



Cisco Cloud Services Router 1000V with Cisco IOS XE Software Release 3.12

DELIVERING ENTERPRISE-CLASS NETWORKING TO THE CLOUD WITH RAPID DEPLOYMENT AND FLEXIBILITY

The Cisco® Cloud Services Router 1000V (CSR 1000V) is a router in virtual form factor that is intended for deployment in cloud data centers. It is optimized to serve as a WAN gateway in a multitenant cloud. Using proven, industry-leading Cisco IOS® Software networking and security features, the CSR 1000V enables enterprises to transparently extend their WANs into external provider-hosted clouds and cloud providers to offer their tenants enterprise-class networking services.

Use Cases

The Cisco CSR 1000V is a software router that an enterprise or cloud provider can deploy as a virtual machine in a provider-hosted cloud (Figure 1).

You can use the Cisco CSR 1000V in the following ways:

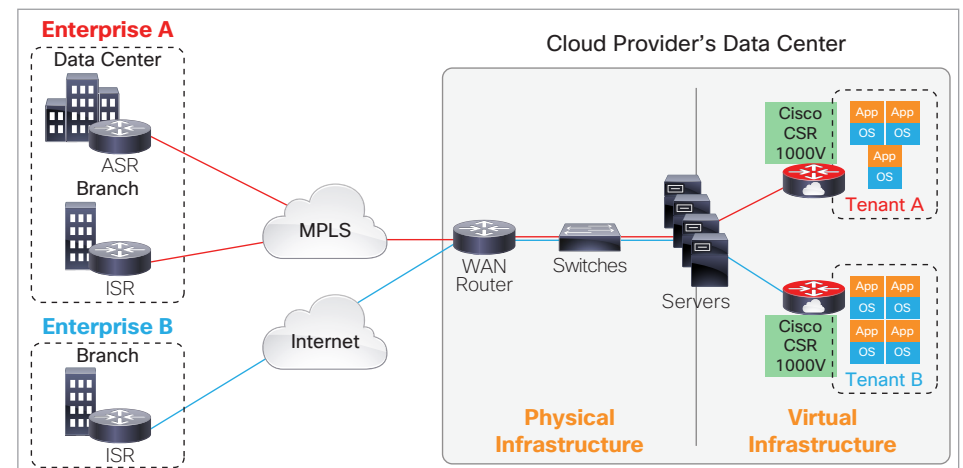
- **Highly secure VPN gateway:** The CSR 1000V offers route-based IPsec VPNs, DMVPN, Easy VPN, and Flex VPN, along with the Cisco IOS Zone-Based Firewall and access control, enabling an enterprise to connect distributed sites directly to its cloud deployment.
- **MPLS extension:** The CSR 1000V can serve as an MPLS customer-edge or provider-edge router that enables a service provider to offer a customer end-to-end managed connectivity. Also, by extending the MPLS WAN deeper into the cloud, the provider can increase tenant scale.
- **IP mobility and virtual-machine migration:** The CSR 1000V LISP feature enables an enterprise to maintain addressing consistency when moving applications into the cloud. The CSR 1000V OTV feature enables an enterprise to replicate virtual-machine workloads by extending VLANs from data center to cloud.
- **Traffic control and redirection:** The CSR 1000V can redirect traffic to Cisco Virtual Wide Area Application Services (vWAAS) appliances. It also offers integrated networking services such as HSRP and Cisco Application Visibility and Control (AVC). These features enable a cloud tenant to receive a comprehensive networking experience.

Features

- Selected Features of Cisco CSR 1000V running Cisco IOS XE Software:
 - **Routing:** BGP, OSPF, EIGRP, Policy-Based Routing, IPv6, VRF-Lite, Multicast, LISP, and GRE

- **Addressing:** DHCP, DNS, NAT, 802.1Q VLAN, EVC, and VXLAN
 - **VPN:** IPsec VPN, DMVPN, Easy VPN, and Flex VPN
 - **MPLS:** MPLS VPN, VRF, and BFD
 - **Security:** Cisco IOS Zone-Based Firewall, ACL, AAA, RADIUS, and TACACS+
 - **High availability:** HSRP, VRRP, and GLBP
 - **Traffic redirection:** AppNav (to Cisco WAAS) and WCCP
 - **Application visibility, performance monitoring, and control:** QoS, AVC, and IP SLA
 - **Hybrid cloud connectivity:** OTV, VPLS, and EoMPLS
 - **Management:** CLI, SSH, NetFlow, SNMP, Embedded Event Manager, and RESTful APIs
- **Infrastructure-agnostic:** The CSR 1000V can run on Cisco Unified Computing System™ (Cisco UCS®) servers or servers from leading vendors that support VMware ESXi, Citrix XenServer, Microsoft Hyper-V or Red Hat KVM or on the Amazon Web Services cloud.

Figure 1. Cisco CSR 1000V Positioned as a WAN Gateway in a Multitenant Cloud





Benefits

- **Rapid deployment and service automation:** Virtual form factor accelerates deployment and eliminates hardware costs such as complete equipment upgrades and RMAs.
- **Single-tenant use:** This feature allows a cloud service provider to provision a routing instance per tenant, simplifying service delivery and tenant management. It also helps the provider overcome VLAN scale limits, increasing tenant scale.
- **Enterprise network extension to the cloud:** This feature provides enterprises highly secure direct connections from their distributed sites to their cloud-hosted applications, improving application response time and user experience.
- **Network consistency:** This feature uses familiar enterprise-class Cisco IOS Software features for consistent network operation across premises and cloud, allowing the enterprise to view the cloud as just another node in its network.