

Oracle Linux

Limits

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Oracle Linux Limits

This document describes the minimum and maximum limits for resources available to Oracle Linux users. Often, limits are theoretical in that they haven't been physically tested and validated, but where a limit is implied by architecture or design, these are described. Sometimes, other limitations might apply because of vendor hardware, firmware, or software driver capabilities. Use this document alongside existing Oracle Linux release notes, platform, and hardware documentation for more specific detail.

All limits described here assume that you're using the latest update level of each Oracle Linux release. Oracle strongly recommends that whenever possible you update software to the current update level of the operating system release.

CPU Limits

A minimum of 2 logical CPUs is recommended for all operating system installs, where possible.

Architecture	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
x86_64	Validated: 768 Theoretical: 5,120	Validated: 768 Theoretical: 8,192	Validated: 1,792 Theoretical: 8,192	Validated: 1,792 Theoretical: 8,192
aarch64	Validated: 160 Theoretical: 4,096	Validated: 256 Theoretical: 4,096	Validated: 512 Theoretical: 4,096	Validated: 512 Theoretical: 4,096

Memory Limits

Maximum Memory

Architecture	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
x86_64	Validated: 12 TB Theoretical: 64 TB	Validated: 24 TB Theoretical: 64 TB	Validated: 48 TB Theoretical: 64 TB	64 TB

Architecture	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
aarch64	Validated: 1 TB Theoretical: 256 TB	Validated: 1.5 TB Theoretical: 256 TB	Validated: 1.5 TB Theoretical: 256 TB	Validated: 1.5 TB Theoretical: 256 TB

The maximum size of the address space that's available to each process is 128 TB.

Minimum Required Memory

Architecture	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
x86_64	1 GB minimum, 1 GB per logical CPU recommended	1.5 GB minimum, 1.5 GB per logical CPU recommended	1.5 GB minimum, 1.5 GB per logical CPU recommended	2 GB minimum, 2 GB per logical CPU recommended
aarch64	2 GB	2 GB	2 GB	2 GB

Note that more memory might be required when performing a network installation. This additional requirement might only apply during the installation process.

Minimum Required Disk Space

Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
10 GB minimum, 20 GB recommended			

File System Limits

Btrfs

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum file size	Theoretical: 8 EB	Theoretical: 8 EB	Theoretical: 8 EB	Theoretical: 8 EB
Maximum file system size	Theoretical: 8 EB	Theoretical: 8 EB	Theoretical: 8 EB	Theoretical: 8 EB
Maximum subdirectories	2^{64}	2^{64}	2^{64}	2^{64}
Maximum symlink depth	40	40	40	40
ACL support	Yes	Yes	Yes	Yes

Ext3

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum file size	2 TB	2 TB	2 TB	2 TB
Maximum file system size	16 TB	16 TB	16 TB	16 TB
Maximum subdirectories	32,000	32,000	32,000	32,000
Maximum symlink depth	8	40	40	40
ACL support	Yes	Yes	Yes	Yes

Ext4

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum file size	16 TB	16 TB	16 TB	16 TB
Maximum file system size	50 TB Theoretical: 1 EB			
Maximum subdirectories	65,000/ unlimited	65,000/ unlimited	65,000/ unlimited	65,000/ unlimited
Maximum symlink depth	8	40	40	40
ACL support	Yes	Yes	Yes	Yes

The limits for the ext4 file system that are described in the preceding table are higher than the recommended limits and might prove unstable. If you are working with systems on which you intend to work toward using higher file system sizes or file sizes, it is recommended that you use either the Btrfs or XFS file system.

XFS

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum file size	500 TB Theoretical: 8 EB	8 EB	8 EB	8 EB
Maximum file system size	500 TB Theoretical: 16 EB	1 PB	1 PB	1 PB
Maximum subdirectories	unlimited	unlimited	unlimited	unlimited
Maximum symlink depth	8	40	40	40
ACL support	Yes	Yes	Yes	Yes

OCFS2

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum file size	16 TB Theoretical: 4 PB			
Maximum file system size	16 TB Theoretical: 4 PB			
Maximum subdirectories	unlimited	unlimited	unlimited	unlimited
Maximum symlink depth	40	40	40	40
ACL support	Yes	Yes	Yes	Yes

Storage

Feature	Oracle Linux 7	Oracle Linux 8	Oracle Linux 9	Oracle Linux 10
Maximum boot LUN size (BIOS)	2 TB	2 TB	2 TB	2 TB
Maximum boot LUN size (UEFI)	50 TB	8 EB	8 EB	8 EB
Maximum number of device paths Driver dependent and might require further configuration	10,000	10,000	10,000	10,000

GPT and UEFI support are required for LUNs that are larger than 2 TB.

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