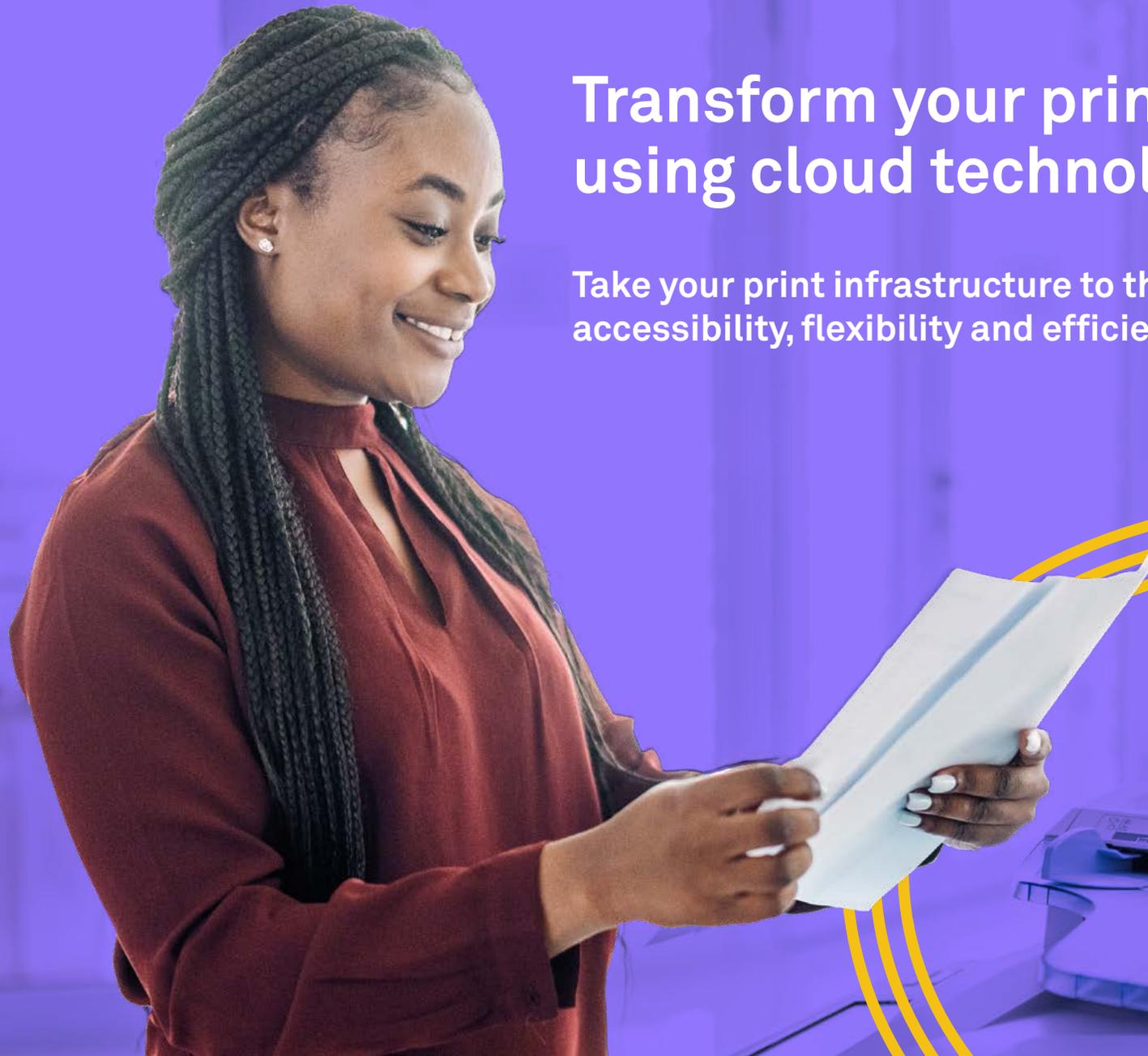


Transform your print infrastructure using cloud technology

Take your print infrastructure to the cloud for better
accessibility, flexibility and efficiency.



Optimizing workplace technology is more important than ever

Optimizing and embracing workplace technology, particularly cloud-based solutions, has become a mandate for success in today's hybrid and flexible work environments. These technologies empower organizations to collaborate seamlessly, adapt to change, make informed decisions, prioritize employee satisfaction, and maintain a competitive edge.

Cloud-based solutions offer the scalability and adaptability you need to meet shifting workforce and workplace demands. Beyond breaking down barriers to support seamless connectivity and collaboration, cloud-based solutions can unlock valuable data-driven insights to help you make informed decisions and navigate today's highly digital and competitive business environment.

When optimizing workplace technology, one often overlooked aspect is print infrastructure. While digital processes and paperless workflows have become prevalent, print-related workflows remain important for many organizations. In a hybrid or flexible work environment, where employees move between in-office and remote working, modernizing the print infrastructure becomes more crucial.



In this eBook, we'll explore:

- The ways cloud technology can transform your organization's print infrastructure
- Key considerations for making print a part of your cloud-first strategy
- Features and benefits of hybrid cloud solutions
- Questions to ask when deciding which cloud print solution is right for you

73%

of organizations are looking to increase their use of cloud-based printing services over the next few years.¹

61%

of businesses expect to fully or mostly use the cloud for their IT infrastructure.²

¹Print 2025. Print 2025: The IT and Office Worker Print and Digital Divide. November 25, 2019.

²Quocirca. The impact of cloud maturity on printing. January 23, 2023.

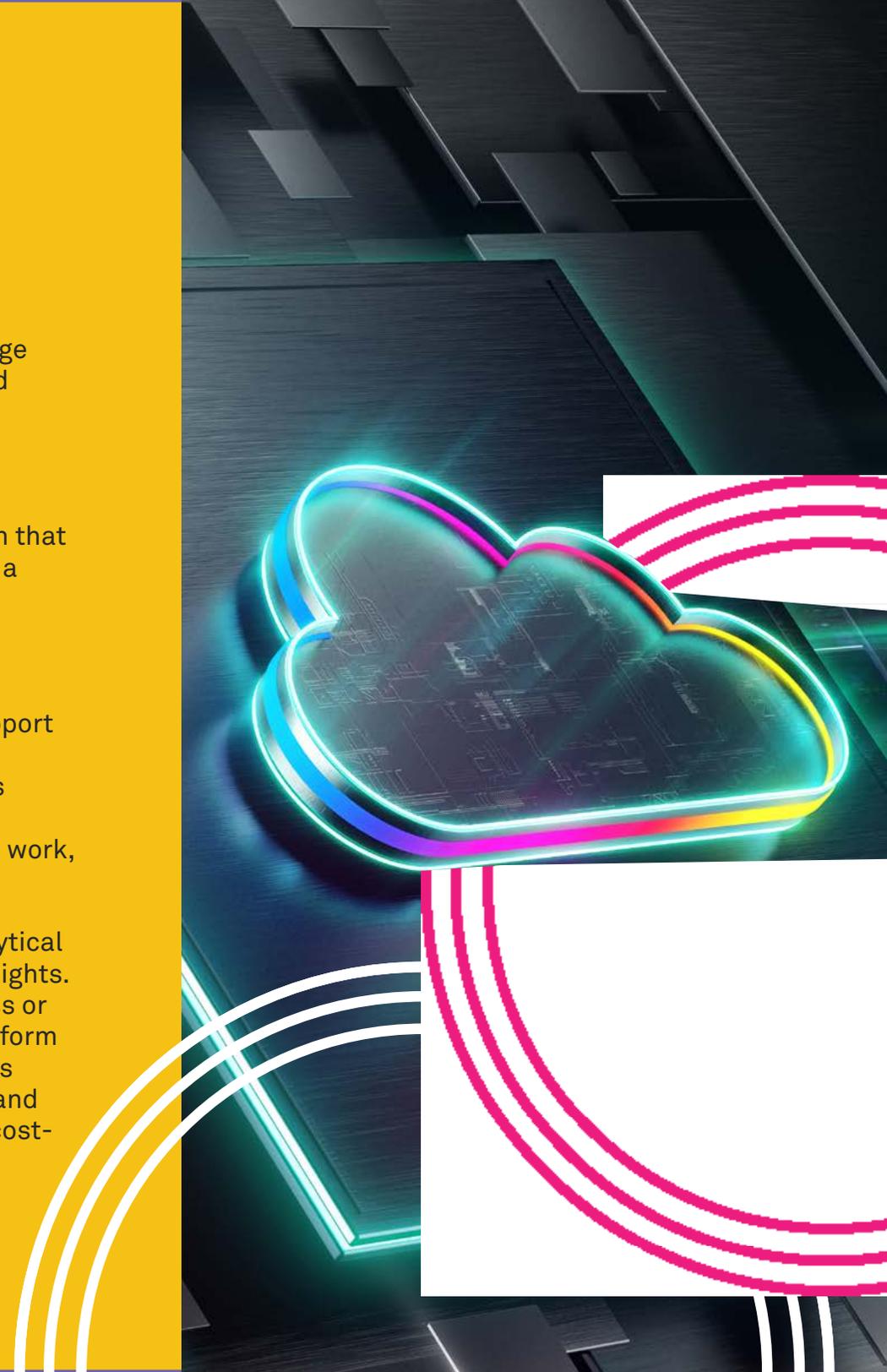
Cloud technology sets a powerful foundation for a strong print and IT infrastructure

In rapidly changing work environments, organizations can leverage the agility, scalability and automation of cloud technology — and forward-looking organizations are moving their IT services and infrastructure to the cloud.

Yet many organizations fail to consider their print infrastructure when evaluating their cloud models, often due to the assumption that migrating to the cloud is too complex, unsecured, and would put a strain on IT and capital resources.

It's important to note that on-premises and outdated print infrastructure are not sustainable for today's organizations. Companies of all sizes must be able to securely manage and support their print infrastructure from a cloud platform and eliminate the dependency on physical or legacy print infrastructure. This is especially true with hybrid or flexible workplaces, as access to technology, including print devices, is essential for employees to work, communicate, and collaborate in different locations.

Furthermore, many cloud print platforms feature advanced analytical tools and reporting, turning print data into valuable business insights. Although the type of data you target will depend on your business or operational goals, the real value of this data is that it can help inform strategy and decision-making to streamline operations, cut costs and meet corporate sustainability goals. Ultimately, usage data and insights can be used to optimize your print infrastructure more cost-effectively and positively impact the bottom line.



Why are organizations reluctant to adopt cloud technology?

Here's a look at the top cloud migration challenges reported by FutureCIO.³

56%

Lack of understanding of cloud security and compliance best practices

55%

Lack of a clearly defined business case for the migration

44%

Insufficient planning

For organizations looking to migrate their print infrastructure to the cloud, what are some key considerations for a successful migration strategy?

³FutureCIO. Cloud migration challenges and opportunities in 2022. June 13, 2022.

5 steps to building your cloud print migration strategy

1 Consider the role of print in your growth trajectory

The first step to modernizing and migrating your print infrastructure to the cloud is understanding its role in future growth and how it can help support your organization's digital evolution. Important questions to consider include:

- How will a move to the cloud impact the productivity of your operations and enhance the user and customer experience?
- What are the technical risks involved — from data center redundancy measures and uptime expectations in the event of a disruption?
- How secure is the platform or service against evolving cyber threats?

Answers to these questions can provide insight into what you need from a cloud print service and their ability to scale with your changing needs.

2 Understand your current print challenges and what is needed to address them

Identify the challenges associated with your existing print infrastructure and how it can be improved and optimized to support the needs of your hybrid or flexible workforce. For example, one of the main challenges faced by organizations is managing print drivers. Print drivers can be a major source of pain for IT teams due to their complexity which includes constant monitoring, updating, and troubleshooting to ensure that printing operations remain operational and secured. The challenges associated with print drivers are further exacerbated when organizations have multiple vendor print manufacturers and a variety of small printers scattered across different locations, including employees' homes.

In addition, other areas of focus should include:

- User devices
- User work environment
- Network
- Print servers
- Printer access and locations



3 Evaluate the role of the print server in supporting your hybrid or flexible workforce

Print servers are an integral part of an organization's day-to-day processes to support workflows and operational efficiencies, especially in the traditional office setting. In a hybrid or flexible work environment, there are other factors to consider, including a seamless remote printing experience regardless of network and location, and managing and monitoring print devices remotely. With a sound understanding of the print server's role in meeting your workforce's needs, you'll be in a better position to choose the right cloud print infrastructure and service provider for your business. Here are some key focus areas to consider.

Printer deployment

IT either handles deployment centrally through a guided policy or enables self-service for users

Printer administration

Centralized management of printer ports, storage of print drivers, access control, etc.

Group policies

Central management and configuration of users' settings and authentications

Queuing print jobs

Management of print jobs to accommodate large print volumes and requests for quick turnaround times

Print driver management

Print drivers are usually stored locally at the print servers, allowing users access to download when required; print driver updates are also centrally managed by IT

Pull printing

Print jobs are sent to a print queue, and before the documents are released for printing, the user needs first to authenticate themselves at the printer

4 Consider the challenges of your IT resources

Do you currently monitor print-related maintenance issues across your entire organization continuously? Can you proactively keep all of your printer devices up-to-date and well-maintained? If so, how long does it take for your IT team to monitor and maintain your print devices? These are some questions to ask when determining whether to keep your print infrastructure onsite or migrate to a comprehensive cloud print management platform.

You should also consider that traditional or legacy print infrastructure requires regular maintenance and puts a strain on your IT resources to troubleshoot errors from print drivers and queue management — regardless of the size of your organization. Furthermore, your IT team can be bogged down with tedious maintenance tasks such as keeping track of system upgrades, patches, security and virus scanning, and more.

When looking for a cloud-based print management platform, partner with a provider that can manage and monitor your print infrastructure better than you can. Look for a service provider that can ensure a proactive approach to resolving print issues onsite and remotely, ultimately reducing downtime and improving the performance of your devices.

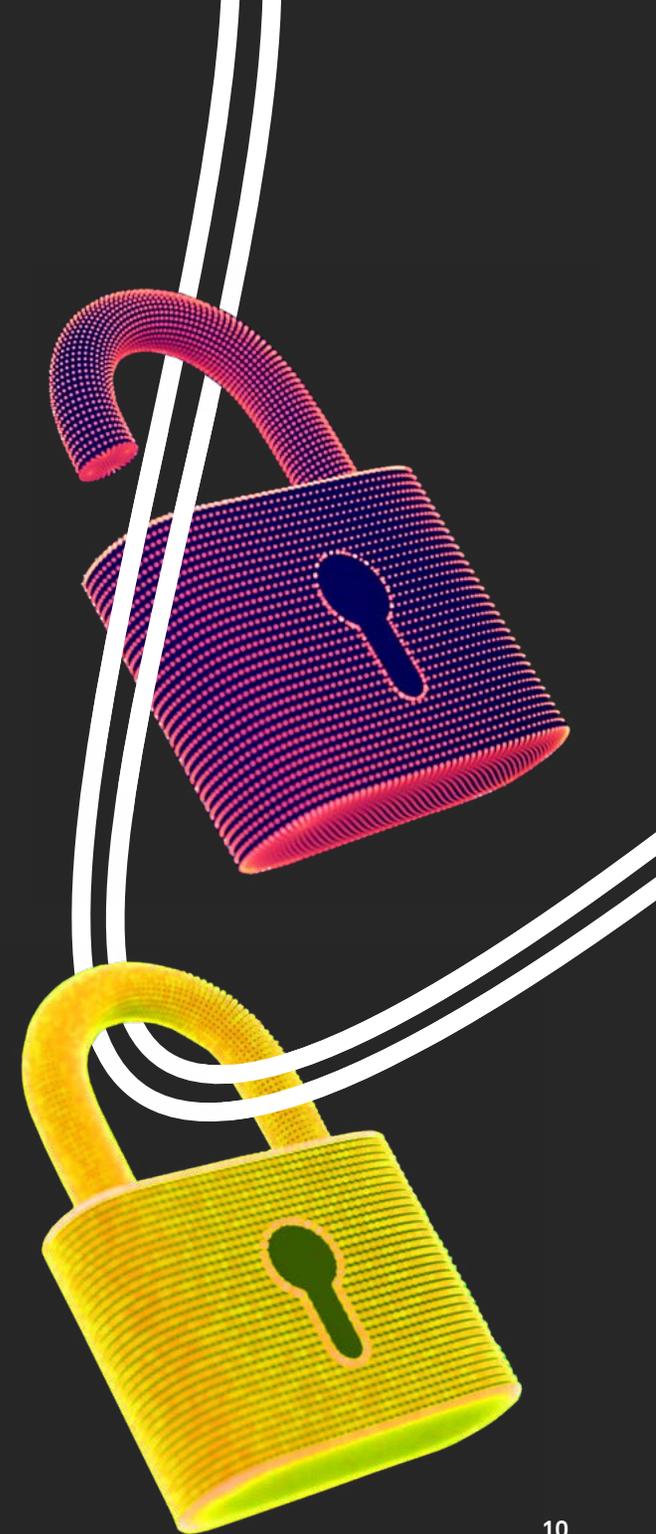


5 Evaluate your network and security requirements

To help safeguard your data, documents, and other proprietary information that will be shared over your cloud print ecosystem, ensure that your infrastructure includes:

- Swipe card or pin authentication
- End-to-end encryption
- Device port closures
- A reliable cloud compliance and governance management
- A system that overwrites latent data on your print devices' hard drives
- A system that helps your organization maintain data confidentiality and integrity
- Continuous monitoring and patching of software and servers
- Continuous monitoring and configuration of security settings
- Access control and data permissions such as authentication and user protection

If data privacy and security are a concern, look to the Software-as-a-Service (SaaS) model to help ensure that security features and patches are fully managed and kept up to date. Specifically, look for a service that continuously monitors and updates the security configurations of your print devices and performs third-party penetration testing on the service software and infrastructure. A cloud print service provider offering this support level should also provide 24/7 monitoring for visibility into your overall print infrastructure.



Key areas of focus when you're ready to make the move

Executing on your cloud print migration plans isn't difficult when you have the right partner, but it does require a sustained and focused approach. It's important to understand your goals, opportunity areas and challenges in each of these areas of your business.



Server architecture

Consider the ability to scale up and down according to business needs. You should also factor in multi-tenancy options, which enable sharing of server resources.



IT administration

Automating IT tasks that require minimum or no human intervention mitigates the strain on your IT resources, allowing them to focus on more strategic priorities. Enable your IT teams to leverage a web-based management console providing an overview of all sites, printers and users from a single pane of glass. Your cloud print solution should also enable self-service for users to easily add devices or simplify the process of adding print devices by only displaying those available locally to them.



User experience

User adoption and change management are key to improving user experience. Better yet, IT teams must ensure that users have a seamless printing experience during the migration, with little to no disruption. Users should easily self-install a new printer or have access to secure mobile printing. Combined with pull printing, an organization can consolidate their entire user population to a single global print queue that caters to every device (regardless of manufacturer) in every site (irrespective of network or even country).



Network and security

Ensure there are no single points of failure despite temporary interruptions to an internet connection. Moving to the cloud should enable customers to have a high availability architecture by default. Your new print platform must be able to control its bandwidth utilization while delivering print jobs at a speed acceptable to users. It should also support proper cloud identity management, enabling your organization to manage identity across multi-domain, multi-tenancy environments.

All effective print platforms should adhere to defined cloud security principles – ISO 27001 or SOC2 compliance. These standardized levels of security will likely require end-to-end data encryption.

What is a hybrid cloud platform and how can you take advantage of it?

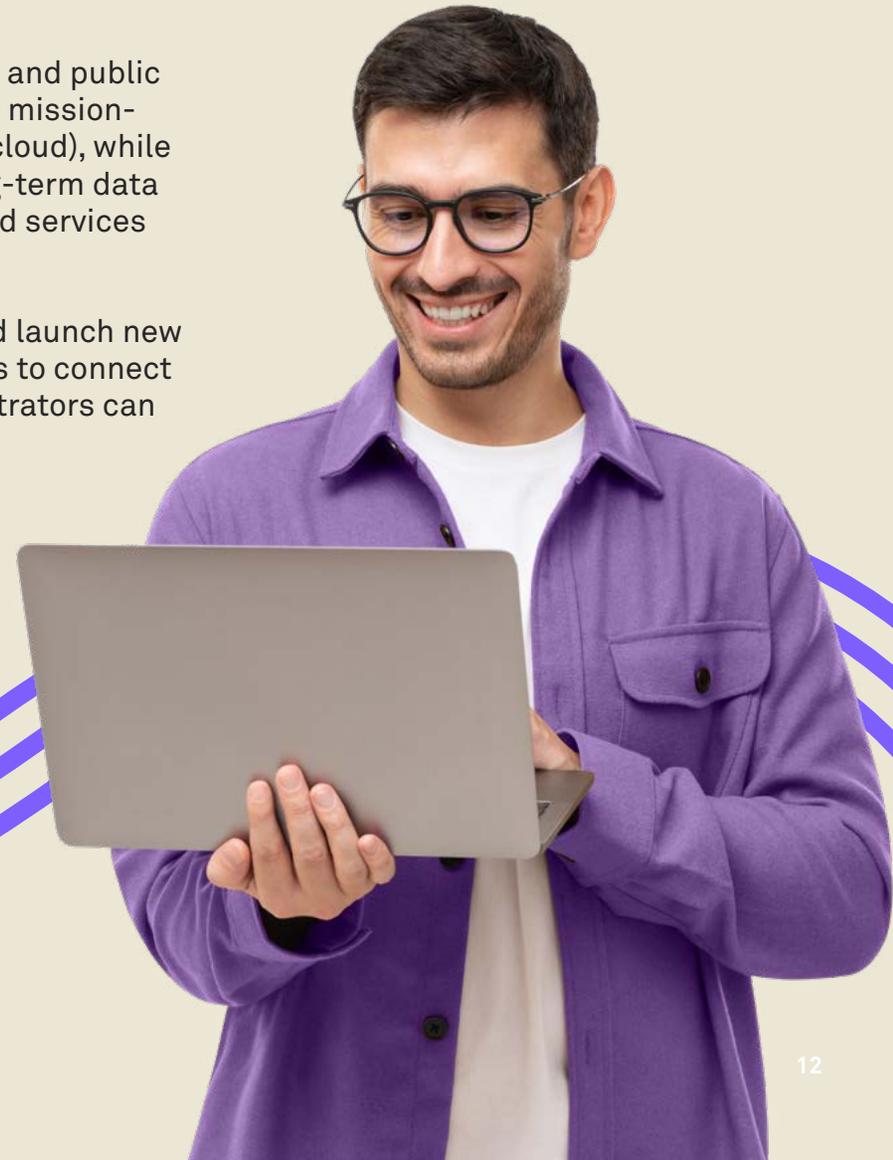
The hybrid cloud platform is an all-in-one cloud-hosted print solution that requires:

- No complex set-up
- No complex IT infrastructure requirements
- Minimal capital output to get started

A hybrid cloud combines the best of both worlds of on-premises private and public cloud hosting services. An organization benefits by keeping control over mission-critical data and applications as with an on-premises solution (private cloud), while leveraging off-premises resources (public cloud) for cost-effective, long-term data storage. It also enables shared access to powerful computing assets and services the organization could not implement as cost-effectively on its own.

Hybrid clouds offer the flexibility to shift workloads between clouds and launch new virtual assets as needs change over time. With the proper software tools to connect them all for efficient communications between each service, IT administrators can manage the entire cloud environment from a single pane of glass.

The primary driver behind the shift to a hybrid cloud is flexibility. Flexibility to scale, move workloads, launch new applications, and quickly recover from service interruptions. Organizations have the flexibility to choose from several configurations, including public cloud hosting, on-premises private cloud, or a combination of the two.



A correctly implemented hybrid cloud strategy brings the following benefits to an organization:



Flexibility and scalability

A cloud-based print infrastructure enables organizations to access resources on-demand, creating a more agile IT environment that can scale according to needs, maximize accessibility and minimize costs.



Business continuity

Having some computing assets managed at off-premises data centers provides redundancies that protect data integrity and availability in the event of a natural disaster, cyber attack or service interruption. A hybrid cloud reduces risk and speeds recovery time should the private or public cloud experience an outage. It eliminates the need for IT to perform regular backups and store copies of the entire environment.



Remote management support for a distributed workforce

Properly authorized employees have global access to information and can work from anywhere with an internet connection. Applications can be deployed and updates can be rolled out to team members and devices wherever they are.



Streamline and reduce costs

Transferring some services and applications off-premises reduces internal costs and offers accounting advantages by reclassifying capital expenses (CapEx) as operational expenses (OpEx). It also enables organizations to reduce manpower expenses and maintenance costs for upgrading on-premises hardware and servers. Further, a hybrid model requires much less on-premises data center space and infrastructure support than a strictly private cloud — eliminating the need to build thousands of square feet of data center space and computing assets.



Ease IT helpdesk burden

One of the most common and significant challenges faced by IT helpdesk teams is the task of connecting users to printers, a challenge that is exacerbated when dealing with employees who frequently visit different office locations. By adopting a cloud-based print management solution, organizations can streamline this process and empower employees to securely print from any location using a self-service approach. This eliminates the need to rely on IT support for printer configuration, ultimately saving valuable time and resources. These time savings can then be redirected towards more strategic and impactful business projects, driving greater efficiency and productivity across the organization.

6 questions to ask when choosing your cloud print solution



- 1 Which cloud structure is right for your business — Infrastructure-as-a-Service (IaaS), where the management and maintenance of the system are managed internally, or Software-as-a-Service (SaaS), where it can be managed from a single centralized location?
- 2 Can the cloud printing solution accommodate both on-premises private and public cloud hosting services without sacrificing features and security?
- 3 Can the cloud print solution support a mixed fleet of printers from all major multifunction printer (MFP) brands?
- 4 Is the solution compliant with local and international security laws/legislations and does it clearly define where data is located (i.e., data sovereignty law)?
- 5 Does the solution have the flexibility to quickly scale based on your changing operational needs?
- 6 Does the provider offer monthly or annual subscription fee options that fit your OpEx?

Introducing RICOH CloudStream

RICOH CloudStream is an all-in-one SaaS print management solution that enables organizations of all sizes to benefit from the agility and innovation of cloud technology.

It is designed for organizations looking to reduce their IT burden and cost-effectively manage their print infrastructure. CloudStream offers:



Serverless printing

Reduce the cost and complexity associated with a traditional print environment. CloudStream lessens the burden on IT, removes reliance on print servers, enables central management, and virtually eliminates common IT helpdesk pain points.

Single print driver

CloudStream offers a single print driver with full finishing options compatible with the latest multi-function devices. It allows employees to print to any device and improves productivity while reducing maintenance and support.

Hybrid cloud solution

CloudStream can be delivered as a hosted SaaS or installed as an on-premises private cloud.

Automation of print-related administrative tasks

Enjoy hassle-free printing with immediate end-user fulfillment/device provisioning. There is no need to install and maintain multiple print drivers for all your different printers. CloudStream makes it easy to deploy and control the entire print infrastructure from a single web-based interface.

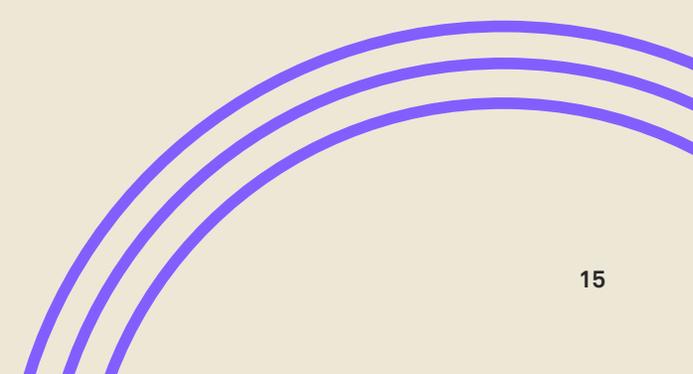
Best-in-class security

CloudStream is designed to protect your data with features including end-to-end server-to-hardware encryption, user authentication, auditing functionality, and integration with cloud-based authentication.

CloudStream is ISO/IEC 27001 certified, which includes SOC2 compliance as well as a commitment to continuous maintenance and improvement, ensuring consistent data and print security. CloudStream helps protect your private and confidential information and prevents other countries from acquiring that data.

Multi-tenant platform

Create your print environment on the CloudStream multi-tenant platform and replace existing Windows and Mac-based print infrastructure in less than ten minutes.



Empower your workforce with the power of print

As organizations of all sizes reimagine the future of work, shifting to a technology ecosystem that enables better workflow automation, seamless collaboration, and efficient communication will support businesses for sustainable growth.

Despite impacting printing in the office, hybrid or flexible work won't signal the demise of office printers. Instead, the need for organizations to rethink how print is procured, monitored, and managed is more important than ever before. But one thing is clear, just as every organization is unique, so are their print infrastructure requirements. There is no one-size-fits-all solution. It's best to undertake a cloud print migration strategy in collaboration with a trusted partner — one that can work with you to identify workload distribution priorities, build a roadmap for your digital transition, and streamline cloud services without compromising on security — and Ricoh is ready to help.

Learn more about RICOH CloudStream and how it can benefit your organization.
Visit us at [ricoh-usa.com](https://www.ricoh-usa.com).

Ricoh, a trusted partner

At Ricoh, we're empowering our customers to respond to our changing world with actionable insights. We believe having access to the right information translates to better business agility, more human experiences, and the ability to thrive in today's age of hybrid and borderless work. Through our people, experience, and solutions, we create competitive advantage every day for over 1.4 million businesses around the globe. To us, there's no such thing as too much information.

RICOH
imagine. change.

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