SUSE® Linux Enterprise High Availability Extension

The current competitive business environment demands more service uptime in IT systems than before. Downtime that can happen in mission-critical workloads or high-density hosts, such as unplanned component failure or even geographic disasters, can cause huge business and productivity losses. To ensure the continuous operation of core business services, you need to protect your workloads from systems failure while increasing services availability, either through greater reliability, redundancy or fast failover to standby systems.

System Requirements

- Minimum Linux server system requirements for installation:
  + 512 MB RAM, 512 MB Swap recommended
  + 2 GB available disk space (more recommended, 8.5 GB for all patterns), 16 GB for snapshot/rollback of the OS
- Supported processor platforms:
  + x86-64 (Intel 64, AMD 64)
  + s390x (IBM Z)
  + ppc64le (IBM POWER LE)

For detailed product specifications and system requirements, visit: **www.suse.com/products/server/**

Product Overview

SUSE® Linux Enterprise High Availability Extension provides mature, industry-leading open source high availability clustering technologies that are easy to set up and use. It can be deployed in the cloud, physical, or virtual environments. Together with geo clustering, it helps maintain business continuity, protect data integrity and maximize service uptime for mission-critical Linux workloads from local to unlimited geographic distances.

Key Benefits and Features

FLEXIBLE, POLICY-DRIVEN CLUSTERING SOLUTION

SUSE Linux Enterprise High Availability Extension supports the Corosync cluster engine and OpenAIS—the leading standards-based communication protocol for server and storage clustering. Also included is Pacemaker, a highly scalable cluster resource manager with a flexible policy engine that supports n-node clusters. Using Corosync, OpenAIS and Pacemaker, you can continuously monitor the health of your resources, manage dependencies and automatically stop and start services based on configurable rules and policies.

LOAD BALANCER

SUSE Linux Enterprise High Availability Extension includes IPv4 and IPv6 load balancing, allowing you to handle node and service failures and redirect requests to other nodes to maintain the availability and performance of the service.

RESOURCE AGENTS FOR APPLICATIONS

SUSE Linux Enterprise High Availability Extension includes resource agents for many third-party and open source applications

at no additional charge. Included are scripts for monitoring third-party applications and popular open source services.

CONTINUOUS DATA REPLICATION

SUSE Linux Enterprise High Availability Extension includes support for distributed replicated block devices with DRBD, a leading open source networked disk management tool. Using DRBD, you can build single partitions from multiple disks that mirror each other and make data highly available. You can also quickly restore clustered services by taking advantage of its fast data resynchronization capabilities.

RELAX AND RECOVER

Also included is Relax and Recover (ReaR), a popular open source node recovery framework and system migration solution. It consists of a modular framework and ready-to-go workflows for many common situations, enabling you to produce a bootable image and restore from backup using this image. As a benefit, it allows you to restore to different hardware and can, therefore, be used as a migration tool as well.

CLUSTER-AWARE FILE SYSTEM AND VOLUME MANAGEMENT

SUSE Linux Enterprise High Availability Extension includes the latest version of OCFS2. This allows you to cluster a wide range of applications through clusteraware POSIX locking, as well as resize clusters and add new nodes. GFS2 read/write support is also included. In addition, cLVM2, a clustered logical volume manager, is supported. cLVM2 provides a more convenient, single, cluster-wide view of storage. Clustering extensions to the standard LVM2 toolset allow you to use existing LVM2 commands to safely and simply manage shared storage, eliminating the need to learn a new set of tools.

VIRTUALIZATION AWARE

The clustering technologies in SUSE Linux Enterprise High Availability Extension support physical and virtual environments equally well. The cluster resource manager in SUSE Linux Enterprise High Availability Extension recognizes, monitors and manages services running within virtual servers created with KVM and Xen, as well as services running in physical servers. Virtual servers can be clustered together or with physical servers, and physical servers can be clustered with each other, extending high availability from virtual to physical workloads.

USER-FRIENDLY MANAGEMENT TOOLS

SUSE Linux Enterprise High Availability Extension includes both a powerful, unified command-line interface and a web-based graphical user interface (HAWK) for easily installing, configuring and managing clustered Linux servers. Also included are YaST2 tools that simplify the configuration of distributed storage systems and highavailability solutions while improving productivity. To help you get better prepared for the downtime, SUSE provides a failover simulation tool that gives you information on potential resource constraints before downtime happens. To give administrators even greater control over the applications and data in the cluster, SUSE Linux Enterpirse High Availability Extension supports quorum devices for two node clusters. Quorum devices act as arbitrators, providing cluster management decisions when a simple decision process does not produce a clear choice.

GEO CLUSTERING

Geo clustering enables you to deploy physical and virtual Linux clusters between data centers located in the cloud or in data centers anywhere in the world. By extending the capabilities of SUSE Linux Enterprise High Availability Extension across unlimited distances, it maximizes an organization's tolerance for regional catastrophic events. Management access is secured with built-in authentication to enable geo clusters within different management groups and from multiple administrators.