

The SMB Cloud Handbook: Part 1

EVERYTHING YOU NEED TO KNOW

Learn what SMBs need from their infrastructure and the doubts, difficulties, and decisions that face businesses seeking to understand how to leverage the cloud.



INTRODUCTION



The cloud revolutionized small and medium business IT infrastructure. Before the cloud, enterprise-grade hardware was beyond the budget of many small-to-medium businesses (SMBs). Today, any infrastructure a business requires is available in minutes with zero capital investment.

In the decade since its introduction, the cloud evolved. There are many competing visions of what a cloud platform should be. There are many different cloud modalities. It can be difficult for SMBs to separate marketing spiel from technical jargon.

At Steadfast, we have been building infrastructure hosting platforms for more than a decade. In that time, we have come to understand what SMBs need from their infrastructure and the doubts, difficulties, and decisions that face businesses seeking to understand how they can leverage the cloud.

This handbook series answers many questions SMBs have about the cloud:

- What is the cloud and what can it do for small and medium businesses?
- How are SMBs using the cloud today?
- What are the different types of cloud and how are they used?
- What are the advantages of the cloud compared to other types of hosting, such as leased dedicated servers or colocation?
- What are the risks of migrating to the cloud and will cloud vendors help SMBs avoid them?

Steadfast defines SMB customers as organizations with up to 500 employees or up to 5 IT employees dedicated to infrastructure management or maintenance. For larger companies, download our Enterprise Cloud Handbook.



CHAPTER 1: THE CLOUD AND BUSINESS

Cloud is not the only choice SMBs have where IT infrastructure is concerned. Yet an increasing number of small and medium businesses are embracing the cloud for new projects and migrating existing infrastructure deployments to cloud platforms.

In this chapter, we take a closer look at what the cloud can do for your business, the operational and financial benefits of choosing the cloud, and how the cloud has helped empower SMBs to flourish in ways that aren't possible on traditional infrastructure platforms.

WHY DO SMBs CHOOSE THE CLOUD?

The cloud provides on-demand servers that can be created in seconds with the click of a button or a call to Steadfast's engineering team. Cloud users can create one server for a project or dozens or more servers to support heavy traffic on a popular site or application.

But why choose a cloud platform instead of shared hosting, traditional virtual private servers or even just leaving everything in-house?

The cloud levels the infrastructure playing field. The ability to quickly deploy servers used to be something that only big companies with expensive IT departments could manage. Today, every business has access to reliable enterprise-grade servers in seconds.

The Cloud Can Make Your Business More Efficient

In the cloud, there is no wait-time between need for a server and server availability. When a developer wants to launch a server to test out an idea, they don't have to fill out a form and wait until the IT department signs off on it. They simply spin up a server and run their code.

Cloud servers help your business create products more quickly, test them more efficiently, and get them to market sooner.

SMBs who use the cloud don't have to worry about managing, securing, and maintaining physical servers. They don't have to invest time and money to make sure their servers are reliable and always available. We take care of that so that cloud users can focus on what really matters.



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Cloud Can Reduce Costs and Increase Profitability

Cloud users can create as many servers as they need, and they only pay for the resources they use. When a business no longer needs a cloud server, it can be removed as quickly as it was created. There are no long-term contracts or penalties: the cost of a business's servers accurately tracks its infrastructure needs.

Cloud servers are available in a wide range of configurations, from low-powered servers that make great testing and development to high-performance machines that are excellent for hosting busy websites, application backends, or databases.

Because additional servers can be created on-demand, there is no need to over-provision servers to account for peak loads and traffic spikes. Underutilized servers have to be paid for even when they're idle. On the cloud, businesses simply deploy the servers they need at any particular time and pay only for what they use.



Steadfast's Cloud Includes Redundancy as Standard

Deploying an infrastructure platform with a single point of failure is a critical mistake, one made by many new cloud users. Redundancy helps ensure greater uptime and availability while reducing the risk of data loss. By default, all of Steadfast's cloud platforms are redundant and fault tolerant, including redundant network connections, power, and physical servers.

As a Steadfast client, you don't have to engineer a highly available server platform, because Steadfast's engineering team will build you a custom platform with full redundancy and fault tolerance.

Your Cloud Grows with Your Business

As your business grows, so does your cloud. We host SMBs that started with a couple of cloud servers that rapidly scaled up into the hundreds as their business grew — all without ever having to worry that they'd run out of room to grow or suffer from poor performance.

WHO BENEFITS FROM THE CLOUD?

The simple answer to the question of who benefits from cloud platforms is this: any individual or organization that needs scalable, on-demand enterprise-grade server hosting. That includes startups, small businesses, established corporations, government agencies, and just about any other organization that depends on IT infrastructure.

We write elsewhere in this book about the benefits of public and private cloud platforms for small businesses and enterprise organizations, but I'd like to zoom out a bit and consider what the cloud brings to organizations in comparison to other hosting options.

New Business Models

Dedicated servers offer the best performance for many workloads, but optimizing for performance alone isn't always the right approach: a well-engineered cloud platform offers solid performance alongside agility that is hard to match with other types of server hosting.

For decades, banks relied on batch processing of transactions using legacy software hosted on dedicated hardware (or even ancient mainframes). Today, modern consumers expect applications that provide real time interactions and instant transactions, something that the old batch-oriented systems couldn't provide.

Banks have been able to exploit the flexibility, agility, and scalability of public and private cloud platforms to offer real time banking services. A similar "cloud effect" can be observed in many industries; the on-demand nature of cloud servers introduces opportunities to re-imagine traditional systems and work flows for the modern world.

Manage the Business, Not IT Infrastructure

Businesses should be able to focus on what really matters. IT is not how most businesses make money, but it is the foundation on which value-generating products and services are built.

[Steadfast Simplicity Clouds](#) are designed to provide all the flexibility and agility of the cloud with none of the management headaches and complexity of traditional cloud platforms.

Our customers include businesses of all sizes across a vast array of industries, including IT service providers, developers, marketing agencies, legal firms, financial services companies, engineering firms, architects, healthcare providers, manufacturing companies, and many more.

They choose the cloud because it empowers them to deploy servers on-demand without the challenges and lead times associated with physical hardware while paying only for the resources they use.

They choose Steadfast Simplicity Cloud because our experts help them to build and manage the perfect private, public, and hybrid cloud server deployment for their business.

Infrastructure that Grows with Your Business

Many of our customers come to us because infrastructure has become a bottleneck constraining the growth of their business. They are unable to offer the quality of service and performance their customers expect.

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We are able to build them a custom cloud platform that will grow as their business grows, allowing them to add (and remove) server resources to meet the current needs of their business. IT infrastructure is supposed to empower, not constrain, and the cloud makes that ideal a reality.

Efficient Infrastructure Spending

Both public and private cloud platforms can help to reduce cloud spending. One of the most challenging aspects of IT infrastructure planning is deciding how many servers are required to meet current loads, future requirements, and to account for redundancy and business continuity planning.

Both overspending and underspending are a risk, but cloud infrastructure is inherently elastic, allowing cloud users to deploy servers that track their changing requirements.

Businesses that embrace Steadfast Simplicity Clouds gain more than just another way to deploy servers: they are empowered to grow their business while we take care of their infrastructure needs.

WHAT HAS THE CLOUD EVER DONE FOR SMALL BUSINESSES?

When historians and sociologists look back on the last decade or so, they face the task of explaining what caused an immense explosion of disruption and innovation in the business world. Startups come out of nowhere and grow to challenge industry giants. Billions of dollars are generated by smart founders who can capture lightning in a bottle. There has always been innovation, but there's something quantitatively different in its pace and heterogeneity in the modern era.

As with any complex phenomenon, there are many explanations for the era of entrepreneurial ingenuity we are living through, but the lowering of barriers is a crucial factor. The internet lowered the barrier to communication. The cloud made it possible for anyone with an idea to access the servers and infrastructure they need to test that idea against reality.

The startup scene understands how the cloud powers innovation, but the same isn't true of many small business owners. We talk to a lot of small and medium business owners and IT executives about their infrastructure, and I'm struck by how few have a deep understanding of what a cloud platform can do for them.

The core value proposition of the cloud for SMEs is this: access to enterprise-grade infrastructure in a world-class data center without having to pay for it upfront. Small businesses reliant on server rooms and small on-premises data centers stocked with ancient and expensive servers — a situation more common than you might think — would benefit enormously from a migration to the cloud. The infrastructure is better, and it doesn't have to be paid for in advance.

But that's not the only benefit. Cloud servers can be deployed at will and destroyed just as quickly — even better, cloud server deployment and configuration can be automated. If it's not clear why that's a good thing, think about the benefits of being able to deploy a new server with a known configuration whenever you need it for testing, staging, continuous integration, or for scaling. Ephemeral servers will change the way you think about enterprise infrastructure.

Speaking of scalability, it's so much easier to spin up a cloud server than to procure and deploy physical hardware. Scaling can be automated too, so it's fairly trivial to spin up additional cloud servers as and when they're needed. If your business has its own server room, consider the difference it might make to your business if you could physically grow and shrink that space as the need for computer and storage resources waxes and wanes.



By migrating to cloud servers, small businesses benefit from everything else that comes along with hosting servers in an enterprise-grade data center: redundant connectivity, impeccable security, consistent power, and outsourced management of the physical infrastructure. All that for a price significantly lower than dedicated hardware.

CHAPTER 2: A CLOSER LOOK AT INDUSTRIES EMPOWERED BY CLOUD

In the previous chapter, we saw how cloud infrastructure empowers SMBs to enhance operational efficiency and reduce IT costs. Now we're going to take a closer look at how the cloud has changed three industries: eCommerce, finance, and healthcare.

There are common threads running through each story, but every industry has specific reasons for turning to cloud infrastructure. eCommerce is a perfect fit for the cloud because of online retail's performance and scaling requirements.

The finance industry prioritizes reliability and cost reduction. And healthcare organizations prefer managed cloud platforms like Steadfast Simplicity Cloud because we can provide high levels of data security without the costs associated with colocation and other hosting platforms.

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ECOMMERCE

It is impossible to build a successful eCommerce business on slow and unreliable infrastructure. Performance, redundancy, and scalability shape the shopping experience of every customer. Poor experiences lead to low eCommerce conversion rates, so it is in the interest of retailers to choose an infrastructure solution that is fast, flexible, and reliable.

There is no shortage of infrastructure options, from shared hosting to clusters of dedicated servers, but cloud platforms offer the optimal balance of cost, performance, and flexibility.



Scalability

The scalability of a hosting platform describes how quickly it can adapt to changing demand. This is particularly important to eCommerce retailers who experience seasonal or temporary peaks in the number of shoppers using their store at the same time. The holiday season — Black Friday and Cyber Monday, in particular — often demands infrastructure with several times the capacity needed on an average day.

The cloud is the most scalable server hosting option. New servers can be added in seconds and deleted just as quickly. Retailers only pay for the resources they use. Cloud scalability is ideal for eCommerce because

it allows retailers to increase capacity on busy days (or busy hours) and reduce it when there is less demand, a level of flexibility that is not possible with dedicated servers.

Ease Of Use

Online retailers who use Steadfast Simplicity Cloud have several options for managing and scaling their cloud platform. An intuitive web interface can be used to scale, deploy, or remove servers. The same capabilities are available via an API that can be used to script and automate servers.

But many retailers who use Steadfast Simplicity Cloud call or email our support teams and let us implement the necessary changes. Unlike other cloud platforms, Steadfast Simplicity Cloud really is simple to use because our team of experienced cloud specialists can do the technical work for you.

Performance

Performance is critical to providing a pleasant shopping experience: [research has shown](#) that slow product pages and shopping carts reduce sales. Performance is related to scalability — a store that doesn't have enough resources will be slow — but there are other important factors, including filesystem and database performance, network latency, and geographic location.

Steadfast Simplicity Cloud is engineered for optimal performance, with state-of-the-art components and highly optimized network connectivity. Also, Steadfast will work with you to build a custom public or private cloud that maximizes performance for your store.

Reliability

High Availability is the gold standard of infrastructure reliability. A Highly Available system is designed to have no point of failure without a redundant alternative ready to take over: if a server fails another should be ready to take its place, if a bandwidth provider suffers downtime an alternative should be available immediately, and so on for every component of the platform.

THE FINANCE INDUSTRY

Historically, financial applications have been slow to move to the cloud. Social and technical issues contributed to the tardiness of cloud adoption. Critical financial management applications running on legacy in-house platforms have been slow to migrate because businesses fear disruption to essential services, but adoption is increasing as cloud skeptics acknowledge that the clear and proven benefits of the cloud should not be ignored.

According to Gartner, senior financial executives report that by 2020, almost 40% of enterprises will use the cloud to support in excess of half of transactional systems of record. Adoption is likely to be fastest among smaller businesses, with 44% of small organizations and 38% of midsize organizations intending to move to the cloud in the next three years.



An in-depth report from the [Cloud Security Alliance](#) foreshadowed the likelihood of greater cloud adoption by the financial industry a couple of years ago. The report examined which qualities of the cloud the finance industry was excited by. The results show that finance executives are interested in the cloud for the same reason as executives at other organizations: flexible infrastructure capacity, faster provisioning, reduced time to market, and reduction in in-house technical and human resources.

For businesses reliant on legacy infrastructure, public and private cloud platforms represent a clear improvement. Outsourcing infrastructure management to a cloud vendor relieves [financial services](#) companies of the burden of building and maintaining their own data centers or co-located hardware. Cloud platforms massively reduce capital expenditure, and operational expenditure on infrastructure scales in-line with the real needs of the company. If anyone can understand why the cloud is the right infrastructure solution in many scenarios, it's financial professionals.

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But the same report also examined why — in spite of the recognition of the benefits of the cloud — finance was slow to make the move. Concerns included security, regulatory compliance, and loss of control over data. The accelerating adoption of cloud platforms suggests that those concerns have been addressed by modern cloud providers who are prepared to work with the financial industry and other businesses to provide a level of security and control that is deemed acceptable.

As cloud platforms and their security controls have matured, there's little reason for the financial services industry and financial executives to maintain a groundless resistance to the cloud.

As we discuss in the next chapter, the cloud doesn't just mean public cloud platforms. In fact, many businesses choose a mixed approach that combines [public clouds](#), [private clouds](#), and [dedicated hardware](#). [Hybrid clouds](#) offer optimal flexibility, allowing companies to mix and match the cost, performance, security, privacy, and control characteristics of their infrastructure depending on the needs of each application.

HEALTHCARE DATA IS SAFER IN THE CLOUD

Data privacy and security are key concerns for [healthcare](#) providers investigating cloud data storage. HIPAA-compliant cloud hosting is the bare minimum for outsourced data storage or application hosting. [HIPAA-compliant](#) cloud hosting provides organizations that handle protected data a cost-effective and flexible solution compared to on-premises or colocated data hosting. But in addition to the benefits of a ready-made HIPAA-compliant infrastructure, there's another security advantage to hosting healthcare data in the cloud that isn't talked about as often.



Network and server breaches and ransomware attacks are an ever-present risk for healthcare organizations, but most healthcare data breaches don't happen because of an attack by a criminal.

They happen because of the mismanagement of locally stored data and the improper disposal of physical health records. They happen because lax physical security leads to the loss of drives or laptops containing healthcare data, or because physical records are stored or disposed of insecurely.

Not long ago, an Indiana-based healthcare organization [exposed healthcare data](#) related to 205,000 individuals. The data wasn't ex-filtrated in a clever network attack; it was lost when the laptop it was stored on was stolen from the company's billing department. Around the same time, 52,000 healthcare records were lost when a Kansas healthcare organization employee had a laptop stolen from his car.

Also last year, in one of several examples of egregiously bad data security, the private healthcare data of 113,000 individuals was found in a dumpster after being disposed of improperly.

These serious data breaches — and many more like it — happened because the organizations in question had woefully inadequate control of their data, how it was handled, and even where it was stored.

Cloud storage provides a far more secure alternative to on-site data storage. If all data is centrally stored on a public or private cloud platform, properly encrypted, and with best practice access controls in place, a large class of privacy and security risks simply can't happen. [Our data centers](#) provide state-of-the-art round-the-clock physical security. The only people who can access healthcare data stored on our servers are those who have been given access by the data's owner, and, because the data is centrally located and managed, all access can be tracked and monitored.

In addition to the storage of medical records and other healthcare data, the applications that process healthcare data can be hosted on a secure cloud platform. If the only way to access cloud data is through secure web applications running on a cloud platform, there's far less scope for employees and contractors to download and leak it. Organizations can control exactly how, when, and by whom their data is accessed.

To go a step further than cloud application hosting, many healthcare organizations choose to host secure virtual desktop environments in the cloud. Data users access secure and controlled desktop environments through vetted devices. Each desktop environment can be monitored, scanned for malware, and tightly limited so that employees can't accidentally or deliberately install insecure software.

Secure HIPAA-compliant cloud platforms offer organizations that handle healthcare data an end-to-end secure infrastructure solution that ensures healthcare data is stored and managed according to their policies and security best practices.



TO BE CONTINUED...

[Download the next installment](#) of "The SMB Cloud Handbook - Everything You Need to Know PART 2" to continue learning about the cloud.

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ABOUT STEADFAST

Founded as a Wisconsin start-up in 1998, Steadfast evolved into a multi-million dollar IT infrastructure company headquartered in downtown Chicago, internationally serving businesses of all sizes. We now operate three state-of-the-art, private data center spaces nationwide and manage thousands of high-performance servers, utilizing top global carriers with peering to more than a hundred direct networks in the world.



Today, with the original founder still at the helm as CEO, that original passion for technology remains the cornerstone of our core values. The entire Steadfast team, from the executive office to data center support, takes great pride in providing our customers with unparalleled IT service, support—all at an exceptional value.

Our Core Differentiator: We make your life easier. We can take everything off of your infrastructure plate.

- **On-Demand IT Engineering:** Our data centers employ onsite, highly-experienced IT engineers who are ready and willing to assist customers with their needs 24/7/365.
- **Rapid Response Times:** Our 30-minute Support Response SLA is literally half the time of the industry-leading providers.
- **An Extension of Your IT Team** – Our service doesn't just end at cloud deployment and technical support. Steadfast acts as an extension of our customer IT teams by making our team available for strategic IT discussions, guidance, or questions.

LET US BUILD THE CLOUD YOUR BUSINESS NEEDS

When It Comes to the Cloud, Simple is Better.

Steadfast Simplicity Clouds include a full spectrum of cloud environments that include private, public, and hybrid clouds, designed on a simple set of principles. Contact us today to get started with a cloud bundle or a fully customized cloud environment made just for you.

For more information, visit www.steadfast.net or contact us for a personal consultation. Call 312-602-2689, email us at sales@steadfast.net or follow us online:



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