



Aspera Solutions for Electronics Industry

MOVING THE WORLD'S DATA AT MAXIMUM SPEED

PRESENTER

Eric Ma

日程

- 數據傳輸的挑戰
- Aspera公司和技術簡介
- 產品體系
- 客戶案例
- Q & A

過去(1990s)

現在(2012)

將來

“大” 數據



100 MB



100 GB

1000x

“大” 存儲



10 GB



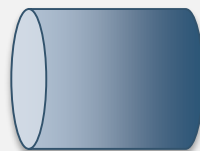
10 TB

1000x

“高” 帶寬



10 Mbps



10 Gbps

1000x

TCP遠距離的傳輸效能

10 Mbps

10 Mbps

1x

COMPUTER MODELING



SEISMIC EXPLORATION



MUSIC & AUDIO



PORTABLE DOCUMENTS



MEDICAL IMAGING



GENETIC SEQUENCING



VIDEO & GRAPHICS



SATELLITE IMAGING



快遞 / 郵寄



網絡傳輸



具體方式

透過郵局或快遞

採用基於FTP或HTTP的傳統網絡傳輸方式

投資

存儲介質和郵遞費用

硬件和軟件，管理和使用的投入。

潛在問題

安全：丟失，盜竊，損壞
時間：Delay

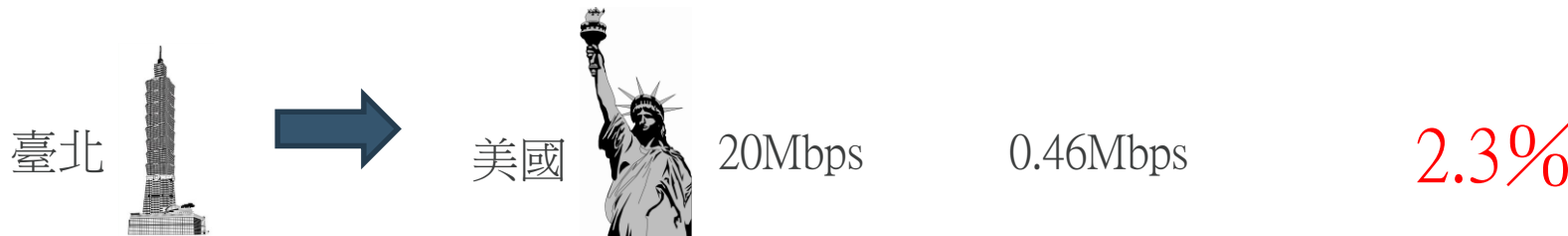
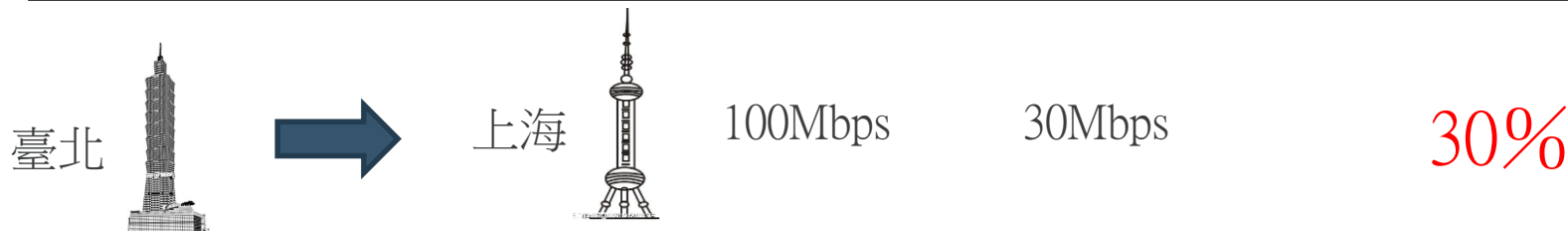
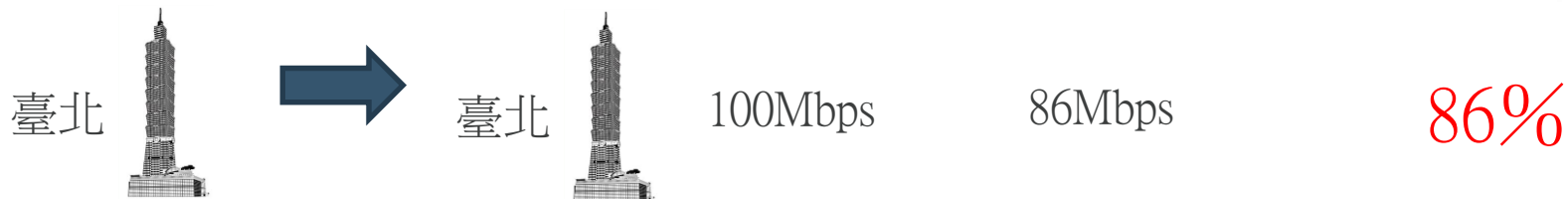
大文件遠距離傳輸不可行。
無法掌控和預計傳輸需要的時間
帶寬使用效率非常低，無法保證投資回報。

FTP

網絡帶寬

實際速度

效率



大文件遠距離傳輸帶寬使用效率非常低！！

創造新一代的傳輸技術(**fasp™**)，並能不受檔案大小、形態、傳輸距離、網路條件限制，以最高效的速度來協助用戶遷移各地的數位資料。

An innovator in moving the world's biggest data at maximum speed

Capabilities:

以軟件實現極速文件傳輸，企業文檔的高效同步和共享，廣泛支持移動終端／各種雲服務等。

成立時間:

2004 美國加州硅谷

服務的市場:

服務全球2200多家企業用戶，涵蓋了工程，電子，製造，通訊，傳媒和生物科技等領域

行業機遇:

大數據遷移的革命化進步

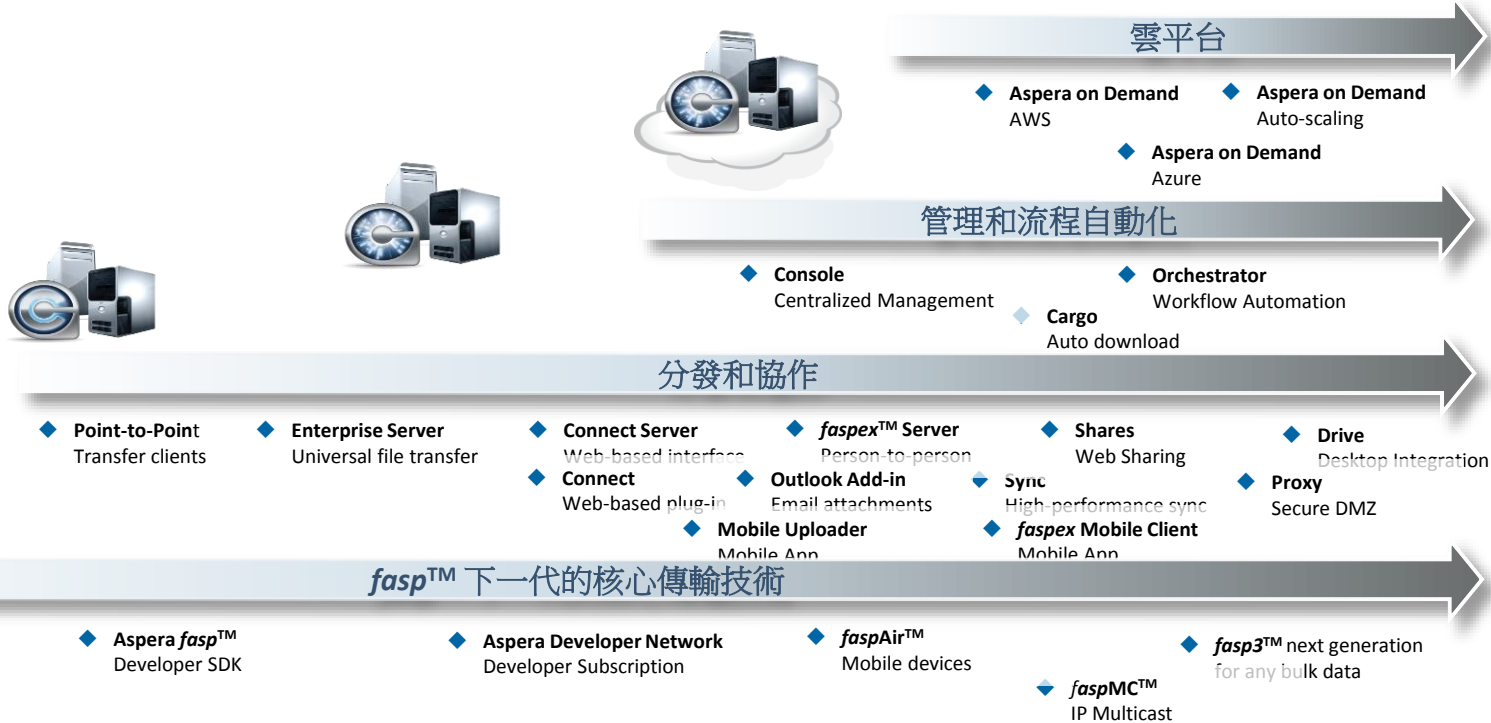
The Aspera Difference:

擁有專利的FASP™ 傳輸技術。



2004 2006 2008 2010 2012 Today

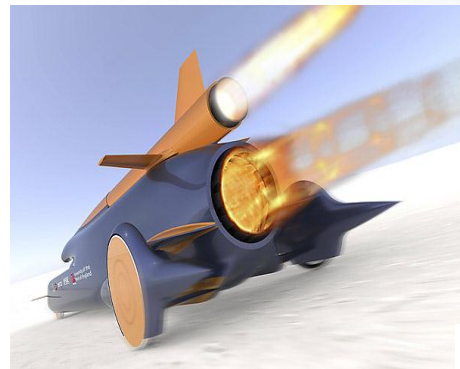
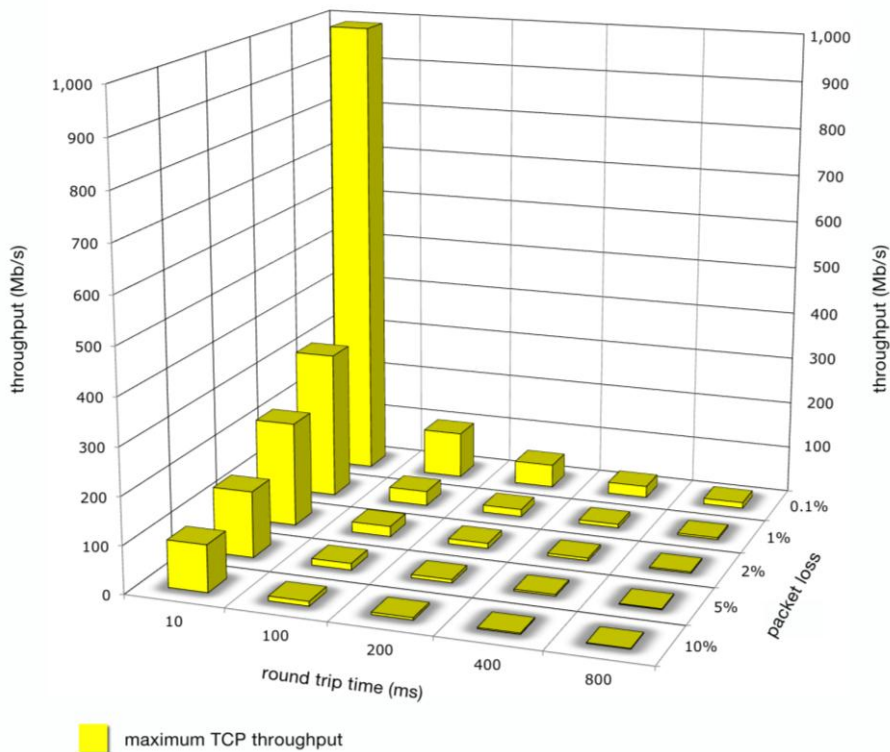
全球超過 2,100 個
客戶



65th EMMY AWARDS

“... an industry game changer”





高效傳輸



帶寬管控



安全加密

FTP	Across US	US – EU	US – ASIA	Satellite
1 GB	1 – 2 hrs	2 – 4 hrs	4 – 20 hrs	8 – 20 hrs
10 GB	15 – 20 hrs	20 – 40 hrs	Impractical	Impractical
100 GB	Impractical	Impractical	Impractical	Impractical

TCP transfer times limited by packet loss · delay (network distance) NOT BANDWIDTH

fasp™	2 Mbps	10 Mbps	45 Mbps	100 Mbps	200 Mbps	1 Gbps
1 GB	70 min.	14 min.	3.2 min.	1.4 min.	42 sec.	8.4 sec.
10 GB	11.7 hrs	140 min.	32 min.	14 min.	7 min.	1.4 min.
100 GB		23.3 hrs	5.3 hrs	2.3 hrs	1.2 hrs	14 min.

Aspera transfer times shorten linearly with bandwidth
Independent of network distance · file size and type

CUSTOMER PERFORMANCE RESULTS (CONTINUED)

From	To	OS	Link type	Capacity	Target	FTP/HTTP	<i>fasp</i>	Increase
New Zealand	Los Angeles, CA	Linux to Win	DS-3 to Internet	45 Mbps	42 Mbps	1.5 Mbps** (150ms/0.5%)	41 Mbps	27x
Washington, DC	New Zealand	Win to Win	Public Internet	100 Mbps	100 Mbps	500 Kbps** (160ms/2%)	92 Mbps	184x
Burbank, CA	Sydney, Australia	Win to Linux	Public Internet	10 Mbps	10 Mbps	1.5 Mbps** (150ms/0.5%)	9.9 Mbps	7x
Tokyo, Japan	Santa Rosa, CA	Win to Linux	Public Internet	20 Mbps	15 Mbps	0.46 Mbps	13.8 Mbps	30x
Pasadena, CA	Tokyo, Japan	Win to Solaris	Public Internet	100 Mbps	10 Mbps	1.1 Mbps	8.4 Mbps	8x
Philippines	New Jersey	Win to Win	Public Internet	100 Mbps	80 Mbps	650 Kbps** (170ms/2%)	78 Mbps	122x
Juarez, Mexico	Philippines	Win to Win	Bonded E1	4 Mbps	4 Mbps	0.25 Mbps	3.8 Mbps	15x
Glendale, CA	Hong Kong, China	Linux to Linux	DS-3 to Internet	45 Mbps	45 Mbps	0.52 Mbps** (300ms/1%)	39 Mbps	75x
Los Angeles, CA	Shanghai, China	Win to Linux	Public Internet	2.5 Mbps	2.5 Mbps	0.10 Mbps	2.4 Mbps	24x
New York, NY	Bangalore, India	Win to Win	T1 to Internet	1.5 Mbps	1.5 Mbps	0.05 Mbps	1.4 Mbps	28x
Mumbai, India	Seattle, WA	Win to Win	Public Internet	500 Kbps	500 Kbps	42 Kbps	495 Kbps	12x
Dual Satellite Phone Connection		Win to Win	Sat. Phone	128 Kbps	120 Kbps	Not functional	115 Kbps	-

* The target rate is the transfer rate given to an Aspera client. *fasp* attempts to maintain this rate in both fixed and adaptive rate modes and will not exceed this cap. In some tests the target rate was set to less than the actual link capacity.

** FTP measurement not taken or unavailable. FTP throughput estimated using the standard TCP Rate Equation, assuming a typical average round-trip delay and packet loss rate. Actual FTP throughput varies with network load, which increases loss and round-trip time.

20X	<ul style="list-style-type: none">• 降低傳輸的時間<ul style="list-style-type: none">– 從10小時傳輸到實施後的26分鐘 *
4x	<ul style="list-style-type: none">• 降低流程流轉耗費的時間<ul style="list-style-type: none">– 媒體資料原始素材採集到播出時間由6天縮短到1.5天**
97%	<ul style="list-style-type: none">• 網絡帶寬利益效率的顯著提高<ul style="list-style-type: none">– 從原來的2%到現在近97%的效率提高***

• Zencoder case study http://Asperasoft.com/fileadmin/media/Case_Studies/Zencoder_AspiraCS.pdf

** MSG Varsity case study http://Asperasoft.com/fileadmin/media/Case_Studies/MSG_Varsity_AspiraCS.pdf

*** Aspera testing <http://Asperasoft.com/technology/transport/fasp>

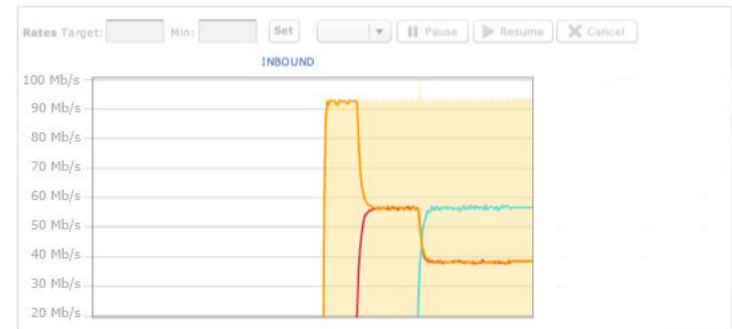
- 使用介面簡單，一般USER可輕易上手
- 不需使用高昂硬體設備及支援多種作業系統
- 和現有用戶驗證系統無縫對接，如AD和LDAP
- 支持對文件和數據的AES128加密
- 智慧型自動速率控制
- 可靈活設置的頻寬策略

Node Detail

 LA (10.0.85.108)

Edit

Transfer Chart



成本的節約

- time savings = cost savings.
- 能最大的利用現有設備和網絡帶寬的投資

新的服務和商業模式

- 新服務和模式 = 新收入

生產和服務效率的提高

- 通過優化和提高內部文件和數據的遷移提高工作效率，降低人力和其他投入

靈活的適應性

- 軟件解決方案 – 安裝發佈便捷



ASPERA產品家族

Moving the world's data at maximum speed

TRANSFER CLIENTS



High-speed transfers
for web, desktop and mobile

WEB APPLICATIONS



File sharing, collaboration
and exchange applications

MANAGEMENT & AUTOMATION



Transfer management,
monitoring and automation

SYNCHRONIZATION



Scalable, multi-directional,
multi-node synchronization

TRANSFER SERVERS



High-speed file transfer servers for on premise, private, public, and hybrid cloud deployments

*FASP*TM TRANSPORT



Innovative, patented, highly efficient bulk data transport technology, unique and core to all Aspera products

基本文件傳輸

TRANSFER SERVERS



Point2Point*, Enterprise server 和 Connect server

Aspera Enterprise Server - Connected to Aspera Demo Server

Transfer Details

Connections Preferences

Documents / Aspera work / Resources / Data Sheets

/Upload/Marketing

- Aspera On Demand
 - Booklet
 - Cargo screenshots
 - Client and P2P
 - Client comparison
 - Connect Server
 - Console
 - Enterprise Server
 - fasp Proxy
 - fasp SDK
 - fasp Security
 - fasp Software Environment
 - faspex
 - Isilon
 - Mobile
 - Orchestrator
 - Outlook Add-in
 - Point-to-Point
 - Server comparison
 - Shares
 - Sync
 - Zencoder
 - matrices notes.docx
- Case Studies
- Data Sheets
- Presentations
- Videos
- Webinars
- Security Slide.pptx
- Trends and Problem Statement.pptx

#	Name	Source	Destination	Status	Speed	Size	Files	Remaining
1	Connect Server	This Computer - Con	Aspera Demo Server...	Complete	13.8 Mbps	81K MB	14 / 14	-
2	Clients_AsperaDS_v...	This Computer - Cle...	Aspera Demo Server...	Complete	-	841.2 KB	1 / 1	-
3	2 Items: Security Slid...	This Computer - 2 it...	Aspera Demo Server...	Complete	32.0 Mbps	3.8 MB	2 / 2	-

aspera-test-dir-large

aspera connect server

Welcome asperaweb (change user)

demo.asperasoft.com > aspera-test-dir-large

aspera-test-dir-large

Download Upload Delete New Folder

Name	Size	Last Modified
Parent Directory		
100MB	100MB	17-Mar-2009 16:06
10GB	10GB	17-Mar-2009 19:25
1GB	1024MB	17-Mar-2009 18:13
250MB		7-Mar-2009 16:07
2GB		7-Mar-2009 19:29
500MB		7-Mar-2009 16:10
5GB		7-Mar-2009 18:28

Transfer Manager

10GB(+3 other files)
Cancelled

2GB
Downloading 179.1 MB of 2.0 GB (14.74 Mbps) - 17:42 remain...

Transfer Monitor

2GB
fasp://demo.asperasoft.com/aspera-test-dir-large/2GB

Downloading 179.1 MB of 2.0 GB (14.7... 1:18 elapsed 17:42 remaining

15.16 Mbps

4.16 Mbps

Fair

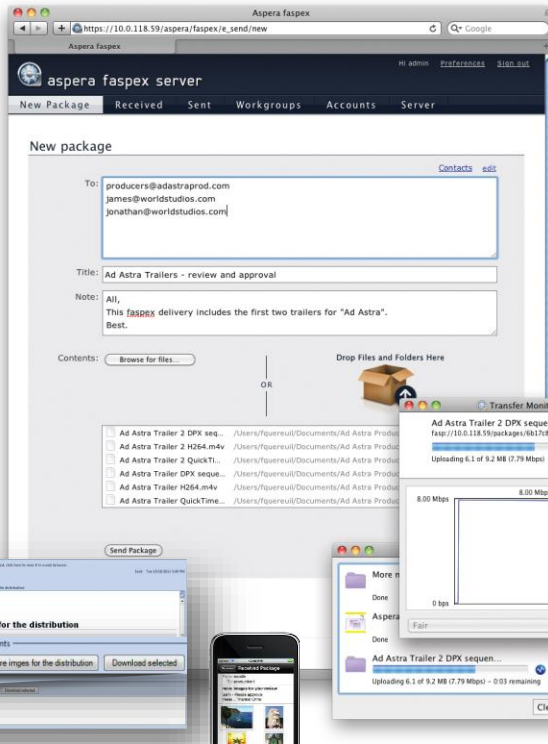
Powered by Aspera

基於Web文件共享
協同和分發

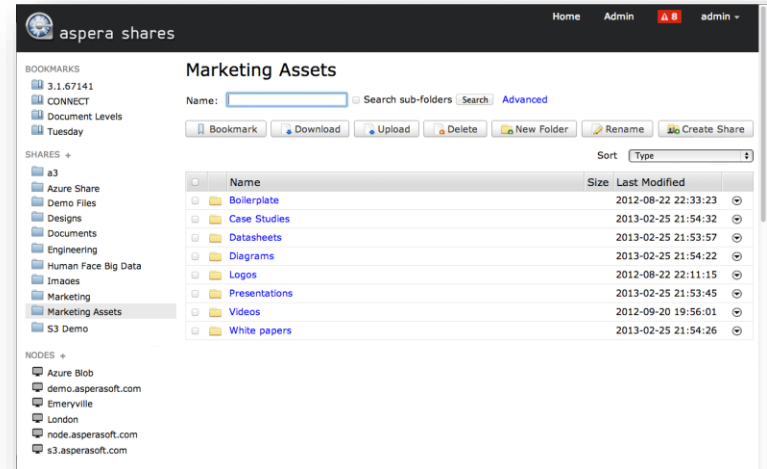
Web applications



Faspex server 和 Shares server



The screenshot shows the 'New package' form in the Aspera Faspex web interface. The form includes fields for 'To:' (recipient email addresses), 'Title:' ('Ad Astra Trailers - review and approval'), and 'Note:' ('All, This faspex delivery includes the first two trailers for "Ad Astra". Best.'). There is a 'Contents:' section with a 'Browse for files...' button and a 'Drop Files and Folders Here' area. A 'Transfer Monitor' window is overlaid on the bottom right, showing the upload progress of several files, including 'Ad Astra Trailer 2 DPX sequence(s)'. A 'Send Package' button is visible at the bottom of the form.



The screenshot shows the 'Marketing Assets' folder in the Aspera Shares web interface. The interface includes a search bar, a list of actions (Bookmark, Download, Upload, Delete, New Folder, Rename, Create Share), and a table of files and folders. The table has columns for Name, Size, and Last Modified. The files listed include folders like 'Boilerplate', 'Case Studies', 'Datashets', 'Diagrams', 'Logos', 'Presentations', 'Videos', and 'White papers', along with a file named 'S3 Demo'.

Name	Size	Last Modified
Boilerplate		2012-08-22 22:33:23
Case Studies		2013-02-25 21:54:32
Datashets		2013-02-25 21:53:57
Diagrams		2013-02-25 21:54:22
Logos		2012-08-22 22:11:15
Presentations		2013-02-25 21:53:45
Videos		2012-09-20 19:56:01
White papers		2013-02-25 21:54:26



文件實時同步



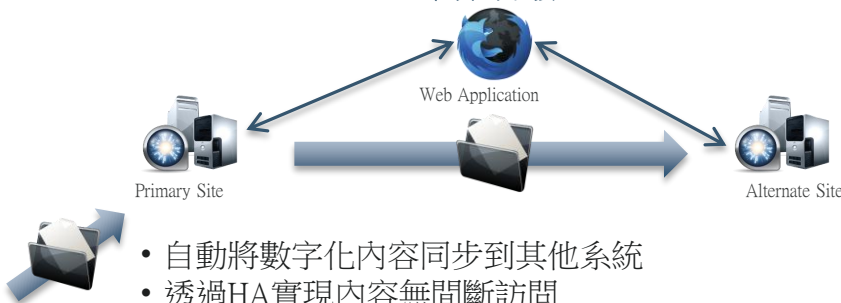
Aspera Sync

數據災難恢復



- 重要數據的異地或本地同步

內容分發



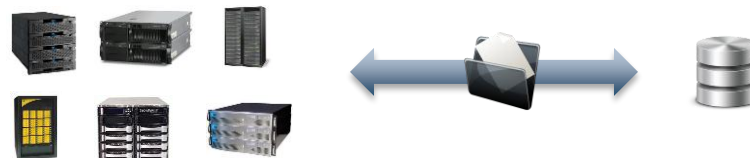
- 自動將數字化內容同步到其他系統
- 透過HA實現內容無間斷訪問

HUB內容匯總和分發



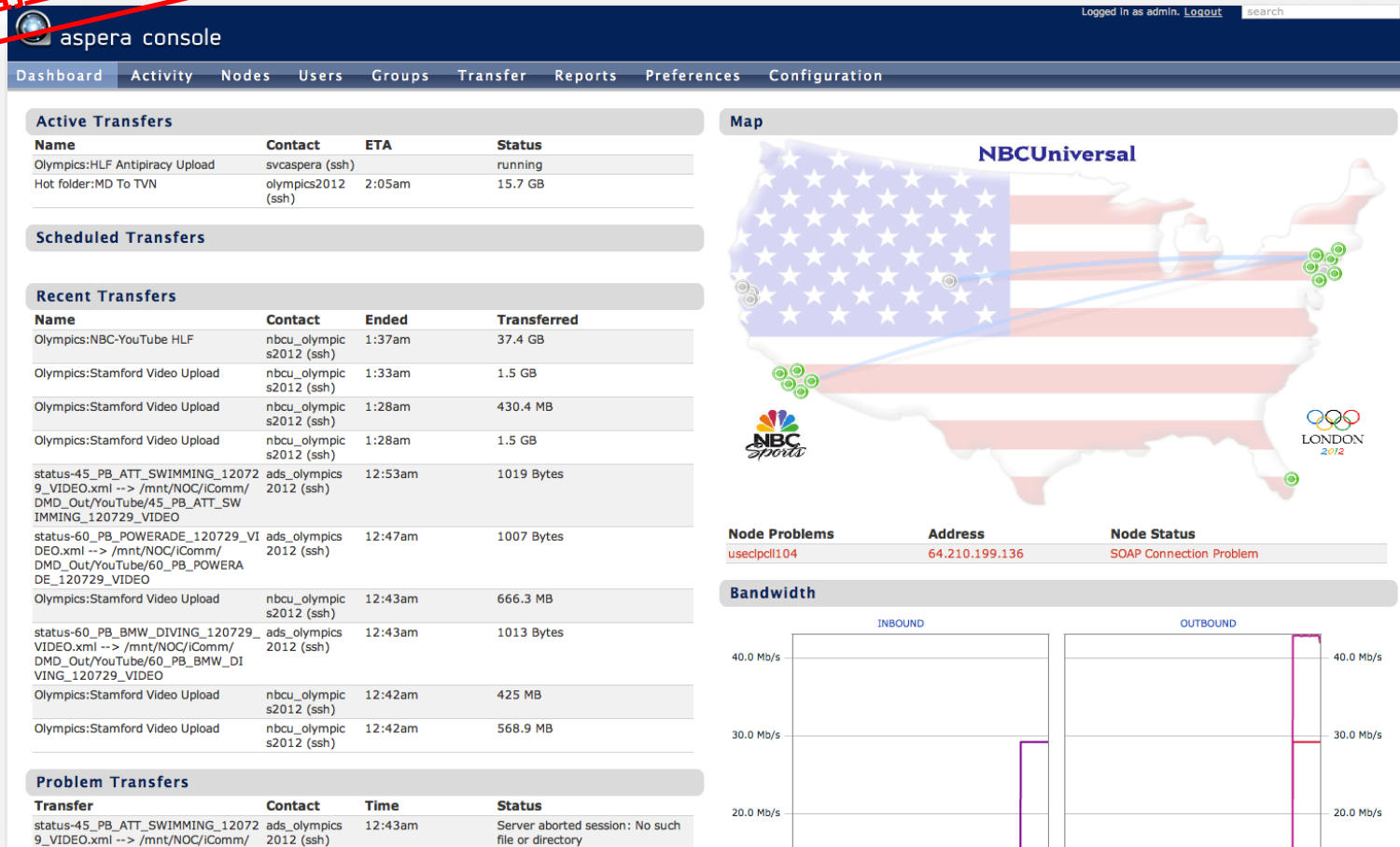
- 從各地把內容匯總到中心節點或從中心分發到各地
- 數據的持續更新

從不同存儲環境進行數據合併



- 對存儲上的文件進行同步
- 保留文件原始屬性，如時間，所有人等信息。

監控和管理



THE SOLUTION

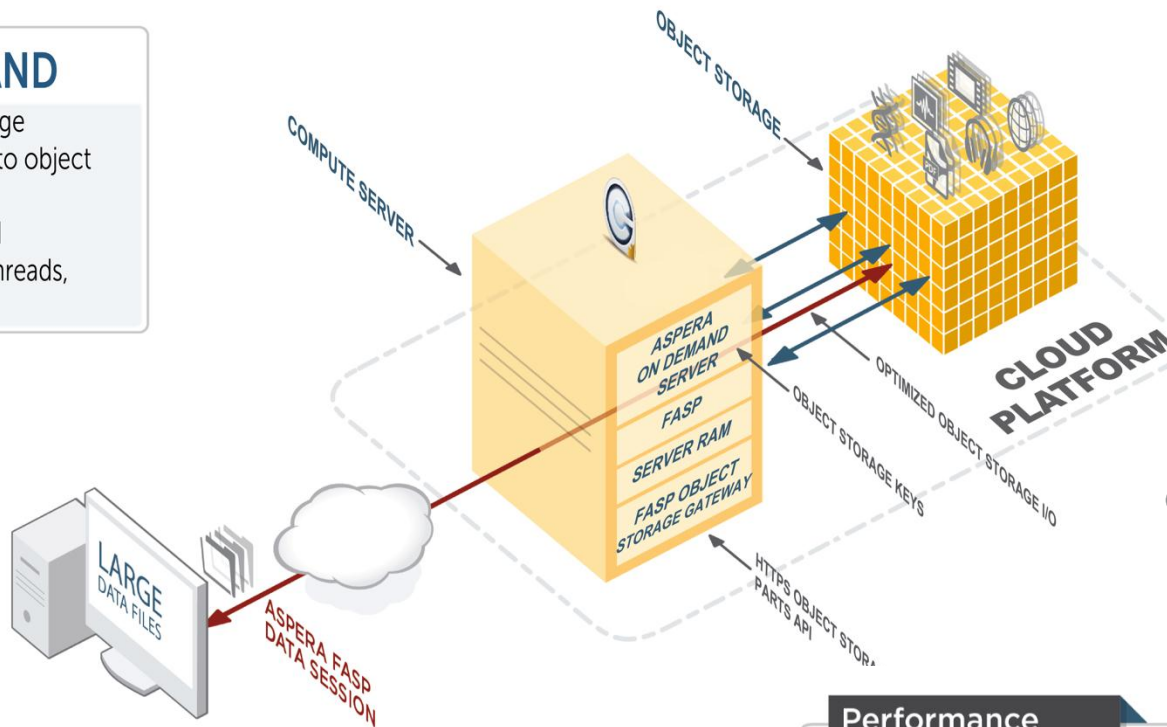
ASPERA ON DEMAND

- Full client-side r/w of object storage
- Synchronous transfer from client to object storage (via Aspera On Demand)
- *asp*™ transfer speeds end-to-end
- Real-time optimization of HTTP threads, chunk size, interfaced to *asp*

Client Software



Road Map



Performance

EFFECTIVE THROUGHPUT

up to 1Gbps
(per server Extra Large Instance)
10TB per 24 hours

Complete set of SDKs with guides, reference information, and sample code for integrating Aspera technology into desktop, network-based, and web applications in place of FTP, HTTP, or custom TCP-based copy protocols using C++, Java, JavaScript, or .NET.

ASPERA MOBILE APIs



Android SDK

Aspera Android SDK provides a Java API to transfer files using FASP-AIR™.



iPhone SDK

Aspera iPhone SDK with Objective C API to transfer files using FASP-AIR.

ASPERA BROWSER APIs



Connect - JavaScript API

JavaScript API exposed by Aspera Connect for integration of FASP based file transfers into web applications for a complete in-browser experience

ASPERA APPLICATION APIs



Shares API

Full programmatic control over browsing Shares, transfer authorization, and upload / download.



faspex™ Web API

A set of services that enables users to create and receive digital deliveries via a Web interface, while taking advantage of FASP high-speed transfer technology.



Console API

Full programmatic management of transfer sessions including initiation, queuing, management and control through a RESTful API.

ASPERA TRANSFER APIs



Aspera Web Services

A SOAP based web service API that allows initiation, monitoring and controlling of FASP based file transfers.



FASP Manager

A class library that allows initiations, monitoring and controlling of FASP based file transfers.



Aspera Multicast SDK

A Java class library for initiation and management of IP multicast based data transmissions using Aspera FASP-MC™.



an IBM® company

Studios

20th Century Fox
DreamWorks
Disney
Lucas Film
Paramount
Pixar
Sony Pictures
Sony Imageworks
Universal
Warner Bros. & GDMX

Post Production

Ascent Media
Cinesite
CINRAM
Cryptography Rsch Inst.
Deluxe
Framestore
eFilm
Lightstorm Entertainment
Modern Video Film
Moving Picture Company
ParkRoads
Post Logic
Postworks NY
Reelz Channel

Content Distribution

Alcatel-Lucent / Velocix
Edgecast
iBAHN
Level3
Limelight Networks
Move Networks

Broadcasters

ABC
ABS-CBN
AFP
Andrita Studio
CBS
CBC
CNN
CSTV
Discovery
ESPN
Fox
Foxtel
HBO
ITN
MLB
NBC
NBA Network
NFL Network
Nova
MTV Networks
Outdoor Channel
Rainbow Media
Red Bee Media
SBS
Scripps Networks
Showtime Networks
Sky Germany
Sky Italia
Starz Entertainment
Travel Chanel
TV Azteca
TV Guide
TVN
Turner
Univision

Online Aggregators

Apple iTunes
Amazon.com
Brightcove
EMI Music
Google YouTube
Hulu
Joost
Microsoft Studios
Microsoft XBOX
Netflix
Synccast (Technicolor)
Universal Music
Sony BMG
Cable/MSO's and IPTV
ATT
British Telecom
Comcast
Crawford
Communications
DirecTV
EchoStar & Dish Network
Rogers Wireless & Cable
Shaw
Telstra
Time Warner Cable
Verizon
Publishing
Dow Jones Online
Houghton Mifflin Harcourt
New York Times
Pearson
Random House
RR Donnelley
Thomson Reuters
Time, Inc.
Sports Illustrated

Life Sciences

Applied BioSystems
Biomedical Systems
BGI
Broad Institute
Duke University
EBI
Fred Hutchinson
Genome Research Ltd.
Johns Hopkins
NIH / NCBI
Translational Genomics
University of Maryland

Pharma

Glenmark Generics
Merck
Pfizer

Integrated & Cloud

Accenture DETE
Artesia
Acesso SubscribeNet
Ceiton
EMC Documentum
Epk.TV
GLOBALedit &
FileSociety
IBM Media Hub
Microsoft IMM
MIT
NorthPlains TeleScope
Omneon
Ooyala
thePlatform
Tandberg MediaPath

ASPERA SAMPLE CUSTOMERS

Global Enterprise

Abercrombie and Fitch
Adidas
Coca Cola
Codan
Greenpeace
Iron Mountain
Mary Kay Cosmetics
Milwaukee Bucks
Johnson & Johnson
RCDB

Engineering, R&D

Apple Computer
Autodesk
CGG Veritas
European Space Agency
General Dynamics
Global Foundries
HP PSG
LSI
NetApp
Nokia
Samsung
Software AG

Legal, eDiscovery

Fios, Inc
Greenberg and Traurig
IPRO Corp
IT.COM
King and Spalding
Mccarter & English
Stroz Frieberg

Games

Activision
Disney Interactive Studios
Eidos Interactive
Electronic Arts
Nintendo
Sega
Sony Computer Entertainment
Sony Connect
Take-Two Interactive
Ubisoft

Financial Services

Bank of America
Dow Jones
Metlife
Morgan Stanley
TD Bank

Federal Government, DOD

DIA
NASA
US Army, Navy, Air Force
USDOJ
FBI
NSA
NGA
US JFCOM
SOCOM
INSCOM
State Department
DISA, SPAWAR
MIT Lincoln Labs
HHS/NIH
Armed Forces Network