

**CITRIX** | Public Sector

# Providing Telework, Workforce Mobility, and Disaster Recovery Solutions for Federal Agencies

Today's Technology Best Practices



## Overview

The future of federal employee telework is now, with Congress recently passing new legislation that creates a policy framework and procedures for government telework programs across the country. The Telework Enhancement Act directs federal agencies to appoint their own telework managers and assimilate teleworking into contingency operations.

No one knows the power of telework than U.S. General Services Administration (GSA) Administrator Martha Johnson, who was sworn in by President Obama from her home via telephone during the paralyzing mid-Atlantic snowstorms of February 2010. This record-setting weather event underscored the need for continuity of operations in the case of any emergency or disruptive event. And, with an emphasis on reducing government's environmental and geographical footprint, the President has made telework programs a priority for the federal government.

“Work is what you do,  
not where you do it.”  
—President Barack Obama

According to a recent Office of Personnel Management (OPM) survey of more than 250,000 workers, about 22% of the federal workforce already telework, with more joining every day. Newly expanded programs allow employees to telework to the maximum extent possible, which in turn leads to fewer cars on the road, reduced absenteeism, consolidated workspace, increased flexibility, better staff retention, and higher worker morale.

A recent study by the Telework Exchange showed that the average federal worker spends nearly \$140 per month on gas—but can save more than \$55 a month by taking advantage of a robust teleworking program. Not only does teleworking reduce travel costs while boosting productivity, but it also helps to build and maintain work relationships when individuals must remain productive away from the office for extended periods or permanently.

Despite this renewed commitment to telework and its related scenarios—workforce mobility and disaster recovery—federal agencies continue to express concerns about such issues as data security and worker productivity. New advances in information technology from Citrix Systems, Inc. offer agencies improved solutions for telework and mobile work, both during normal conditions and in a disaster situation.

These technologies, including application, desktop and server virtualization, provide a high level of data security; are easy and cost-effective to implement, use, and support; and deliver excellent reliability and consistent performance across different usage cases. They also allow the freedom to use a wide variety of computing devices, network connections, and existing agency software and infrastructure.

The following discussion will describe best-practice technologies offered by Citrix for telework, workforce mobility and disaster recovery that have been proven successes in private industry. They enable federal agencies to expand current initiatives with the least expense and staff resources, while giving employees simple, secure and reliable solutions for connecting to the information and tools they need to remain productive while working remotely.

## How Citrix implements technology best practices

Control and secure applications and data through application virtualization.

Citrix simplifies security challenges by centralizing applications and data in the datacenter where they are easier to protect. All data transmission is secured through high-performance, standards-based encryption from the datacenter through the network to the user. User access is controlled through a single point of access that ensures proper authentication for the applications and data specific to their role. Application-level security is built in and facilitates compliance with federal government regulations and protection from zero-day attacks.



One of the best solutions for telework is desktop virtualization...

**Introduce desktop virtualization to provide a full user desktop as an on-demand service.**

Ensuring maximum flexibility for an agency's remote users is key. One of the best solutions for telework is desktop virtualization, a technology that delivers a full, personalized set of applications and other resources to each government computer, laptop, home computer, tablet and more over the network. Instead of installing and running software and the operating system and software locally on each PC or other device, these components, plus the user's personalizations, run on servers in the datacenter. They're delivered "virtually" to users—either a desktop image is transmitted to the user's computer, or the desktop is streamed down to the device.

Each time an employee logs on to the agency's network, a virtual desktop is dynamically assembled in the datacenter utilizing the latest application as an operating system version. IT teams can easily and efficiently manage multiple desktops since the virtual desktop solution is centralized on servers. Desktop virtualization also offers the ability to individually tailor the desktop. Some workers look for simplicity and standardization, while others require high performance and personalization. Customizing the virtual desktop in the datacenter minimizes IT administration and helps to ensure a high level of user productivity and satisfaction.



The benefits of desktop virtualization for remote, mobile, and displaced workers are clear. IT teams no longer have to track down and perform maintenance on individual devices scattered across disparate locations. Virtual desktops can be delivered to just about any type of device, giving users the freedom to choose a PC, Mac, thin client, or smartphone—or to use any available device with a network connection during a disaster situation.

For strong security, application data remains in the datacenter behind a firewall, and desktop images are encrypted over the network; even when the virtual desktop is streamed to the device, no data is left behind once the user session ends. Managed centrally, instituting telework programs becomes that much easier for the federal workforce.

Provisioning capabilities of a server virtualization solution enable server workloads on a failed system to be restarted quickly on another available server, thus dramatically reducing downtime.

### **Ensure quick recovery from any interruption using server virtualization.**

The government's first essential function is to ensure continuity of operations, including rapid response to a disaster situation. Citrix XenServer™, which allows more than one “virtual machine” to run on the same physical server, is an invaluable tool for disaster recovery. Provisioning capabilities of a server virtualization solution enable server workloads on a failed system to be restarted quickly on another available server, thus dramatically reducing downtime.

Through this technology, an IT team can transmit a virtual machine over the network and make it available on another server in an alternate location for employees to access. This capability alone can cut lost time in the event of system failure from days to hours, or less. Server virtualization makes it possible to run multiple, non-compatible workloads on the same server in “isolation,” helping to minimize the number of physical machines that are needed in a disaster recovery facility—or the main datacenter.

### **Making telework concerns a thing of the past**

#### **Ensure maximum productivity.**

Sustained productivity is one of the top concerns for agencies that are implementing or expanding telework initiatives. There are several aspects to optimal user productivity that can be resolved using technology solutions—including a more positive user experience with specific applications, resolving network latency and fixing IT issues. In addition, teleworking staff members can be given the flexibility to use laptops, tablets and more for their daily routine while experiencing the same computing environment they use in the office.

#### **Optimize wide-area networks (WAN).**

Especially when employees are traveling or are displaced due to a disaster or other interruption, slow performance of desktops over wide-area networks can pose a challenge to productivity and overall job satisfaction. Latency over the WAN, especially when employees are connecting at long distances from the datacenter, can significantly hinder response time and force them to

wait for software to launch or actions to be implemented.

New technology can now optimize desktop and application delivery over IP-based WANs, including private leased lines, public Internet VPNs, and satellite and wireless WANs. Installed in the datacenter, it automatically and dynamically applies to each data flow the best combination of performance-boosting techniques depending upon the application, the data, and the network conditions. Teleworkers and mobile employees will experience LAN-line application performance over the WAN, which means less time waiting and more time using their desktop applications and other resources.

### **Bring on a high-definition experience.**

Federal employees who require sophisticated, specialized software—including audio, multimedia or 3D graphics—need the same high performance and responsiveness at home or on the road that they would enjoy in the office. New desktop virtualization technologies from Citrix deliver a high-definition user experience over any network connection. By cutting bandwidth requirements by up to 90 percent, these technologies ensure high availability and reliability.



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### **Strengthening data security**

Another major telework and mobile work concern expressed by federal agencies is data security, especially when workers are using home computers that may not be equipped with the latest antivirus and other protections.

### **Implement policy-based IT controls.**

Delivering applications over the network (particularly the Internet) demands a security solution that can safeguard data from hackers and other cyberspace threats. For telecommuting security, it's extremely difficult to ensure that remote devices—especially public terminals—have full and up-to-date protection. Therefore, it is critical to have a method for remotely controlling the degree of user access to applications based on how secure each device is.



For example, if a mobile user is connecting from a public Internet kiosk, it would be undesirable to allow data to be downloaded and possibly left on the machine. Similarly, if a teleworker's antivirus protection is not current it would be unwise to allow data to be saved on the computer without updates. For practical reasons, IT staff must be able to enforce these controls from the datacenter.

Virtual private networks (VPNs) based on the Secure Sockets Layer (SSL) protocol can provide secure access to specific application resources. They use a downloadable Web software client that does not require on-site installation or updating by IT staff. In addition to stringent encryption of application data over the network and support for two-factor authentication devices such as tokens, these SSL VPNs offer centralized, dynamic controls over user actions including viewing, downloading, saving, editing or printing based on the security level of each individual.

...application and desktop virtualization keeps sensitive applications and data behind the agency firewall...

### **Protect against theft and loss.**

Widely publicized recent events have highlighted the potential exposure of highly confidential data, such as Social Security numbers, after a computer brought home by a federal employee was either stolen or lost. To avoid this, application and desktop virtualization keeps sensitive applications and data behind the agency firewall instead of on individual laptops, PCs or other devices. If a computer turns up unaccounted for, data is not placed at risk because it remains securely in the datacenter.

### **Incorporate single sign-on access and password management.**

The use and management of application passwords can pose a major security issue for federal agencies and a giant headache for users and IT staff alike. Many applications are password-protected, forcing users to remember multiple logins and attend to password changes on a regular basis. To simplify things over time, employees may write them down or use weak passwords, increasing security risks—especially when working from an untrusted device. They also may overload the help desk with requests for password assistance and resets.

Implementing an enterprise single sign-on (ESSO) solution reduces the burden of application passwords for users and IT staff while strengthening security. With an ESSO solution, the logon process for individual applications is automated; users log on just once to the agency's system and the solution authenticates them to each application. This means a single password to remember instead of many, and consequently, fewer help desk calls.

An ESSO solution typically provides powerful, centralized management tools for IT staff, allowing them to specify strong passwords, automate application password changes and quickly terminate user access. These solutions also support the use of two-factor authentication tokens, biometrics and other technologies.

## Fairfax County's Telework Breakthrough

The late-winter blizzard of 2010 brought the Washington, DC region to a standstill and temporarily halted the work of state and local government. This event, along with the fact that the national capital area is routinely one of America's worst traffic regions, has since gone a long way toward spotlighting the virtues of telecommuting.

Fairfax County, Virginia, has been well ahead of the teleworking curve. With its staff driving in from all parts of Virginia, the District, Maryland and even far-off West Virginia, the time came for the implementation of a robust telecommuting system. Approximately 1,400 county workers currently telework at least once a month, and some telework as frequently as once a week. The push to "go green" has also placed a premium on telework adoption. By keeping cars off the road, Fairfax County has become a model agency for its energy conservation policies.



### The Citrix Solution

For the past 10 years, the Fairfax County Executive and County Board of Supervisors have laid the groundwork for making telecommuting a more accessible and user-friendly option for employees. They adapted technical infrastructure to better support telework, launching Citrix XenApp™ thin client for remote access to centralized applications. Fairfax County presently has about 50 servers hosting roughly 140 applications, including Microsoft Office and departmental business applications. Teleworkers use home computers or county-issued notebook computers with their own Internet access; PCs must have antivirus software installed, and employees log in to an SSL virtual private network through a web browser. A portal provides access to everything employees need to work remotely and to communicate with their colleagues—including instant messaging communication, document collaboration, and submitting online help-desk requests.

Fairfax County's network operations center functions around the clock, so if employees choose to work at night or early in the morning, they can still find troubleshooting help at any time via remote-control software. In addition, the county expects to add video capability to its collaborative software suite so that employees can hold videoconferences, and a softphone implementation will let staff use the county's phone system from home.

...Fairfax County has become a model agency for its energy conservation policies.

### Leading the Way Through IT Innovation

The benefits of Fairfax County's groundbreaking telework program are clear, and provide an example for federal agencies to follow. The increase in telecommuting has enhanced employee satisfaction and retention, aided in recruiting and raised daily productivity while ensuring data security, cost controls and continuity of operations. The effects are also being felt outside the county as well—Fairfax's success in taking cars off the road and reducing its carbon footprint has aided in the overall movement to make government more eco-friendly in the DC metro area. In a time of rising fuel costs, cutting down on wasted hours in traffic and trips to the pump is an additional plus for county employees.



## Conclusion

With the next generation of incoming federal workers, there comes an expectation that any and all workplace resources be available within an instant. As a result, addressing this cultural shift is a critical component of any telework program. Citrix provides on-demand solutions that work for the entire staff, and can be leveraged over and over—thus saving time and money, while making for easier user implementation.

Still, an array of issues must be resolved before a federal telework, workforce mobility or disaster recovery initiative can succeed. One key enabler is having the right IT system. A simple, secure and high-performance means for accessing desktops and teammates and getting technical support from any location, on any device or connection, enables federal workers to focus on getting their jobs done. Similarly, the right technology can ease the IT challenge of managing an increasingly distributed user environment.

A number of federal agencies have already successfully implemented technologies providing the latest in virtual desktop delivery, data security, WAN optimization, and remote support and collaboration. These best-practice solutions make it feasible and cost-effective for federal employees to work productively from anywhere, anytime and on any device. Ultimately, the results are clear: Citrix can help government achieve the advantages of improved staff retention and satisfaction; reduced costs, congestion and environmental impact of commuting and other travel; and greater workplace flexibility.

To learn more, please visit [www.citrix.com/federal](http://www.citrix.com/federal)

The **Citrix Delivery Center™** product family is composed of virtualization and networking product lines for an end-to-end system that virtualizes servers, applications and desktops, centralizes them in the datacenter and broadcasts them to users over any network as an on-demand service.

**Citrix® XenDesktop™** is a desktop virtualization solution that delivers Windows desktops as an on-demand service to any user, anywhere.

**Citrix® XenApp™** is an on-demand application delivery solution that enables applications to be centralized and managed in the datacenter and instantly delivered as a service to users anywhere.

**Citrix® XenServer™** is an enterprise-ready, cloud-proven virtualization platform with all the capabilities needed to create and manage a virtual infrastructure at half the cost of other solutions.

**Citrix® NetScaler®**, available as a network device or as a virtualized appliance, makes web applications run 5x better by accelerating application performance, optimizing application availability, and enhancing web application security while substantially lowering costs.

**Citrix® Access Gateway™** is a secure desktop and application access solution that provides administrators granular application-level control while empowering users with access from anywhere.

**Citrix® Branch Repeater™** is a branch optimization solution that provides a high-definition desktop and application experience to branch and mobile users while dramatically reducing bandwidth costs and simplifying branch infrastructure.

**Citrix Receiver™** is a high performance, universal client technology that enables on-demand delivery of virtual desktops, Windows, web and SaaS applications and IT services to any device.

## About Citrix

Citrix Systems, Inc. (NASDAQ:CTXS) is a leading provider of virtual computing solutions that help companies deliver IT as an on-demand service. Founded in 1989, Citrix combines virtualization, networking, and cloud computing technologies into a full portfolio of products that enable virtual workstyles for users and virtual datacenters for IT. More than 230,000 organizations worldwide rely on Citrix to help them build simpler and more cost-effective IT environments. Citrix partners with over 10,000 companies in more than 100 countries. Annual revenue in 2009 was \$1.61 billion.

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