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CLOUD COMPUTING Part Deux

The Ever-Evolving World of Cloud Computing



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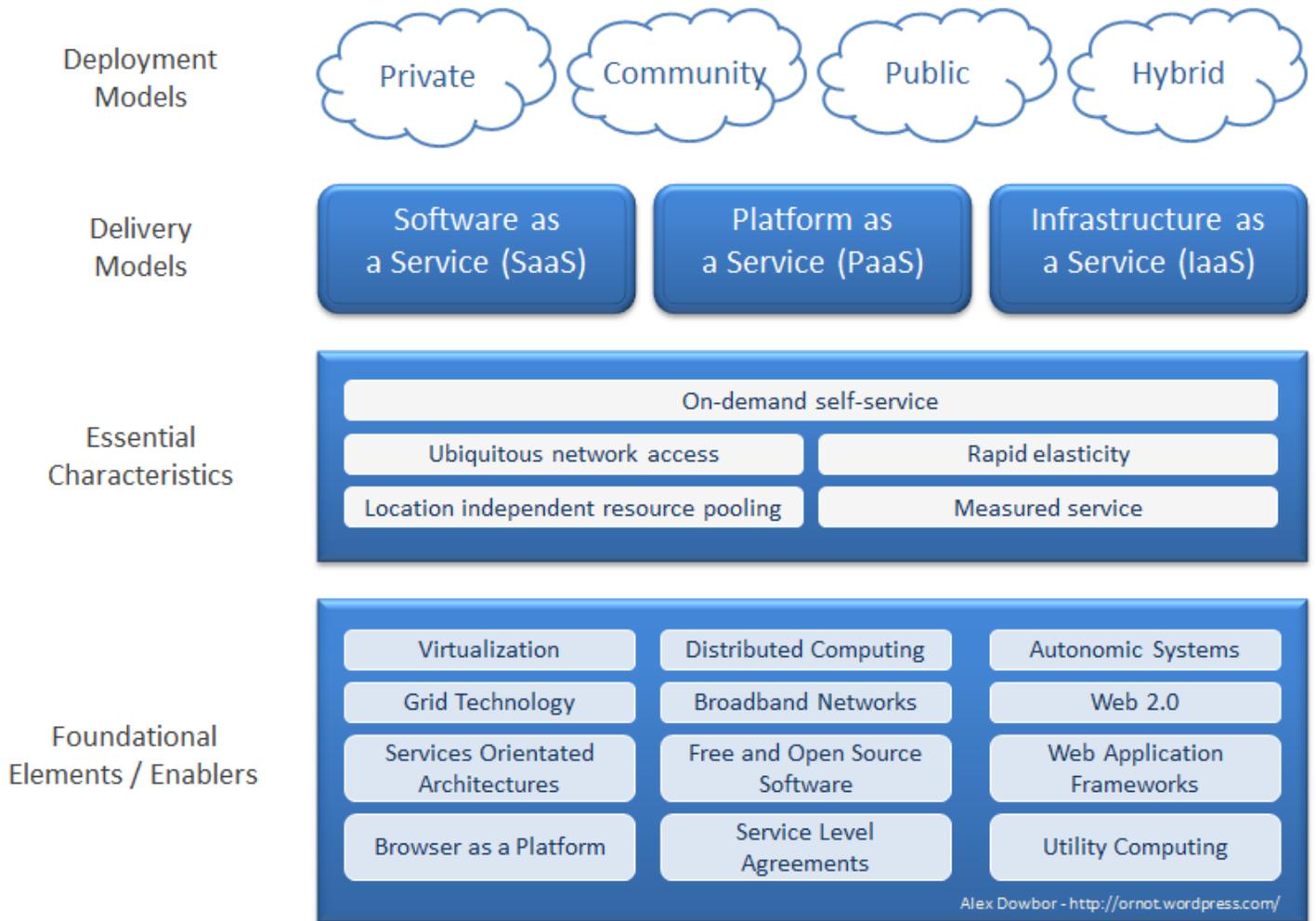


CLOUD COMPUTING UPDATE

New Cloud Computing Document Purpose

This year will be filled with movie sequels such as Iron Man 3, The Hangover 3 and Fast and Furious 87. This “continuation thinking” reminded me that only a year or two ago, we created a couple of white papers sharing cloud computing basics, in an effort to help with general education. Back then, the focus was all about why you should consider cloud computing for a business and its implications. So now that just about everyone is using one or more of these apps, I’d like to look at newer operational concerns for users of Cloud Computing technologies.

If you did not read the original white paper CLOUD COMPUTING FACT SHEET, it is still available at <http://www.fulcrum.pro/resources/white-papers/> . In the first document, my aim was to clarify concepts like the different types of clouds, different delivery models and general terminology. Keep in mind that when we talk about Cloud Computing at large, we are also talking about Private Clouds that include server and storage virtualization technologies. A list of some more specific cloud applications follows in the paragraph below.



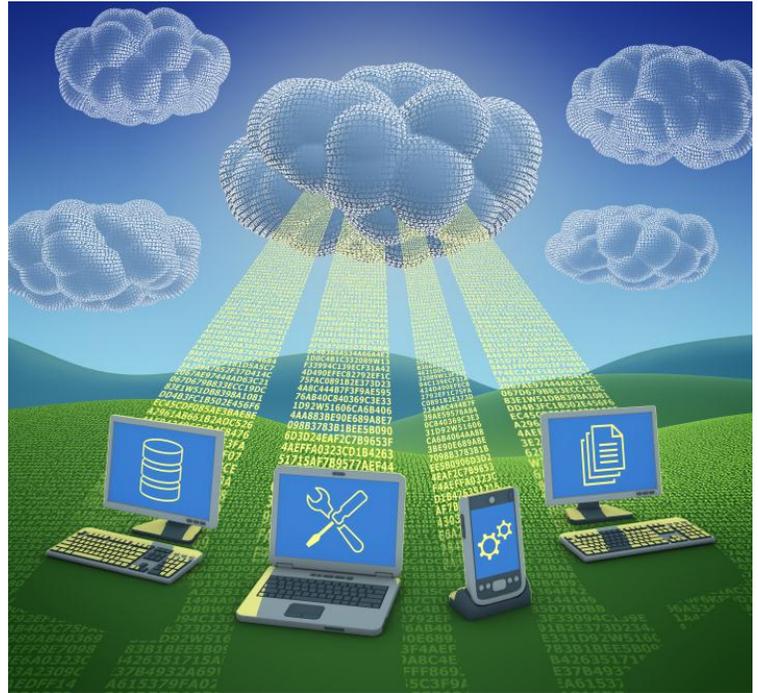
Based on the NIST Working Definition of Cloud Computing v14 and <http://www.csrc.nist.gov/groups/SNS/cloud-computing/index.html>

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Types of Cloud Services

- Hosted line of business application
- Virtualized line of business applications
- General purpose
- Customer Relationship Management (CRM)
- Storage/backup
- Managed security
- Email
- Business productivity applications
- Document/content management
- Spam management
- Web Filtering
- Database
- File sharing
- Development/testing
- Analytics/business intelligence
- Cloud monitoring/management services
- Cloud analytics/business Intelligence
- Call center
- Help desk
- Enterprise Resource Planning (ERP)



Rapid Cloud Growth

According to the IT trade association CompTIA, over 80% of companies now claim to use some form of cloud solution. While some firms highlight avoiding capital acquisition costs as a reason for embracing the cloud, more firms tend to look to the cloud's flexibility or ability to get access to best of breed applications. If you're a small organization with an aging Exchange Server, it is probably an easy decision to pay for hosted Microsoft Exchange instead buying a new 64 bit server, new Windows Server 2012 licenses and new Exchange Server 2013.

Either way, some of this growth is directly tied to consumer devices and a typical consumer's use of personal apps. In a CDW 2013 State of the Cloud Report, 73% of IT professionals say user's personal adoption of cloud apps/mobile devices significantly impacted their adoption of cloud technologies. The survey of IT Professionals further adds that 66% of their own use influenced their recommendations to the cloud.

Two other key statistics are 68% of respondents say employee requests for cloud services have increased over the last two years and that 27% say that operating units have bought cloud services without involving IT. To me, this seems to be a message that as technologists and business leaders, we need to educate the highest levels of our organization on the factors surrounding use of cloud tools. Only through education will we be able to explain all the implications and encourage an organization's senior leader to make sure these decisions are made, in conjunction with the IT team or IT services organization.

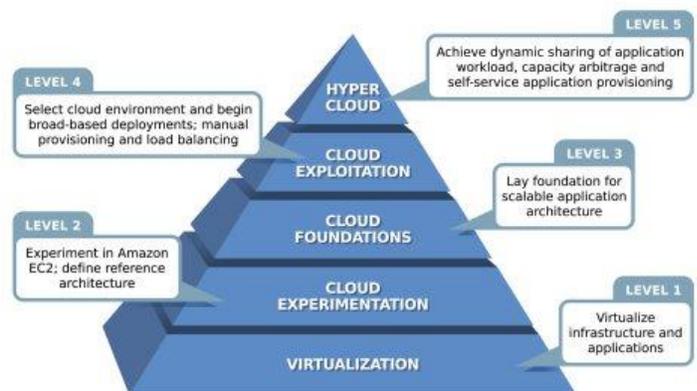
Cloud Planning Management

So what advice do I have for users or potential users of cloud technologies...?

When selecting cloud solutions appropriate for your organization, it is helpful to treat this like any other project. To make a great choice, you should evaluate the options following this basic strategy:

- 1. Environment Assessment:** You'll want to start by developing a list of your business needs, organizing a list of cloud options to choose from and then finding the one that most closely matches your needs. From the earlier example of hosted Exchange, your environment might need special notifications that work better with a local email server. Some possible concern areas to think about include:
 - a. Can we bring our data back down if this doesn't work out?
 - b. Are there APIs to allow my data to interact with my premise based data?
 - c. Are there compliance reasons I shouldn't use this cloud application?
 - d. Do I understand the SLA and how it fits with my business needs?
 - e. Do I have a fast and reliable Internet connection to dependably access this application?
 - f. Will I need a redundant Internet connection to protect against outages?
- 2. Plan and design:** Depending on your application, it is unlikely you'll find success just "jumping into the cloud". There is usually some degree of pain when moving data offsite during the initial change or perhaps just in performance (remember the networking rule, "Move your users as close to their data as possible"). Come up with a plan, set proper expectations for users, consider running a pilot and after a successful pilot, use your notes to execute your plan successfully.
- 3. Delivery:** The delivery stage has to deal with actually going live with a solution. This is geared towards getting the application or service to your users. Some apps may seem like no work, but the more important the system, the more likely it would benefit from some preparation. This could be as simple as how to access the system, distributing tools/setup to access or might require retraining users for connectivity.
- 4. Implementation:** This phase involves final transfer, deployment and customization of your data for the new environment. Maybe you have run parallel systems and/or need to make a final switchover. There are changes that may not seem obvious. A technologist might recommend that you make sure you have full control of your own name registrar and name servers, customize your firewall, anti-virus or web-filtering for the new system or make other environment changes to make sure performance is ideal.

THE CLOUD COMPUTING ADOPTION MODEL



You might even benefit by having a formal kickoff, bringing in all users for some light training or providing handouts for more efficient use.

5. Operation/management: This is the final and ongoing aspect of your cloud environment. Perhaps you need tools to make sure you have plenty of bandwidth to access resources in a speedy fashion. That might mean a better firewall, the ability to trend bandwidth performance or the ability to block out bandwidth wasters. Monitoring and maintaining performance of all systems is important to a typical production network, but not all small businesses have a monitoring tool or have the skills to compare performance against similar environments. After the initial setup, there may be a point in the future you become increasingly reliant on your technology, with needs to upgrade PCs, your network or your Internet connection. Performance monitoring will need to be an ongoing process. You probably will also want to invest some time understanding the security implications of cloud computing.

Top Technology Threats of Cloud Computing

The Cloud Security Alliance recently released a great document covering its “Notorious Nine” threats ranked in order of severity at <http://www.cloudsecurityalliance.org/topthreats>. Moving from local resources to accessing the cloud has its own share of security risks. Executives and onsite technology leaders must be aware of them. Some leaders I have spoken with were told by their vendors that “moving to the cloud gets rid of your risk”, “makes you HIPAA compliant” and a few other “not-quite-right” statements.



The bottom line is the cloud can help reduce risk but it is important to know as a business leader you can never completely eliminate risk. In security circles, we say, “you can’t eliminate risk, only reduce it to an acceptable level”.

Part of the reason the cloud is fast and efficient is because it bypasses normal business level security, processes and best practices. If you had no processes and practices before, this may be a good thing. If you had good process before, this is less good. The challenge is to understand where you are and assess the possible threats that may arise from moving to the cloud.

Each potential threat has a variety of possible compensating controls that might help you make the risk tolerable. Some of the threats a business leader must consider and discuss with his or her IT resources include:

1. Data Breaches- What if your sensitive internal data falls into the hands of a competitor?
2. Data Loss- What if there was an accidental deletion of data or loss due to some physical catastrophe?
3. Account Hijacking- Phishing, fraud and software attacks lead the way in helping hackers get access to someone else’s credentials.

4. Insecure APIs- The basic interfaces used to manage systems make provisioning easy, but could allow external parties to gain access, since availability is over the Internet.
5. Denial of Service- Recent attacks have shut down big names and service providers.
6. Malicious Insiders- Anyone who has to fire an employee knows what this could mean, a bad day for all if an enabled insider decides to make it so.
7. Abuse of Cloud Services- This is less a concern for a small consumer and more so for a service provider. What if someone used your resources maliciously?
8. Insufficient Due Diligence- The point of this whole document is to share the message that *a little diligence at the front end goes a long way in protecting your data, choosing the right solutions and deploying the best practices possible.*
9. Shared Technology Issues- A typical cloud environment uses shared hardware, networking, storage, memory and power, making all a vulnerability. My opinion is that in a private cloud environment, you have more control over this but it mandates more diligence for you to be an expert in the potential for shared issues.

Some Business Questions a Leader Needs to Ask

Whether you are a small business owner, a senior IT person or a consultant, there is one major thought driving technology everywhere. How do I make sure a bigger portion of our IT budget goes toward innovating how we do business versus just maintaining existing technology?

Most organizations are probably 80% maintenance and 20% innovation/improvement, while the most agile and customer service oriented firms tend to be 20% maintenance and 80% innovation. Additionally, business goals should be aligned with the technology budget, meaning more planning and understanding needs to be focused on trends in technology. The cloud absolutely can have a place in helping you get there.

My short list of questions I think a business leader needs to ask.

- If I move my data/functionality to the cloud, how do I move back if I don't like things a year from now?
- If my app/data is in the cloud, will it connect to/work with my other applications?
- Do I currently use small Access databases or homegrown tools that would benefit the business by being converted to a web-enabled application?
- What kind of portability of my data does the cloud application offer?
- Is there a way device growth and mobility can work better with my cloud data?
- Do I really understand the vendor's service level agreement?
- What do I need to do for incident response, should a security event occur?
- Are there aging applications that could be purchased in a cloud-based model?



Regardless of the questions or the answers, a story will start to unfold. The reason cloud solutions are increasing and more people are using them, is there are benefits to discover.

Private and Hybrid Cloud Thoughts

Building a private or hybrid cloud usually requires organizations to acquire some sort of virtualization solution to help them allocate resources more intelligently. Many times these projects simply start as an effort to consolidate systems and better match server resources to needed workloads. The ongoing management can be less labor intensive for an internal or external support vendor, but requires sharpening the new skills needed to support a virtualized environment. Additional benefits related to business continuity and disaster recovery may also present themselves and help firms bound by compliance requirements.

Virtualization is not ideal for all physical systems. Server consolidation is only effective when there are sufficient resources that are underutilized and can be counter-balanced to ensure good performance. While a SQL Server can be easily virtualized, a heavily utilized SQL Server requiring gobs of CPU and disk space may not be the best candidate for conversion. Be sure to research the possible impact of other required things like USB license dongles, serial connections, vendor support for virtualization and other possible barriers to a successful deployment.

After understanding your workloads, you may need to train up your IT team or find a firm with virtualization expertise. If you are concerned about security or bound by compliances like HIPAA, PCI or others, make sure you review your IT policies and adjust for the planned changes. It is project management “best practice” to pilot anything new, so rather than virtualizing your entire environment, you might start small with a few servers, to verify your environment is appropriate before virtualizing everything. Like every IT project, after the initial deployment, you will want to invest time monitoring the new platform to make sure it is optimized and adjusted to keep supporting your business processes.

Cloud Benefits

Lest I seem too “glass half empty”, I tracked down these benefit areas that you could expect with a properly thought-out cloud strategy. The CDW Survey listed these six benefits in order of preference from respondents.

- 1) Increased efficiency (55%)
- 2) Improved employee mobility (49%)
- 3) Increase ability to innovate (32%)
- 4) Freed current IT resources for other projects
- 5) Reduced IT operating costs (25%)
- 6) Enabled us to offer new products/services (24%)



I believe with the right mindset, you can take a step back, do your homework and look forward to a great future in the cloud. Considering your first cloud application or want to learn more about whether a public, private or hybrid cloud strategy is best for your business? Call your Fulcrum Group Account Manager today at 817-337-0300 to discuss pros and cons related to your specific business needs or industry. Help is just a quick phone call away!

