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Red Hat Enterprise Linux technology capabilities and limits

🕐 Обновлено Вчера в 18:09

What can Red Hat® Enterprise Linux® do? Find out in this quick-glance chart of the supported and theoretical [1] limits of the platform.

Specification	Version 3	Version 4	Version 5	Version 6	Version 7
Maximum logical CPUs [2]					
x86	16	32	32	32	N/A [6]
Itanium 2	8	256 [512]	256 [1024]	N/A [6]	N/A [6]
x86_64	8	64 [64]	160 [255]	160 [4096]	160 [5120]
POWER	8	64 [128]	128	128	128
System z	64 (z900)	64 (z10 EC)	101 (zEC12)	101 (zEC12)	101 (zEC12)
Maximum memory [5]					
x86	64GB [3]	64GB [3]	16GB [4]	16GB [4]	N/A [6]
Itanium 2	128GB	2TB	2TB	N/A [6]	N/A [6]
x86_64	128GB	256GB [1TB]	1TB	3TB [64TB]	3TB [64TB]
POWER	64GB	128GB [1TB]	512GB [1TB]	2TB	2TB
System z	256GB (z900)	1.5TB (z10 EC)	3TB (z196)	3TB (z196)	3TB (z196)
Maximum number of device paths ("sd" devices)					
	256	256 [13]	1,024 [13,14]	8,192 [13,14]	10,000 [13,14]
Required minimums					
x86	256MB	256MB	512MB minimum/1 GB/logical CPU recommended	512MB minimum/1 GB/logical CPU recommended	N/A [6]
x86_64	256MB	256MB	512MB minimum/1 GB/logical CPU recommended	1GB minimum/1 GB/logical CPU recommended	1GB minimum/1 GB/logical CPU recommended
Itanium 2	512MB	512MB	512MB/1 GB/logical CPU recommended	N/A [6]	N/A [6]
POWER	512MB	512MB	1GB minimum/2GB recommended	2GB minimum/2GB required per install	2GB minimum/2GB required per install
Minimum diskspace	800MB	800MB	1GB minimum/5GB recommended	1GB minimum/5GB recommended	10GB minimum/20GB recommended
File systems and storage limits					
Maximum filesize (Ext3)	2TB	2TB	2TB	2TB	2TB
Maximum file system size (Ext3)	2TB	8TB	16TB	16TB	16TB
Maximum file size (Ext4)	--	--	16TB	16TB	16TB
Maximum file system size (Ext4)	--	--	16TB [1EB]	16TB [1EB]	50TB [1EB]
Maximum file size (GFS)	2TB	16TB [8EB]	16TB [8EB] [7]	N/A	N/A
Maximum file system size (GFS)	2TB	16TB [8EB]	16TB [8EB] [7]	N/A	N/A
Maximum file size (GFS2)	--	--	100TB	100TB	100TB
Maximum file system size (GFS2)	--	--	100TB	100TB	100TB
Maximum file size (XFS)	--	--	100TB [8EB]	100TB [8EB]	500TB [8EB]
Maximum file system size (XFS)	--	--	100TB [16EB]	100TB [16EB]	500TB [16EB]

Specification	Version 3	Version 4	Version 5	Version 6	Version 7
Maximum Boot LUN size (BIOS)	--	--	2TB	2TB[10]	2TB[10]
Maximum Boot LUN size (UEFI)	--	--	N/A	32bit (i686) - 2TB, 64bit - 16TB (tested limit)	50TB
Maximum x86 per-process virtual address space	Approx. 4GB	Approx. 4GB	Approx. 3GB[4]	Approx. 3GB[4]	N/A[6]
Maximum x86_64 per-process virtual address space		512GB	2TB	128TB	128TB
Kernel and OS features					
Kernel foundation	Linux 2.4.21	Linux 2.6.9	Linux 2.6.18	2.6.32 - 2.6.34	3.10
Compiler/toolchain	GCC 3.2	GCC 3.4	GCC 4.1	GCC 4.4	GCC 4.8.2
Languages supported	10	15	19	22	22
NIAP/CC certified[11]	Yes (3+)	Yes (4+)	Yes (4+)	Yes (4+)	Under Evaluation (4+)
Common Criteria certified KVM[11]	--	--	Evaluated	Evaluated	Under Evaluation
IPv6	--	--	Ready Logo Phase 2	Ready Logo Phase 2	Under Evaluation
FIPS certified[11]	--	--	Yes (7 modules)	Yes (8 modules)	Under Evaluation (9 modules)
Common Operating Environment (COE) compliant	Yes	Yes	N/A	N/A	N/A
LSB-compliant	Yes - 1.3	Yes - 3	Yes - 3.1	Yes - 4.0	Under Evaluation (4.1)
GB18030	No	Yes	Yes	Yes	Yes
Client environment					
Desktop GUI	Gnome 2.2	Gnome 2.8	Gnome 2.16	Gnome 2.28	Gnome 3.8
Graphics	XFree86	X.org	X.org 7.1.1	X.org 7.4	X.org 7.7
OpenOffice	V1.1	V1.1.2	V2.0.4[12]	V3.2[12]	LibreOffice V4.1.4[12]
Gnome Evolution	V1.4	V2.0	V2.8.0	V2.28	V3.8.5
Default browser	Mozilla	Firefox	Firefox 1.5[12]	Firefox 3.6[12]	Firefox 24.5[12]

Legend: Values are depicted as **tested/supported [theoretical]** above.

Notes:

1. Supported limits reflect the current state of system testing by Red Hat and its partners for mainstream hardware. Systems exceeding these supported limits may be included in the Hardware Catalog after joint testing between Red Hat and its partners. If they exceed the supported limits posted here, entries in the Hardware Catalog will include a reference to the details of the system-specific limits and are fully supported. In addition to supported limits reflecting hardware capability, there may be additional limits under the Red Hat Enterprise Linux subscription terms. Supported limits are subject to change as ongoing testing completes.

2. Red Hat defines a logical CPU as any schedulable entity. So every core/thread in a multicore/thread processor is a logical CPU.

3. The "SMP" kernel supports a maximum of 16GB of main memory. Systems with more than 16GB of main memory use the "Hugemem" kernel. In certain workload scenarios it may be advantageous to use the "Hugemem" kernel on systems with more than 12GB of main memory.

4. The x86 "Hugemem" kernel is not provided in Red Hat Enterprise Linux 5 or 6.

5. The architectural limits are based on the capabilities of the Red Hat Enterprise Linux kernel and the physical hardware. Red Hat Enterprise Linux 6 limit is based on 46-bit physical memory addressing. Red Hat Enterprise Linux 5 limit is based on 40-bit physical memory addressing. All system memory should be balanced across NUMA nodes in a NUMA-capable system.

6. Red Hat Enterprise Linux 6 does not include support for the Itanium 2 architecture. Red Hat Enterprise Linux 7 does not include support for the Itanium 2 and 32-bit x86 architectures.

7. If there are any 32-bit machines in the cluster, the maximum gfs file system size is 16TB. If all machines in the cluster are 64-bit, the maximum size is 8EB.

8. Officially support 125 CPUs across the entire machine.

9. Requires Intel EPT and AMD RVI technology support.

10. UEFI and GPT support required for more that 2TB boot LUN support (https://access.redhat.com/kb/docs/DOC-16981).

11. Get security certification details.

12. Firefox, Thunderbird, and OpenOffice applications will be updated during the life cycle.

13. Larger numbers are possible, depending on testing and support by the specific hardware vendor. For example, EMC supports up to 8,192 device paths on Red Hat Enterprise Linux 5. Consult your hardware vendor to determine their limit, and confirm with your Red Hat support representative. In no case will Red Hat support a limit that exceeds the limit supported by the hardware vendor.

14. It may be necessary to increase certain driver parameters to reach these limits. Consult with your Red Hat support representative.

Тип статьи	General	Продукты	Red Hat Enterprise Linux	Категория	Supportability

Комментарии