

HP-UX Virtual Partitions Release Notes

A.04.04

vPars A.04.04

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This document provides information about the A.04.04 release of HP-UX Virtual Partitions (vPars).

vPars Overview

The HP-UX Virtual Partitions (vPars) product runs multiple instances of HP-UX simultaneously on one server, or nPartition, by dividing it into virtual partitions. Each virtual partition is assigned its own subset of hardware, runs a separate instance of HP-UX, and hosts its own set of applications. vPars provides application and operating system fault isolation.

New and Changed Features in This Release

This section lists features that are new in this release, or previously available features that have changed in this release.

New Features

The following features are new with the A.04.04 release of vPars:

- **Support for HP 9000 rp7440, rp8440, Superdome sx2000 Servers**
- **Pre-enablement of SCSI Tape Boot and Recovery for Integrity Servers**

Compatibility and Installation Requirements

This section describes the compatibility information and installation requirements for this release. For specific installation instructions, refer to the *HP-UX Virtual Partitions Administrator's Guide*.

Required Patches

Version A.04.04 of vPars requires the following patches:

- From HP-UX 11i v2 (11.23) release 0706 OE:
 - FEATURE11i (required patches for vPars install)
 - HWEnable11i (required patches for new hardware)
 - QPKAPPS & QPBASE (recommended OS patches)
 - OnlineDiag, NPar, iCAP, WBEM (changes for vPars support)
- From the HP ITRC or Patch Hub:
 - PHKL_34088 (bootloader patch for sx2000 systems)
 - PHKL_35114 (11.23 VMvPar fix)
 - PHNE_36225 (Cumulative mux and pty patch)
 - PHKL_36288 (Cumulative diag2 driver and vPars enablement)
 - PHKL_33929 (11.23 page cache synchronization and pfdats fix)
 - PHKL_33930 (11.23 pstat maxmem fix with CLM and pfdats fix)



NOTE: PHKL_34088 is required for vPars running on Integrity systems with the sx2000 chipset. Without this patch, your vPars system will not properly load the vPars Monitor.

NOTE: PHNE_36225 is required for vPars running on HP9000 systems with the sx2000 chipset. Without this patch, both the console and the vPar will hang when a vPar with the PDH console device attached is booted.

You can download patches from the following Web site:

<http://www2.itrc.hp.com/service/patch/mainPage.do>

vPars Checklist

This section is a brief checklist of common but significant items you should check while setting up vPars.

Firmware Checklist

- **Check Server Firmware:** Check the *HP-UX Virtual Partitions Ordering and Configuration Guide* for the required server firmware.
For the non-nPartition-able systems, firmware upgrades must be done outside of the vPars environment (in standalone mode).
For nPartition-able systems, call your HP Support Representative.
- **Networking and IO Card Firmware:** Check the *HP-UX Virtual Partitions Ordering and Configuration Guide* for the required IO card firmware.
You should also check the firmware on new IO cards, because they may not be updated with the firmware required for vPars.

Virtual Partition Checklist

Each virtual partition requires a *minimum* of:

- At least one CPU
- Its own boot disk
- Enough memory for the operating system and its applications
- A network card (if you require networking capability for the virtual partition)

Operating System and Version Compatibility

This release is specific for HP-UX 11i v2 (B.11.23).

Hardware Requirements

This A.04.04 version of vPars runs on HP 9000 servers and HP Integrity Servers with the HP-UX 11i v2 (B.11.23) operating system.

Switching Modes between vPars and nPars on Integrity Systems

The following information on *modes* and *using new vPars commands for Integrity systems* is included in Chapter 5 of the *HP-UX Virtual Partitions Administrator's Guide*. It is duplicated here as a reminder, in case you are using vPars A.04.xx on Integrity systems. See “Compatibility and Installation Requirements” (page 5) for further information on using vPars A.04.xx on Integrity systems, including other Integrity-only specifics.

Usage Scenarios

- If you are running HP-UX in nPars mode (standalone), use the following vPars command to switch to vPars mode:
OS-Prompt> vparenv -m vPars /* sets the mode for the next nPartition reboot*/
OS-Prompt> reboot /* to reboot the system into vPars mode */
- If you are at the Monitor prompt, use the following Monitor command to switch to nPars mode:
MON> reboot nPars /* sets the mode and reboots the system */

- If you are at the EFI shell prompt, use the following EFI utility to switch to either nPars or vPars mode:

```
Shell:> fsN:
fsN:> vparconfig reboot nPars|vPars
```

Since vparconfig is not a built-in EFI shell command, you must go to the disk to execute vparconfig. For example, to switch to vPars mode:

```
Shell:> fs0: /* go to the EFI partition of the disk */
fs0:> vparconfig reboot vPars /* sets the mode and reboots the system */
```

Note: vparconfig is an EFI utility which gets installed in the EFI partition during the installation of the vPars product.

- If you are at the EFI shell prompt in vPars mode and you do not have vPars installed on any of your disks, you can use the built-in EFI command parconfig to switch to nPars mode:

```
Shell:> parconfig nPars
Shell:> parconfig reset
```



NOTE: Remember to issue a parconfig reset after setting the mode. parconfig nPars only sets the mode to nPars. You must issue the parconfig reset command to reset the system so it boots into nPars mode.

NOTE: parconfig does not support switching to vPars mode. In other words, you can use parconfig to set the mode to nPars, but you cannot use parconfig to set the mode to vPars.

Known Problems Fixed in This Version

This section lists the known problems fixed in vPars A.04.04. For detailed information, see the HP ITRC at: <http://itrc.hp.com>

- **JAGaf93315** vpdb is changed when vPars boots with missing hardware
- **JAGaf83744** vPars/IPF: Need a command which can update the bootpath for the vPars monitor online. A firmware change is required to fix this defect. See the *HP-UX Virtual Partitions Ordering and Configuration Guide* for minimum firmware requirement for your configuration.
- **JAGag24813** Defect: vpard dies because of file descriptor leak in getDBExtData ()
- **JAGag08408** First vparcreate runs for more than 25 minutes
- **JAGag10598** Serviceguard (SG) TOC following firmware (FW) hang during console output
- **JAGag23325** vPars: ia64_corehw over-cycling CPU on all vPars within the same nPar
- **JAGaf96553** Message under vPars: read_ss_nvmm: Cannot validate NVM --2
- **JAGag10038** vparinit may corrupt /usr/conf/gen/mapfile
- **JAGaf68955** vPars console hangs due to race condition with asio0 driver

Known Problems and Workarounds

This section provides a list of problems and limitations known to HP at the time of publication. If workarounds are available, they are included. For information on specific defects, see the HP ITRC at <http://itrc.hp.com>.

- **Virtual Partition Panic**

Related JAG and Patch ID Number JAGaf96876, Patch ID Number PHKL_35114

Applicable On HP-UX Virtual Partitions A.04.xx on HP 9000 systems

Description On a machine running vPars, a global TLB purge effects all of the TLBs in all of the vPars belonging to the same hard partition (nPar), which sometimes causes the following HPMCs:

- Unexpected trap while PSW-Q = 0
- datapage fault
- no hit in cell map

Workaround Install patch PHKL_35114 or later

- **Console Hangs after Processor Dependent Hardware (PDH) Console is Assigned to a vPar**

Related JAG and Patch ID Number JAGag33755, Patch ID Number PHNE_36225

Applicable On vPars A.04.xx on HP9000 sx2000 platforms

Description After PDH console device is assigned to a vPar, output does not appear on console and it appears to be hung. CTRL-A does not generate console output.

Symptoms After the console hardware is assigned to a vPar using the following command:

```
#ioscan -kfnCtty
Class      I  H/WPath  Driver S/W StateH/W Type Description
=====
tty        0  0/8/1    asio0CLAIMED  INTERFACEBuilt-in RS232C
                /dev/diag/mux0 /dev/mux0      /dev/tty0p0
```

```
#vparmodify -p vPar1 -aio:0/8/1
```

– when the vPar is booted, messages do not appear on the console and CTRL-A does not work.

Workaround Install PHNE_36225 or later patch

- **cimserver Process Causes Scheduling Delays**

Related JAG and Patch ID Number JAGag09158, Patch ID Number PHKL_36288

Applicable On vPars A.04.xx on Integrity

Description The cimserver process can cause scheduling delays of over 500 ms.

Symptoms On a single CPU system or partition, the diag2 driver occupies the sole CPU for around 5 seconds causing the system to hang for that duration.

Workaround Install PHKL_36288 or later

- **Virtual Partition Appears to Hang After Typing control-s**

Related JAG or Patch ID Number JAGae98555

Applicable On

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description While a virtual partition is shutting down, panicking, or booting, typing `control-s` to suspend its console output may cause the virtual partition to stop making forward progress. The virtual partition may appear to hang.

Symptoms If a `control-s` is typed at the system keyboard while the virtual partition currently writing to the console is shutting down, panicking, or booting, that virtual partition may appear to hang.

Workaround Type `control-q` to resume console output.

- TC Command of the GSP

Related JAG or Patch ID Number JAGae41558

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description Initiating a Transfer of Control (TC) at the Guardian Service Processor GSP, while the vPars Monitor is booted, may cause the hard partition or system to hang.

Symptoms If the vPars Monitor is booted and a TC is issued via the GSP, the hard partition or system may hang.

Workaround If the hard partition or system hangs, issue an RS (hard reset) at the GSP.

- Configuring an Ultra2 or Ultra160 Card with `vparutil`

Related JAG or Patch ID Number JAGaf00411

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description On nPartition-able servers, using the `vparutil` command to configure an Ultra2 or Ultra160 SCSI card can cause the virtual partition that owns the SCSI card to fail to boot.

Symptoms On nPartition-able servers, the virtual partition connected to an Ultra2 or Ultra160 SCSI boot device fails to boot after the SCSI card is configured using the `vparutil` command.

Workaround For vPars A.03.xx, bring down all the virtual partitions and configure the card from the Boot Console Handler (BCH) using the `SCSI` command to set the desired parameters. Then, boot the vPars Monitor.

For vPars A.04.xx, use the `mptconfig` command. For information on `mptconfig`, see the [Ultra320 SCSI Support Guide](#) or the [support guide for your card](#).

- Autoboot Fails from Fibre Channel Device via Brocade 3800 Switch

Related JAG or Patch ID Number JAGae78109

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description Using a fibre channel mass storage device going through a Brocade 3800 switch with firmware version 3.1.1, autobooting virtual partitions fails on rp5405, L3000/rp5470, or N4000/rp7400 servers with PDC 43.22 installed.

Symptoms Autoboot fails.

Workaround Boot the virtual partitions manually from the vPars Monitor or HP-UX shell prompt. For example:

```
MON> vparload -p vpar2
```

or

```
vpar1# vparboot -p vpar2
```

For more information on using vPars with fibre channel devices, see the *HP-UX Virtual Partitions Ordering and Configuration Guide*.

- **Virtual Partition Fails to Load after a Reboot**

Related JAG or Patch ID Number JAGae88150

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description When using an rp7405, rp7410, or rp8400 system with firmware version 6 (which includes PDC 17.005), the virtual partitions will not boot to the up state after a reboot.

Symptoms The virtual partitions will not boot after a reboot. One or more of the following errors may appear in the vPars Monitor event log:

```
iodc_perror: dev_open/Boot device init (0x42)
```

```
iodc_perror: reinit_bootdev/Read ENTRY IO (0x44)
```

```
iodc_perror: dev_reopen/Read ENTRY IO (0x47)
```

```
iodc_perror: iodc_io_init/init module and device(0x4b)
```

```
Could not read IODC firmware for HPA <hpa>
```

```
Unknown filesystem for path <hardware path>
```

Workaround Manually boot the virtual partitions with the vparboot or vparload command.

- **System Resets During a Crash Dump Due to Watchdog Timer**

Related JAG or Patch ID Number JAGae79790

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description During a crash dump of a virtual partition, hardware heartbeats are delayed long enough such that the watchdog timer is triggered. If the watchdog timer has been configured to reset, then the entire system is reset (TOC).

Symptoms A system (or nPartition) is reset when a virtual partition is performing a crash dump.

Workaround From the GSP, use the AR command to set the watchdog timer to not automatically restart the system (or nPartition).

On non-nPartition-able servers, use the following procedure:

```
GSP> ar
```

```
Current System restart settings:
```

```
Automatic System restart: Enabled
```

```
ASR Alert Level Triggers: 13
```

```
Do you want to modify this configuration? (Y/[N]) y
```

```
Current Automatic System restart: Enabled
```

```
Do you want to modify it? (Y/[N]) y
```

```
New Automatic System restart (Enabled / Disabled): disabled
```

```
New Automatic System restart: Disabled
```

```
Confirm? (Y/[N]): y
```

```
-> Automatic System restart will be updated.
```

```
Current Triggering alert levels are: 13
Do you want to modify them? (Y/[N]): n
```

```
Automatic System Restart configuration has been updated
GSP Host Name: keira
GSP>
```

On nPartition-able servers, use the following procedure:

```
GSP> cm
Enter HE to get a list of available commands
GSP:CM> ar
```

This command modifies the automatic system restart configuration of the selected partition.

```
#   Name
---  ----
0)  vpar8cell
1)  vpar4cell
2)  vpar3cell
Select a partition number: 2
```

```
Automatic system restart for partition 2 is currently
enabled.
Do you want to disable automatic system restart? (Y/[N]) y
```

```
-> Automatic system restart is disabled.
GSP:CM>
```

- **Topology of A5158A FibreChannel Card Changes from Fabric to Public Loop After the Virtual Partition Reboots**

Related JAG or Patch ID Number JAGaf15533

Applicable on

- vPars A.04.xx on PA
- vPars A.03.xx on PA

Description When the A5158A FibreChannel Card is connected to the Brocade 2800 or 12000 switch, the topology of the A5158A changes after the virtual partition reboots.

Symptoms Before a reboot, the topology shows PTTOPT_FABRIC:

```
vpar1# tduutil /dev/td0
Vendor ID is = 0x00103c
Device ID is = 0x001028
TL Chip Revision No is = 2.3
PCI Sub-system Vendor ID is = 0x00103c
PCI Sub-system ID is = 0x000006
Topology = PTTOPT_FABRIC
...
```

After a reboot, the topology shows PUBLIC_LOOP:

```
vpar1# tduutil /dev/td0
Vendor ID is = 0x00103c
Device ID is = 0x001028
TL Chip Revision No is = 2.3
PCI Sub-system Vendor ID is = 0x00103c
PCI Sub-system ID is = 0x000006
Topology = PUBLIC_LOOP
...
```

Logging into the switch, the switch information before the reboot shows:

```
brocade01:admin> switchshow
switchName: brocade01
```

```

switchType:      2.4
switchState:    Online
switchMode:     Native
...
port 0: -- No_Module
port 1: -- No_Module
port 2: -- No_Module
port 3: sw Online F-Port 50:06:0b:00:00:10:23:fa
port 4: sw Online F-Port 50:06:0b:00:00:00:f4:28
...

```

The switch information after the reboot shows:

```

brocade01:admin> switchshow
switchName:     brocade01
switchType:     2.4
switchState:    Online
switchMode:     Native
...
port 0: -- No_Module
port 1: -- No_Module
port 2: -- No_Module
port 3: sw Online F-Port 50:06:0b:00:00:10:23:fa
port 4: sw Online L-Port 1 public
...

```

Workaround To permanently set the device to fabric, change the setting on the switch. For example:

```
switch> portcfggport port_#,1
```

where *port_#* is the port number of the switch that is connected to the A5158A card and 1 represents "true"

To temporarily set this device (the setting will not remain after an OS reboot), reset the device from the HP-UX system:

```

vpar1# tduutil /dev/td0 reset
Reset Done
vpar1# tduutil /dev/td0
Vendor ID is = 0x00103c
Device ID is = 0x001028
TL Chip Revision No is = 2.3
PCI Sub-system Vendor ID is = 0x00103c
PCI Sub-system ID is = 0x000006
Topology = PTTOPT_FABRIC
...

```

- Booting From a FC Tape Device May Cause the Target Virtual Partition to Hang

Related JAG or Patch ID Number JAGag09885

Applicable on vPars A.04.xx on PA

Description If you attempt to boot a virtual partition using a FC (fibre channel) tape device that has been configured using the :TAPE attribute, the target virtual partition may hang.

Symptoms If you attempt to boot a virtual partition using a FC tape device (for example, # vparboot -p *target_vpar* -B TAPE (where TAPE is the FC tape device), the target virtual partition may hang, remaining in the load state indefinitely. Further, the target virtual partition does not reset when using the vparreset command.

Workaround None. HP recommends that you not attempt to boot a FC tape device.

- On sx2000 Integrity Servers, Booting an OS Kernel while in the Wrong Mode May Cause a Panic Instead of Displaying Error Messages

Related JAG or Patch ID Number JAGag06132

Applicable on vPars A.04.xx on Integrity

Description On Integrity servers, if you are in vPars mode and you boot the OS Kernel (boot vmunix) instead of the vPars Monitor (boot vpmon), an error message is typically displayed on the console. You may, however, receive a system panic message, instead of an error message.

Symptoms The system panic displays messages similar to the following

```
EFI\HPUX\AUTO ==> boot vmunix
.....
Launching /stand/vmunix
SIZE: Text:29561K + Data:7016K + BSS:7128K = Total:43705K
Console is on virtual console
Booting kernel...

Stored message buffer up to panic:
5028, 0x11, 0x40).
pinned_pdk_malloc_avail_contig(): 0x33000
Bad News: Cannot use the Kernel Stack when interrupted on the ICS.
Bad News: Fault/trap with interrupts disabled and we cared.
reg_dump(): Displaying register values (in hex) from the save state
...
System Panic:
double panic: Bad News!
```

Workaround After the system comes back up, make sure the system is in the mode you want (vPars or nPars), then boot the appropriate item (vpmon for vPars mode and vmunix for nPars mode).

- **Booting of Monitor Fails After a LAN Boot is Attempted**

Related JAG or Patch ID Number JAGaf62265

Applicable on vPars A.04.xx on Integrity

Description Booting the vPars Monitor fails after a LAN boot is attempted.

Symptoms If a boot of the vPars Monitor is attempted after a failed LANboot, the vPars Monitor boot fails with the an error message similar to the following:

```
HPUX> boot vpmon
> System Memory = 223 MB
Could not allocate enough memory for Kernel.

kernel loading failed
```

Workaround Do either of the following:

- Perform a reboot of the nPartition using the parconfig reset command
- Install patch PHKL_34088 or later

- **Panic Caused by Unequal Amounts of Allocated ILM**

Related JAG or Patch ID Number JAGaf64296

Applicable on vPars A.04.xx on PA

Description Unequal amounts of ILM allocated from cells may cause a system panic.

Symptoms The system panics when unequal amounts of ILM are allocated from the cells to the nPartition. In other words, each cell is not providing an equal amount of ILM to the nPartition. While booting the kernel, you may see the following error message:

```
Can't allocate mem for pfdats
```

Workaround Install both of the following patches:

- Patch PHKL_33929 or later
- Patch PHKL_33930 or later

- **setboot Extraneous Output in stdout and stderr**

Related JAG or Patch ID Number JAGaf41706 and JAGaf47668, PHCO_33044

Applicable on vPars A.04.xx on Integrity and vPars A.04.xx on PA

Description In a vPars environment, setboot may display extraneous output.

Symptoms setboot may display the following extraneous mpctl error message:

```
winonal# setboot
mpctl: Invalid argument
...
```

or the extraneous note:

```
winonal# setboot
...
```

Note: The interpretation of Autoboot and Autosearch has changed for systems that support hardware partitions. Please refer to the manpage.

Workaround In a vPars environment, you may ignore both the mpctl error message as well as the note. Patch PHCO_33044 will be released to correct the output.

- **System Activity Events Reported Through IPMI by EMS**

Related JAG or Patch ID Number JAGaf62654

Applicable on vPars A.04.xx on Integrity and vPars A.04.xx on PA

Description In a vPars environment, system activity events are decoded and reported on all virtual partitions. When examining any single virtual partition, this can be misleading - it may appear that the events occurred on the virtual partition that reported the problem, even if they did not.

Symptoms A virtual partition reports an event, similar to the following:

```
>----- Event Monitoring Service Event Notification -----<
Notification Time: Wed May 4 15:29:44 2005
winona2 sent Event Monitor notification information:
```

```
/system/events/ipmi_fpl/ipmi_fpl is >= 3.
Its current value is CRITICAL(5).
```

Event data from monitor:

```
Event Time.....: Wed May 4 15:29:44 2005
Severity.....: CRITICAL
Monitor.....: fpl_em
Event #.....: 267
System.....: winona2
```

Summary:

```
INIT initiated
```

Workaround In a vPars environment, when system events are reported via EMS (from system firmware or from an OS instance), the system events are decoded and reported on all virtual partitions. The OS instance that is shown as sending the event is not necessarily indicative of the actual virtual partition that encountered the problem. The Reporting Entity ID is the only clue to which virtual partition reported the problem. The output will be similar to the following:

```
Reporting entity ID: 6 ( Cab 0 Cell 0 CPU 6 ) (possibly from one vPar)
```

- **Virtual Partition Does Not Boot After Root Mirror is Created**

Related JAG or Patch ID Number JAGaf54464

Applicable on vPars A.04.xx on Integrity

Description A virtual partition does not boot from its mirror root disk because there is no longer a valid EFI to hardware path mapping in the vPars database.

Symptoms After creating a mirror root disk, the virtual partition fails to boot from this disk. You may see messages similar to the following:

```
Load of 1/0/8/1/0.22.31.0.0.0.1 failed: Not Found
```

Workaround After the mirror is created, use the `vparsutil -u` command to add the new hardware path to EFI path mapping to the vPars database.

Note that on Integrity systems running vPars, whenever the EFI path of a boot disk changes (for example, if an OS is re-installed on the disk), the new hardware to EFI path mapping has to be updated in the vPars database. This can be done by running the `vparsutil -u` command. For more information on EFI and vPars, see the “EFI and Integrity Notes” section in the *HP-UX Virtual Partitions Administrator’s Guide*.

Related Information

Related Information

This section lists the official vPars documents. All documents, including additional topic-specific papers related to using vPars, are available at the HP Documentation web site at:

<http://docs.hp.com/en/oshpux11iv2.html#Virtual%20Partitions>

- *HP-UX Virtual Partitions Release Notes* (this document)
This describes what’s new as well as known problems for a specific vPars release.
- *HP-UX Virtual Partitions Administrator’s Guide*
This is the vPars system administrator’s guide that describes the basic concepts and common tasks for the vPars product.
- *HP-UX Virtual Partitions Ordering and Configuration Guide*
This document contains information on licensing and version requirements for the vPars product and related HP-UX products, such as HP-UX 11i Operating Environments (OEs), for servers using vPars. The document also contains the information on supported hardware, firmware, I/O cards and devices, and other HP-UX products used with vPars.
- Topic Specific Papers:
 - *Securing Virtual Partitions with HP-UX Role-Based Access Control*
 - *Using Golden Images with Virtual Partitions*
 - *Kernel Memory Allocation*
 - *LPMC and resulting CPU States*
 - *LVM & vPars IO Backplane Upgrade*
 - *LVM/VxVM and vPars sx2000 Upgrade*
 - *Resizing vPars automatically with HP-UX Workload Manager*
 - *Booting, Installing, Recovery, and Sharing in a vPars Environment from DVD/CDROM/TAPE/Network*

Ordering vPars

Product Numbers vPars A.04.01 and later have different product numbers than vPars A.03.xx and earlier:

T1335CC vPars A.05.xx for HP-UX 11i v3

T1335BC vPars A.04.xx for HP-UX 11i v2

T1335AC vPars A.03.xx for HP-UX 11i v1

Software Depot You can order this release of vPars from the HP Software Depot at:

- <http://www.hp.com/go/softwaredepot>

For licensing and configuration information as well as required firmware, see the *HP-UX Virtual Partitions Ordering and Configuration Guide*.



NOTE: Note: the home of the HP Software Depot has changed

- from: <http://software.hp.com>
to: <http://www.hp.com/go/softwaredepot>

The direct links to the vPars products on the HP Software Depot are:

- vPars A.05.xx:
<http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335CC>
 - vPars A.04.xx:
<http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC>
 - vPars A.03.xx and A.02.xx:
<http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335AC>
-

Software Availability in Native Languages

The A.04.04 version of vPars is available only in the English language.



NOTE: HP-UX Virtual Partitions *documentation* is available in the English language and in the Japanese language.
