Cloud Computing 厉梦如 2020-03-30 Published

Network Topology

UIS normal networking environment

Problem Description

When the server adds new hardware disks, how can the operating system installed in the server rec ognize the new disks and write data on them?

Process Analysis

- 1. Find new logical volume
- 2. Add new partitions
- 3. Execution mkfs.ext4 / dev / sdb sdb disk format command to ext4 format.
- 4. Mount
- 5. Add Storage Pool
- 6. Add Template Pool(use another new lun,not the sameas Step5)
- 7. Permanently mounted hard drive

Solution

1. Find new logical volume

Logical volume /dev/sda divided into 4 partitions, sdaa,sdab,sdac,sdad.

Logical volume /dev/sdad : Device Boot is empty.

[root@cvknode1 ~]# fdisk -I

Disk /dev/sda: 900.2 GB, 900151926784 bytes, 1758109232 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 262144 bytes / 262144 bytes

Disk label type: gpt

Disk identifier: D470558E-A734-4375-A65A-18B17479D1FB

Start End Size Type Name

1 2048 411647 200M EFI System EFI System Partition

2 411648 252069887 120G Microsoft basic

3 252069888 335955967 40G Microsoft basic

4 335955968 403064831 32G Linux swap

5 403064832 1758107647 646.1G Microsoft basic

WARNING: fdisk GPT support is currently new, and therefore in an experimental phase. Use at your own discretion.]#

Disk /dev/sdad: 107.4 GB, 107374182400 bytes, 209715200 sectors Units = sectors of 1 * 512 = 512 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk label type: dos Disk identifier: 0x8566ae4e

Device Boot Start End Blocks Id System [root@cvknode1 ~]#

2. Add new partitions

(1) start Partition
[root@cvknode1 ~]# fdisk /dev/sdad
Welcome to fdisk (util-linux 2.23.2).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.
Command (m for help):

(2) ViewPartition HelpCommand (m for help): mCommand actiona toggle a bootable flag

- b edit bsd disklabel
- c toggle the dos compatibility flag
- d delete a partition
- g create a new empty GPT partition table
- G create an IRIX (SGI) partition table
- I list known partition types
- m print this menu
- n add a new partition
- o create a new empty DOS partition table
- p print the partition table
- q quit without saving changes
- s create a new empty Sun disklabel
- t change a partition's system id
- u change display/entry units
- v verify the partition table
- w write table to disk and exit
- x extra functionality (experts only)

Command (m for help):

(3) Add new partitions

First patition Command (m for help):n Partition type: p primary (0 primary, 0 extended, 4 free) e extended Select (default p): p Partition number (1-4, default 1): 1 First sector (2048-209715199, default 2048): 2048 Last sector, +sectors or +size{K,M,G} (2048-209715199, default 209715199): +30G Partition 1 of type Linux and of size 30 GiB is set

Command (m for help):p Disk /dev/sdad: 107.4 GB, 107374182400 bytes, 209715200 sectors Units = sectors of 1 * 512 = 512 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk label type: dos Disk identifier: 0x8566ae4e

Device Boot Start End Blocks Id System /dev/sdad1 2048 62916607 31457280 83 Linux

Second patition:

Command (m for help):n Partition type: p primary (1 primary, 0 extended, 3 free) e extended Select (default p): p Partition number (2-4, default 2): 2 First sector (62916608-209715199, default 62916608): Using default value 62916608 Last sector, +sectors or +size{K,M,G} (62916608-209715199, default 209715199): Using default value 209715199 Partition 2 of type Linux and of size 70 GiB is set

Command (m for help):p Disk /dev/sdad: 107.4 GB, 107374182400 bytes, 209715200 sectors Units = sectors of 1 * 512 = 512 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk label type: dos Disk identifier: 0x8566ae4e
 Device Boot
 Start
 End
 Blocks
 Id
 System

 /dev/sdad1
 2048
 62916607
 31457280
 83
 Linux

 /dev/sdad2
 62916608
 209715199
 73399296
 83
 Linux

(4) write table to disk and exit
Command (m for help):w
The partition table has been altered!
Calling ioctl() to re-read partition table.
Syncing disks.
[root@cvknode1 ~]#
(5) confirm disk partitions
[root@cvknode1 ~]# fdisk -l | grep sdad
Disk /dev/sdad: 107.4 GB, 107374182400 bytes, 209715200 sectors
/dev/sdad1 2048 62916607 31457280 83 Linux
/dev/sdad2 62916608 209715199 73399296 83 Linux
[root@cvknode1 ~]#
3. Execution mkfs.ext4 / dev / sdb sdb disk format command to ext4 format.

[root@cvknode1 ~]# mkfs.ext4 /dev/sdad1 mke2fs 1.42.9 (28-Dec-2013) Discarding device blocks: done Filesystem label= OS type: Linux Block size=4096 (log=2) Fragment size=4096 (log=2) Stride=0 blocks, Stripe width=0 blocks 1966080 inodes, 7864320 blocks 393216 blocks (5.00%) reserved for the super user First data block=0 Maximum filesystem blocks=2155872256 240 block groups 32768 blocks per group, 32768 fragments per group 8192 inodes per group Superblock backups stored on blocks: 32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208, 4096000 Allocating group tables: done Writing inode tables: done Creating journal (32768 blocks): done Writing superblocks and filesystem accounting information: done [root@cvknode1 ~]# 4. Mount Execute mkdir /vms/templun command in a new directory as the new hard disk mount point. [root@cvknode1 ~]# mkdir /vms/templun [root@cvknode1 ~]# cd /vms [root@cvknode1 vms]# II total 1676 drwxr-xr-x 2 root root 4096 Feb 28 00:05 cvmbackuptmp drwxr-xr-x 5 root root 3896 Feb 28 12:53 defaultPool_ssd drwxr-xr-x 3 root root 4096 Jan 21 09:52 images drwxr-xr-x 4 root root 4096 Oct 26 05:04 isos drwx-----. 2 root root 16384 Oct 26 04:32 lost+found drwxr-xr-x 2 root root 4096 Feb 28 12:53 templun drwxr-xr-x 2 root root 4096 Dec 19 10:28 vmbackuptmp [root@cvknode1 /]# mount /dev/sdad1 /vms/templun [root@cvknode1 /]# [root@cvknode1 /]# df -TH Filesystem Type Size Used Avail Use% Mounted on devtmpfs devtmpfs 68G 0 68G 0% /dev tmpfs tmpfs 68G 164k 68G 1% /dev/shm

tmpfs

tmpfs 68G 4.4G 64G 7% /run

| tmpfs | tmpfs | 68G 0 68G 0% /sys/fs/cgroup | | |
|--------------------|-------|-----------------------------|--|--|
| /dev/sda2 | ext4 | 127G 20G 102G 16%/ | | |
| /dev/sda1 | vfat | 210M 11M 200M 5% /boot/efi | | |
| /dev/sda3 | ext4 | 43G 7.6G 33G 19% /var/log | | |
| /dev/sda5 | ext4 | 683G 161G 488G 25% /vms | | |
| /dev/sdad1 | ext4 | 32G 47M 30G 1% /vms/templun | | |
| [root@cvknode1 /]# | | | | |

5. Add Storage Pool

| LIS HCI Management | ≡ [®] Dashboard | VMs Networks | Storage Hos | sts Services | Alarms System | Hot Key 🔻 🕺 🕇 | . ¢ <mark>∰ ≡</mark> 0 ⊡ • \$ |
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6. Add Template Pool(use another new lun,not the sameas Step5)

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| 🕵 VM Policies 🗸 🗸 | | | _ | |
| | Target Path * | /vms/templun | | 0 |
| | Type * | Local File Directory | | • |
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7. Permanently mounted hard drive

With the above operation to mount the hard drive, we still need to congfigue Step1 to Step 6 after serv er's restart as this configuration will be lost after the restart. This only to be a temporary mount operation. If you want to permanently mount the hard drive, the fstab file needs to configured.

(1) Get disk's uuid by command blkid /dev/sdad1 $% \left(1 - \frac{1}{2} \right) = 1 - \frac{1}{2} \left(1 - \frac{1}{2} \right) \left(1 - \frac{1}{2} \right)$

[root@cvknode1 ~]/# blkid /dev/sdad1

/dev/sdb: UU TYPE="ext4

(2) configure /etc/fstab

- Entering vi / etc / fstab,
- Type G to get to the file's last row
- · Type "i"to start edit the file
- · Enter UUID(You can copy uuid above by the ssh tool), the disk's mount point such as /vms/te

mplun, Types of ext4, Options of "defaults", dump of 0, pass option of 2.

- Press the ESC key and then type ": wq" to save and exit.
- · Entering cat /etc/fstab to confirm the configuration

[root@cvknode1 ~]/# vi /etc/fstab

/etc/fstab: static file system information.

#

- # Use 'blkid' to print the universally unique identifier for a
- # device; this may be used with UUID= as a more robust way to name devices

```
# that works even if disks are added and removed. See fstab(5).
```

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| # <file system=""></file> | | < | mount point> | <type></type> | <options></options> |
|---------------------------------|-------------------|-------|--------------|---------------|---------------------|
| <dump> <pass></pass></dump> | | | | | |
| proc | | / | proc | proc | |
| nodev,noexec,nosuid | 0 | 0 | | | |
| # / was on /dev/sda2 during ir | stallation | | | | |
| UUID=d7f94577-db8d-4339-a | G86-dcf752G0 | Da7Oa | / | ext4 | errors=remount-ro |
| 0 1 | | | | | |
| # /boot/efi was on /dev/sdal de | uring installatio | n | | | |
| UUID=4548-0F17 | | | /boot/efi | vfat | |
| defaults | 0 | 1 | | | |
| # /var/log was on /dev/sda3 d | uring installatio | on | | | |
| UUID=e3f39eb2-9975-4dc3-b | 7f0-6e25e98aa | ad8c | /var/log | ext4 | |
| defaults | 0 2 | | | | |
| # /vms was on /dev/sda5 duri | ng installation | | | | |
| UUID=06077d58-ebb7-4607- | 938c-09f5e9ad | la43e | /vms | ext4 | |
| defaults | 0 2 | | | | |

 # swap was on /dev/sda4 during installation
 UUID=28b94350-36fa-442c-baad-lcl2605b8ed4
 none
 swap

 sw
 0
 0
 UUID=d8a248ea-3cd0-4fbc-a63c-d5f8dd39a09e
 /vms/templun
 ext4

 defaults
 0
 2
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 1
 1

(3) After the completion of the implementation of the mount -a command, no error is proven configure d correctly.Or you can also restart the server to see whether the configuration is lost after restarting the server.

| <pre>root@cvknode1:/# vi /etc,</pre> | /fstab |
|--------------------------------------|--------|
| <pre>root@cvknode1:/# mount -@</pre> | a |
| root@cvknode1:/# | |
| <pre>root@cvknode1:/#</pre> | |

After the completion of the implementation of df -h command to view disk mount case and occupancy , sdb can see the disk has been successfully mounted to the next /vms/templun directory.