Monsters, Ghosts, and Bugs

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Who am I?

- Kernel developer at Red Hat
- Now maintain Fedora kernel, some stuff internally
- Work in a bunch of areas
- “What do you actually do?”
What kernel is running on your system?
Why are you running that kernel?
Monsters, Ghosts, and Bugs
The Upstream Kernel Release Process
4.20 release

Time

5.0-rc1
5.0-rc2
5.0-rc3
5.0-rc4
5.0-rc5
5.0-rc6
5.0-rc7
5.0 Final

= 1 week
http://phb-crystal-ball.org/
Past results no guarantee of future performance
Merge Window
4.20 release

Time

5.0-rc1
5.0-rc2
5.0-rc3
5.0-rc4
5.0-rc5
5.0-rc6
5.0-rc7

5.0 Final

= 1 week
Busy for maintainers
Exciting for testers
No more new major features!
Except when there are
Find the bugs!
When will my patch go in?
4.20 release

5.0-rc1
5.0-rc2
5.0-rc3
5.0-rc4
5.0-rc5
5.0-rc6
5.0-rc7
5.0 Final

Time

= 1 week
4.20 release

Time

5.0-rc2
5.0-rc4
5.0-rc6
5.0 Final

5.0-rc1
5.0-rc3
5.0-rc5
5.0-rc7

= 1 week
4.20 release

5.0-rc2

5.0-rc4

5.0-rc6

5.0 Final

5.0-rc1

5.0-rc3

5.0-rc5

5.0-rc7

Time

= 1 week
4.20 release

Time

5.0-rc1  5.0-rc2  5.0-rc3  5.0-rc4  5.0-rc5  5.0-rc6  5.0 Final

5.0-rc7

= 1 week
4.20 release

5.0-rc1

5.0-rc2

5.0-rc3

5.0-rc4

5.0-rc5

5.0-rc6

5.0-rc7

5.0 Final

= 1 week
Hooray!
So it’s time to update, right?
Stable updates
What exactly is going into stable updates?
Machine learning for stable patches
### The Linux Kernel Archives

**Protocol** | **Location**
---|---
HTTP | https://www.kerneLorg/pub/
GIT | https://git.kerneLorg/
RSYNC | rsync://rsync.kerneLorg/pub/

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Longterm
There are usually several "longterm maintenance" kernel releases provided for the purposes of backporting bugfixes for older kernel trees. Only important bugfixes are applied to such kernels and they don't usually see very frequent releases, especially for older trees.

<table>
<thead>
<tr>
<th>Version</th>
<th>Maintainer</th>
<th>Released</th>
<th>Projected EOL</th>
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<td>3.16</td>
<td>Ben Hutchings</td>
<td>2014-08-03</td>
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What kernel do distros run?
Stability vs. Features
Unexpected bugs (less awesome)
LTS = steady performance
Kernels that don’t track LTS?
“Frankenkernel”
(Scary monster!)
You know exactly what you are getting
Stable kernels test the limits of review
Embedded
Android: success story
Learn how to engage the community
So you can maintain your own kernel?
Open Source means you can do this!
You probably don’t want to be running your own kernel
You probably don’t want to be running your own kernel
(No seriously)
Distributions usually give good kernels (100% biased)
What do kernel maintainers do all day?
Updates?
(Please update your kernels)
If you must run your own kernel running a maintained kernel from kernel.org is better than nothing.
Backports are effort
Distributions are not perfect
Wrapping up
What do you want your kernel to do?
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**Latest Stable Kernel:** 4.19.7

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