

YUM is dead. Long live YUM!

Red Hat Enterprise Linux 7.6
High Touch Beta

Terry Bowling, Senior Technical Product Manager

Twin Cities Red Hat User Group

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Agenda

What will we cover in the following 15 minutes?

- What is YUM v4? What are the main features & benefits?
- Compatibility with YUM v3
- Availability of YUM v4 in Red Hat Enterprise Linux 7.6
- Demo
- Ask for feedback
- Questions

What is YUM v4?

And what is DNF?

- YUM is a utility that allows users to manage packages on their systems.
- The current version of YUM in Red Hat Enterprise Linux 7 is YUM v3.
- YUM v4 is the new version that brings speed and the latest innovations to package management.
- Based on upstream DNF technology, which you might know from Fedora.

Features and benefits of YUM v4

Why you should care.

- **Faster:**
 - Improved dependency resolver.
 - Fixes in the package management stack lead to shorter verification time.
 - Software updates take less time resulting in reduced maintenance window.
- **Smaller:**
 - Many layers written in C.
 - Fewer Python dependencies, smaller footprint.

Compatibility with YUM v3

Anything new you need to learn?

- Compatibility with current workflows on command line is retained.
 - yum4 command instead of yum.
- Python API has changed in YUM v4.
- YUM v4 can be installed along with YUM v3.
 - Both can be used with the exception of that the history is not shared.
 - YUM databases are in different locations.
 - A transaction performed using YUM v4 cannot be rolled back using YUM v3 and vice versa.

Compatibility with Ansible

Anything new you need to learn?

Ansible Packages module will still default to YUM v3 on RHEL 7

Ansible DNF module could be specified if desired

Remember, yum4 is still tech preview...

What does it actually look like?

7.6 Beta

```
[root@rhel7beta ~]# ls -lF /usr/bin/{yum,yum4,dnf}
lrwxrwxrwx. 1 root root  5 Sep  4 07:50 /usr/bin/dnf -> dnf-2*
lrwxrwxrwx. 1 root root  5 Sep  4 07:50 /usr/bin/yum4 -> dnf-2*
-rwxr-xr-x. 1 root root 801 Aug 15 12:10 /usr/bin/yum*
```

Fedora 28 (DNF and YUM are exactly the same!!!)

```
[root@f28 ~]$ ls -lF /usr/bin/{yum,dnf}
lrwxrwxrwx. 1 root root 5 Apr 18 10:29 /usr/bin/dnf -> dnf-3*
lrwxrwxrwx. 1 root root 5 Apr 18 10:29 /usr/bin/yum -> dnf-3*
```


Availability of YUM v4 in RHEL 7.6

How can I use it?

- Distributed in the Extras channel.
- YUM v4 will be provided as Tech Preview in Red Hat Enterprise Linux 7.6.
 - Early look at future technologies.
 - Find other unknown compatibility issues with real enterprise environments.
 - Gather feedback.

DEMO

Preparation

```
subscription-manager repos \  
--enable=rhel-7-server-optional-htb-rpms \  
--enable=rhel-7-server-extras-beta-rpms
```

```
yum install nextgen-yum4 dnf-plugins-core yum-utils
```

Many commands remained identical: list, search, install, reinstall, remove, etc.

```
ls -lF /usr/bin/{yum,dnf}  
yum list wget; yum4 list wget  
yum search wget; yum4 search wget  
yum install wget; yum4 reinstall wget
```

Fedora users with 'dnf' muscle memory can call their favorite tool too

```
dnf remove wget
```

Sometimes YUM v4 is more intuitive and simply does what is requested.

```
yum install systemd-219-59.el7 --assumeno  
yum4 install systemd-219-59.el7 --assumeno
```

Downgrades are handled properly, this also includes distro-sync

```
yum distro-sync --assumeno  
yum4 distro-sync --assumeno
```

Tools from yum-utils have their alternatives as yum4 sub-commands

```
repoquery --whatprovides bash  
yum4 repoquery --whatprovides bash
```

**# Some behavior has changed. The intention was to make it consistent
across the whole software management stack and more straightforward.**

```
repoquery 'bash*'  
repoquery 'bash*' --show-duplicates # misleading  
yum4 repoquery 'bash*'  
yum4 repoquery 'bash*' --latest-limit=1
```

Testing advanced query commands

```
yum4 updateinfo summary available sec
yum4 updateinfo summary available
yum4 updateinfo list available
yum4 updateinfo list available sec
yum4 updateinfo list available --sec-severity Critical
yum4 updateinfo list --advisory=RHSA-2018:0805
yum4 updateinfo info --advisory=RHSA-2018:0805
yum4 updateinfo list --cves CVE-2018-1000001
```

Testing install/upgrades of security errata

```
yum4 upgrade --security
yum4 upgrade --sec-severity Critical
yum4 upgrade --sec-severity Critical --sec-severity Important
yum4 upgrade --advisory RHSA-2018:1062
yum4 upgrade --cves=CVE-2018-1000001
```

Ask for feedback

How you can help us make Red Hat Enterprise Linux even better!

- Please, file bugs if it works differently than expected!
- Our Engineering team is interested in feedback, including detailed use cases.
- Compatibility: Does YUM v4 work as you expect in your workflows?

For more information...

Links

- Upstream documentation: <https://dnf.readthedocs.io/en/latest/>
- File bugs in [Red Hat Bugzilla](#)
- We'd love to hear your feedback! Access the private group on the Customer Portal to provide further feedback on this presentation:
 - <https://access.redhat.com/groups/1279043>

Upstream Modularity

The problems...

Customers & Distributions need a known release cadence

Customers & Distributions need a known lifecycle

Fedora Release Cadence ~ 6 months

Fedora LifeCycle ~ 13 months

RHEL LifeCycle = 10 years!

Realistic application lifecycles do not organically match:

- Distribution lifecycles
- Customer workload lifecycles

Upstream Modularity

Fedora 28+

A new way to build and deliver content

Delivers more choices to choose from for *your* workload needs



Separates lifecycle of the Application

And your Workload

From the distribution lifecycle and release cadence

Powers Fedora Appstream, provides more choices for desired workloads

Upstream Modularity

Fedora 28+

Fedora 28

Fedora 29

Fedora AppStream

nodejs 6 stream

nodejs-6.rpm

calc unstable stream

calc-git6e17.rpm

nodejs 8 stream

nodejs-8.rpm

nodejs 10 stream

nodejs-10.rpm

django 1.6 stream

django-1.6.5.rpm

Fedora 28 Base

nodejs-8.rpm

calc-1.2.rpm

kernel-4.14.rpm

glibc-2.24.rpm

Fedora 29 Base

nodejs-10.rpm

calc-1.2.rpm

kernel-4.19.rpm

glibc-2.27.rpm

Questions?



THANK YOU



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