NVMe Initiator Emulation

DATASHEET

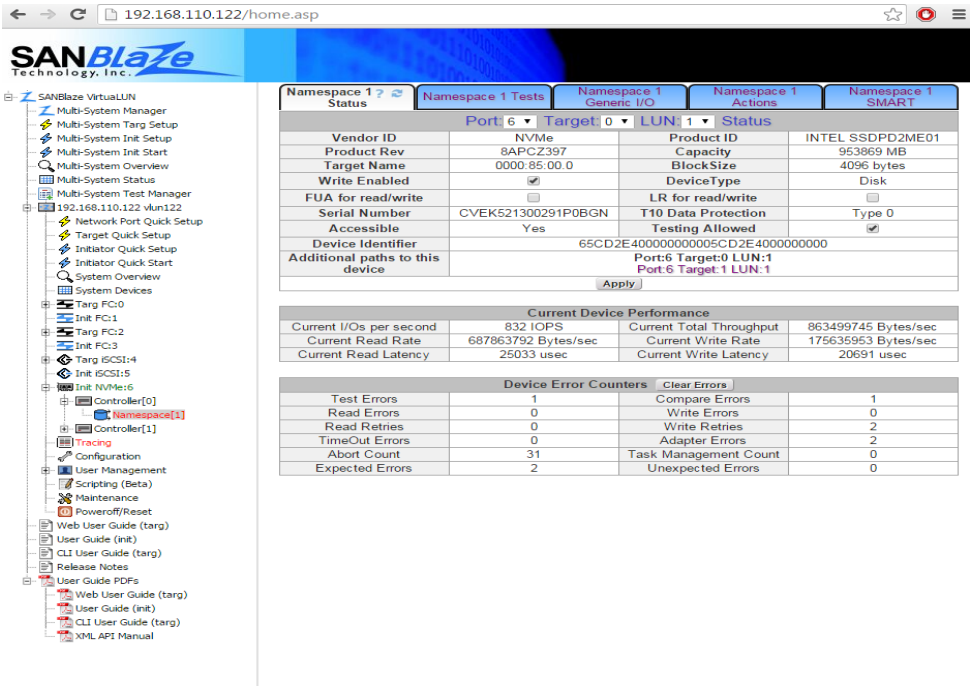
OVERVIEW

SANBlaze VirtuaLUN NVMe Initiator is the key piece of test equipment for anyone needing to test NVMe target devices. The VirtuaLUN feature set provides a unique set of functions applicable in all aspects of a product lifecycle; from development to design validation to test and QA. The ability to drive NVMe targets with a wide range of configurable attributes provides engineers with a flexible, scalable tool to simulate real disk and memory access environments and issues. Development, qualification and certification test cycles can be highly automated, reducing time and surfacing issues and errors.

The VirtuaLUN provides full control and programmability of NVMe parameters, providing unique storage test conditions for NVMe drive testing, development and certification. Additional support for updating and loading firmware, as well as support for secure erase, provide support for further automation steps and processes. Initiator emulation delivers the ability to drive multiple channels of traffic, inject errors, send specific or custom op codes in an easy to use, scriptable platform. Custom command generation and predefined tests provide simulated host environments. Auto connect and probe features quickly identify targets to test. Features such as Read/Write/Compare testing, error injection and a custom command builder provide an environment to drive and test single or multiple NVMe target devices.

Drive pulls can be automated via integration of "Quarch" NVMe interposer card using REST API, scripting or Web based GUI. Performance testing during PCIe glitch insertion, data integrity during drive power margining and PCIe lane failure, controlled and surprise removal can all be automated via SANBlaze / Quarch integration.

Test cases can be saved and restored with a single command. Tests can be started via command line, scripted or via an easy to use Web based interface.



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GENERAL FEATURES

- Drive Firmware Download
- Set Queue Count and Depth
- NVMe Compare
- Add/Remove/Modify Controller
- Secure Erase
- Read / Write and Compare Tests for traffic generation and data integrity
- Dual Port/Multipath support
- Error injection
- Easy to use Web based interface
- Command line interface and scripting
- Save/load configurations
- Trace Functionality
- Error counters
- T10 DIF support/error injection
- Smart Monitoring

Read IO Configuration

- Flush
- Get Features
- Get Log Page
- Identify Controller
- Identify Namespace
- Identify Namespace IDs
- Read
- Reservation Report

Write IO Configuration

- Format NVM
- Format NVM Secure Erase
- Format NVM Cryptographic Erase
- Reservation Acquire
- Reservation Register
- Reservation Release
- Set Features
- Compare
- Write
- Write uncorrectable
- Write Zeros

Additional Features

- NVMe Subsystems reset
- PCI-e Conventional Reset
- PCI-e Function Reset
- Multi-Initiator tests dispatch tests over all available initiators
- Sequential, random, Min/Max and Butterfly seeks
- Namespace management
- Comprehensive "Generic" I/O capability
- Task Management functions
- Compression and Dedup Data Patterns
- Integration with Quarch Products
- SGL Support
- SR-IOV Support
- UNH IOL Conformance test suite

REAL TIME STATISTICS INCLUDING:

- I/O Performance Counters
- Outstanding I/O Count
- Read/Write Latency

KEY APPLICATIONS

- NVMe Drive testing
- Subsystem Performance testing
- Dual Path device testing
- Storage software verification
- SAN management software verification
- Performance testing
- Error handling testing
- Failover and Multipath Simulation
- Scalability testing

For more information please visit our web site at www.sanblaze.com or send email to info@sanblaze.com

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SANBlaze Technology, Inc. is a pioneer in SAN Emulation technologies and a leading provider of solutions for embedded systems. SANBlaze emulation products provide storage engineers, test and QA teams with scalable, high performance and configurable emulated environments for Fibre Channel, iSCSI, SAS, NVMe and FCoE targets and initiators.