

Rings 101 - What is Distributed Network



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What is Distributed Network

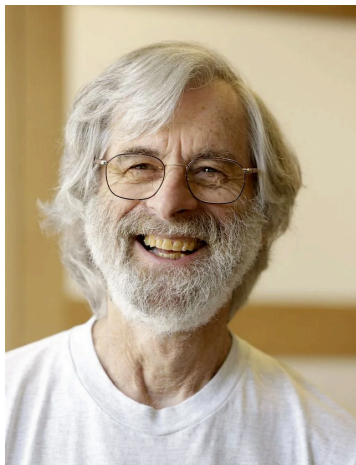
- Definition: What is distributed system (1min)
- Is internet distributed? (1min)
- Introduce to dWeb (1min)
- Implementation of dWeb (1min)

Definition: What is distributed system

A system is distributed if the message transmission delay is not negligible compared to the time between events in a single process. [3]

— Leslie Lamport, 1978

Leslie Lamport at 1978



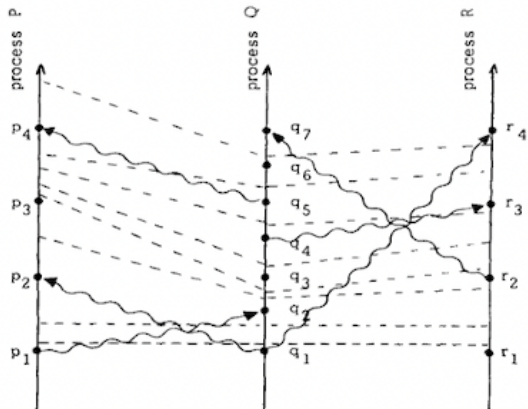
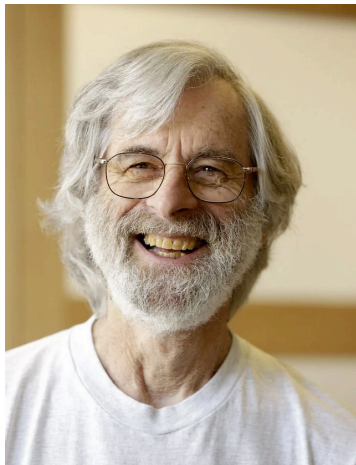
Operating
Systems

R. Stockton Gaines
Editor

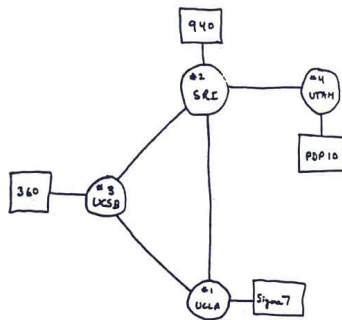
Time, Clocks, and the Ordering of Events in a Distributed System

Leslie Lamport
Massachusetts Computer Associates, Inc.

Logical Timestamp



Is Internet distributed?



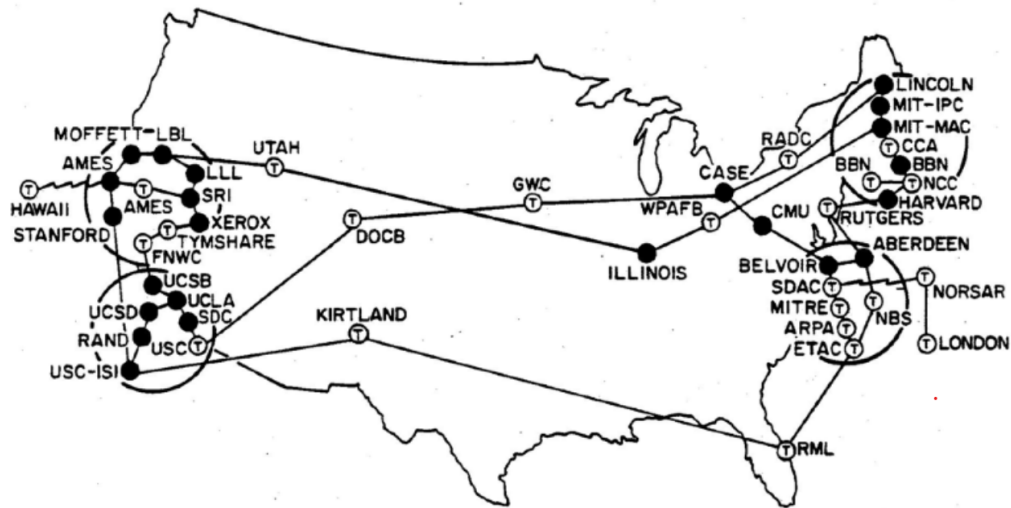
THE ARPA NETWORK

DEC 1969

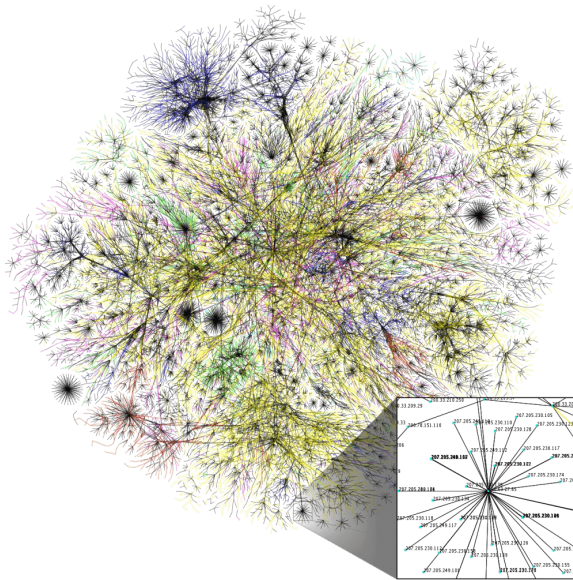
4 NODES

FIGURE 6.2 Drawing of 4 Node Network
(Courtesy of Alex McKenzie)

Is Internet distributed?

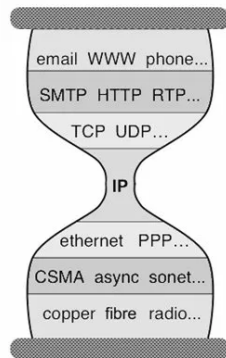


Is Internet distributed?



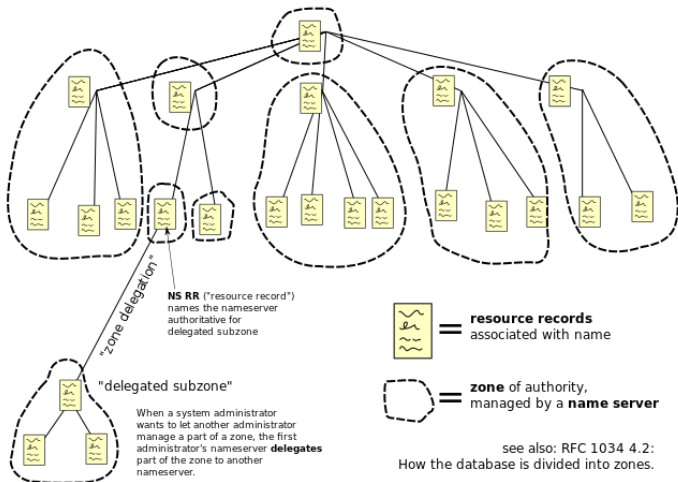
The system is failing.[2]

— Tim Berners-Lee, 2017



Centralized Internet

Domain Name Space

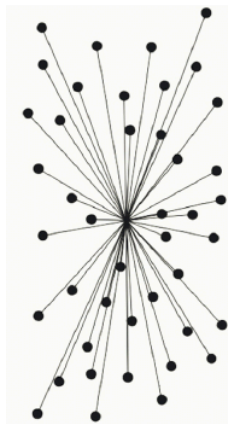


2.3. Distrusting New CNNIC Certificates

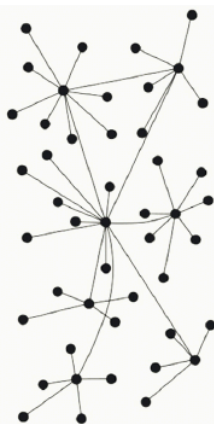
The Mozilla CA team believes that CNNIC's actions amount to egregious behaviour, and the violations of policy are greater in severity than those in previous incidents. CNNIC's decision to violate their own CPS is especially serious, and raises concerns that go beyond the immediate scope of the mis-issued intermediate certificate.

After public discussion, and careful consideration of the impact and consequences of various possible forms of additional action, we are planning to change Firefox's certificate validation code such that it refuses to trust any certificate issued by a CNNIC root with a notBefore date on or after 1 April 2015. This change will persist until CNNIC has re-completed the full application process for re-inclusion in Mozilla's root store (should they choose to re-apply), possibly including some additional steps that the community may require as a result of this incident. While CNNIC's re-application process is in progress, they will remain in the root store so that old certificates can still be verified. As long as they are in this state, they will be held to the normal standards of the root program with regard to audits, etc.

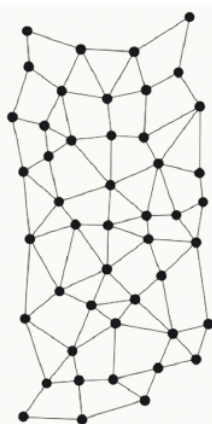
Introducing to the dWeb



Centralised (A)



Decentralised (B)



Distributed (C)

[1]

Implementation of dWeb

- Tor Project - Onion Relay, Hidden services
- GUNnet - DHT Based, structure p2p
- Rings Network - DHT and WASM, structure p2p

Thanks

Repository of this Slides:



Reference



Dietrich Ayala.

Introducing the dweb, 2018.

[\[Online; accessed on 13-July-2023\].](#)



Tim Berners-Lee.

The system is failing, 2017.

[\[Online; accessed on 13-July-2023\].](#)



Leslie Lamport.

Time, clocks, and the ordering of events in a distributed system.

[Communications of the ACM, 21\(7\):558–565, 1978.](#)