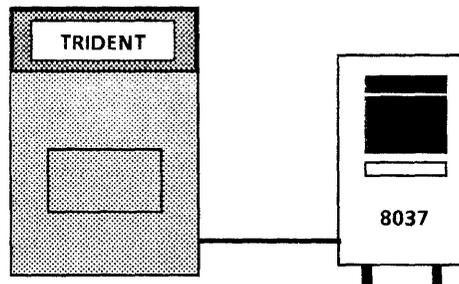


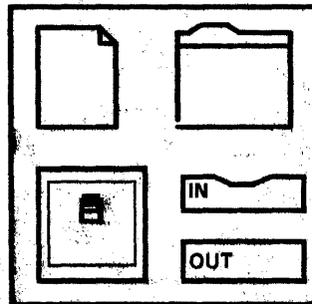
XEROX

8037 LARGE FILE SERVER



**8030
INFORMATION
SYSTEM**

Revised: 3/18/83

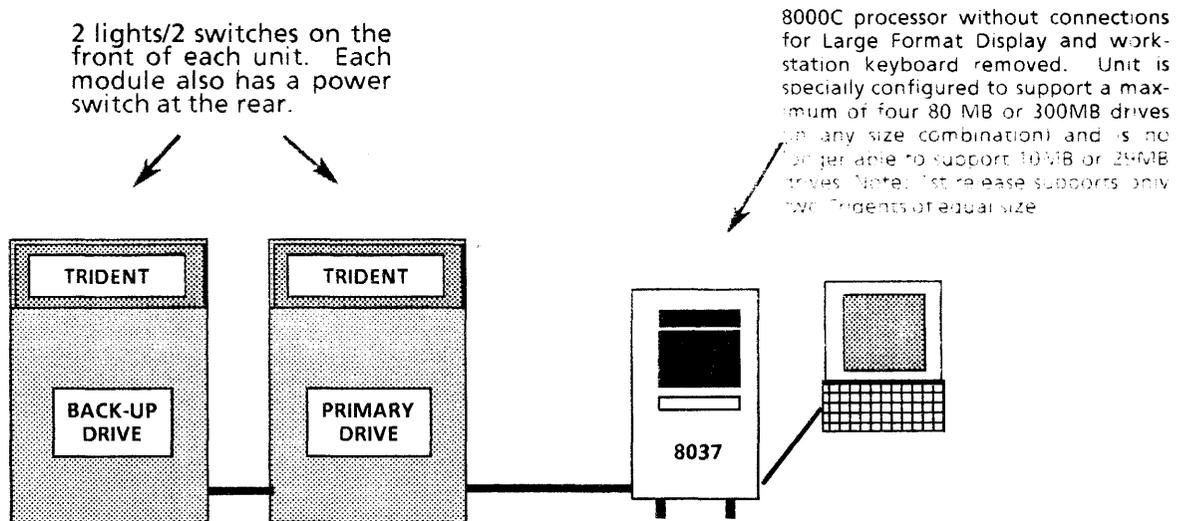


**SYSTEMS
ANALYST
FILE SERVER
REFERENCE
MANUAL**

TABLE OF CONTENTS

PHYSICAL DESCRIPTION	1
OPERATION OF LARGE FILE SERVER	2
OPERATIONAL CONTROLS	2
DISK PACK HANDLING AND STORAGE	4
INSTALLING DISK PACKS	5
REMOVING A DISK PACK	6
DIAGNOSTICS FOR THE LARGE FILE SERVER	7
CONFIDENCE TEST	8
DISPLAY DISK CONFIGURATION	9
DISPLAY ERROR LOG	10
DISPLAY TRACE TABLE	12
DISPLAY BAD PAGE TABLE	12
VERIFY DISK SURFACE	13
FORMAT DISK	14
EXERCISE DISK	15
COMMAND FILE OPTIONS	15
LOADING TRIDENT SERVICES	17
LOADING SERVICES	18
HINTS	21
APPENDIX	22
SETTING BACK-UP PROCEDURES	23
BACK-UP PROCEDURES	24
DESCRIPTION - DISK PACK STORAGE MODULE	25
LARGE FILE SERVER SPECIFICATIONS	27
UPGRADING A 10/29 MB FILE SERVER TO A 80/300 MB FILE SERVER (METHOD 1)	29
UPGRADING A 10/29 MB FILE SERVER TO A 80/300 MB FILE SERVER (METHOD 2)	31
ACTION CARD FOR UPGRADING FILE SERVER & SERVICES	33

PHYSICAL DESCRIPTION



Usually, the drive closest to the 8000 processor is the primary drive. The secondary drive, which in the first release must be the same size as the primary, is only used for back-up. Physical specifications (which are extremely important for this product) can be found in the Appendix of this booklet.

OPERATION OF LARGE FILE SERVER

OPERATIONAL CONTROLS

Light #1 (red) - Device Check

This light should not be illuminated. If it is, a possible problem exists, which should be confirmed using diagnostics.

Light #2 (green) - File Ready

When a new disk pack is loaded and starting up or slowing down, this light blinks. When the disk is spinning at the proper speed (3600 rpm), the light remains on without flashing. When the disk is not moving, this light remains off.

Switch #1 - Start/Stop

Either stops or starts a disk spinning. The "File Ready" light indicates whether or not the disk is spinning.

Switch #2 - Read/Write

When positioned in the "Read Only" position, the drive can access information but will not record new data. In essence, this is a method of write-protecting the disk.

Power Switch

The drives should always be turned on when a disk pack is loaded or about to be loaded.

Each disk drive has a *recirculating air filtration system* which is designed to keep foreign substances (dirt, dust, etc.) from reaching the disk surface. This mechanism is running whenever the main switch is activated. For this reason, each Trident module must have its power turned on whenever a disk is present (regardless of whether the disk is spinning within the unit). Here is some basic information about the disk packs:

- The 80Mb drive has a total of six heads; five for read/write and one for location reference.
- The 300MB drive has a total of twenty heads; nineteen for read/write and one for location reference.
- All heads remain in a parallel position over their respective recording surfaces. This alignment creates what is called an imaginary cylinder.
 - 80MB disk packs have:
 - Five 14" platters. The two outer platters are for protection only; so three are actually used.
 - The three platters represent six disk surfaces.
 - Of the six surfaces, five are used for data. The remaining surface is the "Servo Surface" containing prerecorded data used to generate track positions and timing information.
 - 300MB disk packs have:
 - Twelve 14" platters. The two outer platters are for protection only; so ten are actually used.
 - The ten platters represent twenty disk surfaces.
 - Of the twenty surfaces, nineteen are used for data. The remaining surface is the "Servo Surface" containing prerecorded data used to generate track positions and timing information.
- The read/write head hovers about 1/40,000 of an inch above the disk surface. The air pressure, created by the disk spinning at 3600 rpm, helps keep the head from actually touching the disk. Following are a list of common particles by diameter average:

flying height of head	1/40,000 inch
cigarette smoke	1/24,000 inch
dust particle	1/20,000 inch
fingerprint smudge	1/18,000 inch
human hair	3/1,000 inch

You realize the importance of the air filtration system when you notice that most of the common particles suspended in air are larger than the flying height for the read/write head.

DISK PACK HANDLING AND STORAGE

Trident disk packs are shipped in reusable, corrugated shipping containers that are lined with polyurethane foam. The entire container, including the disk pack, can be handled by one person and provides adequate storage protection with no degradation of performance. Disk packs in their original shipping containers should be stacked no more than eight high while in storage.

Disk packs in library use should always be kept in their plastic cases, unless mounted in a disk drive. The case of the disk pack consists of a clear plastic top cover with a handle and a bottom cover. Where possible, the disk packs should be stored in the room environment of the disk drive and should be brought into the same room no less than two (2) hours before use.

The disk pack should be protected from being dropped or struck against another object. To do so may result in bent discs. The disk pack can be examined through the plastic top cover for damage. To place a damaged disk onto the drive could result in serious damage to the disk drive.

Labels for the disk pack should be written with a pen or felt tip marker that does not produce any residue. Do not use a lead or grease pencil. Attach the label to the top of the storage container. If the container has an indentation, place the label in the indentation to ensure that it does not get scraped off during handling. After removing a label, use isopropyl alcohol to remove any remaining adhesive residue on the canister before attaching the new label. Adhesive left on the cover can contaminate both the disk pack and the drive. **DO NOT** attach labels to the disk pack itself.

Never touch the recording surface of the disk pack itself. The pack should be lifted by the handle of the container cover.

INSTALLING DISK PACKS

To install a disk pack on this disk drive, proceed as follows:

1. Make sure that the disk drive START/STOP switch is set to STOP and that the green File Ready indicator is not lit.
2. Unlatch the air shroud lid of the disk drive and open the lid. The lid latch is located beneath the front edge overhang at the center.
3. Check the interior of the air shroud. The interior should be clean and the heads should be completely retracted from the disk pack area.
4. Remove the lower cover from the disk pack (squeeze the levers under the bottom together) and lower the top cover with the disk pack carefully onto the disk drive spindle.
5. Press down the handle of the top cover to engage the spindle-locking mechanism; rotate the handle clockwise to lock the disk pack to the spindle and to disengage the cover.
6. Carefully lift and remove the top cover from the disk drive and close the air shroud lid. Make sure that the lid latch locks.
7. If the installed disk pack is a permanent record or is a head alignment pack, set the READ ONLY - READ/WRITE switch to READ ONLY to protect the pack from being written on. If writing is to be permitted, set this switch to READ/WRITE.
8. Store the top and bottom covers of the disk pack together (to minimize dust acculumation inside the case) in the indentation on the top rear cover of the disk drive.
9. Set the disk drive START/STOP switch to START. The spindle drive motor should be heard to start and increase in speed, and the green File Ready indicator should start flashing.
10. After about 20 seconds, the green File Ready indicator should stop flashing and remain lit. The red DEVICE CHECK indicator should be out. The server can now be booted using this drive.

REMOVING A DISK PACK

To remove a disk pack from this drive, proceed as follows:

1. Power down the disk drive by setting the START/STOP switch to STOP. The green File Ready indicator should start flashing.
2. Wait until the File Ready indicator stops flashing (about 20 seconds), unlatch and open the air shroud lid.
3. Separate the top and bottom covers of the disk pack (squeeze the levers under the bottom together), and lower the top cover by its handle carefully over the disk pack.
4. Press down the top cover to engage the spindle locking mechanism; rotate the handle counterclockwise to unlock the disk pack from the spindle and to reengage the top cover.
5. Lift the top cover and disk pack carefully from the disk drive and close the air shroud lid.
6. Replace the bottom cover of the disk pack and return the pack to storage.

DIAGNOSTICS FOR THE LARGE FILE SERVER

The Trident Rigid Disk Diagnostics comes on a floppy disk and must be booted from 5. Once booted, the program outputs the title of the diagnostic, followed by an explanation of the usage of a question mark and the Control + C character.

Menus are used to allow you (or whoever is running the diagnostic) a simple way to access various diagnostic programs. Diagnostics can be run by various levels of operators (User, Systems Administrator, Tech Rep.). The screen will display a menu to inquire as to who is about to run the diagnostic.

PERSON RUNNING THE TEST

- 1. USER**
- 2. SYSTEMS ADMINISTRATOR**
- 3. TECH REP**

Hidden menu choices include:

- 4. TECH SPEC**
- 5. ANALYST**
- 6. MANUFACTURING**
- 7. DIAGNOSTIC PROGRAMMER**

If you want to run a diagnostic program for Systems Analyst, you would choose #5 as your choice number. After you do this the screen will display ANALYST privileges and ask you for the Systems Analyst diagnostic password. Do not use the manufacturing or diagnostic programmer options.

After making a selection, the person will be asked for the appropriate password. For example, if the user said they were a systems administrator, they would need their password that identifies them as being a systems administrator. As in the case with other servers, the password will display on the screen as a series of asterisks. Should the person type the wrong password, the program returns to the beginning of the diagnostic and presents the operator with the PERSON RUNNING THE TEST menu.

If the correct password is entered, the screen will display the system unit configuration.

RIGID DISK CONFIGURATION

FIRST UNIT = T80
SECOND UNIT = NOT READY
THIRD UNIT = NOT FOUND
FOURTH UNIT = NOT FOUND

IS THE ABOVE CONFIGURATION CORRECT (YES/NO):

If the operator answers "no", they are asked to correct the problem. If they can't correct the problem, they are told to call for service. If the configuration is correct, the system is ready to run diagnostics. The diagnostics offered to be run depends on how the user "logged on". Under Option 1 (User), only a confidence test is

automatically run. Under Option 2 (Systems Administrator) more choices such as Format the disk are offered. If Option 5 were used (Systems Analyst) several choices would be listed:

1. **CONFIDENCE TEST** (does a through non-destructive verification of the disk)
2. **DISPLAY DISK CONFIGURATION** (display disk configuration visible to the software)
3. **DISPLAY ERROR LOG** (displays errors encountered from a circular table)
4. **DISPLAY TRACE TABLE** (displays all commands plus status from a circular table)
5. **DISPLAY BAD PAGE TABLE** (will store given pages in the bad page table)
6. **VERIFY DISK SURFACE** (verifies the disk surface as compared with the bad page table)
7. **PHYSICAL VOLUME SCAVENGER** (physical volume scavenger attempts to correct disk errors)
8. **DISPLAY BAD PAGE LOG** (displays bad pages in the bad page table)
9. **FORMAT DISK** (formats the disk and verifies the disk surface and logs bad pages)
10. **EXERCISE DISK** (exercises the disk for through checkout after repair)
11. **COMMAND FILE OPTIONS** (builds and runs command files)

If the operator wanted further explanation of these tests, a shift ? instruction would display the explanation in parenthesis.

CONFIDENCE TEST

In OS 3., the Confidence Test is strictly a Go/No Go test. It stops on the first hard error encountered. There is no error analysis in it.

The Confidence Test does a non-destructive disk verification on each unit and when there is more than one unit, a multi-unit test is run. The Confidence Test verifies the following:

- **All individual commands and combinations of commands (including write operations on a special diagnostic cylinder).**
- **All sectors**
- **All heads**
- **All cylinders**
- **Short seek capability**
- **Long seek capability**
- **Random seek capability**
- **Entire disk surface (for bad pages not already listed in the bad page table)**

The Confidence test also does a random read and seek test across multiple units. When the test is entered, various messages will display requiring operator input.

For example: THE SECOND UNIT IS NOT READY AND CANNOT BE VERIFIED. DO YOU STILL WISH TO CONTINUE? (YES/NO)

If the operator answers NO, then the screen will display: YOU MAY WANT TO CALL FOR SERVICE AND TELL THEM THAT THE SECOND UNIT IS NOT READY. TYPE ANY CHARACTER TO CONTINUE.

After answering NO and getting the above prompt (or something similar), the operator is returned to the PERSON RUNNING THE TEST menu.

If the answer to the "still want to continue" question was YES, or if all the units were ready, then the test is started. The unit to be tested, the unit type, and the approximate run time is then posted on the screen. For example:

RUNNING: SECOND UNIT UNIT TYPE: T80 RUNNING TIME: 5 MINUTES

The Confidence test is composed of subtests. Each individual subtest is named and numbered. The name and number displays quickly on the screen as the subtests are being run. Prior subtest names and numbers are erased.

If an error occurs, a maintenance panel code will appear and the description of the error will list on the screen. For example:

ERROR DETECTED

HEADER DATA COMPARE ERROR

PLEASE CALL SERVICE FOR ASSISTANCE.

PLEASE REPORT THE MAINTENANCE PANEL CODE AND THE STATUS ON THE SCREEN.

THANK YOU.

SHOULD YOU WANT TO CONTINUE TYPE ANY CHARACTER:

Typing a character at this point will return the operator to the PERSON RUNNING THE TEST menu.

NOTE: All errors are logged in the error log and all commands including the errors are logged in the trace table so that a tech rep or more sophisticated user can get exact information on what the error was, where the error occurred, and the command sequence when the error occurred.

If no error occurs, the operator is told that the test completed successfully, and is then asked to touch any character to continue. Touching any character will return the operator to the TEST SELECTION menu.

DISPLAY DISK CONFIGURATION

This program displays the disk configuration currently visible (i.e., hooked-up) to the system and visible to the program. (There is a possibility that the system could

be hooked-up and not be visible to the program because of a problem with the hardware/software.)

RIGID DISK CONFIGURATION

FIRST UNIT = T80
SECOND UNIT = NOT READY
THIRD UNIT = NOT READY
FOURTH UNIT = NOT FOUND

TYPE ANY CHARACTER TO CONTINUE

Typing any character returns the program to the TEST SELECTION menu.

DISPLAY ERROR LOG

The Error Log is a circular buffer, that is, when the buffer fills completely, errors are logged starting at the beginning of the buffer again. The error log buffer holds approximately 160 errors. When the 161st error occurs, the first error logged is replaced and so on.

If there is no entry in the log the operator is told the error log is empty. If there is an entry in the log, the last entry in the log is displayed automatically when DISPLAY ERROR LOG is selected. The contents of each log entry are as follows:

ENTRY NUMBER
DEVICE SELECTED
DEVICE HANDLE NUMBER
DEVICE TYPE (T80/T300)
COMMAND EXECUTED

GIVEN PARAMETERS:

CYLINDER
HEAD
SECTOR
SECTORS TO TRANSFER

RETURNED PARAMETERS

CYLINDER
HEAD
SECTOR
SECTORS LEFT TO TRANSFER

USE THE SAME MEMORY AREA FOR EACH SECTOR: BOOLEAN
REQUESTED TRIES
TRIES DONE

**DEVICE STATUS
CONTROLLER STATUS**

Here is an example of an error entry:

```

ENTRY NUMBER:      12
DEVICE HANDLE:     0      DEVICE SELECTED:    0      DEVICE TYPE:      80
COMMAND EXECUTED:  READ HEADER/READ LABEL/READ DATA
GIVEN PARAMETERS:
CYLINDER: 8      HEAD: 4      SECTOR: 17      SECTORS TO TRANSFER: 1
RETURNED PARAMETERS:
CYLINDER: 8      HEAD: 4      SECTOR: 17      SECTORS LEFT TO TRANSFER:
RETURNED READ HEADER DATA:
CYLINDER: 8      HEAD: 4      SECTOR: 17
USE THE SAME MEMORY AREA FOR EACH SECTOR:      TRUE
REQUESTED RETRIES: 10      TRIES DONE:      10
NOTE:  THERE IS A DATA ERROR
DISPLAY STATUS? (YES/NO)  YES
  
```

If the operator answers "NO", the program will display the DISPLAY OPTIONS. If "YES" is entered, the program will display the following status:

DEVICE STATUS		CONTROLLER STATUS		
0.	UNIT 0 SELECTED	TRUE	0. IN PROGRESS	FALSE
1.	UNIT 1 SELECTED	FALSE	1. GOOD COMPLETION	FALSE
2.	UNIT 2 SELECTED	FALSE	2. (BIT 2 IS NOT USED)	
3.	UNIT 3 SELECTED	FALSE	3. FIRMWARE ENABLE	FALSE
4.	UNIT 0 ATTENTION	FALSE	4. VERIFY ERROR	FALSE
5.	UNIT 1 ATTENTION	FALSE	5. VERIFY ERROR	FALSE
6.	UNIT 2 ATTENTION	FALSE	6. DATA OVERRUN	FALSE
7.	UNIT 3 ATTENTION	FALSE	7. INDEX FOUND	FALSE
8.	ANY ATTENTION	FALSE	8. SECTOR FOUND	FALSE
9.	END OF CYLINDER	FALSE	9. (BIT 9 IS NOT USED)	
10.	OFFSET ACTIVE	FALSE	10. RECALIBRATE ERROR	FALSE
11.	DISK BUSY	FALSE	11. HEADER NOT FOUND	FALSE
12.	NOT READY	FALSE	12. MEMORY ERROR	FALSE
13.	WRITE FAULT	FALSE	13. (SEE EXPLANATION)	TRUE
14.	SEEK TIMEOUT	FALSE	14. (SEE EXPLANATION)	TRUE
15.	DISK CHECK	FALSE	15. (BIT 15 IS NOT USED)	

EXPLANATION:	BIT 13	BIT 14		
	FALSE	FALSE	=	RECALIBRATE FAILURE
	TRUE	FALSE	=	HEADER FAILURE
	FALSE	TRUE	=	LABEL FAILURE
	TRUE	TRUE	=	DATE FAILURE

TYPE ANY CHARACTER TO CONTINUE:

Typing a character sends the program to the DISPLAY OPTIONS. Here is an example of the DISPLAY OPTIONS menu, which allows the operator to move back and forth through the error log to display separate individual errors:

```
DISPLAY OPTIONS
  1. PREVIOUS ENTRY
  2. NEXT ENTRY
  3. SAME ENTRY
  4. FIRST ENTRY
  5. LAST ENTRY
  6. EXIT
ENTER CHOICE NUMBER
```

Entering a question mark will provide the operator with the following explanation:

```
ENTRIES ARE DONE CHRONOLOGICALLY AND IN A CIRCULAR FASHION.
```

```
THIS MEANS THAT WHEN THE ALLOCATED BUFFER IS FULL, ENTRIES ARE ENTERED AT THE
BEGINNING OF THE BUFFER, THUS LOSING THE FIRST ENTRIES.
```

The DISPLAY OPTIONS menu allows the operator to move back and forth through the error log. Selecting 1 will display the entry prior to the last entry shown. If there is no prior entry, the operator will be told so.

Selecting 2 will display the entry following the last entry shown. Again, if there are no later entries, the operator will be told.

Selecting 3 displays the same entry again. Selecting 4 displays the first entry, 5 displays the last entry in the table and 6 returns the operator to the TEST SELECTION menu.

DISPLAY TRACE TABLE

The Trace Table is circular buffer. It holds approximately 160 commands. If there are no entries in the log, the operator will be told the trace table is empty.

Using the DISPLAY TRACE TABLE is identical to DISPLAY ERROR LOG. Messages and screen displays are the same.

DISPLAY BAD PAGE TABLE

Display Bad Page Table reads the bad pages from the rigid disk (these pages were written when the rigid disk was formatted) and displays them as shown below:

BAD PAGE DISPLAY
DISPLAY BAD PAGES

1. FOR THE FIRST UNIT
2. FOR THE SECOND UNIT
3. FOR THE THIRD UNIT
4. FOR THE FOURTH UNIT
5. EXIT

ENTER CHOICE NUMBER:

The above menu allows the operator to select the unit from which the bad pages are to be displayed. If selection 5 is entered, the program returns to the TEST SELECTION menu. If the selected unit is there and ready, then the bad pages are read from the selected unit and displayed in the following format:

FIRST UNIT BAD DISPLAY

BAD PAGE:	1200	CYLINDER:	8	HEAD:	0	SECTOR:	0
BAD PAGE:	1277	CYLINDER:	8	HEAD:	2	SECTOR:	17
BAD PAGE:	1288	CYLINDER:	4	HEAD:	2	SECTOR:	23

TYPE ANY CHARACTER TO CONTINUE:

If there are no bad pages logged on the disk, the operator is told that the bad page table is empty.

VERIFY DISK SURFACE

Verify Disk Surface verifies the surface of the selected disk unit and runs a selected number of passes. All bad pages not found in the bad page table will be reported to the operator.

When this instruction is given, the operator will again be asked which unit is to be tested (the first disk drive, the second disk drive, etc.). If the operator is uncertain as to which unit they want to test (or which one is which), they can ask for the UNIT NUMBERING EXPLANATION (Shift + ?) and they will be told how to determine this information.

After selecting the unit, they will be asked how many passes they want to run.

If they enter a Shift + ? now, they will be told that each pass takes about 1 minute and 30 seconds for a T80 or 4 minutes and 30 seconds for a T300. They will be told that each pass reads the entire disk surface and that three passes should normally be sufficient.

If the unit is not ready, or cannot be found, the operator will be prompted with similar messages as those found in formatting. If the disk is ready, the operator will

be prompted with information telling which pass the unit is in and approximately how long it is going to take.

Every bad page found which is not in the bad page table is displayed on the screen with the following message:

FAILING PAGES NOT FOUND IN BAD PAGE TABLE

PAGE	CYLINDER	HEAD	SECTOR	TIMES TRIED	TIMES FAILED
1127	7	2	17	20	2
1483	9	2	17	20	9

If no error occurs the operator will be told: NO BAD PAGES FOUND.

If a different error (not a bad page error) is found, a different message will be displayed on the screen. This message will tell the operator that a "hard error has been encountered". The operator will be told to run the Confidence Test for more details.

FORMAT DISK

This diagnostic program when run will format the selected disk unit and run a selected number of passes. If Format Disk finds a bad page while formatting, it will log that page into the bad page table automatically.

When the test is entered, the operator is asked which unit is to be formatted. If the operator is unsure of this command, a Shift + ? can be entered and the following message will display:

UNIT NUMBERING EXPLANATION

THERE ARE A MAXIMUM OF FOUR (4) UNITS PER SYSTEM.

IT IS ESSENTIAL THAT THE CORRECT UNIT NUMBER BE GIVEN.

SHOULD YOU BE UNCERTAIN ABOUT THE UNIT NUMBER, YOU CAN TURN ALL THE OTHER UNITS OFF WITH THE STOP SWITCH.

PLEASE REBOOT THE DIAGNOSTIC FLOPPY TO GET THE CORRECT CONFIGURATION.

THE CONFIGURATION DISPLAY WILL THEN TELL YOU WHICH UNIT IS PRESENT.

After a unit to be formatted has been selected, the operator will be asked to select the number of passes to be run. Should a Shift + ? be entered, the operator will be shown the following explanation:

PASS COUNT EXPLANATION

EACH PASS RUNS APPROXIMATELY 20 MINUTES FOR A T80 OR 60 MINUTES FOR A T300.

EACH PASS WRITES 15 DIFFERENT DATA PATTERNS.

ONE PASS SHOULD NORMALLY BE SUFFICIENT.

If the selected unit is not ready, the operator will be told: THE UNIT IS NOT READY. PLEASE ATTEMPT TO MAKE THE UNIT READY AND TRY AGAIN. IF THE UNIT STAYS NOT READY , PLEASE GET ASSISTANCE FROM SERVICE. TYPE ANY CHARACTER TO CONTINUE.

If the unit to be tested is not there, the operator will be told that the unit cannot be found and to try to make the unit ready and try again. If this does not work, the operator will be told to contact service again for assistance.

As you know, formatting a disk destroys all of its contents. As with the 10/29 MB disks, the operator will have two confirmation of operation acknowledgements if they want to format the disk.

Once both confirmations are given, the operator will be told how long it will take. Usually this is around 20 minutes for an 80MB and 1 hour and 4 minutes for a 300MB.

Everytime a bad page is found, the bad page number will be displayed on the screen. After all passes are completed, the bad page table is created and stored on the selected disk unit and the operator will be told that the system is LOGGING BAD PAGES.

If no errors are found the prompt will be: FORMATTING DONE. TYPE ANY CHARACTER TO CONTINUE:

EXERCISE DISK

This feature is currently not available.

COMMAND FILE OPTIONS

The Command File Options should only be done by a trained technical representative with the technician's disk pack. This is one of those options that can destroy data and should never be run on the customer's data disk.

The Command File is for the use of a technically skilled operator so that the operator can:

1. Further define an error by trying different commands;
2. Loop on an error for scoping purposes; and
3. Read and display data on the disk.

IMPORTANT: All the Command File Options will not be operative on DDS4. Protections against operator mistakes/errors are not implemented. All of the textual errors in building a command file may not be fixed.

LOADING TRIDENT SERVICES

Beginning with Office Services 3.1 loading the 8037 is performed in the same manner as loading services on a 10/29MB server. Resident in the software are a set of TRIDENT SOFTWARE DISKS (1 & 2) as well as a TRIDENT DIAGNOSTIC DISK.

The only real difference in loading the 8037 is the addition of several boot paths formerly not available. These consist of the following:

BOOT FROM	RESULT
1	Boots software from primary drive
2	Loads software to primary drive from floppy disk
3	N/A
4	Runs diagnostic test then boots software from primary drive
5	Boots diagnostic software from floppy disk
7	Boots alternate drive (1)

There is also a slight difference in the commands you will see appearing on the Lear-Siegler display during the loading process.

LOADING SERVICES

For a more thorough explanation of the steps necessary to partition and load a server, and add services to the network will be found in the Systems Administrators Manual on pages 2-6 through 2-13.

Insert Trident Services Disk #1. Boot server from 2. Server will display.

INSTALLATION UTILITY 4.0

UTILITY OPTIONS

1. Partition for non-print T80
2. Partition for non-print T300
3. Install non-print service
4. Start system
5. Start system error analysis
6. Start system with remote debugging enabled
7. Start system with special debugging

ENTER CHOICE NUMBER:

If you are working with a T300 and the disk has been formatted but never partitioned, it is necessary to partition the disk prior to loading any software or transferring any files to that disk. Enter choice number 2. Screen will display:

SYSTEM DISK PARTITION

WARNING - PARTITIONING A SYSTEM DISC DESTROYS ALL CONTENTS.

CONTINUE Y/N ENTER Y

SECOND CONFIRMATION REQUIRED

CONTINUE Y/N ENTER Y

After approximately 10 to 15 minutes the message "Disk partition complete" will appear and the utility selection menu will display.

INSTALLATION UTILITY 4.0

UTILITY OPTIONS

1. Partition for non-print T80
2. Partition for non-print T300
3. Install non-print service
4. Start system
5. Start system error analysis
6. Start system with remote debugging enabled
7. Start system with special debugging

ENTER CHOICE NUMBER:

Enter choice number 3. Display will read :

READY TO INSTALL SOFTWARE

CONTINUE Y/N Y

INSTALLING SOFTWARE (Part 1) . . .

INSTALLING SOFTWARE (Part 2) . . .

This floppy disk is labeled "Services 4.1 #1"

Insert Floppy Disk labeled "Services 4.1 #2" in the Floppy Disk Drive

INSTALLING SOFTWARE (Part 3) . . .

Systems software installation complete.

UTILITY OPTIONS

1. Partition for non-print T80
2. Partition for non-print T300
3. Install non-print service
4. Start system
5. Start system error analysis
6. Start system with remote debugging enabled
7. Start system with special debugging

ENTER CHOICE NUMBER:

Enter choice number 4. The maintenance panel in the processor will move to 8000. After approximately 15 seconds the display will clear and redisplay information concerning the network number, the domain and organization for this server. If this server is an upgrade or an add-on to an already existing network, this server will obtain this information from the network.

The next prompt appearing will be request for normal start-up.

Network # x-xxx

Normal Startup? Y/N N

Select Startup Option:

1. Continue
2. Load System Error Analysis
3. Add Service
4. Remove Service
5. Change Domain and/or Organization
6. File Check
7. Create User File System
8. Change Network Number

Enter choice number: 7

Creating User File System . . . Done

Creating System File Catalog . . . Done

Creating File Check Folder . . . Done

Normal Startup? Y/N N

Select Startup Option:

1. Continue
2. Load System Error Analysis
3. Add Service
4. Remove Service
5. Change Domain and/or Organization
6. File Check
7. Create User File System
8. Change Network Number

Enter choice number: 3

Select Service

1. Clearinghouse Service
2. External Communications Service
3. Internetwork Routing Service
4. File Service
5. Gateway Service
6. Interactive Terminal Service

Enter choice number: 1

Clearinghouse Service Code: *****

Done Clearinghouse Service Added.

Normal Startup? Y/N N

Select Startup Option:

1. Continue
2. Load System Error Analysis
3. Add Service
4. Remove Service
5. Change Domain and/or Organization
6. File Check
7. Create User File System
8. Change Network Number

Enter choice number: 3

Select Service

1. External Communications Service
2. Internetwork Routing Service
3. File Service
4. Gateway Service
5. Interactive Terminal Service

Enter Choice number: 3

File Service Code: *****

Done File Service Added.

Normal Startup? Y/N Y

At the completion of this step the system will display the services which have been added and their status, then will prompt you for the information it requires. This may include the domain and organization in which this server is to operate. The next step will be to LIST SERVICES so that the processor number can be obtained. This processor number must be registered in clearinghouse as a file service in order to be a functioning network resource. If this server is replacing an existing file server with clearinghouse running, refer to the Appendix page 29, for information concerning several way this server can be brought on-line.

HINTS

1. When loading disk packs on the 80/300 MB Server, after closing the disk drive cover, allow the disk drive to run a minute or two before spinning up the disk. This will help remove the stray air particles from the disk pack area before any read/write operations have been performed.
2. When new disk packs are received for use on the 80/300 MB Server, format the disk, partition it, then install software so that it will truly be ready to use as soon as it is needed. This can be accomplished by using the TRIDENT DIAGNOSTIC routine to format the disk, TRIDENT SERVICES #1 to partition the disk for use on a non-print server, and TRIDENT SERVICES #1/TRIDENT SERVICES #2 disks to install the software.
3. To duplicate desktops and mail folders with contents from one server to another without actual user intervention, the copy container utility can be used. For further information, refer to the Systems Administrator Handbook.
4. Partitioning a 80 Mb disk pack takes approximately 3-4 minutes. Partitioning a 300 Mb disk pack takes approximately 8-9 minutes.
5. Backup times for the 80/300 Mb will vary according to how much information is on the disk pack. For a 80 Mb it may take from 20 minutes to as much as one hour. For a 300 Mb it may take from 15 minutes to one and one half hours.
6. Due to software constraints, the 80/300 Mb drives should never be placed in the READ ONLY position. The system cannot boot the software in this mode. To use the READ ONLY position will crash the disk module.

APPENDIX

SETTING BACK-UP PROCEDURES

Beginning with OS 3.1 the back-up process for an 80MB or 300MB disk pack is accomplished through the use of the COPY DISK command. This options appears with other startup options when an 8000 server is booted.

For simplicity, drive A should run the primary file information while drive B is used only for backup. An easy rotation schedule involves the use of three disk packs. Since backup should be performed on a daily basis with the large file servers, we will use a typical week for our example.

DAY ONE - MONDAY

Drive A is running Pack 1 Drive B is not spinning with Pack 2 Pack 3 on shelf
Back-up is performed from Drive A (Pack 1) to Drive B (Pack 2)
At completion, Pack 1 is placed on shelf, Pack 2 goes on Drive A and Pack 3 goes on Drive B.

DAY ONE -TUESDAY

Drive A is running Pack 2 Drive B is not spinning with Pack 3 Pack 1 on shelf
Back-up is performed from Drive A (Pack 2) to Drive B (Pack 3)
At completion, Pack 2 is placed on shelf, Pack 3 goes on Drive A and Pack 1 goes on Drive B.

DAY ONE -WEDNESDAY

Drive A is running Pack 3 Drive B is not spinning with Pack 1 Pack 2 on shelf
Back-up is performed from Drive A (Pack 3) to Drive B (Pack 1)
At completion, Pack 3 is placed on shelf, Pack 1 goes on Drive A and Pack 2 goes on Drive B.

DAY ONE -THURSDAY (same as Monday)

Drive A is running Pack 1 Drive B is not spinning with Pack 2 Pack 3 on shelf
Back-up is performed from Drive A (Pack 1) to Drive B (Pack 2)
At completion, Pack 1 is placed on shelf, Pack 2 goes on Drive A and Pack 3 goes on Drive B.

From this point the cycle continues to repeat.

BACK-UP PROCEDURES

1. **LOGON** to the file service. Type **STOP SERVICES**.
2. Boot from Drive A (Boot path 0001). Type **N** to the Normal Startup prompt.
3. Type **8** (the **COPY DISK** option). Place a disk pack in drive B and spin it up. This pack must have been previously formatted, partitioned and have had software loaded.
4. Type **Y** to the prompt to proceed. This will start the copying process. When the copy has been made, the message will read **DONE**.
5. After the copy completes, spin down drive A, remove the disk pack and label it with the name of the server and the current date. Move the disk pack from drive B to drive A and spin up the drive.
6. Boot the server using boot path 1. Answer **Y** to the normal startup prompt.
7. Services should be started.

FEATURES

- Recording densities of 6038 bits-per-inch and 384 tracks-per-inch are achieved by circumferential orientation of magnetic coating. Particle orientation provides maximum signal-to-noise ratio for more reliable recording performance.
- Each disk surface is tested on and between tracks for missing and extra pulses. Each disk is certified for 100% error free performance, assuring greater reliability when interchanging packs on various drives.
- The entire recording surface of every disk and pack is pretested with special ceramic heads that are flown at one-half of the normal flying height, assuring no head-to-disk contact in normal use.
- The pack is designed to withstand a start or stop torque of 750 inch-ounces, thus accommodating the rapid start/stop times of drive and pack for quick changing of packs.
- Both the horizontal and vertical disk planes in every pack are dynamically balanced to within 0.06 inch-ounces, eliminating vibrations, increasing data reliability and drive bearing life.
- Every pack must pass a class 100 clean room certifications (Aerospace Assembly or Surgical Amphitheater) prior to shipment. Each pack is thereby free of any contaminants and ready for operation.
- Seven disk packs can be stacked on top of each other to reduce costly storage space requirements.

DESCRIPTION

The disk pack permits nominal recording densities of 6038 bits-per-inch on each track and accommodates 384 tracks-per-inch.

Each 80Mb disk pack contains five recording surfaces, plus a pre-recorded servo and index timing surface and a top and bottom protective disk. Each 300Mb disk pack contains twelve recording surfaces, plus a pre-recorded servo and index timing surface and a top and bottom protective disk. The servo surface is the upper surface of the center recording disc. Removable plastic top and bottom covers are also provided for disk protection.

Each pack is tested under clean room conditions prior to shipment. A head-to-disk interference test is conducted over every disk surface using special ceramic heads that are lowered to less than half of the normal head flying height. Therefore, under normal machine use, there will be no head-to-disk contact.

The normal rotation speed of the Storage Module Disk Pack is 3600 rpm (± 180), permits data transfer rates of 1200 kilobytes per second. When installed, the disk pack is designed to withstand a start and stop torque from the spindle of 750 inch-ounces. This allows the disk to easily accommodate the fast start time (20 seconds) and dynamic braking of the Storage Module disk drives.

To ensure efficient high speed operation, both the top and bottom disks in every disk pack are dynamically balanced to within 0.06 inch-ounces.

The storage Modules Disk Pack is supplied in a convenient reusable corrugated shipping container that is lined with soft poly foam for maximum protection. The entire package, including the disk pack, is easily handled by one person, yet sufficient media protection is provided for non-operating environments.

The Storage Module Disk Pack comes completely assembled, pretested, and ready for use. Each Storage Module Disk Pack consists of the following components (see legend below):



- | | |
|-------------------------|----------------------------|
| 1. Top Cover Assembly | 11. Top Protective Disk |
| 2. Screw (4) | 12. Ring Spacer |
| 3. Trim Shield Retainer | 13. Hub Assembly |
| 4. Maile Lock Screw | 14. Servo Disk |
| 5. Trust Bearing | 15. Bottom Protective Disk |
| 6. Trust Washer | 16. Lower Bell Clamp |
| 7. Weight | 17. Index Pin (2) |
| 8. Nut (6) | 18. Screw (6) |
| 9. Flat Washer (6) | 19. Bottom Cover Assembly |
| 10. Upper Bell Clamp | |

STORAGE CAPACITY

80 and 300 million bytes respectively. Recording densities: 6038 bits-per-inch; 384 tracks-per-inch.

ROTATIONAL SPEED

Each disk pack recording surface is pretested with ceramic heads. Testing heights of new head-to-disk is less than one-half that of normal operation to assure absolute freedom from disk contact.

CERTIFICATION

Single Disk Level:

On-track and off-track testing are performed to insure that the entire recording surface of every single disk is 100% error free. When testing a given track, bit by bit comparisons for missing and extra pulses are made against the average value for that track. In addition, every track is tested for modulation.

Pack Level:

Special read/write recording tests and surface analysis are performed to ensure reliable operation under worst case conditions.

BALANCE

Both top and bottom disks are dynamically balanced to within 0.06 inch-ounces.

LOCKING PULL

To adequately secure the pack to the drive spindle, the disk pack drive lock shaft must pull downward on the pack spindle lock with a force of 130 ± 20 lbs (65.5 ± 13.6 kg).

QUALITY ASSURANCE

Every disk pack is completely free of all foreign material, and tested for cleanliness in a class 100 clean room environment prior to shipment.

STACKING

A maximum of seven containers, each housing a disk pack, can be stacked together without damage to the internal disks.

WEIGHT

13 lbs. including covers (5.9 kg) for 80Mb disk packs.
xx lbs including covers (xx kg) for 300Mb disk packs.

SERVER SPECIFICATIONS

Physical Specifications - The following are the physical specifications of the several Network Systems components:

	Height	Width	Depth	Weight
8000 Processor	25"	12"	30"	120 lbs.
Keyboard/Display	14"	16"	21"	40 lbs.
29 Mb File Module	25"	12"	30"	85 lbs.
Electronic Printer	36"	22"	26"	272 lbs.
873 Processor	8 1"	16.9"	22"	35 lbs.
Star Keyboard/Display	19"	20"	15"	46 lbs.
8012 Module	25"	12"	30"	85 lbs.

Electrical Requirements - The following are the electrical requirements of the several Network Systems components:

	Voltage	Frequency	Current
8000 Processor	115 V. AC	60 Hz	8 Amps.
Keyboard/Display	115 V. AC	60 Hz	0.7 Amps.
29 Mb File Module	115 V. AC	60 Hz	8 Amps.
Electronic Printer	115 V. AC	60 Hz	4.8 - 11.5 Amps.
873 Processor	115 V. AC	60 Hz	2 Amps.
Star Keyboard/Display	115 V. AC	60 Hz	12 Amps.
8012 Module	115 V. AC	60 Hz	12 Amps.

Each component requires a two pole, three wire, grounded duplex receptical (110 outlet).

Environmental Specifications - The following are the environmental specifications for the several Network Systems components:

	<u>Temperature</u>	<u>Relative Humidity</u>	<u>Heat Dissipation</u>
8000 Processor	50° - 90°F	15% - 85%	2048 BTU/HR
Keyboard/Display	50° - 90°F	15% - 85%	67 BTU/HR
29 Mb File Module	50° - 90°F	15% - 85%	700 BTU/HR
Electronic Printer	50° - 90°F	15% - 85%	1490-4530 BTU/HR
873 Processor	50° - 90°F	15% - 85%	1000 BTU/HR
Star Keyboard/Display	50° - 90°F	15% - 80%	505 BTU/HR
8012 Module	50° - 90°F	15% - 85%	700 BTU/HR

Technical Service Space Requirements - The Xerox 8000 Network Systems Processors and Servers require the following technical service space dimensions: Height - 8', Width - 8', Depth - 9'.

LARGE FILE SERVER SPECIFICATIONS

SPECIFICATIONS	8000 NS	KEYBOARD/	DISC MODULE (MODEL 8037)	
	PROCESSOR	DISPLAY	80 MB	300 MB
Dimensions				
Height	25"	14"	35"	36"
Width	12"	16"	19.5"	19.5"
Length	30"	21"	33.0"	33.5"
Weight	120 lbs	32 lbs	320 lbs	480 lbs
Electrical Requirements				
Voltage	115 Volts AC	115 Volts AC	115 Volts AC	208 Volts AC
Frequency	60 Hz	60 Hz	60 Hz	60 Hz
Current	Start-up Surge, 12 Amps Steady State, 8 Amps	0.7 Amps	Start-up Surges Up to 26 Amps Through 12 seconds Running, 8 Amps	Start-up Surges Up to 26 Amps Through 10 seconds Running, 5 Amps
Receptacle				
	15 Amps, Two Pole, Three Wire Grounded Duplex	15 Amps, Two Pole, Three Wire Grounded Duplex	15 Amps, Two Pole, Three Wire Grounded Duplex	15 Amps, Two Pole, Three Wire Grounded Duplex
Plugs Required Configuration				
	1	1	2	2 6-15R
Operating Environment				
Temperature	50° - 90° F.	50° - 90° F.	60° - 100° F.	60° - 100° F.
Relative Humidity	15% - 85%	15% - 85%	10% - 80%	10% - 80%
Heat Dissipation	2048 BTU/Hr	67 BTU/Hr	2250 BTU/Hr	3600 BTU/Hr
Power Watts	920	80.5	2990-920	5200-1040

UPGRADING A 10/29 MB FILE SERVER TO A LARGE FILE SERVER - METHOD 1 AND 2

Consolidation of information as applicable in the upgrade of a file server to a 80 MB or 300 MB server can be accomplished in a minimum of steps if the possible problem areas are known. Method 1 discusses how to accomplish the upgrade on line. Method 2 discusses how to accomplish the transfer using the backup disks. If desired, desktops and mail folders can be backed up to floppy using the COPY CONTAINER utility (see Systems Administrator Handbook).

UPGRADING A 10/29 MB FILE SERVER TO A 80/300 MB FILE SERVER (METHOD 1)

Before proceeding with the upgrade process, there are three things which it is critical to do. First, if there are desktops on the file server to be removed, either the operators or the systems administrator should store them on a local server to remove them from the file server. Second, have all of the users on the network clean out their in-baskets. The purpose of this move is because as systems administrator you do not have access to the mail baskets to be able to move the contents. Third, the upgrade itself will require the network to be unavailable to the users for a short period of time. The actual amount of time involved is dependent on the number of users listed in clearinghouse, the number of mail baskets and the actual quantity of information stored in file drawers involved in this transfer. After accomplishment of these tasks, follow the steps listed below:

At the old CLEARINGHOUSE SERVICE:

ADD FILE SERVICE

(Enter the name and processor number of the new server)

TYPE BACKUP

(Enter the name of the new processor as its destination)

STOP SERVICES

BOOT THE SERVER FROM 1

ANSWER NO to Normal Startup

Enter choice number: 4 (Remove Service)

1. Clearinghouse Service

2. File Service

Enter choice number: 1

TYPE CLEARINGHOUSE PASSWORD

Message . . . DONE

NORMAL STARTUP? Yes

At the new CLEARINGHOUSE SERVICE:

LOGON as XEROX, password CIXCOS

ADD USER

(Enter a dummy user with SA privileges and no description.)

LOGOFF, then LOGON as dummy user.

TYPE RESTORE.

At the completion of these steps, the clearinghouse information previously used on

the other server will be operational on the new server. The next step involves cleanup procedures. The cleanup can be accomplished in several steps. If more than one person is assisting in this process the first step should be to add the file drawers to the new server (probably identical to the old file drawers).

At the new CLEARINGHOUSE SERVICE

DELETE ALIAS

(Delete alias Help Server since it is listed for the old file service)

ADD ALIAS

(Add alias Help Server using the new file service name)

CHANGE MAIL SERVICE

(Should appear using new processor number)

Go to FILE SERVICE

ADD FILE DRAWER

(Do this for each new file drawer. At this point, if you are being assisted, the second person could go to a STAR and begin transferring the information to the new server.)

ADD MAIL FOLDERS

(This must be done for each mail user because the mail folders were previously on the old file server and cannot be transferred)

Go to CLEARINGHOUSE SERVICE

CHANGE USER

Change the home file service (and the mail service , if necessary) to the new file server name. This must be done for each user on the network. After the users have been changed, their desktops will go to the new file server instead of the old whenever they log off.

The new file server now has all of the information resident that was previously on the old file server. Now is probably a good time to do the first backup on your new file server. Remember, this is accomplished using the COPY DISK utility in the startup options. Keep in mind that the disk you are copying to **must** have been partitioned and had software loaded already. Refer to the appropriate page for further information.

UPGRADING A 10129 MB FILE SERVER TO A 801300 MB FILE SERVER (METHOD 2)

Using this method it will be necessary to have a complete set of backup disks from the server to be upgraded. If this server is running clearinghouse, be sure that the clearinghouse information has been backed-up to the file section and that this was done before the last physical backup. By a complete set of backup disks, this means if your backup cycle was five days (Monday -Friday), you would have five groups of disks in your complete backup set.

At the old CLEARINGHOUSE SERVICE:

LOGON

STOP SERVICES

(This is to prevent users from making changes to information that will not be on your backup disks.)

BOOT THE SERVER FROM 1

ANSWER NO to Normal Startup

Enter choice number: 4 (Remove Service)

1. Clearinghouse Service

2. File Service

Enter choice number: 1

TYPE CLEARINGHOUSE PASSWORD

Message . . . DONE

NORMAL STARTUP? Yes

At the new CLEARINGHOUSE SERVICE:

LOGON as XEROX, password CIXCOS

ADD USER

(Enter a dummy user with SA privileges and no description.)

LOGOFF, then LOGON as dummy user.

Go to File Service

ADD FILE DRAWERS

(You must have identical file drawers for the server to properly restore the information.

Add a file drawer with the same name as on the old server.)

TYPE RESTORE.

(You will begin restoring the information from you set of backup disks beginning with the most recent group first. This means if your cycle is Monday through Friday, you will restore Friday, then Thursday, then Wednesday, etc.)

Go to CLEARINGHOUSE SERVICE

TYPE RESTORE.

(This will bring current clearinghouse information on-line.)

At the completion of these steps, the clearinghouse information previously used on the other server will be operational on the new server. The next step involves cleanup procedures. The clean-up can be accomplished in several steps.

At the new CLEARINGHOUSE SERVICE

DELETE ALIAS

(Delete alias Help Server since it is listed for the old file service)

ADD ALIAS

(Add alias Help Server using the new file service name)

CHANGE MAIL SERVICE

(Should appear using new processor number)

Go to FILE SERVICE

LIST MAIL FOLDERS

(If the mail folders for the users are not present it will be necessary to add mail folders for each user.)

Go to CLEARINGHOUSE SERVICE

CHANGE USER

Change the home file service (and the mail service , if necessary) to the new file server name. This must be done for each user on the network. After the users have been changed, their desktops will go to the new file server instead of the old whenever they log off.

The new file server now has all of the information resident that was previously on the old file server. Now is probably a good time to do the first backup on your new file server. Remember, this is accomplished using the COPY DISK utility in the startup options. Keep in mind that the disk you are copying to **must** have been partitioned and had software loaded already. Refer to the appropriate page for further information.

ACTION CARD FOR UPGRADING FILE SERVER & SERVICES

BEFORE YOU BEGIN:

- Make sure all Desktops have been stored locally at STAR's or have been deleted (i.e., all Desktop info stored in User File Drawer)
- Make sure all Mail Boxes are empty
- As a safeguard you may want to Backup the 29MB with all current information (i.e., change the Backup Parameters to reflect a new Backup Cycle so you will copy everything to disc when you do the Backup - this is not really necessary, but you may want to take the precaution)

INSTALLATION -

At 300MB:

- Load software - Add File Service and Clearinghouse Service (List Services - Processor #)
- Logon "Xerox" - Add System Administrator (SA) as User
- Logoff & Logon as SA (go into Clearinghouse Service)
- Add new File Service and Mail Service names (File Server name cannot be the same as the 29MB)
- Stop Clearinghouse Service (do not Logoff)

At 29MB:

- Logon as SA (go into Clearinghouse Service)
- Delete Mail Service
- Add 300MB File Service name
- Backup Clearinghouse Service to 300MB
- Stop Clearinghouse Service (do not Logoff)

At 300MB:

- Start & Restore Clearinghouse Service
- Stop all Services except Clearinghouse Service
- Change all Users to reflect new "Home" File Service & Mail Service
- In File Service add new File Drawers and Mail Folders
- Start all Services
- Check Clearinghouse Service - all Services are listed/started (File Service should be only Service at 29MB)
- Backup Clearinghouse Service to 300MB

At STAR (skip this phase if Desktops were deleted or if copy container utility was used and

individual users will be replacing file drawers and mail baskets themselves):

- Logon to each locally stored Desktop
- Delete old File Drawers & Mail Boxes
- Add new File Drawers & Mail Boxes
- Send Desktops to File Server (should be 300MB)

At STAR:

- Logon as "Xerox"
- Test to validate (i.e., retrieve info from File Service; print document; send mail, etc.)

File Transfer at STAR (you may use several WS's simultaneously to save time):

- Open Directory (go into 29MB File Service)
- Copy File Drawer icons from 29MB to desktop
- Go into 300MB File Service and copy File Drawer icons to desktop
- Move docs from old Drawer (29MB) to new Drawer (300MB)
(NOTE: Moving will assure accuracy, nonduplication, & save time - if an error occurs, you have your Backup and can Copy Container if need be.)
- If the "Fast" method for storing Help was not used on the 29MB (i.e., H&T Folders #1, 2, and 3 in Help & HelpLoad; H&T Folders 4, 5, and 6 in Help) it may be faster to reload Help (i.e., "Copy From Floppy"). In any event, this method should be used as it will provide swifter access time for Network Users.
- Logoff

At 300MB:

- Go through normal process for Backup (i.e., Copy Disc) of large File Service