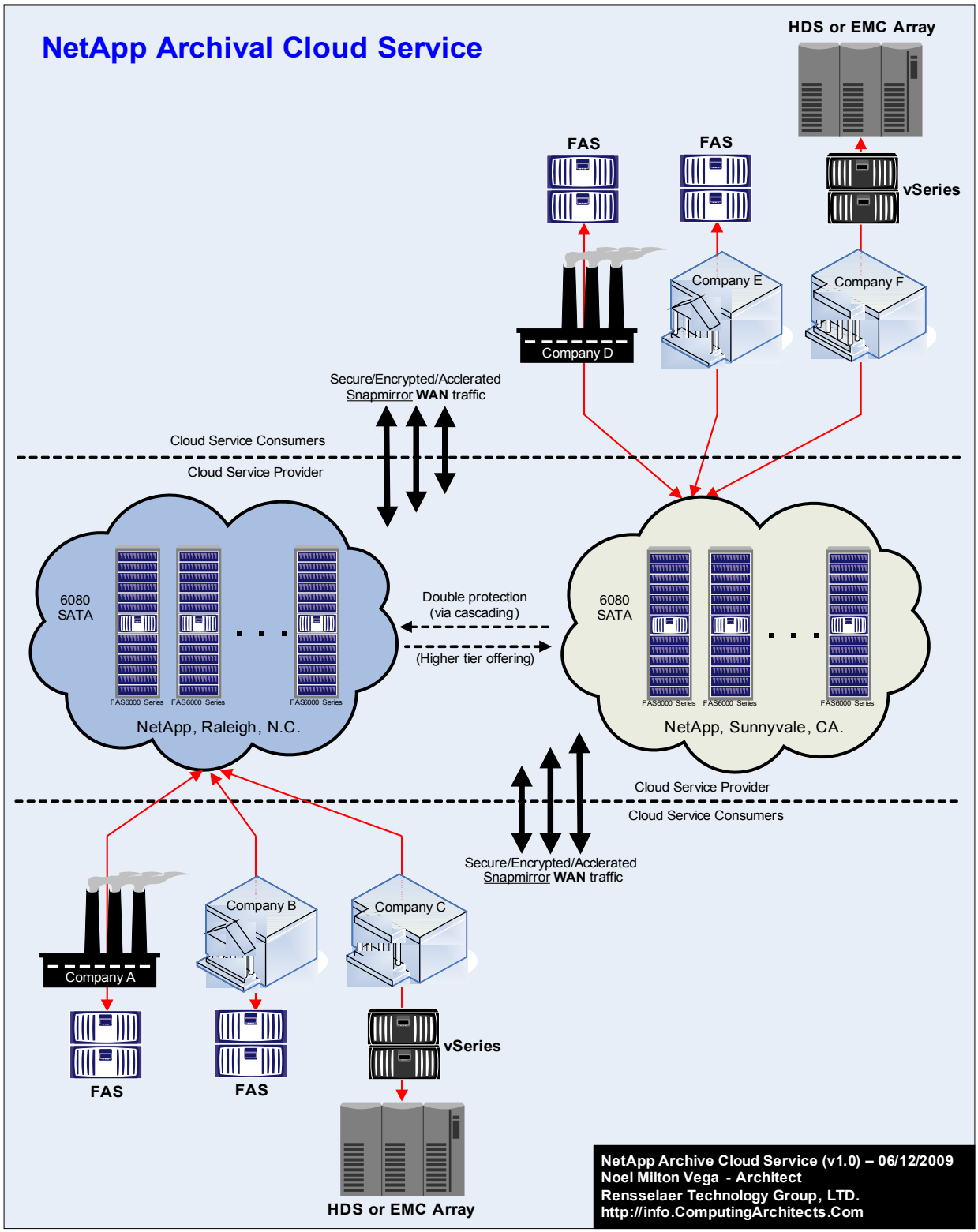
NetApp Archival Cloud Service - N-ACS

v0.91

NetApp Archival Cloud Service (N-ACS) – A proposal

Cloud computing concerns itself with dynamically providing Raw IT compute and storage resources to end users; and also higher level application and IT functions, as a hosted service.

Along the "higher level IT function" line, the Advanced Solutions Team proposes that a **NetApp Archival Cloud Service** (N-ACS) be launched – see architecture diagram below.



N-ACS is **not** a BC/DR solution, and cannot be positioned as such. It is a cloud offering that allows NetApp and non-NetApp customers alike to pay for an extra level of data archiving. Using proven Volume Snapmirror (VSM) replication, customers pay a per-gigabyte-hour rate for rented storage space to archive only what they need to.

This solutions offering lends itself to the following strategic initiatives:

1. **Managed Services**
2. **Heterogeneous Migrations**
3. **Transformation (NDDC)**
4. **Biz Applications Integration**
5. **"Operationalizing" the Customer**
6. **VIRTUALIZATION (Host, Network, & Storage)**

Managed Services

N-ACS can be used as a do-it-yourself, customer managed solution, where the customer provisions needed archival storage and manages the use of it. Alternatively, NetApp can introduce this offering as managed service, where NetApp provisions and manages the archival storage on behalf of the customer. The per-gigabyte-hour rate for each scenario will differ.

Migrations (Heterogeneous and non-Heterogeneous)

A mature N-ACS service can offer supplementary, safety, archival storage for customers undergoing migration activities.

NDDC – Dynamic DataCenter & Business Application Integration

Customers can grow or shrink their archival storage footprint on-demand. Reasons can include, temporarily Offloading processing from performance challenged controllers; Dynamical increasing of storage for development; Performance testing and application testing, etc.; Implement an off-site Nth tier in their ILM strategy; Temporary storage for application development; and so on.

Virtualization & Operationalizing the Customer

Because N-ACS is a hosted cloud service, with the capability to provision / de-provision storage on-demand, customer are freed from traditional considerations associated with the purchase of physical capital storage assets. Considerations include: capital expenses; data center space, power, cable, and cooling; lease and maintenance expiration; planning; and so on. The virtualization of storage assists the customer in their journey to embracing IT as a service.

Why this is attractive to the customer:
The many benefits of hosted compute services and applications to customers are well chronicled, so we won't repeat them here. However, a rather unique appeal that this particular offering has going for it, is this: Most IT organizations will be extremely hesitant to outsource production IT functions. The "play-it-safe" philosophy applies here: "Nobody ever got fired for going with IBM". However, customers will be more likely to get their feet wet with an **A**rchival **C**loud **S**ervice, since it is not production related. In other words, IT managers are more likely to start their cost saving Cloud journey with a **safer play** like this.

Why this is attractive to NetApp:

- Implementation of this service immediately adds value to customer NetApp investments that sales can tout. What is it? In addition to the current benefits of NetApp storage, such as Snapshots, Dedup, Thin-provisioning, and so on, every customer NetApp system is N-ACS ready – only a Snapmirror license is necessary to participate.

- Non NetApp customers (for example using EMC/HDS) can also archive to the N-ACS storage farm by front-ending their Hitachi and EMC storage with a v-Series storage controller. This helps get NetApp in the SAN door while, in the meantime, generating additional revenue from non-NetApp customers. As customers (NetApp and non-NetApp alike) archive their data onto the N-ACS storage farms, their dependance on NetApp storage will become sticky.

- Catapults NetApp's name to the list of serious/legitimate Cloud service providers (branding).

- Volume Snapmirror (VSM) is already a proven technology. As such the core expertise is already in house.

- **It's a relatively easier sell**: Datacenter managers don't want additional hardware assets (such as MetroClusters), processes, costs, etc. to archive their data. Instead, they provision remote N-ACS storage, and Snapmirror data to it. As Datacenter managers become more comfortable with N-ACS, they may opt to reduce their in-house archival footprint in favor of using N-ACS storage.

- Allows NetApp to recoup capital/operational costs from land they've purchased or leased in Raleigh (RTP) and Sunnyvale, by putting the buildings/space to good use.

Initial Implementation:
To get things going, initially NetApp needs to stand-up only two fully populated storage clusters (FAS6080 with cheap SATA drives) – one at the RTP facility and the other at Sunnyvale facility. As customer demand grows, more of these can be just-in-time deployed. What is critical is to make this service "CLOUDY": That is to say, any IP:VOLUME pair given to the customer, must be virtual and also unique across the set of storage clusters in the N-ACS storage farm. This gives NetApp N-ACS managers the ability to seamlessly (from the customer perspective) migrate volumes across storage physical clusters as the needs arise.

Another critical point is data encryption and authentication. Customers will be sensitive to the fact that their data is being transmitted over public networks. Therefore, encrypt of the traffic as well as authentication must be a mandatory goal in the implementation of the N-ACS service.

Site Technologies involved (partial list):

- Volume Snapmirror (VSM).
- vFilers (provider side only).
- Riverbed accelerator appliances.
- vSeries filers (for HDS/EMC storage – consumer side only).
- FAS6080 with cheap SATA drives for destination NACS storage (provider side only).
- Etc.

Service Tier offerings (incomplete – needs to be thought out):

- tier A – single copy
- tier B – double copy (via cascade snapmirror).
- Etc.