



# NetStorage

Customer Presentation

# Choosing Storage for Video Streaming and File Downloads

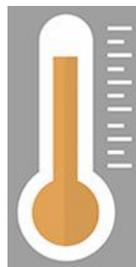


Today, 3 primary classes of cloud storage offerings are available



**Cold Storage** is for archival use case, requires:

- Durability



**Warm Storage** is for content that needs standard performance, requires:

- Durability
- Availability



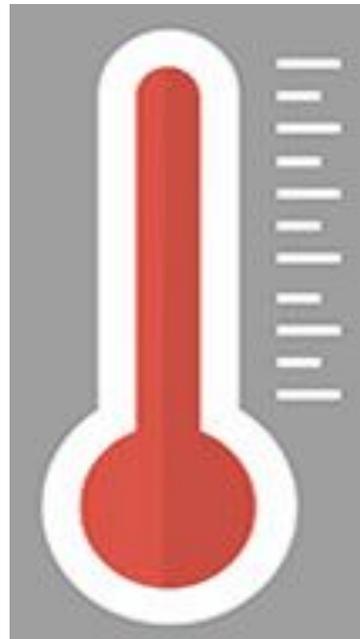
**Hot Storage** is for content that is constantly accessed and updated; requires:

- High Durability for Asset Protection
- Higher Availability for Video and Multi-Media
- High Performance for Transcoding and Delivery

CLASSIFICATION	DESCRIPTION
 Cold	Rarely accessed
 Warm	Less frequently accessed
 Hot	Frequently accessed



## Hot Storage is characterized by 4 key attributes



- High Durability: Protection against data loss. The most durable storage on the market, with a bigger investment on quality upgrades
- High Availability: Protection against disruption to end user by always having two geographically distributed replicas. Close to 100% availability with 2 geo-redundant replicas; Upload can be performed to any replica (industry best offering)
- High Performance: High throughput (speed) for downloads, uploads (Aspera), with customer testimonials from Wuaki
- Global Distribution: The most globally distributed storage solution on the market with 40 locations vs. 15 to the closest competitor (S3) giving us SCALE closest to end-users around the world

# High Performance: Validating Data



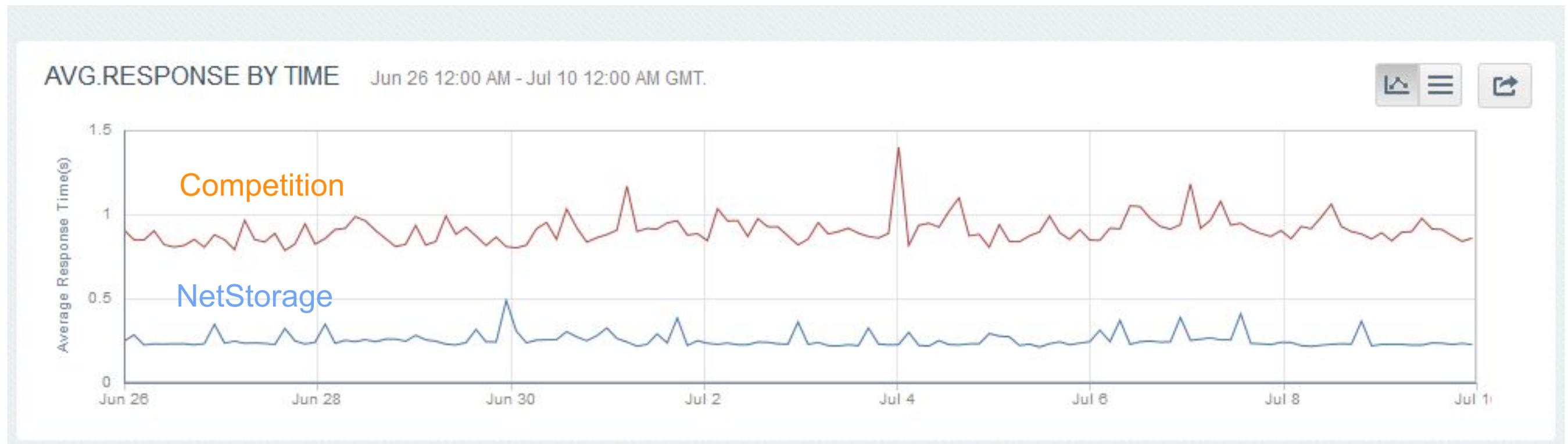
Top Streaming Service

NetStorage delivered **better download throughput** than AWS S3 in all geos



Chose NetStorage over AWS S3 for **better re-buffering behavior** resulting in improved employee benefits (White Paper)

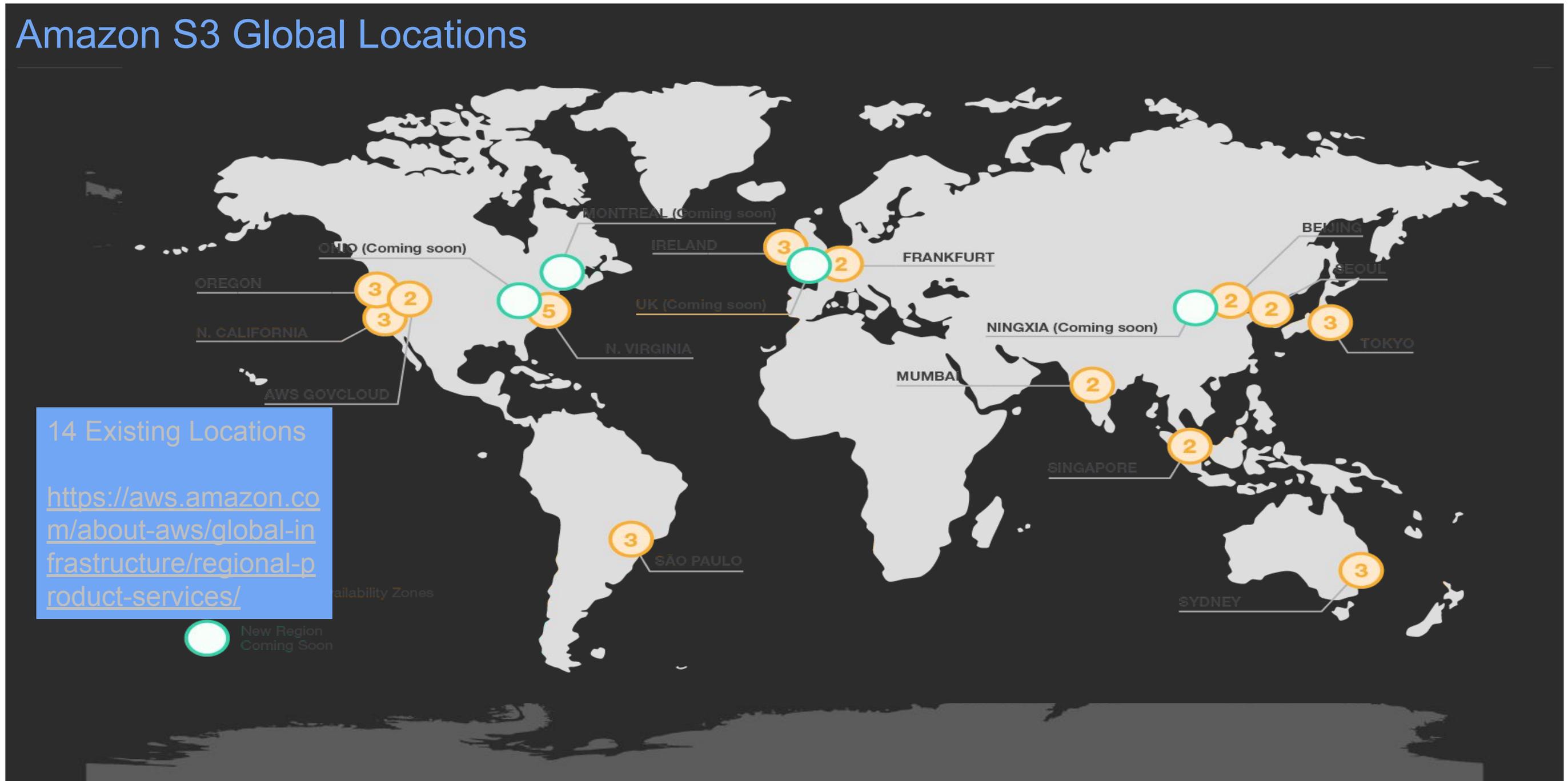
NetStorage delivers **time to first byte faster** than the competition for downloads



# Global Distribution: Most Globally Distributed Locations = SCALE



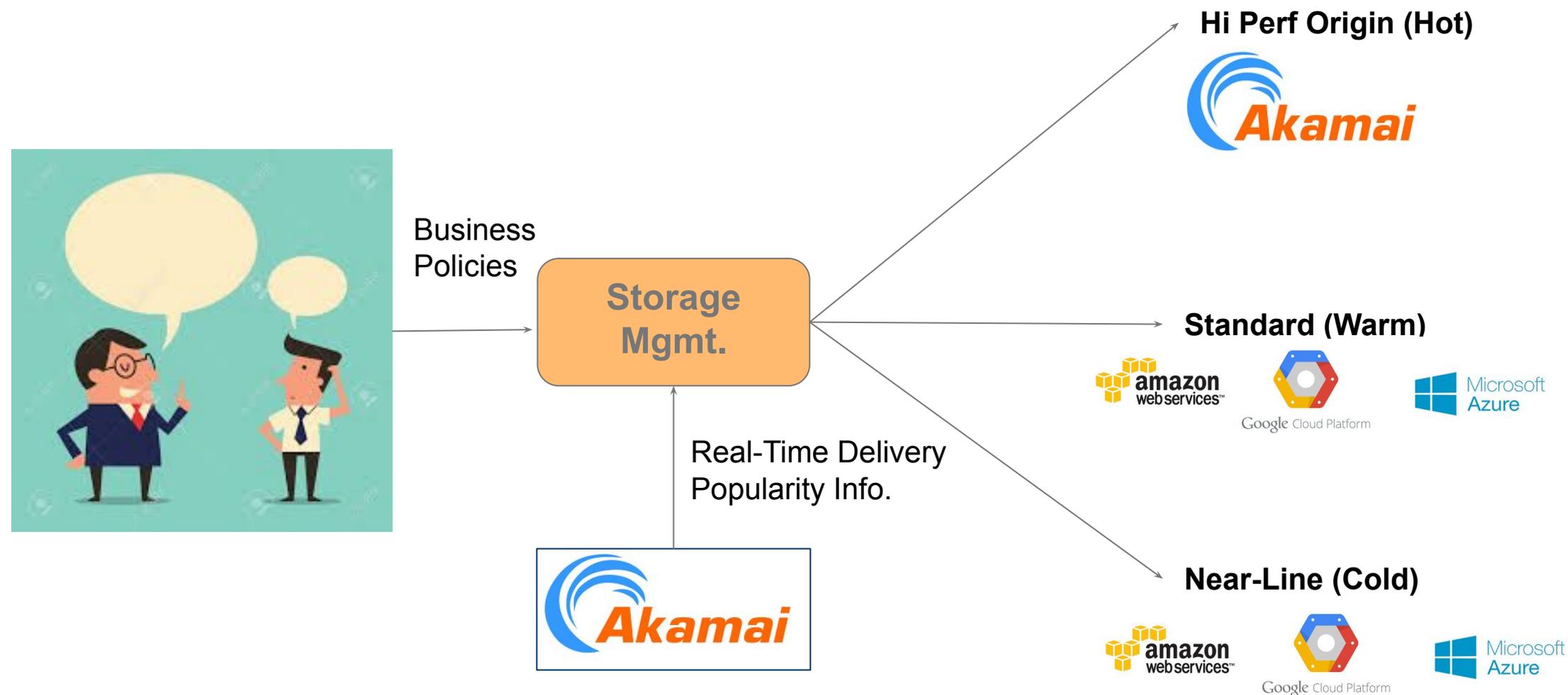
## Amazon S3 Global Locations



14 Existing Locations  
<https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/>

# NetStorage as Storage Management Platform

Storage Mgmt. automates **optimal placement** to achieve **cost and performance efficiencies** based on **real-time popularity derived classification** (delivery geo, delivery temp etc.) and **policies**; Opens up **opportunities to partner with public cloud vendors**



# Deploying a Successful Cloud-Based Storage Should Include:



## Global Distribution

Architecture that is always reliable and available, that leverages Akamai's Intelligent Platform, offers the best features that deliver quality performances



## Dispersed Replication

Using automatic content replication that is geographically dispersed extends resilience against regional outages.



## Scalable Infrastructure

Removing the complexity of storage capacity planning, and enabling rapid on-demand increases with built-in scalability for greater control and faster growth.



## Dynamic Intelligence

Using built-in traffic management identifying the optimal storage locations closest to the end-users, delivers quality end-user experiences.



## Operational Flexibility

Includes supporting standard upload methods as well as Aspera Accelerated Uploads, dramatically speeding up file transfers.

# Why Does A Globally Distributed Network Matter

**Because Internet users are *highly* distributed, and a cloud-based storage is enabled to:**

- Have greater *performance* and *reliability*
- Have enhanced *scalability*
- Offer globally distributed replication for *availability* and *resiliency*
- *Optimize* content using mapping to use closest server to end-users
- Maintain and upgrade storage more *efficiently*

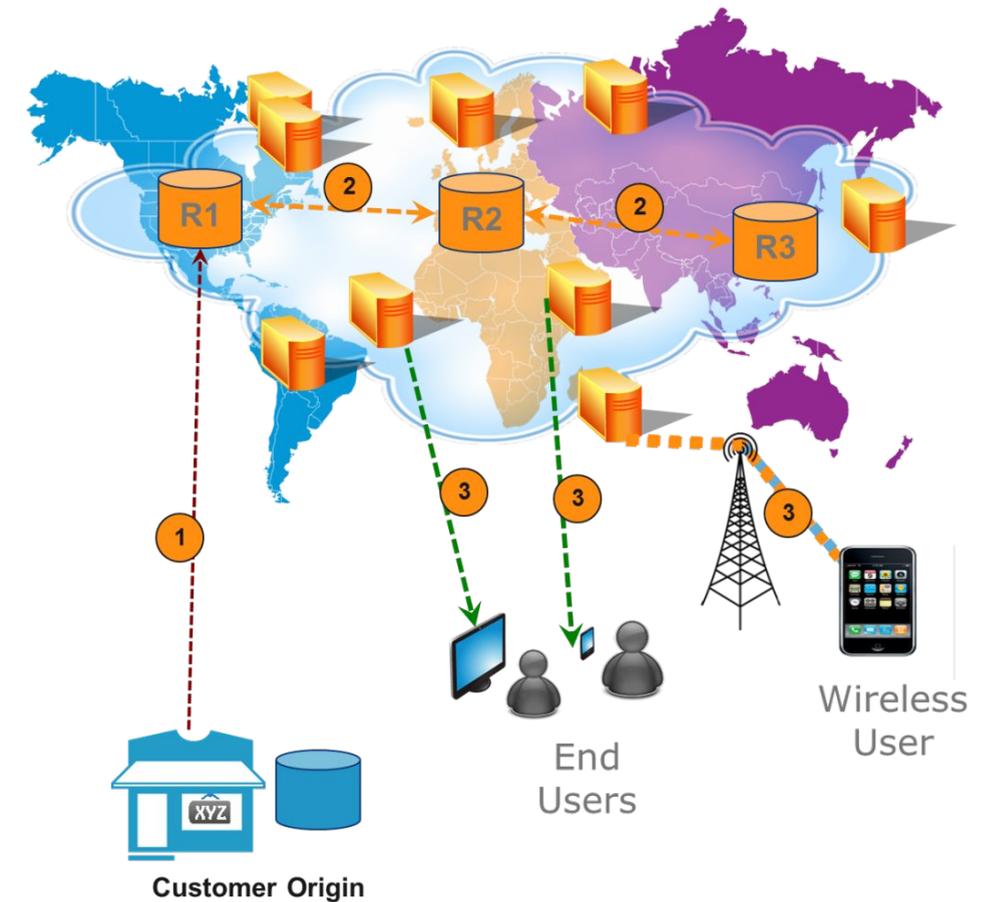


# NetStorage Dispersed Replication

## Reliable and Always Available Content that is Replicated and Geo-Distributed

NetStorage handles critical reliability and availability needs by automatically replicating all content across multiple geographic regions\*:

- Offering the insurance and resilience needed for:
  - Regional power outages
  - Bandwidth congestion
  - Natural disasters



1. Customers upload content to the closest NetStorage data center using any of the supported standard methods and Aspera.
2. NetStorage automatically replicates content to the other geographically distributed data centers configured to host that content.
3. Content is efficiently delivered to end users worldwide leveraging the Global Akamai Intelligent Platform.

\*Solution support automatic standard 2 replicas with additional available.

# NetStorage Scalable Infrastructure

## Scalable Capacity for On-Demand Expansion & Audience Reach

NetStorage removes the complexity of storage capacity planning, and rapid demand increase with its built-in scalability using global capacity

- Enables on-demand expansion for traffic surges and greater audience reach.
- Content can easily be moved from one location to another within NetStorage, providing faster response to dynamic needs – a unique solution to Akamai.
- Future-proofed infrastructure with flexible APIs for simpler content management.



# NetStorage Dynamic Mapping Intelligence

## Delivering Dynamically Optimized Content for Best Performance

Routing decisions based upon constant monitoring and analysis allow for greater content optimization.

- Content is dynamically pulled using built-in traffic management that identifies the optimal NetStorage locations closest to the end-users,
- Allows for enhanced delivery performance for higher quality viewing experiences: reducing buffering, faster start-up time, higher bitrates
- NetStorage uses secure storage design reducing customer risks, and faster network access



# NetStorage Flexible Data Management

## Flexible Content Management and Workflow with Faster Uploads

NetStorage supports all kinds of upload methods, including:

- Premium uploads: Using **Aspera Upload Acceleration** to dramatically speed up file transfers without the negative effects of distance, latency, or packet loss
- Standard uploads at no additional cost for more flexibility
- Self-Service Integration as content source for Akamai HTTP and Streaming solutions.
- Transparency with upload and download CNAMEs automatically route and map traffic.



# Aspera Upload Acceleration Demo

**Akamai** | Aspera Upload Acceleration Demo

**NetStorage** | [Upload History](#) | [About NetStorage](#) | [About The Demo](#)

**Video**  
Spring-720p.mp4



**Server Location**  
Bangalore

**Upload Another Video**  
[Restart Demo](#)

**Transcode Video**  
[Transcode](#)

**Total Time Saved:**  
**00:20:37**  
(After [24 Uploads](#))

**aspera** Aspera Upload Acceleration ✓



3.42X better  
Time Improvement  
7.02X better  
Throughput Improvement

Time: 00:00:12      Throughput: 10.18Mbps

Standard Upload - SCP

(NetStorage standard methods available: FTP, SFTP, FTPS, SCP, RSYNC, RSYNC over SSH, WGET, NetStorage HTTP API, FileManager (Web UI available on the Akamai Luna Control Center))



Time: 00:00:41      Throughput: 1.45Mbps

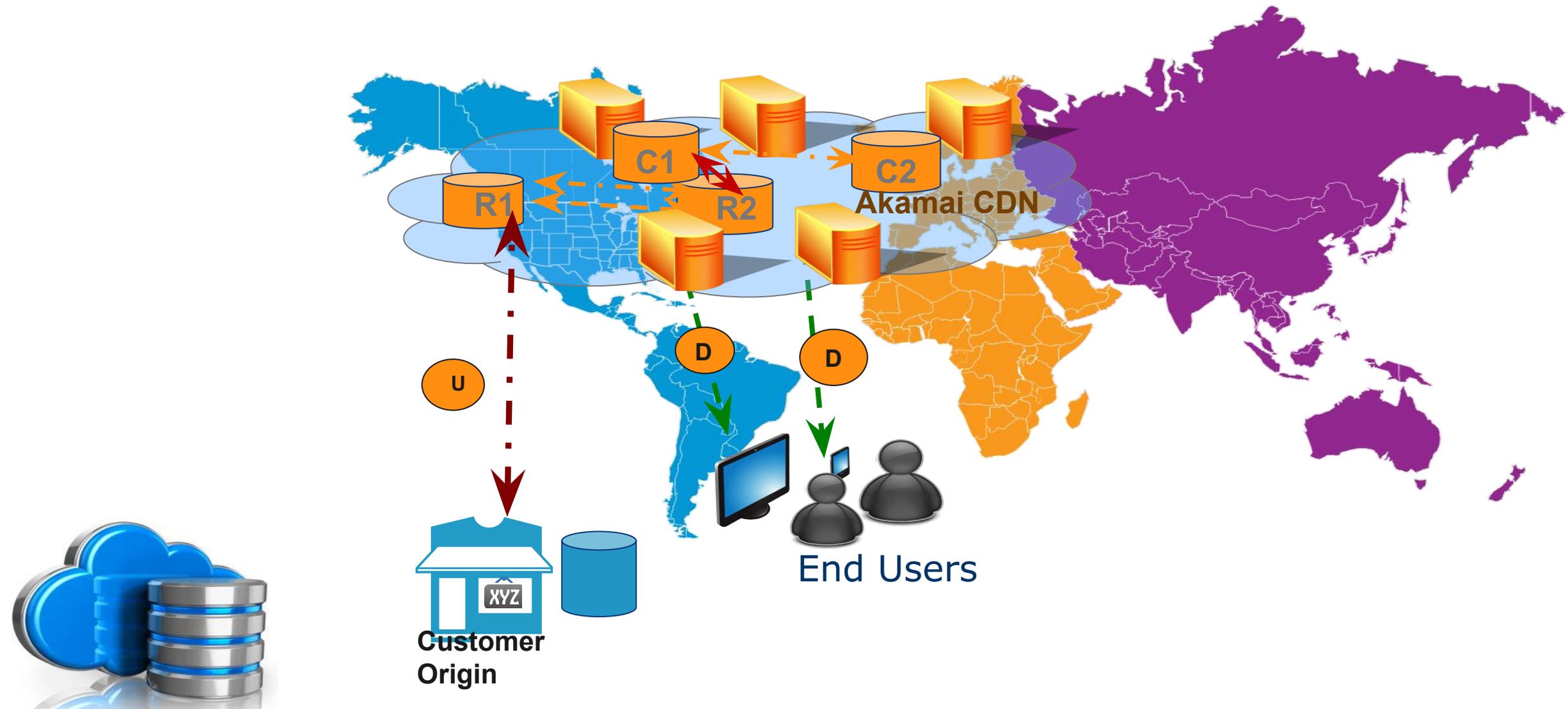
# Akamai's NetStorage VS. Competition

Akamai's NetStorage	Others Cloud Storage Providers
Globally Distributed with over <b>35+ global locations</b> .	Limited number of global locations
<b>Automatic content geo-distributed</b> replication	Content is not replicated automatically at geo-locations
<b>Scalable infrastructure</b> for on-demand or instant capacity needs.	Infrastructure not as big and scaling largely depends on that
Advanced <b>content location capability</b>	Less configurability for customer individual requirements
Improved <b>content management flexibility</b>	
<b>Simplified and integrated Workflows</b>	Upload methods are limited
<b>Deep system integration with Aspera Upload Acceleration</b>	Aspera is also available via APIs
Ability to <b>move content easily</b> around different storage locations	Content moved between locations & to internet has extra cost
<b>Dynamically map content</b> based on optimal locations closest to the end-users.	No automatic content mapping, logic must be built in by developer
<b>Complete Managed Storage Solution</b> with expert design and customization for a storage strategy	Many features need to be operated by the customer and added on increasing cost and complexity
<b>Flexible and cost effective</b> with a one priced bundled fee	Datacenter centric with extra fees every time content is moved
<b>Advanced unique tools</b> like (CM Shell) and Site Snapshot	No Advanced tools



ADDITIONAL DETAILS

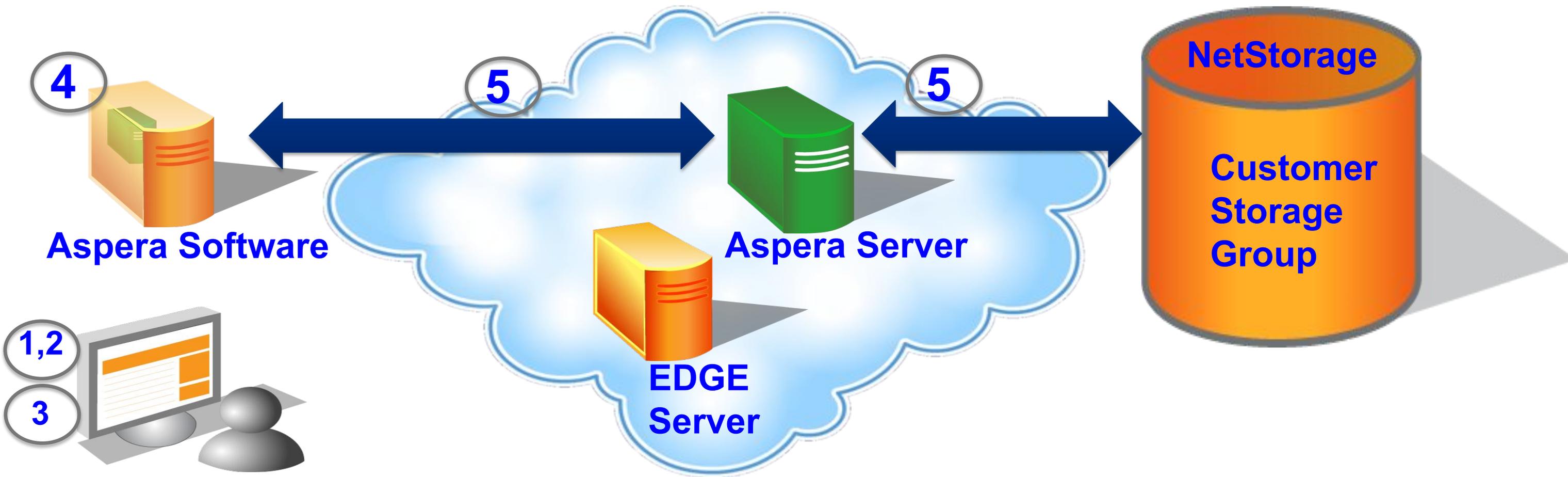
# How Akamai's NetStorage Works



## LEGEND

- U: Upload/Download from customer origin to NetStorage with one of the supported upload methods.
- R1: NetStorage Storage Group Replica 1
- R2: NetStorage Storage Group Replica 2
- R2-C1 Arrow: Content requested by end-users is delivered by Edge, C=Cache.
- D: delivery to end user.

# How Aspera Upload Acceleration Works



1. Customer purchases Akamai Upload Acceleration
2. Customer downloads from LUNA the Aspera Client Software for NetStorage
3. Customer configures Akamai software
4. Customer defines file transfers
5. Transfers occur

# The Aspera Partnership: Aspera Upload Acceleration

## Aspera Upload Acceleration – High Throughput HOV Lane

- Aspera Upload Acceleration: the HOV Lane
- Specialized Servers
- Self Service Solution
- Global Support
- Aspera<sup>1</sup>: 300 Mbps as default
- Client OS's: Windows, OSX & Linux
- Customers can use their existing Aspera client or use our license
- If data stalls due to bandwidth issues, Aspera Upload Acceleration automatically resumes partial transfers and retries failed transfers. Now, the entire cloud-based Akamai content workflow is accelerated

The diagram illustrates the performance difference between Aspera Upload Acceleration and standard upload methods. On the left, a single blue car is shown in a 'High Speed Lane' with an upward arrow labeled 'Aspera Fasp™'. On the right, multiple cars (yellow, white, red) are shown in 'Standard Lanes' with upward arrows labeled 'SFTP SCP FM' and 'HTTP HTTPS'. Below the diagram is a screenshot of the Aspera client interface showing a list of transfers with columns for Name, Source, Destination, Status, Speed, and Size.

#	Name	Source	Destination	Status	Speed	Size	...
1	LivescribeSmartpenFlashU...	This Computer - LivescribeSm...	sshacs@acsdev01.aspera.uploa...	Complete	111.9 Mbps	146...	1 / 1 -
2	ActiveSyncWin_files.zip	This Computer - ActiveSyncWin...	sshacs@acsdev01.aspera.uploa...	Complete	174.9 Mbps	41...	1 / 1 -
3	amaya-WinXP-11.4.7.exe	This Computer - amaya-WinXP...	sshacs@acsdev01.aspera.uploa...	Complete	116.4 Mbps	13...	1 / 1 -
4	Access.en-us.zip	This Computer - Access.en-us.zip	sshacs@acsdev01.aspera.uploa...	Complete	243.2 Mbps	666...	1 / 1 -
5	bbb-480p.avi	This Computer - bbb-480p.avi	sshacs@acsdev01.aspera.uploa...	Complete	80.2 Mbps	210...	1 / 1 -
6	SharePointDesigner.exe	This Computer - SharePointDesi...	sshacs@acsdev01.aspera.uploa...	Complete	102.8 Mbps	102...	1 / 1 -
7	AcrobatPro_10_Web_WWV...	This Computer - AcrobatPro_10...	sshacs@acsdev01.aspera.uploa...	Complete	102.7 Mbps	465...	1 / 1 -
8	Access.en-us.zip	This Computer - Access.en-us.zip	sshacs@acsdev01.aspera.uploa...	Complete	86.0 Mbps	666...	1 / 1 -

<sup>1</sup> = All upload methods are highly dependent on many factors including customer bandwidth, pipe from customer to upload region, hardware / software performing upload, memory, upload file sizes, upload method used, configuration of upload method, etc.

## Other NetStorage features

- Serve from Zip (ability to upload zip files and serve its contents on the fly)
- Automatic Deletion – automatically delete content based on configurable rules like age and directory size
- CMShell – UNIX-like restricted shell for automating content management operations like rename, md5sum, directory listing
- Site Snapshot – Automatically spiders a Web site for backup/fail-over purposes



### SSH Shell Access

azZz	rewrite zip file to Akamai zip file format
cat	concatenate files and print on the standard output
cd	change directory
cp	copy files and directories
debug	view/toggle debug mode
du	estimate file space usage
help	list all commands
hostname	show the system's IP address
ln	make links between files
ls	list directory contents
md5sum	compute and check MD5 message digest
mkdir	make directories
mv	move (rename) files
pwd	print name of current/working directory
rm	remove files or directories
rmdir	remove empty directories
soc	change filenames to streamos requirements
sst	a utility to retrieve files from the World Wide Web
stat	print inode contents
unzip	list, test and extract compressed files in a ZIP archive
wget	a utility to retrieve files from the World Wide Web

# NetStorage Expertize and Customization

## Expert Knowledge & Customization with a Complete Managed Storage Solution

Let the experts at Akamai help design a storage solution that meets your business needs that is flexible and cost-effective. Compared to do-it yourself solutions:

1. NetStorage removes the costs of managing a data storage center overhead.
2. No hidden fees every time you move content around.
3. Leverages Akamai's Media Workflow Solutions with Transcoding and Stream Packaging to further reduce storage costs of multiple file format needs.
4. Over 15 Years of domain expertise that is trusted by over 90% / 6,000+ of Akamai customers.
5. Most globally redundant cloud storage offering, with presence in 35+ strategically chosen world locations.

- ✓ 37+ Geo-distributed locations
- ✓ Over 6,000 Customers World-Wide
- ✓ Used by 90% of Akamai media, worldwide delivery customers

