

Cloud Infrastructure

Dispelling the myths

Our use of Cloud solutions, in both business and personal life, is ever growing. Many organisations consider there to be barriers moving their Physical Servers to the Cloud. Are these concerns genuine and are there any real benefits to having a Cloud Infrastructure?



Microsoft
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Gold Small and Midmarket Cloud Solutions
Gold Cloud Productivity
Gold Enterprise Mobility Management
Gold Datacenter
Silver Cloud Platform

Adopting the Cloud

Risc IT Solutions are Cloud experts, IT professionals, and trusted advisors who help companies work smarter by providing the right solutions for their business challenges. We were the pioneers of Cloud backup in the UK and over the last 20 years we've built our company on a foundation of trust, knowledge, experience, and a dedication to delivering first-class support.

Over the years, we've witnessed first hand the growing adoption of Cloud services. As a pioneer of Cloud backup, we've seen Cloud solutions grow to become a standard part of both business and personal life, and it's not slowing down anytime soon.

Research by the Cloud Industry Forum (CIF) shows that 88% of their research participants use the Cloud ¹, and 66% of organisations expect to increase their Cloud adoption in the next 12 months. ²

Having said that, the same research shows that 93% of businesses face barriers towards moving to the Cloud ³; amongst others, 62% have concerns around data privacy, 35% have a lack of budget, and 29% have challenges with legacy systems. ⁴

In this eBook, we will focus primarily on Virtual Servers rather than Cloud-based services such as Office 365 and Backup. We'll be addressing some of the issues that organisations face when moving to the Cloud and explaining some of the factors that need to be considered before replacing on-premises servers with Virtual Servers.

We are aware that connectivity can pose a problem to certain businesses too, notably businesses in very rural areas. In December 2017 95% of UK premises had superfast broadband coverage. The Government is currently supporting investment to ensure that that final 5% of the UK has access to superfast broadband with a Universal Service Obligation to ensure that everybody in the UK will have a clear, enforceable right to high speed broadband in 2020. ⁵

66% organisations expect to increase their Cloud adoption in the next 12 months. ²

Hopefully, this will mean that companies operating from very rural areas who cannot currently use the Cloud because of poor connectivity, will be able to reap the benefits in the near future.

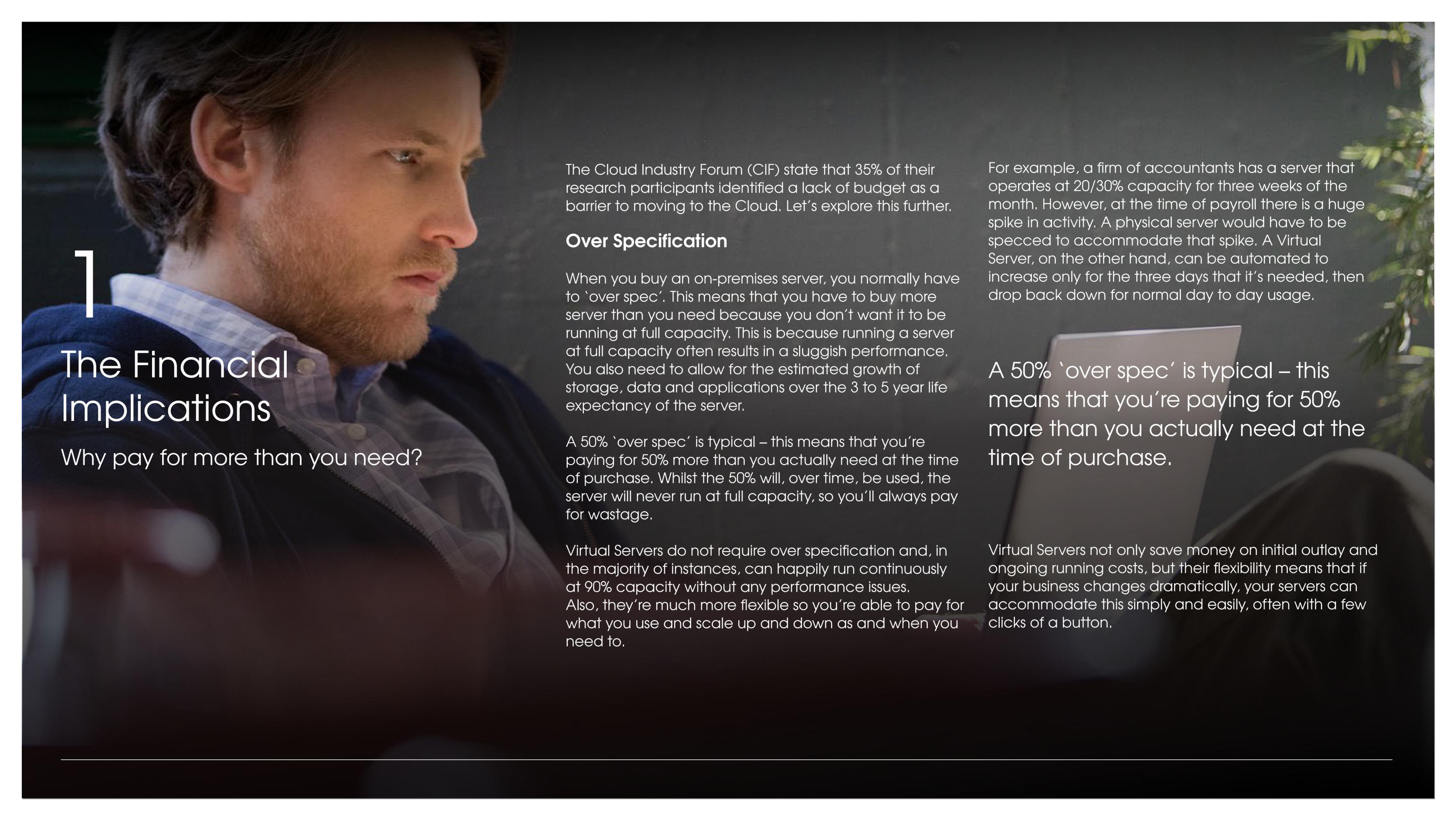
¹ Cloud Industry Forum. White Paper Twenty – Cloud: Driving Business Transformation. P3 and p11.

² Ibid. P3 and p14.

³ Ibid. P3 and p14.

⁴ Ibid. P3 and p27

⁵ Gov.uk.Broadband Delivery UK.

A man with a beard and dark hair is shown in profile, looking towards the right. He is wearing a dark blue jacket over a light-colored button-down shirt. In the foreground, a laptop is open, and the man's hand is visible near the keyboard. The background is a blurred outdoor setting with green foliage.

1

The Financial Implications

Why pay for more than you need?

The Cloud Industry Forum (CIF) state that 35% of their research participants identified a lack of budget as a barrier to moving to the Cloud. Let's explore this further.

Over Specification

When you buy an on-premises server, you normally have to 'over spec'. This means that you have to buy more server than you need because you don't want it to be running at full capacity. This is because running a server at full capacity often results in a sluggish performance. You also need to allow for the estimated growth of storage, data and applications over the 3 to 5 year life expectancy of the server.

A 50% 'over spec' is typical – this means that you're paying for 50% more than you actually need at the time of purchase. Whilst the 50% will, over time, be used, the server will never run at full capacity, so you'll always pay for wastage.

Virtual Servers do not require over specification and, in the majority of instances, can happily run continuously at 90% capacity without any performance issues. Also, they're much more flexible so you're able to pay for what you use and scale up and down as and when you need to.

For example, a firm of accountants has a server that operates at 20/30% capacity for three weeks of the month. However, at the time of payroll there is a huge spike in activity. A physical server would have to be specced to accommodate that spike. A Virtual Server, on the other hand, can be automated to increase only for the three days that it's needed, then drop back down for normal day to day usage.

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Virtual Servers not only save money on initial outlay and ongoing running costs, but their flexibility means that if your business changes dramatically, your servers can accommodate this simply and easily, often with a few clicks of a button.

Consider this

Upgrading

We need to remember that in order to upgrade an on-premise server, or if there is a fault with the server, the machine needs to be turned off resulting in business downtime and lost money. Upgrading a Virtual Server can be done remotely, often with a few clicks of a mouse, so the financial implications of downtime simply do not apply.

Scalability

The Cloud's scalability means you only pay for what you use. This makes the Cloud particularly suitable for businesses that have peaks and troughs in their activity. For example, a restaurant might be considerably busier during the school holidays, so for that period they can issue more resource to enable them to keep up with demand. When the holiday period is over, they can scale their resources back down to whatever they need.

Lifecycle

There's no escaping the fact that at some point in time your on-premise server will reach its end of life and fail: we buy a server, we use it, and eventually we'll replace it. This isn't the case with Virtual Servers as the upkeep and performance is the responsibility of the datacentre who manages your server.

Payment Terms

Lastly, let's not overlook the simplest way that a Cloud infrastructure saves us money compared to physical servers: the payment model. When you buy a physical server, you have one huge upfront payment that can eat up a huge chunk of our budget. In contrast, Cloud servers have a monthly payment model with no upfront costs. This means that you pay a small fee each month, freeing up your cashflow.

2

Is it a good fit?

The Cloud can resolve your connectivity problems.

There are many pros to Virtual Servers, but let's be honest there are also some cons. It's only right to say that if someone has poor internet connection, a Cloud server may not be the right option for them – I say may as this needs to be assessed on a case by case basis as things are not always what they seem.

A concern we hear often is about internet connectivity. So what speed of connectivity do you need for it to be efficient? Internet speeds are dependent on latency and bandwidth. Latency is the speed of response, so how long it takes for the information to get to its destination and back. Bandwidth is purely volume. If you take the analogy of water flowing through a tube – the bigger the tube (more bandwidth), the more water (data) can flow through. How much latency and bandwidth you need depends on the applications and services you're going to be running.

Let's take architects or graphic design houses for example. If they're pulling and pushing a lot of images they will be fine with higher (slower) latency but will need a lot of bandwidth. However, if they're working on videos and large 2D and 3D design files then the higher latency will become an issue making pulling and pushing these files to their local devices slow.

In this scenario, a Remote Desktop Server (RDS) environment could be used to completely replace your on-premises PC and Servers. This means that your computer is powered almost entirely by the Cloud, rather than by traditional hardware.

With an RDS solution, if a user wanted to access a very large video file for example, the file would remain in the Cloud and the computer would simply render a graphical representation of it. Speed, or lower latency, is achieved because they would be operating through the datacentre with datacentre speeds, rather than pulling the whole file down to their machine.

Another example might involve remote workers. Remote workers might be trying to reference and access the server in head office. Due to head office's poor connectivity, the experience for these remote workers is slow and unreliable.

A Virtual Server would enable everybody to work quicker because they'd be accessing datacentre speeds and wouldn't be hindered by the head office's high latency. The only limitation would be the download speed of the remote workers, depending on where they are, not the upload speed of head office.

Poor internet connectivity can be a barrier to moving to the Cloud. However, in some cases, like the ones above, it could be the opposite – the Cloud could resolve your connectivity problems.

Consider this

The Future of the On-Premises Server

With physical servers there are potential issues that you need to be aware of, namely the reliance of different systems talking to each other. For example, your CRM system needs to talk to your line of business application which needs to talk to your billing invoicing system and so on.

These types of services change rapidly, at different rates, with new functionality coming out every week. Traditional on-premises servers just aren't able to keep up. With continual updates across different systems, the ability for the servers to speak to each other inevitably fails.

This is exasperated further with on-premises servers' endless cycle of replacement. The typical shelf life of a physical server is 5 years. This means that your dedicated servers, each running their dedicated applications, can fail at different times as they'll be at different points in their lifecycle. This means there's potential downtime each and every time a server fails, and further compatibility issues caused by its replacement. By moving your entire infrastructure to the Cloud, this ongoing issue would forever be solved as there is no end of life and replacement cycle.

3

Downtime and Disk Failure

Don't overlook the cost of downtime caused by hardware failures.

If you have a highly transactional database (like a CRM or stock management system) and if your physical server has a failure, then what does that downtime cost the business whilst you are waiting for a replacement part and installation?

Is your RAID array in danger?

RAID (Redundant Array of Independent Disks) is several hard drives combined into a single storage unit. RAID arrays provide protection against disk failure by having multiple working disks, essentially sharing the load.

In our experience, if your server is relatively new, so long as you have no other hardware failures then you can continue working whilst a disk is rebuilding.

However, in cases where you have an older server or it's out of warranty, if one disk fails you have to replace it with an identical disk. Finding and replacing this could take time and the extra load on the other disks can create a domino effect putting your entire RAID array in danger of failing.

Is your business at risk?

24 hours in business is a long time, but weeks of being out of action can be financially crippling. Most companies backup their servers and have a DR plan in place, but a disk failure (and subsequent RAID array failure) can happen at any point and is a risk to business continuity. Other common problems such as motherboard failures or RAM issues require a level of investigation which can take days to resolve. In the event of a disaster where you need to replace on premises servers, or if your production box has failed, it could take a week.

Consider this

Preventing Downtime

As the Cloud is designed to have no single point of failure, you simply needn't worry about this. If a physical server in the datacentre has a hardware failure, it seamlessly migrates over to a different physical server behind the scenes, resolving the problem instantaneously.

To prevent downtime and mitigate against these very scenarios, a lot of companies purchase failover kit. This not only proves to be expensive as upfront costs are doubled (you'll need two servers to every one) but it's also inefficient as you have servers sitting idle, doing nothing until they're needed.

Another option is to have your failover server in the Cloud. If, for whatever reason, you need onsite tin, there's nothing to stop you replicating it into a datacentre so when your onsite servers fail, your Virtual Server in the Cloud takes over and your company can still be productive.

4

Taking small steps to the Cloud

You don't have to jump in.

A Hybrid Solution can be the best of both worlds.

29% of businesses have challenges with legacy systems.⁷ If organisations have already invested huge amounts of money in on-premise systems, it's understandable that they don't want to throw that money down the drain by investing in an entirely new Cloud infrastructure. Migrating to Virtual Servers can be a particular issue because on-premise servers are such a huge upfront investment.

Taking small steps can be just as valuable as migrating your entire infrastructure at once – the end goal of a Cloud infrastructure is still the same. Hybrid Cloud refers to a combination of using on-premises servers and servers in a datacentre (the Cloud). A Hybrid Cloud solution respects your previous investments whilst still facilitating a move to the Cloud.

A company has the following common server set up: Active Directory, File Server, Web & SQL Server, Dev Server, and Exchange server. Most of the servers are now reaching end of life, however the Active Directory was replaced only last year so still has life left in it. The organisation wants to move to the Cloud, but doesn't want to replace the Active Directory server. The cost of replacing the servers and the existing investment in the Active Directory server are barriers for the organisation.

A hybrid solution not only alleviates the expense of replacing all five servers, but adds additional efficiency for the company. This is achieved by running the Web SQL server on a Virtual Server in the Cloud, running the Dev server in Azure (so you can spin VMs up and down as you need), and replacing their Exchange server with Office 365.

This leaves the cost of replacing just one physical server (the file server) – freeing up cashflow within the business – along with monthly operation costs that are based purely on what they consume or need at that point. This solution also respects the existing investment in the Active Directory server. When the Active Directory server reaches end of life in a few years, they could replace it with an on-premise server, or they could spin up a Virtual Server with the same purpose.

⁷ Cloud Industry Forum. Op cit. P27.

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Conclusion

Businesses' Cloud adoption – driven by an increasing need for flexibility, good value for money, and business continuity – has exploded in recent years, and will continue to grow in the future.

The business landscape is constantly changing and, for many, Cloud solutions will become a defining part of that change.

We appreciate that Cloud solutions aren't for everybody. Some businesses, such as those in rural areas, cannot overcome the difficulties of moving to the Cloud at this time. We hope that these barriers will be abolished in the near future ensuring access to Cloud solutions if a business desires them. However, for many others the benefits of using a Cloud solution are plentiful and can be transformative for businesses.

Whilst moving your servers to the Cloud isn't always the solution, it can be used to resolve many different business issues, and in ways that we might not initially expect or realise. It has financial benefits, can resolve connectivity issues and enable easy and effective mobile working, as well as allow business continuity in a disaster scenario. It can also be incorporated into your current setup as a hybrid solution.



Why work with us?

For 24x7 UK-based inclusive support, expert advice on moving your infrastructure to the Cloud, and a direct dial to your own account manager, click on the link below.

- Secure and accredited UK datacentre network
- Upfront to monthly payment model
- Full control through the simple online control panel
- Easily reconfigurable to cope with fluctuations in demand
- Simple server configuration – CPU, RAM and storage
- Clone servers to create new environments
- Architected from industry leading hardware – Cisco, EMC, HP and VMware



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