



### **Issue:**

Manufacturing test racks requires multiple initiators, disk and tape devices to test SAN security device operation. The need and coordination of all these devices adds to the complexity and cost of the manufacturing test environment. Also, increasing the amount of tests, while decreasing overall test time, is critical to insure quality and volume production goals.

### **Solution:**

The SANBlaze emulator replaces JBOD and tape devices. Next generation manufacturing test station also uses the same SANBlaze system to replace initiator system, further reducing system count, cost and complexity.

### **Benefits:**

**Cost:** The SANBlaze emulator replaces two JBOD systems, a tape device and a Fibre channel switch.

**Flexibility:** Several test case scenarios were configured and saved as manufacturing test cases, such as configuring 4 disks, and backing up 4 streams simultaneously to 4 emulated tape devices. These configurations can be loaded via script, eliminating the need for physical configuration of devices or infrastructure between tests.

**Speed:** Due to the high data rate and performance characteristics of the SANBlaze emulated tape loader device, the manufacturing test time was significantly reduced, increasing manufacturing throughput without compromising test coverage.

## **Using the SANBlaze Storage Emulator in a Manufacturing Environment**

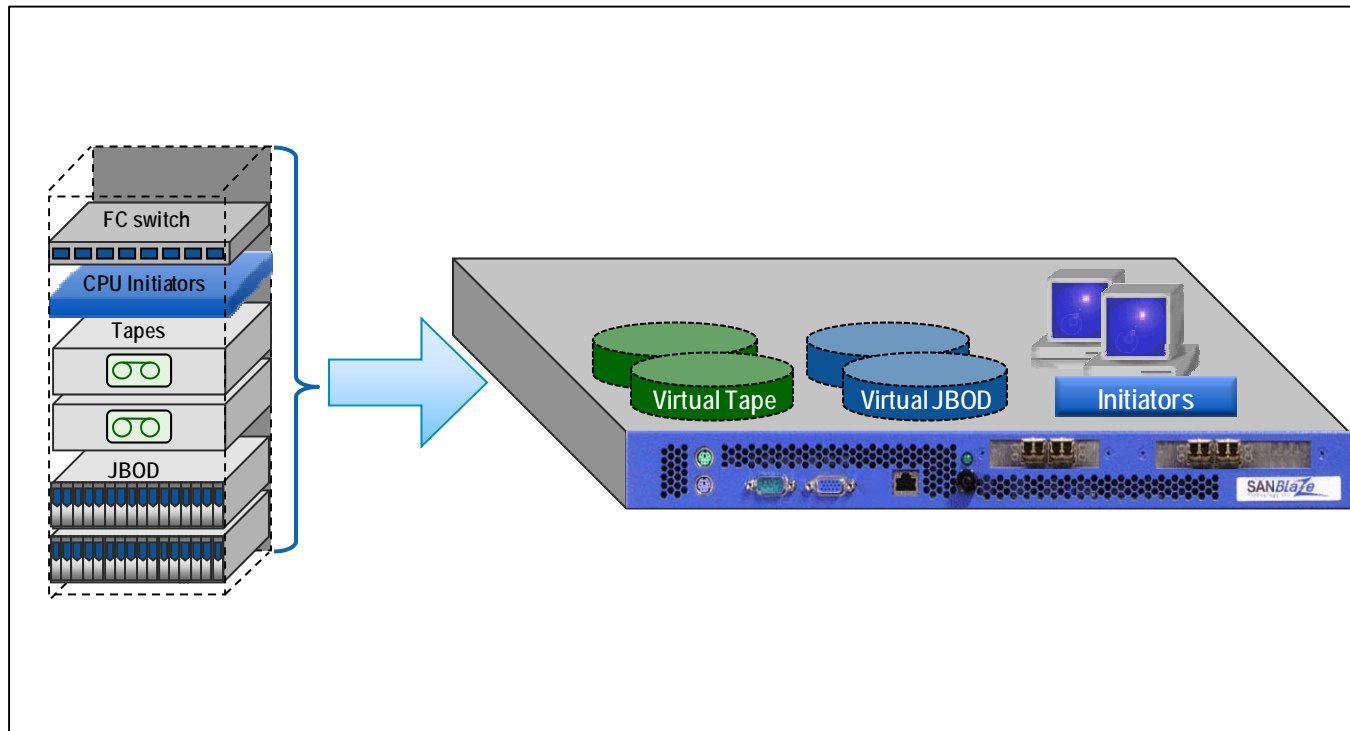
A SANBlaze customer designs and manufactures a storage security device. This device encrypts and decrypts storage data “in-line” with the storage subsystem, either disk or tape or both.

In a manufacturing test rack, the customer’s encryption device under test (DUT) is placed between a group of initiator systems, which run tape backup applications. The DUT emulates a tape device to the initiators, receiving packets destined for a tape device on one fibre channel port, encrypts them and forwards them to a second port, where a real tape loader device then writes the encrypted data to tape.

Also vital to this manufacturing environment was functional verification which required tape data be read back through the device, decrypted and compared with the source data for closed loop data integrity testing.

To further complicate the manufacturing environment, the customer’s manufacturing plan required that the outbound and return data path be proven to run at full line rate (4Gb/ sec.).

In order to meet the functional and performance metrics on the manufacturing floor, the customer had prototyped a test station that contained a JBOD rack of 16 disks, and two tape loader devices. Multiple source files were placed on the JBOD disks, and were read by the initiator, written to tape via the encryption device, read back to the JBOD rack and compared to the source files.



SANBlaze proposed an alternative architecture, which was found to be simpler to implement, met all performance requirements, and was far more reliable and cost effective than the multi-disk, multi-tape scenario previously used.

A single SANBlaze 4 port 4Gb/sec Fibre channel disk emulator replaced the devices on both the initiator and target side of the application, replacing the rack of JBOD disks and the tape loader devices. Two SANBlaze ports are set up in disk emulation mode, and two of the ports are set up in tape changer emulation mode.

The customer's own data verification and performance application was used in manufacturing, unchanged, to read data from the SANBlaze emulated disks and encrypt it through the DUT to a SANBlaze emulated tape. The data is then read back from the SANBlaze emulated tape, decrypted through the DUT and compared with the source file on the SANBlaze disk device.

Manufacturing rack footprint, power, complexity, time and cost are all reduced. Scalability, test node density and performance are all increased.