



Turn It On

Power Up

Turn on all these features to leverage the full value of Cisco routers and switches.

- Protective QoS Features
 - Control Plane Policing (CoPP)
 - Network-Based Application Recognition (NBAR)
- **VRF-Lite/Multi-VRF CE**
- Advanced VPN Services:
 - Dynamic Multipoint VPN (DMVPN)
 - Group Encrypted Transport (GET VPN)
- Catalyst Integrated Security Features (CISF)
- Spanning-Tree Protocol (STP) Toolkit
- Encapsulated Remote Switched Port Analyzer (ERSPAN)
- Dynamic Intelligent Routing Solutions
 - IP Service-Level Agreement (IPSLA)
 - Optimized Edge Routing (OER)
 - Embedded Event Manager (EEM)

To help you get the most functionality, value and ROI from your Cisco routers and switches, we want to ensure you're aware of the many powerful features residing within. Our **Turn it On** program is designed to empower Federal agencies like yours to take full advantage of Cisco's powerful core networking solutions to maximize your productivity, efficiency and technology investment.

VRF-Lite/Multi-VRF CE

Cisco's VRF-lite (Virtual Routing and Forwarding), also known by Multi-VRF Customer Edge (CE), provides a valuable solution for Virtual Private Network (VPN) separation by enabling a single routing device to support multiple virtual routing tables. As a lightweight version of Multiprotocol Label Switching (MPLS) VPNs, VRF-lite leverages the VRF functionality originally developed for MPLS provider edge (PE) routers.

This advanced solution gives the routers the ability to function like multiple virtual routers, enabling each VRF to support a separate community of interest. This provides separation between members of different communities, and is analogous to Virtual LANs separation in a Layer 2 switching environment. This added functionality provides measurable increases in security, privacy, scalability and ROI. And best of all, VRF-lite already resides in your Cisco IOS. All you have to do is turn it on.



Contact your Cisco Systems Engineer for more information and assistance in turning on the full functionality of your Cisco routers and switches.

To learn about enabling additional Cisco features, visit www.cisco.com/go/turniton.

A powerful solution

VRF-lite delivers valuable functionality across the network, including:

- Applicable to many places in the network, including campus, wide-area network (WAN), branch office and data center applications.
- Supports Layer 3 segmentation by providing separate routing and forwarding tables for each community of interest (COI)
- VRF Layer 3 segmentation is analogous to VLAN Layer 2 segmentation
- Builds virtual network topologies on a common infrastructure
- Delivers flexibility to any IP address space for any given VPN, regardless of whether it overlaps or conflicts with other VPNs' address space
- Maintains separate VRF tables to extend the privacy and security of an MPLS VPN down to any place in the network
- Simpler than MPLS, it does not require MPLS VPN protocols such as LDP or RSVP-TE
- Associates users to a specific VRF by the interface to which they are connected

A suite of benefits

VRF-lite delivers several valuable advantages to the router functionality, including:

- Allows multiple virtual topologies to leverage a single infrastructure
- Provides a clean segmentation of multiple compartments/classifications when used in conjunction with High-Assurance Internet Protocol Encryptor (HAIPE)
- Centralized security appliances can provide security services across all VRFs
- Central shared services can be leveraged across all VRFs
- Only one router is needed—rather than a multiple router solution—thus making provisioning and network management easier
- No need for NAT (Network Address Translation) to allow support of overlapping IP address space

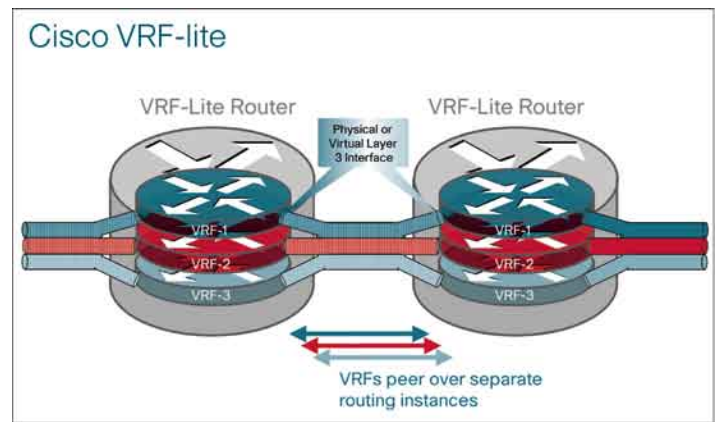
Using VRF-lite

In general, VRF-lite is best suited for networks with four or five segments. It can be used as an end-to-end solution or in conjunction with other solutions such as MPLS, IPSec or GRE for COI separation.

For example:

One of many reasons to turn on VRF-lite

VRF-lite's flexibility is beneficial in many scenarios. For example, when the networks of acquired companies are merged into a shared LAN, the acquired network can be incorporated into the infrastructure as a separate VPN, with little or no interruption to regular business processes on the network.



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