Cisco Nexus 1000V InterCloud

Product Overview

Cisco Nexus® 1000V InterCloud provides the architectural foundation for secure hybrid clouds, allowing enterprises to easily and securely connect the enterprise data center to the public cloud.

Secure Connectivity from the Enterprise to the Cloud Service Providers

Enterprises are increasingly moving to hybrid clouds to gain the benefits of public clouds - agility, on-demand provisioning, pay-as-you-go capability, and elastic scalability - along with the benefits of private clouds. Private clouds have some advantages, allowing enterprises to design and customize their infrastructure and control security. However, private clouds are usually less agile than a public cloud and can be expensive to run to meet peak demand.

Cloud service providers enable rapid provisioning and offloading of peak loads to the cloud, thus optimizing both capital expenditures (CapEx) and operating expenses (OpEx). However, the cloud service is not like the enterprise data center. Its favorable economics derive from its being a shared, multitenant environment, and this difference presents risks. Thus, enterprises face a number of challenges in extending the data center to the cloud provider:

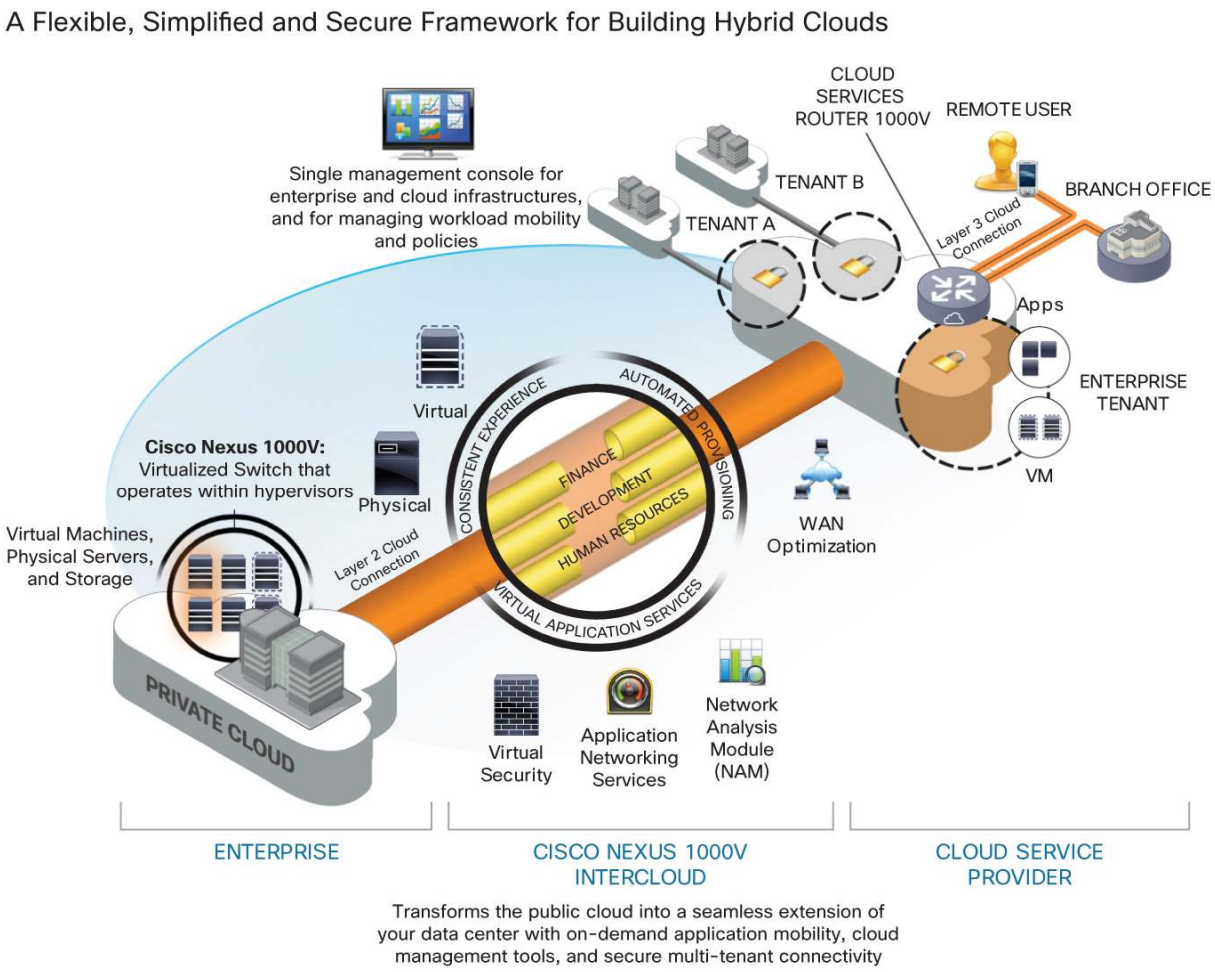
- Network security: The connection from the enterprise data center to the cloud must be secure and must not compromise critical corporate data.
- Application dependencies: Applications should not have to be redesigned when they move to a new cloud environment and should not need new IP addresses.
- Management complexity: Network policies in the cloud provider should be consistent with the policies and configuration used in the enterprise data center.

Cisco Nexus 1000V InterCloud addresses these challenges and provides the foundation for a secure hybrid cloud. With a hybrid cloud, enterprises can combine the benefits of public and private clouds.

Cisco Nexus 1000V InterCloud is designed to bridge enterprise and cloud provider deployments in a secure and consistent manner. Based on Cisco Nexus 1000V Series Switches and industry-standard Cisco® NX-OS Software, Cisco Nexus 1000V InterCloud (Figure 1) provides:

- Secure Layer 2 network connectivity between the enterprise data center and the public cloud
- Consistent network policies and services across private and public clouds
- Simple single pane of management
- Virtual form factor designed for easy deployment

Figure 1. Cisco Nexus 1000V InterCloud Design



With Cisco Nexus 1000V InterCloud, the enterprise network can be securely extended to the cloud, with enterprise network configurations such as VLANs and policies extended to the cloud. Workloads can be migrated from the enterprise data center to the public cloud while retaining the same IP addresses, thus avoiding the need to redesign the application.

With Cisco Nexus 1000V InterCloud, workloads in the public cloud can use the same security policies as their counterparts in the enterprise data center. System administrators get the policy consistency and network visibility that they require while retaining control of the cloud environment as a transparent extension of the enterprise data center.

Cisco Nexus 1000V InterCloud is an easy-to-use solution with simplified management. Through a single pane, customers can view their workloads across the enterprise data center and public cloud. They can select and migrate workloads from the enterprise data center to the public cloud.

With the Cisco Nexus switching portfolio, you can have a consistent networking feature set all the way from the enterprise virtual access layer and the physical data center infrastructure to the public cloud infrastructure.

Product Architecture

Cisco Nexus 1000V InterCloud is a software solution deployed as virtual machines in the enterprise data center and public cloud. It has three major components (as seen in Figure 1):

- InterCloudVirtual switch that securely connects the enterprise data center with the cloud provider: The virtual switch provides Layer 2 network connectivity across the entire system while providing end-to-end security by encrypting traffic between the two sites. It also provides local switching for the workloads in the cloud. This Layer 2 network connectivity allows full workload mobility between servers across locations while retaining the same IP address.
- Simple, single-pane management across enterprise and cloud workloads: The Cisco Prime Network Controller presents a consolidated view of virtual machines across the enterprise data center and the cloud. It also enables virtual machines to be migrated from the enterprise data center to a cloud provider. In addition, it manages security policies and virtual services in the cloud and provides northbound APIs to integrate with cloud orchestration tools.
- Network services infrastructure that helps ensure consistent network and security policies across enterprise data centers and public clouds: Cisco Nexus 1000V InterCloud enables policies to follow virtual machines as they migrate from the enterprise data center to the cloud provider. Cisco Nexus 1000V InterCloud uses Cisco vPath technology to provide network services and supports Cisco virtual services, such as the Cisco Virtual Security Gateway (VSG) for Nexus 1000V Series Switch firewall and Cisco Adaptive Security Appliance (ASA) 1000V Cloud Firewall.

Features and Benefits

Cisco Nexus 1000V InterCloud supports multiple use cases and provides investment protection for customers. It is a multiplatform solution with these features:

- Flexible solution with the capability to connect across multiple private and public clouds
- Simplified and consistent management
- Choice of multiple hypervisor environments, including VMware, Citrix Xen products, and open source hypervisors
- Support for multiple virtual switches, including Cisco Nexus 1000V Series and VMware virtual switch (vSwitch) and virtual distributed switch
- Support for multiple services, such as zone-based firewalls, edge firewalls, and integrated routing

With Cisco Nexus 1000V InterCloud, Cisco now offers the leading hybrid cloud infrastructure that is consistent across multiple clouds, hypervisors, and services. Cisco Nexus 1000V InterCloud enables enterprise customers to achieve the benefits of on-demand, public cloud resources while maintaining the same level of security and privacy that is offered by the on-premises data center. Cisco Nexus 1000V InterCloud also allows service providers to offer differentiated services, provide a secure cloud environment to their clients, and better align their service offerings with enterprise IT needs. Cisco Nexus 1000V InterCloud enables you to adopt a hybrid cloud environment quickly and achieve its benefits sooner.

For More Information

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