

Aspera on Cloud: Enable Multicloud Data Transfer, Sharing & More!

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IBM Aspera

IBM **Aspera**

IBM Aspera's mission

Creating next-generation transport technologies
that move the world's digital assets at maximum speed,
regardless of file size, transfer distance and network conditions

Challenges of multicloud data transfer

FTP & HTTP Timeouts



TCP-based transfers slow with distance and packet loss

Automating Transfers



Manually scripting automated file processing is too complex

Need Faster, More Secure Delivery



Shipping hard disks increases risk of data getting lost in transit

Lack End-to-End Visibility



Activity tracking & reporting across hybrid infrastructures is difficult

Accessing Data in a Hybrid Cloud



Data spread across storage locations can be difficult to access

Securing Your Transfer Environment



Enabling information exchange risks the exposure of your business' IP

Increasingly this calls for



Fastest possible transfers with predictable delivery times

- Regardless of distance
- Support for large files, large numbers of small files, and streams



Support for hybrid cloud infrastructures

- Any storage location
- Any leading cloud platform



Enterprise-grade Security

- Encryption, privacy, and integrity of data
- Authentication and access control



Control and Automation

- Over transfer activity, times, and resource usage
- Seamless integration and automation via APIs



Fully managed service

- Software, infrastructure and security management are handled
- Allows an organization to focus on its business

Key Aspera capabilities

Performance at any distance

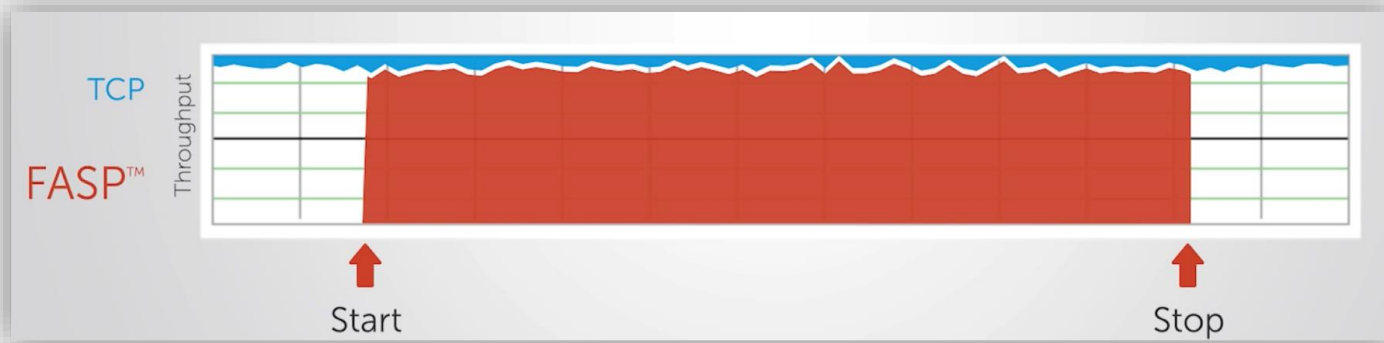
- Transfer up to 100s of times faster using built-in FASP[®] protocol
- Any size or volume
- Predictable and reliable
- Adaptive bandwidth control
- Achieve multi-Gbps speeds

High-speed data transfer across hybrid, multicloud infrastructures



MOVING A 10GB FILE				
	Network Bandwidth	Across US	US - Europe	US - Asia
FTP	100 Mbps	10-20 Hours	15-20 Hours	Impractical
	1 Gbps			
	10 Gbps			
Aspera FASP [®]	100 Mbps	14 Min	14 Min	14 Min
	1 Gbps	1.4 Min	1.4 Min	1.4 Min
	10 Gbps	8.4 Sec	8.4 Sec	8.4 Sec

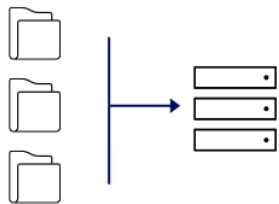
FASP[®]: maximum speed with no network saturation



Extraordinary bandwidth control that doesn't saturate the network

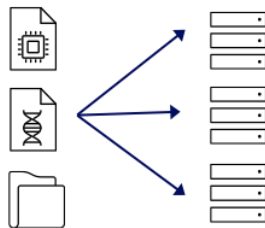
- Automatic detection & full utilization of available bandwidth with “fair” policy protection of other network traffic
- Allows “bursts” in TCP traffic and reclaims unused bandwidth as it as it becomes available

Multicloud transfer use cases



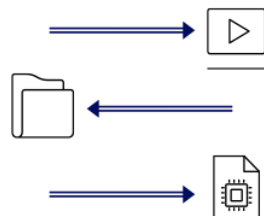
Upload & Ingest Large Data Sets

Migrate/upload massive volumes of data to cloud to cut costs and scale faster, e.g. Migrate to Cloud



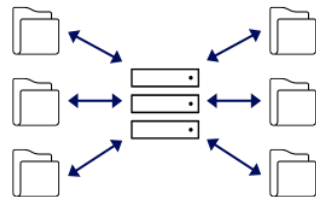
Distribute Data Globally

Rapidly distribute & stream globally to many target sites to accelerate workflows & deliverables, e.g. Retail Distribution



Share & Exchange Files & Folders

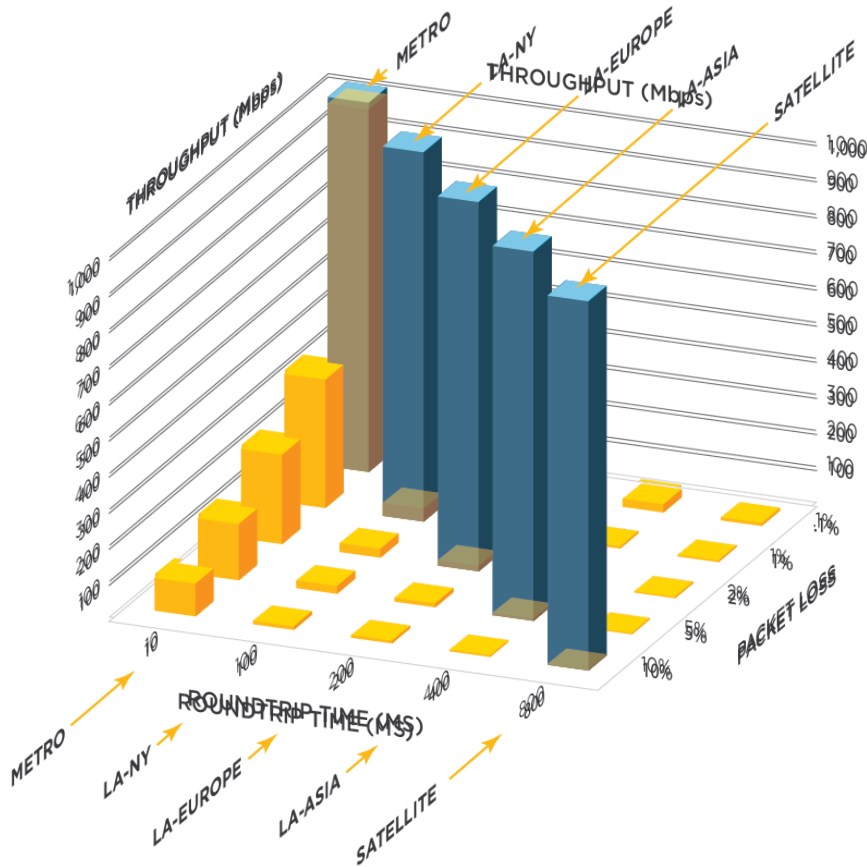
Allow teams to quickly collaborate with huge files and data sets to boost productivity, e.g. Content repositories



Replicate & Sync Datasets

Replicate data repositories. Decrease RTO/RPO to ensure business continuity and prevent data loss e.g. Devops Sync

FASP® – high-performance data transport



Note: The relative bandwidth utilization for FASP transfers over a 1 Gbps network are immune to latency (distance) with very little effect from packet loss.

- Maximum transfer speed
- Congestion avoidance and policy control
- Uncompromising security and reliability
- Scalable management, monitoring and control

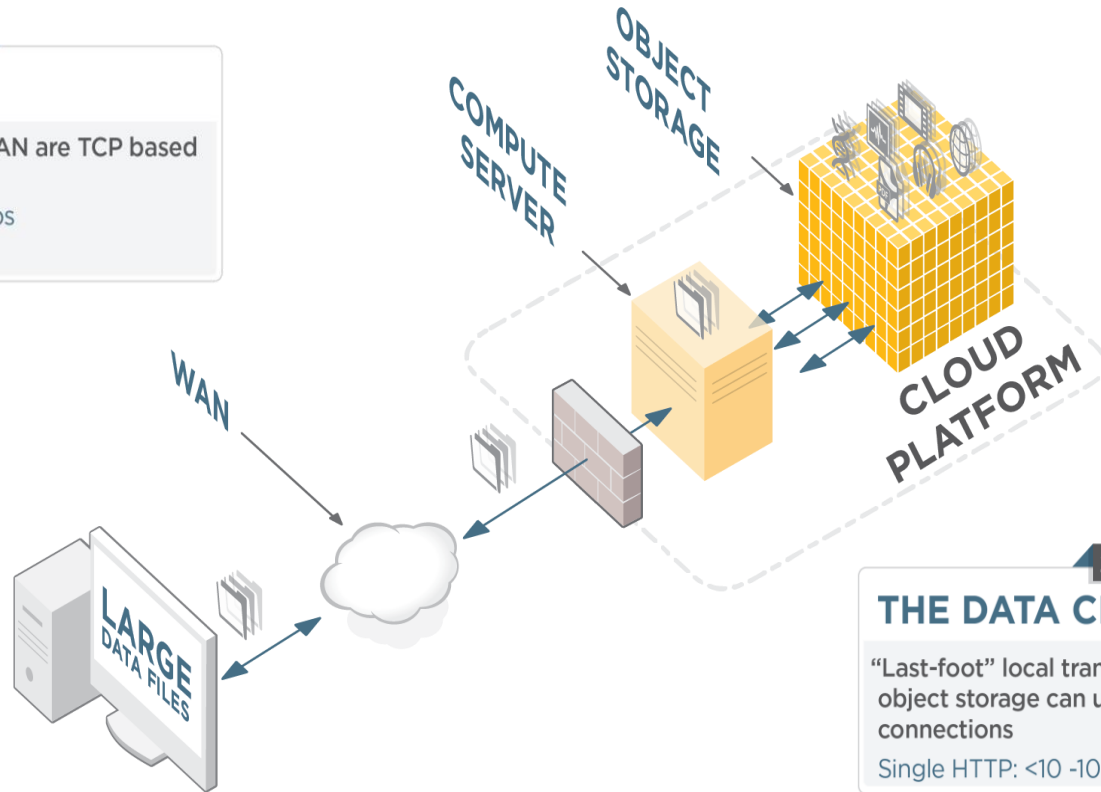
WAN transfer challenge is compounded in the cloud

1ST BOTTLENECK

THE WAN

Transfers over the WAN are TCP based
(FTP, SCP, HTTP etc)

Single HTTP: <10 Mbps
Multi: <10 -100 Mbps



2ND BOTTLENECK

THE DATA CENTER

“Last-foot” local transfers from server to
object storage can use multiple HTTP
connections

Single HTTP: <10 -100 Mbps

Cloud transfer options

HTTP MULTI-PART UPLOAD

OPTION ONE

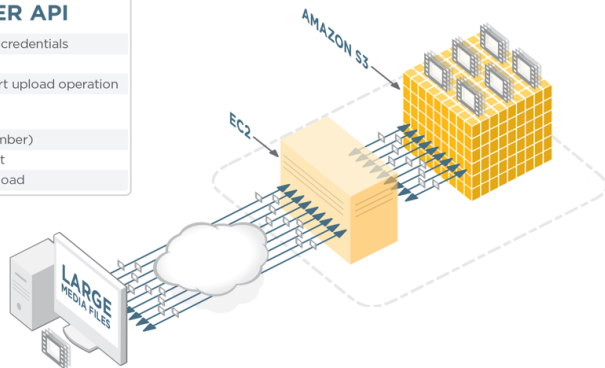
HTTP MULTI-PART UPLOADER API

- 1 Initiate multipart upload by providing your AWS credentials
- 2 Provide required bucket name and key name
- 3 Save the upload ID for each subsequent multipart upload operation
- 4 Upload parts providing part upload information (upload ID, bucket name, part number)
- 5 Save the responses (ETag value and the part number)
- 6 Repeat tasks 4 and 5 for each part of your object
- 7 Execute a final call to complete the multipart upload

OPTION TWO

TYPICAL TOOLS

CLOUDBERRY EXPLORER CYBERDUCK S3FOX ORGANIZER

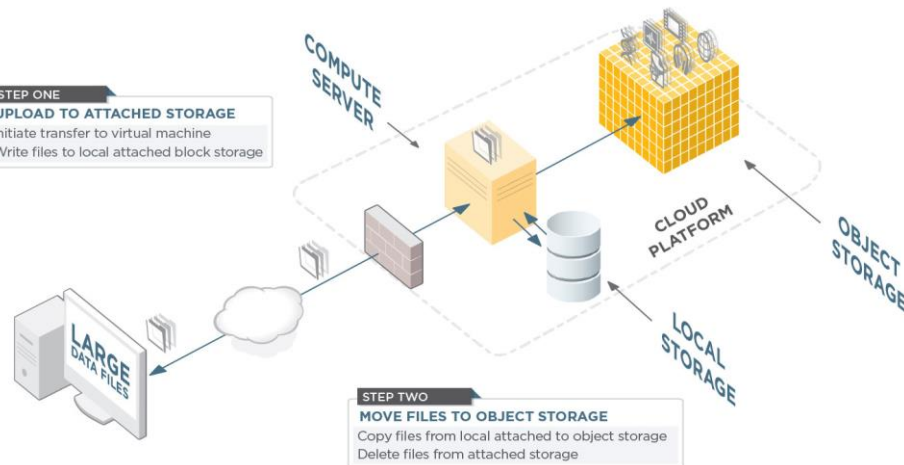


TWO-STEP UPLOAD

STEP ONE

UPLOAD TO ATTACHED STORAGE

- Initiate transfer to virtual machine
- Write files to local attached block storage



STEP TWO

MOVE FILES TO OBJECT STORAGE

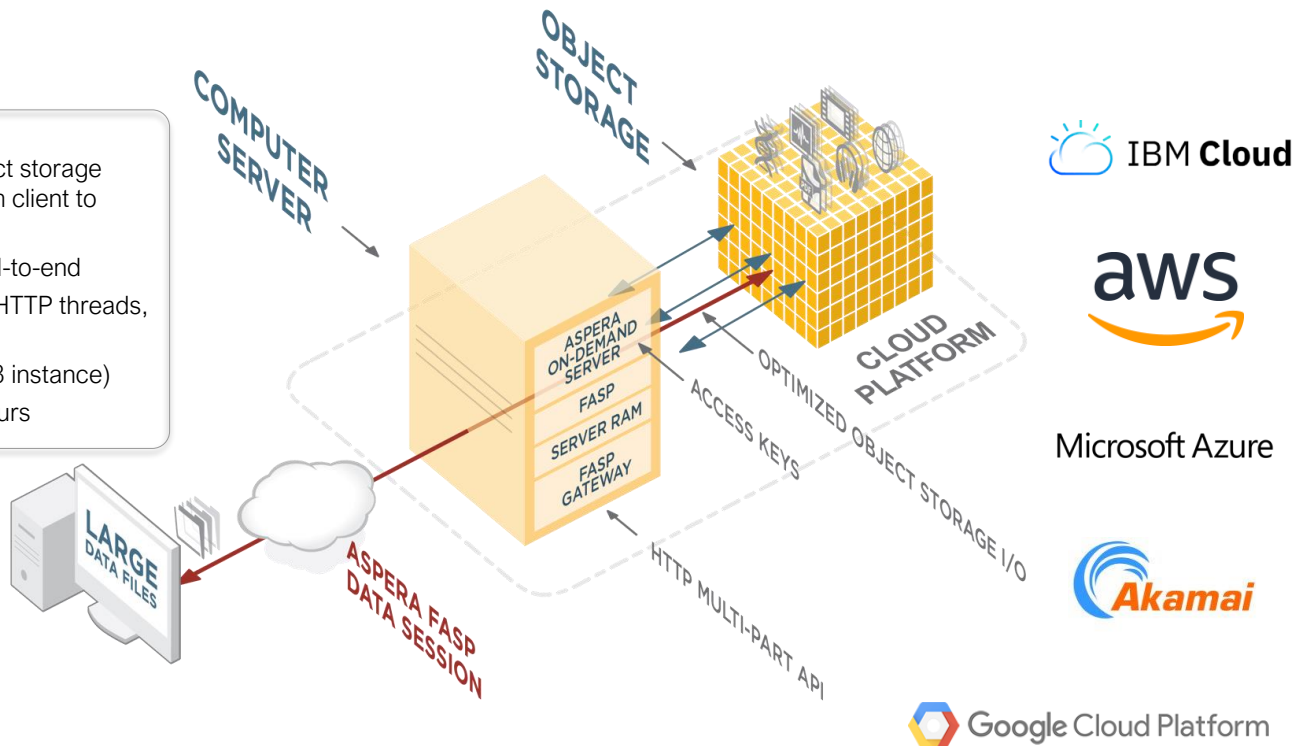
- Copy files from local attached to object storage
- Delete files from attached storage

Both methods for writing to cloud object storage create bottlenecks and unnecessary delays

Aspera Direct-to-Cloud technology

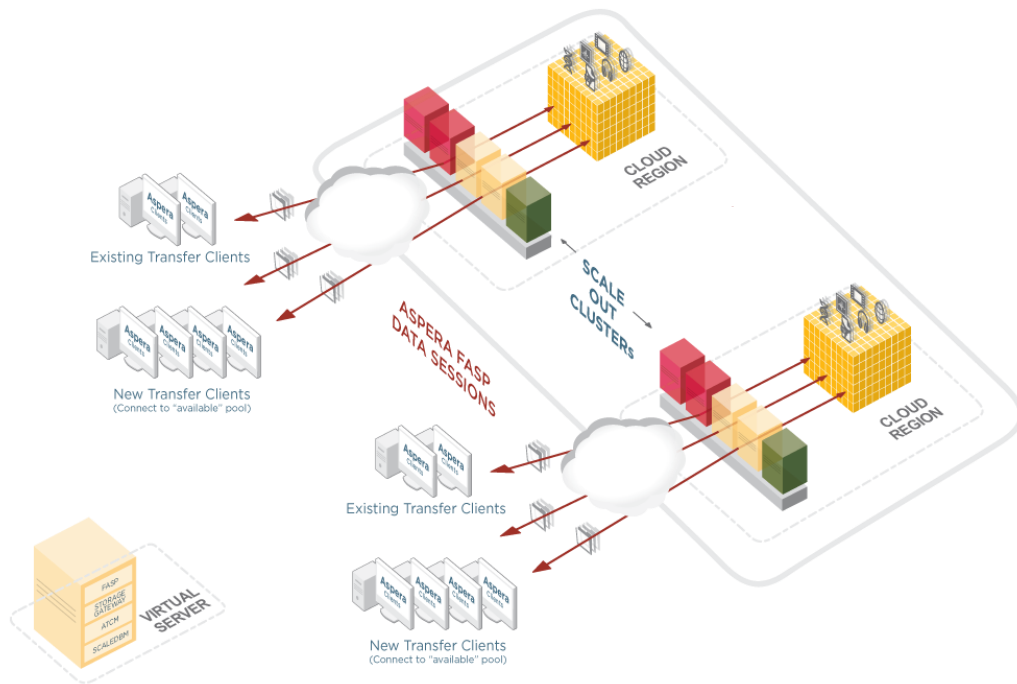
THE SOLUTION

- Full client-side r/w of object storage
- Synchronous transfer from client to object storage
- FASP transfer speeds end-to-end
- Real-time optimization of HTTP threads, chunk
- Up to 2Gbps (with new S3 instance)
- Transfers 20TB per 24 hours



Aspera autoscale

- Integration with underlying cloud object storage APIs
- Data available immediately after transfer
- Ability to pause and resume cloud transfers
- Transfer capacity automatically scales



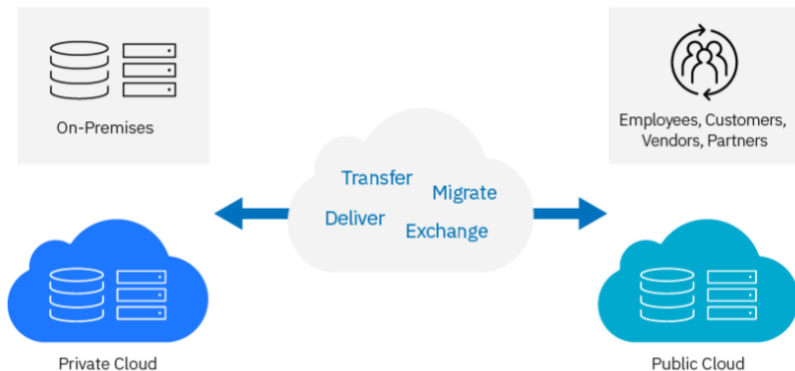
Introducing Aspera on Cloud

A hosted service that enables organizations to securely and reliably move large files and data sets across on-premises and multi-cloud environments at unrivaled speed



Why Aspera On Cloud?

The fastest way to transfer, exchange, and monitor the delivery of your data from any location to anywhere with anyone



Seamlessly access data stored across multiple clouds and on-premises data centers

Move any size and volume of files any distance at maximum speed

Securely collaborate with internal and external users while tightly controlling access to your data

Top business benefits



Lower TCO



Deploy faster



Replace on-premises
legacy systems



Quickly scale
up or down

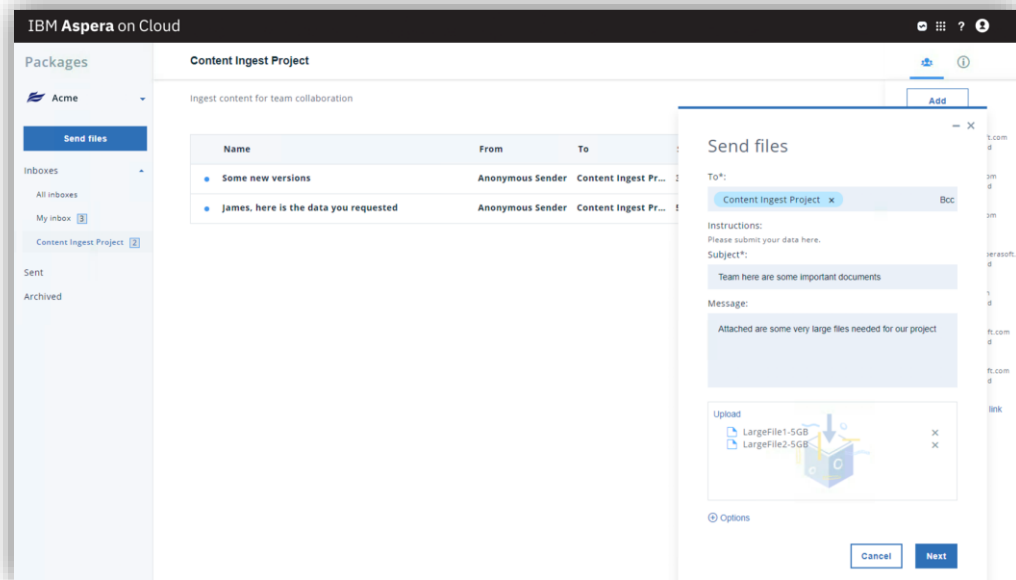


Enable business continuity

Key features & capabilities

Intuitive file sharing & content delivery across a hybrid-cloud environment

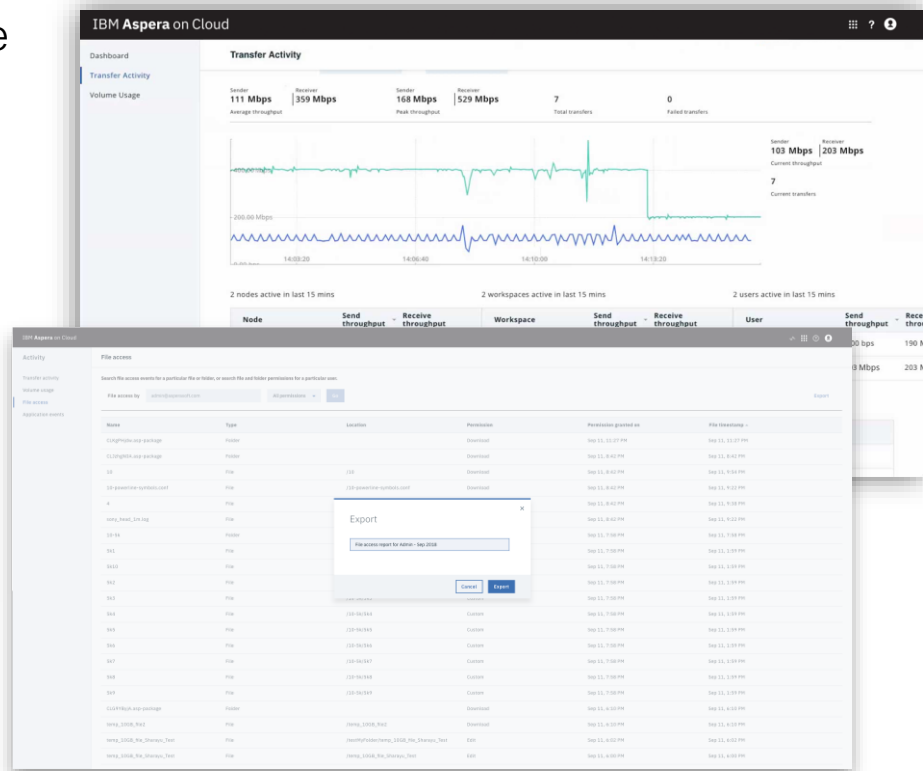
- Drag and drop transfers
- Secure workspace collaboration areas
- Inboxes and content submission portals
- Digital package distribution
- Content preview
- Filter & sort



Key features & capabilities

Real-time activity monitoring and reporting

- Manage transfer activities, storage usage, & digital packages
- Monitor user and application activity logs
- Generate and export custom usage reports
- New reports: File Access and Application Events






Key features & capabilities

Central administration of hybrid environments

- Connect to any market- leading public cloud & on-premises storage
- Remotely manage transfer nodes & network policies
- Flexible access policies across workgroups and applications
- Embed your brand into every communication and web asset



Platforms

- ☒  IBM Cloud
- ☒  aws
- ☒ Microsoft Azure
- ☒  Google Cloud Platform
- ☒ On-Premises Data Centers

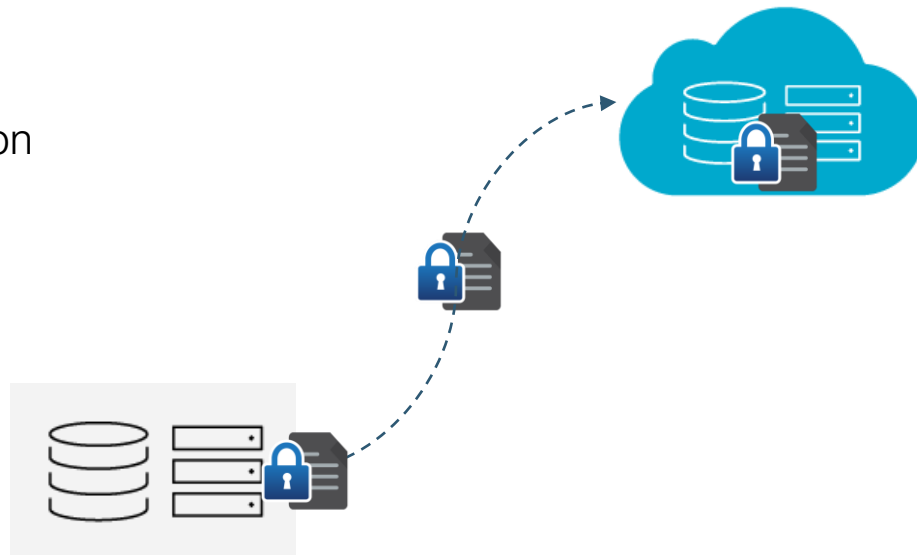
Locations

- N. America (10) – CA, OR, TX, IA, VA, DC, Toronto
- S. America (1) – Sao Paulo
- Europe (8) - Ireland, Frankfurt, Milan, Netherlands, London
- APAC (9) – Chennai, Singapore, Hong Kong, Seoul, Tokyo, Sydney, Melbourne
- More regions coming

Key features & capabilities

Enterprise-grade security

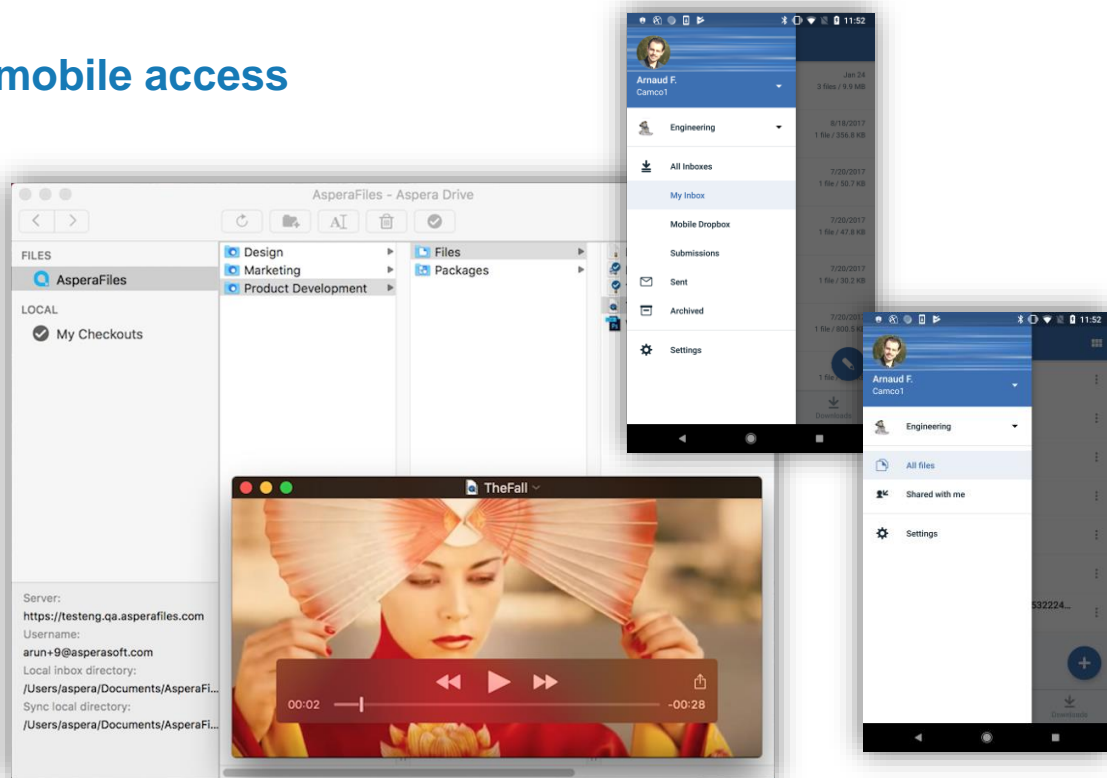
- Powerful access control model
- Secure user / endpoint authentication
- Encryption in transit and at rest
- Data integrity verification
- FIPS 140-2 compliant



Key features & capabilities

Desktop, browser, and mobile access

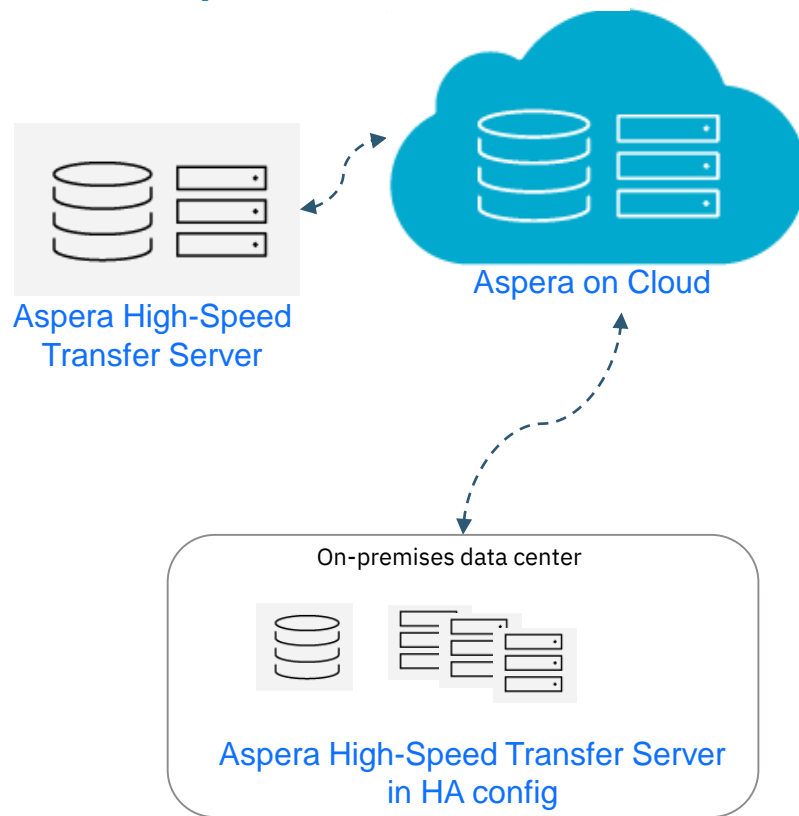
- Aspera Drive
- Aspera Connect
- Aspera on Cloud Mobile App



Deployment option: tether on-premises transfer nodes

Extend SaaS features to customer-managed IBM Aspera nodes

- Connect with any environment running an Aspera High-Speed Transfer server (including high availability configurations)
- Manage a single hybrid, multicloud transfer solution with data stored on-premise, in the cloud, or both
- Leverage a common user experience for key use cases, including:
 - Backup on-premises to cloud
 - Distribution to cloud
 - Ingest into a cloud-based workflow

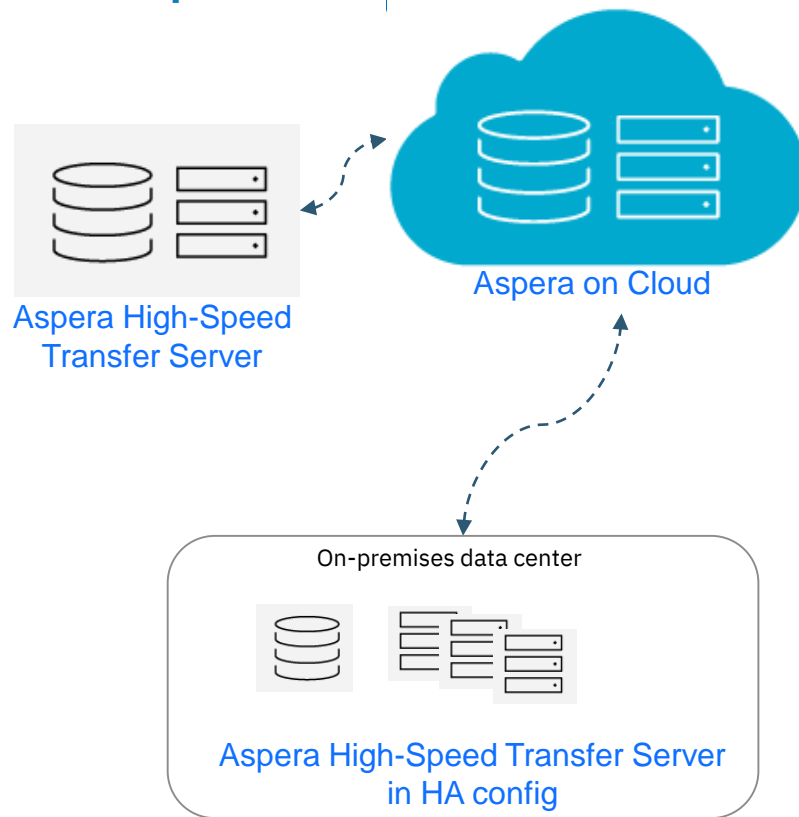


Deployment option: tether on-premises transfer nodes

Extend SaaS features to customer-managed IBM Aspera nodes

– Flexible billing and management:

- For customers who own an Aspera server perpetual license, tether requires purchase of an [Aspera on Cloud standard license](#) to access SaaS features
- For customers who do not own an Aspera server, tether requires purchase of an Aspera on Cloud standard license **and** payment by total transfer volume (includes 1TB transfer volume per year)



Leverage APIs to integrate Aspera on Cloud

Build high-speed transfer into your cloud-native applications

- Proven Aspera technology available for application and workflow integration
- Comprehensive API with full documentation at <https://developer.ibm.com/aspera/>
- Includes out-of-the-box Integration with major vendor cloud object storage APIs

IBM Developer

Aspera

Developer resources ▾

Why Aspera?

Tutorials and Code Examples

- Building a File-Sending Aspera to S3 API
- Node-to-Node Transfer and Authorization
- Creating an Aspera on Cloud Bearer Token
- Adding a Transfer Service Node to AOC with the Files API
- Monitoring Node-to-Node Transfer Retries with the Node API
- Automating Node-to-Node Uploads with a Push Watch Folder (Access Key/Node API Authentication)
- Automating Node-to-Node Downloads with a Pull Watch Folder
- Automating Node-to-Node Uploads with a Push Watch Folder (SSH Authentication)

Creating the Node

- Create a bearer token for the Files API.
For instructions, see [Creating an Aspera on Cloud Bearer Token](#).
- Create an access key for your cloud storage.
For instructions, see [Creating Transfer Service Access Keys with the ATS API](#).
- Retrieve your organization key:

```
curl -i -H "Authorization: Bearer token_string" -X GET
https://api.asperafiles.com/api/v1/organization
```

In the response, the organization key is the value for `oauth_token_verification_key`:

```
HTTP/1.1 200 OK
{
  "access_token_duration": 3600,
  ...
  "oauth_token_verification_key": "-----BEGIN PUBLIC KEY-----
\NMI8IjANBgkqhkiG9w0BAIEFZ39523AQEanBCHSIZ26tDTVtJyJTYWJvbnR5bm9pO1EB
z35TV3Zo1SjD2Du3gVKzo331Ne4rOpxSj+uoSMmMCLRIH4BFYenGhCIPdwx1xZY
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uTay4r0BElLx/G26tPz0qQzQJLWtEPK3cK5K9K2vnbm6GK1K8K9f4h1QQN1L
Z1t51cE7D7/79mrf1+JWNS5tFHPgICuuv8a0JyEvn1G1TWHJ1Gd7RbLP1c/3k129MS
B78NEQ2981Q1VqcN8Q04ewo3Jg2vkCvxhs2ptn1Q1DQA0BvN-----END PUBLIC KEY-
-----\n",
  ...
}
```

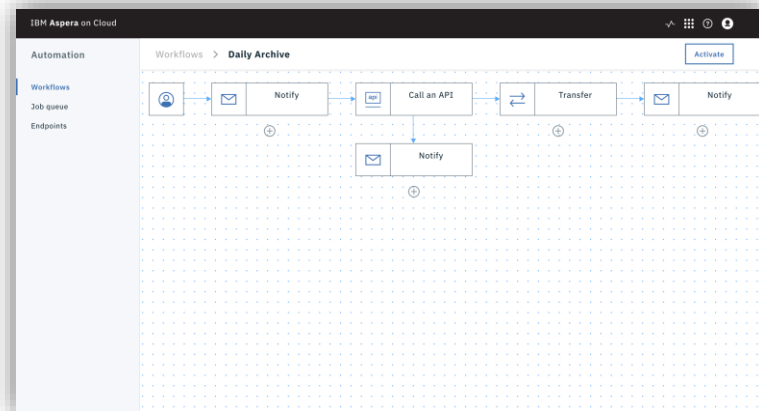
Key features & capabilities

Now in early access – Transfer Automation

Summary: Aspera on Cloud Automation Application enables customers to automate file movement workflows for many common transfer jobs. The Automation workflows can move files between many Aspera on Cloud transfer endpoints, such as shared folders, transfer nodes, shared inbox and package deliveries. The workflows can be triggered by a variety of methods, such as API calls, operator manual intervention, file arrival events, and shared inbox file submissions.

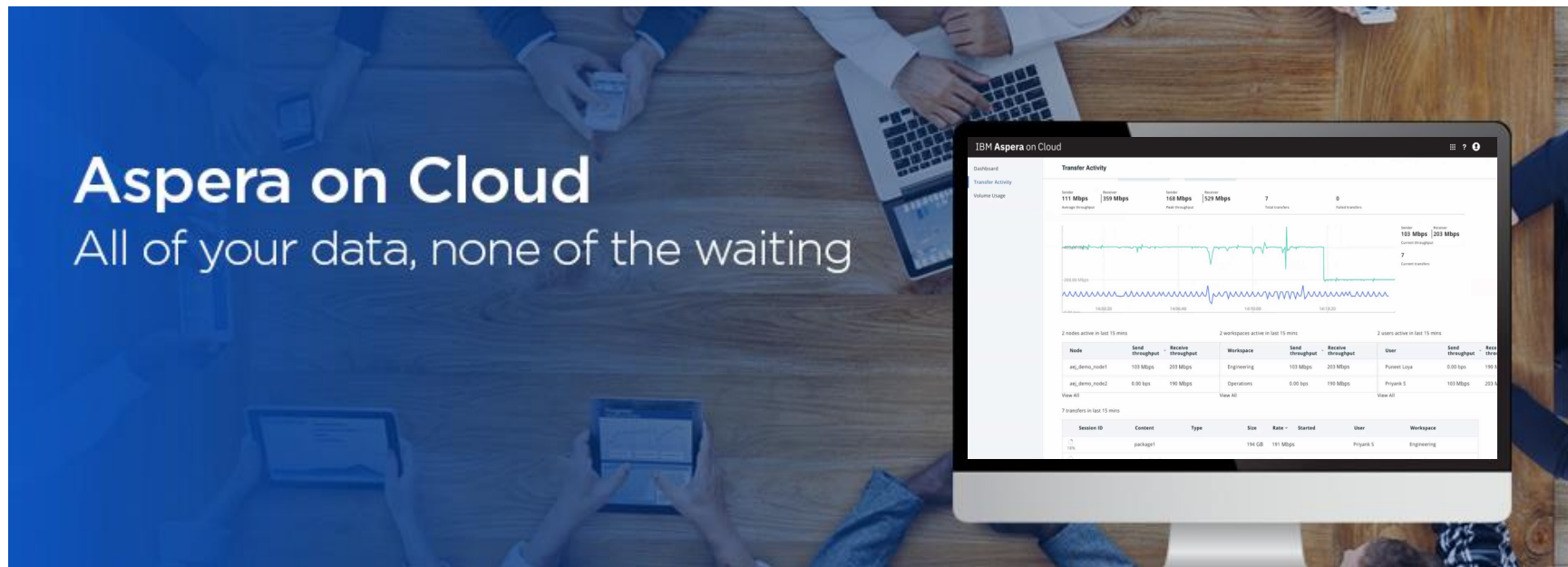
Details:

- Automate complex workflows with event-based transfers between IBM Aspera on Cloud endpoints
- Easily integrate with web services via API calls
- Communicate activity status with event-driven email notifications
- Intuitive interface empowers users to build and execute workflows with ease
- Available to all users of the Advanced and Enterprise editions



Sign up for a trial

Sign up for a free trial evaluation at <http://ibmaspera.com/welcome>



Aspera on Cloud
All of your data, none of the waiting

The image shows a laptop displaying the IBM Aspera on Cloud dashboard. The dashboard includes a 'Transfer Activity' section with a line graph showing transfer rates over time. Below the graph, there are three tables: 'Nodes active in last 15 mins', 'Workspaces active in last 15 mins', and 'Users active in last 15 mins'. The 'Nodes' table lists nodes like 'as_demo_node1' and 'as_demo_node2' with their respective send and receive throughput. The 'Workspaces' table lists workspaces like 'Engineering' and 'Operations' with their respective send and receive throughput. The 'Users' table lists users like 'Purnim Lopa' and 'Priyanka S' with their respective send and receive throughput. The 'Transfers in last 15 mins' table lists transfers with columns for Session ID, Content, Type, Size, Rate, Status, User, and Workspace.

Node	Send Throughput	Receive Throughput
as_demo_node1	100 Mbps	200 Mbps
as_demo_node2	0.00 tps	190 Mbps

Workspace	Send Throughput	Receive Throughput
Engineering	100 Mbps	200 Mbps
Operations	0.00 tps	190 Mbps

User	Send Throughput	Receive Throughput
Purnim Lopa	0.00 tps	190 Mbps
Priyanka S	100 Mbps	200 Mbps

Session ID	Content	Type	Size	Rate	Status	User	Workspace
1	package1		100 GB	100 Mbps		Priyanka S	Engineering

Learn more at <http://www.ibm.com/cloud/aspera/>