



咨询专家 Ask the Expert

思科SD-WAN (Viptela) 日常 运维功能介绍

吴丹木, 客户体验技术专家李强, 客户体验技术专家

咨询订购: 400-010-8885、 Support@ciscos.com.cn

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This session is for you if:

- SD-WAN solution is deployed
- You are familiar with some of the SD-WAN management tools
- You are looking for best practices to operationalize your SD-WAN

What you will learn today to help you on your Cisco SD-WAN journey

How can you get more value from Cisco SD-WAN?

● SD-WAN overview
architecture primer

● SD-WAN management
vManage
fundamentals&monitoring

● Demo

● SD-WAN operations
templates, tools,
and commands

● Demo

● SD-WAN programmability
API integration

● Demo



SD-WAN overview and vManage



Cisco SD-WAN architecture

Orchestration Plane

- First point of authentication
- Distributes list of vSmart/vManage to all WAN Edge routers
- Facilitates NAT traversal

Management Plane

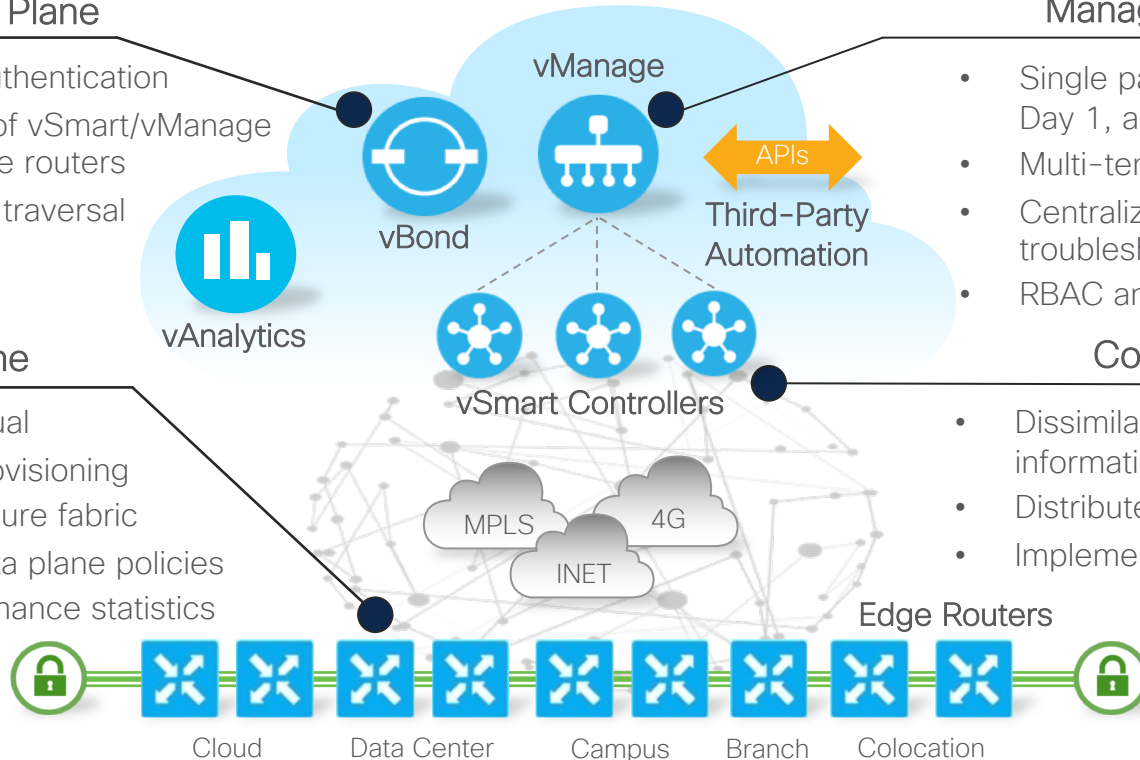
- Single pane of glass for Day 0, Day 1, and Day 2 operations
- Multi-tenant or single-tenant
- Centralized provisioning, troubleshooting, and monitoring
- RBAC and APIs

Data Plane

- Physical or virtual
- Zero Touch Provisioning
- Establishes secure fabric
- Implements data plane policies
- Exports performance statistics

Control Plane

- Disseminates control plane information between WAN Edges
- Distributes data plane policies
- Implements control plane policies



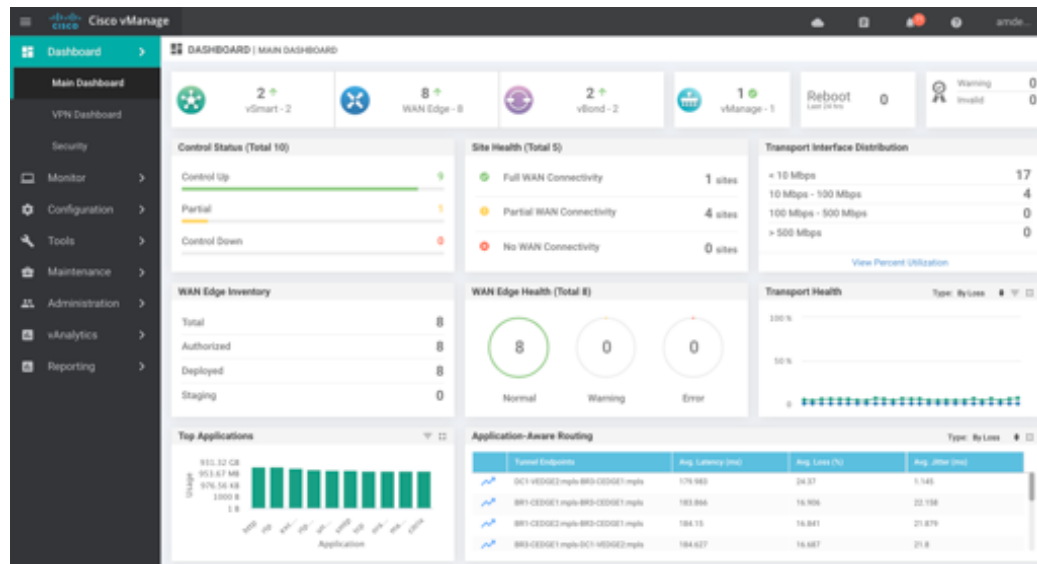
vManage dashboard

Starting point to access the vManage GUI

The vManage dashboard contains vital information, including:

- Status of the controllers and WAN Edge device
- Overall health statistics for WAN Edge
- WAN Edge inventory
- Top applications
- Application-aware routing statistics
- WAN transport health

Serves as a launching point to access more detailed information



Using vManage to monitor the network

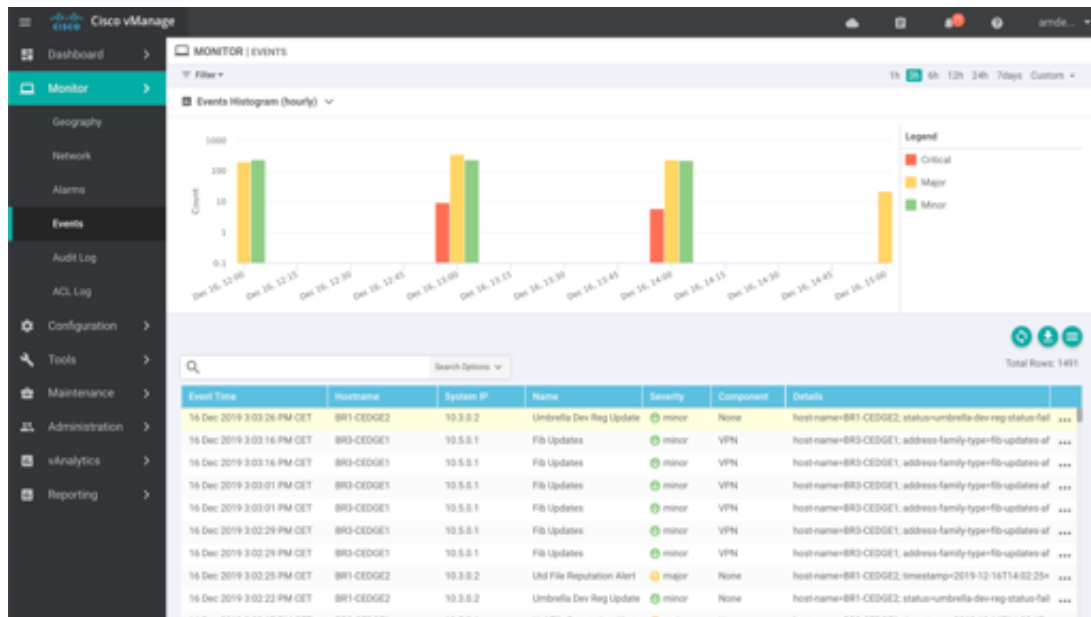
Monitoring capabilities include:


Alarms

- Up/down status of all SD-WAN components
- WAN Edge health
- Application flow visibility
- Transport health visibility
- Individual WAN Edge status and statistics

Logs

- Event logs
- Audit logs
- ACL logs





Demo 1: vManage fundamentals and monitoring SD-WAN

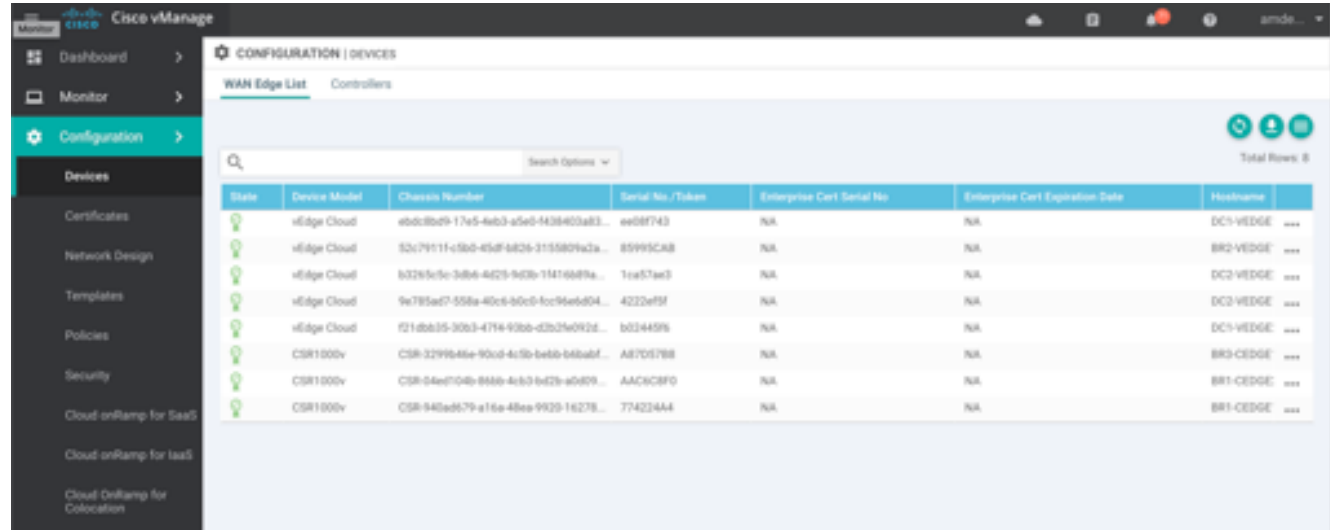
SD-WAN operations



SD-WAN operations

Configuration management

- Managing templates
- Creating templates
- Updating templates



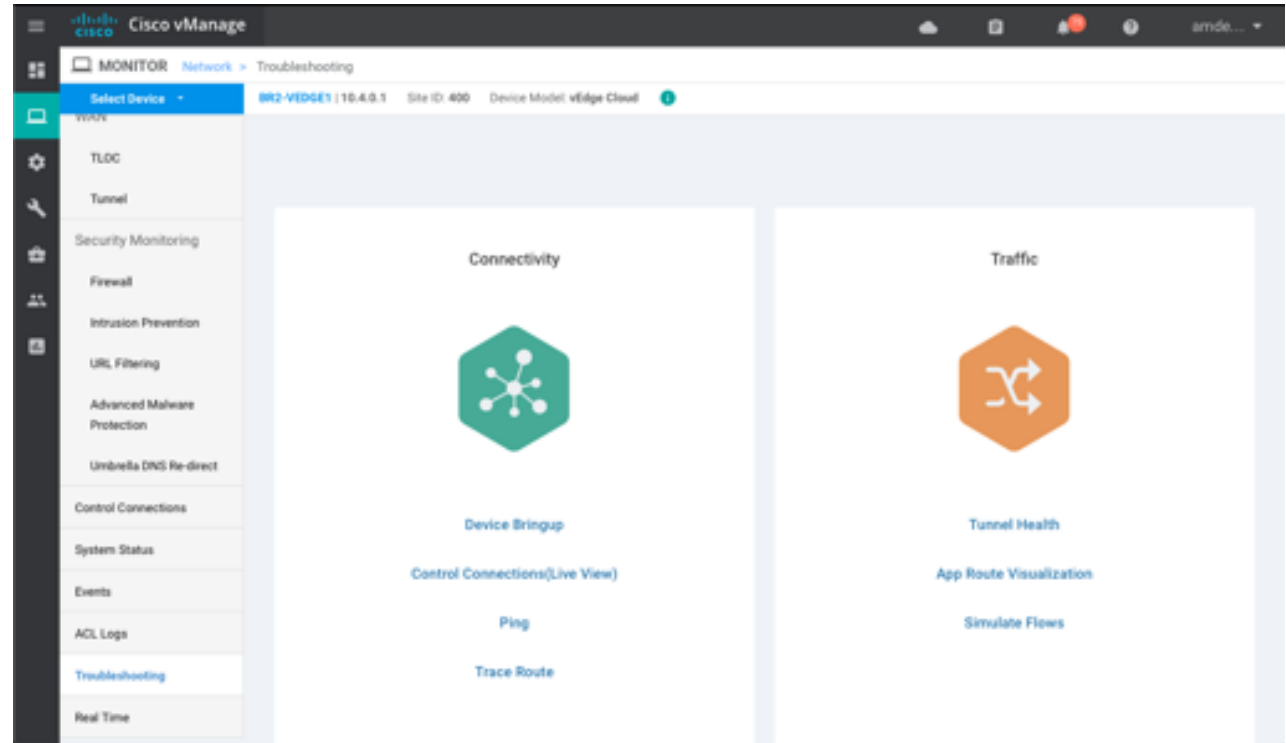
The screenshot shows the Cisco vManage interface. The left sidebar contains navigation options: Dashboard, Monitor, Configuration (selected), and Devices. The main content area is titled 'CONFIGURATION | DEVICES' and shows the 'WAN Edge List' tab. A search bar is present above a table with 8 rows. The table columns are: State, Device Model, Chassis Number, Serial No./Token, Enterprise Cert Serial No, Enterprise Cert Expiration Date, and Hostname. The table lists various vEdge Cloud and CSR1000v devices.

State	Device Model	Chassis Number	Serial No./Token	Enterprise Cert Serial No	Enterprise Cert Expiration Date	Hostname
🟢	vEdge Cloud	ebd8bd9-17a5-4eb3-a5e0-1438403a83...	ee08f743	NA	NA	DC1-VEEDGE
🟢	vEdge Cloud	52c79111-c5b0-45d8-6d26-2155809a3a...	85995CA8	NA	NA	BR2-VEEDGE
🟢	vEdge Cloud	b3265c5c-3d86-4d25-9d3b-11d16d8fa...	1ea57ae3	NA	NA	DC2-VEEDGE
🟢	vEdge Cloud	9e785ad7-558a-40c6-b0c0-f0c94e6d04...	4222ef9f	NA	NA	DC2-VEEDGE
🟢	vEdge Cloud	f21dbb35-30b3-4714-93b0-d3b35e092d...	b034459b	NA	NA	DC1-VEEDGE
🟢	CSR1000v	CSR-3299648a-90cd-4c5b-b4b0-b4baf...	A8705798	NA	NA	BR2-CEEDGE
🟢	CSR1000v	CSR-04ee104b-988b-4c63-bd2b-a0409...	AAC6C8F0	NA	NA	BR1-CEEDGE
🟢	CSR1000v	CSR-94bd6d79-a16a-48ea-9929-16278...	774224A4	NA	NA	BR1-CEEDGE

SD-WAN operations

Tools

- Operational commands
- Troubleshooting
- Network discovery
- Software upgrades



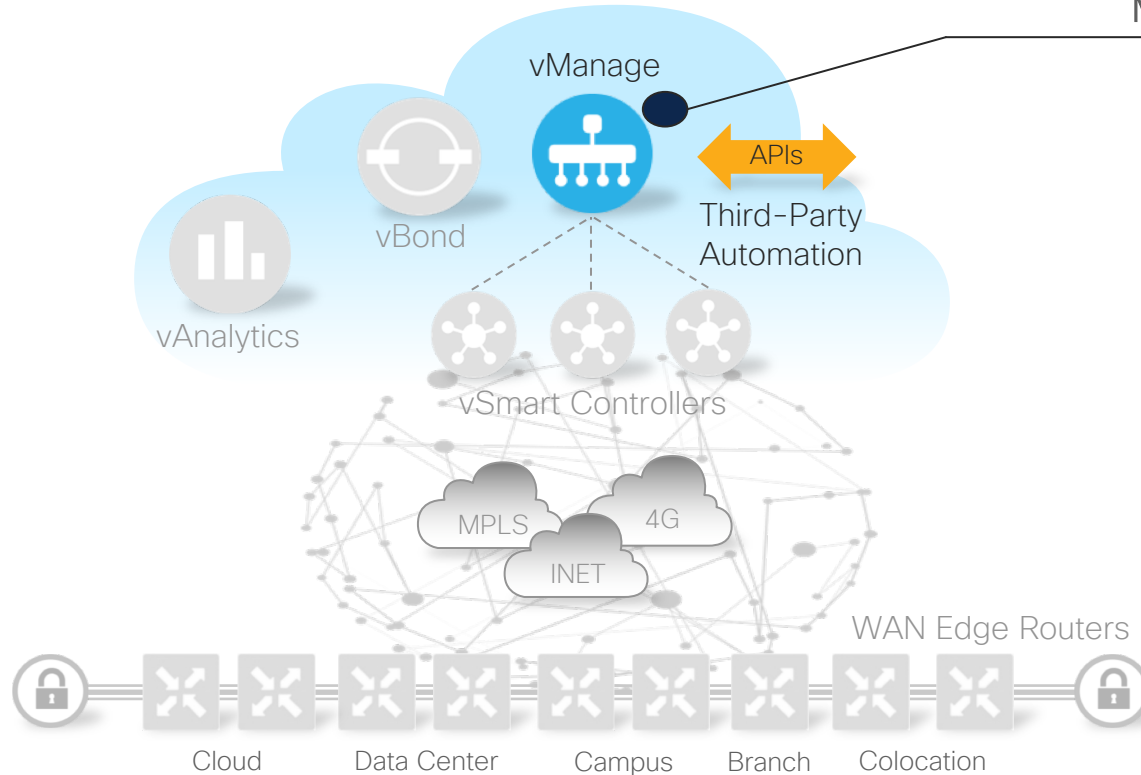


Demo 2: SD-WAN operations

SD-WAN Programmability



Cisco SD-WAN API framework

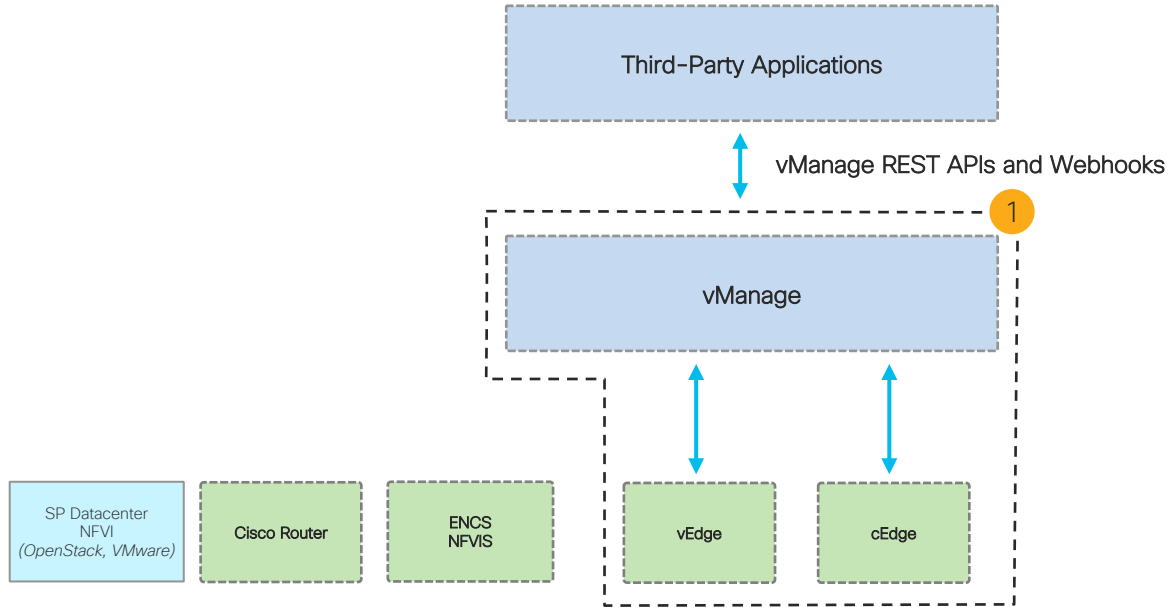


Management Plane

vManage REST APIs

- Endpoint for all API calls
- The vManage web server uses HTTP and its secure counterpart, HTTPS, as the communications protocol
- REST architecture uses a stateless, client-server, cacheable communications protocol

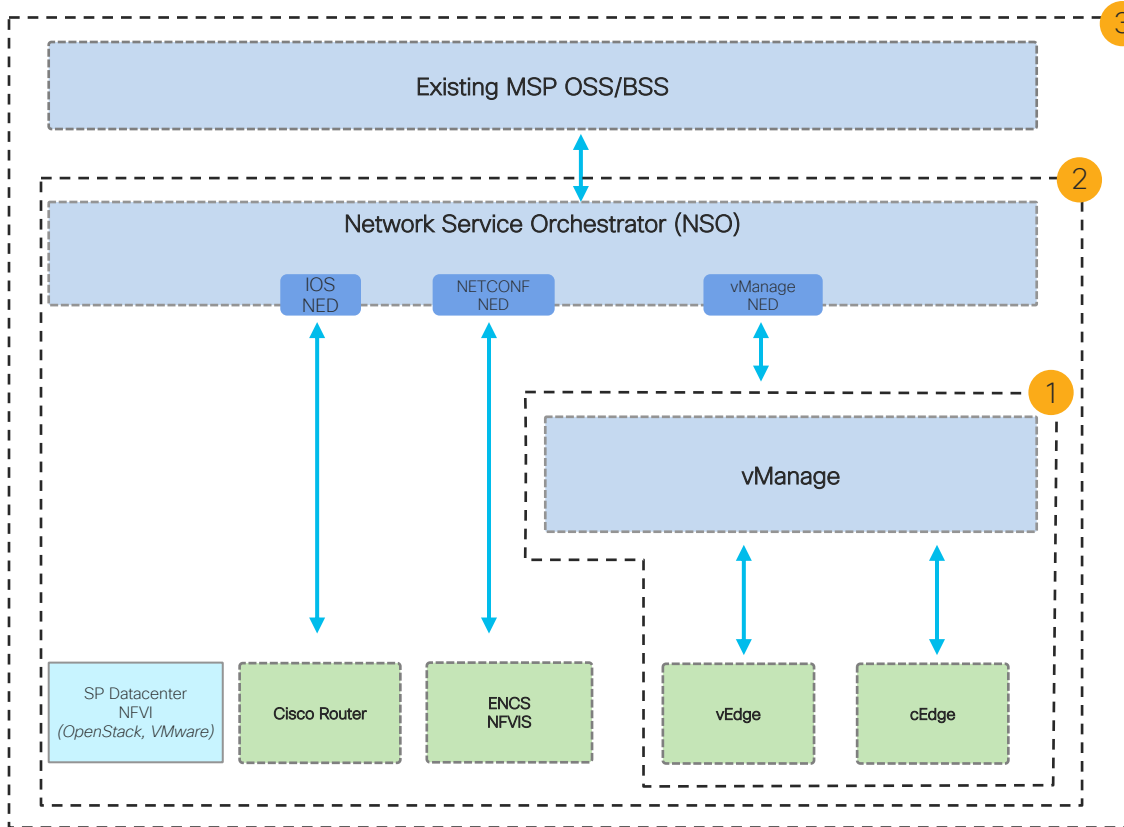
Cisco SD-WAN Automation Stack



Cisco vManage

Target customer has physical SD-WAN Edge appliances without a need for virtual CPE, service orchestration, and OSS/BSS from Cisco

Cisco SD-WAN Automation Stack for MSPs

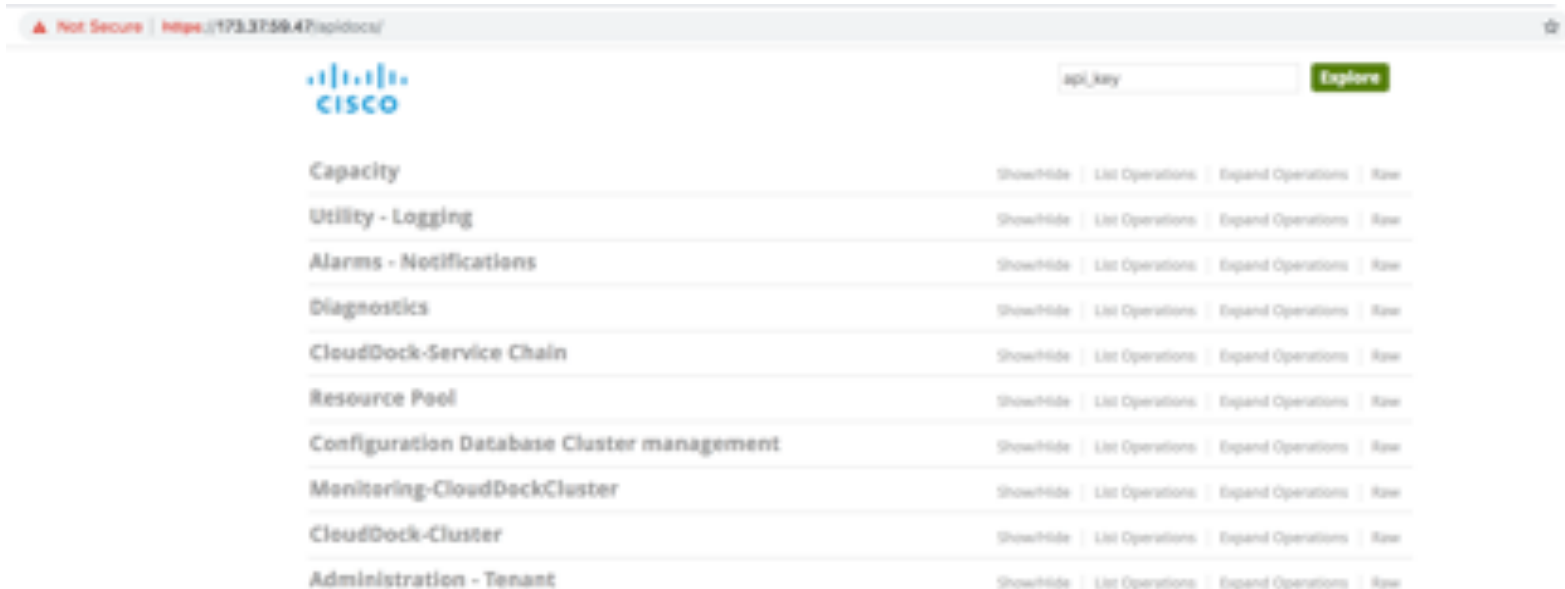


3 OSS/BSS integration with existing MSP OSS/BSS

2 Extended SD-WAN orchestration
Target customer has virtual CPEs; orchestration of other-than-physical SD-WAN Edge appliances is required without a need for OSS/BSS from Cisco

1 Cisco vManage
Target customer has physical SD-WAN Edge appliances without a need for virtual CPE, service orchestration, or OSS/BSS from Cisco

vManage: using REST APIs



- API Documentation built in: `https://<vmanage-ip:port>/apidocs`
- Test API calls can be tried out from Swagger UI

Options for working with REST APIs

Curl

Linux command line application

Postman

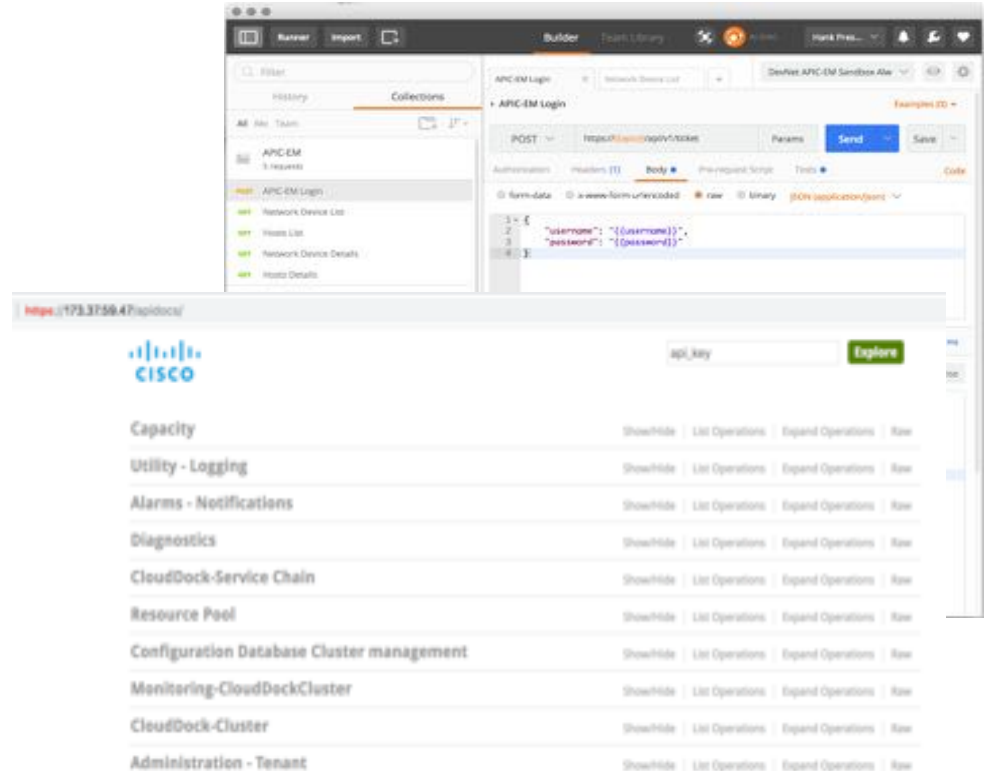
API testing application and framework

Requests

Python library for scripting

OpenAPI/Swagger

Dynamic API documentation





Demo 3: vManage API

Key points to remember

vManage is a single pane of glass that gives visibility into what is happening on the SD-WAN

vManage includes the tools to manage, maintain, and monitor the SD-WAN

The vManage API is a powerful tool that can be used to automate management processes and procedures used in the SD-WAN

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