

ATG CONFERENCE PUBLICATIONS

Where could you go if there were no limits on your innovation?

Members of the Advanced Technology Group at NetApp are regularly published at top tier conferences including the papers listed here.

2018

H. Gunawi, X. Lin, T. Emami and many others. **"Fail-Slow at Scale: Evidence of Hardware Performance Faults in Large Production Systems"** (FAST)

R. Kesavan, H. Kumar, S. Bhowmik. **"WAFL Iron: Repairing Live Enterprise File Systems"** (FAST)

M. Vajha, V. Ramkumar, B. Puranik, G. Kini, E. Lobo, B. Sasidharan, P. Kumar, A. Barg, M. Ye, S. Narayanamurthy, S. Hussain, and S. Nandi. **"Clay Codes: Moulding MDS Codes to Yield an MSR Code"** (FAST)

M. Honda, G. Lettieri, L. Eggert and D. Santry. **"PASTE: A Network Programming Interface for Non-Volatile Main Memory"** (NSDI)

2017

R. Kesavan, R. Singh, T. Grusecki, Y. Patel. **"Efficient Free Space Reclamation in WAFL"** (ACM ToS)

Y. Hayakawa, L. Eggert, M. Honda, D. Santry. **"Prism: A Proxy Architecture for Datacenter Networks"** (SOCC)

M. Curtis-Maury, R. Kesavan, and M. K. Bhattacharjee. **"Scalable Write Allocation in the WAFL File System"** (ICPP)

A. Kathpal and P. Sehgal. **"BARNs: Towards Building Backup and Recovery for NoSQL Databases"** (HotStorage)

R. Talwadkar. **"Dexter: faster troubleshooting of misconfiguration cases using system logs"** (SYSTOR)

P. Macko, X. Ge, J. Kelley, D. Slik, K. Smith and M. Smith, J. Haskins. **"SMORE: A Cold Data Object Store for SMR Drives"** (MSST)

A. Haghdoost, W. He, J. Fredin, and D. Du. **"On the Accuracy and Scalability of Intensive I/O Workload Replay"** (FAST)

H. Kumar, Y. Patel, R. Kesavan, and S. Makam. **"High Performance Metadata Integrity Protection in the WAFL Copy-on-Write File System"** (FAST)

R. Kesavan, R. Singh, T. Grusecki, and Y. Patel. **"Algorithms and Data Structures for Efficient Free Space Reclamation in WAFL"** (FAST)

2016

M. Curtis-Maury, V. Devadas, V. Fang, and A. Kulkarni. **"To Waffinity and Beyond: A Scalable Architecture for Incremental Parallelization of File System Code"** (OSDI)

T. Xu, X. Jin, P. Huang, Y. Zhou, S. Lu, L. Jin, and S. **"Pasupathy. Early Detection of Configuration Errors to Reduce Failure Damage"** (OSDI)

M. Hao, G. Soundrarajan, D. Kenchammana-Hosekote, A. A. Chien and H. S. Gunaw. **"The Tail at Store: A Revelation from Millions of Hours of Disk and SSD Deployments"** (FAST)

K. Yasukata, M. Honda, D. Santry, and L. Eggert. **"StackMap: Low-Latency Networking with the OS Stack and Dedicated NICs"** (USENIX ATC)

M. Honda, L. Eggert, and D. Santry. **"PASTE: Network Stacks must Integrate with NVMM Abstractions"** (HotNet)

S. Yang, R. H. Arpaci-Dusseau, A. C. Arpaci-Dusseau, K. Srinivasan, K. Udayashankar, S. Krishnan, J. Feng, and Y. Zhang. **"Tombolo: Performance Enhancements for Cloud Storage Gateways"** (MSST)

S. Deshpande, K. Dheenadayalan, G. Srinivasaraghavan and V. Muralidhara. **"Filer Response Time Prediction using Adaptively-learned Forecasting Models based on Counter Time Series Data"** (ICMLA)

D. Schwalb, G. K. B.K., M. Dreseler, A. S., M. Faust, A. Hohl, T. Berning, G. Makkar, H. Plattner, and P. Deshmukh. **"Hyrise-NV: Instant Recovery for In-Memory Databases Using Non-Volatile Memory"** (DASFAA)

2015

P. Shah, and W. So, Lamassu. **"Storage-Efficient Data-Source Encryption"** (USENIX ATC)

A. Kangarlou, S. Shete, and J. Strunk. **"Chronicle: Capture and Analysis of NFS Workloads at Line Rate"** (FAST)

C. Dragga, and D. Santry. **"GCTrees: Garbage Collecting Snapshots"** (MSST)

A. Juels, J. Kelley, R. Tamassia, and N. Triandopoulos. **“Falcon Codes: Fast, Authenticated LT Codes (Or: Making Rapid Tornadoes Unstoppable)”** (CCS)

T. Xu, L. Jin, X. Fan, Y. Zhou, S. Pasupathy, and R. Talwadker. **“Hey, You Have Given Me Too Many Knobs!: Understanding and Dealing with Over-Designed Configuration in System Software”** (FSE)

P. Sehgal, S. Basu, K. Srinivasan, and K. Voruganti. **“An Empirical Study of File Systems on NVM”** (MSST)

M. Honda, F. Huici, G. Lettieri and L. Rizzo. **“mSwitch: A Highly-Scalable, Modular Software Switch”** (SOSR)

R. Reddy, A. Kathpal, J. Basak, and R. Katz. **“Data layout for power efficient archival storage systems”** (HotPower)

2014

Y. Zhang, C. Dragga, A. Arpaci-Dusseau, and R. Arpaci-Dusseau. **“ViewBox: Integrating Local File Systems with Cloud Storage Services”** (FAST)

M. Krishnan, N. Prakash, V. Lalitha, B. Sasidharan, P. Kumar, S. Narayanamurthy, R. Kumar, and S. Nandi. **“Evaluation of Codes with Inherent Double Replication for Hadoop”** (HotStorage)

D. Santry, and K. Voruganti. **“Violet: A Storage Stack for IOPS/Capacity Bifurcated Storage Environments”** (USENIX ATC)

V. Mathur, C. George, and J. Basak. **“Anode: Empirical Detection of Performance Problems in Storage Systems using Time-Series Analysis of Periodic Measurements”** (MSST)

R. Talwadker and K. Voruganti. **“ParaSwift: File I/O Trace Modeling for the Future”** (LISA)

G. Yasa. **“RADIR: Lock-free and Wait-free Bandwidth Allocation Models for Solid State Drives”** (HiPC)

2013

F. Xie, M. Condict, and S. Shete. **“Estimating Duplication by Content-based Sampling”** (USENIX ATC)

T. Xu, J. Zhang, P. Huang, J. Zheng, T. Sheng, D. Yuan, Y. Zhou, and S. Pasupathy. **“Do Not Blame Users for Misconfigurations”** (SOSP)

M. Mihailescu, G. Soundararajan, and C. Amza. **“Mixapart: Decoupled analytics for shared storage systems”** (FAST)

Y. Zhang, G. Soundararajan, M. W. Storer, S. Subbiah, A. Arpaci-Dusseau, and R. Arpaci-Dusseau. **“Warming up storage-level caches with bonfire”** (FAST)

P.C. Nagesh and A. Kathpal. Rangoli. **“Space management in deduplication environments”** (SYSTOR)

J. Feng and J. Schindler. **“A Deduplication Study for Host-side Caches in Virtualized Data Center Environments”** (SYSTOR)

2012

J. Schindler. **“I/O characteristics of NoSQL databases”** (VLDB Endowment)

I. F. Adams, B. A. Madden, J. C. Frank, M. W. Storer, E. L. Miller, and G. Harano. **“Usage behavior of a large-scale scientific archive”** (SC)

A. Kathpal, M. Kulkarni, and A. Bakre. **“Analyzing compute vs. storage tradeoff for video-aware storage efficiency”** (HotStorage)

M. Mihailescu, G. Soundararajan, and C. Amza. **“Mixapart: Decoupled analytics for shared storage servers”** (HotStorage)

P. Pipada, A. Kundu, K. Gopinath, C. Bhattacharyya, S. Susarla, and P. Nagesh. **“LoadIQ: Online learning to label program phases using storage traces”** (HotStorage)

J. Lentini, S. Byan, L. Pabon, and A. Madan. **“Mercury: Host-side flash caching for the datacenter”** (MSST)

P. Sehgal, K. Voruganti, and R. Sundaram. **“SLO-aware hybrid store”** (MSST)

K. Srinivasan, T. Bisson, G. Goodson, and K. Voruganti. **“iDedup: Latency-aware, inline data deduplication for primary storage”** (FAST)

2011

L. N. Bairavasundaram, G. Soundararajan, V. Mathur, K. Voruganti, and S. Kleiman. **“Italian for beginners: The next steps for SLO-based management”** (HotStorage)

Y. Chen, K. Srinivasan, G. Goodson, and R. Katz. **“Design implications for enterprise storage systems via multi-dimensional trace analysis”** (SOSP)

J. Schindler, S. Shete, and K. Smith. **“Improving the throughput of small disk requests with proximal I/O”** (FAST)

Z. Yin, X. Ma, J. Zheng, Y. Zhou, L. N. Bairavasundaram, and S. Pasupathy. **“An empirical study on configuration errors**

in commercial and open source systems” (SOSP)

Z. Yin, D. Yuan, Y. Zhou, S. Pasupathy, and L. Bairavasundaram. **“How do fixes become bugs? – a comprehensive characteristic study on incorrect fixes in commercial and open source operating systems”** (FSE)
[ACM SIGSOFT Distinguished Paper Award](#)

2010

P. Macko, M. Seltzer, and K. A. Smith. **“Tracking back references in a write-anywhere file system”** (FAST)

O. Ozmen, K. Salem, J. Schindler, and S. Daniel. **“Workload-aware storage layout for database systems”** (SIGMOD)

N. J. Yadwadkar, C. Bhattacharyya, K. Gopinath, T. Niranjan, and S. Susarla. **“Discovery of application workloads from network file traces”** (FAST)

D. Yuan, H. Mai, W. Xiong, L. Tan, Y. Zhou, and S. Pasupathy. **“SherLog: Error diagnosis by connecting clues from run-time logs”** (ASPLOS)

2009

V. Agrawal, C. Bhattacharyya, T. Niranjan, and S. Susarla. **“Prediction of hard drive failures via rule discovery from autosupport data”** (ICMLA)

A. Batsakis, R. Burns, A. Kanevsky, J. Lentini, and T. Talpey. **“CA-NFS: A congestion-aware network file system.”** (FAST) [Best Paper Award](#)

A. Burtsev, K. Srinivasan, P. Radhakrishnan, L. N. Bairavasundaram, K. Voruganti, and G. R. Goodson. **“Fido: Fast inter-domain communication for enterprise virtual machines”** (USENIX ATC)

W. Jiang, C. Hu, S. Pasupathy, A. Kanevsky, Z. Li, and Y. Zhou. **“Understanding customer problem troubleshooting from storage system logs”** (FAST)

A. W. Leung, M. Shao, T. Bisson, S. Pasupathy, and E. L. Miller. **“Spyglass: Fast, scalable, metadata search for large-scale storage systems”** (FAST)

For more information on the NetApp Advanced Technology Group, including additional NetApp authored papers, visit: atg.netapp.com

