

Learningspace GlusterFS 支持 NVME SSD 操作指导书

Learningspace 暂时不支持识别 nvme ssd 硬盘，如果有需要将 nvme ssd 硬盘作为教学镜像存储使用的，可以采用后台挂载 nvme ssd,然后再到前台纳管的方式进行。前台代码检测到后台已经挂载有/vms/learingspace 目录，则会自动识别。

如下后台操作需要每台 cvk 后台执行。

1、查看 nvme 硬盘的 Name

```
[root@BJLJ-cvknnode-03 ~]# lsblk
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
nvme0n1    259:0    0 894.3G  0 disk
sdd         8:48    0   3.7T  0 disk
sdb         8:16    0   3.7T  0 disk
loop4       7:4     0    30G   0 loop /vms/h3cdshare
sdc         8:32    0   3.7T  0 disk
sda         8:0     0 446.6G  0 disk
├─sda4      8:4     0   31.7G  0 part /var/log
├─sda2      8:2     0  104.5G  0 part /
├─sda5      8:5     0   278G   0 part /vms
├─sda3      8:3     0    32G   0 part [SWAP]
└─sda1      8:1     0    512M   0 part /boot/efi
[root@BJLJ-cvknnode-03 ~]#
```

2、执行 fdisk /dev/nvme0n1 格式化该硬盘

```
└─sda1      8:1     0    512M   0 part /boot/efi
[root@BJLJ-cvknnode-03 ~]# fdisk /dev/nvme0n1
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.

Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0x5333bdd1.

Command (m for help):
```

先执行 **p** 查看是否已有分区，一般是没有，有的话，需要执行 **d** 删除分区
执行 **n** 然后反复回车，直到分区完成，然后执行 **wq** 保存退出

```

[root@BJLJ-cvkn03 ~]# fdisk /dev/nvme0n1
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.

Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0x5333bdd1.

Command (m for help): p

Disk /dev/nvme0n1: 960.2 GB, 960197124096 bytes, 1875385008 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: 0x5333bdd1

   Device Boot      Start         End      Blocks   Id  System

```

Device	Boot	Start	End	Blocks	Id	System

```

Command (m for help): n
Partition type:
   p   primary (0 primary, 0 extended, 4 free)
   e   extended
Select (default p):
Using default response p
Partition number (1-4, default 1):
First sector (2048-1875385007, default 2048):
Using default value 2048
Last sector, +sectors or +size(K,M,G) (2048-1875385007, default 1875385007):
Using default value 1875385007
Partition 1 of type Linux and of size 894.3 GiB is set

Command (m for help): w

```

3 执行 `mkfs.ext4 /dev/nvme0n1p1` 格式化刚才分的分区

```

Command (m for help): wq
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
[root@BJLJ-cvknod-03 ~]# mkfs.ext4 /dev/nvme0n1p1
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
58613760 inodes, 234422870 blocks
11721143 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2382364672
7155 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, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
    102400000, 214990848

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

[root@BJLJ-cvknod-03 ~]# █

```

4、执行 `vim /etc/fstab`，然后复制/var/log 这行，基于复制后的修改下内容

```

#
# /etc/fstab
# Created by anaconda on Thu Sep 10 14:17 2015
#
# Accessible filesystems, by reference, are maintained under '/dev/disk/'
# See man pages (fstab(8), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=928268c6-0ca6-4ce6-b8c5-93acaa9e20df / ext4 defaults 1 1
UUID=3829-7749 /boot/efi vfat defaults,uid=0,gid=0,umask=0077,shortname=winnt 0 0
UUID=fc644a55-db57-44f5-a51b-105a13558a03 /var/log ext4 defaults 1 2
UUID=77a738d0-2913-4681-b283-83c0b54732b /vms ext4 defaults 1 2
UUID=c881a808-eee7-4b16-9938-2e23b0a72 swap swap defaults 0 0
UUID=fc644a55-db57-44f5-a51b-105a13558a03 /var/log ext4 defaults 1 2
~
~
~
~
~
~

```

5、路径修改为/vms/learningspace，然后其他是 ext4 defaults 1 2，报文文件，UUID 也需要改下，见下一步

```

#
# /etc/fstab
# Created by anaconda on Thu Sep  8 10:04:37 2023
#
# Accessible filesystems, by reference, are mounted under '/dev/disk'
# See man page fstab(8), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=928268c6-0ca6-4ce6-b8c5-93acaa9620df / ext4 defaults 1 1
UUID=A8B0-7763 /boot/efi vfat defaults,uid=0,gid=0,umask=0077,shortname=winnt 0 0
UUID=fc644a55-d857-44f5-a51b-105a13558a03 /var/log ext4 defaults 1 2
UUID=07a995ed-2519-48a7-b2a4-65cd8544732b /vms ext4 defaults 1 2
UUID=e501a0c8-6ee7-4bf6-9995-f62e1bafa272 swap swap defaults 0 0
UUID=fc644a55-d857-44f5-a51b-105a13558a03 /vms/learningspace ext4 defaults 1 2
#

```

6、执行 blkid 查看/dev/neme0n1p1 的 UUID，并复制

```

root@BJLJ-cvknode-03 ~]# vim /etc/fstab
root@BJLJ-cvknode-03 ~]# blkid
dev/loop4: UUID="2d5cf46f-c300-4718-a6fc-c209dd798134" TYPE="ext3"
dev/sda1: SEC_TYPE="msdos" UUID="A8B0-7763" TYPE="vfat" PARTLABEL="EFI System Partition" PARTUUID="b536afd0-35d5-40dc-8714-e11746aa8c30"
dev/sda2: UUID="928268c6-0ca6-4ce6-b8c5-93acaa9620df" TYPE="ext4" PARTUUID="9d8af99d-790a-4815-b478-7a062f942556"
dev/sda3: UUID="e501a0c8-6ee7-4bf6-9995-f62e1bafa272" TYPE="swap" PARTUUID="1f52b9ab-a244-4e0e-9884-3f1dd3aae29e"
dev/sda4: UUID="fc644a55-d857-44f5-a51b-105a13558a03" TYPE="ext4" PARTUUID="a37383ff-2b59-4d3d-bb57-3053169b0164"
dev/sda5: UUID="07a995ed-2519-48a7-b2a4-65cd8544732b" TYPE="ext4" PARTUUID="cb9ec9b4-f46a-4174-b9f3-89c5babc06b1"
dev/nvme0n1: PTTYPE="dos"
dev/nvme0n1p1: UUID="0c6da9f6-a079-4a61-9483-427301b88fce" TYPE="ext4"
root@BJLJ-cvknode-03 ~]#

```

7、再次打开/etc/fstab 文件，然后将刚才复制的 UUID 替换/vms/learningspace 这一行的 UUID 的内容，并且保存退出

```

#
# /etc/fstab
# Created by anaconda on Thu Sep  8 10:04:37 2023
#
# Accessible filesystems, by reference, are mounted under '/dev/disk'
# See man page fstab(8), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=928268c6-0ca6-4ce6-b8c5-93acaa9620df / ext4 defaults 1 1
UUID=A8B0-7763 /boot/efi vfat defaults,uid=0,gid=0,umask=0077,shortname=winnt 0 0
UUID=fc644a55-d857-44f5-a51b-105a13558a03 /var/log ext4 defaults 1 2
UUID=07a995ed-2519-48a7-b2a4-65cd8544732b /vms ext4 defaults 1 2
UUID=e501a0c8-6ee7-4bf6-9995-f62e1bafa272 swap swap defaults 0 0
UUID=0c6da9f6-a079-4a61-9483-427301b88fce /vms/learningspace ext4 defaults 1 2
#

```

8、执行 mkdir /vms/learningspace 创建这个目录

```

root@BJLJ-cvknode-03 ~]# vim /etc/fstab
root@BJLJ-cvknode-03 ~]# blkid
dev/loop4: UUID="2d5cf46f-c300-4718-a6fc-c209dd798134" TYPE="ext3"
dev/sda1: SEC_TYPE="msdos" UUID="A8B0-7763" TYPE="vfat" PARTLABEL="EFI System Partition" PARTUUID="b536afd0-35d5-40dc-8714-e11746aa8c30"
dev/sda2: UUID="928268c6-0ca6-4ce6-b8c5-93acaa9620df" TYPE="ext4" PARTUUID="9d8af99d-790a-4815-b478-7a062f942556"
dev/sda3: UUID="e501a0c8-6ee7-4bf6-9995-f62e1bafa272" TYPE="swap" PARTUUID="1f52b9ab-a244-4e0e-9884-3f1dd3aae29e"
dev/sda4: UUID="fc644a55-d857-44f5-a51b-105a13558a03" TYPE="ext4" PARTUUID="a37383ff-2b59-4d3d-bb57-3053169b0164"
dev/sda5: UUID="07a995ed-2519-48a7-b2a4-65cd8544732b" TYPE="ext4" PARTUUID="cb9ec9b4-f46a-4174-b9f3-89c5babc06b1"
dev/nvme0n1: PTTYPE="dos"
dev/nvme0n1p1: UUID="0c6da9f6-a079-4a61-9483-427301b88fce" TYPE="ext4"
root@BJLJ-cvknode-03 ~]# vim /etc/fstab
root@BJLJ-cvknode-03 ~]# mkdir /vms/learningspace

```

9、执行 mount -a 挂载所有目录

```

/dev/nvme0n1p1: UUID="0c6da9f6-a079-4a61-9483-427301b88fce" TY
[root@BJLJ-cvknode-03 ~]# vim /etc/fstab
[root@BJLJ-cvknode-03 ~]# mkdir /vms/learningspace
[root@BJLJ-cvknode-03 ~]# mount -a
[root@BJLJ-cvknode-03 ~]#

```

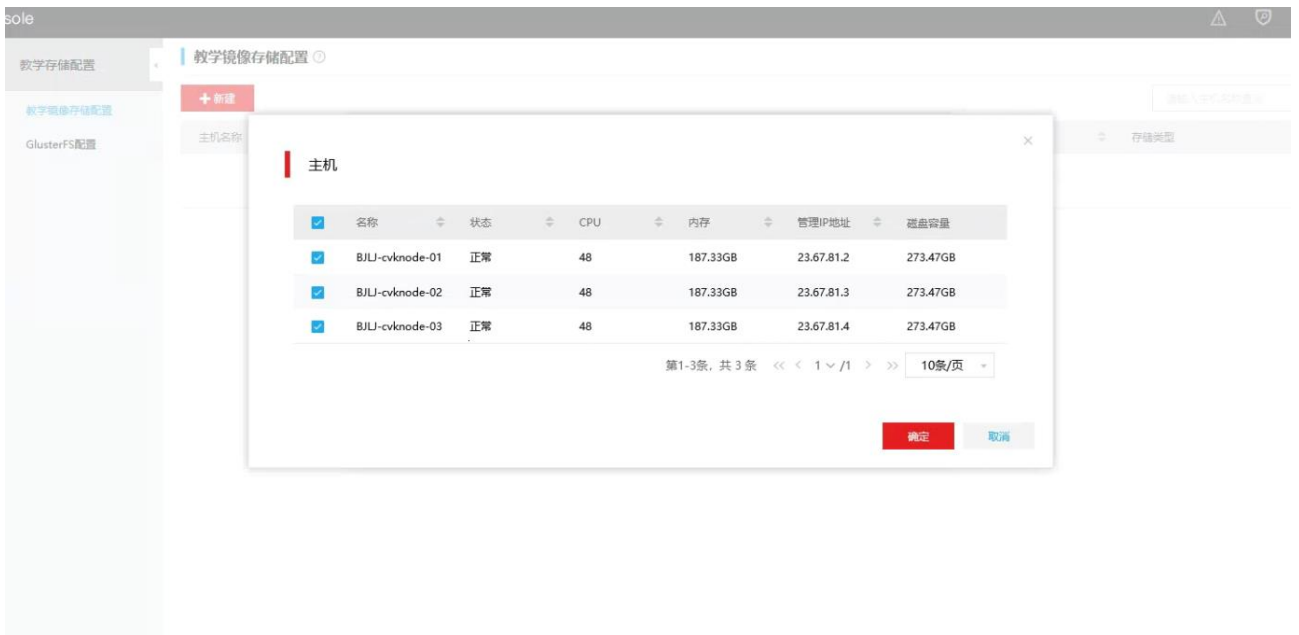
10 执行 df -h 查看/vms/learningspace 目录是否已经挂载了

```

root@BJLJ-cvkn0e-03 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        94G   0    94G   0% /dev
tmpfs           94G  12K   94G   1% /dev/shm
tmpfs           94G  35M   94G   1% /run
tmpfs           94G   0    94G   0% /sys/fs/cgroup
dev/sda2       103G  18G   80G  19% /
dev/sda1       512M  12M  501M   3% /boot/efi
dev/sda4       32G  199M   30G   1% /var/log
dev/sda5       274G  7.3G  253G   3% /vms
overlay        103G  18G   80G  19% /var/lib/docker/overlay2/013f98a9c12c058b8d3748bc603643818585d11f65e4b9a071221a07896a618d/merged
overlay        103G  18G   80G  19% /var/lib/docker/overlay2/1d0a8d9940c96707384d05d0e2826d2a64c01c4594cc8c2cad7e0c6aecd71cc/merged
overlay        103G  18G   80G  19% /var/lib/docker/overlay2/e9b5f18fbc35d2f1bc942786f7ab1afd7561203804ae213364b7c534b25524e0/merged
shm            64M   0    64M   0% /var/lib/docker/containers/9b527243b76380ea49f5865f82c119cb4cdf5a9c0fe01092378054ab39d9f684/shm
shm            64M   0    64M   0% /var/lib/docker/containers/a54e597d60eb57de10c64dcc789011b075e26fdd663a0ea0ebf71af20b7ed10a/shm
shm            64M   0    64M   0% /var/lib/docker/containers/e69fb9acf49a50dcd39ffea8fd01e2210f7283f27adf17b8d34e46e2442d5e9a/shm
dev/loop4      30G  45M   28G   1% /vms/h3cdshare
tmpfs          19G   0    19G   0% /run/user/0
dev/nvme0n1p1 881G  77M  836G   1% /vms/learningspace
root@BJLJ-cvkn0e-03 ~]#

```

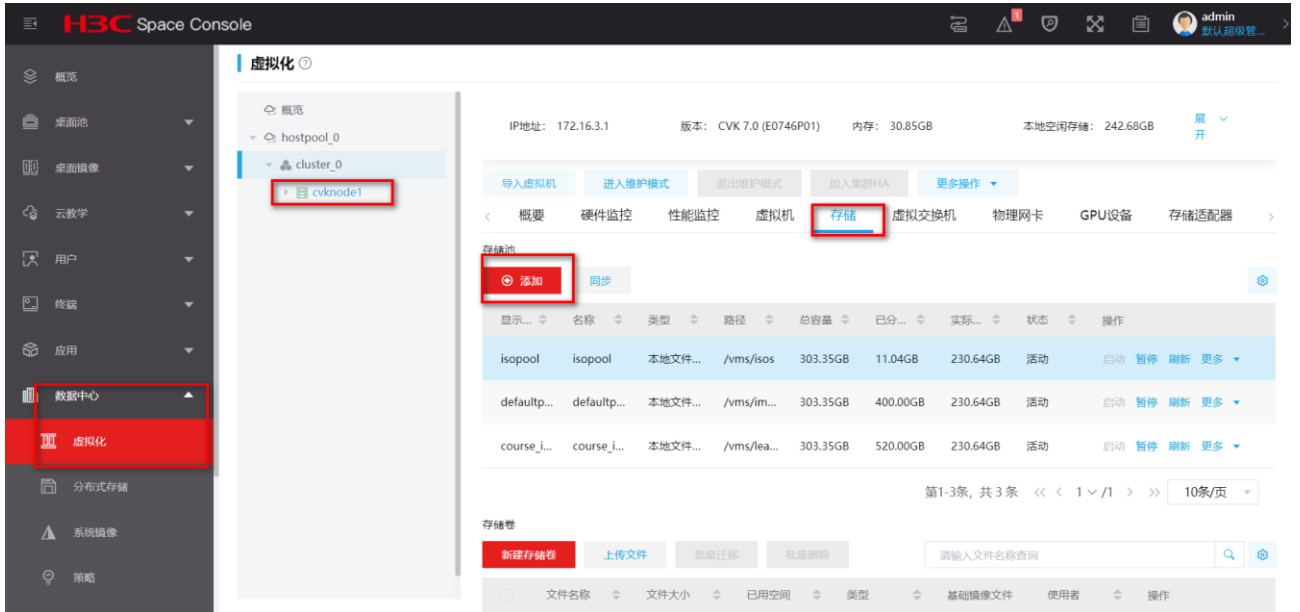
11 在页面上的教学镜像存储配置上按照正常操作添加主机，点确定



12 提示所有主机都已挂盘，每台主机都能找到记录即可



13 如果是单机，不需要配置 GFS，还需要在【数据中心】--【虚拟化】-【主机】-【存储】-【存储池】点击【添加】，类型选取为【本地存储】，名称和显示名称均为，course_images_local，目标路径为：/vms/learningspace/courseImages，如下图



配置:

