



FAST AND DYNAMIC FAULT-TOLERANCE

The Fabriscale fabric manager (FFM) is a new generation of fabric management that ensures more efficient and reliable operation of data centres and high performance computing clusters based on InfiniBand technology. The FFM provides optimized fault-tolerance capabilities, which ensures fast failover for any fault scenario.

A key benefit of the FFM is fast and dynamic fault-tolerance, which reduces the time it takes to handle network faults from several minutes to less than a second. With the FFM there is no need to reconfigure the routing tables when a network fault occurs. Redundant paths are computed upfront and activated by the FFM when faults occur. This leads to less network downtime and a reduced chance for abnormal application termination.

Table 1 below lists the failover time for two different fat-tree configurations when using OpenSM and FFM. For a three stage fat-tree the FFM is 150 to 400 times faster than OpenSM.

Topology	FFM	OSM Fat-tree	OSM Up/Down	OSM DFSSSP
Two stage fat-tree (324 ports)	0.014	0.039	0.040	0.120
Three stage fat-tree (5832 ports)	0.340	104.000	54.000	144.000

Table 1: Failover times in seconds for FFM and OpenSM (OSM).

The failover times measure the time from the subnet manager has been notified of a link failure to the fabric has re-established new routes for all affected paths. At this point the application can continue its communication if it has not terminated abnormally due to a timeout.

For more information about the Fabriscale fabric manager please visit <http://fabriscale.com> or contact us at info@fabriscale.com.