The Case for Private Clouds

Introduction

When Private Clouds Succeed

Sponsored Content: Need cloud control?

Why Private Clouds Fail

What Private Cloud Isn’t

The Future of Private Cloud

Thank you to our sponsor:

[Bluebox logo]

share:  

Facebook  Twitter  LinkedIn  Google+  Email
Think of a private cloud as a carved out slice of compute resources for your very own use. Organizations contemplating a move to cloud computing often eye private clouds, which offer some of the same benefits that public clouds provide, but for exclusive use by one business. While private clouds are not used as frequently as the public cloud, many reports show adoption is growing.

“Most organizations are not ready to move to public cloud because they don’t understand what the implications are, and private is a path that gives them some scalability,” said Eric Hanselman, chief analyst at 451 Research. Private cloud, whether on-premises or hosted, “is the logical first step for enterprises, and will become a core resource as they grapple with issues of security and compliance in public clouds,” he said.

A textbook private cloud deployment offers on-demand, self-service access to virtualized infrastructure resources, resource pooling, rapid elasticity and the ability to measure usage by business unit, according to Forrester Research. When hosted behind an organization’s firewall, private clouds can also provide security and performance benefits.

There is some debate about how much scalability you can get with a private cloud, however. “The idea is it’s supposed to be infinitely scalable, but if you’re building your own, you’re paying for capacity,” Hanselman said. For instance, a business that runs a private cloud on-premises must buy and provision an entirely new server in order to add capacity, even if that capacity isn’t required for the long term and doesn’t require an entirely new piece of hardware.

Nevertheless, companies in heavily regulated industries and those wanting more control over their data see private cloud as a viable option. Private cloud IT infrastructure spending is projected to grow by 16 percent year over year to $12 billion, according to IDC. That’s significant, albeit lower than public cloud IT infrastructure spending, which is expected to grow by 25 percent in 2015 to $21 billion, IDC found.
Minimizing the risk of additional security exposure is the number one reason companies cite for turning to private cloud, said John Burke, principal research analyst and CIO at Nemertes. It’s not just financial and health services firms – any business that has a major stake in intellectual property may see security benefits in the private cloud, he said.

Private clouds tend to have higher levels of network security since an organization’s data is housed on servers to which no one else has access. In contrast to the public cloud model, which has multiple clients accessing services via a pool of servers on public networks, users typically access private clouds across privately leased lines or secure, encrypted connections via public networks.

Then there’s the cost factor. While there is a perception that a public cloud offers economies of scale, “when talking about a large enterprise data center that’s operating efficiently, the cost per virtual machine for running workloads is often a lot lower in a private cloud environment inside someone’s data center than it would be in public cloud,” Burke said.

Minimizing the risk of additional security exposure is the number one reason companies cite for turning to private cloud.

JOHN BURKE, PRINCIPAL RESEARCH ANALYST AND CIO AT NEMERTES

CIOs and data center managers Nemertes talks to on a regular basis said they typically use public cloud for development and quality assurance testing, but private cloud makes more sense for workloads that don’t need to scale up or down, he said.

Other reasons for using private cloud are more practical. “There’s the real-world stuff, like network
connectivity isn’t cost-effective in their area or not available,” noted Terry Hedden, founder and CEO of Cloud Guru, a cloud architecture consulting firm. “It may be [more] cost-effective to have bandwidth locally, down the road, than … in a data center in another country.”

Compliance may also drive a move to the cloud. For some organizations, there can be a real fear of “losing control” over your data when it is moved to a public cloud, and consequently, an organization’s auditor may not sign off on that option, explained Jim Reavis, CEO of the non-profit standards organization Cloud Security Alliance. “It’s a combination of psychological comfort and [that] the laws haven’t caught up, so if you’re a global company, you may not know if a specific cloud provider can keep your information in-country” to comply with data sovereignty or data residency requirements in certain countries, he said.

As a result, “some companies have kept this policy that ‘until we get more comfortable with where things are going, we’ll keep using the private cloud option so we can essentially keep [data] on-premises,’” Reavis said. While you generally lose some of the benefits of public cloud in that case, he said, “You gain that peace of mind.”

Hanselman concurred. “The reality is, there are costs of risk that for a lot of organizations aren’t easily quantifiable, so private cloud is a way to eliminate those governance and compliance risks without having to go through the complicated task of sorting out what the risk is,” he said.
One of the greatest benefits of having a private cloud is the flexibility it provides. With this method, you can truly be in control of your cloud.

Sure, there are horror stories out there about failed deployments and headaches associated with the upkeep of this model, but like anything, there are solutions to eliminate those issues.

Find the Right Tech Talent
Whether you’re going to manage your own private cloud in an on-prem setting, or utilize the services of a private cloud provider who will host it in their data center, the people running your cloud must be experts. This means having a staff of engineers and architects specifically trained in the platform it will run on (i.e. OpenStack) and a support staff that can be available 24x7 to address issues and keep everything running smoothly. Blue Box, an IBM Company employs some of the finest minds in the industry. Let them guide you to the solution that’s right for your needs.

Delegate the Drama
If your team’s expertise doesn’t lie in the deployment of private clouds, or if you prefer to focus on development and innovation rather than operations, it may be smart to enlist the assistance of a service provider. The right provider will come equipped with years of cloud management experience, offer round-the-clock customer support and competitive pricing to take care of your organization. Blue Box Cloud offers all of these things, plus Box Panel, an administrative control panel to manage infrastructure, delivers operational support, billing, and provisioning in real time.

Avoid Budget Unpredictability
Instead of traditional pay-as-you-go models, which can fluctuate greatly based on use, you’ll always know upfront what your cost will be using Blue Box Cloud. With flat fees for your base cluster of nodes and simple payment structures if you decide to scale bigger, price will never be a mystery. There are also options to use services on a month-to-month basis for greater flexibility, or subscription models that will save you money. You won’t just be in control of your cloud, you’ll be in control of your budget.

Make Performance a Priority
Blue Box Cloud was born out of the consistent need in the market for predictability of performance. With a commitment to maximum uptime and 24x7/365 customer support, you can rest assured that if any issues arise, they’ll be corrected swiftly.

Embrace the Future
Private Cloud as a Service (PCaaS) is the choice for enterprises who need private cloud with minimal operational burden. Don’t let your infrastructure get left behind—take control of your future today.
Why Private Clouds Fail

The private cloud model isn’t the panacea for every organization, and industry observers say people’s expectations of how they are supposed to work can end up causing huge disappointment. “In our experience … most often it’s because people develop expectations around calling it ‘private cloud,’ but the infrastructure is not ready for that and it’s not being managed as a private cloud,” said Burke.

According to 451 Research’s Voice of the Enterprise study, 14 percent of companies have had a major cloud failure, with 27 percent of those identified as being caused by unrealistic expectations. “Cloud requires a different mindset to run effectively. In the transition to virtualization, organizations could keep existing processes and procedures mostly intact,” Hanselman said. By contrast, “cloud is a forcing function around a different way of thinking about deploying resources.”

For instance, organizations should have some standardization in how users spin up workloads, he said, and when that doesn’t happen it can cause problems.

Another challenge with using private clouds is not having the right level of skills in IT. “They don’t understand the risks – the distribution of data and how to effectively release some of that operational control while still maintaining responsibility for the workload itself,” said Hanselman. “In a lot of cases, IT has become infrastructure providers without understanding what the requirements are.”

Private cloud models sometimes fail because while private clouds might make clear financial sense for large enterprises, some companies can’t invest the same amount of money that a public cloud provider can in order to deliver the latest security tools or complete redundancy, Hedden said.

Sometimes the same issues that exist in a public cloud environment cause hang-ups in the private realm too, he said. “You move servers to a private data center and you’ve failed to think through network performance and latency, and that can come back to bite you,” Hedden said.
Tom Bittman, a vice president and distinguished analyst at Gartner, found that many of these issues were top of mind for attendees at a recent Gartner Datacenter Conference. A failure to change the operational model was cited by 31 percent, while 19 percent said the private cloud did too little and 13 percent said it failed to change the funding model, he wrote in a blog post.

Other issues? Not putting the right metrics in place and using the wrong technologies. “What’s tactically right might be strategically wrong,” Bittman wrote.

Sometimes the same issues that exist in a public cloud environment cause hang-ups in the private realm too.
Securing customer data, managing costs and avoiding downtime are just a few of the challenges of delivering apps in the cloud. Maybe it’s time to lessen the burden.
What Private Cloud Isn’t

Some experts argue that unless you’re taking advantage of the primary benefits of the cloud – namely, being able to scale computing and storage up and down on an as-needed basis, and paying based on consumption – then what you’re building is not really a cloud.

In fact, some expect that many people might be surprised at just how many true private clouds are out there. “It isn’t that there aren’t private clouds truly worthy of the name but there are just far fewer than people would like to believe,” observed John Treadway, senior vice president at cloud computing consulting firm Cloud Technology Partners. Most don’t deliver the capabilities and characteristics private clouds are supposed to offer, like “on-demand, highly agile, API-driven and metered so I know what I’m paying for, end-to-end, ready to go, with multiple types of services I want to get access to, like databases and different types of storage,” Treadway added.

Still, what’s most important is that businesses define what they hope to get from their private cloud. Treadway recalled a conversation he had with a client who criticized his internal IT team by saying it was trying to compete with Amazon. “I pointed out that they don’t have to compete with Amazon to add value, they just need to be measurably better than what they had before – as long as they don’t spend too much time and money getting there.”

The problem is when IT believes that their private cloud can compete with leading public clouds, a position that may take a business “down lengthy, very expensive roads where there is no possibility of a return on investment,” he added. “Because they can’t possibly get to the level of agility, cost, flexibility and speed that a public cloud provides.” Meanwhile, they invest as much as they can to get as far as they can – and then find the return on those dollars isn’t always very strong, he said.

“For most companies, private cloud is a transitional environment until they get the experience and comfort
level with operating at scale in a public cloud,” said Treadway. “The focus should be on minimizing the investment in private cloud to no more than is absolutely necessary.”

Arbitrary scaling to meet demand is the hardest thing for an internal private cloud to do, according to Burke. Not only are there boundaries on how quickly this can be done when you have to buy and install private machines in your own data centers, but companies also have to deal with the usual limits of space, power and cooling. Ultimately, he said, once the new machines are in, “you’re stuck with them when you scale down. There are real limits on the elasticity of private clouds – and even external ones where you have to pay for stuff to be dedicated to you for some span of time.” Most external private cloud providers require longer-term commitments for resources – usually at least a year, and sometimes longer, he said.

In addition, adding capacity in a public cloud is usually a matter of essentially “turning a dial” for near-immediate access, where adding capacity in a private cloud in most cases takes much more time – days or weeks, compared to seconds or minutes in the public cloud, Hedden said.

With private cloud, “you only have the scalability that you factor into your architecture. So you’re creating a limitation for yourself,” he said.

You will see enterprises with one, two or three successive private cloud initiatives that get better every time, noted Treadway, “but they’re playing catchup, and the public cloud field is pulling away from them in capability at an accelerated pace.” Most enterprises that don’t have the kind of appetite for hanging on for the long haul and spending a lot of money are going to have a hard time being successful with their private cloud, he said. “These are big, complicated systems.”

“It isn’t that there aren’t private clouds truly worthy of the name but there are just far fewer than people would like to believe.”

JOHN TREADWAY, SENIOR VICE PRESIDENT AT CLOUD TECHNOLOGY PARTNERS

And often, people confuse private cloud with virtualization. A private cloud does not have to be virtualized, although it tends to be the common model. Most virtualization software requires centralized storage, which is one of the foundations for a private cloud. But cloud is also about self-service to provide on-demand consumption of IT services and enable the scaling of resources. Building a private cloud yourself also means having the right technologies, such as management tools that provide monitoring and reporting.

Of course, there are pros and cons to every type of cloud option, so at the outset, the key is to “understand the business requirements and understand the systems the organization uses and limitations they have and understand what they need to operate,” said Hedden.
The second step is to evaluate what your options are, taking into account all of those requirements and thinking through how they work, and then figure out which solution makes most sense for your organization.

Those requirements include price and performance. “The third step, in my mind, is you replicate a portion of your environment in a cloud environment and test whether it will work,” Hedden said. “Only when you’ve done an appropriate amount of testing, where you’re confident everything works properly – then you do the cutover.” Just because you create a private cloud doesn’t mean it will be fool-proof, he said. “They have ‘gotchas.’ There’s always risk associated with change.”

A private cloud also does not have to be managed on-premises. A growing percentage is moving to third-party providers. In that case, “you pick a vendor based on your unique requirements,” said Hedden.
The Future of Private Cloud

Expectations for the growth of the private cloud market differ dramatically, perhaps indicating how young the market is.

Research firm Technology Business Research sees high numbers for private cloud usage presently and has big expectations for it down the road. Already, half of 2,211 enterprises TBR surveyed said they are currently using private cloud solutions, and that figure is projected to rise to a whopping 85 percent by 2018, according to the firm’s Private Cloud Customer Research report. TBR also estimated that by 2019, the private cloud market will grow from $45 billion to $80 billion.

From a technical standpoint, private cloud is growing steadily and “actually managing your infrastructure like a cloud is going nowhere but up, and it will become the norm in five to six years,” said Burke.

Hedden thinks the exact opposite will happen. He envisions a gradual reduction in on-premises systems and an increasing number of organizations moving to public cloud as more software is written to be native to the cloud, bandwidth becomes cheaper and internal infrastructures reach end of life.

“As software is being rewritten the limitations of public cloud become less relevant,” he said. “A lot of third-party cloud providers are taking things like security, performance or availability, and are overlaying their services,” as well as cloud providers developing solutions for a specific use case. “Use cases that were out of the realm of possibility are now realistic,” he said. “You can see that from how many [software as a service] providers and infrastructure companies there are out there.”

451 Research also had more tepid expectations for private cloud down the road, particularly compared to TBR’s predictions. It estimated that by 2018, cloud, in its various forms, will make up 29 percent of the
total hosted and managed services market, at over $34 billion of the $117 billion worldwide market. But private, on-premises cloud, the firm believes, will be a “much smaller fraction of that.”

Half of 2,211 surveyed enterprises said they are currently using private cloud solutions, and that figure is projected to rise to a whopping 85 percent by 2018, according to Technology Business Research.

Ultimately, it could come down to the way you define private cloud. CSA’s Reavis said he believes the future of private cloud is in virtual private clouds. The idea is to eliminate dedicating physical infrastructure to individual users. “A virtual private cloud is completely a software construct and could be instantly created as small or as large as you want within the existing public cloud. It could even span multiple cloud providers,” he said. That would solve some of the current challenges with making private clouds cost-effective. The concept is comparable to the way that businesses now connect multiple sites using virtual private networks, instead of old-school direct communication lines like frame relay, he said.

Already, vendors large and small are offering managed, virtual private-cloud services as part of data center outsourcing offerings.

Clearly, with a high rate of change and innovation, it’s tough to predict exactly how the private cloud market will shake out. But one thing is clear, and it’s that private cloud is meeting and will continue to meet some business needs.