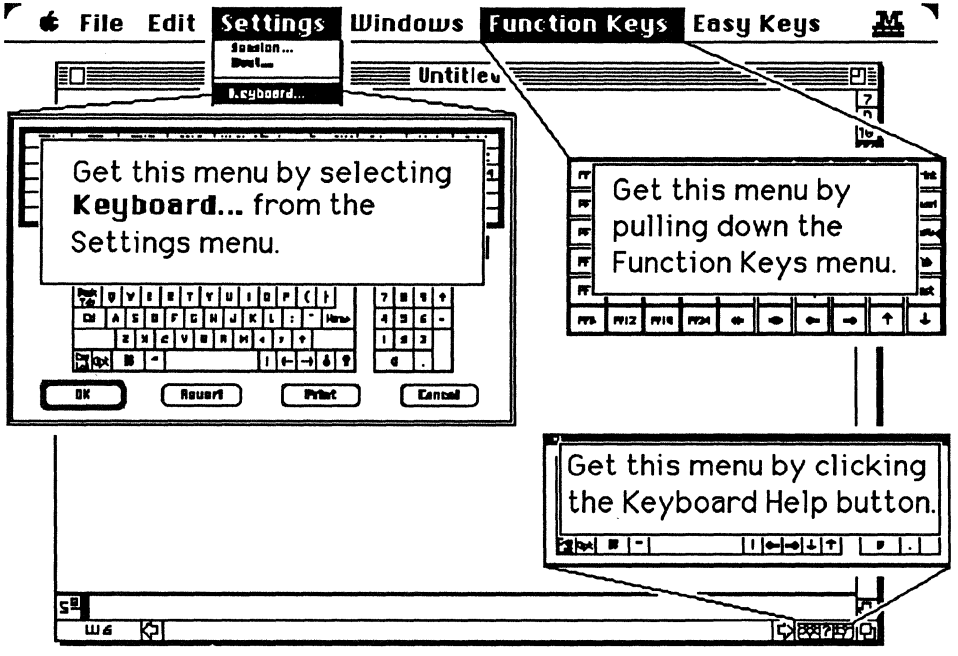
- View your keyboard set-up.
- Get all the the 3270 key functions, both on your keyboard and on screen menus.
- Redo your keyboard set-up.
- Construct EasyKeys, which let you record frequently-used key sequences for easy playback.
- Use the MMF Workstation cursor like a light pen.

The Basic Keyboard

MMF Workstation fully emulates the keyboard functions of the 87-key typewriter keyboard on IBM 3278 and 3279 terminals.

Three Keyboard Menus

The three keyboard-related menus are:



Macintosh Keyboard Support

MMF Workstation assigns the 3270 key functions to your Macintosh keyboard. MMF Workstation supports Macintosh and Macintosh-compatible keyboards.

CONTROL Key On Small Keyboards

To get the CONTROL key on the Macintosh 512Ke and Macintosh Plus keyboards, hold down the ⌘ and OPTION keys together.

Viewing Your Keyboard Set-Up

To find out which 3270 function is where on your Macintosh keyboard:

- Click on the Keyboard Help icon.

OR

- Pull down the Settings menu and select **Keyboard...**

as described below.

There Are Always Five Variations

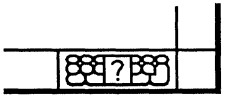
REMEMBER: There are actually five variations of the keyboard:

- Plain
- With OPTION key held down.
- With CONTROL key (or ⌘-OPTION for 512Ke Macintoshes and Macintosh Pluses) and held down.
- With ⌘ key held down.
- With SHIFT key held down.

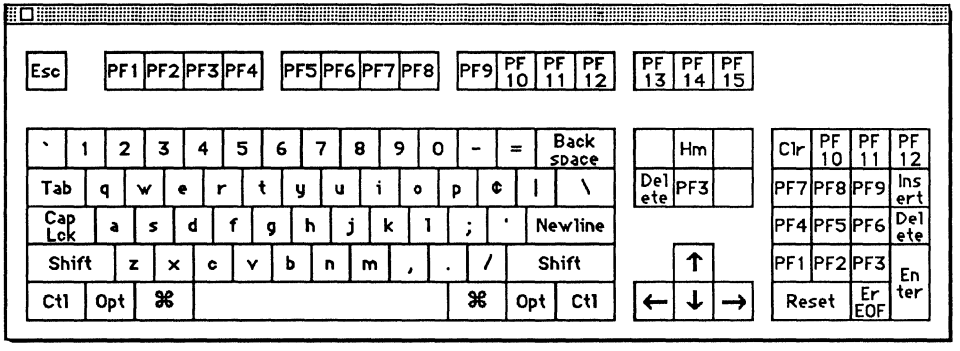
To see each keyboard variation, hold down the key and the contents of the window will change accordingly.

Keyboard Help Button

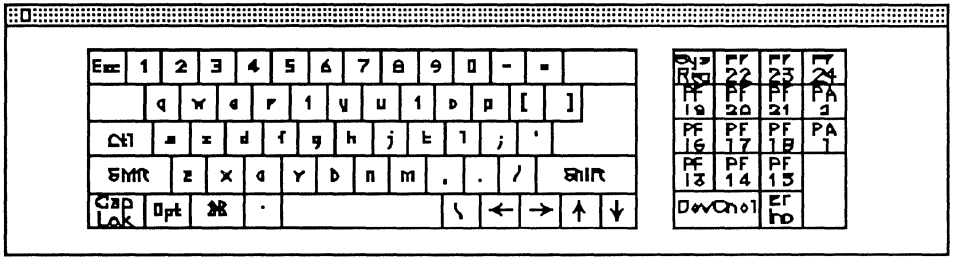
The Keyboard help button is in the lower right corner of the 3270 screen:



Click on the question mark and the following window will appear:



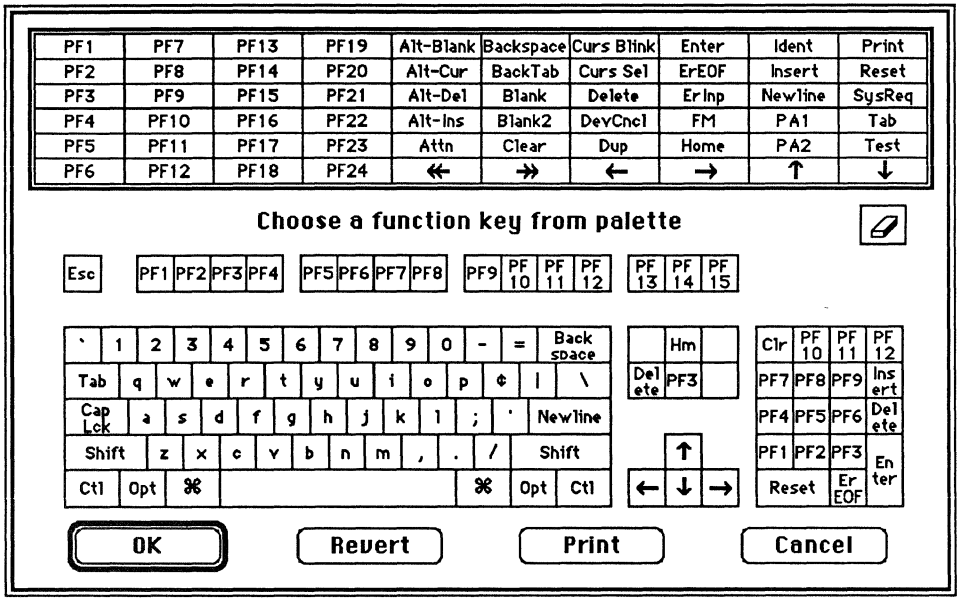
(Here's the window for the smaller keyboard:)



Keyboard Help is a floating window and it stays in front of all nonfloating windows. To make this window go away, click on the close box.

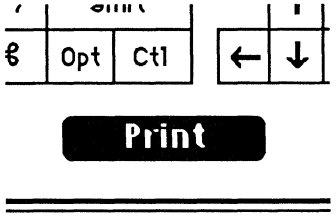
Keyboard... Selection in the Settings Menu

To view your keyboard and make modifications to it, pull down the Settings menu and select **Keyboard...**. You'll see a box with all the 3270 functions across the top and a keyboard map across the bottom:

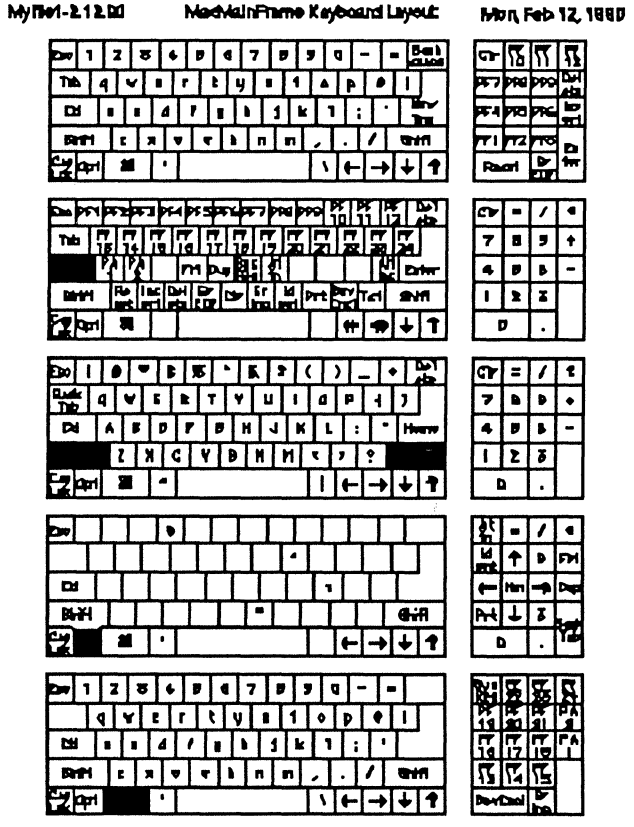


Printout

To get a printout of the five keyboards, click on the **Print** button:



And you'll get a printout on the Chooser printer that looks something like this. (Naturally, your printout will vary depending on your Macintosh keyboard.)



To look at the five keyboard layouts without printing them, hold down the ⌘, CONTROL, OPTION, and SHIFT keys and watch the keyboard map change.

Modifications

To make modifications to your keyboard layout, see the "Re-mapping Your Keyboard" section later in this chapter.

How To Type 3270 Keys

You can get almost every 3270 function key two ways: by typing on the keyboard or by clicking a screen item with the mouse.

Typing Keys On The Keyboard

1. Look up the 3270 key function on one of MMF Workstation's keyboard maps, as described in "Viewing Your Keyboard," above.
2. Type the appropriate key on your Macintosh keyboard.

Typing Keys On The Screen

There are two ways to type keys by clicking the mouse:

1. The Function Keys tear-off menu, and
2. The Keyboard Help button in the 3270 window.

REMEMBER: To see more keys, hold down ⌘, SHIFT, and so on.

To type any screen key, just click the mouse on the key once. (Grayed keys won't click; you'll have to type those from the keyboard.)

Keystrokes Go to the LU Session

When you type a key — either with the keyboard or on the screen — the keystroke will go to the active 3270 window's LU session.

Re-Mapping Your Keyboard

You can change the way the 3270 keys are mapped to your Macintosh keyboard.

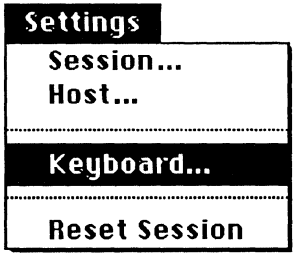
You may want to do this because you're used to a different keyboard layout, because you find a particular layout that suits you, or because you want to omit certain keys so you don't type them by accident.

The following sections describe how to use the Keyboard... Selection in the Settings menu to change your keyboard layout.

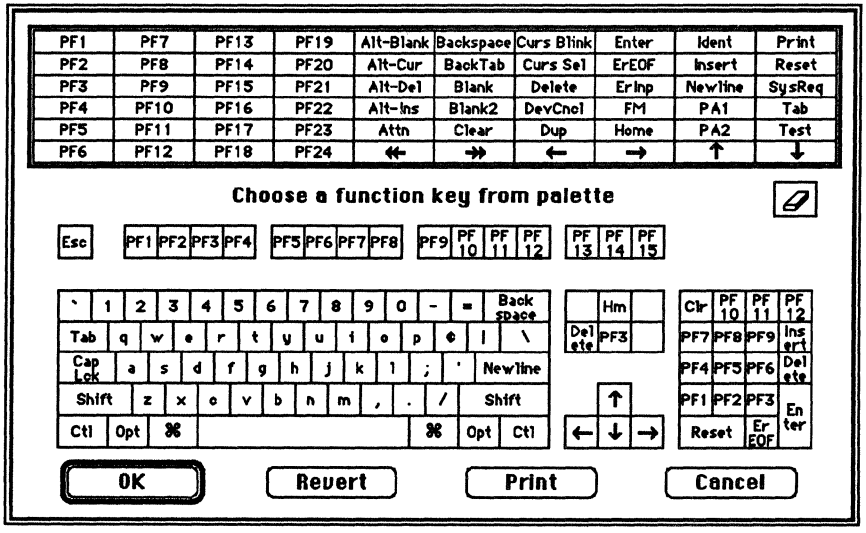
Keyboard... Selection in the Settings Menu

MMF Workstation comes with the 3270 keys assigned to keys on your Macintosh keyboard. You can change these assignments by using the **Keyboard...** selection under the Settings menu.

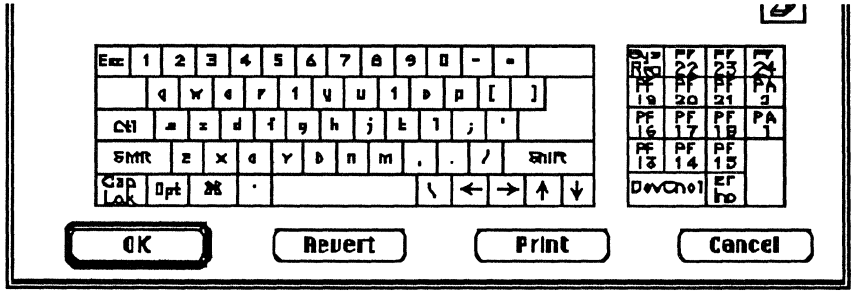
1. Pull down the Settings menu and select **Keyboard...**



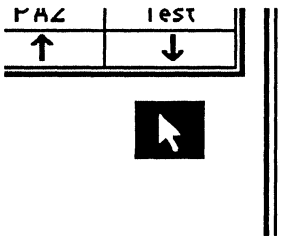
You'll see the following dialog box — 3270 functions are at the top and the keyboard is at the bottom:



(Here's the keyboard map for a smaller keyboard:)

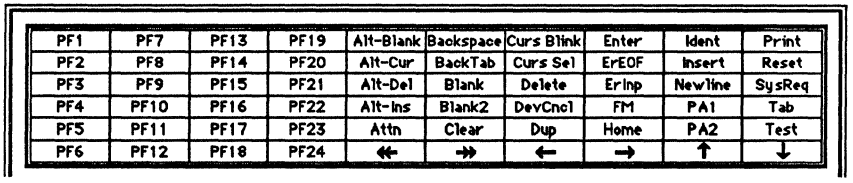


2. Make sure the cursor is an arrow:



If it's not, click this box until it changes to the arrow.

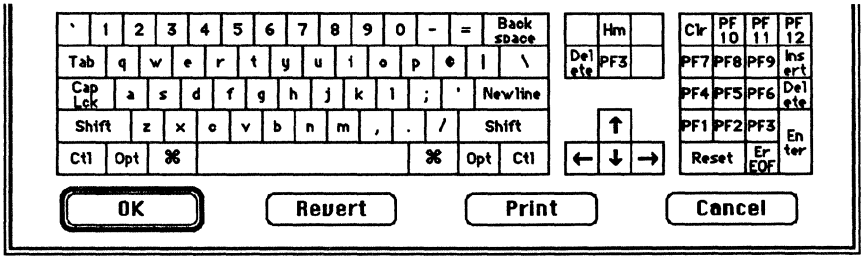
3. Look at the palette at the top of the Function Keys box and pick the new function you want to assign to the key:



PF1	PF7	PF13	PF19	Alt-Blank	Backspace	Curs Blink	Enter	Ident	Print
PF2	PF8	PF14	PF20	Alt-Cur	BackTab	Curs Sel	ErEOF	Insert	Reset
PF3	PF9	PF15	PF21	Alt-Del	Blank	Delete	Erlnp	Newline	SysReq
PF4	PF10	PF16	PF22	Alt-Ins	Blank2	DevCncl	FM	PA1	Tab
PF5	PF11	PF17	PF23	Attn	Clear	Dup	Home	PA2	Test
PF6	PF12	PF18	PF24	↞	↠	←	→	↑	↓

Click on the function you want to assign.

4. Look at the keyboard in the bottom of the box and decide where you want to assign the function. REMEMBER: You may have to hold down ⌘, CONTROL, SHIFT, or other modifier keys to get to the key you want.



Click on the key, and MMF Workstation will assign the function to that key.

To Get A Printout

To get a printout of the keyboard, which will show the current function-to-key assignments, click the **Print** button. (This printout will go to your current Chooser printer.)

REMEMBER: The printout will contain five different keyboard layouts, one for plain, one for OPTION-key, one for CONTROL-key, one for ⌘-key, and one for SHIFT-key.

To Undo Your Work

To put the keyboard back to the layout it had before this invocation of the Keyboard Settings box, click on the **Revert** button.

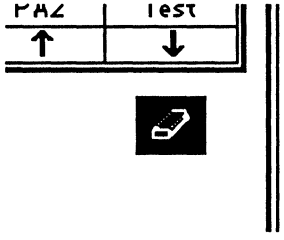
The **Cancel** button also reverts your work, and it closes the window.

To Remove A 3270 Function

You can remove a 3270 function from a key and leave the key with its original function. This is useful in the case of the numeric keypad — you may want to use the keypad to type numbers again rather than PF1, PF2, etc.

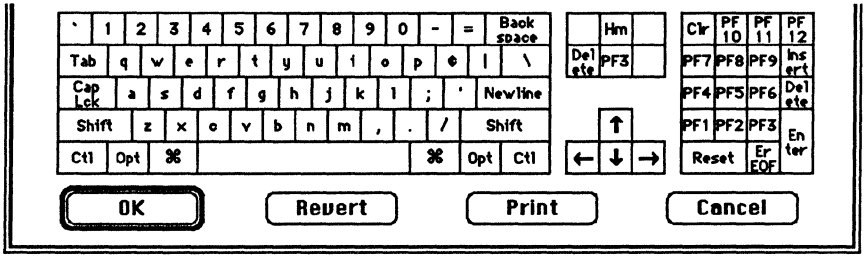
To remove a function from a key:

1. Make sure the cursor is an eraser:



   If it's not, click this box until it changes to the eraser.

2. Look at the keyboard in the bottom of the box and choose the key from which you want to erase the 3270 function. REMEMBER: You may have to hold down ⌘, CONTROL, SHIFT, or other modifier keys to get to the key you want.



   Click on the key, and MMF Workstation will erase the function from that key.

To Return To The Defaults

To get a keyboard that has the default settings that MMF Workstation offers, open a new Session Settings document (by pulling down the File menu and selecting **New**).

To Test Your New Key Assignment

You can test your new key assignment right away; you don't have to save your set-up or restart MMF Workstation. (But do save your setup in a Session Settings document if you want the key assignments to be permanent.)

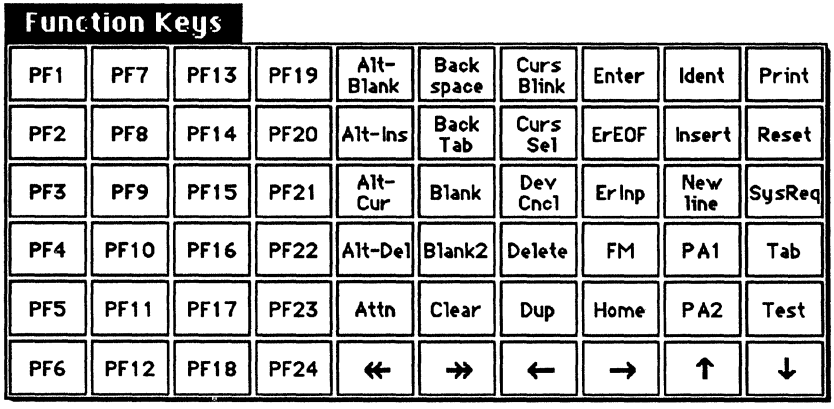
To test the key assignment, either:

- Type the key on your physical keyboard, or
- Click on the Keyboard Help button (lower right corner of your 3270 window), then click on the key in the Help window.

REMEMBER: Hold down CONTROL, SHIFT, etc. too, if that's how you configured the key.

The Function Keys Pull-Down Menu

The main purpose of this menu is to let you type function keys by clicking with the mouse. You can also use it to create a private function key palette.

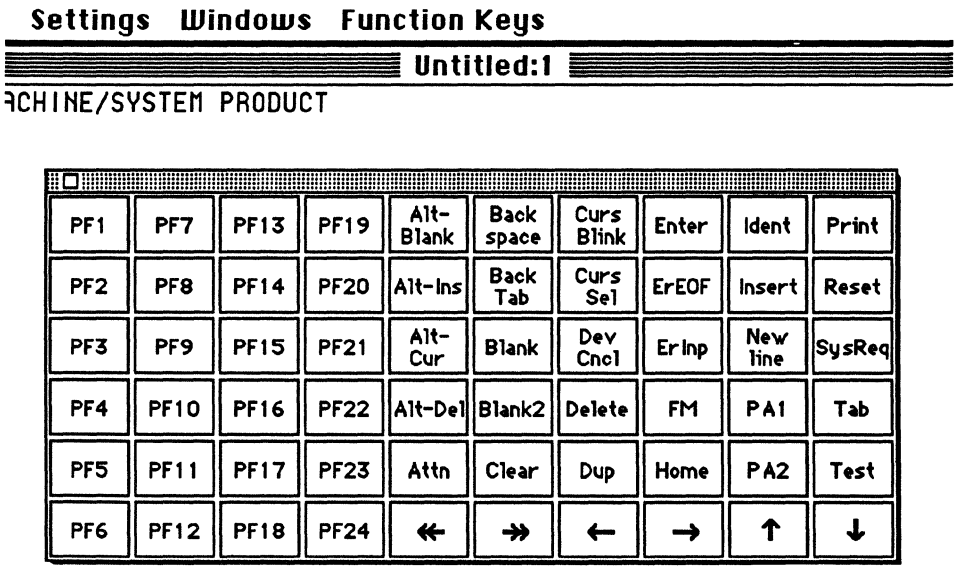


Typing Keys

To type a key, pull down the menu until the mouse cursor is over the key and release.

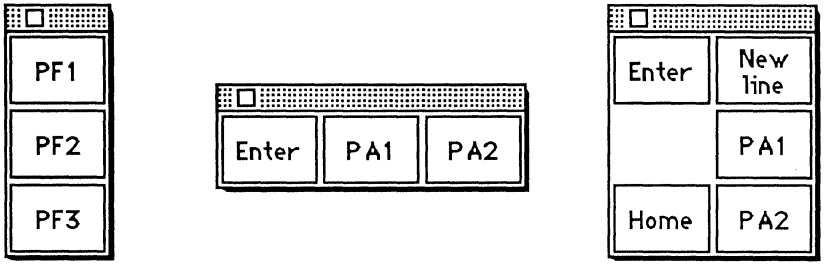
Tearing Off The Menu

If you want to look around a bit before you type, or if you want to create a palette, tear off the Function Keys menu. To do this, pull down the Function Keys menu but keep dragging the mouse all the way through. When you see the outline of a free-floating window on your screen, release the mouse. Now you'll see this floating palette:



Customizing the Function Keys Menu

You can use the Function Keys pull-down menu to make a small window that contains function keys, which you can click on as you work. Here are a few examples.



These windows can be very handy, especially since you don't have to find the key on your Macintosh keyboard in order to type it.

Steps:

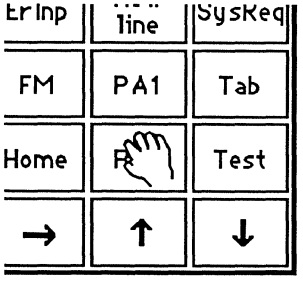
1. Tear Off The Menu

Click on the Function Keys menu in the menu bar and drag the mouse all the way through the menu before releasing.

2. Rearrange The Keys

To rearrange the keys in the palette window:

1. Hold down the ⌘ key (the cursor will change to a hand) and click on one key. Let's pick PA2:



2. Still holding down ⌘, drag PA2 to where you want it to be in the window — let's say you want it to be where PF2 is.

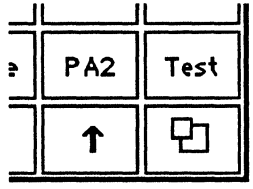
3. Release the mouse and the ⌘ key — PA1 and PF2 will swap places.

Undoing Key Rearrangements

To undo a key rearrangement, swap the keys back again.

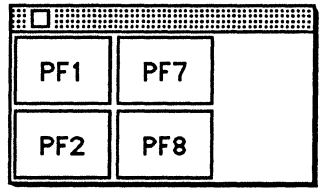
3. Size The Palette

To size the Function Key Palette down around only those keys you want to display, hold down the OPTION key. You'll see the lower right key-square change to a sizing box:



Still holding down OPTION, grab the sizing box with the mouse and size the window.

Notice that you can size the window so that blank space is added, if you want:



4. Move the Palette

To move the palette, grab the title bar with the mouse and drag it. The palette is a floating window, so it will stay in front of all nonfloating windows until you close it.

To make the palette window go away, click on the close box:

To reopen the palette window, pull down and tear off the Function Keys menu again. The window will reopen, and it will remember your rearrangements.

When you save your MMF Workstation set-up in a Session Settings document, MMF Workstation also saves the settings of this window.

Using EasyKeys

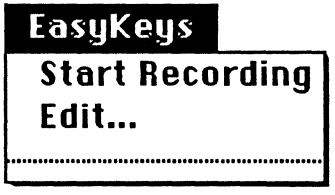
The EasyKeys feature lets you record a sequence of keystrokes and then play them back by pressing a single ⌘-key combination.

For example, you could record the keystroke sequence, "Accounting Files" under the key combination **⌘9**. To get "Accounting Files" to go in at the 3270 cursor, just press **⌘9** (or whatever ⌘-key combination you select at recording time).

To record, edit, and play back EasyKeys, use the EasyKeys pull-down menus described in the following sections.

To Record An EasyKey

1. Go to the 3270 window.
2. Pull down the EasyKeys menu and select **Start Recording**.



3. Type all the keys you want to record.

4. To end the sequence, after you type the last key, either

   - Type a host AID key. Examples:

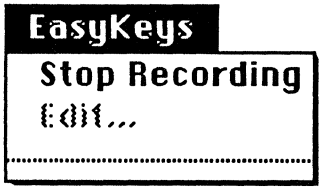
     [ENTER]

     [CLEAR]

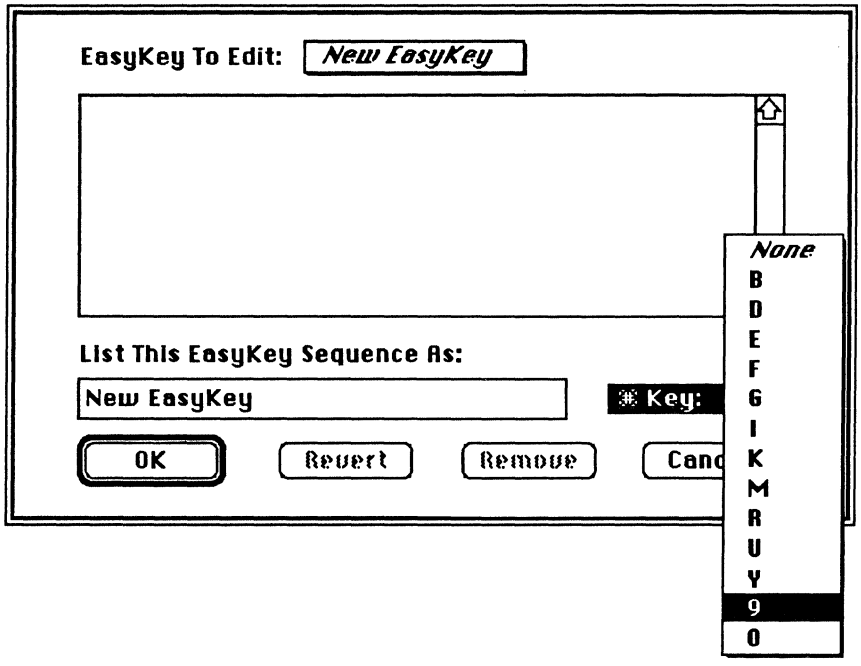
     [PA1] through [PA3]

     [PF1] through [PF24]

   - Or pull down the EasyKeys menu again and select **Stop Recording**:



EasyKeys will now present you with the following dialog box:



5. Fill out the box:

   - Optionally, select the ⌘-key combination that you want to trigger your recorded sequence by selecting it from the ⌘-key pop-up menu.
   - Supply a new name for your EasyKey by typing it in the List This EasyKey Sequence As: panel.
   - Change the keystrokes that will comprise the EasyKey by clicking inside the scroll box and then using the DELETE key and BACKSPACE keys, cutting and pasting, and so on to edit the keystrokes.

   When you're done, click **OK**; or to undo the EasyKey assignment and discard the recorded keys, click **Cancel**.

Items In The EasyKeys Dialog Box

EasyKey To Edit: This is a pop-up menu that displays all the EasyKeys in the current Session Settings file.

Scroll box: This box shows the keystrokes that comprise the EasyKey.

List This EasyKey Sequence As: Type the name you want the EasyKey to have. You can supply a name up to 31 characters long.

⌘ Key: This is a pop-up menu that lists the available ⌘-key combinations.

confirms your edits, assignments, and removals and closes the EasyKeys dialog box.

applies to edits; it restores the EasyKey you've been editing to what it was before this invocation of the EasyKeys box.

removes the EasyKey from the Session Settings document. (The removal is not permanent until you Save the Session Settings document.)

cancels whatever you've done in the EasyKeys box, including clicking the **Remove** button and the most recent editing of an EasyKey. It then closes the EasyKeys dialog box.

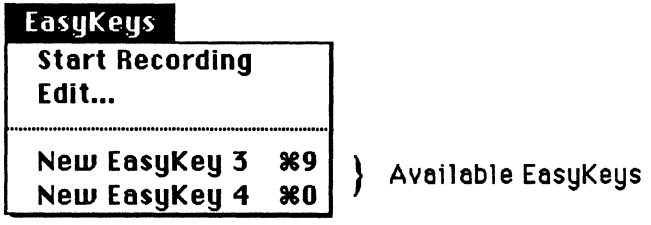
To Play Back an Easy Key

There are two ways to play back an EasyKey:

- Type the ⌘-key combination for the EasyKey,

  OR

- Pull down the EasyKeys menu and select the key you want. The available keys are listed in the bottom section of the menu:

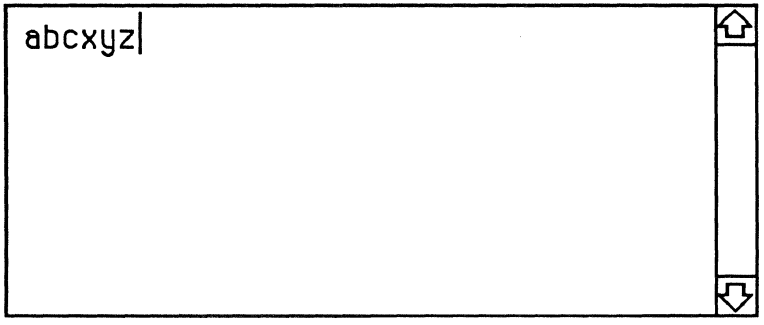


To Edit An Easy Key

1. Select **Edit** from the EasyKeys menu.

   You'll see the EasyKeys configuring box again.

2. To edit the EasyKey, click the cursor into the scroll box:



3. Type in additional keys if you wish; or use the DELETE key and BACKSPACE keys, cutting and pasting, and so on to get the keystroke sequence you want.

4. When you're done editing, click one of the following:

   - **OK** to confirm the new keystrokes.
   - **Revert** to discard the edits and restore the EasyKey to what it was before you started editing it.
   - **Cancel** to discard the edits, cancel everything else you did in the box, and close the box.

Light Pen Feature

You can use the MMF Workstation mouse cursor like a light pen as follows:

For applications that support light pens:

- Position the mouse cursor in the 3270 window at the item you want to select.
- Hold down the ⌘ key. The mouse cursor will change to a lighted cursor.
- Click the mouse button once to make the selection.

Chapter 6

Introduction to File Transfer

MacMainFrame's file transfer capability lets you transfer files between your Macintosh computer and an IBM mainframe host. Transferring a file to the host is called **uploading**; transferring a file from the host is called **downloading**.

By using the different kinds of transfers that MacMainFrame's file transfer capability offers, you can exchange Macintosh and non-Macintosh files among Macintosh and non-Macintosh machines.

To use MacMainFrame's file transfer capability, you:

1. Provide information about the host machine by selecting **Host...** from the Settings menu.
2. Select **Upload** or **Download** from the File menu, according to what you want to do.

This chapter introduces the following topics, with which you need to be familiar in order to use MacMainFrame's file transfer capability correctly:

- The environment on the IBM host machine.
- Transfer formats.
- Multiple LU sessions
- Batch processing

Chapter 7 lists the steps to perform all file transfers and describes the items in the Upload/Download dialog boxes.

Chapters 8, 9, and 10 list the dialog boxes you'll see when you transfer files to and from CICS, VM/CMS, and TSO operating environments, respectively. Chapter 11 describes how to batch process your file transfers.

To look up a file transfer in those chapters:

1. Turn to the chapter for the particular operating environment: CICS, VM/CMS, or TSO.
2. Then turn to the first half of the chapter for Uploads, the second half of the chapter for downloads.
3. Then turn to the page that describes the transfer format you'll use: text, binary, or document.
4. Finally, look at the top of the page if you're using Avatar's HFT software, the bottom of the page if you're using IBM's HFT software.

Terminology: For convenience, we'll refer to MacMainFrame's file transfer capability as MMF FT hereafter.

The Host Environment

MMF FT lets you transfer files to and from three IBM host environments: CICS, VM/CMS, and TSO.

Before you perform a file transfer, you must let MMF know which IBM environment you're running to. (You do this with the **Host...** selection in the Settings pull-down menu.)

As you perform the transfer, you'll fill out slightly different Upload/Download dialog boxes depending on the IBM environment you selected.

The Host-Resident File Transfer Software (HFT)

For the IBM host to perform its side of the transfer, there must be HFT (host file transfer) software running on the host. With MMF FT software, you can use IBM's HFT software or you can use Avatar's HFT software. (Names of IBM and Avatar HFT programs are listed in Chapter 7.)

Before you perform a file transfer, you must specify which host-resident HFT software you'll be using. You do this in the same dialog box in which you specify the host environment. (Pull down the Settings menu and select **Host....**)

Transfer Formats

The term transfer format refers to the way a file's contents is changed while it is being transferred. MMF FT uses three transfer formats: **Text format**, **Binary format**, and **Document format** (which is sometimes called **MacBinary format**).

The following sections explain the formats in which you can transfer files with MMF FT, and they describe what changes, if any, a file goes through when it is transferred in each format.

Macintosh Files

While you don't have to know much about the internals of Macintosh files, we provide the following information for your convenience; it is useful in understanding the differences among MMF FT's three transfer formats.

Internally, Macintosh files have three parts:

Header — Contains basic information about the file, such as its name.

Data — Contains the file's data.

Resources — Contains formatting or other Macintosh-application-specific information.

According to which format you choose, MMF FT transfers all or some of these parts.

Text Format

When MMF FT transfers files in text format, it transfers only the text — no control characters, no font information, no formatting.

Useful For

Text format is useful for text data that can withstand translation without loss of meaning. (Example: the word "MacMainFrame" in ASCII code comes out the same in EBCDIC — "MacMainFrame.")

Many files contain simple ASCII text with no formatting characters (other than TABs and SPACEs, which are themselves ASCII characters). If you're not sure how a document will look when it is converted to text-only, save the document using one of the following programs:

- Apple TeachText.
- MacWrite™ (using the Text Only option).

Plain ASCII files are good candidates for file transfer in text format; executable programs or graphics data are not good candidates.

To make sure you can send a file in text format, save the file as text-only on your Macintosh, regardless of how the application originally saves the file.

On Upload

MMF FT transfers only the data portion of a Macintosh file. It translates the outgoing data from ASCII (native code on the Macintosh) to EBCDIC (native code on IBM host machines), converting unprintable characters (such as control characters) to spaces.

Padding and Fragmenting

MMF FT removes all Carriage Return (CR) characters from text files on upload.

- If the file on the host has fixed-length records but a Macintosh record is shorter than the fixed length, MMF FT adds space characters to pad the record to that length.
- If a Macintosh record is longer than the host record length (fixed or variable), MMF FT will break the Macintosh record into as many pieces as necessary to fit the host record length.

TABs

MMF FT converts each TAB to one SPACE unless you select the **Expand Tabs** option in the Upload box. (For more information on Tab Stops, see Appendix C.)

On Download

MMF FT translates the incoming data from EBCDIC to ASCII, converting unprintable characters (such as control characters) to spaces. MMF FT creates a Macintosh MacWrite™ text-only file.

Padding and Fragmenting

- MMF FT removes trailing spaces from the end of each host fixed length record.
- MMF FT adds a Carriage Return (CR) to the end of each record in order to create a Macintosh record.

TABs

To cause MMF FT to insert TABs and other control characters into the Macintosh record, select **Insert Special Characters** in the download box. (For more information on inserting special characters, see Chapter 7, How To Transfer A File.)

Binary Format

When transferring a file in binary format, MMF FT transfers only the data part of Macintosh files and does no translation of the data.

Useful For

Binary format is useful for:

- Moving the data parts of Macintosh files around unchanged.
- Transferring files belonging to non-Macintosh-specific applications.
- Transferring files between Macintosh and non-Macintosh machines. For example, you can use it to move files between an MS-DOS PC and a Macintosh using the IBM mainframe as a mail box. (These exchanges also require that software on the two machines — the Macintosh and the PC — can read the files. Excel™, PageMaker™ and Microsoft® Word have built-in translation facilities that allow this.)

On Upload

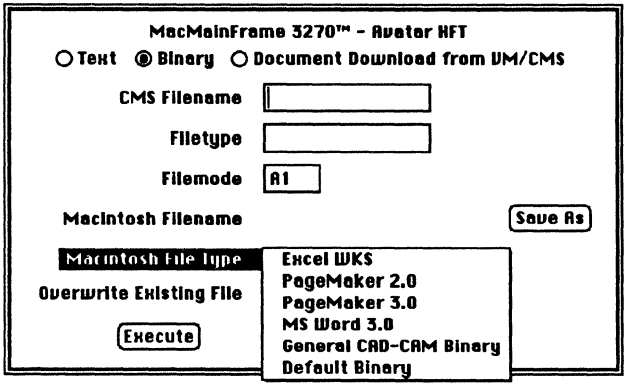
When uploading Macintosh documents in binary format, MMF FT transfers only the data part and does no translation of the data.

On Download

When downloading files in binary format, MMF FT lets you add file type and creator type information to the file. This information lets Macintosh applications recognize the file; and once the file has a file type, you can double-click on the file's icon and the file will start the correct application.

Available File Types

Use the Macintosh Filetype item in the Download box to specify the file type. The **Macintosh file type** item is a pop-up menu:



MMF FT lets you save your downloaded files as the following types:

Mnemonic	File Type

Excel WKS	Excel™ WKS
Pagemaker 2.0, Pagemaker 3.0	PageMaker™ 2.0 & 3.0
MS Word 3.0	Microsoft® Word 3.0
General CAD-CAM binary	General CAD-CAM binary
Default Binary	All files

Default Type: If the first five file types do not fit your application(s), choose Default Binary.

Document Format

Document format lets you transfer Macintosh documents to and from IBM machines intact, that is, with no loss or modification of any part of the document.

The way MMF FT stores Macintosh files on the host is called **MacBinary Format**. MacBinary format is used by other programs in other non-Macintosh environments, for example, on VAX™/VMS machines.

Useful For

Document format is useful for Macintosh-to-Macintosh document exchanges where an IBM machine is the file server. One Macintosh can store exact copies of documents on the IBM host; later, another Macintosh can retrieve them.

On Upload

When uploading files in MacBinary format, MMF FT transfers the entire Macintosh document. Neither MMF FT nor the host performs any translation of the file's contents.

This means the file is not usable by the host, although the host can move and copy the file.

On Download

On download, the IBM machine gives you back the complete Macintosh file. Inside this complete Macintosh file, the original Macintosh filename is preserved, even if the Macintosh file had another name on the IBM host. You can retrieve this Macintosh name now by selecting **Use name from host file image** in the download box.

Background/Foreground Processing

It's not necessary to wait for a MMF FT file transfer to finish to go back to work. You can either use multiple LU sessions to run the file transfer in the background, or you can batch your file transfers. The next two sections describe these options.

Using Multiple LU Sessions

To use multiple LU sessions, run the file transfer in one LU session, then go to another LU session to resume work. The file transfer will continue to run in the first LU session.

Batching Your File Transfers

To run your file transfers in batch, collect the transfers into a batch file, then run the batch file later at your convenience. For complete information on using MMF FT's batch feature, see Chapter 12.

Chapter 7

How To Transfer A File

Introduction

This chapter describes the steps you follow with MMF FT to perform all file transfers.

For additional information about a specific file transfer, see Chapters 8, 9, and 10.

Overview

There are five steps for all file transfers:

1. Check the host settings: select **Host...** from the Settings menu and fill out the resulting dialog box. (This step needs to be done only once per IBM environment.)
2. Select **Upload** or **Download** from the File menu.
3. Fill out a file box. (The file box is optional on download.)
4. Fill out the resulting upload or download dialog box.
5. Confirm the transfer: click **Execute**, **Cancel**, or **Batch** in the upload/download box.

The following sections describe each step in detail.

Before You Start

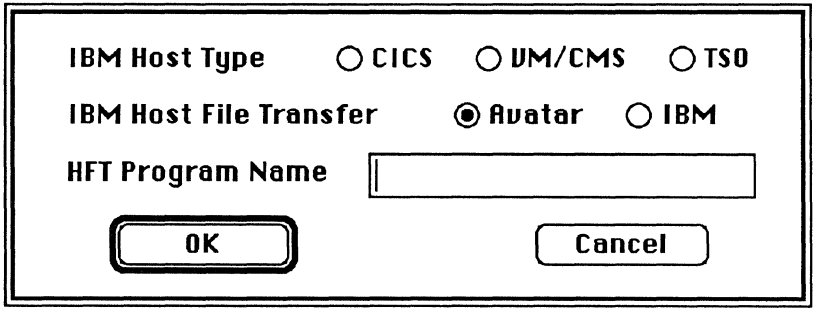
Make sure you have:

- Names and formats of the files you want to transfer.
- Information about the IBM host.
- A second LU session available, if you want to go back to work and not wait for the file transfer to finish.

1. Check The Host Settings

NOTE: This step needs to be done only once per IBM environment.

Pull down the Settings menu and select **Host...** . MMF FT will display the following dialog box:



Fill out the dialog box as follows:

IBM Host Type Click on the operating environment that is running at the IBM host, either CICS, VM/CMS, or TSO.

IBM Host File Transfer Specify whether the file transfer software, which resides at the host, is IBM's (called IND$FILE) or Avatar's (called HFT).

HFT Program Name Supply the name of the host-resident file transfer software according to this table.

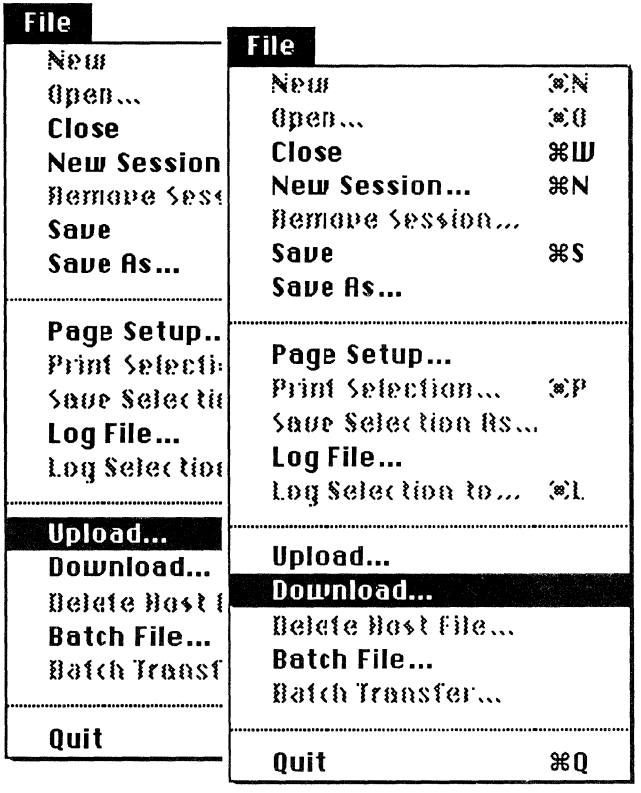
The standard names are:

If you're using:	And The IBM environment is:	Enter this HFT program name:
Avatar's HFT	CICS	RRR3
	TSO	TSOHFT
	VM/CMS	CMSHFT
IBM's IND$FILE	CICS	IND$
	TSO	IND$FILE
	VM/CMS	IND$FILE

When you're done, click the **OK** button.

2. Select Upload or Download

Pull down the File menu and select **Upload** or **Download** according to the transfer you want to perform:

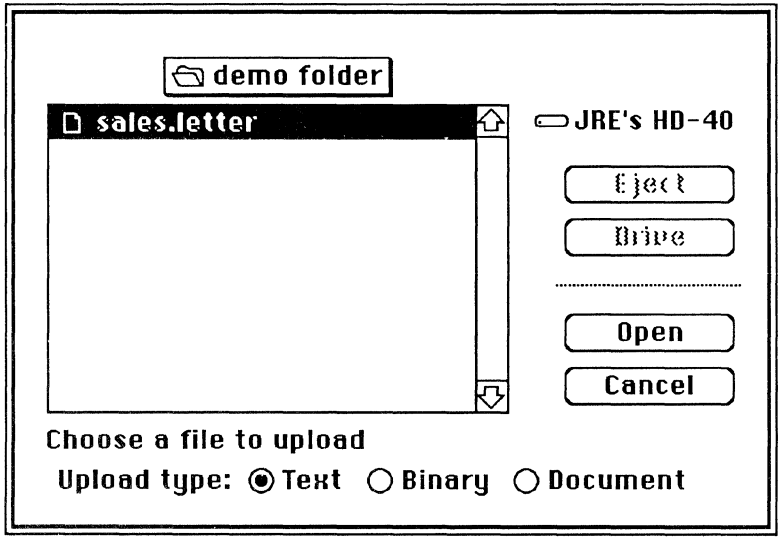


3. Fill Out the File Dialog Box

The file dialog box is different depending on whether you're uploading or downloading.

File Box For Uploads

All uploads automatically present you with a file dialog box first. (Click the **Select** button in the Upload box to get back to this box.)



Use the box just like a regular Macintosh file dialog box.

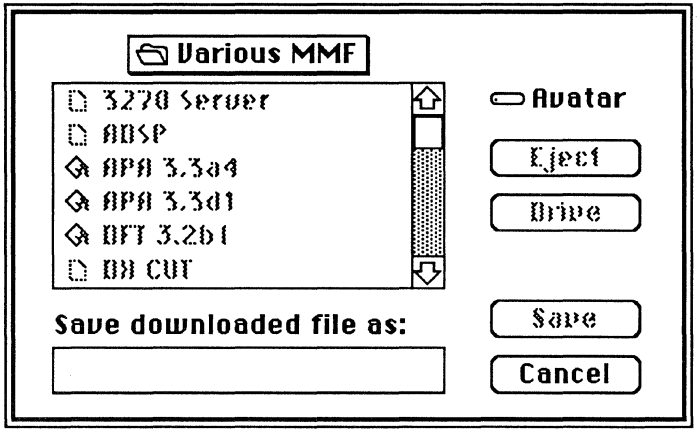
Transfer Format

Note that you can now supply the format in which you would like MMF FT to transfer the file by using the Upload type: radio buttons — **Text**, **Binary**, and **Document**.

File Box For Downloads

On downloads, the file dialog box is optional.

To get to this box, Click the **Save As** button in the download box .



Use the box just like a regular Macintosh file box.

Save terminal file as: MMF FT creates a name here, basing it on the IBM filename, that the downloaded file will have when it arrives at the Macintosh.

Change this name if you wish by typing in a new name.

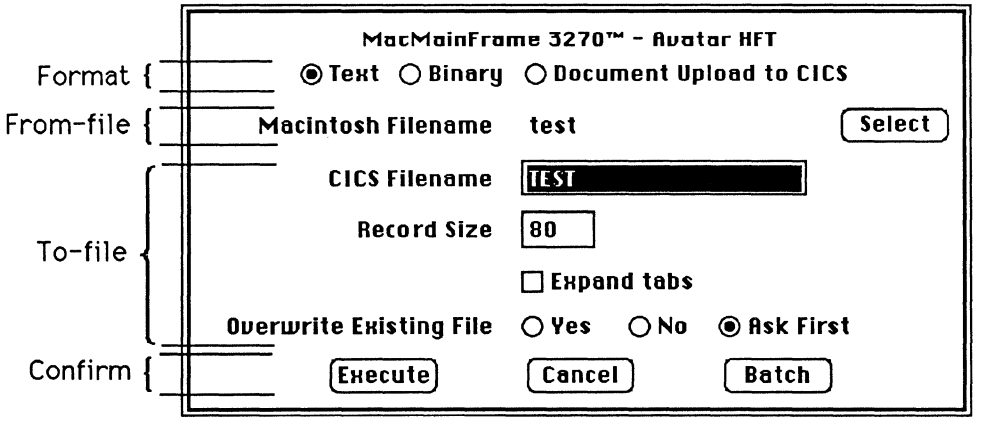
4. Fill out the Upload/Download dialog box.

MMF will then display an Upload/Download dialog box.

Fill out the requested information in the Format section, the From-file section, and the To-file section. (See the diagram below.)

Then click **Execute**, **Cancel**, or **Batch** according to what you want. (For more information on batch processing, see Chapter 11.)

Here's a sample Upload/Download dialog box. (The dialog box you get will vary depending on the type of transfer you're doing.)



Items in the Upload/Download Dialog Boxes

☐ Append CR to each line

This item tells the IBM host to add a carriage return (CR) character to each line of text or binary data it downloads to the Macintosh.

☐ Append to Host File

This item tells the IBM host to perform an append, not an overwrite, during upload.

Block Size

In this item you may supply the number of characters that the TSO destination file should have on upload.

Default = 80 characters.

Maximum = 99999 characters.

CICS Filename

MMF FT creates a name here, basing it on the Macintosh filename, that the uploaded file will have when it arrives at the IBM host.

Type in a new name if you wish, but be sure to follow the host's naming conventions.

CMS Filename

MMF FT creates a name here, basing it on the Macintosh filename, that the uploaded file will have when it arrives at the IBM host.

Type in a new name if you wish, but be sure to follow the host's naming conventions.

☐ CR is record separator

On Uploads, tells the IBM host that the carriage return character in the uploaded file is the record separator character.

Directory

The **Directory** button lets you view the files that are on a CICS host. Click the button to see a directory dialog box. For more information, see Chapter 8.

Available only when Avatar HFT software is running on the host.

☐ Expand Tabs

This item lets you specify an alternate TAB-to-SPACE conversion scheme on uploads of text files, as follows:

	When IBM HFT is running on the host:	When Avatar HFT is running on the host:
☐	Each ASCII TAB → 1 EBCDIC TAB	Each ASCII TAB → 1 EBCDIC SPACE
☒	TABs → SPACEs according to the spacing on the Tab Stops dialog box's ruler.*	TABs → SPACEs according to the spacing on the Tab Stops dialog box's ruler.*

* When you select **Expand Tabs** (when you click the check box to ☒), MMF FT first displays a dialog box that lets you redefine the TAB settings. The Tab Stops dialog box is described in Appendix C.

File mode

You must supply the CMS file mode here.

File type

You must supply the CMS file type here.

Format: Text, Binary, Document

Identifies the file's contents by data type and limits the way transmitting software handles the data during transmission.

Does not modify the contents of the original file in any way; only affects the file's copy that arrives at the destination..

☐ Insert special characters

On downloads, you may tell MMF FT to change certain letter combinations in the arriving file to special characters.

To use this option, you must insert the letter combinations in the host text file and select **Insert Special Characters** in the text-format download box.

The table below provides examples of the special characters that you can insert on the host.

When this letter combination arrives:	MMF FT changes it to this special character:
\t	TABs
\b	BACKSPACE
\n	NEW LINE (Line Feed)
\r	RETURN
\f	FORM FEED
\v	VERTICAL TAB
\0##	A byte value in hexadecimal code.*

* MMF FT interprets this as an ASCII character. EXAMPLE: \005 becomes the ASCII TAB character on the Macintosh.

CAUTION: Make sure the hex code corresponds to a valid ASCII character.

Macintosh Filename

When uploading: Type in the name of the Macintosh file you're uploading.

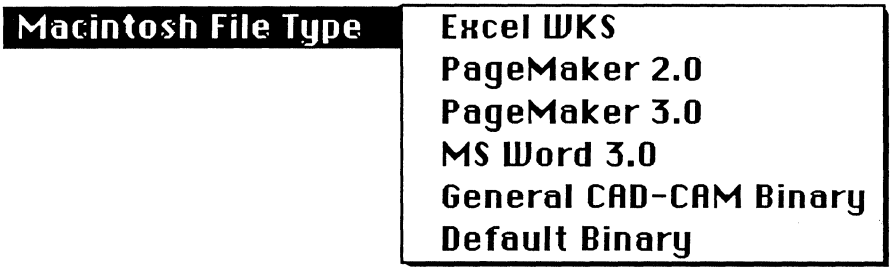
When downloading: MMF FT creates a name here, basing it on the IBM filename, that the downloaded file will have when it arrives at the Macintosh machine.

To view the current files on your Macintosh, click the **Select** button. See the **Select** item in this list for more information.

Macintosh Filetype

You may supply a Macintosh file type here.

This is a pop-up menu — click on the item to get the menu:.



And scroll down or up to select the file type you want

Member Name

If the TSO data set is partitioned, supply the member name; otherwise, leave blank.

Number of Records

You may change the number of records per transfer.

Default = 1000 records.

Maximum = 99999 records.

Overwrite Existing File ○ Yes ○ No ◉ Ask First ○ Append

You may specify whether or not MMF FT should replace an existing file on your Macintosh with the new file that arrives in the download.

Ask First (which is the default) lets you reject the overwrite without aborting the download — you supply a new filename instead, and MMF writes to that file.

Record Format ○ Fixed ◉ Variable ○ Undefined

You may supply the format that the uploaded file's records should have in the destination file.

Default = Variable

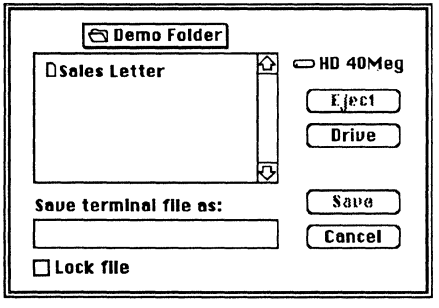
Record Size

You may supply the number of characters per record that the destination file should have on upload.

MMF FT supplies a default record size.

Save As

On downloads, if you want a different filename for the arriving file than the name MMF FT creates, click this button. MMF FT will give you a file box:

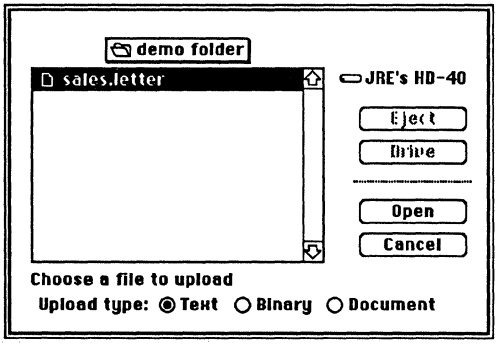


Fill out the **Save terminal file as:** item with the file name you want.

Click the **Save** button to save the file under the new name and leave the box, or click the **Cancel** button to leave the box without changing the name under which to save the file.

Select

If you want to change the name of the Macintosh file you're uploading, click the **Select** button, and MMF FT will present you with a file dialog box:



Use the box to find the file you want; select the file, then click the **Open** button to ready the file for transfer.

MMF FT will open the file, close the box, and return you to the Upload/Download box.

TSO Allocation

On upload, supply the allocation for the file on the host; you must use standard TSO file allocation commands here.

TSO Data Set Name

Supply the TSO data set name of the file you're going to upload. (See **TSO File Name** for downloads.)

NOTE: A partitioned data set must have been previously created on the host.

TSO File Name

You must supply the name of the file from the TSO environment that you want to download. (See **TSO Data Set Name** for uploads.)

☐ Use name from host file image

On downloads, MMF FT names the arriving file what it was named on the IBM host.

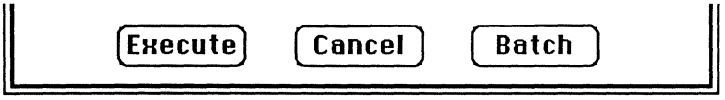
If the file was uploaded in MacBinary format, checking this item will give you the file's original Macintosh name, even if it had another name while it was on the IBM host.

Transfer Format

Note that you can respecify the format in which you would like MMF FT to transfer the file by using the radio buttons now: **Text**, **Binary**, and **Document**.

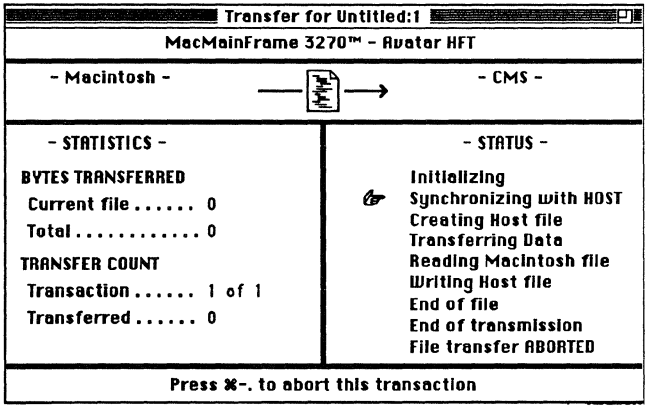
5. Confirm the Upload/Download.

When you're finished filling out the upload/download dialog box, click the **Execute, Cancel,** or **Batch** button; the buttons are at the bottom of the box.



Execute

If you click **Execute**, MMF FT will perform the upload or download and it will display a status window to show you the progress of the file transfer:



(This window is described in more detail in the next section.)

When the file transfer is finished, the status window disappears.

REMEMBER: You don't have to watch the Status window; you can go back to work immediately by switching to another LU session and resuming work there.

Batch

MMF FT will record into the batch file you specify all the information you supplied in the upload/download dialog box and in the Host Settings box. Later, you can run the transactions in this batch file by selecting **Batch Transfer...** from the File menu.

For complete information on MMF FT's batch feature, see Chapter 11.

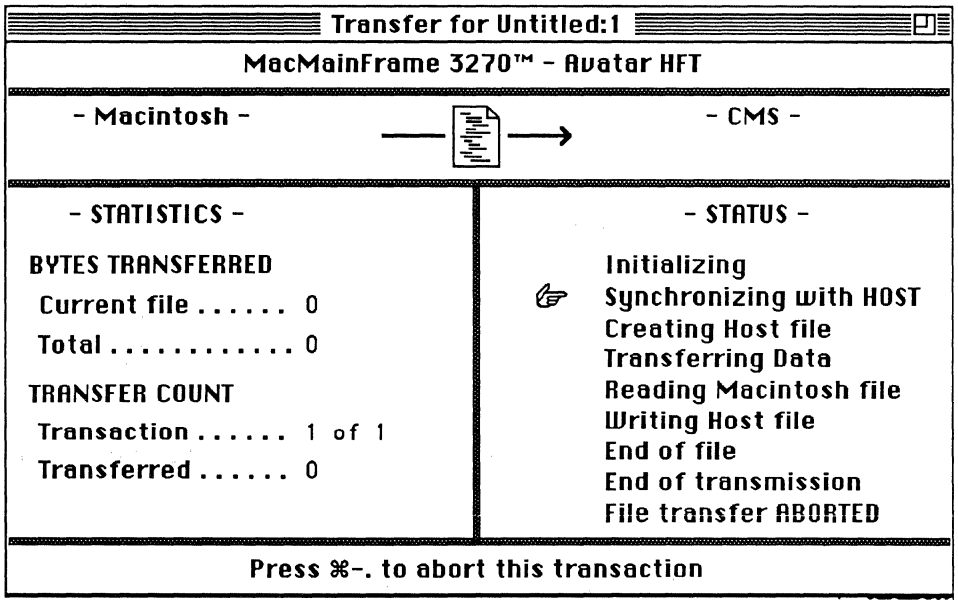
Cancel

MMF FT discards all the information you've provided in the Upload/Download box, performs no file transfer, closes the box, and returns you to the 3270 session window.

The File Transfer Status Window

The File Transfer Status window is an information box that shows the progress of the file upload or download.

This sample window shows the progress of a file being uploaded to a VM/CMS environment:



(When you're in the Load Status box, your cursor will also change to a small animated hand, like the ticking watch the Finder displays.)

Elements of the File Transfer Status Window:

The arrow shows the direction of the transfer:

An upload appears as - **Macintosh** - → - **(IBM)** -.

A download appears as: - **Macintosh** - ← - **(IBM)** -.

The icon in the center of the arrow shows the format in which the file is being transferred:

Text format

Binary format

Document format

- STATISTICS -

STATISTICS displays how many bytes have been transferred, and how many transfers have occurred.

- STATUS - and

The pointing hand indicates which process in the STATUS list is occurring at that moment. The hand moves up and down the STATUS list as the file transfer progresses.

Errors And Troubleshooting

If you fill out a field in the Upload/Download dialog box incorrectly, MMF FT will beep or blink the screen but will not perform the transfer (or if you clicked **Batch**, will not log the transaction to the batch file) and will wait for you to supply correct information.

If you're in doubt about a field, MMF FT often fills in default values where it needs them; try the default first.

Chapter 8

File Transfers To/From CICS

Introduction

This chapter lists all the file transfers you can perform with MMF FT to and from a CICS environment.

How to Use This Chapter

Uploads: See the beginning of the chapter.

Downloads: See the end of the chapter.

If you're using Avatar HFT: See the dialog boxes on the top of the page.

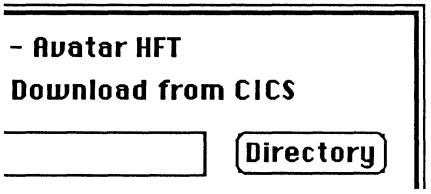
If you're using IBM HFT: See the dialog boxes on the bottom of the page.

Within the Upload section, the transfers are: first Text format, then Binary format, then Document format. Within the Download section, the order is the same.

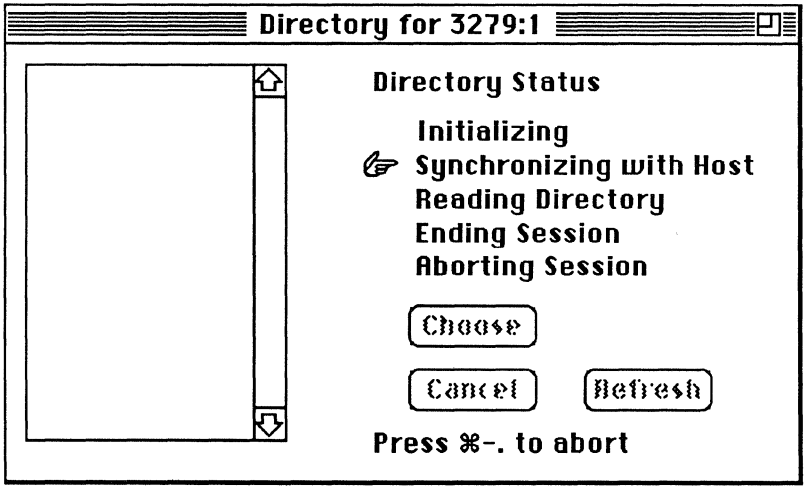
For special CICS-related features — viewing a deleting files on the CICS host — see the next two sections.

Viewing Files on the CICS Host

If you have Avatar HFT running on the host, you can view files there. To do so, use the **Directory** button, which appears in the download dialog boxes:



This button gives you the following directory dialog box, which lets you view the files on the host:



The HFT software will display the files in the scroll list. Scroll up and down to view the files.

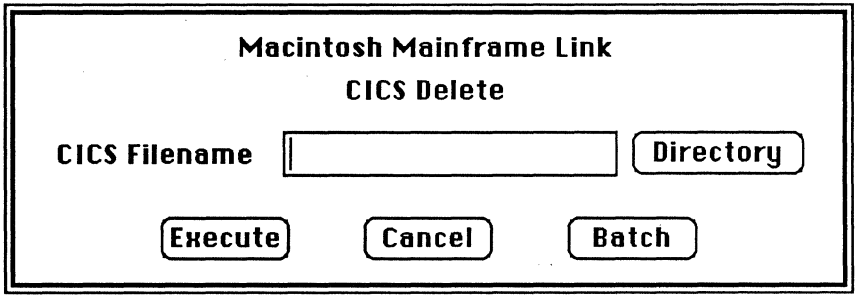
- To select a file to transfer, select the file in the scroll list by clicking the mouse, then click the **Choose** button.

- To quit the dialog box without selecting a file, click the **Cancel** button.
- To get an updated listing of the files, click the **Refresh** button. **Refresh** is useful since files may be added to or deleted from the directory while you are working.

Deleting Files on the CICS Host

To delete a file on the CICS host:

1. Make sure you have Avatar HFT software running on the host.
2. Pull down the File menu and select **Delete Host File...** .
3. Use the resulting dialog box:



Supply the name of the file you wish to delete.

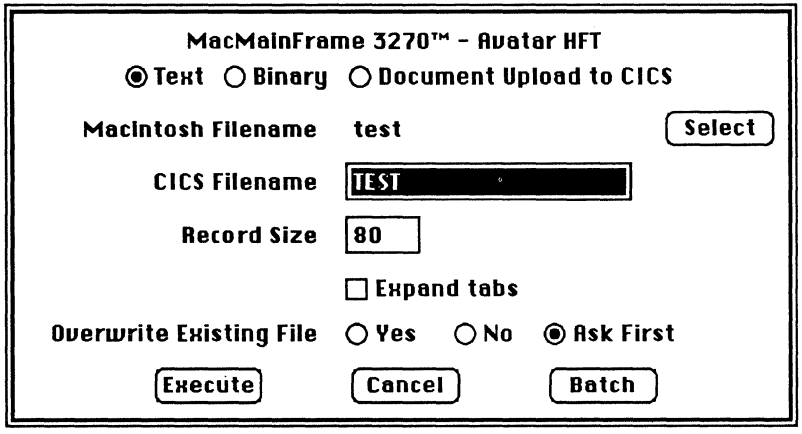
Notice the **Directory** button; you can use this button the same way as in the CICS download boxes — to view files on the CICS host.

4. Click **Execute**, **Cancel**, or **Batch**.

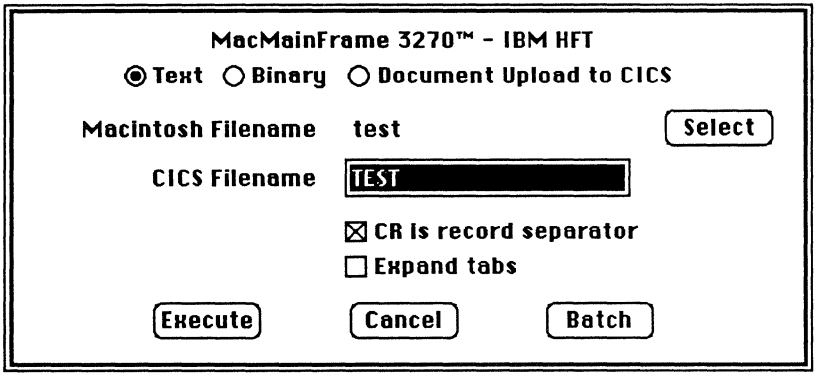
NOTE: The actual deletion of the file takes place when the CICS system administrator runs the Purge program on the CICS host.

Uploads – Text Format

Using Avatar HFT

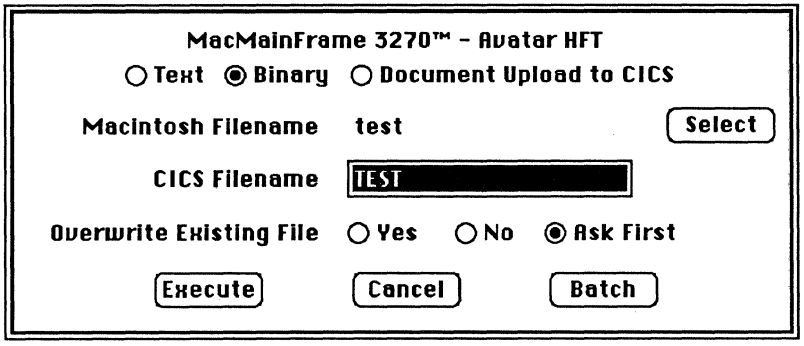


Using IBM HFT

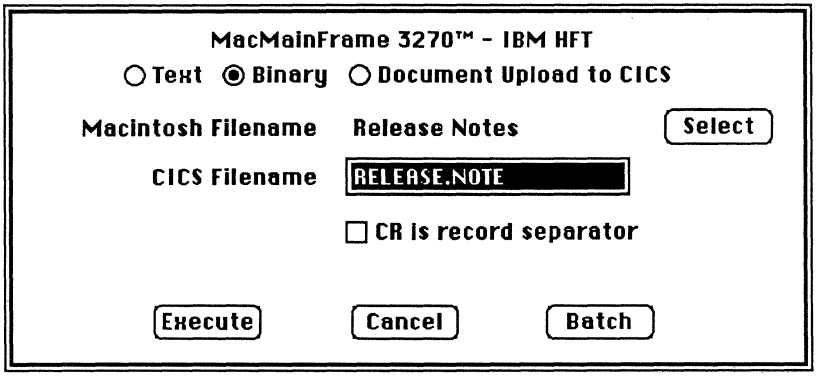


Uploads – Binary Format

Using Avatar HFT

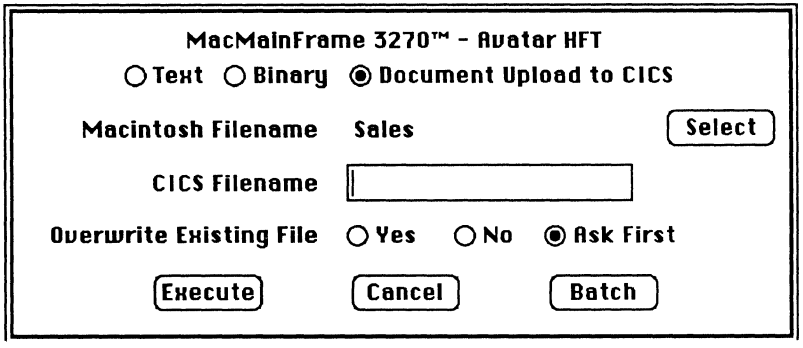


Using IBM HFT

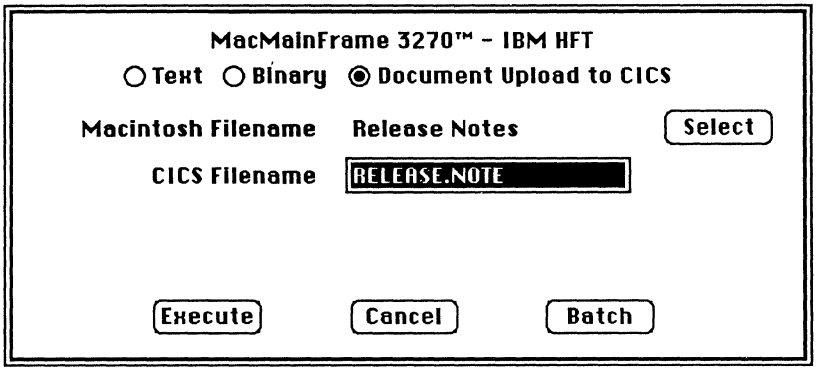


Uploads – Document Format

Using Avatar HFT



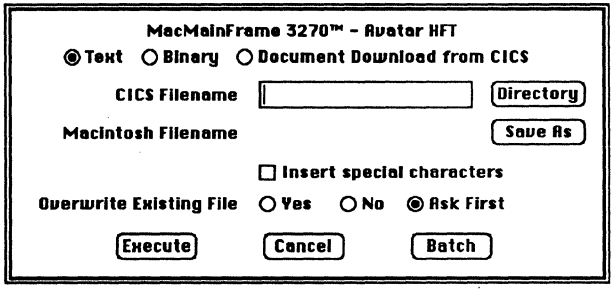
Using IBM HFT



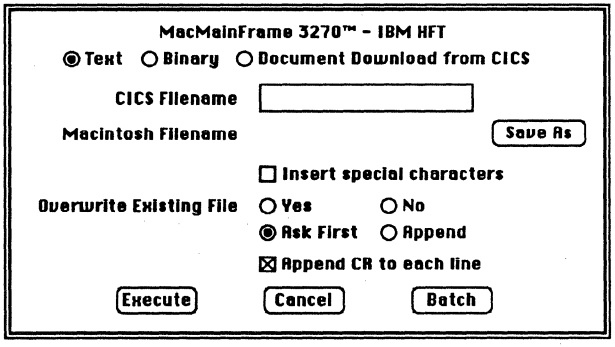
Downloads – Text Format

When you're downloading from a CICS environment and Avatar HFT software is running on the IBM host, you can view and delete files on the host. For information about these features, see the beginning of this Chapter.

Using Avatar HFT

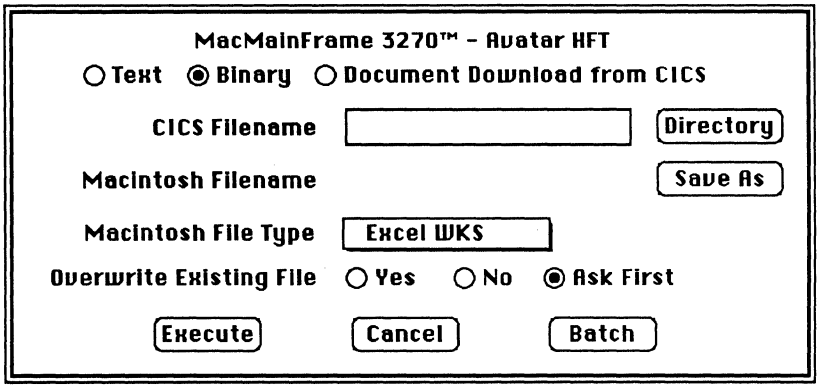


Using IBM HFT

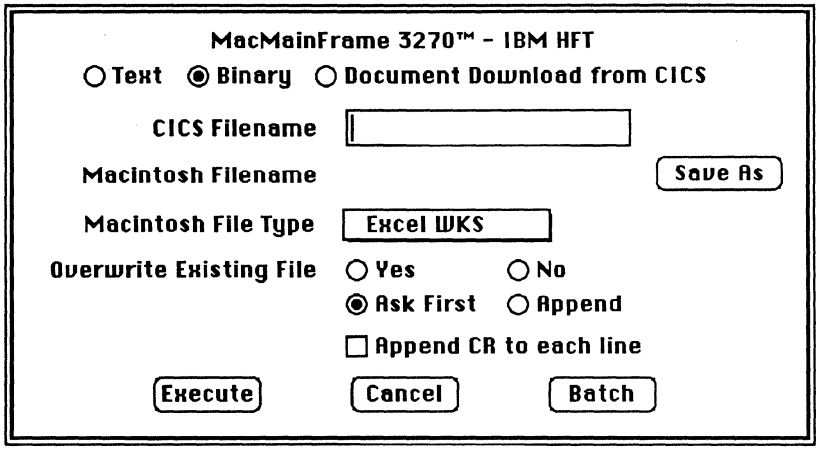


Downloads – Binary Format

Using Avatar HFT

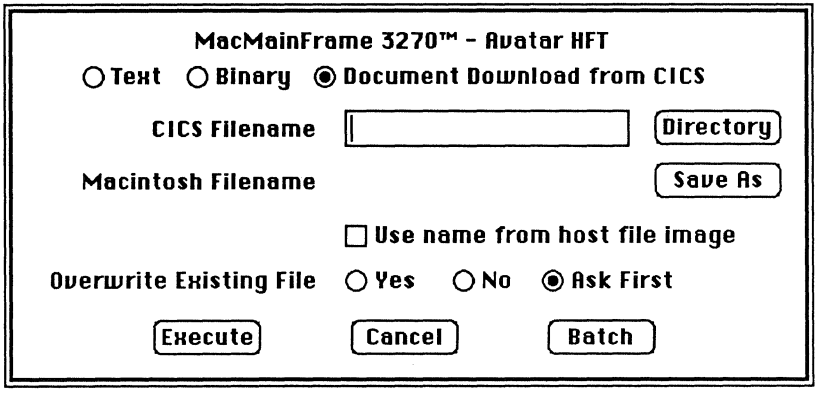


Using IBM HFT

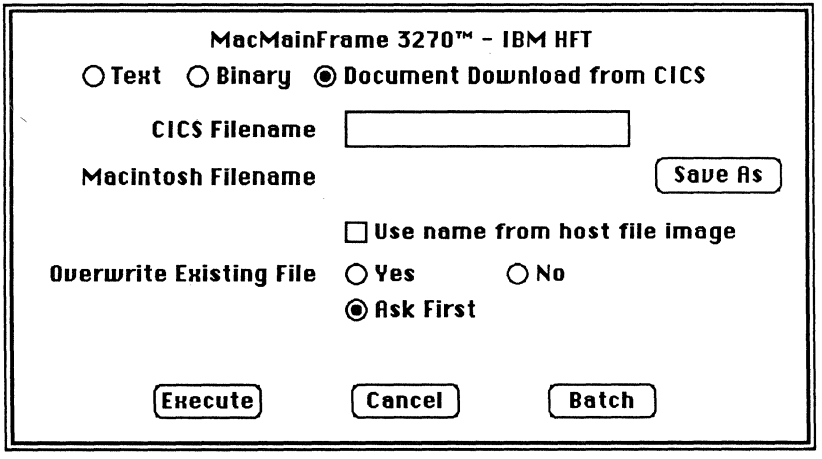


Downloads – Document Format

Using Avatar HFT



Using IBM HFT



Chapter 9

File Transfers To/From VM/CMS

Introduction

This chapter lists all the file transfers you can perform with MMF FT to and from a VM/CMS environment.

How to Use This Chapter

Uploads: See the beginning of the chapter.

Downloads: See the end of the chapter.

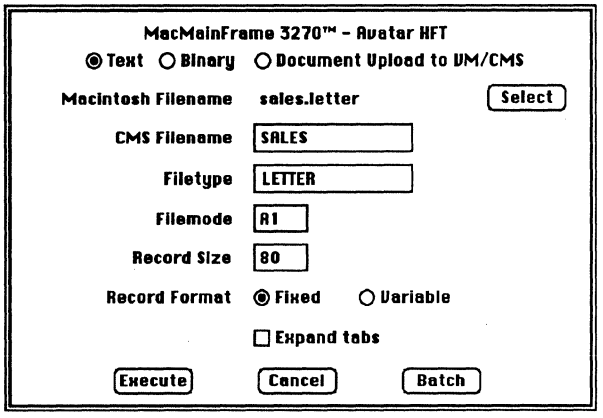
If you're using Avatar HFT: See the dialog boxes on the top of the page.

If you're using IBM HFT: See the dialog boxes on the bottom of the page.

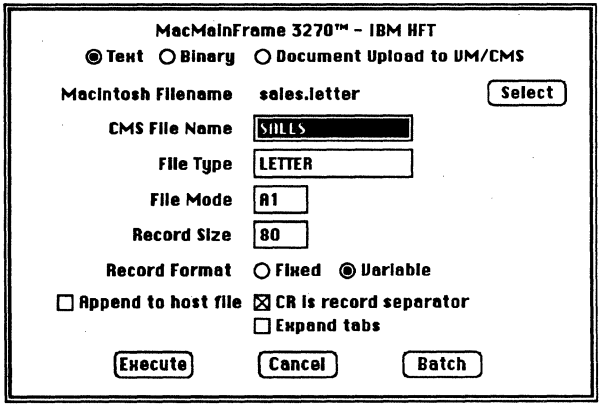
Within the Upload section, the transfers are: first Text format, then Binary format, then Document format. Within the Download section, the order is the same.

Uploads – Text Format

Using Avatar HFT

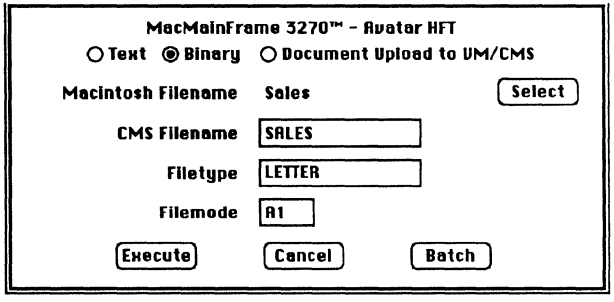


Using IBM HFT

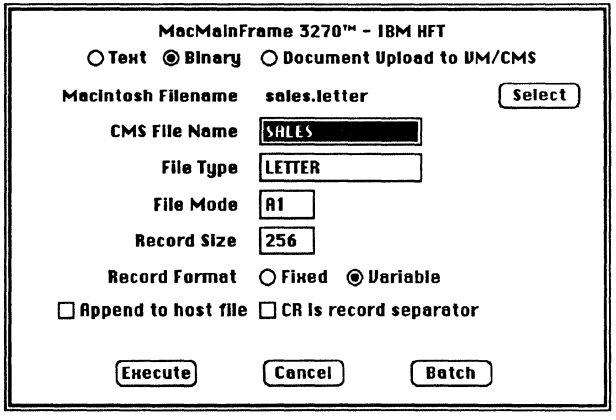


Uploads — Binary Format

Using Avatar HFT

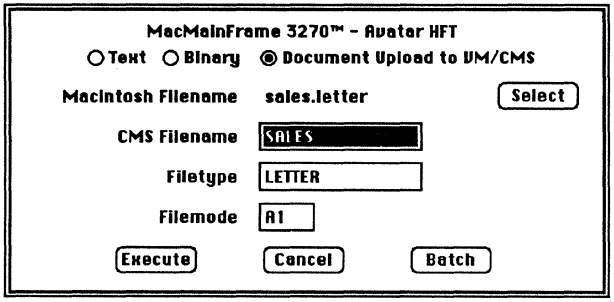


Using IBM HFT

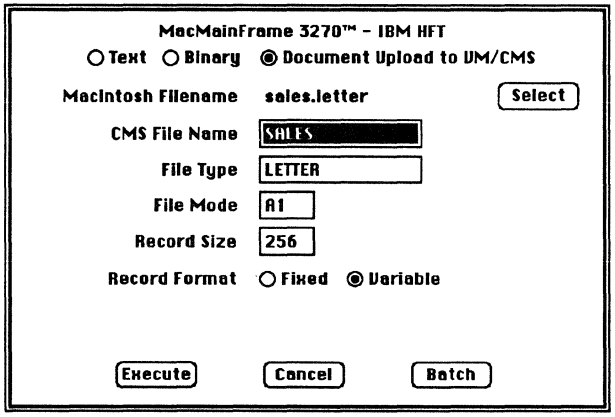


Uploads – Document Format

Using Avatar HFT

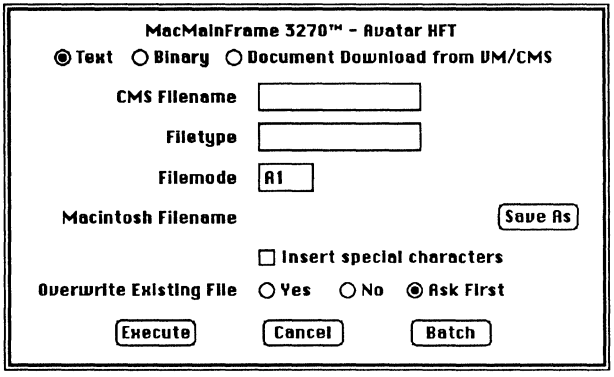


Using IBM HFT

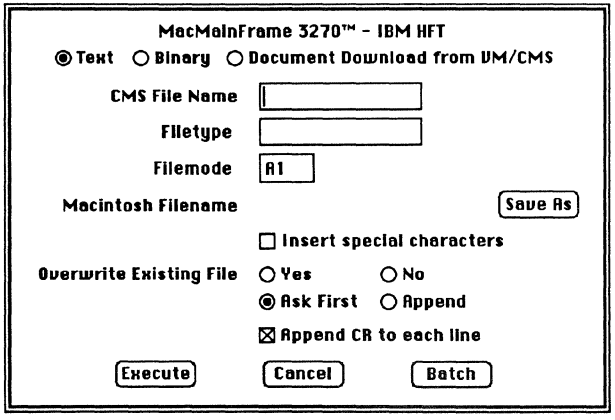


Downloads – Text Format

Using Avatar HFT

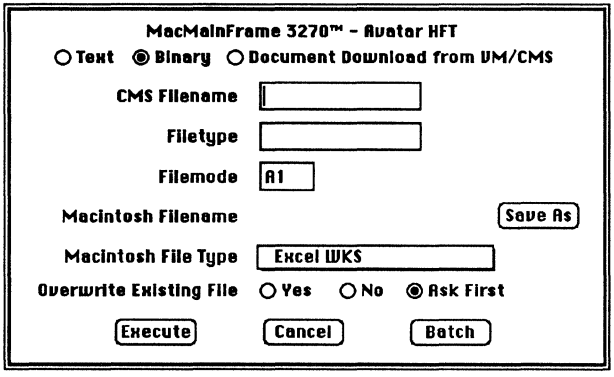


Using IBM HFT

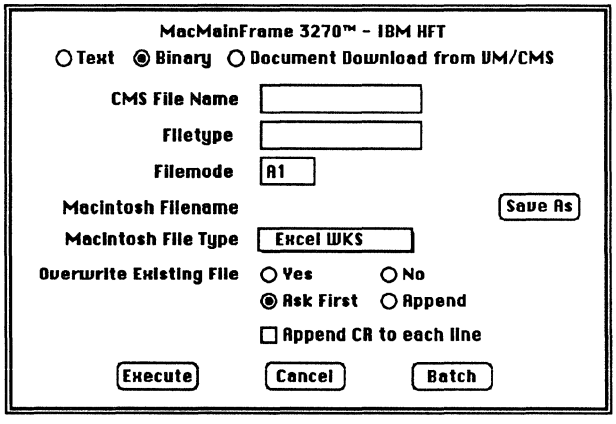


Downloads – Binary Format

Using Avatar HFT

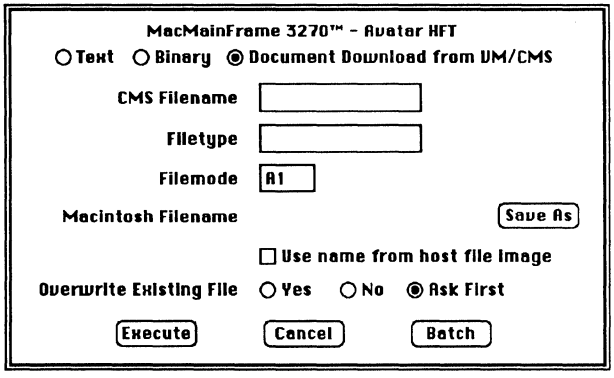


Using IBM HFT

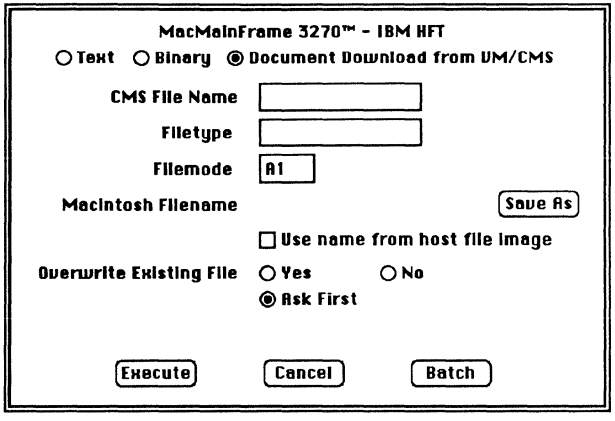


Downloads – Document Format

Using Avatar HFT



Using IBM HFT



Chapter 10

File Transfers To/From TSO

Introduction

This chapter lists all the file transfers you can perform with MMF FT to and from a VM/CMS environment.

How to Use This Chapter

Uploads: See the beginning of the chapter.

Downloads: See the end of the chapter.

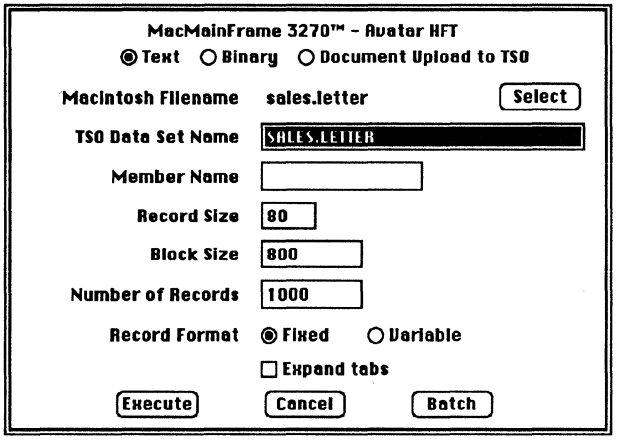
If you're using Avatar HFT: See the dialog boxes on the top of the page.

If you're using IBM HFT: See the dialog boxes on the bottom of the page.

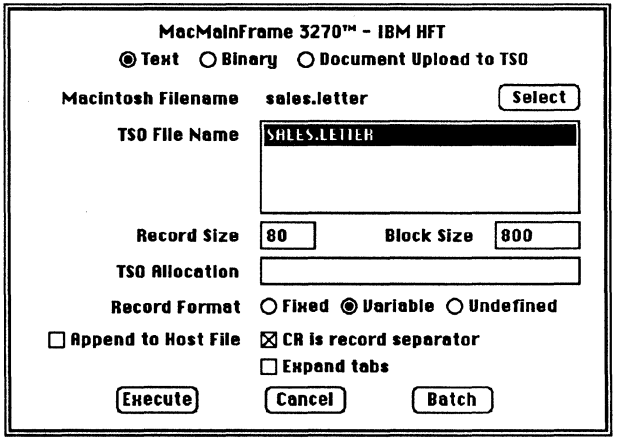
Within the Upload section, the transfers are: first Text format, then Binary format, then Document format. Within the Download section, the order is the same.

Uploads – Text Format

Using Avatar HFT

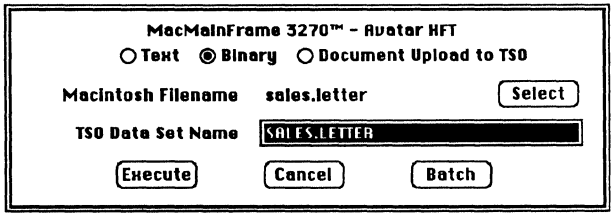


Using IBM HFT

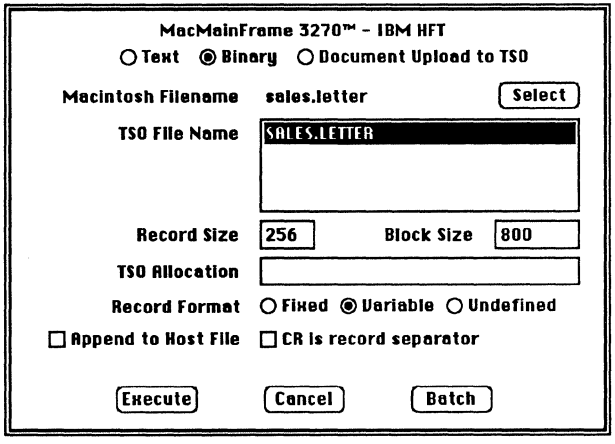


Uploads — Binary Format

Using Avatar HFT

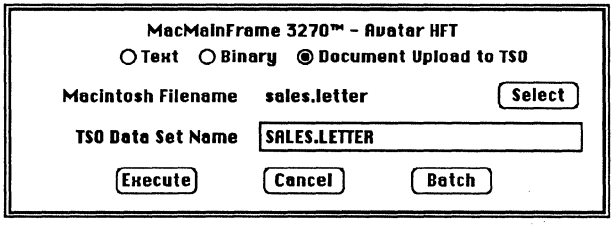


Using IBM HFT

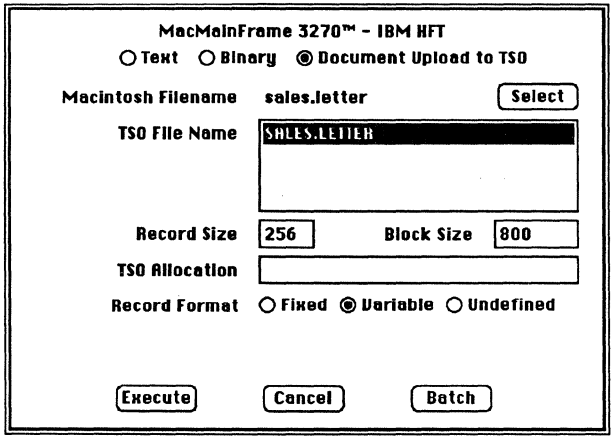


Uploads – Document Format

Using Avatar HFT

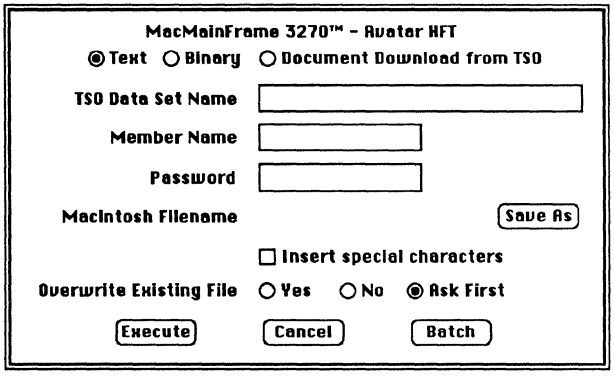


Using IBM HFT

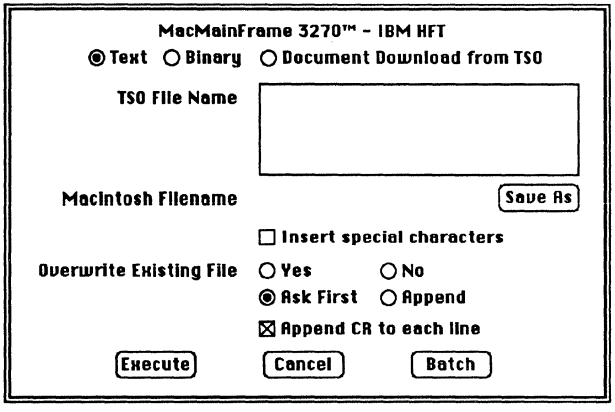


Downloads – Text Format

Using Avatar HFT

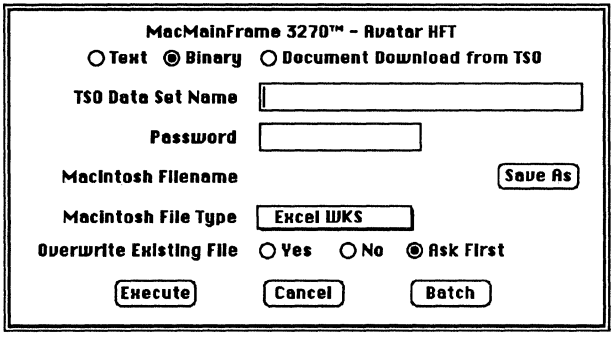


Using IBM HFT

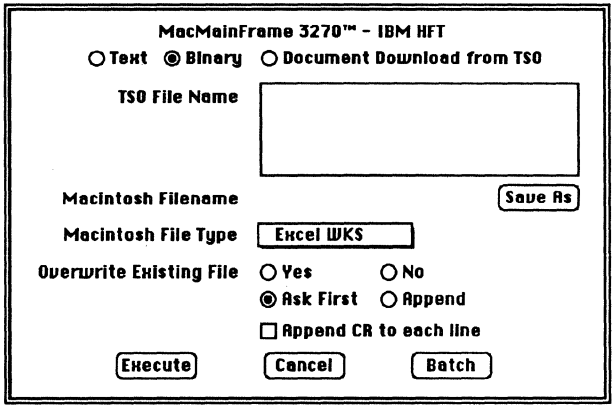


Downloads – Binary Format

Using Avatar HFT

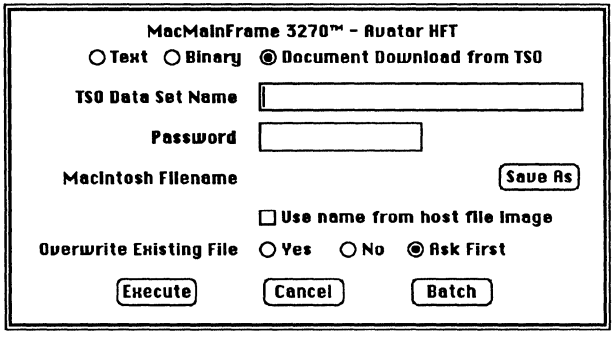


Using IBM HFT

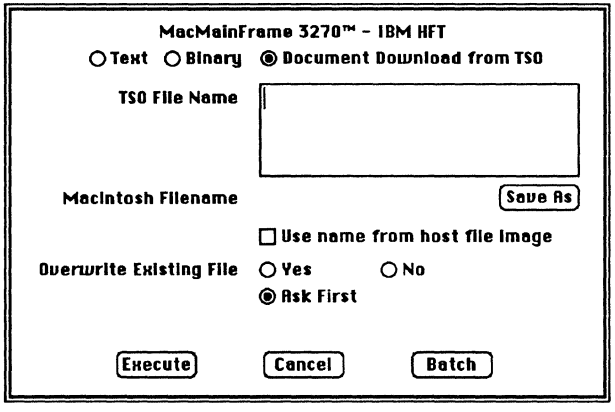


Downloads – Document Format

Using Avatar HFT



Using IBM HFT



Chapter 11

Batching Your File Transactions

Introduction

MMF FT lets you set up several file transactions for execution as batched transactions.

The transactions you can perform in batch are:

- Uploads
- Downloads
- File deletes (CICS environments only, providing Avatar HFT software is running at the host.)

Running your MMF FT transactions in batch is useful for:

- Delaying the execution of transactions to a more convenient time. (You don't have to be logged on to the host when you set up the batch transactions, but you do have to be logged on when you execute them.)
- Recording the transactions so that you can repeat them several times.

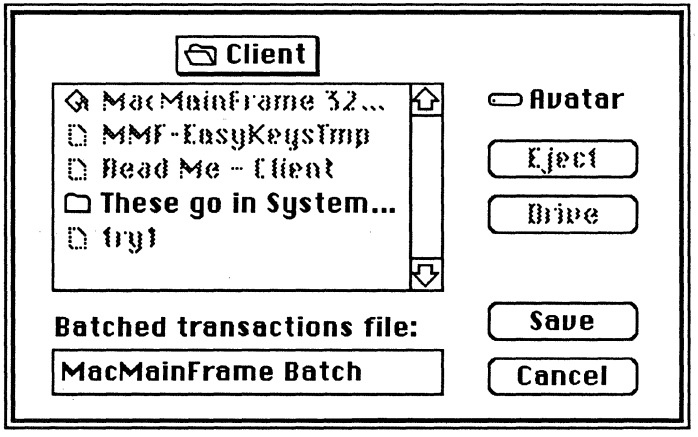
The following sections describe the steps to batch your file transactions.

1. Identify the batch file.

You must tell MMF FT the name of the file that will contain the batched transactions.

1. Pull down the File menu and select **Batch File...**

   MMF FT displays this dialog box:



   The scroll box displays a list of possible Batch files.

2. Select a file from the scroll box, or fill out the box with the name of the file that MMF FT should use as the batch file.

3. Click the **Save** button.

   Default name = MacMainFrame Batch.

MMF FT will save in this file all subsequent transactions that you designate as batch, until you specify a new batch file (by pulling down the File menu and selecting **Batch File...** again).

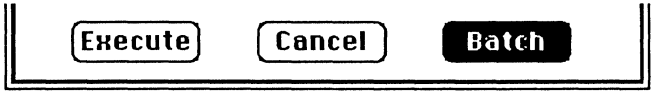
2. Set up the transaction(s).

To set up a transaction, follow the same steps as with all file transfers:

1. Pull down the Settings menu and supply the host information.

   Pull down the File menu and select Upload or Download, and fill out the resulting Upload/Download dialog box.

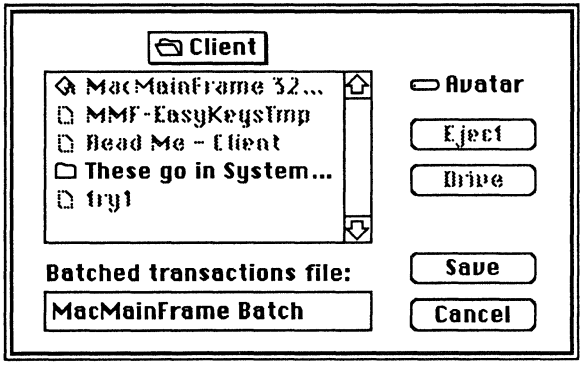
2. For the last step in the Upload/Download dialog box, click the **Batch** button at the bottom of the box:



   (or the **Batch** button at the bottom of the CICS Delete box).

   MMF FT now saves your transfers in the batch file. (The batch file is a Macintosh text document and you can read it with a word processor.)

   If you haven't opened a batch file already, MMF FT will ask you to do so now:

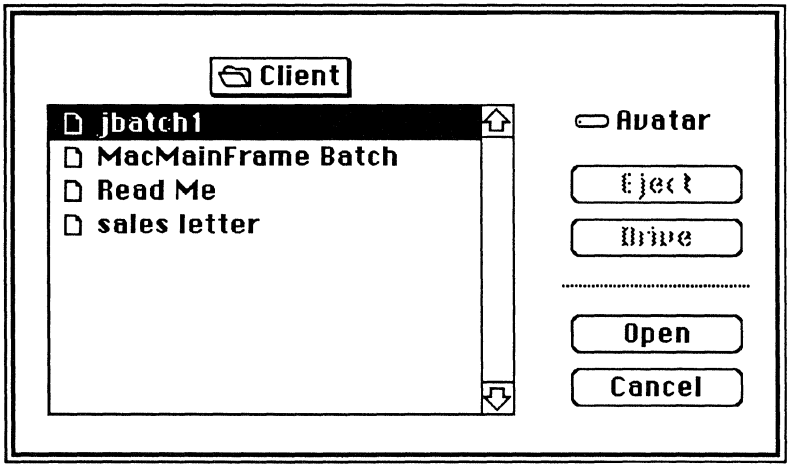


3. Specify as many batch transactions as you want; Uploads, downloads, and file deletes can all be saved to the same file.

   Make sure all the transactions are for the same host environment, for example, all for CICS or all for VM/CMS.

3. Run the batch file.

1. Make sure you're logged on to the IBM host with MMF Workstation.
2. Pull down the MMF Workstation File menu and select **Batch Transfer...** . You'll see the Batch Transfer dialog box:



3. Select a batch file, and click the **Open** button to have MMF FT run the file.

If the host cannot complete a transaction in the batch file you select, MMF FT skips the transaction and goes to the next one.

Chapter 12

Using MacMainFrame 3287

Introduction

✘ CUT MMF 3287 is not available on MMF CUT terminals.

MMF 3287 is an application that emulates an IBM 3287-style printer.

MMF 3287 lets you route an IBM print stream to a printer that's connected to your Macintosh or that resides on your local AppleTalk network. This printer can be a LaserWriter™, for example, which you select from your Chooser. You can also route the print stream to a disk file on your Macintosh.

Once you have established the LU session that will carry the IBM print stream, any user that has access to the host end of that LU session can submit print jobs to the session and the print jobs will print on your Chooser printer.

Once MMF 3287 is running, it automatically accepts print streams and automatically routes the streams to your Chooser printer. MMF 3287 breaks up the IBM stream into individual Macintosh print jobs. This prevents the IBM stream from monopolizing the printer.

As with other MMF products, you can save your MMF 3287 parameter settings in a Macintosh document, and you can restart MMF 3287 from the document (as well as from the MMF 3287 application itself).

What You Need First

To use MMF 3287, you must have:

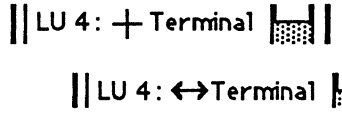
- Software that communicates on the network to both the IBM host and your printer. Use the MMF Workstation software. (For instructions on installing MMF Workstation, see the appropriate installation guide; MMF Workstation installation guides are listed in the Preface.)
- Access to the IBM host. Use MMF Workstation. (For information about the availability of host connections on your network, see your network administrator.)

How To Install MMF 3287

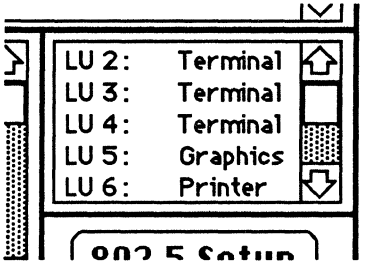
1. Make sure you have a Printer LU session.

Go to the Control Panel, select the Avatar icon, and in the LU panel, change one of the LU sessions to Printer. (If you've already done this *and* restarted your Macintosh since then, skip to the next step.)

To do this, position the cursor over the desired LU and hold down the OPTION key. The cursor will change to a double-ended arrow:



Click the cursor to have the LU's type change from Terminal to Printer to Graphics to Terminal, and so on. Here, we changed LU 6 to Printer:



REMEMBER: You must restart your Macintosh to have this new setting take effect.

2. Make sure you have the MMF 3287 files.

Load the MMF 3287 software that comes on your MMF Workstation distribution diskettes and make sure you have the following files:.

MacMainFrame 3287

Armonk

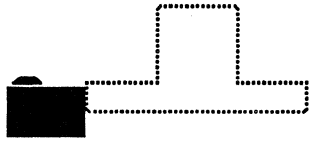
Armon

Appendix B contains a key to the MMF Workstation icons.

3. Install the MMF 3287 application.

Drag the MMF/3287 application from the diskette to a convenient place on your Macintosh.

A separate folder for MMF 3287 is useful since it provides a place for MMF 3287 Print Settings documents, which you'll generate and use.



MMF Folder

4. Install the Armonk™ Font

Make sure your Macintosh System has the Armonk font installed. (Armonk is Avatar's proprietary font for use with MacMainFrame Series products.) Armonk comes in two parts:

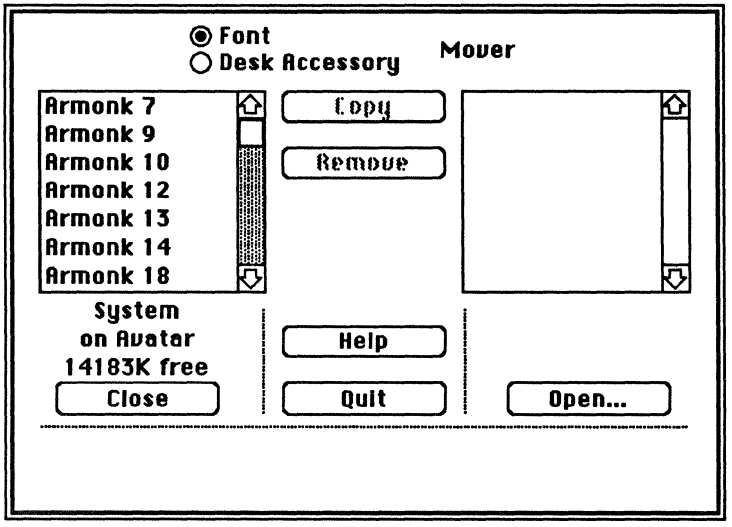
Bitmap version of the font

Postscript version of the font, for use with Laser printers.

1. Use the Font/DA Mover to install the bitmap version of the font in your System:

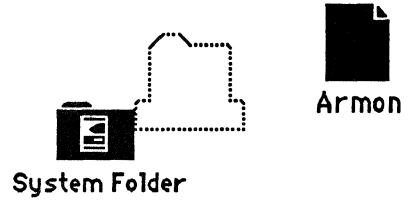
(Or you can double-click on the font icon itself to start the Font/DA Mover.)

The Font/DA Mover displays a dialog box like this:



Follow the Font/DA Mover's **Help** directions to copy the font into the System.

2. Drag the Postscript version of the Armonk font to the System folder:



How to Use MMF 3287

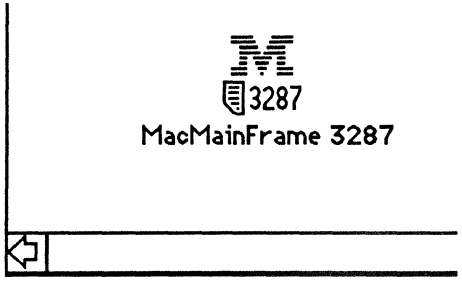
To use MMF 3287, you start it running, optionally change the print parameters, and then enable printing.

The following sections explain how to do this.

REMEMBER: MMF 3287 uses the same printer as MMF Workstation — your Macintosh's **Chooser printer.**

How to Start the MMF 3287 Application

1. Make sure:
   - You've followed the MMF 3287 installation procedures above.
   - MMF Workstation is installed.
   - Your Workstation is connected the IBM host from which you want to receive and route print streams.
   - The host has properly set up the LU you're going to use.
   - You've set up the LU to be for Printer in your Avatar control panel.
2. Open the MMF 3287 application by double-clicking on the MMF 3287 icon:

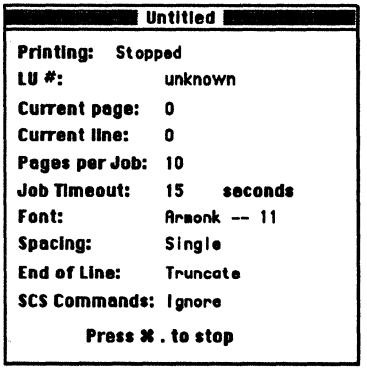


When the MMF 3287 application opens, you'll see the menu bar change from the Finder's:

to MMF 3287's:

If you haven't started MMF 3287 from a Print Settings document, MMF 3287 will open a new Print Settings document for you now.

MMF 3287 will then display the Print Status window:



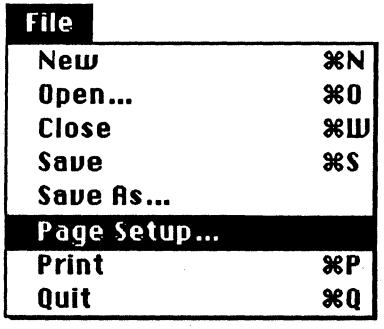
The Print Status window tells the status of print streams, if any, that are currently going through MMF 3287.

Since we haven't enabled printing yet, nothing's happening. (To enable 3287 to print, see "Enabling MMF 3287 to Print" later in this chapter.)

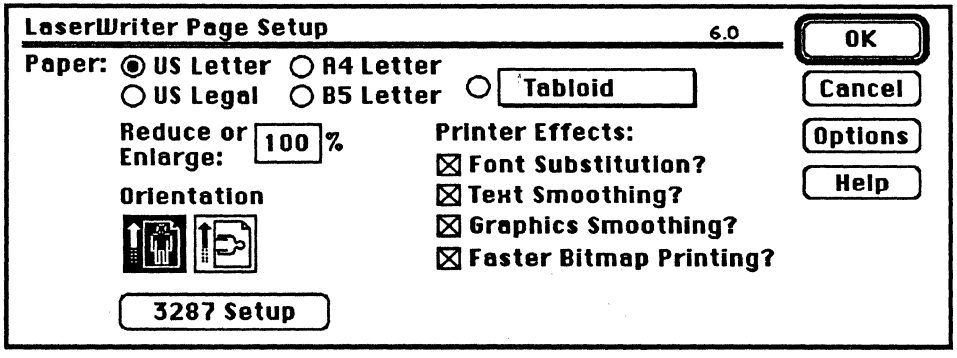
How to Change Print Parameters

To change MMF 3287's print parameters:

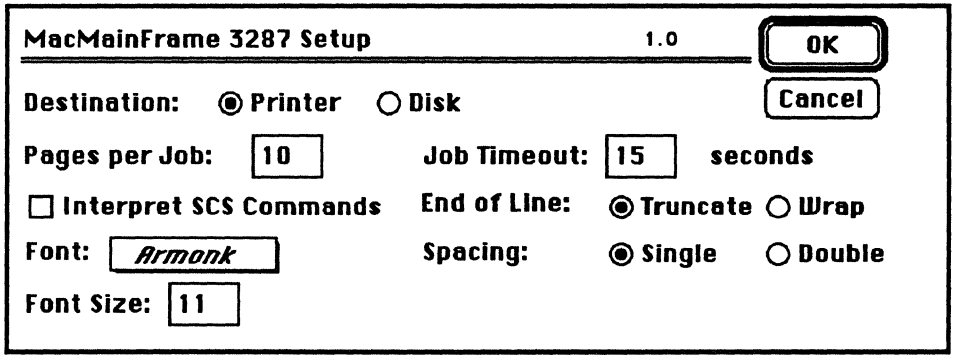
1. Make sure the MMF 3287 application is open.
2. Make sure no streams are printing and that MMF is disabled from printing by pressing ⌘. (COMMAND-period).
3. Select **Page Setup** from the MMF 3287 File menu.



4. Click the **3287 Setup** button in the Page Setup dialog box. (This box is for a LaserWriter; the contents of the box varies according to the type of printer.)

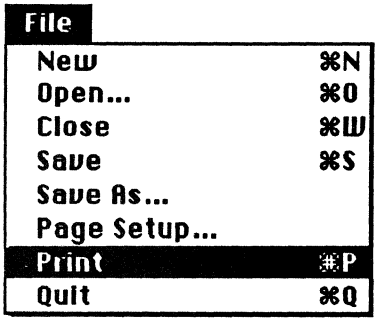


MMF 3287 will then display its own setup dialog box:



5. Fill out the set-up box according to the "Items in the MMF 3287 Setup Box" section below.

To have MMF 3287 use the changes you made, enable MMF 3287 to print. (Pull down the File menu and select **Print**:)



To save the changes you made, select **Save** or **Save As...** from the MMF 3287 File menu. MMF 3287 will record the settings in a Print Settings document:

Saving your print settings is useful because it lets you start MMF 3287 quickly and easily from the Print Settings document itself.

Items in the MMF 3287 Setup Box

Destination: This is where the print job goes.

Printer — To the Chooser printer.

Disk — To a disk file on the Macintosh.

Pages per Job: Maximum number of pages from the IBM print stream that MMF 3287 will group together as a single Macintosh print job. MMF 3287 does not examine the IBM stream or distinguish IBM jobs within the stream.

Job Timeout: If MMF 3287 does not receive any more pages after this time period, it will print the pages it has as a single Macintosh print job and start a new job for the next page it receives.

☐ **Interpret SCS Commands** Interpret SNA Character Stream commands.

☐ Perform minimal SCS formatting. (This is the default.)

☒ Perform general SCS formatting and interpret some SCS attributes.

End of Line:

Truncate: MMF 3287 will discard data that extends past the width of the Chooser printer's print line. Example: A line is 100 characters plus CR, but only 80 of those characters will fit on the printer's paper. The printer prints those first 80 characters, discards the remaining characters up to the CR, and starts printing the next character after the CR in the first character position on the next line of the paper.

Wrap: MMF 3287 will print data that extends past the width of the Chooser printer's print line by wrapping it to the next line and printing it there. Example: A line is 100 characters plus CR, but only 80 of those characters will fit on the printer's paper. The printer prints those first 80 characters, starts the next line and prints as many of the

remaining characters as possible, and so on until it reaches the CR, then starts a new print line as usual.

Font: The font in which the print stream will appear on the Chooser printer. The font choices are Armonk and whatever fonts you have in your System. Use the Font/DA Mover to change the fonts in your System.

Font Size: The size of the font in which the print stream will appear on the Chooser printer.

REMEMBER: A larger font can mean unexpected loss of data at the ends of lines if you have **End of line:** set to **Truncate**.

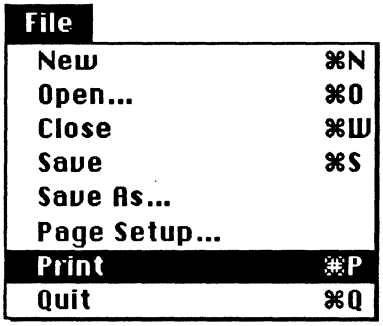
Spacing: The spacing between lines of printed text.

Single — single-spaced lines

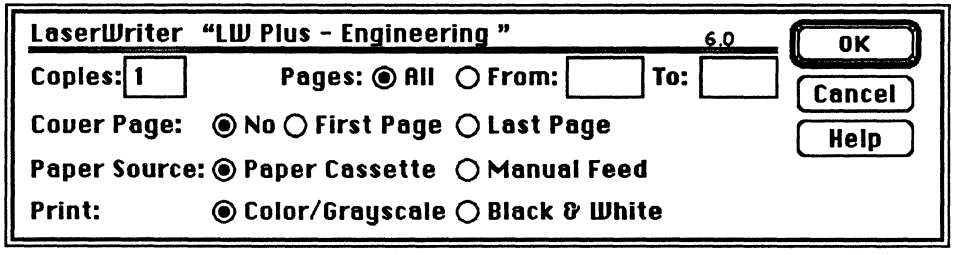
Double — double-spaced lines.

How to Enable MMF 3287 to Print

1. Make sure the MMF 3287 application is open.
2. Pull down the MMF 3287 File menu and select **Print**:



3. Next, you'll see the Print dialog box for your Chooser printer. (This box is for a LaserWriter called "LW Plus — Engineering.")



Fill out the Print dialog box as you wish. Confirm by clicking **OK**.

MMF 3287 will go ahead and start an LU session with the IBM host. Once the LU session starts, the IBM host can send print jobs to MMF 3287 for printing on the Chooser printer.

MMF 3287 now displays the Status window, which stays up while MMF 3287 is running in the foreground whether it is printing or not. (If you're running the MultiFinder, you can move MMF 3287 to the background.)

How to Disable MMF 3287 From Printing

To disable MMF 3287 from printing, press ⌘. (COMMAND-period).

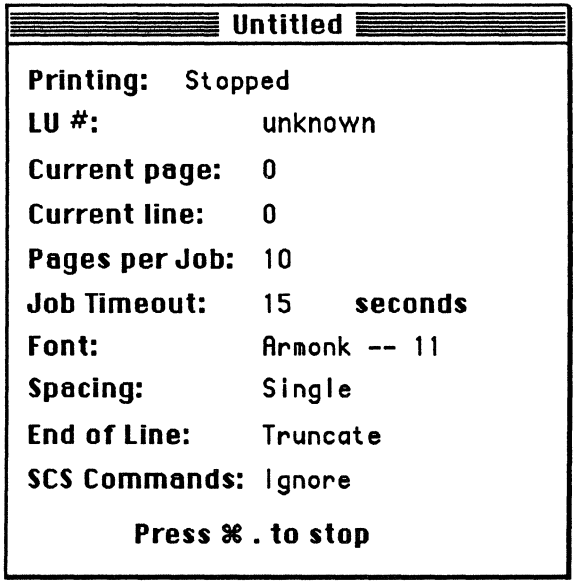
This will cause MMF 3287 to stop printing the ongoing print stream. MMF 3287 will not accept any more print streams from the IBM host.

When you disable MMF 3287 by pressing ⌘., the host sees a power-down of the printer that MMF 3287 is emulating and an LU session disconnect.

When MMF 3287 Prints

MMF/3287 prints automatically.

You can watch the progress of a print job in the Status window, which MMF 3287 displays whenever it prints:



Items in the MMF 3287 Status Window

Printing: Indicates the status of the current Macintosh print job.

Stopped	MMF 3287 is disabled from printing.
Running	MMF 3287 is enabled and is awaiting a print stream from the IBM host.
jobname	MMF 3287 is currently printing this Macintosh print job.

LU #: The Logical Unit number, if known, that MMF 3287 is currently using.

Current Page: Indicates the page that is currently printing in the Macintosh print job.

Current Line: Indicates the line number, in terms of the current Macintosh print job, that MMF 3287 has received from the IBM host.

Pages per Job: Indicates the pages per job you selected in the 3287 setup box. This is the maximum number of pages from the IBM print stream that MMF 3287 will group together as a single Macintosh print job.

Job Timeout: Indicates the job timeout value you selected in the 3287 setup box. After this time, MMF 3287 will print the pages it has as a single Macintosh print job and start a new job for the next page it receives.

Font: Indicates the font and font size that you selected in the 3287 setup box.

Spacing: Indicates the line spacing that you selected in the 3287 setup box.

End of Line: Indicates the method for handling too-long lines that you selected in the 3287 setup box.

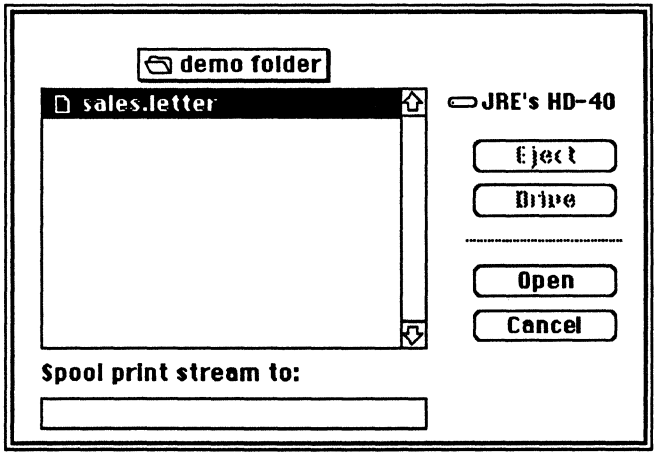
SCS Commands: Indicates whether or not MMF 3287 is interpreting SNA Character Stream commands.

How to Send the Print Stream to a Disk File

To have MMF 3287 to send its print stream to a disk file instead of the Chooser printer:

1. Stop the print stream from the IBM host by pressing **⌘.**
2. Go to the MMF 3287 Setup dialog box (pull down **Page Setup...** from the File menu, and in the Page Setup box click the 3287 Setup button) and click the **Disk** radio button.

   Click **OK** to close the 3287 Setup box.
3. Select **Print** from the MMF 3287 File menu.
4. Next, you'll see a File dialog box:



5. Fill out the File box.

   Confirm by clicking **Open**.

MMF 3287 is now enabled and can accept print streams, which it will send to the disk file.

Getting A New LU Session for MMF 3287

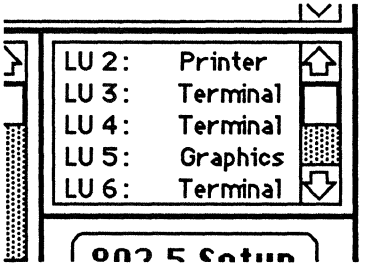
Normally, MMF 3287 uses the LU Session you specify in the LU panel, which is part of the Avatar Control Panel.

You may need to get a new LU Session if you're going to receive a different print stream from the host or if the LU Session you want to use is not available.

To get the new session:

1. Go back to the Control Panel and select the Avatar icon again.
2. In the LU panel, first change the old LU session back to Terminal by clicking on the LU until it changes to anything except Printer. (Remember to hold down the OPTION key so the cursor changes to a double-ended arrow.)

3. Now choose another LU session to be the Printer session. Position the cursor over that LU, hold down the OPTION key, and click the cursor until the LU's type is Printer.



4. Restart your Macintosh to have this new setting take effect.

For more information about LU Sessions, see Chapters 1 and 3.

Shutting Down MMF 3287

Stop Printing, Stop Running

To shut down MMF 3287, select **Quit** from the File menu.

Quit causes the current print stream, if any, to stop printing, and it will prevent any further print streams from printing until you re-enable MMF 3287 to print. **Quit** also asks if you want to save the current Print settings document.

The IBM host will see a power-down of the printer that that MMF 3287 is emulating.

Stop Printing, Remain Running

To stop MMF 3287 from printing but leave it running, press ⌘. (That is, hold down the ⌘ key and while doing so type . (period) once.)

⌘. causes the current print stream, if any, to stop printing, and it will prevent any further print streams from printing until you re-enable MMF 3287 to print.

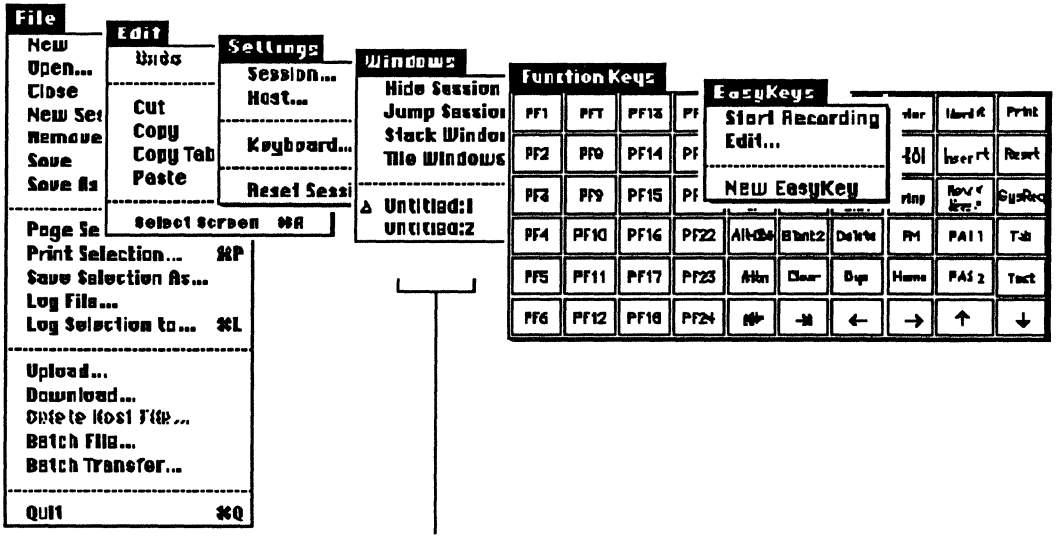
The IBM host will see a power-down of the printer that MMF 3287 is emulating.

Appendix A

MacMainFrame Workstation's Menus

This appendix briefly describes the MMF Workstation software's pull-down menus.

Here's a composite screen shot of all the MMF Workstation menus:



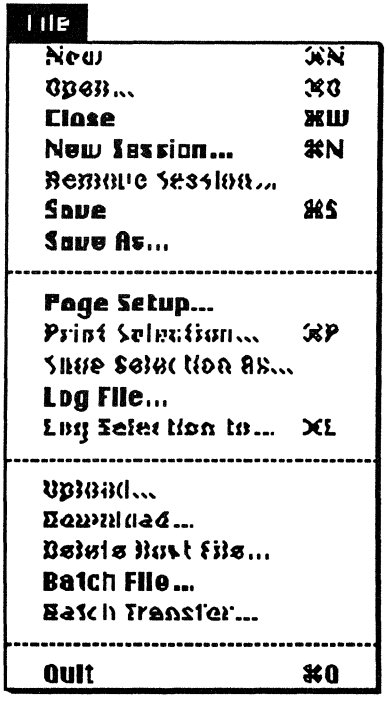
✘ CUT

Remember:

Symbol	Means:
...	There's another screen after you click on the selection.
▼	There are more selections — slide the mouse down to get them.

Some menus are subdivided into general function areas. Not all selections are available all the time.

File Menu



Open, close, and save new and existing Session Settings documents; start new LU sessions and terminate existing ones, removing them from your current Session Settings document.

Save and print data from your 3270 windows.

Do file uploads, file downloads, and batch transfers to and from the IBM host.

Quit MMF Workstation.

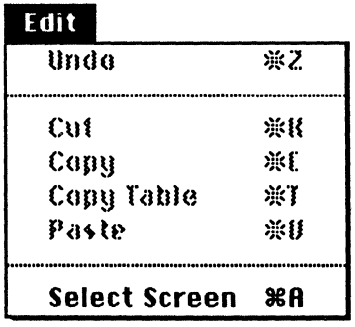
New	Create a new Session Settings document and open the first LU session.
Open...	Open an existing Session Settings document.
Close	Close the current Session Settings document.
New Session...	Start a new LU session and add it to your current Session Settings document. ✘ CUT This feature is not available on MMF CUT Workstations.
Remove Session...	Terminate the current LU session and remove it from the current Session Settings document. ✘ CUT This feature is not available on MMF CUT Workstations.
Save	Save the settings of the current Session Settings document.
Save As...	Save the settings of the current Session Settings document (filename requested).
Page Setup...	Choose the format of a printed page.
Print Selection...	Print the currently selected material.
Save Selection As...	Save the currently selected material to a file (filename requested).
Log File...	Assign a name to the MMF Workstation screen log file. This file is for collecting selected data from your 3270 screen. (See also Copy and Copy Table under the Edit menu.)
Log Selection To...	Append the highlighted area to the MMF Workstation screen log file. (Filename requested if you haven't done a Log File before.)

Upload...	Send a file to the IBM host machine.
Download...	Receive a file from the IBM host machine.
Delete Host File...	Delete a host file (CICS environment only).
Batch File ...	Give a name to the batch file that contains the batch transfer script.
Batch Transfer...	Perform a batch transfer.
Quit...	Stop running the MMF Workstation program, take down all the LU sessions, and optionally save the Session Settings document.

Edit Menu

The Edit menu lets you copy data to and from your 3270 window using regular Macintosh methods, that is, highlighting areas with the mouse and copying, or pasting at the cursor.

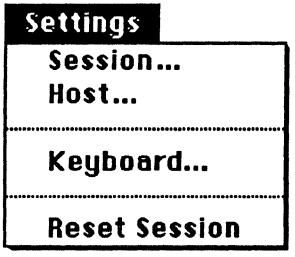
Undo and Cut are usually not available (grayed out) unless you're running a desk accessory that enables them.



Copy	Copy the selected screen area to the clipboard.
Copy Table	Copy the selected screen area to the clipboard preserving columnar formats. (Converts two or more SPACEs to a TAB.)
Paste	Copy the entire contents of the clipboard to the screen. (Sends characters to the host as fast as a fast typist would type them.)
Select screen	Select the entire screen for later printing or saving to the Workstation log file. (See the **Log File** and **Log Selection to...** selections under the File menu.)

Settings Menu

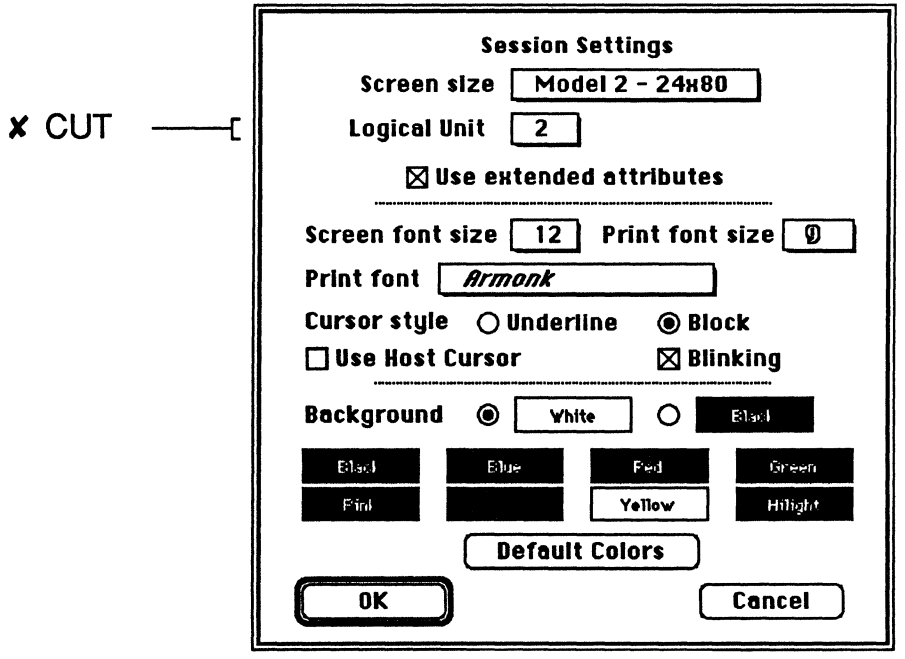
The Settings menu lets you modify the way your current invocation of MMF Workstation runs.



Session...	Go to the Session Settings dialog box to set various LU Session-related parameters.
Host...	Go to the Host Settings dialog box to set host-related information. (For use with MMF Workstation file transfer operations.)
Keyboard...	Go to the Keyboard Settings dialog box to modify the assignment of 3270 functions to keys on your keyboard.
Reset Session	Reset the LU session connection with the host. (For use in case of connection difficulties.)

Session...

The **Session...** selection in the Settings pull-down menu gives you the Session Settings dialog box:

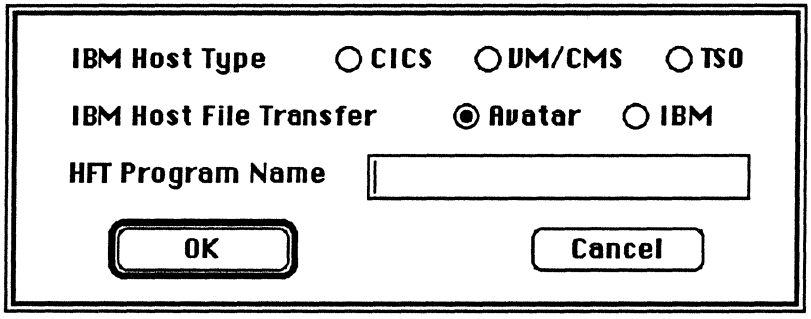


For complete information on how to use the Session Settings dialog box, see Chapters 4 and 5.

Host...

The **Host...** selection lets you give information about the IBM host machine for a file transfer; it's not necessary for regular 3270 window use.

The Host Settings dialog box looks like this:

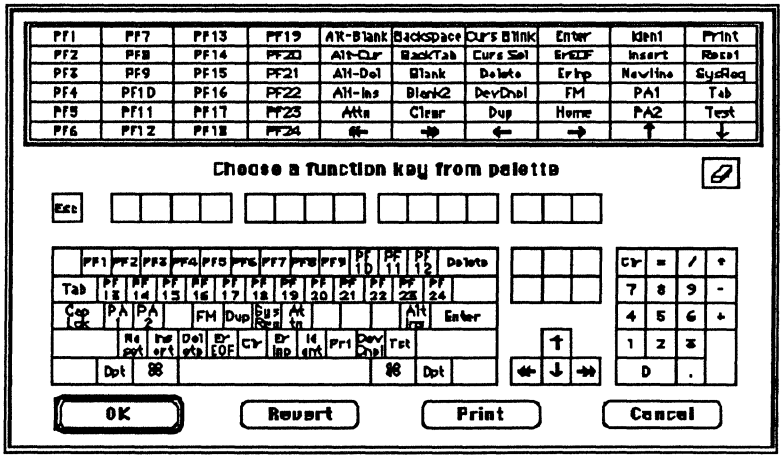


For information on filling out the Host Settings box, see Chapters 6 and 7.

Keyboard...

Keyboard... gives you a dialog box that lets you rearrange the assignments of 3270 functions on your Macintosh keyboard.

To get a printout of all five possible arrangements (keys, CONTROL-keys, SHIFT-keys, etc,) click on the **Print** button. The printout goes to the printer that's currently selected in your Chooser.



For complete information on using the Keyboard Settings dialog box, see Chapter 7.

Function Keys Menu

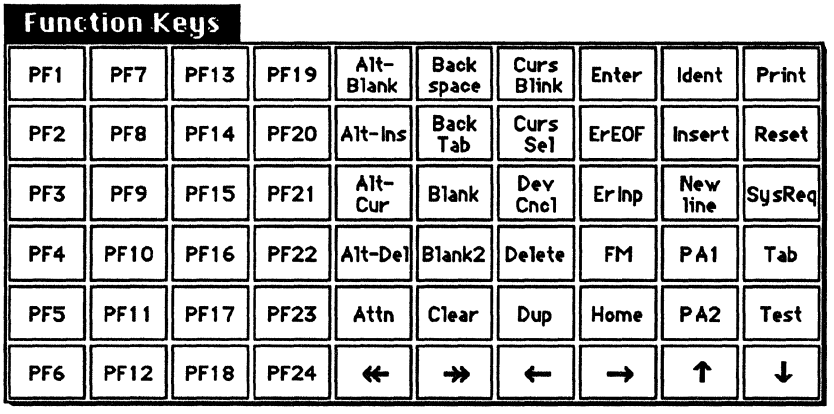
This menu is a tear-off palette. To tear it off, drag the mouse all the way through the palette before you release. The palette will float free and you can then move it around by grabbing the title bar with the mouse.

You can type keys with the palette — click on the keys with the mouse.

You can also reassemble the palette with your own of frequently-used keys. You can then keep your new palette handy on your screen — it's a floating window and always stays in front. To create your palette, use ⌘-mouse to

move the desired keys to one corner, then OPTION-mouse to size the window down around them.

For complete information on how to use the Function keys palette, see Chapter 5.

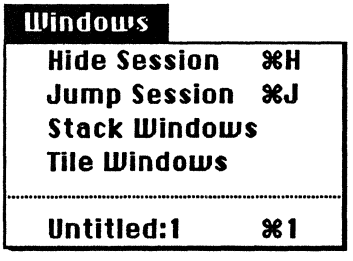


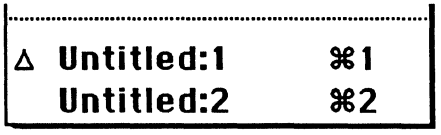
Windows Menu

✘ CUT This feature is not available on MMF CUT Workstations.

The windows menu lets you manage the windows that MMF Workstation is using.

Remember, to go to other windows in other applications while you're running MMF Workstation, you must be running the MultiFinder.

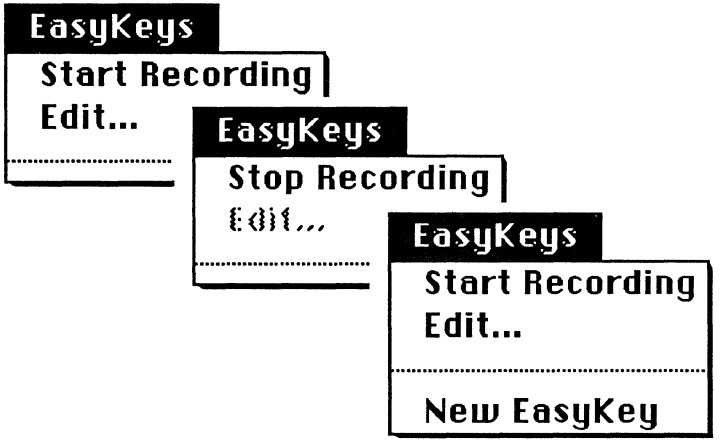


Hide Session ...	Remove a current LU session from view (but do not terminate it). Example: we had two sessions; we hid Untitled:1. Untitled:1 now shows up in the menu with a triangle beside it to indicate that it is a hidden window:  To retrieve Untitled:1, we select it here with the mouse or press ⌘1.
Jump Session	Go to the next session's window (Takes current sessions in the order of their numbers in their title bars.)
Stack Windows	Rearrange all the session windows into a neat overlapping stack of same-sized windows.
Tile Windows	Rearrange all the session windows into a side-by-side display of same-sized windows.
Untitled:1 ⌘1 **Untitled:2 ⌘2** **Untitled:2 ⌘3** etc.	(These are window titles, which are based on the names of Session Settings documents. To go to a window, click on the title with the mouse or press ⌘1, ⌘2, etc.)

Easy Keys Menu

The EasyKeys menu lets you record a series of keystrokes, assign them to a single ⌘-key combination, and then play them back later.

For complete information on creating and using EasyKeys, see Chapter 5.



Start Recording **Stop Recording**	You can now type the sequence of keys you want to become an EasyKey. Tells MMF Workstation to stop recording keys for the EasyKey.
Edit...	Lets you edit an EasyKey's keystrokes
(Defined Easy Keys)	Select one of these to cause MMF Workstation to execute the EasyKey.

Appendix B

Key to MMF Workstation's Icons

This appendix lists the icons you may see when you use MMF Workstation.

System Icons

Icon	Type	Does this:
Avatar	Control Panel document	Lets you select driver software that MMF products must use; lets you supply configuration parameters to the drivers.
MacMainFrame Checker	Application	Lets you verify your hardware and software installation of MMF Workstation, and lets you configure your MMF Workstation.

System Icons, continued

Icon	Type	Does this:
Driver for Token-RingWorkstations: MMF TR **Driver for SDLC Workstations:** MMF SDLC	Driver software	Lets MMF products communicate with hardware and perform other basic tasks.

System Icons, continued

Icon	Type	Does this:
Drivers for Coax Workstations: **Drivers for MMF CUT Workstations** / **Drivers for MMF DFT Workstations** Mac SE CUT Mac SE DFT SE/30 CUT SE/30 DFT Mac II CUT Mac II DFT DX CUT	Driver software	Lets MMF products communicate with hardware and perform other basic tasks. NOTE: The DX CUT driver is for use on all Macintosh hardware platforms.

Application Icons

Icon	Type	Name and Function:
For Token-Ring and SDLC Workstations: **For Coax DFT Workstations:** **For Coax CUT Workstations:** MacMainFrame Workstation	Application	MacMainFrame Workstation — This is the MMF Workstation software. Accepts and displays data in your 3270 windows; communicates with the MMF Workstation driver.

Application Icons, continued

Icon	Type	Name and Function:
For Token-Ring and SDLC Workstations: **For Coax DFT Workstations:** **For Coax CUT Workstations:** (User supplies name)	Session Settings documents	Saves your MMF Workstation set-up — terminal class(es), LU sessions, host configuration, keyboard layout, etc.
(User supplies name)	Batch document	Contains commands for MMF Workstation to perform batch processing of uploads, downloads, and File deletes.

Application Icons, continued

Icon	Type	Name and Function:
3287 MacMainFrame 3287	Application	MacMainFrame 3287 — Emulates a 3287-type printer and lets MMF Workstation route an IBM print stream to the Chooser printer.
Armonk	Font	Armonk — Avatar's proprietary type font (bitmap version), for use with MMF Series products.
Armon	Font	Armon — Postscript version of Armonk font.
(User supplies name)	Print Settings document	Saves your MMF 3287 set-up.

Appendix C

The Tab Stops Dialog Box

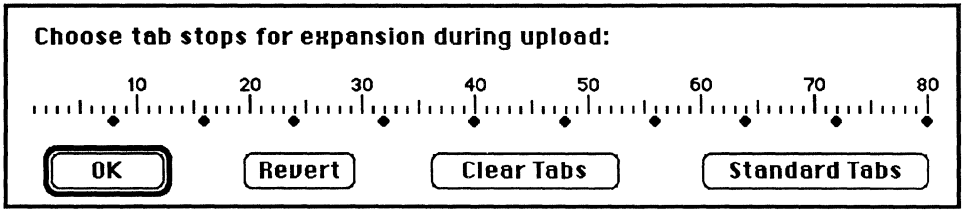
Introduction

This appendix describes the Tab Stops dialog box.

To invoke the Tab Stops box, click the **Expand Tabs** check box in the Upload/Download box.

Use the Tab Stops box to reset the tab stops in the destination file when you're doing a file transfer with MMF FT.

Items



Ruler

Use the ruler to set the tab stops by clicking the TAB markers to where you want them. These will be the TAB stops in the destination file.

Standard Tabs

Click **Standard Tabs** to set the TABs in the destination file to the standard TAB increments. Standard TAB stops are every 8 spaces.

Clear Tabs

Click **Clear Tabs** to clear all TAB stops. MMF then converts each TAB character to one space.

Revert

Click **Revert** to revert the TAB setup to its layout before you invoked this box.

Glossary

ASCII American Standard Code for Information Interchange. Standard ASCII code uses seven bits to identify a single character.

Binary Format A way of transferring files to and from Macintosh machines. In binary format, only the data part of the Macintosh file is transferred.

Block size Under TSO, this is the number of bytes per block of the host file.

CICS Customer Information Control System, an operating environment found on IBM host machines.

Class, LU Session See LU Session Class.

CMS Conversational Monitor System, an operating environment found on IBM host machines.

Default An option that's already selected (or typed in) when a dialog box appears. The option remains in effect unless you change it.

Document format A way of transferring files to and from Macintosh machines. In document format, all three parts of the Macintosh file as well as other information are transferred.

Download To transfer a file from an IBM mainframe (host) machine to an outlying computer.

EBCDIC Extended Binary Coded Decimal Interchange Code. IBM's character set, for use in information transfer among IBM machines. EBCDIC code uses eight bits to identify a single character.

File transfer Moving a file from one computer to another. With MMF/GW Client, the file can be uploaded (transferred from the Macintosh to the IBM host) or downloaded (transferred from the IBM host to the Macintosh).

HFT Avatar's Host File Transfer software for IBM mainframes. Runs on the IBM host machine.

Host An IBM mainframe computer. Specifically, the IBM machine with which MMF/GW Client communicates.

IND$FILE IBM's file transfer software for IBM mainframes. Runs on the IBM host machine.

LAN Local-Area Network.

Log off (host) To end communication with the IBM mainframe (host) machine.

Log on (to host) To establish communication with the IBM mainframe (host) machine.

LU Logical unit; generally refers to an outlying software entity that communicates with an IBM machine over an IBM network.

LU Session An ongoing computer-network communication between an IBM host computer and an outlying machine.

MacBinary format The style of Document transfer format that MMF/GW Client uses to transfer files. See also Document format.

Overwrite (file) To replace the data of an existing file with new data, discarding all the previous data.

Print Settings document A Macintosh document that describes the settings a user uses in MMF 3287. A MMF 3287 user can have several Print Settings documents.

Session Settings document A Macintosh document that describes the settings a user uses in MMF/GW Client — the LU class, color preferences, and so on. A Client user can have several Session Settings documents.

Status line The line at the bottom line of the 3270 screen that displays status messages for the user.

Terminal emulation Simulating the screen appearance and keyboard action of one terminal on another. MMF/GW Client emulates IBM 3270-style terminals on Macintosh machines.

Terminal window A MMF/GW Client Macintosh window that contains a 3270-style terminal screen.

Text format A way of transferring files to and from an IBM mainframe (host) machine. In text format, only the data part of the Macintosh file is transferred and all characters are translated from ASCII (native format on the Macintosh) to EBCDIC (native format on IBM host machines) or vice versa depending on the direction of the transfer.

TSO Time Sharing Operating System, an operating environment found on IBM host machines.

Upload To send a file from an outlying computer in to an IBM mainframe (host) machine.

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AVATAR CORPORATION

65 South Street, Hopkinton, MA 01748

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