IBM

Cluster Program

Disk Server Guide

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IBM

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Disk Server Guide

About This Book

The purpose of this book is to:

1. Provide the installation manager with the procedures to install the disk server version of the IBM Personal Computer Cluster Program and to configure the fixed disk at the disk server station.

2. Provide the cluster manager with procedures for maintaining the fixed disk.

You will be able to completely install the Cluster Program using the procedures in this book.

The following topics covered in this book are directed
to the installation manager and the cluster manager:

- Installing the IBM Personal Computer Cluster
  Program.

- Using the Disk Configurator program

- Screen description and special keys

- Disk Configurator maintenance procedures

- Error message cause and action

- Information on the Disk Server Erase program

- Typical disk server cluster

- Drive letter chart

Organization of this book

This book has three chapters and four appendixes, with an index:

- Chapter 1 contains information on how to get started.

- Chapter 2 gives directions for installing the IBM Personal Computer Cluster program and how to configure the fixed disk at the disk server station. The Disk Configurator description screens and special keys are explained in this chapter.

- Chapter 3 contains the Disk Configurator maintenance procedures, which the cluster manager uses to maintain the public volume.

- Appendix A lists the error messages with recovery procedures.

- Appendix B contains information on the Disk Server Erase program.

- Appendix C contains a diagram of a typical disk server cluster.

- Appendix D contains drive letter charts.

Assumptions

This book assumes that a cluster has been designed and installed before using this product.

This book also assumes that you are familiar with the IBM Personal Computer.

The IBM Personal Computer Cluster Program runs under the Disk Operating System (DOS), Version 2.1. You should be familiar with DOS and its commands before you use this program.

Related Publications

The following are related publications for this book:

- The *Introduction and Program Setup Guide*

- IBM Personal Computer *DOS Reference* manual, Version 2.1

- IBM Personal Computer *Guide to Operations*

Requirements

See the *Introduction and Program Setup Guide* for machine requirements and programming requirements.

Contents

Chapter 1. Introduction

Contents

Notes:

Getting Started

The procedures in this chapter are for setting up a cluster that has a disk server station. After you have set up the cluster, you can use all the IBM Personal Computer Cluster Program functions, regardless of your cluster configuration.

If you decide you don't want or need certain functions, you can erase the programs you don't need. The Cluster Program is described in the *Introduction and Program Setup Guide*.

The installation manager is responsible for station hardware addressing. This person decides such things as public volume size, which stations will own a private volume, and which station will serve as the Public Volume Manager station.

The Public Volume Manager station is the single station in the cluster that has write access to the public volume. It can be any station other than the disk server station.

The station operators use the link after the installation manager has:

- Installed the hardware for the cluster

- Installed the IBM Personal Computer Cluster Program for the disk server station

- Configured the fixed disk at the disk server station

- Copied the Cluster Program to the remote system reset volume if there are stations in the cluster that need the remote system reset function

It is essential for the installation manager to know each station's requirements to take advantage of the cluster's capabilities.

Before you can set up the cluster (See next page for help) the following questions must be answered.

1. What is the size of the public volume?

2. Will the cluster support remote system reset?

3. What types of stations are in the cluster (with or without diskettes)?

4. How many stations will be in the cluster?

5. How many stations will own private volumes?

6. What is the size of each private volume?

7. Are there any stations that do a local system reset?

Some general information will help you answer these questions.

- A single-sided diskette is up to 179K bytes in size. Your private volume should be at least this size to insure adequate work space for programs (six 34K byte blocks is 204K bytes).

- The disk server station is optimized to handle private volumes of up to thirty 34K byte blocks. If larger private volumes are used, performance for the entire cluster may be affected.

  You must decide how large the public volume will be.

  The public and private volumes are allocated in 34K byte blocks.

  The public volume should be at least 362K bytes (11 blocks) in size.

    Note: This is the amount of space needed, during creation of the public volume, to store

a full dual-sided diskette containing application programs. The minimum size of the public volume is two 34K byte blocks.

If you will add other programs to the public volume using Public Volume Manager program, the public volume should be large enough to hold the files you copy during its creation plus the amount of space required to store the additional programs.

You can do a DIR on the device containing those programs to find out how much space they require.

- The remote system reset volume should contain the Cluster Program plus all the programs that stations want to load from drive A.

When you have answered these questions, you are ready to begin setting up the disk server cluster.

Chapter 2. Setting Up a Disk Server Cluster

Contents

The program diskette is supplied with a set-up file that has three options:

- Copy all the files for a station

- Copy the files for the disk server station

- Create a special diskette to be copied to the remote system reset volume

The diskette that is shipped contains batch (.bat) files, which copy all the Cluster Program files to the fixed disk and allows you to copy them to the appropriate diskettes.

Three diskettes are created with the bat files:

- The "Station System Files " diskette is for non-disk server stations that do a local system reset.

- The "Disk Server System Files" diskette is for running the cluster program from a diskette drive. It is also used when backing up DSERVER.TAB (the disk server station index).

- The third diskette is a special diskette that is used to create the remote system reset volume, which supports remote system reset.

The following is a list of steps, in the order that they are performed, which allow you to install the IBM Personal Computer Cluster Program and configure the fixed disk at the disk server station.

The procedures for each step are in the next section of this chapter.

1. Format the fixed disk for use with DOS, if necessary.

2. Copy DOS to the fixed disk.

3. Copy the IBM Personal Computer Cluster Program files to the fixed disk.

4. Create a diskette with station system files.

5. Create an operational diskette for the disk server station.

   This diskette is used for running the disk server station programs from a diskette and for backing up DSERVER.TAB after running the Disk Configurator Program.

6. Create a special diskette to be used when you create the remote system reset volume.

   This diskette is copied to the remote system reset volume. It contains all the programs needed to support remote system reset and diskless stations that use the Information Transfer program.

7. Create the public volume.

8. Create the remote system reset volume.

9. Make entries in the disk server station index for all remote stations.

10. Create private volumes for stations that need them.

11. Give write access to the Public Volume Manager station.

The Cluster Program installation procedures follow.

- Go to the station that is to be the disk server station.

This station can be an IBM Personal Computer XT or an IBM Personal Computer with a fixed disk expansion option.

The IBM Personal Computer Cluster programs are shipped on one dual-sided diskette.

The installation instructions begin on the next page.

Formatting the Fixed Disk

If you have files on the fixed disk that you want to save, make sure you back them up.

If your fixed disk is already formatted with DOS system files, skip this procedure and start with "Copying the Cluster Program to the Fixed Disk" on page 2-7.

1. Insert the DOS 2.1 diskette into the diskette drive.

2. Switch on the power at the disk server station.

After DOS is loaded, format the fixed disk at the disk server station for use with DOS.

Use the procedure in the DOS 2.1 book (**format c:/s/v**).

Copying DOS to the Fixed Disk

To copy all the files on the DOS 2.1 diskette to the fixed disk, use this procedure:

1. Type **copy a:*.* c:**

2. Press Enter ◄┘ .

DOS displays A> after the files have been copied.

3. Type **C:**

4. Press Enter ◄┘ .

Copying the Cluster Program to the Fixed Disk

1. Place the IBM Personal Computer Cluster Program diskette in drive A.

2. Type **copy a:*.* c:**

3. Press Enter ◀┘.

   This copies all the Cluster programs to the fixed disk.

   After the programs have been copied:

   Rename the file called DISK to CONFIG.SYS

4. Type **rename c:disk config.sys**

5. Press Enter ◀┘.

   Note: If you already have a CONFIG.SYS, you must link the two of them.

   a. Type **copy c:config.sys+disk c:config.sys**

   b. Press Enter ◀┘.

Continue with "Formatting System Diskettes" on page 2-8.

Formatting System Diskettes

You will need to format four blank diskettes. Format one diskette using this procedure:

1. Insert the first diskette to be formatted in drive A and change the default drive to C.

2. Type C: and press Enter ◄┘.

3. Type **format a:/s/1**

4. Press Enter ◄┘.

   When asked if you want to format another diskette:

5. Type **N**.

6. Press Enter ◄┘.

7. Remove the diskette from drive A.

8. Label it "Station System Files"

Format two diskettes with system files. Format them as dual-sided diskettes.

1. Type format **a:/s**

2. Label one "Disk Server Station System Files" (This diskette must be a dual-sided diskette).

3. Label one "For Remote System Reset Volume creation".

   Format one diskette without system files.

4. Insert the diskette to be formatted into drive A.

5. Type **format a:**

6. Press Enter ◄┘.

7. Label this diskette "Public Volume Program Files".

8. Copy any applications you want on the public volume to this formatted diskette. The applications must not total more than 360K bytes. (Use the DOS Copy command in the *DOS Reference* manual).

Creating a System Diskette for a Station with a Diskette Drive

Copy the IBM Personal Computer Cluster Programs for the stations that do local system resets to the "Station System Files" diskette. Use the following procedure:

1. Insert the "Station System Files" diskette in drive A.

2. Type **ccopy a**

3. Press Enter ◄┘.

   The message on the screen tells you that the non-disk server cluster programs (station programs) will be copied to the drive you entered after ccopy.

4. Press any key.

   The non-disk server programs (station programs) will be copied to the "Station System Files" diskette.

   DOS displays C>.

The "Station System Files diskette contains the
following additional programs:

RIODRV.COM	VM.COM	PDT.COM
TBL.SYS	PLLSCR.COM	MSG.SYS
IT.COM	PCMDP.COM	CONFIG.SYS

5. Remove the diskette from drive **A** and
   write-protect the diskette.

   If there are stations that do a local system reset, use
   the DOS DISKCOPY command to make a copy of
   the Station System Files diskette for each of them.
   Use the DOS DISKCOPY command (diskcopy a:
   b:).

   Do not write-protect the copies you make. If you
   do, the stations will not be able to receive messages.

   Use the installation map in the hardware installation
   book to determine which stations are set up to do a
   local system reset.

Copying Disk Server Station Programs to The Fixed Disk

Use the following procedure to copy the IBM Personal Computer Cluster Program for the disk server option to a formatted fixed disk.

1. Type **A:**

2. Press Enter ↲.

3. Place the IBM Personal Computer Cluster Program diskette in drive A.

4. Type **ccopy c disk**

5. Press Enter ↲.

   Follow the instructions on the screen:

6. Press any key. (You want the disk server version of the program.)

   The bat file copies the complete disk server version of the Cluster Program to the fixed disk. This is a little different from the copy you did earlier (some files are renamed).

   The bat file tells you to change the default drive and tells you to type **dscopy x** (x is the disk drive where the disk server programs will be copied).

7. Type **C:**

8. Press Enter ↲.

   DOS displays C>

9. Type **dscopy a**

10. Press Enter ◄┘ .

11. Follow the instructions on the screen.

   When you are told to insert the diskette to which
   you are copying the disk server cluster programs:

12. Insert the diskette labeled "Disk Server Station
    System Files" in drive A and press any key.

   The next message on the screen tells you to insert
   the diskette that will be used to create the remote
   system reset volume.

13. Remove the diskette containing the disk server
    programs and insert the diskette labeled "For
    Remote System Reset Volume Creation" in drive A.

14. Press any key.

   After the programs are copied to the diskette, DOS
   displays C>.

   Programs for the remote system reset volume need
   to be copied to this diskette at this time.

   Do a DIR on this diskette to find out how much
   space you have.

15. Remove the diskette from diskette drive A.

16. Put a write-protect tab on all the diskettes you have
    created.

   You are now ready to configure the fixed disk.

Turn to "Configuring the Fixed Disk" on page 2-14.

Configuring the Fixed Disk

The fixed disk at the disk server station is the heart of the Cluster. It is divided into four parts:

- The public volume

- The remote system reset volume

- Multiple private volumes

- The unassigned area of the fixed disk

All stations that have an entry in the disk server station index have access to the *public volume*.

The remote system reset volume is used to support those stations that do a remote system reset from the fixed disk. It contains the system files and the IBM Personal Computer Cluster Program files. The *remote system reset volume* can also contain an application, which can be started automatically using an Autoexec.bat file. The remote system reset volume size cannot exceed the capacity of a dual-sided diskette.

> **Note:** The remote system reset volume has been made with a special CONFIG.SYS. The first record in the CONFIG.SYS should not be modified.

Each *private volume* is owned by a specific station. A station owns a private volume if any number greater than zero is specified for private volume size when adding that station to the disk server station index.

The *unassigned* area of the fixed disk is accessible to the disk server station. The unassigned area of the fixed disk contains the system files and the disk server station version of the IBM Personal Computer Cluster Program files.

The disk server station can also use this area to store program files.

The size of the unassigned area of the fixed disk is determined by the size of the three volumes previously described. The larger the volumes, the smaller the unassigned area.

Starting the Disk Configurator Program

The fixed disk is configured using the Disk
Configurator program.

Several restrictions govern the use of the Disk
Configurator program:

- The link must be down (End **IT**, and enter 2 to take
  the link down).

- The disk server station index must be on the same
  drive as the public and private volumes.

- The disk server station index must be copied to the
  "Disk Server System Files" backup diskette after
  you end the Disk Configurator program.

- When the Disk Configurator program is running, no
  other station can communicate with the disk server
  station.

The first step in configuring the fixed disk is to create
the public volume.

1. Insert the "Public Volume Program Files" diskette
   in drive A if you are creating the public volume for
   the first time.

   If you are only changing the size of the public
   volume, do not insert a diskette in drive A.

2. Make sure the default drive is **C** (**C>**).

   The Disk Configurator program supports the IBM
   color monitor and the IBM monochrome display.

3. Type **DC** for color or type **DC NOCOLOR** if you do not want color.

4. Press enter ◄┘.

   The logo screen appears.

5. After typing in the information on the logo screen, press Enter ◄┘.

   The Disk Configurator program displays the following screen.

```
                     Create the Public Volume Menu              10-010
          Item

            1   Create the public volume
            2   Display the disk server station status

            9   End the Disk Configurator program

          Select an item number: [ ]




          F1=Help
```

The Disk Configurator program displays this screen only if there is no public volume.

If you have a public volume, the Disk Configurator
Main Menu is the first screen that the configurator
program displays after the logo screen.

Special Purpose Keys

The F1 key is used to display help messages and the Disk Configurator description screens.

The following three screens give a detailed description of the special function keys used with this program. They also tell you what the program does.

If you are already familiar with the Disk Configurator program's special purpose keys, go to "Creating the Public Volume" on page 2-23 or Press F1 to display the first Disk Configurator Description screen.

```
                    Disk Configurator Description                  10-814

        The following keys are used in the Disk
        Configurator:

        Tab    Press →| or |← to move between
               input fields on a screen.

        Enter  After you have typed all necessary
               information, press ← to give your
               information to the program.

        Esc    Press Esc if you wish to return to
               the previous input screen.

        PgUp   Press PgUp to display the previous
               page of information.

        PgDn   Press PgDn to display the next page
               of information.




                      PgDn=Next                    Esc=Return
```

This screen describes special function keys and how they are used in the IBM Personal Computer Cluster

Disk Configurator program. Notice that when a key
can be used its name appears at the bottom of the
screen. This is true of all special function keys, except
the tab key and the enter key.

Press the PgDn key to see the following screen.

```
                    Disk Configurator Description                    10-824
            The function keys may be used only when
            displayed on the screen:

            F1    Displays more information about the
                  function of the current screen.

            F10    Displays the station index on the
                   current screen.

            The Disk Configurator formats public
            and private volumes at the disk server
            station for other stations on the link.

            Both public and private volumes consist
            of a number of 34K byte blocks that you
            specify. The public volume must consist
            of at least two 34K byte blocks.




   PgUp=Previous                   PgDn=Next                    Esc=Return
```

This screen tells you about the Disk Configurator program. It also explains the purpose of the F1 and the F10 keys. Note that they are only active when their names appear at the bottom of the screen.

Press the PgDn key to see the last Disk Configurator
program description screen.

```
                    Disk Configurator Description                10-834
              One and only one public volume must be
              created at the disk server station. To
              get read access to the public volume, a
              station must be added as an entry to the
              disk server station index. The contents
              of the public volume can only be changed
              by the Public Volume Manager at the
              station given public volume write access.

              Each station in the disk server station
              index may own only one private volume at
              the disk server station. The contents of
              a private volume may only be changed by
              the station owning the private volume.

              If any stations on the link use remote
              system reset, you must create a remote
              system reset volume that contains system
              files and IBM Personal Computer Cluster
              programs.




 PgUp=Previous                                           Esc=Return
```

This screen contains the rest of the information about
the Disk Configurator program.

Now that you are familiar with the Disk Configurator
program and the special function keys, let's see how the
fixed disk gets configured.

Press the Esc key to display the Create the Public
Volume Main Menu screen.

Creating the Public Volume

The following steps are required if you are creating the public volume for the first time or creating a new public volume because you erased the old one.

1. Select item 1.

2. Press Enter ⬅.

   The Disk Configurator program displays the "Create the Public Volume" screen without the help messages.

3. Press F1.

The following screen appears.

```
        Create the Public Volume                    10-021

           Public volume size: [11  ]

        Disk server disk drive: [c]

        Copy files from drive A: [1]
                  1 - Yes
                  2 - No


    The size of the public volume created on the
    disk server's fixed disk is specified in
    number of 34K byte blocks. The public volume
    must consist of at least two 34K byte blocks.
    The disk server station status will tell you
    the amount of available disk space.

    The files copied to the public volume should
    include program files needed by all the
    stations on the link.




                                            Esc=Return
```

The disk server disk drive is always the address of a
fixed disk at the disk server station. If the disk server
station has two fixed disks, specify C or D (we will
specify C.)

1. Type the size (in 34k byte blocks) of your public
   volume.

2. Type the disk server drive letter (C).

3. Type 2 if you are only changing the size of the
   public volume (no diskette in drive A) or type 1 to
   copy the files from the diskette in drive A (if you

are creating the public volume for the first time you should have the "Public Volume Program Files" diskette in drive A).

> **Note:** The files copied must be those that will be used by all stations in the link.

4. Press Enter ⏎.

The Disk Configurator starts the creation of the public volume. As each file is being copied its name is displayed on the screen.

> **Note:** This is a critical time. Do not do a system reset or power off the system unit while the public volume is being created. Errors can result that require special action.

When the operation completes, the Disk Configurator program displays "The public volume has been created" at the bottom of the screen along with the number of files copied (hidden files are included in this count).

If you have changed the size of the public volume, use the Public Volume Manager program to copy the files you backed up to the public volume. Follow the procedure in the *Public Volume Manager Guide*.

5. Remove the "Public Volume Program Files" diskette from drive A if you copied files to the public volume.

If errors occur, see Appendix A for actions.

Creating the Remote System Reset Volume

The remote system reset volume is created on the same fixed disk as the public and private volumes.

You have a diskette labeled "For Remote System Reset Volume Creation" that is used to create the remote system reset volume.

Creation of this volume is optional. If there are stations in the cluster that need remote system reset, you must create the remote system reset volume to support them.

If there are no stations in the cluster that do remote system reset, you should continue with "Making Disk Server Station Index Entries" on page 2-31.

Press Enter ◄┘ to display the following screen.

```
                    Disk Configurator Main Menu                    10-100
        Item

          1  Display or edit the disk server station index
          2  Change public volume write access
          3  Erase the public volume
          4  Create the remote system reset volume
          5  Erase the remote system reset volume
          6  Display the disk server station status

          9  End the Disk Configurator program

        Select an item number: [ ]




    F1=Help
```

1. Select Item 4 from the Disk Configurator Main
   Menu.

2. Press Enter ◄┘.

2-28

The Disk Configurator program displays the Create
the Remote System Reset Volume screen.

```
          Create the Remote System Reset Volume              10-504

          Before you continue, insert your diskette
          that contains system files and IBM Personal
          Computer Cluster programs into drive A.
```

The remote system reset volume has been created

Esc=Return
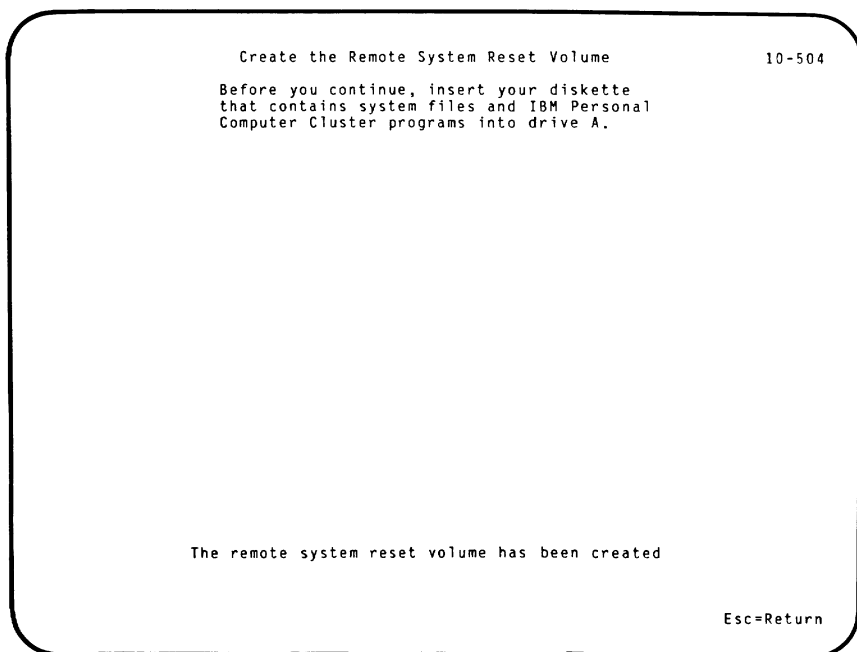
3. Insert the diskette labeled "For Remote System
   Reset Volume Creation" in drive A.

4. Press Enter ⬅ .

   The Disk Configurator program starts the creation
   of the remote system reset volume.

   When the volume is created, the message "The
   system reset volume has been created" appears on
   the screen along with the number of files copied
   (hidden files are included in this count).

Press the Esc key to return to the Disk Configurator Main Menu.

Note: If the operation fails, an error message appears on the screen. Look it up in Appendix A and do the action indicated.

If you are configuring the fixed disk for the first time, make the disk server station index entries at this time.

See "Making Disk Server Station Index Entries."

Making Disk Server Station Index Entries

Any station that reads from the public volume, or does a remote system reset from the remote system reset volume must have a disk server station index entry.

Make all the disk server station index entries; be sure that a private volume is created for the station that has write access to the public volume. This is the station where the Public Volume Manager program must run.

Create a private volume for each station that needs one.

> **Note:** Be sure you create private volumes for each diskless station.

Press the Esc key to return to the Disk Configurator main menu.

1. Select Item 1 and press Enter ◄┘ .

The configurator program displays this screen.

```
              Display or Edit the Disk Server Station Index        10-101

Item

  1  Display the disk server station index
  2  Add an entry to the disk server station index
  3  Change an entry in the disk server station index
  4  Remove an entry from the disk server station index

Select an item number: [2]




                                                                 Esc=Return
```

2. Select Item 2 and press Enter ←⎘ .

   The configurator program displays the Add an
   Entry to the Disk Server Station Index screen.

3. Press the F1 key.
   The configurator program displays the help message
   on the following screen.

2-32

```
                        Name: [                    ]

                Station number: [   ]

          Private volume size: [    ]

          The new name must be unique and may not
          begin with a number.

          The station number is a hardware assigned
          number. This number may not exceed 63
          and may not be the disk server station.

          The size of the private volume created on
          the disk server's fixed disk is specified
          in the number of 34K byte blocks. The disk
          server station status may help you with the
          private volume size. If the size specified
          is zero or blank, no private volume will be
          created.
```

```
F10=Display station index                              Esc=Return
```

4. Make an entry for each station that uses the public
    volume.

    Stations that own private volumes also require an
    index entry, whether they use the public volume or
    not.

    Note: This is a very critical time. Do not do a
    system reset or power off the system unit when
    making index entries. Errors can result that
    require special action.

    If errors occur, see Appendix A for actions.

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Remember, every station on the link that needs access to the fixed disk must be added to the disk server station index.

5. Verify entries by pressing the F10 key.

   This can be done after each entry or after all entries are made.

   The next screen is an example of what you should see.

```
                    Display the Disk Server Station Index                    15-111
|           Name           |   Number   |        Private Volume Size              |
|                          |            |        (in 34K byte blocks)             |
------------------------------------------------------------------------------------
        JOHN                    03                      0010
        MARK                    02                      0010
        SANDY                   04                      0010
        susan                   08                      0002
****************************** End of Index ****************************************


                                                                    Esc=Return
```

The names and station numbers are examples only.

The names are displayed alphabetically.

Up to 16 entries can be displayed on one screen. If
more than 16 entries exist, press the PgDn key to
see the remaining entries.

From this screen you can see which stations own a
private volume. The stations that don't own a
private volume have a private volume size of 0000.

6. If you have a printer, you should print a copy of the
disk server station index. Use the print screen
function.

7. Give write access to the station that is to be the Public Volume Manager station. This will enable you to install additional program files using the Public Volume Manager program.

To do this use the "Change Public Volume Write Access" on page 3-9.

One of the most useful screens that the configurator program has is the Disk Server Station Status screen.

Use the procedure "Display the Disk Server Station Status."

Display the Disk Server Station Status

This screen gives an overall view of how the fixed disk is formatted. Use it to determine public and private volume sizes for your cluster and to summarize disk server station statistics.

1. Display the Disk Configurator Main Menu, if it is not already displayed.

2. Select Item 6 and press Enter ◄─┘ .

This is a sample disk server station index screen.

```
              Display the Disk Server Station Status              10-052
                  Disk server station number: 00
                          Disk server disk: C
                     Public volume size
                     (in 34K byte blocks): 0011
          Number of station index entries: 04
                 Number of private volumes: 03
             Total private volume size
                     (in 34K byte blocks): 0005
                 Public volume manager
                                    Name: Boca
                          Station number: 05
                Remote system reset volume: Yes
                 Disk space available
                     (in 34K byte blocks): 0231




                                                         Esc=Return
```

From this screen you can tell:

- Public volume size (in 34K byte blocks)

- The number of stations that own private volumes

- The total amount of space used for all the private volumes

- How many stations don't own private volumes (station index entries minus the number of private volumes)

- The amount of space remaining on the disk (in 34K byte blocks)

- The disk server station address (station number)

- Where the public and private volumes are stored (disk server disk)

- Which station is the Public Volume Manager station (after you give write access to a remote station)

    Use the "Change Public Volume Write Access" on page 3-9 to give the Public Volume Manager station write access to the public volume. Then return here and continue.

- Press the Esc key to return to the Disk Configurator Main Menu.

- Select Item 9 to end the Disk Configurator program. This procedure is always used to leave the program.

    Note: You should always backup the disk server station index after ending the Disk Configurator program. Use the DOS COPY command to copy DSERVER.TAB to the Disk Server Station System Files diskette. This provides you with a current backup if the disk server station index is destroyed.

What you do next depends on the types of stations in the cluster.

If there is a diskless station in the cluster, or if you want to put the internal use files in a stations private volume, do the procedure "Receiving Messages on The Private Volume" on page 2-42. If neither situation exists, do the procedure "Checking Out the Cluster."

Checking Out the Cluster

Check out the link by doing a local system reset and by bringing up the Information Transfer program at each station on the link.

> **Note:** If you are adding stations to an existing cluster, you can check those stations out after the cluster is returned to normal operation.

Start the Information Transfer program at the disk server station. Use the following procedure.

1. Reload DOS at this station (system reset) from the fixed disk.

   This ensures that the public volume drive is active.

   When C> is displayed:

2. Type **it disk**

3. Press Enter ◄─┘ .

4. Select Item 6 from the Information Transfer Main Menu.

5. Press Enter ◄─┘ .

6. Select Item 1 from the option screen to change drive access.

7. Press Enter ◄─┘ .

8. Select Item 2 (read access) or 4 (read/write access) for each drive at the disk server station.

The Public Volume Manager program can now use the drives at the disk server station.

9. Press the Esc key twice to return to the Information Transfer Main Menu.

10. You must carry out this procedure at each station on the link.

To get the station on the link, use the following procedure.

> **Note:** If the station does a local system reset, make sure a remote station system program diskette is in drive A of that station.

1. Load DOS at this station (system reset).

   When **A>** is displayed:

2. Type **IT**

3. Press Enter ←─┘ .

Broadcast a message from the disk server station. Check to see if all stations receive it.

You have completed the installation of the IBM Personal Computer Cluster programs.

Have the cluster manager add the application programs to the public volume at this time, using the Public Volume Manager program.

Receiving Messages on The Private Volume

Use this procedure to support diskless stations in the cluster that use Information Transfer or to put the internal use files (MSG.SYS and TBL.SYS) of any station in that station's private volume.

> **Note:** This procedure will not work without a remote system reset volume. If this volume does not exist, use DOS to copy MSG.SYS and TBL.SYS to the private volumes or create a remote system reset volume.

Activate the link at the disk server station:

1. Type **it disk** at the disk server station.

2. Press Enter ◄┘.

Diskless Stations

Diskless stations that use the Information Transfer program must copy MSG.SYS and TBL.SYS to their private volume. To do this, some extra steps are needed.

> **Note:** You must make a disk server station entry and create a private volume for each diskless station in the cluster before doing the steps.

The following steps are required for each diskless station that uses the Information Transfer program.

1. Do a remote system reset at the diskless station.

2. Copy the work files (MSG.SYS and TBL.SYS) to the station's private volume.

   Use **REMCOPY** to do this (REMCOPY is a batch file on the remote system reset volume.)

3. Type **remcopy** x (X is the drive letter for the private volume for this station.)

   Note: The drive letter is always **D** for a diskless station.

4. Press Enter ←┘

After you have done this procedure at each diskless station either go to "Checking Out the Cluster" on page 2-40 or continue with the next procedure if you have stations with diskette drives that want their messages sent to their private volume.

Stations with a Diskette Drive

Stations with diskette drives can have messages sent to their private volume instead of their diskette drive.

When the internal use files are on a station's private volume and on the station's operational diskette, the messages will always go to the diskette. To change the routing to the private volume you must use **IT** to change the internal use files drive access to reflect the drive letter of the private volume.

Use the following procedure to copy the work files (MSG.SYS and TBL.SYS). to the station's private volume.

1. Use the drive lettering charts in Appendix D to determine the drive letter designation for this station's private volume and the remote system reset volume.

    Change the default drive to the letter of the remote system reset volume.

2. Type *y:* (Y is the letter of the remote system reset volume).

3. Press Enter ◄┘ .

4. Type **remcopy** *x* (X is the drive letter for the private volume for this station.)

5. Press Enter ◄┘ .

The work files (MSG.SYS and TBL.SYS) are now in the station's private volume.

Chapter 3. Disk Configurator Maintenance Procedures

Contents

Notes:

The following procedures are used by the cluster manager or the installation manager to maintain the volumes on the fixed disk. You must first erase the existing public volume before creating a new one. You should back it up before you erase it. This backup can be done with the DOS COPY command (copy *.*) from the public volume drive at the disk server station to a diskette drive at the disk server station. Backup files can then be copied to the public volume using the Public Volume Manager program.

Changing the Public Volume Size

The following steps are required if you are changing the size of the public volume.

1. Make sure the link is not active and that the station is under control of DOS.

2. Make sure the default drive is C (C>).

3. Type DC.

4. Press Enter ◄┘ .

   The logo screen appears.

5. After typing the information on the logo screen, press Enter ◄┘ .

   The configurator program displays the following screen.

```
┌─────────────────────────────────────────────────────────────┐
│                                                              │
│              Disk Configurator Main Menu          10-100     │
│         Item                                                 │
│                                                              │
│           1   Display or edit the disk server station index  │
│           2   Change public volume write access              │
│           3   Erase the public volume                        │
│           4   Create the remote system reset volume          │
│           5   Erase the remote system reset volume           │
│           6   Display the disk server station status         │
│                                                              │
│           9   End the Disk Configurator program              │
│                                                              │
│         Select an item number: [ ]                           │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│                                                              │
│    F1=Help                                                   │
│                                                              │
└─────────────────────────────────────────────────────────────┘
```

You cannot create the public volume from this
screen.

6. Select Item 3 from the Disk Configurator Main
   Menu.

7. Press Enter ◀┘.

When the next screen appears, type **1** to erase the
public volume.

```
WARNING: If you continue, the data on
the public volume will be destroyed.
Before you erase the public volume, you
should copy any files you wish to save.

You should only erase the public volume if
you need to create a smaller or larger
public volume, if you no longer need this
station to be the disk server station, or
if you want to change fixed disks for
the disk server.

Stations owning a private volume cannot
access their private volume until the
public volume is recreated.

  Destroy data on public volume: [ ]
               1 - Yes
               2 - No
```

                                              Esc=Return

8. Press Enter ◄┘ .

   The message "The public volume has been erased"
   appears on the screen when the volume is erased.

9. Press the Esc key to return to the Disk Configurator
   Main Menu.

10. Select Item 9 to end the Disk Configurator
    program.

11. Press Enter ◄┘ .

    You should always backup the file called
    DSERVER.TAB (disk server station index) after
    ending the Disk Configurator program.

Copy this file to the Disk Server Station System
Files diskette using the DOS COPY command.

Follow the steps under "Creating the Public Volume"
on page 2-23.

Erasing the Remote System Reset Volume

The remote system reset volume should be erased if you
want to add or change applications on that volume or if
you no longer need to use it.

1. Select Item 5 from the Disk Configurator Main
   Menu.

2. Press Enter ◄┘ .

   The Disk Configurator program displays the Erase
   the Remote System Reset Volume screen.

   The screen has all the necessary information for
   completing the erase function.

   When the the volume has been erased, the message
   "The remote system reset volume has been erased"
   appears on the screen.

3. Press the Esc key to return to the Disk Configurator
   Main Menu.

4. Select Item 9 to end the Disk Configurator program.

5. Press Enter ◄┘ .

Erase the Public Volume

Erase the public volume (1) if you need to change the size of the public volume; (2) if you no longer need this station to be the disk server station; or (3) if you want to move the public volume to another station.

Back up the public volume before you erase it using the following steps:

1. Find the drive letter of the public volume, using the drive letter charts in appendix D.

2. Do a DIR on the public volume drive to verify that the volume label says PUBLIC.

3. Back up the public volume by using the DOS COPY command to copy the Public volume files to diskettes or a fixed disk.

To erase the public volume, use the following steps.

1. Press the Esc key to display the Disk Configurator Main Menu.

2. Select Item 3 and press Enter ◄┘ .

   The configurator program displays the Erase the Public Volume screen.

   The screen has all the necessary information for completing the erase function.

   If the fixed disk is changed for the disk server station, the private volumes must be recreated.

   When the next screen appears, type 1 to erase the public volume.

3. Press Enter ◄┘.

The message "The public volume has been erased" appears on the screen when the volume is erased.

4. Press the Esc key to return to the Disk Configurator Main Menu.

> Note: You must end the Disk Configurator program and restart it if you want to create another public volume.

5. Select Item 9 to end the Disk Configurator program.

6. Press Enter ◄┘.

Follow the steps under "Creating the Public Volume" on page 2-23.

Change Public Volume Write Access

The remote station that is designated as the public volume manager station, must have write access to the public volume. If you change the *status* of the Public Volume Manager in any way after giving it write access to the public volume, you will must change the write access to use the Public Volume Manager program.

Status changes are required for:

- Changing that station's number

- Removing that station from the index

- Erasing that station's private volume

To change the public volume write access:

1. Select item 2 from the Disk Configurator Main Menu.

    The Disk Configurator program displays the Change Public Volume Write Access screen.

2. Press the F1 key.

    You are guided through the procedures by the help information.

3. Press the Esc key to return to the Disk Configurator Main Menu.

Remove an Entry from the Disk Server Station Index

When a station no longer requires use of the fixed disk, it can be removed from the disk server station index using this procedure.

If the station has a diskette drive , the Information Transfer program can still be used.

If the station owns a private volume, the volume is erased.

To remove an entry from the station index:

1. Select Item 1 from the Disk Configurator Main Menu.

   The configurator program displays the Display or Edit the Disk Server Station Index screen.

2. Select Item 4 to display the Remove an Entry from Disk Server Station Index screen.

3. Press the F1 key and follow the directions on the screen.

4. Press the Esc key twice to return to the Disk Configurator Main Menu.

Change an Entry in the Disk Server Station Index

1. Press the Esc key to display the Disk Configurator Main Menu.

2. Select Item 1 to display the Display or Edit the Disk Server Station Index screen.

3. Select item 3 to display the Change an Entry in the Disk Server Station Index screen.

From this screen you can change a station's name or number, create a private volume, or erase a private volume.

Change a Station Name

Do the steps listed under "Change an Entry in the Disk Server Station Index" first, then:

1. Select Item 1 from the Change an Entry in the Disk Server Station Index screen, to display the Change Station Name screen.

2. Press the F1 key for the help message.

3. Follow the directions on the screen.

4. Press the Esc key twice to return to the Disk Configurator Main Menu.

Change a Station Number

Changing a station's number can be very useful. You can have an operator move to another station in the event something goes wrong at their station and not have them lose access to their private files.

If the number of the station that the operator is moving to is in the disk server station index, you must:

1. Write down the original number of the station to which the operator is moving.

   for illustration let us say the operator is moving from station 13 to station 45. You would write down 45.

2. Change the original station number to a number that does not exist in the disk server station index or the cluster.

   By displaying the disk server station index you can determine if a number is already in the index and by looking over the hardware map you can determine if the number exists in the cluster.

   For illustration let us say the number 50 does not exist in either the cluster or the disk server station index.

   You would change the original number (45) to 50.

3. Now change the number of the of the station from which the operator is moving (13) to the original number of the station to which the operator is moving(45).

The operator is able to continue working. (The private volume is still owned by the original station number).

If the station the operator is moving to is not in the disk server station index, you need only change the number of the station to which the operator is moving, to the number of the station from which the operator will move.

To change a station's number use the following procedure.

1. Do the steps listed under "Change an Entry in the Disk Server Station Index" on page 3-11 first, then:

2. Select Item 2 from the Change an Entry in the Disk Server Station Index screen, to display the Change Station Number screen.

3. Press the F1 key for the help message.

Create a Private Volume

You can create private volumes for stations that do not own one. If it is necessary to create a private volume for an existing station entry:

Do the steps listed under "Change an Entry in the Disk Server Station Index" on page 3-11 first, then:

1. Select Item 3 from the Change an Entry in the Disk Server Station Index menu.

2. Press Enter ↵.

    The Disk Configurator program displays the Create a Private Volume screen.

3. Press the F1 key for the help information and follow the directions on the screen.

    Status messages appear as the function progresses.

4. When the operation is complete press the Esc key three times to return to the Disk Configurator Main Menu.

    Note: If the operation fails, an error message appears on the screen. Look it up in Appendix A and do the required action.

Erase a Private Volume

Just as a private volume can be created for a station, a private volume can be erased.

1. Select Item 1 from the Disk Configurator Main Menu.

2. Press Enter ◄┘.

3. Select Item 3 from the Display or Edit the Disk Server Station Station screen.

4. Press Enter ◄┘.

5. Select Item 4 from the Change an Entry in the Disk Server Station Index screen.

6. Press Enter ◄┘.

7. Press the F1 key to see the help information.

    The help information tells you how to enter the station name or number.

    Status messages appear as the function progresses.

    You also are instructed to copy any files you want to save.

8. When the operation is complete press the Esc key three times to return to the Disk Configurator Main Menu.

    Note: If the operation fails, an error message is displayed. Look it up in Appendix A and do the required action.

Ending the Disk Configurator Program

Use this procedure to leave the configurator program.

You should always backup the disk server station index
after ending the Disk Configurator program for the
final time. Use the DOS COPY command to copy the
DSERVER.TAB file to the Disk Server Station System
Files diskette.

This ensures that you have a current backup if the disk
server station index is destroyed.

1. Press the Esc key to return to the Disk Configurator
   Main Menu.

2. Select Item 9 to end the Disk Configurator program.

3. Press Enter ◄┘ .

Appendixes

Contents

Notes:

Appendix A. Error Messages

The IBM Personal Computer Cluster Program error messages are listed in alphabetic order.

Cannot write to public volume

Cause: You tried to write to the public volume and you do not have write access.

Action: Ask the cluster manager to use the Public Volume Manager program to copy files to the public volume.

Cannot write to the remote system reset volume

Cause: You tried to write to the remote system reset volume and you do not have write access.

Action: If you want to add files to the remote system reset volume, have the cluster manager add the files to the diskette labeled "For Remote System Reset Volume Creation." Then the volume must be erased and created again with the Disk Configurator program. If the files are not used for remote system reset, put them on the public volume.

Cluster adapter failed

Cause: A hardware problem occurred while trying to access the link.

Action: Follow the steps in the "Problem Determination Procedures" section in the *Guide to Operations* to identify and correct the problem.

Cluster adapter missing

Cause: This station does not have a Cluster adapter card.

Action: Install an adapter card or contact the installation manager.

Directory is full

Cause: The directory does not have enough room for a file.

Action: Run CHKDSK to determine if the directory is full or if some other condition caused the error. Erase any unnecessary files to make room for the file or place it in a different directory.

Disk failure on the disk server disk

Cause: A hardware problem occurred when you tried to validate the disk server disk drive to create the public volume.

Action: Follow the steps in the "Problem Determination Procedures" section in the *Guide to Operations* to identify and correct the hardware problem.

Disk server drive is not a fixed disk

Cause: You tried to create a public or private volume on a drive that is not a fixed disk.

Action: If the drive you selected is not a fixed disk, select the fixed disk drive. If this is a fixed disk drive, contact your IBM Personal Computer dealer.

Disk server station does not respond

Cause: Your station did not receive a response from the disk server station for one of the following reasons: (1) The disk server station is powered off; (2) The Public Volume Manager program is being used; or (3) The disk server station is busy.

Action: Verify that the disk server station is on the link and that the Public Volume Manager is not being used. Retry the operation.

Disk server station index file could not be loaded

Cause: You tried to access the disk server station index file, DSERVER.TAB, but the file cannot be read. Either the drive is not ready or the diskette has been damaged.

Action: Make sure the drive is ready. Copy DSERVER.TAB from the current backup diskette and try again.

Disk server station index file not found

Cause: The disk server station index file, DSERVER.TAB, could not be found on the disk server disk drive. If public or private volumes do not exist, the disk server station index is not in any drive on the link.

Action: Copy the current backup of the disk server station index, DSERVER.TAB, to the disk server disk. Reload the Disk Configurator program. If you do not have a current backup of DSERVER.TAB, see Appendix B in the *Disk Server Guide* for a description of DSE.

Disk server station is busy

Cause: The activity at the disk server station has temporarily exceeded the capacity.

Action: Try the function later.

Disk write protected

Cause: You tried to write to a diskette that is write-protected.

Action: Make sure you are using the correct diskette. If you are using the correct diskette, remove the write-protect tab and retry the operation.

Drive access denied

Cause: The drive access at the remote station will not allow you to read or write to it, depending upon your request. Remember, the default is no access.

Action: Ask the station operator to use the Information Transfer program to change the drive access.

Drive not ready

Cause: The diskette containing your file is in a drive that is not ready.

Action: Make sure the disk drive door is closed and retry the operation.

Duplicate station

Cause: The new station name or number you specified already exists in the station index or two stations have the address switches set to the same number.

Action: Press F10 to display the current names and numbers in the station index. Select a unique entry and retry the operation. If you still experience the problem, follow the steps in the "Problem Determination Procedures" section in the *Guide to Operations*.

Duplicate volume

Cause: You have non-disk server files on the disk server disk with reserved file names.

Action: Rename, move, or erase any non-disk server files on the disk server disk that have reserved file names. The reserved filenames are PCLPUB.VOL for the public volume, RMTIPL.VOL for remote system reset volume, and \PCLINK.PVT\PCLPVT.V## for private volumes. If you cannot erase a volume using the DOS Erase command, see Appendix B in the *Disk Server Guide* for a description of DSE.

ERROR 9999

Cause: PLLSCR.COM cannot be accessed because: (1) it is not on the DOS default drive; (2) it is not in the root directory; (3) your system does not have enough memory for the file; or (4) you are using DOS Version 1.0 or 1.1.

Action: Copy PLLSCR.COM to a DOS 2.1 formatted diskette. Make sure it is in the root directory on the DOS default drive.

File already exists at the remote station

Cause: You are trying to send a file that already exists at the remote station with the drive and path you specified.

Action: Specify another filename or path.

File creation error

Cause: The file you are copying or creating already exists as a read-only file or you tried to add a file to the root directory and the root is full.

Action: Use the DOS DIR command to see if the directory or file already exists in the directory you specified. Use CHKDSK to see if your directory is full.

File not found

Cause: You specified a file that does not exist.

Action: Retry the operation with the correct path and filename. If the filename is correct, verify that the diskette is in the correct drive and the drive letter is assigned to the correct volume.

Input required for this field

Cause: The cursor is positioned at a field where you must enter information.

Action: Type the required information in this field and press Enter ◄┘.

Insufficient disk space

Cause: You are trying to get or send a file, but the disk does not have enough room to receive it.

Action: Specify another drive and/or path. Erase any unnecessary files or insert another diskette.

Insufficient disk space for the station index

Cause: The disk server disk has too many files or the public volume is too large.

Action: Erase or move files from the disk server disk or decrease the size of the public volume.

Insufficient disk space for the volume

Cause: You specified a volume size that is larger than than the amount of 34K byte blocks available on the disk server disk or, you specified a diskette drive instead of a fixed disk drive.

Action: Display the disk server station status to find out the available size for the volume. Erase any unnecessary files on the disk server disk. Make sure you specify a fixed disk drive.

Insufficient disk space in private volume

Cause: You are trying to copy a file to the private volume and you don't have enough space.

Action: Erase any unnecessary files in the private volume or increase the size.

Insufficient disk space on internal use files drive

Cause: You specified a disk that does not have enough space for the internal use files. This may occur when you are reading a station's file directory.

Action: Erase any unnecessary messages from your message file and free the erased message space to make room on the disk. If the error still occurs, end the Information Transfer program and erase any unnecessary files on the disk.

When you are reading a station's file directory, you can put a blank diskette into your internal use files drive. If your internal use files are on a private volume, contact the cluster manager to increase the size of your volume.

Insufficient space in the public volume

Cause: The public volume is too small for the file you are trying to copy.

Action: Erase any unnecessary files in the public volume or increase the size of the public volume.

Insufficient space on the public volume for system files

Cause: The public volume is too small to contain all of the files on your diskette in drive A.

Action: Specify a greater number of 34K byte blocks for the public volume and retry the operation.

Internal use files read or write error

Cause: Information Transfer cannot access the files on the internal use files disk.

Action: If the disk is not write- protected, it is damaged. Run CHKDSK, copy the internal use files from your backup copy, and retry the operation.

Internal use files disk write protected

Cause: Information Transfer tried to write to the internal use files disk, which is write-protected.

Action: Make sure you are using the correct disk. If so, remove the write-protect tab and try again.

Internal use files drive not ready

Cause: The drive door for the internal use files is open or a diskette is not in the drive.

Action: Close the drive door, place the correct diskette in the drive and retry the operation or, change the internal use files drive.

Internal use files may not be copied to the public volume

Cause: You are trying to copy the internal use files to the public volume.

Action: MSG.SYS and TBL.SYS cannot be copied to the public volume.

Internal use files not found

Cause: MSG.SYS and TBL.SYS were not found in the drive you specified as the internal use files drive or they are not together in the root directory.

Action: Move these files to the drive you specified. Make sure they are together in the root directory and retry the operation.

Invalid date

Cause: The date you typed is not valid.

Action: Retry the operation with a valid date.

Invalid DISK parameter

Cause: The link is active and you specified the incorrect Information Transfer parameter.

Action: When the link is active and you initialize Information Transfer again, you must enter it the same way (either IT or IT DISK).

Invalid disk server station index found

Cause: The station index, DSERVER.TAB, contains information that is not valid or one of your diskette drives is assigned to the fixed disk.

Action: Make sure the drive letters are assigned correctly. Copy the current backup of the disk server station index, DSERVER.TAB, to the disk server disk. Reload the Disk Configurator program. If you do not have a current backup of DSERVER.TAB, see Appendix B in the *Disk Server Guide* for a description of DSE.

Invalid DOS version system diskette

Cause: The diskette containing the system files you are copying to the public volume or to the remote system reset volume is DOS Version 1.0 or 1.1.

Action: Put a DOS Version 2.1 diskette containing the system files into drive A and retry the operation.

Invalid drive

Cause: You specified a drive that: (1) is not between A and Z, (2) does not exist, or (3) you attempted to assign drive access to the public volume or remote system reset volume drives.

Action: Specify a valid drive and retry the operation.

Invalid drive specification

Cause: You entered a DOS command to access the public volume, the remote system reset volume, or your private volume, but the volumes do not exist.

Action: Check your system reset drive for the CONFIG.SYS file. This file must specify DRIVE=RIODRV.COM. Check to see if the cluster manager is using the Public Volume Manager program. Verify that the link has been activated from the disk server station.

Invalid filename

Cause: One or more characters you entered for the filename is not a valid filename character.

Action: Check the spelling of the filename you entered. Refer to your DOS manual for valid filename characters. Retry the operation.

Invalid path

Cause: You tried to remove the current or root directory path on the public volume.

Action: Use DOS to change the current directory for the public volume. Then, restart the Public Volume Manager program and erase the directory you changed. You cannot remove the root directory.

Invalid private volume size

Cause: You entered zero for the private volume size.

Action: Specify a one or a higher number for the private volume size and retry the operation. Use the disk server station status to help you determine the correct size of the private volume.

Invalid public volume size

Cause: You specified a public volume size less than two 34K byte blocks.

Action: Specify two or more 34K byte blocks for the public volume size and retry the operation.

Invalid station

Cause: (1) The station number you specified is greater than 63; (2) The name begins with a number; (3) The entry does not exist in the station index; or (4) You are trying to get or send a file or message to your own station.

Action: Check the station index for the correct entry and retry the operation.

Invalid time

Cause: The time you entered is not valid.

Action: Enter a valid time between 00:00 and 23:59.

Link initialization failed

Cause: The cluster adapter card failed to initialize.

Action: Follow the steps in the "Problem Determination Procedures" section in the *Guide to Operations* to identify and correct the problem.

Link is busy

Cause: The activity on the link has temporarily exceeded the capacity.

Action: Try the function later.

Link is not active

Cause: You ended the Information Transfer program and did not keep the link active to receive messages and files.

Action: Load the Information Transfer program from the disk server station. End the session and specify **1** (Yes) to continue message and file transfer.

Link should not be active

Cause: You ended the Information Transfer program and kept the link active when you ended it.

Action: Load the Information Transfer program from the disk server station. End the session and specify **2** (No) to deactivate the link.

Message file cannot be copied

Cause: You are trying to get or send the file, MSG.SYS.

Action: Do not specify MSG.SYS. This file cannot be sent to or copied from another station.

Message file not found

Cause: MSG.SYS is not in the internal use files drive.

Action: Move MSG.SYS to the drive you specified or use Information Transfer to change the internal use files drive.

Message log file not found

Cause: TBL.SYS is not in the drive you specified.

Action: Move TBL.SYS to the drive you specified or use Information Transfer to change the internal use files drive.

Path not found

Cause: DOS was unable to find the directory path you specified.

Action: Refer to your *DOS Reference* manual for a complete description of the path structure. Specify the correct path and retry the operation.

Private volume has been erased

Cause: The disk server station index shows that the station owns a private volume, but it cannot be found on the disk server disk.

Action: Notify the owner of the private volume. Use the Disk Configurator program to erase the private volume information from the disk server station index and create the private volume again.

Program files could not be loaded

Cause: You are trying to access the Information Transfer program from your station. Either the drive is not ready or the disk has been damaged.

Action: Make sure that the drive is ready. If the drive is ready, run CHKDSK and copy the program files from your backup copy and retry the operation. The following files must be in the root directory: IT.COM, PCMDP.COM or PCMDISK.COM, PDT.COM, and PLLSCR.COM.

Program files not found

Cause: The program files were not found in the root directory on the DOS default drive.

Action: Put the program files in the correct drive or copy them to the DOS default drive. The following files must be in the root directory of the default drive: IT.COM, PCMDP.COM, PCMDISK.COM, PDT.COM, and PLLSCR.COM.

Program too big to fit into memory

Cause: The program is larger than your available unused memory.

Action: Your system does not have enough unused memory to execute the command. Erase any unnecessary files.

Public directory is not empty

Cause: You tried to remove a sub-directory that still contains entries for files or other sub-directories.

Action: You cannot remove a directory unless it is empty and you cannot remove a current directory. Contact the cluster manager.

Public file is read only

Cause: You tried to erase a read-only file from the public volume.

Action: You cannot erase a file from the public volume. Contact the cluster manager.

Public file or path creation error

Cause: The file or directory you are copying or creating already exists as a read-only file or in a path on the public volume. Or you tried to add a directory or file to the root directory on the public volume and it is full.

Action: Use the DOS DIR command to see if the directory or file already exists in the directory you specified. Use CHKDSK to see if your directory is full.

Public/private volume device driver is not loaded

Cause: This station does not have a public or private volume device driver installed.

Action: Specify DEVICE=RIODRV.COM in the configuration file (CONFIG.SYS). Make sure CONFIG.SYS and RIODRV.COM are on the same diskette. Use the Disk Configurator to create the public volume and a private volume for this station. Restart DOS.

Public/private volume device driver should not be active

Cause: The problem occurred when you restarted DOS. You either had the remote system reset switch on or you had a CONFIG.SYS file in the system drive (drive A) that contained the parameter DEVICE=RIODRV.COM.

Action: Turn off the remote system reset switch and put a DOS 2.1 or later system diskette into drive A. Be sure that the system diskette does not have a CONFIG.SYS file with DEVICE=RIODRV.SYS. Restart DOS at the disk server station again.

Public volume does not exist

Cause: A public volume does not exist.

Action: Restart DOS. Use the Disk Configurator program to create the public volume.

Read or write error

Cause: This is a media error which usually means that the diskette is damaged and must be reformatted or discarded.

Action: Run CHKDSK to determine the error.

Read or write error at disk server station

Cause: This is a media error which usually means that the diskette is damaged and must either be reformatted or discarded.

Action: Run CHKDSK to determine the error.

Read or write error with non-DOS diskette

Cause: You are trying to access a file with a disk that has not been formatted properly.

Action: Reformat the disk with DOS Version 2.1.

Remote station does not respond

Cause: You are trying to get or send a file or message and the station does not respond or the alternate station does not respond.

Action: Ask the station operator to activate Information Transfer. You cannot specify your own station.

Remote station is busy

Cause: You are trying to get or send a file or message and the activity at the station has temporarily exceeded the capacity.

Action: Retry the operation.

Remote station's drive not ready

Cause: You are trying to get or send a file or
message. Either the drive is not ready or
the diskette is not inserted correctly.

Action: Contact the station you are trying to access.
Make sure the drive door is closed and the
diskette is properly inserted.

Remote station's message file not found

Cause: You are trying to send a message, but the
message file, MSG.SYS, could not be found.
The message is not sent.

Action: Make sure the file named MSG.SYS is in
the station's internal use files drive. Retry
the operation.

Remote station's private volume has been erased

Cause: You are trying to get or send a file to a
private volume and it has been erased.

Action: Notify the owner of the private volume that
it has been erased. Use the Disk
Configurator program to create the private
volume again.

Remote system reset files not found

Cause: The Disk Configurator program tried to copy the remote system reset files to the remote system reset volume, but they were not on the diskette in drive A. The remote system reset files required are CONFIG.SYS and @#CLUSTR.COM.

Action: Make sure the corrrect diskette is in the drive. Retry the operation.

Remote system reset volume has been erased

Cause: The disk server station index shows that the remote system reset volume exists, but it cannot be found on the disk server disk.

Action: Notify the cluster manager. Use the Disk Configurator program to erase the remote system reset volume information from the disk server station index and create the volume again.

Screen text file not found

Cause: The file, PLLSCR.COM, was not found in the root directory on the DOS default drive.

Action: Insert the program diskette with PLLSCR.COM and retry the operation.

Screen text file drive not ready

Cause: The DOS default drive is not ready.

Action: Make sure the disk drive door is closed.
Retry the operation.

Start date greater than end date

Cause: The end date must be after the start date.

Action: Enter the correct dates.

Start time greater than end time

Cause: The end time must be after the start time.

Action: Enter the correct times.

Station index file could not be loaded

Cause: The station index file, TBL.SYS, could not
be accessed because the drive is not ready
or the disk has been damaged.

Action: Make sure that the drive is ready. If it is,
run CHKDSK, copy TBL.SYS from your
backup diskette, and retry the operation.

System files required

Cause: The Disk Configurator program tried to copy the system files to the remote system reset volume, but they were not on the diskette in drive A. The system files are: COMMAND.COM, CONFIG.SYS, IBMBIOS.COM, IBMDOS.COM, and RIODRV.COM.

Action: Make sure you have the correct diskette in the drive. Retry the operation.

This station does not own a private volume

Cause: The station you specified does not have a private volume.

Action: Use the disk configurator to create a private volume for the station, if the station needs and wants one.

Too many files are opened

Cause: Too many files are open at this station.

Action: Increase the number in the FILES= command in the configuration file (CONFIG.SYS). The default is 8 at remote stations and 30 at the disk server. Usually the defaults are sufficient. Restart DOS.

Too many files are opened on the remote station

Cause: Too many files are open at the remote station.

Action: Increase the number in the FILES= command in the configuration file (CONFIG.SYS). The default is 8; usually the defaults are sufficient. Restart DOS.

Unsupported station number

Cause: Your hardware switches are set to a number greater than 63.

Action: Follow the steps in the "Problem Determination Procedures" section in the *Guide to Operations* to identify and correct the problem.

Volume manager cannot run on this station

Cause: You are trying to use the Public Volume Manager program from a station that does not have public volume write access.

Action: The Public Volume Manager program can only be used from a station that has been given write access by the Disk Configurator program. Contact the cluster manager to use the Public Volume Manager program.

Wrong configuration file

Cause: The CONFIG.SYS file on the remote system reset volume did not have the first entry set to DEVICE=@#CLUSTR.COM.

Action: Make sure the correct diskette is in the drive where the first CONFIG.SYS parameter is DEVICE=@#CLUSTR.COM.

Wrong device driver

Cause: The device driver @#CLUSTR.COM is not the same one that was on the Cluster Program diskette.

Action: Copy @#CLUSTR.COM from the Cluster Program diskette onto the "Remote system reset volume" diskette and rerun the Disk Configurator program to create a remote system reset volume.

Notes:

Appendix B. Disk Server Erase (DSE) Program

If one of the following error messages is displayed on the screen, you may have a private volume that is not in the disk server station index.

1. Invalid disk server station index found
2. Disk server station index file not found
3. Duplicate volume

Usually these messages require you to reformat the fixed disk and reconfigure the disk with the Disk Configurator program.

The Disk Server Erase (DSE) program provides an alternate solution to the problem.

Causes for the Error Messages

If you did a system reset when you were creating the public volume or did not end the Disk Configurator program by selecting Item 9 from the main menu, the disk server station index may be invalid because it was not updated and written to the disk server disk.

The current station index will not show the existence of a public volume.

You must erase the public volume before you can use the Disk Configurator program again.

If you did a system reset during the creation of private or did not end the Disk Configurator program by selecting Item 9 from the main menu, the station index will be invalid for the same reasons stated above. You may need to erase these private volumes before using the Disk Configurator program again.

You may see the message **Duplicate volume** when you try to recreate those volumes. You are trying to recreate those volumes because when you displayed the station index the volumes were not there.

If you erased the public volume and did not create any private volumes the last time you used the Disk Configurator program, when you see the message **Invalid disk server station index found**, you have to erase all the private volumes and the station index. Reconfigure the fixed disk starting at the beginning of "Creating the Public Volume" on page 2-23.

If you erased the public volume and created some private volumes, you may see the message **Invalid disk server station index found**. You may need to erase the private volumes you created.

If you see **Disk server station index not found,** you have two choices: (1) If you have a valid back-up copy of the disk server station index (DSERVER.TAB), copy it to the public volume, or (2) If you do not, you must erase the public volume, all the private volumes, and the disk server station index.

If you see the message **Duplicate volume** while trying to create a private volume, public volume, or adding an entry to the station index, you only need to erase the volume you are trying to create or remove the entry you are trying to make.

How to Use DSE

DSE.COM was copied to the fixed disk when the Cluster programs were installed.

To erase the public volume:

- Type **dse public**

To erase all the private volumes:

- Type **dse privates**

To erase a specific private volume:

- Type **DSE PRIVATEXX** where **XX** is the number of the station owning the private volume.

For example:

```
C>dse private02 erases the private volume for station 02.
C>dse private04 erases the private volume for station 04
```

To erase all volumes and the station index:

- Type **DSE**.

You must use the DSE program to erase volumes. Volumes are system hidden files, which cannot be erased using the DOS Erase command.

However, the station index (DSERVER.TAB) can be erased using the DOS Erase command.

To view the the volumes on the disk server disk:

- Type **Chkdsk/v**

The public volume name is \PCLPUB.VOL

B-4

The private volume name is
\PCLINK.PVT\PCLPVT.VXX where XX is a
private volume.

Notes:

Appendix C. Typical Disk Server Cluster

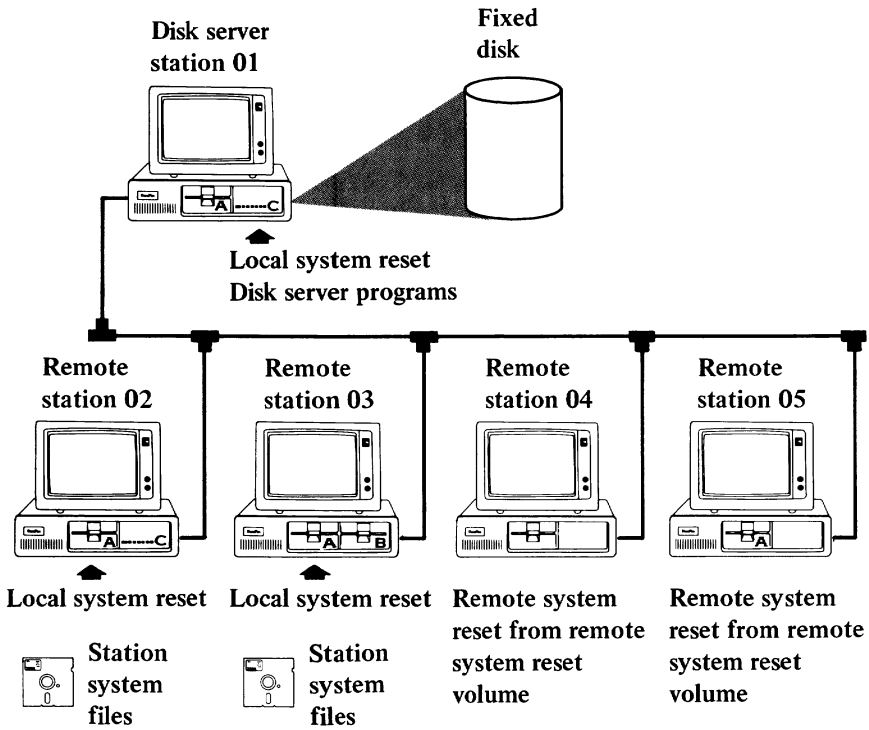The figure on the next page shows a typical disk server cluster with four stations.

Remote stations 01 and 02 do a local system reset from a diskette in drive A.

Remote stations 03 and 04 do a remote system reset from the remote system reset volume at the disk server station.

The disk server station does a local system reset from the unassigned area of the fixed disk.

The unassigned area of the disk is not used for the public or private volumes.

While clusters are generally small, they can contain up to 64 stations.

Disk server
station 01

Fixed
disk

Local system reset
Disk server programs

Remote
station 02

Remote
station 03

Remote
station 04

Remote
station 05

Local system reset   Local system reset   Remote system   Remote system
                                                reset from remote   reset from remote
                                                system reset   system reset
Station   Station   volume   volume
system   system
files   files

Appendix D. Disk Server Station Drive Lettering Chart

The charts on the following pages show the drive lettering within a disk server station cluster. The drive lettering is determined by the number of drives on your IBM Personal Computer and the type of system reset done at your station.

First determine:

- The type of system reset done at your station.

- The chart that applies to your station.

- The number and type of drives at your station.

Follow the row that matches your station.

You can determine the drive letters for your station, for the public volume, the remote system reset volume, and your station's private volume.

**Local system reset
(with remote system reset volume and without private volumes)

	Diskette #1	Diskette #2	Fixed disk #1	Fixed disk #2	Remote system reset volume	Public volume	Private volume
1 diskette drive 0 fixed disks	A/B	N/A	N/A	N/A	D	C	N/A
1 diskette drive 1 fixed disk	A/B	N/A	C	N/A	E	D	N/A
1 diskette drive 2 fixed disks	A/B	N/A	C	D	F	E	N/A
2 diskette drives 0 fixed disks	A	B	N/A	N/A	D	C	N/A
2 diskette drives 1 fixed disk	A	B	C	N/A	E	D	N/A
2 diskette drives 2 fixed disks	A	B	C	D	F	E	N/A

** System reset is from a disk or diskette at your station.

	Diskette #1	Diskette #2	Fixed disk #1	Fixed disk #2	Remote system reset volume	Public volume	Private volume
0 diskette drive 0 fixed disks	N/A	N/A	N/A	N/A	A/B	C	D
1 diskette drive 0 fixed disks	B	N/A	N/A	N/A	A	C	D
1 diskette drive 1 fixed disk	B	N/A	C	N/A	A	D	E
1 diskette drive 2 fixed disks	B	N/A	C	D	A	E	F
2 diskette drives 0 fixed disks	B	C	N/A	N/A	A	D	E
2 diskette drives 1 fixed disk	B	C	D	N/A	A	E	F
2 diskette drives 2 fixed disks	B	C	D	E	A	F	G

** System reset is from the remote system reset volume at the disk server.

**Local system reset
(with remote system reset volume and with private volumes)

	Diskette #1	Diskette #2	Fixed disk #1	Fixed disk #2	Remote system reset volume	Public volume	Private volume
1 diskette drive 0 fixed disks	A/B	N/A	N/A	N/A	E	C	D
1 diskette drive 1 fixed disk	A/B	N/A	C	N/A	F	D	E
1 diskette drive 2 fixed disks	A/B	N/A	C	D	G	E	F
2 diskette drives 0 fixed disks	A	B	N/A	N/A	E	C	D
2 diskette drives 1 fixed disk	A	B	C	N/A	F	D	E
2 diskette drives 2 fixed disks	A	B	C	D	G	E	F

** System reset is from a disk or diskette at your station.

D-4

**Local system reset
(no remote system reset volume and no private volumes)

	Diskette # 1	Diskette # 2	Fixed disk # 1	Fixed disk # 2	Remote system reset volume	Public volume	Private volume
1 diskette drive 0 fixed disks	A/B	N/A	N/A	N/A	N/A	C	N/A
1 diskette drive 1 fixed disk	A/B	N/A	C	N/A	N/A	D	N/A
1 diskette drive 2 fixed disks	A/B	N/A	C	D	N/A	E	N/A
2 diskette drives 0 fixed disks	A	B	N/A	N/A	N/A	C	N/A
2 diskette drives 1 fixed disk	A	B	C	N/A	N/A	D	N/A
2 diskette drives 2 fixed disks	A	B	C	D	N/A	E	N/A

** System reset is from a disk or diskette at your station.

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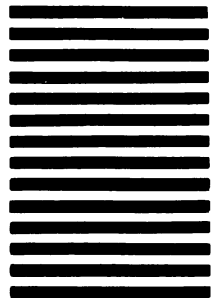continue to use the information you supply.

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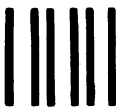
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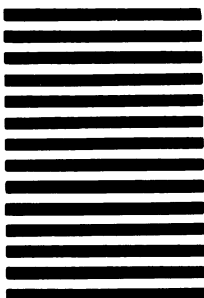authorized IBM Personal Computer dealer.

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