

LifeKeeper

REAL PROBLEMS REAL SOLUTIONS

LifeKeeper from SteelEye is a system for maintaining high availability on clustered systems. We take a look at what features it brings to the world of Enterprise clients



Scalable by adding nodes

In an enterprise-scale environment time is money. When your business depends on e-commerce, downtime hits your profits hard and so the need for high availability is a goal worth striving for. Most if not all enterprise environments have a mixture of operating systems running and so cross platform compatibility is also desirable. Without this the support staff all have to learn new skills with differing software and that can lead to disputes over apportionment of blame if and when issues arise.

LifeKeeper's development started at NCR but was bought by SteelEye at the end of 1999. The product was ported to Linux and certified by many hardware developers during 2000. By forming alliances with vendors such as Compaq and Intel, LifeKeeper can exploit its reliability with more

corporate clients and deliver complementary services and products. The core of the LifeKeeper product is to provide a reliable clustering solution across an Intranet, Extranet or Internet.

Supported operating platforms are Linux, Solaris MS NT and 2000. For Linux clusters, the low cost Open Source solution gives a mission critical resilience to critical applications.

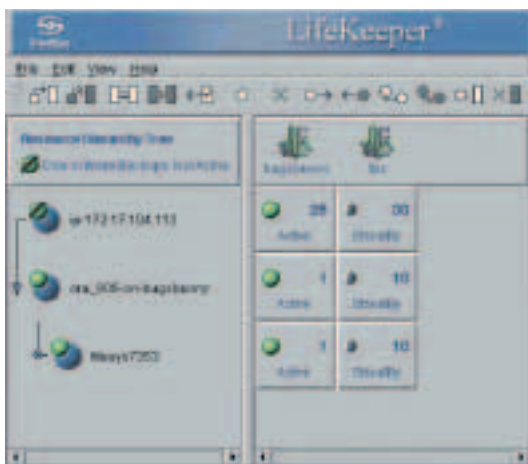
In operation

The system monitors the applications and can maintain the connectivity of clients to provide data access that is uninterrupted over the network. This is done through monitoring multiple LAN heartbeats by sending redundant signals between server nodes to determine the system and application health, LifeKeeper confirms a system's status before taking action. By being proactive, the early warnings enable quicker fixes and so in turn stop full and false failovers to other servers if the hardware is active. By using failover where applications are switched to running on different servers, the risk of a single point of failure is minimised and application and system recovery can be carried out without loss of operations.

The system also gains in its total cost of ownership benefits by using an active-active server configuration. Typical fault resilience relies on spare servers to take over the application in event of failure. By using failover the application is moved to other servers, which do not have to be application-specific. Thus the number of spare servers can be reduced, lessening the total cost.

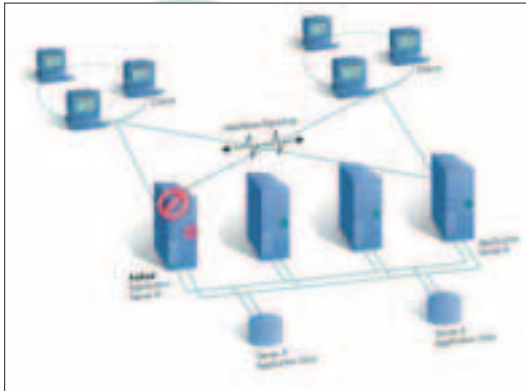
When a server fails in its availability the LifeKeeper seamlessly and transparently moves the application. This means the users are unaware and so productivity is maintained. Less calls to the IT department means everyone is happier and can get on with their jobs.

By using certified hardware the clusters can be scaled up by simply adding other nodes. The LifeKeeper at an application level supports the scalability. It also supports multidirectional configuration where applications can be spread



A right click on a resource gives a pop-up me





Proactive monitoring

and failed over to differing servers.

Data storage is kept on shared disk arrays and is thus separate from application servers. This gives equal access regardless of the application server being used. Data integrity is maintained by locking the storage drive so only one application is allowed access at any one time.

LifeKeeper for Linux provides for an N+1 configuration and supports up to two nodes per shared SCSI bus. This allows shared SCSI disk-based application recovery between two nodes within the cluster that are connected to the same shared disk. In this configuration, one server, in an active-active role, provides backup for failovers from any of the other nodes in the cluster. LifeKeeper for Linux allows cascading failover for as many as 32 active nodes to ensure continuous client access in the event of system or application failure.

Starting Lifekeeper is simple with the command:

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$LKROOT/bin/lkstart
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Application Recovery Kits

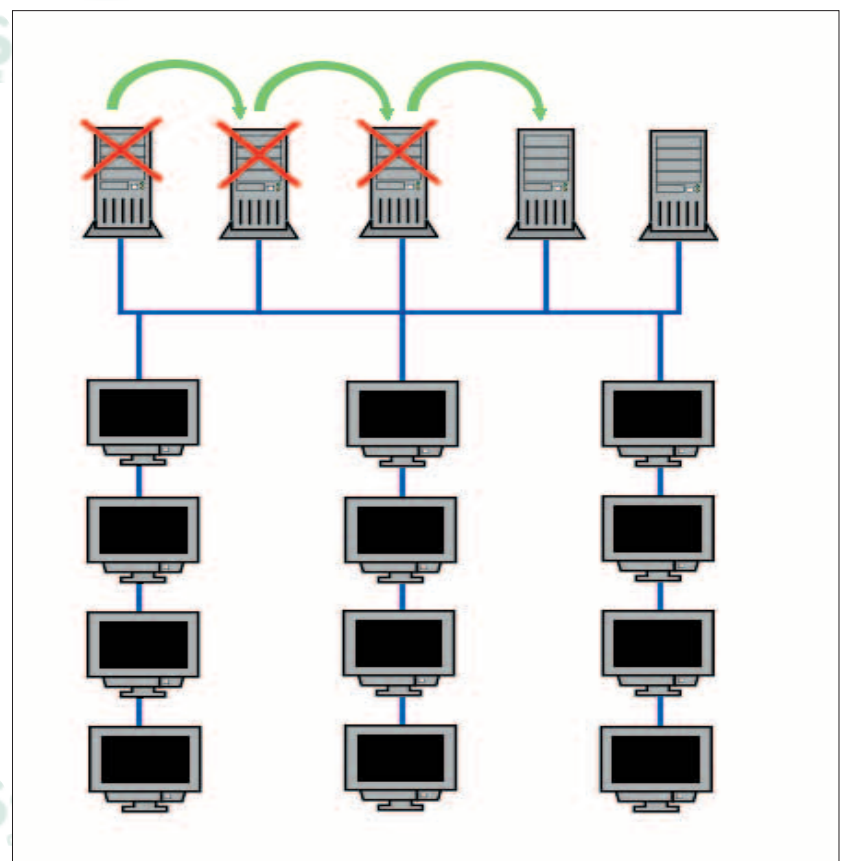
SteelEye offers LifeKeeper Application Recovery Kits for packaged software, including databases, Web servers and application servers. These Application Recovery Kits include tools and utilities that enable LifeKeeper to manage and control a specific application. When an Application Recovery Kit is installed for a specific application, LifeKeeper is able to monitor the health of the application and automatically recover the application if it fails.

SteelEye also provides an Application Recovery Software Developer's Kit (SDK) that supports the development of custom Application Recovery Kits. The Application Recovery SDK offers a powerful framework for developing customised recovery routines for proprietary applications as well as commercial application servers. Using SteelEye's Application Recovery SDK, special recovery routines can be defined by assembling straightforward application recovery scripts.

Uptime during maintenance and upgrades

LifeKeeper enables continuous operations during planned downtime for maintenance or upgrades, as well as in the event of a system failure or if an application ceases to respond. The fault-resilient capabilities of LifeKeeper can be leveraged to facilitate system or application upgrades. With LifeKeeper, the amount of downtime required for common maintenance tasks and upgrades is significantly reduced or eliminated.

LifeKeeper is available and certified for Red Hat, Caldera, TurboLinux and SuSE distributions.



Cascading failover

Application Recovery Kits

Apache Web Server	NFS Server
Apache/SSL (secureweb)	Oracle 8.05 RDBMS
Application with Disk Partition	Oracle8i RDBMS
Application with Filesystem	Oracle9i RDBMS
DB2 WE/EE/EEE 7.x	Sendmail 8.9/SAMS
Filesystem	Print Services
Informix Dynamic Server 9.2	SAMBA (File Share) (Planned)
IP Follower	SAP R/3 (Planned)
IP Local NIC Recovery	Sybase 10.0.2, 11.0.1 (Planned)
MySQL 3.23	Lotus Domino 4.0 (Planned)
NAS Recovery	PostgreSQL (Planned)