

IS THERE A DATA CENTER IN YOUR FUTURE?

There may be a data center in your future, but odds are it's not going to be in your basement. And for many, it won't exist on-premises in a physical sense. You'll still have a data center, but likely it will be of a virtual construct.

With so much attention these days focused on public cloud, it's easy to lose sight of the fact that most large enterprises continue to employ on-premises data centers, but it may only be a matter of time before that flips. "With businesses of all sizes using cloud services, a day will come when on-premises data centers are carted off like yesteryear's typewriters," [Russ Banham writes in Forbes](#). "That day is still in the distance, however."

Increasingly, data center hardware is being replaced by software and virtualization, putting us on the path to what many refer to as [the software-defined data center](#). "When all the key elements of a data centre can be treated as fabrics, where applications get the resources they need when they need them, it's possible to abstract your entire operations model away from a physical data centre," [writes Simon Bisson with ZDNet](#) in the U.K.

WHY INVEST IN HARDWARE?

So, if everything can be abstracted in isolation, why should enterprises continue to invest in hardware that is expensive to operate, in need of continual upgrades, and taking up valuable real estate? Why not take hosting to the ultimate and do away with the on-premises data center altogether?

The industry is clearly moving in that direction. In early 2016, Rackspace introduced [OpenStack everywhere](#), enabling businesses

to run a fully-managed OpenStack private cloud in a data center of their choice – "whether it's in their own, a third party data center, a Rackspace-supported third party colocation facility or a Rackspace data center."

That was followed up in the second half of the year with the announcement of [Rackspace Private Cloud powered by VMware](#), "that enables customers to conveniently transition or extend their on-premises VMware workloads into the hosted VMware environment at Rackspace, built on top of the same VMware virtualization and software-defined technologies they use in their datacenters: VMware vSphere, NSX, Virtual SAN and the vRealize Suite."

VIRTUAL ALL THE WAY?

It doesn't take much imagination to envision enterprises telling hardware vendors to take a hike and instead renting an entire virtual data center that they can manage through portals and dashboards. If everything in today's data center can be virtualized, it really doesn't matter where it runs so long as performance and security requirements are met.

The question is how quickly does that become a reality? Probably not too quickly.

[Unisys executive Steve Nunn writes](#) in a *Data Center Knowledge* article that it's fair to say the future of the on-premises data center is cloud. "But the data center won't be blown away by a sudden tempest," he adds. "It will be pushed along by a slowly building but inexorable weather front that moves it in a new direction at a moderate pace – and with an orderly and beneficial resolution."

Nunn cites survey data showing the reliance today on on-premises mission-critical applications, storage, and analytics. It takes time to migrate applications, particularly legacy applications that are aging and may not be suitable for re-platforming.

STANDING IN THE WAY

"When you talk about the cloud, it still represents a very small percentage of the overall IT capacity that is out there," 451 Research chief analyst Eric Hanselman told [SearchNetworking](#) in sharing his 2017 data center forecast. Legacy infrastructure and staffing are issues standing in the way of abandoning on-premises data centers, Hanselman said.

That may in part reflect that old habits are hard to break. "Even after servers began to be virtualized, the physical hosts remained," [BizTech's John Edwards points out](#). "When some organizations began moving their hardware into cages located within shared data centers or hosting facilities, they still retained responsibility for their tangible, physical assets."

But, as Arthur Cole observes at *IT Business Edge*, "The rules of success are changing as well. Before long, it won't be the organization that has the fastest throughput, the most storage or the highest level of processing that wins in the end. It will be the one that can leverage available technologies and services to carve out a more effective business model."

A CHOICE TO BE MADE

Leveraging technology doesn't necessarily mean owning the technology, though. With the constant growth in data volume, many large businesses are going to have to make a choice in growing their own hyperscale data centers, or outsourcing them completely.

"With the rise in cloud computing, social media, big data, online gaming, and other online applications, there is a constant need for enhanced IT infrastructure that caters to the ever-increasing demand for resources; a factor that further supplements the demand for hyperscale data centers," [Allied Market Research writes of its projection](#) on growth in this market.

Cloud providers represented 63% of the hyperscale data center market in 2015, with a projected compound annual growth rate of 20.7% through 2022. The enterprises segment is growing at an even faster CAGR of 27.7% during the same period, the research firm projects, although total revenue in that segment will be but one-tenth the size of the cloud providers'.

AVOIDING THE ARMS RACE

How many businesses, though, really want to be involved in an arms race where scale and automation are going to be prime

determinants of success? The Amazons, Microsofts, and Googles of the world "have the cachet to employ some of the best and brightest engineers and thought leaders of the computing world, the ability to build and deploy their own custom microchips, access to training datasets comprising the web itself or the hardware and personnel capacity to iterate their infrastructure in real-time," [writes Forbes contributor Kale Leetaru](#).

Sooner or later, most enterprises must come to a decision about whether physical data centers have a role in their futures. If recent trends hold true, many data centers will stay in operation only until the organizations "end-of-life" the applications that can't easily or cost-effectively be migrated.