TechTarget
Data Center & Virtualization
Media

SearchDataCenter.com
SearchWindowsServer.com
SearchServerVirtualization.com
SearchVMware.com

SearchCloudComputing.com
SearchEnterpriseDesktop.com
SearchVirtualDesktop.com
BrianMadden.com

SearchEnterpriseLinux.com
Search400.com
SearchWinIT.com
SearchExchange.com

SearchSQLServer.com
SearchDomino.com
SearchVirtualDataCentre.co.uk
SearchDataCenter.in

SearchCloudComputing.com

E-Guide

Expert insight: Cloud computing defined

What is cloud computing? It depends on who you ask. Because there are so many definitions for this buzz term, you need to be able to discern what this technology actually is and how it can best benefit your organization. In this expert e-guide from SearchCloudComputing.com, discover the meanings of various types of cloud models, including Infrastructure as a Service. And find out how virtualization and cloud computing are linked as well as how to best use these technologies in your infrastructure.

Sponsored By:

TechTarget
*Where Serious
Technology Buyers
Decide*

E-Guide

Expert insight: Cloud computing defined

Table of Contents

The last cloud computing definition you'll ever need

As the classic saying goes, we've all got one. Usually it's an opinion, but in this case it's a personal definition of cloud computing.

Despite a rapidly growing degree of genuine interest, pundits can't seem to agree on a proper meaning. Over the years, "cloud" has become a vague and flexible term that does not reference anything in particular. This has allowed some providers to take advantage of the positive press and push any related services as "cloud," while other companies might shun the term entirely out of self-consciousness or concerns about cloud computing's future.

Meanwhile, the National Institute of Standards and Technology (NIST) is the most famous purveyor of the "cloud" definition, publishing a new one every year in an attempt to cover all the characterizations and opinions that exist in the marketplace. The most recent edition, however, clocks in at a lengthy 790 words, and NIST acknowledges its definition's fluidity with two introductory notes about cloud being an "evolving paradigm." The organization is also actively seeking public comments for the in-progress sixteenth version.

All this back and forth leads to the question: When is a cloud not a cloud?

The fact remains that both "cloud" and "cloud computing" are imprecise, adaptable terms that can be modified to fit the needs and agendas of certain individuals within the marketplace. And with no single, accepted definition, products and services may not effectively provide the benefits clients are seeking for their business.

What is cloud computing, and what just looks the part?

So how far will "cloud" go as a buzzword? There is already a risk of genuinely helpful providers finding themselves lost amid the chatter of derivative offerings, not to mention clients mistakenly pursing a lesser product because it is considered "cloud."

Further complicating matters is the fact that most major developments in enterprise computing contain at least a few "cloud-like" components. When you're deciding between different "cloud" services for your IT environment, take note of the table below and make sure you understand which of their major traits are cloudy in nature, and which are just fog:

	Cloud	Not cloud
Infrastructure as a Service	• Remote delivery • Multi-tenancy • Scalability and load-balancing • Eliminates need for on-site facilities	• Some would argue this is more on-demand delivery of virtual machines than pure cloud • Only some vendors offer truly automated elasticity, e.g. Amazon Auto-Scaling
Managed hosting	• Remote delivery • Eliminates need for on-site facilities • Multi-tenancy	• Provisioning and de-provisioning not automatic • Immediate scalability often not available
Virtualization	• Multi-tenancy • Elasticity • Scalability	• Provisioning and de-provisioning not automatic • Elasticity not infinite and subject to hardware constraints
Private cloud	• Multi-tenancy • Remote delivery via intranet • Elasticity • Scalability	• In most cases, it is on-demand virtualization • Billing mechanisms often not in place; reliance on chargeback • Few companies can achieve economies of scale necessary to make this work • Elasticity not infinite and subject to hardware constraints
File sharing and collaboration	• Remote delivery and access • Multi-tenancy	• Elasticity is limited by hardware and space constraints
Email	• Remote delivery and access • Multi-tenancy • Elasticity • Scalability	• Provisioning and de-provisioning not automatic • Immediate scalability often not available • Often more managed hosting than "cloud"
Voice services	• Remote delivery • Multi-tenancy • Scalability	• Many services require additional customization and are incapable of working "right out of the box"
Mainframe	• Multi-tenancy • Elasticity	• Provisioning and de-provisioning not automatic • Hardware constraints exist • Risk of a single point of failure within the infrastructure • Today, could be synonymous with private cloud

One simple and sensible way to view "cloud" is as a new evolution of IT service delivery from a remote location, either over the Internet or an intranet, involving multi-tenant environments enabled by virtualization. Cloud architecture is underpinned and enabled by commodity hardware, on top of which virtual machines are provisioned and offered to consumers. Elasticity is an important component of cloud computing, but it is both a feature and a natural result of the main drivers of cloud computing: economies of scale, improved efficiency and speed.

That said, the lack of a settled and universal "cloud" definition means businesses need to make their cloud services work for them. A business needs to define its goals and objectives for a cloud computing offering, as well as the benefits sought, and look for providers that will maximize those advantages. Simply being located in the cloud is not enough; nor should the possibility of cost savings be a permanent, compelling reason to adopt. Even though cloud is a new delivery method, it must conform to the old rules of producing superior business value at cost or risk being re-obscured.

IT pundits will continue to argue over a single, appropriate definition, but that does not mean you have to sit around and listen. Make the cloud work for you and your business, and let everyone else argue over what is and isn't cloud.

Wanted: New skills for cloud computing success

The more things change, the more they stay the same.

There is no doubt that cloud computing technologies have introduced new ways of delivering and managing IT services. In turn, many IT managers worry about being ready for the transition. Do they have the technical chops to make this architecture work? Which IT skills do they need to survive in this brave new world?

But the truth is, while cloud introduces new ways of managing data center infrastructure, the skills you need -- or need to develop -- are much the same as those any IT manager needs to get ahead in his career.

What do you need to know?

So, in addition to technical chops, which skills do IT staffers need to make the shift to cloud computing, and why? Here's a quick rundown on the most essential skills that IT managers and administrators should develop to deploy and manage cloud architecture effectively:

- Financial literacy
- Management and interpersonal skills
- Negotiation skills
- Process management skills
- Market understanding
- Technical chops

Financial literacy

Today, financial literacy requires that IT managers do more with less, and financial savvy is key to cost savings. Long-term thinkers believe in the value of hard-cost return on investment (ROI) and reject soft costs in ROI calculations because these costs are only shifted to new line items or projects without real return.

Implementing a cloud-based email solution, for example, may seem more expensive than maintaining an existing one, but malware, spam protection, archiving and other costs may reveal the ROI of a cloud-based technology. Without financial literacy, a manager makes bad product purchasing decisions and projects to move forward on. A financially literate manager, on the other hand, is a driver of forward momentum.

The most relevant, tangible measure of financial literacy remains an MBA. It's worth considering whether a finance degree can help you in your core IT role: saving costs. Management and interpersonal relations skills

Interpersonal relations are critical. The saying "it's not what you know, but whom you know" is important in your IT role. So is the idea that "if you can't get along with anyone, you won't know anyone." Without contacts and buy-in from stakeholders, risky projects will be passed over, and attempts to recruit or retain good talent will be denied. And in today's world of Facebook and Twitter, your relationships with others can be more easily known. There are real consequences for failing to maintain interpersonal relations and they range from poor performance and lackluster career opportunities to litigation and tragedy.

And no matter how strong a manager's interpersonal skills, conflict is inevitable. Within a manager's sphere of influence, staff may differ radically on deployment ideas, architecture plans, and so on. Entrenched staff may not be ready to go in this new direction, privacy advocates may have serious concerns about sensitive data, others may have concern about the impact of cloud architecture on staff roles, and technical staff may be skeptical about performance and reliability metrics. A strong manager must bring all conflicts to an end by having the right facts, persuasiveness, and the interpersonal skills to tie it all together.

Negotiation

Resolving conflict is a form of negotiation; outright negotiation is another. A good manager must understand that service-level agreements (SLAs), performance minimums, costs, and every other factor in implementing a cloud solution requires negotiation. A manager worth his salt comes to the table prepared with not only his own business' requirements but also information on what other companies offer.

Process management

Once conflicts have been resolved and a project is under way, a manager must also understand the business processes in place. If your IT department follows an established methodology such as the IT Infrastructure Library (ITIL) or Microsoft Operations Framework (MOF), implementing a cloud project requires following the processes that these methodologies call for.

For a cloud project to be successful, change management, service-level management and configuration management must be adhered to. So too, IT managers need to understand how to integrate cloud architecture into existing processes. When a cloud service is integrated into business processes, it becomes a *part of the business* rather than a lone silo. This isn't to say that cloud projects won't bring change to these processes. Moving applications, services or infrastructure to the cloud means changing the way those processes operate.

To successfully manage a cloud-based rollout, managers must use project management skills. Managers leading projects should have a strong understanding of project management methodologies. Organizations such as the Project Management Institute offer education and certification in project management and the various methodologies used to handle complex IT projects, such as cloud service rollouts. The Project Management Professional certification is the preeminent project management certification.
It is important that an IT manager become educated about project phases, how to accurately identify risks and resources, how to plot an accurate timeline, and how to set appropriate expectations in the framework of the project management lifecycle.

Market understanding

At every step of the way, management must observe the market landscape to ensure that decisions make sense. A successful manager considers whether to sign on for services that will implode if the company hosting such services were to go out of business. In the event of a vendor's failure, an IT manager should have an exit strategy and must ensure data ownership, code ownership, and the ability to transfer data. Managers should understand their company's needs, observing where improvements can be made and what needs to be

done to get internal staff onboard. Managers must also understand the risks and the reality of failure -- including data loss, privacy breaches, and a whole slew of woes that can and should be avoided.

Technical chops

Because the cloud appears to be a switch-on, go-to-work model, it's easy to overlook its technical aspects. The question of whether a given product will work in a given business is not only about this technology meeting a business need. Products must also work with existing systems and technologies. Managers must understand how new technologies will affect existing technologies and understand how to integrate when needed, how to change technologies when needed, and when to walk away from a project. In short, IT managers need to "keep their chops."

Conclusion

As cloud computing changes the landscape of IT services, today is a time of great transition for managers. To be successful, a manager must add to his management skill set, hone existing skills and adapt to new paradigms. Ignoring the shift makes managers complacent during a period of upheaval, miss out on opportunities, and inevitably do more harm than good. And in all these skills, there is one underlying aspect: good judgment.

Resources from HP and Intel

Click here for more information on HP Converged Infrastructure related topics

About HP and Intel

Hewlett-Packard is one of the world's largest computer companies and the foremost producer of test and measurement instruments. The company's more than 29,000 products are used by people for personal use and in industry, business, engineering, science, medicine and education.

In addition, the company makes networking products, medical electronic equipment, instruments and systems for chemical analysis, handheld calculators and electronic components.

HP is among the top 20 on the Fortune 500 list. The company had net revenue of $42.9 billion in its 1997 fiscal year. More than 56 percent of its business comes from outside the United States, and more than two-thirds of that is from Europe. Other principal markets are Japan, Canada, Australasia, the Far East and Latin America. HP ranks among the top 10 U.S. exporters. HP is No. 5 among Fortune's Most Admired Companies and No. 10 among Fortune's Best Companies to Work for in America.