

# Reliability, Availability, and Serviceability (RAS)

for the Solaris™ Operating Environment



Computer downtime can cost your company thousands, or even millions, of dollars in lost revenues and productivity. To dramatically reduce downtime, the Solaris™ Operating Environment provides data center-class reliability, availability, and serviceability (RAS) at a fraction of a mainframe's cost.

## **Solaris™ Operating Environment**

*The Solaris™ Operating Environment is the only choice for serious enterprise computing. With Solaris, you get a 64-bit environment that's optimized for Java™ computing — from the creators of Java — and is Year 2000 safe. Superior reliability and availability mean that your systems and data are always accessible when you need them. Extensive scalability ensures that your systems won't top out in just a few years, let alone a few months. High performance delivers the power to get the job done fast. And simplified installation and administration lets you concentrate more on running your business, not your network. The Solaris Operating Environment delivers the information and services you need to anyone, anytime, any place.*

## **Solaris™ Enterprise Server**

*Extending the reliable, scalable, and secure Solaris platform, Solaris™ Enterprise Server delivers a highly integrated enterprise environment geared to meet the demands for Enterprise Resource Planning (ERP), e-commerce, and data-warehousing. Solaris Enterprise Server is scheduled for release in the first half of 1999, and will offer superior performance and capabilities for clustering, resource management, and security. With Solaris Enterprise Server, you get mainframe-class capabilities at a fraction of the cost.*

## **Reliability, Availability, and Serviceability (RAS)**

Features of the Solaris™ Operating Environment, combined with products in the Solaris™ Enterprise Server, can help you accomplish three important RAS goals:

- Minimize unplanned downtime
- Minimize planned downtime
- Rapid recovery after a failure

### **Minimizing Unplanned Downtime**

The following features of the Solaris 7 Operating Environment, the latest release of the Solaris Operating Environment, help keep your network up and running:

#### **Dynamic Reconfiguration**

Dynamic reconfiguration allows a system to continue running when a system board fails. You can even replace the faulty board while the system continues to operate.

#### **Improved Device Configuration Library**

The libdevinfo library, used to obtain device configuration information, has been made more robust and reliable in the Solaris 7 Operating Environment. This improvement reduces unplanned downtime by allowing applications to retrieve more stable and consistent device configuration data.

The following components of Solaris Enterprise Server software (some also available separately) offer additional RAS features:

#### **Clustering**

Sun™ Cluster software connects up to four servers as if they were one system. Clustering improves reliability by permitting applications and services to transparently move from one system in the cluster to another if failures occur.

#### **Bandwidth Allocation**

With Solaris™ Bandwidth Manager software, you can prioritize network traffic, preventing a small number of applications or users from consuming all available bandwidth. So you can ensure high-quality service to everyone in your enterprise.

#### **Resource Management**

Solaris Resource Manager™ improves reliability by balancing system performance and ensuring that mission-critical applications have access to needed resources.

#### **Minimizing Planned Downtime**

##### **Improved Hot-Plug Capability**

The hot-plug capability of the Solaris Operating Environment enables you to add or remove cards and subsystems while still online. Improved interfaces in Solaris 7 allow better control and coordination of device reconfiguration during this process.

### **Solaris Online Upgrade**

Solaris Online Upgrade will allow you to upgrade from Solaris 2.6 or later to new versions of the operating environment—without taking the system off line. This feature will be available in the Solaris 8 Operating Environment.

### **Rapid Recovery**

#### **Improved Core Dump Analysis**

The Solaris 7 Operating Environment includes the ability to make dumps configurable and compress dump data when writing to a dump device. Other enhancements make the core dump process more robust so you can determine sources of failure more quickly.

#### **Traceroute Utility**

By tracing the route an IP packet follows to an Internet host, the traceroute utility allows you to quickly diagnose and correct routing misconfigurations and routing path failures.

#### **Kernel Debugging Enhancements**

The Solaris 7 Operating Environment includes enhancements to kadb (for live system debugging) and adb (for crash dump analysis) to improve the troubleshooting process.

#### **Improved Logging of Kernel Events and Errors**

More effective logging of kernel events and errors improves serviceability by providing both valuable warnings and additional system information to administrators.

#### **Remote Console**

Available in the first half of 1999, remote console capability will allow a remote service technician to diagnose problems and perform maintenance in the same manner as an on-site administrator.

### **UFS Logging**

UNIX® file system logging minimizes unplanned downtime by recording UFS updates in a log before the updates are applied to the file system. UFS logging eliminates inconsistencies and makes rebooting much faster.

### **Availability**

#### **Solaris Features**

Solaris RAS features are included in the Solaris Operating Environment. Online Upgrade and Remote Console will be available as specified; all other features are now shipping as part of the Solaris 7 Operating Environment.

#### **Other Products**

Sun Cluster, Solaris Bandwidth Manager, and Solaris Resource Manager are available as components of Solaris Enterprise Server (in the first half of 1999) or as standalone products.

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