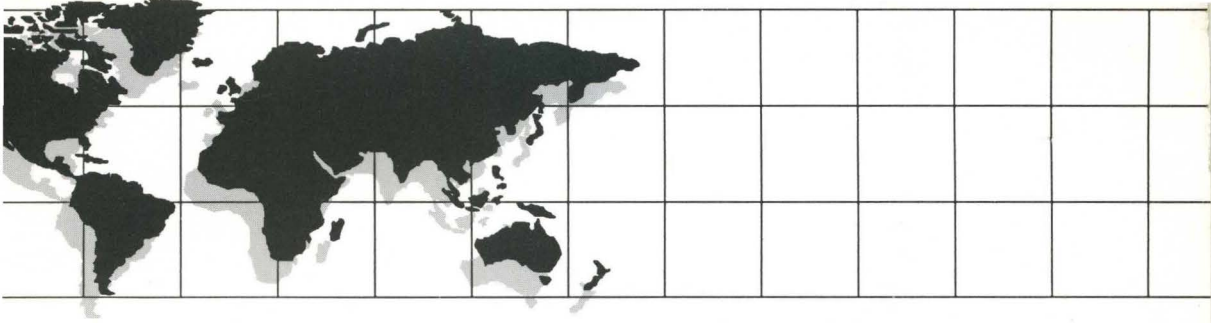

CTOS

CTOS/Vpc™

User's Guide

UNISYS

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Section 3. Setting Up CTOS for CTOS/Vpc

What's New in CTOS/Vpc

This version of CTOS/Vpc provides several new functions, such as support for dual floppy drives, automatic keyboard recognition, support for both XMS and upper memory blocks (UMB), and optimized video drivers for Windows 3.1. These items are documented in this guide.

For a complete list of the new functions provided by this version of CTOS/Vpc, see the *CTOS / Vpc Product Family Software Release Announcement*.

How This Guide Is Organized

This guide is divided into eight sections and three appendixes.

Section 1. Introduction

This section describes the relation of CTOS/Vpc to CTOS and the relation of CTOS/Vpc to the MS-DOS environment.

Section 2. Installing CTOS/Vpc

This section describes the various required and optional CTOS utilities you should install before installing CTOS/Vpc.

Section 3. Setting Up CTOS for CTOS/Vpc

This section tells you what you need to do to configure the CTOS environment so that it can support CTOS/Vpc. This section describes the *pc.sys* file (the CTOS/Vpc configuration file), and explains how to modify the *pc.sys* file to support your particular requirements.

Section 4. Starting a CTOS/Vpc Session

This section describes how to start a CTOS/Vpc session from the Executive, from the Context Manager, and from Presentation Manager. It also briefly describes what you need to do to run CTOS/Vpc from each of these environments.

Section 5. Setting Up the MS-DOS Environment

This section tells you how to configure the MS-DOS environment in CTOS/Vpc.

- The term *486 processor* refers to a workstation containing an 80486 Intel microprocessor. This includes the SuperGen Series 3000 and Series 5000 workstations.
- The term *Windows* refers to the Microsoft Windows product.

Conventions

The following conventions of style are used throughout this guide.

- Names of fields appear in italics, for example, *PSV File Name*.
- CTOS volume, directory, and file names appear in italics, for example, *[Sys]<Sys>*.
- MS-DOS file names appear in small uppercase type, for example, CONFIG.SYS.
- CTOS commands appear in boldface type, for example, **Editor**.
- MS-DOS commands appear in uppercase.
- Keycap names appear in uppercase boldface type, for example, **ALT**.
- Characters for you to type appear in boldface type, for example, **Yes**.

Where to Find More Information

The documents listed below provide more information about MS-DOS and CTOS related products.

MS-DOS Getting Started

This manual describes how to install MS-DOS and how to troubleshoot basic installation-related problems.

MS-DOS User's Guide and Reference

This guide provides comprehensive information about MS-DOS. It covers the various tasks you can complete using MS-DOS, such as file and disk management, and describes how to customize the MS-DOS environment. The manual also provides a reference section in which each of the various MS-DOS commands and utilities (in alphabetic order) are described in detail.

CTOS System Administration Guide

This procedural guide contains general information about hardware types and system software products. It provides detailed information about installing system services, user configuration files, formatting disks, backing up to tape, optimizing system performance, configuring operating systems, and troubleshooting common problems.

CTOS Editor User's Guide

This guide explains how to use the CTOS Editor, which is a text editor that can be started from the Executive command line. It tells how to edit a file with the Editor, and provides a list of shortcuts to simplify the editing process. The guide also provides a reference that lists all of the Editor commands.

CTOS/Vpc Product Family Software Release Announcement

This software release announcement provides information about the new functions provided by the current version of CTOS/Vpc, product interdependencies, product restrictions and limitations, installation instructions, and so on.

CTOS/Vpc: Translation Between MS-DOS and CTOS

On a PC, PC software carries out tasks by accessing PC resources such as disks, memory, video, and so on through MS-DOS or the PC ROM BIOS, both of which can access PC hardware resources.

However, under CTOS/Vpc, hardware resources are accessed differently. In a CTOS/Vpc session, CTOS/Vpc is a translator between the MS-DOS and CTOS environments. That is, CTOS/Vpc intercepts MS-DOS or ROM BIOS attempts to access hardware resources and issues the proper CTOS calls to carry out the desired task.

Thus, under CTOS/Vpc, PC software can access CTOS workstation hardware resources indirectly through CTOS/Vpc translation facilities.

CTOS/Vpc and the Pseudovolume

CTOS/Vpc uses a special CTOS file called a *pseudovolume*, which normally has the file extension *.psv*. A pseudovolume is a CTOS file that contains the MS-DOS file system; it serves as the hard disk for the MS-DOS environment.

The pseudovolume contains MS-DOS, PC software applications that you install, and any other files that are normally contained in a PC hard disk. MS-DOS treats the pseudovolume just like a hard disk on a PC: it can format the pseudovolume, search it for files, and so forth. (The files inside the pseudovolume, however, cannot be directly accessed by CTOS.) You can use up to 2 pseudovolumes for each CTOS/Vpc session.

For more information on pseudovolumes, see Section 7, "Working With Pseudovolumes."

Setting Up the MS-DOS Environment

In addition to setting up the CTOS environment, you must also set up your MS-DOS environment. To set up the MS-DOS environment, you need to

- Install the drivers from the CTOS/Vpc DOS driver diskette
- Install the PC software you want to use
- Install LANce/pc or LANce/LM DOS drivers (optional)
- Modify the MS-DOS CONFIG.SYS and AUTOEXEC.BAT files. You'll have to specify device drivers for special hardware such as a mouse or a CD-ROM drive. Some applications may also require special modifications to the CONFIG.SYS and AUTOEXEC.BAT files

See Section 5 for detailed information on setting up the MS-DOS environment.

CTOS/Vpc and PC Compatibility

CTOS/Vpc emulates the hardware environment of an IBM-PC/AT and provides software support to run most PC software. However, CTOS/Vpc doesn't provide 100% hardware compatibility. For example, although CTOS/Vpc does provide a parallel port for printing, the port is not bidirectional and therefore cannot be used by scanners, which require a bidirectional port. For a complete list of compatibility restrictions, see the *CTOS / Vpc Product Family Software Release Announcement.*

Starting CTOS/Vpc from CTOS

CTOS/Vpc is a CTOS application. Therefore it can be started just like any other CTOS application from a variety of environments. It can be started from the Executive, from the Context Manager, or from the Presentation Manager.

If you start CTOS/Vpc from Context Manager or Presentation Manager, you can switch back and forth from it to other applications. You can also have more than one CTOS/Vpc session running at the same time.

Hardware Requirements

To run the CTOS/Vpc software, your workstation must be equipped with an 80386 processor (or above). See the *CTOS/Vpc Product Family Software Release Announcement* (SRA) for further details about hardware requirements.

Software Requirements

See the *CTOS/Vpc Product Family Software Release Announcement* (SRA) for further details about software requirements, including detailed installation instructions, required levels of CTOS software, and a list of restrictions and limitations of the CTOS/Vpc product.

Using Sysinit.jcl to Install Mouse and CD-ROM

System services such as the Mouse Service or the CD-ROM Service must be installed in workstation memory after they are installed on a CTOS hard disk. Normally, these services are loaded into memory by the *Sysinit.jcl* file, which automatically loads them whenever the workstation is rebooted.

Note: *If you use a CD-ROM drive on the cluster server, you need only install the CD-ROM Service on the server; if you use a CD-ROM drive attached directly to your workstation, you must install the CD-ROM Service on your workstation.*

If your workstation does not have a *Sysinit.jcl* file, create one as described in the *CTOS System Administration Guide*. Then, using the CTOS **Editor** command, edit the file and add the following lines:

```
$Run [Sys]<Sys>Mouse.run

$Run [Sys]<Sys>CdRomService.run
```

If you do not wish to use the *Sysinit.jcl* file, you can install the mouse and CD-ROM services in workstation memory by issuing the proper command from the the Executive command line. To install the mouse service, you would give the command, **Install Mouse Service**; to install the CD-ROM service, you would use the command **Install CDROM Service**. However, if you load the services using this method, you must remember to load the services whenever you reboot your workstation.

Note: *Some CTOS system service software requires you to exit from the Context Manager before giving the command to install the software in workstation memory.*

For more information about system services and how to install them, see the *CTOS System Administration Guide*.

About the Pseudovolume Diskettes

The pseudovolume diskettes contain a small dynamically expandable pseudovolume, a pseudovolume that is initially 3M bytes to 4M bytes and that expands automatically whenever more disk space is required up to a maximum size of 20M bytes. This pseudovolume is bootable and contains MS-DOS.

You are not required to install a new pseudovolume if you have an existing bootable pseudovolume. However, if you use an older pseudovolume you must update the DOS version in the pseudovolume to DOS 5.0 or later. *For information about creating larger pseudovolumes, see Section 7.*

About the Windows Diskettes

The Windows diskettes contain a special version of Microsoft Windows that has been adapted to run under CTOS/Vpc. Other Windows versions do not run under CTOS/Vpc.

Naming the Pc.sys File

The name of the *pc.sys* file can vary, depending on the way you installed CTOS/Vpc using Installation Manager. If you supplied no user name when prompted during the installation, the file name will be simply *pc.sys*. If you did supply a user name when prompted, the file will have the user name in front: for example, if you entered *Nikki* as the user name, the file will be named *Nikkipc.sys*.

The Pc.sys File

When CTOS/Vpc is installed, the following default *pc.sys* file is copied to the CTOS volume and directory you specify (the default is *[sys]<sys>*):

```
:DriveA:[f0]
:DriveB:
:DriveC:[sys]<sys>PseudovolumeName.psv
:DriveCReadOnly?:No
:DriveD:
:DriveDReadOnly?:
:LPT1:[lpt]
:COM1:[comm]b
:GraphicsAdapter:None
:Keyboard Nationalization File:
```

You must modify this file as described below.

Note: *You assign the name of the pseudovolume when you install the pseudovolume.*

Using Floppy Drives

You can assign CTOS floppy drives to be used as MS-DOS drive A or drive B. (You must assign drive A before you can assign drive B.) To assign a CTOS floppy drive, open the *pc.sys* file using the CTOS Editor, and modify the file as described below.

Assigning Drive C

By default, the pseudovolume has the name *.psv* and is installed in *[sys]<sys>*. To assign a pseudovolume to be used as MS-DOS hard drive C, enter the following line in the *pc.sys* file:

```
:DriveC:[sys]<sys>.psv
```

If you have installed the pseudovolume in a different location or have given a different name to the pseudovolume, replace *[sys]<sys>.psv* with the correct information.

Note: *If you are using two pseudovolumes, one as drive C and the other as drive D, the pseudovolume used as MS-DOS drive C must be bootable (that is, it must contain the MS-DOS operating system).*

Assigning Drive D

To assign a second pseudovolume to be used as MS-DOS hard drive D, enter the following line in the *pc.sys* file:

```
:DriveD:[sys]<sys>second.psv
```

Replace *[sys]<sys>second.psv* with the correct name and path of the pseudovolume.

Note: *You must assign Drive C and drive D to different pseudovolumes.*

Using Printers

You must modify *pc.sys* if you plan on using a printer connected locally to the workstation, or if you plan on using a printer connected to a cluster server (either to the server for your cluster, or to another cluster server that is networked to your cluster server).

Supported Printers

You can use any CTOS printer currently connected to a cluster server and used by the cluster if the printer is also supported by MS-DOS or by your PC application software. If you want to connect a printer directly to a workstation parallel port, you can use any printer supported by MS-DOS or by your PC application software.

Using a Printer Connected to a Cluster Server

In some cases, you may not want or be able to print directly to a local printer. If this is the case, you must print indirectly to a CTOS printer that is connected to your cluster server or to a server that is networked to your cluster server, and you must change the :LPT1 line as follows:

```
:LPT1:{nodename}[printername]
```

Replace *nodename* with the the name of your cluster server; replace *printername* with the name of the printer you want to use. (To display the names of the available CTOS printers, along with their associated node names, use the Print Manager command.)

Note: *Print Manager is a Generic Print System utility: to use it, you must have the Generic Print System installed on the cluster server. If your cluster does not have the Generic Print System installed, you can use the Spooler Status command to display the names of available printers.*

This method of printing is slower than printing directly to [lpt].

If You Don't Want to Use Printers

If you don't want to assign a printer to the parallel port, change the :LPT1 line to

```
:LPT1:[NUL]
```

Reassigning LPT1 From Within a CTOS/Vpc Session

To change LPT1 to a different printer while in a CTOS/Vpc session, select *Reassign Devices* from the pop-up menu. (See "Using the Pop-up Menu" in Section 6.)

Additional Printer-Related Entries for Pc.sys

See Appendix B, "The Pc.sys Configuration File," for information about other printer-related options available for the *pc.sys* file.

Using a Video Display

You must modify the *pc.sys* file to support the video display you are using. Supported displays are EGA, VGA, and Mono (MDA compatible, text only). For example, if you are using a VGA display (color or monochrome), you would change the GraphicsAdapter line to:

```
:GraphicsAdapter:vga
```

You should be aware that you can run an active CTOS/Vpc application in the background under Context Manager only if change the graphics line to

```
:GraphicsAdapter:mono
```

If you set the graphics line to VGA or EGA, the application will suspend activity when you switch contexts. Obviously, you cannot run graphics applications (like Windows) in the background because they require EGA or VGA.

Using EMS Memory

If any of the PC applications you use require EMS memory, you must add the following line to *pc.sys*:

```
:ExpandedMemory:NumberK
```

Replace *Number* with the amount of memory, in kilobytes, that you want to set aside exclusively for EMS memory. (By convention, the amount specified is a multiple of 16, for example, 256K.) *Number* can be any number between 16 and 32768. You must also set up MS-DOS to support EMS memory. See Section 5 for details.

Installing Required CTOS System Sevices

If your PC application requires the use of specialized hardware devices such as a mouse or a CD-ROM drive, you must install the hardware device on the CTOS workstation, and you must install the required CTOS system service software required by that device.

Install system services is described in Section 2.

Installing a Math Coprocessor

If a PC application you plan on using requires a math coprocessor, you must install one in the CTOS workstation, if a math coprocessor is not already installed. (See your workstation hardware installation guide for details.) No CTOS software is required to support the math coprocessor.

If you don't know if you have a math coprocessor installed in your workstation, give the **Display Configuration** command from the CTOS Executive command line. If a coprocessor is installed, it will be displayed.

Using Disk Caching

Disk caching can significantly improve performance, and is recommended. You can use CTOS disk caching or you can use MS-DOS disk caching, such as that provided by SMARTDRV.SYS.

For information on CTOS disk caching, see the *CTOS System Administration Guide*. For information about SMARTDRV.SYS, see your MS-DOS or Windows documentation.

Running CTOS/Vpc from the Context Manager

Context Manager is a CTOS product that allows you to run several CTOS applications (contexts) at the same time. You can use Context Manager to run a single CTOS/Vpc session or several sessions (if you have enough memory).

However, before you can run CTOS/Vpc from Context Manager you need to modify the Context Manager configuration file *CmConfig.sys.*

Modifying the CmConfig.sys File

You must modify the *CmConfig.sys* file to tell Context Manager the location of the CTOS/Vpc program and the name of the CTOS/Vpc configuration file (*pc.sys*).

To modify *CmConfig.sys*,

1. Give the command **CM Configuration File Editor** from the Executive command line, and press **GO.**
2. When prompted for the path and name of the *CmConfig.sys* file, accept the default file name *[sys]<sys>CmConfig.sys* by pressing **GO.**

   (Replace *[sys]<sys>CmConfig.sys* with the correct path and name if you have given a different name to this file and/or have placed it in a different location.)
3. When the command form appears, type **VPC** in the **Command Name** field and press **RETURN.**
4. Type **[sys]<sys>vpc.run** in the **Run file name** field and press **RETURN.**
5. Type **2000** in the **Memory required** field and press **RETURN.** (If you plan on using memory-intensive applications such as Windows, type 3000 instead of 2000.)
6. If you are using multiple CTOS/Vpc contexts, type **Y** in the **Needs Exec screen?** field.

Running CTOS/Vpc in the Background

Under Context Manager, a CTOS/Vpc session can remain active when running in the background only in monochrome, text-only mode. If a CTOS/Vpc session uses graphics mode, the session stops running when the context is switched, giving possession of the screen to another application.

To run CTOS/Vpc in monochrome, text-only mode, you must change the :GraphicAdapter: line in the *pc.sys* file to `:GraphicAdapter:Mono`

Running CTOS/Vpc in Presentation Manager

Before you can run CTOS/Vpc from the Presentation Manager, you must modify the *CmConfig.sys* file and add CTOS/Vpc to a program group.

Modifying the CmConfig.sys File

You must modify the *CmConfig.sys* file before running CTOS/Vpc from Presentation Manager. (Presentation Manager and Context Manager both use the *CmConfig.sys* file.)

To modify *CmConfig.sys*,

1. Give the command **CM Configuration File Editor** from the Executive command line, and press **GO.**
2. When prompted for the path and name of the *CmConfig.sys* file, accept the default file name *[sys]<sys>CmConfig.sys* by pressing **GO.**

   (Replace *[sys]<sys>CmConfig.sys* with the correct path and name if you have given a different name to this file and/or have placed it in a different location.)
3. When the command form appears, type **VPC** (or some other name) in the **Command Name** field and press **RETURN.**
4. Type **[sys]<sys>vpc.run** in the **Run file name** field and press **RETURN.**

Adding CTOS/Vpc to a PM Program Group

To add CTOS/Vpc to a Presentation Manager group,

1. Open an existing group in the Desktop Manager (for example, Main), by clicking on the group icon.
2. In the **Program** pulldown menu, select **New**.
3. In the popup window that appears, in the **Program title** field, type the same name that you typed in the **Command Name** field in the *CmConfig.sys* file.
4. Using the mouse, move the cursor to the **path and file name** field, and type *[sys]<sys>vpc.run*.
5. Click on the **Add** button.
6. A popup menu appears, asking you if the application is a CTOS Presentation Manager application. Click on the **No** button.
7. A popup menu appears, asking how you want the application to run. Select the default (let the program decide) by clicking on the **Enter** button.
8. If you want to run multiple CTOS/Vpc sessions, repeat steps 1 through 7, making sure that you type in a different name in the **Program title** field for each session. (Make sure the names match the names you supplied in the *CmConfig.sys* file.

Starting CTOS/Vpc in Presentation Manager

To start CTOS/Vpc in Presentation Manager, double click on the CTOS/Vpc icon.

Memory Requirements

If you run CTOS/Vpc from Presentation Manager, you'll need a partition size of 2M bytes for CTOS/Vpc and the MS-DOS environment. If you plan on using Windows or other memory intensive applications, you'll need a partition size of 3M bytes.

Installing the CTOS/Vpc DOS Drivers

CTOS/Vpc comes with a DOS drivers diskette that contains mouse, EMS, XMS, and VGA drivers. You must install and use these drivers instead of the corresponding drivers shipped with MS-DOS or older versions of the same drivers.

To install the CTOS/Vpc DOS drivers,

1. If you haven't already done so, start the CTOS/Vpc session.
2. Insert the CTOS/Vpc DOS drivers diskette in floppy drive A.
3. From the C> prompt, type **A:** and press **RETURN** to path to floppy drive A.
4. Type **install** and press **RETURN**. The drivers will be copied automatically to both the C:\DOS and the C:\VPC directories.

Installing CD-ROM Device Driver Software

If you are using a CD-ROM drive on the workstation or on the server, you must install the MS-DOS CD-ROM drivers included with the CTOS LANce/pc package, following the instructions provided with LANce/pc.

Note: *If you have ClusterShare, you can use the CD-ROM drivers provided by ClusterShare.*

Modifying the CONFIG.SYS File

The CONFIG.SYS file customizes the MS-DOS environment by specifying which device drivers are loaded and by specifying how memory is organized. The CONFIG.SYS file is read during the MS-DOS boot process, before the AUTOEXEC.BAT file is loaded and executed.

You must modify the MS-DOS CONFIG.SYS file if you want to use EMS or XMS memory or if you want to use special devices such as a mouse or a CD-ROM drive. You must also modify CONFIG.SYS if you want to load MS-DOS into the high memory area, and to provide access to the upper memory blocks (UMB).

Note: *After you change CONFIG.SYS or AUTOEXEC.BAT, you must reboot MS-DOS by pressing* ***CTRL-ALT-DEL*** *in order to put those changes into effect.*

Using EMS Memory

You must install the PEMM.EXE device driver in CONFIG.SYS if you want to use EMS memory or if you want to use any device drivers that use EMS memory. PEMM.EXE must be used instead of the EMM.EXE or EMM386.EXE drivers supplied by MS-DOS.

Note: PEMM.EXE *differs substantially from* EMM.EXE *and* EMM386.EXE *and is not documented in the MS-DOS manuals.*

Installing PEMM.EXE

To install PEMM.EXE, add the following line to the CONFIG.SYS file:

```
DEVICE=C:\DOS\PEMM.EXE sN
```

Replace N with the number of 16K byte pages you want to use. For example, s1 would reserve 16K bytes of EMS memory, s2 would reserve 32K bytes, and s16 would reserve 256K bytes of EMS memory.

Installing PEMM.EXE for EMS 3.2 Compatibility

If you need EMS compatibility with EMS version 3.2, install PEMM.EXE as follows:

```
DEVICE=C:\DOS\PEMM.EXE v32 sN
```

Replace N with the number of 16K byte pages as described above.

Where to Place the PEMM.EXE Line

The PEMM.EXE line must come before any other CONFIG.SYS lines that install device drivers that use EMS memory. The PEMM.EXE line must come after the HIMEM.SYS line.

Modifying CONFIG.SYS for Upper Memory Block Support

To support access to the UMB, you need to change the MS-DOS=HIGH line in the CONFIG.SYS file to:

```
DOS=HIGH,UMB
```

The MS-DOS=HIGH,UMB line must come after the DEVICE=HIMEM.SYS line in the CONFIG.SYS file.

Note: *In MS-DOS, UMB support is provided by EMM386.EXE. Under CTOS/Vpc, however, a special CTOS/Vpc version of HIMEM.SYS provides UMB support.*

Size of the Upper Memory Block

The amount of UMB memory that is available will vary from a maximum of 256K bytes to a minimum of 96K bytes, depending on the type of graphics adapter you use and whether you use EMS memory.

If you use EMS memory, the UMB memory is decreased by 64K bytes. If you use a VGA or EGA display the UMB memory is decreased by 96K bytes.

Note: *The MS-DOS=HIGH,UMB line enables access to the upper memory blocks; it does not automatically load device drivers and memory-resident programs there. To load drivers and memory-resident programs in the upper memory blocks, you need to add the proper LoadHigh and DeviceHigh lines to the CONFIG.SYS file as described in the MS-DOS documentation.*

Loading Device Drivers or TSRs in Upper Memory Blocks

Device drivers and TSR applications can be loaded into the upper memory blocks by adding LoadHigh and DeviceHigh statements to the CONFIG.SYS file. See your MS-DOS documentation for more details.

Modifying the AUTOEXEC.BAT File

The AUTOEXEC.BAT file is used to execute commands automatically after the MS-DOS boot process is complete. (The AUTOEXEC.BAT file is executed after the CONFIG.SYS file is loaded.)

Note: *After you change CONFIG.SYS or AUTOEXEC.BAT, you must reboot MS-DOS by pressing CTRL-ALT-DEL in order to put those changes into effect.*

Typical Contents of AUTOEXEC.BAT

Normally, the commands you place in the AUTOEXEC.BAT file are commands that you need to execute in every MS-DOS session to set up the MS-DOS environment. For example, in every session you must give the proper PROMPT command in order to obtain a C> prompt that displays the path of the current directory. Doing this manually every time you boot MS-DOS would be tedious, so you should place the PROMPT command in the AUTOEXEC.BAT file.

Several commands that should be included in the AUTOEXEC.BAT file are described below.

Echo

The first line in the AUTOEXEC.BAT file is normally ECHO OFF. This prevents the AUTOEXEC.BAT file commands from being displayed during execution.

PROMPT

The PROMPT command is normally included as follows

```
PROMPT=$P$G
```

This will cause the system prompt to display the entire path of the current directory. PROMPT can also be used to accomplish other tasks, such as setting background and foreground display colors. (See your MS-DOS documentation for details.)

If You Use a CD-ROM Drive

If you use a CD-ROM drive, you must add the following lines to the AUTOEXEC.BAT file:

```
RS485EM
\CDROM\MSCDEX.EXE /D:CT-CDROM /L:L ;M:8 /V /E
CDR ASSIGN L: {LOCAL}[CDROM]0
```

In addition, you must add the following information to your PATH line:

```
C:\CDROM;C:\LANCE
```

These lines and PATH information may need to be modified for your particular environment. See the *CTOS LANce/pc and LANce/LM Administration Guide* for more information about using CD-ROM with CTOS/Vpc.

Installing PC Applications

Before you install a PC application, read the *CTOS/Vpc Product Family Software Release Announcement* (SRA). The SRA provides a list of CTOS/Vpc restrictions and limitations.

To install a PC application, see the documentation provided with the application. A PC application may require you to make further modifications to the CONFIG.SYS and the AUTOEXEC.BAT files.

In addition, special PC keys may not be marked on the CTOS keyboard. For example, the COPY key is a CTOS-specific key, but under CTOS/Vpc can also function as the PC-specific ALT key, although the key may be marked only as COPY on the keyboard.

Keyboard Decals

To help you quickly identify the PC-specific keys on a CTOS keyboard, CTOS/Vpc provides a set of decals containing the PC key names. You should attach each PC key decal to the corresponding workstation key, following the instructions provided with the decals. (CTOS workstation keys function in their usual manner when you are not using CTOS/Vpc.)

CTOS and PC Key Mapping Tables

For additional help in identifying PC-specific keys on the various CTOS keyboards, see Tables 6-1 through 6-5.

Table 6-1. K1 Keyboard

Workstation Key	PC Key
COPY	ALT
MOVE	BREAK
CODE	CTRL
DELETE	DEL
SCROLL DOWN	END
RETURN	ENTER
CANCEL	ESC
SCROLL UP	HOME
OVERTYPE	INS
MARK	NUM LK
NEXT PAGE	PGDN
PREV PAGE	PGUP
1/2-1/4	* (asterisk on numeric keypad)
SHIFT-1/2-1/4	PRT SC
BOUND	SCROLL LK
GO	SYS REQ
NEXT	+

Table 6-3. K5 Keyboard

Workstation Key	PC Key
ALT	LEFT ALT
SYSTEM	RIGHT ALT
DELETE CHAR	BREAK
CODE	CTRL
SCROLL DOWN	END
RETURN	ENTER
CANCEL	ESC
SCROLL UP	HOME
OVERTYPE	INS
%	NUM LK
PAGE	PAUSE
NEXT PAGE	PGDN
PREV PAGE	PGUP
WORD	PRT SC
COL	SCROLL LK
LINE	SYS REQ
GO	SYS REQ
PARA	F11
SENT	F12
NEXT	ENTER (NUMERIC PAD)
DIVIDE	/ (NUMERIC PAD)
X (NUMERIC PAD)	* (NUMERIC PAD)

CTOS Keyboard LED Indicators

On the K1, K2, K5, and SG–101–K keyboards, the LEDs on keys F8, F9, and F10 are used to indicate the following PC functions:

F8 LED	NUM LOCK
F9 LED	CAPS LOCK
F10 LED	SCROLL LOCK

Superset Keyboard

The SG-102-K Superset keyboard toggles between PC mode and CTOS Lock mode. If you press the CTOS LOCK key on the Superset keyboard, the keys on the numeric keypad function as the following CTOS keys:

PC Mode	CTOS Lock Mode
0	MARK
1	MOVE
2	SCRL NXT
3	COPY
6	NEXT
7	ACTION
8	SCRL PRV
9	FINISH
DEL	BOUND
ESC	CANCEL
CTRL	CODE
INSERT	OVERTYPE
PAGE UP	PG PREV
PAGE DOWN	PG NEXT
ENTER	GO
F1	HELP

Note that the SCROLL LOCK LED is on when the keyboard is in CTOS Lock mode. (There is no LED for the PC SCROLL LOCK key.) To return the keyboard to PC mode, press the CTOS LOCK key again.

Finish Print Job

The Finish Print Job option is used only if you are using CTOS spooled printing on the CTOS cluster server and CTOS/Vpc is not configured to automatically flush the print buffer. Check with your system administrator to determine whether spooled printing (that is, non GPS printing) is being used.

If you are printing to a printer attached directly to your workstation, this menu item is not applicable. This item is also not applicable if you are printing to a printer attached to a cluster server that uses the Generic Print Service (GPS). Check with your system administrator if you are unsure.

Display Current Config

The Display Current Config option displays the current PC configuration. It displays the same type of information as the *pc.sys* file, but provides more information than the *pc.sys* file contains. This option is useful for displaying information about your current environment, such as how much DPMI memory is available, which printer is being used, and so on.

The information displayed may vary, depending on the contents of your *pc.sys* file. For information about each of the pc.sys file entries, see Appendix B.

Reassign Devices

The Reassign Devices option allows you to temporarily change the LPT1 and COM1 settings specified in the *pc.sys* configuration file, enabling you to use a different printer or communications device. (See Section 3 for information on using printers or communications devices.)

The Reassign Devices option also allows you to temporarily change other parameters such as automatic print buffer flushing, form feed, and so on.

Using CTOS/Vpc Help

If you want CTOS/Vpc-specific online help during a CTOS/Vpc session, press the HELP key. (See "Superset Keyboard," earlier in this section, for information on keyboard substitutions for the Superset keyboard.) The main Help menu displays the following:

```
Configuration Help
Pseudovolume Help
Graphics Emulation Help
Printer Help
```

Press **RETURN** to highlight the help topic you want to display, and press **GO**.

To exit from a help topic, press **CANCEL**. To exit the main help menu, press **CANCEL** again.

Printing From CTOS/Vpc

Before you can print from CTOS/Vpc you must resolve three issues:

- Does the PC application support the printer you want to use?
- Which print method are you using? (Are you printing directly to a local printer, using spooling, or using GPS?)
- Is the *pc.sys* file configured for the printer you want to use?

Each of these issues is described below.

PC Application Printer Support

Whether you print directly to a printer attached locally to the workstation, or whether you print to a printer attached to a cluster server (using spooling or GPS), the printer must be supported by the PC application. If the printer is not supported by the PC application, you cannot use the printer.

Printing Indirectly to a Cluster Printer Using GPS

Another way to print from CTOS/Vpc is to print to a printer that is attached to a cluster server, using the CTOS Generic Print Service (GPS). The cluster server can be your cluster server or a cluster server that is networked to your server.

The advantage to using GPS is that it provides advanced printing facilties for cluster printing and printing to other clusters. A GPS printer can also be used by other users in the cluster for either DOS or CTOS printing.

Note: *Do not install GPS on a cluster workstation if you want to print directly to a printer attached locally to that workstation.*

To print indirectly to a cluster printer, using GPS,

1. Make sure the printer you want to use is supported by the PC application.
2. Make sure GPS is installed on your cluster server. If you want to use a printer on another networked cluster, GPS must be installed on your cluster server and on the other cluster server(s) whose printer you want to use. (See the *CTOS Generic Print System Administration Guide* for detailed information about using GPS.)
3. Change the :LPT1: line in the *pc.sys* file (see Section 3) to

   ```
   :LPT1:{nodename}[printername]
   ```

4. Start a CTOS/Vpc session
5. Set up the PC application to support the printer (see the documentation provided by the application).
6. Print your document following your PC application's normal print procedures.

Exiting From CTOS/Vpc

To exit from CTOS/Vpc,

1. Properly save and exit from any MS-DOS application you are using. If you are using Windows, exit Windows.
2. When the MS-DOS prompt appears, press **FINISH**.

   The following message appears:

   Press <GO> to confirm FINISH or <CANCEL>

3. Press **GO** to exit. (If you have changed your mind and decided not to exit, press **CANCEL**.)

You are returned to the environment from which you started the CTOS/Vpc session (Executive, Context Manager, or Presentation Manager.).

Sharing a Single PSV Between Multiple Users or Sessions

If you need to provide a single PSV on a cluster server that is used simultaneously by multiple users, you must designate the PSV as a *read-only* drive in the *pc.sys* file. Read-only PSVs can be shared by multiple users. See Appendix B for information about the line you need to add to the *pc.sys* file in order to make a PSV read-only.

Likewise, if you want to access a single PSV from multiple CTOS/Vpc sessions on your workstation, you must designate the PSV as read-only.

Creating a Pseudovolume

There are three ways to create a pseudovolume: you can

- Install the pseudovolume shipped with the CTOS/Vpc package (if you ordered the CTOS/Vpc package that includes a pseudovolume)
- Create a dynamically expandable PSV
- Use the **Size PSV** command to create a PSV

Each of these methods of creating a PSV is described below.

To create a dynamically expandable PSV,

1. Make sure CTOS/Vpc is installed and configured on your system (see Sections 2 and 3).
2. Assign a CTOS volume and directory to be used for the PSV, along with the name of the PSV. Make sure you don't use the name of an existing PSV; if you do, the existing PSV will be overwritten.

   Enter this information in the *:DriveC:[volume]<directory>name.psv:* line in the *pc.sys* file (see Section 3).
3. Add the following line to the *pc.sys* file:

   ```
   :CreateLargePSV?:Yes
   ```

   Note that the above entry will create a dynamically expandable PSV that has a maximum size of 127M bytes. If you want to create a dynamically expandable PSV with a maximum size of 20M bytes, delete the "Yes," as follows:

   ```
   :CreateLargePSV?:
   ```
4. Make sure your workstation is booted and is running the environment (Executive, Context Manager, Presentation Manager) from which you normally start CTOS/Vpc.
5. Insert an MS-DOS system (bootable) floppy disk into the CTOS floppy drive that has been assigned as Drive A in the *pc.sys* file. (Make sure the floppy disk contains the DOS FDISK.EXE and FORMAT.COM files.)
6. Start CTOS/Vpc.
7. After MS-DOS is booted from the floppy disk, the A:> prompt appears. At the A:> prompt, type **FDISK**, and press **RETURN**.
8. If you are creating a PSV assigned as drive D in the *pc.sys* file, select option **5** to change the current fixed disk drive, then type **1** for the fixed disk drive number.

   If you are creating a PSV assigned as drive C in the *pc.sys* file, ignore this step.

Creating a PSV With the Size PSV Command

You can use the **Size PSV** command to create a new pseudovolume.

To create a new PSV,

1. From the Executive command line, type **Size PSV**, then press **RETURN**.
2. Fill in the command form as shown in the following example. Parameter fields are described below:

```
Size PSV
  Psv File Name          _____________________________
  New Size (in Megabytes) _____________________________
```

Psv File Name. In this field, enter the path and file name for the new PSV. (The file name must have a *.psv* extension.) For example, *[d1]<sys>porker.psv.*

New Size. In this field, enter any integer number from 1 to 127 (except 32). If you create a PSV that is less than 31M bytes in size using the **Size PSV** command, the PSV can have a maximum size of 31M bytes. (You cannot resize the PSV later to be larger than 31M bytes unless you first create the PSV larger than 31M bytes.)

3. Press **GO**.
4. Assign the new PSV as drive C or drive D by modifying the appropriate line in the *pc.sys* file, as described in Section 3.
5. Start a CTOS/Vpc session. (If the new PSV is drive C, you must insert an MS-DOS boot diskette in drive A before starting the session.) Install MS-DOS and any other PC application software. Set up the MS-DOS environment as described in Section 5.

The size of the new PSV equals the size specified in the *New Size* field. The PSV is already formatted.

Copying a Small PSV to a Large PSV

A small PSV is a PSV that cannot be expanded beyond 31M bytes (or 20M bytes, if you have a small, dynamically expandable PSV). A large PSV is one that can expand up to 127M bytes. If you have a small PSV and want to copy its contents to a large PSV,

1. If you haven't already done so, create a large bootable PSV as described above under "Creating a Dynamically Expandable PSV."
2. In the *pc.sys* file, assign the small PSV and the large PSV to different drives. (Make sure drive C is bootable.)
3. Start a CTOS/Vpc session.
4. At the MS-DOS prompt, change to the drive that is the large PSV (C or D).
5. Type **chkdsk/f** and press **RETURN**.
6. Use the MS-DOS command XCOPY to copy the entire small PSV to the large PSV. For example, if the small PSV is drive C and the large PSV is drive D, you would type the following:

   ```
   XCOPY C:\  D:\  /S  /E
   ```

   This will copy the entire contents of drive C, including all subdirectories, to drive D. See your MS-DOS manual for more information about XCOPY.

Application-Related Problems

If you have problems starting or running an application, check the application documentation to make sure you set up the application properly.

If the application is set up properly, check the *CTOS/Vpc Product Family Software Release Announcement* to determine whether any restrictions or limitations apply to the application.

Drive Access Problems

If you cannot access drive C or D, or if the drive C or D you can access is not the drive you expected to access, check your *pc.sys* file to make sure you assigned the correct pseudovolume to drive C or D (see Section 3).

If you cannot write to drive C or D, check your *pc.sys* file; the drive may have been made read-only (write-protected). To change the drive's read-only status, change the appropriate line in the *pc.sys* file

If you made drive C or D read-only, some applications on the drive may fail to run because they need to write to the drive on which they are placed. You can get around this by installing the application on a drive that is not read-only, or by having the application write to drive that is not read-only (if the application allows you to do this).

Insufficient Memory Problems

If an application fails to run or runs unsatisfactorily due to insufficient memory, determine the type (EMS, XMS, or DPMI) and quantity of memory that is required . Normally the application documentation will tell you this.

If the application documentation doesn't provide information about required memory, see Appendix A for methods you can use to determine whether an application uses XMS or DPMI memory.

If you need more EMS memory, or more XMS memory, or more DPMI memory, modify the *pc.sys* file as described in Section 3. Then modify the CONFIG.SYS file as described in Section 5.

Windows Won't Start (VGA Initialization Error)

If Windows attempts to start, but fails and displays the following error message:

```
An error occured while trying to initialize the VGA
adapter
```

check the :GraphicsAdapter: line in the *pc.sys* file (see Section 3). You must specify *VGA* or *EGA*: if you specify *none* or *mono*, Windows will not start.

Windows Won't Start (Error W031V011E)

If Windows attempts to start, but fails and display the following error message:

```
W031V011E
```

make sure you installed the CTOS/Vpc DOS drivers diskette as described in Section 5. Make sure you have entered the following line in your AUTOEXEC.BAT file, as described in Section 5:

```
C:\DOS\DPMIHOST
```

Windows Applications Won't Start

If a Windows application attempts to start, but fails and displays an insufficient memory message,

1. Check workstation or Context Manager partition memory. Recommended amounts are provided in Section 4 and in the *CTOS/Vpc Product Family Software Release Announcement.*
2. Determine whether the application uses XMS memory or DPMI memory (see Appendix A.) You may have to modify the *pc.sys* file (see Section 5) to make more XMS or DPMI memory available or increase the size of the Context Manager partition if you are using Context Manager (see Section 4).
3. See the *CTOS/Vpc Product Family Software Release Announcement* to determine whether any restrictions or limitations apply to the application.

Workstation Memory

To determine how much memory is installed in the workstation, use the **Display Configuration** command from the Executive command line. This displays the amount of memory (in K bytes) installed in the workstation.

Mininum Memory Requirements

General memory requirements are provided in Section 4. For specific details about minimum workstation memory requirements, see the *CTOS / Vpc Product Family Software Release Announcement.*

Reserving Memory for CTOS/Vpc

If you are running CTOS/Vpc from the Executive and the Context Manager or Presentation Manager are not currently running, all of the unused workstation memory is available for CTOS/Vpc. That is, all of the workstation memory that is not being used by the CTOS operating system and other system services, such as the mouse service, is used by CTOS/Vpc.

Note: *To display the amount of available (unused) memory, use the* ***Partition Status*** *command from the Executive command line.*

If you are running CTOS/Vpc from the Context Manager, the amount of workstation memory reserved for CTOS/Vpc is determined in advance by you when you configure the *CmConfig.sys* file as described in Section 4.

If you are running CTOS/Vpc from the Presentation Manager, all of the unused workstation memory is available for CTOS/Vpc. That is, all of the workstation memory that is not currently being used by the CTOS operating system, other system services, and other applications, is available for CTOS/Vpc.

Upper Memory Blocks

The upper memory area is the memory between 640K bytes and 1024K bytes. This area is reserved to support hardware-related features and cannot be used by most executable programs.

Normally, 96K bytes to 256K bytes of this memory are unused. (The unused portions of this memory are called upper memory blocks, or UMB, for short.) To make use of this memory, the most recent versions of MS-DOS allow you to use it for device drivers and memory resident programs.

UMB support is provided by the special HIMEM.SYS file provided by CTOS/Vpc. To make this feature available in a CTOS/Vpc session you must modify the *pc.sys* file (see Section 3) in the CTOS environment and the CONFIG.SYS file (see Section 5) in the MS-DOS environment.

EMS Memory

EMS memory was an early attempt to overcome the 640K byte limitation of conventional memory. EMS memory is memory outside of conventional memory and is used for data storage, not for running executable programs.

Under CTOS/Vpc, EMS memory is provided by the PEMM.EXE program, which makes a specified portion of XMS memory function as EMS memory. To make EMS memory available in a CTOS/Vpc session you must modify the *pc.sys* file (see Section 3) in the CTOS environment and the CONFIG.SYS file (see Section 5) in the MS-DOS environment.

XMS Memory

XMS memory is memory above 1024K bytes that can be used to run MS-DOS and some PC applications.

XMS memory support is provided by the special HIMEM.SYS file provided by CTOS/Vpc. To make XMS memory available in a CTOS/Vpc session you must modify the *pc.sys* file (see Section 3) in the CTOS environment and the CONFIG.SYS file (see Section 5) in the MS-DOS environment.

When you start CTOS/Vpc, it searches for a configuration file that matches the name you signed on with. For example, if you are currently signed on as *Margarita*, CTOS/Vpc searches for a configuration file named *[Sys]<Sys>Margaritapc.sys*. To specify a different user name, you can override the default by entering a configuration file name in the Executive command form (see Section 4).

In most cases, you must modify the *pc.sys* file before using CTOS/Vpc.

Format of Pc.sys

The PC configuration file is written in the following format:

:Keyword:Value

where

:Keyword:	is the name of a configuration option; keywords and the placement of colons must not be changed.
Value	is the configurable parameter you define.

The Default Pc.sys File

The default PC configuration file is shown in Example B-1. The fields shown in the default file are mandatory.

Example B–1. Default Pc.sys Configuration File

```
:DriveA:[f0]
:DriveB:
:DriveC:[sys]<sys>PseudovolumeName.psv
:DriveCReadOnly?:No
:DriveD:
:DriveDReadOnly?:
:LPT1:[lpt]
:COM1:[comm]b
:GraphicsAdapter:None
:Keyboard Nationalization File.
```

:DriveAPassword:

Default: *[f0]*

Example: *:DriveAPassword:[f0]*

This parameter specifies a password for the floppy drive.

:DriveBPassword:

Default: none

Example: *:DriveBPassword:[f1]*

This parameter specifies a password for the floppy drive.

:DriveC:

Default: none

Example: *:DriveC:[sys]<sys>Your.psv*

This parameter maps a PSV to an MS-DOS drive name. Specify the PSV that you want to be used as drive C. You may specify a PSV located on the server or anywhere on the network that is accessible from your workstation. Drive C must be a bootable volume unless you plan to boot from a floppy disk.

:DriveCReadOnly?:

Default: No

Example: *:DriveCReadOnly?:Yes*

To allow read-only access to the PSV mapped to drive C, specify **Yes**.

Printer Configuration Options

Several printer options are available to help you specify a printer, flush print buffers automatically (for spooled printing), and insert a form feed after each print job.

:LPT1:

Default: *[Lpt]*

Example: *:LPT1:[lpt]*

This parameter lets you specify a printer for your CTOS/Vpc session. (Any printer you specify MUST be supported by MS-DOS or by your PC application.)

If you want to print directly to a printer connected to the parallel port on your workstation, specify **[Lpt]**. which is the default.

To use a printer attached to your cluster server or attached to a cluster server that is networked to your server, specify a node name and printer name as follows;

:LPT1: {node}[Laser]

To find out what CTOS printers are in your cluster, execute the **Print Manager** command (for Generic Print System printers) or the **Spooler Status** command (for pre-GPS printers). See the *CTOS Generic Print System Administration Guide* for information about setting up printers.

Specify **[Nul]** if you do not want to define a printer.

Note: *To change to a different printer during a CTOS / Vpc session, select* Reassign Devices *from the pop-up menu.*

Valid CTOS communications channel device names are *[Comm]A* and *[Comm]B* for the channels on workstation processors, and *[Comm]1A* to *[Comm]1D* on port expander modules. On SuperGen Series 5000 workstations, valid device names are *[Comm]A* to *[Comm]C*.

If you do not want to attach a communications device, leave the value blank or specify **[Nul]**.

To change to a different communications device while using CTOS/Vpc, select *Reassign Devices* from the pop-up menu.

Note: *Do not specify a printer or queue name in this field.*

:ReadyBusy:

Default: None

Example: *:ReadyBusy:CTS*

This parameter defines the device-ready and device-busy signals of communications devices. Specify **Xon/Xoff**, **CTS**, or **None**.

In Xon/Xoff mode, Xoff (13h) and Xon (11h) represent busy and ready respectively. Xon/Xoff mode should not be used if the data being transmitted contains Xoff and Xon characters. In CTS (clear to send) mode, the RS-232 signal CTS is dropped to indicate busy and is raised to indicate ready.

To change this option during a CTOS/Vpc session, select *Reassign Devices* from the pop-up menu.

:KeyboardTimeToRepeat:

Default: 2

Example: *:KeyboardTimeToRepeat:2*

This parameter defines the delay time from when a key is depressed until when the repeating starts. Specify a number between **1** and **3**, as shown below:

Value	*Approximate delay until repeating starts*
1	.2 seconds
2	.4 seconds
3	.7 seconds

:KeyboardRepeatFrequency:

Default: 2

Example: *:KeyboardRepeatFrequency:2*

This parameter defines the repeat rate when a key is continuously depressed. Specify a number between **0** and **3**, as shown below:

Value	*Approximate frequency of repetition*
0	1 character/second
1	10 characters/second
2	20 characters/second
3	30 characters/second

Cluster Performance Options

These options enable you to assign a higher or lower priority to the CTOS/Vpc session and to enable you to make more efficient use of the CD-ROM drive or other CTOS cluster resources.

:PcPriority:

Default: 129

Example: *:PcPriority:129*

To increase or decrease the priority of a CTOS/Vpc process, specify a decimal number between **129** and **176**, where 129 is the highest priority and 176 the lowest.

In some cases, it is necessary to raise this value so that low priority processes, such as GPS device drivers, can execute simultaneously with CTOS/Vpc. For more information, see the *CTOS System Administration Guide*.

:TerminateCTOSResources:

Default: No

Example: *:TerminateCTOSResources:Yes*

This parameter specifies whether to release CTOS resources, for example, when you have used the CD-ROM service. If you specify **Yes**, the resources are released when CTOS/Vpc is rebooted by pressing **ALT-CTL-DEL**. It is recommended that you specify **Yes** for this parameter any time an MS-DOS program uses LANce/pc or ClusterShare services to access remote resources.

MSDOS Directory

The **MSDOS Directory** command displays the files in a pseudovolume or MSDOS floppy disk. To use it, follow these steps:

1. On the Executive command line, type **MSDOS Directory**, then press **RETURN** to display the command form.
2. Fill in the command form.
3. Press **GO** to execute the command.

The command form and parameter fields are described below.

Command Form

```
MSDOS Directory
  [From MSDOS Drive or Psv, default [f0]]  _____
  [Drive password]                         _____
  [Directory prefix]                       _____
  [Print file]                             _____
  [Device details?]                        _____
```

Parameter Fields

[From MSDOS Drive or Psv, default [f0]]

Default: *[f0]*

Enter the name of the pseudovolume or floppy disk whose directory is to be displayed. If no name is entered, floppy drive f0 will be searched for an MS-DOS floppy disk.

[Drive password]

Default: No password

Enter the password for the MS-DOS PSV.

[Directory prefix]

Default: Root directory

Enter the path name for the files to be displayed. For example:

\YourDirectory\YourSubdirectory\

MSDOS Read

The **MSDOS Read** command copies MSDOS files to a CTOS volume. To use it, follow these steps:

1. On the Executive command line, type **MSDOS Read**, then press **RETURN** to display the command form.
2. Fill in the command form.
3. Press **GO** to execute the command.

The command form and parameter fields are described below.

Command Form

MSDOS Read

[DOS file mask(s)]	_____
[From MSDOS Drive or Psv, default [f0]]	_____
[Drive password]	_____
[Map CR/LF to newline (default no)?]	_____
[Directory prefix from]	_____
[Include files from subdirectories?]	_____
[File prefix to]	_____
[Overwrite OK?]	_____
[Print file]	_____

Parameter Fields

[DOS file mask(s)]

Default: See below

Enter the existing MSDOS file name or names. File names can contain up to eight characters and can include the wild-card characters (* and ?).

If you do not specify a file name, CTOS/Vpc copies all files from the root directory of the MS-DOS drive you specify in the *[From MSDOS Drive]* field.

[From MSDOS Drive or Psv, default [f0]]

Default: *[f0]*

Enter the name of the MS-DOS PSV or floppy disk.

[Overwrite OK?]

Default: Ask for confirmation

If you enter **Yes** and the destination file already exists, the existing file is deleted and the MSDOS Read operation continues.

If you enter **No** and the destination file already exists, that file is not copied.

If you leave the field blank, the Executive prompts you for confirmation before the existing file is deleted. Press **GO** to confirm, **CANCEL** to deny, or **FINISH** to stop copying files.

[Print file]

Default: Screen only

If you want a record of screen output, enter a file or printer specification. If the file you specify does not exist, it is created. If it already exists, the new output is appended to the existing file. If you leave this field blank, output is sent to the screen only.

MSDOS Write Command

MSDOS Write copies the specified CTOS file(s) to a PSV. To use it, follow these steps:

1. On the Executive command line, type **MSDOS Write**, then press **RETURN** to display the command form.
2. Fill in the command form.
3. Press **GO** to execute the command.

The command form and parameter fields are described below.

[File prefix from]

Default: Null string

Enter the string of characters you want prefixed to the file name in the *Filename(s)* field to construct the source file specification.

[Directory prefix to]

Default: Root directory

Enter the target path name for the file or files to be copied. For example:

\YourDirectory\YourSubdirectory\

[Overwrite OK?]

Default: Ask for confirmation

If you enter **Yes** and the destination file already exists, the existing file is deleted and the MSDOS Write operation continues.

If you enter **No** and the destination file already exists, that file is not copied.

If you leave the field blank, the Executive prompts you for confirmation before the existing file is deleted. Press **GO** to confirm, **CANCEL** to deny, or **FINISH** to stop copying files.

[Print file]

Default: Screen only

If you want a record of screen output, enter a file or printer specification. If the file you specify does not exist, it is created. If it already exists, the new output is appended to the existing file.

If you leave this field blank, output is sent to the screen only.

D

M

P

Cut along dotted line

Tape

Please Do Not Staple

Tape

Fold Here

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 817 DETROIT, MI

POSTAGE WILL BE PAID BY ADDRESSEE

UNISYS CORPORATION
PRODUCT INFORMATION
MS 18-007
2700 NORTH FIRST STREET
SAN JOSE, CA 95134-2028