



OST

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Distributed Systems Advanced & Blockchain

In the News

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4 October 2020

In the News

- 02.10.2020: [LXD cluster on Raspberry Pi 4](#)
 - Article about running 3 RPIs
 - More interesting, what is LXD/LXC?
 - We discussed containers and VMs
 - LXD/LXC is a container technology
 - Based on namespaces and cgroups (docker as well)
 - [Alternatives for using containers are systemd-nspawn or docker](#)
 - Docker is a packaging mechanism [[source](#), [source](#)]
 - Portable deployment across machines
 - Versioning
 - Component reuse / docker hub
- Docker: limited network functionality, easier portability
- LXD: many more network options, limits portability
- Docker containers are stateless and immutable [[source](#)]
 - Image immutable by default (you can have volumes)
 - Start a container instance, then kill it and restart it, the new container instance won't have any state
- “Docker on Windows, for example, uses Moby Linux which is actually running in a VM inside your Windows box.” [[source](#)]
- Docker is light-weight, simplistic and is well-suited for isolating applications from each other
- LXD on the other hand, is much better equipped and is much closer to a complete operating system environment with networking and storage interfaces
 - Docker specializes in deploying apps
 - LXD specializes in deploying (Linux) Virtual Machines [[source](#)]

In the News

- 26.09.2020: [I was wrong. CRDTs are the future](#)
 - [CRDT](#): Conflict-free replicated data type
 - replicas updated without coordination
 - Example:
 - one-way Boolean event flag is a trivial CRDT
 - Two approaches:
 - Operation-based CRDTs
 - Broadcast only updates
 - State-based CRDTs
 - Broadcast whole state
- Author worked on Google Wave (E-mail competitor)
 - The used Operation-based CRDTs
 - [ShareJS](#)
 - Drawback: a centralized server to globally order operations
 - State-based CRDTs criticism
 - Slow: 6 hours to process a real world editing session with a single user typing a 100KB academic paper
 - Large: 83MB to represent that 100KB document
 - [CRDTs Introduction](#)
 - Now 160KB for 100KB document
 - Fast