



# OverlayFS



## KrkDocker Meetup #2

2015-04-29  
Maciej Lasyk

# OverlayFS - what is that?

simply: overlaying one filesystem (or dir)  
over another

used mainly for LiveCDs, OpenWRT, R-  
PI2 / OpenELEC and lately CoreOS

and us w/LXC ;)

# CoreOS PR #372

disk\_layout: switch to ext4 as the default  
root filesystem. #372

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<https://github.com/coreos/scripts/pull/372>



OverlayFS: "upper" and "lower"

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- > content collision (hiding, merging)
- > lower may be almost any FS, dir, another overlayFS

In future (maybe 3.19)..

<http://lkml.iu.edu/hypermail/linux/kernel/1412.1/00943.html>

This adds support for multiple read-only layers to overlayfs. It also makes the writable upper layer optional.

This is the only unions FS in  
mainstream right now (since  
3.18)

Miklos Szeredi (lead developer)  
tried to put this into mainstream  
since... 3.10? (and Linus liked it)

So what about Docker &  
OverlayFS?

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(note: It's not only about Docker)



Docker FS requirements?

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- > copy-on-write

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  - > both performance sucked
  - > and btrfs is still unstable

```
// Slice of drivers that should be used in an order
priority = []string{
    "aufs",
    "btrfs",
    "devicemapper",
    "vfs",
    "overlayfs",
}
```



it's about performance

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-> page cache sharing

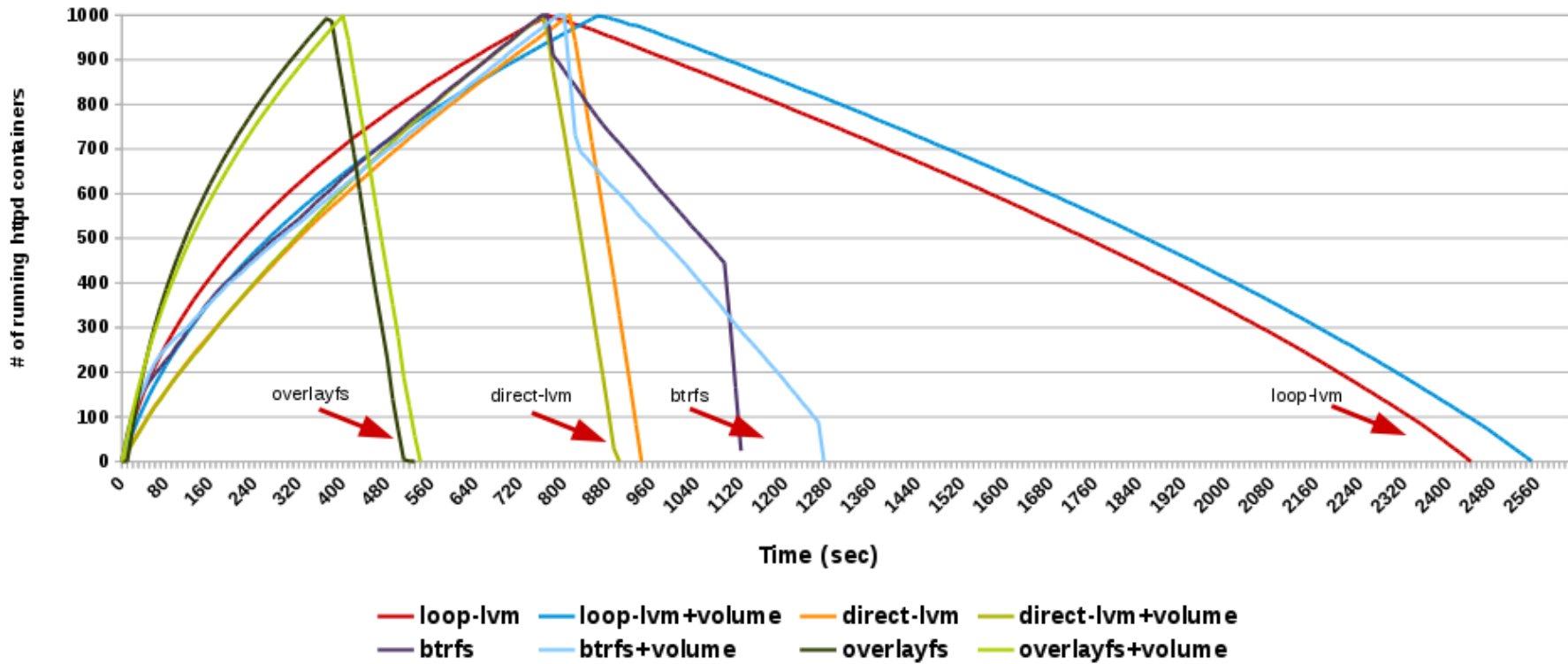
it's about performance

-> page cache sharing

see yourself

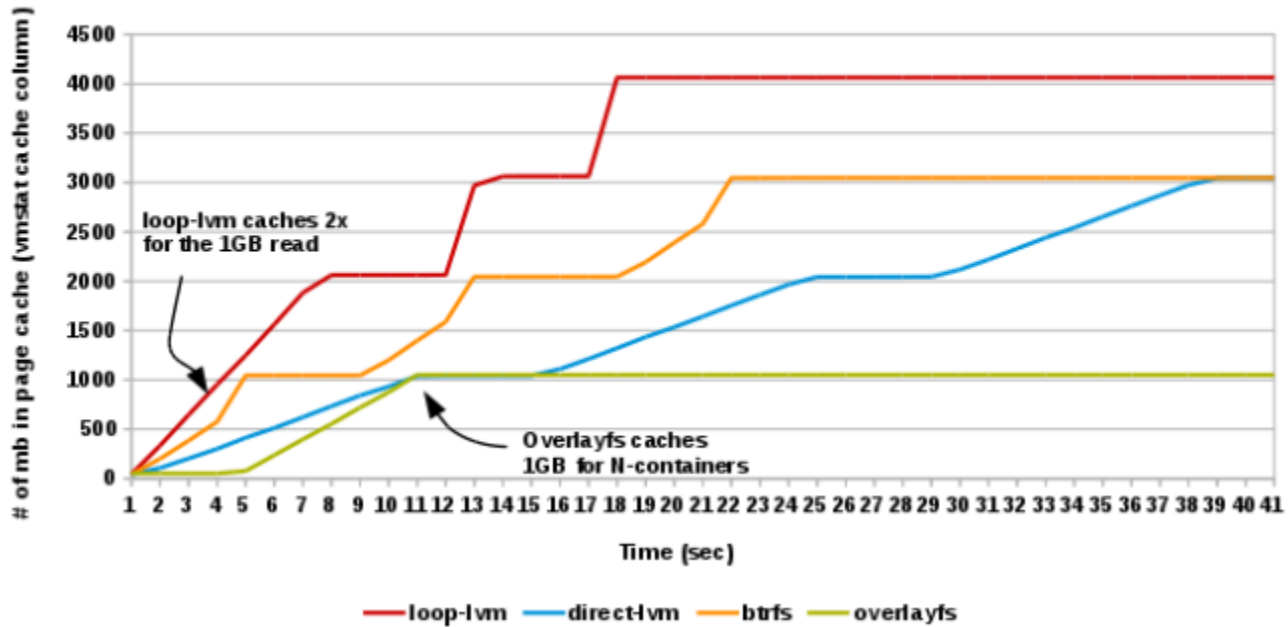
<http://developerblog.redhat.com/2014/09/30/overview-storage-scalability-docker/>

# Container Create/Destroy Times



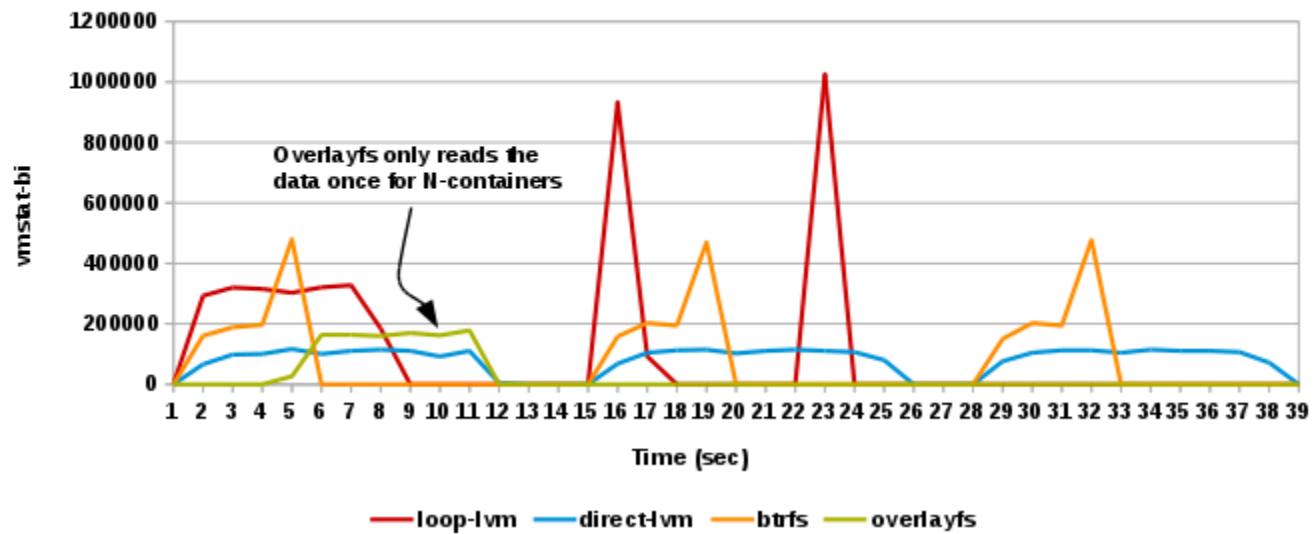
## Docker Page Cache Usage Test

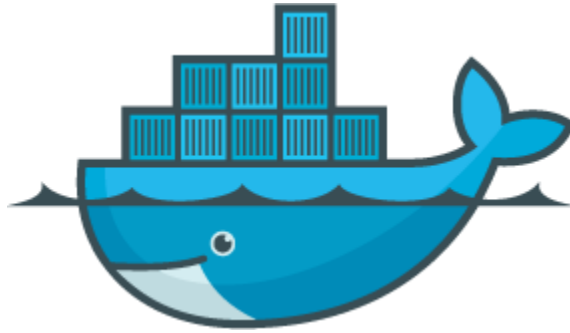
docker-1.1 + 3.17-rc1



## Docker Page Cache Usage Test

docker-1.1 + 3.17-rc1





Thanks :)

Maciej Lasyk

@docent-net

<http://maciej.lasyk.info>