Combined Flash / Cloud Solution Enabling High Speed Collaboration

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High-Speed Collaboration

- Flash offers significant benefits to enterprise storage

- Cloud Controllers blend the very best of Flash & Cloud Storage

- Together, Flash & Cloud enable high-speed cross-site collaboration for end users

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Flash Memory

- ## Higher System Performance
  - ### Translates to increased revenue in most cases

- ## Cost improving over time

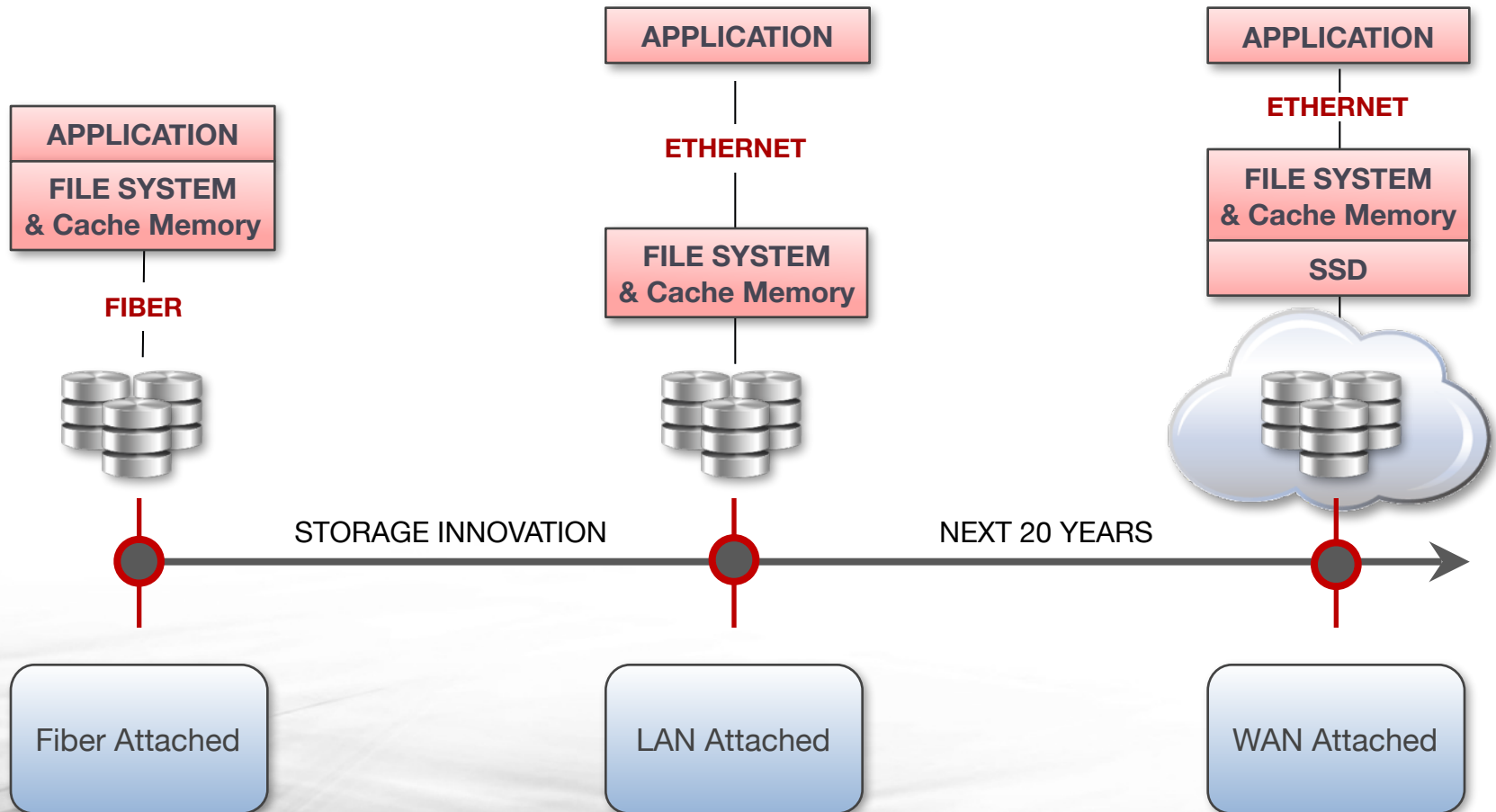- ## Relatively expensive compared to cloud

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Cloud Storage

- Hyper-competition driving cost reductions

- Very high resiliency
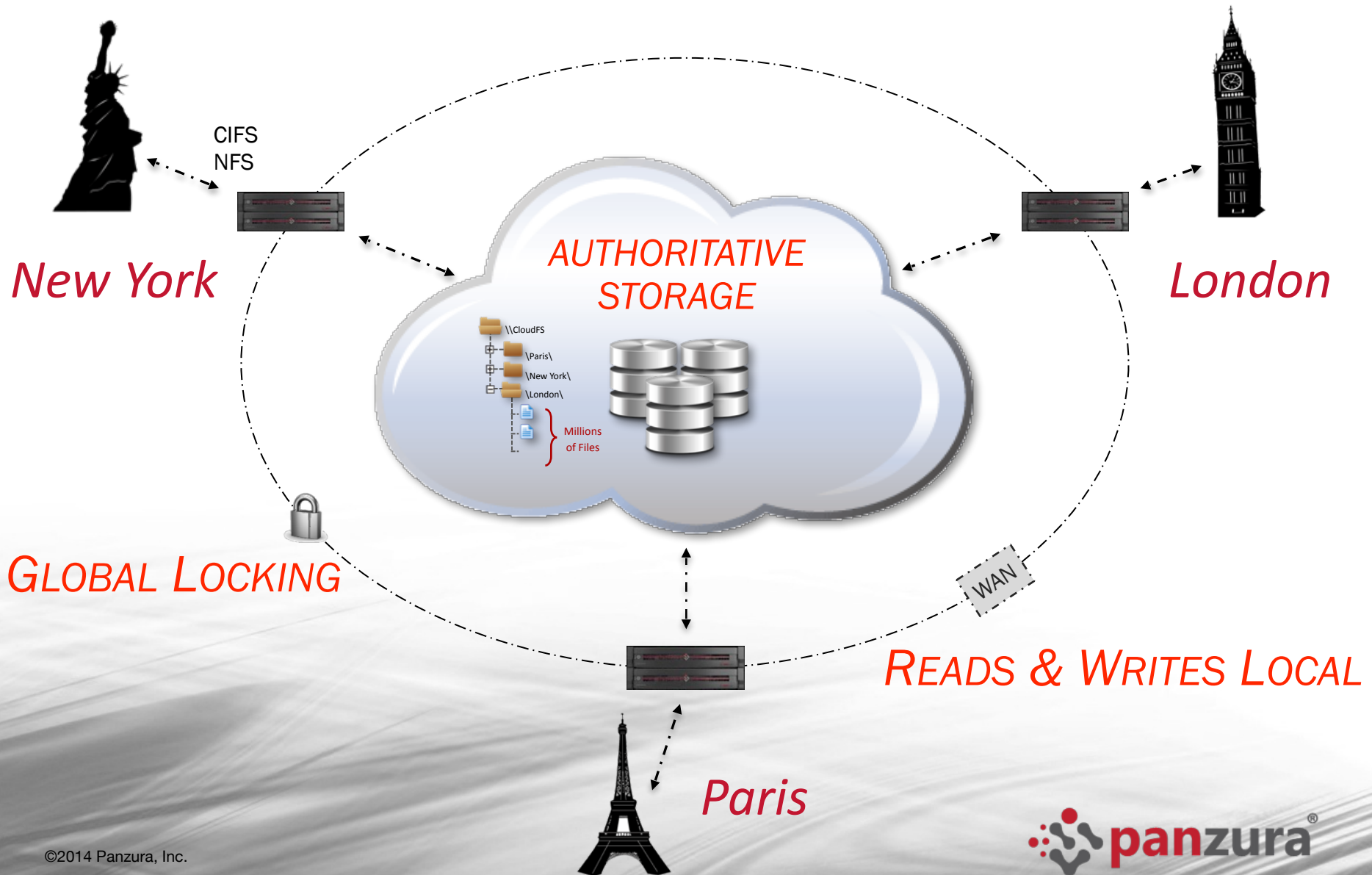 - No longer need backup / archive

- WAN can slow it down significantly

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What is a Cloud Controller?

- Blends the very best of Flash & Cloud Storage
  - Much more capable than traditional "Cloud *Gateways*"

- Both provide extended Tiered Storage
  - SSD + HDD + Cloud Storage

- Cloud Controllers enable high-speed, cross-site, end-user collaboration

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Next Innovation in Storage

APPLICATION

FILE SYSTEM & Cache Memory

FIBER

Fiber Attached

APPLICATION

ETHERNET

FILE SYSTEM & Cache Memory

LAN Attached

APPLICATION

ETHERNET

FILE SYSTEM & Cache Memory

SSD

WAN Attached

STORAGE INNOVATION

NEXT 20 YEARS

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Global Real-Time Collaboration

New York

CIFS
NFS

AUTHORITATIVE
STORAGE

\\CloudFS
\Paris\
\New York\
\London\

} Millions
of Files

London

GLOBAL LOCKING

WAN

READS & WRITES LOCAL

Paris

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Example Use Case – CAD Collaboration

- **Goal:** Cross-Site Real-Time Collaboration

- **Challenge:**

   Opening, Closing, and Saving Projects:

   The "File Open Problem"

   Reduced Productivity and Increased Costs

The Main Culprit

- LATENCY…

Civil3D Project with WAN Opt.

- Project Size = 1.5MB
  - *Smallest File Chosen To Illustrate Problem*
- Round Trip Time 86ms
- File Open and Lock Packets 4,508 (6.46min)
- File Close and Unlock Packets 4,206 (6.03min)
- File Look Up Packets 5,385 (7.72min)
- Read Data Packets 1,004 (1.44min)

43ms

43ms

Total Time: 22 min

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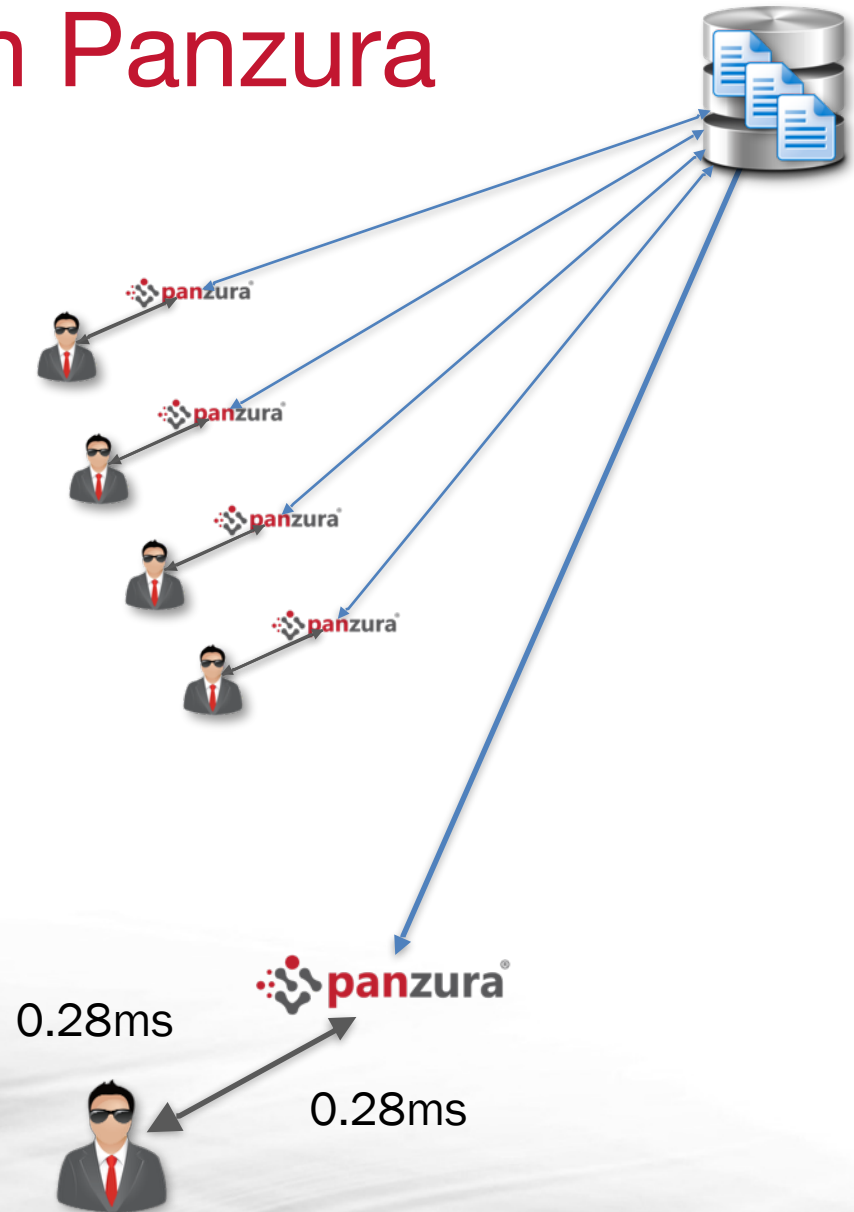
Civil3D Project With Panzura

- Project Size = 1.5MB

- Round Trip Time 0.56ms

- File Open and Lock Packets
  4,508 (2.52sec)

- File Close and Unlock Packets
  4,206 (2.36sec)

- File Look Up Packets
  5,385 (3.02sec)

- Read Data Packets
  1,004 (0.56sec)

0.28ms

0.28ms

Total Time: 8 sec

So what ?

- Imagine 22 minutes to open a file

- Imagine requiring 12+ hours to move data

- Imagine replacing a $384K hardware refresh with a $400/month cloud storage charge

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So what ?

- Collaborate on files in real-time without fear

- Reduce IT costs
  - Cloud storage
  - Lower power / cooling
  - Backup, Archive and DR are inherent

- End-users remain unaware of the change

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High-Speed Cross-Site Collaboration

- Flash makes it all possible

- Solves real-world problems

- Accelerating enterprise storage enables new paradigms

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Summary

- Flash offers significant benefits to enterprise storage

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- Together, Flash & Cloud enable high-speed cross-site collaboration for end users

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Thank You!

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