

## Feature FAQs

### Security

#### 1. What is Solaris Process Rights Management?

Solaris Process Rights Management, introduced in the Solaris 10 Operating System, gives system administrators the ability to limit and selectively enable applications to gain access to just enough system resources to perform their functions. This capability dramatically reduces the possibility of attack from a poorly written application, by eliminating inappropriate access to the system. Even if hackers gain access to an application's server, they are unable to increase operating privileges, thus limiting the opportunity to inject malicious code or otherwise damage data.

#### 2. How is Solaris Process Rights Management different from the Solaris User Rights Management feature?

Enhancements to the Solaris Role Based Access Control (RBAC) software, referred to in the Solaris 10 OS as the Solaris User Rights Management software, enable administrators to assign specific access rights to programs and commands for each user. This reduces the chance of administrative errors or accidental or malicious use of IT resources. User Rights Management is centrally managed to reduce costs and increase flexibility.

Thus, the Solaris RBAC software constrains a user's actions, and Process Rights Management constrains a process' capabilities.

#### 3. What features are provided by Solaris Trusted Extensions ?

Trusted Extensions provides labeled security as a configuration of Solaris 10. Separation of data, processes, memory, network traffic, windowing elements, device allocation and more is enforced by a Mandatory Access Control Policy that defines the relationship and flow of data based on a security classification (called a label). This technology includes two multi-level desktops (Trusted CDE and Trusted Java Desktop System), multi-level printing, multi-level device allocation, multi-level networking, LDAP client naming services, multi-level file system use and a full multi-level API.

## Networking

### 1. What is new in Solaris 10 with respect to networking?

The Solaris 10 Operating System delivers a number of networking enhancements and support for a number of key protocols that meet the diverse needs of the Sun customer base. This release enables more efficient routing and improved network availability, and includes protocols to support telecommunications applications such as Voice over IP (VoIP). The Solaris 10 release also supports the most current IPv6 specifications.

Some Solaris 10 protocol additions include:

- Berkeley Internet Name Domain (BIND9)
- Solaris Stream Control Transmission Protocol software
- Session Initiation Protocol (SIP)
- Open Shortest Path First (OSPFv2) and Border Gateway Protocol 4 (BGP-4) routing protocols
- Virtual IP source address selection (VIPA)

Other enhancements include:

- Rearchitected TCP/IP stack for better performance.
- Kernel level SSL proxy, which simplifies and accelerates SSL/TLS.
- SDP, Sockets Direct Protocol, which lets an application access
- InfiniBand hardware directly rather than use the TCP/IP stack.
- Integrated duplicate address detection.
- Quagga open source routing software which includes support for OSPF6 and other routing protocols.
- Large Send Offload (LSO), which offloads large TCP segments if supported by the NIC hardware.

## Data Management / Solaris ZFS

### 1. What ZFS boot features are included in Solaris 10 10/08?

Both x86 and SPARC systems use the new style of booting with a boot archive, which is a file system image that contains the files required for booting. While the system is booted for installation, a ramdisk is used for the root file system during the entire installation process, which eliminates the need to be booted from removable media.

To learn more about Solaris ZFS visit our [Solaris ZFS Learning Center](#).

## Interoperability with Solaris 10

Solaris offers a number of Linux interoperability features. Available to developers a set of desktop tools and open source utilities when choosing Solaris or OpenSolaris as their development environment - adding Sun's VirtualBox product will allow one system to be used for porting and testing work across multiple operating systems by running Linux instances in virtual machines. For deployment, compatibility for applications in the Java/J2EE layers, an available 'AMP' stack and virtualization solutions including xVM server, allows full Linux OS and application load to be virtualized, and Solaris Containers for Linux Applications, which permits x86 Linux binaries to execute in a Solaris Container.

## Observability and Dynamic Tracing (DTrace)

### 1. What is Solaris Dynamic Tracing (DTrace)?

DTrace is a comprehensive dynamic tracing framework for Solaris 10 designed for real time application debugging and performance troubleshooting. DTrace provides a powerful infrastructure to permit administrators, developers, and service personnel to concisely answer arbitrary questions about the behavior of the operating system and user programs. It is a powerful tool that can be used by both entry-level and experienced system administrators to troubleshoot both system and application performance problems in hours or minutes that might have previously taken days. DTrace is safe to use on development, test, and production systems.

### 2. What are the key highlights of DTrace?

- Provides a fully instrumented operating system, with more than 30,000 instrumentation points in the kernel alone
- Provides a unified view of both the application and the kernel
- No changes, reboot or restart of applications is required before, during, or after a DTrace session
- Safe to use on production systems, gives precise and accurate response to queries
- Easy to get started through prewritten scripts of DTrace routines

### 3. Where can I learn more about DTrace?

You can get started with the "[How to use DTrace from a Solaris 10 System](#)" guide. This guide takes you step-by-step through some basic commands that help you become familiar with the technology. Also, with the D programming language included in DTrace, you can use scripts that others have written making it easy to get started using DTrace. Additionally, there is a growing repository of scripts in the [Sun BigAdmin system administrator portal](#) that users can freely leverage. You may also join the DTrace community on [opensolaris.org](#) to get the latest information on DTrace and to participate in group discussions.

## Platform Choice

### 1. What is Sun's OS strategy in terms of supported platforms?

Simply stated, Sun's operating system strategy is to provide customers with a choice of systems solutions to meet their immediate and long-term needs. To do this, Sun has tightly integrated its operating system, software, hardware, and added service offerings that deliver superior benefits across chosen markets. By taking this "systems" approach, Sun provides a more integrated, cost-effective alternative to its competitors. To achieve the broad range of solutions needed, Sun offers the same Solaris software on both the SPARC architecture and x86-based systems, and offers standard Linux distributions on x86-based systems only. The common integrated values of Java technology, the Sun Java Enterprise System, and Sun Services on all platforms help customers to easily deploy applications across a comprehensive range of hardware based on the SPARC and x64/x86 architectures with excellent software and services to support them.

To provide the greatest value to Solaris users as well as provide an even greater range of opportunities to Solaris developers, Sun and its partners also support the Solaris OS on x86 systems from all major systems vendors. Solaris 10 is supported on hundreds of systems based on the latest AMD, Intel, and SPARC CPUs from vendors including Sun, Dell, HP and IBM. See <http://sun.com/bigadmin/hcl>

### 2. Where can I find the list of third-party x64/x86 applications for Solaris?

A complete list of third-party applications for Solaris on both x86 and SPARC systems is being continuously updated; available through: <http://www.sun.com/bigadmin/apps/>

### 3. What is the roadmap for Solaris on x86 systems?

The Solaris Operating System is developed and built from a single code base for both SPARC and x86 architectures; there is no separate roadmap for each CPU type; the same features and functionality are found on both platforms, other than those specific to certain hardware features. There are also no separate release or support life cycles for different supported platforms.

## Virtualization

### 1. What are Solaris Containers?

- The benefits of Solaris Containers include the following:
- Higher system utilization through ease of consolidation
- Multiple applications can share a single system but still remain completely isolated from one another
- Restarting a container is much quicker because you are not rebooting the entire operating system
- Allows a system administrator to create an environment that the Container Administrator can customize for the application

### 2. What's new in Solaris Containers?

Starting in Solaris 10 10/08, Solaris Containers are automatically upgraded to the last system patches and packages when attaching to a new system. For example, if you detach a Solaris Container from one system and then attach it to a different physical system, the Container will automatically be upgraded to the same patches and packages that are on the new system. This allows for flexibility when performing rolling upgrades of systems and ensures consistency of systems when moving workloads. Also new in Solaris 10 10/08 is the ability for Solaris Containers to officially utilize a ZFS file system as their root. Upgrading a Solaris 10 system with ZFS-based roots for Containers is also supported.

### 3. When do I use a Dynamic System Domain and when do I use a Solaris Container?

Dynamic System Domain features include the ability to hot-plug hardware and run different versions of the Solaris Operating System per domain. Solaris Containers provide very fine-grained control over what an application can do and see. If your applications require the type of separation that separate operating systems can give you, then you should use a Dynamic System Domain; otherwise, you can use Solaris Containers. The real benefit comes when you use Solaris Containers within a Dynamic System Domain.

### 4. Is Solaris Live Upgrade compatible with Solaris Containers?

Yes, with Solaris 10 8/07 you can use Solaris Live Upgrade for patching and upgrading systems with Solaris Containers. This offers two important operational advantages, particularly around patching.

1. You can patch without taking the system offline because you patch a copy of the system. Patching Containers is a serial operation, so patching without taking the system off-line is a major advantage.
2. After patching the copy, you then can boot from that copy. Should you experience a problem, you can easily revert back to the original environment.

A new Sun Blueprint, "[Patching Mirrored Systems with the Solaris Live Upgrade Software](#)" is available.

## Solaris 8 Containers and Solaris 9 Containers

### 1. What are the Solaris 8 Containers and Solaris 9 Containers?

With Solaris 8 Containers and Solaris 9 Containers you can run Solaris 8 and Solaris 9 applications on the latest SPARC systems and Solaris 10 today. The entire environment of the original source system, either Solaris 8 or Solaris 9, is automatically captured and transferred to a Container running on the target Solaris 10 system. For more information, please visit the [Solaris 8 Containers and Solaris 9 Containers FAQs](#).

## Availability and Predictive Self Healing

### 1. What is Predictive Self Healing?

The Predictive Self Healing facility of the Solaris Operating System helps Solaris systems and services maximize availability in the face of software and hardware faults, and facilitates a simpler and more effective end-to-end experience for system administrators. The major self healing features—the Solaris Fault Manager and the Solaris Service Manager—are part of the Solaris 10 OS and are supported on x86 and SPARC systems.

### 2. What are the benefits of Predictive Self Healing?

Predictive Self Healing is designed in conjunction with Sun's server engineering teams and third-party hardware partners to ensure that Sun's customers receive the following benefits:

- Improved system and service availability through predictive diagnosis and isolation of faulty components
- Automated diagnosis and restart of components that happens automatically and in milliseconds
- Simplified administration model for managing services
- Fast and easy repair of problems with links to knowledge articles
- Scalable architecture that can be rapidly upgraded and adapted to new problems without requiring downtime

If you are running mission-critical systems and want to reduce the risk of system outages, Predictive Self Healing can help you achieve it at no additional cost. For customers with complex systems or mission-critical applications, Predictive Self Healing reduces risks and has the potential to significantly increase the uptime of such systems. Visit the [availability features page](#) for more information.

## Support and Services

### 1. Where can I find more information about support and service offerings for Solaris 10?

A comprehensive set of Support and Service offerings are available during the entire [life cycle](#) of a Solaris Operating System milestone version.

Visit the [Solaris 10 Support and Services page](#) to learn more about Sun support and service offerings. You can also take advantage of self-help resources and additional Sun Services.

## OpenSolaris Project

### 1. What is the OpenSolaris.org Project?

The OpenSolaris Project is an open source community gathered around the development, collaboration and innovation of the source code that makes up many of the technologies that are present in the Solaris and OpenSolaris Operating System. Visit [opensolaris.org](http://opensolaris.org) to learn more.

### 2. What is OpenSolaris 2008.05?

OpenSolaris 2008.05 is designed for developers and deployers who are eager to get the latest features at their fingertips with a set of regular 6 monthly releases. Sun's [OpenSolaris subscription support](#) provides the opportunity of receiving 18 months support while leveraging the newest technologies available in OpenSolaris. Visit [opensolaris.com](http://opensolaris.com) to learn more.