Case Study

Service Providers
Business Continuity and Disaster Recovery

Helping keep data and SMBs safe

Datto-Intel collaboration gives providers of managed business continuity and disaster recovery services the tools they need to grow their business, and minimize customer downtime.

At a Glance

- Datto works closely with Intel to optimize the performance and reliability of its business continuity and disaster recovery (BCDR) solutions
- By introducing the 2nd generation Intel® Xeon® Scalable processor and Intel® Optane™ SSDs, Datto has boosted workload performance and accelerated boot times for its BCDR solutions
- It is now investigating how Intel® Optane™ persistent memory (PMem) can help scale compute and memory in line with storage to further improve recovery times

datto

Speeds boot times for concurrent virtual machines (VMs) by up to **20x**[2]

From its headquarters in Norwalk, Connecticut, Datto develops business continuity and disaster recovery (BCDR) solutions for many of the world's small- to medium-sized businesses (SMBs). Datto's mission is to keep people and data safe. To help achieve this, Datto depends on its extensive ecosystem of managed service providers (MSPs). And to ensure the MSPs' long-term success, Datto continuously innovates to advance the performance, security and reliability of its BCDR solutions. Most recently, it collaborated with long-term technology provider Intel to improve virtualization performance, making it easier for MSPs to scale their business and minimize customer downtime.

Challenge

- Datto's challenge is to develop BCDR solutions that make it easier for its MSP ecosystem partners to take on more clients, so they can scale and grow their business
- However, as data volumes continue to rise, Datto must find ways to improve the performance of its solutions, so that MSPs can assure the backup and speedy recovery of complex and compute-intensive applications

Solution

- By introducing the 2nd generation Intel® Xeon® Scalable processor, Datto has boosted workload performance of its back-up appliances by 25 percent[1]
- Using Intel® Optane™ SSDs as a cache for its ZFS SLOG storage system, Datto has eliminated bottlenecks in virtualization performance, speeding boot times for concurrent virtual machines (VMs) by up to 20x[2]

Results

- Datto's partners are now able to back up and restore more compute-intensive and complex systems within minutes rather than hours. This allows them to scale and grow their business and minimize customer downtime
- SMBs can sleep easily, knowing their data is safer and that their offices will be up and running when they need them

Empowering the channel to grow and succeed

Through its ecosystem of MSPs Datto provides cloud-based BCDR services to SMBs around the world. Since the beginning, Datto has been dedicated to doing what's best for these partners. Patrick Trofa, hardware product manager at Datto, explains: "As increasing numbers of SMBs rely on the availability of customer data to carry out their day-to-day operations, there's been a shift from traditional break-fix service models to a monthly, continual managed service approach. To avoid financial hardship, many of our partners are having to reinvent their offering to meet this demand. Datto's response is to create continuity and recovery solutions that make it easy for our partners to take on more clients, so they can continue to successfully scale and grow their business. Our ability to provide partners with high-performance, secure and reliable solutions that allow them to minimize customer downtime is central to this endeavor."

Keeping businesses up and running

Downtime costs money. Whether the cause is natural, criminal or a simple production failure—minimizing recovery times is crucial to maintaining employee productivity and a smooth customer experience. SMBs, many of whom do not have IT professionals available 24/7, rely on Datto's partners to restore their data and applications in the shortest time possible.

To enable this, Datto offers a range of BCDR solutions, from low-profile, physical appliances to a full-feature single platform for local, virtual, and cloud environments. Built specifically to support MSPs in ensuring their customer's business is always on and resilient, the all-in-one BCDR platform includes verified backups, restore options for any scenario, instant virtualization, and ransomware protection. All of this is backed by Datto's private cloud. If an SMB experiences a server failure, the protected systems can be virtualized instantly on the Datto device or in the secure Datto cloud to keep business operations running. It is this capability that enables Datto's partners to restore customer appliances in less than a minute, as opposed to an hour or more without virtualization.

However, as data volumes continue to rise exponentially and ransomware attacks become increasingly complex, Datto knows it cannot rest on its laurels. Instead, it continuously looks for ways to improve system performance to help its partners minimize customer downtime and maintain an edge over the competition.

Improving virtualization performance

From the beginning Datto has worked closely with Intel to optimize the performance and reliability of its BCDR solutions. Intel provides Datto with early access to its technology roadmap, enabling Datto to validate Intel® technologies for use in its solutions prior to the public Intel launch. Most recently Datto collaborated with Intel to integrate the 2nd generation Intel Xeon Scalable processor and Intel Optane SSD into its BCDR platform.

By introducing the latest Intel® Xeon® Silver 4210 processor, Datto has boosted the workload performance of its back-up appliances by 25 percent[1]. And, by using Intel Optane SSDs as a cache for its ZFS SLOG storage system, Datto has eliminated bottlenecks in virtualization performance, speeding boot times for concurrent VMs by up to 20x[2]. Compared to no SLOG, Intel Optane SSDs improve performance of synchronous rewrites by 400 percent[3], and between 15-20 percent compared to a traditional SSD SLOG[4].

Intel Optane SSDs also provide Datto with additional benefits in terms of capacity, latency, and durability. Tom Caputi, senior software engineer and lead ZFS developer at Datto, says: "We get three big advantages from using Intel Optane SSDs. First, in ZFS, we only need to store a couple of seconds worth of data at a time—with Intel Optane SSDs we don't need to pay for capacity we don't need, as we would with a traditional SSD. Second, we also get much lower latency which gets carried over straight to our application. And third, Intel Optane SSDs are much more durable, meaning we don't have to worry about burning through SSDs quickly."

Collaboration for differentiation

Improved virtualization performance, although a major differentiator, is not the only benefit Datto sees in working with Intel. Trofa says: "What really impressed us was the early access we were given to these technologies, together with the ongoing support Intel provided throughout the implementation. For example, when we ran into issues with the thermal performance of the Intel Optane SSD in our platform chassis, the Intel team was able to quickly provide us with an off-the-shelf solution and one they had designed themselves to fix the problem. Similarly, when we ran into supply issues, Intel quickly found us a new partner who could continue to ship. Ultimately, it's this close collaboration that enabled us to bring our latest appliances to market in time for one of the industry's largest events, DattoCon—just one month prior to the official Intel technology launch."

Reassurance that downtime is minimized

With Datto's latest generation of BCDR solutions, MSPs can continue to minimize customer downtime, despite rising data volumes. They can back up more systems to appliances, even those that are more compute intensive and complex. Razwan Ahmad, owner of managed IT service provider N.O.C. Systems, says: "We're known for our full system image-based backup, meaning we keep a full image read for virtualization for our customers at all times. So, when there's a downtime event, we're able to spin up a recovery scenario almost immediately. Previously, if a client were to go down or we had to rebuild a server, it could take a day or two. With Datto,

we can bring up the server in a virtual environment, local or in the cloud. So, if the server goes down, it can be up and running within 10-15 minutes, which is a huge plus. It's a worry-free solution that allows me to go to sleep at night."

SMB owners can also sleep better safe in the knowledge that their information is more secure, and that their productivity and customer reputation won't suffer as a result of downtime. Dr. Michael Trofa, oral surgeon at Norwalk Oral and Maxillofacial Surgery, says: "Downtime is critical. Not only does it cripple our office in that we're unable to effectively treat our patients, since we're not able to access their prior records or obtain radiographic imaging; it also substantially impacts our practice financially. Datto's solutions give me the comfort to know that my patients' information is secure, and my office is going to be up and running, so that I can concentrate on the things that I love to do, which is to take care of patients."

Looking ahead to the next generation

"As a rapidly growing company, offering the latest technologies is just half the battle," concludes Patrick Trofa. "Collaborating with Intel provides us with technical resources to successfully launch new products with confidence. But, more importantly, having a partner who is continuously innovating means we can look ahead and plan for how we can improve the next generation, and beyond. For example, as data continues to grow and it's possible to store more terabytes in smaller form factors, we're already working with Intel to investigate how Intel® Optane™ persistent memory (PMem) can help scale compute and memory in line with storage, helping us to lower latency and further improve access times."

Spotlight on Datto

Datto is a leading provider of cloud-based business continuity and disaster recovery (BCDR) software and technology solutions. Through its one-of-a-kind ecosystem of managed service providers (MSPs), Datto provides over one million small- to medium-sized businesses (SMBs) around the globe with unified continuity, networking, and business management solutions. Since its founding in 2007, Datto continues to win awards each year for its rapid growth, product excellence, superior technical support and for fostering an outstanding workplace. With headquarters in Norwalk, Connecticut, Datto has global offices in the United Kingdom, Netherlands, Denmark, Germany, Canada, Australia, China, and Singapore. Learn more at datto.com.

Lessons Learned

For rapidly expanding companies looking to bring innovative technology solutions to market quickly and cost effectively, Datto has the following advice:

- Find a provider who can help you grow. In addition to supplying technology, it is crucial your provider is fully invested in your mission statement and committed in helping you solve problems for your customers
- Collaborate early. This enables you to iron out any integration issues well in advance and gives you the opportunity to proactively input into the next release
- Ask for help. Don't be afraid to explain your needs and work with your provider to see if they are manageable. For example, if you run into issues with supply, your technology provider may be able to find you an alternative supplier

Learn More

- **Intel® Optane™ persistent memory (PMem)**
- **Intel® Optane™ SSDs**
- **Intel® Xeon® Scalable processors**

Find the solution that is right for your organization. Contact your Intel representative or visit **intel.com/csp**

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 www.intel.com/benchmarks.

[1] Testing by Datto on 12 July 2019, using FIO, Diskspd, Datto virtualization boot-up test. Baseline: Dual E5-2630 CPU, 64GB DDR4 RAM, x12 12TB SATA HDD, x1 128GB OS SSD. New configuration: Dual Intel Xeon Scalable 4210 CPU, x1 100GB DC Intel Optane, 64GB DDR4 RAM, x12 12TB SATA HDD, x1 128GB OS SSD.

[2] See endnote 1.

[3] See endnote 1.

[4] See endnote 1.

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

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries.
Other names and brands may be claimed as the property of others. 0720/NC/CAT/PDF♻ Please Recycle 343790-001EN