

Red Hat Enterprise Linux® 6 vs 7 vs 8

Progress is being made ...

Marc Skinner
Principal Solution Architect

Overview

	RHEL 6	RHEL 7	RHEL 8
GA Date	11/2010	6/2014	11/2018
Kernel Version	2.6.32	3.10	4.18
End of Full Support ELS = +3 years	11/2020	6/2024	6/2029
Current Release as of today: 8/2020	6.10	7.8	8.2

Boot

	RHEL 6	RHEL 7	RHEL 8
Boot loader	Legacy grub	grub2	grub2
SystemManager: Runlevel manager:	upstart init	systemd systemctl	systemd systemctl
Runlevels	0-6	poweroff, rescue, multi-user, graphical, reboot	poweroff, rescue, multi-user, graphical, reboot
Single user mode	Append "1" or "s" to kernel boot parms	Append "1" or "s" or "rd.break" to kernel boot parms	Append "1" or "s" or "rd.break" to kernel boot parms

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Manage services: Enable/Disable:	<code>#service ntpd start</code> <code>#chkconfig ntpd on</code>	<code>#systemctl start ntpd</code> <code>#systemctl enable ntpd</code>	<code>#systemctl start chronyd</code> <code>#systemctl enable chronyd</code>
Network Time Sync	ntp	ntp or chrony	chrony
Network management	Network scripts or NetworkManager	Network scripts or NetworkManager	NetworkManager
Networking bonding	bonding	bonding or teamd	teamd

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Network Interface Names	eth0, eth1	enpXXXX (enp0s3)	enpXXXX (enp0s3)
Reserved UIDS	0-499	0-999	0-999
ISO Installation media	32-bit and 64-bit	64-bit	64-bit
Architecture support	x86, x86_64, Power, System Z	x86_64, Power, System Z	x86_64, Power, System Z, ARM

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Firewall management	iptables	firewalld, front end iptables	firewalld, front end nftables
Temporary file management	tmpwatch	systemd-tmpfiles	systemd-tmpfiles
Package management	yum	yum	yum, front end DNF
Logging	rsyslog	rsyslog and journal	rsyslog and journal

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Default filesystem	ext4	XFS	XFS
Filesystem Check: Filesystem Extend: Can shrink:	<code>#e2fsck</code> <code>#resize2fs</code> yes	<code>#xfs_repair</code> <code>#xfs_growfs</code> no	<code>#xfs_repair</code> <code>#xfs_growfs</code> no
Max file size: Max filesystem size:	16TiB 16TiB	500TiB 500TiB	8EiB (sparse) 1PiB
Max number of device paths	8,192	10,000	10,000

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Default repos	rhel-6-server-rpms	rhel-7-server-rpms	rhel-8-for-x86_64-appstream-rpms rhel-8-for-x86_64-baseos-rpms
Web management tooling	none	cockpit	cockpit
Virtual Machine management	virt-manager	virt-manager	cockpit
Number of shipped RPMs	4,005	5,340	7,040

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Subscription information	/etc/sysconfig/rhn/ systemid #subscription-manager identity	#subscription-manager identity	#subscription-manager identity
Configure subscription	rhn_register rhnreg_ks subscription-manager	subscription-manager	subscription-manager
Authentication configuration	authconfig authconfig-tui authconfig-gtk	authconfig authconfig-tui authconfig-gtk	authselect
X Server: Gnome Version:	Xorg Gnome 2	Xorg Gnome 3	Wayland Gnome 3.28

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Compiler/toolchain	GCC 4.4	GCC 4.8.2	GCC 8.2.1
Python	2.0	2.7.5	3
PHP	5.3	5.4	7.2
Container Technology	N/A	docker and podman	podman

Major Changes

	RHEL 6	RHEL 7	RHEL 8
Working with additional packages/streams	Software collections # yum install	Software collections # yum install	AppStream Modules # yum module [install, info, remove, reset, install, list]
[HA ADD-ON] Cluster resource manager	rgmanager	pacemaker	pacemaker
[LB ADD-ON] Load Balancer	piranha	[Included] Keepalived and HAProxy	[Included] Keepalived and HAProxy
Performance	Baseline	Up to 30% faster	Up to 35% faster

Additions

	RHEL 6	RHEL 7	RHEL 8
Disk Encryption	LUKS	LUKS + NBDE	LUKS + NBDE
USB Protection		USBGuard	USBGuard
Storage Abstraction		System Storage Manager (SSM)	System Storage Manager (SSM)
View hardware configured			lshw

Additions

	RHEL 6	RHEL 7	RHEL 8
Live Kernel Patching		Kpatch / kmod Yes, < 7.7 required a support ticket for access	Kpatch / kmod Yes, automatically pushed to repos
Microsoft SQL support		SQL 2017/2019	SQL 2017/2019
Managing Crypto CIPHERs			System-wide crypto policies #update-crypto-policies
Performance Observability Tooling	systemtap	systemtap	systemtap + eBPF

Upgrades

	RHEL 6	RHEL 7	
	6.10 → 7.6 6.10 → 7.9 (soon)	7.8 → 8.2	
Upgrade tooling	preupgrade-assistant redhat-upgrade-tool	leapp	

Resources

<https://access.redhat.com/articles/1189123>

https://access.redhat.com/sites/default/files/attachments/rhel_5_6_7_8_cheatsheet_8.5x11_0519_0.pdf

<https://access.redhat.com/articles/rhel-limits>

<https://access.redhat.com/articles/4263361>

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