Empowering telework, executive mobility and disaster recovery programs

Best-practice solutions for federal government
Executive summary

Since the passing of the Telework Enhancement Act, federal agencies have made great strides in adopting programs that allow employees to work both in and outside of government offices with equal productivity levels. Agencies like the US Patent and Trademark Office (USPTO), where roughly two-thirds of the office's more than 11,000 employees already telework, provide a glimpse into the future of federal work culture.

Despite this growing commitment to telework and worker mobility, concerns remain about worker productivity, technological barriers, and data security. A recent report by the Office of Personnel Management (OPM) lists management resistance as the chief stumbling block to expanding remote work programs within the federal government. Any program opposition, however, should be weighed against the far-ranging benefits of such initiatives.

As the federal government seeks to recruit workers to replace a generation of retiring employees, a robust telework program can provide a more attractive experience in which employees and contractors can choose the ideal time, place and device for their work. By enabling full productivity beyond the constraints of physical offices and traditional work hours, organizations can reduce real estate, travel and labor costs while ensuring business continuity.

The following white paper will describe best-practice technologies and strategies offered by Citrix for telework, executive mobility and disaster recovery. They enable federal agencies to expand current and future program initiatives under the Telework Enhancement Act with the least expense and staff resources, while giving remote employees simple, secure and reliable solutions for connecting to the information and tools they need to remain productive.

Introduction

While staff productivity, freedom, and job satisfaction are key drivers for instituting a telework program, they are certainly not the only reasons to do so. Tropical storms, twisters, flooding, wildfires and other recent natural disasters have proven that agencies will always need a reliable and seamless contingency plan to keep business up and running. Faced with the growing challenges of unpredictable weather, pandemics and other disaster events, the steps that the federal government takes to ensure continuity of operations are more important than ever. Through a partnership with Citrix, agencies can now access leading-edge solutions for telework and executive mobility, both during normal conditions and in a disaster situation.

Citrix solutions:

- Provide a high level of data security through policy-based IT controls
- Are easy and cost-effective to implement, use, and support
- Ensure quick recovery from any interruption using server virtualization

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Telework: Transforming business and empowering employees

To be effective, a telework program must address two fundamental requirements: staff must be able to work in the same way they would in the office, with full access to desktops, apps, files and collaboration; and IT must be able to secure and control business information to maintain protection, privacy and compliance. Citrix solutions meet these requirements and much more.

Desktop and app virtualization IT can transform any application as well as complete desktops into an on-demand service available on any device. Any combination of desktop and application delivery approaches can be used.

All the latest devices Employees gain the freedom to choose the best device for any situation: a tablet for a short trip, a notebook for a longer journey, or a smartphone for a quick check-in. Any brand and platform can be used including Windows and Mac® desktops and laptops as well as RIM, iOS, Android and
Windows-based mobile products.

**A high-definition experience over any network** Real-time network and performance-optimization technologies ensure a high-definition experience regardless of location, device and network connection. Seamless roaming across devices, locations and networks ensures optimal convenience and productivity. As workers move across devices and locations, they never waste time re-opening documents and re-launching applications. Citrix provides fully seamless roaming so the same application session and consistent desktop appears on every screen they use, ready to resume work.

**Collaborative work platform** Get work done with coworkers and contractors on a social work platform that you make your own. Work with any group of people inside a workspace and connect the entire agency in an employee network. Social activity streams and hundreds of pre-built and custom apps create collaborative workspaces for managing projects, events, intranet and much more.

**Easy online meetings** In or out of the office, workers can initiate or join meetings from any location in seconds, on any device, eliminating the need to coordinate in-person schedules or incur travel costs. Rich tools for collaboration and communication let remote staff initiate or join meetings from any location in seconds, on any device, with high-definition video for true face-to-face interaction.

**Self-service app store** People can access any of their authorized apps—including Windows, web and SaaS—easily on any device through a secure, consistent app store with a convenient single sign-on experience.

**Follow-me data** Staff can easily share files with anyone inside or outside of their agency and sync files across all of their devices so people have the information they need no matter where they’re working.

**Secure by design** Apps and associated data remain in the datacenter, where they are accessed through granular, policy-based user authentication. Access control, auditing and reporting help IT manage compliance, information governance and data protection. If a device is lost or stolen, IT can remotely wipe any enterprise data it may have contained.

**Defining telework program policies and processes**

Whether introducing a formal telework program or policy or simply allowing employees or contractors to work from home on an ad hoc basis, agencies should define organizational parameters in consultation with IT, human resources, real estate, sustainability, legal, and union leadership.
Considerations can be found in the following table:

| Worker eligibility | While many job roles can be performed remotely, some need to remain on-site. Similarly, telework isn’t right for every worker; you should define criteria to identify people who are best able to remain productive and engaged in a remote scenario. |
| Scheduling | Will unlimited teleworking be permitted or will there be a minimum required time for employees to spend in the office? You may want to set parameters for the number of staff within a given group who can work remotely on the same day, or specify days of the week when everyone is required to be on-site. |
| Management | Federal managers need training on how to manage people by productivity and performance rather than by the traditional measuring sticks of time and attendance, using the same set of criteria regardless of whether people work remotely or on-site. |
| Program practices | Teleworkers should maintain regular work hours to prevent burnout. To function effectively, they also need regular interaction with colleagues to share information and best practices, access training, form mentoring relationships and facilitate team building. |
| Resources | Wherever employees and contractors work, a dedicated workspace, office supplies, high-speed broadband and a VoIP softphone need to be considered. The agency or individual can provide their computing device; additional peripherals such as printers and scanners may also be needed. Staff should be able to securely access applications, simple file-sharing and collaboration tools, including easy online meetings. |

The value of telework and mobility for both federal agencies and people makes it a key workplace strategy for every type of enterprise. Citrix solutions and best practices provide a flexible yet controlled framework to implement the right telework policies for your agency.

The view from the top: Enabling executive mobility

For government executives, work isn’t a place anymore. It’s something they do, wherever and whenever the need arises. To reach decisions, build relationships, manage finances and drive strategic value with the agility demanded by today’s tighter resources, executives need the freedom to move beyond agency walls without leaving behind the resources they need to be effective. They need to be able to do anything, anywhere, and on whatever device is most convenient—including their own personal devices—from laptops to the latest tablets and smartphones.

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Executive mobility isn’t a mere aspiration—it’s a requirement for doing government business here and now. To make it possible, organizations must answer a multitude of questions: How can executives collaborate actively even as their work takes them far from agency walls? How can they respond effectively to urgent needs while at home or traveling? How can they be given the flexibility to work with whatever device best suits their need, with fast, effective IT support even on their own consumer-grade devices? How can executives access the most confidential data anywhere, on any device, from any network while IT controls risk and ensures information governance and compliance?

As a leader in solutions that enable more mobile, flexible ways of working, Citrix empowers government executives to work wherever and however they need to, while managing risk and enabling agencies to:

- **Empower executives to work anywhere** using their own personal devices
- **Increase executive productivity** by providing enterprise-application access from mobile devices
- **Enable executives to share files** easily, inside or outside their organization, without introducing unnecessary risk to their organization
- **Improve collaboration** for executives who are constantly on the move by providing online meetings with high-definition audio and video conferencing

**The executive of the future—right now**

Mobility helps high-value professionals put their skills and creativity to work more effectively, in more ways, to achieve the best results for the agency. Citrix executive mobility solutions empower executives of the future with the mobility they need today.

**Wherever, whenever productivity:** A manager who is interrupted in the middle of an analytics report picks up at the same point later in the day—on the same home computer her kids use for homework. A VA doctor accesses the applications and data relating to a patient on a laptop in the office, then resumes the same session on an iPad carried on rounds. For a public relations professional, Adobe Photoshop files or Microsoft PowerPoint presentations can be accessed from anywhere in seconds—even on a smartphone or tablet.

**The best device in any scenario:** A bring-your-own-device (BYOD) initiative, enabled by Citrix executive mobility solutions, allows executives to choose the best device for any need and situation—even a brand new one, set up easily within minutes of its purchase. Efficient central management helps IT deliver concierge-style support to executives, even on their own personal smartphones and tablets.

**Face-to-face contact across the nation—or the globe:** Vendor calls, partner meetings, contract negotiations, medical consultations and ad hoc gatherings can take place at any time, regardless of the physical location of participants. Executives can interact face-to-face with anyone in any part of the world to aid business agility—making many business trips a matter of choice, not necessity.
Healthy work-life balance: Business can call at any time—but it doesn’t always have to take government executives away from their families and personal lives. A home office or hotel room becomes just as productive as a corner suite at agency headquarters, and an unexpected meeting doesn’t have to put an end to a long-planned vacation. A better work-life balance helps executives care for their family while they continue to drive strategic value for the federal government.

Implementing telework technology best practices
Proven telework solutions from Citrix provide federal workers with a secure, efficient means of working remotely under any conditions. Here’s how:

Controlling and securing 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.

Introducing 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, which 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 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.

**Ensuring 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.

### Recommended telework deployment options with XenDesktop

[Diagram: XenDesktop with FlexCast, Hosted Virtual Desktops, Universal Receiver Client, HDX, FIPS 140-2 Level 2 SSL Encryption, RemotePC]

### Addressing common concerns about telework

Owing to past experience, workplace culture and technological stumbling blocks have long combined to slow the growth of telework initiatives within the federal government. The Citrix approach allows managers to let go of their fears and envision a more productive and professionally fulfilled workforce, thus removing the barriers of the past.
Ensuring 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 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.

Optimizing 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.

Citrix technology optimizes 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.

Furnishing 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. Virtualization delivers 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.

Ensuring secure data for remote workers Another major telework and mobile work concern expressed by federal agency managers is data security, especially when their remote 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.

**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.

**Conclusion**

In the current era of federal work, there comes an expectation that information resources be instantly available anywhere a worker needs it. Successful telework and mobility programs provide on-demand solutions that work for the entire staff, to be leveraged over and over—thus saving time and money, and creating easier user implementation.

Still more issues must be resolved before a federal telework, 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.

Many agencies have already successfully implemented technologies providing the latest in virtual desktop delivery, data security, WAN optimization, and remote support and collaboration—with many more to come in the next few years. These best-practice solutions make it feasible and cost-effective for federal employees to work productively from anywhere, anytime and on any device. Improved staff retention and satisfaction, along with reduced costs and greater workplace flexibility, are sure to follow.
About Citrix
Citrix transforms how businesses and IT work and people collaborate in the cloud era. With market-leading cloud, collaboration, networking and virtualization technologies, Citrix powers mobile workstyles and cloud services, making complex enterprise IT simpler and more accessible for 260,000 organizations. Citrix products touch 75 percent of Internet users each day and it partners with more than 10,000 companies in 100 countries. Annual revenue in 2011 was $2.21 billion.

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