

Aspera On Demand for SoftLayer

High speed transfers to, from, and across the cloud

Cloud computing has become a viable, mainstream solution for data processing, storage and distribution, but moving large amounts of data in and out of the cloud has presented an insurmountable challenge for companies with terabytes of digital files.

As a pioneer in the enablement of high-speed data-intensive workflows throughout the enterprise, Aspera invested early and significantly in unlocking the cloud to handle big data by developing an innovative technology solution that is tightly integrated inside many of the biggest cloud service providers. This technology allows companies to reliably and securely move large files and datasets to, from and across the cloud at maximum speed.

The Aspera Solution

To offer a viable option for big data management, processing and distribution, IBM's SoftLayer cloud service needed a high-speed transport solution to address the two main bottlenecks:

- The degradation in wide area network (WAN) transfer speeds that occurs over distance using traditional transfer protocols.
- The "last foot" bottleneck inside the cloud datacenter caused by the HTTP interfaces to the underlying object-based cloud storage.

With Aspera's patented FASP™ transport technology at its core, the suite of Aspera On Demand (AOD) transfer products solves both the technical problems of the WAN as well as the

cloud I/O bottleneck. With AOD, Aspera delivers unrivaled scale-out transfer capacity to enable efficient, large-scale workflows with enterprise-grade encrypted security, a variety of client options (web, mobile, embedded), and applications for transport/ingest, sharing, collaboration and exchange of big data, all available on demand as a subscription license model.

AOD is the clear answer to one of big data's most significant challenges. Our early push to the cloud has been acknowledged by many of our customers, including Netflix, Zencoder, GenoSpace, BGI, and many others, who have been using AOD.

What is Aspera On Demand?

AOD is a full set of Aspera's software available for deployment and use on SoftLayer with a pay-per-use license model. Built on top of Aspera's FASP protocol, AOD allows customers to quickly move data of any size to any cloud environment over any network at line speed. The solution provides high-speed, robust, secure and resume-able file transfers directly to cloud storage environments.

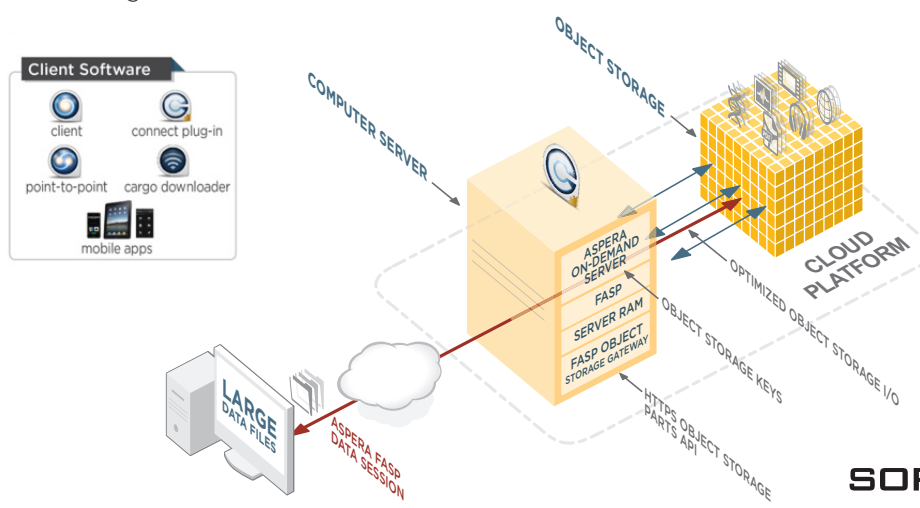


Figure 1: Aspera Direct-to-Cloud transport, a fundamental solution for large file and dataset transfers with cloud object storage, provides native FASP transport capability that is deeply integrated with SoftLayer's object storage

SOFTLAYER®
 an IBM Company

Our Bundled On Demand Solutions

Aspera has developed five distinct AOD bundles with various add-on options to provide customers with simple, robust solutions to their complex problems. These bundles address the needs of the most common deployments and use patterns for our software. They include:

- **Server On Demand:** Enterprise Server, Console and a dedicated transfer client
- ***aspex* On Demand:** Enterprise Server and *aspex* application
- **Shares On Demand:** Enterprise Server, Shares application and Console
- **Application Platform On Demand:** Enterprise Server, Console, Connect browser plugin (SDK sold separately)
- **Console On Demand:** Console

***Add-On options – Drive client, Cargo client, Mobile apps, Aspera for Microsoft Outlook client, Embedded Client

Solutions for Common Use Cases

INGEST / MASS TRANSPORT

Aspera Server On Demand or Shares On Demand are ideal solutions for high speed, large volume, secure data ingest to the Cloud. Using an Aspera Desktop client, or the Aspera Connect browser plug-in, users can transfer files at maximum speed directly to cloud storage where the data is accessible by other applications running in the cloud. Both of these solutions provide an easy web based configuration for both storage access and user management. Aspera Console, which comes with each of the On Demand bundles, provides the ability to configure access to individual storage buckets and directories.

Case Studies: UFC, UEFA Euro2012, Netflix

SHARING & COLLABORATION

Aspera Shares On Demand with easy file sharing enables a natural solution for big data collaboration in the cloud. Whether you are collaborating with individuals or in groups, occasionally or frequently, Aspera On Demand provides the transfer and notification features that meet your needs. Shares On Demand comes with web based user management, access control, notification options and storage configuration.

Case Studies: GenoSpace, ESAC/NCI

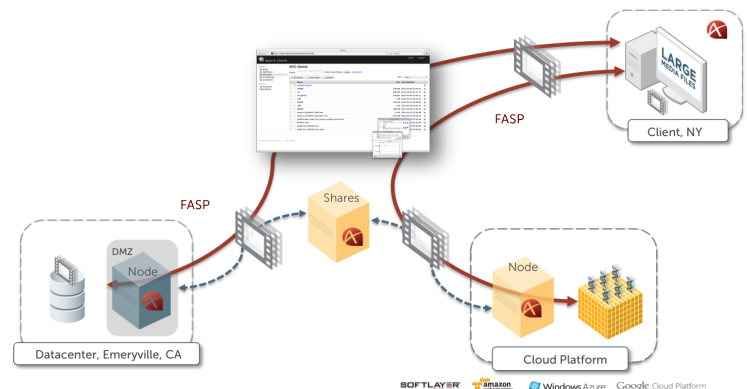


Figure 2: Diagram of the sharing and collaboration use case

PERSON-TO-PERSON DELIVERY

Aspera *aspex* On Demand is the ideal solution for organizations that are in need of a high-speed file delivery solution for their employees, customers or partners. *aspex* is an email-style file and package delivery system, which includes user management, storage access control, transfer monitoring and notification in one simple easy-to-use web interface. Aspera Cargo, an automatic downloader, is available as an add-on for those interested in automating transfers from the *aspex* platform.

Case Studies: Cinema Cloud

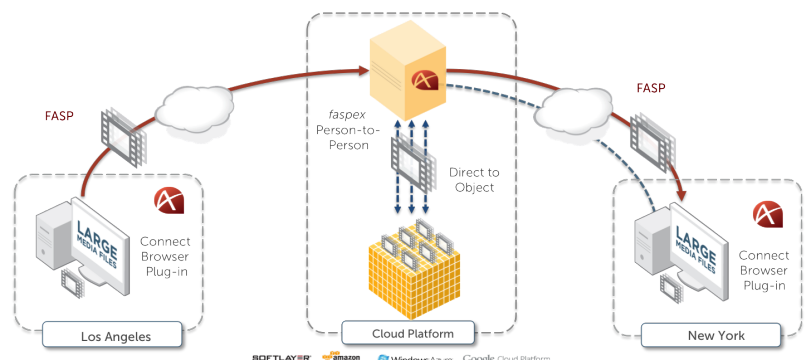


Figure 3: Diagram of the person-to-person delivery use case

INTEGRATION

Aspera Application Platform On Demand is the solution for any third party SaaS providers who would like to integrate the FASP high-speed transfer technology into their SaaS platform. This solution, when combined with the SDK, provides the required software and licensing to support integrations. The SDK Developer Subscription is licensed separately and is required to access the documentation, libraries, sample code and developer support.

Case Studies: Aquipt, Zencoder

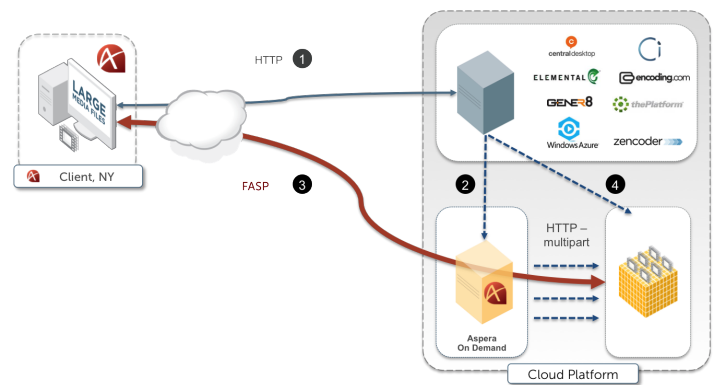


Figure 4: Diagram of the Integration use case

On Demand Highlights

KEY ASPERA DIFFERENTIATORS

- AOD offers the most tightly integrated high-speed big data transport solutions in SoftLayer. Period.
- Rock solid reliability, pause/resume capability, and in-flight and at-rest encryption in the cloud.
- Automatic retry and checkpoint resume of any transfer (single files and directories) from point of interruption.
- Support for files and directory sizes in a single transfer session up to the largest object size supported by the SoftLayer platform.
- Support for directories containing any number of individual files with high-speed, even for very large numbers of very small files.

FLEXIBLE SOFTLAYER PLATFORM DEPLOYMENT

- AOD products support any storage type or location (block, object, on-premises, cloud, or hybrid).
- Adaptable to many use scenarios: one-to-one, hub and spoke, cloud to datacenter, and cloud-to-cloud.
- Fully interoperable transfer support with all core Aspera products acting as transfer peers with the cloud storage and for all modes of transfer (e.g., command line, interactive GUI point-and-click, browser, hot folder automation, and SDK automation).
- Available as pay-as-you go licensing and custom and hybrid deployments across any infrastructure type/combination.

BUILT ON FASP

- Maximum transfer speed over WAN independent of latency and packet loss.
- Extreme file sizes and data sets over global distances.
- Concurrent transfer support scaling for many concurrent transfers per VM instance.
- Direct high-speed transfer to object storage up to the I/O limits of the platform.

ADAPTIVE BANDWIDTH CONTROL

- Full use of the bandwidth capacity.
- Fair to other TCP traffic.
- Priority can be preset or changed on the fly.

ENTERPRISE GRADE SECURITY

- Secure end-to-end authentication.
- User management based on application, directory service or Identity provider accounts.
- Data encryption in transit & at rest on cloud storage.
- Data integrity verification.
- Transfers to/from cloud environments support Aspera proxy on the client side in forward or reverse mode.
- Account management, transfer logging, activity monitoring and reporting.

Subscription Overview

AOD has a subscription license model where pricing for each bundled solution is based on these variables:

- 1) The term of the contract (monthly, yearly, multi-year)
- 2) The data transfer volumes over the contract term
- 3) Optional client add-ons

Purchases are made by pre-paying for a required data transfer volume over the desired term. Pricing discounts are offered by increasing the AOD term commitment and/or the data usage tier for the chosen term.

Subscription data usage starts as low as 100 GB per month for each bundled offering with tiered usage pricing up to 1 PB per month or 12 PB per year. Overages are billed at the end of the term at the original per GB subscription rate. There are no bandwidth caps, no user counts, no limit on number of “servers” (or “instances”) customers can run. A sample of current pricing is listed below.

	Term Commit	Total Usage Allotted	Price	\$ / GB
Server On Demand	Month	0.5 TB	\$500	\$1 / GB
Server On Demand	1 year	12 TB	\$6,600	\$0.54 / GB
Shares On Demand	Month	1 TB	\$1,350	\$1.32 / GB
Shares On Demand	1 year	12 TB	\$12,000	\$0.98 / GB

How to Purchase and Deploy

To deploy AOD software on the SoftLayer platform, customers have a “Bring Your Own Entitlement” (BYOE) option that involves purchasing a software entitlement directly from Aspera.

A high level overview of the deployment process is illustrated below.

SELF INSTALLED SOFTWARE

- 1) Purchase entitlement from Aspera
- 2) Boot a SoftLayer *bare metal* server or virtual server
- 3) Load Aspera software on the SoftLayer server
- 4) Run Aspera installer
- 5) Configure Aspera software
- 6) Enable Server with entitlement

**See details in the quick start guide at cloud.asperasoft.com/softlayer-getting-started*

Each AOD software package is available for installation on a standard Linux 64 host from the Aspera software download site. Access to the software, documentation and license keys will be made available upon purchase of the solution entitlement.

Additional deployment options will be available in the future, so please check with Aspera for additional deployment options.

Questions?

Please contact Aspera Sales at sales@asperasoft.com for detailed pricing, availability and evaluation of our Aspera On Demand product bundles. Additional information on the deployment and advanced configurations can be found on the Aspera Support portal under the “On Demand” forum located at <https://support.asperasoft.com/forums/20790238>

ABOUT IBM SOFTLAYER

SoftLayer provides its powerful bare metal servers and flexible virtual server instances in a single, seamless platform: The same data centers, one global network of networks, and a single API, Web portal, and account model.

Learn more at softlayer.com/cloud-servers.