LifeKeeper® for LAMP
Linux + Apache + MySQL + Perl/PHP

Data and Application Availability Management for LAMP Environments

Key Features:

- Seamless integration with Linux, Apache and MySQL to ensure the highest levels of availability for websites running on LAMP
- Full 32bit and 64bit support for Xeon, Itanium and Opteron-based systems
- Runs on enterprise Linux distributions from Red Hat and SuSE
- Supports Active/Active and Active/Standby LAMP Configurations of up to 32 nodes
- Data can reside on shared SCSI, Fiber Channel, Network Attached Storage devices or on replicated volumes
- Maximizes Ecommerce revenues, minimizes Ebusiness disruption caused by IT outages
- Automated availability monitoring, failover recovery, and failback of all LAMP application and IT-infrastructure resources
- Intuitive JAVA-based web interface provides at-a-glance LAMP status and simple administration
- Easily adapted to sites running Oracle, DB2, and PostgreSQL
- Solutions also exist for other Linux application environments including Rational ClearCase, Sendmail, Lotus Domino and mySAP

LAMP is a shorthand term for a web application platform consisting of Linux, Apache, MySQL and one of Perl or PHP. Together, these open source tools provide a world-class platform for deploying web applications. Running on the Linux operating system, the Apache web server, the MySQL database and the programming languages, PHP or Perl deliver all of the components needed to build secure scalable dynamic websites. LAMP has been touted as "the killer app" of the open source world.

With many LAMP sites running Ebusiness logic and Ecommerce site and requiring 24x7 uptime, ensuring the highest levels of data and application availability is critical. For organizations that have taken advantage of LAMP, SteelEye LifeKeeper ensures these levels of availability by providing constant monitoring of the end-to-end application stack and immediate recovery of any failed solution components. LifeKeeper also supports the movement of LAMP components among servers to remove the need for downtime associated with planned system maintenance.

SteelEye Solution Overview

SteelEye LifeKeeper for LAMP enables integrated monitoring and recovery of the entire LAMP solution stack. This includes physical servers and NIC cards, the Linux OS, the Apache web server with any associated plug-ins for interaction with Perl or PHP or other modules such as Secure Socket Layer, and the MySQL database.

The LifeKeeper solution for LAMP is certified for Red Hat Advanced Server v2.1 and Enterprise Linux v3.0 and SuSE Linux Enterprise Server versions 8 and 9 running on IA32, IA64, EM64T and Opteron platforms. With LifeKeeper, a single set of binaries run across the entire spectrum of supported servers, allowing for the simplest deployment and maintenance for the LAMP cluster.

LifeKeeper supports up to 32 nodes clustered together in either active/active or active/standby configurations. With support for one-to-many, many-to-one and cascading failover cluster topologies, servers can be grouped and failover policies can be defined into the cluster configuration, which best meets the availability needs of Ebusiness and Ecommerce sites running LAMP.

Data in a LifeKeeper-protected LAMP configuration can be placed onto shared storage, either direct attached SCSI, a Fiber Channel SAN, or a Network Attached Storage (NAS) device, or the data can be replicated among servers if no shared storage is present. This ensures that all website data, be it Apache page content with associated Perl/PHP middleware or a MySQL database, are protected and available and can be placed into a data storage configuration, which is optimal for the LAMP configuration being deployed.

Comprehensive Monitoring, Recovery & Availability

In order to ensure the highest levels of availability of LAMP, all solution stack components must be accurately and automatically monitored, including the Linux Operating System, Apache Web server, any associated plug-ins, the MySQL database and any connection points between the components. IP addresses used to access the LAMP site, servers on which the components run, and file systems sitting under the LAMP data are also monitored by LifeKeeper.

LifeKeeper daemons constantly check the health of each stack component and automatically initiate immediate recovery on detection of any problem. LifeKeeper recovers LAMP components either locally, on the same server where the processes are currently running, or from a failed primary server onto a backup server. All recovery actions are based on policies defined at configuration time, optimizing the desired behavior for any cluster operation.

Through the LifeKeeper GUI or using the provided command-line interface, LAMP administrators may initiate manual movement of the solution components between servers as needed during planned maintenance. LifeKeeper for LAMP provides protection against both planned and unplanned outages.

For more information on LifeKeeper for LAMP, visit www.steeleye.com
or email presalessupport@steeleye.com

LifeKeeper® for LAMP

Building on SteelEye's legacy of providing the gold standard for Linux clusters, LifeKeeper for LAMP provides a complete solution for ensuring the availability of eBusiness and eCommerce sites running in Linux / Apache / MySQL environments.

Technical Requirements

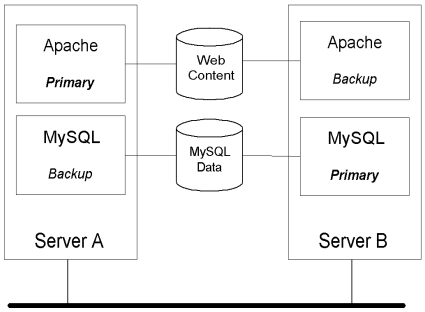
- Red Hat or SuSE Enterprise Linux distributions
- Apache version 1.3 or 2.0
- MySQL version 3.23 or 4.x
- SteelEye LifeKeeper for Linux version 4.5 or later
- LifeKeeper Apache Recovery Kit
- LifeKeeper MySQL Recovery Kit

Example High Availability LAMP Configurations

The configurations shown below are just two examples of LAMP high availability configurations that can be built using SteelEye LifeKeeper. Both of these configurations use shared storage, either SCSI, Fiber Channel or NAS, to hold the data required by Apache and MySQL. LAMP HA can also be deployed in a shared-nothing configuration using LifeKeeper Data Replication to mirror the Apache and MySQL data between direct attached storage units or internal disks. The use of data replication is beneficial in two scenarios: building a low-cost cluster where the price of shared storage is prohibitive, or building a disaster recovery configuration where cluster servers reside in separate facilities, separate cities, or separate countries. Each of the configurations below could have been built using LifeKeeper Data Replication instead of shared storage if desired.

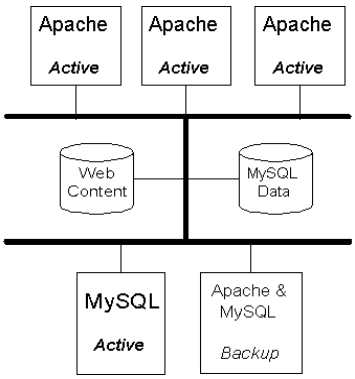
The first diagram shows a simple two node active/active LAMP cluster. Server A is actively running Apache and Server B is actively running MySQL. At the same time, each is acting as a backup for the other.

Should Server A fail or be shutdown, in order to perform maintenance, Server B will take over responsibility for running both Apache and MySQL. By virtualizing the connection method between external clients and Apache and between the Apache and MySQL servers via virtual IP addresses or virtual server names, LifeKeeper can move the Apache and MySQL services among the cluster systems as needed to keep LAMP sites operational. LifeKeeper brings the solution components out-of-service, putting them in-service in the correct order to ensure availability. LifeKeeper also handles the migration of virtual IP addresses across either NICs within a single server or across cluster members for seamless client-side migration during recovery processing.



The second diagram shows a more complex five node active/standby cluster built with several front-end Apache web servers typical of a server farm and a single back-end MySQL database server.

The fifth cluster server is acting as a passive standby node, which can protect both Apache and MySQL. On a fault detection in any of the four active servers, LifeKeeper attempts recovery of the failed LAMP resource on the same server where it is currently running; should this local recovery fail, LifeKeeper begins failover processing to the backup server.



In neither example above were any changes made to the standard LAMP configuration other than ensuring that any data required to run either Apache or MySQL on the backup server were made available to that server by placing the data onto a shared storage device. LifeKeeper provides complete protection without requiring any configuration or programmatic changes to the LAMP environment.

About SteelEye Technology®

SteelEye Technology is the leading provider of integrated data and application availability management solutions for business continuity and disaster recovery on Linux and Windows.

The SteelEye LifeKeeper family of software products enable enterprises of all sizes to ensure continuous availability of business-critical applications and data on industry standard Intel-compatible servers running in either shared or replicated storage environments. SteelEye complements its products with a suite of high availability-focused services for assessment, design, development and deployment.

SteelEye software products and HA services are available worldwide and may be purchased directly from SteelEye or through the SteelEye international network of business partners.

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