

# How to configure MPxIO in Solaris 10

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**QSAN** Technology, Inc.  
<http://www.QsanTechnology.com>  
White Paper# **QWP201008-F300H**



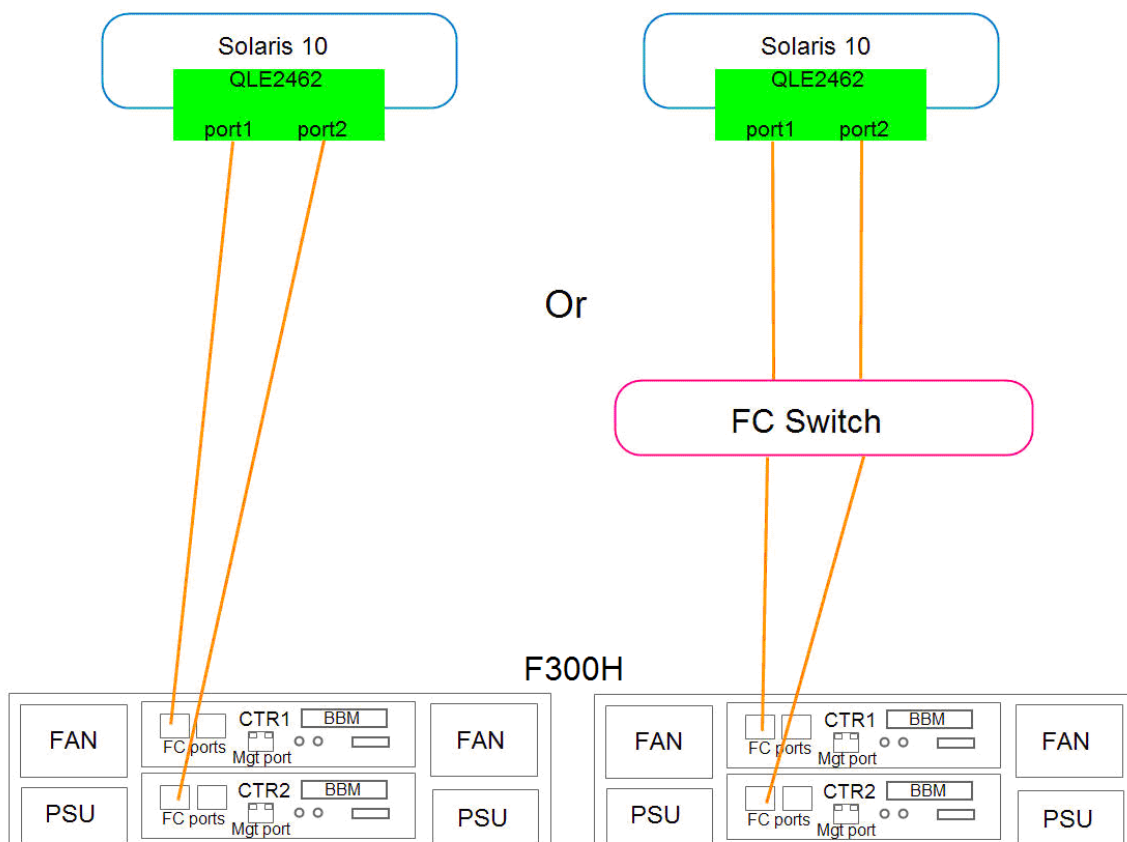
## Introduction

This document is used to demonstrate how to configure the multipath driver – MPxIO – in Solaris 10. Follow the instructions in this document step by step; user can setup the multipathing in Solaris 10 with **QSAN F300H**.

## Environment

- Host OS:** Solaris 10/u6 x86
- Fiber HBA:** QLogic QLE2462
- HBA driver:** qlc (just use the native driver in the Solaris OS, no to use the driver download from QLogic website.)
- Fiber RAID system:** QSAN F300H
- Firmware:** 2.0.0p1 (20101118\_1200)
- RAID configuration:** One 3TB-VD attaches to one LUN in F300H

## Diagram



## Configurations

1. Edit the `/kernel/drv/fp.conf` to enable the multipathing in Solaris 10. Change the value of `mpxio-disable` to `no` and save the setting.

```
# vi /kernel/drv/fp.conf
...
mpxio-disable="no"
```

2. Tell MPxIO driver to accept the device based on the SCSI vendor and Product ID by editing `/kernel/drv/scsi_vhci.conf` file. Add the following settings in the tail of the file.

```
# vi /kernel/drv/scsi_vhci.conf
...
device-type-scsi-options-list=
"Qsan    F300H", "symmetric-option";           // 4 spaces must be kept
                                                // between Qsan and
symmetric-option = x01000000;                 // F300H
```

3. In order to find out the SCSI vendor and Product-ID, use `format` command and select the virtual disk of **F300H** to find out the information.

```
format> inquiry
Vendor:      Qsan
Product:     F300H
Revision:    200
```

Beware that the MPxIO driver accepts the vendor name as exactly 8 characters only. The vendor name must be added 4 spaces at the end of "Qsan" in `/kernel/drv/scsi_vhci.conf` file.

4. It's necessary to reboot for all settings validate.

```
# reboot -- -r
```

5. After rebooting, these iSCSI disks will be merged into one MPIO device.

```
# format // Before MPxIO applied,
Searching for disks... // OS detects the same
// LUN as two independent
// disks.
...
AVAILABLE DISK SELECTIONS:
 0. c1t0d0 <DEFAULT cyl 4460 alt 2 hd 255 sec 63>
   /pci@0,0/pci108e,5348@7/disk@0,0
 1. c4t2100001378B70600d0 <Qsan-F300H-201-3.00TB>
   /pci@0,0/pci10de,5d@e/pci1077,138@0/fp@0,0/disk@w2100001378b70600,0
 2. c7t2900001378B70600d0 <Qsan-F300H-201-3.00TB>
   /pci@0,0/pci10de,5d@e/pci1077,138@0,1/fp@0,0/disk@w2900001378b70600,0
Specify disk (enter its number):
```

```
# format // After MPxIO applied,
Searching for disks... // two disks c4t2100001378B70600d0
// and c7t2900001378B70600d0 are
// merged to c2t201B001378E02FD8d0
```

```
...  
AVAILABLE DISK SELECTIONS:  
  0. c1t0d0 <DEFAULT cyl 4460 alt 2 hd 255 sec 63>  
    /pci@0,0/pci108e,5348@7/disk@0,0  
  1. c2t201B001378E02FD8d0 <Qsan-F300H-201-3.00TB>  
    /scsi vhci/disk@g201b001378e02fd8  
Specify disk (enter its number):
```

6. Then the multipathing device is ready for use now.

```
# df -h  
Filesystem                size  used  avail capacity  Mounted on  
/dev/dsk/c1t0d0s0         4.6G  3.8G   847M    82%      /  
/devices                  0K    0K    0K      0%      /devices  
ctfs                      0K    0K    0K      0%      /system/contract  
proc                      0K    0K    0K      0%      /proc  
mnttab                    0K    0K    0K      0%      /etc/mnttab  
swap                      1.5G  916K  1.5G    1%      /etc/svc/volatile  
objfs                     0K    0K    0K      0%      /system/object  
sharefs                   0K    0K    0K      0%      /etc/dfs/sharetab  
/usr/lib/libc/libc hwcap2.so.1  
                          4.6G  3.8G   847M    82%      /lib/libc.so.1  
fd                         0K    0K    0K      0%      /dev/fd  
swap                      1.5G  1.4M  1.5G    1%      /tmp  
swap                      1.5G  28K   1.5G    1%      /var/run  
/dev/dsk/c1t0d0s7         28G   253M  28G     1%      /export/home  
/dev/dsk/c2t201B001378E02FD8d0s0  
                          3.0T   64M  3.0T    1%      /mnt/test
```

## Applies to

- F300H FW 2.0.0p1 (20101118\_1200)