Cheat Sheet for ORACLE Solaris 11 Course

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Chapter 1

Introduction

Chapter 2

Installing Oracle Solaris 11

2.1 Planning

Planning is required to make sure that the operating system is installed properly and is configured to support business needs. Planning addresses and answers such questions as:

- How many users will you need to support?
- What applications will you be running?
- What type of network will you be using?
- What are your data storage needs?
- What are your hardware needs?

2.2 Installing

2.3 Using an Interactive Installer

Installing the operating system consists of four tasks:

1. Preparing for the installation
2. Preforming the installation
3. Verifying the installation
4. Rebooting the system

Feature	Live Media GUI	Text Installer
Packages	Installs desktop-based packages	Installs server-based set of packages
Network Configuration	Defaults to automatic network configuration	Allows both automatic and manual configuration of the network
root user	The root user is always configured as a role	The root user might not be a role
Memory	Requires more memory than text installer	Requires less memory than Live Media GUI installer

System Information	Command
Host name	`hostname`
Basic information: Operating system name, release, version, host name, hardware architecture and processor type	`uname -a`
Operating system release information	`cat /etc/release`
Disk configuration	`format`
Installed memory	`prtconf | grep Memory`
Information about network services	`svcs network/physical`
Network interface information	`ipadm show-addr`

2.3.1 Preparing for the installation

- Identify system requirements (disk space and memory)
- Review additional installation considerations (whole-disk or partition)
- Verify required device drivers

Note:

- the first user configured is given the `root` role.
- after the reboot, you can find the installation log at `/var/sadm/system/logs/install_log` for the GUI install or `/var/log/install/install_log` for the text install.

2.3.2 Baseline System Information Commands: Summary

Chapter 3

Updating and Managing Software Packages

3.1 Managing Software Packages by Using the Command-Line Interface and Package Manager

List of know-how tasks:

- Searching for a package
- Performing a test run on the package installation
- Installing a package
- Verifying the package installation
- Displaying information about the package and its contents
- Uninstalling a package

3.2 Boot Environment

Package Management Task	IPS Command
Display package state and version information	`pkg list`
Display package information	`pkg info`
Display content of a package	`pkg conten`
Install package updates	`pkg update`
Install package	`pkg install`
Verify package installation	`pkg verify`
Search for a package	`pkg list`
Unistall a package	`pkg list`

Table 3.1: Package Management Commands: Summary

Boot Environment Task	Command
List the boot environments on a system	`beadm list`
Create a new boot environment	`beadm create beName`
Rename a boot environment	`beadm rename beName newBeName`
Destroy an inactive boot environment	`beadm destroy beName`
Activate an inactive boot environment	`beadm activate beName init 6`

Chapter 4

Administering Services

4.1 Administering SMF Services

SMF task	SMF Command
List services currently running on the system	`svcs`
List all the services defined on the system	`svcs -a`
Display service dependents	`svcs -D FMRI`
Display service dependencies	`svcs -d FMRI`
Display the status of a service	`svcs -l svc:/network/ssh:default`
Enable the SMF notification service	`svcadm enable smtp-notify`
Disable a service	`svcadm disable svc:/network/ssh:default`
Refresh a service	`svcadm refresh svc:/network/ssh:default`
Restart a service	`svcadm restart svc:/network/ssh:default`
Confirm the service is up and running	`ps -ef | grep smtp-notify`
Configure the service state transition notification for all services monitored by SMF	`svccfg -s svc:/system/svc/global:default setnotify -g service_transition_state mailto:root@localhost`
Configure notification for a single service	`svccfg -s svc:/network/http:apache22 setnotify from-online mailto:root@localhost`
View configured notification	`svccfg -s svc:/system/svc/global:default listnotify`
Stop all notifications	`svccfg -s svc:/system/svc/global:default delnotify -g all`

Table 4.1: Service Commands

Note:

If the service is `online`, the service dependencies are satisfied. If the service is not `online`, use `svcadm enable -r FMRI` to recursively enable all dependencies.

Note:

By default, the service `svc:/system/boot-config:default` is enabled with the property `config/fastreboot_default` set to `true`. Running `init 6` will skip some firmware initialization steps and will skip the GRUB menu during reboot. The `-p` option appended to the `reboot` command disable the Fast Reboot feature.

SMF task	SMF Command
`online`	Enabled and successfully started.
`offline`	Enabled but not yet running or available to run.
`disabled`	Not enabled and not running.
`legacy_run`	Running. The legacy run is not managed by SMF, but the service can be observed.This state is used by legacy services only.
`uninitialized`	Starting up. This state is the initial state for all services before their configuration has been read.
`maintenance`	Error encountered that require administrative intervention.
`degraded`	Enabled but running at a limited capacity.

Table 4.2: Service States

Monitored Transition States	
to-uninitialized	to-disabled
from-uninitialized	from-disabled
to-maintenance	to-online
from-maintenance	from-online
to-offline	to-degraded
from-offline	from-degraded

Table 4.3: Service Transition States

4.2 Boot a System

4.2.1 Run Levels

Run Level	Resulting State	Description
`0`	Exit the OS	The operating system is shut down, and it is safe to turn off power to the system.
`s` or `S`	Single-user state	A single user can log in. Some file systems are mounted and accessible.
`2`	Multiuser state	Multiple users can access the system and all file systems.
`3`	Multiuser level with server	All system resources are available, and multiple users can log in. This is the default run level.
`5`	Machine powers down	The system shuts down and then powers off the machine.
`6`	Boot to multiuser level with server	The system shuts down to system level `0` and then reboots to level `3`.

Table 4.4: Run Levels

4.2.2 Booting an x86 System to Run Level S (Single-User Milestone)

1. Reboot the system by using the reboot -p command.
2. When the GRUB menu appears, enter e to edit the GRUB menu.
3. Use the arrow keys to choose the `kernel $` line.
4. Enter e again to edit the boot entry.
5. To boot the system in single-user mode, enter `-s` at the end of the boot entry line. Then press Return to go back to the previous screen.

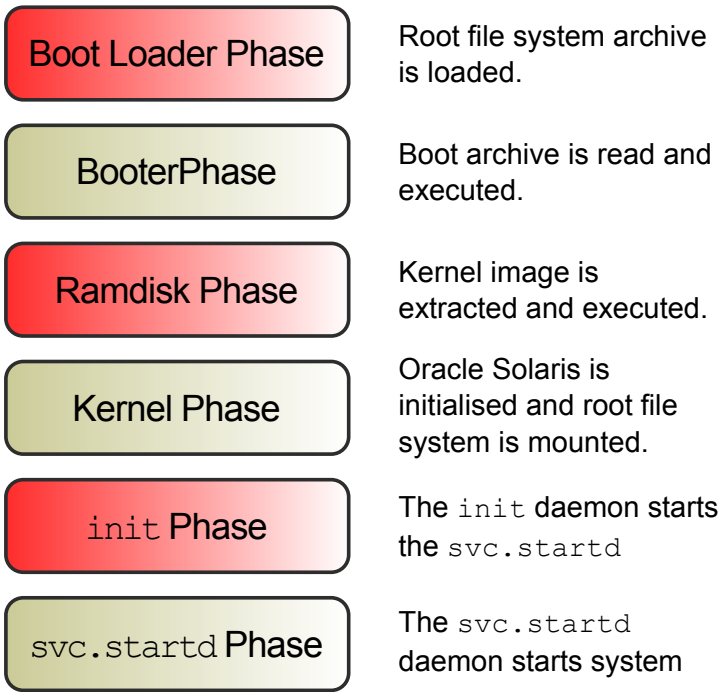

Figure 4.1: Boot process

Run Level	SMF Milestone FMRI
S	milestone/single-user:default
2	milestone/multi-user:default
3	milestone/multi-user/server:default

6. To continue to boot the system in single-user mode, enter `b`.
7. When prompted, enter the `root` password.
8. Verify that the system is at run level `S`.

4.3 Shutdown a System

4.3.1 Shutting down a system

- Shutting down a server:
  - the `shutdown` command is used.
  - clean shutdown is performed.
  - superuser privileges are required.
- Shutting down a stand-alone system:
  - the `init` command is used.
  - clean shutdown is performed.
  - superuser privileges are required.

Chapter 5

Setting Up and Administering Data Storage

5.1 ZFS Pool

5.2 ZFS File Systems

5.3 ZFS Snapshots and Clones

Chapter 6

Administering Oracle Solaris Zones

6.1 Determine the current zone configuration

6.2 Determine the current zone resource utilization

6.3 Administer an Oracle Solaris zone

Chapter 7

Administering a Physical Network

Chapter 8

Setting Up and Administering User Accounts

Chapter 9

Controlling Access to Systems and Files

Chapter 10

Managing System Processes and Scheduling System Tasks

Chapter 11

Performing Basic System Monitoring and Troubleshooting