**STAC Conference 2021** 

# Move Data with Predictability & Speed Intel Ethernet

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Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit <u>www.intel.com/benchmarks</u>.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available security updates. See backup for configuration details. No product or component can be absolutely secure.

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# Why Intel Ethernet?







38 Years of Continuous Innovation



**Broad Product Selection** 

**Ease of Use** 

**Performance Assurance** 

Total number of Intel<sup>®</sup> Ethernet Ports shipped Since 1982

1,400,000,000

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**Compatibility / Interoperability** 

### **Worldwide Support**



# Changing Network Landscape New Requirements for High Performance Networking



Higher network bandwidth makes these requirements more challenging

# Application Device Queues (ADQ) with Intel<sup>®</sup> Ethernet 800 Series



# Application Device Queues (ADQ) Meet service level agreements

 Dedicates queues to high-priority applications to improve application response-time predictability, reduce latency, and improve throughput. Meet service level agreements better and scale service delivery to reach more end-users easily with ADQ.

#### ADQ works by:

- Filtering application traffic to a dedicated set of queues
- Application threads of execution are connected to specific queues within the ADQ queue set
- Bandwidth control of application egress (Tx) network traffic



https://www.intel.com/content/www/us/en/architecture-and-technology/ethernet/application-device-queues-technology-brief.html https://www.intel.com/content/www/us/en/architecture-and-technology/application-device-queues-consistently-meet-service-levels.html



Dedicates queues to high-priority applications



Improve application response time

#### Not a STAC benchmark



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## Application Device Queues (ADQ)<sup>1</sup> Performance Improvements across Multiple Tiers



#### Significantly Improves Predictability, Latency and Throughput

<sup>1</sup>Features & schedule are subject to change. All products, computer systems, dates and figures specified are preliminary based on current expectations, and are subject to change without notice.

# Intel<sup>®</sup> Ethernet 800 Series

**Application Device Queues (ADQ) Performance Improvements** 



#### Significantly improves predictability, latency and throughput

1. Performance results are based on testing as of Feb 2020 (memcached), Feb 2019 (open source Redis), Sept 2019 (Aerospike) and Sept 2019 (NVMe/TCP) and may not reflect all publicly available security updates. See configuration disclosure for details. No product can be absolutely secure. For more complete information about performance and benchmark results, visit <u>www.intel.com/benchmarks</u>

> https://www.intel.com/content/www/us/en/architecture-and-technology/ethernet/performance-testing-application-device-queues-with-memcached.html https://www.intel.com/content/www/us/en/architecture-and-technology/ethernet/performance-testing-application-device-queues-with-aerospike.html https://www.snia.org/sites/default/files/SDC/2019/presentations/NVMe-oF/Minturn David Vasudevan Anil Selecting an NVMe over Fabrics Ethernet Transport RDMA or TCP.pdf

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Memcached Average (P50) Latency



For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. See configuration disclosure for details. For more information regarding performance and optimization choices in Intel software products., please visit https://software.intel.com/en-us/articles/optimization-notice.

#### Not a STAC benchmark intel.

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#### Not a STAC benchmark

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# Application Device Queues (ADQ) Resource Center

For more information go to: http://www.intel.com/adq

#### Aerospike

- Aerospike Solution Brief
- <u>Aerospike Blog</u>
- <u>Aerospike White Paper</u>
- Intel Blog About Aerospike
- <u>Aerospike Press Release</u>
- <u>Aerospike and Intel Joint Webinar</u>
- <u>Networking Tech Field Day</u>



- Memcached
  - <u>Memcached Solution Brief</u>
  - <u>Steve OCP Summit Blog: Steve Schultz, VP CG</u>
- OCP Summit ADQ Presentation Video



- Open Source Redis Solution Brief
- <u>Networking Tech Field Day</u>



NVMe/TCP with ADQ Acceleration

- SDC 2019 Technical Presentation Video
- SDC 2019 Technical Presentation
- Blog: Patricia Kummrow, VP DPG, Intel



#### Training

- Networking Tech Field Day
- <u>Networking Tech Field Day with Aerospike</u>



#### 🗯 Additional Resources

- Intel Ethernet 800 Series Controller
- Intel Ethernet 800 Series Network Adapters
- Intel Ethernet Technologies

# For more info...



#### Aerospike Memcached NVMe/TCP Open Source Redis

#### Training and User Guides

# ADQ Resource Center www.intel.com/adq

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