

Cloud Print Services, 2023

How the cloud is driving print infrastructure modernisation



Executive summary

The cloud has underpinned the digital transformation journey for many organisations as they have adapted to decentralised work models over the past two years. As we move into the era of hybrid work, organisations are increasingly focused on building a resilient, future-proof IT infrastructure. The high availability, flexibility, and scalability of the cloud is helping businesses become more agile, while also better preparing them for cyberattacks through advanced data compliance and security. In addition to offering flexibility and scalability, the cloud can help organisations better manage costs – both financial and environmental – than they would while operating a traditional on-premise environment.

Cloud print services can help overcome the complexity and inefficiencies of managing a traditional print infrastructure. Conventional print management typically relies on on-premise print servers and incurs a high IT administrative burden to manage driver installation, device configuration and compliance, device monitoring, reporting and management, server and queue management, firmware updates, and app deployment and maintenance. Cloud-based print management can reduce the IT burden and lower the financial and environmental costs associated with procuring and managing print servers.

Although many organisations believe the cloud to be more secure than an on-premise environment, some consider security concerns the main barrier to cloud print adoption, along with unclear cost benefits and doubts about performance and availability. In some cases, companies are moving workloads back to on-premise environments from the public cloud. Consequently, hybrid models are most likely to become the dominant model.

Most print manufacturers and ISVs offer cloud-based solutions and services to cater for the different public, private, and hybrid cloud approaches customers are pursuing. Cloud print services and solutions encompass serverless printing, cloud-based print management and remote monitoring, and hybrid cloud print management platforms, which may be managed internally or by third-party managed print services (MPS) providers. Cloud print services may also include other adjacent services and solutions around digitisation, workflow, security, and collaboration.

This report highlights key market trends for cloud print services, covering offerings from both manufacturers and independent software vendors (ISVs). It draws on primary research conducted by Quocirca in 2023.

Key findings include:

- **Cloud adoption continues to increase, underpinning the digital transformation journey.** According to Quocirca's latest research, 21% expect their IT infrastructure to be fully in the cloud by 2025, a rise from 5% today. A further 36% expect it to be mostly in the cloud, a rise from 29% today. This is creating momentum in the cloud print services market, as more organisations recognise the benefits of eliminating or minimising their reliance on on-premises print servers.
- **The shift to cloud-based print infrastructure is underway.** While 27% of respondents manage their print environment completely on-premise today, and a further 42% mostly on-premise, 31% report that it is managed mostly or fully in the cloud. Over half (55%) of respondents expect to be managing print fully or mostly in the cloud by 2025.
- **Despite the transition to the cloud, few companies are eliminating print servers – and some are even deploying more.** Despite the tangible benefits – more predictable and manageable financial and environmental costs – of reducing or eliminating print servers, only 13% of organisations have done so. Overall, 48% of organisations have increased the number of print servers in the past year, falling to 37% amongst smaller organisations and rising to 51% amongst large enterprises and 61% in the US. The need to support a more distributed workforce may be leading to an actual increase in print server deployment as more workgroup printers are introduced.
- **Security is the top barrier to cloud print management adoption.** Overall, 36% of respondents say device and document security are the top concerns for moving to cloud print management, rising to 44% in France and 40% in the retail sector. This is followed by lack of demonstrable cost savings (29%) and the impact of relying on cloud connectivity for printing performance (28%).

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Methodology

End-user analysis

This report highlights key market trends and provides an overview of the competitive landscape, including both manufacturers and ISVs. It is based on Quocirca's research of 507 ITDMS, conducted in March 2023. Where useful, data has also been drawn from other studies carried out by Quocirca.

Vendor analysis

To participate in this study, vendors were required to submit a written response to Quocirca's request for information on cloud services and solutions. This report covers only vendors that agreed to participate in this study. It includes:

Manufacturers: Brother, Canon, Epson, HP, Konica Minolta, Kyocera, Lexmark, Ricoh, and Xerox

ISVs: Celiveo, directprint.io, Kofax (Printix), LRS, MyQ, NT-ware (uniFlow), PaperCut, Pharos, Thinprint (ezeep), Vasion (PrinterLogic), and Y Soft

Definitions

Cloud computing models

Cloud services can be deployed in four ways:

- **Public cloud.** Public clouds are owned and operated by third-party cloud service providers, which deliver computing resources such as servers and storage over the internet. All hardware and other supporting infrastructure is managed by the cloud provider. Examples of public cloud providers are AWS, Microsoft Azure, Google Cloud Platform, IBM Cloud, Rackspace, and VMware Cloud. Large public clouds, such as Azure and AWS, offer a mix of IaaS, PaaS, and SaaS, although their biggest strengths tend to lie in the PaaS space.
- **Private cloud.** A private cloud refers to cloud computing resources used exclusively by a single business or organisation. A private cloud can be physically located in the company's on-site data centre or a co-location facility operated by a third party, while the business still owns and operates the computing and storage hardware, along with some aspects of networking hardware. Some companies also pay third-party service providers to host their private cloud. With a private cloud, services and infrastructure are maintained on a private network.
- **Hybrid cloud.** Hybrid clouds combine public and private clouds, binding them together with technology that allows sharing of data and applications between them. This gives a business greater flexibility and more deployment options, and helps optimise the existing infrastructure, security, and compliance. The most common method of hybrid deployment is between the cloud and existing on-premise infrastructure to extend an organisation's infrastructure into the cloud, while connecting cloud resources to internal systems.
- **Multi-cloud.** A multi-cloud environment aims to eliminate reliance on any single cloud provider or instance. A typical multi-cloud architecture utilises two or more public clouds, as well as private clouds. Companies use multi-cloud environments to distribute computing resources and minimise the risk of downtime and data loss. They can also increase the computing power and storage available to a business.

Multi-tenant versus single-tenant cloud

- **Single-tenant cloud.** A single-tenant cloud is architected to provide the envisaged resource requirements for one specific company. All hardware and application code is costed to support that company. To allow for any resource overruns, the single-tenant cloud owner needs to provision the respective server, storage, and network overhead to allow for demand on resources. These resources are unlikely to be regularly needed, but must be kept running and will involve additional costs, such as licensing, alongside power and maintenance. If the initial design is wrong, insufficient resources may be available when the application or service needs it, which could lead to the service being hindered or failing completely.

- **Multi-tenant cloud.** A multi-tenant cloud is architected to support multiple customers that may have counter-cyclical needs in their applications, based on geographical location or when they run certain services, such as payroll, data consolidation, or reporting. As such, applying a small amount of resource overheads will generally be sufficient to meet the needs of all customers – and the cost for this can be shared amongst customers.

Cloud print services and solutions

- **Cloud print service.** Cloud print services involve a third-party provider, such as an MPS provider, managing the print infrastructure for a customer using a cloud-based platform. This may offer a range of capabilities, including driver deployment, firmware updates, remote monitoring, usage tracking, and reporting.
- **Cloud print solution.** Cloud print solutions vary from simple cloud print solutions that enable printing via the cloud to print management platforms that offer full print management capabilities such as driver management, rules-based printing, document accounting and tracking, reporting, and analytics. Cloud print solutions may be server based or serverless. Some products enable direct IP printing and use appliances to route print jobs, and print jobs may reside either in the cloud or on-premise.

The cloud print ecosystem

A cloud-based print management platform can be delivered as a part of or independently from an MPS. It can be deployed as a private or hybrid model, in which print servers are located in the cloud, eliminating the need for on-premise hardware (serverless printing) or the software to be hosted on-premise (private cloud). Serverless printing enables direct IP printing from workstations to network printers, which removes the complicated set-up of having a dedicated print server.

The cloud print services and solutions ecosystem is diverse, covering vendors that deliver cloud MPS and cloud-based software and solutions. This is categorised as follows:

- **Printer/copier manufacturers** – Traditional OEMs such as Brother, Canon, HP Inc., Konica Minolta, Kyocera, Lexmark, Ricoh, Sharp, and Xerox.
- **Channel partners such as MPS providers** – These are a channel to market for some printer and copier vendors and may offer cloud print services and solutions as part of a wider MPS or cloud offering.
- **ISVs** – These are companies that write and market software for facilitating tasks and processes. A thriving market exists for ISVs that focus on print management solutions, including directprint.io, ezeep (powered by ThinPrint), Kofax (Printix), LRS, MyQ, NT-ware (uniFLOW), PaperCut, Pharos, Process Fusion (UniPrint), ThinPrint, Vasion (PrinterLogic), and Y Soft.

Introduction

The strategic value of the cloud has been proven as a key enabler for digital transformation, helping organisations drive operational efficiencies, lower environmental impact, and modernise legacy infrastructure, as well as supporting the shift to remote work and virtual collaboration. Quocirca's research shows that today, 79% of organisations operate some or all of their IT infrastructure in the cloud, with 5% of these indicating that they are fully in the cloud. Although those expecting to be fully in the cloud by 2025 rises to 21%, the majority will still be taking a hybrid approach (67% in 2025 compared to 74% in 2023). Overall, 57% expect to be mostly or fully in the cloud by 2025, rising to 59% in retail and 60% in the public sector. This compares to 20% of industrial respondents that will remain completely on-premise.

The differing levels of cloud maturity reflect the ongoing need for cloud print services and solutions providers to deliver products that support customers wherever they are on their cloud journey. Cloud print services and solutions enable organisations to manage their devices in the cloud (either custom managed or by a third-party MPS provider). In some cases, organisations can eliminate or reduce the number of print servers. This offers a range of benefits, including improved efficiencies around managing printing across the home and office environment, reduced IT burden, reduced environmental impact, enhanced security, and improved analytics through proactive remote monitoring and reporting.

Quocirca's research reveals that 27% of respondents manage their print environment completely on-premise today, and a further 42% mostly on-premise. However, the shift to cloud print-based infrastructure is underway – 31% report that it is already managed mostly or fully in the cloud, which is set to rise to 55% by 2025.

However, the market is fragmented, characterised by a mix of offerings from print manufacturers and ISVs. For organisations operating a standardised printer fleet, the print manufacturer's own, often proprietary, cloud print management solution generally offers the most integrated functionality and support. Our study also shows that almost half of organisations are actually increasing their print servers as they adapt to new working environments and expand their device fleet. This is particularly the case amongst organisations using MPS or operating a multivendor environment.

The cloud print services market is not a one-size-fits-all environment. Providers need to offer solutions that fit customer expectations and needs – some still want a hybrid solution in which certain print jobs are managed completely on-premise; some want the job to be managed via metadata in the cloud, with the actual print job content remaining local; others want everything managed within the cloud.

In this dynamic market, the table stakes and customer expectations are increasing. Cloud print services and solutions are one element in helping organisations operate a secure and sustainable print infrastructure that supports the hybrid workplace.

The complexity of traditional print management

Traditional print infrastructure is often characterised by a patchwork of devices, printer drivers, and software solutions from multiple vendors. These print management challenges are increased as organisations extend support to employees working from home.

Dedicated print servers have been used to support centralised print management, automatic driver updates, high availability, control over a user’s printer profile, and integrated reporting. While some organisations turn to third-party MPS providers to help reduce the IT burden, reliance on print servers can be costly and inefficient and expose an organisation to risk. Quocirca’s research has shown that each print server costs around £1,900 to provision, with annual running costs of roughly £1,500 and the average organisation operating three print servers.

Despite the tangible benefits – more predictable and manageable financial and environmental costs – of reducing or eliminating print servers, only 13% of organisations have done so. In fact, 48% of ITDMs have increased the number of print servers in the past year, rising to 51% amongst large enterprises and 61% in the US.

The need to support a more distributed workforce may be leading to an actual increase in print server deployment as more devices are introduced. In fact, 80% of organisations say that they have increased the number of devices over the past two years.

‘I think it’s the overheads that we have on premise, with physical boxes, maintenance, licensing model. Microsoft has actually gone over to a subscription model, which means that it’s a fixed cost. We know what it is, and the business is more geared up for that now that they know that there’s a fixed cost going out every month for all sorts of different services.’

IT Manager at a UK Law Firm

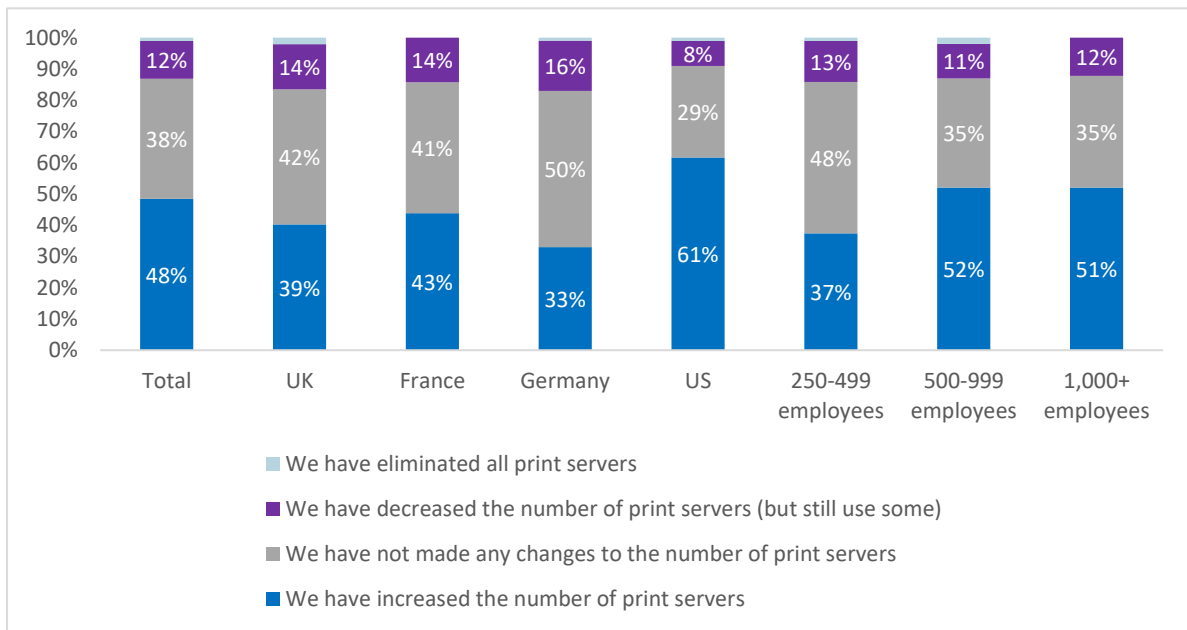


Figure 1. How has the number of print servers changed in the past 12 months?

Notably, organisations using MPS are most likely to have increased print server usage – 60% state that they have increased the number of print servers in use, compared to only 38% of those not using MPS. This suggests that MPS providers are still focusing on on-premise print solutions, rather than trying to move customers over to a

cloud-based platform. Organisations operating a multivendor fleet are most likely to have increased the number of print servers – 58%, compared to 24% of those using a standardised fleet. MPS providers are well positioned to address the potential cost impact of operating a mixed fleet, particularly through the use of serverless printing for customers who are receptive to eliminating print servers completely. However, to do this, MPS providers must move away from on-premise servers to the cloud wherever it makes sense, leaving only those organisations with specific needs for on-premise print servers to have them. Even then, MPS providers must push to be the provider and manager of the hardware and software concerned.

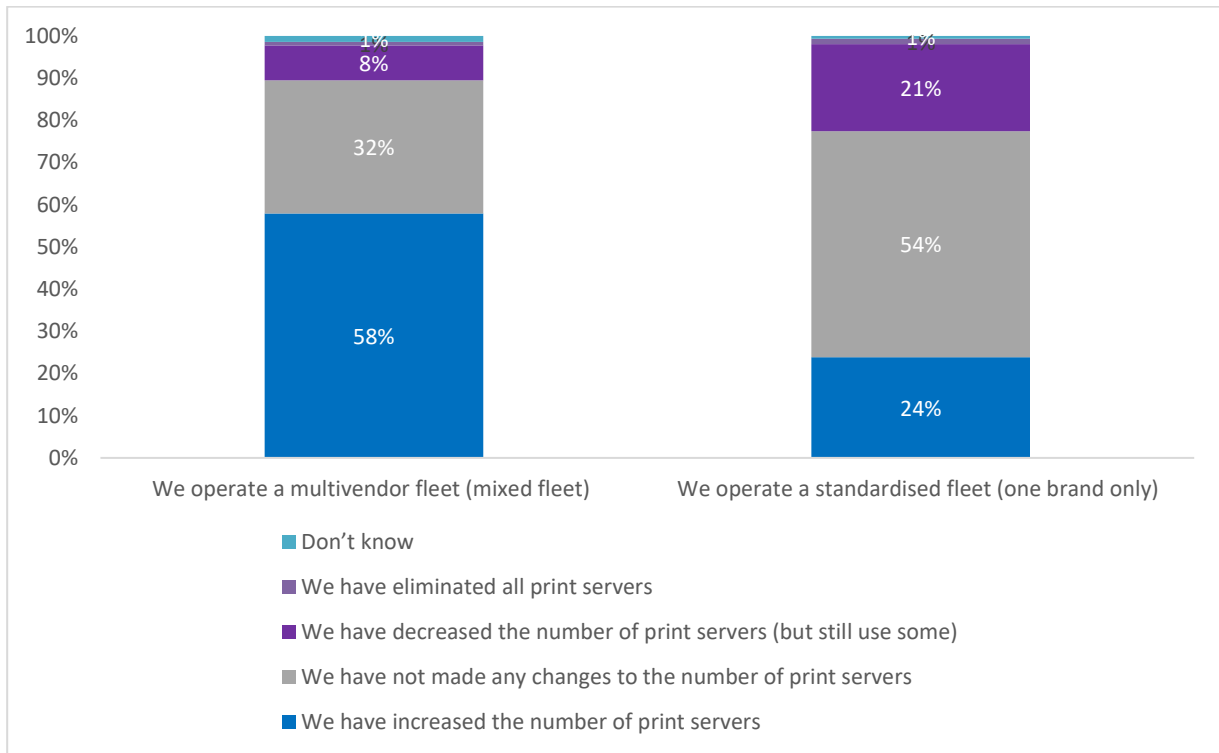


Figure 2. How has the number of print servers changed in the past 12 months? (By printer fleet environment)

Addressing print infrastructure complexity with cloud print management

The strategic value of the cloud has been proven as a key enabler for digital transformation, helping organisations drive operational efficiencies, lower environmental impact, and modernise legacy infrastructure, as well as supporting the shift to remote work and virtual collaboration.

Quocirca’s research shows that today, 79% of organisations operate some or all of their IT infrastructure in the cloud, with 5% of these indicating that they are fully in the cloud. Although those expecting to be fully in the cloud by 2025 rises to 21%, the majority will be taking a hybrid approach (74% in 2023 compared to 67% in 2025). Overall, 57% expect to be mostly or fully in the cloud by 2025, rising to 59% in retail and 60% in the public sector. Of industrial respondents, 25% are all on-premise now, and this is only expected to drop to 20% in two years’ time. The public sector shows the biggest predicted move to all-cloud, from 1% now to 20% in two years’ time.

While many organisations are already using managed print services (MPS) providers to manage their print environment via the cloud, organisations still have untapped opportunities to move to cloud-based print infrastructure and reduce dependency on print servers. This can create lower financial and environmental costs and reduce the IT burden associated with monitoring and securing an increasingly distributed printer fleet.

The momentum of organisations moving to the cloud has been partially driven by a desire for cost management, greater ability to deal with dynamic workloads, and the removal of non-profit-creating activity from the IT team. However, it has been accelerated by the move to a more distributed and demanding workforce brought about through the pandemic. Cloud-based infrastructure has allowed organisations to better adapt to the decentralised, hybrid work environment in a more direct and flexible way than was possible in an on-premise IT environment.

Over half of organisations (53%) are using a cloud print service, with a further 33% planning to do so in the next two years. US organisations (64%) are more likely to be using a cloud print service, along with larger enterprises (60%) (Figure 3). The public sector (44%) is least likely to report using a cloud print service. Note that organisations may be using cloud print management tools irrespective of whether they use a cloud print service through a managed print services provider.

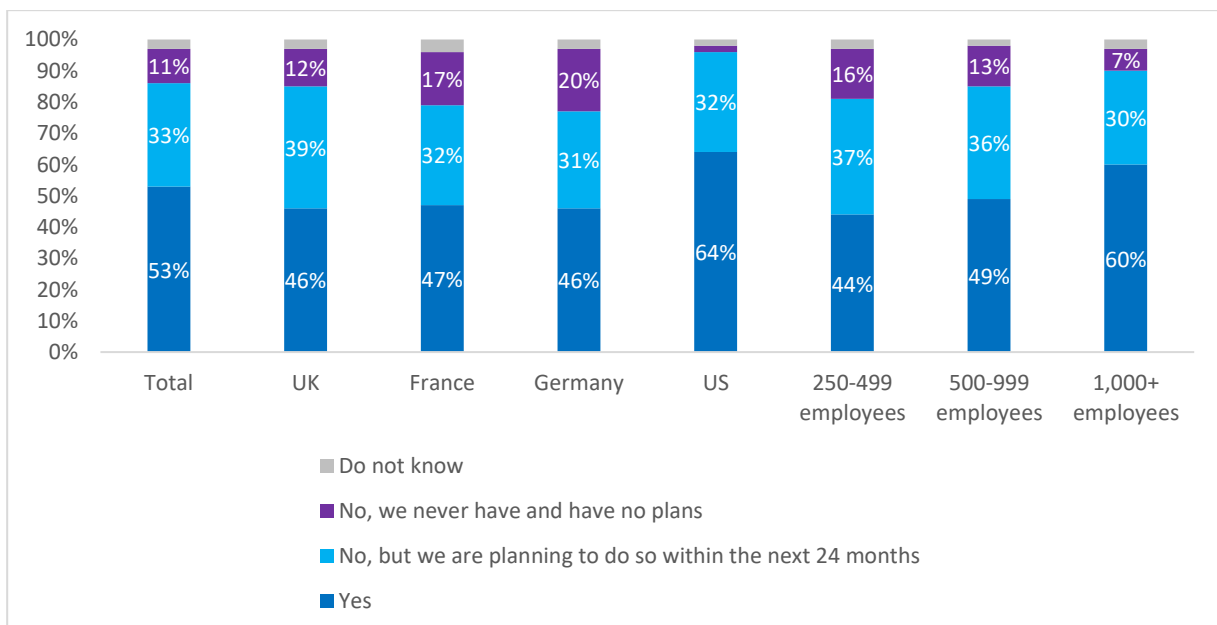


Figure 3. Does your organisation use a cloud print service? (Where an MPS provider hosts the cloud print management platform)

Cloud print management consolidates print management tools into one platform, allowing configuration, users, printers, and policies to be managed remotely. This eliminates the need for internal IT maintenance and individual driver installation. Cloud print management can operate within a private hosted or hybrid model. Print jobs may be sent to the cloud or retained locally. In smaller organisations that have very few workstations or printers, a serverless model may be a better approach, in which everything to do with the management of print jobs is managed directly in the cloud. It can also appeal to enterprises that are consolidating servers, looking to better control print costs and lower the IT administrative burden.

For organisations with tighter security regulations that are not yet ready to eliminate their print servers, a hybrid solution offers ease of use for administrators while still allowing for consolidation and cost savings. Certain data around the print job is managed by on-premise servers, while the metadata around the job itself is managed in the cloud, deployed under a single management platform. Cloud print management tools offer secure printing, remote job submission, and mobile printing. For instance, a global print queue does not need multiple print drivers and queue management. In addition, cloud-based print management can offer stronger access controls, security, and compliance, with firmware updates, fleet management, and reporting all handled by the provider. Increasingly, cloud-based print management solutions are expanding to offer other capabilities, such as workflow routing, data leak protection/prevention (DLP), advanced analytics, and reporting.

As the capabilities of cloud-based print management systems continue to improve, a move to the cloud will become attractive to more organisations. For those with a highly decentralised, hybrid workforce that requires high levels of both device and information security, as well as flexibility and the capacity to add more business capabilities into their print environment, cloud-based print management is fast becoming the only option.

Security – A driver for and barrier to adoption

Organisations are moving away from traditional perimeter-based security models, instead adopting approaches that more closely tie in to a zero-trust model. With this approach, everything must be seen as a security issue and managed accordingly. For organisations dealing with a decentralised hybrid workforce, this has become a necessity, rather than a nice-to-have. Quocirca's research shows that 38% of organisations have already adopted a zero-trust model, with a further 39% planning to adopt one in the next 12 months and only 7% having no plans to.

Security is a driver for cloud adoption

The fear around the cloud opening up more security vulnerabilities is subsiding. Organisations have realised that large cloud providers must offer solid security capabilities just to survive, and are willing to pay large salaries to those skilled in managing security across their platforms. Similarly, organisations providing services on top of a cloud platform also must demonstrate that they not only understand security, but also have the resources in place to provide the highest levels of security possible. For those offering multi-tenanted services, the costs of employing and keeping human resources up to speed on security issues can be shared across the total customer base. This is becoming less of a possibility for many organisations, which are seeing the salaries offered to top security talent move outside of their reach.

However, some organisations using MPS have a range of security concerns around cloud print management, which is inhibiting adoption. Security is a double-edged sword, and there remain concerns around document and device security – ultimately, for many organisations a hybrid approach that fits in with their specific security requirements will prevail.

'My focus for the coming year is security. But one of the drivers for the cloud is also security, because we can't make that same investment that the likes of Microsoft put into having their system secured. We just won't be able to afford it or the resources available to us, and that is a challenge. Security's always been a challenge – it's becoming more forefront now: the requirements for us to make sure that we've got secured systems. Clients are challenging us on what our security credentials are.'

IT Manager at UK Law Firm

Barriers to cloud print adoption

Security is the top barrier to cloud print management adoption. Despite the benefits of improved IT efficiency, flexibility, and scalability, the cloud can create a range of security concerns. These include potential data breaches due to cloud vulnerabilities and lack of identity, credential, and access controls. Overall, 36% of organisations using MPS are concerned with device and document security in the cloud, rising to 40% in the US and 44% in Germany. The retail sector is the most concerned at 44%, compared to just 29% in the professional services sector. A lack of demonstrable cost savings comes in second place (29%), followed by impact on performance (29%).

Larger organisations are more concerned with the migration of workloads and losing functionality that is available in the on-premise print management platform. The impact of potential cloud repatriation, in which organisations shift workloads back to on-premise environments, sometimes due to escalating cloud costs, outages, and security issues, means hybrid approaches will likely remain widely adopted.

The varying approaches in the market (cloud MPS, cloud print management platforms, serverless printing) are creating complexity. Each approach offers different benefits around cost saving, efficiency, and security. As such, MPS providers and ISVs must clearly articulate their propositions and provide clarity around how customers can achieve lower costs, reduced risk, and improved efficiency.

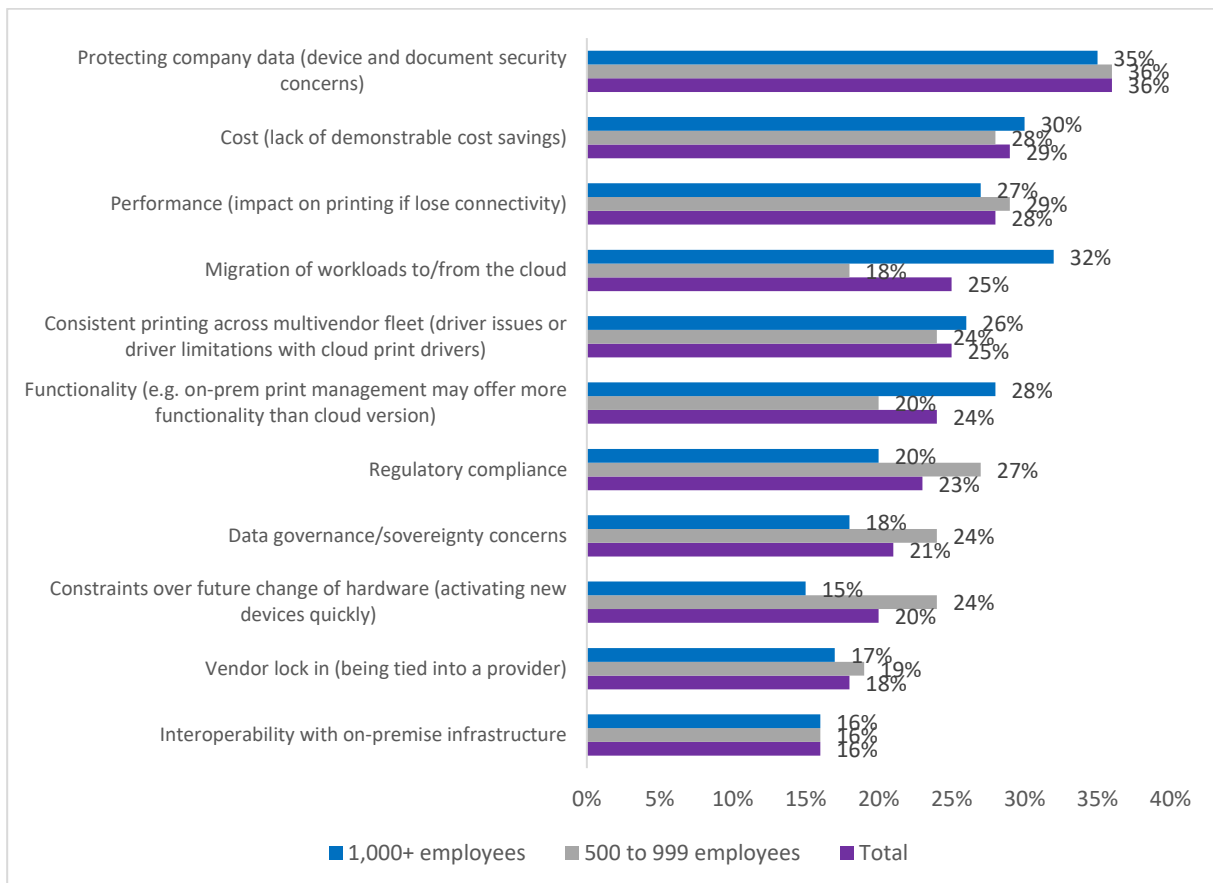


Figure 4. What are your concerns with moving to the cloud for print management?

Buyer recommendations

The cloud print services market continues to evolve. Increasingly, print manufacturers are offering fully managed cloud print services with advanced capabilities, while independent software vendors (ISVs) are offering good solutions for organisations that operate a mixed fleet environment or are not using a fully outsourced MPS. A portfolio offering private, public, and hybrid models will enable organisations to transition as their on-premise and cloud needs adapt. For those already on their cloud journey, choosing a provider that can keep pace will be crucial.

- **Serverless or hybrid.** Smaller organisations with few workstations or printers may find a serverless model with no on-premise print servers a better approach to saving money on print server costs and overheads. This can also support direct printing, in which print jobs go directly from the user device to the printer. It can also appeal to enterprises that are consolidating servers, looking to control print costs and lower the IT administrative burden. However, it can be difficult to manage centrally across distributed locations unless a print management tool is used that supports both serverless and on-premise environments. Organisations not looking to eliminate their print servers or that have security concerns may find a hybrid solution the better choice. With a hybrid solution, some aspects of key print jobs are still managed by on-premise hardware, with other aspects managed via the cloud, deployed under a single management platform. This allows ease of use for administrators, as well as consolidation and cost savings. As the capabilities of cloud-based print management platforms improve, buyers must look for solutions that enable them to move forward as required.
- **Multi-tenant platform.** Single-tenant hosted solutions are more expensive than multi-tenant ones, but provide better overall control and nominally better security capabilities. However, they can create availability risks due to manual maintenance and update processes. Multi-tenant solutions are generally highly configurable and include solid security managed by the service provider. Multi-tenancy can also help keep costs down by sharing them across multiple individual tenants.
- **VPN requirements.** Some cloud printing solutions are hosted on a cloud server, but still require a virtual private network (VPN) tunnel into the network, which limits accessibility. This can add overheads in terms of connection performance, cost of the VPN, and costs of installation and management of the VPN client on desktops and mobiles. It can also create an unnecessary security weakness: if the VPN is compromised, it will affect the whole on-premise network. End-to-end data encryption can be a better solution to dealing with such issues, while integration into existing security solutions, such as security information and event management (SIEM) systems, can guard against malicious parties gaining access.
- **Document security.** The print platform should allow either compression and encryption of print jobs, or local handling of at least some part of the job, rather than sending all the data and metadata around print jobs to the cloud to be spooled. Most cloud-based platforms can keep print jobs on the local network behind the firewall, maintaining higher levels of overall information security. Any data sent between the client and the cloud should be encrypted to prevent the stream from being captured via a man-in-the-middle attack.
- **Identity access management and multi-factor authentication.** Organisations should evaluate capabilities for pull-printing, which allows print jobs to be released only to authenticated users, regardless of location. Cloud printing can enable users to release print jobs from any networked printer or MFP. They should consider a cloud printing platform that enables users to authenticate at any device, using smart card release or other forms of near field communication/Bluetooth, biometrics, or PIN printing. Identity management is becoming a much stronger focus for many providers, with integration into existing identity access management (IAM) systems on offer.
- **Zero-trust support.** The print environment can no longer be viewed as a separate environment to the rest of the IT platform. As the attack surface offered by intelligent devices both in the home and at the office increases, such devices are being targeted as a means of accessing an organisation's network. Buyers must ensure that any chosen system fits with their organisation's security posture and existing security tools –

not just for now, but also for the future. Quocirca recommends ensuring that any chosen solution adheres to the zero-trust model.

- **Native driver support.** While a universal print driver (UPD) can offer simplicity, buyers should consider solutions that offer native driver support that can use the full functionality of the MFP. Efficiencies and cost savings can be made when the driver supports the full functions of the MFP, such as double-sided printing, multi-page up, collation, and multi-drawer support for different paper qualities/types. Quocirca is seeing rapid evolution here, with universal print drivers now supporting more functionality across printer fleets.
- **Reporting and analytics.** Traditional print management solutions offer extensive reporting on printer utilisation, device performance, consumables usage (toner and paper), and service information. In a serverless environment, this reporting may be limited. However, Quocirca is seeing this change as cloud printing platforms mature and more data is drawn from print devices to be analysed and reported on. Buyers should evaluate integration with traditional business intelligence tools, along with advanced reporting around environmental analytics and user behaviour.
- **Pricing models.** Pricing models for cloud print management software platforms should be considered as these can vary. Some ISVs offer per-device, per-user and per-queue models. This can have an impact depending on how many users or devices are deployed, particularly where hybrid working needs to be taken into account.

Supplier recommendations

Quocirca's research shows that cloud usage continues to increase – however, not all organisations are moving to the cloud at the same speed. A mixed capability of equally functional cloud and on-premise solutions will allow customers to move along the cloud journey at their own pace. Suppliers of cloud-based print services and solutions should consider the following:

- **Educate the customer.** The cloud is undoubtedly a major part of most organisations' strategies now. However, the print environment has been slower than other areas of IT infrastructure in its move to the cloud. Nevertheless, recent Quocirca research shows that the speed of both the print channel and its customers in moving to the cloud for MPS services has accelerated strongly. To build on this momentum, customers still need educating on why a move to cloud-based MPS makes sense – arguments around availability, more manageable costs, and better updating of available functionality should be used as preliminary discussion points with any customer (or prospect) still wary of such a move. While many businesses may be familiar with the benefits of MPS, the market for cloud print services and solutions is broad and diverse. The growing acceptance of the cloud – be it IaaS, SaaS, or PaaS – will enable providers to build propositions that can support existing cloud strategies.
- **Address the multi-cloud needs of businesses.** Although the ultimate goal around cloud usage may be a hybrid or single-cloud model, the current reality for the majority of enterprises is a multi-cloud model. Those selling cloud-based print management solutions must recognise that each variant of the cloud offers its own advantages and obstacles to adoption. Any cloud print infrastructure proposition must address the varying needs of businesses as their cloud journey progresses.
- **Ensure security is adequately addressed.** Vague statements around security performance will no longer satisfy buyers, who are now more security-aware than ever, as a more decentralised work environment has created a greater focus on acute security concerns. Look to zero-trust models to develop and message solutions across your portfolio.
- **Look to integrate with existing security platforms.** Identity access management (IAM) and security information and event management (SIEM) systems are widespread in the market and offer mature security solutions. For this reason, Quocirca advises that those in the print market do not aim to provide their own solutions in this area. Instead, the channel should look to integrate into systems that are already

strong in the enterprise environment, such as Okta and Ping Identity for single sign-on (SSO)/IAM and Splunk, LogRhythm, and Fortinet for SIEM systems. At minimum, multi-factor authentication (MFA) systems should be implemented, preferably using mobile device-based apps.

- **Continue the shift from a traditional to a consultative mind-set.** Providing guidance on how to leverage different types of cloud services and technology is critical. A customer moving from where it is currently to where it needs to be in the future will require a lot more discussion and planning. The future of the channel is no longer a ‘sell it and forget’ model that depends on the customer to automatically renew maintenance annually, but one that works with the customer to uncover extra areas where more value-add can be built in over time – and so extra revenue accrues for the provider. This requires a shift in mind-set from selling products to offering solution-based services, as well as the subscription model that comes with this.
- **Enhance trusted-partner status to deliver differentiated value services.** Cloud print service providers have a significant opportunity to provide other value-added services and solutions to support a customer’s digital transformation journey. Workplace services, particularly in the areas of collaboration, videoconferencing, managed desktops, and workflow, can be low-hanging fruit in which good margins can be made. Other areas, such as managed security and other larger IT services, are also possible. Service providers can generate greater profitability by offering additional managed services that deepen customer engagement. Managed services can also increase the share of business that comes from recurring revenue, delivering healthier margins and revenue growth over time. Such services do not need to be home grown by the channel partner: the advantage of the cloud is that it allows cloud-based service providers to share and consume each other’s functionality easily.

Vendor profile: Pharos

Quocirca opinion

Founded in 1992, Pharos Systems International has a strong heritage in the print management software and services market. The company has historically been very strong in the enterprise and education sectors with its on-premise solutions, and in 2013 launched its cloud-native SaaS platform, Pharos Cloud. Pharos stands out for its strong focus on security across both its on-premise and cloud platform, its proven expertise in supporting the complex and high-availability requirements of large enterprises, and a mature approach to zero-trust security. In addition, Pharos offers advanced analytics, and notably extended Pharos Cloud to support work-from-home printing with the Pharos Print-at-Home solution.

In February 2023, Pharos achieved ISO/IEC 27001:2013 certification, demonstrating its continued commitment to information security and formalisation of IT security policies and procedures to help ensure the confidentiality, integrity, and availability of its corporate assets, as well as its Pharos Cloud product.

Pharos Cloud is built on Amazon Web Services (AWS) and supports local data privacy and data sovereignty requirements by providing over 20 predefined geographic regions where secure-release print jobs can be stored at rest in the region where the user is located. These regions correlate directly to secure AWS S3 repositories globally. In addition, administrators can define different metadata collection settings based on region. Pharos Cloud regularly undergoes vulnerability testing and examination by external security specialists, and has received an A+ rating using the Qualys SSL server test. Pharos Cloud supports zero-trust security principles to enable printing in mature zero-trust network environments.

Additionally, in September 2022, Pharos introduced secure scanning capabilities to its cloud platform, enabling users to securely digitise and share documents by scanning to email, network folder, and OneDrive. The initial release supported Ricoh devices only, and in March 2023, the company extended support to Canon (pending certification), HP, Konica Minolta, and Toshiba MFPs.

Pharos is a good choice for large enterprises looking to take advantage of a secure, cloud-based infrastructure to support the increasingly remote and hybrid workforce while still benefiting from traditional secure print functionality. Along with functionality to support printing in the home environment and secure scanning, Pharos is currently one of the more fully featured print management platforms.

Product overview

In addition to the Pharos Cloud platform, Pharos also offers on-premise print management software, which includes Pharos Blueprint for corporate enterprises and its student pay-for-print software, Pharos Uniprint, which enables colleges and universities to recover and reduce printing costs.

- **The Pharos Cloud platform** leverages end-to-end encryption and supports zero-trust security principles. With Secure Release, users can send print jobs across networks to a centralised queue, which can be accessed from any secured printer within the network. Data is encrypted as it is transmitted from the user's computer to the printer, ensuring that sensitive information remains secure during transmission. Direct Print enables the in-office, direct-to-printer workflows employees are familiar with. The platform also provides comprehensive audit trails and reporting capabilities, allowing organisations to monitor printing activities and ensure compliance with industry regulations.
- **Pharos Secure Release** is a secure print application that requires users to authenticate themselves at the printer before documents are released for printing, and is a common feature across the company's entire portfolio. Secure Release allows printing across networks so employees can submit print jobs from home or on the road, and collect them when they are in the office by authenticating via PINs, ID cards, or scanning a QR code with their mobile devices. The Delegate Print feature allows a job owner to designate another user or users to release their documents on their behalf. For example, an in-office employee can release print jobs on behalf of an employee working remotely. In addition, users can submit Secure

Release print jobs from their mobile devices and release them by scanning a QR code at a printer with the mobile app (iOS and Android).

- **Pharos Print-at-Home** enables employees to add and print to their home-office printer from their work computer – with or without a VPN. Pharos Print-at-Home supports networked laser and inkjet printers and utilises Internet Printing Protocol (IPP) to create and send the print job for ‘driverless’ queue management and provides visibility and control over employees' at-home printing.
- **Policy Print** for in-office or at-home printing helps reduce costs by enforcing company print policies (i.e., restricting colour printing or documents over 50 pages) and educating users on more cost-effective and sustainable print habits (i.e., printing double-sided) at the point of print submission.
- **Pharos Direct Print** migrates the in-office, direct-to-printer workflows that employees are familiar with to the cloud and simplifies driver management. Direct Print supports manufacturers' print drivers and simplifies driver management by reducing the number of print drivers that need to be managed. Pharos's advanced IPP-Everywhere print driver, which supports all manufacturers, can be deployed to the majority of users, and manufacturers' drivers can be used only where needed. In addition, Direct Print simplifies driver deployment and makes it easy for employees to find the right printers by automatically adding or removing print queues based on their location.
- **Pharos Insights** provides a singular, comprehensive view of enterprise-wide print operations via intuitive dashboards – including at-home employee printing with Pharos Print-at-Home. Admins can drill down from an intuitive dashboard to view granular job-level data by individual devices, users, and print jobs – and quickly identify top cost-producing users and under-/overutilised print devices.
- **Secure Scan** within Pharos Secure Release enables IT administrators to manage printing and MFP scanning across an organisation, and provides users with a simplified and consistent user experience across all supported manufacturers.

Key differentiators

- **Strong focus on security and zero-trust.** Pharos Cloud is ISO 27001 certified and enables printing in mature zero-trust network environments. The platform delivers a robust, highly secure cloud service with an architecture that can address each of NIST's zero-trust security principles. Data is secured in transit and at rest with end-to-end encryption.
- **Monitoring home printing.** Pharos Print-at-Home functionality utilises Internet Printing Protocol (IPP) to create and send print jobs for ‘driverless’ queue management and provides visibility and control over employees' at-home printing.
- **Comprehensive print analytics** provides deep insights into the printing environment through interactive dashboards.
- **Adhering to local data privacy and data sovereignty requirements.** Pharos Cloud supports over 20 regions within a single customer tenant, in which organisations can customise data privacy collection settings and store secure-release jobs between submission and release in the cloud in a user's region.
- **Zero-knowledge encryption.** Print jobs are encrypted at the workstation with AES 256-bit zero-knowledge encryption. Customers are provided with a system-generated site encryption key. The system does not retain a copy of this encryption/decryption key, and Pharos is not able to view the customer's site encryption key, which means only the customer has access to print job content.

About Quocirca

Quocirca is a global market insight and research firm specialising in the convergence of print and digital technologies in the future workplace.

Since 2006, Quocirca has played an influential role in advising clients on major shifts in the market. Our consulting and research are at the forefront of the rapidly evolving print services and solutions market, trusted by clients seeking new strategies to address disruptive technologies.

Quocirca has pioneered research in many emerging market areas. More than 10 years ago we were the first to analyse the competitive global market landscape for managed print services (MPS), followed by the first global competitive review of the print security market. More recently Quocirca reinforced its leading and unique approach in the market, publishing the first study looking at the smart, connected future of print in the digital workplace. The [Global Print 2025 study](#) provides unparalleled insight into the impact of digital disruption, from both an industry executive and end-user perspective.

For more information, visit www.quocirca.com.

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