

Less is More: The Business Case for Converged Infrastructure



Recently, the editors of Zones Solutions Journal sat down with our presales engineering specialists Michael Beaman, Steve Boer, and Paul Brogan, the company's most senior experts in Converged Infrastructure (CI), to give readers a down-to-earth perspective on the state of CI in 2015, and why this once-exotic architecture is being embraced so rapidly by so many organizations.

Converged Infrastructure (CI) platforms greatly simplify deployment, significantly reduce time to value, and deliver a solid return on investment.

These systems – for which certain manufacturers favor the terms unified computing (Cisco) or integrated systems (IBM) – deliver complete pre-certified and integrated compute, storage and networking; all managed via a single pane of glass.

In pooling these resources, they become virtualized; applications, data and networking are separated from the underlying hardware, so resources can be quickly reallocated to meet the demands of individual applications.

A little history

To understand the true value of today's converged infrastructure offerings, it's helpful to look at how much (or little) data centers have changed in the past 20 years.

While today's networks are faster, storage devices larger and processors vastly more powerful, how they come together hasn't really changed all that much.

As Zones senior solution architect, Michael Beaman puts it, "The problem was mainly one of necessarily low utilization. If you go back to the 1990s to mid-2000s, you were looking at x86 open systems that

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leveraged integrated off-the-shelf hardware, were acquired organically, and typically bound single workloads to single servers. A system might have been configured with 256MB to 4GB of RAM, 100MB of networking – all at a cost of five to ten thousand dollars. And you were left managing lots of servers independently.”

Yet, with all that investment, you might have been utilizing them at about 10% capacity.

“You had to overestimate because the technology was still rather new,” adds Zones sales engineer Paul Brogan. “So you sized it for the peaks.

“You would run your mission critical applications on these, and you would have tens to hundreds of them consuming a tremendous amount of power – also at tremendous cost.”

“So, for that ten-thousand dollar investment,” Beaman says, “you were getting only one-thousand dollars’ worth of benefit.”

In detailing the implementation of a conventional infrastructure, Beaman described the many steps that take place from specification through deployment.

“As a business,” Beaman says, “you have silo’d departments making independent decisions with differing platforms; for example: the networking team might prefer Cisco for core routing and switching; the storage team may prefer Brocade for storage area network (SAN) switching and EMC for the back end storage; while the backup administrator might prefer Commvault for backup software and HP for tape; and the server team might prefer Dell.”

With all of the hardware in place, the IT team must then assess, acquire and test the firmware for each of the components, ensuring that all of the current firmware and patches for each component also works with interrelated equipment upstream and downstream.

“And if it doesn’t,” says presales engineer Steve Boer, “the team ends up on the phone with the various manufacturers, until they can get everything in synch.”

“It is not uncommon to see six weeks go by – with the new equipment on-site – before everything is up and running to the point where the team can begin testing,” adds Brogan.

“The move to convergence is about eliminating all of those specification, integration and deployment challenges” says Beaman. “Challenges that can take months to overcome, and can reoccur when new updates are required.”

Getting it together

By embracing Converged Infrastructure, businesses derive a number of short- and long-term benefits that include reduced time to value, increased availability, improved service-ability, simplified management and an easier transition to a hybrid cloud environment.

“When you look at converged platforms like the HP ConvergedSystem, IBM-Cisco VersaStack, the Cisco-NetApp FlexPod, or EMC’s Vblock Systems,” Beaman explains, “these platforms have patches and updates that are certified for interoperability across the compute, networking, storage, and associated Storage area network – with a single-throat-to-choke support structure.”

That fact greatly reduces the time it takes to specify the architecture. It also means that the system ordered arrives at a customer’s data center ready to go to work.

“I’m over-simplifying,” says Beaman, “but essentially, when you get this box, all you’re going to have to do is plug in cables, throw in IP addresses and start loading images. And, by standardizing on one vendor, you are also reducing the number of images that you’ll manage.”

In terms of availability,” Boer adds, “the fact that your architecture is pre-certified means that when you roll a patch into production, you’re unlikely to experience downtime because that patch or update is pre-certified as well. That’s a very different outcome than you typically see in a legacy environment.”

When it comes to serviceability, a converged system pays significant dividends for the organization. “The advantage here is that you have a standard that your IT team is completely familiar with,” says Brogan. “When you send a technician who works on your systems at one location to one of your remote locations, that technician knows exactly what he’s going to be working on when he shows up.”

Systems administration is consolidated with Converged Infrastructure. “With a common set of management tools,” Beaman explains, “everyone is trained across the solution stack because the environment has been standardized.”

Converged systems also greatly simplify the building and management of different types of clouds by integrating their creation and administration into the same control panel as the rest of the system.

“You can provision these services in a few minutes,” says Beaman, “using prepackaged designs and templates, enabling users to essentially self-serve.”

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"The IT department can create rules around security, compliance, and – when the data needs to be hosted on-premise or off-premise – use cloud orchestration software to automate the workload placement."

"For example, Beaman says, "let's say a test and development team member wants to do some work on an Oracle database. Rather than going to IT and asking permission, they can simply log in to the cloud service, and it will pick – based on their policy settings and security requirements – where it can be hosted on the private cloud or public cloud based on business rules.

"Then it will put that data where it's most appropriate without having an IT administrator have to go in there and make those decisions. It's all done via the cloud orchestration software."

"There's a big upside to this aspect of CI," says Beaman. "Now, I've got IT focused on making the company more nimble, reacting to business needs, and working on projects that are going to drive revenue, rather than doing administrative tasks."

Weighing the benefits

So, what type of organizations are bringing converged infrastructure into the data center?

"Actually, says Beaman, "it's more a question of workload than of size or industry.

"On the one hand, solution cost can vary greatly, from \$250,000 to millions of dollars or more, which would lead one to view CI as a big business solution."

"At the same time," Brogan points out, "it could be a ten-seat company.

"We recently worked with an ISP client who, while small in terms of personnel, had huge processing needs and rapidly growing storage requirements that made CI the best fit, by far."

"At the same time," adds Brogan, "our engineers have the knowledge to scale down these technologies to bring these value-added features to small companies that traditionally run as few as three physical servers, giving them greater uptime, longer hardware life, and future-proofing their infrastructure with an ROI that can match the cost to refresh the environment as physical machines.

"This architecture can bring benefits to big and small alike," Brogan explains, "Get a solid solutions architect and run the numbers both to size build (Processor, RAM, IOPS, GBs), and to account for the fiscal benefit (TCO/ROI), and almost every installation will benefit from – and can be scaled to incorporate – converged infrastructure."

"That's true," says Beaman. "The smart move for almost anyone considering a data center upgrade is to explore a converged platform.

"When you balance how quickly you're up and running; how much more easily your systems are managed, serviced and scaled; and the total cost of ownership over time against the initial cost – not to mention the fact that the costs of these systems are only going to go down over time – it would not be prudent to ignore this technology."

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