

is especially true in distributed real-time analytics involving very large data sets of petabyte scale. In these use cases, the movement of these large data sets from storage to server memory has a huge impact on application performance.

In-Situ Processing: Application Acceleration and Scaling

The CAT-2 with ***in-situ processing*** is built to address many key issues in the programmable storage and content delivery markets that currently limit application performance and scaling. The CAT-2 processes the data where it resides in the SSD without using host resources to ensure more efficient use of storage. This approach, which is managed through standard APIs, affords significant flexibility for the developers of "big data" applications.

How We Do It

CAT-2 utilizes a patented breakthrough architecture which permits it to provide in-situ processing, high capacity, and low power consumption for a variety of target markets. CAT-2 uses the NVMe 1.3 protocol on a PCIe Gen3x4 interface, while the NGD Systems proprietary QoS technology manages power, flash endurance, and latency characteristics. Starting with a base of 3D TLC flash media utilized as the primary storage element enabled by a proprietary LDPC error correction capability, ensure complete platform protection. The product is offered in a PCIe Add-In Card (AIC) and U.2 form factor and is warranted for 3 years at up to 3 drive writes per day.

Key Applications

There are several verticals that can benefit from CAT-2's combination of features, and in-situ processing:

Hyperscale/Data Center



Content Delivery Networks



Fog Storage/Edge Computing



- 0.65 Watts per terabyte
- 3D TLC enabled design

Application Aware In-Situ Processing

- Performs compute functions within storage device
- Reduce CPU overhead
- Improved performance

High Reliability

- End-to-end data protection
- Advanced LDPC ECC
- Full power loss protection
- QoS Management