PrinterLogic
by VASION

Off-Network Printing

How PrinterLogic makes printing easy and secure in today's Zero Trust network-access environments

Table of Contents

Off-Network Printing

More than ever, CIOs are committed to secure networks and data, like isolating possible attack surfaces (including printers) on highly secure networks with restricted access. Meanwhile, IT departments need to give workers easy access to the resources they need to do their jobs. PrinterLogic's Off-Network Printing and Off-Network Cloud Printing features bridge this gap by providing convenient access to printers—even when employees, contractors, and partners reside on different networks.

Cloud-based authentication systems using explicit identity-based approaches, known as Zero Trust[1], are in demand with the increased reliance on contractors and remote workers who need to print but aren't on the company network. Reach Zero Trust with PrinterLogic's Off-Network Printing features while everyone, both inside and outside the network, continues to print seamlessly.

Use Case Overview

Here are common use cases that illustrate how Off-Network and Off-Network Cloud Printing serve customer needs:

Organizations adopting Zero Trust

Employees are granted access to specific applications and resources, but not the underlying network. IT needs a solution that maintains the security of their new network architecture while meeting their employees' printing needs.

Business-affiliate printing

A nurse employed by a hospital's affiliate clinic needs to print a prescription using the hospital's medical records (EMR) software. The clinic is an independent business and is not connected to the hospital's secure network.

Businesses using onsite contractors

A business regularly employs contractors onsite, but they are not allowed on the corporate network where printers reside. These workers are often allowed on a guest network with limited access. Even still, they need access to the company's printers to complete their work.

Zero on-premise infrastructure

Organizations who need a remote printing solution, but don't want to maintain a service client on their network can implement Off-Network Cloud Printing for a fully cloud-hosted solution.

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[1] Zero Trust eliminates blanket access for employees with login credentials, and instead provides all workers—regardless of their location—appropriate, measured access from any device. Gartner calls this Zero Trust Network Access (ZTNA). Their Market Guide for Zero Trust Network Access is available here.

Key Benefits

PrinterLogic's Off-Network Printing features allow end users to easily access printers inside an organization's firewall, even if the user is on a different network. The key benefits are outlined below:

Reduced infrastructure and cost

With Off-Network Printing, customers can eliminate more infrastructure than just printer servers, like VPNs, hosting services, and external access portals used to accommodate employee, contractor, partner, and affiliate remote printing needs. Off-Network Cloud Printing can even eliminate the need for a service client since it is a fully cloud-hosted solution.

High availability and redundancy

As part of the AWS Well-Architected Framework, PrinterLogic inherits several reliability benefits. Gateways scale as needed. If there's a failure, jobs are automatically rerouted to another available gateway. If IT chooses to host the gateway in their data center, redundant gateways can be configured to provide automatic failover if needed.

Enhanced security

In the default Off-Network Printing configuration, print jobs are encrypted at their origination point and routed through the PrinterLogic SaaS gateway service to their destination printer. Jobs through Off-Network Cloud Printing, on the other hand, are encrypted while temporarily at rest in the cloud, then downloaded to the printer.

In addition, PrinterLogic conforms to the AWS Security Pillar.

Native, intuitive printing experience

Because Off-Network Printing mimics regular printing, there is no need to train employees on using a new procedure for remote or off-site printing. Users can print from within the document or web page as usual.

Support for Secure Release features

Secure Release Printing is vital for Off-Network users who initiate the print job. By holding the print job until the user or a collaborator goes to the printer and authenticates, the sensitive information maintains its confidentiality. Off-Network Cloud Printing allows users to release print jobs while their workstation is offline.

Remote workforce support

PrinterLogic's solution is great for mobile workers because it lets them print to a corporate network printer from anywhere, at any time. It facilitates collaboration with insider (office-based) staff. Off-Network Printing puts every team member on equal footing for document-sharing, even if they reside on different networks.

How it Works

Off-Network Printing allows users with internet access, from any location, to send print jobs to a printer located behind the company firewall. In addition to the PrinterLogic SaaS or VA instance, there are two other components that make the solution work: the External Gateway and the Internal Routing Service.

The External Gateway

The External Gateway receives off-network print jobs from remote workstations. In the PrinterLogic-hosted model, the External Gateway is hosted as a service in AWS by PrinterLogic. In the customer-hosted model, the External Gateway is hosted by the customer with an SSL (Secure Sockets Layer) certificate. In addition, combined hosting models (known as hybrid models) can be used. The External Gateway uses port 443 to receive print jobs and uses WebSockets to transfer incoming print jobs down to the Internal Routing Service. Print traffic is encrypted using the TLS (Transport Layer Security) cryptographic protocol.

The Internal Routing Service

The Internal Routing Service maintains a constant connection with the External Gateway to watch for print jobs. When the External Gateway receives a print job, the Internal Routing Service opens a new connection for that job and downloads and delivers it to the designated printer. For organizations that need zero on-prem infrastructure, Off-Network Cloud Printing, described below, eliminates the need for the Internal Routing Service. Instead, this option installs the equivalent functionality on the printer itself.

Three Configuration Options

1. PRINTERLOGIC-HOSTED MODEL

The preferred method for Off-Network Printing employs an External Gateway hosted by PrinterLogic in AWS. This simplifies configuration because IT only needs to set up the Internal Routing Service inside their organization's network. This service uses WebSockets to maintain a connection with PrinterLogic's cloud-based Gateway. When a print job is received, the Internal Routing service pulls the print job into the customer network.
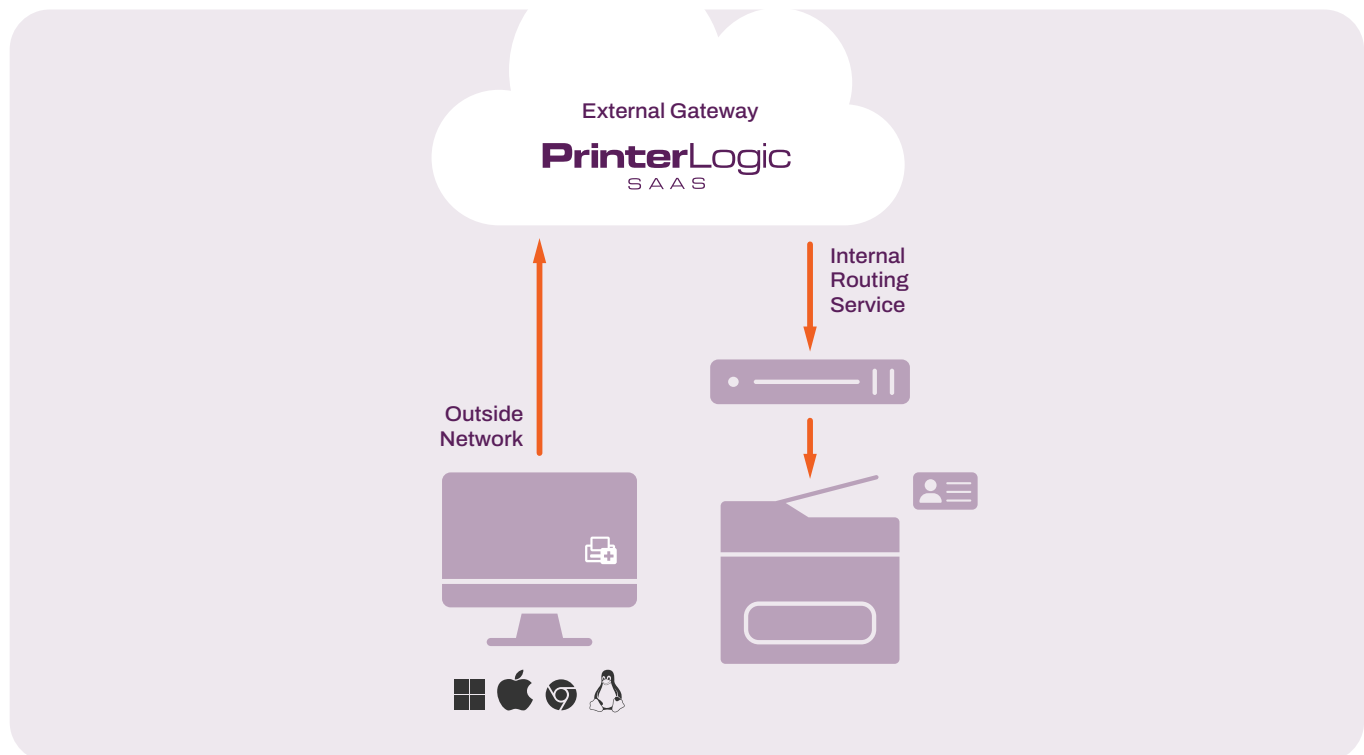

Figure 1. Off-Network Printing where the External Gateway is hosted by PrinterLogic in AWS.

2. CUSTOMER-HOSTED MODEL

For various reasons, IT may prefer to host the External Gateway in the organization's data center or private cloud. PrinterLogic supports these scenarios with the following caveats: First, the External Gateway must be accessible to off-network users and have a publicly available IP address and DNS name. Second, it must also have a certificate signed by a Trusted Certificate Authority. Third, port 443 must be open for incoming connections.
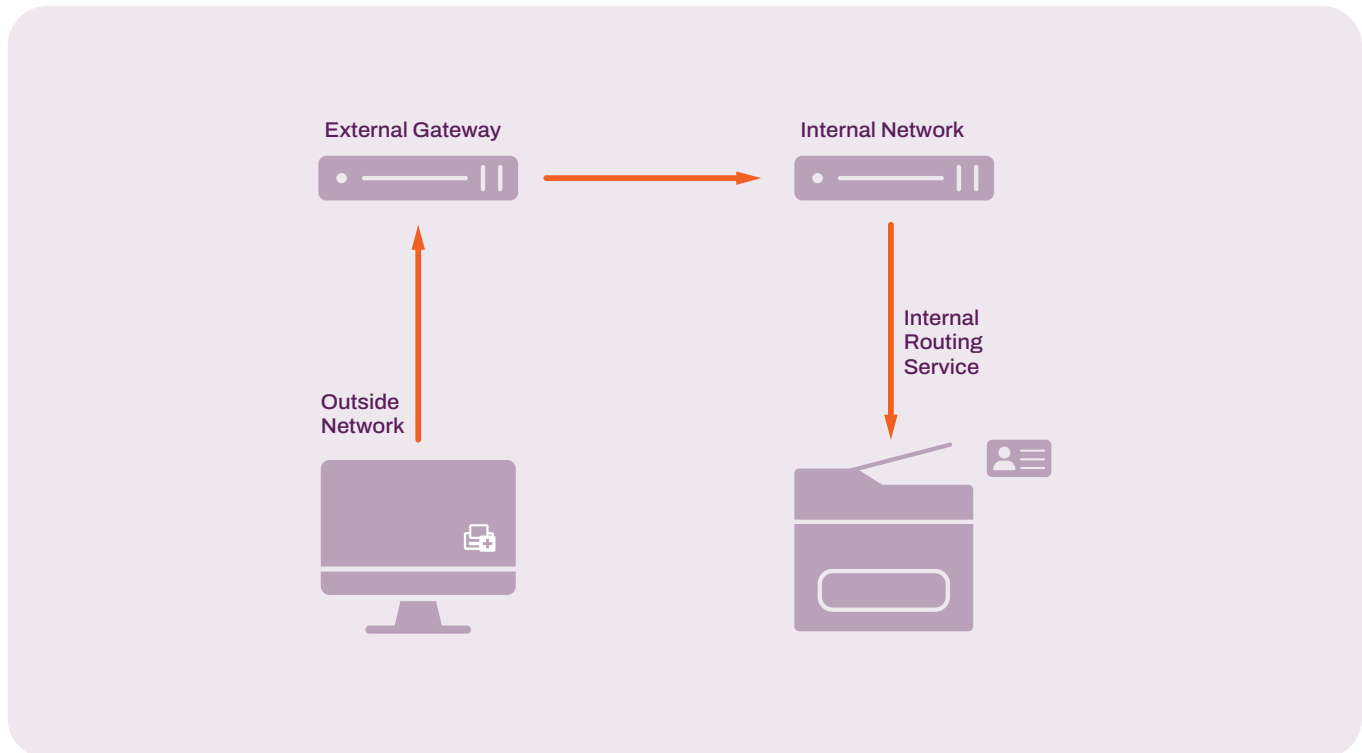

Figure 2. Off-Network Printing where the External Gateway is hosted by the customer.

3. HYBRID MODEL

PrinterLogic-hosted and customer-hosted scenarios can be used together to provide flexibility and redundancy in configurations. These scenarios are illustrated in Figure 3.
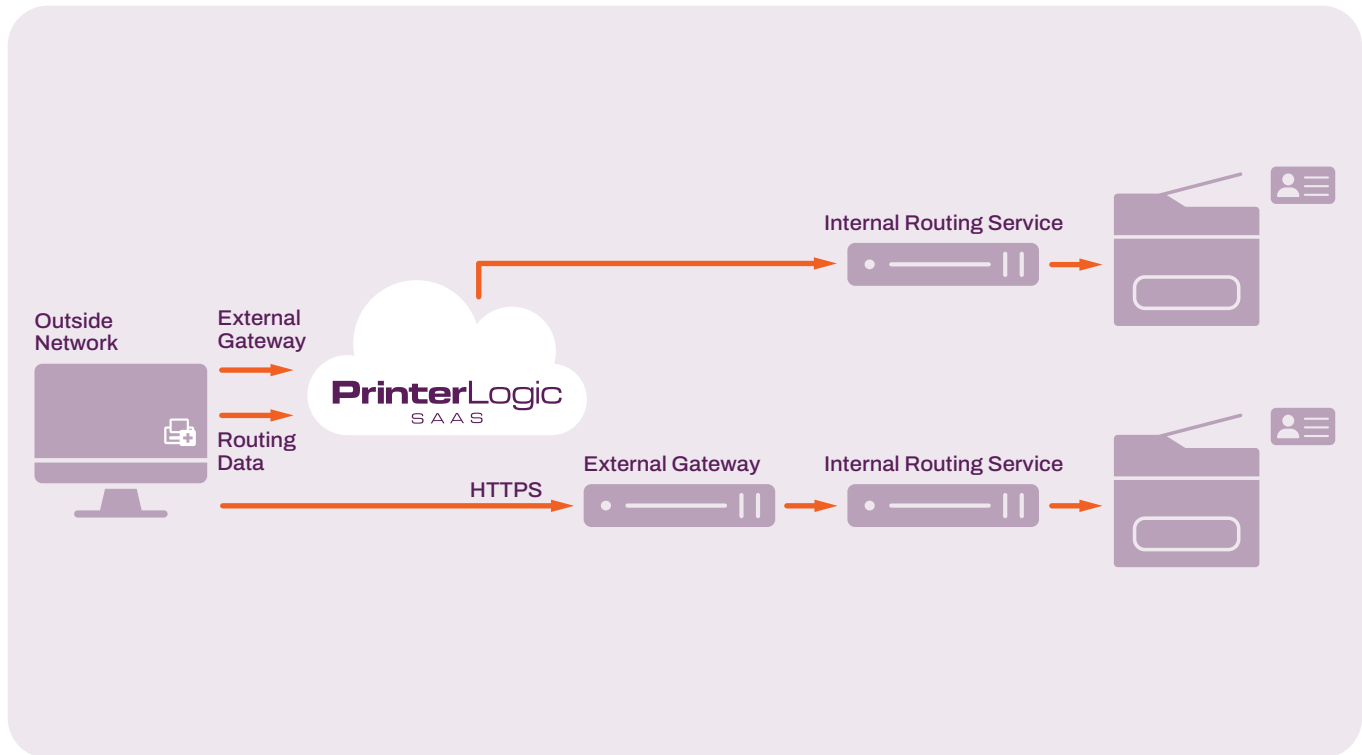

Figure 3. Off-Network Printing using a hybrid model. Both PrinterLogic-hosted and customer-hosted External Gateway are used for redundancy.

Off-Network Cloud Printing

Off-Network Cloud Printing offers many of the same benefits but is designed for organizations that need zero on-premise infrastructure.

Off-Network Cloud Printing uses the same External Gateway as Off-Network Printing and is hosted by PrinterLogic in AWS on the cloud. The gateway receives incoming print jobs from remote workstations over port 443. Jobs remain temporarily at rest in the ONCP Storage microservice until the destination printer is ready to receive the job or when a secure job is released by the user at the printer. The ONCP application, which is installed on a designated off-network printer, calls the Storage microservice and downloads the job over port 443.

ONCP is available for preview and supports HP and Lexmark printers, with additional printer support in the works.
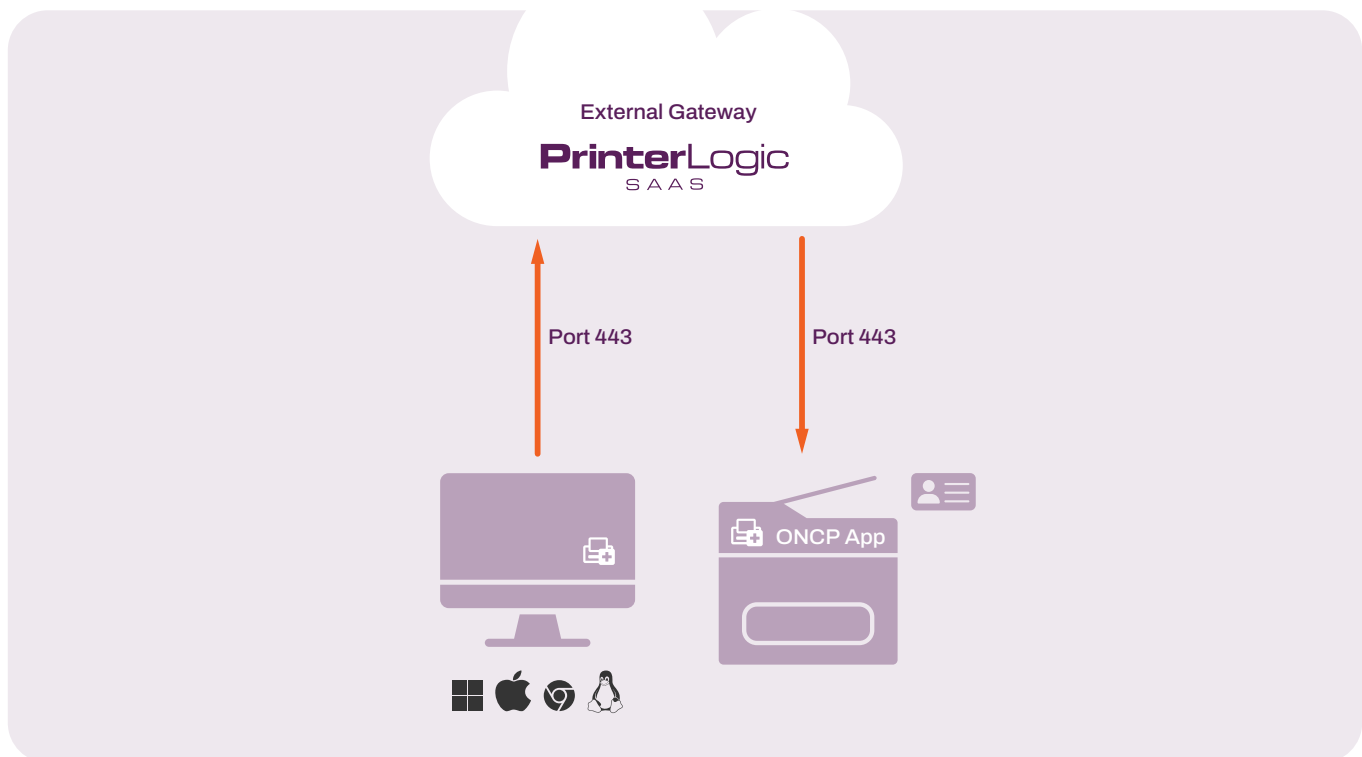

Figure 4. Off-Network Cloud Printing where the External Gateway is hosted by PrinterLogic in AWS on the cloud.

More about Zero Trust

According to Gartner, old security models that assume "inside means trusted" and "outside means untrusted" are quickly becoming obsolete in today's work environment. With increased user mobility and increased dependence on connected business partners, virtual private networks (VPNs) and demilitarized zones (DMZs) became common. But these solutions offered too much implicit trust to users and led to abuses by hackers. Today's organizations require anytime, anywhere access to any application, regardless of a user's location. Zero Trust network access (ZTNA) addresses this need. It abstracts and centralizes access mechanisms that are managed by specialized security engineers.

In a Zero Trust environment, even regular employees are on a separate network from where data servers and printers reside. Zero Trust levels the playing field for all workers and demands verification from everyone. It begins with a policy of denying access and then grants access based on user identity, the device, and other attributes that provide context. Zero Trust network access appeals to organizations looking for flexible and adaptive ways to serve business ecosystems, including all types of workers and partners.

Two PrinterLogic Platform Options

PrinterLogic earned its reputation by providing a serverless printing infrastructure that is feature-rich, secure, and easy to use. There is no need for Group Policy Objects (GPOs) or time-consuming scripting to deploy and manage printers and drivers. There are two versions of PrinterLogic. One is a true SaaS implementation that eliminates the need for print servers, hardware resources, licensing, or maintenance. The other is an easily updated Virtual Appliance for on-premise use that has equivalent functionality. Off-Network Printing is available for SaaS and VA implementation and Off-Network Cloud Printing is currently for SaaS. PrinterLogic's Off-Network Printing feature is part of the Advanced Security Bundle, which also includes Secure Release Printing.

Conclusion

PrinterLogic's Off-Network Printing features let you keep printers on your most secure networks while allowing all workers to print—no matter what network they're on. It solves two key IT challenges: How to manage printing in a Zero Trust network architecture, and how to provide easy, intuitive printing access to contractors, remote workers, and affiliate partners without VPNs or web portals. Off-Network Printing bridges the gap between the demands for better network security and the disconnects that occur for any worker or partner who is trying to print from outside the organization's firewall.

Vasion, formerly PrinterLogic, builds upon the company's best-in-class enterprise print management technology with an intuitive content management and business process cloud platform. With Vasion's SaaS platform, businesses can capture analog and digital content, automate workflows, create agreements with e-signatures, and securely manage content wherever it is stored.

Additionally, the PrinterLogic solution pioneered digital transformation in the print management space by helping IT professionals eliminate all print servers and deliver a highly available serverless printing infrastructure. Whether your organization is paperless, still dependent on paper-based processes, or somewhere in between, Vasion has the solutions to help drive compliance, scalability, and accountability throughout your digital transformation journey.

The company has been included multiple times on the Inc. 5000 and Deloitte Fast 500 lists of fastest-growing companies in North America. For more information, visit https://www.vasion.com and https://www.printerlogic.com.