A fault-tolerant peer-to-peer replication network
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

client

server

Star topology network
How do you do it?

But...

What if the server goes down?

Bye
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 authentication

private / closed network

needs initial configuration
Technology

Unison

two-way synchronization

A

B

A

B

1,2

1,2

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
Inefficient for large networks
Demonstration
Thank you