



SUSE® Linux Enterprise High Availability Extension with VMware

Achieve high availability from the hypervisor to the application using the solutions offered by VMware and SUSE. SUSE® Linux Enterprise High Availability Extension (HAE) provides coverage for the workloads and data running in virtual machines and, in combination with VMware HA, enhances uptime in virtual environments.



■ High Availability for Virtualized Applications and Data

- + Full HA coverage for application and data
- + Support for distributed replicated block devices to make data highly available
- + High availability for both physical and virtual machines
- + Flexible, policy-driven clustering
- + Extensive open source and third-party service and application resource agents

■ Products:

SUSE Linux Enterprise Server
SUSE Linux Enterprise High Availability Extension
VMware vSphere

For Mission-Critical Applications, Seconds Count

Service outages—for even a few seconds—can take a terrible toll on productivity, revenue and customer relationships. But now you can achieve high availability from the hypervisor to the application using the solutions offered by VMware and SUSE. SUSE Linux Enterprise HAE provides coverage for workloads running in virtual machines and their data and is an excellent complement to VMware HA in mission-critical environments. SUSE HAE does this by using high availability clustering to automate application and data recovery. It continuously monitors services, and when a fault or failure occurs, it transfers the workload from one server to another or automatically restarts the application on a known working system. Its real-time synchronization then quickly restores clustered services, and intelligent locking mechanisms maintain data integrity.

VMware HA for Protecting the Virtualization Infrastructure

VMware High Availability (HA) is used to protect virtualized machines from hardware failures and faults in the host operating system. In addition, VMware vSphere Application HA provides policy-based application monitoring and remediation to restart the offending application, service or virtual virtual machine. But to fully protect active memory contents and other information not buffered on hard disks or other storage media, you need additional coverage.

SUSE Linux Enterprise HAE for Protection of Applications and Data

The SUSE Linux Enterprise High Availability Extension makes it possible to increase application and service availability on SUSE Linux Enterprise Server by setting up a cluster and can be deployed on both physical and virtualized machines. When using virtualized

machines, it protects the applications while the virtualization solution's cluster functionality protects the virtual machines. With SUSE Linux Enterprise High Availability Extension, you can protect your data assets using your existing IT infrastructure, minimizing data loss due to corruption or failure. SUSE Linux Enterprise High Availability delivers continuous, real-time replication of data, which means that multiple copies of data are available at all times. The ability to incrementally synchronize large databases and data repositories reduces data recovery times. And built-in locking mechanisms make sure that only one application can access shared storage at a time, to ensure data integrity.

The ability to encapsulate entire workloads within virtual guests means that you can easily replicate and manage them using the tools and capabilities provided with SUSE Linux Enterprise High Availability Extension, such as DRBD, OCFS2 and cLVM2. The combination of SUSE Linux Enterprise Server with VMware vSphere and SUSE Linux Enterprise High Availability Extension, with their support for virtualized environments, gives you unprecedented flexibility to improve services availability as well as resource utilization.

Open Source, Third-Party and Custom Application Protection

Rather than limiting protection just to those applications that run in Apache Tomcat or Apache HTTP Server, SUSE Linux Enterprise High Availability Extension includes resource agents for many third-party and open source applications to protect your data assets applications at no additional charge. In addition, it provides scripts for monitoring third-party applications for popular open source services.

FEATURES

With these components, you can rapidly set up many highly available data center services:

■ Flexible, policy-driven cluster resource manager

- Pacemaker, a highly scalable cluster resource manager

- OpenAIS, the leading standards-based communication protocol for server and storage clustering
- Corosync-certified implementation of a complete cluster engine that supports unicast and multicast communication

■ Cluster-aware file system and volume management

- Oracle Cluster File System 2, a shared-disk, POSIX-compliant, generic cluster file system
- Clustered Logical Volume Manager 2 for a convenient, single, cluster-wide view of storage

■ Continuous data replication and node recovery

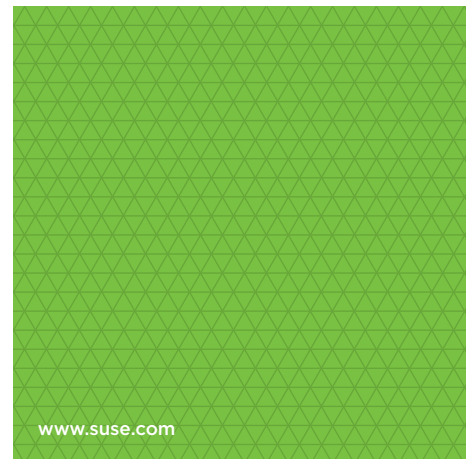
- DRBD (Distributed Replicated Block Device), a networked disk management tool which lets you build single partitions from multiple disks that mirror each other and make data highly available
- Relax and Recover (ReaR) node recovery framework for quick bare-metal restorations

■ Resource agents for many open source and third-party applications

- Scripts for monitoring popular open source services such as Apache, CTDB, MySQL, NFS, PostgreSQL, Tomcat and KVM, Xen
- Scripts for third-party applications, such as SAP, Oracle Database, IBM DB2, Informix Dynamic Server, WebSphere Application Server and VMware

■ User-centric management tools

- A powerful unified command-line interface to quickly and easily install, configure and manage your clustered Linux servers
- A graphical user interface to give operators a streamlined, user-friendly tool for monitoring and administering their clustered environment
- YaST® modules for the configuration of DRBD, OpenAIS and multipath devices



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