Open-FCoE Software Initiator

Chelsio Communications, Inc.
http://www.chelsio.com

370 San Aleso Ave, Suite 100, Sunnyvale, CA 94085

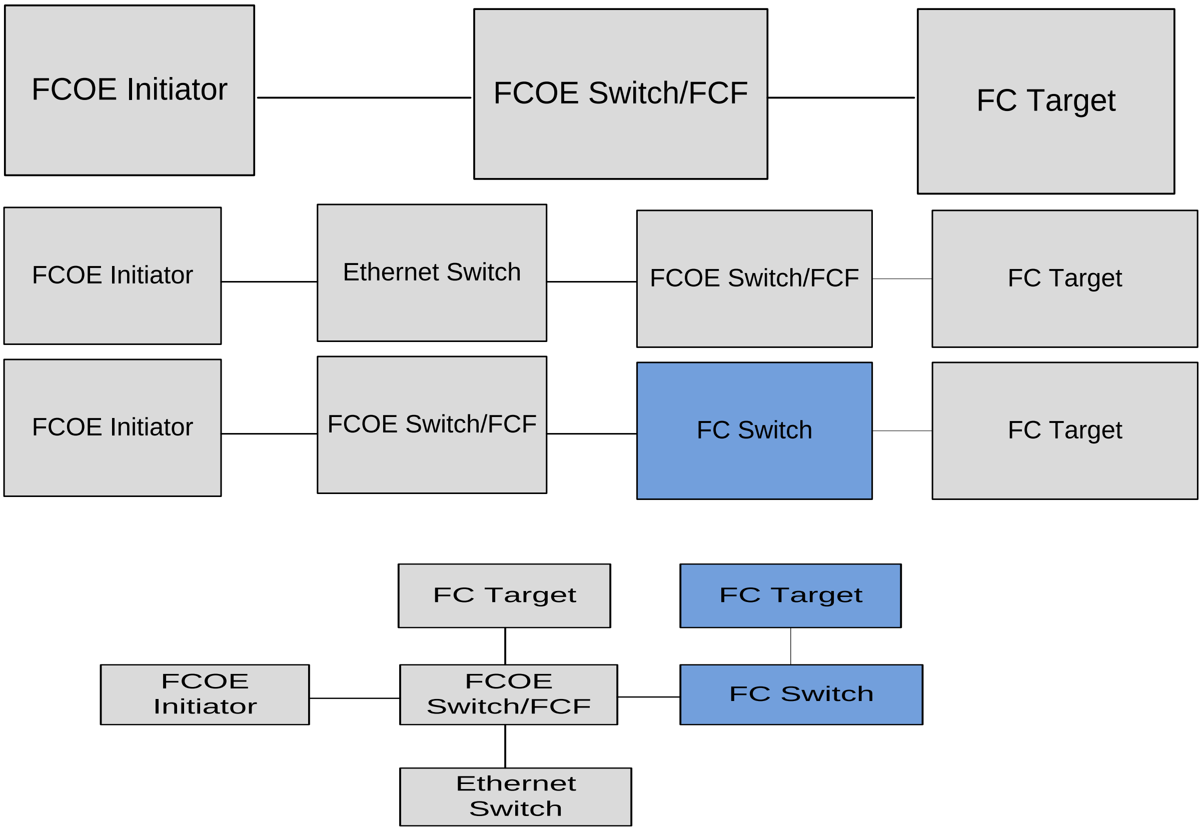
THIS DOCUMENTATION IS PROVIDED “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Table of Contents

TOPOLOGY Support Tested

All the experiments using Open-FCoE have been performed on Chelsio T3 hardware as the underlying Network Interface Card.

FABRIC Topology



Note: Different combinations of READ/WRITE tests were run on all the above topologies.

Protocol validation

FCoE Initialization Protocol (FIP) Validation

1. FIP Discovery Advertisement
2. FIP Discovery Solicitation
3. FIP Flogi Request
4. FIP Flogi Response
5. FIP Keep Alive
6. FC Discovery Process (PLOGI,PRLI,SCSI Command Sets)

Feature Tested

Multiple LUNS / TARGETS

Connected multiple targets, with multiple LUNs, to the Chelsio T3 Open FCoE HBA port and ran 24 hour stress test.

ZONING

Created Zones on the switch and verified that only Zone members were discovered by Chelsio T3 Open FCoE Initiator.

Bus / Target / Host RESET

Using SG3 Utils performed Bus, Target, Host Reset tests.

Stress Test

Performed 48 hours of stress test.

Link / Port Up/Down

Verified the adapter can access all the devices after re-inserting the cable to the Initiator and data integrity program could continue to run without failing.

Setup Details

System Details

CPU: Intel Xeon 3.2GHz

RAM: 1GB

Chelsio driver version: 1.1.2-ko (in-box)

OS: RHEL 5.3

Kernel: 2.6.30.9

I/O Configurations

1) 50% Sequential/50% Random Write Test - Block size 512K to 1MB.

2) 50% Sequential/50% Random Read Test - Block size 512K to 1MB.

3) 50% Sequential/50% Random 70% Read/30% Write Test - Block size 512K to 1MB.

4) 50% Sequential / 50% Random 50%Read 50%write Test –Block size 16K

FCoE Initiator Setup

a) Kernel Configuration and Compilation: Get a kernel that supports Open-FCoE. You can use the latest kernels, anything above 2.6.30 from http://kernel.org/

1. Untar the kernel tar ball.
2. Run 'make menuconfig' and enable the following option

```
Symbol: FCOE [=m] Prompt: FCoE module
    Depends on: SCSI_LOWLEVEL [=y] && SCSI [=y] && PCI[=y]
     Location:
      -> Device Drivers
       -> SCSI device support
        -> SCSI low-level drivers (SCSI_LOWLEVEL[=y])
                       Selects: LIBFCOE [=m],
```

Note: Enabling this option will also enable the libfcoe, libfc and the FC transport.

3. Save the file and exit .
4. In the terminal window, type: <make && make modules>
5. Install the new kernel and modules: <make modules_install && make install>
6. Reboot and boot to the modified kernel

b) Loading FCOE Modules:

    1) modprobe fcoe

c) Making NIC Interface to generate FCOE traffic

    1) Creating a FCOE Interface Port

    ```
    echo “NIC Interface” >/sys/modules/fcoe/create
    ```

    2) Deleting FCOE Interface Port

    ```
    echo “NIC Interface” >/sys/modules/fcoe/destroy
    ```

where, “NIC Interface” is ethX