

Arla
History, Now, and the Future

Magnus Ahltorp
Royal Institute of Technology
ahltorp@nada.kth.se

Love Hörnquist-Åstrand
Royal Institute of Technology
lha@stacken.kth.se

Intro

- History, how we started it and why.
- Arla architecture.
- Where we stand today.
- Future, what we will hack in the future.

History

- Was initiated by Björn Grönvall.
- Björn wrote it since he thought it could be done better.
- Inspired by the Coda architecture but asynchronous.
- The operating system used in the beginning was SunOS4.
- Assar Westerlund and Johan Danielson helped out.

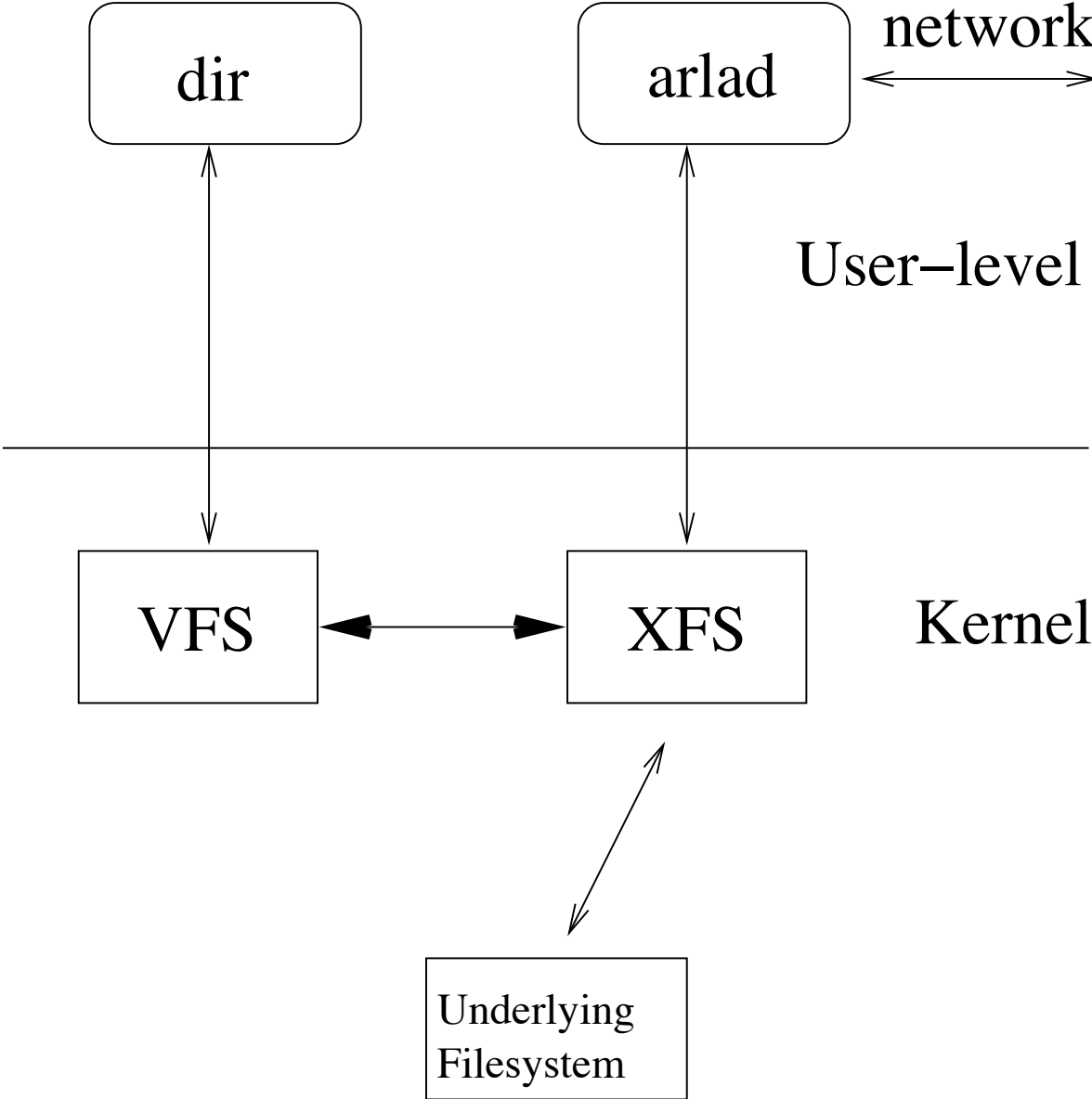
The problems that stopped them

- There didn't exist any documentation on **Rx**, so that had to be rewritten based on tcpdump traces.
- They got hold up by other things.

Modern time arla hacking

- Around 1997 Assar fooled us to pick up Arla, and continue the hacking.
- Part of the reason that this was possible was the release of **LWP** and **Rx**.
- We hacked on arla about half a year before we dared to release the code.

Arla architecture



Where we stand today

- 0.34.6 released, 0.35 is going out soon.
- As some people have learned, release engineering is hard.
- The client is used on production systems at KTH.
- Basic fileserver (milko) working.

Supported operating systems

- Linux
- FreeBSD
- NetBSD
- OpenBSD
- Mac OS X/Darwin
- Solaris (no writing mmap)

Milko

- Basic vlserver working.
- Basic ptserver working.
- Basic fserver working.
- volserver lacks dump/restore and cloning.
- bossserver has some few features.
- salvage only checks consistency of the tree.
- Serves files, but not production quality.

Things people view as a problem

- Arla does caching in whole files.
- **Rx** sucks, we have some improvements, but those will end up in **0.36**.

Current problems: Virtual Memory

- Most operating systems doesn't notify when a page is dirtied in the underlying filesystem.
- The read-write case is the tricky one, can't really avoid dubble-buffering in that case.

Other work

- Noora Peura - Read/write replication in Arla

Future work

- Somehow support files larger than cache.
- Disconnected mode for arla, clean up existing code.
- Milko: stability, “salvage”, backup/restore, and speed
- Keep up with Linux changes.