



Preface

This guide provides instructions for implementing server load balancing (SLB) on the Cisco 4700 Series Application Control Engine (ACE) appliance. It describes how to configure network traffic policies for SLB, real servers and server farms, health monitoring probes, and stickiness (connection persistence).

You can configure the ACE by using the following interfaces:

- The command-line interface (CLI), a line-oriented user interface that provides commands for configuring, managing, and monitoring the ACE.
- Device Manager graphic user interface (GUI), a Web browser-based GUI interface that provides a graphical user interface for configuring, managing, and monitoring the ACE.

This preface contains the following major sections:

- [Audience](#)
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Audience

This guide is intended for the following trained and qualified service personnel who are responsible for configuring the ACE:

- System administrator
- System operator

How to Use This Guide

This guide is organized as follows:

Chapter	Description
Chapter 1, Overview	Describes SLB as implemented in the ACE. This chapter includes a procedure that describes how to configure the ACE for load balancing only.
Chapter 2, Configuring Real Servers and Server Farms	Describes real servers, server farms, and load-balancing methods and how to configure them for SLB.
Chapter 3, Configuring Traffic Policies for Server Load Balancing	Describes how to configure class maps to filter interesting SLB traffic and configure policy maps to perform actions on that traffic. Also describes SLB parameter maps and applying policies to interfaces.
Chapter 4, Configuring Health Monitoring	Describes how to configure health probes (keepalives) to monitor the health and status of real servers.
Chapter 5, Configuring Stickiness	Describes how to configure stickiness (connection persistence) to ensure that a client remains stuck to the same server for the duration of a session.
Chapter 6, Configuring Firewall Load Balancing	Describes how to configure firewall load balancing (FWLB) to load balance traffic from the Internet through a firewall to a data center or intranet.
Appendix A, Using TCL Scripts with the ACE	Describes how to upload and execute Toolkit Command Language (TCL) scripts on the ACE.

Related Documentation

In addition to this guide, the ACE documentation set includes the following documents:

Document Title	Description
<i>Release Note for the Cisco 4700 Series Application Control Engine Appliance</i>	Provides information about operating considerations, caveats, and command-line interface (CLI) commands for the ACE.
<i>Cisco Application Control Engine Appliance Hardware Installation Guide</i>	Provides information for installing the ACE appliance.
<i>Regulatory Compliance and Safety Information for the Cisco Application Control Engine Appliance</i>	Regulatory compliance and safety information for the ACE appliance.
<i>Cisco ACE 4700 Series Application Control Engine Appliance CLI Quick Configuration Note</i>	Describes how to use the ACE CLI to perform the initial setup and VIP load-balancing configuration tasks.
<i>Cisco 4700 Series Application Control Engine Appliance Device Manager GUI Quick Configuration Note</i>	Describes how to use the ACE Device Manager GUI to perform the initial setup and VIP load-balancing configuration tasks.

Document Title	Description
<i>Cisco 4700 Series Application Control Engine Appliance Administration Guide</i>	<p>Describes how to perform the following administration tasks on the ACE:</p> <ul style="list-style-type: none"> • Setting up the ACE • Establishing remote access • Managing software licenses • Configuring class maps and policy maps • Managing the ACE software • Configuring SNMP • Configuring redundancy • Configuring the XML interface • Upgrading the ACE software
<i>Cisco 4700 Series Application Control Engine Appliance Virtualization Configuration Guide</i>	<p>Describes how to operate your ACE in a single context or in multiple contexts.</p>
<i>Cisco 4700 Series Application Control Engine Appliance Routing and Bridging Configuration Guide</i>	<p>Describes how to perform the following routing and bridging tasks on the ACE:</p> <ul style="list-style-type: none"> • Configuring Ethernet ports • Configuring VLAN interfaces • Configuring routing • Configuring bridging • Configuring Dynamic Host Configuration Protocol (DHCP)
<i>Cisco 4700 Series Application Control Engine Appliance Application Acceleration and Optimization Configuration Guide</i>	<p>Describes how to configure the application acceleration and optimization features of the ACE. This guide also provides an overview and description of those features.</p>

Document Title	Description
<i>Cisco 4700 Series Application Control Engine Appliance Security Configuration Guide</i>	<p>Describes how to configure the following ACE security features:</p> <ul style="list-style-type: none"> • Security access control lists (ACLs) • User authentication and accounting using a Terminal Access Controller Access Control System Plus (TACACS+), Remote Authentication Dial-In User Service (RADIUS), or Lightweight Directory Access Protocol (LDAP) server • Application protocol and HTTP deep packet inspection • TCP/IP normalization and termination parameters • Network Address Translation (NAT)
<i>Cisco 4700 Series Application Control Engine Appliance SSL Configuration Guide</i>	<p>Describes how to configure the following Secure Sockets Layer (SSL) features on the ACE:</p> <ul style="list-style-type: none"> • SSL certificates and keys • SSL initiation • SSL termination • End-to-end SSL
<i>Cisco 4700 Series Application Control Engine Appliance System Message Guide</i>	<p>Describes how to configure system message logging on the ACE. This guide also lists and describes the system log (syslog) messages generated by the ACE.</p>
<i>Cisco 4700 Series Application Control Engine Appliance Command Reference</i>	<p>Provides an alphabetical list and descriptions of all CLI commands by mode, including syntax, options, and related commands.</p>

Document Title	Description
<i>Cisco 4700 Series Application Control Engine Appliance Device Manager GUI Configuration Guide</i>	Describes how to use the Device Manager GUI, which resides in flash memory on the ACE, to provide a browser-based interface for configuring and managing the appliance.
<i>Cisco CSS-to-ACE Conversion Tool User Guide</i>	Describes how to use the CSS-to-ACE conversion tool to migrate Cisco Content Services Switches (CSS) running-configuration or startup-configuration files to the ACE.

Symbols and Conventions

This publication uses the following conventions:

Convention	Description
boldface font	Commands, command options, and keywords are in boldface . Bold text also indicates a command in a paragraph.
<i>italic</i> font	Arguments for which you supply values are in <i>italics</i> . Italic text also indicates the first occurrence of a new term, book title, emphasized text.
{ }	Encloses required arguments and keywords.
[]	Encloses optional arguments and keywords.
{ x y z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .

Convention	Description
boldface screen font	Information you must enter in a command line is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords are in angle brackets.

Notes use the following conventions:



Note

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



Caution

Cautions use the following conventions:

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

For additional information about CLI syntax formatting, see the *Cisco 4700 Series Application Control Engine Appliance Command Reference*.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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