Cisco ACI Simulator Release Notes, Release 1.1(1r)

This document provides the compatibility information, usage guidelines, and the scale values that were validated in testing this Cisco ACI Simulator release. Use this document in combination with the documents listed in the *Related Documentation* section.

Note: The Cisco ACI Simulator 1.1(1r) release contains the same functionality as the Cisco APIC 1.1(1r) release. For information about the functionality, see the APIC 1.1(1r) release notes: https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html

Table 1 shows the online change history for this document.

Table 1. Online History Change

Date	Description
August 25, 2015	Created the release notes for Release 1.1(1r).
December 9, 2015	Fixed incorrect URLs to the documentation on cisco.com.
March 1, 2017	In the General Usage Guidelines section, updated the bullet about allowed Cisco UCS C220 Servers.

Contents

This document includes the following sections:

- Introduction
- Software Features
- Installation Notes
- Compatibility Information
- Usage Guidelines
- Supported Scale with the ACI Simulator

Related Documentation Installation Notes

Installation Notes

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Introduction

The Application Centric Infrastructure is conceptualized as a distributed, scalable, multi-tenant infrastructure with external endpoint connectivity that is controlled and grouped through application centric policies. The Application Policy Infrastructure Controller (referred to as the APIC) is the key architectural component that is the unified point of automation, management, monitoring, and programmability for the Application Centric Infrastructure. The APIC supports the deployment, management and monitoring of any application anywhere, with a unified operations model for physical and virtual components of the infrastructure. The APIC programmatically automates network provisioning and control based on the application requirements and policies. It is the central control engine for the broader cloud network, simplifying management while allowing tremendous flexibility in how application networks are defined and automated and also providing northbound REST APIs. The APIC is a distributed system implemented as a cluster of many controller instances.

ACI Simulator

The intent of the ACI Simulator is to provide real, fully-featured APIC software, along with a simulated fabric infrastructure of leaf switches and spine switches in one physical server. You can use the ACI Simulator to understand features, exercise APIs, and initiate integration with third-party orchestration systems and applications. The native GUI and CLI of the APIC use the same APIs that are published to third parties.

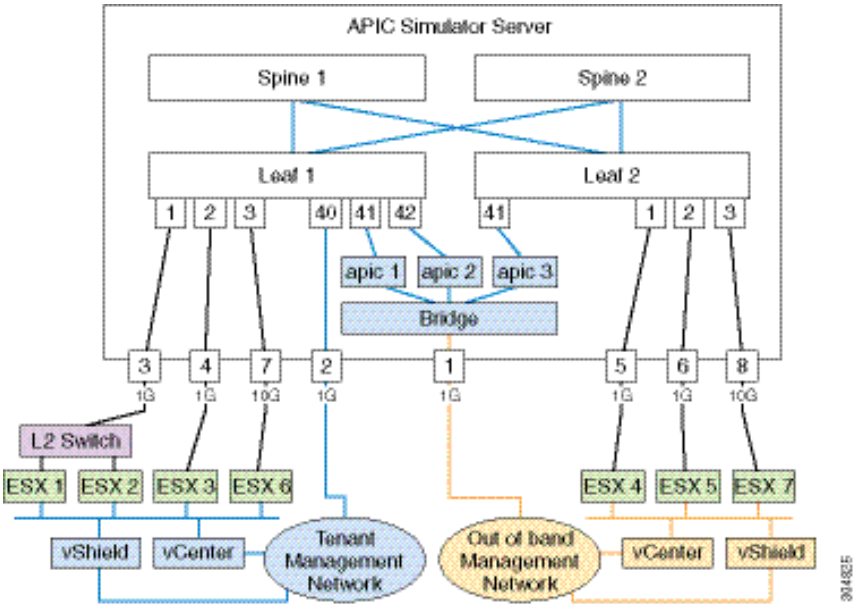
The ACI Simulator includes simulated switches, so you cannot validate a data path. However, some of the simulated switch ports have been mapped to the front-panel server ports, which allows you to connect external management entities such as ESX servers, vCenters, vShields, bare metal servers, Layer 4 to Layer 7 services, AAA systems, and other physical or virtual service appliances. In addition, the ACI Simulator allows simulation of faults and alerts to facilitate testing and demonstrate features.

One instance of the production APIC will be shipped per server appliance. By contrast, the ACI Simulator includes three actual APIC instances and two simulated leaf switches and two simulated spine switches in a single server. As a result, the performance of the ACI Simulator will be slower than deployments on actual hardware. You can perform operations on the simulated fabric using any of the following functional interfaces:

- Graphical user interface (GUI)
- Command Line Interface (CLI)
- Application programming interface (API)

Figure 1 shows the components and connections simulated within the simulator server.

Figure 1 Simulated Components and Connections in the ACI Simulator Server



Software Features

This section lists the key software features of the ACI Simulator that are available in this release.

- Application centric network policies
- Data model-based declarative provisioning
- Application, topology monitoring, and troubleshooting
- Third-party integration (Layer 4 to Layer 7 services, WAN, vCenter, vShield)
- Physical infrastructure policies (spine and leaf)
- ACI inventory and configuration
- Implementation on a distributed framework across a cluster of appliances
- Health Scores for key Managed Objects (tenants, application profiles, switches, and so on)
- Fault, event and performance management

Installation Notes

The Cisco ACI Simulator is preinstalled on the ACI Simulator appliance. When you launch the ACI Simulator for the first time, the APIC console presents a series of initial setup options. See the *Cisco ACI Simulator Installation Guide* for information about the setup options.

Compatibility Information

The 1.1(1r) release of the ACI Simulator supports the following software:

- VMware vCenter 5.1 and 5.5 and vShield 5.1 and 5.5
- Web browsers for the ACI Simulator GUI:
  - Chrome version 35, at minimum, on Mac and Windows
  - Firefox version 26 or higher on Mac and Windows

Usage Guidelines

This section includes usage guidelines that are specific to this release.

- General Usage Guidelines
- Layer 4 to Layer 7 Services Usage Guidelines

General Usage Guidelines

Observe the following guidelines when using the 1.1(1r) software release:

- The ACI Simulator software cannot be installed separately on a standard Cisco UCS C220 Server or on other servers. The software runs only on the ACI Simulator server, which has the following PID:
  - APIC-SIM-S2 (based on Cisco UCS C220 M4 server)
- The ACI Simulator GUI includes an online version of the Quick Start guide that includes video demonstrations.
- Do not do change the following:
  - Default names in the initial setup for node names and the cluster configuration.
  - Cluster size and the number of APIC nodes.
  - Infra VLAN.
- The ACI Simulator does not support the following:
  - Configuration of a DHCP server policy.
  - Configuration of a DNS service policy.
  - Configuring out-of-band management access for switches.
  - Data path forwarding (the ACI Simulator includes simulated switches.
  - CDP is not supported between a leaf and an ESX/hypervisor or between a leaf and an unmanaged/L2 switch. Only LLDP is supported in these cases.
- The ACI Simulator uses NAT for inband management. Inband IPs configured by policy are not used. Instead, APIC and node inband IPs are internally allocated.
- APIC out-of-band management IP/Gateway cannot be modified using an out-of-band management policy and can be configured only during the APIC first time setup screen.
- Keep the vMotion PNIC outside of the Simulator network.
- The infrastructure EPG in the Infra tenant is for internal use only.

- The MP-BGP route reflector and the OSPF external routed network protocols do not work if you are using the simulator
- Virtual shell (VSH) and ishell commands do not work on switches. These commands are implemented on the Cisco NX-OS software, and the Cisco NX-OS software is not available on the simulator.
- The MP-BGP route reflector and the OSPF external routed network protocols do not work if you are using the simulator.
- Virtual shell (VSH) and ishell commands do not work on switches. These commands are implemented on the Cisco NX-OS software, and the Cisco NX-OS software is not available on the simulator.
- Statistics are simulated. As a result, threshold crossing alert (TCA) faults are generated in the simulator to demonstrate the fault generation on the statistics threshold crossing.
- Create a syslog and Call Home source policy under common policy. This policy applies at the system level and sends all syslog and Call Home messages system wide. The GUI path to create syslog and Call Home under common policy are as follows: Admin / External Data Collector/ Monitoring Destinations / [Callhome | SNMP | Syslog].
- The Cisco ACI Simulator simulates faults for counters, which might cause the health score of the top-of-rack (TOR) switch to go down. The faults look like the following:

<faultInst ack="no" cause="threshold-crossed" changeSet="" childAction="" code="F54431" created="2014-01-21T17:20:13.179+00:00" descr="TCA: l2IngrBytes5min dropRate value 9049.94 raised above threshold 9000 and value is recovering "dn="topology/pod-1/node-17/sys/ctx-[vxlan-2621440]/bd-[vxlan-15826914]/vlan-[vlan-1031]/fault-F54431" domain="infra" highestSeverity="minor" lastTransition="2014-01-21T17:22:35.185+00:00" lc="raised" modTs="never" occur="1"origSeverity="minor" prevSeverity="minor" rule="tca-l2-ingr-bytes-drop-rate" severity="minor" status="" subject="counter" type="operational"/> <faultInst ack="no" cause="threshold-crossed" changeSet="" childAction="" code="F54447" created="2014-01-21T17:20:13.244+00:00" descr="TCA: l2IngrPkts5min dropRate value 3.53333 raised above threshold 10" dn="topology/pod-1/node-17/sys/ctx-[vxlan-2621440]/bd-[vxlan-15826914]/vlan-[vlan-1 031]/fault-F54447" domain="infra" highestSeverity="warning" lastTransition="2014-01-21T19:42:37.983+00:00" lc="retaining" modTs="never" occur="9" origSeverity="warning"prevSeverity="warning" rule="tca-l2-ingr-pkts-drop-rate" severity="cleared" status="" subject="counter" type="operational"/>

Layer 4 to Layer 7 Services Usage Guidelines

Observe the following guidelines when using Layer 4 to Layer 7 services:

- The 1.1(1r) release supports Layer 4 to Layer 7 services integration with Citrix and ASA. These packages are not prepackaged in the Simulator appliance. Depending on the Layer 4 to Layer 7 services that you want to test, you should procure the corresponding package from the file share.
- Service nodes should be connected using the out-of-band connection. The service node and the APIC should be in the same subnet. For information on connecting Layer 4 to Layer 7 services to the Simulator, refer to the *Cisco Application Centric Infrastructure Simulator Installation Guide*.
- You can test Layer 4 to Layer 7 services by connecting your service appliance using in-band management connectivity between the simulator and the appliance.
- For additional information on Layer 4 to Layer 7 services, refer to the *Deploying Layer 4 to Layer 7 Services Guide*.

Supported Scale with the ACI Simulator

Table 2 lists the scale values that were validated in testing this ACI Simulator 1.1(1r) release.

Table 2. Values Tested Without an External Service Node

Object	Value
Tenants	10
EPGs	100
Contracts	100
EPG per Tenant	10
Contracts per Tenant	20
vCenter	2
vShield	2

Related Documentation

The Cisco Application Policy Infrastructure Controller (APIC) documentation can be accessed from this website:

https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html

For more information, see the following:

- Cisco Application Centric Infrastructure (ACI) Simulator Documentation

Cisco Application Centric Infrastructure (ACI) Simulator Documentation

The Cisco ACI Simulator documentation is available at https://www.cisco.com/c/en/us/support/cloud-systems-management/application-centric-infrastructure-simulator/tsd-products-support-series-home.html.

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