

EMC GEOSPATIAL INFORMATION SYSTEM (GIS) CLOUD SOLUTION FOR THE PUBLIC SECTOR

A turnkey cloud platform to support the capture, analysis, and display of ArcGIS geographical information for local, state, national, and federal departments and agencies

ESSENTIALS

The EMC GIS Cloud solution enables public sector agencies to do the following:

- Facilitate anytime, anywhere access to Esri ArcGIS geographic information
- Serve geographic information to towns, cities, municipalities, states, federal departments, and other governments, simultaneously, without performance impact and more quickly than ever by leveraging a common geospatial data pool
- Support workers' desire to use hand-held devices for access from field or home
- Optimize performance and reduce overall costs by leveraging the lab-tested Vblock infrastructure platform (EMC, Cisco, VMware, Intel)
- Deploy a government-managed, shared-services model or deliver hosting capabilities as a service provider; charge back to departments to recoup costs; conceive of new revenue streams
- Support open data initiatives such as the UK national crime mapping alliance
- Reduce solution procurement time due to a single point of contact (at VCE)
- Better serve, protect, and encourage citizen involvement

PUBLIC SECTOR CHALLENGE

In the public sector, GIS (Geospatial Information Systems) are not new. Most agencies already know the power of GIS applications to transform raw data into interactive graphical maps.

It's the data explosion they're challenged with. In fact, according to Daratech, GIS data has grown at a compound annual rate of 15.5 percent for the last eight years—about twice the rate of growth for GIS/geospatial software and services.

Across many agencies, there's an acknowledged need for GIS data consolidation and sharing to improve decision making, deliver better citizen service, and reduce operating costs.

THE VALUE IN MOVING TO CLOUD-BASED GIS

Traditional ways of serving GIS applications, where each agency deploys a physical standalone GIS system with its own dedicated storage and processor, are inefficient and costly to maintain. IT asset utilization rates remain low because resources aren't shared. Worse, data becomes duplicated and out of sync across agencies, yielding inconsistent conclusions.

Fortunately for the public sector, where budget pressures are greater than ever, virtualization, cloud, and shared service technologies are now available from EMC, Cisco, VMware, and Intel which, when combined, enable agencies to consolidate their GIS data into a common pool.

Municipalities and agencies dial into the same shared GIS data repository. They access and analyze layers as needed. They create knowledge and actions, confident they're working from the same consistent data baseline.

Here are some examples of how agencies can benefit from an EMC® Vblock™ cloud-based GIS solution:

- **Transportation departments.** Queues and traffic bottlenecks are detected, trains and buses are added, street lights adjusted, and new traffic patterns are simulated, visualized, and monitored in real time.
- **Emergency management, fire, water, and sewer.** Data layers are analyzed and shared across departments to locate underground sewer and gas lines, evacuation centers, and hospitals. Dignitaries are tracked. Emergency responders meet citizen needs quickly through advanced planning.



“We should see stepped-up government purchases of GIS/geospatial technologies in the next few years to handle all the additional images and data they are collecting.”

Charles Foundyler,
CEO, Daratech

“State departments ask us for better ways to pool their ArcGIS information, and now, thanks to our partnership with Esri and the testing we’ve done on Vblock in the lab, we can deliver.”

Bethann Pepoli,
CTO State and Local Government, EMC

“Thanks to the integrated design of the Vblock, our customers can rapidly implement ArcGIS in a cloud deployment model, and with centralized management, they can offer efficient, flexible, and highly responsive GIS services.”

Jack McCarthy
Esri

- **Intelligence agencies.** Service and military personnel traverse unknown territories with greater confidence. Governments survey various landscapes in real time to detect unusual patterns. Suspects are chased and topology is analyzed for best mission routes.
- **Local planning and social services.** Residents can view neighborhood demographics, school trends, and real estate trends. Property boundaries and markers are noted. Correlations between acreage and tax revenue uncover inconsistent assessment values.

COMPONENTS OF THE EMC GIS SOLUTION

EMC’s number one design principle was to offer an open, scalable, reliable, and secure environment from which to serve geographic information—at an affordable price—across agencies and directly to citizens. EMC also recognized the need to provide a solution that could grow in line with the GIS data explosion, one that’s simpler to procure and enables governments to add capacity as needed.

VBLOCK INFRASTRUCTURE FOR GIS CLOUD

The solution is based on the Vblock Infrastructure Platforms from VCE, a coalition of which EMC is a significant part. VCE has delivered the industry’s first completely integrated IT offering that combines best-in-class networking and compute components from Cisco and Intel; storage, security, and management technologies from EMC; and virtualization capabilities from VMware. Seamless support assures end-to-end vendor accountability. This pre-integrated, converged infrastructure enables rapid virtualization deployment so government departments can quickly see a return on investment. Vblock Infrastructure Platforms offer varying storage capacities and processing and network performance, and they support such capabilities as enhanced security and business continuity.

INDUSTRY-LEADING ESRI ARCGIS APPLICATION SUPPORT

Esri’s ArcGIS application is seen most often in government. Working with Esri and VCE, EMC conducted functionality testing in the lab. Installation and workload testing was performed to prove the solution. Esri’s ArcGIS Server suite on a Vblock infrastructure platform can be deployed via a variety of different service scenarios. A municipality can install and operate its own GIS Cloud. A country or state government may install a GIS Cloud and make it available to all municipalities from across the state. Or, it may be preferable to engage with a service provider for a hosted service.

ACCESS DEVICE SUPPORT

Users can access the EMC GIS Cloud solution via Intel-based PCs, Apple MACs, tablets, and/or mobile phones. Thanks to EMC’s VDI solution, enabled by VMware® View™, the users feel like they are “virtually” in front of the geospatial information—no matter where they are physically. In addition, the EMC solution supports the mobile applets being developed by Esri and other GIS application providers.

CHARGEBACK AND REPORTING

The EMC GIS Cloud solution can use “charge backs” as a way for individual departments, agencies, or municipalities to be billed for their use. For example, some departments, like Planning and Criminal Justice, might have more active, daily users than others, and want realtime access to visualized information, while other departments, such as Emergency Management and Transportation, may simply need ad-hoc access. Charge backs “apportion” costs based on each of these department’s actual usage levels. The Unified Infrastructure Management (UIM) module that’s available with Vblock can help with this.

DID YOU KNOW?

- The Crown Estate (UK) pools 90 organizations' GIS data for more sustainable planning
- Montana's GIS supports 14 million Internet requests and 500 GB of data flow every month
- Oregon manages four terabytes of geospatial data, expected to grow to 15 terabytes in four years
- Colorado operates a hybrid GIS cloud, inclusive of public-facing and employee-only data sets
- Central Government of China protects farming rights and enhances food security with GIS
- FEMA (Federal Emergency Management) tracks flood maps for more than 20,000 communities

BIG DATA BACKUP AND PROTECTION

As an added option, EMC offers a suite of backup and protection software and services to ensure government GIS operations continue—no matter what. EMC Data Domain®, for example, an award-winning data deduplication technology, eliminates the cost of storing multiple copies of the information. EMC NetWorker® software helps you back up your GIS data within the available time window.

SUMMARY

GIS is a dynamic IT environment. Hardware and software vendors are coming together to provide a better understanding of industry and workload patterns. They operate different workflows and processes, but what is consistent is the need to capture, analyze, and display exploding volumes of geographical information across multiple public sector departments. To aggregate, deduplicate, and make consistent your multiple pools of GIS data into one shared repository is the mandate for today.

With the EMC GIS Cloud solution, you can do that. You'll become more efficient in the way you manage your GIS data. Your operating costs will decline. Citizens and staff will become more empowered. Ultimately, you'll gain more business value from the information, rather than spending all your resources and time just managing it.

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.

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