

RED HAT® ENTERPRISE LINUX®

DATASHEET

AVAILABILITY ADD-ONS

Load Balancer

RED HAT ENTERPRISE LINUX LOAD BALANCER ADD-ON

Decrease downtime and improve reliability with simple, cost-effective high availability for Red Hat Enterprise Linux



The Load Balancer Add-On for Red Hat® Enterprise Linux® provides fast and reliable transport-layer load balancing (layer-4 switching) independent of applications and can be used to build highly scalable and available network services such as web, cache, mail, ftp, media and VoIP services. It is composed of 2 major software components: the Linux Virtual Server (LVS) and the Piranha Configuration Tool, a management tool with a GUI.

High Availability

The Load Balancer Add-On can be configured across 2 nodes in an active/passive configuration. Red Hat's High Availability Add-On works with the Load Balancer Add-On to provide continuous availability of services within a cluster by eliminating single points of failure. The High Availability Add-On can be configured for most virtual guests as well as for applications that use customizable agents. This Add-On also includes fail-over support for off-the-shelf applications such as Apache, MySQL, and PostgreSQL.

Ease of Configuration – Linux Virtual Server (LVS)

The Load Balancer Add-On can be configured across 2 nodes in an active/passive configuration to provide redundant traffic management services. LVS runs on a pair of equally configured computers: an active LVS router and a backup LVS router. The active LVS router serves 2 roles:

1. Balancing the load across the physical servers
2. Validating the integrity of the services on each real server

The active LVS router redirects service requests from virtual IP addresses to physical servers based on 1 of 8 supported load-balancing algorithms. The backup LVS router monitors the active LVS router and takes over if it fails.

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www.redhat.com/rhel/add-ons/

KEY FEATURES

A Linux Virtual Server (LVS)

The LVS is a highly scalable and highly available server built on a cluster of real servers and enables users to interact with the cluster system as if it were only a single high-performance virtual server.

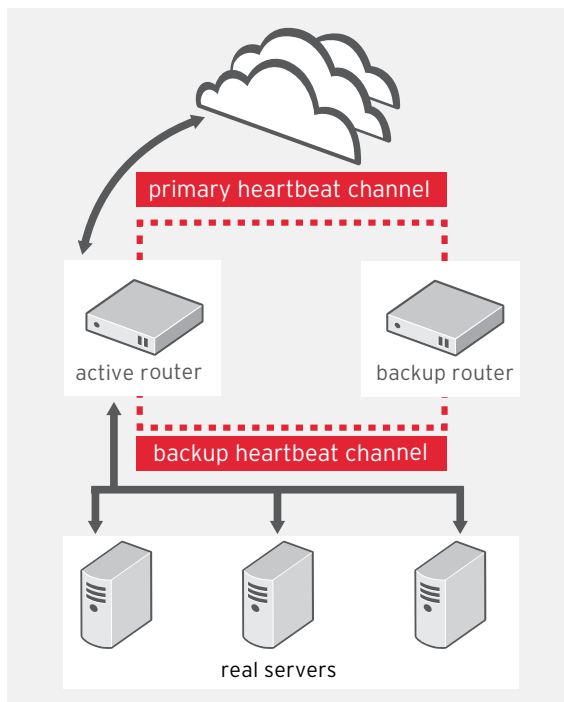
Simplified GUI-based Management Piranha Configuration Tool

Piranha is a browser-based configuration tool that provides a structured approach to creating the configuration file for LVS. It offers easy and intuitive GUI-based management to simplify tedious manipulation of LVS configuration files using a text editor. Piranha also includes the management daemons responsible for implementing router failover. In addition to the web interface (management GUI), Piranha Configuration Tool provides daemons that control fail-over, health-checking, and managing IPVS rules.

While LVS redundancy is encouraged and recommended, Piranha does not require two LVS routers as redundancy is optional. With a single router configuration, the router will not failover to a backup as it would with a configuration with two routers.

To the outside world, the servers appear as one entity. Service requests arriving at the LVS router are addressed to a virtual IP address (VIP). This is a publicly routable address that the site administrator can associate with a fully-qualified domain name.

Typical Load Balancer Configuration



The configuration consists of two layers. The first layer includes one active and one backup LVS router. The second layer has the real servers, which provide the necessary services such as serving web page requests to external clients. The traffic between the two layers is kept separate so the real servers are on a private network, and not the public network where the LVS routers are hosted. Add-On solution.

Only one LVS router is active at a time. The role of the active router is to redirect service requests from virtual IP address to the real servers.

The back-up router provides the role of a standby system. In cases where the user chooses redundancy with two LVS routers, the LVS router periodically exchanges heartbeat messages through the primary external public interface and through the private interface to the alternate router to identify failovers. If the back-up node does not receive a heartbeat message within an expected interval, it initiates a failover and assumes the role of the active router. During failover, the backup router takes over the VIP addresses served by the failed router.

High Availability

The Load Balancer Add-On works with the High Availability Add-On to provide continuous availability of services within a cluster by eliminating single points of failure. Coupling these two Add-Ons gives your service a vast advantage when it comes to minimizing downtime. In the case of a failure, the High Availability Add-On simply passes the service from one node to another with no apparent interruption to cluster clients. The High Availability Add-On can be configured for most virtual guests as well as for applications that use customizable agents.

COMPATIBILITY OF SERVERS AND RED HAT ENTERPRISE LINUX VERSIONS

The Load Balancer Add-On is fully compatible with other Red Hat Enterprise Linux Add-Ons, including the High Availability Add-On (for load balancing applications across redundant servers).

FEATURE SUMMARIES

Linux Virtual Server (LVS)	Balancing the IP load across physical servers/routers helps to ensure data integrity.
GUI Interface (Piranha)	Piranha is an easy and intuitive GUI tool that provides a structured approach to creating the configuration file for LVS.
High Availability	To achieve high availability in a cluster, you need the High Availability Add-On working with the Load Balancer to evenly and continuously distribute the IP load.

In conjunction with Red Hat Enterprise Linux, Red Hat offers a portfolio of Add-Ons to extend the features of your Red Hat Enterprise Linux subscription. Add-Ons allow you to tailor your application environment to suit your particular computing requirements. With increased flexibility and choice, you can select the availability, scalability, and management features required by your organization when and where they are needed.

SERVER AND VERSION COMPATIBILITY

Red Hat Enterprise Linux Version	Variants	Releases
Red Hat Enterprise Linux 5	Red Hat Enterprise Linux Server Red Hat Enterprise Linux AP	Red Hat Enterprise Linux 5.5 and later
Red Hat Enterprise Linux 6	Red Hat Enterprise Linux Serve Red Hat Enterprise Linux for SAP Business Apps	Red Hat Enterprise Linux 6.0 and later

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EXECUTIVE SUMMARY

Red Hat's Load Balancer Add-On provides support for Transmission Control Protocol (TCP) load balancing independent of applications and works in parallel to the High Availability Add-On. The IP loads are distributed among available routers (or servers) for maximum efficiency and high availability. You can read about our additional Add-On offerings by visiting <http://www.redhat.com/rhel/add-ons/>.

HOW TO ORDER THE LOAD BALANCER ADD-ON

The Red Hat Enterprise Linux Load Balancer Add-On is delivered through Red Hat Network, similar to the way regular Red Hat Enterprise Linux content is provided. Customers using the RHN Satellite can make use of Satellite to manage Load-Balancer systems.

To order Red Hat Enterprise Linux Load Balancer Add-On, please contact your local Red Hat Account Representative.

ABOUT RED HAT

Red Hat, the world's leading provider of open source solutions and an S&P 500 company, is headquartered in Raleigh, NC with more than 70 offices spanning the globe. Red Hat provides high-quality, affordable technology with its operating system platform, Red Hat Enterprise Linux, together with cloud, virtualization, management, storage and service-oriented architecture (SOA) solutions, including Red Hat Enterprise Virtualization and JBoss Enterprise Middleware. Red Hat also offers support, training and consulting services to its customers worldwide.

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