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“How watching Survivor changed how I talk to data intensive institutions”

Sean Curran – ANZ Sales Director

MOVING THE WORLD’S DATA AT MAXIMUM SPEED

WHO IS THIS GUY? WHAT'S AN ASPERA?

Software technology company innovating new data transfer solutions

Based in Emeryville California

Founded in 2004, now part of IBM Software

Creators of the FASP® protocol

- Innovative, patented, highly efficient bulk data transport technology
- Unique and core to Aspera's high-performance file transfer software suite
- Outperforms software and hardware WAN acceleration solutions
- Ranked first in every WAN transfer throughput benchmark

Patents: FASP® Bulk Data and Dynamic Bandwidth Control issued in USA and many other countries

Markets Served: Media and Entertainment, Federal Government, Life Sciences, Healthcare, Oil & Gas, Cloud Computing, Software and Gaming, Financial Services, Legal/eDiscovery, Engineering, Technology, Telecommunications, Service Providers, Architecture and Design, Enterprise IT

Global 24x7 Support: Support and sales offices in Sophia-Antipolis, Singapore, Virginia US, and Direct Sales and Sales Engineering throughout globe

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CHALLENGES WITH TCP AND ALTERNATIVE TECHNOLOGIES

Distance degrades conditions on all networks

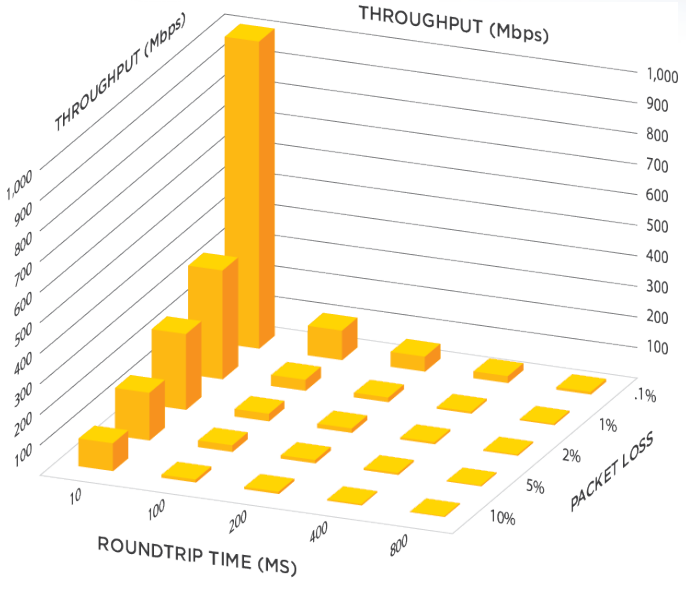
- Latency (or Round Trip Times) increase
- Packet losses increase
- Fast networks just as prone to degradation

TCP performance degrades with distance

- Throughput bottleneck becomes more severe with increased latency and packet loss

TCP does not scale with bandwidth

- TCP designed for low bandwidth
- Adding more bandwidth does not improve throughput



Alternative Technologies

- TCP-based - Network latency and packet loss must be low
- Modified TCP – Improves TCP performance but insufficient for fast networks
- UDP traffic blasters - Inefficient and waste bandwidth
- Data caching - Inappropriate for many large file transfer workflows
- Data compression - Time consuming and impractical for certain file types
- CDNs & co-lo build outs - High overhead and expensive to scale

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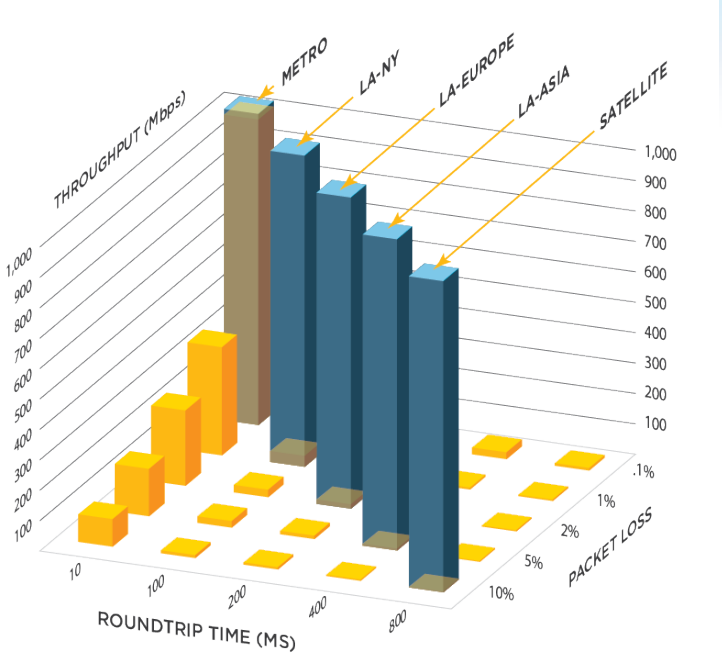
FASP® — HIGH-PERFORMANCE DATA TRANSPORT



Maximum transfer speed

- Optimal end-to-end throughput efficiency
- Transfer performance scales with bandwidth independent of transfer distance and resilient to packet loss

Congestion Avoidance and Policy Control

- Automatic, full utilization of available bandwidth
- On-the-fly prioritization and bandwidth allocation

Uncompromising security and reliability

- Secure, user/endpoint authentication
- AES-128 cryptography in transit and at-rest

Scalable management, monitoring and control

- Real-time progress, performance and bandwidth utilization
- Detailed transfer history, logging, and manifest

Low Overhead

- Less than 0.1% overhead on 30% packet loss
- High performance with large files or large sets of small files

Resulting in

- Transfers up to thousands of times faster than FTP with precise and predictable transfer times
- Extreme scalability (concurrency and throughput)

FASP – PROVEN PERFORMANCE

Location Agnostic

FASP transfer speeds don't degrade as transfer distances increase while FTP speeds do decrease

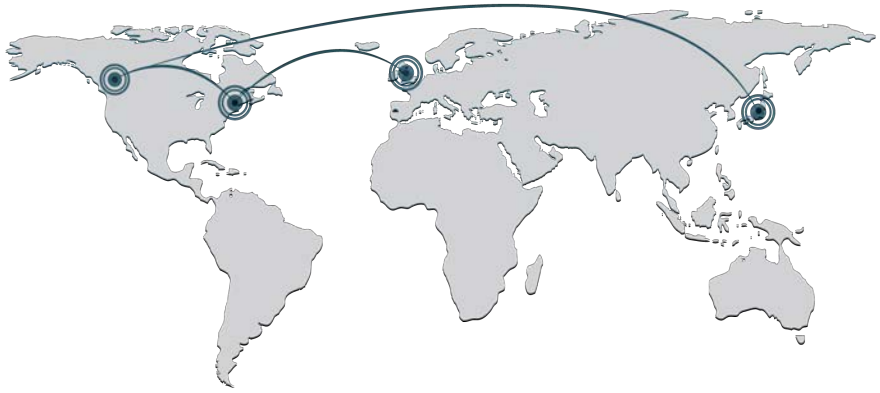
Predictable & Reliable

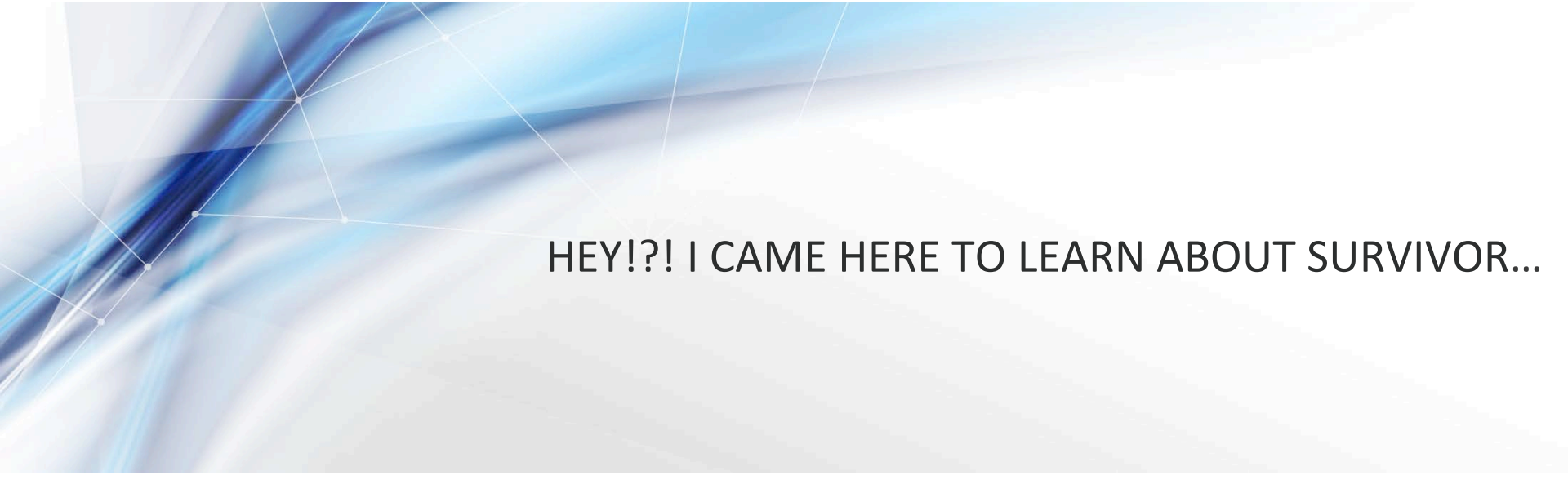
Transfer times decrease linearly as bandwidth increases. FTP transfer times don't improve with bandwidth

Versatile

Supports large files just as easily as and large sets of small files

Moving a 10GB file		Across US	US – Europe	US – ASIA
FTP	10 Mbps	10-20 Hrs	15-20 Hrs	Impractical
	100 Mbps			
	1 Gbps			
	10 Gbps			
Aspera FASP®	10 Mbps	140 Min	140 Min	140 Min
	100 Mbps	14 Min	14 Min	14 Min
	1 Gbps	1.4 Min	1.4 Min	1.4 Min
	10 Gbps	8.3 sec	8.3 sec	8.3 sec




HEY!?! I CAME HERE TO LEARN ABOUT SURVIVOR…

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SURVIVOR – STRUCTURE OF THE GAME

- 18-ish people from a cross section of American walks of life.
- Deposited into a place on earth – South Pacific, South America, Australia, New Zealand
- Every 2 days they vote someone out for a range of reasons at 'Tribal Council'
- Everyone has a game plan – because they "have watched all the last 30 seasons of Survivor and the…."
- Brutal physical challenges – puzzle challenges – social challenges that can win 'Immunity' that day
- Hidden the immunity idols – meaning strategies are crafted with other in alliances
- Everyone says "it's taught me a lot about myself" and "I stayed true to myself"
- Winner get 1 million dollars at the end
- Brings out the worst in people – lots of tears – hurt feelings and yelling.

Contestants are generally one of three stereotypes:

- Attractive fraternity sports player (football or lacrosse player generally) – Cutaways to this person (male or female) generally constitutes such over confident verbiage as:
  - "The game is not ready for someone like me"
  - "I've played x and y professionally and I will be here until z because of my competitive edge playing sports"
  - "I will play the game better than anyone else because I know how to get inside people's heads"
  - Something happens, they say "This will be a game changer" (it never is)
  - Wins the majority of challenges and is easily guided by smarter folks
- Generic Intellectual – Professional, Academic, School Teacher – Non Athlete
  - Nice guy/girl who wants to play and honest game
  - Believes that there is good in everyone,
  - Social game player, gets on with almost anyone.
  - Try's to play smarter than anyone else
  - Prime targets in the first 5 – 8 tribal councils
- Scheming painful, unique, irritant:
  - 'No one is ready for him or her' (they are)
  - Explosive attitude, narcissistic, spends a lot of time playing with people's feelings
  - Usually works in an IT sales related role :)

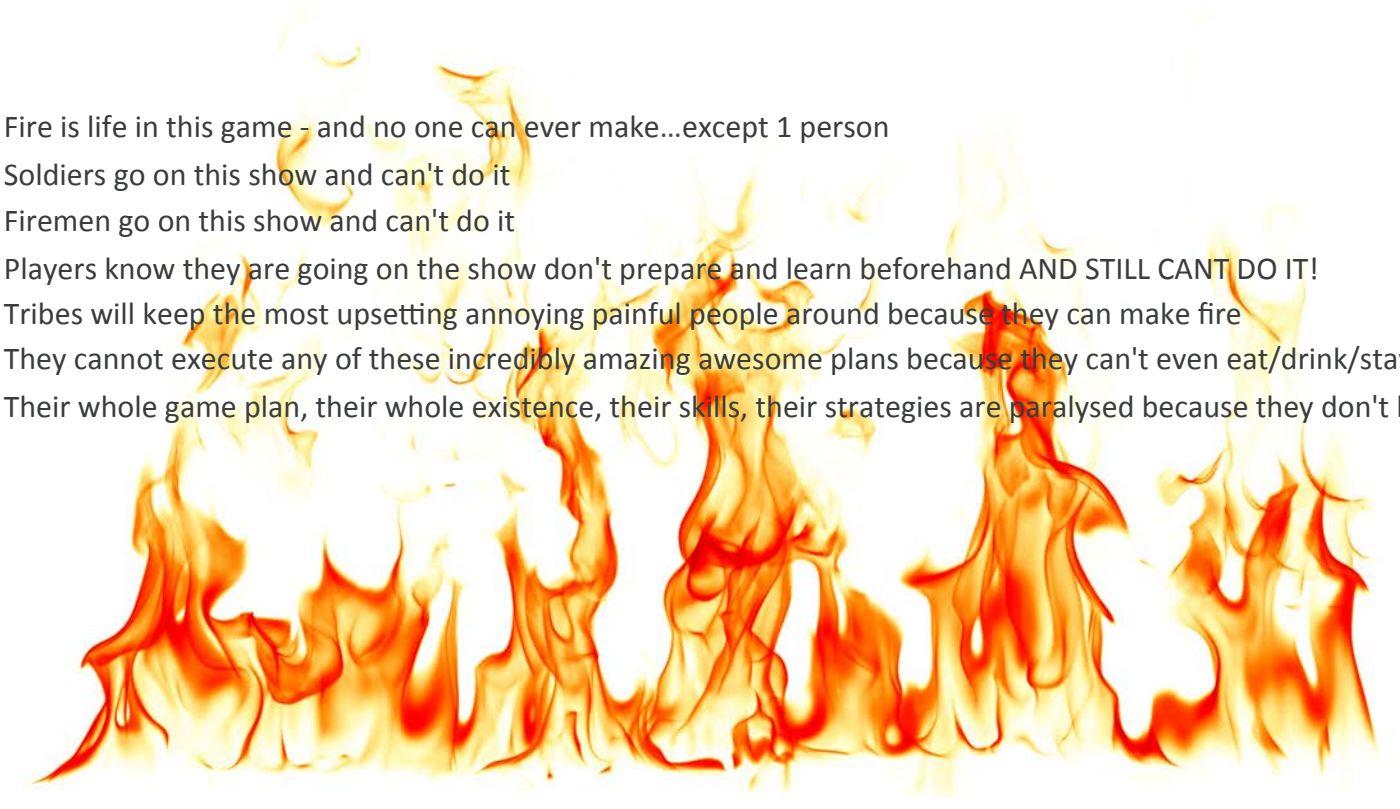
HUH…SO THE DATA TRANSFER PIECE...?

Why are they just plain terrible for 5-10 Tribal councils?

The most physical players, cunning players, intelligent, crafty, brilliant players are levelled by one thing…

Fire

- Fire is life in this game - and no one can ever make…except 1 person
- Soldiers go on this show and can't do it
- Firemen go on this show and can't do it
- Players know they are going on the show don't prepare and learn beforehand AND STILL CANT DO IT!
- Tribes will keep the most upsetting annoying painful people around because they can make fire
- They cannot execute any of these incredibly amazing awesome plans because they can't even eat/drink/stay dry/stay warm
- Their whole game plan, their whole existence, their skills, their strategies are paralysed because they don't have fire.



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OK…I THINK I'M FOLLOWING…

31 Seasons of Survivor and this fundamental core to the game, has not, and will not change.

Contestants are crippled and brought to their knees until they understand it – and more often than not they don't realise until it is too late.

Effective data transfer and robust data transfer is the fire of a data driven organisation

THE DOLLARS

When talking with an Australian based science organisation who migrated to our software

- FTP/HTTP/TCP is free…and you absolutely get what you pay for...
- FTP/HTTP/TCP is free…except for the cost per year in making it work and tuning
- FTP/HTTP/TCP is free…and it takes valuable resources away from their primary job of research
- The institutions potential $2 million dollar investment under utilised by lack of an effective, predictable and reliable protocol.

TOPOLOGY OF OUR CUSTOMER'S FACILITIES

Not too different to what you think…

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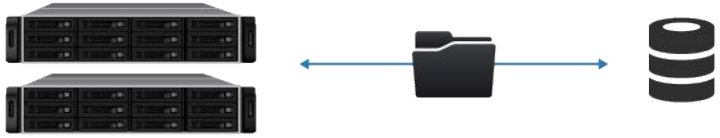
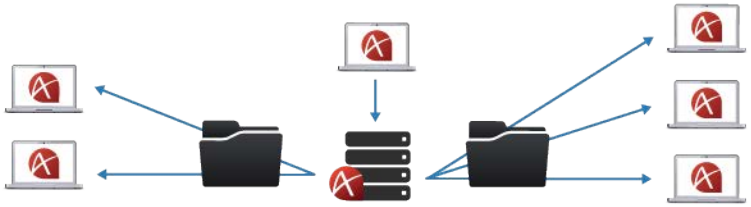
DIAGRAM OF FACILITY



Oil and Gas - Primary Storage to DR Storage Replication
Media – Online Video Files from performance disk to near line offsite
Legal – Data sync from customer site to forensics site
Law Enforcement and Defence – Data transfer from Agency to Agency

Oil and Gas - Data Ingress Site to Processing Nodes
Media – Submission of Assets from VFX to Editorial Facility
Legal – Evidence transferred for processing at cloud location
Law Enforcement and Defence – Rapid dissemination of intel



Oil and Gas - Collaborative tools for geo dispersed collaborative teams
Media – VFX, Animation team, Sound team, grading and editorial teams collaborating on final production
Legal – Secure document collaboration in evidence and litigation scenarios across multiple sites
Law Enforcement and Defence – Rapid operational data deployment to multiple locations

START A FIRE – MAKE A DIFFERENCE

Or the tribe will vote you and your facility out…

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WHEN A FIRE STARTS TO BURN…

"Do the basics right" - 'Basics need to be addressed before you can innovate'

- Implement a predictable, reliable and scalable transfer protocol to drive success
- Maximize your facilities infrastructure investments to their highest potential by feeding them the greatest amount of data possible.
- Plan and accurately predict your data transfer. Scale it linearly
- Always always always remember – The researcher is the utmost focus as they are your consumer.

What if the the greatest innovation, research outcome or breakthrough in infectious disease, diabetes, extra-terrestrial search, heart disease, water table and ground salination analysis, weather predictions etc. was stuck in a transfer progress bar…?

If the simple solution is to implement a commercial software platform for a fraction of your overall spend…is that not a sound investment?

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