

Ibrahim Ahmadzai

Mr. Nestor

ICS2O0-B

December 5, 2019

## **Solaris (Oracle) Research**

### **What is Solaris Oracle?**

- Solaris is a non-free Unix operating system originally developed by Sun Microsystems. It superseded the company's earlier SunOS in 1993. In 2010, after the Sun acquisition by Oracle, it was renamed Oracle Solaris.

### **Topic A - Application Software**

#### **1. User Applications**

[https://docs.oracle.com/cd/E23824\\_01/html/821-1451/gkhqx.html](https://docs.oracle.com/cd/E23824_01/html/821-1451/gkhqx.html)

- In Oracle Solaris 11, user accounts are created as Oracle Solaris ZFS file systems. Every home directory that is created by using the useradd and roleadd commands places the home directory of the user on the /export/home file system as an individual ZFS file system.

#### **2. Does it run without user input?**

[https://docs.oracle.com/cd/E24457\\_01/html/E21993/blabe.html](https://docs.oracle.com/cd/E24457_01/html/E21993/blabe.html)

- If you type the run command initially without arguments, the program is run without user input.

#### **3. Is it off the shelf or is it a custom-developed application?**

<https://www.oracle.com/ca-en/solaris/solaris11/>

- It is a custom developed application and it is free to use for everyone when you download it onto your computer.

## **Topic B - Hardware**

1. What processor speed does it have?

[https://support.oracle.com/knowledge/Sun%20Microsystems/1444358\\_1.html](https://support.oracle.com/knowledge/Sun%20Microsystems/1444358_1.html)

- CPU sockets, CPU cores per socket, hardware threads per core, etc. Solaris 10 and 11 consider "vCPUs" - virtual processors as entities on which to schedule processes. **(NO SPEED IS GIVEN)**

2. What capacity of memory does it have?

<https://www.oracle.com/technetwork/server-storage/solaris10/overview/specs-jsp-136480.html>

- Solaris requires at least 256 MB of memory for a normal installation.

3. Where is it designed to use?

<https://www.oracle.com/solaris/solaris11/>

- Oracle Solaris is the best enterprise operating system for Oracle Database and Java applications. Focused enhancements across CPU, memory, file system, I/O, networking, and security deliver the best database, middleware, and application performance for Oracle workloads.

## **Topic C - User Interface**

1. Does it support a windowed environment, command line, or network users

<https://www.oracle.com/technical-resources/articles/it-infrastructure/admin-o11-12-s11-first-steps.html>

- Oracle VM VirtualBox is a free-to-download hypervisor that supports Microsoft Windows, Apple OS X, Linux, and Oracle Solaris as host platforms.

2. Does it support multiple applications or only an application at a time?

[https://en.wikipedia.org/wiki/Solaris\\_\(operating\\_system\)](https://en.wikipedia.org/wiki/Solaris_(operating_system))

- Solaris 10 includes Sun's Java Desktop System (JDS), which is based on GNOME and comes with a large set of applications, including StarOffice.

3. Does it get rebooted or is it always on?

<https://www.howtogeek.com/howto/solaris/shut-down-or-reboot-a-solaris-system/>

- Solaris Oracle gets rebooted every time the computer is rebooted or the computer is turned off.

## **Topic D - Device Management**

1. What type of input devices does it support?

[https://docs.oracle.com/cd/E26505\\_01/html/E37385/gdvku.html](https://docs.oracle.com/cd/E26505_01/html/E37385/gdvku.html)

- Oracle supports input devices such as DVD drives, Printers and plotters, Light pens, Touch-sensitive screens, Digitizers, Tablet-and-stylus pairs.

2. What type of output devices does it support?

[https://docs.oracle.com/cd/E23823\\_01/html/817-5093/gdvku.html](https://docs.oracle.com/cd/E23823_01/html/817-5093/gdvku.html)

- The Oracle Solaris software does not directly communicate with all these devices. The output displayed by this command depends upon the type of system.

3. What types of disk drives and file systems does it support?

[https://docs.oracle.com/cd/E36784\\_01/html/E39021/fsoverview-20860.html](https://docs.oracle.com/cd/E36784_01/html/E39021/fsoverview-20860.html)

- The Universal Disk Format (UDF) File System The Oracle Solaris UDF file system works with supported ATAPI and SCSI DVD drives, CD-ROM devices, and disk drives. In addition, the Oracle Solaris UDF file system is fully compliant with the UDF 1.50 specification.

## **Topic E-Security**

1. What types of user accounts and user permissions does it support?

[https://docs.oracle.com/cd/E37838\\_01/html/E61023/rbacgloss-1.html#OSSUPrbacgloss-superusermodel](https://docs.oracle.com/cd/E37838_01/html/E61023/rbacgloss-1.html#OSSUPrbacgloss-superusermodel)

<https://docs.oracle.com/cd/E19253-01/817-1985/6mhm8o5mm/index.html>

<https://docs.oracle.com/cd/E19683-01/806-7612/files-fig-27/index.html>

- The different user accounts that Solaris support are: system account, regular user account, guest user account, superuser account (role), group account, local

user account, remote user account, network user account, anonymous user account, and trusted (privileged) user account

- File permissions help to protect files and directories from unauthorized reading and writing. Often you will have files you want to allow others to read but not change. In other situations, you might want to share executable files or programs. File permissions enable you to control access to your files.

The following list describes the three basic file and directory permission types.

- **r – read** permission. A file must be readable in order for you to examine or copy it. A directory must be readable in order for you to list its contents.
  - **w – write** permission. A file must be writable in order for you to modify it, remove it, or rename it. A directory must be writable in order for you to add or delete files in it.
  - **x – execute** permission. A file with executable permissions is one you can run, such as a program. A directory must be executable in order for you to gain access to any of its subdirectories.
- Solaris supports many user permissions which include: file control, displaying permissions and status (1s -l\_), listing hidden files (1s -a), changing permissions (chmod), and setting absolute permissions.
2. How does it protect against conflicts/interference between legitimate application processes?

[https://en.wikibooks.org/wiki/Fundamentals\\_of\\_Information\\_Systems\\_Security/Access\\_Control\\_Systems](https://en.wikibooks.org/wiki/Fundamentals_of_Information_Systems_Security/Access_Control_Systems)

- There must be a three-step process of Identification, Authentication and the application transforms the passphrase into a virtual password and into a format that protects the data from being affected by the electrical interference.
3. How does it protect against malicious software?

<https://blogs.oracle.com/solaris/solaris-is-immune-from-virusmalware-right-v2>

- Oracle Solaris does have a number of features that can be deployed to reduce the risks where malware is the threat. Immutable Zones (including bare metal and LDOMs): This provides protection against malware persisting.

## **Topic F - Network Connectivity**

1. Is the computer stand-alone or part of a larger network?

<https://www.linkedin.com/pulse/linux-vs-solaris-farshad-vahidpour>

Solaris Oracle is an operating system that is a part of a greater network called Unix.

Solaris is considered a “Unix like” operating system.

2. What type of network and internet connections does it provide?

<https://www.oracle.com/technetwork/server-storage/solaris11/documentation/solaris-the-carriergradeos-wp-308726.pdf>

- VLAN, link aggregation, and the ability to support MAC layers other than Ethernet, including IP tunnels, Wi-Fi, and InfiniBand.

- Solaris also more effectively uses unique assets in legacy fixed and mobile intelligent networks (IN), broadband and cable networks, as well as next-generation networks (NGN), such as Long-Term Evolution (LTE), WiMAX, and IP Multimedia System (IMS)
3. Does it provide other services such as backup, firewall, etc?

<https://www.oracle.com/technetwork/server-storage/solaris11/documentation/solaris-the-carriergradeos-wp-308726.pdf>

- Oracle Solaris provides a sophisticated network-wide security system that controls the way users access files, protect system databases, and use system resources. Solaris Oracle uses integrated security services and applications to enhanced encryption algorithms, to a firewall for network protection.
- Extended security features are also available, including authentication, data integrity, data privacy, and single sign-on capabilities so that tampering, snooping, and eavesdropping does not compromise data or associated transactions.
- Solaris also provides features such as snapshots that help users that need to perform backups or to save their files.

