# Verified Scalability for Cisco Dynamic Fabric Automation

**First Published:** January 31, 2014

**Last Modified:** February 04, 2014

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# Preface

The Preface contains the following sections:



## Audience

This publication is for network administrators who configure and maintain Cisco Nexus devices.

## Document Conventions

Command descriptions use the following conventions:

| Convention | Description |
|---|---|
| **bold** | Bold text indicates the commands and keywords that you enter literally as shown. |
| *Italic* | Italic text indicates arguments for which the user supplies the values. |
| [x] | Square brackets enclose an optional element (keyword or argument). |
| [x \| y] | Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice. |
| {x \| y} | Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice. |

| Convention | Description |
|---|---|
| [x {y \| z}] | Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element. |
| `variable` | Indicates a variable for which you supply values, in context where italics cannot be used. |
| string | A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks. |

Examples use the following conventions:

| Convention | Description |
|---|---|
| `screen font` | Terminal sessions and information the switch displays are in screen font. |
| **`boldface screen font`** | Information you must enter is in boldface screen font. |
| *italic screen font* | Arguments for which you supply values are in italic screen font. |
| < > | Nonprinting characters, such as passwords, are in angle brackets. |
| [ ] | Default responses to system prompts are in square brackets. |
| !, # | An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line. |

This document uses the following conventions:

**Note** Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

**Caution** Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

# Related Documentation for Cisco DFA

The Cisco Dynamic Fabric Automation documentation is at the following URL: http://www.cisco.com/en/US/solutions/ns340/ns517/ns224/ns945/dynamic_fabric_automation.html#~Products .

The Cisco Nexus 6000 Series documentation is at the following URL: http://www.cisco.com/en/us/products/ps9402/tsd_products_support_series_home.html.

The Cisco Nexus 7000 Series documentation is at the following URL: http://www.cisco.com/en/US/products/ps12806/tsd_products_support_series_home.html.

The Cisco Nexus 1000V Switch for VMware vSphere documentation is at the following URL: http://www.cisco.com/en/US/products/ps9902/tsd_products_support_series_home.html. The documentation therein includes the following guides for Cisco DFA. Additional information pertaining to troubleshooting can be located in the Cisco Nexus 1000V documentation for Cisco NX-OS Release 4.2(1)SV2(2.2).

- *Cisco Nexus 1000V DFA Configuration Guide, Release 4.2(1)SV2(2.2)*
- *Cisco Nexus 1000V VDP Configuration Guide, Release 4.2(1)SV2(2.2)*

The Cisco Prime Data Center Network Manager (DCNM) documentation is at the following URL: http://www.cisco.com/en/US/products/ps9369/tsd_products_support_series_home.html. The Cisco Prime DCNM documentation for Cisco DFA includes but is not limited to the following guides:

- *Cisco DCNM 7.0 OVA Installation Guide.*
- *Cisco DCNM 7.0 Fundamentals Guide*
- *Cisco DCNM DFA REST 7.0 API Guide*

The Cisco Prime Network Services Controller (NSC) documentation is at the following URL: http://www.cisco.com/en/US/products/ps13213/tsd_products_support_series_home.html.

The OpenStack for Cisco DFA install documentation includes the following guide and documents:

- *Open Source Used In OpenStack for Cisco DFA 1.0* at the following URL: http://preview.cisco.com/en/US/docs/switches/datacenter/dfa/openstack/opensource/OpenStack_for_Cisco_DFA_1.0_Open_Source_Documentation.pdf
- *OpenStack for Cisco DFA Install Guide Using Cisco OpenStack Installer* at the following URL: http://www.cisco.com/en/US/docs/switches/datacenter/dfa/openstack/install/guide/os-dfa-coi.pdf
- *OpenStack for Cisco DFA Install Guide for Using Pre-built OpenStack for Cisco DFA Images* at the following URL: http://www.cisco.com/en/US/docs/switches/datacenter/dfa/openstack/install/guide/preblt-image.pdf
- *Quick Guide to Clonezilla* at the following URL: http://www.cisco.com/en/US/docs/switches/datacenter/dfa/openstack/install/guide/clonezilla-image-restore.pdf

# Documentation Feedback

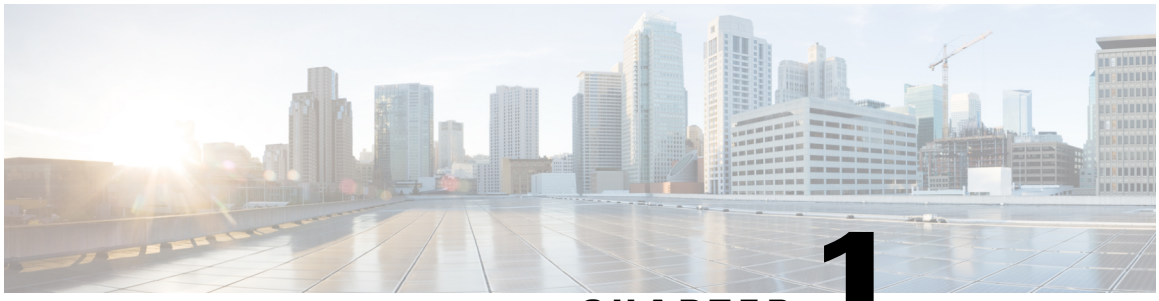
To provide technical feedback on this document, or to report an error or omission, please send your comments to one of the following:

We appreciate your feedback.

# Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. The RSS feeds are a free service.



CHAPTER 1

# Verified Scalability for Cisco Dynamic Fabric Automation

This chapter contains the following sections:



## Overview of Verified Scalability

This document lists the Cisco verified scalability limits for a Cisco Dynamic Fabric Automation (DFA) deployment.

In the following tables, the Verified Topology column lists the verified scaling capabilities with all listed features enabled at the same time. The numbers listed here exceed those used by most customers in their topologies. The scale numbers listed here are not the maximum verified values if each feature is viewed in isolation.

The Verified Maximum column lists the maximum scale capability tested for the corresponding feature individually. This number is the absolute maximum currently supported by the Cisco NX-OS Release software for the corresponding feature. If the hardware is capable of a higher scale, future software releases may increase this verified maximum limit.

## Verified Scalability for a Cisco DFA Fabric

This table lists the verified scalability for the fabric and Cisco Dynamic Fabric Automation (DFA) deployment.

***Table 1: Verified Scalability for a Cisco DFA Fabric***

| Feature | Verified Topology | Verified Maximum |
|---|---|---|
| Number of spines | 8 | 16 |

| Feature | Verified Topology | Verified Maximum |
|---|---|---|
| Number of leaf switches | 384 | 384 |
| Number of tenants | 10,000 | 10,000 |
| VRFs | 20,000 | 20,000 |
| Segments | 50,000 | 50,000 |
| IP routes | 800,000 | 1.2 million |
| Virtual machines (VMs) | 12,000 | 300,000 |
| Prime Network Services Controller (NSC) | 11 | 40 |
| Network service nodes per Prime NSC instance | 512 | 512 |

# Verified Scalability for Cisco DFA Leaf Switch

This table lists the verified scalability for a leaf switch and Cisco Dynamic Fabric Automation (DFA) deployment.

***Table 2: Verified Scalability for a Leaf Switch and Cisco DFA Deployment***

| Feature | Verified Topology | Verified Maximum |
|---|---|---|
| IPv4 hosts | 40,000 | 64,000 |
| IPv6 hosts | 10,000 | 20,000 |
| VRF | 200 | 300 |
| Segments | 1000 | 1500 |
| VDP sessions | 1200 | 15,000 |
| Layer 2 BFD sessions | 380 | 384 |

# Verified Scalability for Cisco DFA Border Leaf Switch

This table lists the verified scalability for a border leaf switch and Cisco Dynamic Fabric Automation (DFA) deployment.

*Table 3: Verified Scalability for a Border Leaf Switch and Cisco DFA Deployment*

| Feature | Verified Topology | Verified Maximum |
|---|---|---|
| IPv4 hosts | 40,000 | 64,000 |
| IPv6 hosts | 10,000 | 20,000 |
| VRF | 600 | 1000 |
| Segments | 1000 | 1500 |
| Layer 2 BFD sessions | 380 | 384 |