



# Support for multipath access in SnapDrive for UNIX

Snapdrive for Unix

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# Support for multipath access in SnapDrive for UNIX

SnapDrive for UNIX supports FC multipath access to the storage systems using the standard multipathing software solution. By using multipathing, you can configure multiple network paths between the host and storage system.

Platform	Multipathing solution
AIX	For FC <ul style="list-style-type: none"><li>• NativeMPIO</li><li>• DMP</li></ul>

If one path fails, the FC traffic continues on the remaining paths. Multipathing is required if the host has multiple paths to a LUN, and it works by making the underlying paths transparent to the user. If the multipathing solution specified in the configuration file for SnapDrive for UNIX operations is configured and supported, SnapDrive for UNIX uses the specified multipathing solution.

## Enabling multipathing

To use multipathing in SnapDrive for UNIX, you must complete steps that include installing and starting the HBA. If you are using a non-NetApp multipathing solution, you must download the software and application package from the HBA vendor's web site.

Your system must be running current versions of FC and iSCSI system components.

[NetApp Interoperability Matrix Tool](#)

### Steps

1. Install the supported HBAs before you install the appropriate Host Utilities software.



SnapDrive for UNIX supports multivendor HBAs.

2. Start the HBA service.

If the HBA service is not running, the following error message is displayed when you run SnapDrive for UNIX commands, such as `snapdrive storage create` and `snapdrive config prepare luns`:

```
0001-876 Admin error: HBA assistant not found
```

You must verify that the required number of paths are up and running. You can verify the paths by using the `sanlun` utility, which is included with the Host Utilities software. For example, in the FC multipathing configuration, you can use the `sanlun fcp show adapter -v` command.

In the following example, there are two HBA ports (`fcd0` and `fcd1`) connected to the host that are operational (port state). You can have only one HBA or iSCSI initiator and you must configure multipathing

by providing more than one path to the target LUNs.

```
# sanlun fcp show adapter -v
adapter name: fcd0
WWPN: 50060b000038c428
WWNN: 50060b000038c429
driver name: fcd
model: A6826A
model description: Fibre Channel Mass Storage Adapter
(PCI/PCI-X)
serial number: Not Available
hardware version: 3
driver version: @(#) libfcd.a HP Fibre Channel
ISP 23xx & 24xx Driver B.11.23.04
/ux/core/isu/FCD/kern/src/common/wsio/fcd_init.c:Oct 18
2005,08:19:50
firmware version: 3.3.18
Number of ports: 1 of 2
port type: Fabric
port state: Operational
supported speed: 2 GBit/sec
negotiated speed: 2 GBit/sec
OS device name: /dev/fcd0
adapter name: fcd1
WWPN: 50060b000038c42a
WWNN: 50060b000038c42b
driver name: fcd
model: A6826A
model description: Fibre Channel Mass Storage Adapter
(PCI/PCI-X)
serial number: Not Available
hardware version: 3
driver version: @(#) libfcd.a HP Fibre Channel
ISP 23xx & 24xx Driver B.11.23.04
/ux/core/isu/FCD/kern/src/common/wsio/fcd_init.c:Oct 18
2005,08:19:50
firmware version: 3.3.18
Number of ports: 2 of 2 port type: Fabric
port state: Operational
supported speed: 2 GBit/sec
negotiated speed: 2 GBit/sec
OS device name: /dev/fcd1
```

If multipathing is enabled on a host, multiple paths are visible for the same LUN. You can use the `sanlun lun show all` command to verify the paths. In the following example, you can find multiple paths to the same LUN (`fish: /vol/vol1/lun`):

```

filer:          lun-pathname          device filename  adapter  protocol
lun size          lun state
filer_1:        fish/vol/vol1/l1          hdisk36          fcs0
FCP            5m (5242880)          GOOD
filer_2:        fish/vol/vol0/lunKr      hdisk39          fcs0
FCP            100m (104857600)        GOOD
filer_3:        fish/vol/vol0/testaix    hdisk2           fcs0
FCP            200m (209715200)        GOOD
filer_4:        fish/vol/vol1/l1          hdisk45          fcs1
FCP            5m (5242880)          GOOD

```

3. In an FC configuration, zone the host HBA ports and target ports by using the switch zoning configuration.
4. Install and set up the appropriate FC or iSCSI switch.
5. Check the SnapDrive for UNIX stack requirements.
6. Install or upgrade SnapDrive for UNIX.
7. Verify the SnapDrive for UNIX installation.
8. Locate the `snapdrive.conf` file path.
9. Configure the following configuration variables in the `snapdrive.conf` file:

- `multipathing-type`
- `default-transport`
- `fstype`
- `vmtype`

For every host, the multipathing type, transport type, file system, and volume manager type are dependent on each other. The following table describes all the possible combinations:

Host platform	Default transport type	Multipathing type	fstype	vmtype
AIX	FCP	absolute	jfs2 or jfs	lvm
		nativempio	jfs2 or jfs	lvm
		dmp	vxfs	vxvm

The preceding table gives the supported values of the `multipathing-type`, `default-transport`, `fstype`, and `vmtype` configuration variables.

10. Save the `snapdrive.conf` file.

SnapDrive for UNIX automatically checks this file each time it starts. You must restart the SnapDrive for UNIX daemon for the changes to take effect.

## Related information

[NetApp Support](#)

[NetApp Interoperability](#)

[AIX Host Utilities 6.0 Installation and Setup Guide](#)

## Reason to refresh the DMP paths

On hosts with FC and DMP configurations, the `snapdrive storage delete - lun` command can hang.

The command may hang because of inappropriate installation or configuration of the following components:

- NTAPasl
- Veritas stack (storage foundation)
- Multipathing licenses

You must refresh the DMP paths information properly after any FC path is enabled, disabled, or added. To refresh the DMP paths, execute the following commands in the sequential manner as listed below.

Platform	Command
AIX	<ul style="list-style-type: none"><li>• <code>cfgmg</code></li><li>• <code>vxdisk scandisk</code></li></ul>

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