

## Issue Brief

# Leveraging End-User Computing to Improve Government Services

Virtualization, enterprise mobility management and cloud computing help state and local governments increase productivity, efficiency and security across the enterprise

## The Key to Overcoming Government Challenges

State and local governments face a continual puzzle. They're under pressure to deliver more services, and to deliver them faster and more effectively. But they're also under pressure to cut expenses. While those often seem like conflicting goals, it's essential to achieve them both.

Government leaders who are trying to solve that puzzle face an unprecedented opportunity. They can empower their employees to work more productively and respond faster to citizen needs, while also reducing costs and making the IT infrastructure more secure. The key to achieving those goals lies in the combination of three end-user computing (EUC) technologies: virtualization, enterprise mobility management and cloud computing.

**Virtualization** is the use of software to create the non-physical equivalent of a computing resource (a server, desktop computer, application, storage platform, network, etc.). Virtual resources are more flexible and easier to manage than their physical equivalents. Endpoint provisioning and maintenance are centralized and simplified. Virtual desktop infrastructure (VDI) can also improve security because data no longer resides on physical devices.

**Enterprise mobility management (EMM)** is a set of technologies for efficiently managing all of the mobile devices in an enterprise. It encompasses various mobile devices and operating systems, including users' personal devices (BYOD) and assets owned by the government. EMM includes provisions for securely managing applications, content, email, browsers and more.

**Cloud computing** provides IT services (data, applications, storage, etc.) that are maintained remotely on a central server, rather than stored and operated on site. The services are typically delivered via the Internet.

This issue brief examines three areas of government activity where these EUC technologies can produce major improvements while reducing costs: emergency response and field operations, IT infrastructure management and administration, and cyber security.

✓ The key to empowering employees to work more productively and respond faster to citizen needs, while also reducing costs and making the IT infrastructure more secure, lies in the combination of three complementary technologies: →





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## Enhancing Emergency Response and Improving the Productivity of Field Workers

A significant number of public employees spend most of their working hours — and accomplish their most important work — in the field. This group includes public safety professionals — police, firefighters, emergency medical technicians and others who respond to incidents, conduct investigations and patrol the streets. It also includes caseworkers who help citizens in areas such as health, housing and child welfare; inspectors who audit for compliance with health, building, environmental and other regulations; and many employees in transportation, transit, highway, public works and other departments.

Many other government employees also perform some of their duties away from the office, attending meetings, for example, or working from home in the evening. Like professionals in the private sector, government workers increasingly rely on laptops, smartphones and tablets to stay productive wherever they go.

State and local governments have been interested in mobile technology for many years, and that interest continues to grow. In a 2014 Center for Digital Government (CDG) survey, groups of city, county and state CIOs ranked mobility and/or mobile applications among their top five priorities.<sup>1</sup>

Mobile technology for employees in the field is not a new concept. As far back as the 1990s, governments were equipping emergency vehicles with mobile data terminals or laptop computers that allowed some computer-aided dispatch (CAD) and reporting functions. Of course, since those early days, multiple generations of new technology have arrived on the scene. The latest solutions, employing virtualization, EMM and cloud computing, offer broader and better capabilities than anyone could have dreamed of 20 years ago.

Here are some examples of what a state or local government can accomplish with support from current technology:

- It can give employees in the field secure access to all of their desktop resources and applications through a single, unified workspace. The end user can access these assets on a tablet, Chromebook/Linux-based thin client, smartphone or laptop computer. From any location, at any time, employees can use enterprise applications — including

legacy apps — send and receive email, and conduct other business activities just as they would at their desks.

- The IT department can centrally manage all mobile devices and applications on the government infrastructure — including both employee- and government-owned devices.
- Governments can empower employees in the office and in the field to share information securely and collaborate in real time.

When a government implements these technologies, emergency responders, field workers and professionals of all kinds gain quick, flexible and secure access to the applications and information they need to do their work — anytime, in any location, and across any platform and device type. For field workers, that provides a major productivity boost. The less time employees spend traveling to and from the office to gather information, file reports and complete paperwork, the more time they can spend in the community, serving the public.

The technology also helps field workers respond faster and more effectively to urgent needs. A caseworker visiting a home can check the family's eligibility for multiple services and sign people up on the spot. Firefighters responding to an industrial fire can pull up information on chemicals stored in the building and coordinate the response with police and HAZMAT workers. Employees in the field and employees in the office can collaborate more effectively in real time.

According to a recent analysis, adoption of mobile technology by caseworkers in human services agencies could increase productivity by 45 percent. The analysis predicts that if government as a whole doubled its mobile



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technology adoption rate from 35 percent to 70 percent, the resulting improvement in productivity would be worth more than \$50 billion a year.<sup>2</sup> Additionally, there are reductions in overtime costs and mileage as a result of employees not having to drive to and from the office to file reports and complete paperwork.

## Improving IT Efficiency and Business Continuity

The vast range of legacy applications, operating systems and end-user devices deployed throughout a government enterprise challenges IT departments. But EUC solutions can streamline IT management while providing better services to end users and reducing costs.

When used together, EUC solutions can help governments centralize and streamline operations and lower capital and operating costs. In a survey of virtualization in government, MeriTalk found that server virtualization had already helped agencies reduce their IT budgets by an average of 19 percent. If desktop virtualization yielded only half those benefits agencies could save another 9.5 percent.<sup>3</sup>

Desktop virtualization and EMM allow the IT department to support all end-user devices — including desktops, laptops, tablets, smartphones and thin clients — centrally, more efficiently and with fewer resources. EUC solutions also cut operating costs by vastly simplifying the work of provisioning and managing the entire life cycle of endpoints, speeding up processes such as testing patches and installing critical updates, reducing the number of problems that users encounter, and allowing IT staff to respond to the remaining problems much faster.

EUC solutions reduce capital costs as well. By deploying in the cloud, the department reduces the amount of infrastructure it must maintain. It spends less on hardware, as thin clients and inexpensive mobile devices take the place of high-end workstations and traditional desktops. A strategy that incorporates these technologies also helps a government meet its disaster recovery and business continuity objectives. In the event of an interruption, office employees can work from home or other locations, accessing all of their applications just as though they were sitting at their desks.

## Enhancing Security and Compliance

For all of the benefits it offers, mobility has also traditionally posed a serious drawback: new points of vulnerability. Improperly secured wireless connections and endpoints expose the entire organization to malware and data loss. And a lost or stolen mobile device can put sensitive information — such as passwords, citizens' personal data or details of criminal investigations — into the wrong hands.

Because they centralize the administration of end-user devices and applications, EUC solutions help the IT department strengthen security across the enterprise. For instance, administrators can use the security tools built into these solutions to control access and user activity across all endpoints, job functions and departments. By leveraging strong identity management, access control can be tied to each user, and not strictly to devices, thereby strengthening and simplifying user access to their desktops and content. Applications can also include data loss prevention capabilities — such as blocking copy and paste or email forwarding functions — to keep users from accidentally or intentionally leaking confidential or regulated data.

A strategy employing desktop virtualization, EMM and cloud computing reduces the danger posed by lost or stolen devices because data resides in the data center and behind the firewall — not on the mobile device. As an added measure, administrators can use an EMM solution to encrypt any local data and remotely lock or wipe a stolen device, making it impossible for the thief to access any locally stored information.

An agency can use an EMM solution to automatically enforce its own policies regarding the use of mobile devices. It can also automatically implement safeguards required by the Criminal Justice Information Services (CJIS) security policy, the Federal Information Processing Standards (FIPS), the Health



### Strategies a government can use to increase IT efficiency include:

- Using a combination of VDI and EMM to deliver desktop, data and application services to users on any device, in any location
- Running applications in the cloud or through a hybrid model that includes cloud and on-premises hosting
- Implementing VDI and EMM to centralize and automate device management and consolidate IT operations
- Enforcing mobile security compliance monitoring and automatic non-compliance remediation such as device lock or wipe
- Supporting continuity of operations objectives via high availability in the case of a disaster (for example, governments can implement desktop-as-a-service [DaaS], locating the desktop in the cloud so that it remains available to mobile users during power outages or other interruptions at the local data center); there are also solutions that allow users to fail-over their physical desktop to a virtual one running in a cloud if the physical desktop is inaccessible due to scenarios such as extreme weather
- Creating shared services to consolidate the operations of multiple agencies and/or jurisdictions

Insurance Portability and Accountability Act (HIPAA) or other federal regulations.

## Real-World Results

Based on the success of a VDI pilot with 300 users, **Montgomery County, Pa.**, is rolling out the technology to a total of 3,000 users in 2015.

Thanks to VDI, caseworkers with the county's Aging and Adult Services agency have real-time access to all of their applications and data. Employees no longer have to travel to the office to print reports or type up notes, which has been a tremendous time saver, according to county CTO Anthony Olivieri.

"Our caseworker productivity is up by 300+ percent. And they are happier employees with more work-life balance," says Olivieri.

Similarly, officers in the sheriff's department no longer visit the office at the start of a shift to download and print out warrants, or return later to enter data on their activities. Instead, they complete their work from the road, on tablets. "It's cut down on overtime, and it's made them far more efficient," Olivieri says. "They're able to serve far more warrants in a day."

The VDI system performs flawlessly, and it's easy to manage, says Olivieri. "My administrators are raving about it." As of spring 2015, in advance of the full rollout, the IT department was adding security enhancements and building in redundancy with secondary data centers to ensure business continuity.

While expanding its VDI deployment, Montgomery County has also been enjoying the benefits of an EMM solution, used to manage hundreds of mobile devices. As more users bring their own devices to work, the IT department is now using the EMM software to create a secure "container" within each mobile endpoint. This measure enhances security by separating work-related functions from personal activity. "If a person leaves the county or loses the device, we can pull off all the county-related data," Olivieri says.<sup>4</sup>

## Endnotes

1. <http://www.erepublic.com/blog/A-Roadmap-to-Government-Priorities.html>
2. <http://dupress.com/articles/gov-on-the-go/#end-notes>
3. [http://www.businesswire.com/news/home/20120130005254/en/Government-Virtualization-Save-30-Billion-2015#.VTEcY\\_DJDD0](http://www.businesswire.com/news/home/20120130005254/en/Government-Virtualization-Save-30-Billion-2015#.VTEcY_DJDD0)
4. All information from Anthony Olivieri from interview conducted on April 23, 2015.
5. [https://www.youtube.com/watch?v=jD3CNQml\\_k&list=PL9MeVsUOuG66YhjLEkHs1Nj6ZDnjhX2YX&index=2](https://www.youtube.com/watch?v=jD3CNQml_k&list=PL9MeVsUOuG66YhjLEkHs1Nj6ZDnjhX2YX&index=2)

**VDI has been a tremendous time saver for Aging and Adult Services caseworkers in Montgomery County. Anthony Olivieri, the county's CTO, says, "Our caseworker productivity is up by 300+ percent. And they are happier employees with more work-life balance."**

**Mecklenburg County, N.C.**, has used desktop virtualization to empower thousands of workers in the field across several departments. These employees use tablets to access a full range of applications from any location.

Lisa Forster, child protective services supervisor with the county's Youth and Family Services division, says VDI has made her job simpler and helped her respond faster to families' needs. One time, for example, she was working in the field when she received an emergency call. Before rushing to the site, she needed information on the case.

"Instead of taking 30 minutes to drive to the office and print the report, and then another 30 minutes to get to my location, I was able to pull up the information right there in the field," Forster says.

Desktop virtualization has saved the county money on both hardware and operating costs, says Technical Services Director Cliff DuPuy. "It comes to about \$3.2 million in savings per year for the organization. That's money we can put back into services."<sup>5</sup>

## Conclusion

Public employees perform crucial work. Tight budgets make it hard to give them all of the support they need. A strategy based on EUC solutions can empower these workers to be more productive, agile and responsive to the needs of their citizenry. EUC solutions further enable government IT departments to modernize their computing environments and arm the agencies and employees they serve with the latest technologies, all while maintaining security, reducing costs and improving operational efficiencies.

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