

**Cloud Computing Infrastructure**

**FREQUENTLY ASKED QUESTIONS ON CLOUD COMPUTING**

Get answers to questions about cloud computing, private cloud, public cloud and more.

[Dynamic Datacenter Alliance](#_Dynamic_Data_Center)

# General Questions

**Q: What is the cloud vision and approach for operations & management that Microsoft announced today?**

**A:** Progressing on its multi-year Dynamic IT vision, Microsoft articulated the transformational impact of cloud computing on operations & management. As datacenters evolve from traditional and virtualized forms to the cloud, Microsoft will lead innovation in the cloud using the following approach:

* Investing in advanced cloud capabilities across the entire stack including cloud computing infrastructure, application/development platforms and cloud applications.
* Bring in learning’s from operating cloud services like Windows Azure to its server assets so customers can build private cloud capabilities within their Datacenters.
* Bridge the gap between on premises (or private) and off-premises (public) cloud environments by providing unified management and consistent application development/deployment models across these scenarios, and enable workload federation to allow hybrid cloud models. This will enable you with the flexibility to choose to use your own assets, use a service provider or deploy your services through Windows Azure.

To summarize, Microsoft: a) is committed to investing broadly and deeply across all the cloud layers b) has the developer, management, server and cloud assets that need to come together to make this vision a reality.

**Q: What are the some of the key cloud driven trends that led Microsoft to this vision?**

**A:** Microsoft believes the cloud is enabling the above described approach at 3 levels:

* **Datacenter and Hardware Model** – We’re seeing significant advances and standardization in the datacenterand associated IT equipment/hardware. From large monolithic datacenters that take significant time and cost, various alternative models including containerized and modular/ pre-assembled datacenters are emerging. Hardware is becoming incredibly efficient and delivers large computing power at a fraction of the cost.
* **Application Model** – Cloud computing provides the ability to quickly deliver highly-available, security-enhanced and vastly geo-scalable applications and services while offering a rich end-user experience from virtually anywhere and any web-connected device.
* **Operational Model** – Cloud services have inherent resilience to hardware or software failures due to redundant/self-healing service models combined with deep integration between ops & development/ test. These factors make it easy for operations to run & manage cloud apps with 24x7 availability without having to be “lights on” always.

Microsoft has been providing industry level thought leadership to all of the above (based on running our cloud services out of our datacenters) and is investing in product capabilities so you can derive these benefits within your datacenters in the future.

**Q: What benefits will I experience if the above vision were to be realized?**

**A:** Once these cloud driven transformations become mainstream, enterprise IT will likely experience breakthrough business benefits:

* **Increased business agility** – Applications and services can be delivered to market in an extremely agile manner with the end-user & developer empowerment that cloud computing unleashes.
* **Reduced Management Complexity –** Having one management solution that seamlessly straddles your on premises or off premises environments in conjunction with shared virtualized infrastructure internally breaks down IT silos and process inefficiencies leading to simplification.
* **Costs/Operational Efficiencies** – Cloud apps/services will be significantly cheaper and efficient, be it capital expenses (e.g. hardware/datacenter) or operational expenses (e.g. service management).
* **IT maturity** – Much greater levels of IT maturity thus transforming the relationship between IT and the business from that of service provider to trusted advisor.

**Q: What is the supporting product roadmap to enable the above vision?**

**A:** Microsoft announced its roadmap for the System Center suite that will provide unified service centric management to enable customers manage their on-premises (or private cloud) and off-premises (public cloud) environments. By using technologies like model driven management, application virtualization and automation, System Center® vNext will manage the end to end application/service life cycle using cloud principles. In addition, Windows Server®/ Hyper-V® and Visual Studio® will also continue to build in cloud oriented capabilities.

**Q: What is unique about Microsoft’s forward looking cloud approach/strategy and what does it mean for me?**

**A:** Microsoft has a comprehensive set of cloud offerings across the stack at all levels; be it the infrastructure layer, platform layer or the application layer. Microsoft has exceptional experience delivering high scale cloud services out of its global datacenters (e.g. Windows Azure, Bing, Hotmail etc.). This enables us to provide industry level thought leadership and articulate how cloud computing can potentially bring in transformational impact to the entire stack.

Most importantly, Microsoft is uniquely positioned to bring in these learning’s and innovation to enterprise datacenters by implementing “cloud principles” in its products like Windows Server and System Center. We will implement this “service centric” approach to developing, deploying and managing cloud services/apps through their life cycle, thereby enabling compelling private cloud scenarios for our enterprise customers. We will also enable rich federation scenarios to allow customers implement hybrid approaches – e.g. have their cloud apps/services spread out between on-premises clouds and off premises clouds (e.g. service provider clouds or Windows Azure). Through technologies like server application virtualization, model based management and automation, we expect to enable flexible private cloud infrastructure that will support existing applications as well as new-generation cloud apps.

**Q: How does Microsoft’s vision and approach impact my existing datacenter investments?**

**A:** We will continue to offer our customers the choice of datacenter deployment and management options ranging from traditional to virtualized to private and public through our System Center product offerings. Microsoft very well aware that various business drivers will mean our commercial customers will continue to adopt a mixed deployment approach across all of these options.

It will be our endeavor to enable customers to maximize their existing investments in applications and infrastructure as they transition to a cloud paradigm to provide the greatest opportunities to take advantage of new approaches for application/ service development & management.

**Q: What service offerings does Microsoft have today for customers?**

**A:** To help customers enable the foundation for private clouds, Microsoft offers the **Dynamic Datacenter Toolkit**. This offering will provide customers with architecture and deployment guidance and best practices for enabling the foundation for private clouds today and help customer move along the path to create agile and dynamic IT environments.

Microsoft also has an offering for our hosting partners to enable the foundation for a public cloud environment, called the **Dynamic Datacenter Toolkit for Hosters.** It helps them to enable new scenarios like compute overdraft and cloud-based disaster recovery, and also provides the ability to deploy on-demand managed services and virtualized servers powered by System Center and Windows Server 2008 Hyper-V.

**Q: How much do these service offerings cost and when will they be available?**

A: Both toolkits will be free of charge from Microsoft and will build on top of Microsoft System Center technologies. Availability:

* **Available today** – Dynamic Datacenter Toolkit for Hosters: enabling the foundation for Hosted Clouds
* **Availability scheduled for June 2010**– Dynamic Datacenter Toolkit : enabling the foundation for Private Clouds

**Q: Is the private cloud a separate product? How can customers get this?**

**A:** Private cloud is not a separate product offering from Microsoft. It is an internal service-oriented IT environment optimized for performance and cost that is deployed inside a customer’s datacenter. Powered by products including Windows Server® and Microsoft® System Center® family of products, private clouds are typically deployed to be compatible with existing applications while using cloud principles like elasticity, scalability and chargeback proportional to use.

To enable customers to create private clouds, Microsoft will offer full management solutions along with partner offerings. For details on this, customers can go to <http://www.microsoft.com/privatecloud>.

**Q: Is the public cloud a separate product? How can Hosters get this?**

**A:** Hosted clouds are adeployment option for enterprises where the infrastructure services are provided by a hosting partner. Hosting partners can leverage their relationships with their enterprise and SMB customers to offer the benefits of cloud computing with provide support to customers as they get accustomed to these services. Hosting partners have long been part of the overall Microsoft ecosystem.

With the Dynamic Datacenter Toolkit for Hosters, hosting partners can now deploy the foundation for the public cloud with on-demand managed services and Virtualized Servers, Clustering, Network and Storage powered by System Center and Windows Server 2008 with Hyper-V.

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# Private Cloud

**Q: What is Microsoft’s Private Cloud?**

**A:** Private cloud is not a separate product offering from Microsoft. It is an internal service-oriented IT environment optimized for performance and cost that is deployed inside a customer’s datacenter. Powered by products including Windows Server® and Microsoft® System Center family of products, private clouds are typically deployed to be compatible with existing applications while using cloud principles like elasticity, scalability and chargeback proportional to use.

To enable customers to create private clouds, Microsoft now offers key technologies, service offerings and solution accelerator tools along with partner offerings. For details on this, customers can go to <http://www.microsoft.com/privatecloud>.

**Q: What are the benefits of Microsoft’s private cloud offerings?**

A: Microsoft delivers the technology that allows enterprises to build a private cloud within their datacenters based on enhancements to Windows Server/Hyper-V and System Center.  This portfolio represents infrastructure, service and application development tools for clouds that offer:

* A **flexible and familiar infrastructure** with a common Windows-based platform to build and deploy cloud applications/services in an extremely agile manner.
* **Reduced management complexity** by enabling integrated management across the application/service life cycle, while unifying management across physical and virtual environments.
* **Operational efficiency** by streamlining and automating task execution and IT processes within the enterprise datacenter.

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# Public Cloud

**Q: What is Microsoft’s Public Cloud?
A:** Microsoft Public cloud is part of the overall Microsoft cloud offering. Hosting partners can leverage their relationships with their enterprise and SMB customers to offer the benefits of cloud computing along with a hand to hold for support as customers get accustomed to these services. Hosting partners have long been part of the overall Microsoft ecosystem.

With this solution, hosting partners will be able to deploy on-demand managed services and Virtualized Servers, Clustering, Network and Storage powered by System Center and Windows Server 2008 with Hyper-V.

**Q: What is the Dynamic Datacenter Toolkit for Hosters?**

**A:** Microsoft’s Dynamic Datacenter Toolkit for Hosters contains guidance, sample code, best practices and collateral to help hosting providers rapidly build and launch managed services powered by Windows Server 2008 Hyper-V and Microsoft System Center. It provides step-by-step instructions for enabling the foundation for the public cloud and that assists hosting providers and ISVs in building an instantly scalable virtualized infrastructure. In addition, marketing guidance and customizable content in the tool kit articulates how hosting partners can market and sell managed services and solutions.

See more here: <http://www.microsoft.com/hosting/accelerate/demo.mspx>

**Q: Why is this Toolkit important to hosting providers?**

**A:** In order to be successful and to grow as large player move into mass-market hosting, it is imperative to hosting providers to be able to offer truly managed-services. The Dynamic Datacenter Toolkit for Hosters makes it easy for hosting providers to rapidly build and launch managed services powered by Windows Server 2008 Hyper-V and Microsoft System Center.

**Q: Do you have examples of hosting providers utilizing the Toolkit?**

**A:** MaximumASP, a Microsoft Gold Certified provider of web hosting and IT services recently utilized the Microsoft Dynamic Datacenter Toolkit for Hosters to improve the performance of its MaxV Virtual Dedicated Servers. MaximumASP collaborated with Microsoft on the Dynamic Datacenter Toolkit for Hosters as a way to offer instant scalability, increased support through advanced monitoring, disaster recovery, and ultimately higher customer satisfaction. The toolkit has allowed MaximumASP to rapidly build and deploy hosted solutions. They are able to better utilize their hardware and support staff, leading to lower costs which they are able to pass along to their customers.

**Q: When will the Toolkit be available to hosting providers and how can they get it?**

**A:** The Toolkit is available to all hosting providers that are enrolled in the Microsoft Hosting Community, an extension of the broader Microsoft Partner Program.

**Q: Are there any training requirements for using the Toolkit?**

A: The Toolkit is based on Windows Server 2008 Hyper-V and System Center. If you are familiar with these tools, you will be able to work with the Dynamic Datacenter Toolkit for Hosters.

**Q: How long does it take to deploy the Toolkit?**

**A:** The amount of time required to deploy and leverage the Dynamic Datacenter Toolkit for Hosters depends on various factors including the hosting partner’s size, familiarity with technology, and number of customers interested. Microsoft recommends pilot programs for deploying this technology.

**Q: Will enterprise customers be able to access technology available to Hosters?
A:** Yes.

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# Dynamic Datacenter Alliance

**Q: What is the Dynamic Datacenter Alliance?**

**A:** Dynamic Datacenter Alliance (DDA) is a program designed to bring together an ecosystem of partners including hosters, system integrators, hardware manufacturers and software vendors who are working with Microsoft to offer rich and differentiated value around the Dynamic Datacenter Toolkit for Hosters and the Dynamic Datacenter Toolkit.

**Q: I am a Hoster. What benefits does Dynamic Datacenter Alliance offer me? What are the qualifications required to join the Dynamic Datacenter Alliance?**

**A:** **Benefits:** When you join this alliance, you will get:

* Interoperable, tested, and well-defined technology components that help you accelerate time to market.
* Access to new technology as it is made available.
* Marketing opportunities, such as potential for referrals and Web traffic from the Microsoft site and the chance to participate in events.

**Qualifications:** To participate in the Dynamic Datacenter Alliance, Hosting Partners must:

* Be an existing Microsoft partner with a signed Microsoft Services Provider License Agreement, and have attained the Hosting Solutions Competency.
* Launch and have an active Dynamic Datacenter offer in place.
* Agree to participate in market research, provide insights to help drive product development, and assist in the creation of customer evidence.

**Q: I am a System Integrator. What benefits does Dynamic Datacenter Alliance offer me? What are the qualifications required to join the Dynamic Datacenter Alliance?**

**A: Benefits:** When you join this alliance, you will get:

* Technologies that serve to homogenize Software+Services architectures (as companies strive for the right balance between the public and private clouds).
* New business opportunities.
* Potential for recurring revenue streams.
* Potential for Dynamic Datacenter Toolkit leads from Hosting University.
* Access to registration area for Hosting Support
Q & A.

**Qualifications:** To participate in the Dynamic Datacenter Alliance, System Integrators must:

* Be an existing Microsoft Certified Partner and have attained the Networking Infrastructure and Virtualization Solutions Competency.
* Complete appropriate level of training on the Dynamic Datacenter Toolkits.
* Implement Dynamic Datacenter Infrastructure and have it available for demonstration to customers.
* Have a Dynamic Datacenter Practice in place.

**Q: I am a Technology Partner. What benefits does Dynamic Datacenter Alliance offer me? What are the qualifications required to join the Dynamic Datacenter Alliance?**

**A: Benefits:** When you join this alliance, you will get:

* To participate in turn-key, Microsoft supported end-to-end solution, with tested guidance and automated tools to successfully plan, deliver, and operate a private cloud.
* To leverage toolkit’s extensibility to integrate with your technology.
* A low-cost solution that leverages existing Microsoft technologies which customers already license.
* Free IP in solution to help lower your development costs, reduce time to market, and boost reliability of your offering.

**Qualifications:** To participate in the Dynamic Datacenter Alliance, Technology Partners must:

* Be an existing Microsoft Certified Partner.
* Provide resources as needed to integrate and validate your technology into solution.
* Perform parallel testing with Solution Accelerator’s team to validate extensibility to your technology.
* Be willing to engage in joint marketing efforts regarding this solution.

**Q: Can you share any updates from the Dynamic Datacenter Alliance (DDA) that was announced last year?**

**A:** Since the announcement, we’ve seen tremendous DDA momentum in the marketplace from our entire partner ecosystem ranging from public cloud service providers (hosting partners), IHVs, ISVs, and System Integrators. The underlying Microsoft service offerings are Dynamic Datacenter Toolkit (private cloud computing infrastructure offering) and the Dynamic Datacenter Toolkit for Hosters (public cloud computing infrastructure offering), which were announced last year.

As of today, we have a large number of hosting partners building Dynamic Datacenter offerings on the Microsoft platform with 20+ hosting partners already having live offerings. Top tier System Integrators are in the process of building service offerings to help customers deploy and implement private cloud within their datacenters. We are also working with ISVs who are building service extensions on top of our platform. Finally, we are working with a variety of top tier IHVs to validate their infrastructure (storage, compute network) against our private and public cloud offerings to allow maximum flexibility for our customers.

**Q: Where can partners find more information on the Dynamic Datacenter Alliance?**

**A:** For further details and information on Dynamic Datacenter Alliance, please visit <http://www.microsoft.com/virtualization/en/us/alliance.aspx>. Read the latest blogs here <http://blogs.technet.com/ddcalliance>.

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