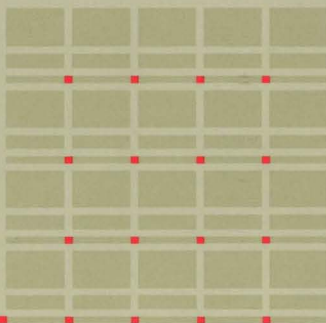


Multiple Server Update Guide

IBM
Personal Computer




CORVUS

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Multiple Server Update Guide

IBM Personal Computer

Part Number: 7100-06592-01
Release Date: December 1984
Revision: A

FCC WARNING

This equipment has been tested with a Class A computing device and has been found to comply with Part 15 of FCC Rules. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference.

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HOW TO USE THIS GUIDE

This guide explains how to update an existing Omninet™ local area network of IBM® Personal Computers using Constellation II software to accept more than one disk server and disk system or OmniDrive™ mass storage system. The disk servers must have ROM version DSD9B or later. Contact the Corvus Customer Service Department for further information.

Adding another disk server and disk system or OmniDrive means having multiple servers on the network. Both systems have disk servers: the disk system needs an external disk server to communicate on the network and the OmniDrive has its server built in.

Throughout this guide the term server refers to either the combination of a disk server and disk system or an OmniDrive.

Adding multiple servers to a network with only IBM PCs requires checking the Omninet address, setting the bias switch and merging user tables. Updating a network with IBM PCs and one or more other computer types requires the above procedures plus matching the boot files. Adding IBM PCs to an existing network of one or more other computer types involves all the above procedures, but matching the boot files requires several different steps.

This guide assumes that you have completed the system generation process on an uninitialized disk system for an IBM PC.

Start at the section “Setting the Switches” to check the Omninet addresses and set the bias switches properly.

All users will go to the section “Merging the User Tables” to create matching user tables. The tables of users in the CORVUS volumes on all servers on the network must be identical for users to boot.

Users adding a new server to a network with printer servers or more than one computer type also will go to the section “Updating the Boot Files.” The printer server or computer type, with several exceptions, has its own boot file in the CORVUS volume. The types of boot files in the CORVUS volumes on all servers on the network must be identical.

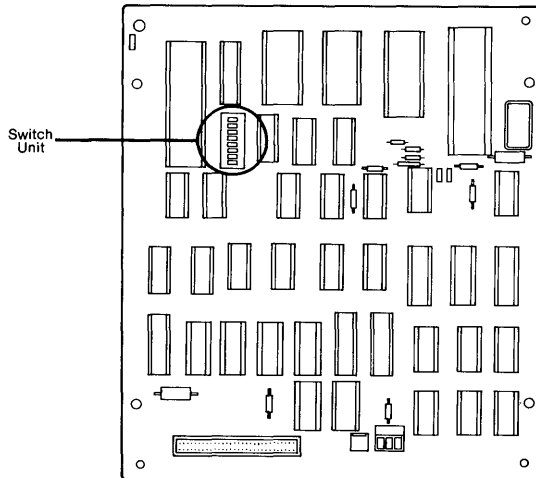
A section on volume mounting with multiple servers concludes this guide.

SETTING THE SWITCHES

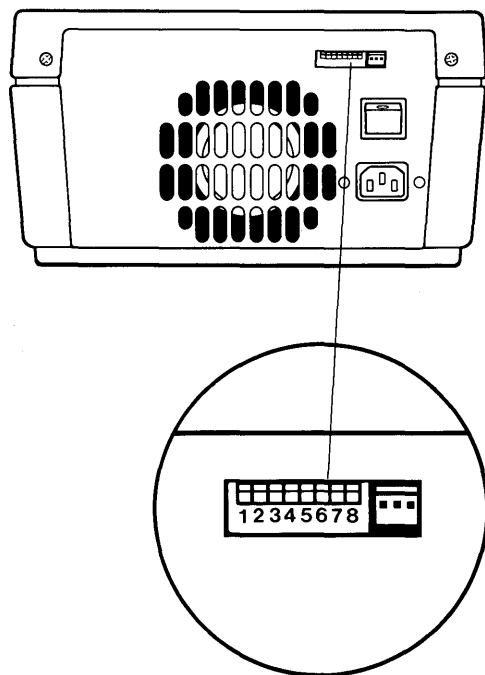
Before connecting the new server to the network, make sure all servers have unique addresses and their bias switches are set properly. The first server on the network must have the bias on, and all other servers must have the bias off. Follow the steps below to check the addresses and set the bias properly.

1. Locate the switches on the disk server or OmniDrive.

Remove the cover of the disk server to reveal the switches. For instructions, see the installation guide used to set up the disk server. The OmniDrive switches are visible on the back of the drive.



*Disk Server
Circuit Board*



OmniDrive Back Panel

2. Check the Omninet address.

The first six switches are used for the Omninet address. Switches 7 and 8 are not used for the address. The first server on the network may have been set to address 0, but additional servers must have their own addresses.

Make sure each server has a unique address. For a disk server, use the chart labeled "Disk Server Addresses and Switch Settings." For an OmniDrive, use the chart labeled "OmniDrive Addresses and Switch Settings." Be sure to use the right chart.

Address	Switch Setting						Address	Switch Setting					
	1	2	3	4	5	6		1	2	3	4	5	6
0	↑	↑	↑	↑	↑	↑	32	↑	↑	↑	↑	↑	—
1	—	↑	↑	↑	↑	↑	33	—	↑	↑	↑	↑	—
2	↑	—	↑	↑	↑	↑	34	↑	—	↑	↑	↑	—
3	—	—	↑	↑	↑	↑	35	—	—	↑	↑	↑	—
4	↑	↑	—	↑	↑	↑	36	↑	↑	—	↑	↑	—
5	—	↑	—	↑	↑	↑	37	—	↑	—	↑	↑	—
6	↑	—	—	↑	↑	↑	38	↑	—	—	↑	↑	—
7	—	—	—	↑	↑	↑	39	—	—	—	↑	↑	—
8	↑	↑	↑	—	↑	↑	40	↑	↑	↑	—	↑	—
9	—	↑	↑	—	↑	↑	41	—	↑	↑	—	↑	—
10	↑	—	↑	—	↑	↑	42	↑	—	↑	—	↑	—
11	—	—	↑	—	↑	↑	43	—	—	↑	—	↑	—
12	↑	↑	—	—	↑	↑	44	↑	↑	—	—	↑	—
13	—	↑	—	—	↑	↑	45	—	↑	—	—	↑	—
14	↑	—	—	—	↑	↑	46	↑	—	—	—	↑	—
15	—	—	—	—	↑	↑	47	—	—	—	—	↑	—
16	↑	↑	↑	↑	—	↑	48	↑	↑	↑	↑	—	—
17	—	↑	↑	↑	—	↑	49	—	↑	↑	↑	—	—
18	↑	—	↑	↑	—	↑	50	↑	—	↑	↑	—	—
19	—	—	↑	↑	—	↑	51	—	—	↑	↑	—	—
20	↑	↑	—	↑	—	↑	52	↑	↑	—	↑	—	—
21	—	↑	—	↑	—	↑	53	—	↑	—	↑	—	—
22	↑	—	—	↑	—	↑	54	↑	—	—	↑	—	—
23	—	—	—	↑	—	↑	55	—	—	—	↑	—	—
24	↑	↑	↑	—	—	↑	56	↑	↑	↑	—	—	—
25	—	↑	↑	—	—	↑	57	—	↑	↑	—	—	—
26	↑	—	↑	—	—	↑	58	↑	—	↑	—	—	—
27	—	—	↑	—	—	↑	59	—	—	↑	—	—	—
28	↑	↑	—	—	—	↑	60	↑	↑	—	—	—	—
29	—	↑	—	—	—	↑	61	—	↑	—	—	—	—
30	↑	—	—	—	—	↑	62	↑	—	—	—	—	—
31	—	—	—	—	—	↑	63	—	—	—	—	—	—
Address	1	2	3	4	5	6	Address	1	2	3	4	5	6
	Switch Setting							Switch Setting					

↑ = on
— = off

*Disk Server Addresses
and Switch Settings*

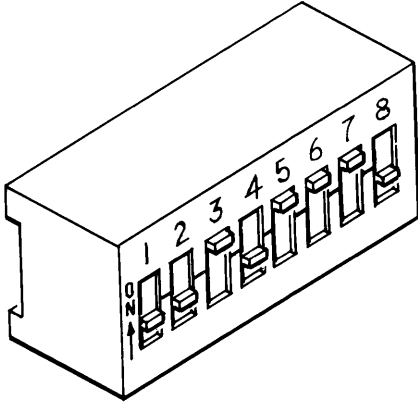
Address	Switch Setting						Address	Switch Setting					
	1	2	3	4	5	6		1	2	3	4	5	6
0	•	•	•	•	•	•	32	•	•	•	•	•	▲
1	▲	•	•	•	•	•	33	▲	•	•	•	•	▲
2	•	▲	•	•	•	•	34	•	▲	•	•	•	▲
3	▲	▲	•	•	•	•	35	▲	▲	•	•	•	▲
4	•	•	▲	•	•	•	36	•	•	▲	•	•	▲
5	▲	•	▲	•	•	•	37	▲	•	▲	•	•	▲
6	•	▲	▲	•	•	•	38	•	▲	▲	•	•	▲
7	▲	▲	▲	•	•	•	39	▲	▲	▲	•	•	▲
8	•	•	•	▲	•	•	40	•	•	•	▲	•	▲
9	▲	•	•	▲	•	•	41	▲	•	•	▲	•	▲
10	•	▲	•	▲	•	•	42	•	▲	•	▲	•	▲
11	▲	▲	•	▲	•	•	43	▲	▲	•	▲	•	▲
12	•	•	▲	▲	•	•	44	•	•	▲	▲	•	▲
13	▲	•	▲	▲	•	•	45	▲	•	▲	▲	•	▲
14	•	▲	▲	▲	•	•	46	•	▲	▲	▲	•	▲
15	▲	▲	▲	▲	•	•	47	▲	▲	▲	▲	•	▲
16	•	•	•	•	▲	•	48	•	•	•	•	▲	▲
17	▲	•	•	•	▲	•	49	▲	•	•	•	▲	▲
18	•	▲	•	•	▲	•	50	•	▲	•	•	▲	▲
19	▲	▲	•	•	▲	•	51	▲	▲	•	•	▲	▲
20	•	•	▲	•	▲	•	52	•	•	▲	•	▲	▲
21	▲	•	▲	•	▲	•	53	▲	•	▲	•	▲	▲
22	•	▲	▲	•	▲	•	54	•	▲	▲	•	▲	▲
23	▲	▲	▲	•	▲	•	55	▲	▲	▲	•	▲	▲
24	•	•	•	▲	▲	•	56	•	•	•	▲	▲	▲
25	▲	•	•	▲	▲	•	57	▲	•	•	▲	▲	▲
26	•	▲	•	▲	▲	•	58	•	▲	•	▲	▲	▲
27	▲	▲	•	▲	▲	•	59	▲	▲	•	▲	▲	▲
28	•	•	▲	▲	▲	•	60	•	•	▲	▲	▲	▲
29	▲	•	▲	▲	▲	•	61	▲	•	▲	▲	▲	▲
30	•	▲	▲	▲	▲	•	62	•	▲	▲	▲	▲	▲
31	▲	▲	▲	▲	▲	•	63	▲	▲	▲	▲	▲	▲
Address	1	2	3	4	5	6	Address	1	2	3	4	5	6
	Switch Setting							Switch Setting					

▲ = switch up
• = switch down

*OmniDrive Addresses
and Switch Settings*

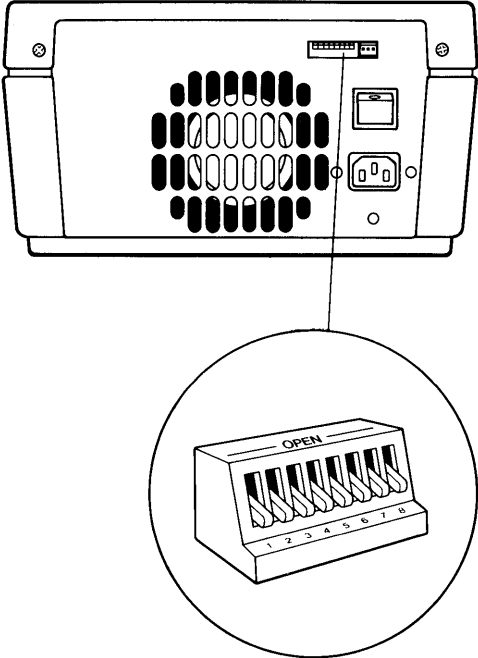
3. Check the bias switch on the first server.

On a disk server, switch 7 is the bias switch. If a disk server was the first server on the network, make sure its switch 7 is set ON to set the bias on.



First Disk Server Bias Switch Setting

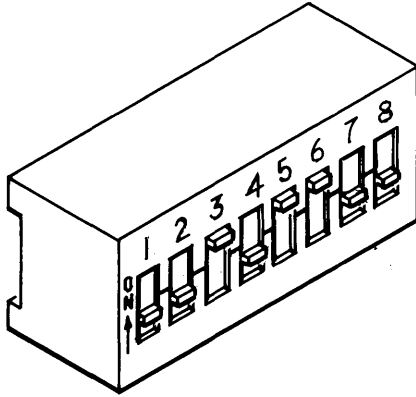
On an OmniDrive, switch 8 is the bias switch. If an OmniDrive was the first server on the network, make sure its switch 8 is set DOWN to set the bias on.



First OmniDrive Bias Switch Setting

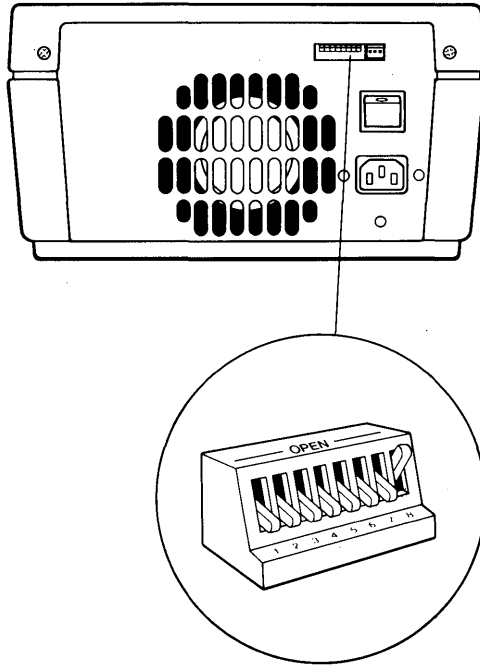
4. Check the bias switch on the new server.

If a disk server was just added to the network, make sure switch 7 is set OFF to set the bias off. All additional servers should have the bias off.



New Disk Server Bias Switch Setting

If an OmniDrive was just added to the network, make sure switch 8 is set UP to set the bias off. All additional servers should have the bias off.



New OmniDrive Bias Switch Setting

Be sure that only one server has been set with the bias on. Go to the next section, "Merging the User Tables;" to create matching user tables.

MERGING THE USER TABLES

Merging user tables requires complete control of the network. Make sure that no one is trying to use the network when following the steps below. Turn off all existing mass storage systems.

Connect the new disk system just generated to the Omninet network. If the IBM PC is a new computer type for the existing network, also connect an IBM PC to the existing network. Follow the appropriate steps in the setup instructions for the disk system and the *IBM Personal Computer Network Station Installation Guide*.

Use this section to merge the user tables. Make sure the new server is turned on and the existing servers are left turned off until instructed to turn them on.

1. Log on as system manager.

Log on at the IBM PC. Insert the Corvus boot diskette and turn on the computer. The system manager's user name is IBMGR and the password is HAI. After you log on, the screen will display the Constellation II main menu.

2. Turn on the existing servers.

Remember that servers refers to all mass storage systems, but if your network has The Bank™ mass storage system, do not turn it on. After turning the servers on, wait until only the red indicator light labeled READY is lit on all drives before performing the next step.

3. Select the drive management option.

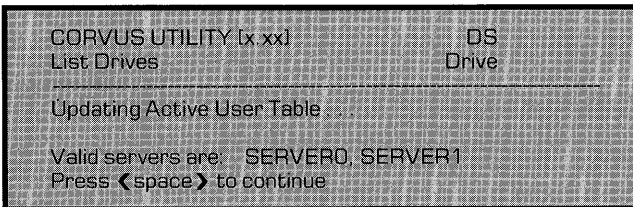
Press D

The screen displays the drive management main menu.

4. List all servers on the network.

Press L

The screen display is similar to:



All servers on the network should be listed. If they are not, use the list drives option until they are listed. Once all servers are listed, press **[SPACE]** to return to the drive management menu, and go to the next step.

5. Select an existing server.

Press S

The screen display is similar to:

```
CORVUS UTILITY (x.xx)          DS
Select Drive                  Drive
-----
Enter drive information:

Valid servers are:  SERVER0, SERVER1
Enter server name: [SERVER0]
```

Type the server name, drive name and password for an existing server. Do not select the new server.

Press after each entry.

The screen displays the drive management main menu again.

6. Select the user manager.

Press U

The screen displays the user manager main menu.

7. Select the merge user tables option.

Press M

After a moment, the screen display is similar to:

```
User Manager [x.xx]          DS SERVER0
Merge User Tables          Drive DRIVE1
-----
Looking at server SERVER0
User BOB                   added
User GAIL                  added
User IBMBACKUP            replaced
User IBMGR                replaced
User IBMUSER              replaced
User SERVER0              added
All servers updated.
-----
Press <SPACE> to continue
```

The program automatically checks all the servers on the network and displays a similar list for each. Accept the suggested responses until all servers are updated.

Press

The screen displays the user manager main menu. Return to the drive management main menu.

8. Repeat the steps for the new server.

Repeat steps 4 through 6 above, selecting the new server in step 4.

When finished merging the user tables, exit Constellation II completely.

Users adding the new server to a network that only has IBM PCs and no printer servers are done. Go to the last section of this guide, "Volume Mounting Information," then turn to the *IBM Personal Computer MS-DOS System Manager's Guide* to create users and volumes and grant access on the new drive.

Users adding the new server to a network that has printer servers or computer types other than the IBM must go to the next section, "Updating the Boot Files."

UPDATING THE BOOT FILES

Updating boot files requires complete control of the network. Make sure that no one is trying to use the network when following the steps below.

The goal of this section is to make the boot files identical on every drive on the network. The chapter is divided into two subsections. Users adding the new server to a network that has only IBM PCs and printer servers should go to the subsection "Printer Servers."

Multiple server networks that are using a printer server to despool files to a printer must have the PIPES volume on the disk system at Omninet address 0. The printer server cannot despool files from servers other than server 0.

Users adding the new server to a network that has IBM PCs and also other computer types must also complete the subsection "Other Computers."

Note that if you have The Bank mass storage device, it should be turned off when performing the steps in this chapter.

PRINTER SERVERS

Follow the steps below to add the printer server boot file to the new server. This section assumes the utility server was installed initially from an IBM PC. If it was not, follow the steps below using the other computer type, making the appropriate adjustments when needed.

1. Log on as system manager.

Log on as IBMGR at an IBM PC. The screen displays the Constellation II main menu.

2. Select the drive management option.

Press D

The screen displays the drive management main menu.

3. Select the server with Omninet address 0.

Press S

The screen displays a list of the valid servers.

Type the server name, drive name and password for the server at Omninet address 0.

Press

4. Select the boot manager.

Press B

The program automatically unmounts the CORVUS volume, and a message to that effect appears on screen.

Press SPACE

The screen displays the boot manager main menu:

```
Boot Manager [x.xx]          DS SERVER0
Main Menu                   Drive DRIVE1
-----
A — Add boot file
R — Remove boot file
L — List boot files

H — Help
E — Exit
-----
Please select an option:
```

5. Select add a boot file.

Press A

The screen displays:

```
Boot Manager [x.xx]          DS SERVER0
Add a boot file             Drive DRIVE1
-----
Enter boot file characteristics:
Source file name:
```

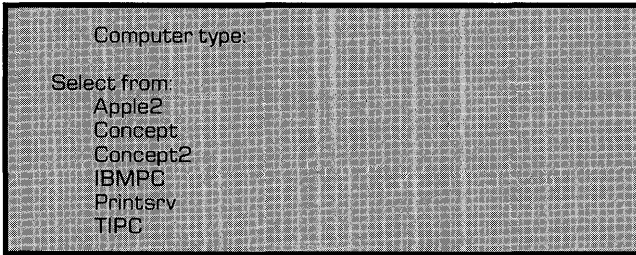
6. Enter the boot file name.

The file name is BOOT.PRINTSRV. The boot file can be found in the PSERVER volume. IBMGR should already have access to the volume.

Type PSERVER:BOOT.PRINTSRV

Press

The screen display is similar to:



7. Enter the computer type.

The type is a printer server, denoted Printsrv.

Type PRINTSRV

Press

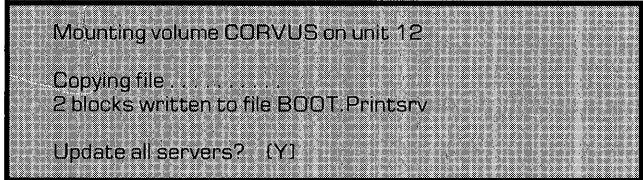
The screen display is similar to:



8. Add the boot file.

Press

The screen display is similar to:



```
Mounting volume CORVUS on unit 12
Copying file
2 blocks written to file BOOT.Printsrv
Update all servers? (Y)
```

All existing servers must have the proper files for the network to function. Update all servers to ensure that the file is on each of them.

Press

Once all servers are updated, exit Constellation II.

Users with only IBM PCs and printer servers are done once the printer server boot file has been added. Go to the last section of this guide, "Volume Mounting Information," then turn to the *IBM Personal Computer MS-DOS System Manager's Guide* to create users and volumes and grant access.

Users with computer types on the network other than IBM PCs must go to the next section, "Other Computers," once the printer server boot file has been added.

OTHER COMPUTERS

Follow the steps below to add all the existing boot files to the new server, and to add the IBM boot file to all the existing servers. The IBM boot file will need to be added only if an IBM has not been on the network before.

1. Turn off the new server.

Turn off the system just generated.

2. Log on as system manager.

Log on at a computer that already works with the network.

If the screen doesn't already display the Constellation II main menu, enter the Constellation II program.

3. Turn on the new server.

Turn on the system just generated. After turning the server on, wait until only the drive's red indicator light labeled READY is lit before performing the next step.

4. Select the drive management option.

Press D

The screen displays the drive management main menu.

5. Select the new server.

Press S

Type the server name, drive name and password for the new server.

Press

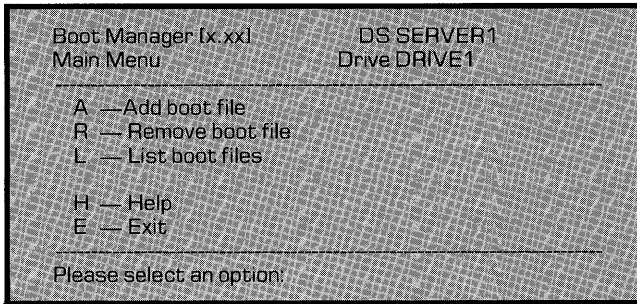
6. Select the boot manager.

Press B

Some computers may unmount a volume and display a message to that effect on screen.

Press to continue the program if a volume is unmounted.

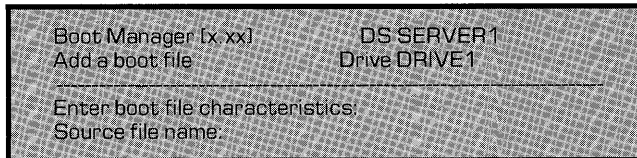
The screen displays the boot manager main menu:



7. Select add a boot file.

Press A

The screen displays:



8. Enter the boot file name.

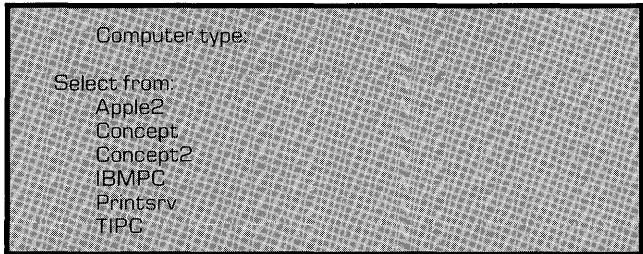
The following chart shows the various computer types and boot file names:

<i>Computer Type</i>	<i>File Name</i>
Corvus Concept	BOOT.CONCEPT
Apple II	BOOT.APPLE2
Corvus Concept +	BOOT.CONCEPT2
IBM PC	BOOT.IBMPC
TI Professional	BOOT.TIPC
Apple III	BOOT.APPLE3
Corvus Companion	BOOT.COMPANION

Type the file name for the computer currently being used.

Press

The screen display is similar to:



9. Enter the computer type.

Type the correct name.

Press

The screen display is similar to:

```
OK to add boot file BOOT.Concept (Y/N) [Y]
```

10. Add the boot file.

Press

The screen display is similar to:

```
Mounting volume CORVUS on unit 12
Copying file . . . . .
10 blocks written to file BOOT.Concept
Update all servers? [Y]
```

All existing servers must have the proper files for the network to function. Update all servers to ensure that the file is on each of them.

Press

Once all servers are updated, exit Constellation II.

11. Repeat the steps for all types.

Repeat steps 1 through 10 for every existing computer type on the network that has a boot file. Computers that use boot files are listed in step 8 of this subsection.

The IBM boot file must be added only if IBM PCs were not part of the network before this new drive was generated. To add the IBM boot file, follow steps 1 through 10, but turn off all existing drives in step 1, then turn them all on in step 3.

After all drives on the network have matching boot files, go to the next section, "Volume Mounting Information," then turn to the *IBM Personal Computer MS-DOS System Manager's Guide* to create users and volumes and grant access.

VOLUME MOUNTING INFORMATION

Different computer types and operating systems handle volume mounting differently on a multiple server network. With the latest release of IBM Constellation II, the IBM PC can mount volumes from all servers on the network at boot time.

The home disk server is the key to volume mounting on a multiple server network. The home disk server is specified when creating the user account. The home disk server must contain the user's boot information, and it can contain private volumes as well.

Volumes on the home disk server that are assigned a unit number are mounted automatically at boot time. 10 units are available for mounting volumes with the IBM PC. If less than 10 volumes on the home disk server are mounted, volumes assigned a unit number that are on other servers are also mounted. The number of volumes from each server that are mounted depends upon the units remaining out of the 10. The program first checks the home disk server, then begins checking other servers, starting with the lowest Omninet address. No matter how many volumes are assigned a unit number, a total of 10 will be accessible by the user.

Volumes on The Bank are never mounted automatically when a user boots, but those volumes and any others a user has access to can be mounted after booting with the mount manager program.

