UNISYS

UNIX® System V, Release 4.0

Unisys Volume Manager

Release 1.2.1
Release Notes

UNIX System V Release 4.0
Unisys Volume Manager

Notational Conventions

In this document, as in all UNIX System V Release 4.0 documentation, certain typesetting conventions are followed when command names, command line format, files, and directory names are described. There are also conventions for displays of terminal input and output.

bold   User input, you must type words that are in **bold** exactly as they appear. These include commands, options to commands, and names of directories and files.

Italic   Variables, you substitute the appropriate values. These values may be filenames or they may be data values, as applicable. Italics are also used for names of UNIX System V Release 4.0 commands and manual pages.

`constant width`   System output, such as prompt signs and responses to commands as they appear on terminal screens, and source code examples are presented in `constant width` type.

<>   Input that does not appear on the screen when typed, such as passwords, keys used as commands, or <RETURN> and other special keys, appear between angle brackets.

<^char>   Control characters are shown between angle brackets because they do not appear on the screen when typed. The circumflex (^) represents the control key (usually labeled CTRL). To type a control character, hold down

	the control key while you type the character specified by *char*. The control character will not appear on the screen.
[ ]	Command options and arguments that are optional, such as [-msCj], are enclosed in square brackets. Do not type the brackets.
|	The vertical bar separates optional arguments from which you may choose one. For example, when a command line has the format

> *command [arg1 | arg2]*

you may use either *arg1* or *arg2* when you issue the command.

| ... | An ellipsis after an argument means that more than one argument may be used on a single command line. |
| *command*(#) | A command name followed by a number in parentheses refers to the section of a UNIX system reference manual that documents that command, system call, or library function. For example, the notation *ed(1)* refers to the page in Section 1 of the *User's Reference Manual* that documents the *ed* command. |

Examples in these *Release Notes* show the default system prompt for UNIX System V Release 4.0, the dollar sign ($). They also show the default prompt when you log in as the super-user, the pound sign (#).

Release 1.2.1 Unisys Volume Manager Overview

This document applies only to the Release 1.2.1 Unisys Volume Manager (UVM) package and not to any other package. Release 1.2.1 Unisys Volume Manager (UVM) is based on Veritas (VxVM) Volume Manager. Each package comes with its own release notes. The packaging of this product is in the final form and is delivered on 150 MB QIC tape.

Unisys Volume Manager Package Contents

The Release 1.2.1 Unisys Volume Manager package consists of the following:

1. *Release 1.2.1 Unisys Volume Manager Release Notes* (4358 5322–200).

2. Release 1.2.1 Unisys Volume Manager Binary Installation Tape (1 QIC tape, 150 MB format)

    Style Numbers:

    *   US6000-DSK (MassCab-2 version)
    *   US6035-DSK (U 6000/35 version)
    *   US6065-DSK (U 6000/65 version)
    *   USW6100-DSK (U 6000/100 version)
    *   USW6300-DSK (U 6000/300 version)

3. *Unisys Volume Manager Administrator's Guide* (3915 2616-200)

4. *Unisys Volume Manager Basic User's Guide* (4585 4122-000)

5. *Unisys Volume Manager Installation Guide* (4585 4098-000)

Installation Procedure

This section describes how to install the Release 1.2.1 Unisys Volume Manager package.

Please read this document in its entirety before proceeding with the software installation.

Hardware and Software Requirements

A Unisys U 6000/35, U 6000/65, U 6000/100, or a U 6000/300 system with a minimum of 16 megabytes of memory and with UNIX System V Release 4.0 successfully installed on it. The release level of the OS must be at least 1.2 . The QT1 package for this release of the OS should be installed.

Software Installation

The steps to install the UVM software differ depending on whether this system is being installed for the first time, this system is being upgraded to a new operating system and new UVM, or this system is being reinstalled with a new operating system and new UVM(root disk erased). These steps differ because an existing user wants to avoid having to backup all his data, install a new operating system, reconfigure his volumes, and then reload his data.

Installing the UVM Package (New Installation)

This section is for the user who does not currently have UVM installed and would like to install UVM. Please refer to the chapter "Installation of Volume Manager" in the *Unisys Volume Manager Installation Guide.*

Before using UVM make sure that the command **disksetup** has been installed properly on the system. If it has not, and the OS release is 1.2 and QT1 is installed on the system, execute the following command:

cp /usr/sbin/disksetup /sbin/disksetup

Installing the UVM Package (Upgrade of UVM from Release 1.1.2 to Release 1.2.1)

Please read this procedure completely before proceeding with the upgrade procedure.

The steps listed in the following procedures assume that all disks, controllers, mirrors, etc. will be configured exactly the same between both releases. Any reconfigurations should be done after this process has been completed.

For adding a new disk to Volume Manager please refer to the *Unisys Volume Manager Installation Guide.*

Follow this upgrade procedure for adding disks that were under UVM 1.1.2 or UVM 1.1.1 control.

There are many new concepts in UVM 1.2.1. One of the main concepts is that of Disks and Disk Groups. Read the chapter on Disks and Disk Groups in the *Unisys Volume Manager Administrator's Guide* before proceeding with the upgrade.

The properties of disks and disk groups that need to be known for the upgrade procedure are:

1. Volumes are created within a disk group and are restricted to using disks within that group. This means that a volume cannot span across two disks in different disk groups.

    For the upgrade procedure, this means that if in UVM 1.1.2, the volume is mirrored/spanned/striped across two (or more) disks, those two (or more) disks have to be in the same disk group after the upgrade to UVM 1.2.1.

2. Volume Manager needs at least one disk in the disk group "rootdg" to be enabled.

Note: All disks must have the required free space (512 blocks) at the end, for the upgrade procedure to work.

To find out if a disk has the required free space or not, do the following:

prtvtoc -f /tmp/abc /dev/rdsk/*disk_node*

Looking at the file /tmp/abc it can be determined whether the disk has the required free space or not. Here is an example. By executing the command

prtvtoc -f /tmp/abc /dev/rdsk/c0.0d1s0

The file /tmp/abc looks as follows

#SLICE	TAG	FLAGS	START	SIZE
0	0x5	0x201	4	833145
1	0x2	0x200	120	225120
2	0x3	0x201	225240	32760
3	0x9	0x200	258000	16380
4	0x4	0x200	274380	278520
5	0x4	0x200	552900	267900

From the first slice (slice 0) the size of the disk can be determined. In this case it is 833149 blocks (833145+4). The block number at which the last non-zero partition (in this case partition 5) ends is 820800 (552900+267900). So the free space at the end of the disk is 12349 (833149 - 820800) blocks, which is greater than 512 blocks and hence enough for a Volume Manager private partition. If there is no free space on the disk, the free space (512 blocks) should be created either at the end or at the beginning of the disk. Creating the free space at the end of the disk is the easiest. One approach is to back up the file system on the last partition, remake the file system with a lesser size, and repartition the disk with the new reduced size for the last partition. The best way to do this partitioning is reduce the size of the last partition by at least 512 blocks in the file generated by **prtvtoc** and then execute **edvtoc** by using the same file. For further information on prtvtoc and edvtoc refer to the **prtvtoc(1M)** and the **edvtoc(1M)** man pages.

The main portion of the upgrade process is deciding how many disk groups are needed on the system.

Normally a single disk group (rootdg) will suffice for a system.

If the system is being used in a Ready Reserve configuration, disks on the MassCab should be added to another disk group (other than rootdg). This is because the import and deport functions work on all disk groups except rootdg. The purpose of Ready Reserve is to provide high availability of data by doing automatic failover. In a system running Ready Reserve MassCabs are connected in a dual initiator mode. If the operation of one system (system A) is interrupted, the other system (system B) takes over the disks used by system A, and makes the data on those disks available. If Volume Manager is being used (the disks are under Volume Manager control), this transition becomes possible

if the disks on the MassCab are in a different (other than rootdg) disk group. If system A is interrupted, system B has to import the disk group and start all the volumes for the data on those disks to become available.

The above factors should be taken into consideration while upgrading the disks in the system to UVM 1.2.1. If disks on the internal SCSI channel and disks on the MassCab are under Volume Manager control, and the system is connected in a dual initiator configuration, the MassCab-2 disks should be put in a different disk group (if those disks are to be assigned to the second system when the first system fails).

There are two possibilities in this upgrade procedure

1. All the disks that need to be upgraded go into one disk group.

2. The disks that need to be upgraded go into different disk groups.

The steps in the following two procedures assume that the entire disk will be under UVM control after the upgrade (**the disk will be repartitioned**). If this is not the case, the procedures should not be used.

The Disks go into one Disk Group

1. Stop all I/O activity on the volumes in UVM 1.1.2 (current version) i.e. unmount all file systems mounted on volumes and stop all processes running on raw volumes.

2. Do **/usr/lib/uvm/sbin/volprint -m > uvm.config**. Save the file uvm.config for later use.

3. The next step depends on whether the OS will not be upgraded (Version 1.2 is already running on the system), will be upgraded to the next version using the upgrade feature, or will be reinstalled (root disk erased and repartitioned).

    I. The OS will not be upgraded (Version 1.2 is already running on the system)

        • Please refer to the *Unisys Volume Manager Administrator's Guide* "Software Removal" in the chapter "Getting Started with UVM" to remove the 1.1.2 release of UVM.

        • Go to step 4.

II. The OS is upgraded from Release 1.1.1 to 1.2 .

- Please refer to the *Unisys Volume Manager Administrator's Guide* "Software Removal" in the chapter "Getting Started with UVM" to remove the 1.1.2 release of UVM.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* (refer to Section 4, "Upgrading Your System from Version 1.1.1 to 1.2 ") for upgrading an existing system to the 1.2 release of the operating system.

    Note: Be sure that you will only be upgrading the operating system and not reinstalling it.

- Go to step 4.

III. OS release 1.2 is installed on the system, erasing a previous release of the OS.

- Save the file uvm.config on tape with the command
    ls uvm.config | cpio -oBmudv > /dev/rmt0

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* (refer to Appendix D, "Reinstallation Procedures") to install the 1.2 release of the operating system.

    Note: This process will erase your root disk. Any disks which are under UVM control should not be repartitioned.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* under heading "Logging In To Unix" in the chapter " Installing UNIX System V Release 4.0" to log into the system.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* under heading "Completing the Installation" in the chapter "Installing UNIX System V Release 4.0" to log onto the system and become a superuser.

- Restore the configuration file from the tape you saved them on with the command
  cpio -iBmudv < /dev/rmt0
- Go to step 4.

4. Follow the instructions in the *Unisys Volume Manager Installation Guide* in the chapter "Installation of Volume Manager" to install the 1.2.1 release of UVM.

5. Decide what disk group all the disks need go into.

   If all the disks need to go into the disk group "rootdg" nothing needs to be done. If the disks need to go into a disk group other than "rootdg", Volume Manager must be enabled by adding a disk to the "rootdg" disk group. (refer to *volinstall in the UVM Installation Guide*)

6. Decide what disk media name each disk will have (A logical name to use for the disk, for example, is disk01)

7. Enter the disk node name and the disk media name in the file /etc/vol/bin/upgrade.data (format is listed in the file)

8. Run '/etc/vol/bin/volupgrade *config_file*', where *config_file* is the file name where the old UVM 1.1.2 configuration was previously saved in step 2 (in this example it is uvm.config).

   e.g. **/etc/vol/bin/volupgrade /home/save/uvm.config**

   If no disk is under Volume Manager control when volupgrade is run, the disks can be added only to one disk group i.e. "rootdg". If the disks need to be added to another disk group, enable Volume Manager by adding a disk to the disk group "rootdg" (refer to *volinstall* in the *UVM Installation Guide*), and then run volupgrade.

9. After the upgrade procedure all volumes will be in the DISABLED state. Start all the volumes using '**volume start** *volume_name*' and proceed.

   e.g. **volume -g** *disk_group* start vol1

   where *disk_group* is the name of the disk group the disks were added to.

The Disks go into Different Disk Groups

If a volume spans across 2 disks, they must go into the same disk group. So, if two disks need to go into different disk groups, they should not have any common volumes.

1. Stop all I/O activity on the volumes in UVM 1.1.2 (current version) Unmount all file systems mounted on volumes and stop all processes running on raw volumes.

2. Decide on the disk groups for the disks.

3. Make a list of all the volumes for the set of disks that go into the same disk group. Do this for all the disk groups decided on in step 2.

4. Do '/usr/lib/uvm/sbin/volprint -mh *[vol_name1] [vol_name2]* ... > **uvm.config.<*dgname*>**' where *vol_name1, vol_name2* .. are the names of all of the volumes on the disks that go into the same disk group, and *dgname* is the name of the disk group the volumes go into. Do the volprint command for all the disk groups decided on in step 2.

    For example, if disks c1.4d14, and c1.4d02 go into the disk group "rootdg" and the disks c1.3d12 and c1.3d04 go into the disk group "testdg" and the volumes on the disks c1.4d14 and c1.4d02 are vol1, vol2 and vol3 and the volumes on disks c1.3d12 and c1.3d04 are vol4 and vol5, then the following commands should be executed to save the configuration for the upgrade to UVM 1.2.1.

    /usr/lib/uvm/sbin/volprint -mh vol1 vol2 vol3 > uvm.config.rootdg

    /usr/lib/uvm/sbin/volprint -mh vol4 vol5 > uvm.config.testdg

    Save the files uvm.config.rootdg and uvm.config.testdg for use during the upgrade procedure.

    vol1, vol2, and vol3 are all volumes existing on c1.4d14 and c1.4d02; vol4 and vol5 are volumes existing on c1.3d12 and c1.3d04.

5. The next step depends on whether the OS will not be upgraded (version 1.2 is already running on the system), will be upgraded to the next version using the upgrade feature, or will be reinstalled (root disk erased and repartitioned).

I.   The OS will not be upgraded (version 1.2 is already running on the system)

- Please refer to the *Unisys Volume Manager Administrator's Guide* "Software Removal" in the chapter "Getting Started with UVM" to remove the 1.1.2 release of UVM.

- Go to step 6.

II. The OS is upgraded from from release 1.1.1 to 1.2 .

- Please refer to the *Unisys Volume Manager Administrator's Guide* "Software Removal" in the chapter "Getting Started with UVM" to remove the 1.1.2 release of UVM.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* (refer to Section 4, "Upgrading Your System from Version 1.1.1 to 1.2 ") for upgrading an existing system to the 1.2 release of the operating system.

   Note: *Be sure that you will only be upgrading the operating system and not reinstalling it.*

- Go to step 6.

III. Version 1.2 is installed on the system, erasing a previous release of the OS.

- Save the files uvm.config.rootdg and uvm.config.testdg on tape with the command

   ls uvm.config.rootdg uvm.config.testdg |
   cpio -oBmudv > /dev/rmt0

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* (refer to Appendix D, "Reinstallation Procedures") to install the 1.2 release of the operating system.

   This process will erase your root disk and that any disks which are under UVM control should not be repartitioned.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* under the heading "Logging In To Unix" in the chapter " Installing UNIX System V Release 4.0" to log onto the system.

- Follow the instructions in the *UNIX System V Release 4.0 Software Installation and Operations Guide* under the heading "Completing the Installation", in the chapter "Installing UNIX System V Release 4.0" to log onto the system and become a superuser.

- Restore the configuration file from the tape you saved them on with the command
    cpio -iBmudv < /dev/rmt0

- Go to step 6.

6. Follow the instructions in the *Unisys Volume Manager Installation Guide* in the chapter "Installation of Volume Manager" to install the 1.2.1 release of UVM.

7. Note the disk groups the disks must go into.

    If a set of disks has to be added to the disk group "rootdg" then the upgrade procedure should be first carried out for those disks and then for the disks that have to be added to disk groups other than rootdg.

    If a set of disks has to be added to the disk group "rootdg" volupgrade can be run directly. If the disks need to go into disk groups other than "rootdg", enable Volume Manager by adding a disk to the disk group "rootdg" (refer to *volinstall* in the *UVM Installation Guide*), and then run volupgrade.

8. The upgrade process needs to be carried out separately for each disk group.

    If the number of disk groups in UVM 1.2.1 is two, the volupgrade command needs to be run twice.

9. Decide on a disk group to upgrade (for example, rootdg).

10. Decide what disk media name each disk will have within the disk group (for example, c1.4d14 could be called disk01 and c1.4d02 could be called disk02).

11. Enter the disk node name and the disk media name in the file /etc/vol/bin/upgrade.data (format is listed in the file) .

12. Run '/etc/vol/bin/volupgrade *config_file*', where *config_file* is the file name where the old UVM 1.1.2 configuration was saved in step 4 (in this example it is uvm.config.rootdg).

    /etc/vol/bin/volupgrade /home/save/uvm.config.rootdg

13. After the upgrade procedure all volumes will be in the DISABLED state. Start all the volumes using 'volume start "volume_name"' and proceed.

    volume -g *disk_group* **start vol1**

    where *disk_group* is the name of the disk group the disks were added to.

14. Carry out steps 9 to 13 for each disk group decided in step 2.

This version of UVM does not support the upgrade of the root disk (root and swap partitions) to volumes. So if there are any volumes on the root disk, they will have to be backed up and recreated after UVM1.2.1 is installed.

All disks under UVM 1.2.1 need some free space for a private region where UVM related data is stored. The upgrade procedure tries to find free space at the end of a disk. Disks on Unisys systems are partitioned using the combination of scsiformat and mkivdesc commands (the description file for scsiformat is generated using mkivdesc). Many of the disks already have some unused space at the end, which in most cases is enough for UVM. If volupgrade does not find enough free space for the private region, it quits and displays an appropriate message. If there is no free space on the disk, the free space (512 blocks) must be created either at the end or at the beginning of the disk. Creating the free space at the end of the disk is the easiest. One approach is to back up the file system on the last partition, remake the file system with a lesser size, and repartition the disk with the new reduced size for the last partition. If the file system is VxFS Advanced it can be shrunk online by using the *fsadm* command. The following disks have the free space needed for UVM assuming that they were partitioned using mkivdesc and scsiformat. If they were partitioned by using some other means, the free space may not be there.

- 1.3 GB
- 525 MB

- 652 MB

- 164 MB

- 319 MB

- 82 MB

- 331 MB

- 425 MB

Not all disks are listed here. If a disk does not show up in this list, it doesn't mean that the disk does not have the free space needed for UVM.

Upgrade of Some Partitions on the Disk

This subsection has guidelines on upgrading some partitions of the disk to get them under UVM 1.2.1 control.

Two disk types support disk private regions: simple and sliced. The simple type presumes that the public and private regions are stored on the same disk partition, with the public region following the private region. The sliced type presumes that the public and private regions are stored on different disk partitions. For this upgrade procedure we are concerned with the sliced type. If the disk name ends in a hexadecimal digit other than 0 (e.g. c1.4d14s3) the public region defaults to the named partition, and the private region defaults to the immediately following partition. For example, with an access name of c1.4d14s3, the public region defaults to partition 3 and the private region defaults to partition 4 (c1.4d14s4). The private region can be specified to be any other partition on the disk.

There are several ways in which a single partition can be upgraded to UVM 1.2.1:

1. One way of getting a partition under UVM 1.2.1 control is adding that partition as a sliced disk. The private partition will default to the next partition. For example if /dev/rdsk/c0.0d1s3 is added as a sliced disk the private region will default to /dev/rdsk/c0.0d1s4.

2. Another way of upgrading single partitions to UVM 1.2.1 is to upgrade the full disk from UVM 1.1.2 to UVM 1.2.1. For example, if disk c0.0d1 has 4 partitions and partitions 1 and 3 are under UVM 1.1.2 control and partitions 2 and 4 are being used as raw partitions, before removing UVM 1.1.2 from the disk, make simple volumes on partitions 2 and 4

using **upmk** and **uvmk**. (Both these commands are non-destructive; they won't destroy any current data on the partitions as long as these partitions are not being added to other volumes as mirrors). Follow the above procedure to upgrade the whole disk to UVM 1.2.1. Once under UVM 1.2.1 control, the volumes can be used as raw volumes through the /dev/rvol interface.

3. If it is necessary to keep some partitions as raw partitions (to be used as /dev/rdsk) perform the following upgrade. As an example, suppose the disk /dev/rdsk/c0.0d1 is being upgraded and partitions 1, 2, 3, and 4 are under UVM 1.1.2 control and partition 5 is not under UVM control:

    *   Using UVM 1.1.2, make a simple volume on partition 5 using the **upmk** and **uvmk** commands.

    *   Follow the upgrade procedure·to upgrade the whole disk to be under UVM 1.2.1 control.

    *   Go to the directory /etc/vol/upgrade.d/c0.0d1

    *   Here the old partitioning of the disk is saved in the file **oldpart** and the new partitioning is saved under the file **newpart**. The **newpart** file must be modified. Copy this file to another file name.

        cp newpart newpart.new

    *   An example oldpart is :

#SLICE	TAG	FLAGS	START	SIZE
0	0x5	0x201	4	833145
1	0x2	0x200	120	225120
2	0x3	0x201	225240	32760
3	0x9	0x200	258000	16380
4	0x4	0x200	274380	278520
5	0x4	0x200	552900	267900

An example newpart (depends on oldpart) is :

#SLICE	TAG	FLAGS	START	SIZE
0	0x5	0x201	4	833145
1	0x0	0x0	0	0
2	0x0	0x0	0	0
3	0x0	0x0	0	0
4	0x0	0x0	0	0
5	0x0	0x0	0	0
6	0x0	0x0	0	0
7	0x0	0x0	0	0
8	0x0	0x0	0	0
9	0x0 .	0x0	0	0
10	0x0	0x0	0	0
11	0x0	0x0	0	0
12	0x0	0x0	0	0
13	0x0	0x0	0	0
14	0xe	0x201	120	820680
15	0xf	0x201	820800	512

- In this example, partition 5 has to be kept as a raw partition. Modify the file **newpart.new** (which is the file newpart because it was copied) and change the line for partition 5 to look like the line for partition 5 in the file **oldpart**. This is true for multiple partitions also. If, in addition to partition 5, partition 3 also needs to be used as a raw partition, modify the line for partition 3.

In this example **newpart.new** would look as follows:

#SLICE	TAG	FLAGS	START	SIZE
0	0x5	0x201	4	833145
1	0x0	0x0	0	0
2	0x0	0x0	0	0
3	0x0	0x0	0	0
4	0x0	0x0	0	0
5	0x4	0x200	552900	267900
6	0x0	0x0	0	0
7	0x0	0x0	0	0
8	0x0	0x0	0	0
9	0x0	0x0	0	0
10	0x0	0x0	0	0
11	0x0	0x0	0	0
12	0x0	0x0	0	0
13	0x0	0x0	0	0
14	0xe	0x201	120	820680
15	0xf	0x201	820800	512

- Now use the file **newpart.new** to re-edit the VTOC file of c0.0d1:

  **edvtoc -f /etc/vol/upgrade.d/c0.0d1/newpart.new
  /dev/rdsk/c0.0d1s0**

- Remove only the volume and plex that was created for the c0.0d1s5 partition (keep the subdisk so that Volume Manager does not use this space for other volumes). For example, if the volume is vol-tmp, the plex is plex-tmp, the subdisk is sd-tmp and the disk group is rootdg.

  - # **volplex -f dis plex-tmp**

  - # **voledit -f rm vol3-tmp**

  - # **volsd -f dis sd-tmp**

  - # **voledit -f rm plex-tmp**

- Keep the subdisk sd-tmp so that volume manager does not use that free space and the partition /dev/rdsk/c0.0d1s5 can be used as a raw partition.

- Reboot the system so that the partition becomes available.

Differences Between UVM 1.1.2 and UVM 1.2.1

1. The use of disks and disk groups, including access and media records. For further information on this please refer to the chapter titled "Disks and Disk Groups" in *Unisys Volume Manager Administrator's Guide.*

2. Root and Swap volume support. For further information on this please refer to subsection "Volume Manager Rootability" in chapter "Introduction" in *Unisys Volume Manager Administrator's Guide.*

3. New utility *volassist*, which makes it easier to make volumes. For further information on this please refer to subsection "The Volume Manager Utilities" in chapter "Volume Administration" and to the volassist man page in *Unisys Volume Manager Administrator's Guide.*

4. Support for event notification using *volnotify* and *volwatch.* For further information on this, please refer to the volnotify and volassist man pages in *Unisys Volume Manager Administrator's Guide.*

Migration from UVM 1.1.2 to UVM 1.2.1 User Interface

Note: The UVM 1.1.2 user interface will not be supported after this release.

The following are notes on using the UVM 1.1.2 user interface:

1. The UVM 1.1.2 commands will operate only on disks in the disk group "rootdg". The UVM 1.2.1 commands must be used for all other disk groups.

2. The upstat command will not show the offset from the beginning of a partition for the subdisk associated with the plex. It will display the node name of the public partition on which the subdisk resides. In UVM 1.2.1

multiple subdisks can reside on a partition. To find out the offset, use the **volprint** command.

3. The -1 and -s options are no longer available with uvmadm.

4. The value given for the -s option for uvmk is ignored. The volume's size is set to the size of the smallest plex.

5. In the UVM 1.1.2 sysadm interface in Administer UVM Operations menu, the following options are no longer available:

   - Sync UVM

   - Display UVM databases

   - Add UVM database

   - Delete UVM database

   - Create UVM database

6. In the UVM 1.1.2 sysadm interface, to make a plex, data has to be entered in the form of *disk_media_name,offset,length* for the subdisk, where *disk_media_name* is the media name assigned by UVM to a disk node, *offset* is the offset from the beginning of the public partition at which the subdisk should be made, and *length* is the length of the subdisk.

7. The command **uvtrace -e config**, supported under UVM Release 1.1.2, is not supported under UVM 1.2.1.

User Notes

This section contains a collection of user notes for Release 1.2.1 Unisys Volume Manager.

- The upmk command does not work as is for UVM 1.2.1. The format is different. In UVM 1.2.1 there is no concept of subdisks on disk partitions. There is one big public region and subdisks are allocated from this public region at an offset from the beginning of the region. The upmk command now needs the disk media name followed by the offset and the length of the subdisk (disk_media_name,offset,length) instead of the node name for the subdisk. All other options remain the same. For example

  upmk -p disk01,0,2000 plex1

- Volume Manager knows all the drives on the system. Even if the drives are not under UVM control they are listed when the **voldisk** command is used. Their state is set to error. UVM is designed to work in this way.

- The procedure to reverse a failed **volupgrade** (a failed upgrade of a disk) is:

  In the directory /etc/vol/upgrade.d/*diskname*, where *diskname* is the name of the disk that was upgraded, there is a file called **scsifor_part**. This file contains the partitioning of the disk before the upgrade. Use this file with the scsiformat command to repartition the disk and the disk will be partitioned as it was before the upgrade. For example:

  scsiformat -o /dev/rdsk/c0.0d1 /etc/vol/upgrade.d/c0.0d1/scsifor_part

- Grow and shrink operations (basic file system operations) and the **volresize** command will fail to grow the file system if the file system is not VxFS Advanced. The workaround for this is to backup the data on the file system and remake the file system with the larger size.

- If a drive is added to the system after the system is rebooted, it will have to be defined using the **voldisk** command. For example, if the drive c1.3d02 is added to the MassCab, then for UVM to recognize the drive, do

  voldisk define c1.3d02s0

  After doing this, **voldiskadd c1.3d02** will work.

- A new disk group cannot be created from the sysadm menus. To create a new disk group, initialize the disk using the Basic Disk Operation's Add Disks menu (with disk group as none), then create a new disk group by using the voldg command.

  For example, if the disk was c1.4d14 and the new disk group is testdg, use the command:

  voldg init testdg disk01=c1.4d14s0

- While running volinstall or while encapsulating a disk when the system reboots, turn the system power off, then back on for the ISIC board to reset itself properly.

- The file /etc/vol/disks.exclude is seen only by the volinstall command. No other command refers to this file. vold sees a disk even if it is listed in the /etc/vol/disks.exclude file.

Known Problems in the 1.2.1 Release

- The old UVM 1.1.2 user interface will not be supported after this release.

- The upstat command cannot be used to obtain the value of a plex's comment field, nor can it be used to obtain the value of a volume's comment field. The comment field can be printed by the volprint command.

- If the system repeatedly fails to access a UVM device, the system may panic.

- The upmk command can fail if multiple upmk commands are executed at the same time.

- If all the device nodes for a MassCab-2 are not present, UVM may print warning messages.

- When using sysadm to delete a volume, plex, or mirror, sysadm may incorrectly allow the user to reselect the object for deletion a second time. To avoid this, use the cancel function to exit the deletion menu.

- When encapsulating a disk, the resulting volumes are named based on the information stored in the drive's VTOC. Thus volumes can be named rootvol#, standvol#, and swapvol# even if they are not being used to mirror the root, stand, or swap device.

- The **voliod** command can create only 20 voliod processes at a time. If a user tries to creat more than 20, the command is ignored.

- If a vxfs file system is created on a volume, and the volume is mounted using **mount -Fvxfs** */dev/uv/name*, the file system cannot be grown or shrunk. Use the command **mount -Fvxfs** */dev/vol/name* or the command **mount -Fvxfs** */dev/vol/rootdg/name* to mount the file system.

- If the Remove Volume menu is used to remove a mounted volume, sysadm falsely reports that the file system was unmounted.

- When selecting a volume to be removed, sysadm indicates whether that volume contains a mounted file system, instead of the type of file system on a drive.

- The Set Defaults option of sysadm allows the user to set the number of mirrors to the "}" character. This field must be set to a number of future UVM operations or UVM commands might fail.

- When using the Replace Disk menu, the choices function cannot be used to select the name of a replacement device.

- There is no online man page for the **volreattach** command, use the printed man page instead.

- The **voldisksetup** man pages should indicate that MassCab-2 drives use two digits for a target ID.

- The process to get root, stand, and swap partitions under UVM control is not supported in this release.

- The volassist command cannot mirror a volume on one disk. If there is only one disk in a disk group and *volassist mirror* is used, the following error message is displayed:

    ```
    volassist: Insufficient space for a x block
    long mirror in concat, spanning layout
    ```

    where x is the length of the volume in blocks.

- The command **voldctl add disk** *drive_name*, where *drive_name* is a node name for a disk, adds the drive to the /etc/vol/volboot file. If the drive does not exist, a warning message is displayed.

- The command

  voldisk init c1.6d03s0 publen=300 len=400 puboffset=10 offset=20

  needs additional explanation

    1. publen and len are two names for the same attribute.

    2. puboffset and offset are two names for the same attribute.

    3. If an attribute is specified more than once, then voldisk uses the specification closest to the end of the command line.

- The command **volstat -i** *interval*, where interval is the number of seconds between prints, does not exit gracefully if there are no volumes in rootdg. (It prints some shell variables before exiting)

- The **putil** *field_name* is not supported by **volmend**, use **putil0, putil1, putil2** instead.

- The **volmirror** command is used internally by the UVM shell scripts. It does not check for invalid inputs. It also prints unexpected output when used on the command line.

- In the **Basic Volume Operations** menu in UVM's new sysadm interface, the *Remove* option removes volumes. After a volume is removed the **Remove Volumes** screen will still list the volume. To get a correct listing of the volumes return to the **Basic Volume Operations** menu and select the *Remove* option.

- The command **volmend -s clear all** *subdisk* produces and error message

  fsgen/volmend: Object <plex containing subdisk> is a plex, not allowed and returns an exit code of 20.

- The encapsulation process uses the information in the VTOC of the disk while naming volumes. If the disk is partitioned similar to the root disk, then after encapsulation partition 1 on that disk will be named **rootvol***number*, partition 2 will be named **swapvol***number*, and partition 3 will be named **standvol***number*, where number is a digit. However these volumes have no relation to the root, swap and stand volumes.

- After installing UVM 1.2.1, during the reboot that follows, the messages

  ```
  idmknod: can not stat /dev/uv
  idmknod: can not stat /dev/ruv
  ```

  are displayed on the screen. They can be ignored.

- The **Quick Install** option in volinstall cannot be used because the root and swap volume feature is not supported in this release.

- The command **edvtoc** does not check to see whether a partition is within disk boundaries. If a partition that starts beyond the last block of the disk is created, when UVM tries to access this partition, it exits with an error:

  ```
  Error: Device path not valid
  ```

  The reason is that the partition is created beyond disk the boundaries.

- When using the modify volume sysadm menu, the choices key cannot be used to obtain a list of plexes.

- If a MassCab-2 disk is being used by UVM, the **voldisk** command must be used to place the drive offline before it can be removed or deleted.

- If the root file system is VxFS and **vold** and **voliod** are running when the system is shut down, the file system doesn't unmount cleanly. For the file system to unmount cleanly, you must create a file called K00uvm in /etc/rc0.d and put the following lines in it:

  /sbin/vold -k
  /sbin/voliod -f set 0