



Datalink V-Scape™

VIRTUAL DATA CENTER AND PRIVATE CLOUD REFERENCE ARCHITECTURE

Virtualization technologies are driving a massive transformation of the enterprise data center.

Initially, organizations focused on the efficiency and cost savings of consolidating servers; however, recent advancements in technology for managing virtual server environments and the integration with storage and networking provide the opportunity to extend the benefits of virtualization. This extension across storage, networks, and servers creates an end-to-end virtual data center or internal cloud migration opportunity.

The resulting infrastructure abstracts application services from physical boundaries across the entire solution stack of servers, storage, and networks. These advancements can dramatically alter how technology is consumed – changing the way applications are deployed and managed. Organizations can then realize a dramatic improvement in cost, efficiency, and flexibility in deploying applications, thus providing IT with accelerated support and achievement of IT initiatives and business objectives.

Many data center architectures are still built around complex, heterogeneous silos of servers, networks, and storage systems – resulting in poor utilization and captive resources.

These resources require multiple provisioning toolsets, management processes, and teams of people to manage them. In addition, massive data growth combined with increasing power, cooling, and space limitations exert extreme pressure on IT infrastructure and responsiveness.

Most IT organizations face the challenge of successfully architecting a solution from disparate technology components (e.g., servers, storage, networking,

virtualization software, and management software) from different vendors. Determining which technologies work best together and how to manage them individually and as a whole is difficult and time-consuming. Furthermore, in many organizations, the teams making these decisions are often comprised of members from different divisions within the company, further complicating the ability to synchronize efforts to architect a unified system.

Benefits of Datalink V-Scape™

- > Establishes a solid foundation from which to build a virtual data center.
- > Addresses the organization's specific business goals and requirements.
- > Scales to accommodate future needs.
- > Includes proven technologies from industry-leading companies.
- > Reduces costs and risks.
- > Delivers a high-performance, highly available, and secure infrastructure.
- > Provides a validated solution to help solve the organization's virtualization challenges.
- > Allows customers to migrate from existing state to a unified data center based on business objectives and utilizing existing assets.
- > A single source to design, deliver, and support a complete unified data center solution.

Datalink **SolutionScape**[™] Reference Architectures reduce risk and simplify design and integration.

A proven Datalink **SolutionScape** Reference Architecture, **V-Scape** includes integrated servers, server virtualization, storage, networking, and end-to-end management. **V-Scape** serves as a framework for building a virtual data center or private cloud architecture tailored to the specific needs of the organization.

V-Scape Overview

V-Scape leverages Datalink's best practices and vast data center design and integration expertise gathered from years of experience providing optimized data center solutions. The Datalink-validated reference architecture features technologies from industry leaders such as VMware®, Cisco®, NetApp®, EMC®, Hitachi Data Systems® (HDS), Dell™, HP, and others. **V-Scape** provides organizations with a design that integrates virtual and unified server, storage, and network elements that can be customized based on business needs. The reference architecture also utilizes Cisco-validated data center design practices that incorporate best-of-breed storage, VMware, and management with Cisco Unified Compute and Cisco Unified Fabric. **V-Scape** leverages Datalink's vast experience integrating solutions from NetApp, EMC, and HDS into unified data center architectures.

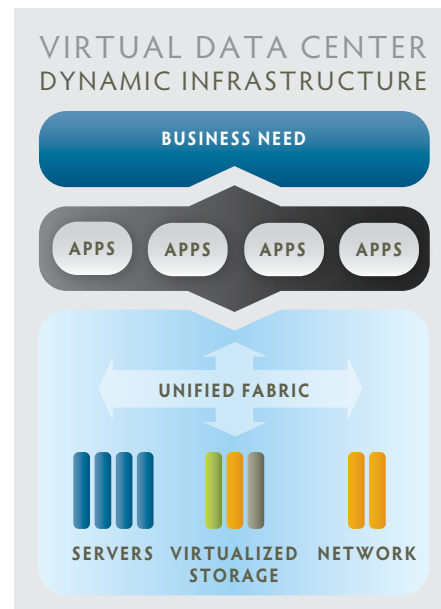
V-Scape's scalability and flexibility allows it to easily adapt to meet specific business needs. Designed for incremental virtual server workload growth, a single **V-Scape** rack will scale from hundreds to thousands of virtual server workloads. As an organization grows, **V-Scape** scales out by following the same **V-Scape** architecture and new business requirements.

Part of the methodology is the correct initial and ongoing sizing of the organization's workload requirements. To assist with sizing, Datalink measures the existing virtual and physical server loads and maps the application loads onto the architecture. This service leverages a non-invasive data collection method to determine the optimal **V-Scape** configuration.

V-Scape Benefits

Datalink's unified and validated architecture helps organizations quickly transform IT silos into a shared, virtualized infrastructure. This transformation allows IT to be managed as a dynamic asset that reduces costs and quickly adapts to changing business needs. Leveraging Datalink's proven **V-Scape** reference architecture reduces risk exposure in meeting business objectives. Datalink designs, delivers, and provides unified support on the complete solution. The resulting end-to-end virtualized data center provides the foundation for internal cloud computing and the realization of IT as a service.

Fig. 1: With **V-Scape**, a virtual data center can achieve a dynamic infrastructure that addresses an organization's unique business needs.



V-Scape reference architecture example

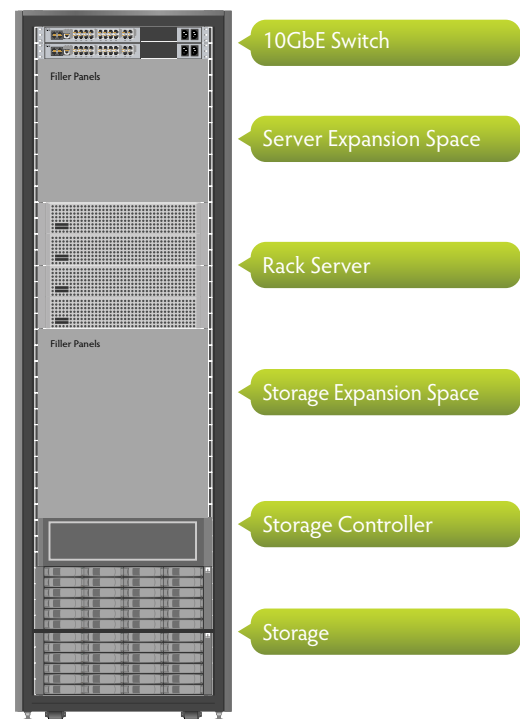
The components of the V-Scape reference architecture are designed to align your business objectives with your data center transformation.

Components of a V-Scape reference architecture example are:

- **VMware vSphere™ virtualization suite** – VMware vSphere is the leading data center virtualization operating system that consolidates, optimizes, and automates applications in the virtual data center. The virtualization infrastructure is managed by VMware vCenter™ Server.
- **Cisco B-Series Unified Computing System (UCS) or existing server platforms from HP, Dell, or IBM** – The X86 multi-core processors are optimized for virtualization workloads, and provide superior processing power and memory at extremely competitive price points.
- **Unified Integrated Storage** – Well-integrated, best-of-breed storage from NetApp, EMC, and HDS provides superior storage optimized for the dynamic data center by delivering industry-leading efficiency and extreme flexibility.
- **Cisco Nexus® switches** – The Nexus switch provides a unified network integrated to support virtual workloads on a VMware and unified storage infrastructure.
- **Management from leading providers such as VMware Management Suite, Cisco Unified Management, NetApp OnCommand Balance, and more** – These solutions provide the ability to visualize and orchestrate the V-Scape unified data center solution and build a foundation from services brokering for private and hybrid cloud solutions.
- **Datalink Unified Support Services** – Datalink OneCall™ Unified Support provides a single source support program for the entire solution spanning VMware, servers, storage, and networking so you can achieve higher uptime and focus on big-picture business objectives.

The result is a single, unified architecture tailored to meet the customer's business needs. Through this solution, the customer can consolidate server, network, and storage resources into dynamic resource pools, which can be provisioned to applications from a virtual data center. This initial example can be viewed as a foundational building block for an internal cloud with services and cost metrics that will compare favorably to external cloud services where available. The flexible architecture can also be extended to integrate tactical applications or application overloads with external cloud services in the future.

Fig. 2: V-Scape example



Conclusion

V-Scape was defined to be robust enough to run mission-critical applications with manageability that rivals the most complete, purpose-built application stacks. The validated solution provides a high-performance, highly available, secure infrastructure that is both cost-effective and easier to manage. This flexible architecture provides organizations with the confidence to offer a virtual infrastructure for all but a few legacy applications.

To learn how **V-Scape** reference architecture can be customized to meet the needs of your organization, contact 800.448.6314 or visit Datalink.com.

Making IT happen

A complete data center solutions and services provider, Datalink helps Fortune 500 and mid-tier enterprises get the most from every IT investment – with storage, server, and network expertise across the infrastructure. We deliver greater business results throughout, designing what we sell, deploying what we design, and supporting what we deliver.

Corporate Headquarters
10050 Crosstown Circle, Suite 500, Eden Prairie, MN 55344
800.448.6314 | WWW.DATALINK.COM

© 2011-2012, Datalink. All rights reserved. The information contained herein is subject to change without notice. Datalink, **SolutionScope**, and **V-Scape** are trademarks or registered trademarks of Datalink Corporation in the U.S. and other countries. Cisco and Cisco Nexus are registered trademarks of Cisco and/or its affiliates in the U.S. and certain other countries. Hitachi Data Systems and HDS are trademarks and/or service marks of Hitachi, Ltd. and/or Hitachi Data Systems. VMware, vCenter, and vSphere are trademarks or registered trademarks of VMware, Inc. in the U.S. and/or other jurisdictions. NetApp is a trademark of NetApp, Inc. in the U.S. and other countries. Dell is a trademark of Dell Corporation. EMC is a registered trademark of EMC Corporation. All other trademarks are the property of their respective owners.

RA-DB-3.0.2.12

