NFINIT

Moving to the Cloud:

Best Practices

Introduction

Over the last decade, there has been a growing data **migration** as companies moved their operation — in whole or in part — to the cloud. Most did so in order to optimize their costs and enjoy greater business flexibility. This massive migration from on-site data storage to enterprise-wide, cloud-based storage has made the cloud the most disruptive force in the IT market. <u>Projections estimate</u> that IT spending on cloud-based offerings will surpass non-cloud offerings by 2022 — and for good reason.

Even if you feel that transitioning to the cloud is a daunting prospect, it's a necessary step you must take in order to thrive in today's competitive landscape. **Whether you're a small business or a major enterprise,** the benefits the cloud, when properly utilized, provides are just too great to ignore.

> Additionally, in all likelihood, your competition is considering the switch (or has already begun the process) — making the migration to the cloud not only beneficial, but necessary to stay ahead.

But how do you transition to the cloud? And what are the best practices for migrating?

The experts at NFINIT have put together the answer.

Why Should You Move to the Cloud?

In 2018, IDG's cloud computing survey discovered that approximately 75% of businesses had at least part of their operations in the cloud, with most utilizing a varied mix of in-house infrastructure and cloud services.

This hybrid cloud approach needs to provide access to a variety of platforms to enable workload optimization — one that offers the oversight and control of private cloud with the affordability of public cloud.

So, what is causing this partial migration to the cloud? It comes down to the benefits, which include:

Increased productivity

Cloud computing creates economies of scale. As Forbes notes, "The advantage of cloud computing to a business, particularly a smaller one, is that the administration and management of computing resources. This classic division of labor allows everyone to increase productivity in their specialties."

Storage is simpler

Cloud-based storage is more **flexible** and scalable than on-site servers. It's easier to expand or contract storage needs without having to manage the capital headaches associated with managing physical equipment.

Cost-effective

Transitioning to cloud is relatively inexpensive to set up and can be tied to your exact needs, which reduces waste. By transitioning into an operational excellence cloud-based model, you reduce your capital expenditures and infrastructure costs.

Less downtime

Downtime represents dollars lost. Cloud-based infrastructure utilizes ultra-low latency networks and creates a fast and flexible IT environment that keeps your business online, providing increased security, reliability, mobility, and recovery speeds.

Increased scalability and flexibility

Your cloud provider can help you rapidly scale and transform the way your business functions and operates. What used to take weeks or months, now can be done in hours or days. You can protect legacy systems and eliminate hardware constraints. Further, an operational expenditure (OPEX) cloud-based model grants you flexibility to preserve capital expenditure (CAPEX) funds for other projects, while still protecting and upholding useful legacy systems.

Easy access to information

The cloud provides flexibility that allows your business and its workers to operate remotely. As Business Insider writes, "Cloud adoption has become a catalyst for data center consolidation or migration to help align an organization's IT systems and workloads to cloud platforms, producing new levels of speed, agility and innovation."

These are just a few of the reasons why an increasing number of businesses are transitioning to the cloud. And this desire for a competitive edge is ubiquitous.

According to TechRepublic,

81% of business leaders are embracing the cloud because they're concerned about missing out on cloud advancements... The survey unequivocally confirms that Cloud FOMO is real and on the mind of C-level and other IT leaders who are grappling with bringing the value of this new frontier to their organizations, from increasing IT outcomes to being a strategic driver for increased business agility.

The bottom line: migrating parts of your operation to the cloud is a great way to optimize business infrastructure, create efficiencies, and reduce costs.
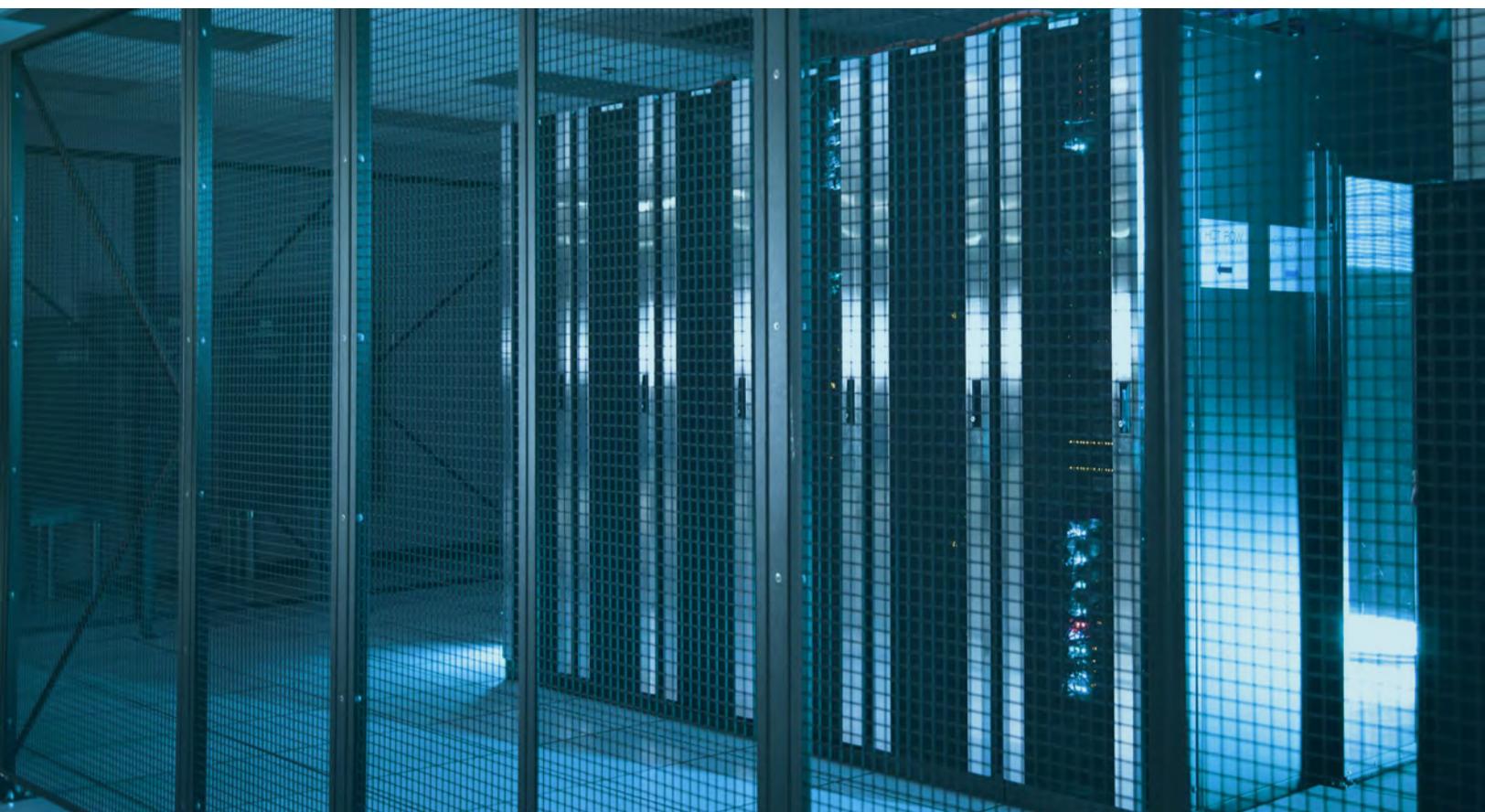
Best Practices for a Successful Migration: Make Sure You Do It Right

Although you may be in a hurry to switch to the cloud, it's important that you don't rush the process. Like with any business decision, you must take the time to craft a game plan, strategize, and consider potential hurdles or obstacles. By taking a measured approach, you ensure that your transition goes smoothly.

So, what are the steps for a successful migration?

Know Your Cloud Economics

Understanding the cloud's potential benefits isn't enough. You need to know the **whys** and **wherefores**. To create visibility, your team must perform an analysis that factors in the principals, costs, and benefits of migrating to cloud computing. In order to optimize your operation and derive the most value from the switch, it's important that you know where and how cloud services will impact your IT infrastructure, IT budget, and security.

Naturally, this will depend upon your current infrastructure, staffing needs, R&D setup, and various other factors. You will need to estimate:

- The total cost of ownership

- **Variable and metered cost model (as opposed to traditional IT resourcing cost model)**

- Cost of your current data center

- Estimated costs of setting up cloud infrastructure

- Costs of executing a migration

- Further integration and post migration costs

Going forward, your new systems will be able to help monitor cloud usage and performance, and then offer actionable insights or recommendations.

Commit to a Cloud-First Approach

It's important that your organization considers the areas where colocated cloud, community cloud, and public cloud offerings can help them optimize workloads.

According to Gartner,

"

Innovation is rapidly shifting to the cloud, with many vendors employing a cloud-first approach to product design and some technology and business innovations available only as cloud services. This includes innovations in the Internet of Things and artificial intelligence.

To make your migration, it's important that you hire or enlist the help of IT experts who have experience and expertise with:

- Cloud security

- Cloud architecture and deployment

- Cloud data and analytics

- SaaS deployments

- Internet of Things applications

You will need to work together to map out a migration strategy.

Steps for this include:

— Nominate a primary technical and financial stakeholder who will lead the charge.

— Decide whether you want to go single cloud or multi-cloud.

— Establish Key Performance Indicators (KPIs) to chart how the cloud application or service stacks up against expectations.

— Set up performance baselines to compare pre-migration performance to post-migration performance.

— Decide whether you will migrate everything at once or if you'll do so in parts. If you transition in parts, you will need to prioritize which components shift first.

> For this, you'll need to:
>
>   a) Perform a Network and Security Evaluation
>
>   b) Evaluate user acceptance and viability of cloud applications

— Refactor applications and services prior to migration to ensure that they're optimized for the cloud.

— Create a data migration plan.

— Determine which resources could be retired and removed once migration is finished.

By strategizing ahead of time and being purposeful about your migration, you'll be prepared for the inevitable bumps in the road.

Set Up a Cloud Business Office

In addition to having primary technical and financial stakeholders, **make sure you have executive sponsorships in place to spur the charge towards a cloud migration.** This virtual leadership team will have full oversight and provide direction to engineers during the transition. The team of experts will also be responsible for allaying fears, troubleshooting, and guiding the organization throughout all phases of the process. According to Jonathan Allen, **depending on the size of your organization,** the team can consist of:

- CIO or Direct Report with Single Threaded Ownership

- Chief Financial Officer or Direct Report

- Procurement or Vendor Management

- Chief Information Security Officer

- Legal council / Risk Leader (needed in most organizations, but especially regulated ones)

- Head of Infrastructure

- Head of Service

- Engineering or Product Manager

Whether you have a team of ten or three, the size is unimportant — what matters is that the team meets on a weekly basis in order to touch base, strategize, and plan ahead.

Understand Your Application Estate

Some of your legacy apps may not be easily integrated with cloud infrastructure, so it's vital that you work with a cloud system that is backward compatible.

If you're reliant upon such applications, you may need to set up a hybrid cloud network. But even that creates its own potential challenges such as latency and data volume.

According to a HPE Point Next study,

Depending on the importance of these applications, there will likely be a hybrid cloud network whereby the public cloud provider is connected through a private network link. In this mode, cloud-based applications can access legacy on-premises services while still gaining the benefits of a cost-efficient and agile infrastructure.

To assess your current application infrastructure, you will need to utilize discovery automation and profile tools. Doing so will ensure that applications migrate successfully and that you're taking full advantage of the benefits offered by the cloud.

Establish a Minimum Viable Cloud (MVC) Pilot Application

Also known simply as the pilot, a MVC is an agile approach to creating a secure cloud environment no matter what phase you are in of the cloud migration.

Per Sasikanth Padigala, a public cloud expert, a successful MVC should be able to:

- "Demonstrate the viabilities of cloud services

- Be secure in terms aligning with Cloud security alliance guideline, and ensures the infrastructure, application, data, and network security

- Have Agile mindset, automation, DevSecOps, Ci/CD of Infra/App pipelines, Virtual/Physical connectivity with on-premise data center & extended corporate user access"

Ideally, you will need to select one MVC application — known as the pilot application — which will be your test case.

But what are the characteristics of a viable MVC pilot application?

Desirable qualities of a potential candidate are:

Includes sensitive data

Prepares you by forcing your organization to address data security concerns and challenges from the outset.

Is on less than 10 servers

Although you want to challenge yourself, you want to select an application that isn't integral to your operation. Because it's a test run, you can expect hiccups and backtracks to occur with any MVC. Therefore, it would be foolish to test the process on an application that's a vital part of your business.

Has an internet facing portal

Developers will need to be able to access the application from the outside (for risk and compliance purposes).

Is able to "lift and shift"

It's wise to choose an application that is already configured and supported b**y the cloud provider(s) you shift to.** This means you won't have to waste time rewriting or refactoring the application.

Perform a Security and Governance Gap Assessment

When it comes to cyber security, hackers will attempt to leverage visibility gaps in order to penetrate a security environment.

> Your cloud team can help your organization perform Security and Governance Gap Assessments to reduce exposure to threats and vulnerabilities.

This will compare your current control objects and measure them to a known standard such as the CSA's Cloud Controls Matrix (CCM).

Once completed, it will highlight the vulnerabilities in your security perimeter and then establish prescriptive and preventative actions. This creates an MVC application that already has security tailored and mapped, which saves you time and money since it no longer needs to be built from the ground up.

Seek Continuous Compliance

It's vital that you utilize software to constantly search and scan your cloud environment, consumption, usage, and security. By adding software signatures that regularly search for governance and compliance protocols, you ensure that your system is operating within the proper bounds.

The application, system, network, and audit logs need to be documented and then regularly analyzed in order to find areas where the system can be fixed, improved, or further optimized. By staying in continuous compliance, you set yourself up for success and mitigate risks.

Implement Automation Frameworks

Cloud Management Insider writes,

Setting up cloud automation is the perfect start for enterprises to move ahead in the cloud journey. When you are able to standardize cloud monitoring, utilization and optimization for your infrastructure then you should get serious and take steps toward automation.

Automation, at its essence, is all about saving time and cutting costs. And it plays an integral role in building out cloud-based infrastructure for every application. By automating processes, you create less work and problems for your employees and IT team. Over time, this leads to significant cost savings and increases operational efficiencies through optimization.
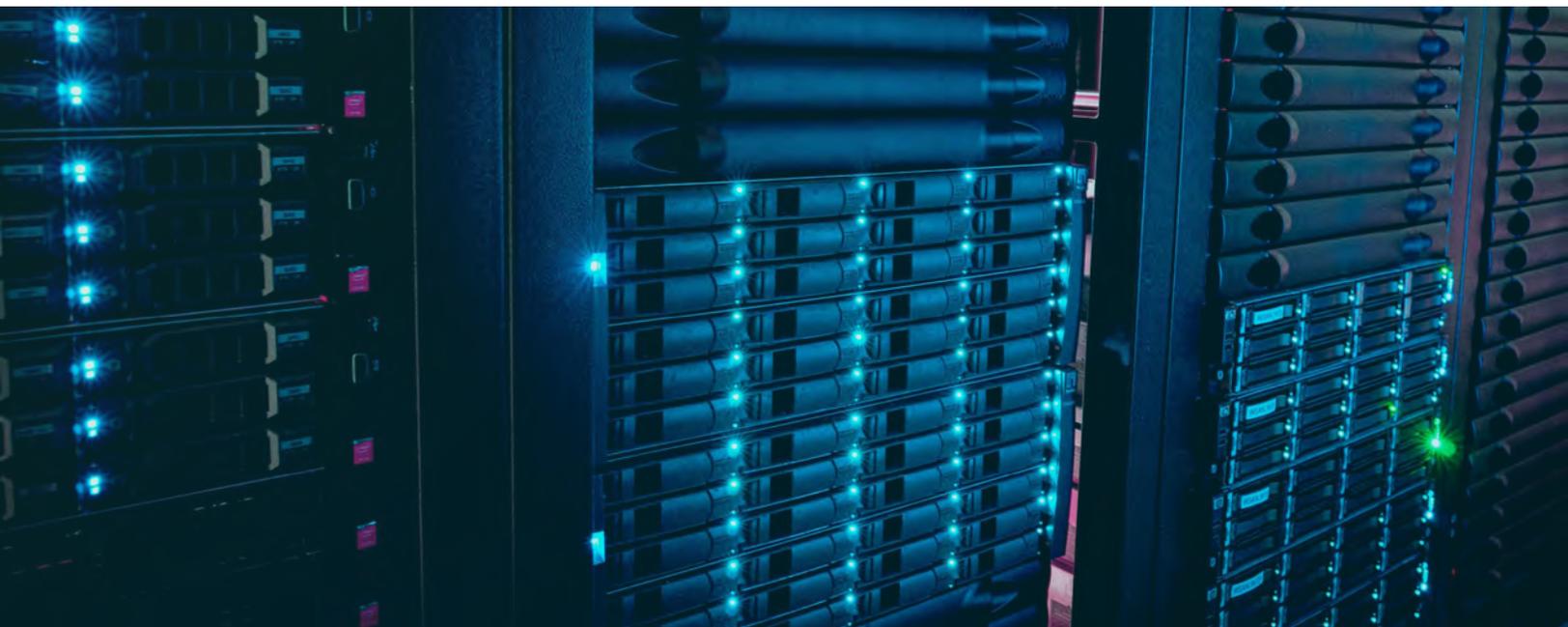
Migrating to the Cloud with NFINIT

Both major enterprises and SMBs are feeling the pressure to migrate partially or fully to the cloud. But with expertise needed, this entire process can seem overwhelming.

Enter NFINIT, your trusted IT partner.

NFINIT is here to be your guide through the migration process. For years, we have helped businesses of all sizes with cloud migration, reducing IT costs, and increasing operational excellence.

We act as your cloud migration strategist, architect, commander, and then support team to ensure that your migration is dynamic, cost-effective, and responsive.

We stand at the ready to facilitate a smooth and seamless migration.

Interested in seeing what NFINIT can do for you? Contact us today to learn more.

CONTACT US

Sources:

Gartner. Gartner Says Nearly 50 Percent of PaaS Offerings Are Now Cloud-Only.
https://www.gartner.com/en/newsroom/press-releases/2019-02-27-gartner-says-nearly-50-percent-of-paas-offerings-are-

IDG. IDG Cloud Computing Survey.
https://www.idg.com/tools-for-marketers/2018-cloud-computing-survey/

Forbes. Migrating to the Cloud, Don't Let Your Guard Down.
https://www.forbes.com/sites/theyec/2020/01/13/migrating-to-the-cloud-dont-let-your-guard-down/#76979f9d47f3

Business Insider. Moving to the cloud can actually save energy — here's how.
https://www.businessinsider.com/sc/the-benefits-of-switching-to-the-cloud-2017-3

Gartner. Cloud Strategy Leadership.
https://www.gartner.com/imagesrv/books/cloud/cloud_strategy_leadership.pdf

Medium. 12 Steps to Get Started With The Cloud.
https://medium.com/aws-enterprise-collection/12-steps-to-get-started-with-the-cloud-526f162c6dac

HPE Point Next. Migrating to the cloud for innovation and cost management.
https://assets.ext.hpe.com/is/content/hpedam/documents/a00066000-6999/a00066407/a00066407eew.pdf

Medium.What is "Minimum Viable Cloud (MVC)" Environment and Approach?
https://medium.com/@sasikanth_36595/what-is-minimum-viable-cloud-mvc-environment-and-approach-3b3b015431d

Cloud Security Alliance. Cloud Controls Matrix (CCM).
https://cloudsecurityalliance.org/research/cloud-controls-matrix/

Cloud Management Insider. 5 Stages of Cloud Security Automation framework.
https://www.cloudmanagementinsider.com/cloud-security-automation-framework/