On-premise vs. cloud-based solutions
A dilemma for businesses
If it’s in the cloud, it must be better, right? Well, maybe, and maybe not.

Introduction
Consider any technology today, and you will likely find a “cloud” version that is just perfect for your needs, at least as far as the vendor is concerned. Cloud-based solutions and cloud computing in general seem to be what everyone is talking about - what everyone desires - and any company providing any sort of software or service wants to have a cloud version since, if it’s in the cloud, it must be better, right? Well, maybe, and maybe not. For the business trying to decide which solutions are right for their needs, understanding what the key differences are, where one is better than the other, and sometimes, more importantly, where one is worse than the other is critical in ensuring the decision maker for the company makes the right choice for the company. That may or may not be the right choice for the vendor you are working with, so here’s what we hope is some unbiased advice to help you choose. Let’s start with some definitions.

On-premise offerings
On-premises solutions, sometimes shortened to “on-prem,” are those that are deployed in the traditional manner. Servers are acquired, operating systems are installed, other hardware may be involved, but all of that lives within your four walls, or the walls of your datacenter. You can reach out and touch on-prem solutions. You’re responsible for them, to at least some degree. You might virtualize the servers, but the physical hosts are still there. You might outsource management to a service integrator, but you still provide the physical security, the electricity, and the balance sheet entries to carry the assets. You might have the hardware in a cage within a shared datacenter or hosting facility, but they are still tangible, physical assets for which you are responsible.

Hosted offerings
Hosted solutions are those that a service provider offers you within their datacenters or other facilities. They are usually contracted for a period of time, and are built for you specifically. They may be hosted in more than one location, but the locations are fixed and known, and the resources are largely yours. When a hosting provider hosts solutions for you, they are responsible for whatever it is that they are offering you. If it’s a datacenter, they provide the electricity, physical security, and perhaps core networking functions. If it’s an application hosting provider, they provide all the support and configuration for the app. In either case, you are paying for something that others are providing you. You are largely hands off.
Cloud offerings

Hosted offerings may sound like cloud offerings, but there are some critical differences to understand. The National Institute of Standards and Technology (NIST) established five essential characteristics of cloud computing that should help you understand the primary differences. They are:

1. **On-demand self-service**: once services are established, the customer should be able to provision new users, services, virtual machines, etc. without involving the cloud service provider.

2. **Broad network access**: cloud services are typically accessed over the Internet, as opposed to being on an internal network accessible only over private connections.

3. **Resource pooling**: there is some degree of shared resources from which services draw as needed.

4. **Rapid elasticity**: customers' needs may expand or contract, and the service will expand or contract with those needs.

5. **Measured service**: customers are billed based on some measured consumption. That could be licenses, or CPU cycles, or Gigabytes of storage consumed, or number of mailboxes; whatever the thing measured, that is how customers are billed. You pay for what you use.

NIST also has standardized around three types of service models. They are

1. **Software as a Service (SaaS)**: Applications that could be email, CRM, cloud storage, etc.

2. **Platform as a Service (PaaS)**: This includes web sites, web applications, etc.

3. **Infrastructure as a Service (IaaS)**: Typically, virtual machines hosted in the cloud and made available to the customer, who maintains the operating system on up.

Finally, NIST has defined four deployment models. They are

1. **Private cloud**: It's mine, all mine, and not yours. The private cloud is used exclusively by one user.

2. **Community cloud**: It's yours and mine, but not his, because he isn't one of us. Meaning the cloud is used exclusively by a group of people or a community.

3. **Public cloud**: It's yours, mine, his, and anyone else who is willing to pay for it. Used openly by the general public.

4. **Hybrid cloud**: This part is yours, and that part is mine, and we will connect them together in some way. It's made up of two or more deployment models (private, community and public) within the same organization.

Which is best?

Like so many IT questions, the answer is “it depends,” and what it depends on is largely dependent upon a number of things about your company. If you have the necessary expertise on staff, and sufficient resources to provision what is required, then you may want to keep it on-prem. If you have trust issues, or very unique compliance requirements, you may want to keep it on-prem. Be careful with that one though, as you may find that a cloud provider can meet your security and compliance requirements better than you can, and for less cost!

If you don’t have and can’t afford the expertise on staff to maintain something, cloud based offerings should be very appealing. If you need global presence, 24x7x365 support, or extreme scale, cloud based offerings may be the only realistic way to get there for a business. Let’s look at some specific things you should consider when evaluating whether to do something on-prem or move it to the cloud.

<table>
<thead>
<tr>
<th>Topic</th>
<th>On-premises</th>
<th>Cloud</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expertise</td>
<td>Top talent comes with top costs, and niche skills may be very expensive to attract and retain.</td>
<td>Cloud service providers specialize in an offering, and staff it with the necessary expertise.</td>
<td>Cloud</td>
</tr>
<tr>
<td></td>
<td><strong>24x7x365 support and monitoring</strong></td>
<td>Cloud service providers monitor 24x7, but may not monitor what is important to you, or notify you directly in a timely fashion.</td>
<td>On-prem</td>
</tr>
<tr>
<td></td>
<td>Monitoring systems can run 24x7, but keeping staff around the clock can be very expensive.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>You can do anything for a cost, but can you do everything cost-effectively?</td>
<td>One of the big benefits to cloud service providers is the resource pooling. They can afford to offer scale of services you could not provision yourself at any cost.</td>
<td>Cloud</td>
</tr>
<tr>
<td>Trust</td>
<td>When you run it yourself, you have only to worry about yourself.</td>
<td>You have to trust someone sometime, and when it comes to cloud service providers, you are going to have to extend a lot of trust.</td>
<td>On-prem</td>
</tr>
<tr>
<td></td>
<td>When you run it yourself, you have only to worry about ensuring compliance with all the laws and regulations that apply to your business.</td>
<td>Cloud service providers have teams devoted to compliance, and can much more readily meet and maintain compliance. Trust, but verify, and you will be fine.</td>
<td>Cloud</td>
</tr>
<tr>
<td>Compliance</td>
<td>When there’s an outage, it is up to you to get things back up and running.</td>
<td>Most cloud service providers offer financially backed SLAs. They too will have outages, but at least you will get credit for downtime and not have to work around the clock to restore services.</td>
<td>Cloud</td>
</tr>
<tr>
<td>Understanding your business</td>
<td>Only you can understand your business as well as you do. You know which user, customer, or application is more important.</td>
<td>Cloud services are the great equalizer. Mailboxes are mailboxes, and until you escalate, a problem impacting your CEO and a problem impacting a part-time employee are just equal problems.</td>
<td>On-prem</td>
</tr>
<tr>
<td>Security</td>
<td>Security is critical, and you know your assets and your people.</td>
<td>Security is complex, expensive, and must be maintained 24x7. Cloud service providers can leverage economies of scale to provide security beyond anything you could practically do on your own.</td>
<td>On-prem</td>
</tr>
<tr>
<td>Customization</td>
<td>When you deploy it, you can do it any way you please, and can customize things, add plug-ins, etc. as you see fit.</td>
<td>Cloud based services offer lots of choices, and many configurable options, but they are still going to be limited in what you can do, and may not support all the options you want.</td>
<td>On-prem</td>
</tr>
<tr>
<td>Cost model</td>
<td>On-prem solutions involve assets that must be purchased, may need to be financed, and must ultimately be replaced.</td>
<td>Cloud solutions are services to which you subscribe, and as such, can be categorized as operational expenses. There’s often great tax benefits to that.</td>
<td>Cloud</td>
</tr>
</tbody>
</table>
If you keep a flat score, it looks like a split decision, with on-prem solutions taking the advantage five times, and cloud based solutions taking the advantage the other five times. But each of these ten categories is going to be weighted differently depending upon your business, your needs, and your IT team. Weigh them based on what you think is most important for you, and then see which scores higher. You might be surprised. Here’s some more things to consider.

### SMB
Small to medium sized businesses can leverage cloud-based services to get enterprise-class solutions on tighter budgets. There probably isn’t a cloud service offering that an SMB can build themselves on premise with the same budget. SMBs could embrace cloud-based solutions so they can focus on their core competencies and the things cloud service providers don’t offer, like desk side support.

### Enterprise
Enterprises might be able to deploy IT solutions with equal capabilities to a cloud-based offering, but that doesn’t mean that they want to. Enterprises should focus on those things that they must deploy on-prem, like services requiring customizations, and leverage cloud-based services for the “commodity IT” things like email, CRM, etc.

### The Hybrid Approach
There’s no reason to think the choice between on-prem and cloud is a mutually exclusive one. Customers can pick and choose what works best for them. Maybe you want to keep your email system on-prem, but leverage a cloud-based service for message hygiene, continuity or archiving. Or perhaps you will deploy your domain controllers and file and print servers on-prem, but build application and database servers in the cloud using an Infrastructure as a service provider who can provide you with computing resources for far less than you can do on your own. Enterprises may want to deploy all their production systems on-prem, but can leverage cloud services for lab or QA purposes to easily and cost-effectively spin up systems for testing.

Whether you are more inclined to favor on-premises solutions or cloud-based solutions, don’t assume you have to choose one to the exclusion of the other. There are times where both may be the better choice, depending on circumstance the right choice is up to you. The one thing to keep in mind is that on-prem solutions may represent large capital investments, but cloud-based solutions may represent long-term subscription contracts. Weigh each option carefully, focus on doing what you do well with your existing staff first, and then look at if it makes sense to float away to the cloud!
About GFI Software™: Smartly Engineered for Greater IT

GFI Software develops easier, smarter and affordable enterprise-class IT solutions for businesses. Our solutions enable IT administrators to easily and efficiently discover, manage and secure their business networks, systems, applications and communications wherever they exist. GFI is committed to its customers worldwide to deliver the trusted expertise, right-sized and smartly engineered IT solutions with a strong focus on security excellence.

GFI is a channel-focused company with a network of thousands of partners worldwide. The company has received numerous awards and industry accolades, and is a longtime Microsoft® Gold ISV Partner.

More information about GFI can be found at http://www.gfi.com.

Follow us on:

Facebook: https://www.facebook.com/gfisoftware
Twitter: https://twitter.com/gfisoftware
Blog: http://www.gfi.com/blog