

Cisco Secure Enclave Data Center Solution for EMC VSPEX

## Cisco takes security into account at every layer of infrastructure so you can keep your applications and business running.

To keep your business ahead of the competition, your IT staff is being asked to do more than build, manage, and continuously improve your enterprise infrastructure and processes. It is also tasked with helping your business innovate and deliver unique customer experiences. At the same time, your business managers are trying to meet their goals as quickly and cost effectively as possible.

With the pace of business fast, you need to be fleet, which is why many companies are turning to virtual and cloud environments. But although this type of infrastructure offers many technical and business advantages, you need to find a way to share while keeping your applications and data—and your business—safe from security breaches and other catastrophic events.

### Cisco: A Defense-in-Depth Approach

Keeping applications and information safe on shared infrastructure requires a thoughtful and thorough approach. Recognizing the risk that businesses face, Cisco designed a defense-in-

depth approach that protects against threats without adding complexity or making it difficult to add data center services. The solution—the Cisco Unified Computing System™ (Cisco UCS®) with Cisco® Secure Enclaves—gives you the capabilities you need to protect your data center as well as enhance operational efficiency and scalability.

#### The Right Platform for Shared Infrastructure

Cisco UCS accelerates IT operations and creates the modern technology foundation you need for initiatives such as virtual infrastructure, private clouds, big data, and desktop virtualization. A leading solution in bare-metal and virtual infrastructure innovation, Cisco UCS integrates industry-standard, x86-architecture Intel® Xeon® processor-based servers with networking and storage access into a unified system. Server, networking, storage, and intelligent management resources work together in a self-aware and self-integrating system. This design delivers

greater computing density and network simplicity in a smaller footprint that reduces operating costs.

#### Isolation That Protects

Cisco Secure Enclaves, combined with Cisco UCS and additional services integration, help secure your shared infrastructures and the applications they run (Figure 1). By logically extending Cisco's data center building blocks, Cisco Secure Enclaves bring the benefits of standardization beyond infrastructure to applications and services. The technology segments infrastructure into isolated areas, called enclaves, that provide access controls, visibility, and threat defense at the levels your business requires. Each enclave is a logical and scalable abstraction of infrastructure that takes into account your security needs and application- or customer-specific resources to deliver a trusted platform that you can use to meet your service-level agreements (SLAs).

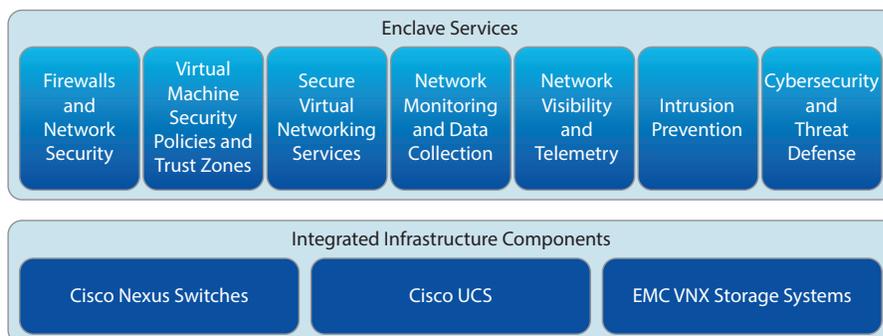


Figure 1. Cisco Takes Security into Account Throughout Infrastructure Layers

## Get Started with a Proven Approach

Cisco makes it easy to use these technologies and create a more flexible, functional, and secure application environment within your data center. The Cisco Secure Enclave Data Center Solution for EMC VSPEX is a verified, lab-tested architecture that provides detailed design and implementation guidance to accelerate deployment, reduce risk, and secure your applications and your business.

### Build in Security at Every Layer

The solution combines Cisco UCS blade and rack servers, Cisco Nexus® Family switches, and EMC VNX 5400 storage arrays with Cisco Secure Enclaves to create shared infrastructure with isolated areas (enclaves) to secure workloads. Zone and edge firewalls are used to control access into, between, and within enclaves, and Cisco Virtual Security Gateway (VSG) protects traffic within the enclave and enforces security policies at the virtual machine level.

A Cisco Adaptive Security Appliance (ASA) allows each enclave to have dedicated access controls, intrusion prevention, and antivirus policies—and visibility into and monitoring of network traffic supports cyberthreat defense. Data is protected by IP filtering and

encryption mechanisms that help ensure that only trusted clients get access to data, and that data is protected as it travels across the network.

By following the guidelines in this Cisco Validated Design, you can create a foundation that helps protect against compromise while delivering a simplified, standardized, and trusted approach for the use and management of your shared resources.

## Application and Data Security and More

The combination of secure enclaves, firewalls, data protection, and security mechanisms help you safeguard your information, applications, and infrastructure—but those are not the only benefits of Cisco's approach. Deploying the Cisco Secure Enclave Data Center Solution for EMC VSPEX can also help you:

- **Gain consistency.** The solution uses a standard approach to application security that allows application-specific policies to be consistently enforced, even as you move applications between environments.
- **Optimize resources and save costs.** Enhanced isolation capabilities let you pool resources and safely co-host services so you can make

secure, cost-effective use of your capital investments.

- **Improve operational efficiency.** Automation and rapid provisioning capabilities make it easy to deploy new infrastructure and applications. For example, service profiles let you define every aspect of a server's configuration so you can reduce provisioning time to minutes and create a more dynamic environment that makes efficient use of capacity. Service profiles can also be used with virtualization clusters to easily bring new resources online.

## Conclusion

As you virtualize more of your data center and move to a private cloud, Cisco solutions can help you keep your applications, information, and infrastructure safe from threats. From isolating workloads to supporting corporate security policies, Cisco's defense-in-depth approach gives you the confidence to move forward as you usher in a new era of business innovation.

## For More Information

- Learn more about [Cisco UCS](#) and [Cisco Secure Enclaves](#)
- Read the [Cisco Validated Design](#) guide



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