```
blacks:/<1>xilinx/xrt/bin # ./xbutil validate
INFO: Found 1 cards

INFO: Validating card[0]: xilinx_u250_xdma_201820_1
INFO: Checking PCIE link status: PASSED
INFO: Starting verify kernel test:
INFO: verify kernel test PASSED
INFO: Starting DMA test
Host -> PCIe -> FPGA write bandwidth = 5274.25 MB/s
Host <- PCIe <- FPGA read bandwidth = 11974.1 MB/s
INFO: DMA test PASSED
INFO: Starting DDR bandwidth test: ...........
Maximum throughput: 45478.003906 MB/s
INFO: DDR bandwidth test PASSED
INFO: Card[0] validated successfully.

INFO: All cards validated successfully.
blacks:/<1>xilinx/xrt/bin #
```

GigaIO FabreX TOR Switch

Server with GigaIO FabreX Network Adapter Card

Server with GigaIO FabreX Network Adapter Card

GigaIO FabreX AIC Resource Box with Xilinx Alveo

Same >4,000 Images/Sec Performance
Internal PCIe (top) vs. FabreX (bottom)

Native PCIe Fabric Optimizes the Utilization of Accelerator Cards for Data Center Workloads

Unrivaled NVMe PCIe Performance:

- GigaIO™ FabreX™ creates a native PCIe network fabric offering the same performance as internal PCIe slots.

Modern Data Center Architecture:

- Xilinx® Alveo™ PCIe accelerator cards speed workloads by up to 90x versus CPUs and up to 4x versus GPUs.

Composable Infrastructure with NVMe-oF:

- Combined they create an ideal composable environment for database search and analytics, financial value-at-risk (VAR) calculations, real-time machine learning inference, video processing and encoding, and genomics sequencing.

Adapts to Constantly Changing Needs:
Modern workloads perpetually grow and change, so data center architectures need to evolve to support business needs. This involves deploying infrastructure in ways that can be reconfigured with software to support present and future requirements.

Best Fabric for NVMe-oF:
Running NVMe-oF over native NVMe PCIe fabrics – among the fastest interfaces in computing – achieves better performance than Ethernet, Fibre Channel, or InfiniBand fabrics. That's why GigaIO FabreX can network Xilinx Alveo PCIe accelerator cards without lowering performance.

Optimum Accelerator Card Utilization:
The system illustrated above creates an NVMe-oF composable environment sharing PCIe accelerator cards among data center servers. The resulting system is configured, managed, and monitored using open standards APIs including DMTF Redfish®.