# Cloud Computing and Storage Panel: Will Enterprises be All-in and When?

**Mark Carlson, SNIA TC Chair**

**Scott Sobhani, Cloud Constellation**

**Fredrik Forslund, Blancco Technology Group**

**Craig Dunwoody, GraphStream**

**Laz Vekiarides, ClearSky Data**

**Padmavathy Madhusudhanan, Wipro**

# Abstract

- Cloud Computing and Storage/Data is maturing but where are Enterprises in the adoption of the cloud? Are they increasingly adopting public cloud? Are they setting up their own private clouds? How successful are they in doing so?

- This panel will discuss the issues these customers are facing and how various products, services and data management techniques are addressing those issues.

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# Scott Sobhani

- [Scott Sobhani](#), CEO and cofounder of Cloud Constellation Corporation and the SpaceBelt, Information Ultra-Highway is an experienced telecom executive with over 25 years in executive management positions, most recent as VP for business development and commercial affairs at International Telecom Advisory Group (ITAG). Previous positions include CEO of TalkBox, VP & GM at Lockheed Martin, and VP, GM & senior economist at Hughes Electronics Corporation. Mr. Sobhani was responsible for closing over $2.3 billion in competitive new business orders for satellite spacecraft systems, mobile network equipment and rocket launch vehicles. He co-authored "Sky Cloud Autonomous Electronic Data Storage and Information Delivery Network System", "Space-Based Electronic Data Storage and Network System" and "Intermediary Satellite Network for Cross-Strapping and Local Network Decongestion" (each of which are patent pending). He has an MBA from the University of Southern California, and a bachelor's degree from the University of California, Los Angeles.

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# Tata Communications

Enterprises are subject to local laws governing how and where data is stored, and many [IT Decision Makers] were concerned that data in the cloud could theoretically be held in many different servers across the globe.

Source: Tata Communications 2015 Data Centre and Cloud Services Market Assessment Study – 1000 IT decision-makers from 8 major countries interviewed

# Enterprise Use-Cases

**Bypassing the pandemic cybersecurity crisis to solve a multitude of diverse requirements.**
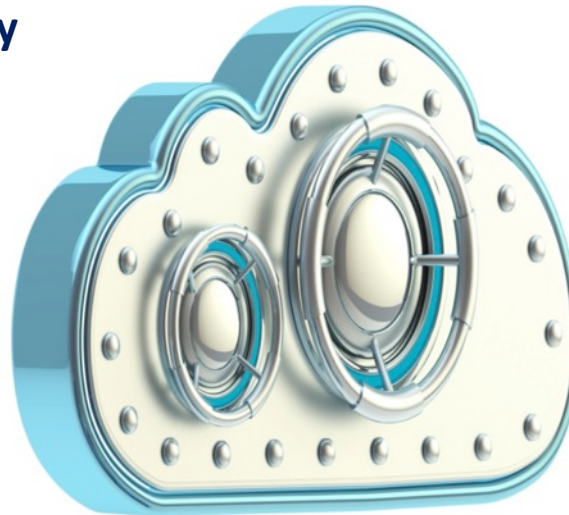
## Medical & Pharmaceutical

- Novartis – formulas and research data
- Amgen – formulas and research data
- Hospitals – patient privacy and image archiving

## Government & Military

- US State Department – embassies
- US Department of Defense – drones
- Libraries – archiving
- Social Security – archiving
- Office of Personnel Management

## Energy

- Exxon-Mobil – exploration data
- Shell Oil – exploration data
- Proprietary Research Data

## Media

- IBM Video Cloud – Expedited live video delivery
- Netflix – Bypass congested/expensive networks

## Insurance

- Anthem – jurisdictional/regulatory
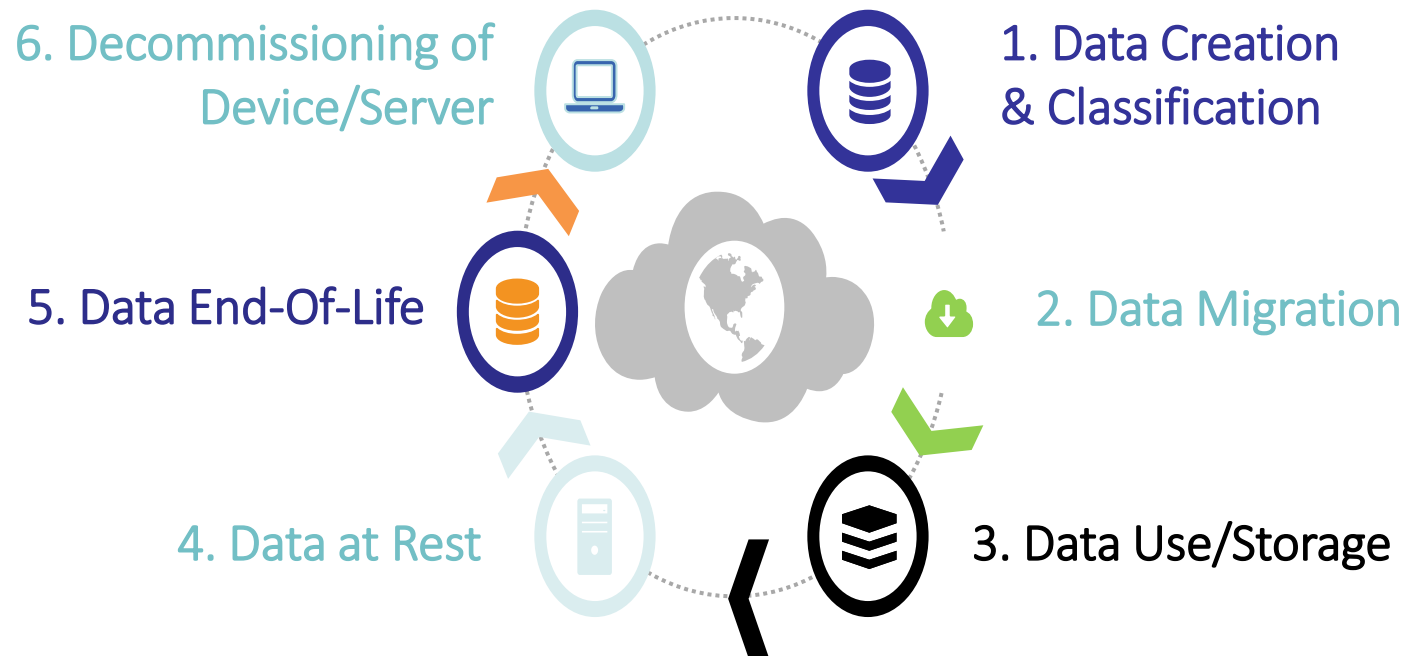- Cigna – jurisdictional/regulatory

## Banking

- HSBC – global operations and jurisdictional
- FedWire – transactional risk
- Bitcoin – protection of cryptocurrencies deposits

## Transportation & Utilities

- Airports – ATC Networks
- PG&E – SCADA Networks

# Fredrik Forslund

- Fredrik Forslund serves as Director of Cloud & Data Center Erasure Solutions for Blancco Technology Group. Bringing over 15 years of experience, he previously founded SafeIT Security, a security software company focusing on encryption and selective data erasure. With a keen eye for streamlining corporate IT security efficiencies and maintaining compliance with data privacy legislation, he is often regarded as a trusted advisor among customers. Prior to joining the company, he served as a Management Consultant for McKinsey & Company. Having lived and worked in the U.S. and Europe, Forslund understands the operational, financial and cultural nuances of driving global business growth. When he's not guiding customers through data erasure, or working with internal teams, he can be found speaking at industry conferences, such as Cloud Expo Europe, Datacloud Europe and others.

# Data Lifecycle in the Cloud



6. Decommissioning of Device/Server

1. Data Creation & Classification

5. Data End-Of-Life

2. Data Migration

4. Data at Rest

3. Data Use/Storage

# 6 Scenarios When Data Removal Is _Absolutely_ Necessary

**Sending Back Drives for Warranty**

**Terminating Virtual Machines in IaaS Cloud**

**Planned SAN/Server Decommissioning**
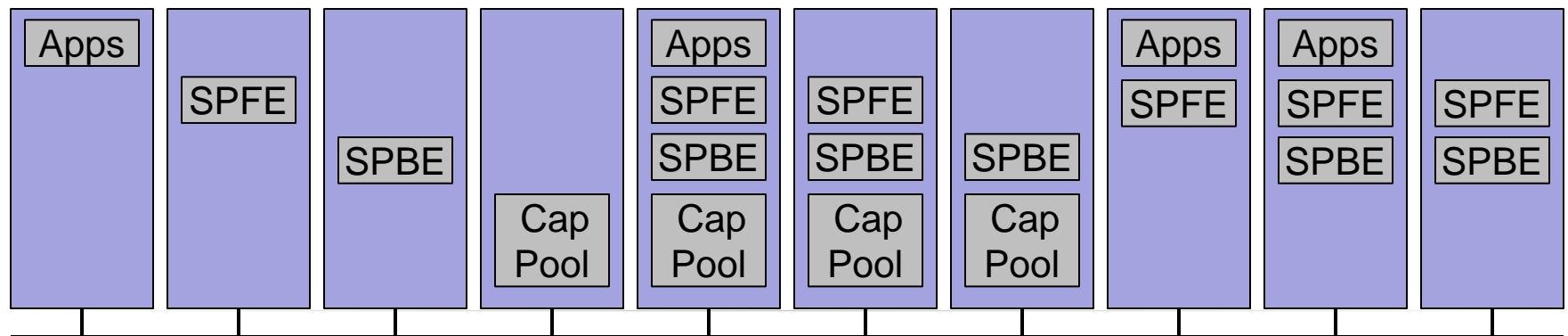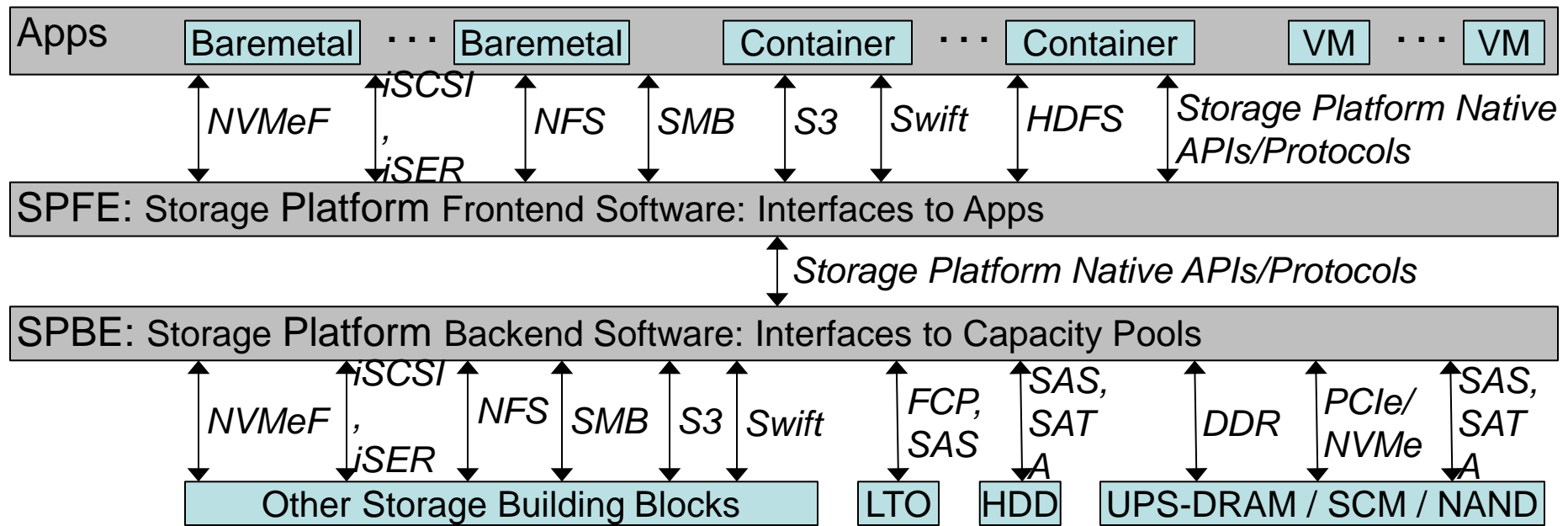
**Planned Data Migration & Data Center Consolidation**

**Regulation/Governing Bodies Conduct Audits**

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# Craig Dunwoody



- Craig Dunwoody is co-founder and CTO of two Silicon Valley companies: GraphStream, an integrator of advanced scalable data infrastructure, and Birchbridge, an early-stage startup that is developing a cabinet-scale datacenter building block product with an innovative physical-layer architecture. Previously, at Silicon Graphics, he developed system software for seven successive generations of industry-leading visual computing systems. He earned BSEE, MSEE, and MSCS degrees from Stanford University, and has co-authored seven issued and five pending U.S. patents.

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# Unbundled scale-out storage software

| Apps | Baremetal | · · · | Baremetal | | Container | · · · | Container | | VM | · · · | VM |
|---|---|---|---|---|---|---|---|---|---|---|---|

*NVMeF*  *iSCSI, iSER*  *NFS*  *SMB*  *S3*  *Swift*  *HDFS*  *Storage Platform Native APIs/Protocols*

**SPFE: Storage Platform Frontend Software: Interfaces to Apps**

*Storage Platform Native APIs/Protocols*

**SPBE: Storage Platform Backend Software: Interfaces to Capacity Pools**

*NVMeF*  *iSCSI, iSER*  *NFS*  *SMB*  *S3*  *Swift*  *FCP, SAS*  *SAS, SATA*  *DDR*  *PCIe/ NVMe*  *SAS, SATA*

| Other Storage Building Blocks | LTO | HDD | UPS-DRAM / SCM / NAND |
|---|---|---|---|

| Apps | | | | | Apps | | | | | Apps | Apps | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPFE | | | | SPFE | SPFE | | | | SPFE | SPFE | SPFE |
| | | SPBE | | | SPBE | SPBE | SPBE | | | | SPBE | SPBE |
| | | | Cap Pool | | Cap Pool | Cap Pool | Cap Pool | | | | | |

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# Combining self-op & hosted storage
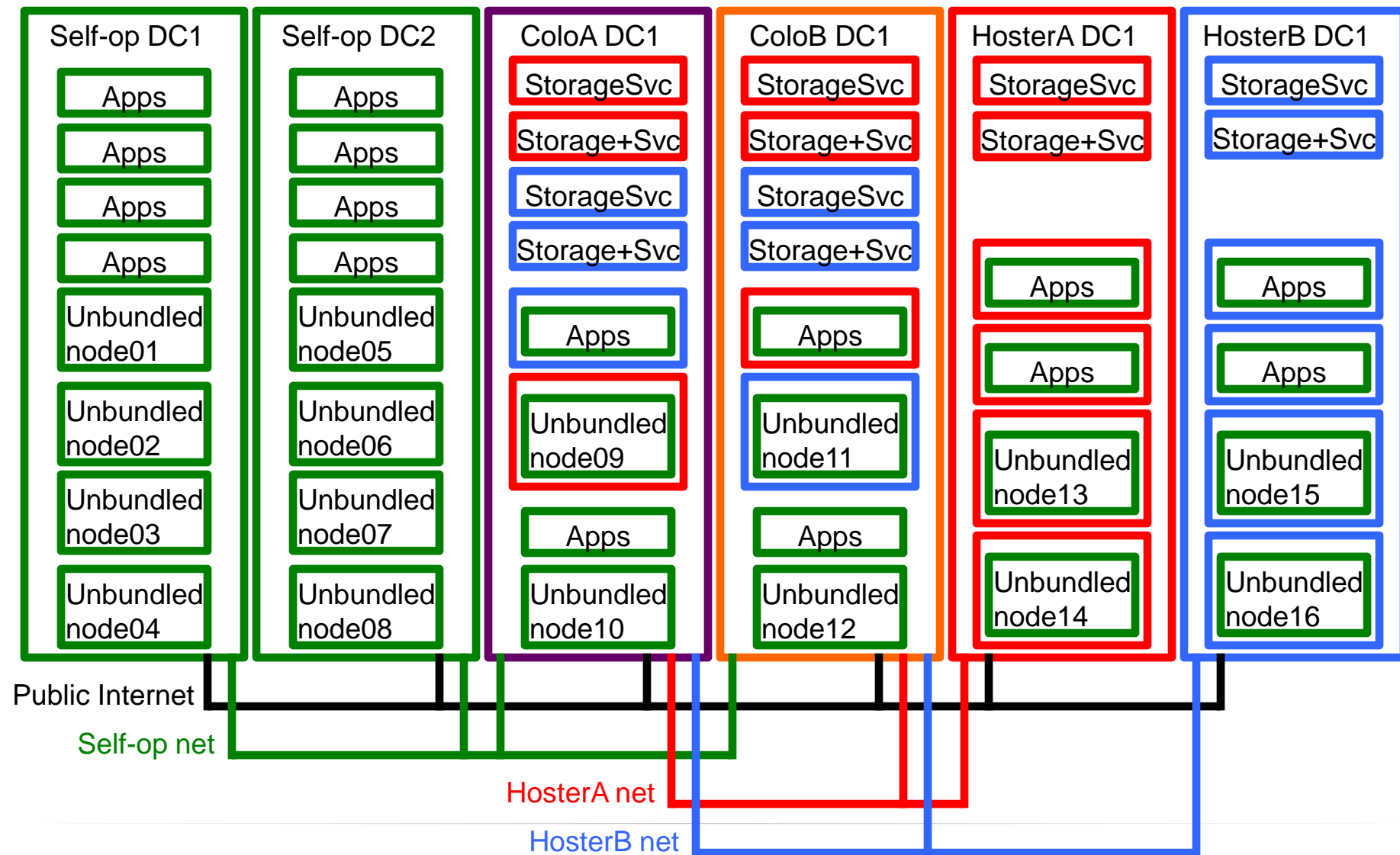
# Laz Vekiarides



- Laz Vekiarides is the CTO and co-founder of ClearSky Data, an enterprise storage company that simplifies the entire data lifecycle as a managed service and recently raised $27 million in a Series B investment round. Most recently, he served as the Executive Director of Software Engineering for Dell's EqualLogic Storage Engineering group, where he led the development of numerous storage innovations and established the EqualLogic product line as a leader in host OS and hypervisor integration. Laz joined Dell from EqualLogic, which was acquired in early 2008, where he was a member of the core leadership team – playing a key role in the company's early success as a Senior Engineering Manager and Architect for the PS Series SAN arrays and host tools. He holds several storage technology patents, as well as a BSEE from Northeastern University, and an MSCS from the Worcester Polytechnic Institute.

# Data and Latency Are a Problem.



**COMPANES DELIVER AN AVERAGE OF**

# ONLY 18%

**OF THEIR WORKLOADS FROM THE CLOUD TODAY.**

- ☐ Data footprints have inertia
  - ☐ Hard to move them around
- ☐ Data + apps in the cloud:
  - ☐ UX Latency
- ☐ Data in cloud + local apps:
  - ☐ Storage latency
- ☐ Security issues everywhere

Source: "Tapping the Cloud's Full Potential." April 2015. Available at:
http://www.bain.com/publications/articles/tapping-clouds-full-potential.aspx

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# Padmavathy Madhusudhanan



- Padmavathy K.M is a Principal Consultant with Wipro Technologies having an overall experience of 18 years in s/w development. Her expertise includes development of Client-Server based applications, Component development and Storage applications. She is a post graduate from University of Madras with a Master's degree in Computer Applications. In her current role, she works in the Product Engineering Services division focused on Technology evaluation & selection, solution architecture, engagement model definition and demonstrations to address customer specific requirements in Enterprise computing & Storage platform. Earlier she had worked on Data migration, storage virtualization & tape virtualization products for various leading storage vendors. Her interest includes SMI-S, storage virtualization, Cloud storage, Bigdata and is a member of SNIA SMI-S core and cloud storage groups. - See more at: http://www.snia.org/events/dsicon/speakers#Madhusudhanan
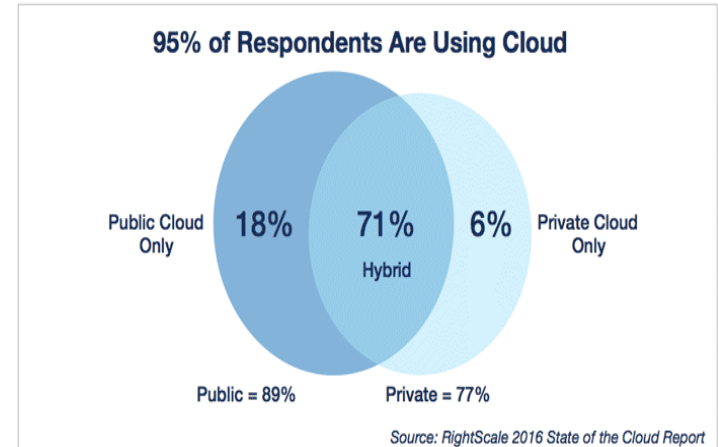
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# Challenges in Public Cloud

□ Compatibility Issues during migration

□ Different security protocols supported by different cloud providers.

□ Recurring Cost when data growth is exponential & retention period is high



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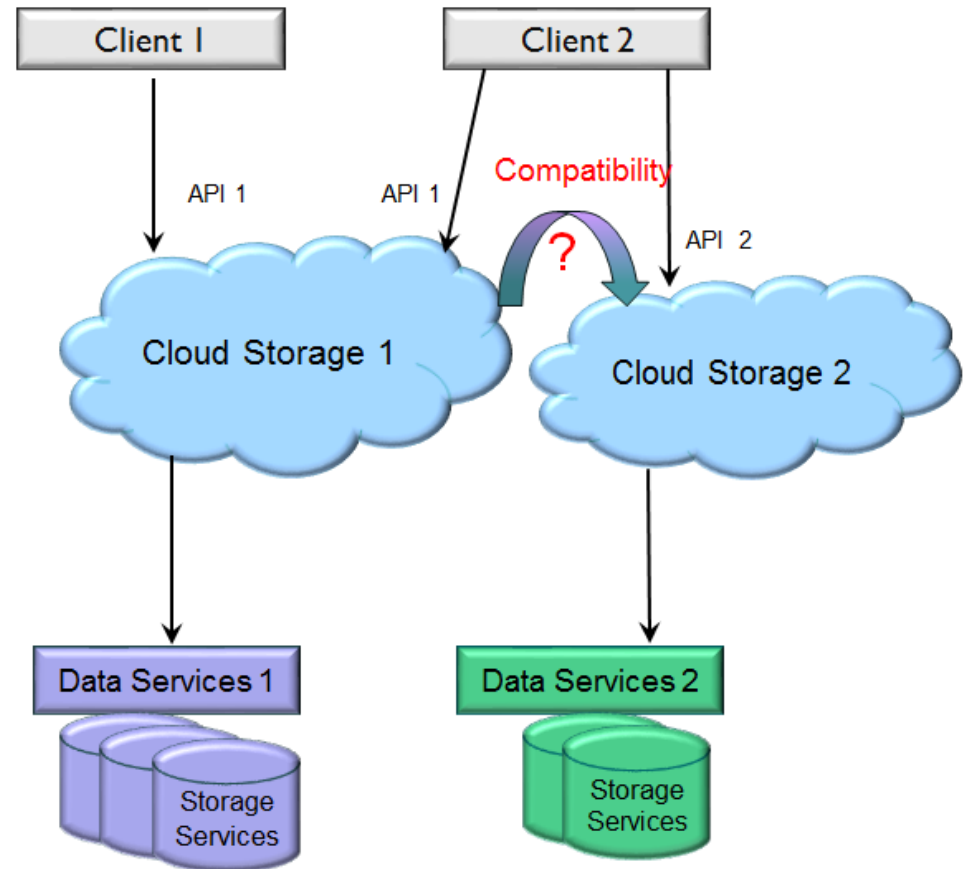
# Best suited for public cloud

□ Unstructured data storage ex. Social Media

□ Deals with large amount of data but performance is not a key criteria. Ex R&D - Drug analysis

□ Accessing data across locations.  Ex. Tracking warehouses & on time shipment



**95% of Respondents Are Using Cloud**

| Public Cloud Only | 18% | 71% Hybrid | 6% | Private Cloud Only |

Public = 89%          Private = 77%

Source: RightScale 2016 State of the Cloud Report



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# Q & A

# Questions

- What are the most pressing issues with internal and external cloud adoption?
- Do Enterprises trust the public cloud?
  - Can the vendors meet expected service levels?
  - Is it "secure enough"?
- Which applications make sense for the cloud?
- What to do with existing applications that cannot use the cloud?
- Are there valid reasons for building data centers and running their own cloud? What issues arise?
- What does the "post-cloud" era look like?
- What will be the most enduring elements of self-operated data infrastructure?