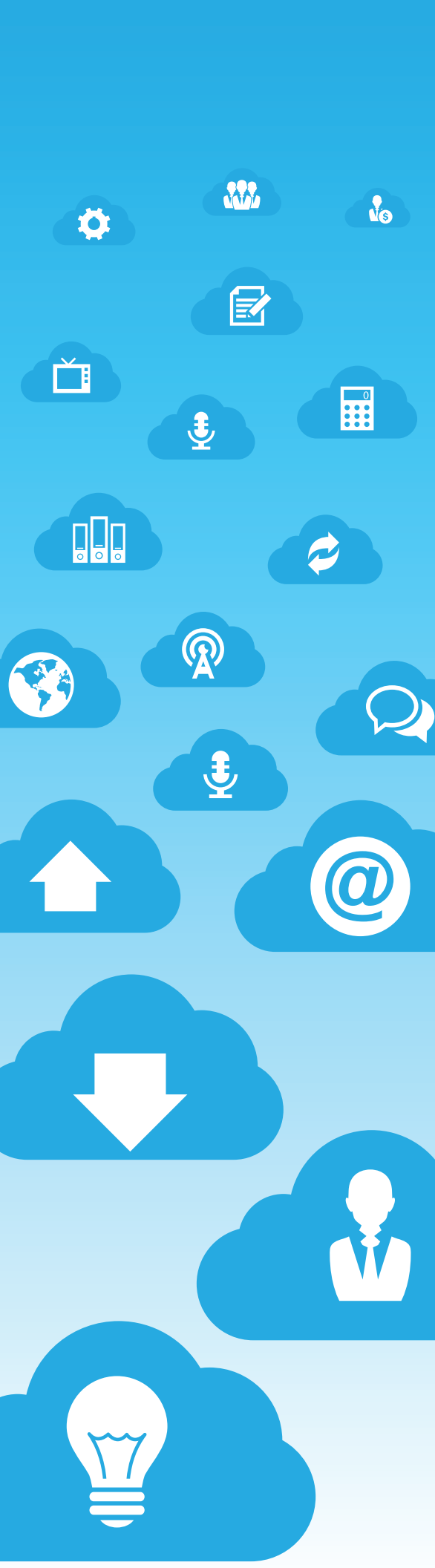


IT GUIDE

DEPLOYING MICROSOFT AZURE AT SCHOOLS





INTRODUCTION

The cloud – unless you’ve been living under that proverbial rock, you’ve at least heard of it. Chances are good that you’re using it in your professional and personal life, as well.

The cloud has grown since its birth, which most experts place somewhere around 2006, which is when Amazon launched Amazon Web Services to put their computer equipment to use during the off-peak period. Since then, cloud technology has grown astoundingly, and now encompasses a very broad range of things, from simple services delivered as applications to entire platforms provided through cloud connectivity.

Cloud technology offers a broad range of benefits for virtually every industry on the planet, and cloud hosting with Microsoft Azure provides substantial advantages to the education sector. It stacks up very well to its competitors, and the licensing options ensure that every organization is able to find the perfect fit.

On the surface, Azure seems pretty similar to other options in the segment, including Google and Amazon. However, that’s just a superficial impression. Digging a little deeper reveals just how wide the gulf is between Microsoft’s offering and its competitors. More and more, Azure is becoming the single most promising cloud solution available, and that applies to organizations in the education sector as much as to the tech industry or any other segment.

Obviously, there are different levels of cloud computing services available, and different organizations will require a different type depending on their specific requirements. These include software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS). Microsoft falls into the PaaS segment, and provides not only the infrastructure (hardware and software located offsite), but also the operating system, web server and coding environment needed.

WHAT IS MICROSOFT AZURE?

Microsoft Azure has been around for some time now, but it has undergone several evolutions over the past several years, bringing new tools and capabilities to the table, expanding operability, and boosting reliability.

Essentially, Azure allows your education organization to “rent” data capacity and capabilities, while utilizing powerful tools through a familiar interface. It’s based on Windows, so the learning curve is small to nonexistent – anyone who’s ever used Windows can easily navigate and utilize Azure.

Azure first debuted back in 2010, but has emerged as the industry leader, which is a significant achievement considering it’s up against the likes of Google, Amazon and Salesforce, three very entrenched veterans.

Why would you need a cloud platform?

A number of reasons could be behind the decision to move to the cloud, some of the most common benefits include:

- No need for a large, in-house IT team
- No need for in-house servers
- No need for proprietary software
- Central resource management
- Resource allocation according to demand
- Pay as you use model
- No need for multiple licenses, saving organizations money and hassle
- No need for manual patching and upgrades (all maintenance and upgrades are automatic)

Today, Azure has been adopted by Fortune 500 companies, mid-size companies and smaller organizations. You’ll find names like Heineken and 3M here, as well as Dyson and Mazda, GE and Towers Watson, but you’ll also discover smaller names that aren’t as familiar. That’s due to a number of factors, including the platforms stability, security and ease of use. Of course, the fact that there are 19 global data centers underpinning Azure doesn’t hurt (which makes it incredibly robust and available around the world at all times).

Microsoft’s cloud computing platform, a growing collection of integrated services – analytics, computing, database, mobile, networking, storage and web – for moving faster, achieving more, and saving money.



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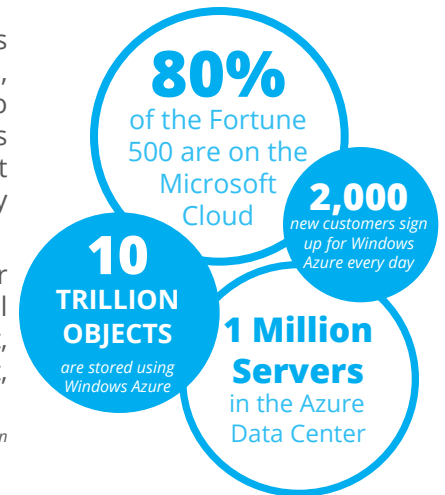
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WHY MICROSOFT AZURE?

Open and flexible, Azure delivers unrivaled productivity to professionals and developers. It's designed to work with existing IT environments, complementing rather than competing with those solutions. It is also designed with the utmost in security in mind, so data protection is seamless and constant. However, perhaps the most important element here is the platform's economical pay as you go format, and the easy scalability, which ensures that it can grow as your needs change.

The Marketplace is an interesting addition, it's a one-stop shop for services and solutions that integrate with Azure and offer additional functionality or capabilities. Customers using Azure are able to host, purchase and manage these solutions from a single access point, greatly simplifying the process.

Only Microsoft Azure Certified services are offered in the attached Azure Marketplace. For users, that means there is no question that the services will offer the interoperability they demand and expect, and there will be no problem with compatibility.



Key Features of Azure

Microsoft Azure delivers an industry-best collection of key features that allow you to do more, with less hassle, ranging from building web and mobile apps, delivering virtual machine scenarios, data processing, and visualizations.

Added features include the ability to run large-scale parallel and batch compute jobs, deploying Windows client apps in the cloud to run on any device, and the ability to easily build and consume cloud APIs. In the area of data and storage, Azure delivers the ability to manage relational SQL databases as a service, provides durable, highly available scalable cloud storage, and offers fully managed search as a service.

BUILDING WEBSITES

Building, launching and maintaining websites is simpler than ever with Azure, and you can use frameworks like ASP.net or you can go with an open source application such as WordPress.

MEDIA CREATION, MANAGEMENT AND DISTRIBUTION

In our media-rich world, the ability to easily create, manage and distribute content is essential. Azure gives you the ideal platform for live or streaming video and other types of media.

BIG DATA SOLUTIONS

Data is the lifeblood of every organization today, including the education sector. Azure delivers tools needed to manage, safeguard and access massive amounts of data.

MOBILE APPLICATIONS

Whether you're developing a mobile app for interoffice use, for student use, or for another reason, Azure accelerates the development, deployment and management lifecycle. It's also simpler to integrate authentication using the most common options, including Facebook and Twitter, Windows Live and more.

MANAGEMENT AND AUTOMATION

Automate even very complex schedules with the built-in scheduler component, and operational insights are easy to glean, both in-house and on the cloud.



Key Features of Azure *(continued)*

PROTECTION

Key Vault is designed to safeguard and maintain control of keys and other sensitive information.

TRAFFIC AND NETWORKING

Azure delivers the ability to provision private networks, balance loads, handle traffic by routing incoming traffic for availability and performance, and more.

MEDIA SOLUTION

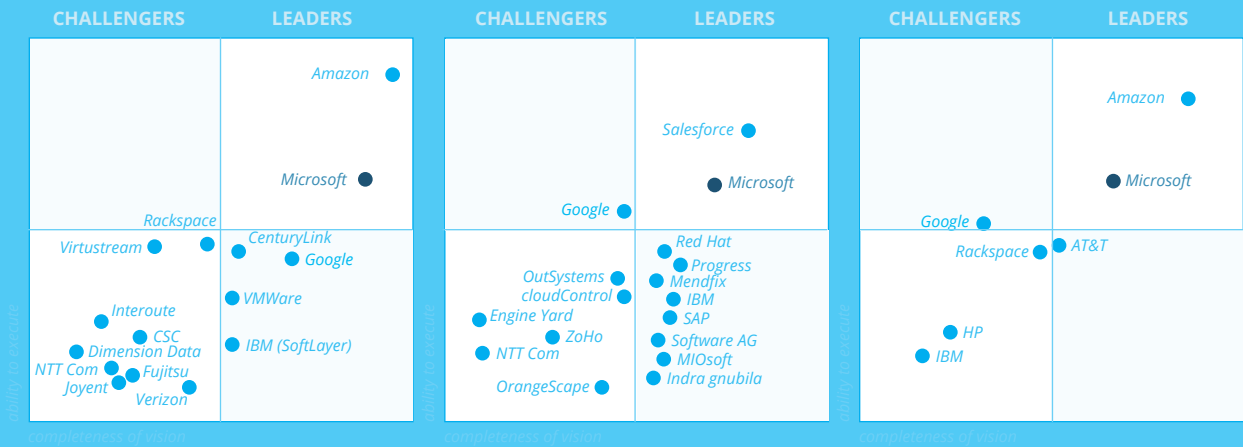
Encode, store and stream both video and audio. The included Azure player works for all of your needs, and you can also enhance the discoverability and accessibility of your media. Content can also be delivered securely for the utmost in protection.

More features include identity and access management, developer services, analytics, Internet of Things (IoT), mobile, and storage.



Comparisons with Competitors

Microsoft Azure has several key competitors. However, Microsoft has been able to position themselves as the industry leader in cloud computing by outperforming competitors in several key areas. In fact, according to Gartner's Magic Quadrants, Microsoft remains the only vendor positioned as a leader in the three core segments: Cloud Infrastructure as a Service, Application Platform as a Service and Cloud Storage Services.



INFRASTRUCTURE

Microsoft outperforms competitors like Google, VMWare, Rackspace, IBM and CenturyLink in infrastructure, offering one of the best abilities to execute.

PLATFORM

Azure's platform trumps competitors in the area of platform, including Google, Red Hat, Progress, IBM, SAP and Zoho, to name just a few.

STORAGE

The only competitor to score higher than Azure in the area of storage is Amazon Web Services, with Google, AT&T, IBM, HP and Rackspace falling behind.

HYBRID FUNCTIONALITY

One area where Azure stands head and shoulders over the competition is in hybrid functionality. In this instance, Microsoft gives users the ability to put one foot in the cloud, while keeping some core operations and functionality closer to home. Tasks that would require a significant amount of time and computing power can be rapidly scaled to the cloud, while others can be maintained on local machines. What's even more interesting is the ability to keep some parts of an application on in-house hardware, while migrating other portions of the application to the cloud.

PRICING

Microsoft takes a pay as you go stance, so your price will depend on what you use and when you use it. There are no upfront fees associated with Azure, and there are no termination fees, so you can cancel at any time. Additionally, per minute billing ensures that you're not spending money on something you're not using. As a final note, the free trial allows you to test the waters without any financial risk at all.

There are four pricing tiers currently offered by Microsoft.

FREE

Gain the ability to host up to 10 apps in a shared environment. Bandwidth and support are available for additional charges, on a pay as you go format.

SHARED

The shared plan allows you to "develop and test in an environment with features such as SSL, domain names and more before production and suitable for low traffic sites.

BASIC

Designed for apps with lower traffic requirements. Gives you the ability to "host unlimited websites/domains and includes built-in network load balancing support.

There are three subsets of the Basic plan:

B1 - 1 core, 1.75 GB RAM 10 GB storage

B2 - 2 cores, 3.5 GB RAM, 10 GB storage

B3 - 4 cores, 7 GB RAM, 10 GB storage

STANDARD

Designed for production apps and gives you the ability to host unlimited websites/domains and includes built-in load balancing, autoscale and backup support.

There are three subsets of the Standard plan:

S1 - 1 core, 1.75 GB RAM 50 GB storage

S2 - 2 cores, 3.5 GB RAM, 50 GB storage

S3 - 4 cores, 7 GB RAM, 50 GB storage

PREMIUM

For building enterprise-grade apps, Premium is the best choice.

There are three subsets of the Premium plan:

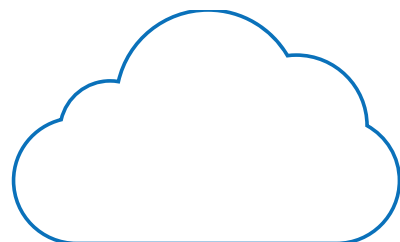
P1 - 1 core, 1.75 GB RAM 250 GB storage

P2 - 2 cores, 3.5 GB RAM, 250 GB storage

P3 - 4 cores, 7 GB RAM, 250 GB storage

Each plan is scalable, with pricing changing depending on the amount of bandwidth and support required, as well as the number of VMs required.

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TOP 10 BENEFITS OF DEPLOYING AZURE AT SCHOOLS

Microsoft Azure delivers a broad range of benefits that apply directly to any education-sector organization, ranging from flexibility to cost-savings and ease of use.

1. YOU AND YOUR TEAM ALREADY KNOW IT

Azure is built on Windows. That means if you know Windows, you know Azure. This is of benefit to developers writing applications and many others. The same programming languages are used here as in Windows, and it's far simpler to create a cloud-version of a Windows app as well.

2. AZURE SOFTWARE DEVELOPER KIT

The Azure SDK includes an operating environment that can run on a desktop machine. Named the Windows Azure Development Fabric, it also includes storage and the Azure agent. The benefit here is that development and debugging can be done on a local machine, and then the app can be easily moved to the cloud. Microsoft also makes a wide range of other tools available for download with their SDK.

3. SCALABILITY TO THE NTH DEGREE

One of the most interesting benefits of Azure to education-sector organizations is the ease of scalability. With Azure, you can create an application and then scale to any number of users without the need to change a single line of code. Whether you have 10 users or 10,000, it's that simple. Once an app is created, you simply specify the number of users. As more users adopt the app, you simply change the settings so more processors are available. It's never been simpler to meet changing usage needs without incurring additional problems.

4. 64-BIT BENEFITS

All apps running in the Azure environment operate on their own virtual machine, which exists within the 64-bit Windows Server 2008 OS. The hypervisor here is designed just for cloud use, and there's no need to supply your own virtual machines. You also don't have to worry about maintaining the operating system (all apps are developed using web role and worker role instances that operate on their own machines). The Windows Azure Agent ensures that all apps are interoperable with other components within their own virtual machines. That means no worries about hardware.

5. SAVE BIG

By utilizing cloud-based resources, you're able to reduce your use of and reliance on on-premises hardware and software. This allows you to reduce IT costs dramatically. Additionally, because you only pay for the bandwidth and processing power you're using at the time, you'll find that creating, testing, debugging and disturbing apps is far more affordable.

6. A CLOUD-BASED DATA CENTER

Having your own data center is out of reach for many organizations. SQL Azure gives you all the benefits of an enterprise-class data center in the cloud, without those traditional issues. That means you benefit from automatic failover, redundant copies of data, reliability and high availability at all times, without having to worry about backing everything up on your end. SQL Azure is very similar to SQL Server – it's a relational database model that stores data the same way. However, it's spread across multiple physical computers to provide additional flexibility.

7. THE RESOURCES YOU NEED FOR SUPPORT

We've mentioned the familiarity you'll have with Azure because it's based on Windows, and that applies to the integrated support structure in Windows. You get access to things like MSDN and TechNet, as well as the Windows developer ecosystem, and the support built into every Microsoft product. In short, there's always someone available to help if you have questions or encounter a challenge.

8. IT HAS WHAT YOU NEED

While it might seem impossible for something to be everything to everyone, Azure actually achieves it. There's something here for everyone. Hosting providers, systems integrators, custom developers and pretty much anyone else will find that Azure has the tools, capabilities and solutions they need. From creating, deploying and managing web apps to working with in-house infrastructures and creating software solutions tailored for specific needs, it's all right here.

9. CUTTING EDGE SECURITY

The spike in hacks, malware and other threats has organizations around the world understandably nervous. However, Azure bakes in robust security from the very beginning. You'll find that identity integration and management is simple with the .NET Access Control Service, and user access management is a snap with Security Assertion Markup Language tokens. The compliance framework within Azure was designed from the ground up to meet regulatory requirements.

10. INTEROPERABILITY: HYBRID FUNCTIONALITY

We mentioned Azure's hybrid focus previously, but let's touch on it again. You can easily develop hybrid applications that connect your in-house apps and programs to cloud-based resources and services, ranging from storage services to databases and more. This applies to communications services as well, which work between your apps, the cloud and mobile devices alike. All open standards and Internet protocols are also supported, including REST, XML, HTTP and SOAP. There are also tools for a wide range of languages, from Ruby to Java and more.

When everything is said and done, Azure allows you to build your infrastructure, develop modern applications, easily gain insight even from complex data, and manage identity and access across your ecosystem.

CASE STUDY - <https://customers.microsoft.com/Pages/CustomerStory.aspx?recid=2424>

CONCLUSION

In the end, it should be clear that Microsoft Azure is the ideal solution for organizations in virtually all industries and industry segments. For education-based organizations, it delivers powerful solutions to pressing problems, alleviating costly headaches and bottlenecks, while making it simpler to develop cutting edge tools for staff, students, clients and more.

The scalability means this platform can grow as your needs change, ensuring that there is no need to switch platforms once your needs have grown beyond a certain point. Azure is part of your organization for life, and that should offer peace of mind for all involved.

Because it works with your existing IT infrastructure, there is no need for costly hardware purchases, and there's no reason you should have to abandon your in-house solutions. Azure integrates completely with these, connecting them to the cloud in new, innovative ways while protecting privacy and data security.

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