

How to check dual path in AIX

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How to verify if there is dual paths to SAN disks in AIX Operating System

In this context we are using two important command which is `lspath` and `dlnkmgr`.

`lspath` is the native AIX command which is included in the OS.

`dlnkmgr` comes from Hitachi software and you need to install it before you can use it on AIX.

To list hard disks connected to the server, its status and path.

```
=====
[root@myserver]# /usr/sbin/lspath
Enabled hdisk0 vscsi
Enabled hdisk0 vscsi1
Enabled hdisk1 fscsi0
Enabled hdisk2 fscsi0
Enabled hdisk3 fscsi0
Enabled hdisk4 fscsi0
Enabled hdisk1 fscsi1
Enabled hdisk2 fscsi1
Enabled hdisk3 fscsi1
Failed hdisk4 fscsi1
=====
```

Explanation:

If you noticed the output, it contains list of hard disks (`hdisk`), status and which `scsi` it is connected to. "`vscsi`" is referring to virtual `scsi` and "`fscsi`" is referring to fiber channel `scsi`. "Enable" means the disk is enabled. There are two `scsi` listed for each hard disk and this means each hard disk is connected with dual path. Noticed one of the path for `hdisk 4` failed.

To do a quick check on the number of path present (does not mean all are Enabled] using for loop.

```
=====
```

```
[root@myserver]# for i in `usr/sbin/lspath|grep scsilawk '{print $2}'|sort|uniq`; do echo "$i
`usr/sbin/lspath lawk '/'$i' /' |lunqlawk '/Enabled/'|wc -l";done
```

```
[root@myserver]# for i in `usr/sbin/lspath|grep scsilawk '{print $2}'|sort|uniq`; do echo "$i
`usr/sbin/lspath lawk '/'$i' / {print $2}'|wc -l";done
```

```
hdisk0    2
hdisk1    2
hdisk2    2
hdisk3    2
hdisk4    2
```

=====

To determine if all the paths are working using DynamicLinkManager.

=====

```
[root@myserver]# /usr/DynamicLinkManager/bin/dlnkmgr view -lu -c -item
```

Product	S/N	LUs	iLU	SLPR	HDevName	VG	Paths	OnlinePaths
USP	0060121	89 0230	0	hdisk1	vg01	2	2	
		040A	0	hdisk2	vg02	2	2	
		040B	0	hdisk3	vg03	2	2	
		0411	0	hdisk4	vg04	2	1	

=====

Noticed that the "OnlinePaths" for hdisk4 is 1. This means one of the path might be having some problem.

Note: The dlnkmgr commands used in this article can only detect disk devices connected through fscsi.

To detect those using vscsi please use lspath.

To determine if all the paths are working using lspath.

=====

```
[root@myserver]# lspath -H -F "name parent path_id connection status"
```

name	parent	path_id	connection	status
hdisk0	vscsi1	0	810000000000	Enabled
hdisk1	vscsi1	0	820000000000	Enabled
hdisk3	vscsi1	1	840000000000	Enabled
hdisk2	vscsi1	1	830000000000	Enabled
hdisk4	fscsi0	0	50060e8004eae731,0	Enabled

=====

To list more details on all disk devices status except for the ones connected via vscsi.

```
=====
[root@myserver]# /usr/DynamicLinkManager/bin/dlnkmgr view -lu -item
Product      : USP
SerialNumber : 0012345
LUs          : 89
iLU SLPR HDevName VG      OSPathID PathID PathName          ChaPort CLPR Status
Type IO-Count IO-Errors DNum IEP
0230 0 hdisk1 vg01 00000 000068 08.08.00000000000012400.0026 1M 0 Online Own
71822950 0 0 -
          00001 000069 08.06.0000000000002AC80.0026 2M 0 Online Own
71822507 0 0 -
040A 0 hdisk2 vg02 00000 000078 08.06.0000000000002AC80.001F 2M 0 Online
Own 388064 0 0 -
          00001 000079 08.08.00000000000012400.001F 1M 0 Online Own
388537 0 0 -
040B 0 hdisk3 vg03 00000 000074 08.06.0000000000002AC80.0027 2M 0 Online
Own 14968067 0 0 -
          00001 000075 08.08.00000000000012400.0027 1M 0 Online Own
14969600 0 0 -
0411 0 hdisk4 vg04 00000 000102 08.06.0000000000002AC80.0037 2M 0 Online
Own 12887367 0 0 -
          00001 000103 08.08.00000000000012400.0037 1M 0 Offline Own
12887438 0 0 -
=====
```

Noticed that the "Status" for PathID "000103" used by hdisk4 is "Offline". This means it might be having some problem.

Next try to enable the failed path for hdisk4 to see if it worked.

To enable the failed path for hdisk4 and see if it worked

```
=====
root@myserver# chpath -l hdisk4 -p fscsi1 -s enable
paths Changed
```

```
[root@myserver]# /usr/sbin/lspath |grep hdisk4
Enabled hdisk4 fscsi0
```

Enabled hdisk4 fscsi1

The below command will use lspath to identify number of path configured and number of those path which are online

```
root@myserver# echo "Dev      NoPath  Online  ThroughNoOfInterface";for i in `lspath -H -F 'name parent path_id connection status'awk '!/name / {print $1}'|sort|uniq`;do echo "$i `lspath -H -F 'name parent path_id connection status'awk '/$i' / {print $4}'|uniq|wc -l`; `lspath -H -F 'name parent path_id connection status'awk '/$i' / && /Enabled/ {print $4}'|uniq|wc -l`; `lspath -H -F 'name parent path_id connection status'awk '/$i' / {print $2}'|uniq|wc -l`";done
```

Dev	NoPath	Online	ThroughNoOfInterface
hdisk0;	1;	1	1
hdisk1;	1;	1	1
hdisk2;	3;	1	1
hdisk3;	3;	1	1
hdisk4;	3;	1	1

To get WWN

```
root@myserver# lscfg -vl fcs0|grep Network
Network Address.....10000000C93CD567
root@myserver# fcstat fcs0 |grep "World Wide Port"
World Wide Port Name: 0x10000000C93CD567
```

To get MAC address of fcs

```
root@myserver# lsconf |grep fcs
+ fcs0      U7311.D20.657CEDA-P1-C02-T1      FC Adapter
+ fcs1      U7879.001.DQD0HWE-P1-C1-T1      FC Adapter
```

To check which fscsi is related to fcs

```
root@myserver# lsdev -C |grep fscsi
fscsi0     Available 07-08-02    FC SCSI I/O Controller Protocol Device
```

```
fscsi1    Available 06-08-02    FC SCSI I/O Controller Protocol Device
root@myserver# lsdev -C |grep fcs
fcs0      Available 07-08          FC Adapter
fcs1      Available 06-08          FC Adapter
```

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