



# Private Clouds Can Be Complicated: The Challenges of Building and Operating a Microsoft® Private Cloud

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## **Abstract**

A Microsoft Private Cloud enables businesses to balance the benefits of cloud computing with the benefits of a private data center. Building and maintaining a Microsoft® Cloud Platform environment can be challenging, though, and most organizations don't have the resources to effectively manage the environment. This white paper examines how businesses can address those challenges and leverage the benefits of a Microsoft Private Cloud by using Rackspace to host and manage their Microsoft Cloud Platform environment.

Business today requires a robust IT infrastructure. The connected, mobile world needs 24/7 service with the agility to accommodate rapid changes in demand. Cloud computing offers a variety of advantages that a traditional data center simply can't compete with. The shared resources and potential security and compliance issues are a fatal flaw, however, that prevent many companies from taking advantage of the benefits of cloud computing.

A Microsoft Private Cloud surrenders some of the unique advantages of cloud computing in order to help alleviate the security and privacy concerns. Implementing and managing a private cloud – especially a resilient high-availability private cloud – requires dedicated resources with the right knowledge and skills to manage the cloud infrastructure effectively and efficiently.

A better alternative for many companies is to outsource those functions. A hosted managed Microsoft Cloud Platform allows a business to leverage the benefits of cloud computing and the security and privacy of a private cloud without the overhead and administrative headaches of managing and maintaining the actual cloud infrastructure.

## **Microsoft Private Cloud**

Microsoft Private Cloud uses resources that are dedicated to your business. The private cloud is similar to the public cloud in that it provides resource pooling, self-service elements, elasticity, and a pay-for-use model. With a Microsoft Private Cloud the entire cloud

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architecture is dedicated to your organization – from the firewalls and switches to the actual servers running in the cloud. The difference is that you get the security of a single-tenant environment with physically isolated network, compute, and storage layers, and maintain the ability to control and customize the dedicated resources to suit your needs.

Virtualization is a defining feature of cloud computing and it's an important aspect of a Microsoft Private Cloud, but it's not the only feature. A Microsoft Private Cloud is about abstracting computing resources from the infrastructure – both physical and virtual – and the ability to deliver those resources to users or customers. The Microsoft Private Cloud helps enable you to exceed the cost effectiveness of a standard virtualized infrastructure through higher workload density and more efficient resource utilization.

Microsoft Private Clouds run on Microsoft's Cloud Platform, which is designed to simplify and streamline the management of virtualized Microsoft resources in the cloud. It provides your organization with complete control over the cloud infrastructure and eliminates concerns about unauthorized third-parties gaining access to sensitive data or resources. The combination of a reduced TCO and better alignment of IT resources with business goals make the Microsoft Private Cloud a competitive advantage.

There is more than one way to migrate to the cloud, but for organizations that are already invested in and dependent on a Microsoft network and server environment a Microsoft Cloud Platform offers the most advantages. A Microsoft Private Cloud enables you to use virtual servers and virtual machines to maximize utilization of hardware resources. Windows Server has best-in-class virtualization capabilities baked right into the OS, so you benefit from cost-effective licensing since Hyper-V comes free with Windows – there are no additional hypervisor licenses to buy.

Microsoft System Center gives IT admins tremendous flexibility to manage and deploy resources, and to build cloud elasticity and scalability into the infrastructure with dynamic provisioning of

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assets, resource pooling and automation. Automation is one of the primary benefits of virtualization and cloud computing.

IT admins can automate repetitive tasks in a Microsoft Private Cloud, such as load-balancing and allocation of resources to handle unexpected spikes in demand. A Microsoft Private Cloud with Microsoft System Center also improves application performance and simplifies application deployment.

The Microsoft Cloud Platform is a powerful solution for companies that want the benefits of the cloud with the privacy of a proprietary data center. However, deploying and managing a Microsoft Private Cloud presents its own challenges that may be overwhelming for many organizations.

### **Challenges of managing a Microsoft Private Cloud**

Just setting up a private cloud environment is a daunting task. To properly deploy and configure the physical and virtual environment can take some organizations up to a month. Setting up just one server with high availability resilience can take up to 40 separate virtual machines. Hyper-V is a powerful platform for managing a virtual environment, but it takes specific expertise to manage effectively.

Building a Microsoft Private Cloud is just the beginning, though. That's when things get challenging.

Microsoft System Center is a powerful platform for managing and automating a Microsoft Private Cloud environment, but Microsoft System Center isn't just one thing. Microsoft System Center is comprised of a variety of different applications that work in concert. Managing Microsoft System Center means managing some combination of Operations Manager, Configuration Manager, Virtual Machine Manager, Orchestrator, Data Protection Manager, Service Manager, App Controlled, and Endpoint Protection. You need a full-time resource or two dedicated just to mastering Microsoft System Center.

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The Windows Azure Pack also integrates with System Center and Windows Server to provide additional capabilities. Windows Azure Pack includes a variety of elements such as a management portal for tenants, scalable shared Web-hosting platform, and virtual machine templates to facilitate Infrastructure-as-a-Service (IaaS).

Aside from Microsoft System Center itself, there are a number of moving parts involved in establishing IT-as-a-service using a Microsoft Private Cloud model. You need a self-service component to allow application owners to specify the requirements they need. You need a service model that understands how to bind the application architecture to the underlying resources. You need process automation tools capable of breaking down the application provisioning request into the necessary enterprise change requests. Then you need tools in place to facilitate the deployment and configuration of the application, and a way to identify and monitor the resources once everything is up and running.

Within the Microsoft Private Cloud you will have instances of Windows Server along with other Microsoft server applications such as Exchange, SharePoint, Lync, SQL Server, Web servers, and more. There could be hundreds, thousands, or tens of thousands of virtual servers and virtual applications running in your Microsoft Private Cloud environment. Somebody will need to be responsible for monitoring all of those assets to ensure they are healthy and running properly. Somebody needs to perform vulnerability and risk management and make sure that any necessary patches or updates are applied.

### **Microsoft® Cloud Platform powered by Rackspace®**

You could build and manage your own Microsoft Private Cloud, but that probably isn't the best use of your resources. Engaging the services of a managed cloud provider yields a variety of benefits that enable you to take advantage of what Microsoft Cloud Platform has to offer without the challenges that come along with it. A Microsoft Cloud Platform powered by Rackspace includes flexible guest OS management, the scalability and availability of Windows Azure, the ability to federate Microsoft Cloud Platform

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resources with other private and public cloud infrastructures, and the enhanced security of a single-tenant environment – all backed by Fanatical Support® and industry leading SLAs.

- **Cloud experts**

Rackspace has teams of professionals who do nothing but live and breathe cloud infrastructure. They have in-depth knowledge and experience with Microsoft servers and applications, and they understand what it takes to build, deploy, monitor, manage, and maintain a Microsoft Private Cloud. Rackspace is a Microsoft Cloud OS Network Gold Certified Partner, and a four-time Microsoft Hosting Partner of the Year with hundreds of Microsoft Certified Professionals and cloud specialists that have extensive expertise in Microsoft applications - it runs the largest Microsoft Exchange and SharePoint environments outside of Microsoft itself.

- **Focus on your business**

Odds are that your core business isn't building and managing a cloud infrastructure. So don't waste effort or resources trying to get into that business. It's a distraction. Focus on your core business and on providing the greatest possible value for your customers, and leave the Microsoft Private Cloud to the experts at Rackspace.

- **Cost effective**

Hiring and training the personnel necessary to effectively and efficiently manage a Microsoft Private Cloud infrastructure is expensive. Outsourcing your Microsoft Private Cloud to a managed cloud provider like Rackspace allows you to cut costs while simultaneously getting personnel who are better trained and more experienced. You get flexible guest OS management, which means you can enable or disable guest OS support on your virtual machines based on your business needs, and monitoring, backup, troubleshooting, and antivirus. You also get the scalability and availability of the Microsoft Cloud Platform and can scale to thousands of nodes with the Windows Azure Portal, with built-in features such as live migration and failover clustering for up to 64 nodes.

**A Rackspace  
Managed Private  
Cloud provides  
customers with a  
complete package.**

- **Peace of mind**

You also get peace of mind. You know that there are teams of trained cloud specialists and Microsoft Certified professionals looking after your Microsoft Private Cloud, and that support is just a phone call away. You get the confidence to focus your energy on your business, knowing that the Microsoft Private Cloud infrastructure is in good hands.

Let Rackspace do the heavy lifting for you. Every Rackspace data center in the United States supports the Microsoft Cloud Platform – including Microsoft Hyper-V, System Center, Windows Server, and Windows Azure Pack with its web-based interface, enabling user self-service. Rackspace can deploy and manage your entire Microsoft Private Cloud environment so you can focus on your business.

A Rackspace Managed Private Cloud provides customers with a complete package. A team of experts designs and deploys your private cloud running on the Microsoft Cloud Platform, providing you the enhanced security of a single-tenant environment with physically isolated network, compute, and storage layers, and the cloud experts to proactively monitor and maintain the health of your private cloud 24x7x365.

Unlike some cloud providers, Rackspace specializes in managed cloud. Beyond the data center infrastructure, Rackspace also provides optimized platforms and a team of experts to run it all. Let Rackspace help you architect, build, and operate your Microsoft Private Cloud environment. Your company deserves a Microsoft Private Cloud supported by Rackers who are there to make it work for you, and backed by Rackspace's trademark Fanatical Support. ■

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*Tony Bradley is a respected authority on technology. He is Editor-in-Chief of TechSpective.net. He has authored or co-authored a number of books, including *Unified Communications for Dummies*, *Essential Computer Security*, and *PCI Compliance*. He has been a CISSP (Certified Information Systems Security Professional) for over 12 years, and he has been recognized by Microsoft as an MVP (Most Valuable Professional) in Windows and Windows security for 9 consecutive years. – See more at: <http://bradleystrategygroup.com/about/who-we-are/#sthash.wkosl3sg.dpuf>*

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