Cisco Enterprise Service Automation

Cisco® Enterprise Service Automation reduces IT operating expenses by simplifying and automating the processes involved in multi-branch deployments.

Product Overview

Cisco Enterprise Service Automation (ESA) helps IT organizations automate and standardize IT processes across their networks to align with both company and Cisco best practices. Through its GUI, ESA provides intuitive ways of designing cookie-cutter profiles that enable IT to bring up multiple branches in no time. Cisco ESA essentially reduces the operational expenses of an IT organization by rapidly automating the processes involved in branch provisioning and rolling out services.

ESA aids with orchestration, automation of processes, and service chaining of virtual and physical branches, drastically reducing the time required to provision multiple branches simultaneously from months to just minutes. ESA, along with the Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM) and Cisco Prime® Infrastructure, allows IT to design, provision, manage, and monitor the hardware, hosting platforms, and software services required to successfully get a new branch up and running. ESA workflows align with ITIL processes, providing ways for users to create network designs for initial provisioning and service upgrades. It goes through an approval process when there is a change, and the supply of common network attributes for configuring the devices is based on the region, location, or type of branch.

Features and Benefits

Feature	Benefit
Profile design	Allows IT architects to create cookie-cutter network designs with flexibility to provide standardized configurations. Helps reduce complexity by providing best practices and Cisco validated topology designs for the user-selected branch functions.
Plug and Play	Provides automated zero-touch deployment and day-zero provisioning for the hardware platforms connecting to the network. Lowers operating costs by reducing the time that technicians must be on-site to connect and configure the physical hardware and hosting platforms.
Group attributes automation	Improves the user experience and automation of multi-branch provisioning by defining common attributes at the group, region, or site level. Avoids the need to type in predefined attributes for the individual devices or components being provisioned.
Virtual branch service chaining	Reduces complexity by supporting Cisco validated topology designs for virtual functions to help ensure that connectivity results in a working branch network. Automation of service chaining prevents manual service chaining errors and time required to troubleshoot connectivity issues.
Physical branch provisioning	Provisions an entire branch network by automating onboarding, initial configuration, and customer-supplied configurations for the complete branch network. Supports simultaneous provisioning of multiple branches with standardized configurations through easy-to-use bulk provisioning mechanisms.
Deployment and diagnostics status	Improves visibility by providing insights into errors in provisioning at every logical step, per component, thereby reducing the time required to troubleshoot provisioning errors.
Approval process	Embeds an approval process in the workflow to provide a trusted environment for IT organizations before pushing any changes to the network. Follows ITIL processes that align with IT organizational needs. Allows only authorized persons to approve the branch designs and provisioning process.

Feature	Benefit
Versioning	Serves as a source of truth, enabling network operators to see what is provisioned on the network by versioning the design changes and associating the changes with the user and the branches affected by the network profile. Allows changes to multiple devices in multiple branches at the same time and provides a mechanism to keep track of the changes.
Role-based access control (RBAC)	Supports an RBAC model, providing the IT organization flexibility to define tasks for each role. Aligns with IT operational needs by providing support for customizable roles in addition to predefined ones.

Automation, Integration, and Cisco Validated Designs

Service Automation is a process tool that supports APIs and allows an external system to plug into a branch network and pass input parameters to it. It is used to automate the provisioning of branches. Cisco Enterprise Service Automation is a thin, lightweight orchestration layer that closely integrates with other Cisco management tools and controllers, such as Cisco Prime Infrastructure and APIC-EM, and comes as an enterprise packaged solution. It uses the services available in the controller and management tools to register and provision both physical and virtual branches and seamlessly monitor and manage the components provisioned for inventory, change, fault, and performance functions.

Service Automation includes knowledge packs that are prepackaged within the system, providing users with validated topology designs. These Cisco best practice designs can be used in designing the virtual branch components. This helps reduce the load on the user, who otherwise would need to understand the nuances of service chaining. The tool is designed to provide flexibility to the user to choose either the Cisco virtual network functions or functions offered by other network vendors that are certified to work in this environment. The tool has a Cisco validated initial configuration that the user can use to get the network up and running within minutes.

Platform Support/Compatibility

Table 1 lists the platforms and products that support ESA.

Table 1. Platform Support

Platforms and Functions	Product Family
Hosting platforms	Cisco UCS C-Series Rack Servers Cisco UCS E-Series Servers Cisco Enterprise Network Computer System
Cisco virtual functions	Cisco Cloud Services Router (CSR) 1000V Cisco Adaptive Security Virtual Appliance (ASAv) Cisco Virtual Wide Area Application Services (vWAAS) The Cisco Firepower™ Next-Generation Firewall (NGFW)
Hardware platforms	Cisco 4000 Series Integrated Services Routers Cisco Catalyst® 3650 Series Switches

System Requirements

Table 2 provides product specifications for the various virtual appliance deployment options supported by Cisco Enterprise Service Automation.

Table 2. Specifications

Resource Description	Minimum Requirement
vCPU (Virtual CPUs)	4 vCPUs
Memory (DRAM)	8 GB
Minimum hard disk drive size	50 GB

Ordering and Licensing Information

Cisco Enterprise Service Automation version 1.0 is part of the Cisco Enterprise Network Functions Virtualization (ENFV) solution bundle. When you purchase the bundle, you get a RTU (right to use) license for the software. ESA 1.0 does not require any other licenses for provisioning and orchestration of services.

To deploy the ENFV solution, and orchestrate and automate deployments with ESA you need to deploy two appliances (physical or VM):

1. A Cisco APIC-EM server.
2. Cisco Prime Infrastructure Server that allows you to monitor, orchestrate, and manage the network devices.

If you have already deployed these servers with the necessary licenses, you can use the existing equipment.

If you have not already deployed the Cisco Prime Infrastructure or APIC-EM servers, you will need to procure the associated server and the device licenses. For information on ordering APIC-EM and Cisco Prime Infrastructure, go to http://www.cisco.com/c/en/us/products/cloud-systems-management/prime-infrastructure/datasheet-listing.html.

http://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/application-policy-infrastructure-controller-enterprise-module/datasheet-c78-730594.html.

To access the Information on ordering the ENFV solution itself, please follow the link below: http://www.cisco.com/c/en/us/solutions/enterprise-networks/enterprise-network-functions-virtualization-nfv/index.html.

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