

Strategies for Improving FITARA/DCOI Scores in U.S. Government Agencies

How PrinterLogic helps consolidate, secure and optimize enterprise infrastructure.

The logo for PrinterLogic, featuring the word "PrinterLogic" in a bold, blue, sans-serif font. The background of the slide is blue, and there is a decorative graphic at the bottom consisting of two horizontal bars, one orange and one yellow, that step down to the right.

PrinterLogic

FITARA and DCOI Mandates for Federal Agencies



Congress is ramping up pressure on Federal IT leaders to optimize their infrastructure and practices. In 2010, legislators passed the Federal Data Center Consolidation Initiative (FDCCI). In 2014, Congress expanded its oversight with the Federal Information Technology Acquisition Reform Act (FITARA), and began assigning grades for compliance progress. In 2016, the Data Center Optimization Initiative (DCOI) replaced the FDCCI.

Federal agencies face the challenge of overhauling big legacy environments and replacing them with secure, workable solutions—all while facing public scrutiny in the form of report cards.

Consolidating Infrastructure. Federal agencies spend about 75 percent of their budgets on operations and maintenance, including print infrastructures in data centers. Agencies maintain thousands of print servers and support tens of thousands of printers. Print servers are risky and expensive: They are single points of failure, they consume IT resources, and they complicate deployments. As such, they interfere with data-center consolidation goals.

“We had a mix of virtual and physical print servers, and we wanted to get rid of them so our work wasn’t multiplied every time we made a change. With PrinterLogic’s centralized approach, we manage the whole thing now from a single pane of glass.”

Improving Security. According to Gartner, “IT modernization is not just good for productivity and cost control, it has also become a national security imperative.”¹ Print servers that process secure documents are vulnerable to attack. Sensitive abandoned print jobs can sit on printers for days. Agencies are starting to use CAC/PIV badge release at printers in order to ensure multi-factor authentication, and to make sure the authorized employee is ready to receive the print job, but converting an entire printer fleet to this system is expensive. During the process, agencies get rid of perfectly good printers because they aren’t compatible with the new technology.

—U.S. Federal Agency Customer

Optimizing Operational Efficiency. Print-server infrastructure is expensive on several levels. Without centralized management, working with print servers is complicated, and each additional server compounds overhead costs. If servers are distributed, IT teams must maintain and patch each server, and they rely on running group policy objects (GPOs) and/or scripts to deploy drivers. In some cases, travel is required to resolve difficult issues. When print servers

are centralized, the wide area network (WAN) is taxed with print traffic going back and forth between remote sites and the central print server. Users are frustrated with long wait times, and productivity suffers if a server crashes and no one can print. This leads to even higher help-desk costs.

Visibility into the Print Environment. Optimizing a print environment is more than centralized management and lowering help-desk costs. Agencies need more visibility into printing devices and activity, including tools for tracking consumables, device utilization, department accountability, detection of rogue printers, and analysis after a security breach.

Consolidate, Secure, and Optimize Print Environments

PrinterLogic can help federal agencies better meet DCOI requirements and improve FITARA scores by consolidating, securing, and optimizing their print environments.

PrinterLogic consolidates expensive print architectures by eliminating all print servers and converting the environment to centrally managed, direct-IP printing. Using a lightweight workstation app, print jobs are sent from an end user's device directly to the network printer—bypassing print servers and staying on the local area network (LAN).

PrinterLogic's serverless solution also integrates with cloud initiatives such as Microsoft Azure or Amazon Web Services. End users experience a consistent desktop and a familiar printing experience.

Once print servers are eliminated, printing in Virtual Desktop Infrastructures (VDIs) is faster and more reliable. PrinterLogic eliminates complex printer deployment scripts and GPOs that map print jobs from the VDI farm back to the printers on the local network.

PrinterLogic also offers secure pull printing. Instead of sending a document to the printer right away, the job remains on the workstation until it's released by the user using an authentication step at the printer. PrinterLogic supports CAC/PIV badge release for every make and model of printer. The solution is compliant with HSPD-12

“We have more than 10,000 users and we were managing dozens of print servers. If a server went down it could affect a lot of customers at once. PrinterLogic takes that problem away.”

—U.S. Federal Agency Customer

“When new people were hired, it took a lot of IT time to get them up and running. That's been eliminated now, because coworkers can help a new user install a printer using the self-service portal.”

—U.S. Federal Agency Customer

and compliance-pending with the FIPS 140-2 standard.

On the IT side, print administration is centralized and simplified via a web-based Admin Console. The Admin Console allows IT to add new printers, deploy and update printer drivers, specify default driver settings, or rename a printer without editing scripts and GPOs. On the end-user side, PrinterLogic's Self-service Installation Portal lets employees install a printer on their own— with a single click—without help-desk intervention or elevated admin rights. IT can define security parameters as needed to limit access to certain printers.

PrinterLogic provides added print environment visibility by collecting data about device utilization, page counts, consumables, and even rogue USB desktop printers.

How PrinterLogic Supports Infrastructure Consolidation

PrinterLogic supports infrastructure consolidation by eliminating print servers and simplifying Virtual Desktop (VDI) printing. The company offers several deployment options. The default option is the off-the-shelf application known as PrinterLogic Web Stack (formerly Printer Installer), which is installed on a single VM in your data center. PrinterLogic Web Stack works with Windows, Mac, and Linux endpoint operating systems.

Eliminating Print Servers

The path to eliminating print servers begins with PrinterLogic Web Stack. Once installed, an

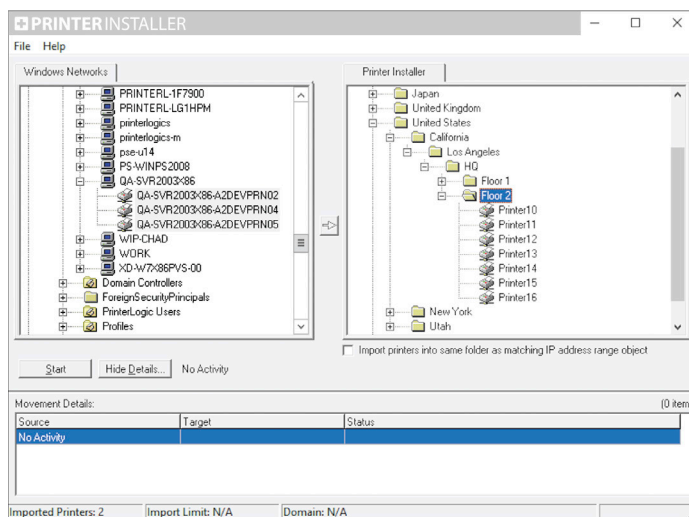


Figure 1: PrinterLogic Web Stack Admin Printer Import Tool

Admin Console is used to run a printer import tool, shown below, which imports printer objects, associated drivers, and even specific driver settings.

Next, the PrinterLogic Client is pushed to end-user workstations. The client installs printer drivers, configures printers, and collects print-job data. It also converts printers that were previously associated with print servers into direct-IP print queues.

Without print servers, print jobs are no longer routed from the data center over slower WAN connections. Instead, jobs are sent via direct IP from the workstation straight to the network printer. An Internet connection (or connection with the PrinterLogic Web Stack management server) is not required, because the job stays on the local network segment.

“We pulled the plug on 400+ servers and saved millions on printer management.”

—U.S. Dept. of Homeland Security

Once the the printers are imported, they are managed through the web-based Admin Console. From this interface, IT can monitor the print environment and fix issues remotely.

Efficient, Reliable Printing in Virtual Environments

A Virtual Desktop Infrastructure (VDI) gives users access to information from any location and any device while keeping critical data secure in the data center. Despite their many advantages, Citrix and VMware routinely fall short when it comes to routing and delivering print jobs.

With a VDI, print jobs are sent from an end user’s workstation over the Independent Computing Architecture (ICA), HDX, or PCoIP channel to a Citrix or VMware server. From there, IT uses scripts, GPOs, and vendor policies to map print queues from the end user’s network into the virtual session. This increases WAN traffic, and because it relies on unreliable scripting and GPO mapping, often results in help-desk calls.

PrinterLogic solves these problems by converting printers to centrally managed direct IP, resulting in reduced WAN traffic, improved reliability, and a better printing experience for the user.

When end users connect to a VDI session, the PrinterLogic Client can be installed on the Citrix/ VMware host server or a fat/thin client. If the PrinterLogic Client is installed on the server, it detects the user’s location and delivers printers that were deployed to that user. No special drivers are required. The PrinterLogic Client determines the physical location of the fat/thin client from within the session, and printers closest to the workstation are detected via location-aware printing.

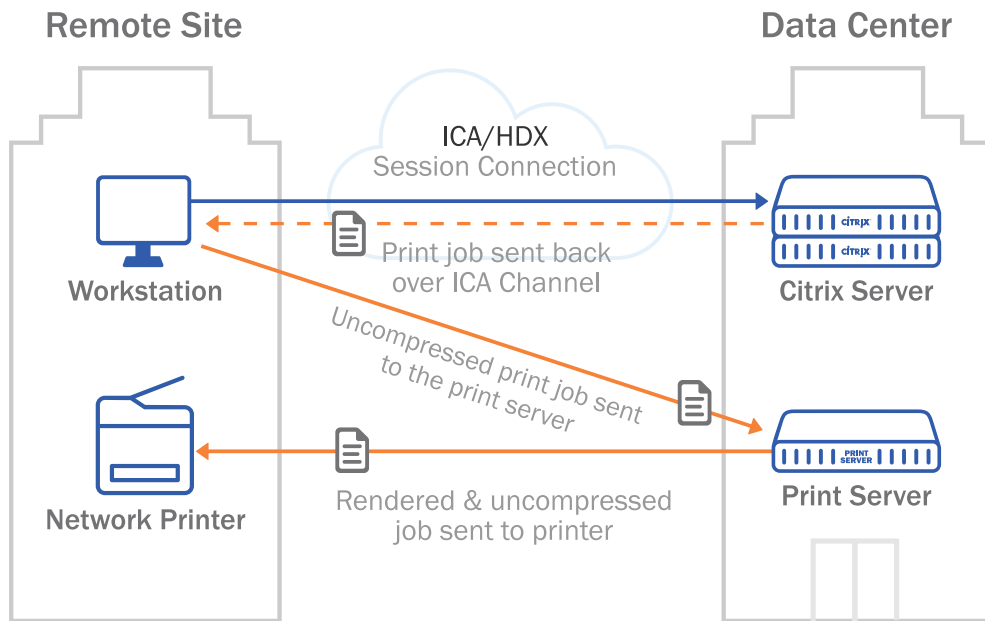


Figure 2: VDI Printing Scenario Without PrinterLogic

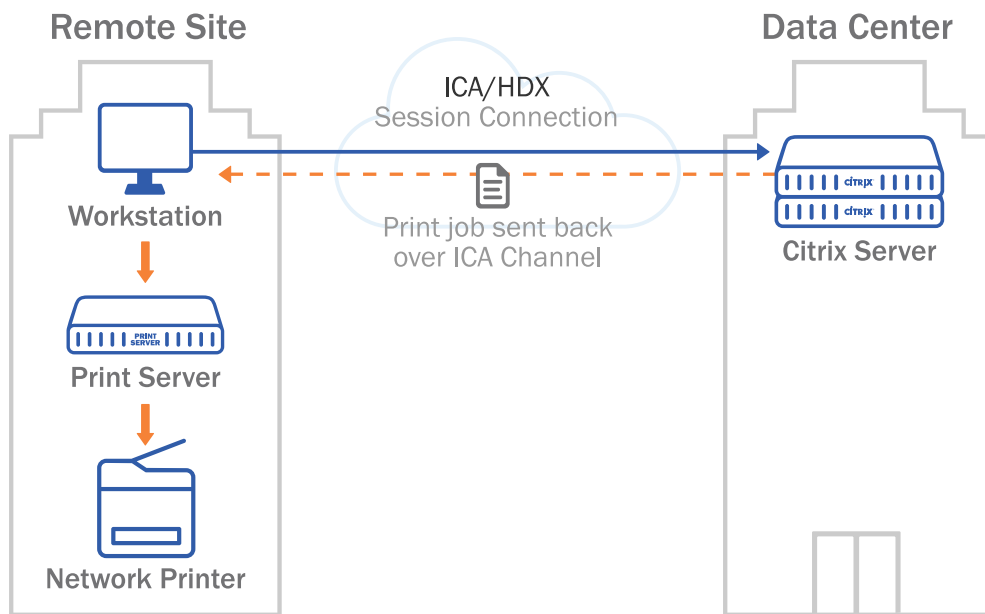


Figure 3: VDI Printing Scenario With PrinterLogic

If the PrinterLogic Client is installed on a fat/thin client, the printer is installed on the workstation and uses redirected printers created in the Citrix or VMware session. This allows print-job compression through the ICA or PCoIP channel, and print jobs are sent directly to the printer without having an unreliable print spooler in the middle.

If users are mobile, they can use PrinterLogic's Self-service Installation Portal to identify and install printers on their own. Installed printers remain with these users anytime they connect.

This combination of increased manageability and end-user empowerment results in significant reductions in help-desk costs.

More information about how PrinterLogic simplifies and enhances Citrix or VMware printing is available in [How to Simplify Citrix Printing](#), and [Simplifying VMware Horizon Printing](#).

Serverless CAC/PIV Pull-Printing

Printers are a big security risk. The average employee prints 34 pages a day, and 15-20 percent are left abandoned on the printer. In fact, nearly 90% of enterprise organizations have suffered at least one data loss related to unsecured printing.² Pull printing improves print security by requiring users to go to the printer and release their print jobs using a form of authentication.

By Federal mandate, agencies and their contractors are expected to use their CAC/PIV smart cards to authenticate and release print jobs.

While there are many solutions for using CAC/PIV cards to authenticate printing, implementing this type of release system on a large fleet of printers is a formidable challenge. First, there are the sheer costs associated with procuring new CAC/PIV-capable printers. Then there's the time required to set them up. Securing funds for this can take years, and during the process, agencies may scrap perfectly usable printers.

Furthermore, if agencies use a traditional print-server approach, they could end up adding hundreds of pull-print and authentication servers, which goes contrary to DCOI goals.

PrinterLogic solves these problems with a serverless architecture and a CAC/PIV-enabled E-241 Badge Reader that works with any existing network printer. IT connects the E-241 Reader to a printer's network port. End users swipe their smart card at the reader, and their print job is released and printed immediately. Because the solution works with existing printers, it saves having to pay for new printers and servers.

For more details, check out PrinterLogic's [Serverless CAC/PIV Solution](#) datasheet. To learn more about our pull-printing solution, refer to the white paper: [Pull Printing: Improved Security, Reduced Waste](#).

Optimizing the Efficiency of Print Environments

In addition to eliminating print servers and their disadvantages, PrinterLogic Web Stack enhances operational efficiency through centralized management and the Self-service Installation Portal.

Centralized Management

Eliminating print servers is a step in the right direction, but without centralized management, IT lacks essential controls over the print environment. PrinterLogic eliminates print servers and provides centralized management through the Admin Console—a single interface that can be accessed anywhere on the network. IT administrators organize printers in the treeview on the left side of the screen. On the right side of the console, IT can easily manage those printers. With centralized management, they can:

- Manage and configure printers and drivers without scripts and GPOs. IT no longer has to touch or remote in to each print server. Make changes in the Admin Console and the

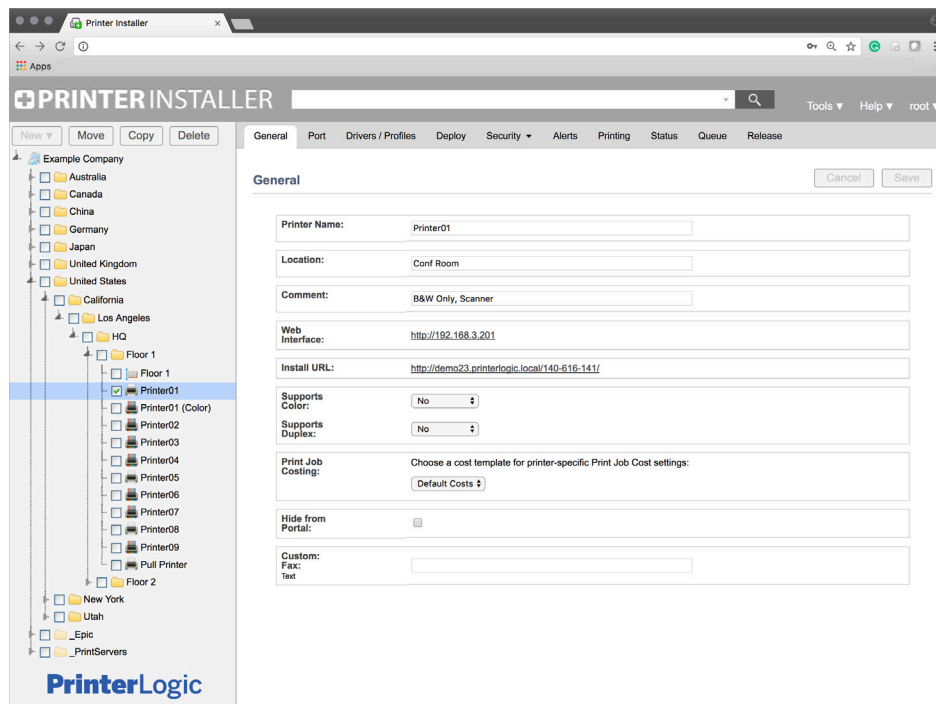


Figure 4: PrinterLogic Web Stack Centralized Admin Console

changes are pushed to the appropriate printer. PrinterLogic Web Stack categorizes printer drivers by 32- and 64-bit architecture for Windows, Mac, and Linux workstations (and even for VDI environments).

- Manage printer details such as assigning a friendly name that's helpful for users, or information about printer options such as duplex or color. A cost per page can be assigned for grayscale and color copies so IT can track the expense associated with that printer.

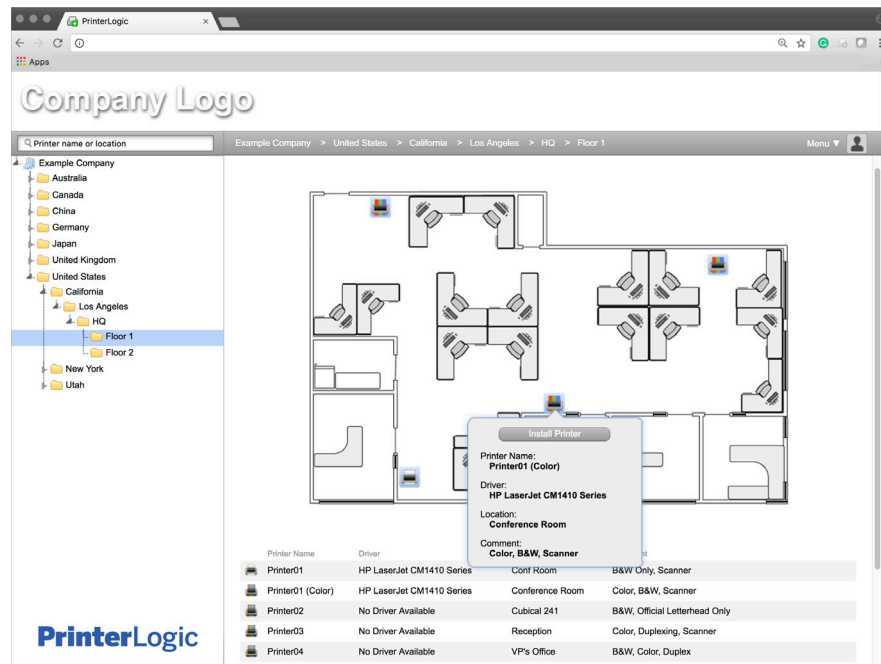


Figure 5: Self-service Installation Portal with Floor Plan Map

- Reduce default costs by setting unique profiles for each printer driver, such as duplexing, color, toner mode, paper size, paper source, and finishing options.
- Assign IP addresses or DNS names and port numbers to the printers.

Self-service Installation Portal

PrinterLogic Web Stack deploys printer drivers using auto-deployment or the Self-service Installation Portal. Auto-deployment is a push installation using the PrinterLogic Client. From the Admin Console, you can deploy printer drivers using Active Directory (user, computer, group, container, or OU), IP address range, hostname, MAC address, or a combination of these called Advanced Groups.

The Self-service Portal uses a pull installation and lets employees install a printer on their own— with a single click—without help-desk intervention. Users can easily identify nearby printers using a visual floor plan map and intuitively add a printer. Admins can also define security parameters: If your agency has a specialty printer intended for a limited audience, you can hide that printer from the Self-service Portal using the Security tab.

For more information on driver deployment and the self-service portal, consult the following white paper: [Printer and Driver Management](#).

Improved Printer and Usage Visibility

As organizations grow, print traffic mushrooms. To control expenses, an agency needs to know where it's spending its resources. PrinterLogic Web Stack collects printer data to help IT understand those trends and provide print accountability. This data includes:

“PrinterLogic lets us manage what we have, and get the data we need about what's out there, which gives us a clearer idea of what we spend on document management.”

—U.S. Dept. of Homeland Security

- Reports—Provide a view into the print environment, including every print job and associated costs. IT can schedule a repeating report and automatically send it to management so they understand the print counts and related costs at their location. The reports also provide visibility into USB printing—Identify what workstations they're attached to, who is printing to them, and what their consumables are costing.
- Print job auditing—Track and audit print jobs by user, department, job title, or printer. Admins can discover who is printing and how much. This provides insight for weeding out low-volume printers and relocating high-capacity printers where they are needed most.
- Usage data—Ties the actual cost of printing to usage data. Data shows the consumables used and allows admins to discover consolidation opportunities.
- Printer status—Monitor physical printer status through SNMP v3. IT can view all printers at every location and even monitor printer functions. IT staff can receive alerts for printers with paper jams, low toner, low paper, and more.
- Administrative audit records—Tracks administrative changes to printer settings.
- User-level audit records—Monitors all print jobs for every employee.
- Role-based access control—Restricts who accesses what information.

FIPS 140-2 Compliance for PrinterLogic Web Stack

The Federal Information Processing Standard (FIPS) is the U.S. government security standard used to approve cryptographic modules. Testing is done by accredited laboratories. PrinterLogic is in the process of submitting the PrinterLogic Web Stack code to National Information Assurance Partnership (NIAP) for evaluation. This organization is responsible for U.S. implementation of the Common Criteria and FIPS 140-2 compliance testing. PrinterLogic expects compliance verification by the end of 2018.

Conclusion

In this white paper, we've presented an overview of FITARA and DCOI mandates for federal agencies and explained how the PrinterLogic solution helps consolidate, secure, and optimize print environments.

In that context, we've also discussed how PrinterLogic's serverless CAC/PIV solution delivers print security, and how our solution works with existing printers regardless of make or model—which is a more cost effective approach than competing authentication solutions.

Agencies that use PrinterLogic gain more visibility into their print environments. They have the data needed to analyze and expose further opportunities for cost reduction. This leads to improved print accountability at the organization, department, and user level.

PrinterLogic's centralized direct-IP architecture does away with print servers and saves IT time, frustration, and infrastructure costs on several levels. The PrinterLogic environment is easy to maintain, helps admins be more proactive, and presents a more reliable experience for end users. These benefits lead to dramatic reductions in help-desk tickets, and frees up IT resources for more important tasks.

Bottom line: PrinterLogic is a world-class, cost-effective solution. Our customer retention rate is 97 percent. Nearly 90 percent of PrinterLogic customers report an ROI within one year. And if that weren't enough, PrinterLogic's Net Promoter Score (NPS), a broadly accepted customer loyalty metric, is higher than Sony and Apple Computer.

To find out more, contact sales@printerlogic.com or call our Federal Sales Desk at 435.216.1939 for a WebEx product demonstration and a 30-day trial install.

Footnotes

¹ Thielemann, Katell. (2018). "Market Insight: What U.S. Federal Government Buyers Want in 2018," page 6. Stamford, CT: Gartner.

² Howard, Michael, "An Expert Guide to Securing Sensitive Data: 34 Experts Reveal the Biggest Mistakes Companies Make with Data Security," Digitalguardian.com, February 16, 2018, <https://digitalguardian.com/blog/expert-guide-securing-sensitive-data-34-experts-reveal-biggest-mistakes-companies-make-data#Howard>