TRANSFORM YOUR BUSINESS: BIG DATA AND ANALYTICS WITH VCE AND EMC

Vision

Big data and analytic initiatives within enterprises have been rapidly maturing from experimental efforts to production-ready deployments. Businesses are increasing pressures on IT to extract greater value from information generated by web, social media, mobile, and other untapped data sources while making it easy to support a larger user population and allow for greater insights from the existing environments. In planning and revamping analytical efforts, embracing big data projects, such as Hadoop, as part of the enterprise architecture is becoming a crucial part of strategic efforts to drive competitive advantage in making decisions and running operations. For this reason, business impetus to evolve Hadoop implementations from being reliant only on commodity hardware to being ready to be deployed on enterprise-class infrastructure is at an all-time high.

In advancing from proof-of-concept environments to production-ready infrastructures, businesses are seeking to:

- Augment core business processes and decisions with big data
- Increase virtualization, multi-tenancy, and data protection-run IT-as-a-service
- Meet security, governance, and compliance requirements with data oversight and visibility
- Ensure mission-critical availability and performance tuned to business needs
- Drive standardization across data centers and ensure flexibility for logical and physical change
- Adapt to deployment demand incrementally with a mix and match of technology components

Formed by Cisco and EMC with investments from VMware and Intel, VCE is the leading innovator of converged infrastructure systems. Customers rely on VCE for the fastest deployment of infrastructure and applications, the highest performance and availability, and the lowest Total Cost of Ownership (TCO). EMC is a global leader in enabling businesses and service providers to transform their operations and deliver information technology as a service (ITaaS). Fundamental to this transformation is cloud computing. Through innovative products and services, EMC accelerates the journey to cloud computing, helping IT departments to store, manage, protect, and analyze their most valuable asset—information—in a more agile, trusted, and cost-efficient way. VCE and EMC are now helping our customers simplify, speed, and adapt their cloud deployment to drive better business
outcomes on a converged system. Unlike traditional approaches where big data projects were confined to limited business units or research efforts, our approach enables organizations to drive revenues, control cost and risk, protect against privacy and security concerns, and meet compliance and governance mandates with their big data and analytics initiatives.

Solution Overview

The solution exploits Vblock™ System with VCE Vision™ Intelligent Operations and Vblock™ Data Protection with EMC’s selected portfolio of solutions for big data and analytics. Featuring Compute and Network technology from Cisco, Storage and Data Protection from EMC, and Server Virtualization and Virtualization Management from VMware, Vblock Systems are the most innovative, converged infrastructure in the industry. VCE Vision software discovers the physical and logical configuration of Vblock Systems, including the system definition, release compliance, and operations automation package; and delivers API integration with a customer’s choice of data center management frameworks. Uniquely designed to help organizations achieve the highest levels of reliability, security, availability, and performance, EMC’s comprehensive portfolio, including storage products such as EMC Symmetrix VMAX, VNX, and Isilon, and production products such as EMC Avamar, Data Domain, VPLEX, and RecoverPoint, are crucial components of Vblock Systems. For structured data in particular, organizations can choose Symmetrix VMAX for powerful, highly-secure operations, or VNX for the highly-performant density needs of unified operations. For unstructured data including files, businesses can use Isilon for scale-out, Network Attached Storage (NAS) with native Hadoop Distributed File Systems (HDFS) integration. This solution is open for organizations to deploy Hadoop distributions and other analytics of preference such as SAS and to support traditional databases and other systems and applications as part of the analytic value chain. It also empowers businesses to virtualize Hadoop deployment with VMware vSphere Big Data Extension (BDE) for operational simplicity, better resource utilization with multi-tenancy, and enterprise-class scaling and availability.

Addressing Industry Challenges

Organizations have recently increased their investments in big data and analytics initiatives to support corporate mandates to drive customer acquisitions, improve operations, reduce cost and risk, and better manage risk and fraud. In many cases, business owners have worked with analysts and data scientists to derive business rules to spot new patterns and create new offerings, derive new rules, and fine-tune algorithms to innovate new solutions as part of research and development. Others have built Hadoop and adjacent solutions in the commodity hardware that needs transitioning to the next generation infrastructure for which mission-critical availability and performance, interoperability with the rest of enterprise architecture, and privacy and security are mandatory. In evaluating the current and future architecture, the following challenges have become clearer:
To migrate or continue replicating data that is part of the core systems to create an integrated architecture is time-consuming and inefficient.

Business demand is unpredictable and demands a service-driven approach. However creating an environment to quickly provision new services is harder without multi-tenancy and virtualization.

Commodity hardware with direct attached storage (DAS) is harder to manage as an enterprise infrastructure due to privacy, security and security concerns, and lack of IT oversight.

Availability and performance are becoming greater issues as aggregating a larger set of scattered data including social and mobile data across the enterprise is a significant undertaking while businesses demand more stringent SLA end-to-end.

Big data deployments based on commodity hardware are harder to replicate across data centers. Dedicated appliances, while useful for specific analytics, are harder to upgrade and to migrate technology components to newer generations.

Difficulties in integrating legacy environments with new data and applications for analytic purposes incrementally.

**Big Data and Analytics on Vblock™ Systems**

When deploying big data and analytics on Vblock Systems, businesses can enjoy the benefit of standardizing on the optimized infrastructures across data centers while choosing the right set of compute, network, and storage for the big data and analytic use cases. For example,

- Achieve elasticity, scalability, and reliability benefits on Vblock System 300 or Vblock System 700 family utilizing Cisco B-series and best-in-class networks, and EMC VNX or Symmetric VMAX.

- Ensure mission-critical readiness of Hadoop deployment with EMC Isilon deployed on Vblock 300 or Vblock 700 family to exploit multi-tenancy, virtual/bare-metal implementation, HDFS integration, privacy, and reliability advantage.

- Drive operational and performance gains running high performance databases in conjunction with running sophisticated analytics in an integrated environment.

- Ensure faster, better business outcome by analyzing massive quantities of data and scale within the cloud.

- Ensure data protection with VCE Data Protection, including EMC Avamar, Data Domain, VPLEX, and RecoverPoint.

- Future proof big data and analytic deployments with ease of upgrade for Compute, Network, and Storage in response to demand change and availability of new technologies.

### Solution Highlights

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<tr>
<th>Solution Highlights</th>
<th>Big Data and Analytics on Vblock System</th>
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<tbody>
<tr>
<td>Availability / Reliability</td>
<td>Enterprise- and service provider-class, 6 x 9’s</td>
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<tr>
<td>Performance / Scalability</td>
<td>Enterprise- and service provider-class, high configurability with dynamic and intelligent scaling</td>
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<tr>
<td>Security / Privacy</td>
<td>Data-at-rest encryption, secure data transmission, multi-level segregation, control, and isolation</td>
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<td>Protocol Support</td>
<td>HDFS 1/2, NFS, CIFS, FTP, HTTP</td>
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<tr>
<td>Data / Analytic Support</td>
<td>All data including structured and unstructured data, select EMC Symmetric VMAX, VNX, and/or Isilon.</td>
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<td>Multi-Tenancy</td>
<td>Yes</td>
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Solution Highlights | Big Data and Analytics on Vblock System
---|---
Mixed Workload | Yes
Integrated Support | Yes
Virtualization | Yes, as well as bare metal, implement vSphere BDE
Operations Management | Yes with VCE Vision™, Open API. System metrics available

Business Benefits
Big Data and Analytics on Vblock Systems powered by EMC will enable organizations to achieve a complete view of business accelerating the time to results on IT investments on the converged platform. The solution enables customers to deploy data and applications to meet business demands from users, while maximizing the flexibility and utilization of IT resources in a service-based model.

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<th>Benefit</th>
<th>Description</th>
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<td>Speed – Time-to-Value</td>
<td>Get up and running with 40+ day lead time ready to deploy and migrate big data and non-big data. Meet 5X faster time for new services.</td>
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<td>Agility – Operational Efficiency</td>
<td>Scale storage/network/compute tuned to demand. Rapidly deploy mixed workloads on a single platform to support more innovation—embrace any data regardless of variety, volume, or velocity.</td>
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<td>Openness – Open-Source Support and Standards-Based</td>
<td>Open and standards-based aggregation of functional, environmental, and operational characteristics. Easy to incorporate existing and new big data and analytic workloads. Support existing and emerging management and analytic frameworks.</td>
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<td>Scale – Enterprise- and Service Provider-Grade</td>
<td>Enterprise- and service provider-grade, suited to IT-as-a-Service model. Start for today’s demand, and adapt with future demand.</td>
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<td>Automation – Turn-Key, Pre-Validated Platform</td>
<td>Automated validation and testing with roadmap alignment with investors. Reduce error-prone processes associated with deploying and maintaining IT infrastructure and applications.</td>
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<td>Predictability – Reduced Risk and Cost</td>
<td>Achieve 96% reduction in downtime. Reduce annual data center costs by up to 50%. Integrated support.</td>
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For More Information

- **VCE**: [http://www.vce.com](http://www.vce.com)
- **EMC**: [http://www.emc.com/big-data](http://www.emc.com/big-data)

**ABOUT VCE**

VCE, formed by Cisco and EMC with investments from VMware and Intel, accelerates the adoption of converged infrastructure and cloud-based computing models that dramatically reduce the cost of IT while improving time to market for our customers. VCE, through the Vblock Systems, delivers the industry's only fully integrated and fully virtualized cloud infrastructure system. VCE solutions are available through an extensive partner network, and cover horizontal applications, vertical industry offerings, and application development environments, allowing customers to focus on business innovation instead of integrating, validating, and managing IT infrastructure.

For more information, go to vce.com.