## 如何检测FC存储池的连通性

Linux系统中在/sys/class目录下有三个主要文件夹跟 fibre channel相关。分别是fc\_transport、fc\_remote\_ports、fc\_hosts。我们可通过指令 systool -c 来查看相应信息。

1. fc\_transport：代表已连通的存储的端口的信息；netapp上禁用的fc端口在这个文件夹可以查到。

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| **[**root**@**node11 fc\_remote\_ports**]**# systool -c fc\_transport **-**v **|** **more**  Class **=** "fc\_transport"  Class Device **=** "0:10"  Class Device path **=** "/sys/devices/pci0000:80/0000:80:02.2/0000:84:00.0/host1/rport-1:0-10/target1:0:10/fc\_transport/target1:0:10"  node\_name **=** "0x201500a098c20fc4"  port\_id **=** "0x011204"  port\_name **=** "0x201300a098c20fc4"  uevent **=**  Device **=** "target1:0:10"  Device path **=** "/sys/devices/pci0000:80/0000:80:02.2/0000:84:00.0/host1/rport-1:0-10/target1:0:10"  uevent **=** "DEVTYPE=scsi\_target" |

port\_name即存储设备的wwpn，node\_name即存储设备的wwnn

**我们可通过这个指令拿到所有已连接上的存储设备的端口：**

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| **[**root**@**node11 fc\_remote\_ports**]**# systool -c fc\_transport **-**v **|** **grep** port\_name  port\_name **=** "0x201300a098c20fc4"  port\_name **=** "0x200000a098c20fc4"  port\_name **=** "0x200c00a098c20fc4"  port\_name **=** "0x201100a098c20fc4"  port\_name **=** "0x200900a098a98ac9"  port\_name **=** "0x2003a4c64f1db633" |

1. fc\_remote\_ports代表主机到存储端口链路信息，fc\_remote\_ports文件夹包含未给主机分配存储的链路信息。如netapp上禁用的fc端口依旧在这个文件夹可以查到。

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| **[**root**@**localhost **~]**# systool -c fc\_remote\_ports **-**v**|more**  Class **=** "fc\_remote\_ports"  Class Device **=** "0-0"  Class Device path **=** "/sys/devices/pci0000:80/0000:80:02.0/0000:83:00.0/host6/rport-6:0-0/fc\_remote\_ports/rport-6:0-0"  dev\_loss\_tmo **=** "60"  fast\_io\_fail\_tmo **=** "off"  maxframe\_size **=** "2048 bytes"  node\_name **=** "0x200100a098a98ac9"  port\_id **=** "0x011001"  port\_name **=** "0x200200a098a98ac9"  port\_state **=** "Online"  roles **=** "FCP Target"  scsi\_target\_id **=** "0"  supported\_classes **=** "Class 3"  uevent **=**  Device **=** "rport-6:0-0"  Device path **=** "/sys/devices/pci0000:80/0000:80:02.0/0000:83:00.0/host6/rport-6:0-0"  uevent **=** |

1. fc\_host代表主机HBA卡信息。

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| **[**root**@**node3 cinder**]**# systool -c fc\_host **-**v  Class **=** "fc\_host"  Class Device **=** "host1"  Class Device path **=** "/sys/devices/pci0000:80/0000:80:03.0/0000:85:00.0/host1/fc\_host/host1"  active\_fc4s **=** "0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x01 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 "  dev\_loss\_tmo **=** "60"  fabric\_name **=** "0x1000c4f57cae9b8c"  issue\_lip **=** **<**store method only**>**  max\_npiv\_vports **=** "255"  maxframe\_size **=** "0 bytes"  node\_name **=** "0x20008c7cff326580"  npiv\_vports\_inuse **=** "0"  port\_id **=** "0x010800"  port\_name **=** "0x10008c7cff326580"  port\_state **=** "Online"  port\_type **=** "NPort (fabric via point-to-point)"  speed **=** "16 Gbit"  supported\_classes **=** "Class 3"  supported\_fc4s **=** "0x00 0x00 0x01 0x20 0x00 0x00 0x00 0x01 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 "  supported\_speeds **=** "2 Gbit, 4 Gbit, 8 Gbit, 16 Gbit"  symbolic\_name **=** "QLogic-1860-1p | 3.2.7.0 | node3 | CentOS Linux release 7.3.1611 (Core) | "  tgtid\_bind\_type **=** "wwpn (World Wide Port Name)"  uevent **=**  vport\_create **=** **<**store method only**>**  vport\_delete **=** **<**store method only**>**  Device **=** "host1"  Device path **=** "/sys/devices/pci0000:80/0000:80:03.0/0000:85:00.0/host1"  uevent **=** "DEVTYPE=scsi\_host" |

Port\_name即本机的wwpn，port\_state = ‘online’说明本机的fc网卡是连通状态的，如果是掉线状态是‘Linkdown’。

已经可以拿到已连接上的wwpn列表，只要再拿到存储池的wwpn信息即可进行比较，得出存储池的连通性。

怎么样拿到存储池的wwpn信息呢？

存储设备驱动提供了接口方法：

华为：

cinder.volume.drivers.huawei.rest\_client.RestClient#get\_fc\_target\_wwpns(self, wwn)

Netapp：

cinder.volume.drivers.netapp.dataontap.client.client\_cmode.Client#get\_fc\_target\_wwpns(self)

华为的接口是要传递本地wwn的。