

GETTING THE MOST FROM CLOUD COMPUTING - PART 3

5 Cloud Computing Best Practices



In Part 1 of Quest's GETTING THE MOST FROM CLOUD COMPUTING series of Executive Briefs, we explored why and how Cloud computing is driving new ways to do information technology and changing how all of us do business.

In Part 2, we described ways that Cloud environments can be affordably customized to more precisely fit the needs of individual enterprises.

Finally, in Part 3 of the Quest Executive Brief series, we delineate five important Cloud computing best practices that can help every business decision-maker when choosing how to deploy Cloud capabilities in their organization ...

Why Cloud computing best practices matter

As we showed in Part 1, Cloud computing addresses a problem long ago built into traditional data centers: The silo-like IT architectures that have spawned “you-can’t-get-there-from-here” environments burdened by wasted resources, complex and labor-intensive management hassles, and vulnerability to administrative lapses that expose organizations to unnecessary risk.

Cloud computing addresses many of the problems of traditional IT architectures with three capabilities (described in more detail in Part 2, *The Value of Shaping Your Own Cloud*):

- Virtualization,
- The Internet, and
- Automated service management

The results are quite impressive. Because applications are hosted on centralized virtual servers that can securely share workloads in a Cloud data center, Cloud services are easily scalable, more secure, more reliable, and more visible to management software.

Cloud services can also quickly and automatically be provided on demand wherever they’re needed,

which helps optimize expensive IT resources, since IT assets no longer need to be kept for dealing with peak loads or just-in-case scenarios.

So using Cloud services means an organization’s departments and end-users don’t have to run their own copies of an application. That single Cloud version of the app can be designed so it’s sufficiently flexible and customizable that everyone can use it on a variety of devices. Plus that Cloud app is easy (and cost-effective) to patch and update, to enforce security and compliance mandates, and to audit.

Cloud services enable the networking of the enterprise on an entirely new level, too. Location- and device-independent collaboration and data sharing among end-users, business partners, and even customers can occur in simple, friendly ways via a standardized, cost-effective Cloud environment that continues to secure and protect data and applications while your employees focus on their jobs.



GETTING THE MOST FROM CLOUD COMPUTING

A three-part Executive Brief series from Quest

Cloud computing is quickly changing the ways we do information technology — and the ways we do business. Under the hood, Cloud computing is arcane and complicated and requires deep expertise. But when it’s done right, it delivers sleek, simple-to-use, and very cost-efficient IT that can smooth business processes and make your enterprise more competitive.

To get the most from Cloud computing, you need to know something about it, which is why Quest offers three complementary Executive Briefs:

- 1 *The Benefits and Challenges of Cloud Computing*
- 2 *The Value of Shaping Your Own Cloud*
- 3 *5 Cloud Computing Best Practices* (this Brief)

All three of these Executive Briefs are available at www.questsys.com — or for the asking when you call 800.326.4220.

And if you have any questions about Cloud computing, please don’t hesitate to contact us. We’re here to help you.

When Cloud computing is done right ...

When hosted Cloud services augment or replace on-premise IT operations, the expense shifts from the capital budget to the operating budget. Because you use only what you need right now and pay only for what you use, your total cost of ownership (TCO) goes down and your return on investment (ROI) and time-to-value go up.

But there are any number of ways and combinations to implement and deploy Cloud computing. We offer detailed descriptions of public Clouds, private Clouds, and hybrid Clouds in Part 2, *The Value of Shaping Your Own Cloud* — but what's clear is that for many organizations large and small, some kind of hybrid approach will offer the best payoffs.

That's because hybrid Clouds combine — and take advantage of — the best of public and private clouds. Hybrid Clouds are designed to integrate multiple Cloud environments, typically external public Clouds running non-critical IT services and internal private Clouds running critical IT services.

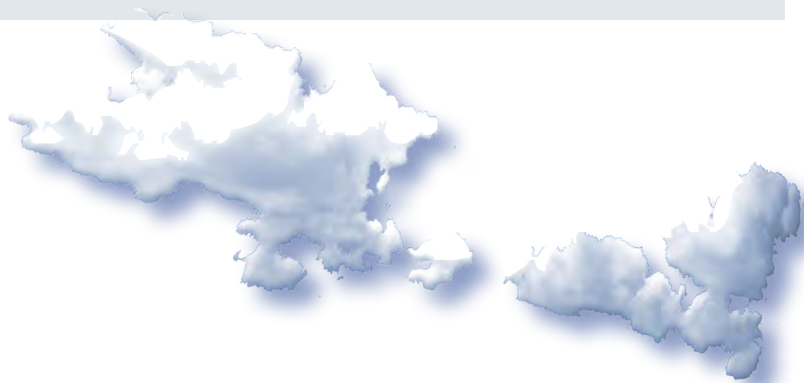
Note, though, that by definition hybrid Cloud computing environments are *customized*. Which brings us to the importance of those five Cloud computing best practices. If you follow these five best practices, your chances of deploying a cost-effective, innovative Cloud environment increase exponentially.

1

Develop a Cloud strategy

Do your **Cloud provider due diligence**. In order to find a Cloud provider with the ability to meet your organization's requirements, carefully review the provider's ...

- > *Cloud infrastructure*, which should:
 - Be based on an enterprise-grade virtualization platform with virtual security (rather than security solutions designed for physical environments grafted onto a virtualized environment),
 - Integrate server, network, and storage access resources into a physically distributed but centrally managed system, and
 - Implement a united fabric technology that reduces costs by eliminating need for multiple sets of network adapters, cables, and switches.
- > *Regulatory compliance policies and procedures.*
- > *Security and data protection policies and procedures.*
- > *Development practices* (how developers use your data for testing may have compliance implications).
- > *Data classification policies and procedures*, since these may affect where your data can reside.



Conduct a Cloud feasibility assessment. And unless you have Cloud computing expertise on staff, don't try to do it alone. Instead, look for a Cloud services provider who will conduct a free feasibility assessment that ...

- > *Helps you identify which IT capabilities you're thinking of offloading to the Cloud*; the best app candidates are those most frequently requested by users, which also tend to be those that change often, such as ...
 - 1 Transient apps that are often provisioned, reallocated, cloned, etc. — e.g., a development/test environment,
 - 2 Variable-demand apps for which users frequently request application resource adjustments — e.g., seasonal transactions, scientific computation, and
 - 3 'Long tail' apps that don't get prioritized by IT — e.g., resources for an extranet.

- > Determines what sort of service availability your business requires as well as the security, privacy, and compliance mandates you must meet.
- > Recommends ways you can achieve a seamless transition to the Cloud.

Remember: You can choose to shift only particular components to the Cloud (e.g., storage, user interfaces/desktop images) and leave the rest untouched on premises — but pay attention to colocation of Cloud data for components that are data-process-intensive.

2 Negotiate your Cloud SLA

Consider the value of bundling all your Cloud services into a single monthly OpEx payment. This will ...

- > Shift significant amounts of your IT costs from your capital budget into your operating budget,
- > Relieve you of constant IT asset upgrade and maintenance costs, and
- > Make it easier to manage your services and ensure that you've established — and continue to achieve — appropriate service levels.

A flexible hybrid Cloud SLA
can do it all
— exactly the way you want it

Versatile, configurable ownership/management options	Owned by Cloud provider	Owned by Customer
Managed by Cloud provider	✓	✓
Managed by Customer	✓	✓

Look for a Cloud services provider who is willing and able to customize your Cloud SLA. Doing this can address your security, availability, compliance, and other concerns, since a customized SLA incorporates your requirements, including ...

- > How security is achieved,
- > Levels of privacy protection,
- > Compliance and regulatory mandates to be adhered to,
- > Where your data is located,
- > Details of how your data and co-tenancy are managed (if you opt for a shared-tenancy environment),
- > Who owns the data,
- > What data controls are in place,
- > How your data will be restored in event of disaster,
- > How long before processes are up and running again,
- > Who at the Cloud services provider has what sort of access to your data.

3 Pay attention to security

Carefully evaluate potential Cloud service providers' security capabilities. You can start with these questions:

- > What access control model do you use? Who chooses the authoritative sources of access control policy and user profile information — you, or us, or a third party?
- > Do you support retrieval of access control policies and user profile information from external sources? If so, via what formats and transmission mechanisms?
- > Where do our accounts reside? How are they provisioned and deprovisioned? How do you protect the integrity of my data?
- > What authentication mechanisms do you support? (These should be appropriate for the sensitivity of the data use.) Do you support federated authentication or single sign-on model(s)?
- > What support do you provide for delegated administration by policy administration services?

- > *What log information do you provide? Can it be imported into our operational analysis and reporting tools?*
- > *Can we specify external entities with whom to share information? If so, how is that accomplished?*

When using any Cloud service, pay particular attention to **user authentication**. You'll want to ...

- > *Define and enforce strong password policies,*
- > *Match authentication options to the risk level of the Cloud services being used — and authenticate all users with at least a username and password,*
- > *Require enterprise administration capabilities for all supported authentication methods, especially the administration of privileged users,*
- > *Use self-service password reset functions first to validate identities, and*
- > *Consider using federated authentication (you authenticate your users locally, then pass some type of token to the Cloud service granting access for that user).*

Perform a thorough evaluation of your current IT security. This will enable you to understand your infrastructure and application vulnerabilities and make sure that all security controls are in place and operating properly.

Develop a risk mitigation plan and document it. Doing so will give you what you need to quickly deal with any issues that arise — and you'll know how to train employees about risks and how to respond to them.

Monitor Cloud service performance rigorously. This is how you and your Cloud provider will recognize any security threats early and deal with them quickly.

4 Cover your data backsideup

Make sure you know and incorporate into your SLA ...

- > *What data lives in the Cloud,*
- > *Where your data lives in the Cloud,*
- > *How your data is protected once it's in the Cloud,*
- > *How your data is protected in transit,*
- > *How and where your data is backed up, and*
- > *How — and how easy — is the process by which you recover your data backups.*

5 Always monitor your Cloud services

Because monitoring is the best way to ensure that your network is behaving and that your Cloud services provider is living up to your service-level agreement, be aware:

- > *Moving to the Cloud doesn't require a new network (unless your existing network already has serious issues) — but*
- > *Bandwidth is a core component of systems using Cloud platforms, so you need to plan for your bandwidth requirements and monitor bandwidth use. Doing this generally obviates Cloud bandwidth issues.*

The bottom line

When it comes to cloud services, neither one size nor one type of Cloud fits all, so it's important to seek out a Cloud

services provider who takes the time to understand your objectives — and knows what's necessary to achieve them.

Look for a Cloud services provider with the experience and expertise to work seamlessly with your staff, systems, policies, and procedures to design, deliver, and support the customized cloud capabilities your organization really needs, can afford, and can trust — rather than just sell you a cast-in-concrete service and walk away.

Since you're likely to rely to some extent on your Cloud services provider's Cloud, you'll want a provider who operates a state-of-the-art network of advanced-technology, highly-secure, highly-available Cloud data centers that run a variety of Cloud service capabilities.

And make sure your Cloud services provider is willing to customize your SLA and offers an umbrella Cloud SLA that addresses the service levels of all your Cloud services — so you always get the service levels you need.

To find out more about why and how Cloud computing is changing business information technology, see Quest's Executive Brief, *The Benefits and Challenges of Cloud Computing*, the first in Quest's three-part Executive Brief series on GETTING THE MOST FROM CLOUD COMPUTING.

And to learn about the ways that Cloud environments can be affordably customized to more precisely fit the needs of individual enterprises, see Quest's Executive Brief, *The Value of Shaping Your Own Cloud*, the second in Quest's three-part Executive Brief series on GETTING THE MOST FROM CLOUD COMPUTING.



The complete Cloud services provider

Consulting

Assesses current customer Cloud-readiness, then reliably recommends a cost-effective Cloud services plan, including migration, training, and deployment

Engineering

Defines/designs requirements for performance, security, scalability, SLAs, etc.

Aggregation/integration

Makes disparate Cloud services work together and/or with legacy solutions

Implementation

Deploys Cloud services and migrates customer data and applications via state-of-the-art unified virtual data center networks designed for Cloud services

Customization

Adds functionality to aggregated/integrated Cloud services

Support

Provides 'a single throat to choke'

State-of-the-art Cloud infrastructure

Fields virtualized, Cloud-enabled data center resources available via customizable SLAs

ABOUT QUEST

A trusted technology management company delivering successful solutions for clients ranging from the Fortune 50 to Fortune 5000 small and medium-sized businesses, Quest offers a portfolio of professional, cloud, and managed services either on-site or from its secure network of global service delivery centers. Quest is ranked #9 on the Global Managed Services Cloud Providers Top 100 by MSPmentor, is ranked among the top 500 technology firms by VARBusiness, is among CRN's top 250 Tech Elite, and is included in CRN's designation of Cloud Elite.

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