"viosupgrade" command from VIOS – Non-NIM environment

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NOTE: The following document describes testing of ESP VIOS 3.1 code, pre-GA. Post-GA, some of this information may no longer be relevant or required. Please refer to the appropriate release notes for VIOS 3.1, before attempting to follow these instructions.

This document assumes that you know what you're doing and have done a little planning and preparation first. It is highly recommended that you read and refer to Nigel Griffiths presentation for more information on upgrading to VIOS 3.1, *BEFORE* you attempt to upgrade a VIOS to 3.1:
https://www.ibm.com/developerworks/community/blogs/cgaix/resource/80_Upgrading_to_VIOS31_in_Action.pdf

In this example, we have a SSP cluster of 4 VIOS (two VIOS nodes on each physical Power System CEC). Two of the cluster nodes have already been upgraded to VIOS 3.1.0.00. The cluster status (below) shows that nodes vio1 and vio2 are both UP_LEVEL (on 3.1). The last two nodes, vio3 and vio4 are ON_LEVEL, running 2.2.6.30. The 2.2.6.30 level provides access to the "viosupgrade" tool.

```
[padmin@vio3]$ cluster -status -verbose | grep -E 'Node Name|Node Upgrade Status'
    Node Name:            vio1
    Node Upgrade Status:  3.1.0.00 UP_LEVEL
    Node Name:            vio2
    Node Upgrade Status:  3.1.0.00 UP_LEVEL
    Node Name:            vio3
    Node Upgrade Status:  2.2.6.30 ON_LEVEL
    Node Name:            vio4
    Node Upgrade Status:  2.2.6.30 ON_LEVEL
```

We will use the **viosupgrade** tool to upgrade these SSP VIOS to 3.1.0.00. The following steps are based on the following paragraph from the VIOS 3.1 ESP upgrade instructions document:

3.3 "viosupgrade" command from VIOS – Non-NIM environment

VIO Servers from 2.2.6.30 to 3.1.0.00 or later can be upgraded using "viosupgrade" command where VIOS can upgrade itself. This method is another way of upgrading VIOS in a non-NIM environment where it uses alt_disk_mksysb command to install 3.1.0.00 on the provided new disk.

Note: If user wishes to boot back to the older image, they can do so by setting the bootlist for the old rootvg disk and restart the VIOS.

Command: *viosupgrade -l -i <mksysb image> -a <hdisk>*

Example: *viosupgrade -l -i vios3.1_mksysb -a hdisk1*

Upgrade Status: *Following command gets the status of the VIOS upgrade operation after the VIOS partition restarts using the newly installed image.*

Status: *viosupgrade -l -q*

Note: Query option ("-q") is provided to query the installation status when VIOS comes up with the newly installed image. This option does not provide any output during VIOS backup and installation process (prior to the VIOS restart).

The following steps were performed to upgrade both nodes to VIOS 3.1.0.00.

1. On the first VIOS, vio3, we check the VIOS level is 2.2.6.30 and then make available, a spare disk which we will use as an alternate root volume group.

```
[padmin@vio3]$ ioslevel
2.2.6.30
[padmin@vio3]$ r oem
oem_setup_env
[root@vio3]# lspv
hdisk0        00fa2d4742c2fa99                    rootvg        active
hdisk1        00fa2d4757ea53dc                    altinst_rootvg
hdisk2        00fa2d21bdb01ff7                    caavg_private  active
hdisk3        none                                None
hdisk4        none                                None

[root@vio3]# alt_rootvg_op -X altinst_rootvg
Bootlist is set to the boot disk: hdisk0 blv=hd5

 [root@vio3]# lspv
hdisk0        00fa2d4742c2fa99                    rootvg        active
hdisk1        00fa2d4757ea53dc                    None
hdisk2        00fa2d21bdb01ff7                    caavg_private  active
hdisk3        none                                None
hdisk4        none                                None

[root@vio3]# chpv -C hdisk1

[padmin@vio3]$ lspv -free
NAME           PVID                        SIZE(megabytes)
hdisk1         00fa2d4757ea53dc            122880
```

2. We take note of several important VIOS configurations items, so that we can compare these before and after the upgrade process. This will allow us to ensure the upgrade has completed as expected.

```
$ lsmap -all
$ lsmap -all -net
# lsseas -c
$ pv -list
$ lu -list
$ cluster -status
$ cluster -status -verbose
# lsdev -Cc adapter
# ifconfig -a
# netstat -nr
# hostname
# lspv
```

```
# lsdev -Cc disk

# for i in `lsdev -Cc disk | awk '{print $1}'`
do
echo $i
lsattr -El $i -a queue_depth -a reserve_policy
echo
done

$ cat config/ntp.conf
$ cat /etc/netsvc.conf
$ grep TZ /etc/environment
```

3. The viosupgrade command has the following options.

```
[padmin@vio3]$ viosupgrade -h

Usage:
viosupgrade -l -i image_file -a mksysb_install_disk [-c]
viosupgrade -l -q
Flags:
-l      Specifies local Node Installation.
-i      Specifies image file for the alternate disk installation.
-a      Specifies alternate disk to install the provided image.
-c      Specify if the node is part of the cluster.
-q      Queries the status of VIOS restore operation after booting
        the VIOS with newly installed image.
```

4. We start the upgrade process on vio3. First we copied the VIOS 3.1 mksysb image to the /home/padmin directory on vio3. Then we ran the viosupgrade tool with -l, for local node installation, -i to specify the mksysb image for the alt rootvg creation and -c to indicate the node was part of a SSP cluster.

Please Note: This step assumes that you have already created a VIOS 3.1 mksysb image, using the following procedure: https://www-01.ibm.com/support/docview.wss?uid=isg3T1011386#4

For the GA release, you will need to download the ISO images from the IBM ESS website first.

Step 2: Select the software you wish to download

	Product Number	Product Name
☐	5765-CD3	AIX Enterprise Edition
☐	5765-H23	PowerHA for AIX Standard Edition V6
☐	5765-H39	PowerHA for AIX Standard Edition V7
☐	5765-PVE	PowerVM Enterprise Edition
☑	5765-VE3	PowerVM Enterprise ED V3

Total download size(MB): 9862

Product				
5765-VE3	details	◨	PowerVM Enterprise ED V3	21998

Release		Download Package		Size(MB)
06.01.00	packages	☐	1404: Expansion Pack v06.01.00,ENU,DVD	185
01.05.00	packages	☐	2201: PowerVM Enterprise Edition v01.05.00,ENU,DVD	11766
03.01.00	packages	☑	2344: IBM PowerVM V3 / VIOS v03.01.00,ENU,DVD	9862
		☑	README for ISO Download	1
		☑	ISO, Virtual I/O Server v3.1.0.0 DVD 1 of 2 (11/2018)	4488
		☑	ISO, Virtual I/O Server v3.1.0.0 DVD 2 of 2 (11/2018)	762
		☑	ISO, Virtual I/O Server v3.1.0.10 Flash (11/2018)	4611

Then you can use the 'cat' command to combine all the files into one file for the mksysb resource. This is not a new procedure. This has been required for many years and is no different for VIOS 3.1.

In our case, we copied the mksysb to our NIM master and from there, copied it to each of the VIOS.

Please refer to Nigel Griffiths presentation for more information on creating the necessary mksysb from the ISO images on ESS:

https://www.ibm.com/developerworks/community/blogs/cgaix/resource/80_Upgrading _to_VIOS31_in_Action.pdf

```
$ scp vios3100_mksysb padmin@vio3:

[padmin@vio3]$ viosupgrade -l -i vios3100_mksysb -a hdisk1 -c
Welcome to viosupgrade tool.
Operation triggered for given node(s).
Please wait for completion..
Initiating VIOS configuration backup..
VIOS configuration backup successful.
Initiating installation on alternate disk(s)..
Installation on alternate disk(s) successful.
Copying files to altinst_rootvg.
Waking up altinst_rootvg successful.
Putting volume group altinst_rootvg to sleep ...
forced unmount of /alt_inst/var/adm/ras/livedump
forced unmount of /alt_inst/var/adm/ras/livedump
forced unmount of /alt_inst/var
forced unmount of /alt_inst/var
forced unmount of /alt_inst/usr
forced unmount of /alt_inst/usr
forced unmount of /alt_inst/tmp
forced unmount of /alt_inst/tmp
forced unmount of /alt_inst/opt
forced unmount of /alt_inst/opt
forced unmount of /alt_inst/home
forced unmount of /alt_inst/home
forced unmount of /alt_inst/admin
forced unmount of /alt_inst/admin
forced unmount of /alt_inst
forced unmount of /alt_inst
Fixing LV control blocks...
Fixing file system superblocks...
VIOS will be rebooted after '60' seconds to boot from the newly installed disk.

Press contrl+c to terminate.

Rebooting . . .
```

Note: When user call the viosupgrade tool with all the mandatory arguments, the VIOS automatically initiates its own installation after taking the VIOS backup. Following steps are involved with viosupgrade tool when this gets triggered from VIOS.

a. VIOS metadata backup will be taken and temporarily saved in /tmp filesystem. If filesystem space is not sufficient to hold the backup data. Filesystem size will be automatically increased to accommodate the backup file.

b. Installs bos.alt_disk_install fileset to get the alt_disk_mksysb command from VIOS 3.1 ISO image for VIOS 3.1 installation.

c. Initiates this new alt_disk_mksysb from VIOS to install the mksysb image on the alternate disk.

d. After alt_disk_mksysb installation, filesystem from alternate mksysb disk will be mounted and the backup file from the temporary location will be copied to this filesystem. Alternate mksysb disk is expected to have sufficient disk space to copy the backup file.

e. New bootlist will be created with alternate mksysb disk.

f. Initiates the reboot of VIOS on alternate mksysb disk.

g. Upon successful booting with new mksysb disk, after starting the VIO daemon service, inittab triggers auto VIOS restore process.

h. Auto restore looks for the restore signature file in the root filesystem. If this file exists, then it initiates restore process and restores VIOS metadata with newly installed mksysb image.

i. In some cases, VIOSBR restore requires node reboot to complete the restore process. If viosbr restore returns the error code "to reboot and restart the restore command, system will be automatically rebooted.

j. Upon 2nd reboot, again initab looks for the restore signature file, if it exists, it initiates the restore command again.

k. This step will be repeated as long as it gets the error code 98. In order to avoid any issues related to infinite loop, these steps (reboot + restore) will be called 3 times in a row (on all circumstances, there is no need for more than 2 reboots). If restore command fails to successfully restore VIOS metadata configuration, an error will be logged in the Error log before exiting from the backup process.

l. If restore fails with any other error code, an error log entry will be logged to Error log to indicate the error with VIOS metadata restore process. It's the user's responsibility to fix the issue and re-run the "viosbr –restore"command manually to restore the metadata. Error log entry will have the details of the backup file path for users.

m. If restore returns successfully, restore signature file has been removed and an entry will be logged in the restore log file.

n. User can run viosupgrade with "-q"option to check the status of the VIOSBR restore process.

5. The VIOS will reboot a couple of times. Monitor this from the HMC. Once the VIOS has finished it reboots, login via the HMC vterm console. You will be prompted to set the padmin password and accept license agreements. Verify that ioslevel returns the expected version, 3.1.0.00.

```
IBM Virtual I/O Server

                         login: padmin
[compat]: 3004-610 You are required to change your password.
       Please choose a new one.

padmin's New password:
Enter the new password again:

Indicate by selecting the appropriate response below whether you
accept or decline the software maintenance terms and conditions.
Accept (a) |  Decline (d) |  View Terms (v) > a
$
$ ioslevel
3.1.0.00
```

6. Monitor the status of the viosupgrade tool, viosbr restore. If you have logged in before the restore process has completed, you may see a message stating that the VIOS will be rebooted again. Otherwise, you will see a message that the restore is completed and the cluster node has also been recovered/restarted.

```
$ viosupgrade -l -q
Welcome to viosupgrade tool.
Getting status of node(s):

Please see the viosbr restore status:
===================================


Viosbr restore timestamp:
Tue Sep  4 00:07:27 CDT 2018


License acceptance is successful

Restoring the backup..

RULES: The restored device settings do not match the recommended factory default
settings
Restoration of other components configurations are complete in PRE phase.
Please reboot the VIOS system before restoring further devices

Restore summary on vio3:
Backedup Devices that are unable to restore/change
==================================================



DEPLOYED or CHANGED devices:
```

```
============================
Dev name during BACKUP              Dev name after RESTORE
--------------------                ---------------------
'ArtexRules' are restored successfully
***************************************************************************
The command's response was not recognized.  This may or may not indicate a problem.
***************************************************************************


viosbr restore requires reboot.
Rebooting..


--


$ viosupgrade -l -q
Welcome to viosupgrade tool.
Getting status of node(s):

Please see the viosbr restore status:
====================================


Viosbr restore timestamp:
Tue Sep  4 00:11:49 CDT 2018


License acceptance is successful

Restoring the backup..

RULES: The restored device settings do not match the recommended factory default
settings
vtscsi3 in backup does not have a matching VTD on the system
vtscsi0 in backup does not have a matching VTD on the system
vtscsi6 in backup does not have a matching VTD on the system
vtscsi1 in backup does not have a matching VTD on the system
vtscsi5 in backup does not have a matching VTD on the system
Restore summary on vio3:
Backedup Devices that are unable to restore/change
=================================================
VMLibrary


DEPLOYED or CHANGED devices:
============================
Dev name during BACKUP              Dev name after RESTORE
--------------------                ---------------------
'ArtexRules' are restored successfully
ct_node_id                          794b545abb5a278f
ent8                                ent7
hdisk0                              hdisk0
hdisk1                              hdisk1
hdisk2                              hdisk2
hdisk3                              hdisk3
hdisk4                              hdisk4
ent7                                ent9
***************************************************************************
The command's response was not recognized.  This may or may not indicate a problem.
***************************************************************************


Restore is successful..


Cluster restarted after viosbr restore..
Inittab entry is removed..
$
```

7. Once the upgrade was completed, cluster status reported that vio3 was "*3.1.0.00 UP_LEVEL*".

```
[padmin@vio3]$ cluster -status -verbose | grep -E 'Node Name|Node Upgrade Status'
    Node Name:              vio1
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Name:              vio2
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Name:              vio3
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Name:              vio4
    Node Upgrade Status: 2.2.6.30 ON_LEVEL

[padmin@vio3]$ cluster -status -verbose
Cluster Name:           powervc
Cluster Id:             c33ad822f0c311e780030090fa7711d5
Cluster State:          OK
Repository Mode:        EVENT
Number of Nodes:        4
Nodes OK:               4
Nodes DOWN:             0

    Pool Name:              aixsp
    Pool Id:                000000000A34520C000000005A4D3B79
    Pool Mirror State:      NOT_MIRRORED

    Node Name:              vio1
    Node Id:                c341aa8af0c311e780030090fa7711d5
    Node MTM:               8284-1
    Node Partition Num:     1
    Node State:             OK
    Node Repos State:       OK
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Roles:
        Pool Name:              aixsp
        Pool Id:                000000000A34520C000000005A4D3B79
        Pool State:             OK

    Node Name:              vio2
    Node Id:                c592b512f0c411e780100090fa7711d5
    Node MTM:               8284-1
    Node Partition Num:     2
    Node State:             OK
    Node Repos State:       OK
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Roles:
        Pool Name:              aixsp
        Pool Id:                000000000A34520C000000005A4D3B79
        Pool State:             OK

    Node Name:              vio3
    Node Id:                e86fa388f0c411e780170090fa7711d5
    Node MTM:               8284-2
    Node Partition Num:     1
    Node State:             OK
    Node Repos State:       OK
    Node Upgrade Status: 3.1.0.00 UP_LEVEL
    Node Roles:
        Pool Name:              aixsp
        Pool Id:                000000000A34520C000000005A4D3B79
        Pool State:             OK

    Node Name:              vio4
    Node Id:                094a437ef0c511e7801e0090fa7711d5
    Node MTM:               8284-2
    Node Partition Num:     2
    Node State:             OK
```

```
        Node Repos State:       OK
        Node Upgrade Status:    2.2.6.30 ON_LEVEL
        Node Roles:             DBN
            Pool Name:          aixsp
            Pool Id:            000000000A34520C000000005A4D3B79
            Pool State:         OK
```

8. We discovered, during testing, that the queue depth and reserve policy for each hdisk, were reset to unexpected values i.e. 1 and single_path. We changed these values back to their previous (and correct) values.

```
[root@vio3]# for i in `lsdev -Cc disk | awk '{print $1}'`
> do
> echo $i
> lsattr -El $i -a queue_depth
> echo
> done
hdisk0
queue_depth 1 Queue DEPTH True+

hdisk1
queue_depth 1 Queue DEPTH True+

hdisk2
queue_depth 1 Queue DEPTH True+

hdisk3
queue_depth 1 Queue DEPTH True+

hdisk4
queue_depth 1 Queue DEPTH True+


[root@vio3]# for i in `lsdev -Cc disk | awk '{print $1}'`
do
echo $i
chdev -l $i -a queue_depth=32 -a reserve_policy=no_reserve -U
echo
done
hdisk0
hdisk0 changed

hdisk1
hdisk1 changed

hdisk2
hdisk2 changed

hdisk3
hdisk3 changed

hdisk4
hdisk4 changed
```

9. Several system configuration options had to be re-instated e.g. NTP, TZ, netsvc.conf, padmin env profile, etc. We changed each of these to the desired settings.

; add env profile settings to padmin .profile and .kshrc.

```
[root@vio4]# grep kshrc /home/padmin/.profile
```
export ENV=/home/padmin/.kshrc

```
[root@vio4]# cat .kshrc
export EXTENDED_HISTORY=ON
```

```
export EDITOR=/usr/bin/vi
export HOST="$(/usr/bin/uname -n)"
export ENTSTAT_MODE=closed.error
alias aix="ioscli oem_setup_env"
alias history='fc -t'

if [ "$(whoami)" != "root" ]; then
  export PS1="[$(whoami)@${HOST}]$ "
else
  export PS1="[$(whoami)@${HOST}]# "
fi

set -o vi
```

; add ntp servers into /home/padmin/config/ntp.conf

```
[padmin@vio4]$ cat config/ntp.conf
# IBM_PROLOG_BEGIN_TAG
# This is an automatically generated prolog.
#
# bos610 src/bos/usr/ios/cli/ntp.conf 1.1
#
# Licensed Materials - Property of IBM
#
# Restricted Materials of IBM
#
# COPYRIGHT International Business Machines Corp. 2006
# All Rights Reserved
#
# US Government Users Restricted Rights - Use, duplication or
# disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
#
# IBM_PROLOG_END_TAG
# server time3-1b.austin.ibm.com
# server time3-2c.austin.ibm.com prefer
slewalways yes
disable pll
disable auth
server 10.1.1.2 prefer
server 10.1.1.3
driftfile /home/padmin/config/ntp.drift
tracefile /home/padmin/config/ntp.trace
logfile /home/padmin/config/ntp.log
```

;uncomment ntp from /etc/rc.tcpip and start ntp.

```
[root@vio3]# grep ntp /etc/rc.tcpip
start /usr/sbin/xntpd -a '-c /home/padmin/config/ntp.conf' "$src_running"

[root@vio3]# startsrc -s xntpd -a  '-c /home/padmin/config/ntp.conf'
```

; set TZ

```
# chtz Australia/Melbourne
```

; add this line to /etc/netsvc.conf

```
hosts = local4,bind4
```

Note: The /etc/hosts and /etc/resolv.conf files are both automatically copied to the upgraded environment, by the viosupgrade tool. i.e.

```
$ grep cp viosupg.pl
      $rc = system("mkdir /alt_inst/$backupfile_path ; cp -p
/home/padmin/cfgbackups/${Backup_file}.tar.gz /alt_inst/$backupfile_path");
      $rc = system("cp -p /etc/resolv.conf /alt_inst/etc/resolv.conf");
      $rc = system("cp -p /etc/hosts /alt_inst/etc/hosts");
      $rc = system("cp -p /home/padmin/viosupg_restore.sh
/alt_inst/usr/ios/sbin/viosupg_restore.sh");
```

10. With all the config changes completed, we reboot the VIOS at this point. This will ensure that all the correct settings are now in use and the date/time will be correct for the entire VIOS node/system. We then verified, again, that all of the SSP and VIOS config had been recovered correctly. i.e.

```
[padmin@vio3]$ lu -list
POOL_NAME: aixsp
TIER_NAME: SYSTEM
LU_NAME                 SIZE(MB)    UNUSED(MB)  UDID
novalink-842D21W        65536       32608       f915eba0c34bd88264c4a958cd7db431
novalink-842D47W        65536       31818       67ebff3245b08369c7c4a166386d813a
volume-AIX72_rootvg_00~ 122880      122887      f48fa8c1b6066b095d024a6e48574a1e
SNAPSHOTS
5f711424a003092d2be917b5f8abe8d5IMSnap
32303b99e9dee936884e2897c5ac7e46IMSnap
volume-kristian_test-3~ 122880      105222      5f711424a003092d2be917b5f8abe8d5
volume-kristian_test-9~ 122880      122653      dbbf805a38422ed05f2298e110845930
volume-kristian_test-9~ 122880      122744      63c262d3342fe56885b8c57a9189ee04
volume-xwing-89fda67c-~ 122880      122537      32303b99e9dee936884e2897c5ac7e46
 [padmin@vio3]$ pv -list

POOL_NAME: aixsp
TIER_NAME: SYSTEM
FG_NAME: Default
PV_NAME          SIZE(MB)    STATE           UDID
hdisk3           512000      ONLINE          33213600507680C8100BE8800000000001~
hdisk4           512000      ONLINE          33213600507680C8100BE8800000000001~
...etc...

$ lsmap -all
$ lsmap -all -net
# lsseas -c
$ pv -list
$ lu -list
$ cluster -status
$ cluster -status -verbose
# lsdev -Cc adapter
# ifconfig -a
# netstat -nr
# hostname
# lspv
# lsdev -Cc disk

# for i in `lsdev -Cc disk | awk '{print $1}'`
do
echo $i
lsattr -El $i -a queue_depth -a reserve_policy
echo
done

$ cat config/ntp.conf
$ cat /etc/netsvc.conf
$ grep TZ /etc/environment
```
11. Repeat all of the steps above on the other VIOS node, vio4. Once this is complete, all nodes will report "*Node Upgrade Status: 3.1.0.00 ON_LEVEL*".

```
[padmin@vio4]$ cluster -status
Cluster Name        State
powervc             OK

    Node Name       MTM           Partition Num  State  Pool State
    vio1        8284-1        1  OK     OK
    vio2        8284-1        2  OK     OK
    vio3        8284-2        1  OK     OK
    vio4        8284-2        2  OK     OK

[padmin@vio4]$ cluster -status -verbose
Cluster Name:           powervc
Cluster Id:             c33ad822f0c311e780030090fa7711d5
Cluster State:          OK
Repository Mode:        EVENT
Number of Nodes:        4
Nodes OK:               4
Nodes DOWN:             0

    Pool Name:          aixsp
    Pool Id:            000000000A34520C000000005A4D3B79
    Pool Mirror State:  NOT_MIRRORED

    Node Name:          vio1
    Node Id:            c341aa8af0c311e780030090fa7711d5
    Node MTM:           8284-1
    Node Partition Num: 1
    Node State:         OK
    Node Repos State:   OK
    Node Upgrade Status: 3.1.0.00 ON_LEVEL
    Node Roles:
        Pool Name:          aixsp
        Pool Id:            000000000A34520C000000005A4D3B79
        Pool State:         OK

    Node Name:          vio2
    Node Id:            c592b512f0c411e780100090fa7711d5
    Node MTM:           8284-1
    Node Partition Num: 2
    Node State:         OK
    Node Repos State:   OK
    Node Upgrade Status: 3.1.0.00 ON_LEVEL
    Node Roles:         DBN
        Pool Name:          aixsp
        Pool Id:            000000000A34520C000000005A4D3B79
        Pool State:         OK

    Node Name:          vio3
    Node Id:            e86fa388f0c411e780170090fa7711d5
    Node MTM:           8284-2
    Node Partition Num: 1
    Node State:         OK
    Node Repos State:   OK
    Node Upgrade Status: 3.1.0.00 ON_LEVEL
    Node Roles:
        Pool Name:          aixsp
        Pool Id:            000000000A34520C000000005A4D3B79
        Pool State:         OK

    Node Name:          vio4
    Node Id:            094a437ef0c511e7801e0090fa7711d5
    Node MTM:           8284-2
    Node Partition Num: 2
    Node State:         OK
    Node Repos State:   OK
    Node Upgrade Status: 3.1.0.00 ON_LEVEL
    Node Roles:
```

```
Pool Name:       aixsp
Pool Id:         000000000A34520C000000005A4D3B79
Pool State:      OK
```

Note: If you need to access the old, 2.2.6.30, rootvg (to copy files/scripts) you can wake up the old rootvg by using the alt_rootvg_op command (don't forget to put it back to sleep when you are done!) e.g.

```
; Wake up old rootvg
# alt_rootvg_op -W -d hdisk0

; Put old rootvg to sleep
# alt_rootvg_op -S -d hdisk0
```