

Cisco Virtual Managed Services Solution

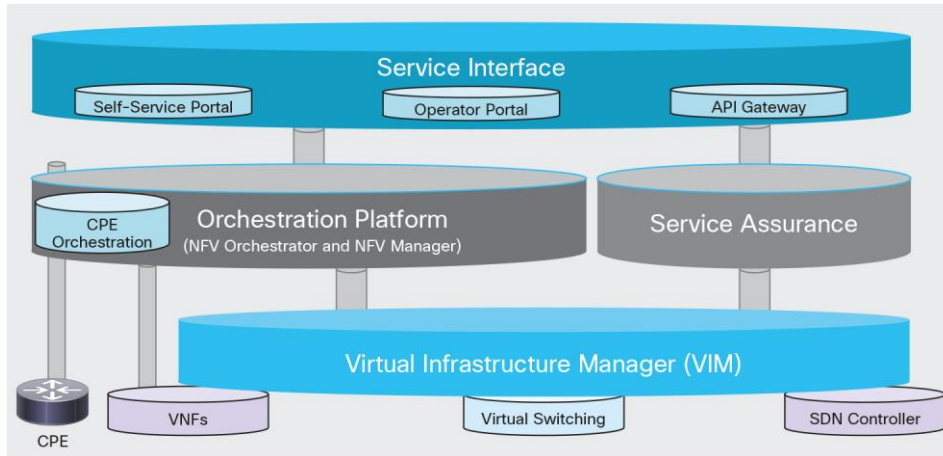
The Cisco[®] Virtual Managed Services (VMS) solution automates the delivery of cloud business services, offering an agile way to deliver and consume business services. It shortens the time to revenue and significantly reduces capital expenditures (CapEx) and operating expenses (OpEx) with an exceptional user experience.

Product Overview

The Virtual Managed Services solution automates the entire service-creation process. It offers a suite of prepackaged service-level packages, such as Cloud VPN, and provides an open platform for service providers to customize and co-create unique offers. It consists of the following main components (Figure 1):

- **Service Interface:** The interface provides a customer-facing self-service portal for creating, ordering, customizing, managing, and activating a cloud service offering. It also provides an operator-facing portal with a dashboard application for Virtual Managed Services operations and APIs for integration with the operator's operations support system and business support system (OSS/BSS).
- **Orchestration Platform:** This platform enables automation of network service delivery. It uses the model-based Cisco Network Services Orchestrator (NSO) software to automate the dynamic provisioning of physical, virtual, and software assets required to create services. It uses the Cisco Elastic Services Controller (ESC) to automate virtual network functions (VNFs) lifecycle management.
- **Service Assurance:** This component provides monitoring, health status, proactive alerts, and key performance indicators (KPIs) for end-to-end services and devices.
- **Virtual Infrastructure Manager (VIM):** Based on OpenStack, the manager provides networking, computing, and storage infrastructure services.
- **Software-Defined Networking (SDN) Controller:** The solution's programmable software and virtual switching capabilities are based on open-source software—the Open Daylight (ODL) SDN controller and Open Virtual Switch (or Open vSwitch [OVS])—combined with enhancements provided by Cisco's high-performance vector packet processing (VPP) software technology.
- **Customer-Premises Equipment (CPE) Orchestration:** CPE Orchestration allows the Virtual Managed Services Orchestration Platform to remotely control the customer's on-premises equipment for zero-touch deployment and ongoing management.
- **Service-Level Packages:** A suite of prepackaged software function packages address specific business service use cases, such as VPN, firewall, and web security.

Figure 1. Cisco Virtual Managed Services Platform Software Architecture



Features and Benefits

Features	Potential Benefits
Customer self-service portal	<ul style="list-style-type: none"> • Reduces service acquisition costs for business customers • Enables customers to more quickly order what they need when they need it; especially useful for new branch offices, businesses entering new markets, and organizations that need to make seasonal changes • Reduces business IT operating costs through simplicity, enabling ordering with a few clicks of the mouse
Zero-touch configuration of CPE	<ul style="list-style-type: none"> • Eliminates the need for service calls, reducing service costs for business customers • Reduces business IT operating costs associated with CPE configuration
Automated service creation	<ul style="list-style-type: none"> • Enables services to be rolled out more quickly by reducing service lead time from weeks to minutes

Main Features

Suite of Pre-validated Customizable Business Service Packages

Fast time to market and time to revenue is essential to service providers. The Virtual Managed Services solution offers multiple prepackaged and pre-validated business services that can be deployed over the solution platform. These packages support all the business and technical logic for the user interface, service orchestration, service assurance, VNFs, and underlying infrastructure. For example, Cloud VPN service-level packages support secure site-to-site VPN, firewall, next-generation intrusion prevention system (IPS), and web security services.

Open Platform

Virtual Managed Services is an open platform that consists of multivendor network services orchestration enabled by Cisco Tail-f® and open-source technologies such as OpenStack. It supports standards-based YANG for service modeling, NETCONF, and representational state transfer (REST) APIs for management of multivendor physical and virtual elements. The openness and flexibility of the platform enables you to customize and develop your own virtualized managed service offers across your infrastructure.

Platform Support

Components	Support Details	Cisco IOS® Software Images (Feature Sets) Supported
CPE	Cisco Integrated Services Routers Generation 2 (ISR G2) Any Cisco 800, 1900, 2900, or 3900 Series ISR that supports Ethernet interfaces	Cisco IOS Software Release 15.5.1T and later
OpenStack	Canonical Ubuntu Server	OpenStack Icehouse
Operating system	Canonical Ubuntu Server	14.0.4LTS (includes Icehouse)
POD	3 Virtual Managed Services POD reference configurations are available: Small, Medium, and Large. Contact Cisco for the additional details.	A Virtual Managed Services POD consists of a Cisco ASR 9000 Series WAN router, Cisco Nexus® 9396PX top-of-rack (ToR) switches, Cisco UCS® C240 M4 Servers for Ceph storage, and Cisco UCS C220 M4 Servers for computing

Licensing

Cisco Virtual Managed Services Platform	Virtual Managed Services Platform Components	License
Service Interface	Enables improved end-customer experience, e-commerce capabilities, and real-time service monitoring and provides an optional operator administrative service interface (portal)	1 time (perpetual) plus support
Orchestration	Enables orchestration and automation of virtual network functions and service policies	1 time (perpetual) plus support
Service Assurance	Provides monitoring, proactive alerts, and performance metrics for devices managed by Virtual Managed Services	1 time (perpetual) plus support
Service Assurance for CPE and VNF	Supports CPE and VNF service assurance	Term based
CPE Orchestration	Enables the Virtual Managed Services Orchestration Platform to control the end-customer CPE device	Term license on per-CPE basis
Service-Level Packages	Provides support for a specific business service use case, including VNF licenses, VNF orchestration, and solution software support	
Cloud VPN Foundation	<ul style="list-style-type: none"> Cloud VPN base service-level package that supports site-to-site IP Security (IPsec) VPN 	<ul style="list-style-type: none"> Term license Various tiers based on bandwidth
Cloud VPN Advanced	<ul style="list-style-type: none"> Supports all the features of Cloud VPN Foundation plus a firewall Optional SSL VPN and Web Security 	<ul style="list-style-type: none"> Term license Various tiers based on bandwidth SSL VPN, and Web Security on per-user basis

System Requirements

Software Components	Recommend Resources
Virtual Managed Services Platform Software plus	
Up to 144 Cloud VPN Foundation packages	Small Virtual Managed Services POD (8 Cisco UCS C220 M4 Servers)
Up to 72 Cloud VPN Advanced packages	Small Virtual Managed Services POD (8 Cisco UCS C220 M4 Servers)

Cisco and Partner Services

Cisco Services can help your organization implement Virtual Managed Services. Our team provides industry-leading cloud, data center, and systems integration expertise, proven best practices, and a comprehensive integrated approach to help you achieve your business goals and gain greater value from your Virtual Managed Services solution.

Cisco Capital Financing to Help You Achieve Your Objectives

Cisco Capital[®] financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx, accelerate your growth, and optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. Cisco Capital financing is available in more than 100 countries. [Learn more.](#)

For More Information

For more information about the Cisco Virtual Managed Services solution, please visit:

- [Cisco Virtual Managed Services](#)
- [Cisco Powered™ Virtual Managed Services](#)



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)