Content Delivery Networks (CDN)

VS

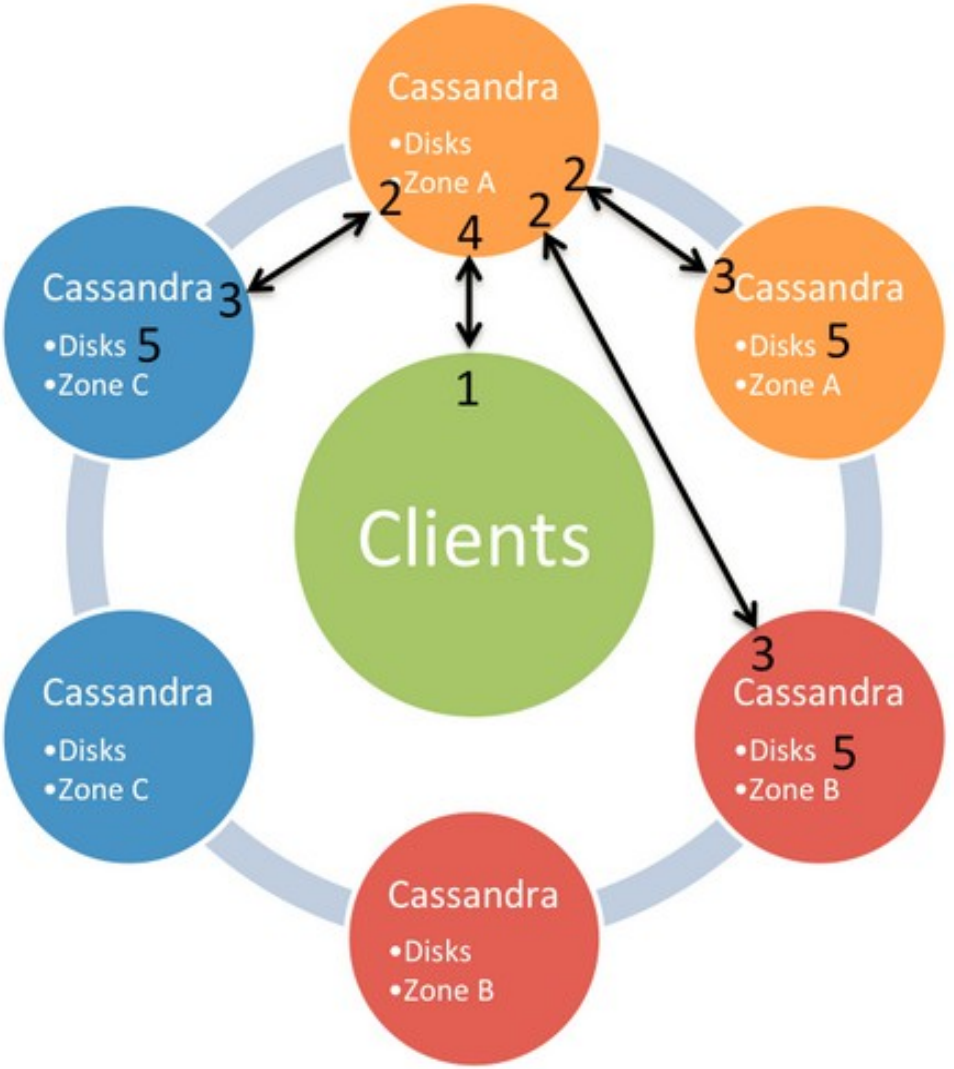
Redundant Array of Inexpensive Disks (RAID)

in your own Clouds

Cassandra Write Data Flows

Single Region, Multiple Availability Zone

1. Client Writes to any Cassandra Node
2. Coordinator Node replicates to nodes and Zones
3. Nodes return ack to coordinator
4. Coordinator returns ack to client
5. Data written to internal commit log disk



If a node goes offline, hinted handoff completes the write when the node comes back up.

Requests can choose to wait for one node, a quorum, or all nodes to ack the write

SSTable disk writes and compactions occur asynchronously

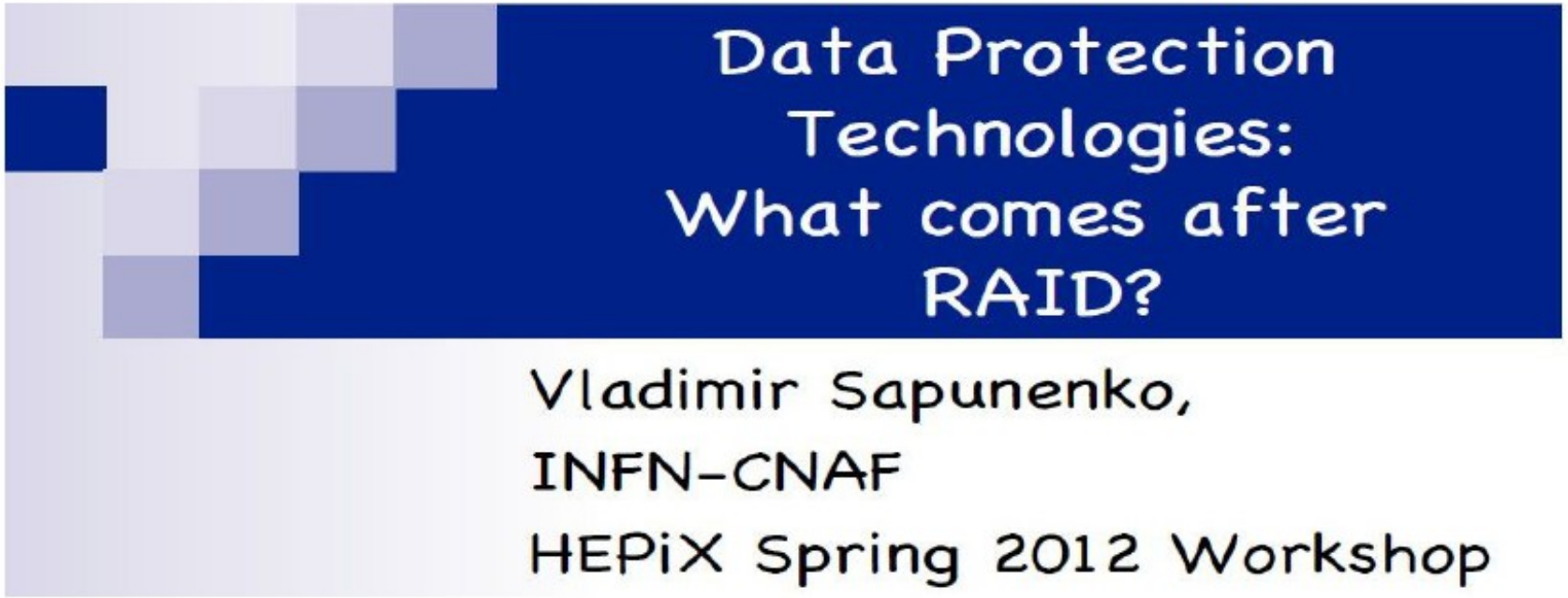
NETFLIX

Huawei UDS cloud storage

photo: Image credit: Huawei

Published February 1, 2013 at 305 × 406 in Huawei finds favor at CERN: researchers sign up for more UDS cloud storage

Pain points 2



- "Direct Attached Storage capacities have increased to the extent, that the rebuild times to recalculate parity data and recover from drive failures is becoming so onerous that the probability of losing data is increasing to dangerous levels."
- RAID is dead, long live the RAIC (Redundant Array of Inexpensive Clouds)!

Risk and Security in the Enterprise Cloud

Mark Masterson

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Bacharach, Germany

Resident troublemaker at CSC

Technology / Software / Internet

jroller.com/MasterMark

Flaming ball of contradictions, and enterprise architect for the Financial Services vertical in Europe @ CSC

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Introduction

- Do you know the Geo-location of your data?

- Are you handcuffed with your Cloud Service Provider?

Secure InterCloud eXchange (SICX)

« Provider independent secure multi-cloud storage solution »

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HIP-TEK lab, CERN

Works with

How Stuff Works 3: RAIC & Vendor lock-out

Availability (SLA) options:
Total # / Min # of Clouds
4/3 = 133%
7/5 = 140%

Q: We don't like this Cloud, now what?
A: Cut it loose, forget the apple slices, no value as such, close the account. 3 out of 4 Clouds still work: Biz as usual.

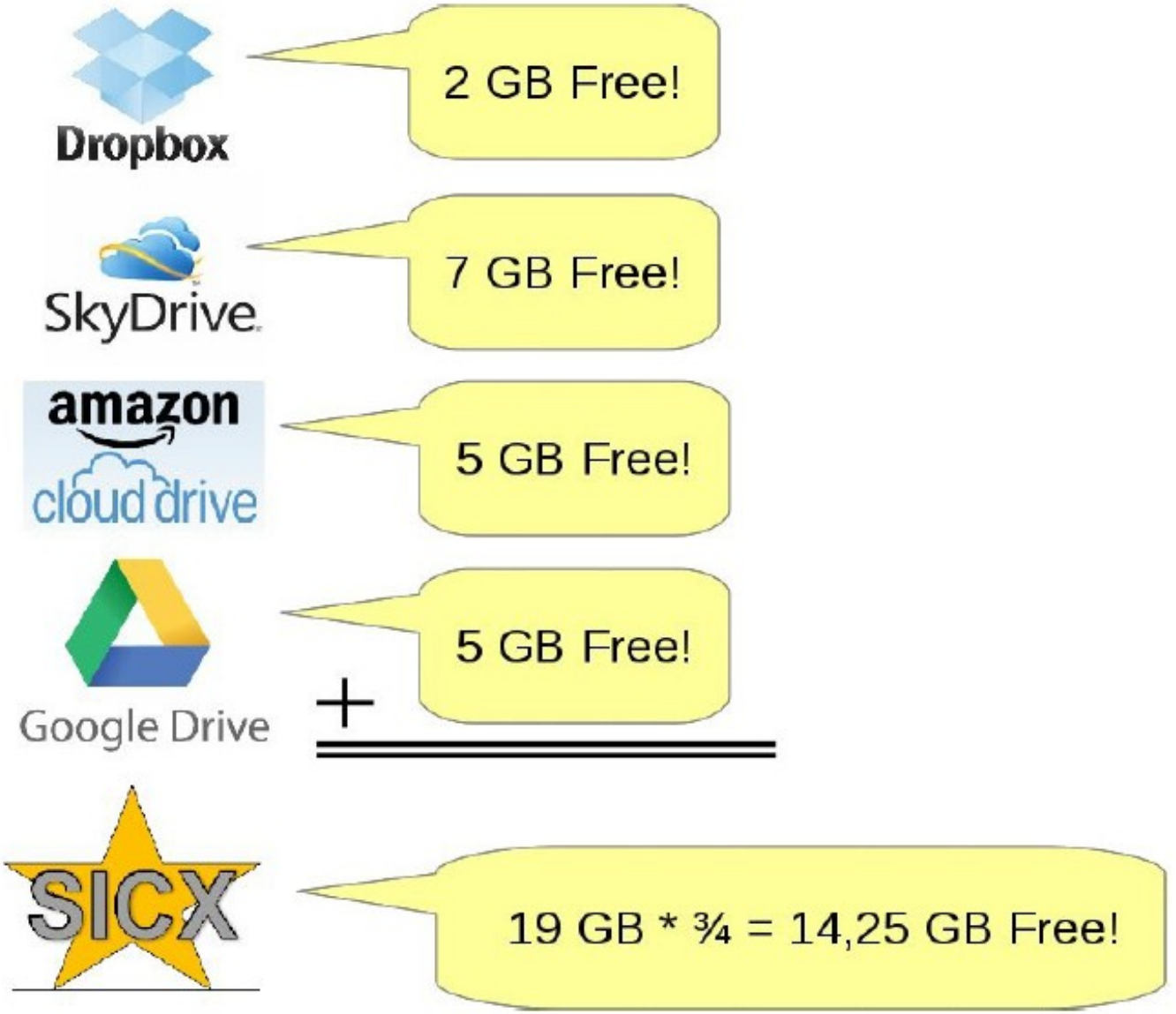
Dropbox

SkyDrive

amazon cloud drive

Google Drive

How Stuff Works 4: SICX Freemium



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”Retain Governance and Riskfree Compliance even if cloudsourcing IaaS Storage inside multitenant public Clouds”