

## IBM TotalStorage Proven™ program

### IBM Linux-HA on DS4000 (formerly FAStT)



#### **Testing Template:**

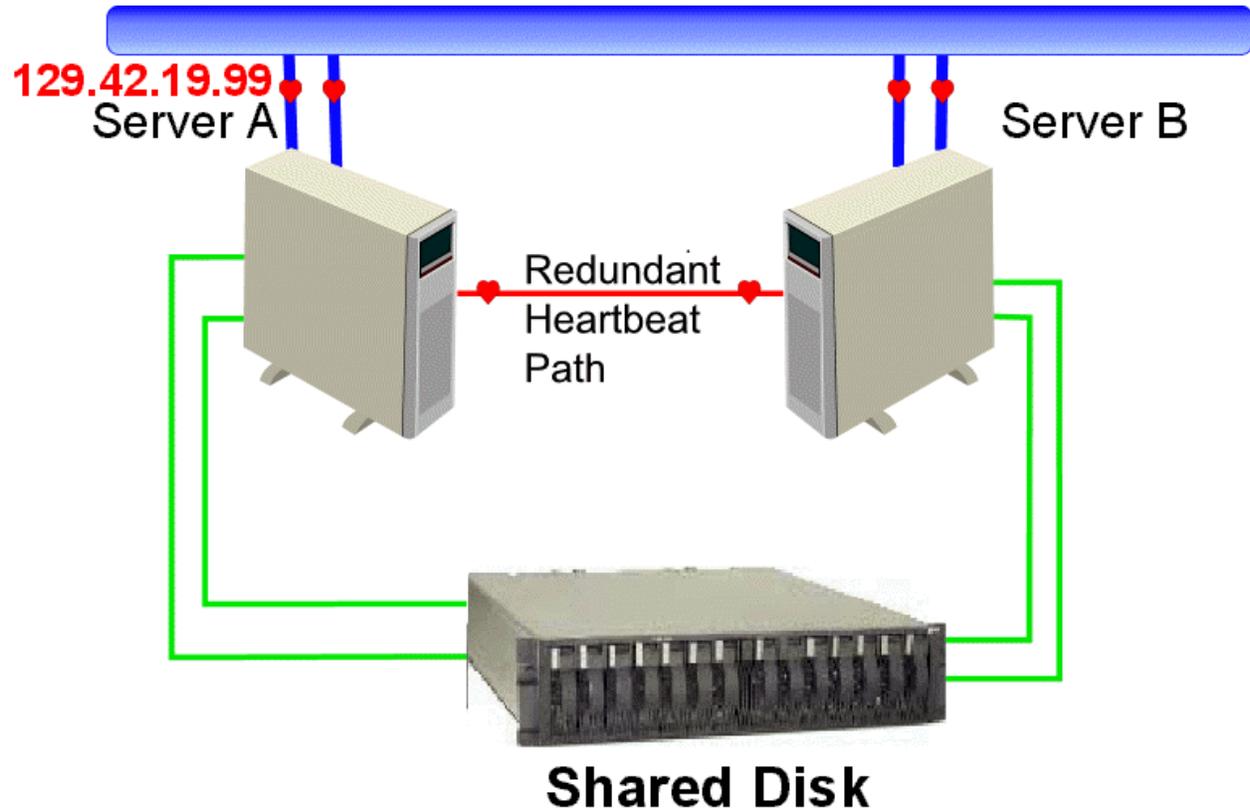
This document will be used to describe, from a technical perspective, the elements that were included as part of the IBM TotalStorage Proven testing. It is intended to give an overall picture of the technical elements of the configuration, with a brief description of the results of the testing including any specific highlights of the interoperability results.

High-level architecture/description, include a list of products that meet the compatibility requirements ("Approved Product(s)") as well as a list of the IBM storage products with which the Approved Products meet the compatibility requirements ("Qualified IBM Storage Products"):

This solution includes 2 xSeries servers (IBM), equipped with QLOGIC cards and dual Ethernet cards each, FAStT storage (now called DS4000) and an 8 port FC Switch. In the specific configuration tested, a FAStT600 was used, QLOGIC 2312 cards and an IBM 3534-F08 switch.

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The testing scenario:



Testing level achieved: Standard

- Standard: The standard test consists of elements like install, configuration, load, exercise I/O, and backup/restore testing.

Testing Overview:

Test Configuration:

Linux OS: RedHat Enterprise Level 3.0 (RHEL 3)  
Linux-HA Version 1.2.3 (Open Source)  
QLOGIC 2312, firmware 1.25  
FC Switch: IBM 3534-F08, kernel 5.4, Fabric v3.1.1b

Testing Dates: Dec 8, 2004 – Dec 15, 2004

Installation and setup on both xSeries servers:

- 1) Install Linux OS - RHEL 3.0 , including QLOGIC drivers
- 2) Install and Configure Linux-HA (open source package) avail at [www.linux-ha.org](http://www.linux-ha.org)
- 3) Include serial connection and Ethernet connection between two servers for heartbeat

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- 4) Configure Apache (httpd) to use as high availability test service
- 5) Create mount pts on each server to FAStT storage and create web pages on FAStT to be accessed via httpd service

### Testing Results:

- 1) Start Linux-HA (heartbeat) on both servers (active and standby)
  - 2) Tested failover from primary to secondary using various methods to take down primary service. (stop service cmd, power off, pull cables)
  - 3) Tested auto failback – bringing primary server back on line.
  - 4) Data Integrity – Writes to files on FAStT storage from each server are preserved during failover and failback.
  - 5) Performance: <10 sec failover and failback observed in all test scenarios.
- \* Additional details provided in Test results document provided to TotalStorage Proven program

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