

# SAVWAREHA

THE HARDWARE-INDEPENDENT "HIGH AVAILABILITY" SOFTWARE SOLUTION

## SERVER-MIRRORING SOFTWARE FOR UNIX



*"At last...high availability  
SCO servers. Easy to  
configure and use.  
Robust and reliable."*

**SCO World**  
JUNE/JULY 1999

- ELIMINATES DOWNTIME
- AUTOMATIC FALLBACK
- OPEN ARCHITECTURE DESIGN
- EASY INSTALLATION
- FLEXIBLE CONFIGURATION
- INDUSTRY STANDARD HARDWARE
- FILE SYSTEM INDEPENDENCE
- WEB-BASED GRAPHICAL USER INTERFACE

**ENSURES USER ACCESS TO CRITICAL DATA**

**SavWareHA** enhances productivity in your organization, by ensuring users access to UNIX-based resources regardless of the status of the primary system. A hardware-independent software solution, **SavWareHA** allows a "standby" system to act as a mirror for the application server; whether it services the critical application(s) or the entire business entity.

**SavWareHA** has the capability of sustaining high availability missions. By connecting the two systems with high speed Ethernet, Fiber Optics, Fibre Channel or any similar topology, it mirrors a pair of servers for "Hot Standby" "High Availability". Either system can be completely disconnected as needed.

**SWITCHOVER** In normal operation, **SavWareHA** is not obvious to either users or system administrators. In the event of failure, switchover from the primary to the secondary system enables users to continue accessing both application(s) and database(s). This is called "fallback mode." The mirrored file systems on the standby system are mounted and the users are enabled. Messages notifying key personnel can be generated at this time.

While in standby mode, users will operate as if they were still connected to the primary system, while the "down" system is either repaired or replaced.

**RESTORE** When your primary system is ready to be returned to service, you can either: 1. "Promote" the standby server to primary status, reconnect the repaired server and "demote" it from primary to standby status, then copy the mirror to the standby server. 2. "Recover from fallback mode." The primary system takes over and users log back into the primary system. All reads will come from the standby since the most recent data is there. **SavWareHA** will perform a background copy to bring the two systems into synchronization. (Users will be writing to both systems, but reading from the standby until the regeneration is complete.)

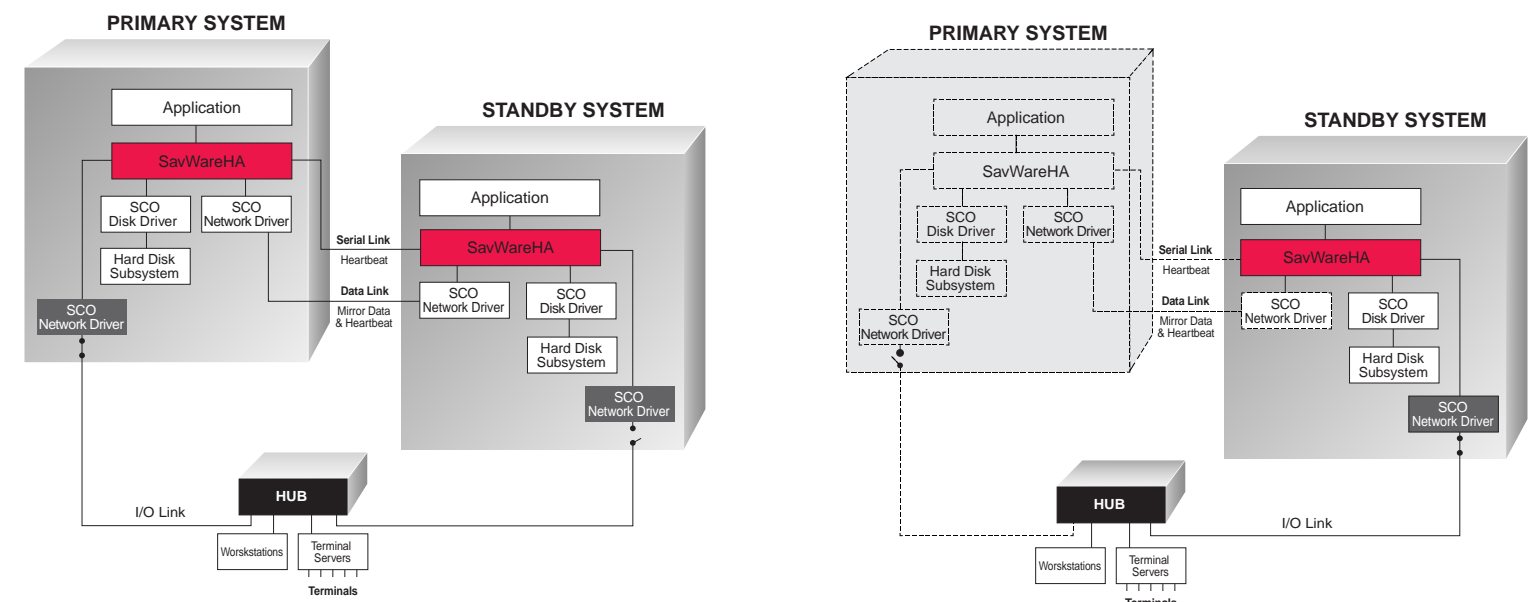
**WEB-BASED USER INTERFACE** **SavWareHA** features anywhere, anytime access with its Web-based HTML Graphical User Interface (GUI). Now system administrators can administer their **SavWareHA** software via any standard Web browser. (Character-based interface also available.)

*"If you have high-availability needs, this product is definitely worth examining."*

*Tim Parker, SCO World  
JUNE/JULY 1999*

**NORMAL MODE**

**FALLBACK MODE**



THE MIRROR CAN CONTAIN A UNIX FILE SYSTEM OR A RAW PARTITION FOR DATABASE ACCESS.

- In SCO UnixWare 7 and Open Server 5 installations, "ip aliasing" allows the network login ip address to float to the system in control.
- Open Server 5 installations also have "ip matching" available where the system name, ip address & MAC address are identical on both systems.
- The Hard Disk Subsystem can be a part of a disk, a whole disk, a disk array or a RAID array.
- Only the "system in control" is switched over to the network.
- Users are always automatically connected to the "system in control." In normal mode this is the primary system.

THE PRIMARY SYSTEM CAN BE PHYSICALLY DISCONNECTED AND RECONNECTED WITHOUT DISRUPTION TO THE STANDBY SYSTEM, WHILE IN FALLBACK MODE.

- Users are always automatically connected to the "system in control." In fallback mode this is the standby system.
- The standby system takes over with the same ip address, and then services the network.

# CONFIGURATIONS

## USER ACCESS AT ALL TIMES

### MISSION

SavWareHA is designed to keep all critical data mirrored at all times and to insure that users have access to it regardless of the state of the primary system.

### FILES

Designated data is mirrored instantly and continuously during normal operation. The root drive cannot intentionally be mirrored in its entirety.

SavWareHA copies critical files over to the standby system on a periodic basis, keeping user and configuration data in synchronization.

### USERS

User connectivity is achieved through both traditional multiplexors or through the network. In either case, the users (both local and remote) maintain their connection and, in the event of a primary system failure, are restored to operation on the standby system.

By physically attaching users to both systems, SavWareHA can logically switch all users automatically.

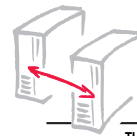
## ALTERNATIVE CONFIGURATION

**MULTIPLE DATA LINKS** Increased performance and enhanced fault tolerance can be achieved by providing multiple paths for data to be mirrored using multiple data links.

**DUAL-ACTIVE** A Dual-Active Mirrored server configuration can help you better utilize your investment by spreading the load in an environment with more than one application and/or database. It allows different applications and/or databases to be hosted from different servers, using the "other" mirrored server as a standby backup server; so that both servers are online and servicing users.

**SHARED DISK ARRAY-MIRRORED SERVERS** The servers can use a shared disk array configuration. In this case, data redundancy is accomplished by using RAID software or hardware. For optimum performance, RAID 0 (striping) and 1 (mirroring) is recommended. For the most cost-effective approach, RAID 5 (parity) is the most efficient deployment.

**WAN-MIRRORED SERVERS** Additional protection against localized trauma (earthquake, fire, flood, electrical storms, tornadoes, etc.) can be achieved by geographic separation of these servers.



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*Dedicated To Your Success™*

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