PUBLIC CLOUD MIGRATION STRATEGY GUIDE

mycloudIT

WHAT YOU SHOULD KNOW ABOUT MOVING YOUR BUSINESS TO THE PUBLIC CLOUD

This guide will provide an overview of the benefits, considerations, and options available to move to the public cloud Moving to the cloud is complex. This guide is intended to highlight key topics you need to think through as you plan and execute your move to the cloud.

In this guide you will learn about:

+ Overall Cloud Opportunity

+ Benefits for Businesses and IT Service Providers

+ How to Design Your Cloud Strategy

+ Monthly Recurring Revenue Basics

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THE IT INFRASTRUCTURE TRANSFORMATION

The "cloud" is here! But what does that mean?

The cloud has been here for decades transforming foundational industries - email, music, banking, entertainment, and transportation - to just name a few.

Today, the rise of public cloud providers and billions in investment per year has grown cloud visibility, and opportunity. Microsoft, Amazon, and Google are paving the way to unthinkable possibilities with the world's newest commodity - public cloud infrastructure. And along the way, they are bringing the transformative force of the cloud to computing and IT infrastructure.

The IDC forecasts worldwide public IT cloud services revenue will reach $203bn by 2020.

IT is big and complex, and, hence naturally resistant to transformative disruption. But the benefits of the public cloud mean the shift to computing on public cloud infrastructure is certain.

+   Lower costs

+   Increased security and reliability

+   Dynamic scalability and flexibility

+   Pay-as-you-go pricing

+   Increased productivity

The technology exists today for server-less computing in the public cloud. However, with billions tied up in old infrastructure, a skills and knowledge gap, and complex organizational systems, this once in thirty-year disruption will happen gradually. IDC forecasts by 2018, 80% of IT organizations will be committed to at least hybrid architectures.

This overview is intended to help you get ahead of the curve and guide you through the benefits, considerations, and options to enable computing on public cloud IT infrastructure.

BENEFITS OF THE PUBLIC CLOUD

Three core benefits of the public cloud stem from flexibility and scalability:

1. Cost Saving

2. Security & Reliability

3. Productivity

Cost Savings in the Public Cloud

No Capital Expenses Needed

Existing IT infrastructure requires huge investments of capital on fixed assets, upfront. Hardware and software needs are often estimated 12-36 months out, and categorized as sunk costs.

In the public cloud, no equipment needs to be purchased, no capital outlay required, and costs associated with wrong forecasting avoided. You are moving CapEx to OpEx, just being there.

Reduced Operational Expenses

With physical infrastructure, costs are required to power, administer, maintain and service hardware. Additional line items include fire suppression, redundant data, the ability to fail over to a coallocated data center. The costs can skyrocket. All of this is accounted for as operational and labor expenses through a managed services provider or an internal IT department.

Public cloud providers bear all of this financial burden and then labor can be repurposed to more strategic or revenue-generating activities. Additionally, the indirect costs of unplanned downtime are practically non-existent with the world class equipment, back-up options available, and reliability guarantees of a public cloud provider.

Dynamic Scalability Lowers Consumption & Administrative Costs

The cloud enables flexibility to scale up and down to match demand on multiple dimensions. Users can be added or removed in minutes. Compute power can be increased without adding more machines, even on a per app basis. And load-balancing allows for efficient usage of resources on the fly. This all adds up to less consumption cost, and less administrative cost to configure and manage the optimal sizing.

Pay Only for What is Used - The Power of Auto-Scheduling

With a pay-as-you-go model, only for what is used, businesses save on compute, storage, licensing, networking, and security costs. Elastic computing capabilties allow actual app usage to match infrastructure runtime without disrupting operations. Most employees don't work 24/7, servers should not either. With auto-scheduling capabilities, schedule virtual machines to turn on and off, significantly reducing runtime costs. It is a true utility model - pay for services when they are actively used and not a cent when they are not.

To summarize, the cost savings of computing in the public cloud include:

+ No large upfront hardware purchases - move CapEx to OpEx

+ Lower operational costs, labor costs and maintenance expenses

+ Reduced spending on compute, storage, networking, and security

+ Lower consumption and administrative costs

+ Business-friendly business model

SECURITY AND RELIABILITY

Security

Security is the most common concern and misconception of computing in the public cloud. In reality, the typical data center is far less secure as public cloud providers employ robust, comprehensive measures to secure data.

+ Offer a multi-layer approach that is built into the infrastructure

+ Implement security controls while data is stored and in-transit

+ Sophisticated encryption technology

+ Frequent penetration testing

+ Proactively ensure adherence to latest security compliance requirements

One of the biggest benefits of leveraging public cloud computing is that many regulatory and data protection standards are shared with the public cloud provider, which you can augment. In addition, most public cloud providers can offer additional customized solutions tailored to the specific needs of the business.

Reliability

Public cloud providers, such as Microsoft and Amazon, come with a 99.95% SLA guarantee, which is much higher than most on-premises data centers can hope to offer. These massive cloud providers automate key features to ensure this level of reliability:

+ 3 redundant copies of data at all times

+ 1 copy in a separate data center in case of regional disaster like a hurricane or earthquake

+ Automatic fail over to backup server to minimize downtime

+ Hosting applications on at least 2 server instances to minimize downtime if hardware failure occurs

Therefore, unless you want to spend millions of dollars on building and maintaining your own IT infrastructure, it is highly unlikely that you can compete with the stability, reliability, and security of public cloud providers.

PRODUCTIVITY

Work From Anywhere

Cloud computing allows employees to move more freely within the company and from any location outside of the workplace. The use of mobile apps and devices has now evolved well beyond email to corporate workspaces on mobile devices. This mobility and flexibility empowers employee productivity and satisfaction.

Constant Connection

This constant connection helps businesses starting up or expanding geographically. The cloud provides the most cost-effective way to quickly set up the infrastructure for an operational business or satellite office. And this allows smaller start-ups and SMBs to compete in a global marketplace with limited resources. Everyone in a company, no matter the location, can be connected at all times. With constant connection businesses are getting things done at lightning speed with ease and low cost.

Bring your Own Device

BYOD policies are on the rise as they empower improved mobility, employee satisfaction, and greater productivity for both employer and employee. Employees can choose the tools and devices they prefer, making work more enjoyable and productive. Through predictable equipment stipends companies can spend less on devices and reallocate equipment spend to invest in cutting-edge technologies to further drive productivity and business value.

ARCHITECTING THE TRANSITION

It is time to move applications and workloads to the public cloud - provider offerings continue to mature, at ever-increasing rates. Past concerns are gone today, and most can now host mission-critical workloads on public cloud IaaS and PaaS to allow businesses to fully take advantage of the public cloud benefits on offer.

Designing a cloud strategy is complex, but should follow these basic steps:

1. Identify an individual or team to lead your cloud adoption strategy

2. Assess existing production applications and workloads and ask where those should be hosted

3. Identify the suitable public cloud deployment model - IaaS or PaaS

4. Evaluate public cloud providers and a multiprovider strategy

5. Architect, migrate, and manage cloud services

6. Monitor consumption

There are a number of key considerations to make when designing and implementing your cloud strategy above. We will outline some of those key considerations below:

+ SaaS, PaaS, IaaS

+ Workloads to Move to the Cloud Today

+ Public Cloud Provider Considerations

+ Architecting a Migration Plan

SaaS, PaaS, IaaS

Key Distinguishing Feature od SaaS, PaaS, IaaS Is Conctrol

The specific application or workload will help determine which cloud deployment model or cloud layer is best for a particular situation.

Software-as-a-Service (SaaS): remove the need for managing, maintaining & upgrading - similar to the thin-client model of software provisioning; reduces the administrative and labor costs of managing at the cost of flexibility and control; off the shelf solutions, viable for non-critical apps.

Platform-as-a-Service (PaaS) provide a platform to develop or customize applications without managing OS, servers, storage, and networking; software and hardware infrastructure, viable for in-house developed applications.

Infrastructure-as-a-Service (IaaS) outsource a virtual data center in the cloud without investing in capacity planning or any physical management and maintenance; direct access to servers and storage with automated and scalable compute resources; most flexible and customizable solution, viable for most all on-premises workloads IaaS solutions are especially attractive because the flexibility of public cloud virtual machine depoyments allow the opportunity to take full advantage of public cloud benefits.

> For an overview of SaaS vs. PaaS vs. IaaS

> For an overview of the skills required for each layer

Workloads That Should Already Be in the Cloud

Some workloads are ripe for the cloud, here are a few key considerations:

- **+** Application Lifetime: if an application is ready for a huge redevelopment, it is better to be migrated to the cloud to reduce budget and resources

- **+** Integration Complexity: if an application does not have a complex interconnection with other applications or processes, then it's easier and less costly to migrate to the cloud

- **+** Compliance and Security: some cloud providers provide built-in compliance for particular industries

Here is a list of common workloads ready to move to the cloud now:

1. Email Services

2. Data Backup and Disaster Recovery

3. Collaboration Tools

4. Apps with Large Databases (CRM, ERP)

Email Services
With cloud-based email systems, such as Office 365, your services are always up and running without the need for maintenance or updates. Enable your end-users to connect better with customers and colleagues whether t hey are working in the office or on the go.

Data Backup and Disaster Recovery
Before the cloud, if your servers went down or the power went out there was a good chance of data loss. The old-fashioned way to prevent this was replicating servers. This traditional method is expensive and requires extra resources and staff for maintenance and updates.

Moving data off-premises to a cloud provider is the best way to preserve your customer data against transient hardware failures or disaster. Microsoft, for example, offers at least three copies of your data for data redundancy. There are also options to keep copies of your data in a secondary region in case of a natural disaster.

Collaboration Tools
Collaboration tools drive most end-users' day-to-day activities: instant messaging, web conferencing, file sharing, and project management. Many of these are still powered by on-premises servers, which is great for local users, but often cumbersome for remote users.

Team collaboration services in the cloud let employees access company information wherever they are. You can host a large instance in the public cloud near HQ, and have smaller instances running in other cloud regions that are near remote offices. Users will enjoy a native-feeling performance from anywhere and mitigate the day-to-day challenge of disconnection or lagging services.

Apps with Large Databases (CRM, ERP)
Applications such as Customer Relationship Management (CRM) & Enterprise Resource Planning (ERP) often consist of many VMs and huge databases containing terabytes worth of data. While much of the data stays idle most of the time, these applications and databases still require capacity planning to prepare for seasonal peaks.

There are two big benefits to getting these applications and their datasets into the cloud. First, you'll greatly reduce your servers and storage costs to host and run the data. Second, these applications can benefit from the elasticity of the cloud by easily adding more computing power or storage during peak seasons.

Choosing a Public Cloud Infrastructure Provider

Today, you do not need to make a whole scale choice between public cloud provider. Evaluate each on a per application or workload basis, and consider a multicloud deployment strategy.

We all know the big 3 - Amazon, Microsoft, and Google - and there are others. Rather than run down the pros and cons of each, which you can find here, we will discuss some of the top considerations to make in evaluating each.

1. Cost & Pricing Structure

2. Location of Data Centers

3. Security and Compliance Policies

Cost & Pricing Structure
Cost formulas to calculate cost can vary by provider in complex ways as there are a number of factors that go into each formula. The best way to compare costs is to estimate a typical deployment set-up and enter these details into a price calculator for each provider, then understand the key factors that make up the difference. Even better, if they allow for a free trial deployment you can go one step further in estimating actual usage costs.

Location of Data Centers
Location is important for several reasons - proximity, policy, and recover.

– **Proximity:** look to where your users are

– **Policy:** some countries and industries have regulations on where data can be stored

– **Disaster Recovery:** make sure you're using a data center NOT located in the same area as your primary location

Moving data off-premises to a cloud provider is the best way to preserve your customer data against transient hardware failures or disaster. Microsoft, for example, offers at least three copies of your data for data redundancy. There are also options to keep copies of your data in a secondary region in case of a natural disaster.

Security and Compliance Policies
Look at the level of built-in security features and controls, as well as evaluate their industry compliance standards.

– **Identity & Access:** how do they enable you to manage access for your end-users - e.g. do they offer multi-factor authentication?

– **Network Security:** do they ensure encrypted or private connections?

– **Data Protection & Privacy:** how do they secure data in transit? Do they follow industry standards? What are their backup and retention policies?

– **Threat Defense:** do they continuously monitor and analyze threats? do they conduct penetration testing?

– **Compliance & Certifications:** do they streamline compliance to industry and government regulations?

Other Considerations:

+ Services Delivered: SaaS, PaaS, IaaS

+ Network Connectivity & Storage

+ Migration Options

+ Support Provided

Architecting a Migration Plan to the Cloud

Building a migration plan to the cloud starts with two key considerations:

1. Existing application or workload characteristics and architecture

2. Desired outcome

And must take into account other factors such as:

+ Existing IT resources and skill sets

+ Capital resources

+ Available time

+ Overall company cloud strategy

+ Business objectices including: operational and cost efficiencies and business strategy

All of the above must be considered in architecting the appropriate migration plan for a particular workload. Once considered, **Gartner identifies 5 alternative migration options**, mapped to the different cloud layers discussed above, for architecting your move to the cloud and associated pros and cons.

1. **Rehost (IaaS):** redeploy applications to a different hardware environment and change the application's infrastructure configuration

2. **Refactor (PaaS):** run applications on a cloud provider's infrastructure

3. **Revise (IaaS or PaaS):** modify or extend the existing code base to support legacy modernization requirements, then use rehost or refactor options to deploy to cloud

4. **Rebuild (PaaS):** rebuild the solution on PaaS, discard code for an existing application and re-architect the application

5. **Replace (SaaS):** discard an existing application (or set

Additional considerations to be made in a fully architected cloud migration stratey include:

+ Available Third-Party Tools, Vendors, and Service Providers

+ Governance

+ Performance Requirements

+ Containers and Microservices
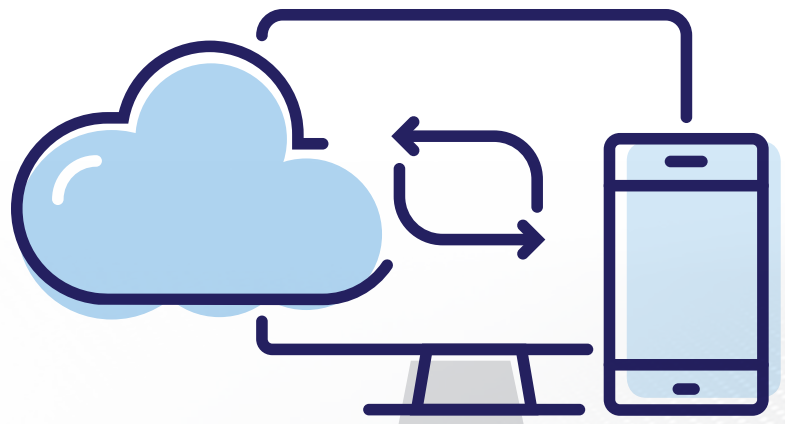
MONTHLY RECURRING REVENUE

Cloud Migration Strategy Overview

THE CLOUD DELIVERS SUBSCRIPTION BILLING AND MRR BUSINESS MODEL

Monthly Recurring revenue Basics

Monthly Recurring Revenue (MRR) is the income that a company can reliably anticipate every 30 days via collecting monthly software subscription fees. This monthly fee replaces the upfront and maintenance licensing fee structure in the old business model. The subscription generally includes updates, patches, and new versions of the software when they occur.

This new MRR model yields multiple benefits:

+ Steady cash flow: protects the company's bottom line more consistently than one-time licenses and fluctuating project-related transactions
+ More predictable planning: makes it easier to properly budget and plan for revenue growth
+ Clients benefit: fixed fees offer predictability to clients

Get Familiar With MRR Metrics

The most important metrics to track as you move to MRR in the cloud.

+ Monthly Recurring Revenue (MRR)
+ Customer Lifetime Value (LTV)
+ Cost Per Acquisition (CPA)
+ Churn (%)

Monthly Recurring Revenue (MRR): The amount of revenue you expect to receive every month from recurring services. The single most important metric that a cloud service provider should be tracking. It will serve as your primary benchmark for progress and indicate how your business grows overtime.

Customer Lifetime Value (LTV): Predictable, long-term profits a company will derive from a customer relationship. Because revenue is earned and recognized over a long period of time, understanding the long-term potential value derived from a customer relationship is critical. The profitability horizon in cloud managed services is longer than for project work, requiring this metric to look further into the future.

Cost Per Acquisition (CPA): The average amount that you spend for each new customer. It might be tricky to get CPA for sales & individual marketing campaigns. Regular web analytics won't show you where customers originally came from. You'll need to have customer analytics which can tie all the data back to the customers so you can see which marketing efforts bring you the most profit.

Churn (%): The percentage of customers who leave during a given period (month, quarter, year). If you have a high churn (double-digit) there is something problematic with your product. Start talking to your customers and fix the problem before further invest in acquisition efforts. Tracking these core metrics will give you plenty of insights to act on, identify opportunity and build your business.

SUMMARY

Thank you for taking the time to read this Cloud Migration Strategy Overview. We hope you gained new insights and identified key considerations involved in moving your business to the cloud.

In the first section, The Cloud Opportunity, we discussed the inevitable, albeit slow move of computing and IT infrastructure to the public cloud. This is because of the significant benefits of the public cloud:

+ Lower costs
+ Increased security and reliability
+ Dynamic scalability and flexibility
+ Pay-as-you-go pricing
+ Increased productivity

However, these benefits are not automatic and careful planning and execution is required to fully realize them.

In the second section, Design Your Cloud Strategy, we highlighted basic steps to follow:

1. Identify an individual or team to lead your cloud adoption strategy
2. Assess existing production applications and workloads and ask where those should be hosted
3. Identify the suitable public cloud deployment model - IaaS or PaaS
4. Evaluate public cloud providers and a multiprovider strategy
5. Architect, migrate, and manage cloud services
6. Monitor consumption

And expounded on some of the key consideraetions along the way:

+ SaaS, PaaS, IaaS
+ Workloads to Move to the Cloud Today
+ Public Cloud Provider Considerations
+ rchitecting a Migration Plan

In the third section, Monthly Recurring Revenue, we highlighted the benefits of this business model and key metrics to track.

ABOUT MYCLOUDIT

MYCLOUDIT MAKES IT EASY TO MOVE TO THE PUBLIC CLOUD

MyCloudIT is an end-to-end solution that makes the transition to the public cloud simple, efficient, and affordable. Built by cloud experts, MyCloudIT is a turn-key platform that simplifies the delivery, management, and monitoring of desktops, apps, and data in Microsoft Azure.

+   Automate all engineering required to move to the cloud

+   Reduce the deployment of a customized solution to a few questions

+   Streamline all management functions

+   Enable key features like auto-scheduling to maximize cost savings

+   Monitor real-time alerts and analytics to optimize cost and performance

MYCLOUDIT DEPLOYS REMOTE DESKTOP SERVICES ON AZURE IAAS

The MyCloudIT platform leverages Microsoft Azure IaaS to automate the creation and management of Azure Remote Desktop Services.

We automate the process required to build a scalable and reliable Windows Server Remote Desktop Services (RDS) deployment using best practices from the Microsoft Azure and Microsoft Windows Server RDS teams.

Microsoft Azure

"From noob Azure guys, we have a freaking awesome, fully functional 3D accelerated RDS environment which is flawlessly running AutoCAD and Revit, dual-screen, in a world class datacenter, that I can access from anywhere!"

- Bobby Weiter, CEO at AECWorkspace

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