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告警信息

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问题描述

本案例适用场景：uis在初始化时会对磁盘进行扫描，如果磁盘已经存在分区会被认为已经被使用，从而过滤，界面扫不到对应的磁盘；部分场景下使用lsblk看到磁盘无分区，在扫盘时也可以发现，但是加入存储集群进行格式化时失败，原因是这些磁盘有残留分区。针对uis集群初始化或者硬盘池扩容时因磁盘残留的分区信息导致无法添加磁盘的情况，本文提供了手动处理方法

在uis的场景下，磁盘分区主要分为两类：即物理磁盘分区场景以及lvm场景

注意事项：1、在初始化环境，清理分区时不要清理掉系统盘。

2、在磁盘扩容场景，不要误操作清理掉已经加入集群的磁盘和系统盘，确认方法看第一章

过程分析

一、待清理磁盘确认

扫盘失败或者提示格式化磁盘失败后，可以先后台确认是否是因为加入集群的磁盘有残留分区导致，如果有残留分区则清理磁盘分区后再尝试，如果没有则打400。

1、初始化场景

1) 确认待清理的磁盘

在初始化uis部署场景，除了系统盘外，其他磁盘都会被要求加入集群，都可能存在磁盘未清理的情况

2) 分区残留确认

使用lsblk 看到对应磁盘是否有分区，如下所示

```
[root@cvknode3 ~]# lsblk
NAME                                MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINTS
sda                                  8:0      0  558.4G 0 disk
sdb                                  8:16     0  558.4G 0 disk
sdc                                  8:32     0  558.4G 0 disk
├─sdc1                               8:33     0   512M 0 part  /boot/efi
├─sdc2                               8:34     0  105.6G 0 part  /
├─sdc3                               8:35     0   32.3G 0 part  /var/log
├─sdc4                               8:36     0    32G 0 part
├─sdc5                               8:37     0  388.1G 0 part  /vms
sdd                                  8:48     0  558.4G 0 disk
sde                                  8:64     0  446.6G 0 disk
├─sde1                               8:65     0   100M 0 part  /var/lib/ceph/osd/ceph-1
├─sde2                               8:66     0   318G 0 part
├─sde3                               8:67     0   100M 0 part  /var/lib/ceph/osd/ceph-3
├─sde4                               8:68     0    64G 0 part
├─sde5                               8:69     0   100M 0 part  /var/lib/ceph/osd/ceph-5
└─sde6                               8:70     0    64G 0 part
sdh                                  8:112    0   300G 0 disk
sdi                                  8:120    0   300G 0 disk
```

查看是否有lvm

分别使用 lvs,vgdisplay,pvdisplay,如果任意一条命令有显示存在信息，则表示有lvm残留，需要清理，如下所示

```
[root@cvknode183 ~]# lvs
[root@cvknode183 ~]# vgdisplay
"/dev/nvme1n1p3" is a new physical volume of "<930.32 GiB"
-- NEW Physical volume
PV Name                /dev/nvme1n1p3
VG Name
PV Size                <930.32 GiB
Allocatable            NO
PE Size                0
Total PE               0
Free PE                0
Allocated PE           0
PV UUID                G709Pf-qeWU-sDYn-9gU8-vVQZ-Rpm1-jhXLQq
[root@cvknode183 ~]# pvremove /dev/nvme1n1p3
Labels on physical volume "/dev/nvme1n1p3" successfully wiped.
[root@cvknode183 ~]# pvdisplay
[root@cvknode183 ~]#
```

2、磁盘扩容场景

扩容场景需要确认扩容的磁盘，避免清理了正在使用的磁盘。

1) 先确认当前存储状态正常，执行ceph -s 命令显示所有osd处于up状态

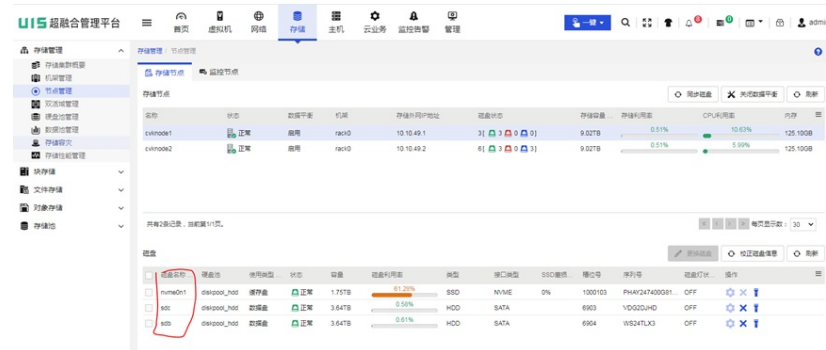
```
[root@cvknode1 ~]# ceph -s
cluster:
  id:          c1aaa3b3-33d3-4543-8fc0-9e31172c649d
  health:      HEALTH_OK

services:
  mon: 3 daemons, quorum cvknode1,cvknode2,cvknode
  mgr: cvknode1(active), standbys: cvknode2
  osd: 10 osds: 10 up, 10 in

data:
  pools:   6 pools, 1280 pgs
  objects: 11376 objects, 43587 MB
  usage:   95947 MB used, 16078 GB / 16172 GB avail
  pgs:     1280 active+clean

io:
  client:  1533 B/s wr, 0 op/s rd, 0 op/s wr
```

2) 查看uis的【存储】->【主机管理】界面进行查看，确认要清理的磁盘未使用，并且不是系统盘



3)、查看是否有lvm

```
[root@cvknode183 ~]# lvsdisplay
[root@cvknode183 ~]# pvdisplay
"/dev/nvme1n1p3" is a new physical volume of "<930.32 GiB"
--- NEW Physical volume
PV Name                /dev/nvme1n1p3
VG Name
PV Size                 <930.32 GiB
Allocatable             NO
PE Size                0
Total PE               0
Free PE                0
Allocated PE           0
PV UUID                G709Pf-qeWU-sDYn-9gU8-vVQZ-Rpm1-jhXLQQ

[root@cvknode183 ~]# pvremove /dev/nvme1n1p3
Labels on physical volume "/dev/nvme1n1p3" successfully wiped.
[root@cvknode183 ~]# pvdisplay
[root@cvknode183 ~]#
```

二、物理磁盘分区场景

这种场景是指磁盘分区是在物理磁盘上进行划分，在uis初始化选盘界面有“清理磁盘分区”按钮，可以直接通清理功能进行操作。如果有分区表残留，则可以通过如下命令进行清理。注：部分磁盘分区残留通过lsblk无法查询，但有分区表的残留，也可以使用此命令进行清理

```
[root@cvknode2 ~]# sgdisk -o /dev/sdc
The operation has completed successfully.
[root@cvknode2 ~]#
```

清理完成后使用 fdisk 命令查看磁盘信息，展示如下就表示符合要求

```
[root@cvknode2 ~]# fdisk -l /dev/sdc
Disk /dev/sdc: 3.64 TiB, 4000787030016 bytes, 7814037168 sectors
Disk model: ST4000NM002A-2HZ
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disklabel type: gpt
Disk identifier: CE81B182-802B-4585-8B8E-AB82248DC38E
[root@cvknode2 ~]#
```

解决方法

lvm分区清理

lvm分区清理存在两种情况：1是lvm还保持完整，使用lvsdisplay或者dmsetup ls 可以看到对应的卷；2是lvm已经部分损坏，通过lvsdisplay 或者dmsetup ls 查询不了信息

1、完整lvm清理

1)、使用dmsetup ls 可以看到当前存在的lvm卷

```
[root@cvknode183 ~]# dmsetup ls
centos-home (253:1)
centos-swap (253:0)
centos-root (253:2)
[root@cvknode183 ~]#
```

2) 使用dmsetup remove XXXX //XXX表示映射设备的名称, 比如要删除 centos-root 就执行dmsetup remove centos-root, 删除后查询, 确认centos-root

```
[root@cvknode183 ~]# dmsetup remove centos-root
[root@cvknode183 ~]# dmsetup ls
centos-home (253:1)
centos-swap (253:0)
[root@cvknode183 ~]#
```

3) 删除完之后 使用sgdisk -o /dev/sdX //其中X表示lvm所在的物理磁盘或者物理分区

2. 残留lvm清理方案

残留的情况下使用lsblk 或者dmsetup ls命令是无法查看到, 甚至lvdisplay命令也显示为空, 但是会导致磁盘在加入存储集群时会导致磁盘格式化失败。

```
Logical volume "home" successfully removed.
[root@cvknode183 ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/centos/root
LV Name                root
VG Name                centos
LV UUID                YNwUgc-nzcG-A06H-ffQr-I42V-JL1L-v4y9FL
LV Write Access        read/write
LV Creation host, time localhost, 2025-02-22 11:16:17 +0800
LV Status               NOT available
LV Size                50.00 GiB
Current LE              12800
Segments                1
Allocation              inherit
Read ahead sectors     auto

[root@cvknode183 ~]# dmsetup ls
No devices found
[root@cvknode183 ~]#
```

Lvm逻辑构成简单描述: 物理分区被用作pv, 多个pv构成vg, 然后vg当作了一块完整的磁盘用来划分lv, 所以pv, vg和lv都有可能残留, 清理的时候需要从上到下进行清理, 即先清理lv, 再清理vg, 最后清理pv, 如下分别提供了清理方法

1) Lv清理: lvdisplay 查询当前lv, lvremove删除

```
[root@cvknode183 ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/centos/home
LV Name                home
VG Name                centos
LV UUID                Iekr3n-AoNt-1hl4-BnRX-4yMw-oW00-UVEEj
LV Write Access        read/write
LV Creation host, time localhost, 2025-02-22 11:16:13 +0800
LV Status               available
# open                  0
LV Size                876.31 GiB
Current LE              224336
Segments                1
Allocation              inherit
Read ahead sectors     auto
- currently set to     8192
Block device           253:1

--- Logical volume ---
LV Path                /dev/centos/root
LV Name                root
VG Name                centos
LV UUID                YNwUgc-nzcG-A06H-ffQr-I42V-JL1L-v4y9FL
LV Write Access        read/write
LV Creation host, time localhost, 2025-02-22 11:16:17 +0800
LV Status               NOT available
LV Size                50.00 GiB
Current LE              12800
Segments                1
Allocation              inherit
Read ahead sectors     auto

[root@cvknode183 ~]# lvremove /dev/centos/home
Do you really want to remove active logical volume centos/home? [y/n]: y
Logical volume "home" successfully removed.
[root@cvknode183 ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/centos/root
LV Name                root
VG Name                centos
LV UUID                YNwUgc-nzcG-A06H-ffQr-I42V-JL1L-v4y9FL
LV Write Access        read/write
LV Creation host, time localhost, 2025-02-22 11:16:17 +0800
LV Status               NOT available
LV Size                50.00 GiB
```

2) Vg清理: vgdisplay 查询, vgremove 删除

```

[root@cvknode183 ~]# vgsdisplay
--- Volume group ---
VG Name          centos
System ID
Format           lvm2
Metadata Areas   1
Metadata Sequence No 6
VG Access        read/write
VG Status        resizable
MAX LV           0
Cur LV          1
Open LV          0
Max PV           0
Cur PV          1
Act PV           1
VG Size          930.31 GiB
PE Size          4.00 MiB
Total PE        238160
Alloc PE / Size 12800 / 50.00 GiB
Free PE / Size  225360 / 880.31 GiB
VG UUID          aa2f4f-xuwx-VV1v-fa0q-3XK8-ke7z-AkFRWx

[root@cvknode183 ~]# vgreduce centos
Do you really want to remove volume group "centos" containing 1 logical volumes? [y/n]: y
Logical volume "root" successfully removed.
Volume group "centos" successfully removed.

[root@cvknode183 ~]# vgsdisplay
--- Volume group ---
VG Name          centos
System ID
Format           lvm2
Metadata Areas   1
Metadata Sequence No 6
VG Access        read/write
VG Status        resizable
MAX LV           0
Cur LV          0
Open LV          0
Max PV           0
Cur PV          0
Act PV           0
VG Size          930.31 GiB
PE Size          4.00 MiB
Total PE        238160
Alloc PE / Size 0 / 0
Free PE / Size  238160 / 930.31 GiB
VG UUID          aa2f4f-xuwx-VV1v-fa0q-3XK8-ke7z-AkFRWx

[root@cvknode183 ~]# pvdisplay
"/dev/nvme1n1p3" is a new physical volume of "<930.32 GiB"
--- NEW Physical volume ---
PV Name          /dev/nvme1n1p3
VG Name
PV Size          <930.32 GiB
Allocatable      NO
PE Size          0
Total PE         0
Free PE          0
Allocated PE     0
PV UUID          G709Pf-qeWU-sDYn-9gU8-vVQZ-Rpm1-jhXLQQ

[root@cvknode183 ~]#

```

3) Pv的清理:pvdisplay 查询 pvremove 删除

```

[root@cvknode183 ~]# pvdisplay
"/dev/nvme1n1p3" is a new physical volume of "<930.32 GiB"
--- NEW Physical volume ---
PV Name          /dev/nvme1n1p3
VG Name
PV Size          <930.32 GiB
Allocatable      NO
PE Size          0
Total PE         0
Free PE          0
Allocated PE     0
PV UUID          G709Pf-qeWU-sDYn-9gU8-vVQZ-Rpm1-jhXLQQ

[root@cvknode183 ~]# pvremove /dev/nvme1n1p3
Labels on physical volume "/dev/nvme1n1p3" successfully wiped.

[root@cvknode183 ~]# pvdisplay
"/dev/nvme1n1p3" is a new physical volume of "<930.32 GiB"
--- NEW Physical volume ---
PV Name          /dev/nvme1n1p3
VG Name
PV Size          <930.32 GiB
Allocatable      NO
PE Size          0
Total PE         0
Free PE          0
Allocated PE     0
PV UUID          G709Pf-qeWU-sDYn-9gU8-vVQZ-Rpm1-jhXLQQ

[root@cvknode183 ~]#

```

4) 删除完成后执行 sgdisk -o /dev/nvme1n1 清理磁盘，其中nvme1n1 是pv所在的磁盘