

# HCC + CentOS 7.0.140whatisthis???

... tales of EL7 from below that stadium over there <—

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## strawpoll time

Are you using EL7 on production hosts?

embed

(Pick one)

EL7 is so ancient, get with the times man!

A few, yes... ok not really production, maybe

No, we just got to EL6!

... what do you MEAN they're turning off SL5 1xplus?!?!

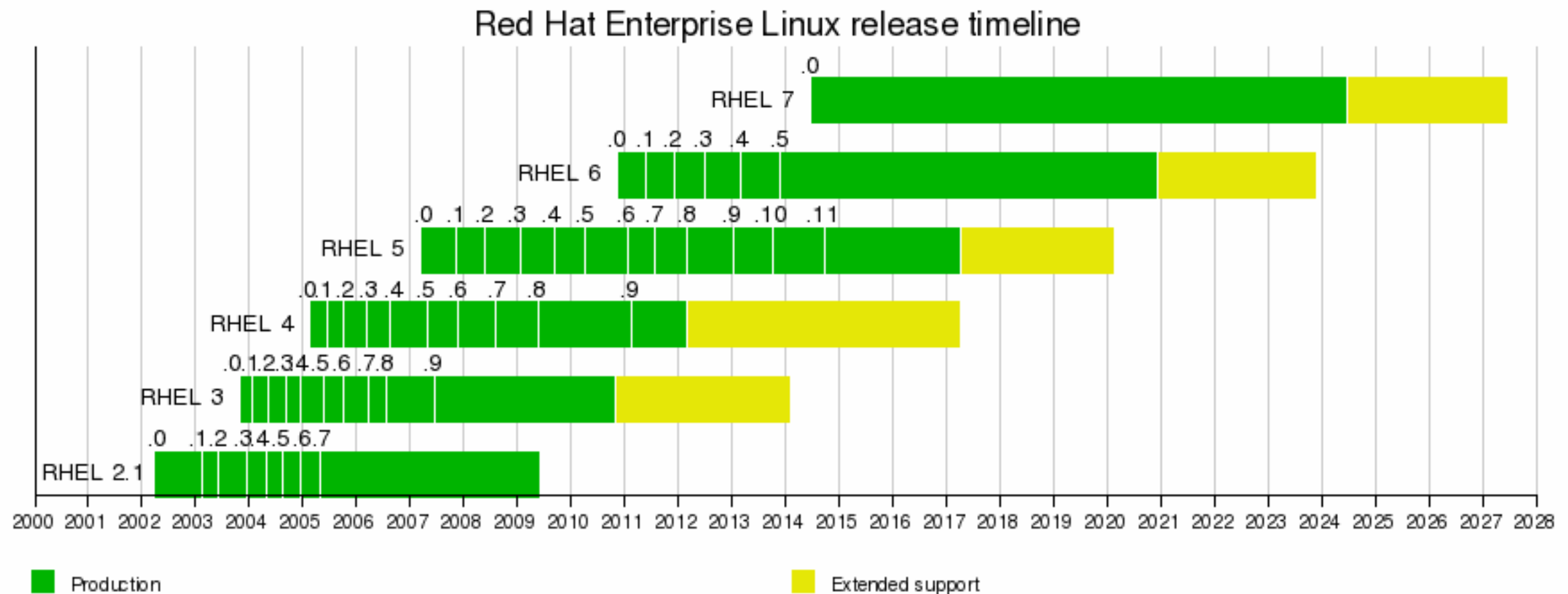
**VOTE**

**RESULTS**

## “RHEL” @ T2\_US\_Nebraska and HCC

- Mix of CentOS and Scientific Linux, majority of our ~1,200 hosts are SL 6.5
- CentOS -> SL -> CentOS -> SL -> ... ~~CentOS 7?~~  
SL 7.0 x86\_64 \o/
- Still a few EL5 boxen (Tier3 login node, local gratia database, other randomness)
- Cobbler + Puppet + HPC things + typical grid “stuff”

Keeping up with the tail end of Linux  
(surely there's a Debian joke in here)



RHEL5 is ~7 years old

RHEL6 is ~4 years old

RHEL5 support to 2017/2020?

RHEL6 support to 2021/2024?

## Why EL7?

- 3.10 kernel, not (completely) ancient userspace
- cgroups, containers, docker, kpatch, systemd, UEFI, storage tech, networking excitement, hardware support ...
- Newer, faster, better \o/

## Why not EL7?

- Bigger change than EL5->EL6
- Still very (very) new in HEP / OSG communities

Lets provision a worker, what could possibly go wrong!

- Kickstart? Fail due to kssendmac, partitioning, etc...
- Installed, great! Puppet run? Fails all around...
  - Lots of modules expecting simple release numbers, not “7.0.1406” (variations on lsb-\*, facter versions, etc...)
  - Local LDAP related issues (apparently we had accounts with UID/GID between 500-1000)
  - Dependency hell - very little packaging done for EL7 from OSG and others
  - ... lots of bad ‘first generation puppet’ (as in 0.24x era puppet) assumptions that we should have never made ...

So what's -really- different from EL6?

- systemd
  - SysV → systemctl
  - .service (services / init scripts)
  - .targets (replaces old run levels) ...
  - journald (logging)
  - ... and all that socket + DBUS goodness

- firewalld
  - Still uses iptables (the command) to talk with netfilter
  - GUI and cmd line tie in with NetworkManager a bit more
  - XML configs in /usr/lib/firewalld and /etc/firewalld
  - Concept of zones
  - Services
  - —direct mode (old style) and ability to use old iptables services
  - MUCH more configuration management friendly (at least I think it will be)



- cgroups
  - cgconfig and libcgroup are now deprecated (libcgroup 'mostly so', systemd doesn't yet support everything)
- Containers
- Docker

- logging
  - rsyslog 7.4.x (all latest 7.x and 8.x packages available for EL5/6/7 straight from Adiscon)
  - rsyslog pulls from journal, existing forwarding seems to work just fine
- journactl

```
[root@red-node000 etc]# journalctl _COMM=condor
-- Logs begin at Tue 2014-10-07 22:54:16 CDT, end at Mon
2014-10-13 09:24:32 CDT. --
Oct 08 15:55:29 red-node000.unl.edu condor[1707]: /etc/
sysconfig/condor: line 26: cgcreate: command not found
Oct 08 15:55:29 red-node000.unl.edu condor[1707]: /etc/
sysconfig/condor: line 26: cgcreate: command not found
```

- Storage
  - XFS default, pNFS, SSM, /usr all the things
- Networking
  - More NetworkManager integration
  - Teaming (in addition to bonding)
  - IPv6 stuffs? still need /etc/gai.conf?
  - Hardware support for 40Gb
  - Mostly 'just works'

... so back to that worker node ...

- Threw a SL6 chroot on with same tool we did SL5-on-SL6 with back in the day  
(<https://github.com/bbockelm/RHEL5-chroot>)

... cvmfs worked ... condor worked-ish ...

- Pilots from CERN, success
- ... but really? glxexec? lcms? what else...

## OSG Software for EL7

- Currently only a -development repo exist (and much of what's there has 'issues')
- “next calendar year” (completely unofficial)
- Probably do a 3.3 release with EL7 (again very unofficial)

- Stuff that works
  - hadoop (well, the EL6 packages)
  - condor (well, at least our HCC builds)
  - cvmfs
  - frontier-squid
  - puppet

- Stuff that didn't work:
  - gridftp-hdfs (packaging issues)
  - bestman (packaging issues, but do we care?)
  - gums (packaging issues)
  - osg-client (simple things like iperf not existing in epel anymore)
    - gratia-service depending on 'mysql-server'
    - bwctl-server requiring iperf (only iperf3 exists in EPEL) — even osg-client depends on this
  - ... so yes, many things to still resolve at both the site level and the upstream support level

... did I mention packaging issues?