

Solaris Operating System - Learning Summary

What is Solaris?

Solaris is a Unix-based operating system developed by Sun Microsystems, now maintained by Oracle. It's designed for enterprise environments requiring:

- **High performance**
- **Security**
- **Stability**
- **Scalability**

It supports advanced technologies like Oracle VM Server for SPARC and is widely used in data centers, financial services, and government systems.

Key Features of Solaris

- **Robust performance on high-end hardware**
 - **Virtualization with Oracle VM Server for SPARC**
 - **High Availability and Fault Tolerance**
 - **RBAC and mandatory access control**
 - **Service Management Facility (SMF)**
 - **Image Packaging System (IPS)** for package management
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Comparison: Solaris vs Linux Distributions

Feature	Solaris	Linux Distributions
Source Code	Proprietary (Closed)	Open Source
Package Manager	IPS, pkgadd	APT, YUM, DNF
File System Tool	SMF	ZFS (on some distros), systemd
Security	RBAC, MAC	Mostly DAC, some RBAC support
Virtualization	Oracle VM Server for SPARC	KVM, QEMU, Docker
Process Debugging	truss, pfiles	strace, lsof

Important Solaris Directories

Directory	Description
/	Root directory
/bin	Essential binaries

Directory	Description
/boot	Boot-related files
/dev	Device files
/etc	Configuration files
/home	User home directories
/kernel	Kernel modules
/lib	Libraries for binaries
/mnt	Temporary mount points
/opt	Optional software
/proc	Process info as files
/sbin	System administration binaries
/tmp	Temporary files
/usr	Read-only data and apps
/var	Variable data like logs

Command Comparisons

System Information

Linux (Ubuntu):

```
uname -a
```

Solaris:

```
showrev -a
```

Installing Packages

Linux (Ubuntu):

```
sudo apt-get install apache2
```

Solaris:

```
pkgadd -d SUNWapchr
```

Permission Management

Find SUID Files

Linux:

```
find / -perm 4000
```

Solaris:

```
find / -perm -4000
```

NFS Sharing

Solaris Share Directory:

```
share -F nfs -o rw /export/home
```

Mount NFS Share:

```
mount -F nfs 10.129.15.122:/nfs_share /mnt/local
```

Config File:

```
cat /etc/dfs/dfstab
```

Process Mapping

Linux:

```
sudo lsof -c apache2
```

Solaris:

```
pfiles `pgrep httpd`
```

Tracing System Calls

Linux:

```
sudo strace -p `pgrep apache2`
```

Solaris:

```
truss ls
```

- **truss** can trace signals and child processes
 - **strace** is limited to the specified process
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Learning Tip: Practice cross-platform comparisons by running the same tasks on both Ubuntu and Solaris virtual machines. Use command documentation (**man <command>**) to dive deeper.