SSDs Give You More from Your CPU Investment

**CPUs Are Expensive
Use Them**

The more work you can get out of your CPUs, the more value you're getting from your CPU investment. (CPUs are a big part of system cost — why let them sit?)

They are the heartbeat of your enterprise platforms. They are what handles *everything*.

Higher CPU utilization means you get more. More from every core, every gigahertz and every dollar you've spent.

SSDs can help you get there.

Many IT Organizations Have Two Big Budget-Related Challenges

- Budgets aren't growing fast enough to keep up with exploding demand

- IT teams aren't getting enough value (useful work) from the physical resources they already have (CPUs, storage, and so forth)

Where's the demand coming from? Massive data lakes with unprecedented growth rates (like real-time sensors, and self-monitoring and self-reporting devices), an everchanging application environment (more virtualization, media streaming and hybrid infrastructures) and a more distributed workforce — all demanding access to data and services at the speed of now.

What's strangling resource value? Aging infrastructure and aging design standards. Imbalances between core components — some can be overtaxed while others remain underutilized.

While SSDs can't increase your budget, they can help drive value from your existing platform investment through better resource utilization.

VS.
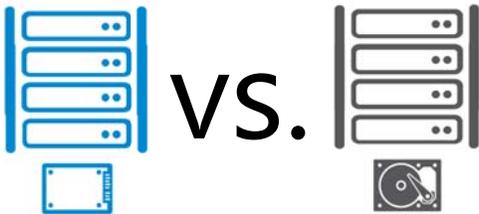
SSD Cluster
5100 ECO 3-node cluster built with 2x Micron 5100 ECO (1.92TB) per node, software RAID 0

Legacy Cluster
Legacy 3-node cluster built with 2x 10K RPM SAS HDDs (1.6TB) per node, software RAID 0

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Keep Your CPUs Busy

CPUs are Expensive: They can be a significant part of any platform cost. With multiple cores and increasing gigahertz, their value can be strangled when paired with slow storage. If your systems isn't using its CPUs, that's money spent without benefit.

Keep Them Busy: Because they can do more than legacy storage, SSDs keep your expensive CPUs busier. When paired with SSDs, CPU utilization skyrocket over legacy storage — and you get more value for your money. Figure 1 shows how much more of our CPUs we use when paired with SSDs (% CPU used improvement).[2]
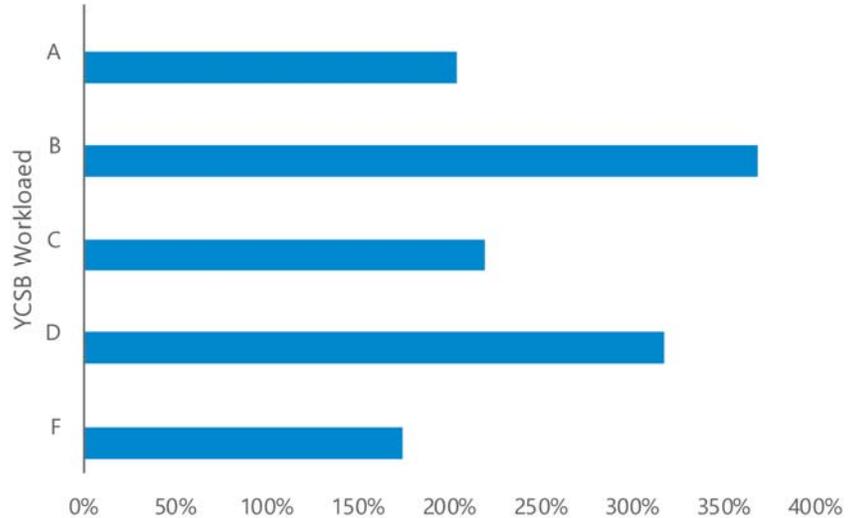

Figure 1: CPU Usage Improvement: SSDs vs. Legacy HDDs

Get More From Them

Get More from Your Applications: Our example deployment (MongoDB) performance excelled with the SSDs, and lagged with legacy storage (Figure 2).[3] The Yahoo! Cloud Serving Benchmark (YCSB) shows the real difference SSDs can bring.[4]

Drive the Value of Your Data: New, quickly developed, data hungry applications demand fast storage. With SSDs, they can push other systems to deliver more and improve results. Drive your data farther, faster with SSDs.
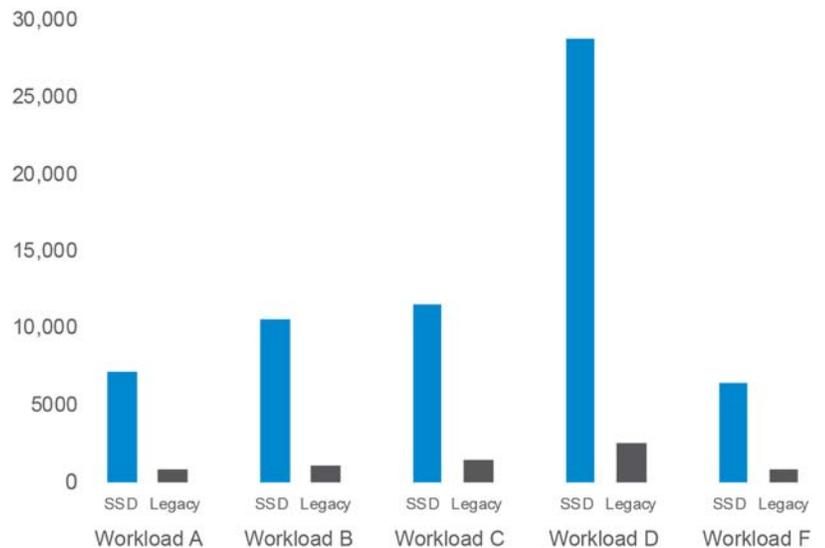

Figure 2: Operations per Second: SSDs vs. Legacy HDDs

Want to Learn More?

See Micron's full line of workload-focused SSDs on www.micron.com, and learn how they can bring better value and lower TCO to your datacenter using our Move2SSSD TCO Estimator.

1. Database = MongoDB. Database sized to exceed available memory to ensure storage I/O.
2. %CPU used improvement calculated by dividing the SSD cluster %CPU used by the legacy cluster %CPU used for each workload.
3. Database operations per second, measured for both configurations measured at 96 threads (adding more threads did not improve results).
4. We tested Workloads A through D and F, we did not test Workload E as it isn't universally supported).

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