



Putting simplicity and security at the heart of private clouds

The bullion cloud platform provides a ready-to-run solution meeting the highest SLA levels, while keeping IT infrastructures simple. Delivered in a single rack, it is based on innovative scalable bullion servers with Bulls' own banking class security offer, combined with best-in-class partner offerings, validated and integrated. With the bullion cloud platform enterprises are able to implement a secure private cloud, regardless of the type of application, database or infrastructure SLA level requirements.



Introduction

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Private clouds, built on pervasive virtual infrastructures, are increasingly appealing to organizations looking to deliver IT resources to end-users faster, more reliably, at a lower cost.

However, bringing a private cloud and pervasive virtualization to reality could be a daunting task. Security matters as well as the complexity of hardware and software infrastructures may become real challenges for enterprises. At this point they need to have a partner understanding the requirements of business critical applications on their private cloud to meet Service Level Agreements through flexibility, agility and security.

With bullion cloud platform, Bull has developed, evaluated, selected, implemented, and tightly integrated the best-in-class hardware and software targeting the most demanding needs of enterprises. Moreover, Bull has designed three pre-packaged configurations: Discovery, Department and Enterprise, to closely target the needs of a developers' team, of a small to medium organization, or of enterprises with the highest requirements in terms of performance and security.

Each bullion cloud platform includes innovative scalable bullion servers integrating VMware vSphere5 and vCloud Director 1.5 combined with best-in-class partner offerings, such as EMC storage, Brocade Unified Networking and Commvault backup, validated and integrated by Bull. The whole platform benefits from Bull's own banking class security offer.

Delivered in a single rack, the bullion cloud platform provides enterprises with a ready-to-run solution meeting the SLA levels required for any type of application, while keeping IT infrastructures simple.

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Making private cloud infrastructures simple again

Today's cloud offerings are all based on hundreds and even thousands of small, fairly poor performing blade servers. The scale-out architecture of blade servers does not facilitate the task of the IT Department when it has to meet the increasing power demand from resource-intensive applications or databases. In addition, multiple physical servers make administration tasks and networking management much more complex. With bullion cloud platform, enterprises can just deploy few physical servers, and meet most users' requirements, without wasting investments in unused resources and in infrastructures' management.

The bullion cloud platform architecture ensures simplicity in your datacenter

bullion cloud platform can host thousands of applications as well as the most demanding database since it includes bullion servers that provide all the power of the VMware vSphere5 scalability. No other server on the market will make things easier. In fact bullion cloud platform scales up and out, twice better than any other market player.

Your infrastructure scales at the pace you need it

Thanks to bullion modular architecture, enterprises' staff can focus on innovation and service delivery instead of having to configure separate components, scanning for potential security breaches and tuning.

Supporting the most demanding applications and databases

The bullion cloud platform is the only cloud platform based on bullion, the fastest and most scalable virtualization server on the market.

With an ultra fast bus, up to 160 cores and 2024 GB of central memory, a single bullion server can support large databases in private clouds, requiring 100,000 IOps, in a cost-effective way.

Over 500 applications hosted on a single server

bullion has shown the full potential of VMware vSphere5 and vCloud Director 1.5, as it can host over 500 applications on a single server, reducing the administration and increasing the performance with low-latency application interaction and simplifying the IT architecture.



Delivering efficient data center management

At the heart of the cloud platform, VMware vCloud gives end-users secure, on-demand access to shared infrastructure resources and simplified datacenter management. vCloud offers a cloud without compromise – run an efficient cloud securely within your datacenter. The solution, which combines vCloud Director, vCenter Chargeback, and vShield Edge, extends VMware’s virtualization technology to further pool datacenter resources, including compute, storage, network, and security, into “virtual data centers.” These secure and elastic resource containers can then be shared between users and accessed through self-service portals. And, because they are completely decoupled from the underlying hardware, applications can be easily moved between compatible clouds and that infrastructure can be managed more efficiently.

Policy-Driven Management & Security

Companies prepared to run workloads on cloud infrastructure require security and performance SLAs, especially when consolidating multi-tenant business units onto the same infrastructure.

vCloud Director offers the ability to manage shared infrastructure with confidence.

Multi-tenant organizations can run on shared infrastructure with security and access control to ensure the lowest cost of delivery.

Agile Access to Cloud Infrastructure

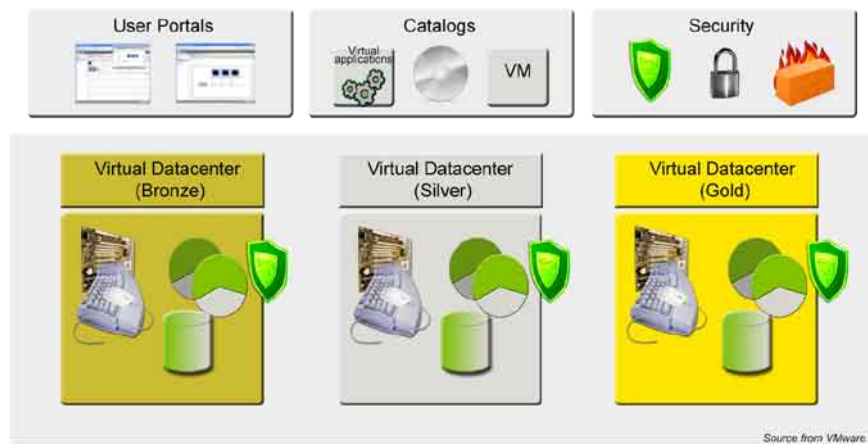
End-users have begun going around corporate IT to use third-party commodity public clouds in search of agility.

vCloud Director provides the ability to offer infrastructure-as-a-service to accelerate the rate of provisioning. End-users can get access to standardized virtual machines with greater speed and agility.

Portability with Hybrid Cloud

As companies look for flexibility and cost efficiency, they want to avoid being locked down with a specific deployment model.

vCloud Director offers the ability to deploy standardized vApp workloads on either a private, public, or hybrid basis. Companies are able to get the benefits of infrastructure-as-a-service without losing the flexibility to migrate workloads.



Data center Management Architecture

Protecting information with the highest security levels

Strategies revealed, trade secrets copied, client files raided, image and credibility damaged... the list of risks is a long one and the amount of potential damage colossal. Today, the need to protect information assets is often coupled with a legal requirement to guarantee that actions can be tracked and audited. Against this backdrop, businesses and public sector bodies must not turn their backs on the enormous potential of cloud computing, but instead take into account the essential precautions that will enable them to innovate and grow in complete confidence.

This is why the bullion platform embeds the highest levels of security to ensure controlled access, secure connections and monitors safeguarding of data.

Keeping access secure

The way people interact with information systems is at the heart of all security policies. The vital role played by digital identity management systems is to only allow authorized personnel to access applications and data. This is why Evidian I&AM9, the comprehensive Identity and Access Management solution is integrated into the bullion cloud platform.

I&AM9 enables the identities of those who belong to an organization to be managed centrally, authenticates everyone who connects to the system, manages their access rights as a function of their job role and tracks the connections they make to ensure regulatory compliance. A trusted specialist thus ensures that the right people get access to the information they need, available inside a private or public cloud.

Protection against data loss

To help its customers protect themselves against data loss, and especially industrial espionage, Bull has designed visibull, an innovative DLM (Data Leak Monitoring) solution.

It enables sensitive documents to be dynamically identified and catalogued, based on the organization's own rules (keywords, intended recipients), then incorporates a fingerprint that allows them to be recognized even if they have been altered or disguised in some way (by cut and paste, document capture), and finally monitors network flows to detect any inappropriate leaks with no impact on network performance.

Defense-level encryption of data and transactions

The Enterprise cloud platform is validated with TrustWay encryption, to encrypt data, especially the personal ones and transactions. Ideal to ensure data security in hybrid-clouds, if data does fall into the hands of an unauthorized person, TrustWay defense-level encryption maintains its confidentiality along legislation requirements. Bull is one of the Europe's leading experts in cryptography, with for example, on-line tax declarations in France and solutions that meet defense standards.

Supporting huge volumes of data in a secured environment

Optimizing huge volumes of data with a complete security is key to implement secure private clouds within the enterprise. As an expert integrator of storage solutions, Bull has put its unique skills, tools and partnerships to design, validate and optimize the management of your data on the bullion cloud platform and provides tailored assistance to ensure rapid, well-managed implementation. With EMC - a Bull partner for more than 18 years - Overland, CommVault and Brocade, Bull has selected the best technologies to embed into the bullion cloud platform.

An automated and economical unified storage

The bullion cloud platform includes the EMC VNX and VMax storage systems for an automated and economical unified storage with pace-setting performance, optimized for virtual applications.

The EMC storage offer provides tightly integrated management by Unisphere with visibility into the entire environment, coupled to an excellent interoperability between EMC storage and VMware software.

The industry's most powerful networked storage

The Enterprise cloud platform is sized with the EMC VMwax storage systems as the foundation of the virtual data centers of the future with the industry's most powerful networked storage. EMC VMax provides hundreds of petabytes, and millions of IOPs all controlled through a single Management Console, providing a maximum of architectural simplicity.

Storage optimization and efficient application protection embedded into the bullion cloud platform

The implementation of a private cloud computing requires changes to data backup strategies. A backup environment designed for a physical server and its applications is not necessarily efficient in a private cloud environment with virtual machines. It involves new constraints: VM sprawl, lack of flexibility and performance, difficulties to respect backup windows.

But it also provides new opportunities: multiple backup options, granular recovery options, from Single File Restore to easier Disaster Recovery. Protecting a private cloud is not limited to the backup of the VMs, there are needs for storage optimization and efficient application protection. bullion cloud platform provides the appropriate solution to enterprises to enable them to manage high volumes of data and to secure them within private clouds.

bullion cloud platform offering

To cover the requirements of developers' teams as well as those related to the implementation of mission-critical applications Bull provides three cloud platform configurations. Each configuration is pre-defined, optimized, validated and pre-packaged, for a rapid and risk free deployment. In addition it can scale easily as the business grows.

Discovery cloud platform: this configuration meets test and development requirements and provides fast provisioning, with a Pay-as-you-go. It is designed to optimize support costs and maximize server utilization rates.

Department cloud platform: to provide a cost-effective solution for small and medium organizations which need to host numerous applications on a simple infrastructure. This configuration meets SLA levels for business applications and ensures the related security levels.

Enterprise cloud platform: to meet any level of SLA. It provides banking-class security, the ideal platform to bring business critical applications and databases to the cloud.

Cloud platform configurations: overview

	Discovery Agility	Department Costeffectiveness	Enterprise Security
Use	Tests and developments	Infrastructure applications such as: messaging, internet service	Enterprise critical data such as SAP, Weblogic, data bases...
Benefits	Fast access to new temporary resources	High density consolidation Simplified infrastructure Improved TCO	Secured heavy production Quality of service Banking-class security Ultra fast
Reliability	Memory Protection Simple Backup	Memory Protection High Availability Simplified Management	Memory Protection, Enterprise Backup, global PRA
Scalability	Cloud Services Web-provisioning 300 Virtual Machines	Hyper consolidation: 168 applications on a single 4-socket server 500 Virtual Machines	Hyper Scalability: 8 to 16-sockets 700 Virtual Machines

Cloud platform configurations: main features

	Discovery Agility	Department Cost-effectiveness	Enterprise Security
HW resources	<ul style="list-style-type: none"> • 3x novascale bullion servers with 72x cores (Intel® Xeon® E7-4830), native VMware vSphere 5 embedded, • 576GB of total RAM (192GB per server), • 36x1Gb/s of total Ethernet ports connected to 1Gb/s Brocade switches for LAN and SAN connectivity, for fast, reliable and cost-efficient network connectivity, • EMC VNX-e with 20x300GB SAS disks drives, Unisphere with thin provisioning, file deduplication and local replication, seamless VMware integration, VNX CFS/NFS support, local protection suite. 	<ul style="list-style-type: none"> • 3x novascale bullion servers with 120x cores (Intel® Xeon® E7-4850), native VMware vSphere 5 embedded, • 1536GB of total RAM (512GB per server) • 18x10Gb/s of total converged network ports connected to Brocade VDX switches. Leveraging Brocade VCS fabric technology, enabling cloud-optimized, networking. • EMC VNX with total capacity of 20TB Unisphere, with virtual provisioning, VNX FASTSuite to automatically optimize for the highest performance and lowest storage cost. 	<ul style="list-style-type: none"> • 3x novascale bullion servers with 240x cores (Intel® Xeon® E7-4870), native VMware vSphere 5 embedded, • 3072GB of total RAM (1TB per server), • 36x10Gb/s of total converged network ports connected to Brocade VDX switches. Leveraging Brocade VCS fabric technology, enabling cloud-optimized networking, • EMC VMax the industry's most powerful networked storage, providing hundreds of petabytes, millions of IOPs, all controlled and integrated into a single Management Console.
Resources allocation model	70% Pay-as-you-go 15% Allocation model 15% Guaranteed resources	75% Allocation model 10% Pay-as-you-go 15% Guaranteed resources	80% Guaranteed resources 15% Allocation model 5% Pay-as-you-go
Security	<ul style="list-style-type: none"> • Secure VMware hypervisor deployment, • Embedded HW security feature support including redundant Hot-swap fans, I/O adapters, memory protection, • VMware vShield Edge. 	<p>In addition to Discovery</p> <ul style="list-style-type: none"> • Commvault Simpana for Enterprise disk-based backup, • Bull Performance Report to gain a Global View of business service performance, • Encrypt data where it's created, disk-based WORM functionality, anti-virus integration and alerting. 	<p>In addition to Department</p> <ul style="list-style-type: none"> • visibull Dataleak Management to protect against data loss, and especially industrial espionage, • Evidian IAM: to ensure security policies. The way people interact with information systems is at the heart of the bullion cloud platform, • Bull TrustWay encryption solution.
Integrated software	<ul style="list-style-type: none"> • VMware vSphere 5, • VMware vCloud Director 1.5, • vShield Edge, <p>Management</p> <ul style="list-style-type: none"> • VMware vCenter with plug-ins of: <ul style="list-style-type: none"> • Bull System Manager • EMC Unisphere • Brocade 	<p>In addition to Discovery Management</p> <ul style="list-style-type: none"> • Commvault Simpana for Enterprise disk-based backup, • Bull Performance Report: Activity Monitoring for IT Operations, • VNX plug_in for VMware for provisioning, management, cloning and deduplication. 	<p>In addition to Department</p> <ul style="list-style-type: none"> • Evidian IAM: to ensure security policies are obtained. The way people interact with information systems is at the heart of the bullion cloud platform, • EMC FASTsuite and Security and Compliance Suite, • Bull Performance Report Activity Monitoring for IT Operations to gain a Global View of business service performance.

The journey to the Cloud with Bull

Cloud Computing is set to deliver important benefits to enterprise IT. Improved flexibility and IT business alignment will be the outcome of a transition to a services-driven approach. Better financial efficiencies are expected to be obtained through further steps in rationalization of infrastructures and automation.

In the journey to the Cloud, IT will be significantly altered in management and governance. The management of IT will dramatically shift from a component-based model to a service-based model, supported by automation. Critical IT governance functions such as sourcing and compliance will have to encompass a much wider spectrum due to the diversity of service sources and associated SLAs. Additionally, security will plan an ever-increasing role as enterprise IT expands across more networks and systems beyond the enterprise boundaries.

With such compelling changes on the IT agenda, the Cloud journey will require careful navigation for IT managers. As they develop the business case for Cloud, they will have to carefully balance all options, and leverage methodologies, tools and technologies. With its advisory services-based approach, Bull may provide a global framework for execution. As part of the critical items on the list, implementing a standardized, fully-functional yet simple Cloud platform will be top priority. This is the key role of the bullion cloud platform.

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