

Six Steps to A Cloud Migration Project That Improves Your Company's Productivity and Profitability

Introduction

Content migration into the cloud involves moving company data from one environment into another. Yes, great rewards come with a successful cloud migration project. If done right, your company can realize greater cost savings, increased operational effectiveness, enhanced storage use, and better connectivity. However, 51% of companies begin cloud migrations by failing to even define a cloud strategy at all, according to "Best Cloud & Data Stats of 2011...So Far." By sidestepping these and other costly errors, your company may avoid known risks inherent in cloud migration initiatives.

To help you, this white paper provides an overview of the risks and rewards of adopting the cloud computing model, walks you through the steps of a successful cloud migration, and introduces you to cloud migration resources offered by The Integrity Group.

Your Forecast for Using The Cloud Only Gets Brighter!

If your company uses an individual computing model, you may already know how data stored on devices can be susceptible to loss, damage or theft.

Although the network computing model addresses these problems, the people and hardware needed to make it work may not always be accessible.



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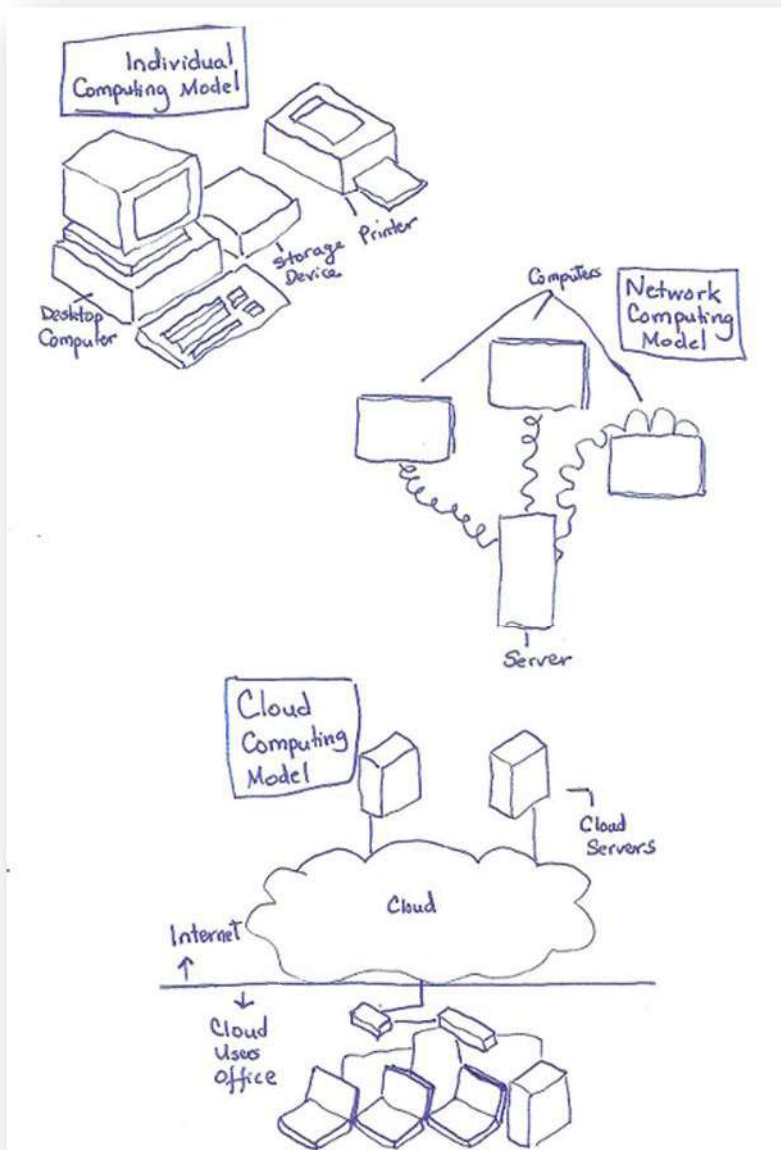
As is the case with a network computing model, costly software and high capacity storage devices, such as file servers, storage area networks, and network-attached storage, do provide high-performance, high-availability data management systems. However, these have many drawbacks, including high cost, and limited lifetimes that require backup recovery systems, and specific environmental conditions and personnel to them.

In a network computing model, considerable amounts of energy for power and cooling is required, which can make up around 30% of total energy use in the average datacenter, according to an ABB Group study. The average company's datacenter uses the same amount of energy as 25,000 U.S. houses.

Interestingly, almost 74% of company datacenters had to increase their physical server counts in the three years prior to 2011, according to an AFCOM poll of 360 IT managers and senior IT executives. The trend of increasing physical server counts will only continue.

At the Integrity Group, we recognize that working with large volumes of information on a local area network can get expensive.

In the individual and networked computing models, data, computing prowess, and software are available locally either on a device, or on a network--not to users outside these networks.



This is in stark contrast to the cloud computing model.

Cloud computing involves sharing and subscribing to computing resources that handle applications and data over the Internet, versus the use of a local server.

Therefore, when you hear people talk about the cloud, they simply mean the Internet.

Although the financial services, manufacturing, healthcare, and the transportation industries have largely adopted use of cloud solutions in their business... that picture is set to change.

A 2008 Pew Research Center survey entitled, "Future of the Internet", concludes that cloud computing will be used by 71% of users to some degree in the next decade.

Instead of a computer in an office performing computing work in the individual computing model, or through a company's datacenter in the networked

computing model, the computing work will be performed over the Internet or Wide Area Network using cloud computing solutions.

Cloud service providers today offer economical and virtually unlimited software licenses and storage.

That's because economies of scale enable these providers to supply software and information more economically than equivalent electronic data storage devices.

In all, information creation, storage, access and sharing on cloud is less expensive, requires no installation, needs no replacing, provides backup and recovery systems, has no physical presence, involves no personnel and requires no energy for power or cooling.

As the cloud industry grows, proprietary standards will give way to universal standards--whose benefits you can expect will trickle down to cloud consumers. Further, as Internet technology advances, users will see an increase in performance and better up-times at a lower cost.

Many times costs associated with adopting the cloud have dominated discussions, but the cost-based view does not paint a complete picture.

For companies with a productivity focus, the ability to apply IT tools faster and more flexibly has proven to be a primary benefit of adopting cloud solutions into their business.

Cloud solutions provide you the consumer more efficient ways to create, store, access and share information. Rather than estimating the amount of information that you create, store, access and share--while requiring you to purchase the hardware and software required--you the cloud consumer only pay for what you need. Cloud solutions are also scalable, able to grow to meet increased demand.

However, the cloud is the future not only because of its cost, scalability, and economies of scale, it involves fewer maintenance and troubleshooting headaches.

Cloud computing cuts IT labor costs by 50%, according to IBM's Chief Technology Officer. With cloud computing, a major portion of IT responsibility shifts to the providers. As a result, you do not need to address software updates and technical issues individually.

Realize a Noticeable Returns on Your Cloud Investment

Here are few kinds of returns on your cloud investment dollars that you can expect to receive:

[Companies That Are Right for the Cloud

If your company uses the following services and/or components, you're a good candidate for the cloud:

- ✓ **Backup systems**
- ✓ Batch processing applications
- ✓ **Log processing systems**
- ✓ Development systems
- ✓ **Testing systems**
- ✓ Build systems
- ✓ **Web-front (marketing) applications**
- ✓ Queuing systems
- ✓ **Content management systems**
- ✓ Training/ pre-sales demo systems

If you've identified that one or more of the applications listed above are used in your business, call The Integrity Group to help you:

- ✓ **Determine which service or component has underutilized assets.**
- ✓ Identify which have urgent company needs to scale but are running out of capacity.
- ✓ **Assess those services or components using traditional tape drives for backup.**
- ✓ Determine which need to be used by partnering organizations.

To request a free Technical Assessment, contact the Integrity Group at 281.955.0707 to get started today.]

■ **Rate adaptation and cost savings**

Decision-making delays can translate into loss revenue. By reducing delays, the cloud helps your company make transitions that keep your business in step with market trends.

■ **Ease of ownership**

Say goodbye to more IT datacenter infrastructure. Even non-IT staff is able to configure and operate infrastructure and applications suited when you move operations into the cloud.

■ **Rapid and dynamic provisioning of resources**

As your company grows, you need more human resources and equipment in the traditional business-computing model. Transitioning into the cloud enhances scalability, allowing your company to adjust its capabilities on the fly without investing in new infrastructure, training new personnel, or licensing new software.

Outside of cost, your company can experience greater organizational productivity by putting cloud computing architecture in place.

Rainy Days? No Problem, When You Deploy Into the Cloud!

Imagine that you and a competing company are operating in the same industry.

Your companies are very much alike. You both provide the same services, serve the same market, and both have ambitious projections for the future.

One day a hurricane strikes the area where your two companies are headquartered knocking out power citywide. You are still very much alike — in fact, you both house the same number of employees and offer the same services.

However, there is a difference: Your competitor has to shut down operations for a full two weeks due to the hurricane's aftermath. Your company, on the other hand, continues servicing customers on schedule.

What makes the difference?

Your company successfully migrated its noncritical applications and data into the cloud, allowing your employees to continue work offsite on schedule. Your business operates without an interruption.

Cloud computing enables any member of your company to access your business from anywhere in the world.

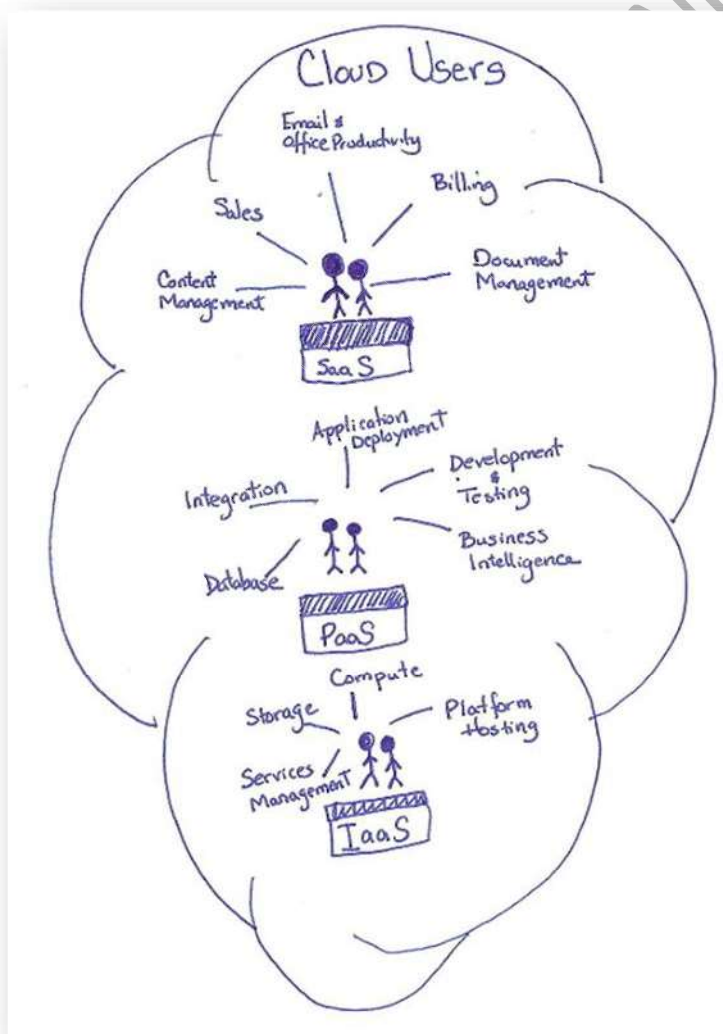
Therefore, by adopting a cloud solution, you're able to minimize uncontrollable circumstances that would normally shut down your company's operations. And with datacenter outages costing companies on average \$505,502 per incident, according to a 2011 Ponemon Institute benchmark study of 41 datacenters, the major expenditure of outages is an expense your company won't miss.

By deploying the cloud, your business can operate far more efficiently.

First Things First: Are You Cloud-Savvy?

Before you decide to venture off into the cloud, you should have a general understanding of the kinds of cloud services there are on the market today. There are three types:

- ✓ **Infrastructure as a Service (IaaS)** Providers offer computers as physical or virtual machines, along with other computational resources. Examples of IaaS offerings include storage, platform hosting, backup & recovery, CDN and others services.
- ✓ **Platform as a Service (PaaS)** PaaS is a computing platform that typically includes an operating system, programming environment, database, and web server. Examples of PaaS offerings include business intelligence, databases, development & testing, integration, and application deployment platforms.



- ✓ **Software as a Service (SaaS)**
After installing or receiving access to application software, cloud users connect with their client to access the software. SaaS providers offer sales, billing, ERP, human resources, content management, email & office productivity, document management, collaboration, financials management, and access social network software.
- ✓ **Storage as a Service (STaaS)**
STaaS involves a service provider offering space for rent in their storage infrastructure as solution to backup storage problems.
- ✓ **Security as a Service (SECaaS)**
SECaaS is the integration of security services into a corporate infrastructure, which may

include anti-virus, authentication, intrusion detection, and anti-malware/spyware, to name a few.

- ✓ **Data as a Service (DaaS)** DaaS involves making on-demand data available to a user regardless of where they are located or whether they are a consumer or provider operating within the same organization.
- ✓ **Database as service (DBaaS)** DBaaS involves a service provider offering on-demand access to a database for storing application data.
- ✓ **Test environment as a service (TEaaS)** TEaaS is software and its associated data hosted centrally as a test environment delivery model accessible by users using a thin client.
- ✓ **API as a service (APIaaS)** APIaaS enables application programming interfaces to be created and hosted, providing multiple entry points for API calls to execute XML web services, TCP/IP or other APIs.
- ✓ **Backend as service (BaaS)** BaaS provides a way to link applications to backend cloud storage, in addition to providing features such as integration with social networking services, push notifications, user management, and push notifications.

Your cloud provider can provide you with service deployment, service orchestration, cloud service management, as well as security or privacy offerings.

Once your company has decided on a provider, you'll need to decide how the cloud system will be deployed:

- ✓ **Private**
In this system, your cloud system operates solely for your company. Your company, or a third party, manages the system and it may exist on your company's premises or off-premises.
- ✓ **Community**
Your community's cloud infrastructure is one shared by several entities and supports a certain community with shared concerns (e.g., policy, compliance concerns, security, etc.). Your company, or a third party, manages the system and it may exist on your company's premises or off-premises.
- ✓ **Public**
In the public cloud, your system is available for use by the public or a large industry group, but an organization selling cloud services may own it.
- ✓ **Hybrid**
In the hybrid cloud, your system consists of two or more clouds (private, community, or public) and remains unique entities. Standardized or proprietary technology that enables data and application portability ties it together.

Ok...so you know the basics of moving your business operations into the cloud. Let's now discuss the nuts and bolts of migrating your data and/or applications.

Why Some Cloud Migration Efforts Fail

Cloud information creation, storage, accessibility and sharing have several drawbacks that you should address with stakeholders in your company before deciding to use it. They are as follows:

- Users relinquish direct control over information. Although a cloud provider is far less likely to have its data lost or compromised than most individuals or organizations, people like knowing where their information is and who is handling it.
- Cloud relies on network connectivity between the LAN and the cloud provider. Any number of issues, including network disruptions, solar flares, severed underground cables and satellite damage, can affect network connectivity. Network outages mean that the cloud is completely unavailable.
- Lower Internet bandwidth will result in decreased performance. For example, if accessing a typical software or file on a LAN takes 1 second, accessing the same software and file in the cloud can take 10 to 100 seconds. While consumers are accustomed to slow internet downloads, they aren't accustomed to waiting long periods for a software, document or a spreadsheet to load.
- Cloud service providers use proprietary networking protocols often incompatible with normal software and file serving on the LAN. Accessing cloud software and information often involves ad hoc programs to be created to bridge the difference in protocols.

“So, How Do I Get My Data Into The Cloud Anyway?”

Once your company has decided to initiate a cloud migration, you should never fall into the trap of thinking of a migration as a straight A-to-B-to-C move. At The Integrity Group, we find that many companies perform cloud migrations but fail to anticipate the problems encountered, and fail to document them.

As cloud computing technology advances, the integration of cloud services is becoming too complex to manage. Therefore, cloud migration of large quantities of data comes with a load of issues.

Data can deteriorate. Information can become redundant or obsolete. Data may not match the requirements of the new system. Moving information from one place to another can also result in data corruption.

Moreover, your company's operations don't come to a halt because you're moving data. Therefore, you will need to ensure the cloud migration occurs in a manner that your company avoids service interruptions.

A good cloud migration initiative begins by determining your company's data and application-readiness and ends with a successful move into the cloud environment.

When you're ready to begin, The Integrity Group can help you to analyze your data, develop the architecture to house your data, and move your data while ensuring your cloud migration starts and finishes right.

First things first, however...

How do you increase your chances of successfully executing a cloud migration initiative? Define your company's cloud strategy with a Cloud Migration Plan.

Your Cloud Migration Plan should detail the business case for the project, as well as fill in the gaps of understanding needed to move your data from your existing legacy architecture into the cloud architecture.

To create your Cloud Migration Plan, take the following steps:

1. Determine measurements of success.

At the beginning, assess the time, function, and financial constraints your company requires the cloud migration project to meet to be a

success. This may include an appraisal of security, compliance, technical, tools, and license requirements.

2. Define the source and data structures of the legacy system.

Is the information to be migrated in the form of a database, application, business process, or digital preservation migration? Assess your source structures. Perform an analysis of the existing system to understand how it worked, was used, and by whom.

3. Determine target structure of the new system.

As mentioned previously, cloud service providers offer three service models currently on the market: SaaS, PaaS, and IaaS. Additionally, the four deployment models previously mentioned includes private cloud, community cloud, public cloud, or hybrid cloud. Assess the target structures of your chosen cloud service provider, and choose an optimal system.

4. Identify whether a manual or automated approach is best.

Small amounts of data, usually less than 5000 pages, may be migrated manually. If the amount of data is large, or an application is being migrated, you may determine an automated approach is better. Assess the size and complexity of your migration project to determine which approach will work.

5. Map out categories of data between the source and target structures.

All cloud systems consist of three primary components: access, resource pools and address mapping. Access components allow users to connect with required applications. Resource pools maintain the storage and servers that users can build on to run applications. Lastly, address-mapping components link elastic resource locations (e.g. URLs) to allow user access to applications no matter where they are running. Connect the dots unique to your source and target structures.

6. Execute migration.

Now, you can execute the migration. In that you have defined the existing and expected requirements, rules, handling of exceptions and the Quality Assessment process, you now have all technical elements in place to execute.

In the event unforeseen problems arise, as in the unplanned need for supplies, you'll document such in your Cloud Migration Plan.

If your migration is not successful, it will be due to not meeting success criteria.

Summarily, the Cloud Migration Plan is critical to ensuring your project succeeds. When you clearly define all objectives and rules clearly, you will leave little room for error. Conceptualize how the source data will connect to the target structure, while outlining the parameters that information must meet to ensure data integrity throughout the migration.

And when you need an ally to help structure plan, The Integrity Group partners with your company to from conception to completion.

Conclusion

To conclude, the topic of cloud migration has become more complex due to an increased number of platforms, technologies and vendors. Since its development, cloud service providers have increased dramatically, and the decisions that a company must make in order to migrate data has grown.

Significant incompatibilities between applications and the offerings of various cloud providers exist.

A Cloud Migration Service is ideal for companies that want to maintain data integrity and reduce or eliminate data loss as business demands and needs increase, whose internal change and configuration management strategy are complex, or who possess data whose integration points are complex between company to cloud, or cloud to cloud are complex .

ABOUT THE INTEGRITY GROUP

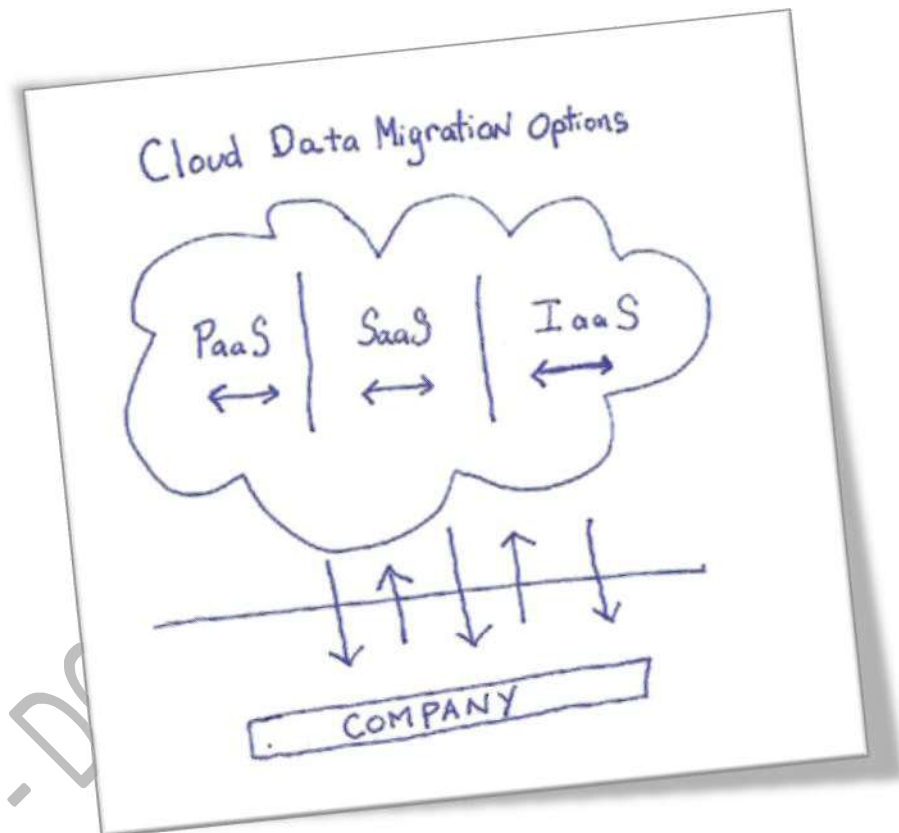
For over 15 years, The Integrity Group has eliminated our clients' toughest documentation, training, and marketing communications headaches. Our continuum of value enables us to offer customized solutions for your toughest project challenges...with our solutions reducing the costs of producing your content by up to 25% on average.

The Integrity Group offers a Cloud Migration Service that:

- Gets your data moved quickly and safely,
- Reduces known errors by cleansing data before, during and after it is migrated,
- Speeds cloud migration projects by minimizing time spent on data extractions and loading that accompany automated tools that don't fit your need, and
- Decreases risk with our proven cloud migration methodology and services.

With The Integrity Group's Cloud Migration Service, we work with your architects to provide analysis and design to determine what works best with your customized Cloud Migration Plan. We prefer sitting with you during planning at the beginning, to ensure we provide maximum value to your initiative.

The Integrity Group allies with your company to preserve your critical information when migrating data from company to cloud, or from cloud to cloud. We are not a competitor to other cloud computing companies that provide support. Instead, we partner with them to get the job done.



The Integrity Group's Cloud Migration Solution is ideal for your company if:

- You need to retire a legacy system while maintaining quality factors during data mining.
- You need data migrated into the cloud, but a one-size-fits-all automated tool isn't what you need.
- A recent company merger or acquisition requires that multiple systems integrate to ensure your company's operations continue business as one entity.

The Integrity Group can customize a solution that fits your company's needs.

A few of the roles that we can take on your next cloud migration project include:

Cloud Auditor

We can conduct an independent assessment of your cloud services, information system operations, performance and security of your cloud implementation.

Cloud Broker

We can manage the use, performance and delivery of your cloud services, and negotiate relationships between your cloud architecture's providers and consumers.

Cloud Migration Agent

We can create your Cloud Migration Plan and move your data to its destination in the cloud while maintaining your data quality and integrity as it moves.

To get started with a free Technical Assessment today, call 281.955.0707.

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