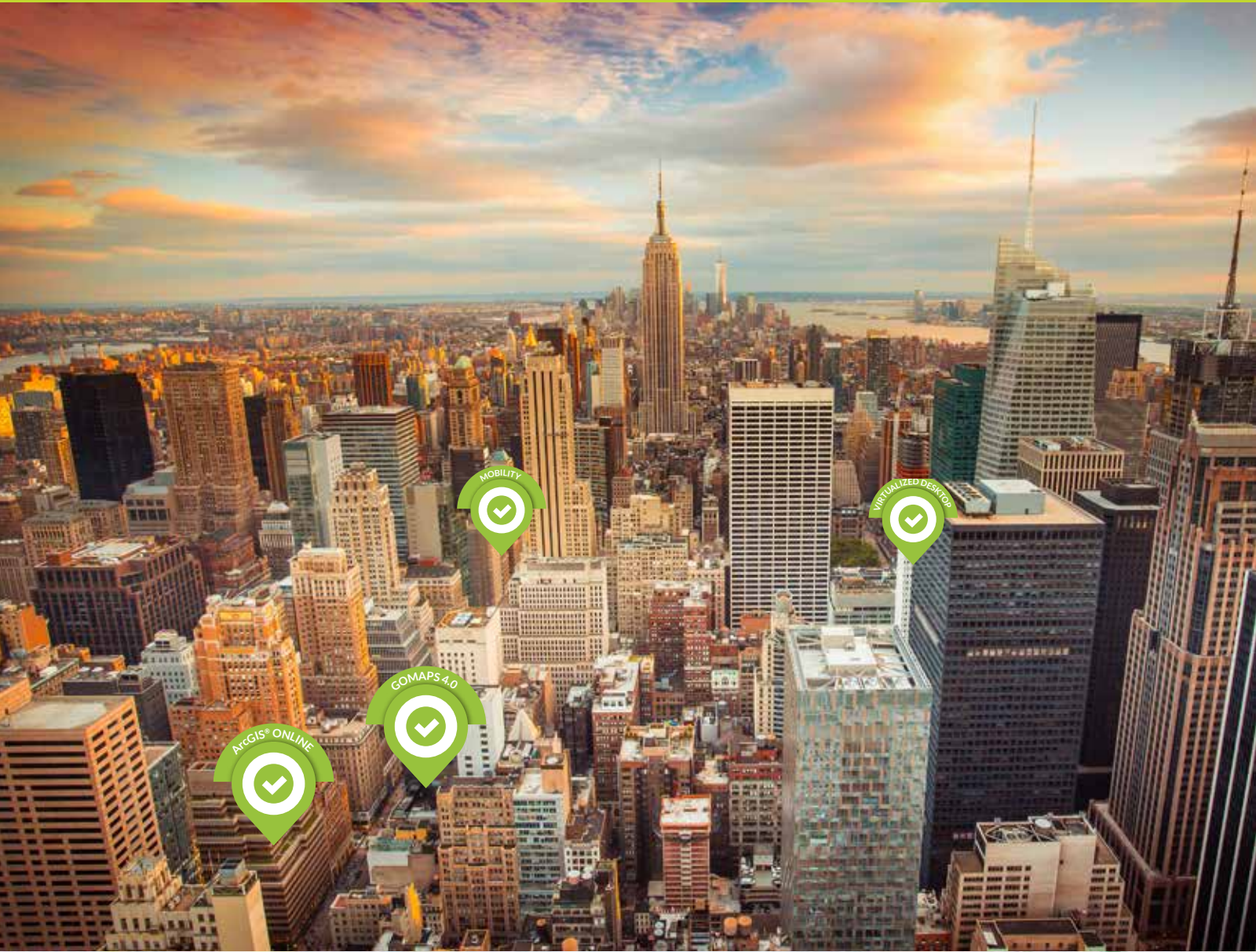




Virtualized Desktop



WHITEPAPER:

TOP 3 REASONS TO MAKE THE MOVE TO VIRTUALIZED ARCGIS



Abstract

ROK Virtualized Desktop helps organizations of every size save money, increase productivity, and achieve faster processing speeds by providing a stable, secure, cloud-based infrastructure for ArcGIS desktops that can be accessed from any connected device. ROK manages all hardware and software updates, service pack installations, and licensing, thereby alleviating IT headaches for GIS teams and in-house IT departments.



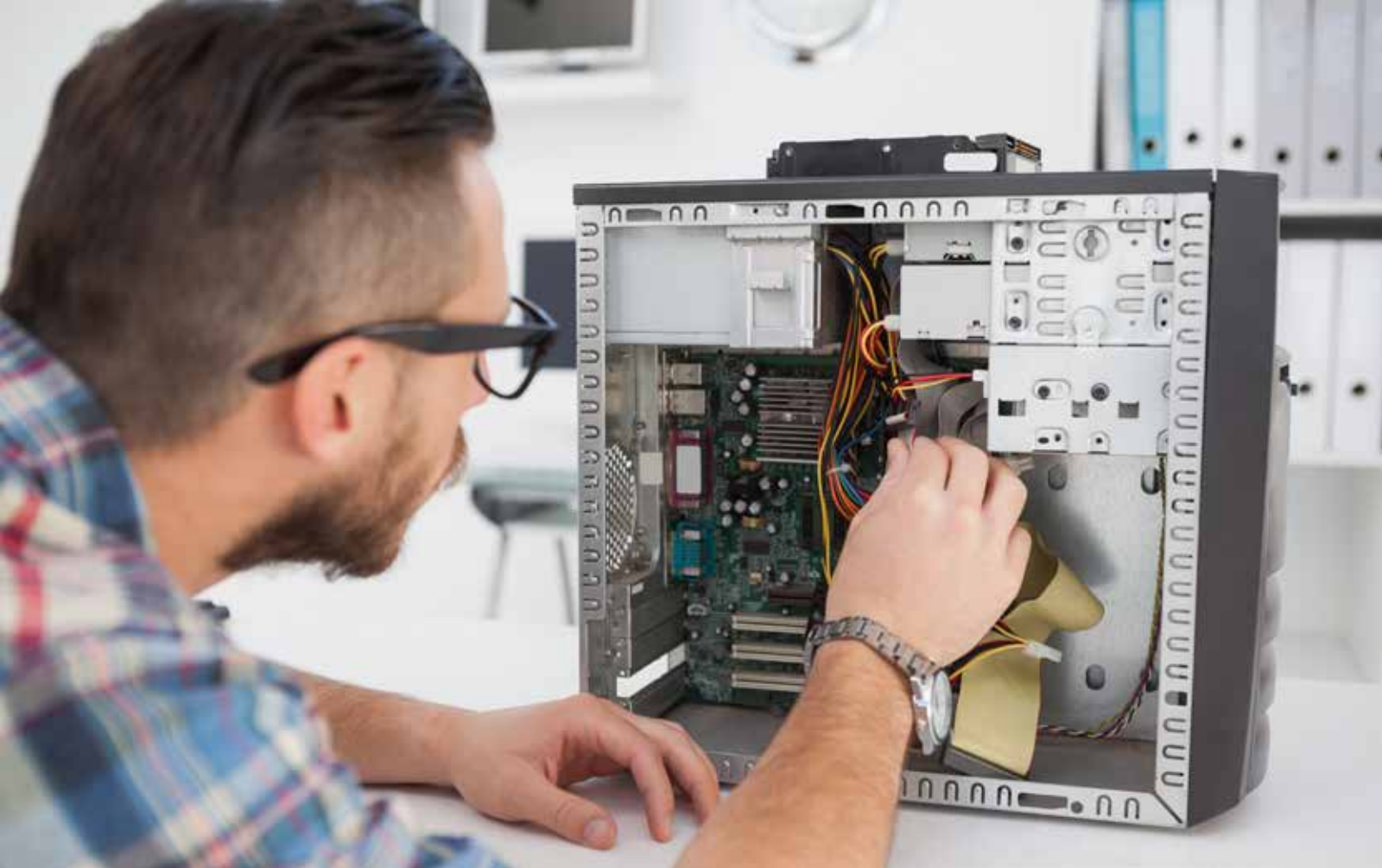
Background

ArcGIS is a powerful platform that allows organizations to collect, share, analyze, and visualize massive amounts of location-based data. As graphics capabilities grow more sophisticated (and more resource intensive!) and as customer expectations for access to real-time information continue to rise, it has become increasingly difficult and often cost-prohibitive for organizations to maintain their onsite infrastructure, hardware, software, AND IT staff necessary to keep up with changing requirements and customer demand.



The Problem with Traditional GIS Systems

In a traditional, on-premises GIS system, all data collection, management, analysis, and dissemination are handled through a central on-site server managed by an in-house IT department. As GIS becomes more deeply integrated with other systems, and as spatial modeling capabilities, associated computing requirements, and the sheer amount of data continue to grow, the time has come for organizations to recognize the constraints of the traditional model and take a fresh look at the benefits that modern cloud-based models have to offer.



IT Costs and Complications

The IT demands of maintaining a GIS system have increased exponentially since the early days of GIS, so it's no surprise that for GIS team members currently struggling to operate a modern, in-house GIS system, IT headaches are often the first concern that comes to mind. For organizations, it's often the costs associated with updating and maintaining hardware and software, as well as the need for personnel to perform those functions. All too frequently, GIS managers and analysts find themselves attending to IT concerns—resolving issues with on-premises databases and web servers, diagnosing network problems, managing server-based GIS— or waiting for their limited IT staff to respond to a request or trouble ticket before they are able to get to the actual jobs awaiting them at their GIS desktop. For municipalities like the City of North Miami Beach or Pinellas Park, FL, hiring additional IT staff to manage on-premises GIS resources was neither feasible nor desirable from a cost perspective, yet the internal and customer-facing applications supported by the municipalities' ArcGIS data are critical to residents and government agencies. The municipalities also faced concerns about server outages and system reliability in the event of hurricanes or other severe weather events.



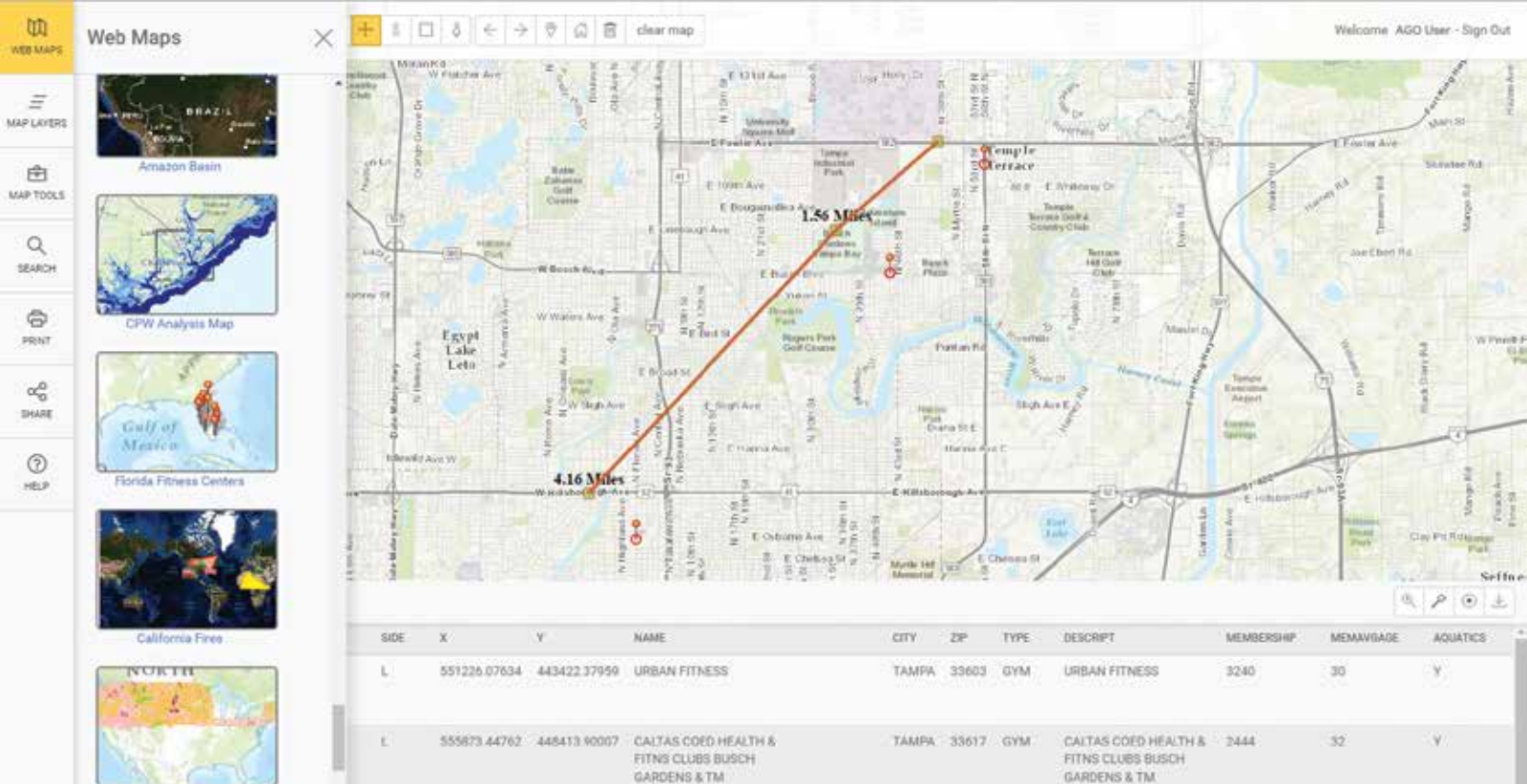
Limited Productivity

For the Southern Environmental Law Center (SELC), a non-profit focused on environmental conservation, an in-house GIS database was sufficient for a single GIS analyst. But as the organization grew, the analyst wasted hours packaging and downloading data to allow him to work remotely from nine other office locations, and when a second GIS analyst joined the department, sharing data across the office LAN resulted in slower performance times and inconsistencies between workstations. In Nassau County, FL, the GIS manager spent hours every week updating data and troubleshooting IT issues. Every department in the county created and maintained its own maps, and residents and developers required separate visits to offices such as the flood zone department, tax appraiser's office, and tax collection office to research a single property or parcel of land.



Insufficient Processing Power and Slow Response Times

Key Environmental, Inc., an environmental engineering consulting firm headquartered in Pennsylvania, needed a way to collect massive amounts of data in the field at a client's Staten Island, NY site location and push the updates back to the geodatabase in real time. Although Key Environmental had used ESRI technology for years, the data requirements for this project were far beyond what their servers could handle, and the firm's multiple offices lacked a central datastore.



A Solution in the Cloud

For all the organizations referenced here, and for many more, the solution to their cost, productivity, and processing issues was found in the cloud, with the support of Amazon's Web Services and ROK Technologies.

ROK Virtualized Desktop is a cloud-based ArcGIS solution that provides the security, stability, and reliability organizations need, all while helping to save time and money, increase productivity, and improve processing speeds.

Moving to the cloud represents a significant cost savings in most cases, as it immediately removes the need for organizations to purchase or maintain servers, upgrade desktop PCs, or even purchase the most current version of GIS software. A move to the cloud also frees IT departments or, in many cases, GIS teams, from needing to worry about installing the latest service pack installation, or whether the newest release of GIS software will be compatible with employees' current Mac or PC build and operating system.

Most cloud service provider partners, like AWS are flexible and platform-agnostic to operating systems and languages. You can still use the programming language, architecture, operating systems and databases your organization is most familiar with thereby reducing the need for more IT resources and training.

Enhanced Security

With Virtualized Desktop, servers are located off-premises in a secure, tightly monitored, and optimally climate-controlled Immedion facility. All critical infrastructure is critically housed within an independently audited, AICPA SOC 2 compliant data center to ensure the physical security, virus protection, and network security of your data. Disaster recovery and business continuity protection is provided through the Immedion Recovery Cloud (DRaaS), with hourly replication, bi-annual testing, and flexible recovery points, as well as through a backup service with secure file, web, application, database, and operating system backups to multiple Immedion sites.



Cost Savings and Freedom from IT Concerns

The City of North Miami Beach moved to Virtualized Desktop in 2014. GIS manager Don Blalock estimates that the cost of maintaining IT staff and infrastructure to maintain their GIS in-house would cost three times what the municipality spends for the cloud-based solution. Additionally, North Miami Beach can now create online maps in near real time, get reports out to employees and residents before, during, and after a hurricane, and automatically access the most current versions of ArcGIS software and service packs every time they log in, from any machine. Pinellas Park, which migrated to Virtualized Desktop in 2015, has been able to move its GIS services forward without the need for a database administrator or the need to rely on in-house IT staff. The city's GIS team members are able to access their GIS data from any location and are free to focus solely on GIS tasks such as asset management and map creation.

Increased Productivity

The SELC's move to Virtualized Desktop in 2015 allowed them to achieve their primary goals of democratizing workstation performance, so that every member of the GIS staff has the same response times and access to the same systems and same information, no matter what device they use to access the platform, or from what location. Virtualized Desktop allows employees to easily work from the organization's different offices, or from remote locations and has eliminated time spent on hardware and software updates and data backups. Nassau County switched to Virtualized Desktop in 2016. Since that time, GIS manager Jason Gregory estimates that productivity has increased at least 25 percent. Virtualized Desktop has eliminated the hours Gregory spent every week updating data, and previously siloed map and GIS information is now collected all in one repository, allowing the county's customers (residents, realtors, builders, etc.) to generate one report online and eliminating the lines out the door at various zoning offices.

“Access is available to us at all times of the day and the speed with which requests are met has exceeded all expectations,” said Paula Acre, of Key Environmental. “The Virtualization of ArcGIS for Desktop has enabled us to prepare professional reports for our clients in a very timely and cost-effective manner.”



Faster Speeds and Better Processing Power

For Key Environmental, which began using Virtualized Desktop in 2013, the solution not only increased processing speeds; it allowed them to fulfill a service to their clients that they would not otherwise have been able to provide. With Virtualized Desktop, Key Environmental is able to handle an enormous database efficiently and quickly, with no lag time, even as the database has grown from zero records to upwards of a million. Data is entered on iPads and even iPhones and Android devices in the field, while a QC manager back in the office can run QC as soon as the data is loaded.



Cloud Computing Considerations

The big names in cloud computing—think Google, Amazon (AWS), and Microsoft —provide pure infrastructure (hardware) solutions. Essentially, customers are renting a server in the cloud. The amount of server space can be scaled up or scaled back according to need, and the customer’s internal IT department or outsourced IT consultant makes the decisions about when and how much server space to acquire.

Providers like Dropbox and Google Drive, on the other hand, offer a purely service-oriented cloud-based solution, through which users can share and store certain kinds of information online. ESRI itself provides this type of solution in its ArcGIS Online, where users can store and share GIS content and even publish web maps, all in the cloud. Both infrastructure solutions and service-based solutions allow organizations to perform specific tasks that would be prohibitively expensive to run and maintain in-house.

A third type of solution is more of a hybrid that offers organizations both the infrastructure to power their ArcGIS applications in the cloud and an expert technical team to install, maintain, and update ArcGIS for Desktop and ArcGIS Online, including all the hardware, software, licensing, and IT support required to host ArcGIS server-based map services and applications.

The market for cloud Infrastructure as a Service (IaaS) continues to be defined by organizations who need more security, innovation and scale. Amazon Web Services (AWS) is the cloud-focused service provider leader most commonly chosen for strategic, organization wide adoption. AWS is the most mature, enterprise-ready provider with the strongest track record of customer success and has the largest partner ecosystem, of which ROK Technologies is one.

AWS offers a deep set of security tools to ensure the availability, integrity and confidentiality of your data and provides end-to-end privacy and security. AWS, as with all cloud service providers allow organizations to iterate, experiment and innovate quickly due to the global cloud infrastructure. This flexibility also allows for auto-scalability and elastic load balancing for when there is increased demand as well as reduced consumption.

On-premise to the cloud transformation efforts (with AWS, Microsoft, etc) are best undertaken in conjunction with a System Integrator (SI) or Managed Services Provider, like ROK Technologies. ROK Virtualized Desktop is a stable and secure infrastructure for ArcGIS desktops that frees GIS managers from the need to keep up with hardware, software, and licensing updates, allowing them to focus once again on their core responsibility: GIS.

Why ROK Virtualized Desktop?

With ROK Virtualized Desktop, organizations can:

- Save money on server purchases or hosting fees, hardware maintenance, and software updates, as well as IT resources and staff. ROK Virtualized Desktop provides organizations of every size access to the same ArcGIS platform they currently use, but with lower costs, faster processing speeds, and none of the hassle of managing legacy hardware or maintaining in-house systems.
- Increase productivity, with collaborative, interactive tools that streamline data collection, analysis, and distribution, plus a renewed focus on providing GIS services instead of maintaining the required infrastructure.
- Achieve faster processing speeds, with Citrix XenApp integration. RAM and CPU-intensive GIS applications such as ArcMap load on a dedicated cloud machine with plenty of capacity and processing power. In addition to its Virtualized Desktop solution, ROK provides ArcGIS server hosting, custom GIS application and database development, and more.



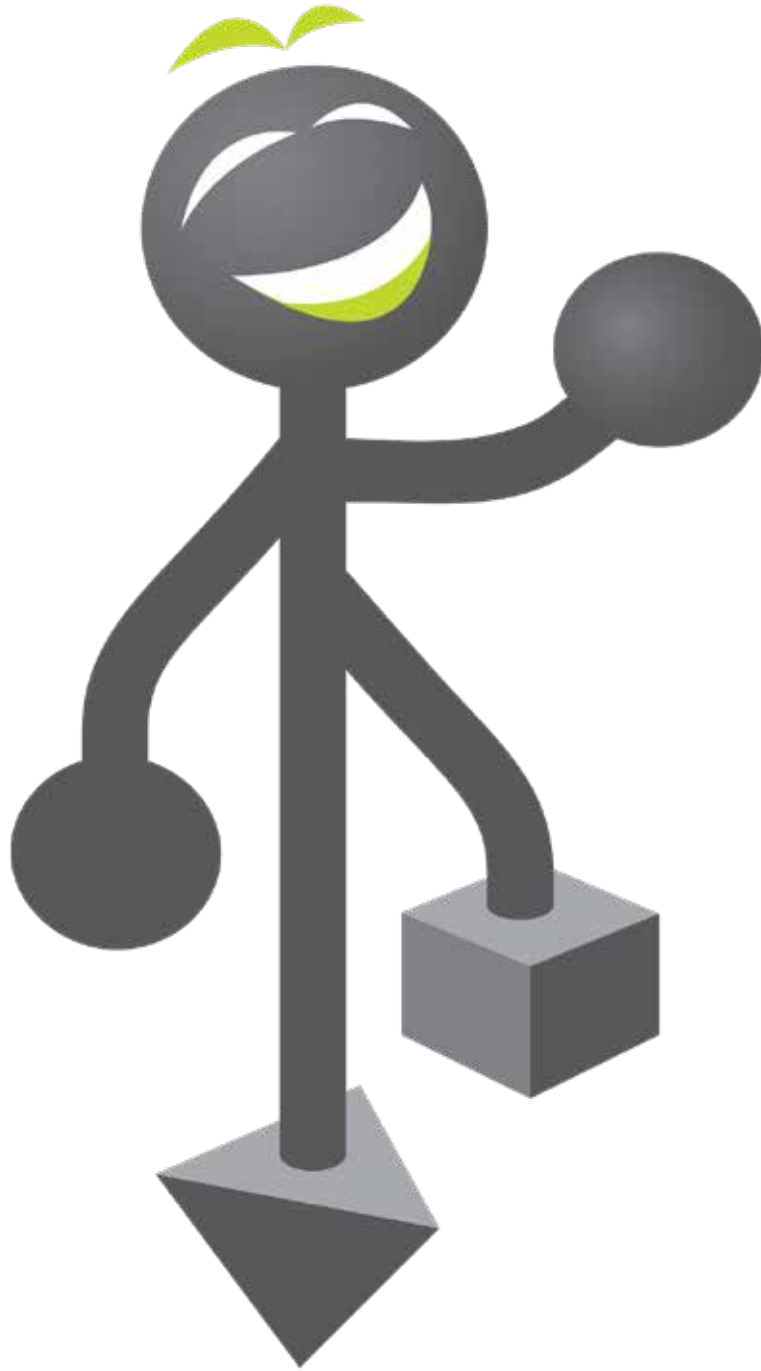
From Virtualized Desktops to cloud-based enterprise geodatabases, the ROK cloud gives organizations the ability to maintain the scalability of the public cloud while delivering a custom hybrid solution accessible anywhere, on any connected device—Mac, PCs, laptops, tablets, or even Chromebooks.

Summary/Conclusion:

ROK Virtualized Desktop provides organizations of every size access to the same ArcGIS platform they currently use, but with lower costs, faster processing speeds, and none of the hassle of managing legacy hardware or maintaining in-house systems.

ROK Technologies has been an ESRI business partner since 1997. The company has its roots in custom application development for the web with a focus on internet-based GIS, and has grown to specialize in cloud-based infrastructure and services for the ArcGIS platform.

To learn more about the benefits of ROK Virtualized Desktop, contact info@roktech.net today. We'll set up a call to discuss the specific needs of your organization and help determine how our cloud-based, virtualized ArcGIS solution and managed services can help you save money, achieve faster processing speeds, improve your overall productivity, and get back to doing what you do best: GIS.



ROK TECHNOLOGIES

Taking GIS to the cloud.

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