

Whitepaper

Promise & Toshiba



Summary

Promise is approaching zero defects in its use of Toshiba HDDs and alone among storage solution providers can show how HDDs perform across a large population.

- Uptimes and field failures from the Promise-Toshiba Technology alliance are significantly better than expected industry norms.
- A long-term structured relationship with Toshiba, a fellow market-leader, is helping Promise serve new sectors as use of disk drives saturates society.

The qualifying and testing of drives described in this white paper includes:

- HDD screening
- FW check & updates
- Throughput screens
- Media scan.

Promise Technology's success with Toshiba Hard Disk Drives (HDDs)

Promise Technology is a developer of open storage platforms for IT archival, Cloud based architecture, rich media and HD / 4K workflows, IP video surveillance and emerging technologies such as IoT and smart cities. Solutions cover projects of any size from Storage appliances to scale-out storage at major sites and Cloud services.

To advance the range and out-perform competitors, Promise is partnering with Toshiba, a world-leading manufacturer of storage products including enterprise, premium and desktop internal hard drives that offer reliability and flexibility. This long-term structured relationship is empowering both companies in brand reputation and response to dynamic market change.

Promise is using Toshiba HDDs across its storage solutions with impressive results that have redefined reliability and uptime. Performance prediction for a company of Promise's reputation is vital and we know from experience that archival systems interact with HDDs from different vendors in different ways. Two premium manufacturers working together means stronger and more consistent solutions that show sector leadership and factor out interoperability conflicts.

Compatibility between the Promise and Toshiba ranges together with the exceptional build quality of both companies has seen field failure rates reduced to as little as 0.4%. When used in Promise solutions, Toshiba HDDs are exceeding Toshiba's own performance specifications.

Lifecycle predictions

Promise's core values include giving customers accurate information and ensuring that they understand the methods used for our lifecycle predictions. These methods involve field testing of HDDs in numbers and over a duration that are statistically meaningful with detailed documentation. The approach has allowed Promise and Toshiba to achieve reliability levels that are unmatched in the IT, datacentre, Cloud, rich media and video surveillance storage arenas.

New demands on HDDs within video surveillance

Traditional IT archival requires only random access to the storage medium while output from a video camera must be recorded sequentially.

The Toshiba alliance is assisting Promise with:

- High bandwidth
- Minimal latency
- Meeting demands of video analytics
- Cloud storage.

Combined offering

Together, Promise and Toshiba can offer different products (but with common operating practices) that cope with the fundamental distinctions between regular data storage and storage for video surveillance and sensors relating to:

- Big data
- Internet of Things (IoT)
- Smart cities.

Understanding real-life operational challenges

Our alliance with Toshiba means that both companies have better understanding of end-users' challenges in the field and can respond to developments such as the advent of 'big data,' general data convergence and increasing Cloud adoption. The performance of the Toshiba HDDs is helping Promise to meet its commitments to end-users in terms of consistency of performance and uptime.

The standard for Promise's evaluation of Toshiba HDDs is MTTF (Mean Time To Failure) predicted from a long period of time and over a large number of units. Promise's extensive field trials of its product range with Toshiba hard drives gives a probability of drive failure over a large enough population of HDDs for the figures to be statistically meaningful.

Precise component combinations

The alliance with Toshiba is allowing Promise to reduce MTTF across a whole family of products in testing that is based on precise combinations of disks with specific controller and cable types.

Promise has taken care to ensure that MTTF measurement exercises have considered stress put on mechanical components such as actuator arms, spindle motors and read/write heads during load/unload and stop/start cycles. We have factored in operational constraints including temperature and extent/quality of cooling equipment.



Disruption from downtime and 'as a service'

Promise is committed to lowest failure rates possible for mission-critical applications. HDD malfunction means 'opportunity costs' through disruption to site operation as well as actual material costs.

Feedback from our users shows that their definition of 'mission-critical' is widening. Cloud computing has developed from packages where data was stored in the Cloud but software resided locally to applications that have complete reliance on Internet connectivity. More and more security disciplines (including vital elements such as access control) are now supplied on an 'as-a-Service' (aaS) model. This means that server failure from major component malfunction at a data centre can now impact businesses so broadly that it shuts down elements as basic as telephone systems and closes the entire operation.



Price point on non-critical projects

Promise's expectations of operating duty across all product types are exceptionally high. However, we will also strike a balance on price point with smaller, less vital sites such as offices where usage is not 24/7. Promise works with Toshiba on Cloud-class drives for lower workloads of approximately 180TB/year which are aimed at data storage rather than surveillance applications.

Promise products using Toshiba HDDs

- **Auryn** high-capacity open-platform surveillance storage block offering 672TB of capacity from up to 112 drives. Auryn maximises uptime and come close to the plug & play ideal.
- **Pegasus3** storage solution aimed at HD or 4K (Ultra-HD) workflow environments.
- **Vess Series** open-platform Appliance server and storage appliances for video surveillance.
- **VTrak E5000 series** offering affordable high-performance fibre channel to SAS storage solution that is IT / data centre-ready.

Ongoing alliance

Rainer Thieme, Leader Integration and Quality Control Promise Technology EMEA, said:

"Promise Technology has been integrating hundred thousands of Toshiba hard drives with very low failure rates. The alliance with Toshiba guarantees a uniform approach as well as high performance projections based on impeccable field testing. Toshiba is helping make the Promise offering more cost-effective, energyefficient and resilient. Cost savings are being passed on to customers."

Noriaki Katakura, General Manager of the Enterprise and Desktop HDD Business Unit at Toshiba Electronics Europe GmbH, said:

"Robust, reliable and high-quality HDDs are fundamental to delivering the high-performance storage solutions needed by today's data centers, video surveillance, rich media and cloud applications. Toshiba's focus on delivering the highest product quality is at the heart of the strong, long-term and structured relationship that the company has built with Promise Technology. Our close collaboration, and the high standards that Promise and Toshiba expect to meet, is driving both companies to achieve ever-greater technical excellence while providing the technical and commercial agility needed to respond to rapidly evolving user demands in the volatile storage marketplace."

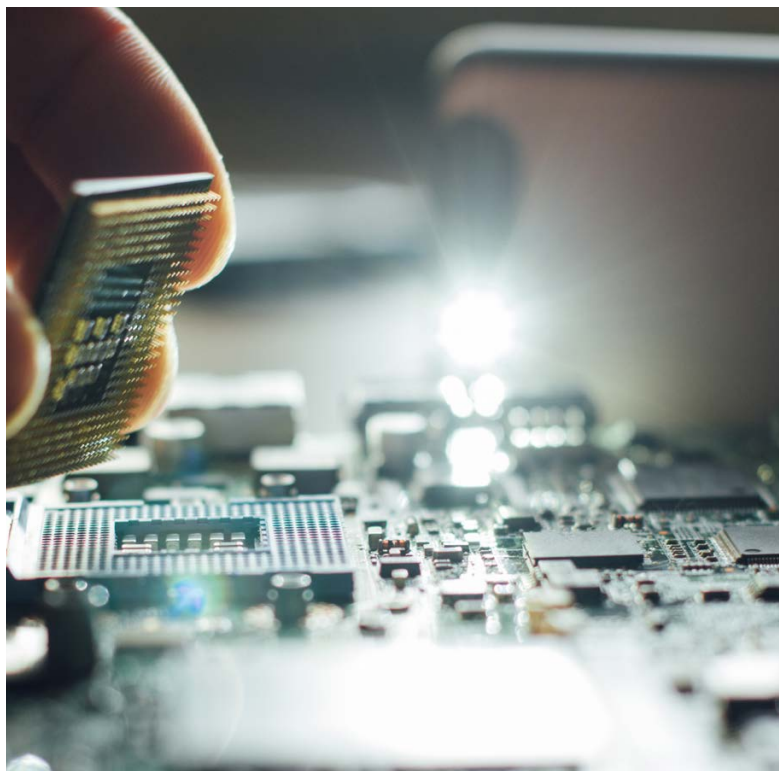


Storage demands for consumer, 'prosumer' and rich media markets (using streaming video) are growing and these sectors have exceptional needs that can be satisfied by few providers. Promise, complemented by Toshiba components, can meet and exceed these changing requirements.

Promise products empower customers to analyse, manage, store, segment and retrieve data quickly and securely. Users benefit from meaningful insight into system health and performance of their storage servers and HDDs. Customers also enjoy industry-leading fault tolerance and redundancy with segregated storage as required and exceptional scalability.

Regulated sectors

Promise's uptime levels based on our own platforms and Toshiba's components are satisfying the most stringent requirements including those of regulated sectors such as petro-chemical, water treatment and CNI (Critical National Infrastructure) where civil liability penalties and fines for non-compliance are massive.



Conclusion

The alliance between Promise and Toshiba means that in the rare event of unit failure the replacement and investigative process can be speedy. Common operating practices across the two companies are reducing maintenance complexity and streamlining technical support. Both companies understand that customers now face storage issues which extend beyond ever-increasing volumes of data to issues such as endurance, robustness and reliability.

At some locations, downtime may result in litigation from customers while at CNI sites, costs of failure can be political as well as economic. Promise's relationship with Toshiba shows sector leadership and means that there is uniformity both in components and working methods.

The data performance illustrated graphically in this whitepaper meets new standards in terms of suitability for purpose, integrity and ease of retrieval. Improving on a benchmark that was already set very high is creating still more confidence from end-users who know that key performance values are running through both companies. Promise and Toshiba are showing what really happens to HDDs in operation across a meaningful population and range of operating conditions. The data will be invaluable in helping customers devise deployment and maintenance strategies.

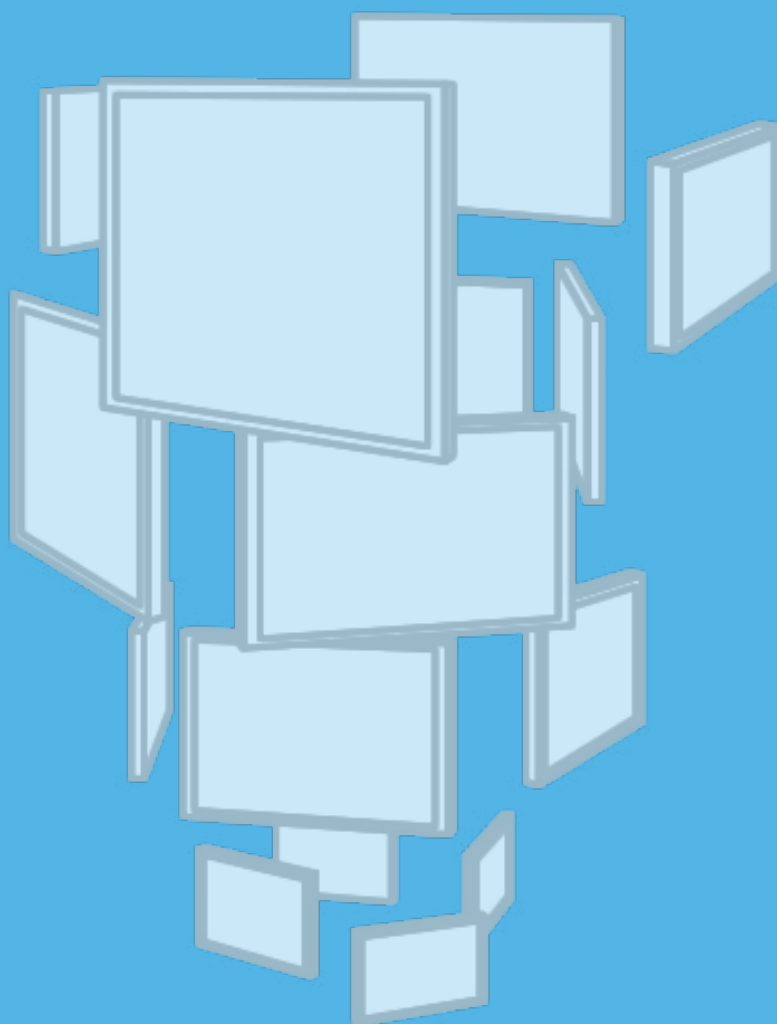
About Toshiba

Toshiba's product range allows end-user configurations to grow in line with evolving data storage needs. The company's HDDs feature high-endurance designs for challenging applications such as datacenters, video surveillance, rich media and cloud applications review. The range covers all types of operating duty, workload and usage conditions with industry-leading warranties.

About Promise

Promise Technology develops open storage platforms for datacenters, video surveillance, rich media and cloud applications. Promise can provide a solution for deployments of any size from storage appliances to scale-out storage solutions for large projects and Cloud services. Promise excels in mission-critical environments at critical national infrastructure (CNI). Solutions can be found at locations including:

- Airports
- Banks
- Casinos
- Government premises
- Highways
- Hospitals
- Metro & railways
- Shopping malls
- Mines
- Oil & gas
- Prisons.



Promise Technology

The Open Storage Platform for Video Surveillance