Whitepaper Healthcare IT – A Decision Maker’s Guide to Cloud Computing and Managed Server Hosting

This document explains the difference between dedicated, virtual, public cloud, and private cloud hosting environments; along with essential information that healthcare professionals may require. We introduce the concept of virtualization, its many benefits, and the reasons why it effectively contends with dedicated hosting services. Virtualization has created new possibilities and opportunities for the healthcare segment of technology. Healthcare IT professionals specializing in virtualization technologies have recently found more attractive and lucrative opportunities, especially with the new Healthcare Reform and healthcare IT initiatives introduced during the Obama administration. Virtualization is the technology behind cloud computing, and it makes a vast pool of network resources a genuine possibility.

Basic Hosting Definitions:

Managed Server Hosting: Managed server hosting is a phrase used to describe the way a hosting plan is designed to function. Managed hosting is the better way to host your critical infrastructure, providing high security and fully redundant backup power supplies, 24/7 monitoring and access, around-the-clock engineers, and much more. Managed hosting revolutionized the way organizations established their working presence on the Internet, which enabled them to conduct online business simply and effectively. Managed hosting handled by the Service Provider is ideal for organizations that don’t have the time, resources, or operational expertise to handle server operations, applications, and upkeep of key infrastructure. Organizations that have a need for dedicated resources generally choose a managed server hosting option.

Dedicated Virtualization and the Structure of a Private Cloud: Private cloud technologies have revolutionized the way the Internet accesses information online. Using technologies such as VMware, XenServer or Hyper-V, a private network is set up with an operating system that uses very few system resources. This creates the possibility to include more than one virtual server on one physical hardware server. It creates a more efficient usage of system resources and delivers content faster than dedicated server solutions do. It’s all a matter of receiving as many resources as you need. Server A might only need a single core and 4 GB of RAM to function properly, while server B might need a custom-tailored cloud hosting solution. Grouping more than one virtual server per physical hardware server also keeps costs affordable and within the spending budget for almost all businesses! There’s no need to overpay for resources that you might not need at any given point. The scalability that cloud hosting creates is unprecedented. Public clouds are also created using virtualization technology and utilize the same shared hardware, providing a more cost-effective way to use cloud hosting as a business solution. Public and private clouds only differ in how they use the physical hardware. Public clouds share their resources, while private clouds are linked to dedicated hardware designed to serve a single purpose. With a public cloud, you can opt only to pay for the services you use. You can pay per hour, day, week, month or even year. Server applications that utilize fewer resources will be able to take advantage of the functionality of cloud hosting without any exorbitant fees.

Section I: How To Understand What Your Hosting Needs Are and How They Relate to Cloud Computing

Cloud computing, by the right Service Provider, offers a higher level of security and the ability to alleviate the problem of multiple physical server locations. All server resources are shared on the cloud, making any maintenance efforts and customizations faster than ever before. Private clouds are much more reliable and robust than public clouds. Public clouds have to serve a great majority, while private clouds are designed to serve a select few. Even though cloud computing is a much more efficient and faster way of doing business, public clouds fall short in ability when
compared to private clouds. If you are an enterprise class business or an organization with large computing resources and bandwidth requirements, you may want to choose a private cloud. However, although they more easily meet compliance requirements and have higher uptime guarantees, they cost more than the public clouds, which is something to take into consideration when deciding which cloud option to choose. Organizations that demand fewer resource-intensive applications and are simply looking for a low-cost infrastructure and online presence will be more attracted to a public cloud hosting solution. Public clouds are relatively inexpensive and offer the same essential features as a private cloud without the need for resource-intensive dedication. All users of public clouds are provided the resources they need according to the current server resource demand. Everyone shares the same resources, and unless your application is extremely taxing on the server, public clouds are a perfectly viable solution to help your organization prosper. If your organization is currently using dedicated hosting solutions with underutilized servers running only a few programs, you will love cloud computing. Cloud computing has all of the resources and system processes running through a shared medium. Even on the private cloud, resources are allocated according to the current demand on the server configuration. If you have deployed a huge server infrastructure in the past and had no choice but to accrue multiple physical servers, you now have a new option with cloud computing. Cloud computing groups together everything you need to run your server applications and does it more efficiently than ever before. The cloud era alleviates waste of system resources, hardware, and employees with nothing to do. Cloud computing makes sure everything is streamlined and handled with extreme efficiency.

Section II: The Versatility of Cloud Computing, Private and Public Clouds

Because everything about cloud computing is based on a virtual schematic, scalability – for both upgrades and downgrades – is much simpler. Scalability doesn’t require any of the physical labor that was once a big part of dedicated server solutions. Instead, upgrading and downgrading of virtual servers and features is done with the click of a button. New virtual servers can be brought online to serve a company’s growing demand and escalating requirements with ease. Cloud computing is the new hosting standard for flexibility, scale and cost-effectiveness. While server upgrades and the addition of new servers used to be a manual process, cloud computing changed all that. Now, in association with current server demands, cloud servers automatically create new virtual servers to handle the increase in resource demands. This keeps employees from having to perform repetitive tasks and operations that a cloud configuration is capable of handling by itself. As new virtual servers are added to keep up with the increase in demand, new machines are enabled and put into use. This keeps any growth in demand from ever being able to affect the overall performance of the cloud network.

Section III: Which to Choose: Managed Hosting, Public Cloud or Private Cloud?

As an overview, managed hosting is much more expensive than public and private clouds. Usually reserved for organizations with exacting standards and resource requirements, managed hosting solutions still hold a great deal of the market share. However, public and private clouds have all the features of a managed hosting solution, without the need for continual upkeep of the servers. There is much less need for expansion operations than that which is required with dedicated server solutions. Large organizations with rigorous requirements should opt for a private cloud. While more expensive, it has the most options and features available for customization. Plus, larger organizations are simply not designed for a public cloud, as they require too many system resources for it to be a viable solution. Although there is no such thing as one-size-fits-all in cloud computing, a lot also depends upon the applications being provisioned and the utilization of the machines. Small organizations that require fewer resources could be better suited for public clouds, as they can more adequately share system resources without causing a conflict. If your application doesn’t need a large-scale private cloud and you can save money by using a public
one, then this would be an effective option. A managed hosting solution would also be a possibility. Just be sure to pit the positive aspects of each hosting option against any negative aspects. As far as the Healthcare Industry is concerned, cloud hosting represents the future because scaling up or down sometimes becomes a necessity. For example, with open enrollment for insurance and new patient registration, flexibility is of the utmost importance, and cloud hosting represents an extremely important step in the right direction. As a Healthcare professional, understanding that even standard managed dedicated hosting is sometimes not able to satisfy the needs of your project is a must. You also want to make sure you have considered all regulatory and compliance requirements. With so many requirements, including compliance with the Health Insurance Portability and Accountability Act (HIPAA), Health Information Technology for Economic and Clinical Health Act (HITECH), Statement on Standards for Attestation Engagements 16 (SSAE 16), and Payment Card Industry (PCI) compliance, there are serious considerations to be made toward security and implementation of controls; these should be the key objectives. With the fast adoption of electronic medical records / electronic health records (EMR/EHR), there are also serious considerations involving patients’ privacy and the protection of records. Multi-practice data management can represent a challenge for quite a few reasons, and cloud hosting is a solution that provides the right balance of reliability, flexibility, and scalability. Because cloud hosting is a relatively new type of service and not all providers are equally knowledgeable, it’s important to establish partnerships only with companies that have proven themselves, as explained in section IV.

### Section IV: Which Service Provider to Choose?

The Hosting Service Provider you choose is critical to your overall hosting success. If a Service Provider is ill-equipped and has a poor track record, definitely continue to research Service Providers. You could select the most popular Host Provider, but you also want to spend some time to do your due diligence. A recognizable brand name does not guarantee the best available options. There are plenty of options in the market; some companies that are relatively unknown but have been in business for years might surprise you. You also want to compare features versus affordability. Either way, your ability to get out of the contract is vital, so make sure you have an exit strategy in case the situation does not work out as well as you had anticipated. Another approach is asking your credible contacts for recommendations. While reading online reviews can also help, there can be more there than meets the eye. Some reviews could simply be invented, while others are recommended because they offer attractive affiliate commissions, not necessarily because they are excellent choices. Paying for opinions tends to create glowing reviews; and buying perspectives may mean the service can’t stand on its own. By asking people you know and trust for an opinion, you will have no reason to doubt the validity of their claims. There are a few questions you will need to ask yourself in order to determine if a certain Service Provider is worth your business. How long have they been running? How stable are they? Is their business model bulletproof, or would they go under as soon as new technologies emerge due to their inability to adapt? You should also ask them candid questions, such as how much debt they have and how viable their business model is. Besides profitability, organizations that are run as private enterprises are more likely to be held accountable to their shareholders and have a real purpose and soul, as opposed to fly-by-night companies. One-size-fits-all solutions are a thing of the past, especially if you are running complex Healthcare IT applications that require a lot of tweaking. Ask all of your questions before signing up for an account. Service Providers generally provide free consultations, and it is highly advisable to contact at least a handful of providers directly before making your final decision. Make it clear that you are looking for a Service Provider that is able to offer flexible hosting solutions. Be careful when dealing with sales representatives: some of their statements could be misleading. Many will say anything it takes to convince you to sign on the dotted line. Ask clear questions, and demand clear answers. Choosing a highly rated and thoroughly tested HIPAA Compliant Hosting Service Provider will yield exceptional results for your organization. Each Service Provider is going to have a different overall configuration, and even
if they all perform at optimal levels of functionality, they will have separate benefits and features from which to choose. Deciding what is right for your business depends on a better understanding of your needs. It is strongly suggested to conduct an in-depth needs analysis internally before going into deep conversations with the Service Providers.

Section V: Data Centers and Savings

In the past, a majority of organizations opted to handle the hosting aspect of their businesses in-house; now, though, with the plethora of options and choices available, traditional methods are a thing of the past. More importantly, cost could be the driving factor in comparing traditional internal solutions versus innovative and cost effective hosting solutions in a datacenter environment. There are serious costs involved with traditional in-house hosting, and a lot of logistical challenges need to be taken into consideration. How much will it cost to train and remunerate your staff? How much will it cost to replace broken hardware? These are just two of the questions you need to ask yourself in order to determine if handling everything internally is worth the effort. Datacenters put a lot on the table in terms of reliability, affordability and features (such as advanced cooling systems and regulatory compliance). Since they operate a large number of servers, it is possible for them to keep costs reasonable and pass the savings on to customers. At the end of the day, numbers do all of the speaking. If you want to host your applications in-house, those numbers might not add up.

Section VI: Future Hosting Solutions

The future of hosting solutions in our current day and age is definitely exciting. What may seem to be a perfect solution today might not work tomorrow. Bear in mind that there is always a new wave of technological advancements that could be more efficient, robust and cost-effective. Six months down the road, you may find yourself loathing the contract you signed and desire the features and options of new technologies. Because technology is continually changing, signing a long-term contract could hinder your future growth objectives and impact the overall profitability of your organization. What can you do to safeguard yourself against making a mistake? You’ll need to calculate all the potential, foreseeable avenues of possibility.

Summary:

This document has outlined the most important aspects of making a hosting decision for your healthcare organization. Take comfort in the fact that cloud computing has changed the way we do business. Cloud hosting, as a more efficient business model, stands to revolutionize both your business and your IT budget. Cloud hosting provides numerous benefits that you can’t find in standard dedicated hosting solutions. You now know what public and private clouds are and how they can improve your current online efforts. Understanding how these hosting solutions affect your healthcare applications is critical to your overall success. All in all, the hosting solution you choose should be decided by the level of resources and array of features you need. Public and private clouds are all about virtual resource management. All aspects of cloud computing are designed to be more efficient than dedicated server solutions. Not a drop of water is wasted on your journey, and the lower cost of the cloud computing option will reflect that.

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Moazzam currently holds the position of Director of Business Development at Atlantic.Net, where he contributes to the growth of Atlantic.Net by branding and leveraging their product offerings with web and social media marketing. With over 12 years of experience in marketing and business strategy, he has successfully launched and managed products from concept to marketing to profitable campaigns.