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BUSINESS IT

SME BUSINESS IT WHITE PAPER

CLOUD SOLUTIONS FOR SMALL TO MEDIUM BUSINESSES

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WHAT IS A CLOUD SOLUTION?

A cloud solution is simply a solution kept on someone else's servers and accessed via the internet.

To provide an analogy, employing a cleaner directly makes you responsible for hiring, training, equipping, managing a whole person when you may only need a third of a day's work most of the time with occasional requirements for two people for a day for an end-of-year deep clean.

For many businesses it makes much more sense to outsource their cleaning requirements and only pay for the time they need, gaining the flexibility to ramp up or down as needed and freedom from sourcing specialist chemicals with particular labelling and storage requirements.

In the same way buying a server makes you directly responsible for hardware and software maintenance, power, disaster recovery and security. It also locks you into either starting with more processing power than you need, or risking not having enough if your business grows over the 5 year lifespan of the device.



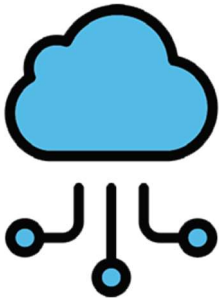
Cloud-based solutions are scalable, quicker to set up, and shift the hardware and software maintenance to the experts who can take advantage of economies of scale to create an environment for less that it would cost you.

To continue the metaphor, when you hire a cleaning company you may well pay more per hour than you would for someone you hired internally – you're paying for the management, training, equipment etc. that the 3rd party is handling for you as well. But, it often works out cheaper overall due to a reduction in overheads, management time and on-the-job down time.

Similarly, cloud services often come with a subscription-based monthly cost, offset by not having to pay for the up-front costs of buying software outright and not having to buy and maintain your own hardware.

USING APPS IN THE CLOUD

Software is increasingly being made to be accessed via the cloud rather than downloaded locally. This allows the app provider to build an environment specifically designed to run their solution. That way they don't have to try to account for the myriad of ways people set up their personal devices or business servers when developing software. They can also avoid having to support issues that may be caused by the user's environment.



This means you get the additional stability of a system run in a dedicated environment. As long as you have an internet connection and your login details you can access your apps from anywhere on any device. You don't have to worry about maintaining hardware or complex installs, and your data may be backed up by the app provider.

TYPES OF CLOUD SOLUTION

SOFTWARE-AS-A-SERVICE (SAAS)

The most common type of cloud solution is known as SaaS. You're probably using some sort of SaaS solution already. It simply means that instead of or as well as installing an app on your PC, you access some or all of the functionality of the software online. It usually means that you don't buy a single license and install the software on one PC for all users.

Instead you buy a monthly subscription for each user and they get to access the software through a browser or install it on multiple devices. This is a better deal for many businesses these days as it is unusual for multiple users to be on one device. Many will have multiple devices - desktops, laptops, tablets and phones all count.

Your subscription pays for the software provider to keep your data on their servers. They'll handle all the hardware and software maintenance, antivirus, local networking and updates. It's important to find out whether they'll also provide backups for your data, or if you'll need to sort out disaster recovery separately.

PLATFORM-AS-A-SERVICE (PAAS)

PaaS is a cloud space where you are responsible for the apps, either installing or building them yourself. The supplier provides the hardware, local networking and operating system. It's

important you review any agreements to make sure you're clear on who is responsible for backup, antivirus and updates to the OS. You'll definitely be responsible for updates to your software. This setup is often used by businesses who want to build their own apps, either as a core part of their business or for internal use. It's usually set up to allow you to build customer facing apps.

INFRASTRUCTURE-AS-A-SERVICE (IAAS)

IaaS gives you the most control and the most responsibility. You essentially hire space and processing power in someone else's data centre. There will be some level of interface installed to allow you to connect to the space and start building your environment.

You'll be responsible for installing, updating and maintaining your operating systems and all software including antivirus. You'll need to establish whether a provider's offering includes any kind of backup solutions or firewalls.

They will often provide some very basic options to protect their datacentre, but you will likely need to install a more in-depth solution.

	Hardware	Operating System & Environment	Software Apps
	Provision & maintenance	Install, update & bugfixing	Creation/Install, update & bugfixing
SaaS	Supplier	Supplier	Supplier
PaaS	Supplier	Supplier	You/Your IT
IaaS	Supplier	You/Your IT	You/Your IT

KEY QUESTIONS TO ASK A SUPPLIER

User support is a key area where contracts will differ. There is a difference between break-fix (fixing a problem or bug in the app) and user support which may, or may not, include training or remediation of mistakes.

If you are buying a subscription service find out what level of user support is available before making a decision. Another point where contracts will vary is in backup and disaster recovery.

Talk to any potential suppliers about what they will be backing up and what they will expect you to have copies of, as well as what their disaster recovery plan is.

GOING SERVERLESS

For some businesses cloud solutions mean you don't need an on-premises server at all – you could go completely serverless. This can provide a significant saving on hardware, software and maintenance, as well as making working from outside the office easier.

Cloud-based solutions are:

- Less costly up-front.
- Easy to access, manage and use from anywhere you've set permissions to access from.
- Flexible, if you get a sudden increase or decrease you can just pick up new licenses, or drop them at the next renewal.
- Monitorable, Microsoft 365 has a lot of built-in management and monitoring features.
- Better for business continuity, if something happens at your office, staff can be set up quickly and easily at an alternative site or to work from home. With OneDrive you can even get files saved on the local machine back if something happens to a PC.



However, cloud-based solutions are also:

- More expensive on a monthly basis for licensing costs.
- Outside of your business premises.
- Only accessible where there is an internet connection, some requiring a fast connection.

Vendor lock in is an often raised point when it comes to cloud solutions, and to some degree it's a concern. If you're in a Microsoft 365 environment Microsoft can put up license costs or make changes to how the system works and there isn't a lot you can do about it.

Unfortunately, it isn't so different for on-premises solutions. If you're using Microsoft Exchange on-premises solution you are as vulnerable to the whims of Microsoft changing how things work, with the additional threat of them declaring things end-of-life.

To some degree you're safer in the cloud. Microsoft are highly unlikely to suddenly decide that Outlook won't talk to Microsoft 365, or that they will no longer provide security updates for their cloud solution. However, on-premises Exchange software will go end-of-life in time and will no longer work with Outlook or receive security updates.

It's also worth bearing in mind that cloud is what Microsoft wants you to do. That isn't a good enough reason on its own, but the fact that Microsoft put more R&D and support effort into the cloud solution is starting to show. It's getting buggier and less predictable to access on-premises emails on a mobile phone, and some products are only available with a cloud license. Microsoft Teams is a key piece of software that requires a cloud license to fully access. Whilst you can have a cloud account for Teams and use on-premises email that setup will mean you cannot sync your

Teams and Outlook calendars, and you are likely to face a lot of issues getting your emails to work on a mobile phone.

A key item to consider when reviewing how much to put in the cloud is what apps you are using. You might be able to host emails, files and authentication with 365, but if you are using apps like Sage that need a server to run you'll need to either move to a different, cloud-based solution – or you'll need to keep some sort of on-premises server.

IS SERVERLESS RIGHT FOR YOU?

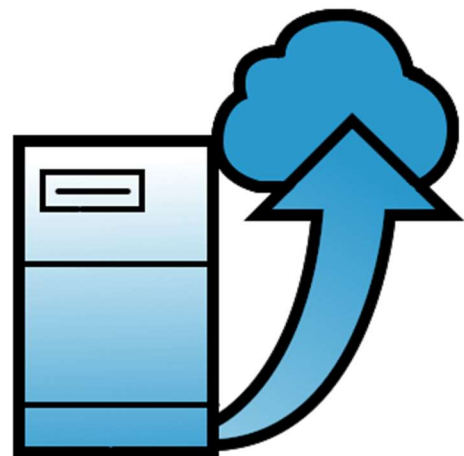
There are four main functions that a server performs for most small businesses:

1. **Authentication** – making sure anyone logging into the network PCs has the correct credentials, controlling what they can access and managing password changes.
2. **File management** – storing files in a central location so staff can access them from their PCs.
3. **Email** – creating and storing calendars, mailboxes, distribution lists and shared mailboxes.
4. **Apps** – some apps like Sage require a central database which is usually stored on a server.

The most commonly used cloud based solutions to replace these are:

1. **Authentication** – Microsoft 365 Entra (formerly known as Azure Active Directory).
2. **File management** – Microsoft SharePoint and OneDrive.
3. **Email** – Microsoft 365 Exchange online.
4. **Apps** – a cloud-based server set up through a service like Amazon Web Services or Microsoft Azure.

There are other things your server could be doing for you. These include storing redirected profiles so a member of staff logging on to any PC in the network gets the same experience, providing terminal server services where you remote from your local PC to a remote desktop service, sharing printers and sharing scanner folders. If you have door entry systems, large machines that connect to your server for files or software, large data processing systems like 3D scanners or MRI machines you may need to maintain an on-premises server.



Speaking to the suppliers of your different systems will be the best way to find out if there is a cloud-based alternative.

The key questions you need to ask to work out if serverless is right for you are:

- **How complex is your environment?** The more complex your inbox rules, authentication permissions, file structure etc. the more difficult it will be to migrate to the cloud. Not to say it can't be done – but the labour and time costs of doing so will need to be factored in.
- **How much does taking care of a server cost you?** Do you have AC in the whole building making the additional for the server cabinet a small proportion? Or is it only in the server cabinet so turning off the AC could save a significant amount on your electricity bill? How often do you have to call your IT Company for support with the server? How often have you had to buy new parts for your server?
- **Will the benefits of cloud benefit your business?** Do you want to have staff to be able to work from home? Does anyone ever need to connect to their emails and files from a customer's site? Or is everyone in the office all day, every day? Do you ever have power cuts or internet outages at head office? Do you need flexibility to account for business growth? Is your office internet good enough to download all files over as/when you need them?
- **How much does server hardware cost you compared to the monthly cost of a subscription?** If you add up the costs of buying and setting up a new server every 5 to 7 years alongside the maintenance, and compare them to the annual cost of the subscriptions how does it work out?
- **Do you have any software that needs an App server?** Sage, for example, will not work without an on-premises server. The only way to take it to a serverless environment is to build complete remote desktops in the cloud and work on hardware local to where Sage is kept. Remember to factor in moving to a cloud-based solution if you need to.

Going to the cloud doesn't have to be an all-or-nothing situation. The most common hybrid solution is to take Emails to the cloud whilst files, authentication and apps stay on premises. For many businesses this offers the best of both worlds – relieving the requirements of maintaining exchange server which often require a lot of digital space and processing power – whilst maintaining control of business critical files and systems in house.

Whatever your approach a cloud migration needs planning and takes time to implement well, but when it's done right users should find it easy to use with very few substantive differences compared to the on-premises solutions from their perspective.

HOW MUCH WILL GOING TO THE CLOUD COST?

It will vary depending on your specific needs and software requirements, but it will be a significant investment. For an example a rough estimate for a company with fairly simple setup for 10 users, with a £6,000 server would compare as:

	Monthly Costs	Setup Costs	Annual cost over 5 years
New on-premises only solution	£261.53	£12,810	£5,700.40
On-premises server, emails in the cloud	£319.53	£11,005	£6,035.40
Serverless solution	£181.00	£4,230	£3,018.00

This calculation factors in things like the cost of the AC to your server cabinet, the cost of site visits from your IT Company for the server, the cost of buying and maintaining an uninterruptable power supply and the cost of maintaining upgrades.

If you require an app server in the cloud the costs could be significantly more. Costs of initial setup and software install will be comparable between a cloud server and a new box. The initial cost of the server will disappear, but the monthly costs of a cloud server comparable to a £5,000 small business server would be around £400/month.

The differences between the solutions can be summarised:

Setup	Emails	Files	Auth.	Backup	Antivirus	Email Security	Office Suite	Printing	Scanning
New On-prem only solution	On-prem Exchange	Server Share	On-prem Active Directory	Windows Server Backup to Disk	3 rd Party Solution	Exchange Basic	One off Licenses	Shared from Server	Scan to Server Shared Folder
On-prem server, Emails in the cloud	MS 365	Server Share	On-prem Active Directory	Windows Server Backup to Disk	3 rd Party Solution	Exchange Basic	Office 365	Shared from Server	Scan to Server Shared Folder
Serverless solution	MS 365	Share Point & OneDrive	Microsoft Entra	Full Cloud Backup	Microsoft Defender	Microsoft Defender	Office 365	On each device	Scan to Email

THE PRACTICALITIES

PREPARATION, PREPARATION, PREPARATION

Every minute you spend at the start of the project planning will save 10 at the end bugfixing and significantly reduce the disruption to users. Whether you are replacing an on-premises server or going to the cloud moving:

- Your entire authentication, permissions and login setup.

- Every mailbox, calendar and distribution list you have.
- Every file you have.
- Printing setups, shared drives, scanning setups, DHCP and DNS setup...

Is always going to be a significant project. There will always be some disruption to users, but the aim of the planning stage is to keep it to a minimum.

Key things to consider are:

- **Does everyone currently have access to only what they need access to?** You can replicate your current setup exactly, but it's a great opportunity to clean things up. Make sure accounts for staff members who have left are removed or disabled and the access rights and requirements are formally reviewed.
- **How many licensed mailboxes do you need?** With 365 the exact function and cost of a user mailbox vs a shared mailbox vs a distribution list are very different.
- **What geographic areas might your users log in from?** Geographic limiting is an important part of cloud security, it can be altered to allow for business trips or short term changes of location but the basic should only permit login from locations you have staff.
- **Is your file structure ideal for your business?** If you are running into trouble with overlong document paths, or if you have an organically grown setup complete with the inconsistencies that tend to build up over time – this is an ideal time to review and rework it into a coherent setup.
- **Do you use any apps that need a server?** Installing these on a cloud server or moving to a cloud solution takes time and preparation.
- **What will you do if your office power or internet goes down?** Going serverless makes it much easier to send people home to work, but only if they have laptops to take with them or PCs at home to work on.
- **What needs backing up and how will you back it up?** Cloud providers will usually keep backups against issues with their servers, but you may want to keep your own backups to recover edited documents or items that may have been accidentally deleted.
- **Where are the servers you're storing data on?** Microsoft is allows you to choose to keep data within required geographic areas, but you will need to make sure any other cloud suppliers keep their data in a location that complies with the relevant legislation.
- **Who is responsible for the maintenance and support for each area of your new environment?** If you are using a cloud-based remote desktop service or cloud-based apps you may need to speak to the suppliers for some issues and your IT Company for others. Making sure you've worked out in advance who looks after what will give staff the quickest route to support.

It's important to create a detailed plan, and stick to it.

SECURING YOUR ASSETS IN THE CLOUD

There are often security concerns when moving to the cloud. Keeping everything physically in your office feels safer. But remember - your server is connected to the internet, which means it's accessible. It's also networked to all your PCs, if one of them were infected a virus could spread to the server.

There are two major factors in calculating the likelihood of getting breached:

- Likelihood of being attacked.
- Mitigation in place to prevent an attack.

Microsoft or Amazon's servers are a big target. Microsoft are one of the most attacked platforms in the world. However, they also have some of the most significant investments in security and disaster recovery. Thousands of servers across multiple continents replicating data, supported by an army of technicians with high end, expensive monitoring equipment, firewalls and antivirus solutions.

Your server is a much smaller target, but equally with all the best intentions - your server is not anywhere near as protected as the Microsoft ones.

Historically the cost of creating and distributing malware was high - it was hard work and it took time. This meant that relying on security by obscurity was a reasonable option. Who's going to spend 6 months of hard work hacking a single server for an SME business in Maldon?



These days anyone can buy a basic ransomware program off the dark net for £50 and distribute it via email to millions of people with a small amount of knowledge and almost no cost. Everyone will get sent malware at some point and there is a high likelihood that any one person could make a small mistake and get got! Security by obscurity no longer works.

It is certainly possible to protect your own servers, business class firewalls, a robust anti-virus solution, and backups for disaster recovery offer a reasonable level of protection. But you will never match the levels of investment and architecture of someone like Microsoft. Emails, files and authentication in the 365 cloud with multi-factor authentication enabled are as secure or more so than emails, files and authentication on your own server.

THE CLOUD IS HERE TO STAY

Cloud solutions and subscription-based apps are swiftly becoming the most common type of software. You may have good reasons to maintain an on-premises server for some services, beginning to move the services you can to the cloud before you have to is a good idea.

Exchange server (on-premises email software) is receiving fewer and fewer upgrades and the whole program could be declared end-of-life within the next decade. Email in the cloud is where Microsoft wants businesses to go, and going with them tends to make everything work more smoothly.

If you're reviewing new software solutions for Accounting, CRM, or anything else you should factor in cloud-based options for your review. Bear in mind that signing up for a long term contract or paying out to move your data to a new system that locks you into keeping an on-premises server could cost more in the long run.

Whether any, or all cloud services are right for your business will depend on your needs. If you'd like help reviewing the options available and the likely costs of each option give us a call on 01245 265 100 or email info@ontraq.com.