

```
[oracle@ol6-agrac-rac1 ~]$ su -
```

```
Password:
```

```
[root@ol6-agrac-rac1 ~]# cat /proc/partitions
```

major	minor	#blocks	name
2	0	4	fd0
11	0	1048575	sr0
8	0	512000	sda
8	1	510976	sda1
8	16	2097152	sdb
8	17	2096128	sdb1
8	32	8388608	sdc
8	33	8387584	sdcl
8	48	8388608	sdd
8	49	8385898	sdd1
8	80	2097152	sdf
8	81	2096451	sdf1
8	112	16777216	sdh
8	113	16771828	sdh1
8	96	8388608	sdg
8	97	8385898	sdg1
8	64	8388608	sde
8	65	8385898	sde1
8	128	8388608	sdi
8	129	8385898	sdi1
8	144	8388608	sdj
8	145	8385898	sdj1
8	208	8388608	sdn
8	176	8388608	sdl
8	177	8385898	sdl1
8	192	8388608	sdm
8	160	8388608	sdk
8	161	8385898	sdk1
252	0	16769024	dm-0
252	1	4186112	dm-1
252	2	33538048	dm-2

```
[root@ol6-agrac-rac1 ~]#
```

```
[root@ol6-agrac-rael ~]# fdisk /dev/sdm
Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel
Building a new DOS disklabel with disk identifier 0x4b85af8a.
Changes will remain in memory only, until you decide to write them.
After that, of course, the previous content won't be recoverable.
```

```
Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)
```

```
WARNING: DOS-compatible mode is deprecated. It's strongly recommended to
switch off the mode (command 'c') and change display units to
sectors (command 'u').
```

```
Command (m for help): n
```

```
Command action
```

```
  e   extended
```

```
  p   primary partition (1-4)
```

```
p
```

```
Partition number (1-4): 1
```

```
First cylinder (1-1044, default 1):
```

```
Using default value 1
```

```
Last cylinder, +cylinders or +size{K,M,G} (1-1044, default 1044):
```

```
Using default value 1044
```

```
Command (m for help): w
```

```
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
```

```
Syncing disks.
```

```
[root@ol6-agrac-rael ~]# █
```

```
[root@ol6-agrac-racl ~]# fdisk /dev/sdn
Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel
Building a new DOS disklabel with disk identifier 0xf06bf265.
Changes will remain in memory only, until you decide to write them.
After that, of course, the previous content won't be recoverable.
```

```
Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)
```

```
WARNING: DOS-compatible mode is deprecated. It's strongly recommended to
switch off the mode (command 'c') and change display units to
sectors (command 'u').
```

```
Command (m for help): n
```

```
Command action
```

```
  e   extended
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  p   primary partition (1-4)
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```
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```

```
Partition number (1-4): 1
```

```
First cylinder (1-1044, default 1):
```

```
Using default value 1
```

```
Last cylinder, +cylinders or +size{K,M,G} (1-1044, default 1044):
```

```
Using default value 1044
```

```
Command (m for help): w
```

```
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
```

```
Syncing disks.
```

```
[root@ol6-agrac-racl ~]# █
```

```
[root@ol6-agrac-rael ~]# cat /proc/partitions
```

major	minor	#blocks	name
2	0	4	fd0
11	0	1048575	sr0
8	0	512000	sda
8	1	510976	sda1
8	16	2097152	sdb
8	17	2096128	sdb1
8	32	8388608	sd
8	33	8387584	sd1
8	48	8388608	sdd
8	49	8385898	sdd1
8	80	2097152	sdf
8	81	2096451	sdf1
8	112	16777216	sdh
8	113	16771828	sdh1
8	96	8388608	sdg
8	97	8385898	sdg1
8	64	8388608	sde
8	65	8385898	sde1
8	128	8388608	sdi
8	129	8385898	sdi1
8	144	8388608	sdj
8	145	8385898	sdj1
8	208	8388608	sdn
8	209	8385898	sdn1
8	176	8388608	sdl
8	177	8385898	sdl1
8	192	8388608	sdm
8	193	8385898	sdm1
8	160	8388608	sdk
8	161	8385898	sdk1
252	0	16769024	dm-0
252	1	4186112	dm-1
252	2	33538048	dm-2

```
[root@ol6-agrac-rael ~]#
```

```
[root@ol6-agraac-rac1 ~]# ls -la /dev/oracleasm
total 0
drwxr-xr-x. 3 root root 60 Feb 1 2017 .
drwxr-xr-x. 21 root root 4800 Feb 1 01:13 ..
drwxr-xr-x. 2 root root 120 Feb 1 00:40 disks
[root@ol6-agraac-rac1 ~]# ls -la /dev/oracleasm/disks
total 0
drwxr-xr-x. 2 root root 120 Feb 1 00:40 .
drwxr-xr-x. 3 root root 60 Feb 1 2017 ..
brw-rw----. 1 oracle dba 8, 129 Feb 1 01:15 asm-disk1
brw-rw----. 1 oracle dba 8, 145 Feb 1 00:43 asm-disk2
brw-rw----. 1 oracle dba 8, 161 Feb 1 00:41 asm-disk3
brw-rw----. 1 oracle dba 8, 177 Feb 1 00:56 asm-disk4
```

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*99-oracle-asmdevices.rules X

```
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29e265e3dc931e219c55c9ab9c9",  
NAME="oracleasm/disks/asm-disk1", OWNER="oracle", GROUP="dba", MODE="0660"  
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29846c43ca297077d413ef27a3b",  
NAME="oracleasm/disks/asm-disk2", OWNER="oracle", GROUP="dba", MODE="0660"  
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29cdde3ef74ed659d759c72fe85",  
NAME="oracleasm/disks/asm-disk3", OWNER="oracle", GROUP="dba", MODE="0660"  
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c293c10e8da800b486d307d8ba68",  
NAME="oracleasm/disks/asm-disk4", OWNER="oracle", GROUP="dba", MODE="0660"  
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c2942fed88cf3fe49a20037ab2c7",  
NAME="oracleasm/disks/asm-disk5", OWNER="oracle", GROUP="dba", MODE="0660"  
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c2968a0b87feac27d44e8c500981",  
NAME="oracleasm/disks/asm-disk6", OWNER="oracle", GROUP="dba", MODE="0660"
```

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```
[root@ol6-agrac-rac1 ~]# /sbin/scsi_id -g -u -d /dev/sdm
```

```
36000c2942fed88cf3fe49a20037ab2c7
```

```
[root@ol6-agrac-rac1 ~]# /sbin/scsi_id -g -u -d /dev/sdn
```

```
36000c2968a0b87feac27d44e8c500981
```

```
[root@ol6-agrac-rac1 ~]# gedit /etc/udev/rules.d/99-oracle-asmdevices.rules
```

```
[root@ol6-agrac1 ~]# /sbin/partprobe /dev/sdm1
```

```
[root@o16-agrac-rac1 ~]# /sbin/partprobe /dev/sdn1
```



```
[root@ol6-agrac-rac1 ~]# /sbin/udevadm test /block/sdm/sdm1
```

```
run_command: calling: test
```

```
udevadm_test: version 147
```

```
This program is for debugging only, it does not run any program,  
specified by a RUN key. It may show incorrect results, because  
some values may be different, or not available at a simulation run.
```

```
parse_file: reading '/lib/udev/rules.d/01-log-block.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/10-console.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/10-dm.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/11-dm-lvm.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/13-dm-disk.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/40-isdn.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/40-libgphoto2.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/40-redhat.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/40-usb-media-players.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/42-qemu-usb.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/50-firmware.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/50-udev-default.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-alias-kmsg.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-cdrom_id.rules' as rules file  
parse_file: reading '/etc/udev/rules.d/60-fprint-autosuspend.rules' as rules file  
parse_file: reading '/etc/udev/rules.d/60-ipath.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-libmtp.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-net.rules' as rules file  
parse_file: reading '/etc/udev/rules.d/60-pcmcia.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-alsa.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-input.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-serial.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-storage-tape.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-storage.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-persistent-v4l.rules' as rules file  
parse_file: reading '/etc/udev/rules.d/60-raw.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/60-wacom.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/61-gnome-bluetooth-rfkill.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/61-mobile-action.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/61-option-modem-modeswitch.rules' as rules file  
parse_file: reading '/lib/udev/rules.d/61-persistent-storage-edd.rules' as rules file
```

```
udevadm_test: MAJOR=8
udevadm_test: MINOR=193
udevadm_test: DEVNAME=/dev/oracleasm/disks/asm-disk5
udevadm_test: DEVTYP=partition
udevadm_test: ACTION=add
udevadm_test: SUBSYSTEM=block
udevadm_test: DEVLINKS=/dev/block/8:193 /dev/disk/by-id/scsi-36000c2942fed88cf3fe49a20037ab2c7-part1 /dev/disk/by-path/pci-00
00:02:04.0-scsi-0:0:0:0-part1 /dev/disk/by-id/wwn-0x6000c2942fed88cf3fe49a20037ab2c7-part1
udevadm_test: ID_SCSI=1
udevadm_test: ID_VENDOR=VMware
udevadm_test: ID_VENDOR_ENC=VMware\x20\x20
udevadm_test: ID_MODEL=Virtual_disk
udevadm_test: ID_MODEL_ENC=Virtual\x20disk\x20\x20\x20\x20
udevadm_test: ID_REVISION=1.0
udevadm_test: ID_TYPE=disk
udevadm_test: ID_SERIAL_RAW=36000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SERIAL=36000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SERIAL_SHORT=6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_WWN=0x6000c2942fed88cf
udevadm_test: ID_WWN_VENDOR_EXTENSION=0x3fe49a20037ab2c7
udevadm_test: ID_WWN_WITH_EXTENSION=0x6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SCSI_SERIAL=6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_BUS=scsi
udevadm_test: ID_PATH=pci-0000:02:04.0-scsi-0:0:0:0
udevadm_test: ID_PART_TABLE_TYPE=dos
udevadm_test: LVM_SBIN_PATH=/sbin
udevadm_test: .ID_FS_TYPE_NEW=
udevadm_test: ID_FS_TYPE=
udevadm_test: UDISKS_PRESENTATION_NOPOLICY=0
udevadm_test: UDISKS_PARTITION=1
udevadm_test: UDISKS_PARTITION_SCHEME=mbr
udevadm_test: UDISKS_PARTITION_NUMBER=1
udevadm_test: UDISKS_PARTITION_TYPE=0x83
udevadm_test: UDISKS_PARTITION_SIZE=8587160064
udevadm_test: UDISKS_PARTITION_SLAVE=/sys/devices/pci0000:00/0000:00:11.0/0000:02:04.0/host4/target4:0:0/4:0:0:0/block/sdm
udevadm_test: UDISKS_PARTITION_OFFSET=32256
udevadm_test: UDISKS_PARTITION_ALIGNMENT_OFFSET=0
udevadm_test: run: 'socket:@/org/freedesktop/hal/udev_event'
```

unable to open device '/sys/block/sdm/sdn1'

```
[root@ol6-agrac-rac1 ~]# /sbin/udevadm test /block/sdn/sdn1
```

```
run_command: calling: test
```

```
udevadm_test: version 147
```

This program is for debugging only, it does not run any program,
specified by a RUN key. It may show incorrect results, because
some values may be different, or not available at a simulation run.

```
parse_file: reading '/lib/udev/rules.d/01-log-block.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-console.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-dm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/11-dm-lvm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/13-dm-disk.rules' as rules file
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parse_file: reading '/lib/udev/rules.d/40-libgphoto2.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-redhat.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-usb-media-players.rules' as rules file
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parse_file: reading '/lib/udev/rules.d/61-mobile-action.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-option-modem-modeswitch.rules' as rules file
```

```
udevadm_test: MAJOR=8
udevadm_test: MINOR=209
udevadm_test: DEVNAME=/dev/oracleasm/disks/asm-disk6
udevadm_test: DEVTYP=partition
udevadm_test: ACTION=add
udevadm_test: SUBSYSTEM=block
udevadm_test: DEVLINKS=/dev/block/8:209 /dev/disk/by-id/scsi-36000c2968a0b87feac27d44e8c500981-part1 /dev/disk/by-path/pci-00
00:02:04.0-scsi-0:0:1:0-part1 /dev/disk/by-id/wwn-0x6000c2968a0b87feac27d44e8c500981-part1
udevadm_test: ID_SCSI=1
udevadm_test: ID_VENDOR=VMware
udevadm_test: ID_VENDOR_ENC=VMware\x20\x20
udevadm_test: ID_MODEL=Virtual disk
udevadm_test: ID_MODEL_ENC=Virtual\x20disk\x20\x20\x20\x20
udevadm_test: ID_REVISION=1.0
udevadm_test: ID_TYPE=disk
udevadm_test: ID_SERIAL_RAW=36000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SERIAL=36000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SERIAL_SHORT=6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_WWN=0x6000c2968a0b87fe
udevadm_test: ID_WWN_VENDOR_EXTENSION=0xac27d44e8c500981
udevadm_test: ID_WWN_WITH_EXTENSION=0x6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SCSI_SERIAL=6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_BUS=scsi
udevadm_test: ID_PATH=pci-0000:02:04.0-scsi-0:0:1:0
udevadm_test: ID_PART_TABLE_TYPE=dos
udevadm_test: LVM_SBIN_PATH=/sbin
udevadm_test: .ID_FS_TYPE_NEW=
udevadm_test: ID_FS_TYPE=
udevadm_test: UDISKS_PRESENTATION_NOPOLICY=0
udevadm_test: UDISKS_PARTITION=1
udevadm_test: UDISKS_PARTITION_SCHEME=mbr
udevadm_test: UDISKS_PARTITION_NUMBER=1
udevadm_test: UDISKS_PARTITION_TYPE=0x83
udevadm_test: UDISKS_PARTITION_SIZE=8587160064
udevadm_test: UDISKS_PARTITION_SLAVE=/sys/devices/pci0000:00/0000:00:11.0/0000:02:04.0/host4/target4:0:1/4:0:1:0/block/sdn
udevadm_test: UDISKS_PARTITION_OFFSET=32256
udevadm_test: UDISKS_PARTITION_ALIGNMENT_OFFSET=0
udevadm_test: run: 'socket:@/org/freedesktop/hal/udev_event'
```

```
[root@ol6-agrac-rac1 ~]# /sbin/udevadm control --reload-rules
```

```
[root@ol6-agrac-rac1 ~]# /sbin/start_udev
```

```
Starting udev:
```

```
[ OK ]
```

```
[root@ol6-agrac-rac1 ~]# ls -la /dev/oracleasm/disks
```

```
total 0
```

```
drwxr-xr-x. 2 root root 160 Feb 1 01:24 .
```

```
drwxr-xr-x. 3 root root 60 Feb 1 01:40 ..
```

```
brw-rw----. 1 oracle dba 8, 129 Feb 1 01:43 asm-disk1
```

```
brw-rw----. 1 oracle dba 8, 145 Feb 1 01:43 asm-disk2
```

```
brw-rw----. 1 oracle dba 8, 161 Feb 1 01:43 asm-disk3
```

```
brw-rw----. 1 oracle dba 8, 177 Feb 1 01:43 asm-disk4
```

```
brw-rw----. 1 oracle dba 8, 193 Feb 1 01:43 asm-disk5
```

```
brw-rw----. 1 oracle dba 8, 209 Feb 1 01:43 asm-disk6
```

```
[root@ol6-agrac-rac1 ~]# █
```

```
[root@ol6-agrac-rac2 ~]# ls -la /dev/oracleasm/disks
```

```
total 0
```

```
drwxr-xr-x. 2 root  root   120 Feb  1 00:40 .
drwxr-xr-x. 3 root  root    60 Feb  1 01:40 ..
brw-rw----. 1 oracle dba   8,  97 Feb  1 01:46 asm-disk1
brw-rw----. 1 oracle dba   8, 113 Feb  1 01:40 asm-disk2
brw-rw----. 1 oracle dba   8, 129 Feb  1 00:41 asm-disk3
brw-rw----. 1 oracle dba   8, 145 Feb  1 01:40 asm-disk4
```

```
[root@ol6-agrac-rac2 ~]# cat /etc/udev/rules.d/99-oracle-asmdevices.rules
```

```
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29e265e3dc931e219c55c9ab9c9", NAME="oracleasm/disks/asm-disk1", OWNER="oracle", GROUP="dba", MODE="0660"
```

```
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29846c43ca297077d413ef27a3b", NAME="oracleasm/disks/asm-disk2", OWNER="oracle", GROUP="dba", MODE="0660"
```

```
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29cdde3ef74ed659d759c72fe85", NAME="oracleasm/disks/asm-disk3", OWNER="oracle", GROUP="dba", MODE="0660"
```

```
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c293c10e8da800b486d307d8ba68", NAME="oracleasm/disks/asm-disk4", OWNER="oracle", GROUP="dba", MODE="0660"
```

```
[root@ol6-agrac-rac2 ~]# █
```

```
[root@ol6-agrac-rac2 ~]# scp root@192.168.0.111:/etc/udev/rules.d/99-oracle-asmdevices.rules /etc/udev/rules.d/
root@192.168.0.111's password:
99-oracle-asmdevices.rules                                100% 1182      1.2KB/s   00:00
[root@ol6-agrac-rac2 ~]# cat /etc/udev/rules.d/99-oracle-asmdevices.rules
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29e265e3dc931e219c55c9ab9c9", NAME="oracleasm/disks/asm-disk1", OWNER="oracle", GROUP="dba", MODE="0660"
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29846c43ca297077d413ef27a3b", NAME="oracleasm/disks/asm-disk2", OWNER="oracle", GROUP="dba", MODE="0660"
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c29cdde3ef74ed659d759c72fe85", NAME="oracleasm/disks/asm-disk3", OWNER="oracle", GROUP="dba", MODE="0660"
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c293c10e8da800b486d307d8ba68", NAME="oracleasm/disks/asm-disk4", OWNER="oracle", GROUP="dba", MODE="0660"
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c2942fed88cf3fe49a20037ab2c7", NAME="oracleasm/disks/asm-disk5", OWNER="oracle", GROUP="dba", MODE="0660"
KERNEL=="sd?1", BUS=="scsi", PROGRAM=="/sbin/scsi_id -g -u -d /dev/$parent", RESULT=="36000c2968a0b87feac27d44e8c500981", NAME="oracleasm/disks/asm-disk6", OWNER="oracle", GROUP="dba", MODE="0660"
[root@ol6-agrac-rac2 ~]#
```

```
[root@ol6-agrac-rac2 ~]# cat /proc/partitions
```

```
major minor #blocks name
```

```
 2         0          4 fd0
11         0    1048575 sr0
 8         0     512000 sda
 8         1     510976 sda1
 8        16    2097152 sdb
 8        17    2096128 sdb1
 8        32    8388608 sdc
 8        33    8387584 sdc1
 8        48    8388608 sdd
 8        49    8385898 sdd1
 8        64    8388608 sde
 8        65    8385898 sde1
 8        80    2097152 sdf
 8        81    2096451 sdf1
 8       128    8388608 sdi
 8       129    8385898 sdi1
 8       112    8388608 sdh
 8       113    8385898 sdh1
 8       144    8388608 sdj
 8       145    8385898 sdj1
 8        96    8388608 sdg
 8        97    8385898 sdg1
 8       176    8388608 sdl
 8       177    8385898 sdl1
 8       160    8388608 sdk
 8       161    8385898 sdk1
252        0    8384512 dm-0
252        1    4186112 dm-1
252        2   16769024 dm-2
```

```
[root@ol6-agrac-rac2 ~]#
```



```
[root@ol6-agrac-rac2 ~]# /sbin/udevadm test /block/sdk/sdk1
```

```
run_command: calling: test
```

```
udevadm_test: version 147
```

This program is for debugging only, it does not run any program, specified by a RUN key. It may show incorrect results, because some values may be different, or not available at a simulation run.

```
parse_file: reading '/lib/udev/rules.d/01-log-block.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-console.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-dm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/11-dm-lvm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/13-dm-disk.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-isdn.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-libgphoto2.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-redhat.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-usb-media-players.rules' as rules file
parse_file: reading '/lib/udev/rules.d/42-qemu-usb.rules' as rules file
parse_file: reading '/lib/udev/rules.d/50-firmware.rules' as rules file
parse_file: reading '/lib/udev/rules.d/50-udev-default.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-alias-kmsg.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-cdrom_id.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-fprint-autosuspend.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-ipath.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-libmtp.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-net.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-pcmcia.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-alsa.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-input.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-serial.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-storage-tape.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-storage.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-v4l.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-raw.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-wacom.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-gnome-bluetooth-rfkill.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-mobile-action.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-option-modem-modeswitch.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-persistent-storage-edd.rules' as rules file
```

```
udevadm_test: MAJOR=8
udevadm_test: MINOR=161
udevadm_test: DEVNAME=/dev/oracleasm/disks/asm-disk5
udevadm_test: DEVTYP=partition
udevadm_test: ACTION=add
udevadm_test: SUBSYSTEM=block
udevadm_test: DEVLINKS=/dev/block/8:161 /dev/disk/by-id/scsi-36000c2942fed88cf3fe49a20037ab2c7-part1 /dev/disk/by-path/pci-00
00:02:04.0-scsi-0:0:0:0-part1 /dev/disk/by-id/wwn-0x6000c2942fed88cf3fe49a20037ab2c7-part1
udevadm_test: ID_SCSI=1
udevadm_test: ID_VENDOR=VMware
udevadm_test: ID_VENDOR_ENC=VMware\x20\x20
udevadm_test: ID_MODEL=Virtual_disk
udevadm_test: ID_MODEL_ENC=Virtual\x20disk\x20\x20\x20\x20
udevadm_test: ID_REVISION=1.0
udevadm_test: ID_TYPE=disk
udevadm_test: ID_SERIAL_RAW=36000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SERIAL=36000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SERIAL_SHORT=6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_WWN=0x6000c2942fed88cf
udevadm_test: ID_WWN_VENDOR_EXTENSION=0x3fe49a20037ab2c7
udevadm_test: ID_WWN_WITH_EXTENSION=0x6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_SCSI_SERIAL=6000c2942fed88cf3fe49a20037ab2c7
udevadm_test: ID_BUS=scsi
udevadm_test: ID_PATH=pci-0000:02:04.0-scsi-0:0:0:0
udevadm_test: ID_PART_TABLE_TYPE=dos
udevadm_test: LVM_SBIN_PATH=/sbin
udevadm_test: .ID_FS_TYPE_NEW=
udevadm_test: ID_FS_TYPE=
udevadm_test: UDISKS_PRESENTATION_NOPOLICY=0
udevadm_test: UDISKS_PARTITION=1
udevadm_test: UDISKS_PARTITION_SCHEME=mbr
udevadm_test: UDISKS_PARTITION_NUMBER=1
udevadm_test: UDISKS_PARTITION_TYPE=0x83
udevadm_test: UDISKS_PARTITION_SIZE=8587160064
udevadm_test: UDISKS_PARTITION_SLAVE=/sys/devices/pci0000:00/0000:00:11.0/0000:02:04.0/host4/target4:0:0/4:0:0:0/block/sdk
udevadm_test: UDISKS_PARTITION_OFFSET=32256
udevadm_test: UDISKS_PARTITION_ALIGNMENT_OFFSET=0
udevadm_test: run: 'socket:@/org/freedesktop/hal/udev_event'
```

```
[root@ol6-agrac-rac2 ~]# /sbin/udevadm test /block/sdl/sdl1
```

```
run_command: calling: test
```

```
udevadm_test: version 147
```

This program is for debugging only, it does not run any program, specified by a RUN key. It may show incorrect results, because some values may be different, or not available at a simulation run.

```
parse_file: reading '/lib/udev/rules.d/01-log-block.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-console.rules' as rules file
parse_file: reading '/lib/udev/rules.d/10-dm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/11-dm-lvm.rules' as rules file
parse_file: reading '/lib/udev/rules.d/13-dm-disk.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-isdn.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-libgphoto2.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-redhat.rules' as rules file
parse_file: reading '/lib/udev/rules.d/40-usb-media-players.rules' as rules file
parse_file: reading '/lib/udev/rules.d/42-qemu-usb.rules' as rules file
parse_file: reading '/lib/udev/rules.d/50-firmware.rules' as rules file
parse_file: reading '/lib/udev/rules.d/50-udev-default.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-alias-kmsg.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-cdrom_id.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-fprint-autosuspend.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-ipath.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-libmtp.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-net.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-pcmcia.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-alsa.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-input.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-serial.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-storage-tape.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-storage.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-persistent-v4l.rules' as rules file
parse_file: reading '/etc/udev/rules.d/60-raw.rules' as rules file
parse_file: reading '/lib/udev/rules.d/60-wacom.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-gnome-bluetooth-rfkill.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-mobile-action.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-option-modem-modeswitch.rules' as rules file
parse_file: reading '/lib/udev/rules.d/61-persistent-storage-edd.rules' as rules file
```

```
udevadm_test: MAJOR=8
udevadm_test: MINOR=177
udevadm_test: DEVNAME=/dev/oracleasm/disks/asm-disk6
udevadm_test: DEVTYP=partition
udevadm_test: ACTION=add
udevadm_test: SUBSYSTEM=block
udevadm_test: DEVLINKS=/dev/block/8:177 /dev/disk/by-id/scsi-36000c2968a0b87feac27d44e8c500981-part1 /dev/disk/by-path/pci-00
00:02:04.0-scsi-0:0:1:0-part1 /dev/disk/by-id/wwn-0x6000c2968a0b87feac27d44e8c500981-part1
udevadm_test: ID_SCSI=1
udevadm_test: ID_VENDOR=VMware
udevadm_test: ID_VENDOR_ENC=VMware\x20\x20
udevadm_test: ID_MODEL=Virtual_disk
udevadm_test: ID_MODEL_ENC=Virtual\x20disk\x20\x20\x20\x20
udevadm_test: ID_REVISION=1.0
udevadm_test: ID_TYPE=disk
udevadm_test: ID_SERIAL_RAW=36000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SERIAL=36000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SERIAL_SHORT=6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_WWN=0x6000c2968a0b87fe
udevadm_test: ID_WWN_VENDOR_EXTENSION=0xac27d44e8c500981
udevadm_test: ID_WWN_WITH_EXTENSION=0x6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_SCSI_SERIAL=6000c2968a0b87feac27d44e8c500981
udevadm_test: ID_BUS=scsi
udevadm_test: ID_PATH=pci-0000:02:04.0-scsi-0:0:1:0
udevadm_test: ID_PART_TABLE_TYPE=dos
udevadm_test: LVM_SBIN_PATH=/sbin
udevadm_test: .ID_FS_TYPE_NEW=
udevadm_test: ID_FS_TYPE=
udevadm_test: UDISKS_PRESENTATION_NOPOLICY=0
udevadm_test: UDISKS_PARTITION=1
udevadm_test: UDISKS_PARTITION_SCHEME=mbr
udevadm_test: UDISKS_PARTITION_NUMBER=1
udevadm_test: UDISKS_PARTITION_TYPE=0x83
udevadm_test: UDISKS_PARTITION_SIZE=8587160064
udevadm_test: UDISKS_PARTITION_SLAVE=/sys/devices/pci0000:00/0000:00:11.0/0000:02:04.0/host4/target4:0:1/4:0:1:0/block/sdl
udevadm_test: UDISKS_PARTITION_OFFSET=32256
udevadm_test: UDISKS_PARTITION_ALIGNMENT_OFFSET=0
udevadm_test: run: 'socket:@/org/freedesktop/hal/udev_event'
```

```
[root@ol6-agrac-rac2 ~]# /sbin/udevadm control --reload-rules
```

```
[root@ol6-agrac-rac2 ~]# /sbin/start_udev
```

```
Starting udev: [ OK ]
```

```
[root@ol6-agrac-rac2 ~]# ls -la /dev/oracleasm/disks
```

```
total 0
```

```
drwxr-xr-x. 2 root root 160 Feb 1 01:58 .
```

```
drwxr-xr-x. 3 root root 60 Feb 1 2017 ..
```

```
brw-rw----. 1 oracle dba 8, 97 Feb 1 02:05 asm-disk1
```

```
brw-rw----. 1 oracle dba 8, 113 Feb 1 02:05 asm-disk2
```

```
brw-rw----. 1 oracle dba 8, 129 Feb 1 02:05 asm-disk3
```

```
brw-rw----. 1 oracle dba 8, 145 Feb 1 02:05 asm-disk4
```

```
brw-rw----. 1 oracle dba 8, 161 Feb 1 02:05 asm-disk5
```

```
brw-rw----. 1 oracle dba 8, 177 Feb 1 02:05 asm-disk6
```

```
[root@ol6-agrac-rac2 ~]# █
```

File Edit View Search Terminal Help

```
[oracle@ol6-agrac-rac1 ~]$ grid_env  
[oracle@ol6-agrac-rac1 ~]$ asmca
```

ASM Configuration Assistant: Configure ASM: Disk Groups

_ □ ×

ASM Instances

Disk Groups

Volumes

ASM Cluster File Systems

You can choose to create a new disk group or add disks to an existing disk group. To create dynamic volumes, you need disk groups with 11.2 ASM compatibility.

Tip: To perform operations on a disk group, right mouse click on the row.

Disk Groups

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
DATA	31.99	31.60	31.60	EXTERN	MOUNTED(2 of 2)

Create

Mount All

Dismount All

Help

Exit

File Edit View Search Terminal Help

```
[oracle@ol6-agrac-rac1 ~]$ grid_env
[oracle@ol6-agrac-rac1 ~]$ asmca
```

ASM Configuration Assistant: Configure ASM: Disk Groups

- □ ×

ASM Instances

Disk Groups

Volumes

ASM Cluster File Systems

Create Disk Group

×

Disk Group Name

FRA

Redundancy

Redundancy is achieved by storing multiple copies of the data on different failure groups. Normal redundancy needs disks from at least two different failure groups, and high redundancy from at least three different failure groups.

High Normal External (None)

Select Member Disks

Show Eligible Show All

Quorum failure groups are used to store voting files in extended clusters and do not contain any user data. They require ASM compatibility of 11.2 or higher.

<input checked="" type="checkbox"/>	Disk Path	Header Status	Disk Name	Size (MB)	Failure Group	Quorum
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>

Note: If you do not see the disks which you believe are available, check the Disk Discovery Path and read/write permissions on the disks. The Disk Discovery Path limits set of disks considered for discovery.

Disk Discovery Path: /dev/oracleasm/disks/*

Change Disk Discovery Path

Exit

Click on the Show Advanced Options button to change the disk group attributes. Disk Group compatibility attributes may need to be modified based on the usage of disk group for different versions of databases or ASM Cluster File Systems.

Show Advanced Options

OK

Cancel

Help

Help

Create Disk Group

Disk Group Name

Redundancy

Redundancy is achieved by storing multiple copies of the data on different failure groups. Normal redundancy needs disks from at least two different failure groups, and high redundancy from at least three different failure groups.

High
 Normal
 External (None)

Select Member Disks

Show Eligible
 Show All

Quorum failure groups are used to store voting files in extended clusters and do not contain any user data. They require ASM compatibility of 11.2 or higher.

<input checked="" type="checkbox"/>	Disk Path	Header Status	Disk Name	Size (MB)	Failure Group	Quorum
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>

Note: If you do not see the disks which you believe are available, check the Disk Discovery Path and read/write permissions on the disks. The Disk Discovery Path limits set of disks considered for discovery.

Disk Discovery Path: /dev/oracleasm/disks/*

[Change Disk Discovery Path](#)

Disk Group Attributes

An allocation unit (AU) is the fundamental unit in which contiguous disk space is allocated to ASM files. ASM file extent size is a multiple of AUs. The AU size cannot be modified later.

Allocation Unit Size (MB)

Specify minimum software versions for ASM, Database and ASM volumes that this disk group need to be compatible with.

ASM Compatibility

Database Compatibility

ADVM Compatibility

Refer Oracle Automatic Storage Management Administrator's Guide for more details on the Compatibility matrix.

[Hide Advanced Options](#)

OK

Cancel

Help

Create Disk Group

Disk Group Name

FRA

Redundancy

Redundancy is achieved by storing multiple copies of the data on different failure groups. Normal redundancy needs disks from at least two different failure groups, and high redundancy from at least three different failure groups.

High Normal External (None)

Select Member Disks

Show Eligible Show All

Quorum failure groups are used to store voting files in extended clusters and do not contain any user data. They require ASM compatibility of 11.2 or higher.

<input checked="" type="checkbox"/>	Disk Path	Header Status	Disk Name	Size (MB)	Failure Group	Quorum
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>
<input checked="" type="checkbox"/>	/dev/oracleasm/disks/asm-dis...	CANDIDATE		8189		<input type="checkbox"/>

Note: If you do not see the disks which you believe are available, check the Disk Discovery Path and read/write permissions on the disks. The Disk Discovery Path limits set of disks considered for discovery.

Disk Discovery Path: /dev/oracleasm/disks/*

Change Disk Discovery Path

Click on the Show Advanced Options button to change the disk group attributes. Disk Group compatibility attributes may need to be modified based on the usage of disk group for different versions of databases or ASM Cluster File Systems.

Show Advanced Options

OK

Cancel

Help

You can choose to create a new disk group or add disks to an existing disk group. To create dynamic volumes, you need disk groups with 11.2 ASM compatibility.

Tip: To perform operations on a disk group, right mouse click on the row.

Disk Groups

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
FRA	0.00	0.00	0.00	NORMAL	



Create

Mount All

Dismount All

File Edit View Search Terminal Help

```
[oracle@ol6-agrac-rac1 ~]$ grid_env  
[oracle@ol6-agrac-rac1 ~]$ asmca
```

ASM Configuration Assistant: Configure ASM: Disk Groups

_ □ ×

ASM Instances

Disk Groups

Volumes

ASM Cluster File Systems

You can choose to create a new disk group or add disks to an existing disk group. To create dynamic volumes, you need disk groups with 11.2 ASM compatibility.

Tip: To perform operations on a disk group, right mouse click on the row.

Disk Groups

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
DATA	31.99	31.60	31.60	EXTERN	MOUNTED(2 of 2)
FRA	15.99	15.81	7.90	NORMAL	MOUNTED(2 of 2)

Create

Mount All

Dismount All

Help

Exit

File Edit View Search Terminal Help

```
[oracle@ol6-agrac-rac2 ~]$ grid_env  
[oracle@ol6-agrac-rac2 ~]$ asmca
```

ASM Configuration Assistant: Configure ASM: Disk Groups

ASM Instances

Disk Groups

Volumes

ASM Cluster File Systems

You can choose to create a new disk group or add disks to an existing disk group. To create dynamic volumes, you need disk groups with 11.2 ASM compatibility.

Tip: To perform operations on a disk group, right mouse click on the row.

Disk Groups

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
DATA	31.99	31.60	31.60	EXTERN	MOUNTED(2 of 2)
FRA	15.99	15.81	7.90	NORMAL	MOUNTED(2 of 2)

Create

Mount All

Dismount All

Help

Exit