BOOT SERVICE

XEROX

Network Administration Library

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Purpose

This Boot Service booklet provides step-by-step procedures for setting up and maintaining a Boot Service. Procedures for preparing a network to support network installation of workstation software are also provided.

Intended audience

This booklet has been prepared for System Administrators who have participated in the System Administrator workshop.

Before you read this booklet

There is some general information about services that you need to be familiar with before you read this booklet. The information is contained in the "Services Executive" section in the Server Operation and Maintenance booklet, and the Introduction to Network Administration booklet. All of these publications can be found in the Network Basic Services volume.

Before you can use this service

As part of the preparation for setting up the Boot Service, you need to perform the procedures described in the Server Software Installation booklet. This booklet is also part of the Network Basic Services volume.

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Before a system on a network can be used, it must be installed with application-level software. The processor must boot an installation utility in order to install this application software. The Xerox 8000 processors can be booted from floppy disks, rigid disks, and over the network.

The Boot Service enables Xerox 6085, 8010 or 8043 processors to be booted over the Ethernet network.

Note: At present, the Boot Service cannot be used to boot servers or install software on servers through the Ethernet connection.

When you boot over the network, the Xerox processor broadcasts a request for a specific utility boot file. The Boot Service constantly monitors the network to respond to such requests. Upon receiving an etherboot request, the Boot Service retrieves the specified utility boot file from its local database and sends it to the requesting remote processor. This utility provides menus from which users can select certain installation options that allow them to retrieve desired software from the database.

Note: The Boot Service can only respond to one request at a time. Requests by additional processors will result in those processors being placed in a holding queue. Those processors will indicate, by way of their maintenance panels, a code (either 0149, 0199, or 0928) while at this holding point.

Note: If the Boot Service is not responding at all, the requesting processor will then indicate a code of either 0151 or 0201.

This entire process of booting networked system elements is known as etherbooting.

Note: Performance measurements have shown that approximately 20 seconds are needed to perform all the steps in the etherbooting sequence. This time will increase in proportion to the number of processors attempting to etherboot simultaneously.

In addition to the installation utility boot file (the Installer), the Boot Service database can be configured to store other utility boot files (such as diagnostics) which can be invoked over the network. Etherbooting remote diagnostics can be valuable when a user needs to troubleshoot a workstation that cannot boot from its own disk drive.

The distinction between utility boot files and product software (workstation or server) is that utility boot files have to be completely resident in the main memory of the processor,

whereas product software does not. Product software must be resident on a rigid disk.

Note: There is no correlation between the amount of memory installed on the Boot Service and the time taken to boot a requesting processor.

The Boot Service is an independent, separately loadable services software package, which provides the basic etherbooting functions to a network.

This chapter lists all of the Boot Service commands. Some commands of other services are also identified because they are used in this booklet. The commands below are listed in alphabetical order, followed by a brief explanation. To address the Boot Service commands, the enabled System Administrator must be in the Boot Service context.

Add Alias

(Clearinghouse Service command) Registers alternate names of servers or users into the Clearinghouse database.

Add File Drawer

(File Service command) Registers reserved file storage space for servers or users.

Change File Drawer

(File Service command) Alters the access privileges to users of a file drawer.

Delete Files

(Services Common Software command) Deletes current Boot Service files that are duplicated and need to be replaced by the new floppy files.

Expunge Service

(Services Common Software command) Removes a service from a server. This command is only available if the service to be expunged has not been initialized. Because the command has such drastic consequences, there is a warning message and confirmation is required.

List Boot Statistics

Shows the number of boot files requested, the number of boot files sent, the number of microcode boot files requested, and the number of microcode boot files sent.

List Files

Lists the contents of the Boot Service database. A pattern must be specified for this operation. The default pattern is the wildcard symbol (*), which causes all files on the Boot Service database to be listed. This command may be canceled by pressing <BREAK>.

List Floppy Files

Lists the contents of a floppy disk. A pattern must be specified for this operation. The default pattern is the wildcard symbol (asterisk), which causes all files on the floppy disk to be listed. This command may be canceled by pressing < BREAK>.

Retrieve Floppy Files

Copies files from a floppy disk to the working directory. Upon execution of this command, you are prompted to specify either specific file names or the standard wildcard symbol (asterisk). The default pattern uses the standard wildcard symbol. During the operation of the command, the server executive displays the name of each file that is successfully copied to the working directory. This command may be canceled by pressing <BREAK>.

Run Service (Services Common Software command) Runs and configures a

service. May be used before other dependent services that are

resident on the same server are run.

Start Service (Services Common Software command) Starts a service.

Stop Service (Services Common Software command) Stops a service. User

confirmation is required before a service is stopped.

3. Setting up your Boot Service

The Boot Service is an independent, separately-loaded services software package that provides the basic etherbooting functions for a network. It allows any user to etherboot a utility boot file from a Boot Server's database.

Note: Before a Boot Service can be installed, the server must be running Services System Software 10.0 and have at least 9000 free disk pages on the server before adding the 10.0 Boot Service.

There are six floppy disks necessary to install the Boot Service for the first time. These floppies are titled:

Services System Software #1 Boot Service 10.0 Standard Etherboot Files #1 Standard Etherboot Files #2 Standard Etherboot Files #3 Standard Etherboot Files #4

The last four floppy disks contain database boot files and their configuration profile, which can be booted over the network. When installing the Boot Service, the service is installed first, then the database and configuration profile files are installed.

The Boot Service can co-reside with any service and on any configuration of servers.

Note: There may be some difficulties when the Boot Service is installed on a server that is already running another highly interactive service (such as a Print Service).

The Boot Service can only support processors on a single Ethernet network. For interconnected networks, each network requires its own Boot Service. There are no restrictions on the number of Boot Services for a single network.

These procedures must be performed to set up a Boot Service:

- Initializing the Boot Service
- Installing the Boot Service database

Initializing the Boot Service

This procedure is based on the assumption that you have followed Steps 1-12 in the Server Software Installation booklet, and have proceeded your server. The Clearinghouse should be running at this point, and your Boot Service should be activated.

Procedure

If you have not proceeded your server, do steps 1 and 2. If you have proceeded your server, and there is a "Normal Startup?" prompt on your screen, skip to step 3.

- 1. Type Run Service and press < RETURN >.
- 2. Enter the number corresponding to Boot Service and press < RETURN >.

Run ServiceRETURN

1 Boot Service
Enter one or more choices: IRETURN

Type N to the "Normal Startup" prompt and press <RETURN>.

CAUTION: It is very important that you answer this prompt with an **N**, otherwise the Boot Service will be installed improperly, and the recovery will be very difficult.

Running Boot Service
Service name and description unknown.
Enter service name:

- 4. The Boot Service will prompt you for a name. Type the name for the Boot Service and press <RETURN>.
- 5. The Boot Service will prompt you for a description. Type in a description and press <RETURN>. At this point, the software registers the service in the appropriate Clearinghouse domain.

Service name and description unknown.
Enter service name: EtherbootRETURN
Enter service description: Boot Service for OurDomainRETURN
Confirm (Y/N): YRETURN
Validating Clearinghouse entry for Etherboot:OurDomain:OurOrg
A new Clearinghouse entry was created
Done.

Note: You must now install the Boot Service database as described in the next section, "Installing the Boot Service database." This configuration is stored into a local file named "Boot Service. Profile".

Installing the Boot Service database

You can now install the database files. They are located on the four floppy disks labeled:

Standard Etherboot Files #1 Standard Etherboot Files #2 Standard Etherboot Files #3 Standard Etherboot Files #4

You use Boot Service commands to install the database files. These database files are ultimately stored on the server's working directory. They are distributed on the "Standard Etherboot Files" floppy disks.

The procedure that follows is generic instructions for installing the Boot Service database. The particular Standard Etherboot Files floppy disks used depend on the types of processors used to install software over the network, and the utilities you choose to have accessible from the network.

To determine which Standard Etherboot Files floppy disks should be used to install the Boot Service database, refer to Appendix B.

Note: Before Boot Service can be installed, the server must be running Services System Software 10.0, and have at least 9000 free disk pages on the server before adding the 10.0 Boot Service.

Procedure

- 1. Log on and enable in the Boot Service context.
- 2. Insert the appropriate Standard Etherboot Files (#1, #2, #3, or #4) floppy disk into the floppy disk drive.
- 3. Type Retrieve Floppy Files and press < RETURN >.
- 4. Press < RETURN > at the "File List: *" prompt. You will see messages displayed that show the name of each file

copied. These are informative messages only. No action is required.

Names of files on the working directory that match any file on the floppy disk are not copied and a message about the matching file name is displayed.

BSIRetrieve Floppy FilesRETURN
File List: *RETURN
EtherInitialDUon db... copied to the working directory
MesaDlion.db... copied to the working directory

.etc.

5. Repeat steps 2 - 4 for each appropriate "Standard Etherboot Files" (#1, #2, #3, or #4) floppy disk.

In order for the Boot Service Profile to be registered correctly in the Server Profile, all services on the server must be stopped and the server must be booted.

- 6. Stop all services on the server.
- 7. Press both the B RESET and ALT B buttons, release B RESET, wait until 0001 appears in the maintenance panel, then release ALT B.

To have the Boot Service ready to respond to boot file requests from processors over the Ethernet network, the service must be started.

8. Type Y to the "Normal Startup?" prompt and press <RETURN>.

Comment: To prepare your network to support network installation of workstation software, refer to the section titled "Network installation of workstation software" in this booklet.

Comment: At this time you could test the Boot Service by going to a workstation and performing an "Installation boot" (a "3 boot"). You should expect to see the appropriate Installation menu.

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4. Maintaining your Boot Service

Use the commands and procedures in this section to perform specific tasks that are needed to keep your Boot Service running. The tasks should be done on an as-needed basis.

The chapter includes these sections:

- Listing boot statistics
- Listing floppy disk files
- Reconfiguring the Boot Service database

Listing boot statistics

The List Boot Statistics command allows System Administrators to monitor the load on the Boot Service. This network management command displays the number of boot files requested, the number of boot files sent, the number of microcode boot files requested, and the number of microcode boot files sent.

Procedure

- 1. Log on and enable in the Boot Service context.
- 2. Type List Boot Statistics and press < RETURN >.

BSIList Boot StatisticsRETURN

Boot files requested: 6

Boot files sent: 5

Microcode boot files requested: 18

Microcode boot files sent: 16

In the example above, six processors requested boot files. This Boot Service responded to five of those requests. Another Boot Service on the same network may have responded to the sixth one. Typically, each boot file request is preceded by three requests for microcode boot files.

Listing floppy disk files

The List Floppy Files command permits an enabled user to list the contents of a floppy disk. You must leave the floppy disk inserted in the disk drive while this command is executed. This is a general purpose floppy disk management command designed to help System Administrators manipulate floppy disk files.

Procedure

- 1. Insert the floppy disk into the disk drive.
- 2. Log on and enable in the Boot Service context.
- 3. Type List Floppy Files and press < RETURN >.
- 4. Press < RETURN > at the "File List: *" prompt.

BSIList Floppy FilesRETURN
File List: *RETURN
EtherInitial.db December 5, 1984-13:23:11
Dlian.germ December 4, 1984-11:00:12

Note: You can cancel this command by pressing <BREAK>.

Reconfiguring the Boot Service database

Occasionally, you may need to reconfigure the Boot Service database. To do this, the Boot Service must be in a stopped state.

The Boot Service offers the flexibility of adding or deleting utility boot files from its database. For each file in a Boot Service database, there is a set of associated parameters that are registered in the server profile. The Boot Service uses this configuration data to identify specific boot files and to maintain system-wide statistics based on their properties. While you are modifying a Boot Service database, you may be required to change the configuration data.

A Boot Service database is configured by a configuration profile which records parameters associated with each individual boot file contained in the database. Each boot file contains a separate entry in the configuration profile.

The parameters associated with each file consist of the following fields:

- Type of Hardware identifies the class of processors served by this file.
- Type of File the Boot Service supports three types of boot files: Microcode, Germ, and Boot.
- Boot File Number a pre-assigned number administered by Xerox.
- Boot File Name a pre-assigned name administered by Xerox.

The parameter file is a text file whose entries must conform to the following format:

TypeOfHardware TypeOfFile FileNumber BootFileName

For example, the entry for the Germ boot file may look like:

DLion Germ 25200000030 DLion.germ

During every Boot Service startup, the configuration data is scanned and stored in internal tables. Errors in any of the parameter fields cause that file to be skipped from the Boot Service database. An appropriate message is displayed to flag this condition.

Use Procedure A to list all boot files on the floppy disks. Use Procedure B to list all boot files in the Boot Service database. Use Procedure C to reconfigure the boot files of the Boot Service database.

First, log on and enable in the Boot Service context, then follow one of these procedures.

Procedure A. Listing the boot files on the floppies

- 1. Insert the floppy containing new files in the disk drive.
- Type List Floppy Files and press < RETURN >.
- 3. Record the names of the floppy files and compare them with the current Boot Service files.

Procedure B. Listing the boot files in the Boot Service database

- 1. Type List Files and press < RETURN >.
- 2. Press < RETURN > at the "File List: *" prompt.
- 3. Record the names of the duplicate files that are displayed.

Note: If additional services are installed on this server, their files will also be displayed.

Procedure C. Reconfiguring the boot files in the Boot Service database

- 1. Type **Stop Service** and press < RETURN > .
- 2. Type the numbers corresponding all of the services (Example: 1-3) and press < RETURN > .
- 3. Type Y to the "Stop immediately?" prompt and press <RETURN>.

Note: By answering Y, you will stop all current user sessions.

- 4. Use the Services Executive **Delete Files** command to delete current Boot Service files that are to be replaced by the new floppy files.
- 5. Insert the floppy containing new files in the disk drive. Use the Boot Service **Retrieve Floppy Files** command to update the contents of the Boot Service database.
- 6. Press both the B RESET and ALT B buttons, then release the B RESET button. Release the ALT B button when 0001 appears in the maintenance panel.
- 7. Type Y to the "Normal Start up?" prompt and press <RETURN>.

Note: During every startup of the Boot Service, the contents of the Boot Service configuration profile are transferred to the server profile. The "Standard Etherboot Files" floppy disk contains the default Boot Service configuration profile file called "Boot Service.profile."

The default name of the Boot Service configuration profile can be changed in the "Profile File" entry in the "Boot Service" section of the server profile. This must be done before starting the Boot Service.

There are certain procedures that must be performed before workstation software can be down-loaded from the network server to a networked workstation.

These procedures involve creating an alias name for a File Service that will be used to store the workstation software, and creating two specifically named file drawers that workstations will access when downloading software.

Once you have completed these procedures, you must load the workstation software floppy disks into the newly created file drawers.

Preparing a network to support network installation of workstation software

This procedure is performed at the Clearinghouse Service and the File Service.

Procedure

- Decide which File Service (if you have more than one on your network) will be used to store the workstation software. These materials require approximately 24,000 disk pages, so you will probably want to use the largest capacity File Service on your network.
- Go to the server supporting the Clearinghouse Service and log on and enable in the Clearinghouse Service context. Use the **Add Alias** command to register the alias "Installation Server" as an alternate name for the File Service you will use to store the workstation software.

(Clearinghouse ServiceRETURN

CHS! Add AliasRETURN

Add Alias for Name: FS1RETURN

New Alias to be Added: Installation ServerRETURN

Done: Installation Server now stands for FS1

Add another alias (Y/N): NRETURN

3. Go to the File Service that has the "Installation Server" alias and log on and enable in the File Service context.

IFILE ServiceRETURN

Use the Add File Drawer command to add two file drawers, one named "Installation Drawer" and the other named "VP Applications."

FSI Add File DrawerRETURN

File Drawer Name: Installation DrawerRFTURN Owner's Name: JonesRETURN Page limit (0. .2147483647):15000RETURN

Confirm (Y/N): YRETURN

Done

Use the Change File Drawer command for each file drawer created in order to give read access to everyone, or create a group and give read access privileges to everyone in the group (refer to the procedure "Changing information about file drawers" in the File Service booklet). Give "Add" access to yourself, the backup System Administrator, and the person who will load the workstation software into the Installation Drawer and VP Applications file drawers.

Comment: Once you have completed these procedures, you must copy the contents of the workstation software floppy disks into the Installation Drawer and VP Applications file drawer. For information on which files are to be loaded into each of these file drawers, refer to Appendix B.

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This chapter contains error or informational messages that you might come across during the operation of your service. They are listed in alphabetical order.

Each message is followed by a brief explanation of the probable cause and, if applicable, action that may be taken to resolve the situation.

When you see a message that you do not understand or want more information about, write it down. Then, look it up in the following message list. If the listing does not provide the information you are looking for, contact the Network Support Center (NSC).

A file by that name already exists on the working directory and files must be unique.

Probable cause: A file name on the floppy disk matches a file name on the service.

Action: You must first delete the file from the working directory and then install the file you want into it.

Aborted ...

Informative message displayed when any floppy disk command is aborted.

Activating Files In Database.

Informative message displayed at Boot Service startup to indicate that the configuration data in the file named "Server.Profile" is being read.

<Boot File Name > of (# <Boot File Number >) is not on this disk.

Note: When this message is displayed the <Boot File Name > and <Boot File Number > are replaced with actual names and numbers.

Probable cause: During every startup, the Boot Service scans the server profile for the database. This message is displayed if the Boot Service cannot find a file specified in the server profile. This file is skipped from the Boot Service database.

Boot files requested.

Informative message displayed during the execution of the List Boot Statistics command.

Boot files sent.	
	Informative message displayed during the execution of the List Boot Statistics command.
Boot Service data not registered in	server profile. No files deleted.
	This message appears during the Boot Service expunge operation.
Boot Service initialization aborted.	·
	Probable cause: The Standard Services Software option was not enabled during Boot Service initialization.
	Action: Enable the Standard Server Software.
Copied to the working directory.	
	Informative message indicating that the file was successfully transferred onto the server's working directory.
End of floppy file.	
	An unexpected end of the floppy disk file has occurred.
Error: file not consistent, NOT cop	ied.
	File data structures may have been damaged; they cannot be copied.
File list on floppy is full.	
	Probable cause: The floppy disk is full.
	Action: Provide additional space on the floppy before further operations.
Floppy disk has bad sector.	
	Probable cause: There is an invalid sector on the floppy disk and it cannot be accessed.
	Action: Obtain a new floppy disk.
Floppy disk has only 1 side.	
	Probable cause: A single-sided floppy disk was used.
	Action: Ensure that the disk you are using is the proper one. You can only use double-sided floppy disks.
Floppy disk is bad.	
	Probable cause: The formatting of the floppy disk was incorrect and it cannot be accessed.
	Action: Obtain a new floppy disk.

Floppy disk is only single density.

Probable cause: A single-density floppy disk was used.

Action: Ensure that the disk you are using is the proper one. You must only use double-density floppy disks.

Floppy drive has hardware problem.

Probable cause: A hardware problem has been encountered with the floppy disk drive.

Action: Call the Network Support Center.

Floppy file cannot have size 0.

Probable cause: A floppy disk file of zero length has been read. The floppy is most likely damaged.

Action: Obtain a new floppy disk.

Floppy file not found.

Probable cause: The indicated file on the floppy disk was not found.

Action: Check other floppy disks for the needed file.

Floppy image is invalid.

Probable cause: Floppy system data structures are damaged.

Action: The floppy disk needs to be replaced.

Floppy is not placed in the disk drive properly.

Probable cause: The floppy disk was inserted either upside down or with the wrong edge inward.

Action: Reinsert the floppy disk and try again.

Floppy volume not open.

The floppy disk volume cannot be accessed before opening.

Incompatible floppy file size and system file size.

Probable cause: There is a floppy disk file size mismatch with the allocated Pilot file size.

Action: Replace the disk.

Insufficient space on floppy disk.

Probable cause: The floppy disk is full.

Action: Get another floppy disk that has more free space and try again.

Invalid boot file number format in profile entry.

Probable cause: A boot file number encountered in a profile entry did not have a valid format.

Action: Use the correct format and try again.

Invalid floppy volume handle.

Probable cause: The floppy disk data structure was destroyed.

Action: Replace the floppy disk.

Invalid page number for floppy file.

Probable cause: The page number used while accessing the floppy disk file was invalid.

Action: Replace the floppy disk.

Length of file list on floppy is too short.

Probable cause: The length of the floppy disk file has been inadvertently truncated (shortened).

Action: Replace the floppy disk.

Microcode boot files requested:

Informative message displayed during the execution of the List Boot Statistics command.

Microcode boot files sent.

Informative message displayed during the execution of the List **Boot Statistics** command.

No floppy drive can be found.

The floppy drive is either not working or is missing.

Please insert floppy disk into floppy drive.

The user can ABORT this command when this message is displayed by pressing < BREAK>.

Please try again.

Probable cause: This appears in conjunction with a generic floppy disk error message.

Action: Change the floppy disk.

Problem encountered in retrieving file to working directory. This file is not completely copied to the working directory.

An unknown problem was encountered in retrieving a file to a working directory. This file may not be completely copied to the working directory.

Space for floppy is too small.

Probable cause: The floppy system data structures are damaged.

Action: Replace the floppy disk.

Space on the server's working directory is exhausted. Cannot complete.

Probable cause: The space on the server's working directory is exhausted.

Action: Provide space and try again.

Standard services not product factored. Boot Service will not run.

Probable cause: The standard software option has not been enabled on this server.

Action: Enable the option and try again.

This floppy disk contains mangled data and is unreadable.

Probable cause: The floppy data structures are in an inconsistent state.

Action: Replace the floppy disk.

This floppy disk is incorrectly formatted.

This error could occur if a floppy disk written by some other application is inserted.

Unknown boot file type.

A boot file type encountered in the profile entry did not match one of the following types: Microcode, Germ, or Boot.

Unknown floppy problem.

Probable cause: The software cannot decipher problems in accessing the floppy disk.

Action: Replace the floppy disk. If that does not solve the problem, then call the Network Support Center.

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Boot Activating the software on a server or workstation by pressing

the hardware "boot button" (B RESET on the processor

maintenance panel).

Boot Service The service that provides the facility for booting software on a

server or workstation through the network.

Clearinghouse A service that provides the naming facility for the other services

and workstations on the internet. The Clearinghouse maintains a system-wide directory function that allows all the system components to locate needed resources and other registered

objects.

Clearinghouse database The database is organized by domains, which consist of 200-

300 users resident in the same geographical location. A domain can reside in multiple Clearinghouses, and each Clearinghouse can hold multiple domains. (See **Domain** for

more information.)

The specialized database held by the Clearinghouse Service,

that serves as a global directory for the entire internetwork.

Clearinghouse Service (CHS) A lookup directory service that maintains a database of

all users, services, and servers in a network. The Clearinghouse Service cooperates to provide a single unified database system

among other Clearinghouse Services.

Database The permanent stored data.

Etherbooting The process of booting software over the Ethernet.

Ethernet High-speed local area network developed by Xerox that

carries information to workstations and servers attached to the

network.

Floppy disk A flexible, removable magnetic disk used for data storage and

loading software onto the workstation and server.

Network The physical and logical connection of system elements. A

network allows information exchange between workstations

and servers.

Profile file The mechanism used to record configuration information. It is in fact the server profile file, but information specific to the

Remote Batch Service may only be manipulated by Remote

Batch Service commands.

Rigid disk A hard disk medium used as the main storage device for

software and data on the workstations and servers.

Server A processor on which one or more services can run.

Server profile The data file used to retain information such as names and

assignments after the initialization and configuration of servers and services is complete. This way, the user does not have to

specify the information each time the server is booted.

Service Software that performs a specific function which runs on a

server.

System Administrator A user with specific network privileges, responsible for setting

up and maintaining the network services.

On Xerox 8000 series processors, an operator can specify a software boot by pressing and releasing a combination of switches.

After pressing a boot switch, the operator can select one of many different routes the processor will take for its next step in loading software. This section details those different possibilities.

All of these possibilities are referred to as a "boot switch" with numbers used to differentiate them.

In general, each boot switch boots from a different media and software sequence combination. The media may be floppy disk, hard disk, or the Ethernet network. The software sequence then loaded may perform diagnostic functions on the processor as well as any media-specific hardware.

8000 series processor

The method of pressing the two switches on the front of the processor and the point at which you release them will determine the boot path you select. The LED maintenance panel is used to inform you of the selection possibility then available.

- 1. Press the B RESET and ALT B buttons.
- 2. Release the B RESET button. (The maintenance panel displays the boot switch number beginning with 0000.)
- 3. Release ALT B when the maintenance panel displays the desired boot switch.

Note: If you accidentally pass the point at which you should have released the ALT B switch, continue holding the ALT B switch and the sequence will repeat in a few seconds.

Boot Switch	Action
0000	Drive 0 diagnostic boot for disk drive-attached processors
0001	Drive 0 non-diagnostic boot for disk drive-attached processors
0002	Floppy disk non-diagnostic boot
0003	Ethernet non-diagnostic boot from the Boot Service
0004	Ethernet diagnostic boot of utility from the Boot Service
0005	Floppy disk diagnostic boot
0006	Reserved for Ethernet boot of experimental microcode/software from the Boot Service
0007	Large capacity disk drive 1 diagnostic boot
0008	Large capacity disk drive 2 diagnostic boot
0009	Large capacity disk drive 3 diagnostic boot
0010	Floppy disk head-cleaning function

The purpose of this document is to provide you, as System Administrator, with important information regarding network installation (down-loading) of ViewPoint software. Before reading this document, you should familiarize yourself with the Boot Service related information contained in the 10.0 Release Document, and the Boot Service booklet in the Network Administration Library.

Note: It is recommended that all network servers be upgraded from Services 8.0 software to Services 10.0 software. In particular, network servers running Print Service must be upgraded to Services 10.0. Services 8.0 print servers will not correctly print ViewPoint graphics that contain shading, or graphics created with VP Free-Hand Drawing.

Considerations for network installation

Network installation provides convenience and efficiency if you have a sufficiently large number of workstations, and server space available to establish the Boot Service and the supporting installation drawers. To evaluate the benefits of this facility, consider the following:

- The Installation Drawer and VP Applications drawer are established on file servers, but not necessarily the same one.
 The Boot Service can co-reside with any other service on your network, but preferably not the Print Service.
- It takes approximately 3 hours to establish a Boot Service and set up Installation and VP Applications drawer.
- Workstations must have at least 768Kb of memory to install software via the network.
- At least one workstation must have a rigid disk that is larger than 10Mb.
- The time required to install workstation software by floppy disk is longer for 6085 workstations than for 8010 workstations. (This is due to the larger number of 6085 floppy disks.)
- It may be appropriate to use both network and floppy disk installation methods. In some situations you may wish to use network installation to install basic ViewPoint software (the operating system and basic workstation software required to logon and create a desktop), and install additional applications (VP Spelling Checker, VP Spreadsheets, etc.) directly from floppy disks.
- Remote workstations loading software via a dial-in connection cannot load basic ViewPoint software. However, they can load VP Series application software.

The following table presents approximate times for installing ViewPoint software via floppy disk and network, as well as approximations for initial workstation booting.

Approximate Time Required for:	Floppy Disk Installation	Network Installation
8010 basic software	>45 min	15 min
8010 fonts & applications	>30 min	<15 min
6085 basic software	>45 min	15 min
6085 fonts & applications	>30 min	<15 min
First 8010 boot	< 30 min	<30 min
First 6085 boot	< 30 min	< 30 min

Preparing for network installation

This section provides an overview of the tasks involved in preparing a network to support network installation of ViewPoint software. Detailed procedures on performing each task are provided in the following documentation:

- Services 10.0 Release document
- Boot Service booklet in the Network Administration Library
- 8010 Software Installation tab in the VP Series Reference Library
- 6085 Software Installation tab in the VP Series Reference Library

References to appropriate documentation are noted by number next to each task.

Select a server that will run Boot Service

A Boot Service must be installed on each network that has workstations that will perform Etherbooting. Etherbooting may be accomplished through a repeater but not through an IRS (Internetwork Routing Service). Check to be sure that there is enough free space on the selected server(s) to hold the Boot Service database. The following table shows disk page requirements for the Boot Service database.

Boot Service database files for:	Required Disk Pages
8010 ethernet booting of Installer	1,150
8010 ethernet booting of Diagnostics	900
6085 ethernet booting of Installer	1,200
6085 ethernet booting of Diagnostics	2,500
LCD Server ethernet booting*	2,150

^{*} LCD = Large Capacity Disk: 80Mb and 300Mb. LCD server ethernet booting files need not be provided in the database if you do not have LCD servers that require etherbooting.

Install Boot Service software [1,2]

The Boot Service supports booting of processors from the Ethernet. This service is a base for the network installation utility that provides a convenient and efficient means of installing workstation software.

The necessary files for the Boot Service database vary depending on the types of workstations that will install software over the network, and the utilities you choose to have accessible from the network.

The Ether boot files for the Boot Service database are provided on four floppy disks. If you have only 8010 workstations, you will use files from the Standard Ether boot Files 1.1 #1 and #2 floppy disks. If you have only 6085 workstations, you will use files from the Standard Ether boot Files 1.1 #3 and #4 floppy disks. If you have both 8010's and 6085's, you will use files from all four floppy disks. Files needed for LCD servers are provided on floppy disks #1 and #2.

The following tables present the database files needed for networks supporting 8010 workstations, 6085 workstations, and both 8010 and 6085 workstations. Additionally, a table presenting the database files for Large Capacity servers is presented.

Note: When installing database files, all floppy disk files may not be used. The files used depend on the utilities you choose to have accessible from the network.

Database files for 8010 workstations

Comments	Files Disk	Pages
	BootService.profile	
All 8010 boot functions require these files	EtherInitial.db	
	DLion.germ	
	Mesa.db	
Required to run Boot Diagnostics*	MoonBoot.db	
	TOTAL DISK PAGES OF ABOVE FILES	295
Required to install software over the network	InstallerNSDLion.boot	810
Required to boot EI disk diagnostics	SimpleNetExecDLion.boot	400
	EIDiskDLion.boot	440

The processor must be booted from 0004 to run Boot Diagnostics.

Database files needed for 6085 workstations

Comments	Files Disk	Pages
All 6085 boot functions require these files	BootService.profile	
	EtherInitial.db	
	MesaDove.db	
	Dove.germ	
Required to run Extended Boot Diagnostics	MoonRise.db	
	TOTAL DISK PAGES OF ABOVE FILES	300
Required to install software over the network	InstallerNSDove.boot	825
Required to.boot any of the functions below	SimpleNetExecDove.boot	415
Required to boot 6085 Offline Diagnostics	OfflineDiagnosticsDove.boot	1120

Database files needed for 8010 and 6085 workstations

To determine necessary database files to support both 8010 and 6085 workstations, combine the files listed in the two tables above (8010 workstations and 6085 workstation).

Note: When supporting both 8010 and 6085 workstations, only one BootService.profile file will appear in the database.

Database files needed for LCD Servers

Comments	Files Disk	(Pages
All LCD server functions require these files	BootService.profile	
	EtherInitial.db	
	TridentRavenMesa.db	
	TriDLion.germ	
Required to run Boot Diagnostics*	MoonBoot.db	
	TOTAL DISK PAGES OF ABOVE FILES	295
Required to boot the installation utility	InstallerNSTriDLion.boot	810
Required to boot disk diagnostics	SimpleNetExecTriDLion.boot	400
	EILCDDiagDLion.boot	600

The processor must be booted from 0004 to run Boot Diagnostics.

Note: When supporting LCD server etherbooting in conjunction with 8010 workstation etherbooting, only one BootService.profile, EtherInitial.db and Moonboot.db file will appear in the database.

Verify the database

Compare the listing of files in the Boot Service database with the files listed in the appropriate tables above to verify that the database is correct.

Create installation and VP Applications file drawers

The Installation and VP Applications file drawers do not have to reside on the same file server, and do not have to be on the same network as the workstations who will access them (workstations can access the file drawers via a repeater or IRS). File drawer access rights must be properly set to ensure user access.

The following tables present approximate disk page requirements for the Installation and VP Applications file drawers for networks supporting 8010 workstations, 6085 workstations, and both 8010 and 6085 workstations.

Installation File Drawer disk page requirements

8010 Workstations	6085 Workstations	8010 and 6085 Workstations
9000	8,900	13,900

Note: If you load VP Extended Language, the Installation drawer will require an additional 2,350 disk pages. This number is based on the use of a single keyboard data file. (There are four keyboard data files, each 1,100 disk pages. Two files are used for the 8010 and two for the 6085. Each pair corresponds to a U.S. keyboard data file, and a Japanese keyboard data file.)

VP Applications File Drawer disk page requirements

8010 Workstations	6085 Workstations	8010 and 6085 Workstations
7,900 (VP Series applications)	7,900 (VP Series applications) 500 (VP PC Emulation) 8,400	$7,900 \qquad \text{(VP Series applications)} \\ \frac{500}{8,400} \qquad \text{(VP PC Emulation)}$

Note: If you load VP Japanese Text Capability, the VP Applications drawer will require an additional 6,450 disk pages. If you load VP Chinese Text Capability, the VP Applications drawer will require an additional 5,700 disk pages. If you load both, the VP Applications drawer will require an additional 12,150 disk pages.

Install Xerox ViewPoint software on at least one 8010 and/or 6085 workstation via floppy disks [3 and/or 4]

If your network supports only 8010 or 6085 workstations, then you must install Xerox ViewPoint software on at least one 8010 or 6085 workstation via floppy disks. If your network supports both 8010 or 6085 workstations, then you must install Xerox

ViewPoint software on at least one 8010 and one 6085 workstation via floppy disks.

The workstation(s) you are installing software on should not be a 10Mb workstation, as you will need at least 2500 free disk pages to accomplish a subsequent task

Note: All workstations must be repartitioned as part of the upgrade. All files should therefore be stored on floppy disks or a file service prior to installing software.

Copy contents of installation floppy disks to Installation file drawer [2]

If you network supports only 8010 or 6085 workstations, then you must copy the contents of the 8010 or 6085 installation floppy disks to the installation file drawer, as appropriate. If your network supports both 8010 and 6085 workstations, then you must copy the contents of both 8010 and 6085 installation floppy disks to the installation file drawer. Files are copied to the Installation drawer from a 8010 and/or 6085 workstation.

The following lists the installation floppy disks whose files need to be copied to the Installation file drawer to support 8010 workstations, 6085 workstations, and both 8010 and 6085 workstations.

8010 workstations:

8010 Xerox ViewPoint 1.0, Basic Workstation #1 and #2

8010 Xerox ViewPoint 1.0, Common Software

8010 Xerox ViewPoint 1.0, Essential Applications

8010 Xerox ViewPoint 1.0, File Check

8010 VP NetCom 1.0. Common Software

8010 VP NetCom 1.0, Network Installation Scripts

VP Document Editor 1.0

6085 workstations:

6085 Xerox ViewPoint 1.0, Basic Workstation #1 through #6

6085 Xerox ViewPoint 1.0, Common Software #1 through #3

6085 Xerox ViewPoint 1.0, Essential Applications

6085 Xerox ViewPoint 1.0, File Check #1 through #3

6085 VP NetCom 1.0, Common Software

6085 VP NetCom 1.0, Network Installation Scripts

VP Document Editor 1.0 #1 through #3

8010 and 6085 workstations:

8010 Xerox ViewPoint 1.0, Basic Workstation #1 and #2

6085 Xerox ViewPoint 1.0, Basic Workstation #1 through #6

8010 Xerox ViewPoint 1.0, Common Software

6085 Xerox ViewPoint 1.0, Common Software #1 through #3

Either

8010 Xerox ViewPoint 1.0, Essential Applications

or

6085 Xerox ViewPoint 1.0, Essential Applications 6085 Xerox ViewPoint 1.0, File Check #1 through #3 8010 Xerox ViewPoint 1.0, File Check

Either

8010 VP NetCom 1.0, Common Software

or

6085 VP. NetCom 1.0, Common Software 8010 VP NetCom 1.0, Network Installation Scripts 6085 VP NetCom 1.0, Network Installation Scripts

Either

VP Document Editor 1.0

or

VP Document Editor 1.0 #1 through #3

Verify that the contents of the Installation drawer are correct

Compare the listing of files in the Installation drawer with the files listed below to verify that all necessary files are present. A separate file list is provided for 8010 workstations, 6085 workstations, and both 8010 and 6085 workstations.

Note: If you have installed files from both 8010 and 6085 floppy disks, you will have duplicate files in the Installation drawer. All duplications should be deleted

8010 workstations:

SAx000Initial.db

Standard.Icons

Mesa.db

Directory.Icons

Moonboot.db

BasicDirectory.message

DLion.germ

BWSLoader.message

BWSDlion.boo

BWSMessages.messages

EnglishKeyboardBitmap

Keyboards

NormalBackstop.TIPC

NormalSideKeys.TIPC

NormalSoftKeys.TIPC

BufferedCharTabs.TIP

CopyModeMouse.TIPC

HelpKey.TIPC

KeyboardKey.TIPC

Keyboards.49.TIPC

Menu.TIPC

MoveModeMouse.TIPC

NormalKeyboard.TIPC

NormalMouse.TIPC

SameAsModeMouse.TIP

System.NovaFont

Font Manager

Interpress

Interscript Converter

Logon

Printing Common Software

Table Windows

Workstation Keyboards

DefaultUserProfile

WorkstationProfile

Software Options Tool

Mail

Remote Printing

VP Document Editor

Reference Icons

Network Access

Terminal Emulation Common Software

BWSScavengerDLion.boot

ViewPoint: 8010 Add Extended Language Option (from net)

.DLionscript

ViewPoint: 8010 Install ViewPoint Software (from net)

.DLionscript

ViewPoint: 8010 Partition Workstation Disk.DLionscript

ASCIIKeyboardPicture.bits Desktop.messages

FileDrawer.messages

Folder.messages

MultiNational.messages

ProductFactoring.messages

ServicesErrors.messages

SimpleEditor.messages

SWS.messages

Wastebasket.messages

XComsoft.messages

ProductFactoring.cache

Conversion Common Software

Cusp

Diagnostics

Disk Space Warning

Field Content

Floppy Tool

BasicWorkstationFiles.list

CommonSoftwareFiles.list

ExtendedLanguageFiles.list

HOW TO USE THE **INSTALLER.script**

ViewPoint: Change Echo.script

ViewPoint: 8010 Special Installation and Error Recovery

Commands (from net) .DLionscript

AllSystemFiles.lis

6085 workstations:

MesaDove.db

Moonrise.db

Dove.germ

BWSDove.boot

DbkASCIIKeyboardPicture.bits

DbkEnglishKbPicture.bits

DbkKeyboards

DbkNormalBackstop.TIPC

DbkNormalSideKeys.TIPC

DbkNormalSoftKeys.TIPC

BufferedCharTabs.TIPC

CopyModeMouse.TIPC

HelpKey.TIPC

KeyboardKey.TIPC

Keyboards.49.TIPC

Menu.TIPC

MoveModeMouse.TIPC

NormalKeyboard.TIPC

NormalMouse.TIPC

SameAsModeMouse.TIPC

System.NovaFont

Font Manager

Interpress

Interscript Converter

Logon

Printing Common Software

Table Windows

Workstation Keyboards

DefaultUserProfile

WorkstationProfile

Software Options Tool

Mail

Remote Printing

VP Document Editor

Directory.Icons

BasicDirectory.message

BWSLoader.message

BWSMessages.messages

Desktop.messages

FileDrawer.messages

Folder.messages

MultiNational.messages

ProductFactoring.messages

ServicesErrors.messages

SimpleEditor.messages

SWS.messages

Wastebasket.messages

XComsoft.messages

ProductFactoring.cache

Conversion Common Software

Cusp

Diagnostics

Disk Space Warning

Field Content

Floppy Tool

AllSystemFiles.list

BasicWorkstationFiles.list

CommonSoftwareFiles.list

ExtendedLanguageFiles.list

HOW TO USE THE

INSTALLER.script

ViewPoint: Change Echo.script

Reference Icons

Network Access

Terminal Emulation Common Software

BWSScavengerDove.boot

ViewPoint: 6085 Add Extended Language Option (from net)

.Dovescript

ViewPoint: 6085 Install ViewPoint Software (from net)

.Dovescript

ViewPoint: 6085 Partition Workstation Disk.Dovescript

ViewPoint: 6085 Special Installation and Error Recovery

Commands(from net) . Dovescript

8010 and 6085 workstations:

SAx000Initial.db BufferedCharTabs.TIPC

Mesa.db CopyModeMouse.TIPC

Moonboot.db HelpKey.TIPC

DLion.germ KeyboardKey.TIPC BWSDlion.boot Keyboards.49.TIPC

ASCIIKeyboardPicture.bits Menu.TIPC

EngliskKeyboardBitmap MoveModeMouse.TIPC
Keyboards NormalKeyboard.TIPC

NormalBackstop.TIPC NormalMouse.TIPC

NormalSideKeys.TIPC SameAsModeMouse.TIPC

NormalSoftKeys.TIPC System.NovaFont
DiskInitialDove.db Standard.Icons

MesaDove.db Directory.lcons

Moonrise.db BasicDirectory.message

Dove.germ BWSLoader.message

BWSDove.boot BWSMessages.messages

DbkASCIIKeyboardPicture.bits Desktop.messages
DbkEnglishKbPicture.bits FileDrawer.messages

DbkKeyboards Folder.messages

DbkNormalBackstop.TIPC MultiNational.messages

DbkNormalSideKeys.TIPC ProductFactoring.messages

DbkNormalSoftKeys.TIPC ServicesErrors.messages

SimpleEditor.messages DefaultUserProfile
SWS.messages WorkstationProfile

Wastebasket.messages Software Options Tool

XComsoft.messages Mail

ProductFactoring.cache Remote Printing

Conversion Common Software VP Document Editor

Cusp Reference Icons

Diagnostics Network Access

Disk Space Warning Terminal Emulation

CommonSoftware

Field Content BWSScavengerDLion.boot

Floppy Tool BWSScavengerDove.boot

Font Manager AllSystemFiles.list

Interpress BasicWorkstationFiles.list

Interscript Converter CommonSoftwareFiles.list

Logon ExtendedLanguageFiles.list

Printing Common Software HOW TO USE THE

INSTALLER.script

Table Windows ViewPoint: Change Echo.script

Workstation Keyboards

ViewPoint: 8010 Add Extended Language Option (from net)

.DLionscript

ViewPoint: 8010 Install ViewPoint Software (from net)

.DLionscript

ViewPoint: 8010 Partition Workstation Disk.DLionscript

ViewPoint:8010 Special Installation and Error Recovery

Commands(from net) .DLionscript

ViewPoint: 6085 Add Extended Language Option (from net)

.Dovescript

ViewPoint: 6085 Install ViewPoint Software (from net)

.Dovescript

ViewPoint: 6085 Partition Workstation Disk.Dovescript

ViewPoint:6085 Special Installation and Error Recovery

Commands(from net) .Dovescript

Copy VP Series application software, VP Fonts, and VP Training Exercises to VP Applications file drawer [2]

In the same manner as you copied files to the Installation file drawer, copy all applications, fonts, and training exercise files purchased for your site to the VP Applications file drawer.

Files from the following types of floppy disks should be copied to the VP Applications file drawer:

- VP Training Exercises
- VP Fonts
- VP Series Applications

Note: The contents of 8010 and 6085 VP Training Exercises, VP Fonts, and VP Series Applications, are the same. You may therefore use files from either 8010 or 6085 floppy disks.

Either

8010 Xerox ViewPoint 1.0, Essential Applications

or

6085 Xerox ViewPoint 1.0, Essential Applications

Either

VP Document Editor 1.0

or

VP Document Editor 1.0 #1 through #3

Verify that the contents of the VP Applications drawer are correct

Compare the listing of files in the VP Applications drawer with the files listed below.

Note: The listing below supplies all available file names. The actual files that appear in the VP Applications drawer depend on the VP Series applications and fonts purchased for your site.

VP Applications drawer file list:

Mail

Training VP Spreadsheet

Remote Printing

Training: VP Standalone

Remote System

Administration

VP Cusp Buttons

Software Options Tool

VP Data Capture

Training: Basic Graphics

(Bar, Pie, Line)

VP Data Driven Graphics

Training: Document Creation

VP Document Editor

Training: Fill-in Rules

VP Equations

Training: Forms

VP File Conversion of 860

Documents Training: Tables

VP File Conversion of 860

Record Files

Training: VP Data Capture

Document

VP File Conversion of ASCII

Training: VP Data-Driven

Graphics

VP File Conversion of

Document Interchange Format

Training: VP Equations

1-2-3 Spreadsheets

VP File Conversion of Lotus

Training: VP NetCom

Spreadsheets

VP File Conversion of VisiCalc

Training: VP RemoteCom

VP File Conversion of WordStar Documents

Training: VP Spelling

Checker

VP Free-Hand Drawing

VP List Manager

VP Terminal Emulation of

Local TTY

VP List Manager Upgrade

Tool

VP Terminal Emulation of TTY

VP Local Draft Printer

VP Helvetica Fonts

VP Object Conversion

Utility

VP PC Emulation Fonts

VP PC Emulation

VP Printwheel Fonts

VP Spelling Checker

VP Terminal Fonts

VP Spreadsheet

VP Xerox Classic Fonts

VP Terminal Emulation of

VP Xerox Large Modern Fonts

DEC VT100

VP Terminal Emulation of IBM 3270

VP Xerox Small Modern Fonts

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