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KVM to VMware migration with DD

On the source KVM Cluster :

REDHAT 7 :

Connect to one host of the cluster:

Shutdown the VM

```
VM=<vm name>
pcs resource disable ${VM}
```

```
pcs resource unmanage ${VM}
```

```
pcs status | grep ${VM}

 ${VM} (ocf::heartbeat:VirtualDomain):        Stopped (disabled, unmanaged)
```

List disks used by the VM :

```
multipath -ll | grep ${VM} -A1

${VM}_hds_system1 (360060e8007e6bf000030e6bf00003047) dm-70 HITACHI ,OPEN-V
```

Scan new disks :

```
for DEVICE in `ls /sys/class/scsi_host/host?/scan`; do echo "- - -" > $DEVICE; done
```

List new disks (unused disks start by 3600):

```
multipath -ll | grep ^3600 -A6

360000970000296700060533030363038 dm-49 EMC     ,SYMMETRIX
size=80G features='1 queue_if_no_path' hwhandler='0' wp=rw
`-+- policy='service-time 0' prio=1 status=active
  |- 2:0:0:1   sdq   65:0     active ready running
  |- 3:0:0:1   sdaa  65:160   active ready running
  |- 6:0:0:1   sdac  65:192   active ready running
  `- 7:0:0:1   sdae  65:224   active ready running
--
360000970000296700060533030363037 dm-48 EMC     ,SYMMETRIX
size=500G features='1 queue_if_no_path' hwhandler='0' wp=rw
`-+- policy='service-time 0' prio=1 status=active
  |- 2:0:0:2   sdr   65:16    active ready running
  |- 3:0:0:2   sdab  65:176   active ready running
  |- 6:0:0:2   sdad  65:208   active ready running
  `- 7:0:0:2   sdaf  65:240   active ready running
```

List source disk(s) and partitions :

```
ls -l /dev/mapper/${VM}*

lrwxrwxrwx 1 root root 8 Aug  5 11:24 /dev/mapper/${VM}_hds_system1 -> ../dm-70
lrwxrwxrwx 1 root root 9 Aug  5 11:24 /dev/mapper/${VM}_hds_system1p1 -> ../dm-183
```

List destination disk :

```
ls -l /dev/mapper/360000970000296700060533030363038*
lrwxrwxrwx 1 root root 8 Aug 30 09:44 /dev/mapper/360000970000296700060533030363038 -> ../dm-49
```

Copy disk (be sure to select the P1 partition for the source disk):

```
sync
```

```
ddrescue -v -f -n -b 65536 /dev/mapper/${VM}_hds_system1p1 /dev/mapper/360000970000296700060533030363038
```

```
GNU ddrescue 1.22
About to copy 72939 MBytes from '/dev/mapper/${VM}_hds_system1p1' to
'/dev/mapper/360000970000296700060533030363038'
    Starting positions: infile = 0 B,  outfile = 0 B
    Copy block size:   1 sectors       Initial skip size: 12 sectors
Sector size: 65536 Bytes

     ipos:   72939 MB, non-trimmed:        0 B,  current rate:  47251 kB/s
     opos:   72939 MB, non-scraped:        0 B,  average rate:    207 MB/s
non-tried:        0 B,  bad-sector:        0 B,    error rate:       0 B/s
  rescued:   72939 MB,   bad areas:        0,        run time:      5m 51s
pct rescued:  100.00%, read errors:        0,  remaining time:         n/a
                              time since last successful read:         n/a
Finished
```

Disconnect the destination disk from the KVM cluster host :

```
/home/admin/bin/removelun_rhel  /dev/mapper/360000970000296700060533030363038 | bash
```

Send mail to Catherine Sacre for connect the disk to the VM server (catherine.sacre@ext.publications.europa.eu)

When VM server is created, connect to the Vsphere web interface :

```
https://opvmwsvc060.publications.win/ui/
```

Go to OP / UNIX TEAM / KVM Migration and select the VM

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Power on the VM and open the Web console

Select the Rescue Kernel and connect in SSH

Get the kernel version used by default

```
cat /etc/grub2.cfg | grep linux16 | awk '{print cat /etc/grub2.cfg | grep linux16 | awk '{print $2}' | head -1 /
vmlinuz-3.10.0-693.17.1.el7.x86_64}' | head -1
/vmlinuz-3.10.0-693.17.1.el7.x86_64
```

Build a new initramfs :

```
dracut --force /boot/initramfs-3.10.0-693.17.1.el7.x86_64.img 3.10.0-693.17.1.el7.x86_64
```

reboot the VM and start using the default kernel, ssh to the VM :

Install VMware Tools

```
yum install -y open-vm-tools.x86_64 && systemctl start vmtoolsd.service
```

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Get the kernel version used by default

```
cat /boot//grub/grub.conf | egrep "vmlinuz|default" | grep -v "#"

default=0
        kernel /vmlinuz-2.6.32-696.20.1.el6.x86_64 ro root=/dev/mapper/root-slash rd_NO_LUKS  KEYBOARDTYPE=pc
KEYTABLE=uk LANG=en_US.UTF-8 rd_LVM_LV=root/swap rd_NO_MD nofb quiet splash=quiet SYSFONT=latarcyrheb-sun16
rd_LVM_LV=root/slash crashkernel=auto rd_NO_DM rhgb quiet intremap=off elevator=noop transparent_hugepage=always
console=tty0 console=,115200
        kernel /vmlinuz-2.6.32-573.22.1.el6.x86_64 ro root=/dev/mapper/root-slash rd_NO_LUKS  KEYBOARDTYPE=pc
KEYTABLE=uk LANG=en_US.UTF-8 rd_LVM_LV=root/swap rd_NO_MD nofb quiet splash=quiet SYSFONT=latarcyrheb-sun16
rd_LVM_LV=root/slash crashkernel=auto rd_NO_DM rhgb quiet intremap=off elevator=noop transparent_hugepage=always
console=tty0 console=,115200
        kernel /vmlinuz-2.6.32-573.el6.x86_64 ro root=/dev/mapper/root-slash rd_NO_LUKS  KEYBOARDTYPE=pc
KEYTABLE=uk LANG=en_US.UTF-8 rd_LVM_LV=root/swap rd_NO_MD nofb quiet splash=quiet SYSFONT=latarcyrheb-sun16
rd_LVM_LV=root/slash crashkernel=auto rd_NO_DM rhgb quiet intremap=off elevator=noop transparent_hugepage=always
console=tty0 console=,115200
```

If the default is 0, select the first kernel line for get the kernel version and build the dracut command

Build a new initramfs :

```
# if the current kernel is the first one (default=0)

KERNEL=`cat /boot//grub/grub.conf | egrep "vmlinuz|default" | grep -v "#" | awk '/kernel/ {print # if the current kernel is the first one (default=0)   KERNEL=`cat /boot//grub/grub.conf | egrep "vmlinuz|default" | grep -v "#" | awk '/kernel/ {print $2;exit}'|cut -d"-" -f2-` && echo "# $KERNEL" IMAGE=/boot/initramfs-${KERNEL}.img && echo "# $IMAGE"   dracut --force $IMAGE $KERNEL;exit}'|cut -d"-" -f2-` && echo "# $KERNEL" IMAGE=/boot/initramfs-${KERNEL}.img && echo "# $IMAGE"

dracut --force $IMAGE $KERNEL
```

reboot the VM and start using the default kernel, ssh to the VM :

Add the CD-Rom device with the Vsphere console

Add drivers CD with the Vsphere console : Action / Guest OS / Install VMware drivers

SSH to the VM :

```
mount /dev/sr0 /media
VMTOOLS=`ls /media/VMware* | awk -F'/' '{print $NF}'` && echo $VMTOOLS
cp /media/$VMTOOLS /tmp/ && cd /tmp/ && tar -xvf /tmp/$VMTOOLS && /tmp/vmware-tools-distrib/vmware-install.pl -d
```

Reboot the server and check installation status :

```
/etc/vmware-tools/services.sh status
```

Remove the CD-Rom device with the Vsphere console

Check puppet modifications:

```
puppet agent -t --noop
```

Check following things :

Mac address

Monitoring (services OK)

Backup

recover

Satellite

yum repolist

Reboot test

Start application

Enable application

Move the VM to the correct directory under VMware (DIGIT)

Remove Source VM:

Remove VM on the cluster

Remove LUNs

Update CMDB