A primary concern of government businesses is the security of sensitive data for an increasingly mobile workforce.

90 percent of federal CIOs cited an increase in cyberattacks. Data breaches account for an estimated $637M annually across federal IT systems. To strengthen their data centers against cyber threats, government agencies are transitioning desktops to the data center, and some are migrating to Windows 10.

Agencies must simultaneously cope with budget constraints and evolving regulations. Many IT departments struggle with migrating from legacy hardware and managing multiple devices that support a wide variety of users across the organization—from lower-end computing needs like office automation to high-end engineers. To increase security, lower cost, and enable mobility, government agencies are moving to virtual desktop infrastructure (VDI)—which is sometimes challenged by desktop lag. Artificial intelligence (AI) could free up 30 percent of the government workforce’s time within five to seven years, letting them focus on more strategic tasks.

**INDUSTRY OVERVIEW**

**TYPICAL CUSTOMERS**

Institutions worldwide, including defense, intelligence, federal civilian, and state and local governments.

**COMMON APPLICATIONS**

ESRI ArcGIS, Autodesk AutoCAD, ANSYS, Adobe Creative Cloud, MATLAB, Dassault Systèmes SOLIDWORKS, Siemens PLM NX, Skype, Windows 10, and core business applications (streaming video, online training, teleconferencing)

**WHO TO CALL ON**

Decision Makers – Federal CIOs, CTOs, Executive Director of IT, Program Managers

Influencers – Solution Architects, IT Administrators

**THE SOLUTION**

Government organizations have several use cases for virtualization:

1. Modeling and simulation (ex. munitions, vehicles, aircraft, materials), military simulation and training (flight or driving simulators), geospatial analysis (GIS and imagery), CAD and CAM (engineering design), and video surveillance (camera and other sensors for physical security)

2. Office automation and Windows 10, including Skype and online training, teleconferencing, and other video and office productivity applications

3. AI and data analytics are enabling everything from smart cities to identifying flu outbreaks to helping health departments analyze tens of thousands of tweets to identify possible food poisonings.

**NVIDIA QUADRO vDWS**

NVIDIA® Quadro® Virtual Data Center Workstation (Quadro vDWS) gives traditional graphics users a secure, high-performance desktop delivered from the data center for their demanding applications.

**BENEFITS**

Centralized data for better version control and more consistency

Reduced need to move large data sets across the network from servers to client machines—enabling faster load times

Improved collaboration for employees across multiple locations

More secure access for external suppliers and contractors

Supports multiple NVIDIA GPUs in a single virtual machine (VM), to power the most demanding workflows

Reduced downtime, even during maintenance with live migration

Lower IT management costs

Enforce security in the data center by reducing the need for data at the end points

Increased employee mobility

Manage business continuity and disaster recovery centrally

Cloud-ready

**NVIDIA GRID**

NVIDIA GRID® Virtual PC (GRID vPC) and Virtual Apps (GRID vApps) deliver a high-quality virtual desktop experience for office automation and Windows 10 for public sector employees using office productivity applications and streaming video.

**BENEFITS**

Virtualized access to online training, teleconferencing, Skype, and other graphics-intensive applications

Support for increasing graphics requirements of Windows 10 and modern productivity applications

Support for multiple, high-resolution monitors, for example, up to four HD, two 4K, or one 5K monitor for increased productivity

Cost-effective solution to scale VDI across your organization

Enforced security in the data center by reducing the need for data at the end points

Increased employee mobility

Lower IT management costs

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1 DelPrete, George (2015 Jun 9) 4 Top Challenges for Federal CIOs.
4 Viechnicki, Peter, and Eggers, William (26 April 2017). How Much Time and Money Can AI Save Government?
NVIDIA VIRTUAL COMPUTE SERVER

**NVIDIA Virtual Compute Server** (vComputeServer) is ideal for data scientists and analysts running computationally intensive workloads—including AI, data science, and high-performance computing (HPC) applications.

**BENEFITS**

- Run containerized applications for machine learning and deep learning in a virtualized environment to isolate workloads and securely support multiple users.
- Harness the power of multiple GPUs in a single VM to scale application performance, important for deep learning training workloads.
- Eliminate data center silos and leverage the same hypervisor management tools for both compute and graphics workloads.
- Maximize infrastructure utilization by running compute-intensive workflows during the night when utilization of VDI is lower.

**GOVERNMENT KEY USER GROUPS**

<table>
<thead>
<tr>
<th>TARGET PERSONA</th>
<th>Use Cases</th>
<th>Recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysts, Data Scientists, Developers</td>
<td>For using AI-based applications and data science to analyze vast amounts of data</td>
<td>NVIDIA vComputeServer on NVIDIA T4 Tensor Core GPUs, Quadro RTX™ 6000, RTX 8000, or NVIDIA V100S Tensor Core GPUs</td>
</tr>
<tr>
<td>Engineers, Simulation and Training</td>
<td>For remotely viewing and editing very large 3D models and images; for vehicle flight simulator, collective, individual, and cyber training</td>
<td>Quadro vDWS on NVIDIA T4, Quadro RTX 6000, RTX 8000 or P6 for blades (supports up to two 8K or four 5K displays)</td>
</tr>
<tr>
<td>Knowledge Workers</td>
<td>For general-purpose VDI using virtualized Linux and Windows 10 common office productivity apps</td>
<td>GRID vPC on NVIDIA T4, M10, or P6 for blades (supports one 5K, up to two 4K, or four HD displays)</td>
</tr>
</tbody>
</table>

**THE NVIDIA VIRTUAL GPU SOLUTION**

The NVIDIA virtual GPU solution brings graphics acceleration to the data center. It requires both hardware and software licensing components:

- **NVIDIA VIRTUAL GPU SOFTWARE.** Choose either GRID Virtual PC, GRID Virtual Apps, Quadro Virtual Data Center Workstation, or NVIDIA Virtual Compute Server plus the appropriate SUMs (Support, Update, Maintenance) option for your needs.
- **NVIDIA DATA CENTER GPUs.** NVIDIA GPU accelerators in certified server platforms run the NVIDIA virtualization software. Choose from density-optimized, performance-optimized, or blade-optimized solutions.

**NEXT STEPS**

**KEY QUESTIONS TO ASK:**

- Are you struggling with user experiences and performance as you migrate VDI users to Windows 10?
- Did you know that Windows 7 End of Support is January 2020?
- Did you know that Windows 10 is the most graphically intensive OS to date and modern productivity apps require graphics acceleration to function properly?
- Are you looking to reduce and consolidate your data center footprint?
- How are you managing the devices of your mobile workforce?
- Are you concerned about the security of your data with mobile employees?
- Do you have users who are doing a lot of modeling, simulation, and online training?
- Would you like to enable your engineers to complete simulations faster and work with larger model sizes in their VDI environment?
- Would you like to spend less on software application licensing, while delivering better performance?
- Which graphics applications are you using today?

**CLICK TO LEARN MORE ABOUT:**

NVIDIA Virtual Compute Server
NVIDIA Quadro Virtual Data Center Workstation
NVIDIA GRID vPC/vApps
SUMs
NVIDIA Data Center GPUs
Certified Servers

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