

#### CUSTOMER



### INDUSTRY

Data center solution provider

## CHALLENGES

Reducing cost of running DCIM data center building management system

## SOLUTION

Deploy AMD EPYC 7F72 processors

### RESULTS

Saving over a million dollars in OPEX across 13 data centers plus another \$500,000 in processor costs, and with performance improvements

### **AMD TECHNOLOGY AT A GLANCE**

AMD EPYC 7F72 with 24 cores

## **TECHNOLOGY PARTNER**



Quality Technology Services (QTS) is a mega-scale data center provider to a global customer base, with 26 locations around the world. Running huge data centers is

about much more than just the servers that are situated inside. The whole environment housing those servers needs to be precisely controlled and managed. This takes a considerable amount of computing power. When QTS found that its existing non-AMD CPU-based systems weren't delivering the performance required despite escalating costs, the company started looking for an alternative. AMD EPYC<sup>™</sup> utilization down to

alternative. AMD EPYL™ processors and VMware vSAN™ offered the perfect solution.

"We've got over seven million J.J. McDaniel, Senior square feet of space dedicated Cloud Architect at QTS to technology infrastructure and we have over 1200 customers," explains J.J. McDaniel, Senior Cloud Architect at QTS. The company has an unusual organization in that it is a real estate investment trust (REIT). "We're one of only five data center REITs. When investors invest in QTS, it's as much a real estate investment as it is technology, so they get a lot of dividends back because of our classification as a REIT." QTS realized that a change of platform was needed to maintain this strong position.

# Managing data center building infrastructure

"The company has a history of successfully converting distressed properties at really good value, into world-class data centers," explains Wesley Ambrose, Principal Systems Engineer at QTS. "Our first Atlanta location was an old retailer distribution center, so it was a massive warehouse turned into a data center." A key part of this transformation comes from installing the power, air conditioning, security and other elements that convert a large space into a controlled and reliable data center facility.

"You have to control all of that power and the building too," explains Wesley. "It doesn't seem that big, but each of these buildings is a significant capital investment, and there's up to a million square feet of building. We must maintain the cooling in all of that

about 20 percent."

evenly. We must maintain the building itself, including the automation for the doors and security. There's a lot of computing power that goes into maintaining the building itself, not even including the customers' servers that are in it."

"We have a large computing platform that we use at each

data center and then some centralized components as well to maintain all that and report on it," continues Wesley. "The platform that we use is called DCIM, Data Center Infrastructure Management." This controls everything from visitor check-in to the uninterruptible power supply (UPS) units protecting power delivery, and also includes monitoring and controlling air conditioning, video surveillance. and motion sensors. "Our DCIM footprint is really big because of the number of buildings we have. We just weren't happy with our current hardware and and storage software solution, specifically with the performance and licensing scenarios. It actually cost us a significant amount of money just to run the storage controller software VM (virtual machine) that maintains the environment." This was what led to QTS exploring AMD EPYC<sup>™</sup> technology as an upgrade.

AMD + QTS CASE STUDY

# Lower operation costs with AMD EPYC CPUs

"We had performance problems with some lower-level software-based storage systems," explains Wesley. "So we bought much bigger ones and it was an astronomical cost, both in licensing as well as the cost of buying the hardware. We also had issues with another vendor's platform lock-in that limited our CPU options. So that's what led us to look at AMD." After discussions with QTS's hardware supplier Dell EMC, a switch to AMD EPYC processorpowered servers running vSAN seemed like it could deliver a much better alternative.

"We researched, we read white papers, and we saw how AMD was winning worldwide benchmarks," says J.J.. "That really played a key role, because we couldn't test our stuff in the lab, it has so many components. It just wasn't reproducible in a test environment, so we had to put it in a data center. There really was a leap of faith involved, as well as talking to AMD and Dell engineers, and it worked out. When we looked at the numbers, just by

switching over to AMD processors, we could save over \$500,000."

"It's financially irresponsible to not examine EPYC if you have a lot of servers. It blew my mind how much money we saved." Wesley Ambrose, Principal Systems Engineer at OTS

The sweet spot for QTS ended up being the AMD EPYC 7F72 CPU, combining a high clock speed with a healthy 24 cores. "If you go over 32 cores, you incure additional licensing and we didn't want to do that and we didn't want to go lower either," says J.J.. "Dell and AMD were able to aggressively discount to a point that it made sense for us. We're saving over \$500,000 across our data centers just on the processor alone, and then at least twice that in operational expenses. It's ridiculous how much we're going to be saving compared to what another software-based storage solution was charging us."

QTS rolled out the new platform across three of its data centers with one bold move, in Dallas Fort Worth, San Jose, and northern New Jersey. "We did them all at the same time," says J.J.. However, although the VMs could not be migrated live, they were small, so moved across quickly. QTS operates a redundant system, allowing individual VMs to be moved without affecting performance. "We just shut the VM down, vMotion it over, bring the VMX file up, taking a minute, and then start a storage migration in the background. It didn't take very long to move most of that stuff. It was pretty quick."

## **Million-dollar savings**

The migration was extremely smooth and QTS expects to have moved 13 data centers over to AMD EPYC CPUs by Q4 2021. "Over a three-year

period, just on operational expenses alone and by "Over a three-year period, switching to this new platform, we're going to save over just on operational a million dollars across 13 data centers," says J.J.. "We are expenses alone, by going from a dual-socket solution to single-socket AMD switching to this new solution. We saved so much money, we were able to go platform we're going to with all flash storage and still save money. It was crazy." The move away from dual sockets has dramatically save over a million dollars reduce licensing and solution costs, but still improved over 13 data centers." performance. "We went from 50 to 75 percent CPU J.J. McDaniel, Senior

J.J. McDaniel, Senior<br/>Cloud Architect at QTSutilization down to about 20 percent. It saves us money,<br/>which saves shareholders money."rrs, just by<br/>000."QTS is now planning to roll out AMD EPYC processor-powered servers<br/>across additional sections of its IT infrastructure, starting with its<br/>service delivery platform, also known as the SDP portal, which QTS's<br/>clients use as the window into operational analytics. Then there's the<br/>IT department itself, including telephony. "We have a total of over 100<br/>servers that we're going to be migrating next year across our DCIM,

"Our socket count is dropping in half but we're maintaining the same number of VMs," says Wesley. "Licensing is a gigantic headache for us, so just reducing that operational expense pays for this. I'm very happy with the output so far. It's exceeded my expectations. It's financially irresponsible to not examine EPYC if you have a lot of servers. It blew my mind how much money we saved just on hardware and hardware support by swapping."

# WANT TO LEARN HOW AMD EPYC<sup>™</sup> PROCESSORS MIGHT WORK FOR YOU?

Sign up to receive our data center content amd.com/epycsignup

SDP and internal IT services," says J.J..



## **About QTS Data Centers**

Quality Technology Services (NYSE: QTS) is a leading provider of data center solutions across a diverse footprint spanning more than 7 million square feet of QTS Mega Data Centers throughout North America and Europe. With the data center world evolving rapidly, QTS is committed to providing hardened, redundant, flexible and scalable hybrid colocation and hyperscale data center solutions powered by innovative software-defined data centers and network services. QTS delivers real-time visibility and access to data across all customers' deployments from one platform. For more information, visit <u>qtsdatacenters.com</u>.

## About AMD

For 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies—the building blocks for gaming, immersive platforms, and the data center. Hundreds of millions of consumers, leading Fortune 500 businesses, and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work, and play. AMD employees around the world are focused on building great products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit amd.com/EPYC.

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