

The Journey to the Private CLOUD

Introducing the first private cloud solution that gives you what you need, without compromise.

- ✓ Best-in-class technology
- ✓ Consolidated, integrated infrastructure
- ✓ Defense in Depth Security
- ✓ Worry-free, single point of contact support
- ✓ Lower TCO
- ✓ Energy efficient

As virtualization and automation have taken hold in government, agencies have begun to experience the myriad benefits that come with it—greater flexibility and efficiency, reduced costs, and fewer management headaches. But that's only phase one. Phase two—a move to private cloud computing—will bring even greater benefits, from increased security to flexible, on-demand provisioning of services and technology.

Private clouds are pooled 'corporate' IT resources that provide flexible, on-demand, fully scalable services. Private clouds 'live' behind agency firewalls and are tailored to agencies' unique requirements around security and management control over services and infrastructure, while still giving IT organizations the agility required to meet ever-increasing demands for services.

Vblock, an innovative solution from Cisco, EMC and VMware and powered by industry-standard Intel Xeon processors, is a foundational building block of a private cloud. This fully integrated, tested and validated package enables the delivery of infrastructure as a service. Users can provision services, reduce capital expenditures, optimize operating costs, and improve IT staff productivity—without significantly increasing their workload.

"There is no reason for government and education leaders to wait. All of the technological innovations for implementing the Infrastructure Cloud have matured and are ready for public sector adoption."

—Teresa Bozzelli, Vice President, Government Markets, Bozzelli Enterprises Inc.

What exactly is Vblock?

Vblock Infrastructure Packages are fully integrated, tested and validated COTS packages that provide the basis to create, define, orchestrate and deliver IT services and resources – in other words, the primary building block of cloud computing. It supports the broadest range of operating systems and applications, enabling agencies to rapidly migrate existing applications easily and quickly.

Begin your private cloud journey without having to build the vehicle yourself

- ✓ **Best-in-class technology**
Vblock Infrastructure Packages are ready to deliver reduced TCO for IT infrastructure and proven virtualization capabilities for today's most mission-critical environments. The combination of best-in-class virtualization, networking, computing, storage, security and management technologies improves service levels, operational predictability, compliance, security and reduces risk.

Here is just one example: Cisco's Unified Computing System Manager acts as a central nervous system for Vblock, providing centralized automated management capabilities. This powerful software:

- Reduces TCO at the platform, site, and organizational levels
- Increases IT staff productivity and business agility through just-in-time provisioning and mobility support for both physical and virtual environments
- Enables scalability through a design that accommodates up to 320 discrete servers and thousands of virtual machines in a single highly available management domain

- ✓ **Consolidated, integrated infrastructure**
Vblock Infrastructure Packages are pre-integrated, pre-tested and pre-validated. That means that every piece of the architecture—server, software, storage, virtualization, networking, security and management technologies—works seamlessly together in one packaged solution. And because it's pre-integrated, it provides a base platform from which to easily customize solutions to fit unique usage requirements.

"The federal cloud market will increase to \$800 million by 2013."

—INPUT, "Evolution of the Cloud: The Future of Cloud Computing in Government," 2010

It's what's under the hood that counts.

Though cloud computing makes it easier for government agencies to add new services quickly and scale them as needed, it also places new demands on data center computing resources. This requires a virtualized server infrastructure with the flexibility to quickly allocate capacity in response to demand.

✓ Defense in Depth security

The tight integration and engineering around the Vblock solution has created the most consistently secure architecture possible. With VM-Aware networking, security policies are replicated and automatically enforced across all physical and virtual machines on the network. Changes or additions to security policies are immediately reflected across the infrastructure. Vblock's ironclad security is due in part to:

- Cisco's Nexus 1000 virtual switch, together with V-sphere 4.0, ensures that as new virtual machines are created, existing security policy is replicated in each machine
- Cisco's VN-Link connects the virtual machine and interface of the physical server. VN-Link allows for real-time policy-based configuration, mobile security and network policy
- EMC's RSA security is layered on the Vblock architecture for policy management of identity, data and infrastructure

✓ Worry-free, single point of contact support

Because Cisco, EMC and VMware worked so closely together to create Vblock, you can count on end-to-end vendor accountability. But at the same time, we have simplified the support infrastructure, creating the "one throat to choke" model that customers prefer. To further enhance the experience, customers may choose their own primary point of contact for support, so there is only one number to call—whenever you need it.

✓ Lower TCO

Vblock reduces total cost of ownership at the platform, site and organizational levels. Because Vblock is a COTS package, there are few, if any, startup costs. What's more, it's easy to provision and is virtualized for optimization and scaling. All of these factors lead to higher IT staff productivity and organizational agility.

✓ Energy Efficient

By consolidating previously underutilized servers and managing assets more efficiently, a cloud computing architecture can dramatically reduce energy consumption in data centers—notoriously significant energy consumers. Fewer devices use less energy for power and cooling—and they also use less real estate!

Imagine the possibilities.

- A major defense agency develops a private cloud, including services for infrastructure, platform and software, via a self-service portal over the agency's internal network. With this platform, users throughout the department can receive and customize their computing environments within 24 hours.
- An agency dedicated to helping victims of disaster must make sure that when disaster strikes, agencies can easily and quickly access information and services. Cloud computing solutions based on the building blocks of Vblock can be quickly scaled to provide IT services where needed.
- A military organization must get computing infrastructure in place quickly when new units are deployed. Using Vblock in a containerized data center format, newly deployed combat teams would receive rapidly provisioned IT services for use in-theater.
- A Federal agency is responsible for disseminating health-related information to local healthcare departments. By using a private cloud solution built on Vblock, it can quickly provision IT resources to deliver information and software—a critical capability when faced with an outbreak or flu pandemic. This structure also allows state and local governments to tap into the cloud infrastructure on an as-needed basis without having to deploy separate data services for each locale.
- The innovative Nebula cloud-based self-service platform is a giant step forward for NASA. It will provide cost-effective software-as-a-service applications and other cloud computing services for government and private organizations.

"Cloud computing in general has a lot of potential. The federal government will be rethinking the model of creating a center of gravity for technology, in that we're not making investments multiple times in the same technology."

-Vivek Kundra, Federal CIO, January, 2010

Accelerate the Journey to Private Cloud Computing.

The Virtual Computing Environment (VCE) coalition, formed jointly by Cisco and EMC with VMware, represents an unprecedented level of collaboration in development, services and partner enablement to minimize risk during an organization's journey to the private cloud. To learn more, visit www.cisco.com/go/vce

