



# *Distcloud*

## Disaster-aware Distributed File System

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# *Distcloud*

## Software Defined Storage

single POSIX file system  
on the top of inter-cloud environment,  
in world wide.

Disaster-aware distributed file system,  
works in a case of continental disaster,  
with multi-cloud, all active.

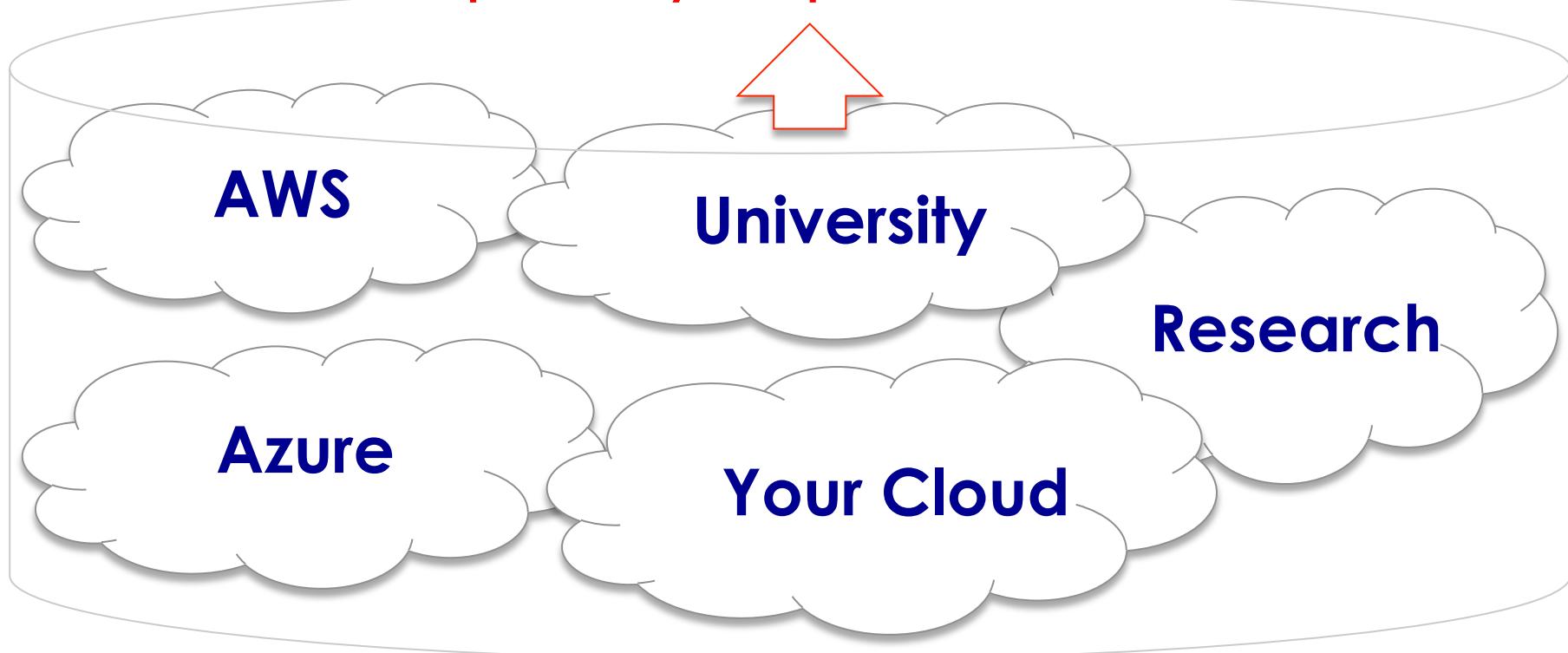
# Many clouds...

## build a research data platform

on the top of multiple / independent cloud services, world wide

### POSIX file system

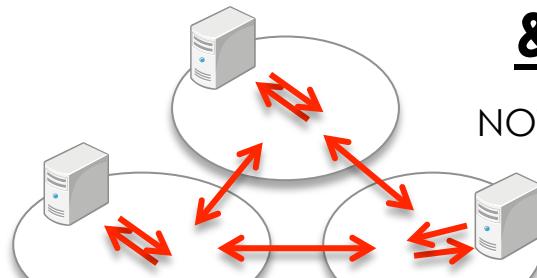
on the top of many independent cloud services



# Challenges

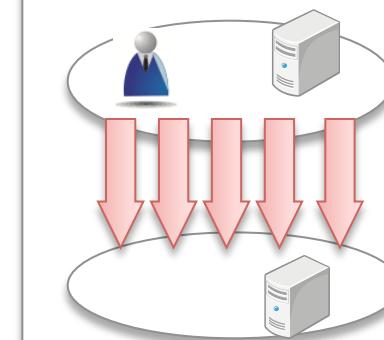
Intercloud, big latency, consistency, etc., ...

## Multiple site ( $N > 2$ ) & All Active



NOT primary/backup  
no centralized  
no database

## Improve throughput



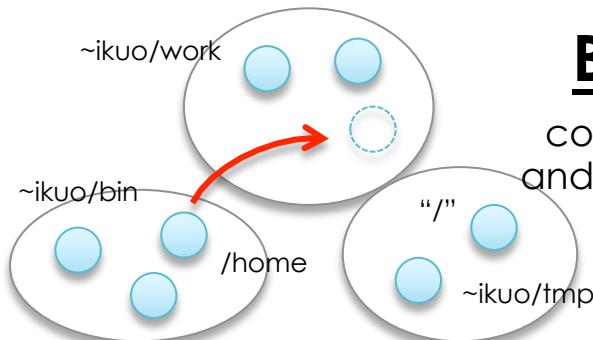
Large number of parallel TCP sessions improve total performance

## VM Live Migration



VM live migration works on distcloud

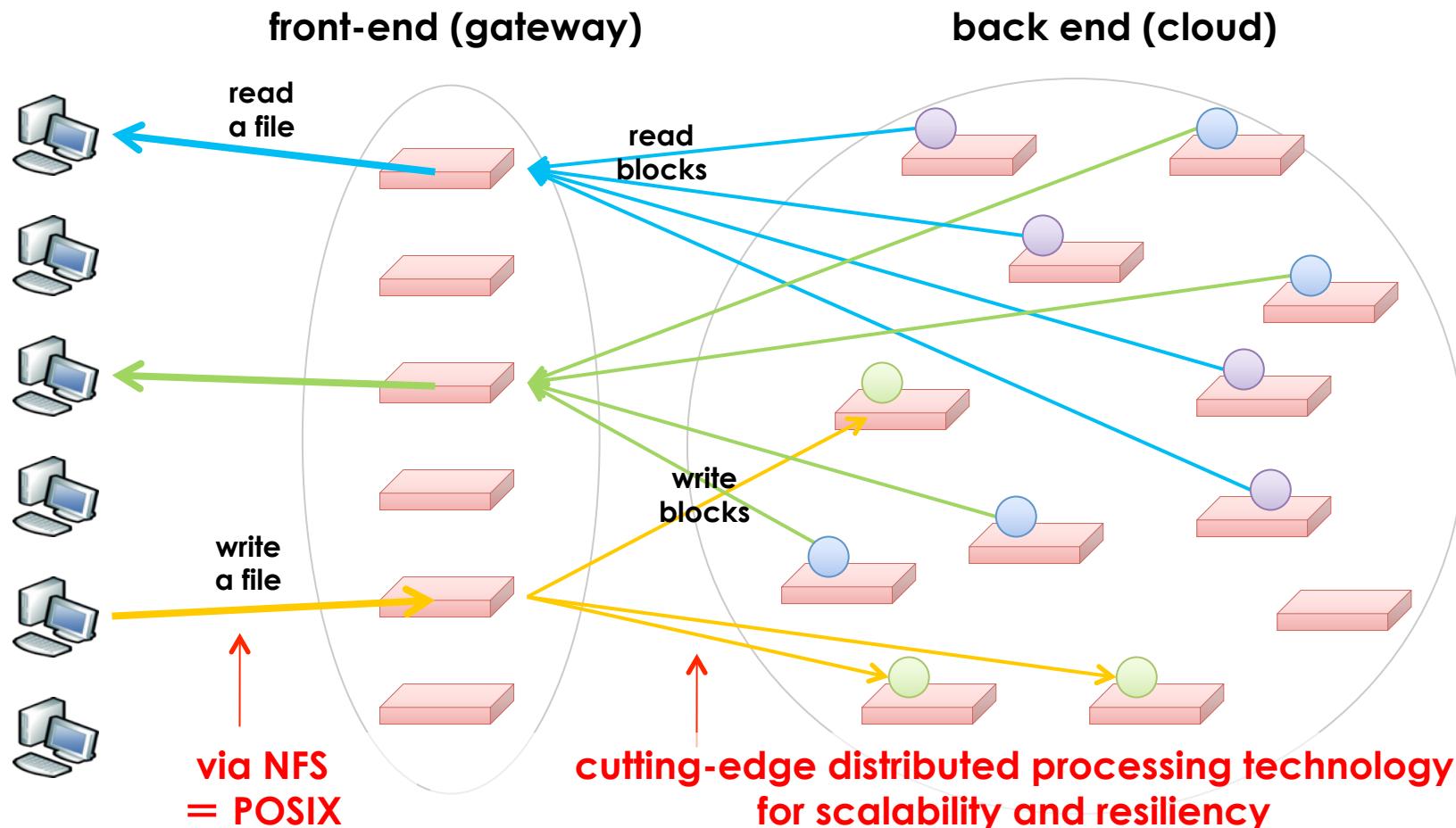
## Optimize BIG delay



consistency model and meta migration

# Fully distributed architecture

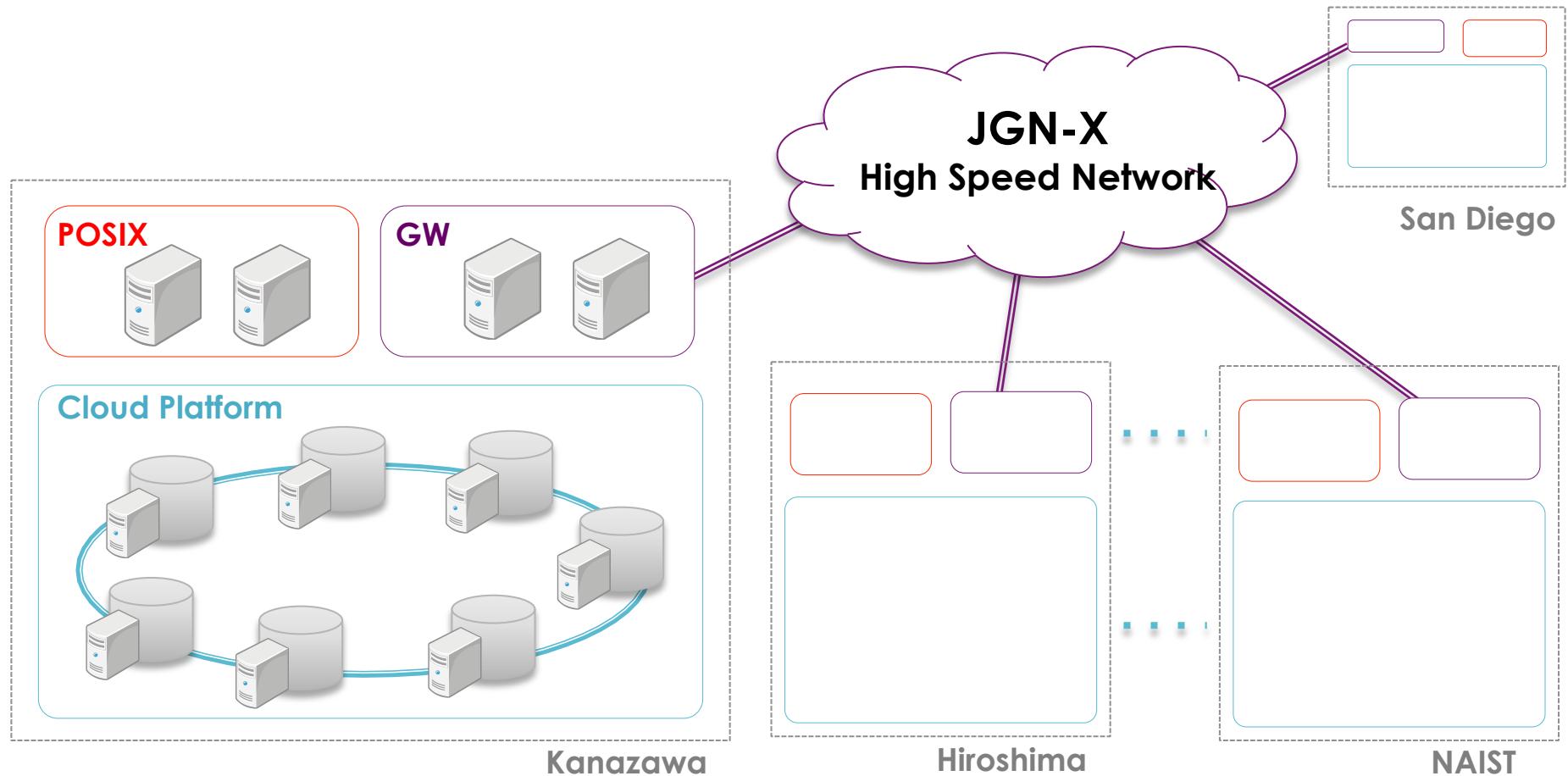
POSIX on the top of scale-out object storage



# Distcloud in Japan

## Distributed SDS on JGN-X

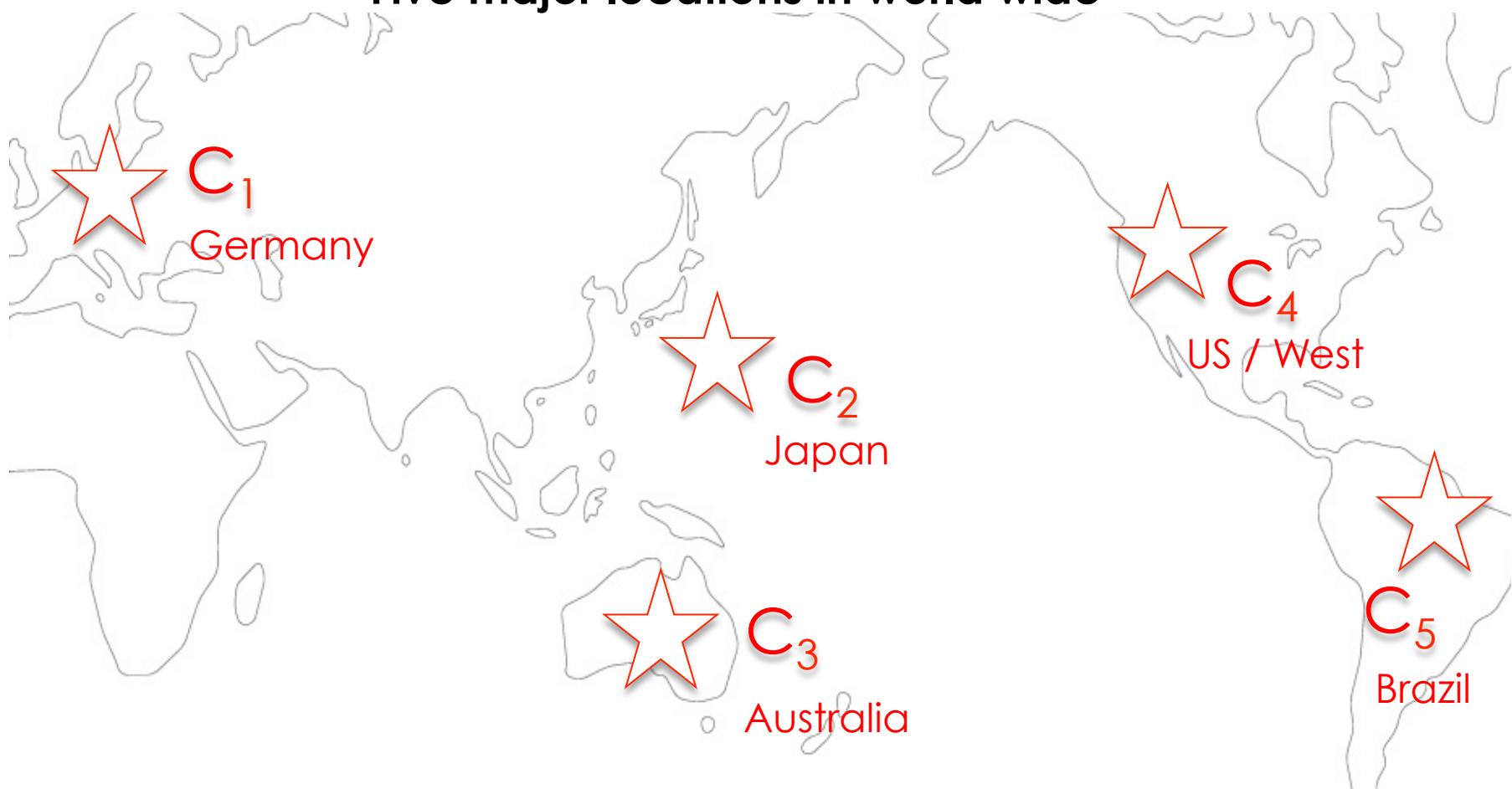
Fully distributed, No RDB, No centralized system



# Distcloud in world wide

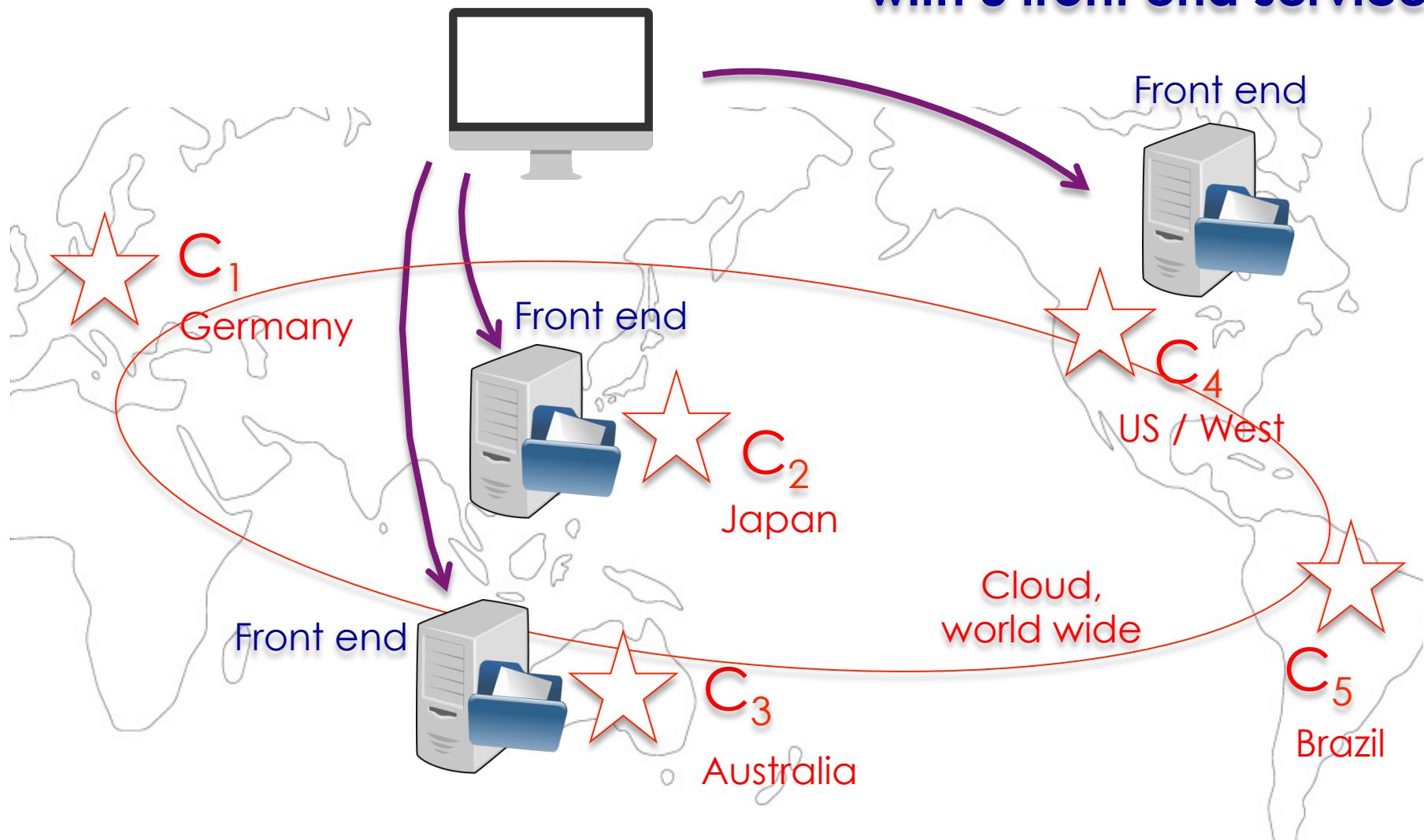
## Global Intercloud SDS

Five major locations in world wide



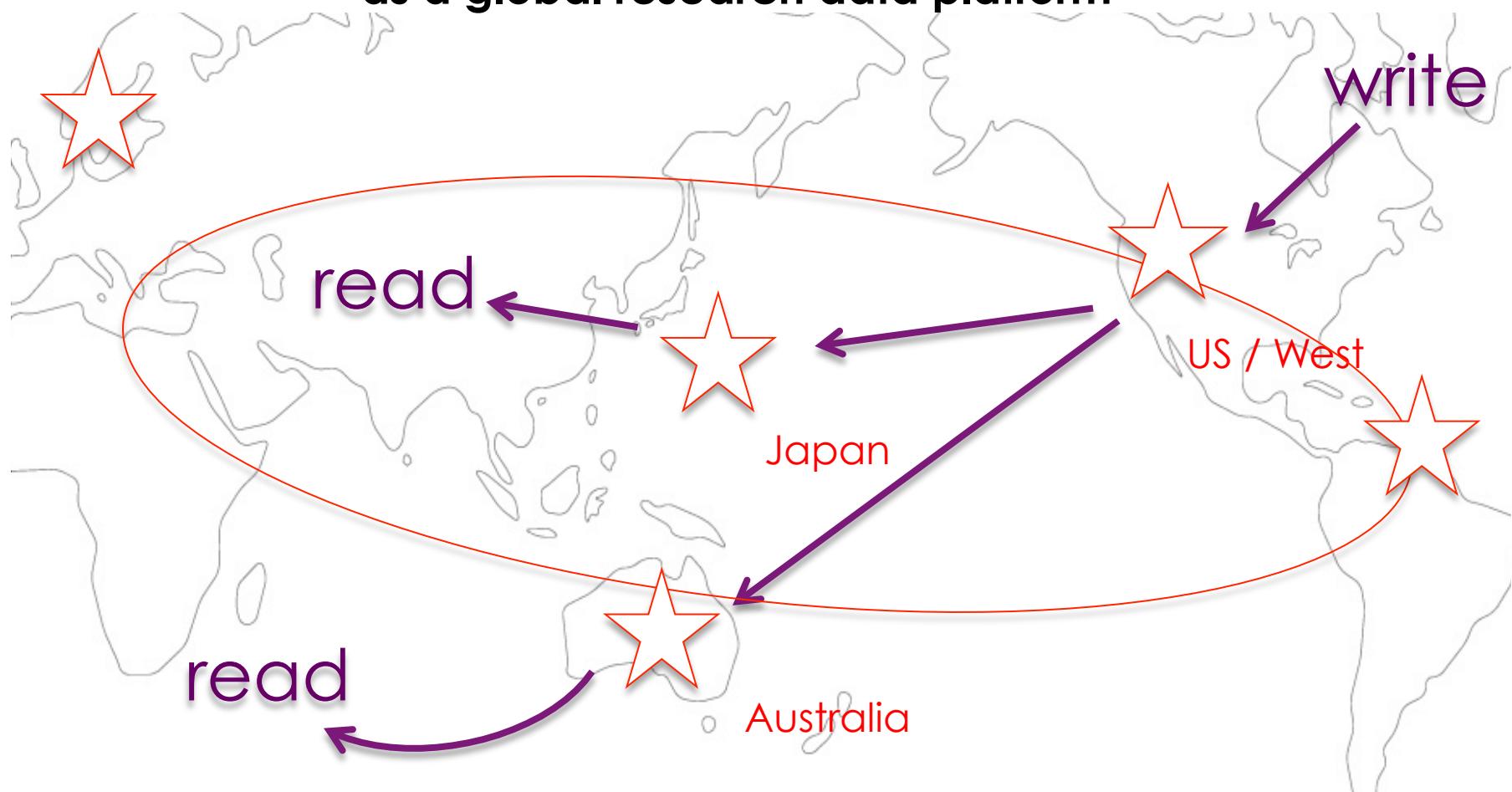
# Disaster-aware demonstration

**One Single Huge File System  
with 3 front end services**



# How the Distcloud works

**Sharing Data, with replicas  
as a global research data platform**



# How the Distcloud works

## Disaster-aware

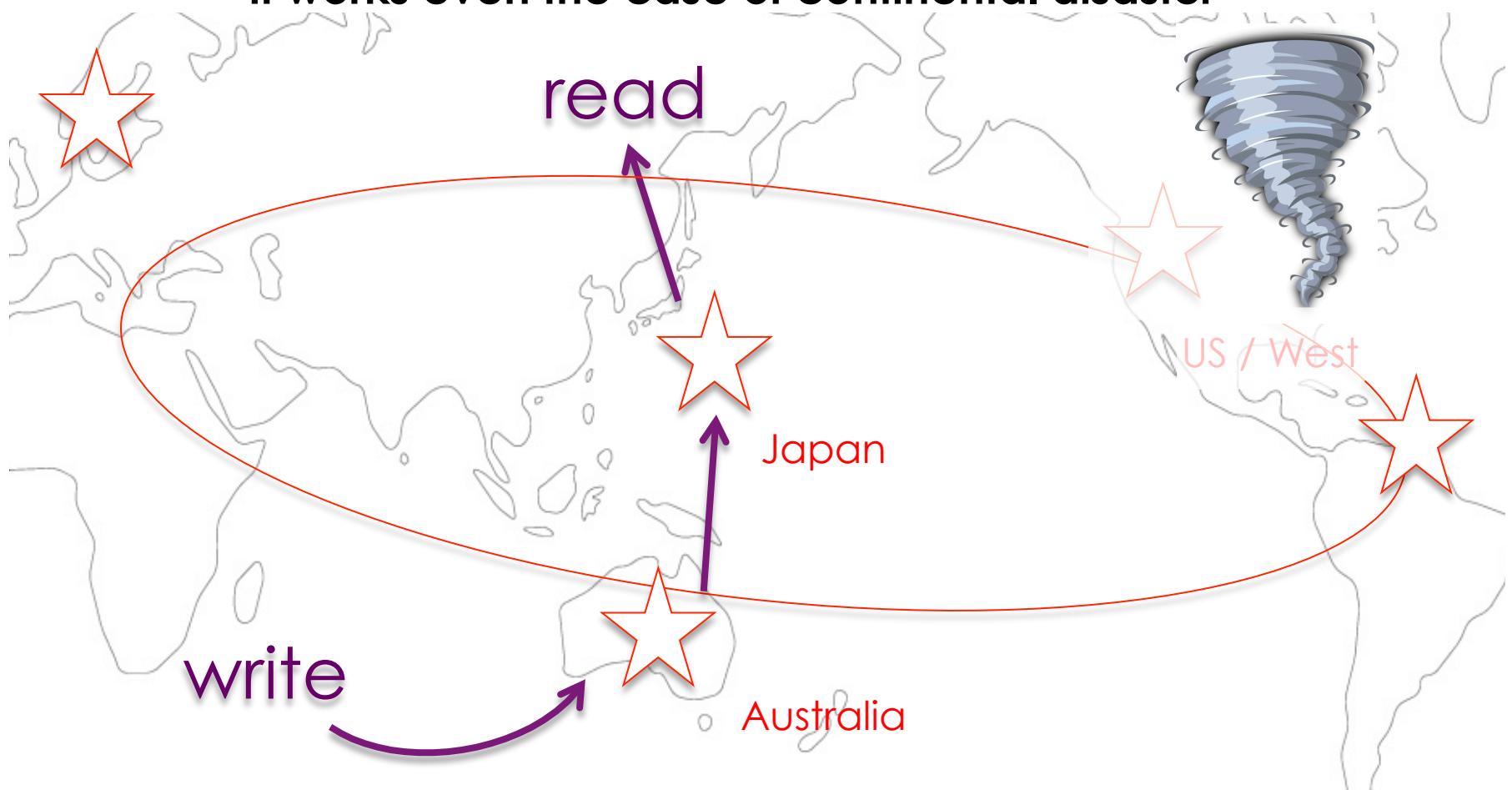
data written once, is available even in the case of disaster



# How the Distcloud works

## Disaster-aware

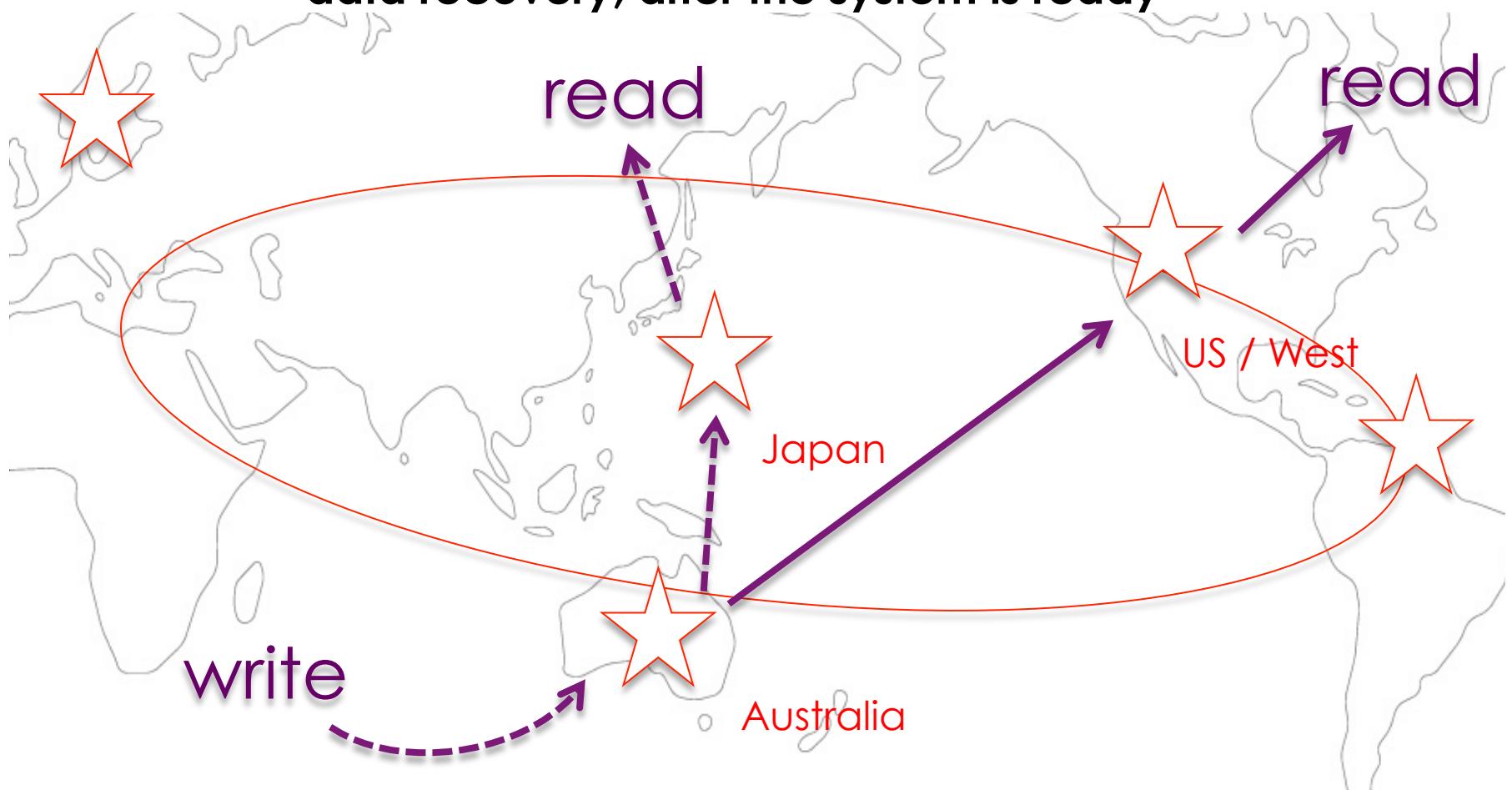
it works even the case of continental disaster



# How the Distcloud works

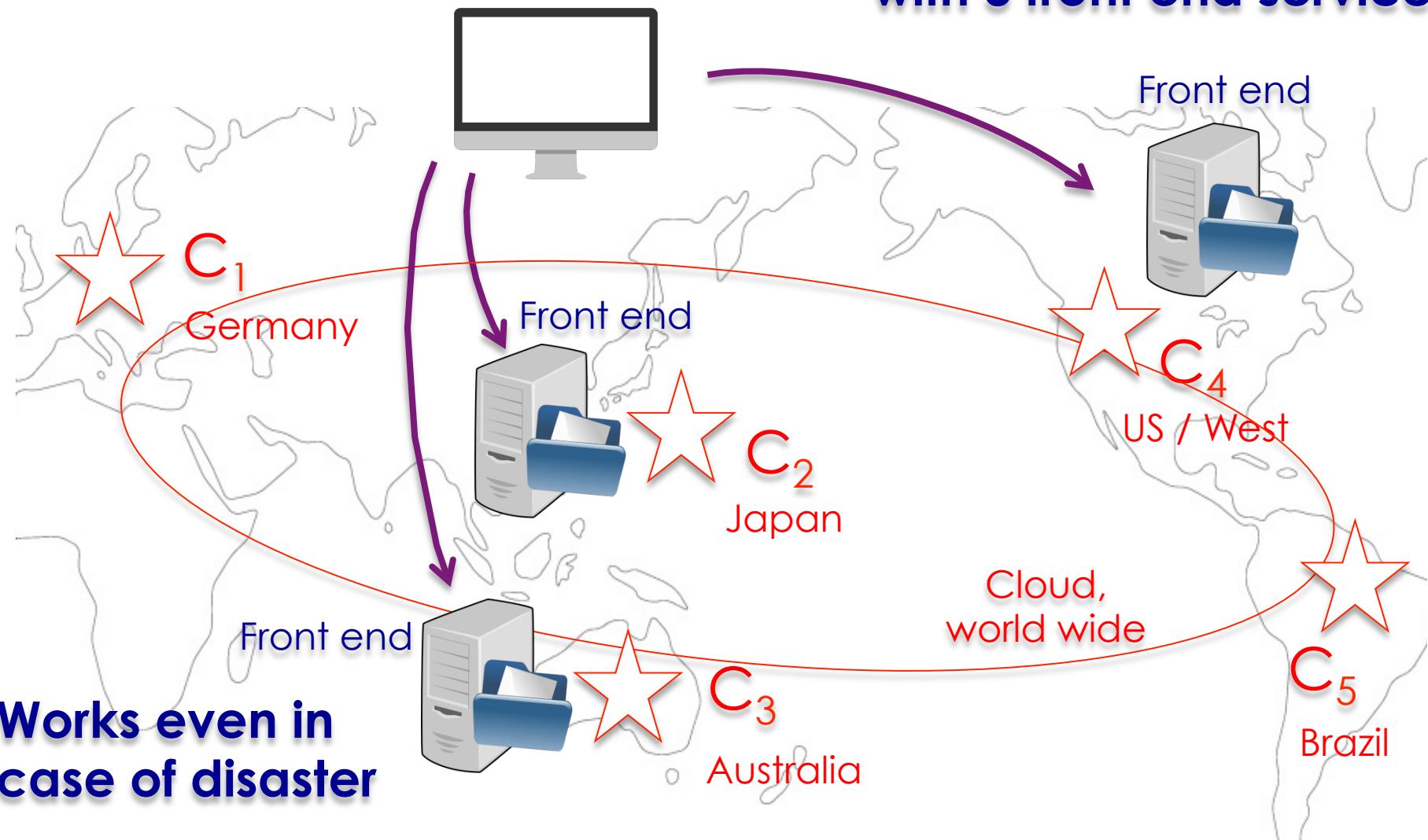
## Disaster-aware

data recovery, after the system is ready



# Disaster-aware demonstration

One Single Huge File System  
with 3 front end services



# Distcloud

## Fully Distributed File System

no SPoF, no database, no centralized mechanism

Multiple-site, All active

write into anywhere, read from anywhere

## Disaster-aware

it works even in a case of continental class disaster

## Transparent

works as POSIX like file system, user friendly, no special configuration for users

**Join the project,  
We welcome you.**

**Thank you !**