



Preface

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

This preface contains the following major sections:

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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 of Server Load Balancing	Describes SLB as implemented in the ACE. It includes a procedure that describes how to configure the ACE for load balancing only.
Chapter 2, Configuring Real Servers and Server Farms	Configure real servers, server farms, and load-balancing methods for SLB.
Chapter 1, Configuring Traffic Policies for Server Load Balancing	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	Configure health probes (keepalives) to monitor the health and status of real servers.
Chapter 5, Configuring Stickiness	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	Configure firewall load balancing (FWLB) to load-balance traffic from the Internet through a firewall to a data center or intranet.
Appendix A, Using Toolkit Command Language (TCL) Scripts with the ACE	Upload and execute Toolkit Command Language (TCL) scripts on the ACE.

Related Documentation

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

Document Title	Description
<i>Release Note for the Cisco Application Control Engine Module</i>	Provides information on operating considerations, caveats, and command-line interface (CLI) commands for the ACE.
<i>Cisco Application Control Engine Module Hardware Installation Note</i>	Provides information for installing the ACE into the Catalyst 6500 series switch.
<i>Cisco Application Control Engine Module Getting Started Guide</i>	Describes how to perform the initial setup and configuration tasks for the ACE.
<i>Cisco Application Control Engine Module Administration Guide</i>	Describes how to perform ACE administration and configuration tasks, including initial setup, remote access, class maps and policy maps, managing the ACE software, SNMP, system message logging, redundancy, and upgrading your ACE software.
<i>Cisco Application Control Engine Module Virtualization Configuration Guide</i>	Provides instructions on how to operate your ACE in a single-context or in multiple-contexts. Multiple-contexts use the concept of virtualization to partition your ACE into multiple virtual devices or contexts.

Document Title	Description
<i>Cisco Application Control Engine Module Routing and Bridging Configuration Guide</i>	<p>Provides instructions for configuring the routing and bridging features of the ACE. This guide provides a routing overview and describes how to perform ACE configuration tasks, including:</p> <ul style="list-style-type: none"> • Configuring VLANs • Configuring routing • Configuring bridging • Configuring Address Resolution Protocol (ARP) • Configuring Dynamic Host Configuration Protocol (DHCP)
<i>Cisco Application Control Engine Module Security Configuration Guide</i>	<p>Describes how to perform ACE security configuration tasks, including:</p> <ul style="list-style-type: none"> • Security access control lists (ACLs) • User authentication and accounting using a TACACS+, RADIUS, or LDAP server • Application protocol and HTTP deep packet inspection • TCP/IP normalization and termination parameters • IP fragmentation and reassembly • UDP parameters • Network address translation (NAT)
<i>Cisco Application Control Engine Module SSL Configuration Guide</i>	<p>Describes how to perform ACE SSL configuration tasks, including:</p> <ul style="list-style-type: none"> • SSL certificates and keys • SSL initiation • SSL termination • End-to-end SSL

Document Title	Description
<i>Cisco Application Control Engine Module System Message Guide</i>	Describes how to configure system message logging on the ACE. This guide lists and describes the system log messages generated by the ACE.
<i>Cisco Application Control Engine Module Command Reference</i>	Provides an alphabetical list of all CLI commands including syntax, options, and related commands.

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 font</i>	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 <i>screen font</i> .
boldface screen font	Information you must enter in a command line is in boldface screen font .

Convention	Description
<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.

1. A numbered list indicates that the order of the list items is important.
 - a. An alphabetical list indicates that the order of the secondary list items is important.
- A bulleted list indicates that the order of the list topics is unimportant.
 - An indented list indicates that the order of the list subtopics is unimportant.

Notes use the following conventions:



Note

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

Cautions use the following conventions:



Caution

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

Warnings use the following conventions:



Warning

Means ***possible physical harm or equipment damage***. A warning describes an action that could cause you physical harm or damage the equipment.

For additional information about CLI syntax formatting, refer to *Cisco Application Control Engine Module 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>

