

Seminar 5: Vector Clocks - <https://riak.com/why-vector-clocks-are-hard/>

An article discussing a way of tracking time in DS.

Keywords: monotonic, causality, vclocks, *whatever word you didn't understand* etc.

- **What is the article about?**

The article addresses pruning and how vclocks may get difficult, as well as two instances of how to use vclocks and how they function.

- **What do vclocks guarantee?**

Data integrity.

- **How do vclocks solve conflicts?**

Creates a vector clock that will be a successor to all previously-seen vector clocks. So taking everything the previous two vector clocks have.

- **Explain the concept of "pruning" a vclock and why we would do that.**

When the number of customers using a system increases over time, pruning is utilized. When a field is increased, a timestamp is added to it and it is updated to the current local time. This timestamp is solely used for pruning purposes and never utilized for vclock comparison.

- **What other timekeeping tools are used besides vclocks? Describe at least 2 shortly.**

Three other techniques for capturing temporal and causal linkages in a distributed system are listed below (logic clocks).

- Lamport timestamps, which are software counters that increase monotonically.
- In an optimistic replicated system, version vectors organize replicas based on updates.
- Matrix clocks, which are a kind of vector clocks that additionally store information about other processes' perspectives on the system.