A fault-tolerant peer-to-peer replication network

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Replication network

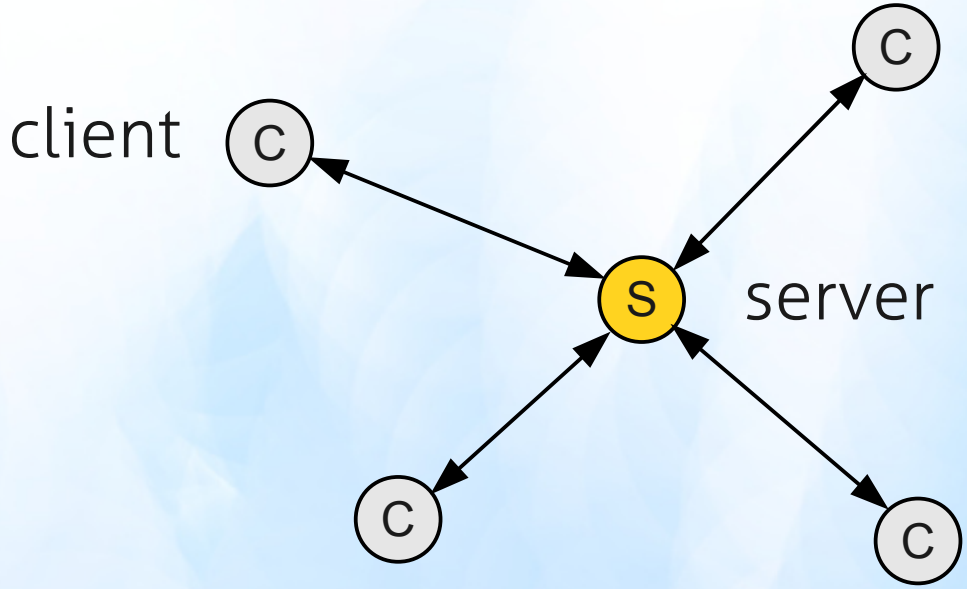
Syncronizes files across computers

Data available wherever you go

Home Work Remote

How do you do it?

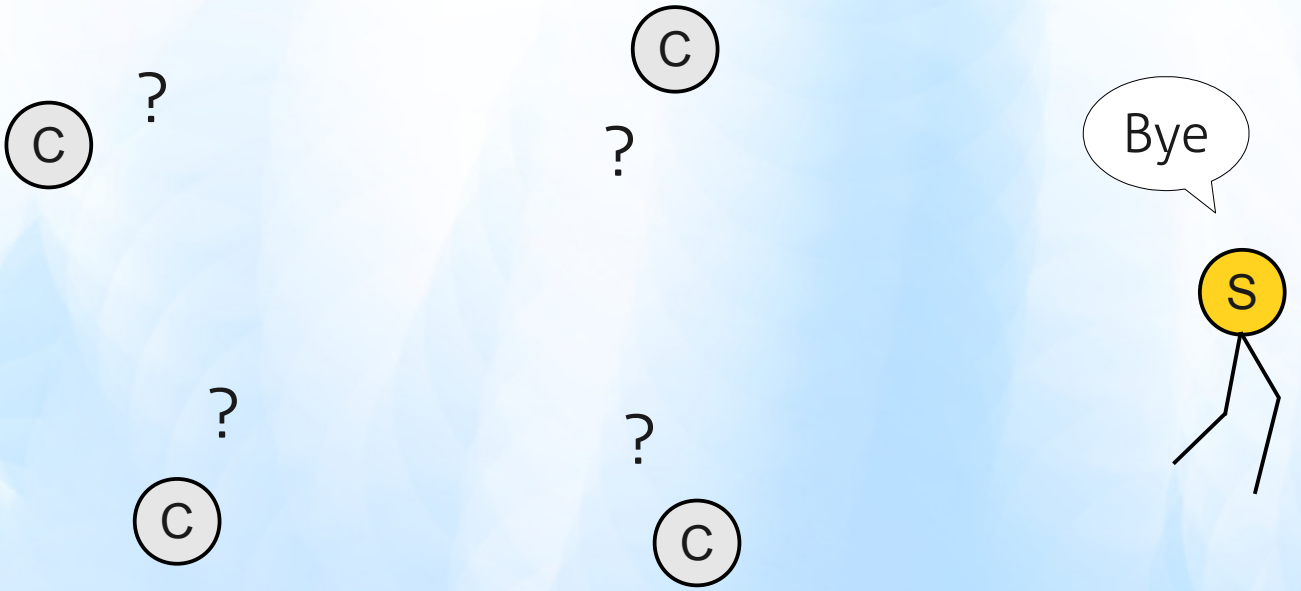
What we initially wanted to do:



Star topology network

How do you do it?

But...



What if the server goes down?

Peer-to-peer

Descentralized

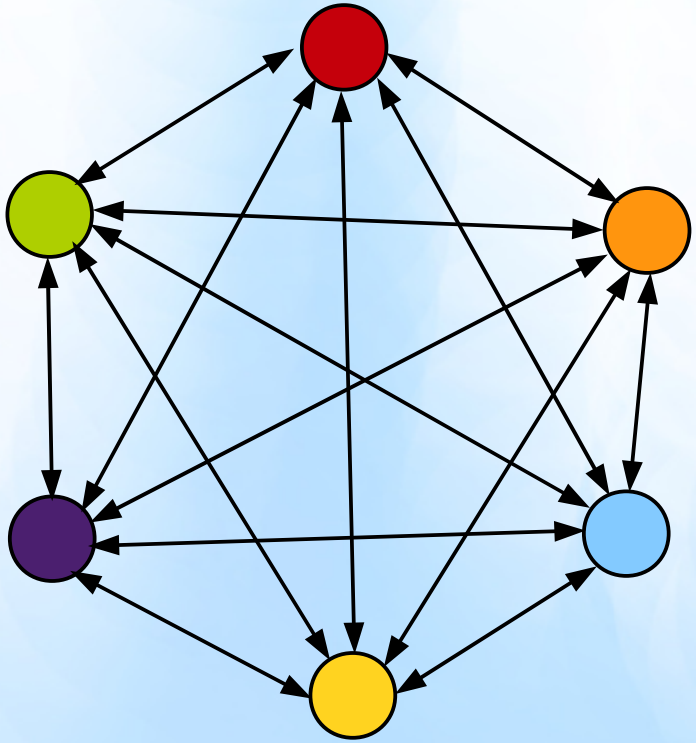
Each peer (node)

is both

client and server

Mesh topology

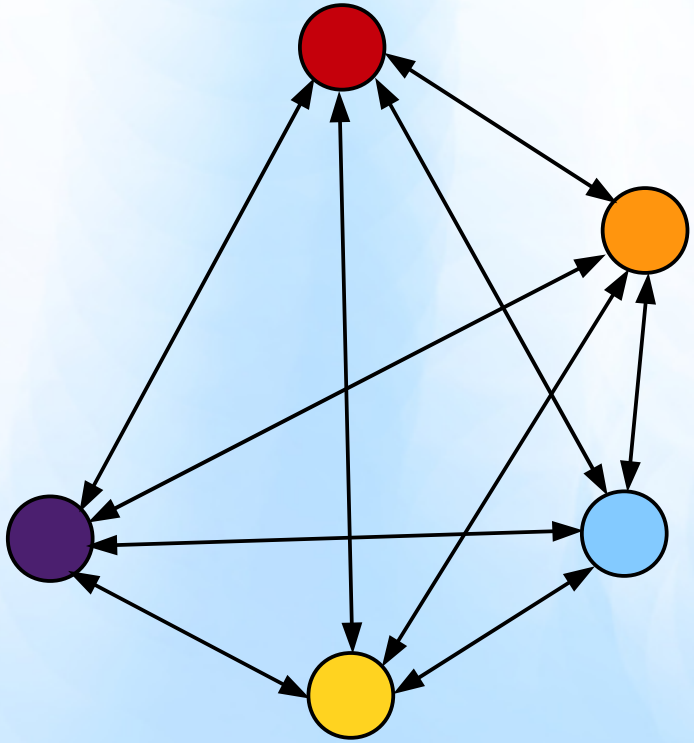
(fully connected)



Fault tolerant

What if a node goes down?

The network does not suffer



Fault tolerant

Nodes can be added and removed

Particular to our network:

permits **any** file transfer

is secure

grants ASAP availability of data

Technology

- SSH
  - secure network
  - public key authentification
  - private / closed network
  - needs initial configuration

Technology

Unison

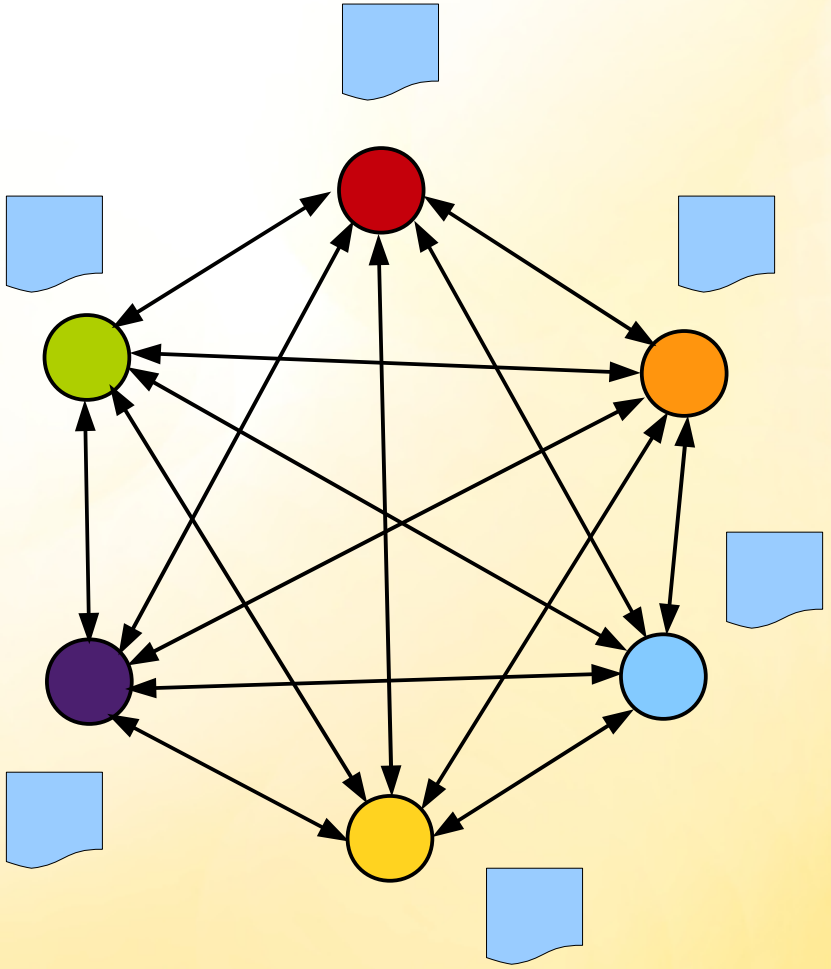
two-way synchronization

Sync

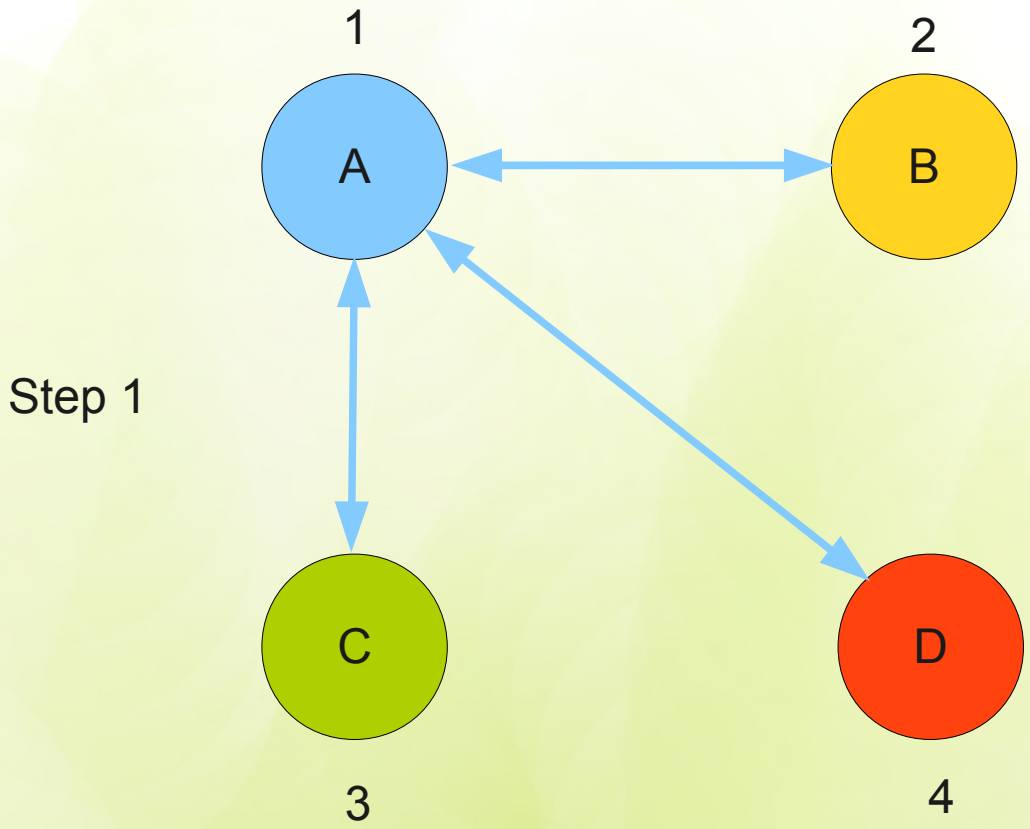
Result

Technology

- Cron
  - Sync every hour
- Bash script
  - Reads IP list
  - Runs Unison
  - Sync IP list between nodes

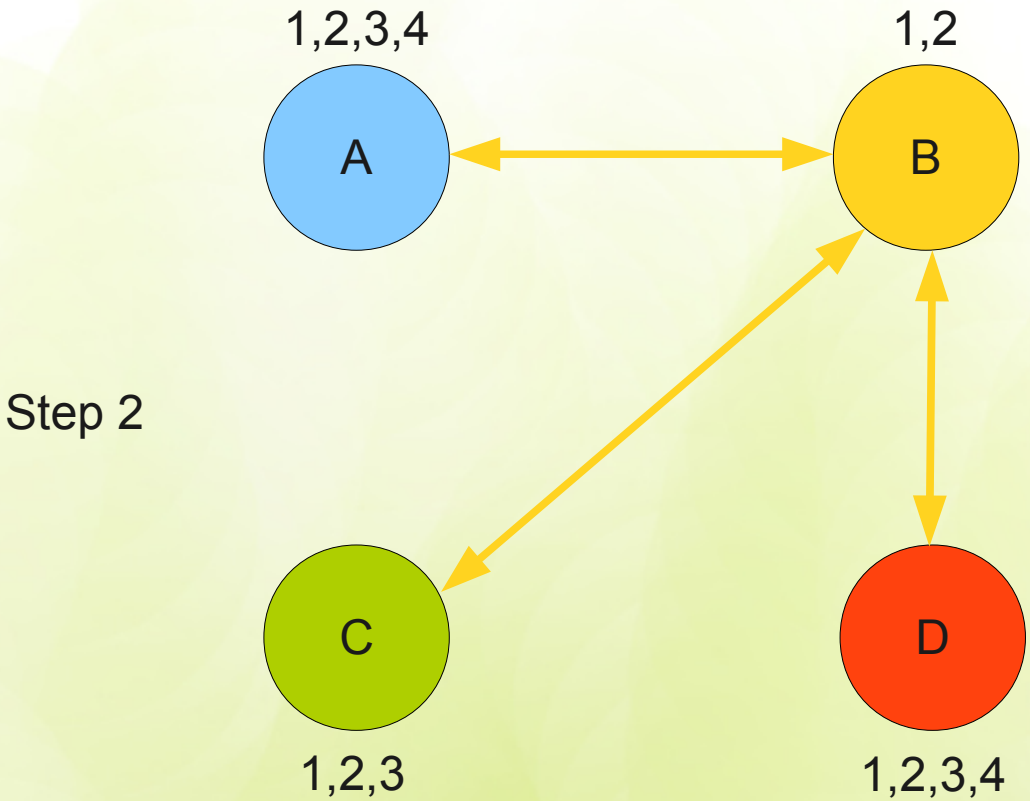


How does it all work?



Node A syncs (in order) to B, C and D

How does it all work?



Each node syncs to every other node

Characteristics

ASAP availability of data

Consistent data across nodes

Some overhead

Inneficient for large networks

Demonstration

Thank you