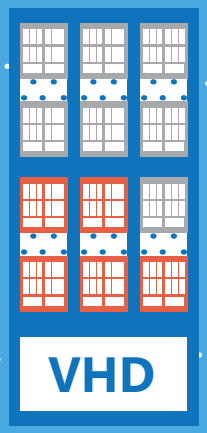
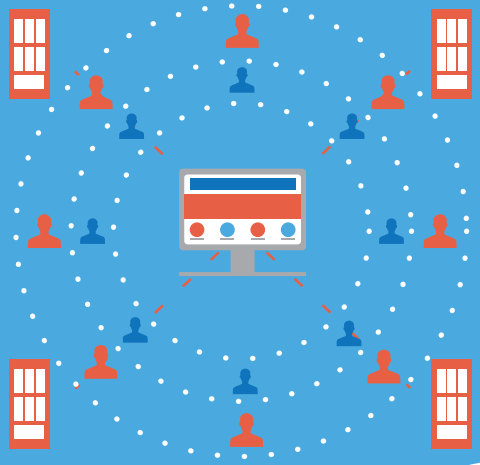
CIO's Guide to Microsoft Azure





Microsoft Azure

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Microsoft Azure

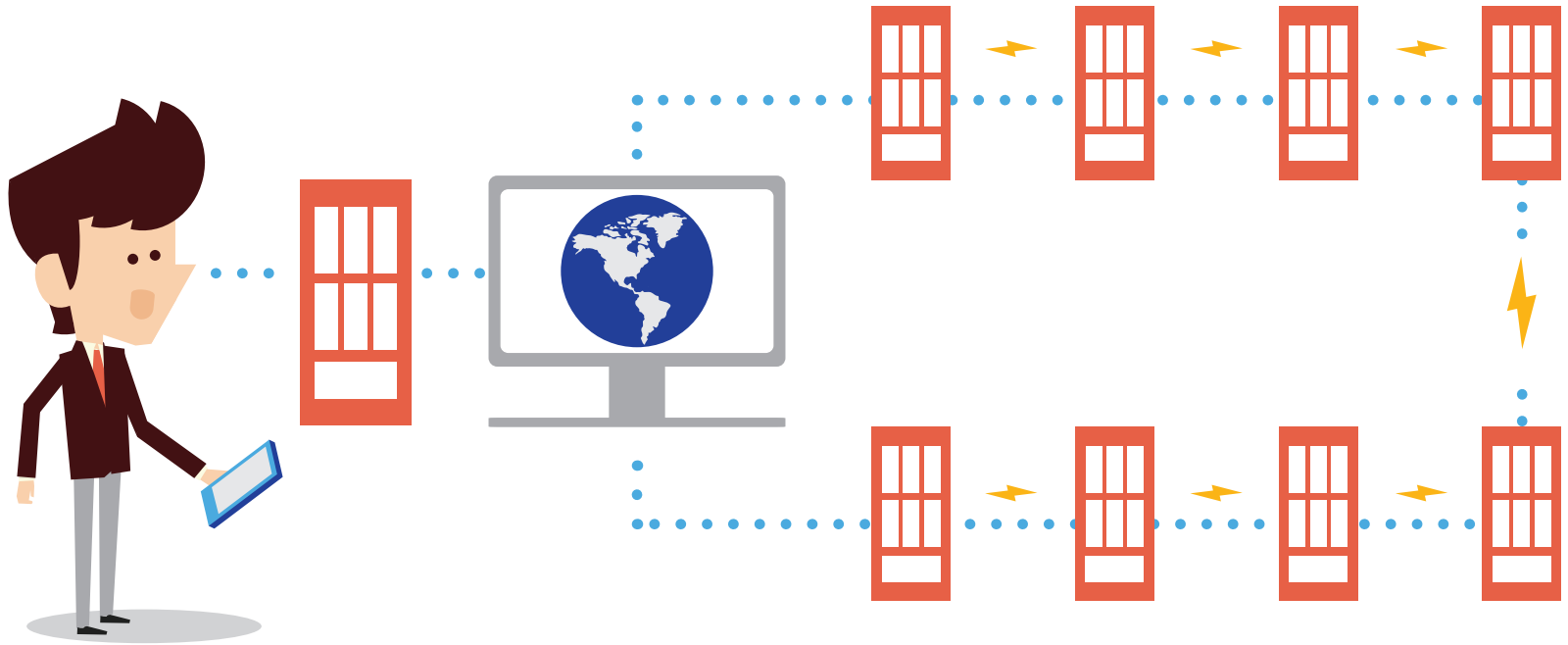
WHAT IS MICROSOFT AZURE?

For most of us idle wanderers of the interwebs, it's easy to imagine that all the websites and applications we come across in our net travels exist in some invisible realm watched over by armies of tech wizards. Of course, in reality all the information that gets channeled to our devices has to be stored in some physical location, and for applications to work data has to be processed by an actual machine somewhere.

Microsoft Azure

WHAT IS MICROSOFT AZURE?

Until recently, most of the computing people did relied on their device's own hardware. Next, we started pulling information from other machines so we could view various types of web content. Then those websites began performing more and more tasks for us, so we were effectively using distant machines to do our computing and simply using our own devices as portals to the resulting output.



Microsoft Azure

WHAT IS MICROSOFT AZURE?

Official Definition:

"Azure is an open and flexible cloud platform that enables you to quickly build, deploy and manage applications across a global network of Microsoft-managed datacenters. You can build applications using any language, tool or framework. And you can integrate your public cloud applications with your existing IT environment."

Microsoft Azure

Microsoft Azure

WHAT IS MICROSOFT AZURE?

With the rapid expansion of the market for mobile devices and businesses' increasing reliance on ever-larger volumes of data, the idea of outsourcing your storage, processing, and hosting functions to third-party companies developed into what today we call the cloud. Azure is Microsoft's general-purpose name for their cloud offerings in these domains.

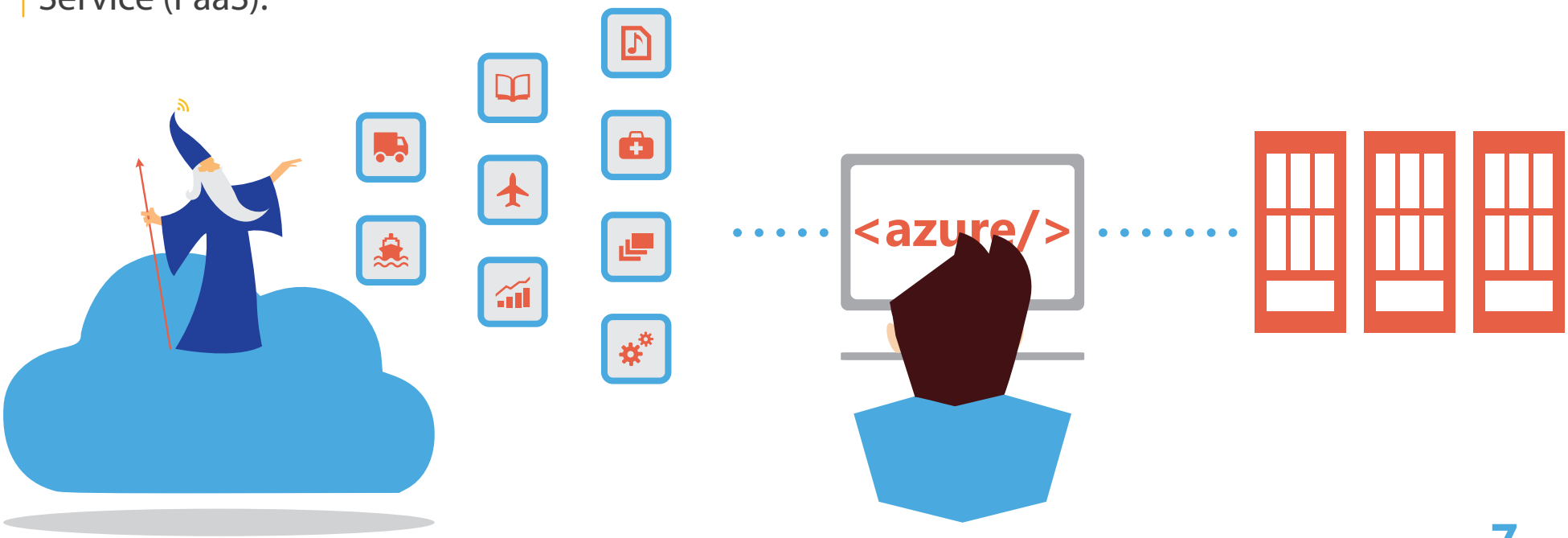
FACT: 57% of Fortune 500 companies are using Azure

Microsoft Azure

WHAT IS AZURE USED FOR?

Cloud Services:

Azure can be used as a platform for building and deploying applications. Your developers create the code with tools provided by Azure, and then virtual machines execute the application using Windows Server. Since the development and hosting tools are purchased through a subscription, Azure Cloud Services is an example of what's called Platform as a Service (PaaS).



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WHAT IS AZURE USED FOR?

Cloud Services (cont'd):

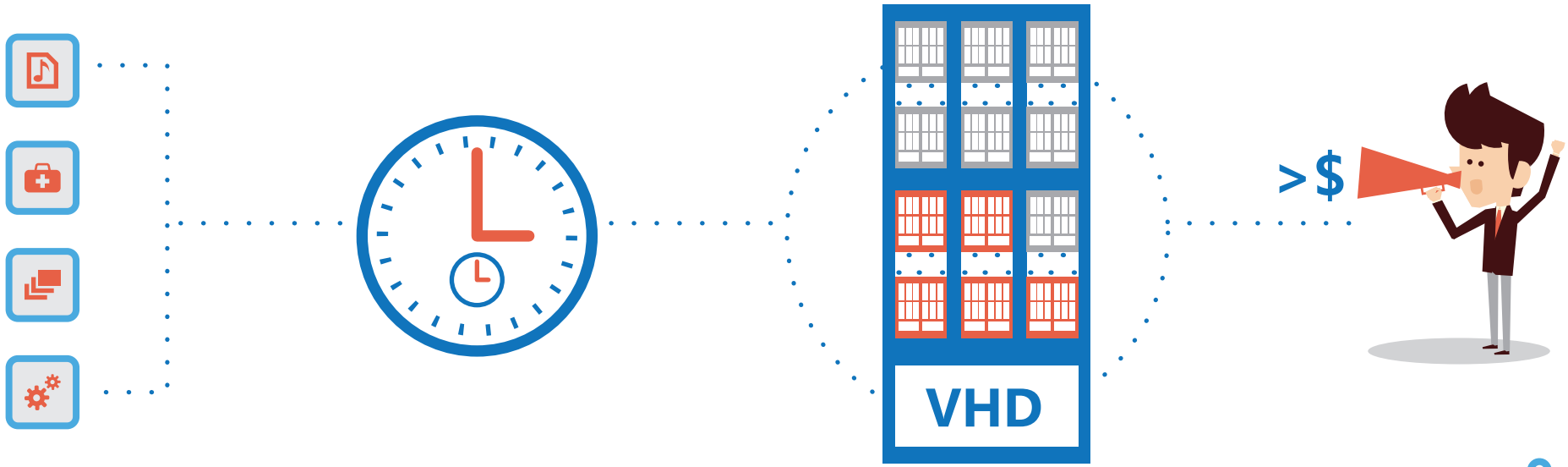
Your application will run on virtual machines, but unlike with the Virtual Machines services, Azure will install the operating system and continuously update it with any new patches. You can use Cloud Services to create different roles for users—web users and workers—and it's really easy, as it is with all Azure tools, to scale up or down to accommodate more or fewer users. So you only ever pay for the computing power that actually gets used.

Microsoft Azure

WHAT IS AZURE USED FOR?

Virtual Machines:

Azure gives you the ability to create VMs simply by specifying the size and the Virtual Hard Disk (VHD) you want to use. The VHD is the virtual version of a hard drive on a conventional computer; it's where all the files and applications are saved. Azure provides access to both Windows and Linux VHDs, so developers have the freedom to choose what they want to work with. You pay according to how much time the VM is actually running. Developers can use VMs to build and test applications quickly at low cost.

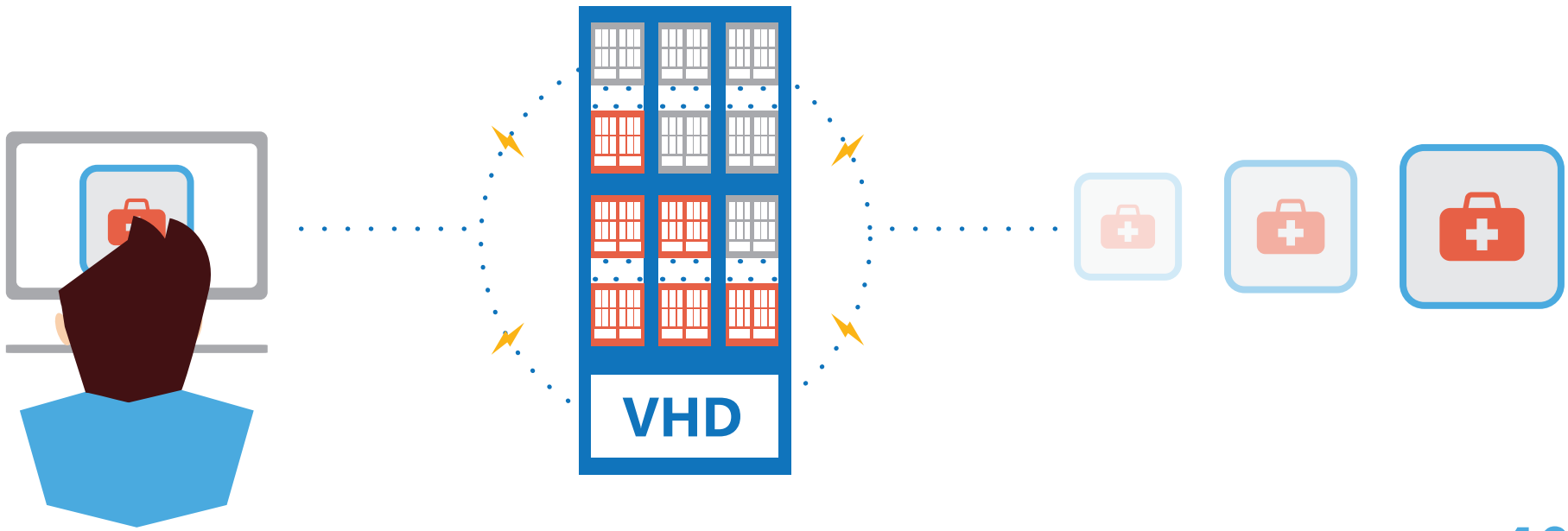


Microsoft Azure

WHAT IS AZURE USED FOR?

Virtual Machines (cont'd):

You can also use VMs to augment on-site datacenters to boost the power of applications like SharePoint. Since Azure Virtual Machines essentially gives you the computing substrate for your applications through a service subscription, it falls into the category of Infrastructure as a Service (IaaS).

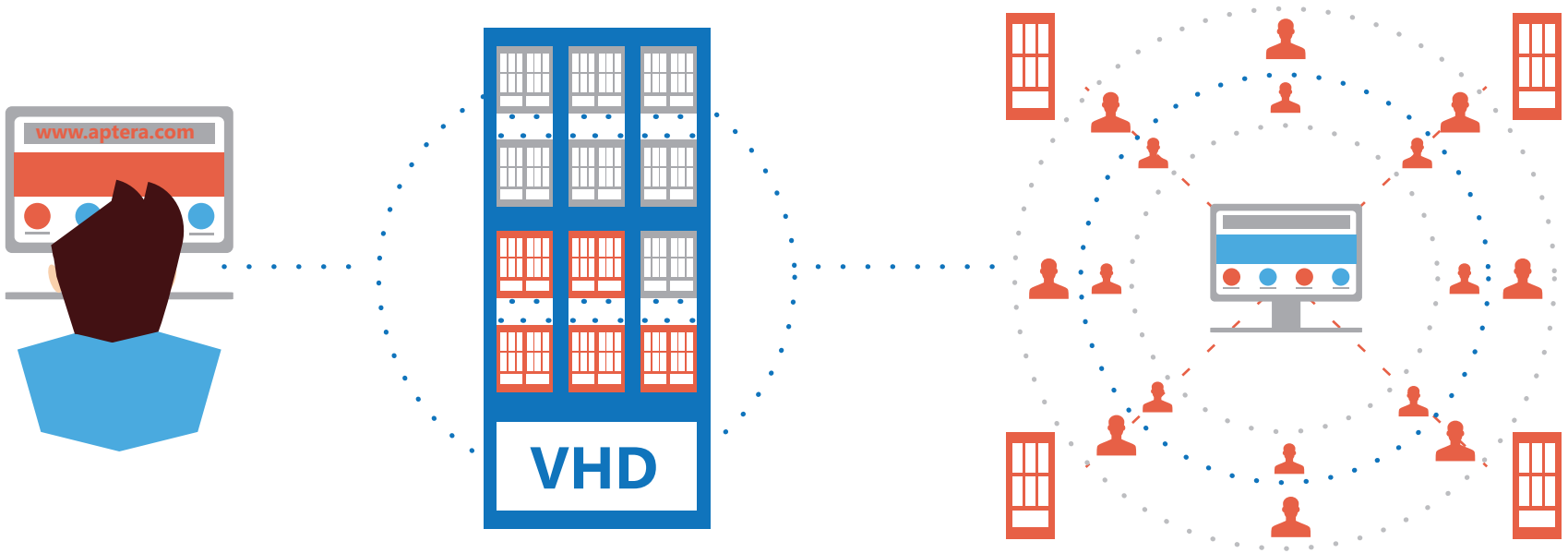


Microsoft Azure

WHAT IS AZURE USED FOR?

Web Sites:

You can use Azure as a platform for creating and hosting websites and web applications. Web Sites supports several different development tools and content management systems. And it provides a low cost way to make your site available to however many visitors use it without having to maintain or upgrade any on-site servers.



Fact: >250,000 active websites on Azure

Microsoft Azure

WHAT IS AZURE USED FOR?

Mobile Services:

Like Cloud Services, Azure's Mobile Services give you the tools to create and deploy applications, but obviously in this case the apps are used on mobile devices. The information that gets accessed by the app running on your device is stored in what's called a back-end database, and so Mobile Services is referred to as mobile Back-end as a Service (mBaaS). With Azure, you can build apps for Android, iOS, HTML/ JavaScript, and Windows Phone.

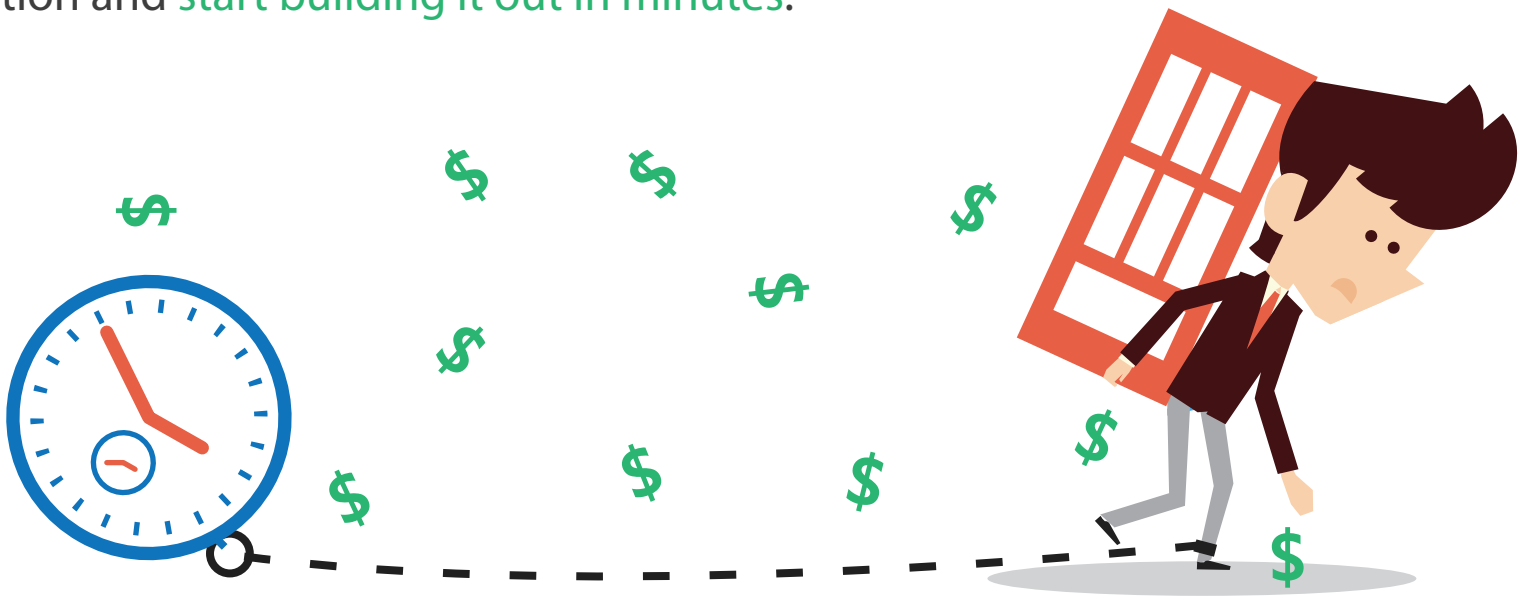
Microsoft Azure

WHY DO BUSINESSES WANT TO USE SOMEONE ELSE'S HARDWARE?

You get three basic advantages from using cloud platforms and infrastructure as opposed to on-site machines.

1. Speed

Purchasing new servers, configuring them, and integrating them into your existing environment tends to be both costly and time-consuming. With Azure, you can set up an application and start building it out in minutes.

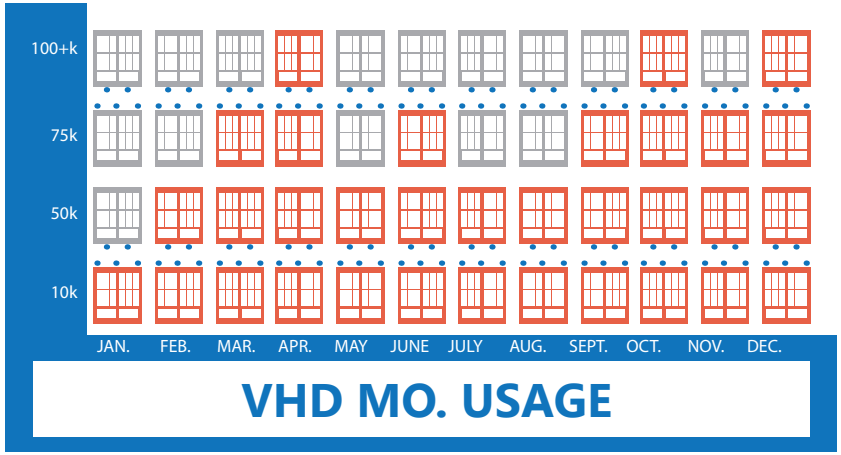


Microsoft Azure

WHY DO BUSINESSES WANT TO USE SOMEONE ELSE'S HARDWARE?

2. Scale

Demand for your applications may be variable throughout the year (think tax return filing software). Or you may expect a low number of users at first followed by huge growth as your application catches on. You may even expect usage to the decline, maybe because you're launching another application. Scaling up with your own on-site servers means purchasing and provisioning them to accommodate growth. And once the servers are in place you still have to maintain them even if they're not being used.

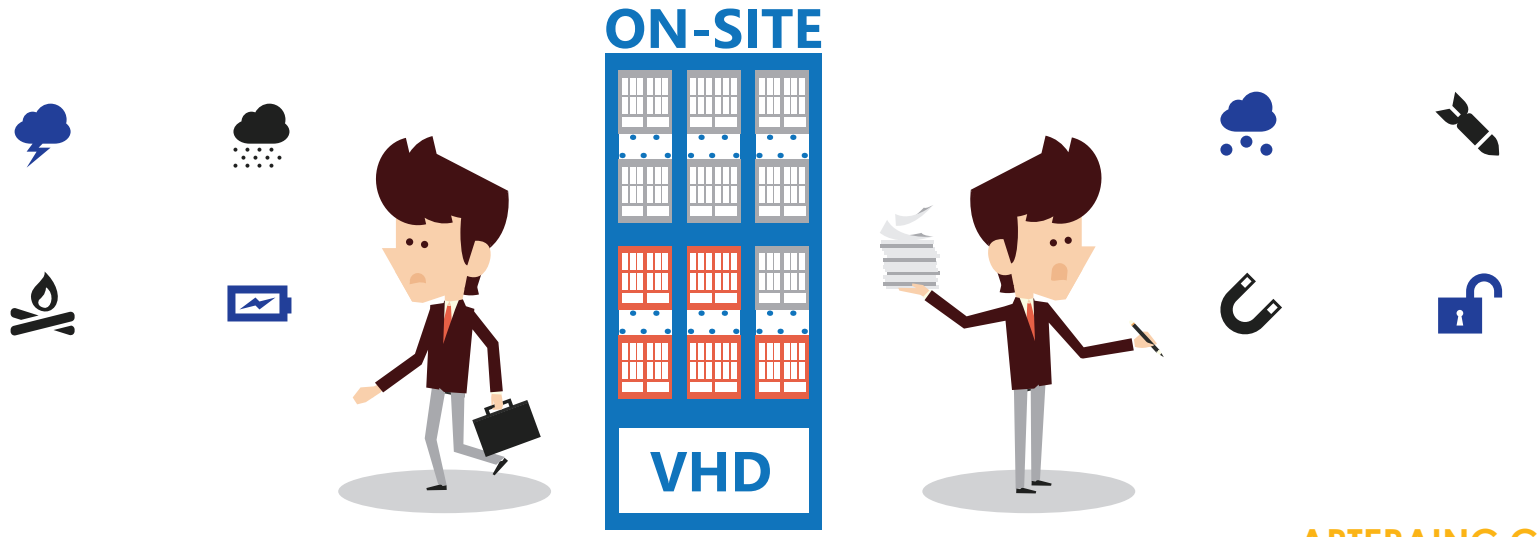


Microsoft Azure

WHY DO BUSINESSES WANT TO USE SOMEONE ELSE'S HARDWARE?

3. Economics

If you're expecting your application to start slow and then gain momentum—and who doesn't want this to happen?—then you will probably start off with more processing capacity than you actually use. And if usage declines after a peak you'll have a similar problem. With Azure, you only pay for what you use. On-site server farms also require a lot of maintenance: climate control, electricity, disaster recovery, backups, security. Moving to the cloud means freeing up your IT staff so they can focus on new projects instead of routine maintenance.

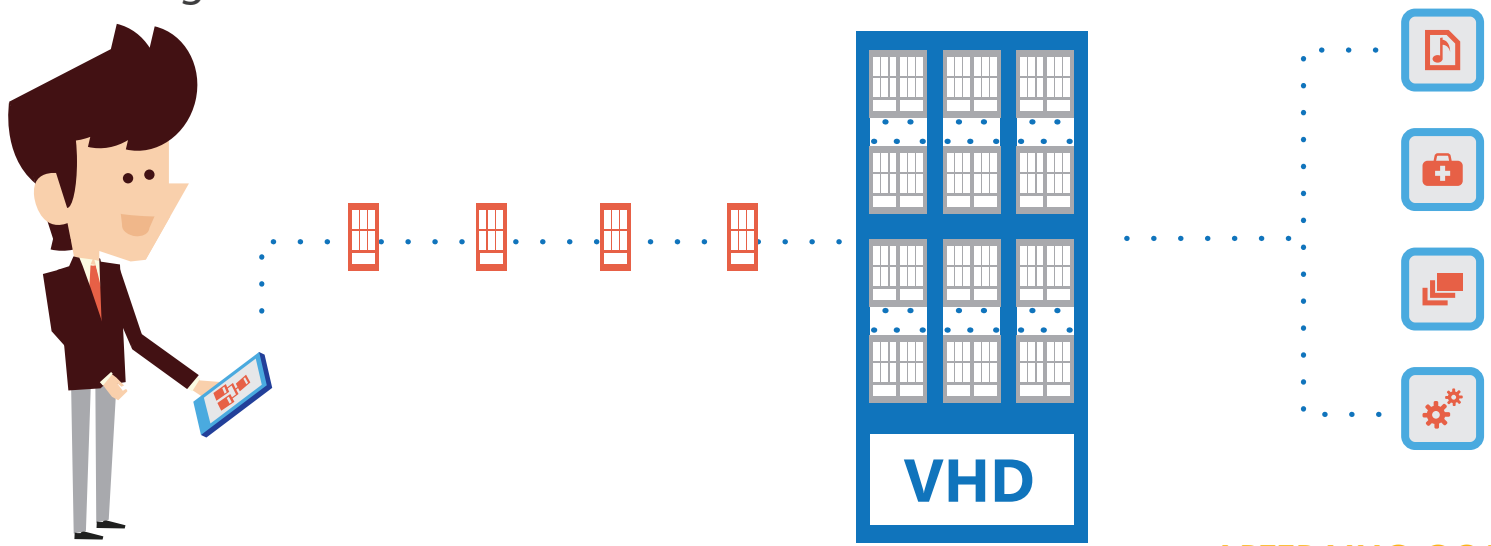


Microsoft Azure

WHAT ARE THE ADVANTAGES OF VIRTUALIZATION?

You can make use of virtualization in your on-site datacenters, but if you're using Azure you'll definitely be relying on virtual machines to one extent or another. To create virtual servers on physical servers, you use software that sets up divisions between each virtual machine (VM) and allows them all to operate independently. What this does is add a layer of abstraction between your information and the physical infrastructure that hosts it. This in turn gives you more flexibility in how you manage and protect the various elements of your computing environment.

The main advantages of virtualization come in four basic areas:

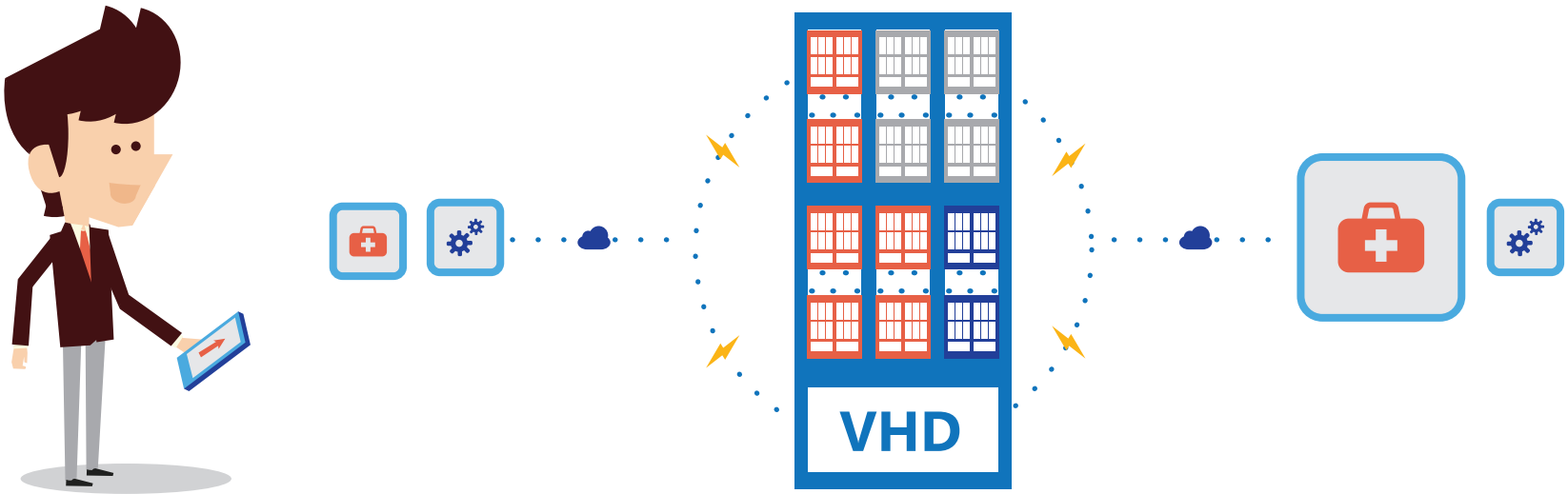


Microsoft Azure

WHAT ARE THE ADVANTAGES OF VIRTUALIZATION?

1. Efficiency

Some applications may require relatively little processing power to run. By virtualizing your servers, you make it possible to devote an entire VM to each application. And by hosting multiple smaller servers on one large physical server you can significantly reduce overall energy costs. The VMs aren't restricted to their physical servers either. So if you need more power to run them it's really easy to pull in other machines to host them.

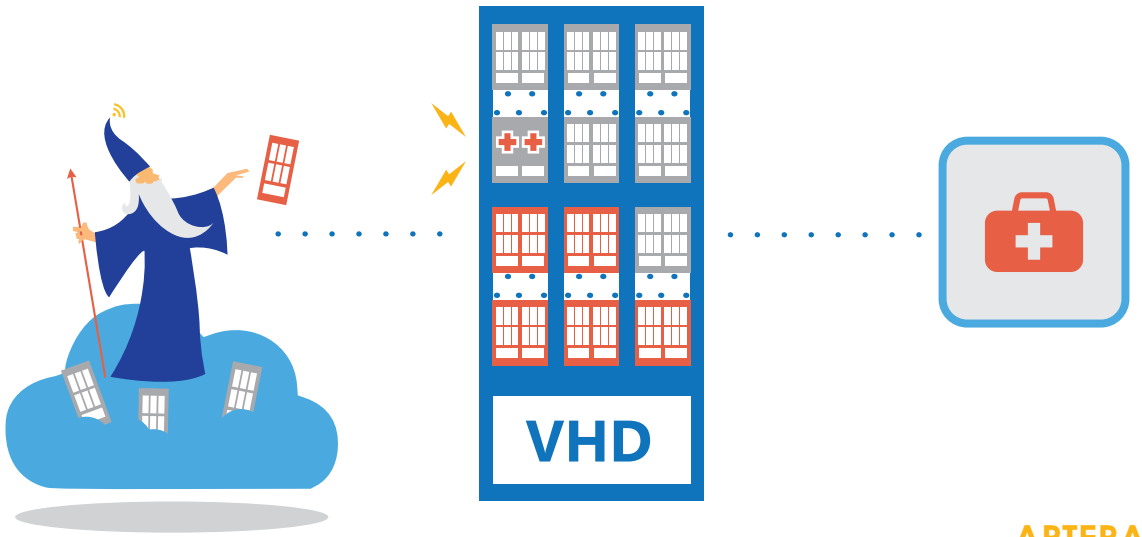


Microsoft Azure

WHAT ARE THE ADVANTAGES OF VIRTUALIZATION?

2. Resilience

With Azure, each of your VMs is ready to go on more than one actual machine. That means built-in redundancy if something goes wrong with an application. If your VM picks up a virus or some malware, it can simply be shut down without disrupting the operation of your application. And of course there's also the assurance that if some type of natural disaster occurs the datacenter running your applications is secure—even if an entire Microsoft datacenter goes down there are still extra layers of redundancy.

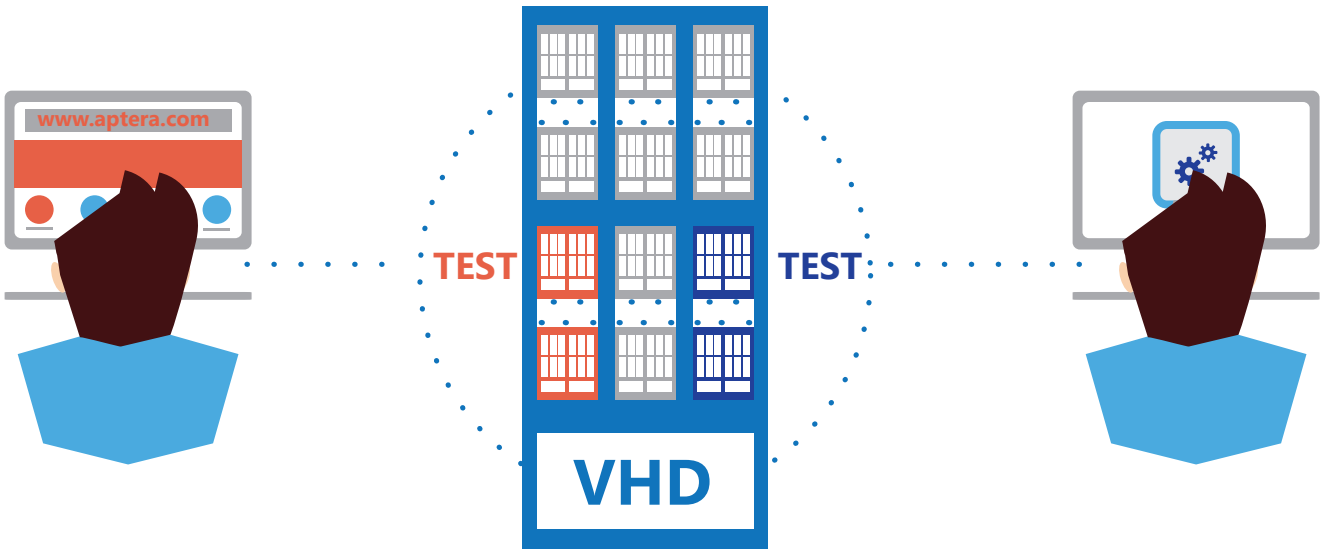


Microsoft Azure

WHAT ARE THE ADVANTAGES OF VIRTUALIZATION?

3. Testing

It's much easier to set up a VM than it is to purchase and provision a physical server. And you can never be sure running a new application won't somehow affect existing applications running on the same machine. So developers often use VMs to build and test applications. This allows you to isolate them while still avoiding much of the costs of a new server.



Fact: Azure includes over 300 services spanning Compute, Storage, and Networking.

Microsoft Azure

WHAT ARE THE ADVANTAGES OF VIRTUALIZATION?

4. Migration and Running Upgrades

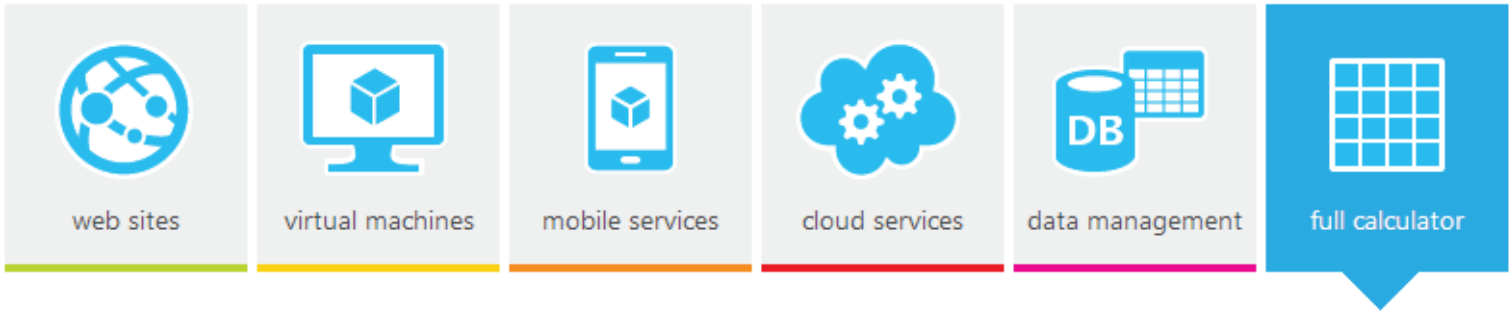
With VMs, you can keep your entire system up and running while you develop or update new applications. You could in principle move your entire environment into Azure while you replaced the whole thing and still have little or no downtime. You can even send a VM to a client or an employee in a distant location so they can have the boosted processing power they need.

Microsoft Azure

HOW MUCH DOES AZURE COST?

Unfortunately, there's no simple way to answer the cost question because pricing for Azure is based on variables along several dimensions. The cost of Cloud Services, for instance, is determined by the number of VMs (which are also called instances), the size of the VMs, the amount of memory they need to run, how much bandwidth they use, and what kind of support you need. Cloud Services can run anywhere from $60 a month to over $60,000 a month. And right now Microsoft is offering all kinds of special deals to businesses as an incentive to make the move to the cloud.

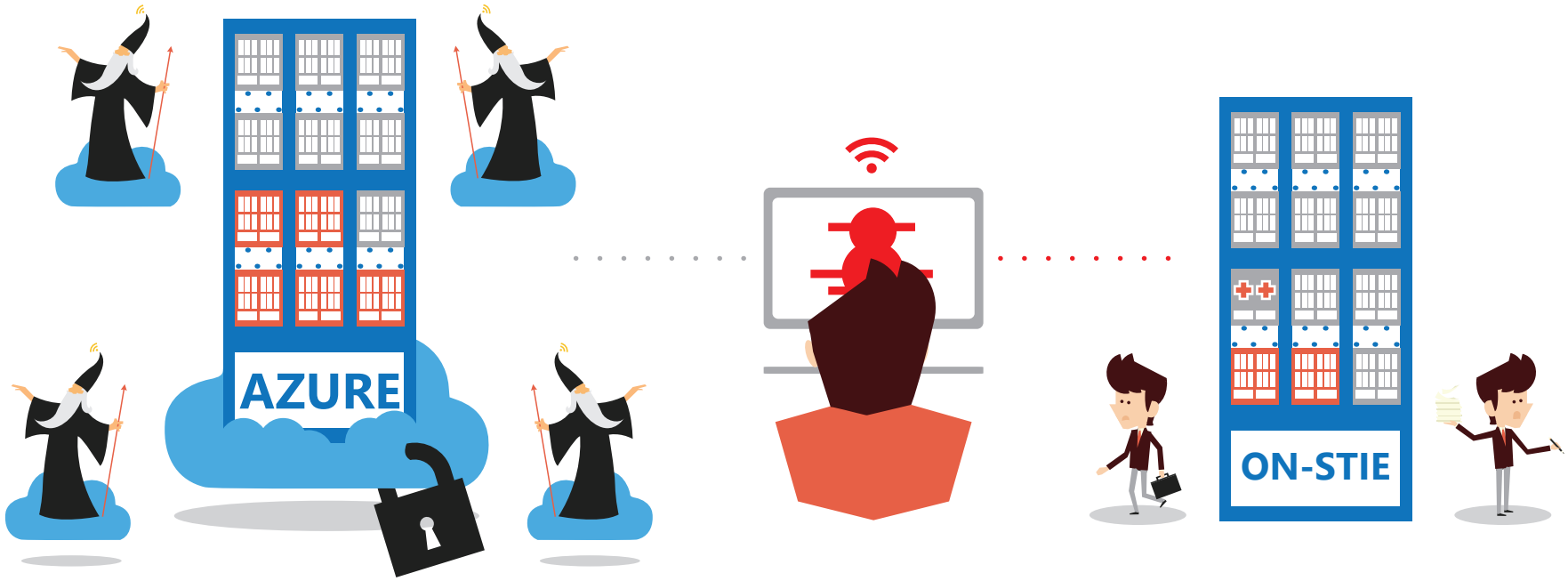
The best way to get an idea of what your costs may be is to go to the Azure website and play around with the cost calculator they provide. Here's a link: COST CALCULATOR



Microsoft Azure

IS AZURE SECURE?

When CIOs are polled, the most common concern they cite about the cloud is security. In many ways, these concerns are misplaced, since all the security breaches we've heard about recently—like Target for instance—have involved conventional on-site computers. Cloud computing is actually more secure than using your own servers for many of the same reasons that keeping money in the bank is safer than stuffing it under your mattress.



Microsoft Azure

IS AZURE SECURE?

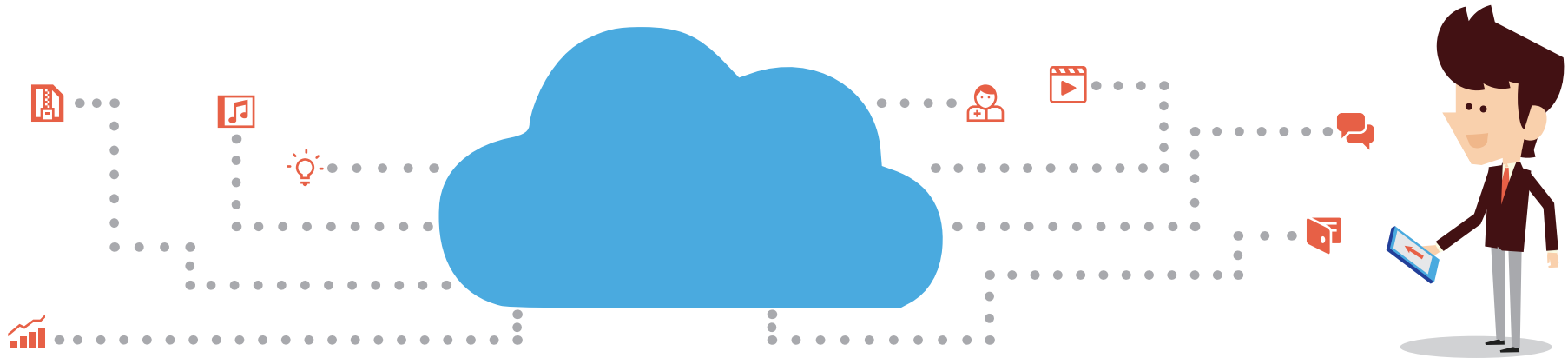
Microsoft's datacenters are like Fort Knox: access is restricted with RFID and biometric controls. Data is encrypted both at-rest and in-transit. And you can use various types of added safeguards, like multifactor authentication for signing in. Recently, however, Microsoft has responded to security concerns by offering what's called elliptic curve cryptography (ECC) for their platform services. This is an incredibly robust encryption technology, and certifications require that extraordinarily stringent demands be met.

For more details about Azure security measures check out this white paper: AZURE WHITE PAPER

Microsoft Azure

HOW DOES AZURE STACK UP AGAINST THE COMPETITION?

The market for cloud technologies and services is dynamic and rapidly evolving. Amazon was the industry pioneer with their cloud storage and infrastructure services, and it was only in 2013 that Microsoft really started making a push into the market. There's no simple way to summarize the scenarios in which one competitor is better positioned to meet your company's needs because the considerations are both numerous and intricate. But we can point you to the best independent source for in-depth industry research and recommendations, Gartner, Inc. And it's interesting to see what Gartner's experts have had to say about Azure as Microsoft has been making headway into the cloud market.



Fact: >20 trillion storage objects in Azure, delivers 2 million requests per second

Microsoft Azure

HOW DOES AZURE STACK UP AGAINST THE COMPETITION?

In June of 2013, Gartner researcher Eric Knipp summed up the field thus:
"If you could aggregate many evaluation criteria into one measure—appropriateness for strategic adoption—one solution has established itself as a leader for .NET applications in each cloud model: Windows Azure for public PaaS, AWS for Windows Server running on public IaaS and Apprenda for private PaaS. Other offerings are beginning to mature and create real competition for developer attention. In the public cloud, increased competition from Microsoft has forced Amazon Web Services to up its game and to start treating Windows Server VMs and Windows developers as first-class citizens. Likewise, Microsoft has been forced to innovate and expand Azure into IaaS. Developers benefit from this competition."

Microsoft Azure

VS

amazon web services™

Microsoft Azure

HOW DOES AZURE STACK UP AGAINST THE COMPETITION?

Knipp goes on to describe the Cloud Services situation like this:
"The PaaS offerings considered in this segment all share some characteristics. For example, when compared with Microsoft Windows Azure, they are all simpler PaaS environments in terms of number of features and capabilities. They have fewer options, adjacent services and tooling integration. This should make them easier to get started with than a complex and more powerful platform such as Windows Azure. However, ease of use is typically more about tooling and workflow, and none of these environments comes close to Azure (or AWS) in the quality of its tooling. Simply put, Microsoft's control over the .NET stack and its associated Visual Studio tooling is a tremendous advantage over would-be PaaS competitors."

Microsoft Azure

HOW DOES AZURE STACK UP AGAINST THE COMPETITION?

Gartner released their Magic Quadrant Report in January of 2014, and it shows that Microsoft's efforts to take over the cloud have been paying off. In the IaaS category, Azure is second only to Amazon Web Services, and Azure is gaining fast. In the PaaS category, Azure is alone with Salesforce in the Leader's quadrant. Salesforce, who just began a partnership with Microsoft, is still the leader in this area. The cloud storage company Nasuni recently tested the leading cloud companies in the storage category, and this year Azure pulled ahead of the pack for the first time. Taking all cloud dimensions and services together, Azure has already taken a significant lead. And it seems Microsoft is only getting started.

Fact: NBC Sports streamed the entire 2014 Olympics with Azure. >100 million viewers

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ABOUT APTERA

With offices in Fort Wayne, IN, and Nashville, TN, Aptera is home to one of the most talented software and web design teams in the country. Since its founding in 2003, the Aptera team has grown from a two-man operation to an organization with over seventy employees serving businesses all over the country. A Microsoft Gold Certified Managed Partner, Aptera's team has experts in SharePoint, Business Intelligence, .NET Development, Cloud Computing, Microsoft Lync, and more. We're equipped to step in at any stage of your business's project, from analyzing workflows and installing data-tracking modules to building custom software or a new web site, and from optimizing your search rankings to moving you into the cloud. We believe the key to our success has been hiring excellent people, giving them the resources they need, and encouraging them to treat every project as the basis for a lasting partnership.

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