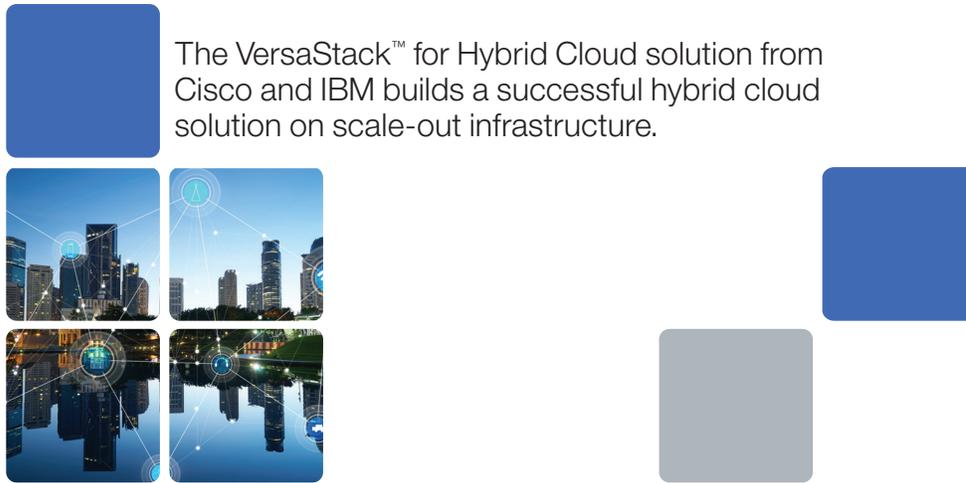




## Top 5 Reasons to Deploy Hybrid Cloud on VersaStack Solutions

The VersaStack™ for Hybrid Cloud solution from Cisco and IBM builds a successful hybrid cloud solution on scale-out infrastructure.



### Top 5 Reasons

- 1. Scale-out infrastructure as foundation:** Build your hybrid cloud solution on a solid foundation to meet changing business needs.
- 2. Versatility and choice:** Support your business initiatives with options to deploy workloads in data center, private, or public cloud environments.
- 3. Management simplicity:** Manage everything from bare metal to virtualized and public cloud workloads with a single solution, while automating previously complex and time-consuming manual processes.
- 4. Storage efficiency and optimization:** Optimize on-premises data with built-in storage virtualization and real-time compression. Copy data to and from the public cloud as needed.
- 5. Proven solutions:** Trust a proven platform backed by an excellent single-support structure and technical assistance team. Take the guesswork and complexity out of scale-out IT infrastructure with a validated solution.

### Introduction

Your business must be agile and efficient to capitalize on emerging business opportunities. And with digitization and other trends that make business results critically dependent on IT services, your IT organization must be able to respond in lockstep with the business. Most IT organizations have chosen a hybrid cloud as their preferred approach, because it increases flexibility but also puts IT in control of both on-premises and public cloud services.

**The VersaStack for Hybrid Cloud solution from Cisco and IBM adds hybrid management capabilities to the VersaStack converged infrastructure, making it a proven foundation for your hybrid cloud.**

VersaStack for Hybrid Cloud is a converged infrastructure solution with additional software components that deploy and manage applications and automate application-aware data to and between data center and cloud environments. It extends existing VersaStack solutions that include both IBM and Cisco® best-in-class hardware and software products to support application deployment and copy data automation. It also offers options to include the most common public clouds—IBM BlueMix infrastructure (formerly IBM SoftLayer), for example, in your hybrid cloud architecture.

Now you can take the guesswork out of your hybrid strategy and stay in control, while giving users a choice of deploying workloads and managing data on your infrastructure or a public cloud.

## Reason 1: Scale-Out Infrastructure as a Foundation for Hybrid Cloud

Not everything belongs in the public cloud, though some pay-as-you-go or short-lived workloads are best deployed there. Cost considerations, as well as security, compliance, and data sovereignty mandates, all mean that IT must continue to use and expand on-premises infrastructure. Long-running or stable workloads and large data sets are more cost-effective when deployed on premises.

To respond to business needs, IT must build hybrid cloud on a foundation of the modern data center, with the tools and automated processes necessary to deliver a cloudlike user experience wherever the infrastructure resides.

You need hybrid-ready infrastructure with the flexibility to add compute, storage, and network capacity at cloud speed, in order to support more workloads and users. Doing so shouldn't require fundamental changes to your solution architecture.

VersaStack solutions from Cisco and IBM let you scale and repurpose systems without having to adjust your software and networking capabilities or interrupt operations. (Figure 1). You can scale your environment up if you need greater performance and capacity—adding computing and network resources individually as needed—or you can scale it out if you need multiple consistent deployments by adding integrated systems. You can add flash-memory capacity to support multiple applications, and you can scale the virtualized storage system out to increase the number of I/O operations per second (IOPS) and bandwidth for your applications. As a result, you can pay as you grow, and you can grow in small increments that don't break your budget.



Figure 1. The VersaStack Solution

## Reason 2: Versatility and Choice for Business Success

Your IT customers need the choice of deploying workloads, including applications and data in data center, private, or public cloud environments, based on business need. Traditional IT architectures often require infrastructure modifications to support new applications and services. VersaStack for Hybrid Cloud offers an application-centric solution that puts the infrastructure to work for the application in any environment.

You can deliver application, data, and infrastructure services that support business initiatives and critical service-level agreements (SLAs) from infrastructure you buy and maintain, as well as public cloud infrastructure you rent as needed.

### User Self-Service

Your users simply request applications and necessary compute, network, and storage resources through an easy-to-use self-service portal. They can choose where to deploy applications, guided by price, performance, and various security and compliance policies set by IT, without cumbersome approval workflows or “ticket and wait” IT processes. Your IT organization evolves to IT as a service (ITaaS) to accelerate IT delivery and reduce business risk with a single governance framework that provides visibility and control across all users, applications, and deployment environments.

### Multiple Cloud Choices

Automate the full lifecycle of application deployment and management in your converged infrastructure or public clouds, including IBM BlueMix infrastructure. Choose from more than 20 data center and cloud types and regions. Deploy applications in the vSphere environment that is included in VersaStack, as well as in the OpenStack and Azure Pack environments. And choose public clouds such as IBM BlueMix infrastructure as well as Amazon Web Services, Google Compute, Microsoft Azure, and others.

### Application and Data Portability

To get the most out of a hybrid cloud strategy, you should avoid lock-in and maintain options to move applications and data as needed. Most IT organizations want to maintain portability for business rather than technical reasons. Cost, lock-in, and risk reduction are all valid reasons to maintain the portability of data and applications from VersaStack to, from, and between public clouds.

## Reason 3: Management Simplicity

Traditional management approaches make your IT environment difficult to use and scale. That's because an approach in which management is an afterthought results in incomplete solutions that fail to deliver unified infrastructure management. And with different cloud environments added to a hybrid mix, it is more important than ever before to simplify your management stack. Cisco and IBM break down these barriers so that you can simplify and maintain your physical, virtual, and cloud platforms with better visibility and control.

VersaStack for Hybrid Cloud integrates best-in-class components and a choice of management software into a solution that is ready to use as soon as it reaches your loading dock. Automation, orchestration, and lifecycle management capabilities simplify deployment and make it easy for your IT staff to operationally integrate your bare-metal and virtual infrastructure as well as private and public cloud resources

to automate what were previously complex, time-consuming, manual, and compartmentalized processes.

- **Cisco UCS® Manager** is delivered with every VersaStack configuration and provides unified management of Cisco UCS and IBM storage system components. Using Cisco SingleConnect technology, it controls multiple chassis and manages resources for thousands of bare-metal deployments and virtual machines.
- **Cisco UCS Director** creates hybrid-ready infrastructure as it unifies and automates infrastructure management processes. It abstracts the complexity of devices, hypervisors, and virtual machines, automating management processes with unified and easy-to-use tools and interfaces.
- **Cisco CloudCenter™** is an application-centric cloud management platform that automates the full application lifecycle in the data center or cloud. It gives users flexibility with self-service, on-demand application deployment through policies set by IT to control costs with scaling, bursting, updates, and end-of-life actions.

## Reason 4: Storage Efficiency and Optimization

VersaStack solutions are built with IBM Spectrum Storage software. This industry-leading storage virtualization solution helps deliver hybrid-ready storage. Spectrum Storage solutions can pool and access your new and existing storage systems, including all-flash or disk storage systems; optimize storage use; and ease data copy and migration tasks.

The built-in IBM Easy Tier function automatically migrates data between storage tiers—known as dynamic tiering—based on real-time use patterns without disruption to applications. In addition, you can enable compression to further increase efficiency. Together, these capabilities and storage innovations can help your IT staff improve efficiency and utilization while reducing complexity and cost.

### Storage Footprint and Capacity

The virtualized, flash-optimized, enterprise-class storage systems used in VersaStack solutions create an efficient storage infrastructure. Recognizing the complex balance of storage capacity, performance, and cost, VersaStack solutions use IBM Real-time Compression software to save up to 80 percent of disk space with no impact on system performance. With these tools and the Easy Tier function, your IT staff can optimize storage pools and avoid downtime for backup, maintenance, and upgrade operations through the use of advanced copy services such as point-in-time copy and remote replication.

### High Performance

Latency-sensitive applications can take advantage of VersaStack solutions with the IBM FlashSystem V9000, an all-flash-memory array with ultra-low response times. Designed to replace Tier 1 systems with slow disk drives, FlashSystem V9000 can function as a software-defined storage layer that virtualizes all managed storage for easy access. The system accelerates I/O for critical applications through IBM FlashCore technology, which includes advanced flash-memory management features, ultra-fast write buffers, and hardware-based data offload methods. In addition, it preserves enterprise resiliency through IBM Variable Stripe RAID and other unique reliability features.

### Flexible Integration with Backup, Archive, and Tape Solutions

Tape storage solutions are popular choices when companies must control costs and protect data for the long term. With VersaStack solutions, you can add tape storage to your data center deployments to easily archive and maintain the growing volumes of unstructured data that are generated by your big data and cloud computing environments. The industry-leading IBM Spectrum Protect backup and archiving solution easily complements the VersaStack solution and can reduce backup infrastructure costs by up to 53 percent.<sup>1</sup> You can choose from an extensive portfolio of tape archiving solutions—including drives, autoloaders, libraries, virtual tape systems,

and software—which makes it easy to use disk drives, for example, for added simplicity. Whether you need a few tape systems or large robotic solutions, VersaStack can integrate with the products you need and help you get the most from cost-effective tape storage.

### Copy Data Management

Whether the goal is operational efficiency, data integration in the cloud, self-service Dev/Test, or automated disaster recovery, a common requirement for optimal use of converged infrastructure is easy management of copies of data. IBM Spectrum Copy Data Management makes copies available to data consumers when and where they need them. It catalogs copy data from across your local and hybrid cloud and offsite cloud infrastructure, identifies duplicates, and compares copy requests to existing copies. Copy processes and work flows are automated to enable consistency and reduce complexity. This helps to ensure that the minimum number of copies are created to meet your business needs.

## Reason 5: Proven Solutions for Quick and Reliable Deployment

VersaStack solutions are designed as preintegrated, validated, and supported converged infrastructure. Your organization can quickly and easily deploy the shared infrastructure it needs. The VersaStack for Hybrid Cloud option delivers easy, efficient, and versatile IT infrastructure that can be extended with public cloud services to break down the barriers that limit agility and innovation.

### Validated Designs

Cisco and IBM make it easy to use technology and build cost-effective data center infrastructure for any application. Verified, lab-tested architectures provide detailed design and implementation guidance that help reduce risk and guesswork by giving your architects and administrators step-by-step guidebooks for implementation. By following the guidelines in these Cisco Validated Designs and IBM Redbooks, you can create a VersaStack

foundation that helps protect against compromise while delivering a simplified, standardized, and trusted approach for the deployment, use, and management of your infrastructure resources.

### Right Platform for the Right Workload

The VersaStack for Hybrid Cloud solution combines decades of thought leadership, experience, and expertise from Cisco and IBM with powerful data center computing, storage, networking, mobility, collaboration, analytics, and software technology from both companies to deliver the foundation of the modern data center (Figure 2). Our experts work together to design, develop, test, and

Windows will be optimized for and run best on VersaStack solutions.

### Extend Hybrid with Public Cloud Options

VersaStack for Hybrid Cloud with the Cisco ONE™ Enterprise Cloud Suite cloud management package adds Cisco CloudCenter to your VersaStack infrastructure. It provides an application-centric management and orchestration layer that extends automation to include application deployment on premises or to the most commonly used public clouds, including the IBM BlueMix infrastructure. With one cloud management platform, you can now easily broker application services

customers, and suppliers. We continue to innovate our long-standing Global Services Alliance partnership so that you can have confidence that the IT technology you rely on is backed by comprehensive support. You can take advantage of a single point of contact through the Cisco Technical Assistance Center (TAC). This team of experts provides troubleshooting support, advance hardware replacement options, and extensive self-help, along with smart capabilities that can help your IT staff be more efficient. Cisco experts work with IBM Global Technical Services to deliver end-to-end problem escalation and resolution, onsite support, and the power of the collective expertise of both companies.

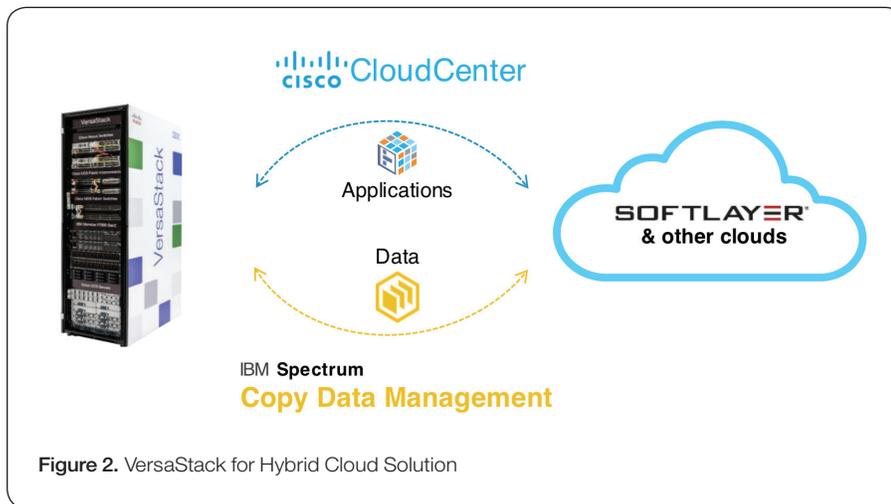


Figure 2. VersaStack for Hybrid Cloud Solution

refine solutions that solve real business challenges. Whether you need to run your business applications on premises or in the public cloud, you can have confidence that software solutions from IBM, such as IBM WebSphere, IBM PureApplication, and IBM DB2 for Linux, UNIX, and Microsoft

to the VersaStack converged infrastructure or a public cloud—whichever is the best fit for your business needs.

IBM and Cisco recognize that your IT infrastructure connects your business to the people that matter most: your users,

### Conclusion

Cisco and IBM are global IT industry leaders and have a 15-year history of demonstrated joint success, with more than 25,000 shared customers. We have experience in guiding emerging technology transitions and have the breadth and capability to deliver innovative, validated solutions while helping your organization reduce risk. Cisco and IBM together provide global delivery capabilities and deep industry expertise as well as current technology offerings in data center computing, networking, mobility, collaboration, analytics, and the Internet of Things (IoT). Our solution portfolio is based on client-specific needs and strategies across industries and segments, including healthcare, banking, public safety, energy, utilities, and retail. We offer what you need to achieve the vision of a modern data center that delivers IT and business agility.



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