

Oracle Linux 7

Administrator's Guide



E54669-79
October 2022



Oracle Linux 7 Administrator's Guide,

E54669-79

Copyright © 2022, Oracle and/or its affiliates.

Contents

Preface

Conventions	v
Documentation Accessibility	v
Access to Oracle Support for Accessibility	v
Diversity and Inclusion	vi

1 System Configuration

Yum	1-1
Ksplice	1-1
Boot and Service Configuration	1-2
System Configuration Settings	1-2
Kernel Modules	1-2
Device Management	1-3
Task Management	1-3
System Monitoring and Tuning	1-3
System Dump Analysis	1-3

2 Networking and Network Services

Network Configuration	2-1
Network Address Configuration	2-1
Name Service Configuration	2-2
Network Time Configuration	2-2
Web Service Configuration	2-2
Email Service Configuration	2-2
High Availability Configuration	2-3
Load Balancing Configuration	2-3
VNC Service Configuration	2-3

3 Storage and File Systems

Storage Management	3-1
--------------------	-----

File System Administration	3-1
Local File System Administration	3-2
Shared File System Administration	3-2
Oracle Cluster File System Version 2	3-2

4 Authentication and Security

Authentication Configuration	4-1
Local Account Configuration	4-1
System Security Administration	4-2
OpenSSH Configuration	4-2

5 Virtualization

Linux Containers	5-1
Using KVM With Oracle Linux	5-1

Preface

Oracle® Linux 7: Administrator's Guide provides introductory information about administering various features of Oracle Linux 7 systems, including system configuration, networking, network services, storage devices, file systems, authentication, and security.



Note:

The information in this book has been migrated to separate and more updated documentation. For the most current information, refer the individual, topic-based guides in the [Oracle Linux 7 Documentation](#).

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <https://www.oracle.com/corporate/accessibility/>.

For information about the accessibility of the Oracle Help Center, see the Oracle Accessibility Conformance Report at <https://www.oracle.com/corporate/accessibility/templates/t2-11535.html>.

Access to Oracle Support for Accessibility

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab>.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1

System Configuration

This section contains the following chapters:

- [Yum](#) describes how you can use the `yum` utility to install and upgrade software packages.
- [Ksplice](#) describes how to configure Ksplice Uptrack to update the kernel on a running system.
- [Boot and Service Configuration](#) describes the Oracle Linux boot process, how to use the GRUB boot loader, how to change the run level of a system, and how to configure the services that are available at each run level.
- [System Configuration Settings](#) describes the files and virtual file systems that you can use to change configuration settings for your system.
- [Kernel Modules](#) describes how to load, unload, and modify the behavior of kernel modules.
- [Device Management](#) describes how the system uses device files and how the `udev` device manager dynamically creates or removes device node files.
- [Task Management](#) describes how to configure the system to run tasks automatically within a specific period of time, at a specified time and date, or when the system is lightly loaded.
- [System Monitoring and Tuning](#) describes how to collect diagnostic information about a system for Oracle Support, and how to monitor and tune the performance of a system.
- [System Dump Analysis](#) describes how to configure a system to create a memory image in the event of a system crash, and how to use the `crash` debugger to analyse the memory image in a crash dump or for a live system.

Yum

This chapter describes how you can use the `yum` utility to install and upgrade software packages.

Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Software](#) .

For information about creating and using a Yum server that acts as a local mirror of the ULN channels, see [Oracle Linux: Unbreakable Linux Network User's Guide for Oracle Linux 6 and Oracle Linux 7](#).

Ksplice

This chapter provides a high-level overview of Oracle Ksplice.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux: Ksplice User's Guide](#).

Boot and Service Configuration

This chapter describes the Oracle Linux boot process, how to use the GRUB 2 bootloader, how to change the `systemd` target for a system, and how to configure the services that are available for a target.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

System Configuration Settings

This chapter describes the files and virtual file systems that you can use to change configuration settings for your system.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

Kernel Modules

This chapter describes how to load, unload, and modify the behavior of kernel modules.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

Device Management

This chapter describes how the system uses device files and how the udev device manager dynamically creates or removes device node files.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

Task Management

This chapter describes how to configure the system to run tasks automatically within a specific period of time, at a specified time and date, or when the system is lightly loaded.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

System Monitoring and Tuning

This chapter describes how to collect diagnostic information about a system for Oracle Support, and how to monitor and tune the performance of a system.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

System Dump Analysis

This chapter describes how to configure a system to create a memory image in the event of a system crash, and how to use the `crash` debugger to analyse the memory image in a crash dump or for a live system.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Core System Configuration](#).

2

Networking and Network Services

This section contains the following chapters:

- [Network Configuration](#) describes how to configure a system's network interfaces and network routing.
- [Network Address Configuration](#) describes how to configure a DHCP server, DHCP client, and Network Address Translation.
- [Name Service Configuration](#) describes how to use BIND to set up a DNS name server.
- [Network Time Configuration](#) describes how to configure the chrony, Network Time Protocol (NTP), or Precision Time Protocol (PTP) daemons for setting the system time.
- [Web Service Configuration](#) describes how to configure a basic HTTP server.
- [Email Service Configuration](#) describes email programs and protocols that are available with Oracle Linux, and how to set up a basic Sendmail client.
- [High Availability Configuration](#) describes how to use Pacemaker and Corosync to set up high availability cluster configurations with networked systems.
- [Load Balancing Configuration](#) describes how to use Keepalived and HAProxy to set up load balancing for networked systems.
- [VNC Service Configuration](#) describes how to enable a VNC server to provide remote access to a graphical desktop.

Network Configuration

This chapter describes how to configure a system's network interfaces and network routing.



Note:

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Network Address Configuration

This chapter describes how to configure a DHCP server, DHCP client, and Network Address Translation.



Note:

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Name Service Configuration

This chapter describes how to use BIND to set up a DNS name server.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Network Time Configuration

This chapter describes how to configure a system to use the chrony, Network Time Protocol (NTP), or Precision Time Protocol (PTP) daemons for setting the system time.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Web Service Configuration

This chapter describes how to configure a basic HTTP server.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Email Service Configuration

This chapter describes email programs and protocols that are available with Oracle Linux, and how to set up a basic Sendmail client.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

High Availability Configuration

This chapter describes how to configure the Pacemaker and Corosync technologies to create an HA cluster that delivers continuous access to services running across multiple nodes.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

Load Balancing Configuration

This chapter describes how to configure the Keepalived and HAProxy technologies for balancing access to network services while maintaining continuous access to those services.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

VNC Service Configuration

This chapter describes how to enable a Virtual Network Computing (VNC) server to provide remote access to a graphical desktop.

 **Note:**

Information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up Networking](#).

3

Storage and File Systems

This section contains the following chapters:

- [Storage Management](#) describes how to configure and manage disk partitions, swap space, logical volumes, software RAID, block device encryption, iSCSI storage, and multipathing.
- [File System Administration](#) describes how to create, mount, check, and repair file systems, how to configure Access Control Lists, how to configure and manage disk quotas.
- [Local File System Administration](#) describes administration tasks for the btrfs, ext3, ext4, OCFS2, and XFS local file systems.
- [Shared File System Administration](#) describes administration tasks for the NFS and Samba shared file systems, including how to configure NFS and Samba servers.
- [Oracle Cluster File System Version 2](#) describes how to configure and use the Oracle Cluster File System Version 2 (OCFS2) file system.

Storage Management

This chapter describes how to configure and manage disk partitions, swap space, logical volumes, software RAID, block device encryption, iSCSI storage, and multipathing.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing Storage and Storage Devices](#).

File System Administration

This chapter describes how to create, mount, check, and repair file systems, how to configure Access Control Lists, how to configure and manage disk quotas.



Note:

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing File Systems](#).

Local File System Administration

This chapter describes administration tasks for the btrfs, ext3, ext4, OCFS2, and XFS local file systems.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing File Systems](#).

Shared File System Administration

This chapter describes administration tasks for the NFS and Samba shared file systems.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing File Systems](#).

Oracle Cluster File System Version 2

This chapter describes how to configure and use the Oracle Cluster File System Version 2 (OCFS2) file system.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Managing File Systems](#).

You can also find more information about OCFS2 at <https://oss.oracle.com/projects/ocfs2/documentation/>.

4

Authentication and Security

This section contains the following chapters:

- [Authentication Configuration](#) describes how to configure various authentication methods that Oracle Linux can use, including NIS, LDAP, Kerberos, and Winbind, and how you can configure the System Security Services Daemon feature to provide centralized identity and authentication management.
- [Local Account Configuration](#) describes how to configure and manage local user and group accounts.
- [System Security Administration](#) describes the subsystems that you can use to administer system security, including SELinux, the Netfilter firewall, TCP Wrappers, chroot jails, auditing, system logging, and process accounting.
- [OpenSSH Configuration](#) describes how to configure OpenSSH to support secure communication between networked systems.

Authentication Configuration

This chapter describes how to configure various authentication methods that Oracle Linux can use, including NIS, LDAP, Kerberos, and Winbind, and how you can configure the System Security Services Daemon feature to provide centralized identity and authentication management.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up System Accounts and Authentication](#).

Local Account Configuration

This chapter describes how to configure and manage local user and group accounts.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Setting Up System Accounts and Authentication](#).

System Security Administration

This chapter describes the subsystems that you can use to administer system security, including SELinux, the Netfilter firewall, TCP Wrappers, chroot jails, auditing, system logging, and process accounting.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See the following corresponding documentation:

- For security topics, see [Oracle Linux 7: Security Guide](#).
- For information about setting up user accounts and authentication, see [Oracle Linux 7: Setting Up System Accounts and Authentication](#).
- For information about SELinux, see [Oracle Linux: Administering SELinux](#).

OpenSSH Configuration

This chapter describes how to configure OpenSSH to support secure communication between networked systems.

 **Note:**

The information in this chapter has been migrated to a separate and more updated documentation. See [Oracle Linux: Connecting to Remote Systems With OpenSSH](#).

5

Virtualization

This section contains the following chapters:

- [Linux Containers](#) describes how to use Linux Containers (LXC) to isolate applications and entire operating system images from the other processes that are running on a host system.
- [Using KVM With Oracle Linux](#) describes how to use an Oracle Linux system as a hypervisor with Kernel-based Virtual Machine (KVM) and provides information on installing virtualization packages.

 **Note:**

Information about using the Docker engine to manage containers and images under Oracle Linux is provided in [Oracle Linux: Oracle Container Runtime for Docker User's Guide](#).

Linux Containers

This chapter describes how to use Linux Containers (LXC) to isolate applications and entire operating system images from the other processes that are running on a host system.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux 7: Working With LXC](#).

For information about how to use the Docker Engine to create application containers, see the [Oracle Container Runtime for Docker User's Guide](#).

Using KVM With Oracle Linux

This chapter describes the Kernel-based Virtual Machine (KVM) feature.

 **Note:**

The information in this chapter has been migrated to separate and more updated documentation. See [Oracle Linux: KVM User's Guide](#).