

PICK Systems, Inc.

INSTALLATION GUIDE

mv.ENTERPRISE 4.0 on UnixWare

(Part Number 88-02004A01)
(Revision AB)

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1. Installation Instructions

1.1 Installation Overview

This section provides step-by-step instructions for installing mv.ENTERPRISE Release 4.0 on UnixWare.

IMPORTANT: Contact PICK Systems Customer Support at (949) 261-1875 or your local office for any questions concerning user-written assembler modes. If you have any user-written assembler modes and/or third-party packages, they must be recompiled and reinstalled after the installation procedure is complete.

1.2 Notation Conventions

This document observes the following written conventions:

Notation	Explanation	Example
Alternate font	Alternate font designates commands, and serves to identify various forms of syntax, or designates menus, screens, fields and any associated items.	Attempting to initiate a 17th process would display the message: All licensed ports are in use The UNIX file path is /usr/config/config.pick
Alternate font bold	Designates input text. May be upper or lower case, depending on typed input requirements.	After selecting the tape device, type: T-REW
<i>Italic font</i>	Designates book titles. Designates terms being emphasized.	Refer to the <i>mv. ENTERPRISE User Reference Manual</i> . <i>If this is a new installation</i> , proceed to Step 7.
<i>Italic Helvetica bold</i>	Indicates terms being defined.	.cshrc : Script executed upon entry to a C shell.
BOLD CAPS: and body text	Indicates important items requiring special, visual emphasis. CAUTION. Means <i>remember</i> . Indicates something you should keep in mind while you follow a set of instructions. IMPORTANT: Means <i>significant</i> . Indicates additional information you should know before proceeding through instructions. NOTE: Means <i>hint</i> . Indicates helpful information or a short cut that could save time or trouble. WARNING: Means <i>halt</i> . Indicates important information to read before proceeding.	CAUTION: Altering the default number of the virtual memory buffers for a line increases the true memory requirements of the system. IMPORTANT: A kill -5 HAS THE SAME EFFECT ON PICK AS A kill -9. NOTE: These devices <i>must</i> be non-rewind devices. WARNING: A kill -9 should not be used to remove a Pick process unless recommended by PICK Systems Customer Support.

1.3 Additional Documentation

Current information on mv.ENTERPRISE is available on the PICK Systems Web site at www.genauto.com.

The following documentation supports mv.ENTERPRISE Release 4.0:

- *mv.ENTERPRISE User Reference Manual*
(Part Number 84-00014A00).
- *Assembly Language Manual* (Part Number 05627-001).

To order any of the above titles, or to inquire about other manuals published by PICK Systems, contact Order Administration at the following address:

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If you have any requests, comments, corrections or questions regarding the *content* of mv.ENTERPRISE documentation, contact the Technical Publications Department at PICK Systems through the above address or at documentation@picksys.com.

1.4 mv.ENTERPRISE PICK License Management

The mv.ENTERPRISE implementation requires a PICK Systems licensing agreement with Pick Systems. The total number of ports allowed on an mv.ENTERPRISE virtual machine is governed by this licensing agreement. Questions concerning the impact this licensing agreement has on mv.ENTERPRISE installations can be directed to PICK Systems Customer Support in Irvine, CA at (949) 261-1875.

In order to control the number of terminals running mv.ENTERPRISE, a security system has been added. This ensures that a hardware machine is properly configured and that the appropriate license is in place with Pick Systems.

Before installing mv.ENTERPRISE, it is necessary to acquire a master mv.ENTERPRISE configuration control code from PICK Systems Customer Support in Irvine, CA or your local office. This record is unique to each machine and will contain the maximum number of mv.ENTERPRISE processes (excluding Phantoms) that are licensed and allowed to run at one time.

mv.ENTERPRISE/ODA requires a separate master control code and contains the maximum number of mv.ENTERPRISE/ODA server processes that are licensed and allowed to run at one time.

The install program will prompt for the codes and create the necessary file on a new installation. The configuration control file contains one or two lines composed of 13 characters that make up a control code. The first line contains the mv.ENTERPRISE master control code. The second line contains the mv.ENTERPRISE/ODA master control code, if necessary. The UNIX file path is

```
/usr/config/config.pick
```

After mv.ENTERPRISE is installed, the system is able to run the specified number of real processes on any ports and on any logical mv.ENTERPRISE machine.

For instance, if a machine is licensed for 256 ports and has 240 processes running on a production machine, 16 ports would be left to run on a

development machine. Attempting to initiate a 17th process would display the message:

All licensed ports are in use

This message will also be logged in the pick_log file which is located in the /usr/stat directory. A process can then be dropped from any port on any machine to create a free process. There is no preset allocation of ports to logical machines and no limit to the number of logical machines involved. The only restriction is the total number of active mv.ENTERPRISE processes.

1.5 Before You Install

1. Read through all sections of this installation guide and the release notes carefully before proceeding. If you have any questions or problems, call PICK Systems Customer Support in Irvine, CA at (949) 261-1875 or your local office.

If this is a new installation, proceed to Step 7.

If this is not a new installation, proceed to Step 2.

2. Ensure that all users are logged off and that phantoms and printers are inactive.
3. If you are performing a complete database save and restore, examine your file sizing and perform any necessary reallocations at this time. Inappropriately allocated files reduce performance and reduce database integrity under fault conditions.
4. *Remove* any EXEC command from the GLOBAL-LOGON PROC in the LIBRARY account.
5. If performing a complete database save and restore, execute the base save and any account save threads.
6. Perform a SHUTDOWN from mv.ENTERPRISE to shutdown all processes. (SHUTDOWN is the recommended procedure for bringing mv.ENTERPRISE down.)

Proceed to “Installation Instructions.”

7. For a new installation, it is necessary to acquire a mv.ENTERPRISE configuration control record from PICK Systems Customer Support at the number listed above. This record is unique to your machine and contains the maximum number of mv.ENTERPRISE processes (excluding Phantoms) for which you are licensed and authorized to run at one time. Without this record, the installation cannot be completed.
8. Configure system parameters for mv.ENTERPRISE.

For new installations, certain system parameters must be changed, which causes the Unix kernel to be re-built.

- From within UnixWare, go to the UnixWare Desktop.
 - Select Admin_Tools.
 - Select System_Tuner.

- In the System_Tuner,
 - Click on the Device Driver Parameters option.
 - From the pull down menu, select Inter-Process Communication (IPC) Parameters.
 - Locate and change these parameters:

SEMMNI Specifies number of semaphore identifiers in the kernel. This option represents the number of unique semaphore sets that can be active at any time.

Moving the horizontal scroll bar, set the value to 248.

SEMMSL Specifies maximum number of semaphores per semaphore identifier.

Moving the horizontal scroll bar, set the value to 150.

SHMMAX Specifies maximum shared memory segment size.

Moving the horizontal scroll bar, set the value to 20447232.

- Accept the default values for all other options; click **OK**.
- The next prompt asks:

Do you want to rebuild the kernel now?

Respond **Yes**.

The message:

Kernel rebuilding will take a few minutes. Please wait.
displays, followed by the message:

Do you want to reboot the system now?

Respond **OK**.

9. Configure Tape Devices for mv.ENTERPRISE.

mv.ENTERPRISE relies on UnixWare to provide driver support for tape devices. These should be configured as non-rewind devices in the config.tape file.

As a minimum device 0 needs to be specified to install mv.ENTERPRISE. The config.tape file contains 32 lines of data representing device 0 to 31 respectively. For example, to make /dev/rmt/c0b0t5l0n the default tape drive or device 0, the first line in config.tape should be:

```
/dev/rmt/c0b0t5l0n
```

where the suffix n signifies that the tape device c0b0t5l0 is a non-rewind device.

10. Configure Disks for mv.ENTERPRISE.

Each mv.ENTERPRISE virtual machine consumes about 3.5 MB of space in its directory. The actual database resides on Unix system disk partitions (non-active).

Use fdisk to partition available disks with 1 to 4 partitions. Note that your system comes installed with UnixWare already on the active disk partition.

Refer to man pages and/or *UnixWare Installation Handbook*, "Installing Multiple Operating Systems" for a brief explanation.

For a description of device naming conventions refer to the man pages: *man 7 intro*.

IMPORTANT: The maximum partition size for a pick data segment is 2045 cylinders (just under 2 gigs).

11. Configure the `/etc/hosts` file for mv.ENTERPRISE.

An alias for the PICK host must exist in the `/etc/hosts` file for ethernet connections to be established. In the example below, pickA (192.0.0.1) refers to the local machine and pickB (192.0.0.2) is the name of a remote machine:

The `/etc/hosts` file on pickA

```
192.0.0.1    pickA pickhost
```

```
192.0.0.2    pickB
```

The `/etc/hosts` file on pickB

```
192.0.0.2    pickB pickhost
```

```
192.0.0.1    pickA
```

12. The following directories are created during the install process:

```
/VERSION
```

```
/usr/config
```

```
/usr/stat
```

1.6 Installation Instructions

1. To log on, type:

root

This installation procedure *must* be performed while logged on as **root**. Once installed, mv.ENTERPRISE may be initiated from any UNIX login.

2. Insert the mv.ENTERPRISE Release 4.0 release tape in the appropriate tape drive.
3. If this is a new installation, build the base mv.ENTERPRISE directory. For example:

**cd /
mkdir production**

4. Change directories to the mv.ENTERPRISE directory.

cd /production

5. Load the UNIX tar section by entering the command:

tar -xvf tape_device_name

where *tape_device_name* represents the DAT drive from which mv.ENTERPRISE is being loaded. For example:

/dev/rmt/c0b0t510n

Using this command installs the following programs:

consumer	Transaction Logger consumer program.
install	Install program.
logger	Transaction Logger raw device configuration.
pick	mv.ENTERPRISE monitor program.
pickoda	mv.ENTERPRISE/ODA monitor program.
pick.lpd	Line printer driver program.
pickctrl	Install utility program.
preadchr	mv.ENTERPRISE/UNIX transfer utility program.
pwritechr	mv.ENTERPRISE/UNIX transfer utility program.
seqpick	System errors transfer program.
sweeper	Transaction Logger sweeper program.

6. Execute the install program by typing:

./install -o -m

For more information regarding the install program refer to “mv.ENTERPRISE Install Program”.

- If this is not a new installation, the install program displays the current mv.ENTERPRISE configuration and then prompts for the name to be used for the mv.ENTERPRISE monitor program. An example of such a name is *prodpick*.

Proceed to Step 8.

- If this is a new installation, the install program prompts for the mv.ENTERPRISE configuration parameters as follows:

Prompt	Response
Enter the Pick configuration control code	Enter the mv.ENTERPRISE configuration control code.
Enter the ODA configuration control code	Enter the optional mv.ENTERPRISE/ODA configuration control code.
How many Pick terminals?	Enter the number of PICK terminals required for your system.
How many Phantom jobs?	Enter the number of Phantom jobs required for your system. A general rule is one Phantom line for every eight physical lines.
How many default virtual pages?	Enter the number of default virtual pages. The number of default pages has a direct effect on performance. If this is not a new system, the existing values in the config script, including the number of virtual pages, should not be altered without first consulting PICK Systems Customer Support. As a default, enter 128.
Enter initial data base names: When done, type end .	Enter each data base name. When all data base names have been entered, type end . Each data base name is entered and terminated with a carriage return.

Enter the name to be used for the Pick program?	Enter the name for the Pick monitor program (i.e. prodpick). The first four characters of the name to be used for the program must be unique from any other mv. ENTERPRISE virtual machine. These characters form the semaphore set identification for the machine.
How many Phantom processes started at coldstart?	Enter the number of Phantom processes to start at coldstart.
Do you wish to add default users to users script (y/n)?	Type no if there is no requirement for asynchronous terminal support. Type yes to build a generic boot script. The users script, built by install, is a generic boot script for mv. ENTERPRISE. If you request to add default users to the users script, it must be customized after its creation to the requirements of the installation.

NOTE: In an environment where all users are connected via TCP, at the prompt: Do you wish to add default users for users script? type **n**.

- The config.tape file *must be changed* to include the correct tape devices to be used under mv. ENTERPRISE. As a minimum device 0 needs to be specified to continue the installation. The config.tape file contains 32 lines of data representing device 0 to 31 respectively. (e.g. **/dev/rmt/c0b0t510n**).

NOTE: These devices *must* be non-rewind devices.

- Install the mv. ENTERPRISE Release 4.0. ABS by typing the command:

`./absrestore`

This restores the mv. ENTERPRISE 4.0. ABS from the release tape. Successful completion of an absrestore will display the message ABS tape loaded with XXX frames used.

9. If you wish to use the pickoda monitor program, proceed with the following steps.

Save a copy of the current mv.ENTERPRISE monitor program (i.e., *prodpick*) to a new name. Type:

mv prodpick prodpick.reg

Replace the existing mv.ENTERPRISE monitor program with the mv.ENTERPRISE/ODA monitor program.

cp pickoda prodpick

10. If this *is* a new installation or you are doing a complete file restore, proceed with Steps 11-15 to complete the installation procedure.

If this *is not* a new installation, and you are not doing a complete file restore, perform a COLDSTART by typing the command:

./coldstart

Then, proceed with Steps 14-15.

11. If this *is* a new installation, leave the mv.ENTERPRISE Release 4.0 tape inserted.

If this *is not* a new installation, remove the mv.ENTERPRISE Release 4.0 release tape and insert the base file-save tape in drive 0.

12. Perform a file restore by typing the command:

./filerestore

The following prompts display:

Do you really wish to file restore prodpick (y/n)?

Type **Y**.

Load Data Tape and press "C"

Type **C**.

Enter number of phantoms for restore, <CR> for none
Press ENTER.

When the file restore is complete, remove the base file-save or release tape.

13. Restore any accounts which reside on account-save tapes, then remove the account-save tapes.

If this is a new installation, the installation is complete.

14. If this is not a new installation, perform the incremental system upgrade procedure that follows. This procedure updates the release system accounts and files.

NOTE: *Do not* allow users on the system until the upgrade procedure is complete.

CAUTION: Data located in SYSPROG, LIBRARY, ASM, SCRIBE, ODA.ADMIN and any account included in future mv.ENTERPRISE releases will be affected. If you have altered the release files for any reason, you must maintain a backup copy with your changes. Refer to “Upgrade File Listing” for a complete listing of all files altered during the upgrade procedure.

During the upgrade, the upgrade program prompts for the option to upgrade all account master dictionaries. If you respond with Y, all account master dictionaries will be updated using the MD-UPGRADE utility. MD-UPGRADE upgrades existing commands in each master dictionary and add additional, new commands based on the SEQ.UPGRADE.NEWAC item in the LST file. If you respond with N, you must manually upgrade all account master dictionaries.

- Insert the mv.ENTERPRISE Release 4.0. release tape in drive 0.
- Log on to the SYSPROG account.
- To attach to Drive 0, at TCL type:

T-ATT 0

- To initiate the upgrade program, at TCL type:

SYSTEM-UPGRADE

- Upon completion of the SYSTEM-UPGRADE procedure, remove the mv.ENTERPRISE Release 4.0. tape and store the tape in a safe location.

15. The upgrade to mv.ENTERPRISE Release 4.0 is now complete.

1.7 Upgrade File Listing

The following is a listing of all files that are altered during an upgrade.

Account	File	Account	File
ASM	DICT ASSEMBLER	LIBRARY	DICT TERMINALS
	CS-UTIL		TERMIO.STATUS
	DICT CS-UTIL		DICT TERMIO.STATUS
	DICT LINES		UTILITIES
	INSTRUCT		DICT UTILITIES
	NSYM		
	OSYM	ODA.ADMIN	DICT ODA.BP
	REL.BOOT.SYMBOLS		
	SYM	SCRIBE	SCB.BP
	TOSYM		DICT SCB.BP
			WP-MD
LIBRARY	DICT ACC		
	BLOCK-CONVERT	SYSPROG	BOOT.ABS
	ERRMSG		CNTL-FILE
	DICT ERRMSG		MENU-SP
	HELP-FILE		NEWAC
	DICT HELP-FILE		NEWAC,SYSPROG
	DICT JOB		PSYM
	LST		TERM-DEFS
	DICT PARS.RSLTS		DICT TERM-DEFS
	PARS.TAG.DEFS		UTILITIES-SP
	DICT QUEUE		DICT UTILITIES-SP
	DICT RUM		
	DICT STAT-FILE	SYSTEM	LIBRARY (MD)
	DICT SYSERR		ASM (MD)
	TERMINALS		

1.8 mv.ENTERPRISE Install Program

The install program is located in `tar` format as the first file on a release tape. The purpose of `install` is to create the `mv.ENTERPRISE` environment shared by all `mv.ENTERPRISE` processes and build support scripts found in the `mv.ENTERPRISE` Unix directory such as *absrestore* and *coldstart*.

The install program prompts for these `mv.ENTERPRISE` configuration parameters:

How many Pick terminals?

How many Phantom jobs?

How many default virtual pages?

Enter initial data base names:

When done, type 'end'.

Enter the name to be used for the Pick program?

How many phantom processes started at coldstart?

Do you wish to add default users to users script (y/n)?

These prompts are described below.

How many Pick terminals?

The number of physical Pick lines this `mv.ENTERPRISE` virtual machine will use. This parameter specifies the maximum number of terminals and may be slightly larger than the current requirements.

How many Phantom jobs?

The number of Phantom lines this `mv.ENTERPRISE` virtual machine will use. A general rule is one Phantom line for every eight physical lines.

How many default virtual pages?

This prompt is for default virtual pages, and should be set to 128. Each `mv.ENTERPRISE` process started will use this number as the maximum number of memory pages it may map at any one time. The

number may be overridden with the mv.ENTERPRISE monitor -v option.

Enter initial data base names:

When done, type 'end'.

The location(s) of disk to be utilized by mv.ENTERPRISE. The database names are the disk node names. The base names were previously defined when the mv.ENTERPRISE environment was established in UNIX.

Enter the name to be used for the Pick program?

Renames the mv.ENTERPRISE program to the name entered and builds all support scripts accordingly. An example is *prodpick*. The first four characters of the program must be unique from other mv.ENTERPRISE virtual machines since the semaphore set, used for locking, is derived from these characters. A list of these supporting scripts follows; some of them are built using the newly designated machine names from the response to this prompt.

If this is a new installation, the install program displays two additional prompts.

How many phantom processes started at coldstart?

- If Phantom processes are not to be used very often or are only being used for batch processing, the user should answer 0 (zero) to this prompt.
- If a number of Phantoms are to be used for processing short duration jobs which are being shutdown and started repeatedly, the number of Phantom processes needed to run these jobs should be entered.
- If the user is uncertain of his application requirements, enter the total number of Phantom processes.

Do you wish to add default users to users script (y/n)?

If this installation does not have a requirement for asynchronous terminal support, the user should answer **n** (no). Otherwise, answer **y** (yes) which will build a generic boot script containing a record for each mv.ENTERPRISE user. The user's script can then be customized for the specific needs of this installation. Refer to "mv.ENTERPRISE Install Program" for a detailed description of the options.

1.8.1 Support Scripts

The support scripts and files built by the mv.ENTERPRISE install program are listed below:

.cshrc	Script executed upon entry to a c shell.
.login	Script executed upon login to the directory.
abs	Binary file containing an image of the executable mv.ENTERPRISE virtual assembly code.
absrestore	Script to load an abs area from tape. The default drive is zero.
coldstart	Script to set the coldstart flag and start mv.ENTERPRISE processes via the scripts <i>Phantoms</i> and <i>users</i> .
common1	Common area shared by mv.ENTERPRISE processes.
config	File containing information regarding the mv.ENTERPRISE environment such as number of ports, number of Phantoms, default number of virtual pages, and location of mv.ENTERPRISE data space.
config.tape	File containing tape device node names.
config.ethernet	File containing pseudo Ethernet tape device node names.
filerestore	Script to perform a file restore. Sets the filerestore flag then executes the script <i>Phantoms</i> .
install	Program to create the mv.ENTERPRISE environment. It also creates: <i>.cshrc</i> , <i>.login</i> , <i>absrestore</i> , <i>coldstart</i> , <i>common1</i> , <i>config</i> , <i>config.tape</i> , <i>config.ethernet</i> , <i>filerestore</i> , <i>Phantoms</i> , <i>killpick</i> , <i>users</i> and <i>warmstart</i> .

<i>killpick</i>	Script to kill mv.ENTERPRISE processes. This can be very dangerous. An mv.ENTERPRISE machine should <i>only</i> be stopped with the TCL command SHUTDOWN, and this script should only be used if you are directed to do so by PICK Systems Customer Support.
<i>phantoms</i>	Script created during the install procedure to separate Phantom and printer lines from user lines.
<i>pick</i>	mv.ENTERPRISE monitor or kernel. It is renamed during install to a unique name such as prodpick or devpick.
<i>pickoda</i>	mv.ENTERPRISE/ODA monitor or kernel.
<i>pick.lpd</i>	Program to allow the sharing of the UNIX spooler by multiple virtual machines.
<i>users</i>	Script created during the install procedure to start mv.ENTERPRISE users. Executed by the coldstart and warmstart scripts.
<i>warmstart</i>	Script created during install to be used in conjunction with the WARMSTOP utility.

1.9 Install Options

Options for install are listed below:

- m{mail_addr}** Specifies an address to mail critical mv. ENTERPRISE error and warning messages, where *mail_addr* is defined in the form system-name!\path-name. Using the -m option without specifying an address will suppress sending mail. The install default is to send mail.
- t{term_node}** Specifies the terminal on which to display mv. ENTERPRISE error and warning messages, where *term_node* is a terminal defined in /dev. The install default is the system console (/dev/console).
- O** Specifies removing and recreating common1 from information in the file *config*. If *config* does not exist, install will prompt for terminals, Phantoms, memory pages, and data names to use. Never use the -O option if there are active users on the mv. ENTERPRISE machine.

1.10 mv.ENTERPRISE Monitor Program

The following mv.ENTERPRISE monitor program options are available. These options are invoked by a dash, the lower case letter indicated, and in some cases, a parameter following the option.

- a** Restore ABS from a mv.ENTERPRISE release tape.
- d** Set default tape device. If not used, defaults to -d0.
- de** Set default Ethernet device. Allows the use of an Ethernet tape device to do a full file restore from another PICK virtual on the network.
- e** Add file systems to mv.ENTERPRISE overflow without performing a save and restore. Used instead of the -x for the first coldstart after adding file systems.
- f** Set file load flag. This causes a full file restore.
- g** Display system locks, group locks and stop.
- g{r}** Display host ID, system locks, group locks, record locks and stop.
- gu{r}** Display system locks, group locks, UNIX semaphore usage information, record locks stop.
- h** Inhibit the EXIT and SH/TOPIX commands for this line.
- i** Pass stacked data to mv.ENTERPRISE from the Unix command line. The general format is:

#prodpick -i'stacked.data'

where *stacked.data* is the string to be passed to mv.ENTERPRISE. Note that the specified string must be surrounded by single quotation marks. The 'stacked.data' will always be followed by a carriage return. Unlike the mv.ENTERPRISE/BASIC DATA statement, this data is stored as though the user actually typed it in. It will appear on the screen, one character at a time, until the input stack is exhausted. Note that the input buffer is limited to 300 bytes.

In addition to single characters, a carriage return can be fed to the input stream with the two-character escape sequence '\r'.

- l** Set the mv.ENTERPRISE line number for this process. If not supplied, mv.ENTERPRISE locates the first unused line. The general form is **-ln** where *n* specifies the mv.ENTERPRISE line number. The form **-ln-m** can be used to specify a range of line numbers to use. The first unused mv.ENTERPRISE line in the range will be assigned to the process.
- n{n}** Alter the default UNIX scheduling priority.
- oh** Suppress LOGON banner.
- ol** Log line off when carrier drop detected.
- ot** For mv.ENTERPRISE processes connected via Telnet. The **-ot** option causes a logged on mv.ENTERPRISE process to be left in a re-startable state when its telnet connection is lost. The process can only be restarted using the monitor option **-l**. For mv.ENTERPRISE processes which are logged off, the loss of the Telnet connection will not require the monitor option **-l**. The mv.ENTERPRISE port is available to any new monitor activation. mv.ENTERPRISE processes which require an immediate logoff when the Telnet connection is lost should use the monitor option **-ol**.
- r** Set communications options. The general form is **-rpf** where *f* and *p* specify flow control and parity as follows:
 - *flow: *y* -X-on/off flow control (default).
 - n* -No flow control (passed to program as data).
 - i* -Input flow control only.
 - o* -Output flow control only.

NOTE: For all of the options above, hardware output flow control is enabled and hardware input flow control is disabled.

As an alternative, flow control can be obtained by entering a numeric option to reflect the desired flow control. This option is formed by adding together the appropriate numbers from the table below to provide a more flexible control of flow.

- 0 No flow control
- 1 X-on/off output control
- 2 X-on/off input control
- 4 RTS/CTS output control
- 8 RTS/CTS input control

For example, the default flow control is the number 7 (7 = 1 + 2 + 4 from the table above) for bi-directional X-ON/OFF and output hardware flow control.

- parity: n 8-bit, no parity (default).
- s 8-bit, no parity, strip high bit.
- e 7-bit, even parity.
- o 7-bit, odd parity.

The default flow and parity control is -ryn, or x-on x-off flow control and 8-bit, no parity.

- s{n}** Set the baud rate for the terminal. Defaults to 9600.
- t** Set the UNIX terminal device address. This option has a parameter immediately following giving the UNIX path name of the terminal to use as the port. For example, -t/dev/pts01. If not supplied, the default is your local terminal, if running as a foreground task, and no terminal, (Phantom), if running as a background task.
- v** Alter the default number of virtual memory buffers for this line. This is followed by a number from 20 to 256. Since memory requirements for a mv.ENTERPRISE printer are low, printer lines should be set to a value of 20 pages.

CAUTION: Altering the default number of virtual memory buffers for a line increases the true memory requirements of the system.

-V{n} Display or alter the default size of the virtual memory buffer table (VFS) allocated for each line. The optional parameter n is a number between 20 and 256. Used without the numeric parameter, the size of virtual memory buffer table is displayed. For example:

./prodpick -V

Current VFS = 36; Map = 1; Sequence = 0;
Adjusted lines = 0;

where **Current VFS** is the size of the VFS table allocated per process, **Map** is the number of virtual memory buffers mapped per VFS table entry, **Sequence** is the number of times the size of the VFS table has been modified, and **Adjusted lines** is the number of processes that modified their VFS table to the current size.

Used with the numeric parameter, the current size of virtual memory buffer table allocated for each line will be altered. All processes whose VFS is greater than or equal to the VFS specified in config are permitted to increase their VFS by the difference between the config VFS size and the new current VFS size.

For example, if the VFS size specified in config is 36, the following command will alter the current VFS by 12:

./prodpick -V48

Current VFS = 48; Map = 1; Sequence = 1;
Adjusted lines = 0;

Processes whose VFS is greater than or equal to 36 (the VFS specified in config) are permitted to increase their VFS by 12 (the difference between 48 and 36). In this example, processes started with the default 36 VFS will increase to 48. Processes started with a VFS of 64 will increase to 76. Processes whose VFS is less than 36 will never adjust their VFS.

-M{n} Used in conjunction with -V to adjust the number of virtual memory buffers mapped per VFS table entry. Valid entries for parameter n are 1, 4, 8, 16. The total number of virtual memory buffers allocated per line is equal to the VFS table size times the number of buffers per VFS table entry. The command **./prodpick -V64 -M4** causes the default number of virtual memory buffers for each line to be 256.

- W** Set warmstart flag. Should only be used when machine has been warmstopped.
- X** Set the coldstart flag. Implied by options **-a**, or **-f**.
- Z** Same as **-X**. In addition, flags coldstart to return all acquired workspace overflow to the file space table.

1.11 Extending Disk Space

The extend option is provided to avoid performing a **SAVE** and **RESTORE** of the database to extend disk space. Follow the steps below to extend the available disk space for the mv.ENTERPRISE database.

1. Create the new logical disk devices and add the device names to the config script. Precede new disk device names by a new level number.

For example, an existing machine contains two disk devices /dev/dskwww and /dev/dskxxxx. If two new disk devices, /dev/dskyyy and /dev/dskzzz, are to be added without performing a **SAVE** and **RESTORE** of the database, the information reflected in the config file is:

	Before	After
Physical ports	100	100
Phantoms	20	20
VFS buffers	128	128
Disk device	0/dev/dskwww	0/dev/dskwww
Disk device	0/dev/dskxxxx	0/dev/dskxxxx
Disk device		1/dev/dskyyy
Disk device		1/dev/dskzzz

Example 1: Extending Disk Space

2. Ensure that all users are logged off and that Phantoms and printers are inactive.
3. Perform a **SHUTDOWN** from mv.ENTERPRISE.
4. Run the mv.ENTERPRISE install program. Type:

install -o -m

5. Flag the mv.ENTERPRISE database for disk space extension. Type:

./prodpick -l0 -e

where *prodpick* is the name of the mv.ENTERPRISE monitor program. The **-e** option flags the coldstart procedure to add the new available disk space (frames) to the overflow table.

6. Start the mv.ENTERPRISE Phantom processes. Type:

./phantoms

7. Coldstart the mv.ENTERPRISE virtual machine. Type:

./prodpick -l0

where *prodpick* is the name of the monitor program. The instruction above begins the coldstart which includes the flag set for disk extension in step 5 (**./prodpick -l0 -e**).

8. Once the coldstart is complete, start the user processes. Type:

./users

NOTE: Once this process is complete, *additional disk devices cannot be added at the new level*. The level number *must* be incremented if extending disk space a second time. When performing the next **SAVE** and **RESTORE** of the database, all level numbers should be set to 0.

There is a 4 level maximum with valid levels of 0-3.

1.12 mv.ENTERPRISE Line Printer Driver Program

The program *pick.lpd*, which is located on the release tape with the mv.ENTERPRISE *monitor* and *install* programs, is useful for sites which operate multiple mv.ENTERPRISE machines. The driver allows a machine access to the UNIX spooler; therefore, two machines can share a printer since they are both outputting through the same physical device. Remote printing is only supported on UnixWare 2.1.2 and above. An example of starting the line-printer device:

1. `./prodpick.lpd prodpick.lp0.99 lp0 10 &`

where:

<i>prodpick.lpd</i>	The line printer driver program.
<i>prodpick.lp0.99</i>	The name used for the pipe; it is a concatenation of the UNIX spooler queue name and the mv.ENTERPRISE port.
<i>lp0</i>	The name of the UNIX spooler queue to be used by this pipe.
10	The number of seconds the pipe is allowed to be idle before it is closed.
&	Tells UNIX to run this process in the background.

2. `./prodpick -l99 -oh -t/dev/prodpick.lp0.99 -v20 &`

where:

<i>prodpick</i>	mv.ENTERPRISE program.
<i>-l99</i>	Run printer on mv.ENTERPRISE port ninety-nine.
<i>-oh</i>	Suppress LOGON banner at startup of printer process.
<i>-t/dev/prodpick.lp0.99</i>	Use this pipe for output.
<i>-v20</i>	Restrict to 20 the number of VFS pages for use by the mv.ENTERPRISE spooler process.
<i>&</i>	Run process in the background.

The pipe name is written to `/tmp/prodpick.lp0.99` as a lock to prevent two pipes with the same name. This lock is released when the pipe is shutdown. If this procedure is being run from a script, it is necessary to sleep for 5 seconds between commands to allow the pipe adequate time to start.

3. From within mv.ENTERPRISE, start the printer. Type:

STARTPTR 0,0,0,S99

where:

<i>STARTPTR</i>	The name of the command to start a printer
<i>0</i>	The mv.ENTERPRISE printer number.
<i>0</i>	The form queue number associated with this printer
<i>0</i>	The number of pages to eject between print jobs
<i>S99</i>	Signifies that the printer is attached serially and is running on port 99.

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