RHEL8 vs RHEL7 vs RHEL6

General Info Related to Distribution,Kernel Ver and Support

S.No	Description	RHEL 8	RHEL 7	RHEL 6
1	General Availability Date	14-Nov-18	10-Jun-14	10-Nov-10
2	Code Name	Ootpa	Maipo	Santiago
3	Kernel Version	4.18	3.10.0-123	2.6.32-71
7	End of Extended Life cycle Support	TBD	N/A	30-Jun-24
8	Last Minor Release	TBD	7.7	6.1

Changes Related to Boot Process

S.No	Description	RHEL 8	RHEL 7	RHEL 6
1	Boot Loader: The GRUB2 looks very similar to GRUB but there are many features added.	GRUB 2		Legacy GRUB
2	Runlevel: Runlevels are referred as target but there is no difference but they merged runlevel 2,3,4 into one.	runlevel0.target -> poweroff.target		runlevel 0
		runlevel1.target -> rescue.target		runlevel 1
		runlevel2.target -> multi-user.target		runlevel 2
		runlevel3.target -> multi-user.target		runlevel 3
		runlevel4.target -> multi-user.target		runlevel 4
		runlevel5.target -> graphical.target		runlevel 5
		runlevel6.target -> reboot.target		runlevel 6
3	To view runlevel/target	systemctl get-default		runlevel
4	To change runlevel/target	systemctl isolate [Name.target]		init [runlevel]
5	To configure default runlevel/target	systemctl set-default [Name.target]		/etc/inittab
6	To break root password or Boot into single user mode	Append rd.break or init=/bin/bash to kernel cmdline		Append 1 or s or init=/bin/bash to kernel cmdline
7	KDUMP	Kdump is enabled by default and will run without any problems if the system has too much RAM.	Kdump is enabled by default and will run without any problems if the system has too much RAM (up to 3 TB).	Kdump is enabled by default and will run without any problems if the system has too much RAM.

Changes Related to Major Packages

S.No	Description	RHEL 8	RHEL 7	RHEL 6
1	System Manager: Systemd is a new init system and system manager which was adapted by most of the major distribution.	systemd		upstart
2	Service Manager	systemctl command		service command
3	Enable Service on Boot	systemctl command		chkconfig
4	Network Time Synchronization	Only Chrony (faster time sync and useful for the systems which are not online all the time)	It supports Chrony and ntp	ntp

5	Network Bonding	Teamd		Bonding
6	To view ports/sockets	ss and lsof		netstat, ss and lsof
7	Cluster Resource Manager	Pacemaker		Rgmanager
8	GUI Interface (Desktop)	Gnome 3.28	Gnome 3	Gnome 2
9	Default Display Server	Wayland	X.Org	X.Org
10	Default Database	MySQL 8.0, MariaDB 10.3, PostgreSQL 10 and 9.6, and Redis 5.0	MariaDB	MySQL
11	Default Firewall	Firewalld, it uses nftables framework in the backend	Firewalld, it uses Iptables framework in the backend	Iptables
12	Temporary Files Management	systemd-tmpfiles		tmpwatch
13	Load Balancer Technology	Keepalived and HAProxy		Piranha
14	Python	Python 3	Python 2.7.5	Python 2.0
15	PHP	PHP 7.2	PHP 5.4	PHP 5.3
16	Compiler	GCC 8.2.1	GCC 4.8.2	GCC 4.4

Changes Related to File System Support

S.No	Description	RHEL 8	RHEL 7	RHEL 6
1	Default File System	XFS		EXT4
2	File System Check	xfs_repair	xfs_repair	e2fsck
3	File System Extend: xfs_growfs (This doesn't allow you to reduce a filesystem)	xfs_growfs	xfs_growfs	resize2fs

Other Major Changes Related to Configurations Management and Support

S.No	Description	RHEL 8	RHEL 7	RHEL 6
1	First Process owned by	systemd (PID 1)	systemd (PID 1)	init (PID 1)
2	Network Interface Name	enpXXX (enp0s3)	enpXXX (enp0s3)	eth0
3	Host Name Change	It needs to be defined in /etc/hostname file	/etc/hostname	It's defined in /etc/sysconfig/network file
4	UID Allocation Change	0-999 UIDs are reserved for system and application users.	0-999	0-499
5	Max Supported (Individual) File & Filesystem Size	XFS= 500TB	XFS= 500TB	EXT4= 16TB
		XFS= 1024TB	XFS= 500TB	EXT4= 16TB
6	ISO Image	Only 64-Bit	Only 64-Bit	32-Bit and 64-Bit
7	Mount Options Change	By default user_xattr and acl mount options are enabled	By default user_xattr and acl mount options are enabled	Need to enable them manually

8	Default Repos	Repo ID: rhel-8-for-x86_64-appstream-rpms	Repo ID: rhel-7-server-rpms	Repo ID: rhel-6-server-rpms
		Repo Name: Red Hat Enterprise Linux 8 for x86_64 – AppStream (RPMs)	Repo Name: Red Hat Enterprise Linux 7 Server (RPMs)	Repo Name: Red Hat Enterprise Linux 6 Server (RPMs)
		Repo ID: rhel-8-for-x86_64-baseos-rpms		
		Repo Name: Red Hat Enterprise Linux 8 for x86_64 – BaseOS (RPMs)		
9	Package Management	By default both are installed, YUM symbolic link to DNF	By default only YUM and DNF can be installed from the Extra repo	Only YUM
10	Max. RAM Supported	24 TB on x86_64 architecture	12 TB on x86_64 architecture	12 TB on x86_64 architecture
11	Directories Change	Directories /bin, /sbin, /lib and /lib64 are now all under the /usr directory	All these under the /usr directory	All these under the / directory
12	Logging	rsyslog and journal	rsyslog and journal	Only rsyslog
13	Minimum required disk space	10GB minimum, 20GB recommended	10GB minimum, 20GB recommended	1GB minimum, 5GB recommended
14	Is the upgrade possible?	Yes	Yes, RHEL 7.7 to RHEL 8	Yes, RHEL 6.10 to RHEL 7.7
15	Virtual Machines Management	cockpit	virt-manager	virt-manager
16	“Application Streams” which allows developers tools, frameworks and languages to be updated frequently without impacting the core resources of base OS. In other words, application streams will help to segregate the users space packages from OS Kernel Space.	Yes	No	No

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