

IX Taller Internacional, 1 y 2 de sep:
Tendencias y retos del sector TIC

Cloud Computing & Content Distribution Networks

Davi Ottenheimer
Senior Director of Trust



EMC²

Pivotal™

Big Data
Platform as a Service
Agile Application Development

vmware®

Enterprise Mobility
Software-Defined Data Center

EMC II

Information Infrastructure
Converged Infrastructure

ADVANCED SECURITY

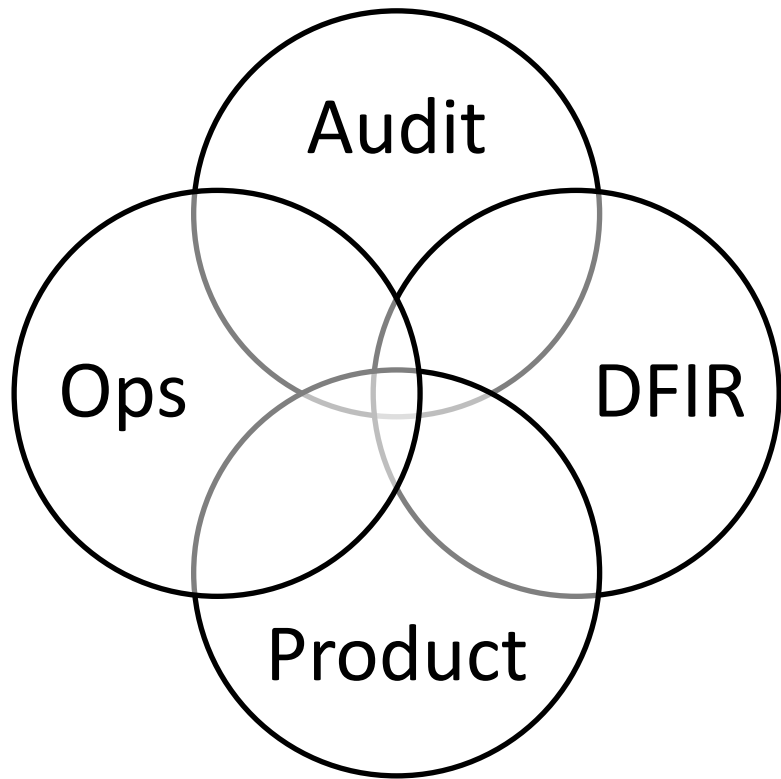
RSA

Partners
vmware
EMC²

vCloud
Hybrid Service
vmware®
EMC II

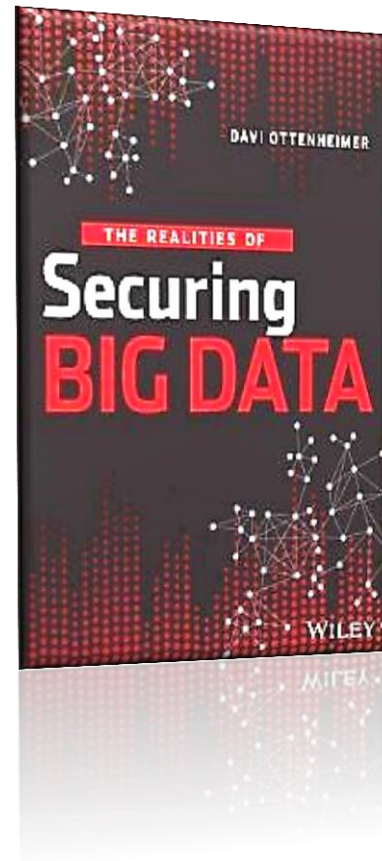
Our Federation





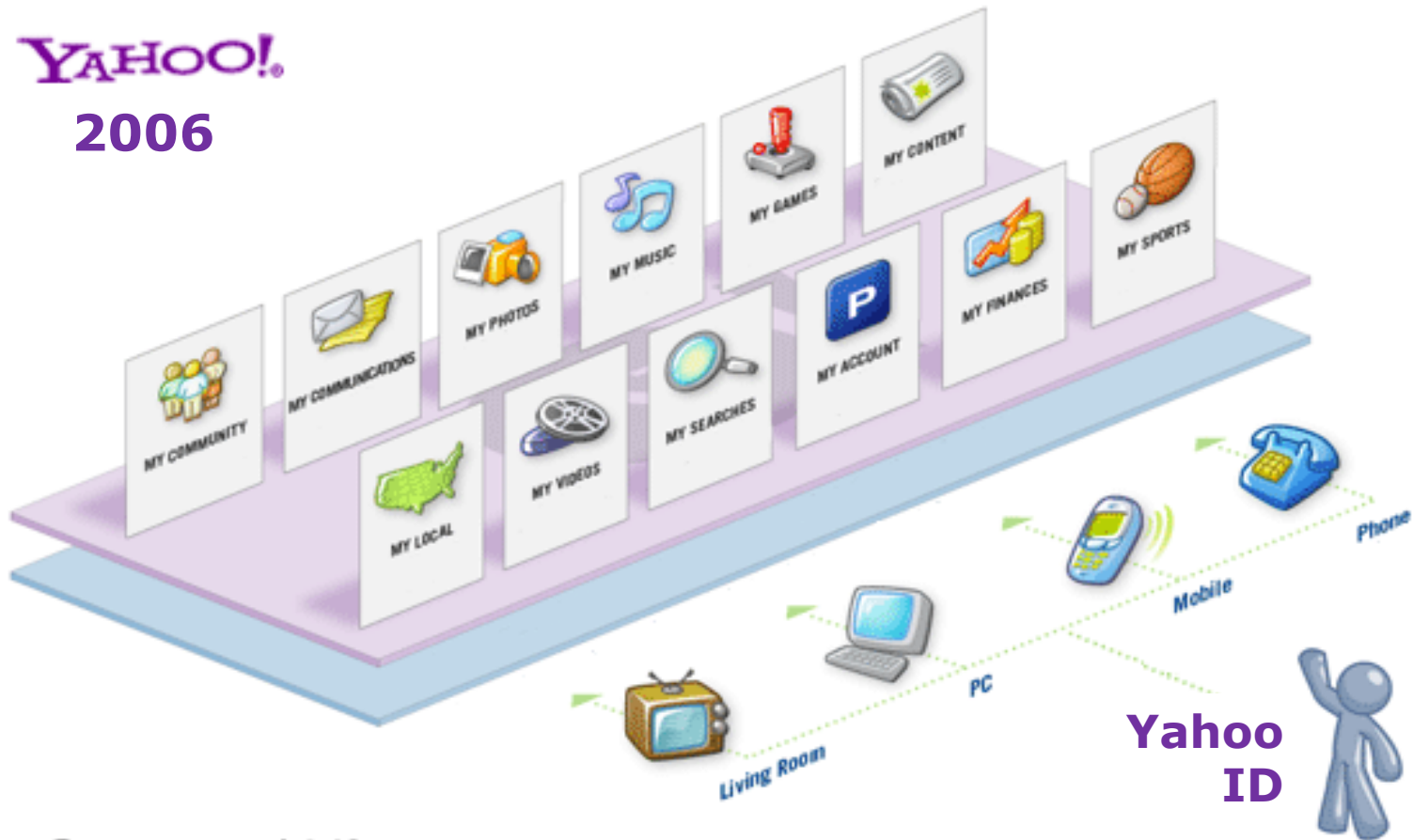
Davi Ottenheimer
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YAHOO!

2006



Connected Life



Android 2.2
Android 4.4
iPhone 4s
N900
N9
Fennec (Firefox Mobile) 9
Internet Explorer Mobile 9
Opera Mini 9
Blackberry 7 (Bold 9900)
Blackberry 10 (Q10)
NTT Docomo Browser
Firefox 25.0 Desktop Version

2014
#Unlike



MMS Settings

User-Agent: Android (Galaxy S4)

Jolla

Nokia N9

iOS (iPhone 5)

Windows (Lumia 1020)

Android (Galaxy S4)

Custom

Mozilla/5.0 (Linux; U; Android 4.2; en-us; GT-I9500 Build/JDQ39) AppleWebKit/534.30 (KHTML, like Gecko) Version/4.0 Mobile Safari/534.30

Maximum message size: Extra large

1 MB



Fundamental Trends



MOBILE



CLOUD



BIG DATA



SOCIAL



TRUST

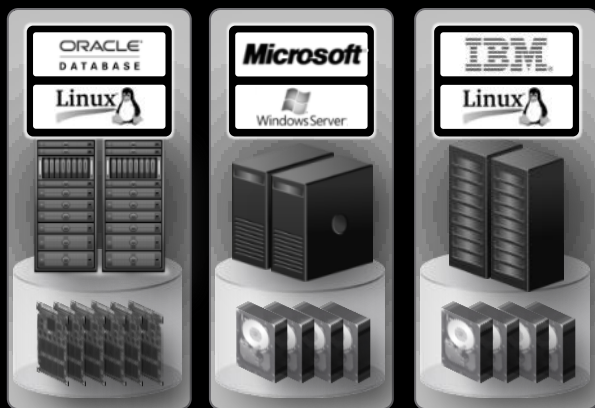
Source: EMC Digital Universe with Research and Analysis by IDC, *The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things*, April 2014.

Fundamental Trends in IT



Yesterday's Silos

Labor Intensive



Slow To Provision

Tomorrow's Clouds

**Low-Cost, Elastic
Compute, Storage &
Network**



Immediate Access



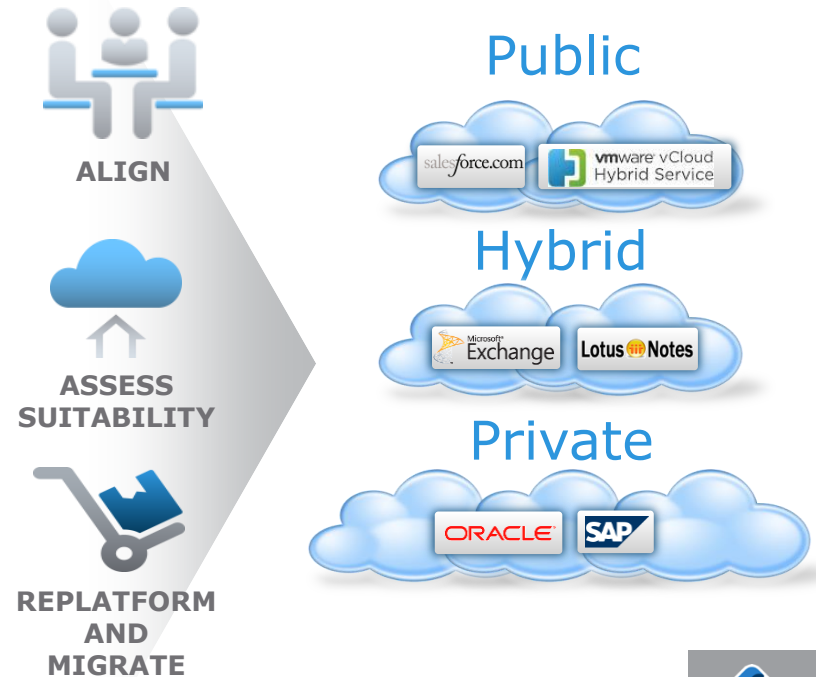
Yesterday's Silos

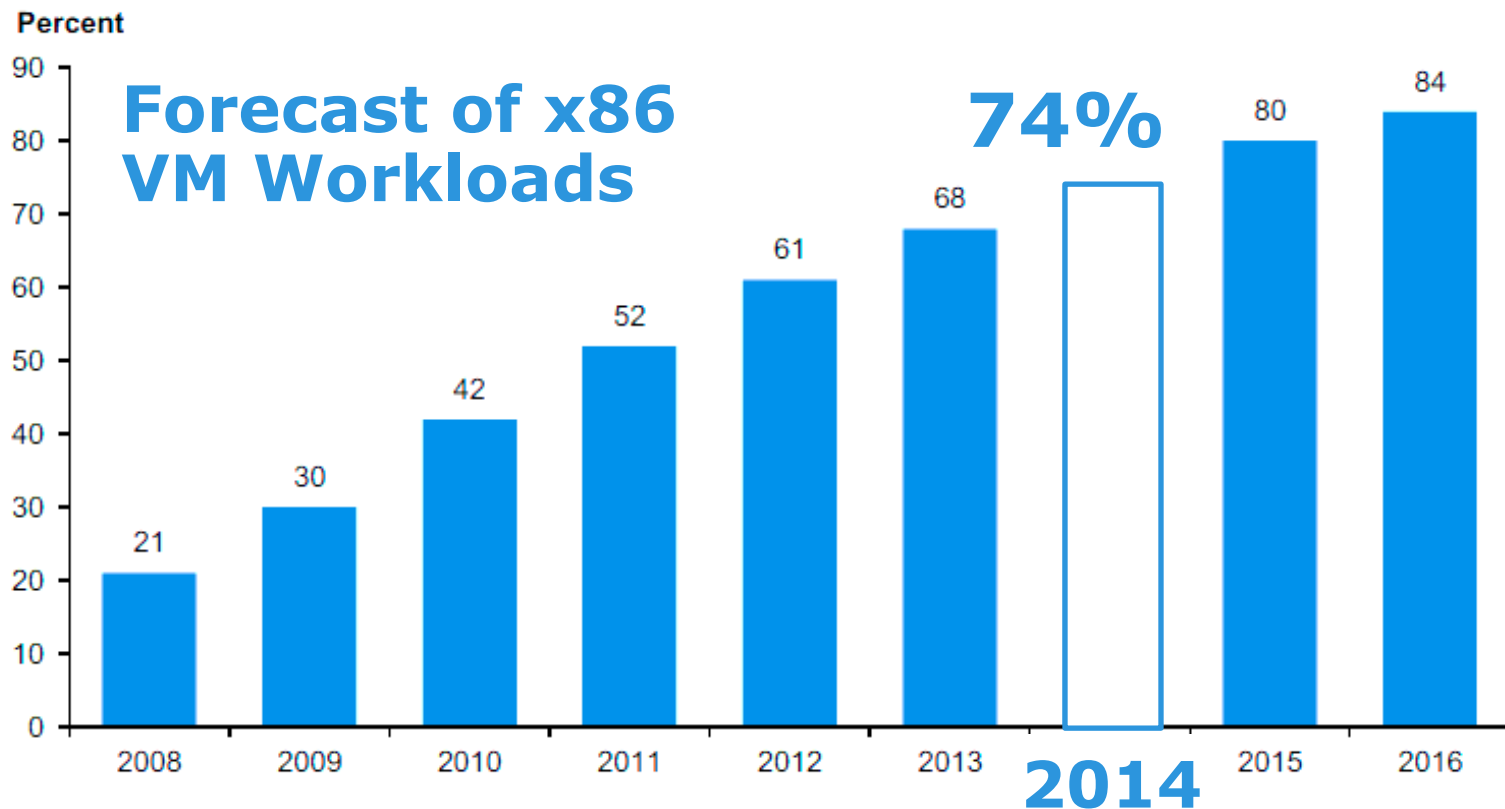
Rigid, Complex, Fragile



Tomorrow's Clouds

Agile, Simple, Trusted





Source: Gartner (January 2014)

Forecast

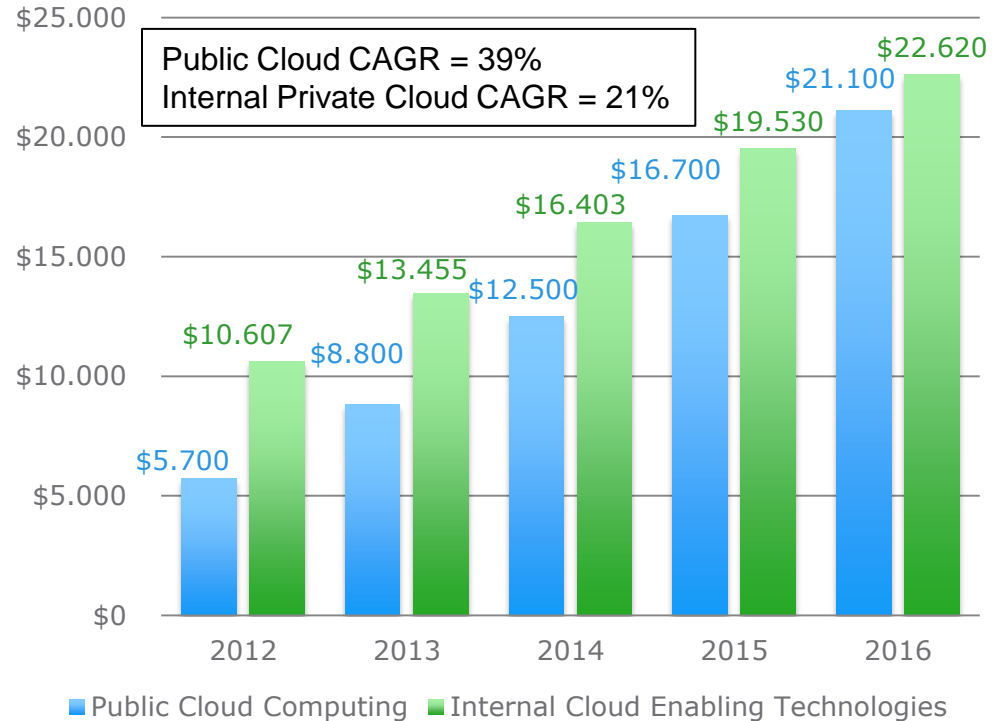


\$16B in 2012 to \$44B in 2016

- Private and Public Cloud Growing Rapidly
- Despite Flat IT Market, Significant Cloud Growth (CAGR)

Forecast

Cloud Infrastructure Forecast 2012 to 2016



Source: 451 Research Market Monitor





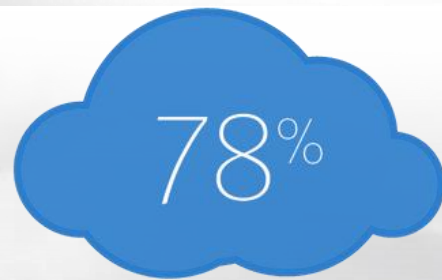
Public

- New Apps
- App Resilience
- Off-premises
- Object and Commodity



Hybrid

- Existing Apps
- Infrastructure Resilience
- Off-premises



Private

- Existing Apps
- Infrastructure Resilience
- On-premises
- File & block

WHY WELL-RUN HYBRID IS BEST

Agile

Simple

Trusted

2016 Workloads





Cloud Trust



High-Profile Public Cloud Breaches

- Sony
- Google
- Amazon
- Apple
- Microsoft



I asked the guys when i first started there if i'd ever see a severity level 1, and they said you will **NEVER** see one in your career with amazon.. well.. what do you know haha.

<http://evilrouters.net/2011/04/29/the-ec2-efs-outage-what-amazon-didnt-tell-you/>

Cloud Trust





Nobody is secure. Sony is just the tip of this thing.

You would have thought a big time reputable company like Sony would be running up-to-date, patched software with an appropriate firewall. If Sony didn't do this, which other big, reputable companies aren't doing this?

There's nothing from the government or regulatory industry that says anything about how to run a shop.

http://www.wallstreetandtech.com/articles/229403047?cid=nl_wallstreettech_daily

Sony





We carefully control the number of employees who have access to our systems, and we regularly upgrade our security controls—for example, ***we are significantly increasing the amount of time we spend auditing our logs*** to ensure those controls are effective. That said, a limited number of ***people will always need to access these systems*** if we are to operate them properly--which is why we take any breach so seriously.

- Google SVP Engineering

<http://gawker.com/5637234/>

- Breaches Uncovered by Customers
- Site ***Reliability*** Engineer (SRE)
Invaded Chat / Voice / Mail



Google



- “Rock Solid, Secure and Affordable”
- Permanent Outage After Incident
 - General DDoS
 - EC2 Control Panel Access
 - Missing EBS Snapshots, AMI, S3 Buckets...



"In summary, most of our data, backups, machine configurations and offsite backups were either partially or completely deleted.

Code Spaces will not be able to operate beyond this point"

http://www.theregister.co.uk/2014/06/18/code_spaces_destroyed/

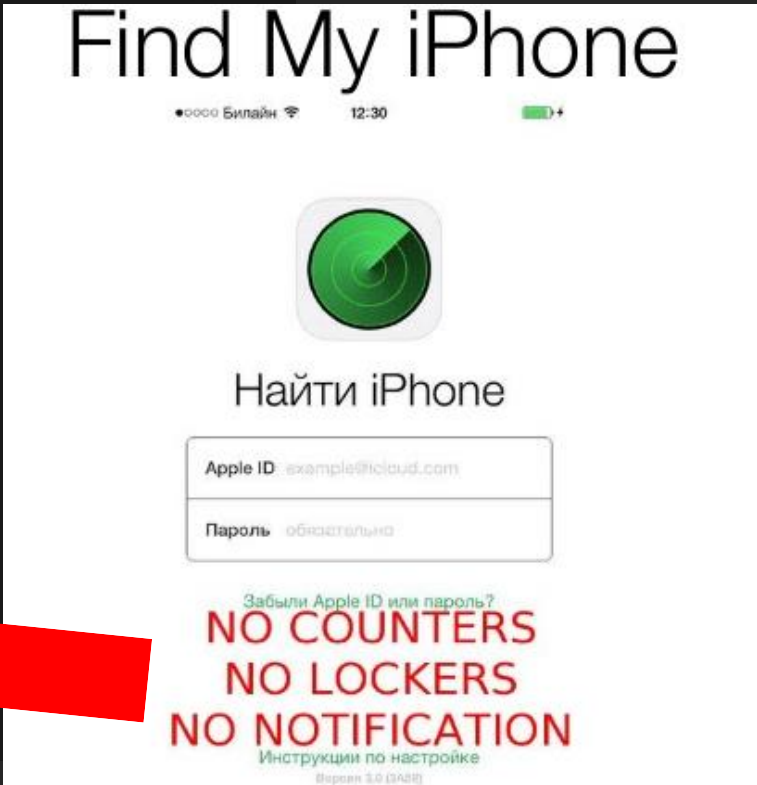
Amazon



```

MacPro:ibruite kmax$ ./id_brute.py
Working with: FFWC188-888@hotmai.com
Trying: FFWC188-888@hotmai.com Password1
Trying: FFWC188-888@hotmai.com Princess1
Trying: FFWC188-888@hotmai.com P@ssw0rd
Trying: FFWC188-888@hotmai.com Passw0rd
Trying: FFWC188-888@hotmai.com Michael1
Trying: FFWC188-888@hotmai.com Blink182
Trying: FFWC188-888@hotmai.com !QAZ2wsx
Trying: FFWC188-888@hotmai.com Charlie1
Trying: FFWC188-888@hotmai.com Anthony1
Trying: FFWC188-888@hotmai.com 1qaz!QAZ
Trying: FFWC188-888@hotmai.com Brandon1
Trying: FFWC188-888@hotmai.com Jordan23
Trying: FFWC188-888@hotmai.com Cwecw188
Got It! FFWC188-888@hotmai.com Cwecw188
Trying: FFWC188-888@hotmai.com Cwecw188
^Z
[3]+ Stopped ./id_brute.py
MacPro:ibruite kmax$

```



Apple



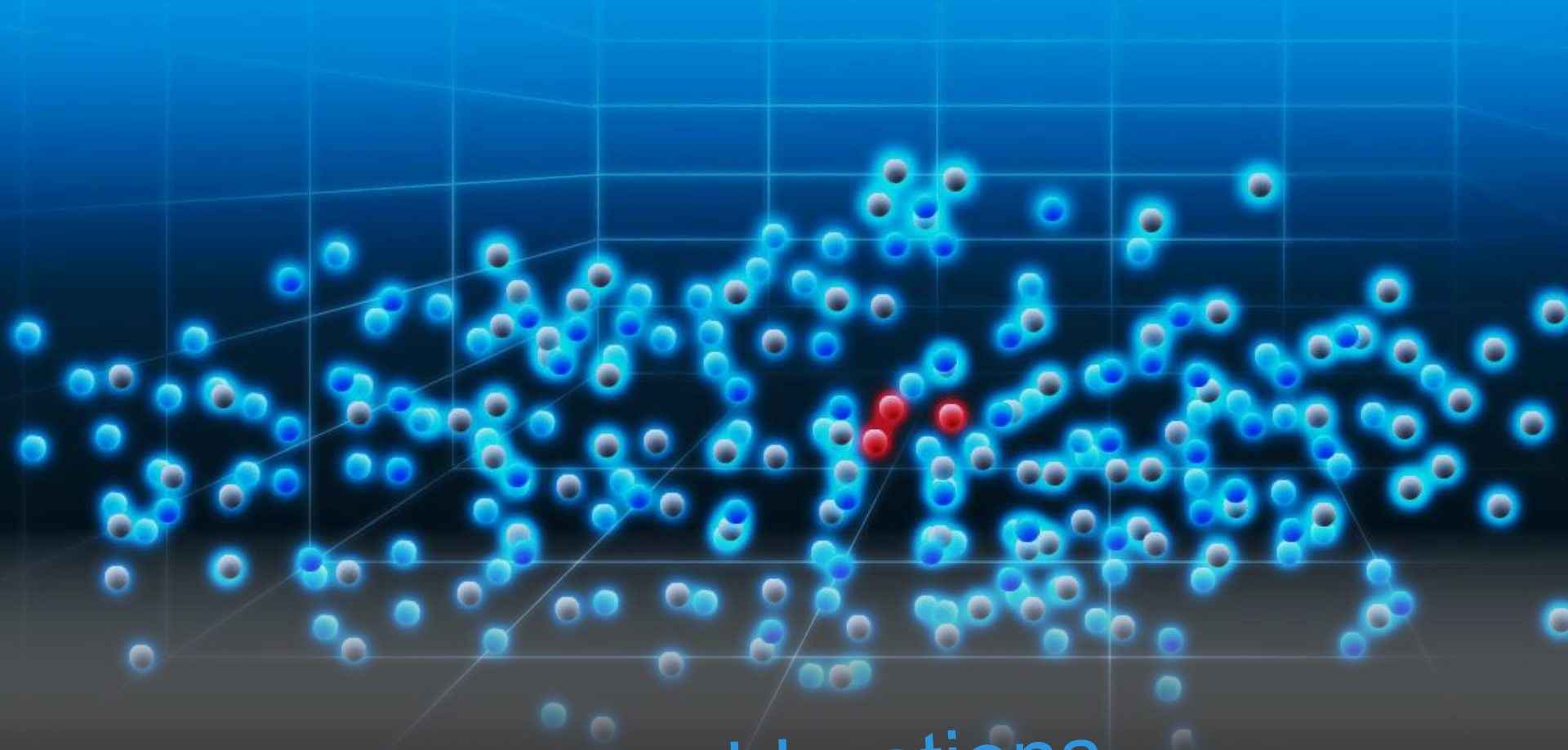
<http://www.slideshare.net/alexeytroshichev/icloud-keychain-38565363>



1. Right to Privacy (Anon, ID Immutability, 'Fingerprint')
2. Right to be Forgotten (i.e. Spent Convictions)
3. Freedom to Choose Where and by Whom Data is Stored
4. Transparency of 3rd-Party Relationships Including Government Agencies
5. Transparency in Terms of Service and Privacy Policies
6. Big Data Analysis Risks and Vulnerabilities

Cloud Trust Considerations







Cloud Trust Considerations



Mobile Devices + Twitter Use

More than 280 million Tweets posted from mobile phones reveal geographic usage patterns in unprecedented detail.

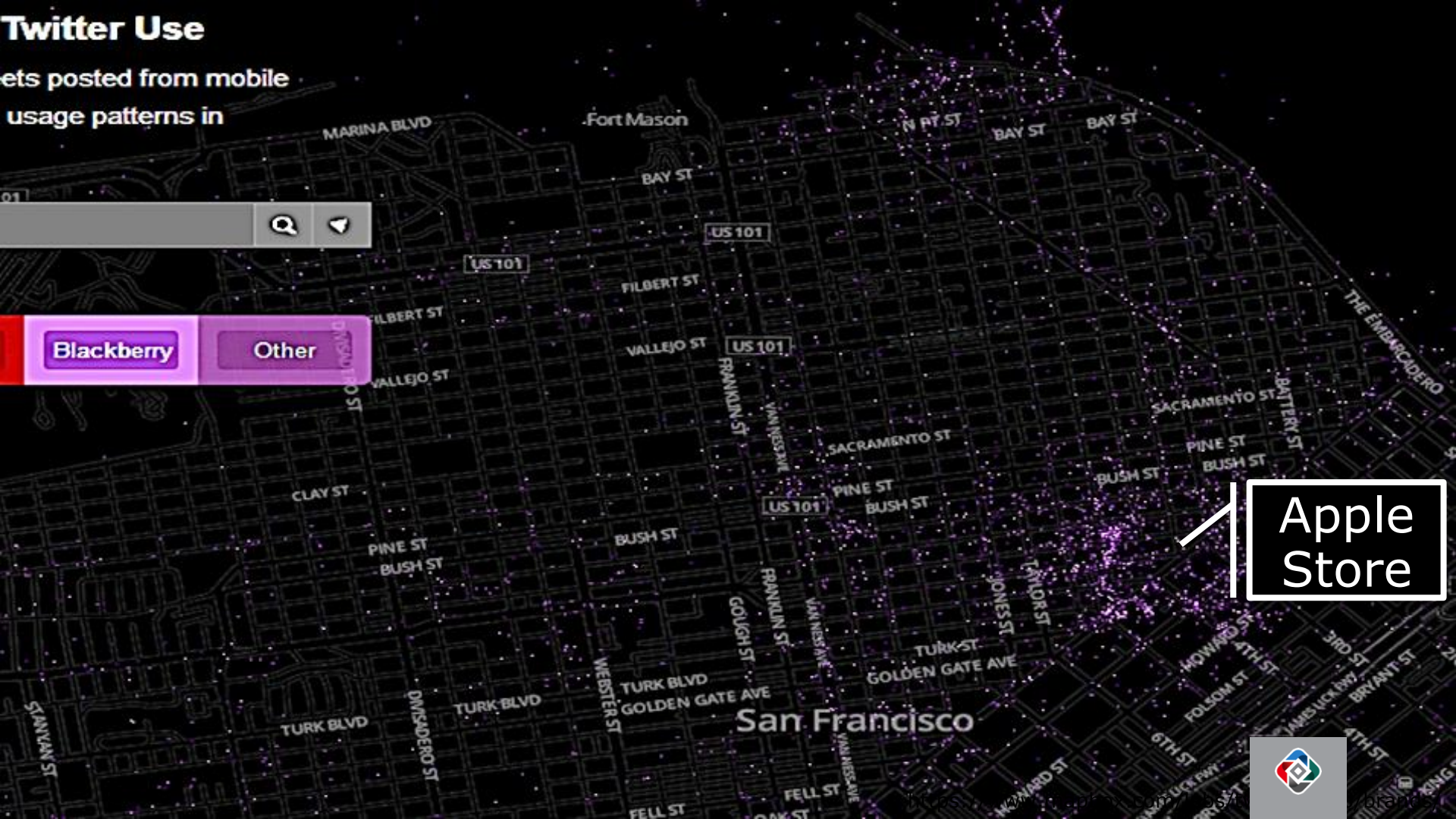
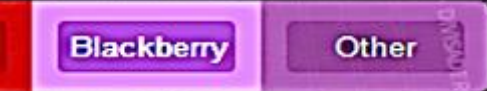
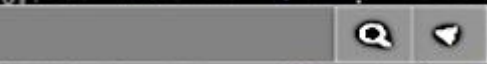


Android iPhone Blackberry Other

Small Craft = iOS
Ferry = Android

Twitter Use

ets posted from mobile
usage patterns in



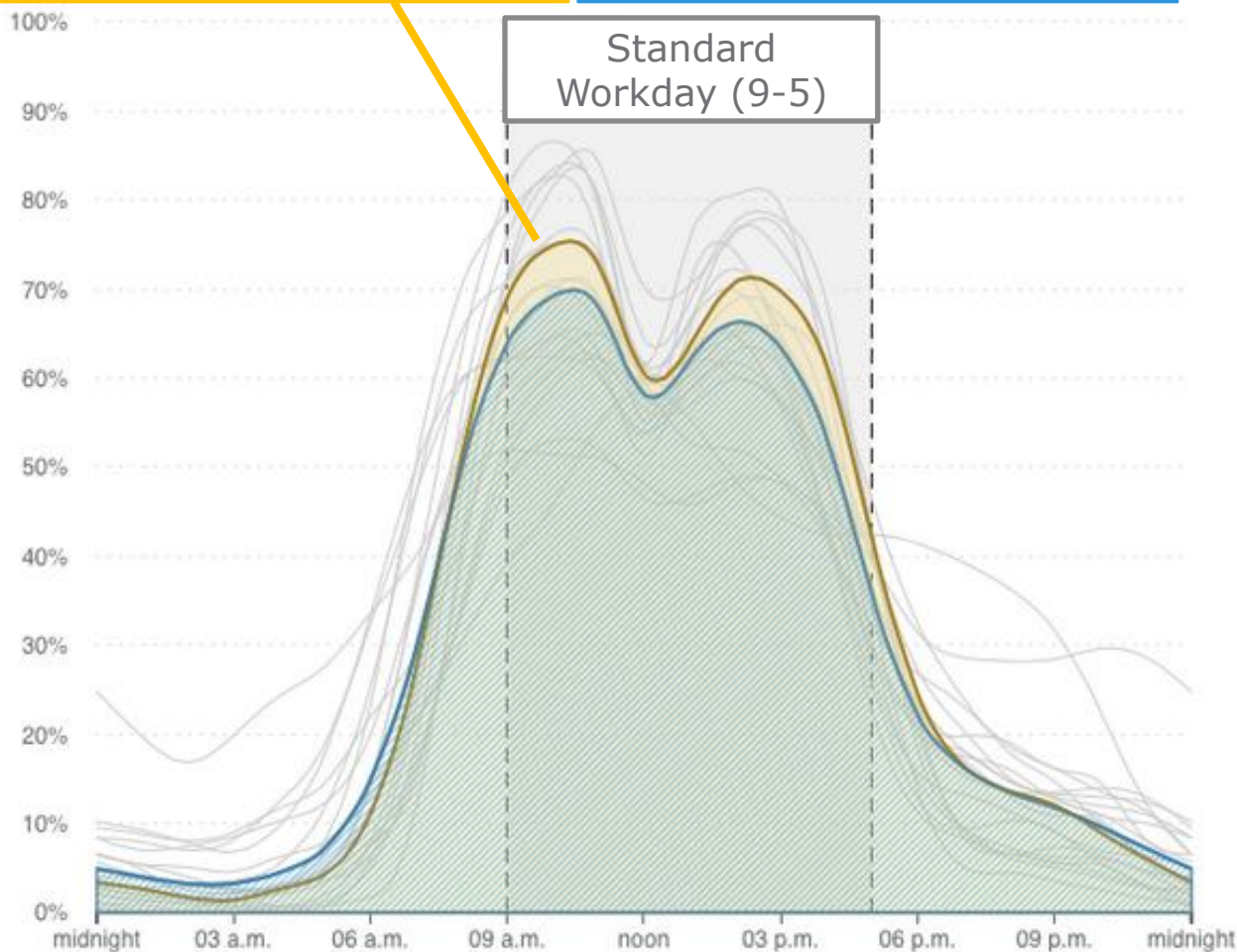
Apple Store



Management

All Jobs

<http://www.npr.org/blogs/money/2014/08/27/343415569/whos-in-the-office-the-american-workday-in-one-graph>



Trust Redefined





TRANSPARENCY



RELEVANCE

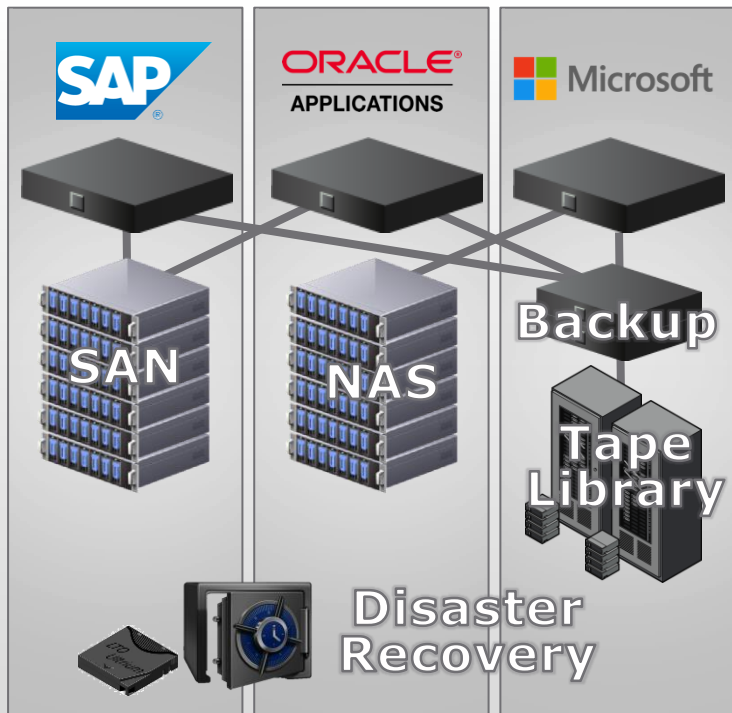


RESILIENCE

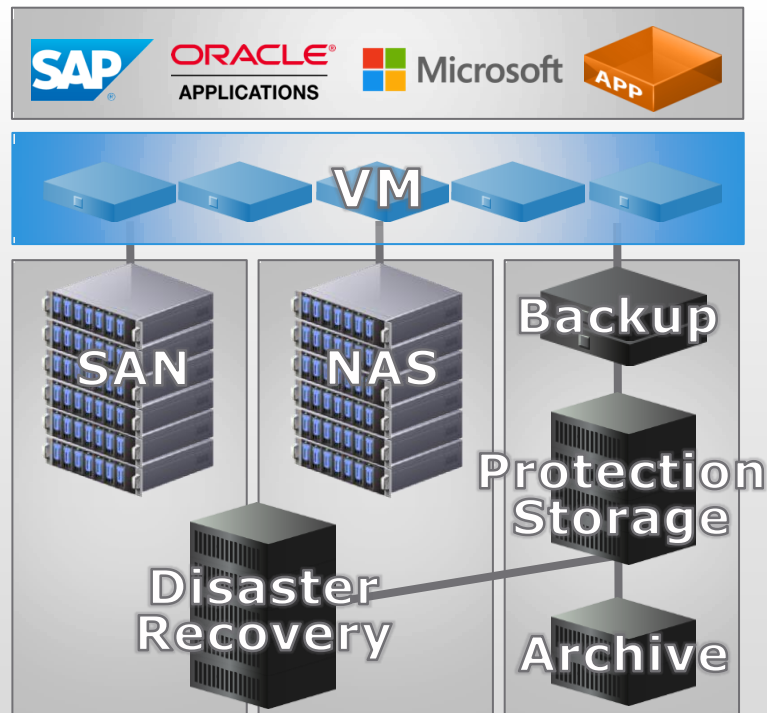
Trust Redefined



Traditional IT



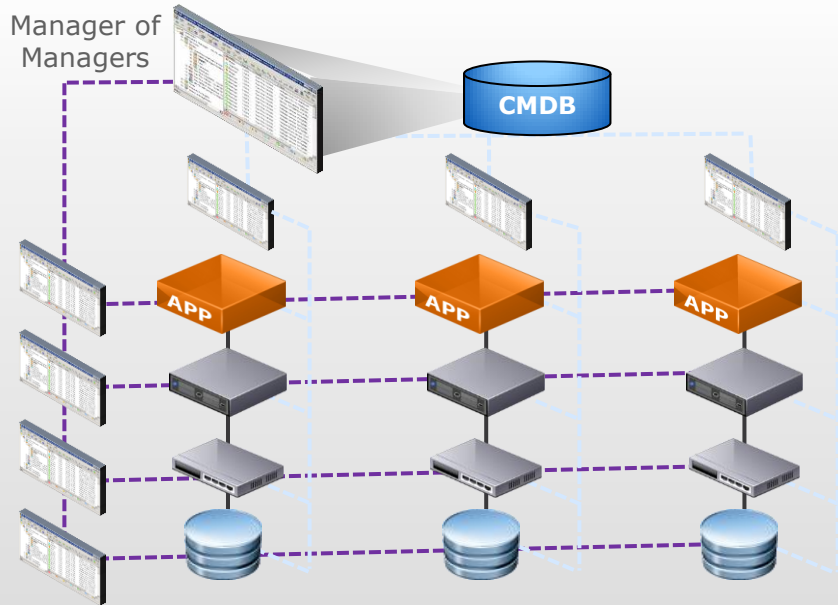
Cloud



1. Transparency



Traditional IT



Rigid, Complex, Fragile

Cloud



Agile, Simple, Trusted

1. Transparency



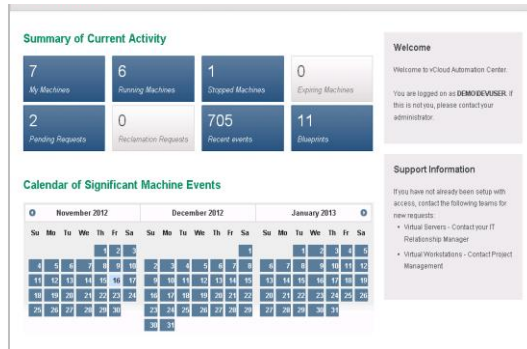
Business

Govern and manage IT services, to run like a business



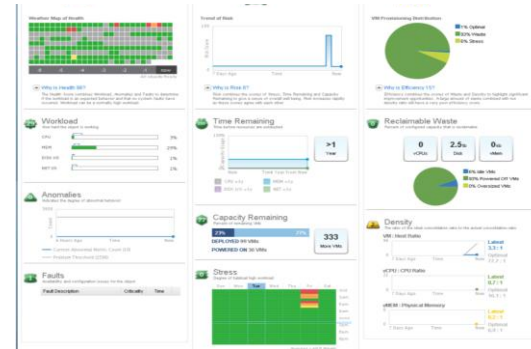
Automation

Deliver infrastructure, applications and desktops as a service



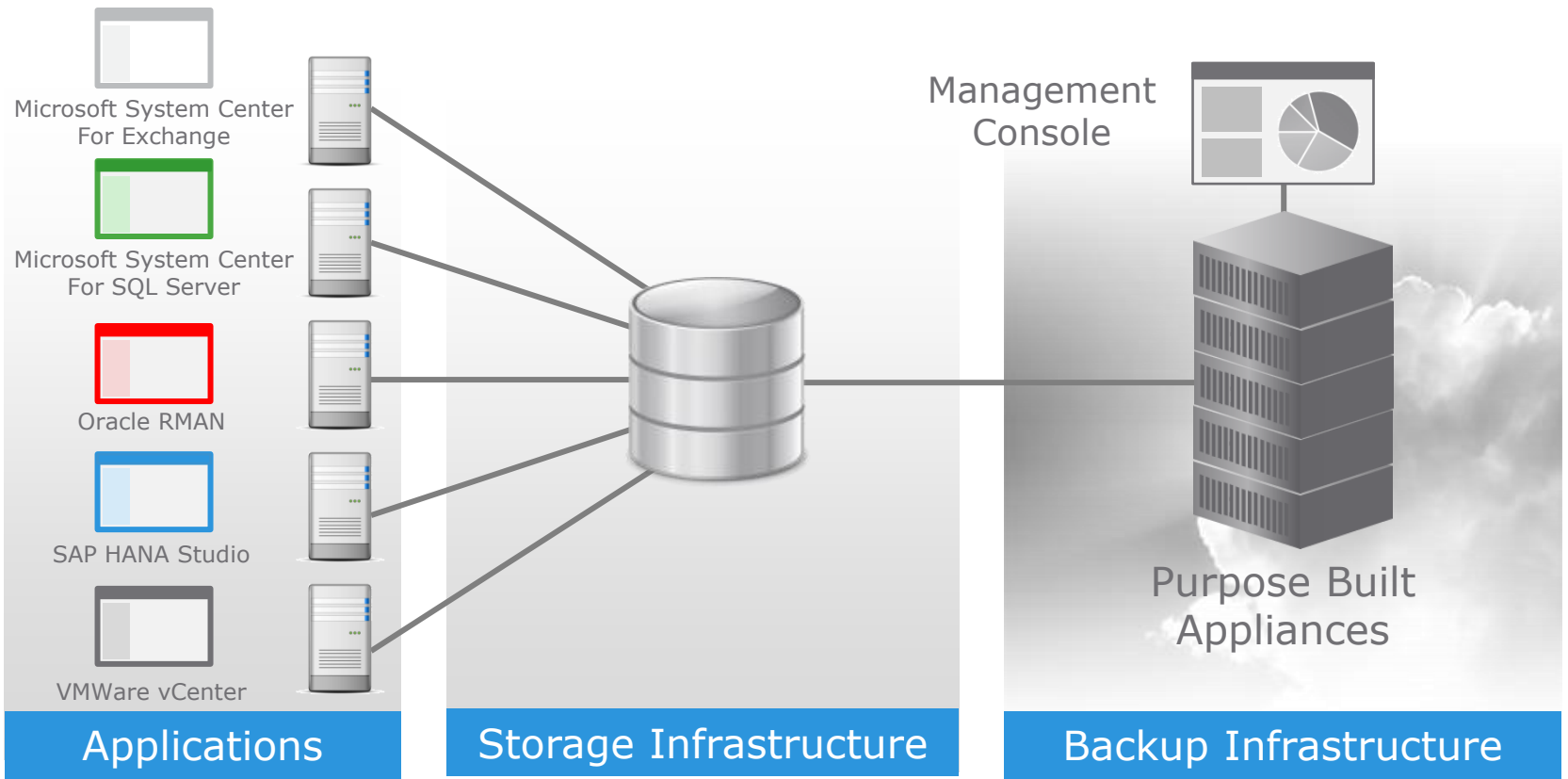
Operations

Manage health, risk, efficiency and compliance of infrastructure and applications



2. Relevance

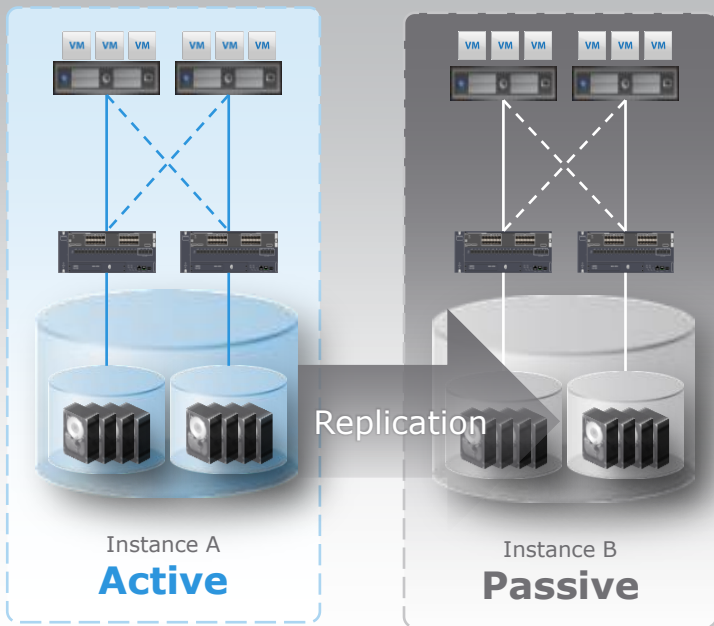




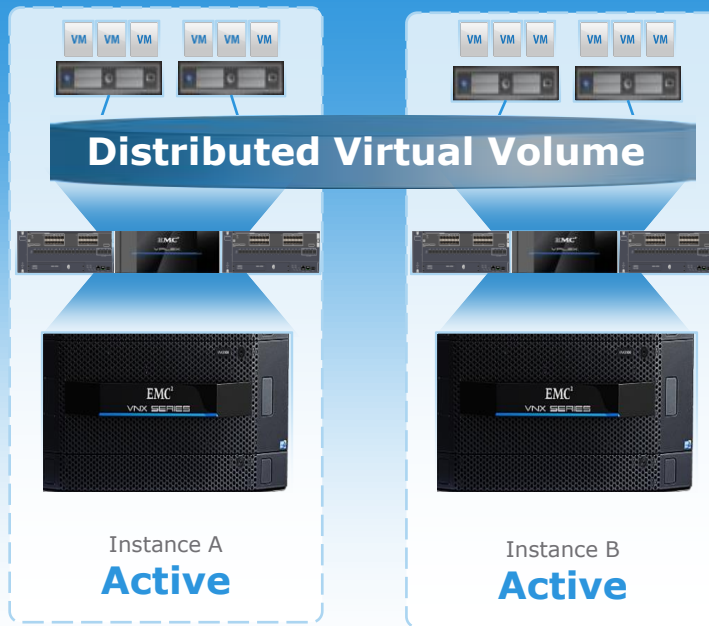
3. Resilience



Failure Domains

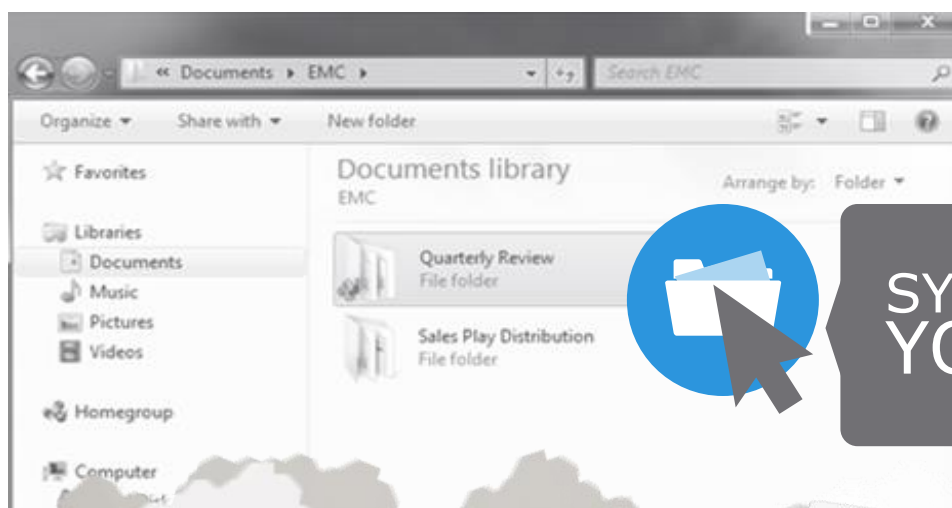


Active / Active

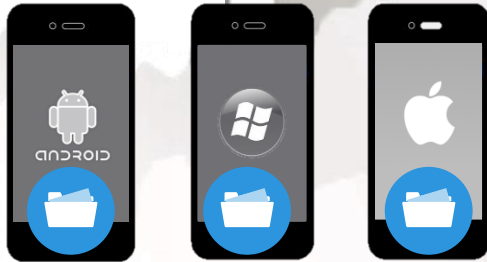


3. Resilience





**SYNC & ACCESS
YOUR FILES**



PRIVATE



PUBLIC

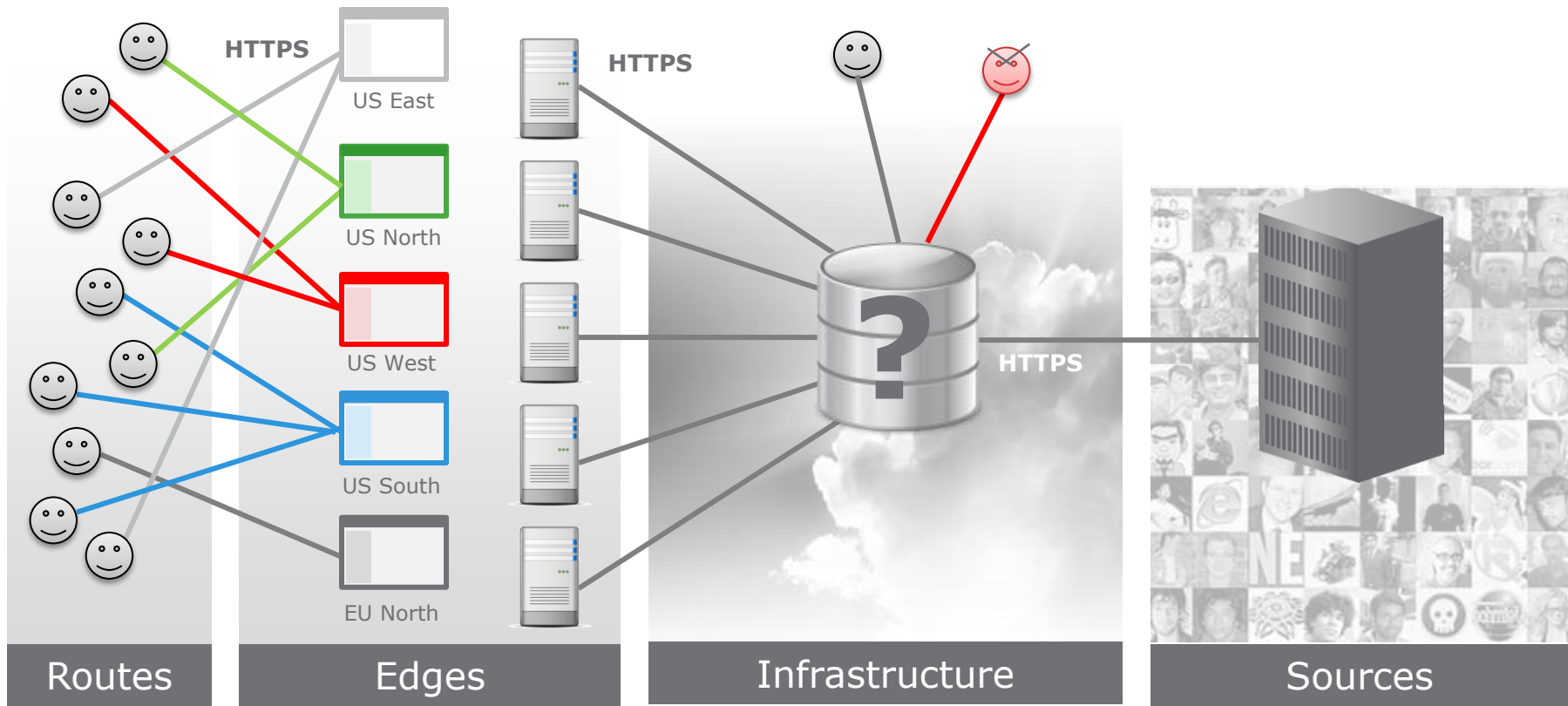
3. Resilience





Content
Delivery
Networks





Content Delivery & Trust



Transport Layer Encryption

- Impersonation
- Key and Cert Management

Rule-base (Behavioral) Access

- Time
- Location
- Frequency, etc.

Attack Response

- Resourcing
- Obfuscation
- Filtering

Multi-factor Authentication

- Data or Network (Token)
- Linked with Access Rule

Anycast Architecture

- Service Redundancy
- Geo-proximity
- Traffic Transparency

Source Obfuscation

- Randomness
- Camouflage

Content Delivery & Trust





TRANSPARENCY



RELEVANCE



RESILIENCE

Trust Redefined





EMC²

Pivotal

RSA[®]

vmware[®]