



THE HOW AND WHY OF MOVING FROM DEDICATED TO THE CLOUD

Introduction

Few technologies have changed enterprise to the extent of cloud computing. Time was that businesses were forced to shell out a mint for their computing resources, which rarely, if ever, scaled to any meaningful degree. With the advent of the cloud, businesses can now host their entire infrastructure in the cloud - and in fact, many do.

Today, if you're looking to save money on computing costs, ditching your physical servers for cloud hardware could be just the ticket. That's where we come in. This chapter of the book will go over what's involved in making the switch - and a few justifications for why you'd want to in the first place.

Chapter I: Making The Leap

Although cloud hosting provides a great deal more simplicity - and significantly lower costs- than dedicated hosting, the switch from one to the other can actually be quite complicated, time-consuming, and difficult. It's not something you can simply make on a whim. That's a road you don't want to go down.

In order to ensure the transition goes as smoothly as possible, there are a few best practices you'll need to keep in mind:

Understand Why You're Making The Switch - What Are Your Needs?

First thing's first: ensure that you'll actually gain something from cloud computing. What problem are you looking to solve, and what can the cloud do to solve it that your current setup can't? Figure out what specific issues your current installation is having first, then plan out how you intend to solve them using cloud computing.

What you want to do is set down a strategy and a set of realistic goals up-front, before you start using the cloud. Understand also that cloud computing isn't for everyone - You need to make certain that what you're doing with your server is something that can actually be done on the cloud. It may well be that your organization is one of those that's better off sticking with more traditional infrastructure.

Know Which Service Model Will Serve You Best

As you may already know, there are three primary cloud service models: platform-as-a-service, infrastructure-as-a-service, and software-as-a-service. Before you decide to ditch your server for the cloud, you need to figure out which of the three is the best fit for your organization. In most cases, you're probably going to be using IaaS, although certain situations (if, for example, you were using your dedicated server for application development), PaaS might be a better fit.

Don't Do Everything All At Once

Although it's certainly true that the cloud can do a great deal for your organization in the long run, diving headlong into cloud computing is somewhat reckless, and can often create more problems than it solves. Ideally, you want to make your move to the cloud a gradual thing, particularly if you've infrastructure outside of your dedicated server.



Don't Slack On Security

The cloud is not inherently less secure than a dedicated server, and many hosts will handle the basic details of cloud security for their clients. That does not, however, mean you can afford to slack off as far as keeping your data safe is concerned. Treat your cloud installation with the same care and scrutiny you treated your dedicated server: establish controls regarding who can access it, when, and from where; make sure you also keep a close eye on the devices your staff are using for their computing.

Consider Whether Or Not You'll Actually Save money

Believe it or not, in certain rare cases, cloud computing can actually cost more than running a dedicated server. Make sure you chart out how much you'll need to spend on cloud resources in an average month before you make the switch - and consider whether or not your finances might be better off if you just keep doing what you're doing. Not only that, complications that arise from switching over might actually end up losing you money if you aren't careful.

Now that we've covered the actual transition, let's talk a bit about why you might want to make it.

Chapter II: Infrastructure-As-A-Service Is Ideal For Businesses Of Any Size

There is a pervasive narrative in the cloud media space regarding infrastructure-as-a-service. It goes something like this: IaaS is exclusively for startups that need networks and servers without capital investment, and enterprises that require massively-scalable, redundant, programmable infrastructure deployments. SaaS, meanwhile, is exclusively for small businesses who require ready-made, easy-to-deploy, low-expertise solutions - such businesses have no need for an IaaS platform.

This assumption is completely incorrect.

Though small businesses don't have huge infrastructure requirements, there are still many who could benefit from a switch to the cloud. There are still many organizations with PCs stuffed in back-closets running payroll processing, customer databases, backups, bespoke business-specific software, and so on. This model - which we'll refer to as 'datacenter-in-a-closet' - is both barely functional and inherently risky.

Infrastructure-as-a-Service offers an alternative, safer deployment model for small businesses, one that's both less costly and easier to manage.

Part of the reason for this is expertise. Most small businesses do not have an IT expert on hand; instead, they contract the management of their servers and networks to freelance IT professionals. Though this works, it's also unnecessarily expensive, particularly when the contractor is required to make site visits for simple jobs.

IaaS can be managed remotely. For small businesses, this means that their IT contractor does not have to be onsite for the vast majority of maintenance and configuration tasks. This in turn saves the organization both time and money.



Data integrity is also of note here: if a small business suffers an incident that wipes out their data closet, they can, in most cases, say goodbye to their data. Even if they've adequate offsite backups, the time it takes to resurrect them onto alternative hardware is time most small businesses cannot afford to be out of action. With the cloud. no such risk exists.

The chance of anything catastrophic happening to cloud servers and data storage is incredibly small; in the unlikely event something does go wrong, snapshots and backups can be used to spin up an identical network in a matter of hours rather than weeks.

Though scalability on the level enabled by cloud platforms is not necessarily an advantage small businesses will be concerned with, the capacity to quickly deploy additional servers is. Many businesses need a little extra computing power from time-to-time: to run tests, as staging environments, to speed up payroll processing, to run extra database or processing jobs, and so on. They need just a little more than usual to accomplish a specific set of tasks. That's a trivial thing on an IaaS platform such as Outscapes, which takes minutes to spin up a server and install the operating system.

In short, IaaS is for everyone - not just Silicon Valley startups and Internet giants. And it also isn't solely for databases and organizational backends. Used right, it also functions as an an incredibly powerful development tool.

Infrastructure-As-A-Service Is The Perfect Load Testing Platform

There's nothing quite so unpleasant for a developer of web apps or mobile apps than to have a particularly successful launch only to have their app collapse under the weight of its own popularity. The same goes for enterprise software deployments that fold like a house of cards exactly when the business needs them most. To avoid that situation, extensive testing of real-world load is necessary.

That's something most apps don't receive - at best, they're tested with a simulated environment, one which doesn't accurately mirror real-world situations.

To be fair, performing a test that does mirror reality is incredibly difficult. It's all too easy to overlook a scenario which will trigger an unoptimized code path and cause an app to run inefficiently; it's nigh impossible to write comprehensive tests for such a thing. That's no excuse, however, to simply avoid extensive load testing.

By definition, to load-test an application, a company needs access to more servers and bandwidth than they generally utilize. In the old days, this meant load testing was incredibly expensive - and that many organizations either compromised, made a best guess, or simply avoided it altogether. Today, this is no longer the case.

The cloud has changed things, providing platforms that allow for comprehensive, efficient, and - importantly - affordable testing. For companies running their applications in the cloud, it isn't overly complex to replicate a significant portion of their production environment to be used for testing. Because infrastructure-as-a-service provides on-demand hardware, load testing servers can be ephemeral.



Code changes can be pushed to testing or staging servers, and then load tested using temporary server networks built in the same cloud environment. Once the testing is over, the servers can be spun down, with the company only paying for usage time. There's no need to keep permanent, redundant infrastructure for testing purposes.

Because load testing in the cloud is more efficient and less expensive, it makes much more financial sense to do it - and by doing it, companies can provide better, higher-quality software to their clients.

Conclusion

As you can see, infrastructure-as-a-service, though challenging to implement, offers a number of very significant gains for the business that understands how to utilize it. Cheaper infrastructure, better scaling, a more effective development process; these benefits only scratch the surface of what the cloud can do. And they can aid a business of any size - not just a startup or massive enterprise.

