RHEL 8 Beta Update

Marc Skinner
Principal Solutions Architect
Q1 2019
RHEL 8 Beta

- Public beta open since 11/14/18
- High Touch beta open
- Code name: Ootpa
- Unified ISO
RHEL 8 :: Kernel 4.18

- glibc 2.28
- CGroups version v2
- Repackaging
  - Kernel-core, kernel-modules, kernel-modules-extra
- Large memory increases
  - Virtual address space: up to 128 PiB
  - Physical address space up to 4 PiB (support max still being determined)
RHEL 8 :: Installer

- Supported Architectures
  - AMD and Intel 64-bit architectures
  - The 64-bit ARM architecture
  - IBM Power Systems, Little Endian
  - IBM Z
- Anaconda defaults to LUKS2 format
- LUKS2 format default for dm-crypt, cryptsetup tooling
- Anaconda can install directly to NVDIMM devices
- nvdimm Kickstart command and options
RHEL 8 :: Package Management

- System Purpose
  - Replaces variants – Server, Workstation
  - Works with subscription-manager and auto-attach
- # tuned-adm recommend
  - Looks at syspurpose and dmidecode
- yum4 (shhh, it’s DNF)
RHEL 8 :: yum v4

<table>
<thead>
<tr>
<th>Package</th>
<th>Arch</th>
<th>Version</th>
<th>Repository</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>stratis-cli</td>
<td>noarch</td>
<td>1.0.0-2.4el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>50 k</td>
</tr>
<tr>
<td>Installing dependencies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>python3-dbus-client-gen</td>
<td>noarch</td>
<td>0.3-1.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>25 k</td>
</tr>
<tr>
<td>python3-dbus-python-client-gen</td>
<td>noarch</td>
<td>0.6-2.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>24 k</td>
</tr>
<tr>
<td>python3-dbus-signature-pyparsing</td>
<td>noarch</td>
<td>0.82-2.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>19 k</td>
</tr>
<tr>
<td>python3-intel-dbus-python</td>
<td>noarch</td>
<td>0.06-2.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>27 k</td>
</tr>
<tr>
<td>python3-jstbuses</td>
<td>noarch</td>
<td>0.9-6.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>45 k</td>
</tr>
<tr>
<td>python3-justbytes</td>
<td>noarch</td>
<td>0.11-2.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>40 k</td>
</tr>
<tr>
<td>stratisd</td>
<td>x86_64</td>
<td>1.0.0-2.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>1.2 M</td>
</tr>
<tr>
<td>python3-pyparsing</td>
<td>noarch</td>
<td>3.1.30-7.el8</td>
<td>rhel-8.0.0-beta-1.4-appstream</td>
<td>142 k</td>
</tr>
</tbody>
</table>

**Transaction Summary**

Install 9 Packages

- Enhanced dependency mapping allows for smaller installs
- Better clean up for package removal
- New stable API
- Application Streams metadata support
RHEL 8 :: Application Streams

- Multiple major versions available for select packages
- Faster update cycle
- Replace SCLs
- Consolidate delivery to a single repository

Python 3.8

Python 3.6

Python 2.7

RHEL 8
RHEL 8 :: Dynamic Languages

- Ruby 2.5
- PHP 7.2
- Perl 5.26
- Python
  - No version is installed by default
  - Python 3.6 is default Python3 implementation
  - Python 2.7 is default Python2 implementation
RHEL 8 :: Databases

- MariaDB 10.3
- MySQL 8.0
- PostgreSQL 10
- PostgreSQL 9.6
- Redis 4.0

- No Mongo ...
RHEL 8 :: Web Servers

- Nginx 1.14
- Apache 2.4.35
RHEL 8 :: Session Recording

- tlog
- Cockpit-session-recording
- SSSD

- Playback
  - tlog-play
  - Via cockpit
RHEL 8 :: SOS

- New version: sos-3.6
- New plugins: alternatives, ansible, buildah, clear_containers, date, elastic, fibrechannel, host, kata_containers, lustre, memcached, mssql, networkmanager, nvme, omnipath_client, omnipath_manager, opendaylight, openstack_octavia, ovirt_provider_ovn, ovn_central, ovn_host, rear, release, runc, skydive, unpackaged, watchdog, wireless
RHEL 8 :: podman & buildah with CRIO

- Rootless container support
- Multi-stage build support
- Daemon-less container engine
- CNI compliant tooling
RHEL 8 :: Cockpit

- What is new?
- Installed by default on non-minimal installations
- Updates the system shell login prompt to provide login link
- Uses host IDM resources by default
- Compatible with Mobile browsers
- Front page displays missing updates/subscriptions
- Understands and can use Policy-Based-Decription rules (NBDE)
- Can manager virtual machines via libvirtd
RHEL 8 :: HA and Clusters

- Pacemaker upgraded to version 2.0
- Corosync upgraded to version 3
RHEL 8 :: Network

- Intel Driver e1000 replaced with e1000e
- Next generation TCP stack
- Change from default “reno cubic”
- `net.ipv4.tcp_congestion_control=bbr` or `nv`
  - New Vegas or NV
    - Congestion-Control algorithm from Facebook
  - Bottleneck Bandwidth and RTT or BBR
    - Congestion-Control algorithm from Google
    - Responds to actual congestion vs packet loss
    - YouTube saw 4%-14% higher network throughput
RHEL 8 :: Boot Manager

- NVDIMM Support
- New boot manager: BOOM
  - supports BootLoaderSpec
  - supports secure-boot
  - supports booting LVM snapshot images
RHEL 8 :: XFS

- Shared copy-on-write data extent functionality
  - Fast
  - Space-efficient
  - Transparent
- COW enabled by default during mkfs.xfs
- Enable cp command to use COW
  - # cp –reflink file1 file2
RHEL 8 :: Stratis

- Manage snapshots and thin provisioning
- Grow file system sizes as needed
- File system maintenance

- Basic steps
  - `# yum install stratisd stratis-cli`
  - `# systemctl enable –now stratisd`
  - create a pool out of 1 or more local storage components
  - use “stratis” userspace command
RHEL 8 :: NFS 4.2

- /etc/sysconfig/nfs moves to /etc/nfs.conf
- New: nfsconf tool
- nfsnobody user replaced with nobody:nobody
RHEL 8 :: VDO

- Virtual Disk Optimizer
  - Thin provisioning
  - Data de-duplication
  - Data compression
RHEL 8 :: Image Composer (Tech Preview)

- Create ISO and guest images
- Improve consistency across multiple deployment footprints
- Understand impacts of package addition without need for a live system
- Straightforward UI
RHEL 8 :: Deprecation/Replacement

- KDE deprecated! :(
- authselect replaces authconfig
- chronyd replaces ntpd
- Wayland Display Server default, but X11 still available
- firewalld and nftables replace iptables/ebtables/arptables (still on system, but no new features)
- NFS v2 deprecated
RHEL 7 to 8 Upgrade?

- `leapp` – in RHEL 7 extras repo
THANK YOU

plus.google.com/+RedHat  facebook.com/redhatinc
linkedin.com/company/red-hat  twitter.com/RedHatNews
youtube.com/user/RedHatVideos