

 **NetApp** +  **Resilio**

# You're Syncing It Wrong: *What's Possible With Peer-to-Peer*



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# Teenagers

...that you embarrass

# Parents

...that you disappoint

All the ways

you're syncing it wrong

**F**ast

Slow

**Big**

Small



**Now**

Then

Hot

Cold

Here

There

Everywhere

Anywhere



Too Much

Not Enough

At All



# Someone Else

is syncing it for you



Google Drive

*...and you didn't even know!*



How did we get here?!?

1971

cp

Bell Labs

1982

rcp

UC Berkeley

1976: Xmodem

1981: Kermit

1984: FidoNet

1985: ftp, Ymodem

1986: Zmodem



1990

WWW

Tim Berners-Lee

1990: EMC Symmetrix, SRDF

1992: ONTAP, SnapMirror

1996: rsync

1998: unison

# Millennial Challenges







**BitTorrent™**

**2001**

35%

This was before:

2018

2022

3%

>28 million

Mid-2000's Global Internet Traffic

YouTube, NetFlix, Facebook, Tik Tok

>20% global upstream traffic

#1 global upstream traffic (9.7%)

Current global internet traffic

Global daily active users

# 1 ExaByte

SD video at 1 Mbps

HD video at 54 Mbps

Xfer in 1 year

YouTube

## BitTorrent

# >1 billion GB

292,000 years

5,400 years

3.5 Tbps sustained

1.7 years

## 1 month

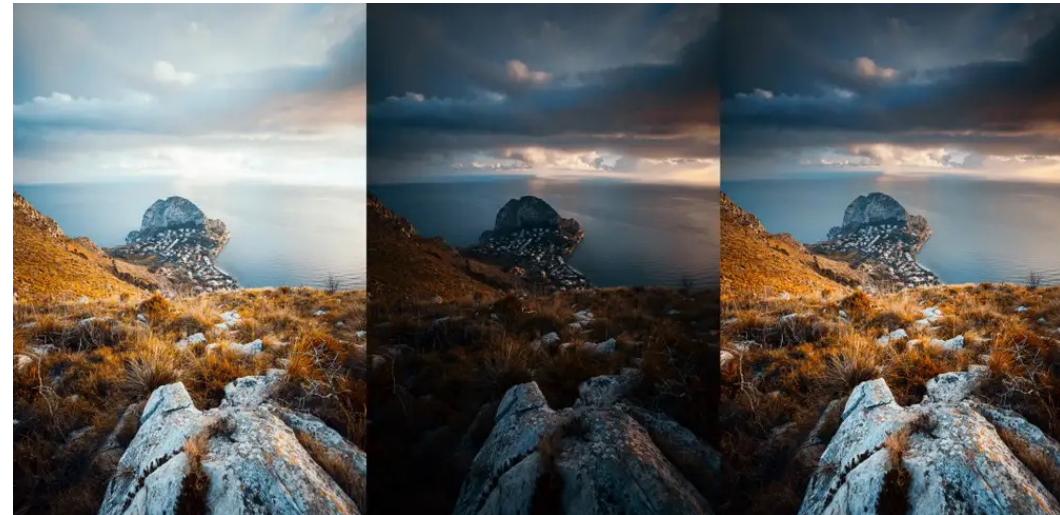
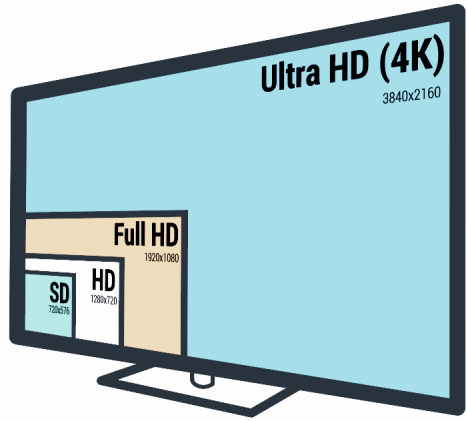
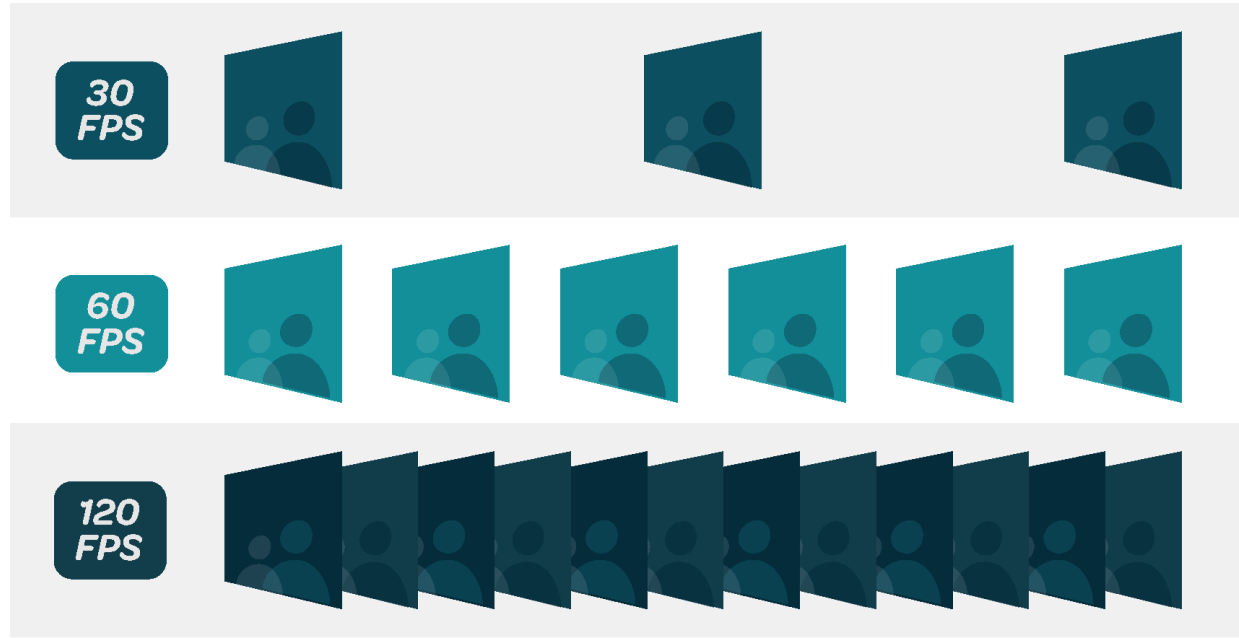
# So what?

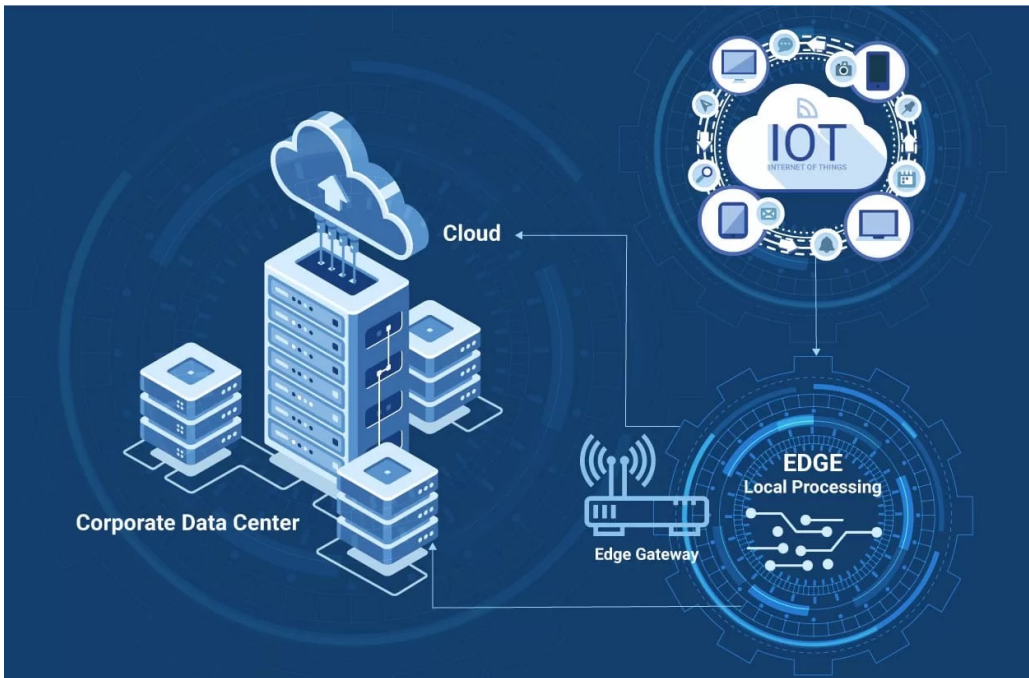
Not interesting to IT

*...except how to block it.*









The world is doing much more interesting things with data.

We need to move data in much more interesting ways.



Resilio

55+ employees with deep expertise in file movement protocols, storage, networking, CDNs, and security. Offices in US and EU.



Eric Klinker

Co-Founder and CEO

CEO/BitTorrent,  
CTO/Internap, CTO/netVmg,  
Inventor/Excite@Home,  
Engineer/U.S. Naval Research Lab



Ilan Shamir

Co-Founder and COO

SVP Engineering & GM Platforms  
/BitTorrent, GM Endpoint  
Products/Check Point,  
Architect/Zone Labs



Konstantin  
Lissounov

Co-Founder and CTO

VP, Engineering/CrowdStrike  
Cloud Ops/Aruba  
VP/Alcatel-Lucent  
VP/Internap



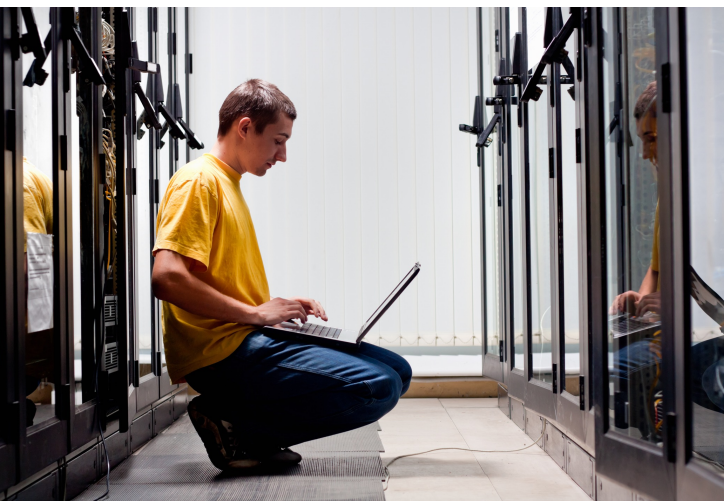
Josh Sargent

VP - Sales & Partnership

Principle Solution Architect/Meridian IT  
(18 years), Sonnenschein Nath &  
Rosenthal, PrimeCo Personal  
Communications



Resilio builds high-performance file delivery and access solutions for extraordinary data environments.



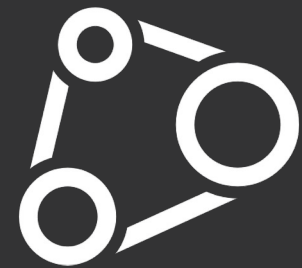
# Trusted by IT professionals and creatives around the world.

- ✓ **350+** enterprises
- ✓ **3500+** SMBs and agencies
- ✓ **250,000+** agents installed
- ✓ **125,000,000,000+** files transferred
- ✓ **6+** exabytes of data transferred





# Resilio Connect



# Resilio Connect

- Real-time omni-directional file sync
- 1:1, 1:N, N:1, N:N
- Active-Active
- Active-Passive
  
- Peer-to-Peer
- Scalable
- Fast
- Efficient
- Resilient

- Reliable
- Flexible
- Visible
- Central Control
- Secure
- Simple

# Management Console

- Private local installation
- Central management & control
- Monitoring and instrumentation
- Scales to thousands of agents

# Agents

- Data movers
- Windows, Linux, macOS, BSD, others
- Peer-to-Peer
- Direct communication

The screenshot displays the 'Resilio Connect' Management Console interface. The top navigation bar includes 'OVERVIEW', 'EVENTS', 'JOBS', 'AGENTS', 'GROUPS', and 'PROFIL'. The main content area is titled 'Job runs > Replicate Training Materials' and features sub-tabs for 'OVERVIEW', 'STATISTICS', 'AGENTS', and 'LOGS'. The 'OVERVIEW' tab is active, showing 'GENERAL INFO' with the following data:

GENERAL INFO	STATISTICS
Status: In progress	Total Agents: 5 Agents
Duration: 1 Days, 2 Hours	Offline Agents: 0 Agents
Transfer ETA: 2 Minutes	

The 'STATISTICS' section provides a detailed breakdown of transfer metrics:

Total bytes in the job	Total bytes to transfer	Max speed	Average speed	Current
205.5 TB	89.7 GB	20.1 Gbps	19.1 Gbps	18.7
		105 files/sec	75 files/sec	72 files/

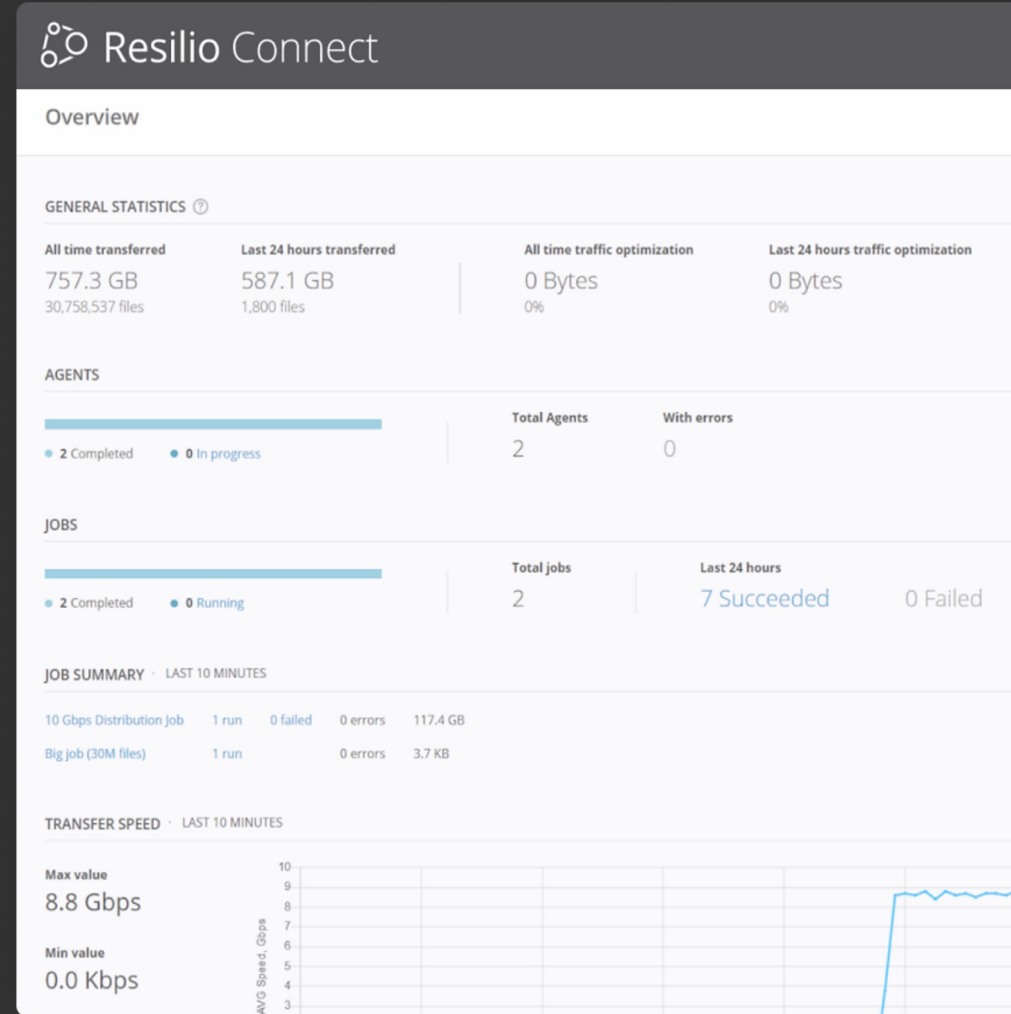
Additional statistics include: Total files in the job: 12,200,122; Total files to transfer: 9,008. A note states: 'Average speed is based on speed for the last 5 minutes'. At the bottom, 'AGENTS STATUSES' shows 1 Agent in 'Loading' state, and 'AGENTS ERRORS' shows 0 Agents in 'Paused' state.

The screenshot shows the 'Connect Agent' interface within the Resilio Connect environment. The top navigation bar includes 'FOLDERS' and 'HISTORY'. The main content area displays a table of folders and their replication status:

Name	Status	Size	Last transferred
UX	✓	36.84 GB	May 29, 2020
Replicate Training Materials	○ 95%	4.1 TB	May 29, 2020
Recorded Webinars	✓	949.3 MB	May 29, 2020
Sales Collateral	✓	577.69 MB	May 28, 2020
Brand Assets	✓	568.58 MB	May 28, 2020
Inspiration	✓	8.13 MB	May 27, 2020

Resilio Connect makes unstructured data universally accessible and highly-available across your entire infrastructure:

On-premise, cloud, hybrid/multi-cloud, edge, and distributed teams.



# Feature Overview



## Distribute Data

Update software & data reliably. 100% file delivery success using our unique P2P architecture.



## Real-Time Sync

Real-time file sync allows you to automatically sync changed files & folders without delay.



## Consolidate Data

Consolidate data from 1000s of machines. Collect performance reports, CCTV videos, transaction logs, or any other data you need.



## Cross Platform

Run on any OS. Windows, Linux, OSX, iOS, Android, FreeBSD, and all major NAS solutions.



## Workflow Management

Use custom scripts to operate on the data you move. Scripts can be made OS-specific and written in any programming language.



## Event Processing Integration

Pair Connect with any major event processing solution to receive detailed notifications and analysis of events.



## Bandwidth Scheduler

Set bandwidth usage limits based on time-of-day or day-of-week. Create different schedules profiles for different jobs and agent groups.



## Control via API

Script any Connect functionality using a powerful REST API. Manage agents, create groups, control jobs, or report on data transfers.



## Selective Sync

Download only the files that you need, without having to replicate entire folders on every device.



## Private & Secure

Transfer files over end-to-end encrypted connections. State of the art security that was reviewed and verified by 3rd party experts. Your data only touches devices you own.



## Role-Based Permissions





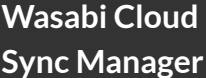



















Improve data management security by adding multi-level admins. Control access to settings, user management, agents, and jobs.



## WAN Optimization

Utilize 100% of the available bandwidth in your network independent of distance, latency, or loss.

# The unstructured data industry...

Server/Storage Replication	File Sync/Share	File Transfer	GFS
 <p>(DFS, Rsync, Azure File Sync, Robocopy)</p>       	      	  <p>Repliweb</p>  	    



# Customers Say...



*“During one security incident, by the time the security team had a plan, we’d already delivered and applied patches and solved the problem using Resilio Connect. **We’ve never seen anything as fast as Resilio Connect.**”*



*“We suffered a massive network infrastructure outage. Nothing worked. Email, web services, file sharing. **Everything was down. Except Resilio Connect!** Resilio was still sending data.”*

# Remote Work

Media & Entertainment / Others



# TURNER

## Challenge

Teams that travel to remote sites need to keep their content in sync and rendered at the server farm in headquarters.

## Solution

By integrating Resilio Connect into their team's workflow, Turner Sports could easily sync TBs of media files between their working remote teams and HQ. Connect's transfer protocol enabled fast and reliable delivery of mission critical files between the on-site team and HQ.



# TURNER

## Quote

*“What I love about Resilio is that I can always keep a local copy of what the graphics team is working on that syncs back to the home site.*

*We get fast and easy access of the local server and all changes.”*





# SKYWALKER SOUND

A L U C A S F I L M C O M P A N Y

## Challenge

In March 2020, as COVID-19 prevention policies went into effect, Skywalker Sound knew it needed to transition quickly from its usual ProTools workflow. Instead of revolving around shared local storage, it would have to move to a distributed model that allowed real-time collaboration among the specialized staff who were now working from home.

Adapting its workflow to support geographically distributed remote users was only the first part of the issue. Skywalker Sound also had practical concerns about factors such as bandwidth and data security.

## Solution

With Resilio Connect, Skywalker Sound was able to configure the collaborative workflow it needed to remain productive without complicating things for its remote users. At home, staff work from a local external SSD/HDD storage device that mounts on their workstations as an SMB share. As the project data changes, it syncs with the primary storage bucket back at Skywalker Ranch.





# SKYWALKER SOUND

A LUCASFILM COMPANY

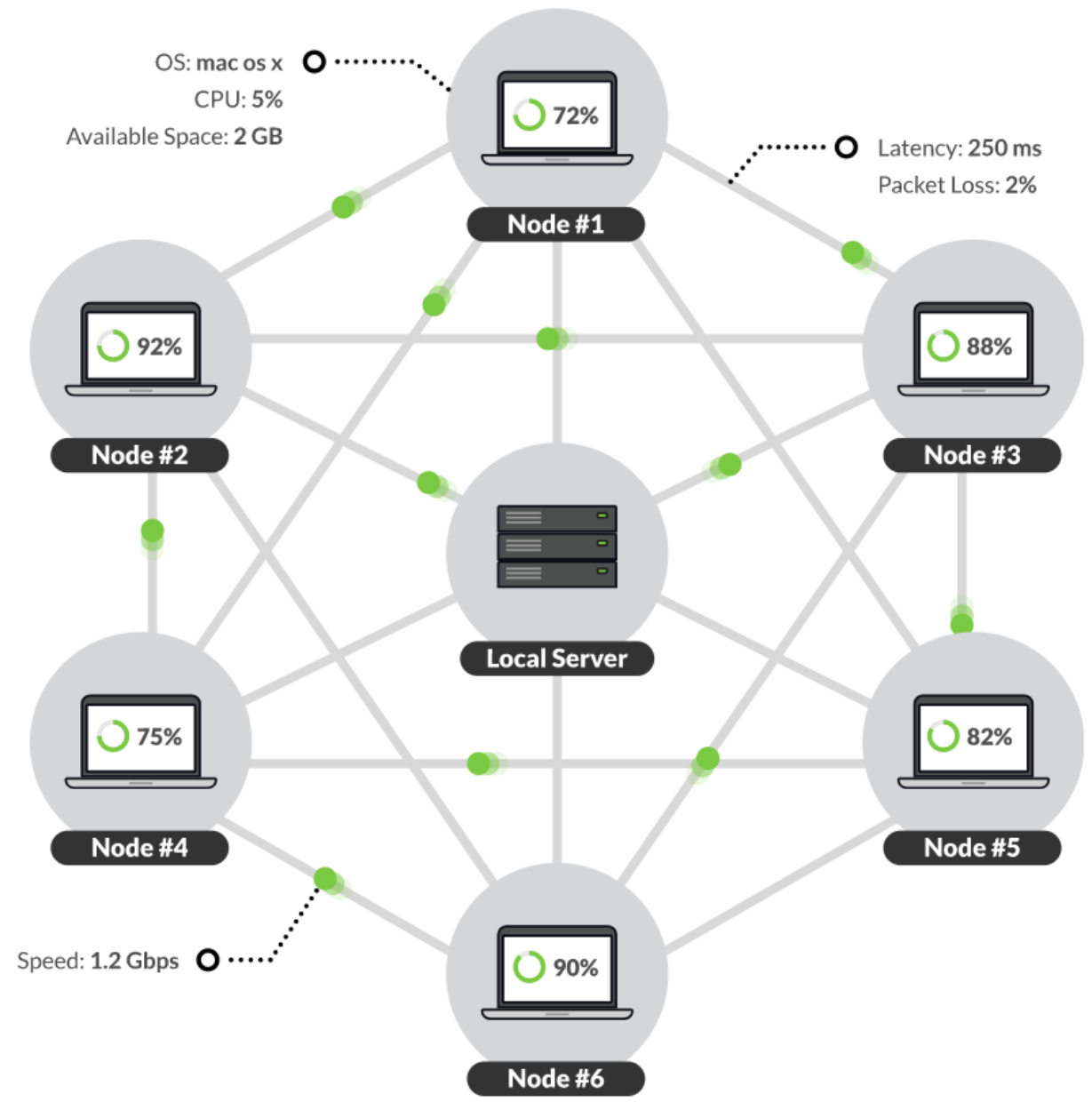
## Quote

*"I think the concept of people being more distributed and being able to work from home is here to stay. With Resilio in place and building in other aspects around it to make the content secure, we've achieved that in such a way that we can have a more diverse workforce and give our staff more flexibility with how they can work in the future."*



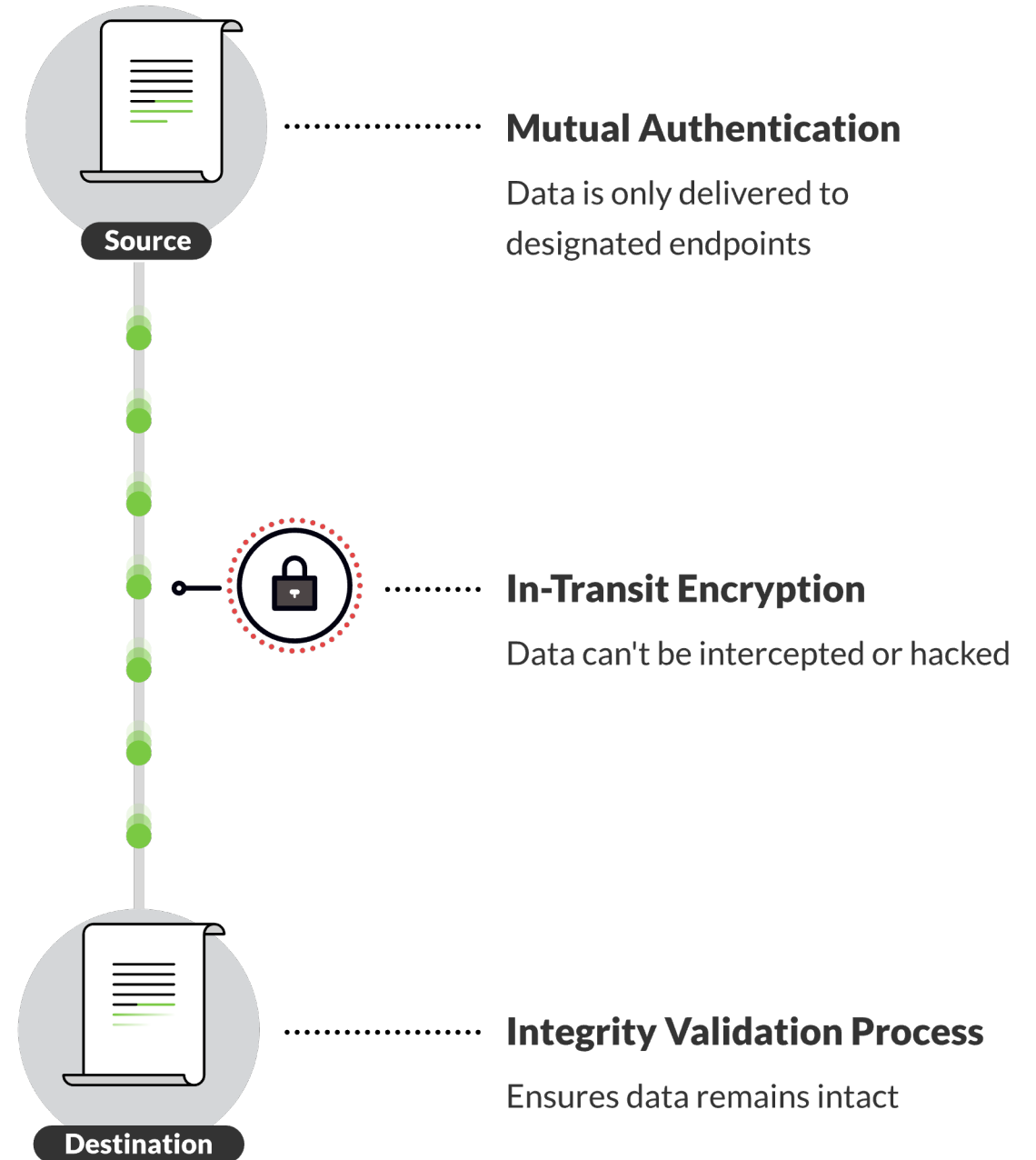
# Peer-to-Peer

- ✓ BitTorrent-like P2P architecture for massive scale, performance, & resiliency
- ✓ Data is moved concurrently. Gets the Job done 2-10x faster than traditional 1:1 solutions
- ✓ Take advantage of aggregate network performance by clustering multiple agents
- ✓ Reduced server load & cloud traffic
- ✓ No single point of failure - easy to configure redundant and highly available systems
- ✓ Data transfer continues even if some of the network is unavailable



# Private & Secure

- ✓ 100% private (*no cloud or 3rd party devices involved*)
- ✓ End-to-end encryption (AES-256 CTR)
- ✓ Mutual authentication and authorization of clients and Management Console
- ✓ One-time session encryption keys ensure Forward Secrecy
- ✓ Cryptographic data integrity validation



# Edge

Maritime / Shipping / Transportation / Logistics

# ExxonMobil

## Challenge

Need to transfer huge (up to 100GB) VHD files to dozens of sites over the globe. Some are offshore with high latency (700ms) satellite links.

## Solution

By integrating Resilio Connect into its workflow, Exxon was able to create a VHD update solution that never fails. What used to take weeks and many retries is now done within a couple of days without any human intervention.





# ExxonMobil

## Quote

“Connect has been a great help on our deployment process and it made things faster and easier for sure. *Transfer jobs complete* vs. never completing before Connect.”

“Resilio is the only product that can deliver data globally for us. *Nothing else works* (except shipping physical disks).”





## Challenge

Mobile health clinics (over 30 technically equipped buses) capture radiology images that need to be consolidated to a central repository for medical examination and diagnosis.

## Solution

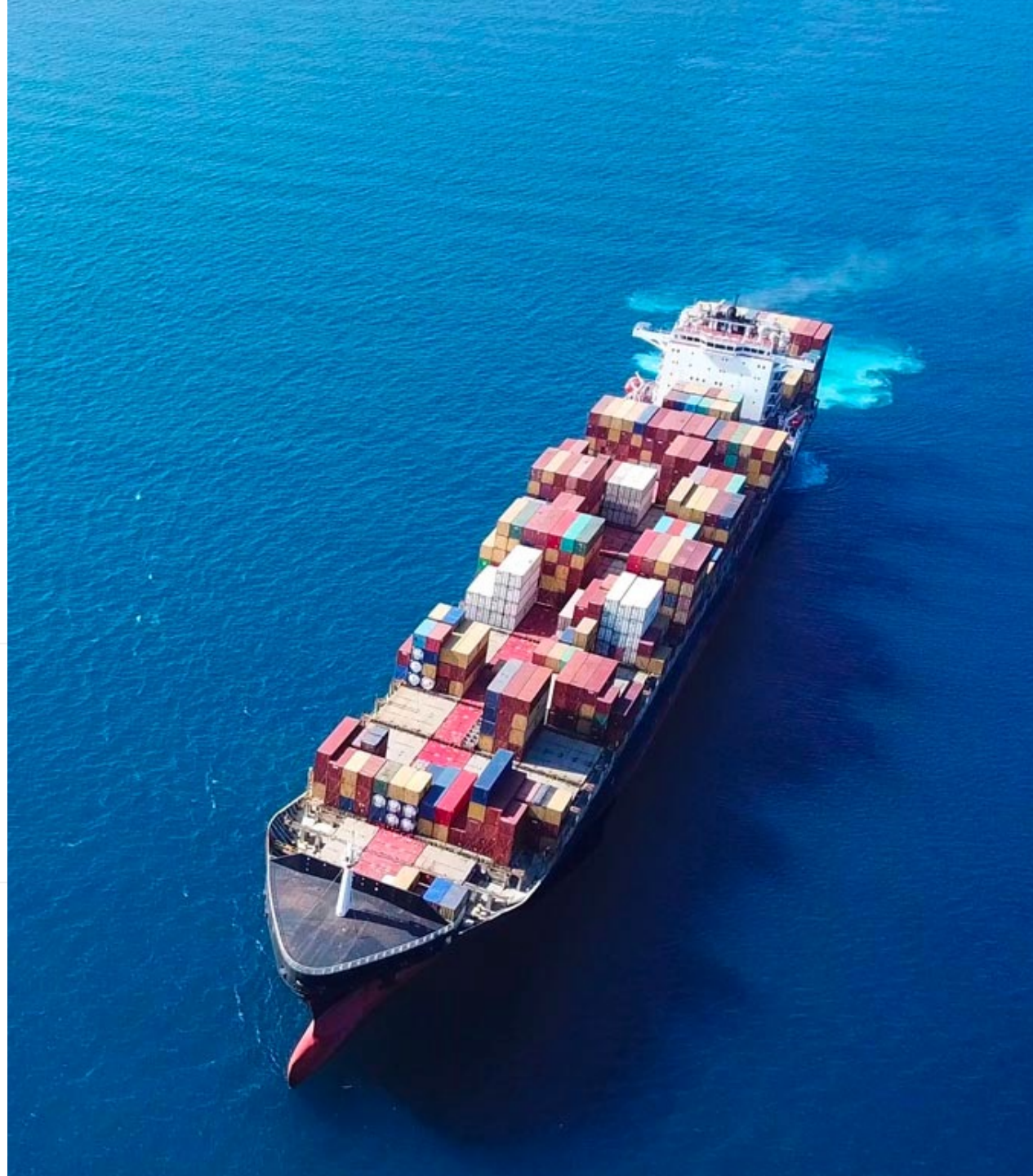
By integrating Resilio Connect into their mobile radiology clinics, the images can be sent over LTE connections to the HQ for review. Post-transfer and verification, a cleanup script is triggered by Resilio Connect. It deletes the source data from the local storage on each bus and staff's tablet to free up space for future mobile data collection.



# Why Resilio?

## Unreliable Edge Locations

- Slow, intermittent, high-latency networks
- 1,000s of endpoints and remote locations
- Maritime, retail, transportation
- Reliability advantage



# Reliable Over Any Network

File Chunking

The file is moved in small chunks. This allows us to “checksum restart” and efficiently recover from failures.

Integrity Verification

We never create corrupted files.

Connection Loss Recovery

Interrupted transfers resume automatically as soon as connectivity is re-established.

Persistent

We retry until the transfer is done.

Resilient

Connectivity doesn't depend on static IPs. Machines can change IPs and it won't break the data transfer operation.

Efficient

ZGT is highly optimized for high-latency, unreliable networks.

# Last Mile

Retail / Fast Food / Branch Banking

 **Resilio +** McDonald's (AUS & NZ)





McDonald's

## Distribution of 20GB OS Images

- ✓ Over 1,000 locations
- ✓ Remote self-installation of Win PR7 to 20,000 devices
- ✓ Eliminated need to mail USB drives

## Digital Marketing & Training Materials Pushed to All Stores

- ✓ Resolved network congestion during the daily 3pm transfer

## POS Terminals

- ✓ POS data consolidated from each store every 8 hours
- ✓ ~7000 configuration files pushed out in real-time





McDonald's

## Quote

“During one security incident, by the time the security team had a plan, we’d already delivered and applied patches and solved the problem using Resilio Connect. *We’ve never seen anything as fast as Resilio Connect.*”







Marine ingenuity

## Challenge

Patching 100s of endpoints on dozens of vessels at sea using SCCM was failing.

## Solution

Resilio Connect offered a reliable data distribution protocol that overcame Van Oord's intermittent internet connections. Once each vessel received an update, Resilio Connect distributed it to every endpoint on the vessel over the local network. Resilio Connect was a perfect replacement for SCCM's Distribution Points.

The IT team at Van Oord took it a step further by using Connect's scripting capabilities and completely eliminated the need for deployment via SCCM. The remote scripting enabled the IT team to install applications and configure systems as needed.





Marine ingenuity

## Quote

*“Resilio has helped Van Oord greatly because now we are able to get data over really poor satellite connections, and **we were able to patch our entire vessel environment faster than ever.**”*





# Case Study: Mercedes-Benz

## The Challenge

Mercedes-Benz Dealerships needed to distribute quarterly & monthly OS updates to sales technicians working across 34 branches in Switzerland & 6 branches in Italy over a variety of network connections. The branches used USB sticks to update every device in their network.

## The Solution

Leveraging Resilio Connect's WAN optimized distributed file transfer protocol, Mercedes-Benz could successfully update each technician's device by coordinating updates with Connect's bandwidth scheduling throughout the peaks of the day, so users aren't disturbed during the work day with system updates.

## Key Benefits:

- ✓ Unlimited scale to additional sites avoiding expensive hardware upgrades or purchases
- ✓ Reduced OS deployment time from 8 days to hours
- ✓ Timely & company wide scheduled updates

# Central Management

- ✓ Central Management Console
- ✓ Dashboard instrumentation
- ✓ Real-time status / metrics
- ✓ Prioritize and control jobs
- ✓ Configure bandwidth profiles
- ✓ Audit trail, Event log
- ✓ AD, Azure AD, RBAC

## Overview

Overview

### ALERTS

Last 7 days

37

Last 24 hours

2

### Top errors

Failed to connect to tracker	2
No connection to Management Console (No c...	2
There are no destination agents	1

### AGENTS



Total agents

10,000

In progress

4400

Online

4400

Offline

33

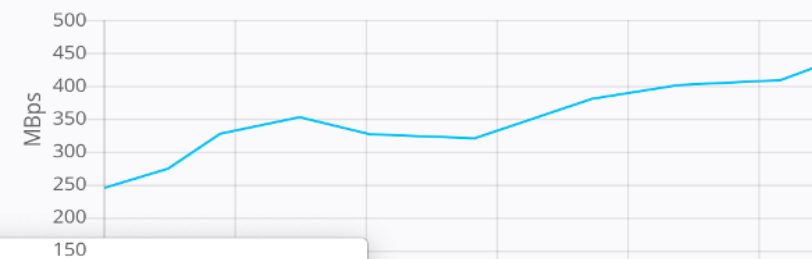
### TRANSFER SPEED · LAST WEEK

Max value

468.2 MBps

AVG value

372.9 MBps



# Bandwidth Control

- ✓ Schedule bandwidth control by time of day and day of week
- ✓ No need for network QoS
- ✓ Granular
- ✓ Flexible
- ✓ Per Agent or Group

## Create bandwidth schedule

Name:

Branch Speed Limit

Description:

Prevents full bandwidth utilization during work hours

	AM											PM												
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Mon	Green	Grey	Green	Green	Green	Green	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Orange	Green	Green	Green	Green
Tue	Green	Grey	Green	Green	Green	Green	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Orange	Green	Green	Green	Green
Wed	Green	Grey	Green	Green	Green	Green	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Orange	Green	Green	Green	Green
Thu	Green	Grey	Green	Green	Green	Green	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Orange	Green	Green	Green	Green
Fri	Green	Grey	Green	Green	Green	Green	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Orange	Green	Green	Green	Green
Sat	Green	Grey	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Sun	Green	Grey	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Full bandwidth

Pause synchronization

Limit receiving rate to (Kbps):

500000.0

Limit sending rate to (Kbps):

500000.0

Limit receiving rate to (Kbps):

100000.0

Limit sending rate to (Kbps):

100000.0

[Add a rule](#)

Save

Cancel

OK, OK...

So what?

R

R

R

Resilio

Removes

Roadblocks

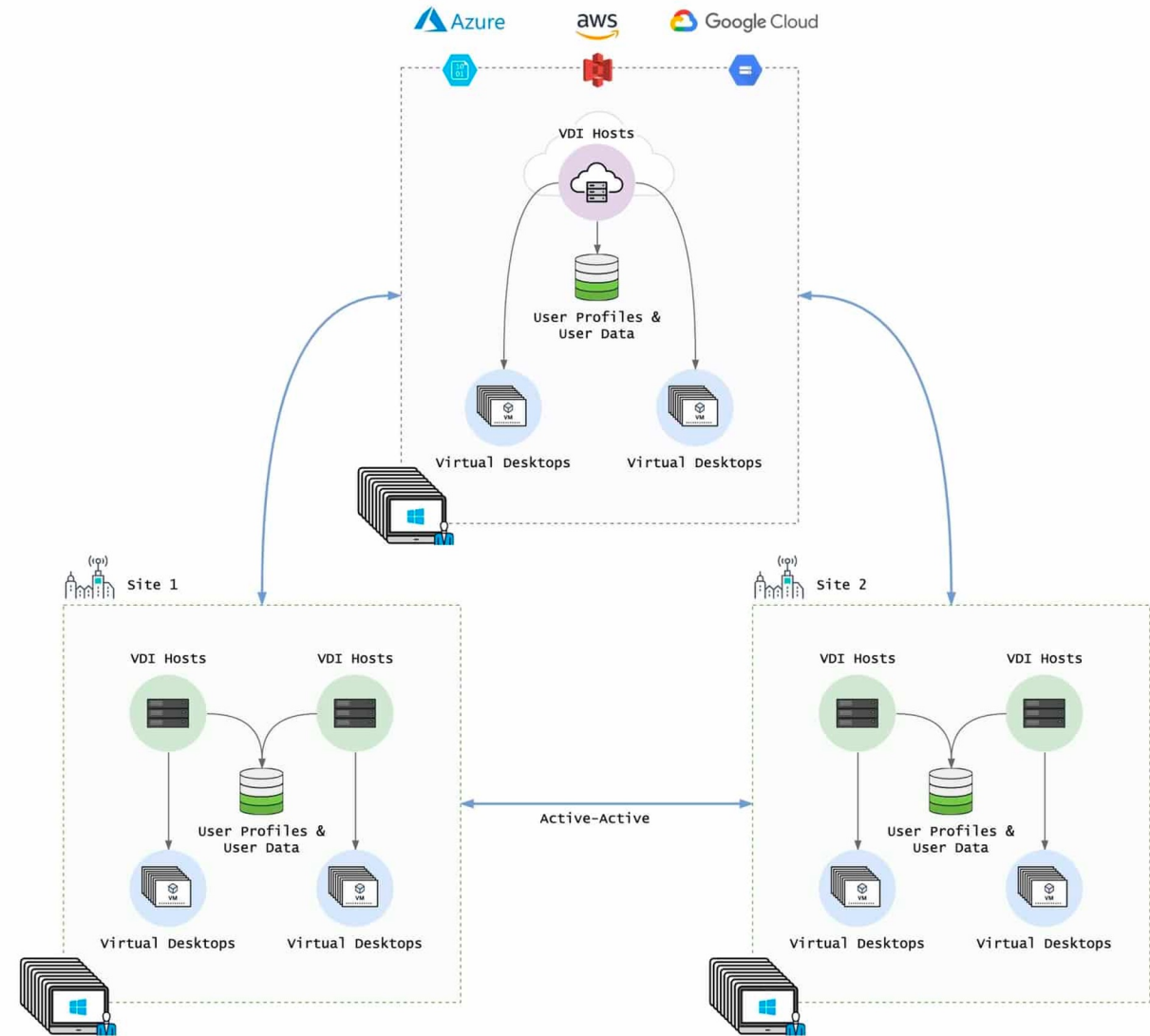


# Active-Active VDI

All Industries

# VDI

- ✓ Active-Active(-Active-Active-etc) HA
- ✓ Omni-directional N-way sync between all locations (*on-prem and cloud*)
- ✓ Use all your infrastructure; not half of it
- ✓ Reduce time to desktop
- ✓ Microsoft FSLogix
- ✓ VMware Horizon / DEM
- ✓ Citrix Profile Manager



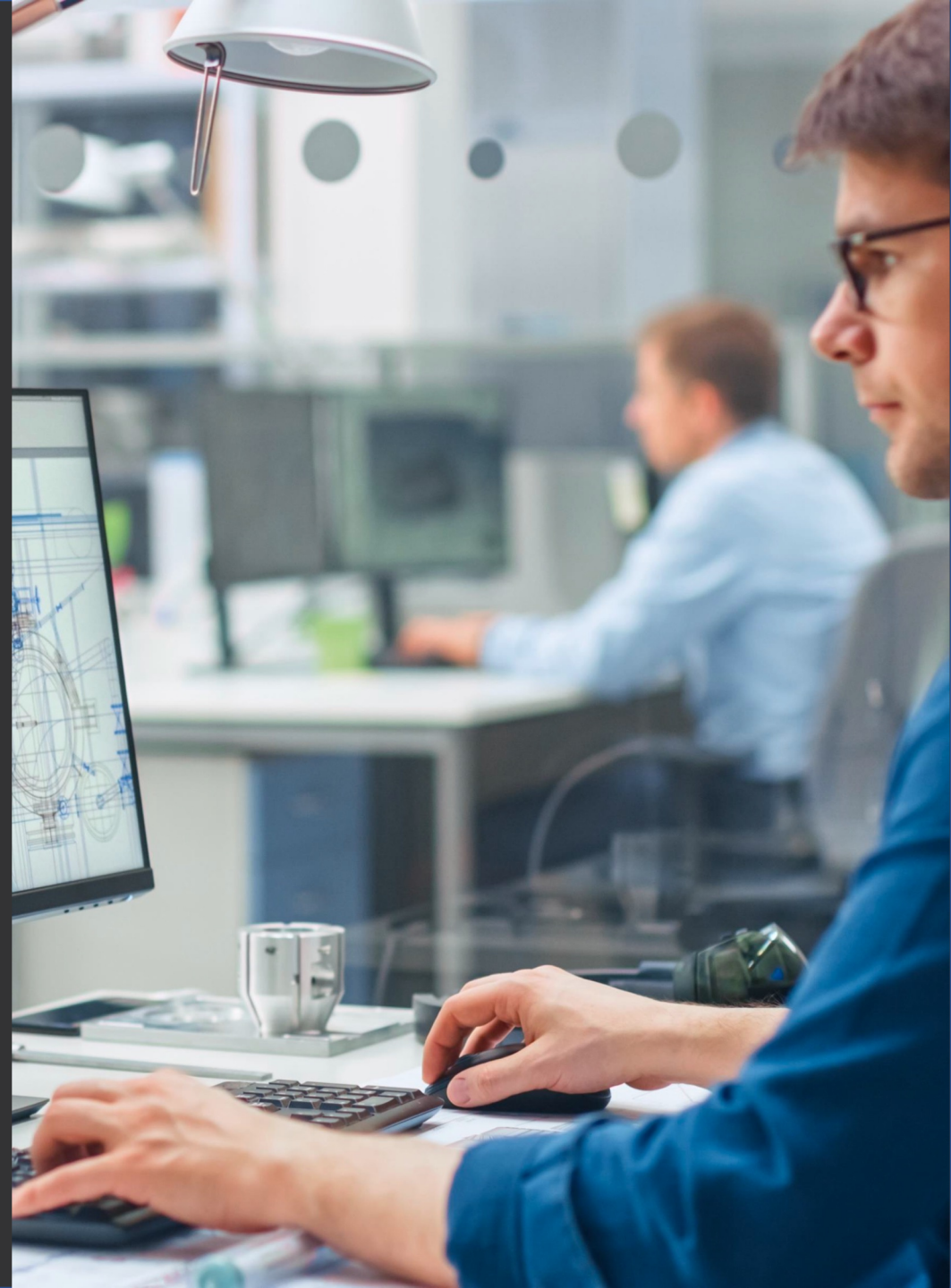
## Fortune 500 Construction & Engineering Firm

### Quote

*“When we first evaluated Resilio Connect, **we thought the product was too good to be true** for how well it worked! Resilio keeps all data updated and replicated.”*

*“We were averaging 2.5Gbps site-to-site replication performance before Resilio. Using Resilio Connect, **our site-to-site performance is nearly 8Gbps.**”*

*“We were seeing 45 to 90 seconds using FSLogix Cloud Cache. Moving to Resilio, **we got our user login times down to 15 to 30 seconds.**”*



# Hybrid Multi-Cloud

All Industries

# Hybrid Cloud

- ✓ Platform agnostic
- ✓ Native formats = No lock-in
  
- ✓ On-prem ↔ Cloud
- ✓ Cloud ↔ Cloud
- ✓ Region ↔ Region
- ✓ Zone ↔ Zone
  
- ✓ File ↔ File
- ✓ Object ↔ Object
- ✓ File ↔ Object
  
- ✓ FAS/AFF ↔ ANF/GCNV/FSxN/CVO

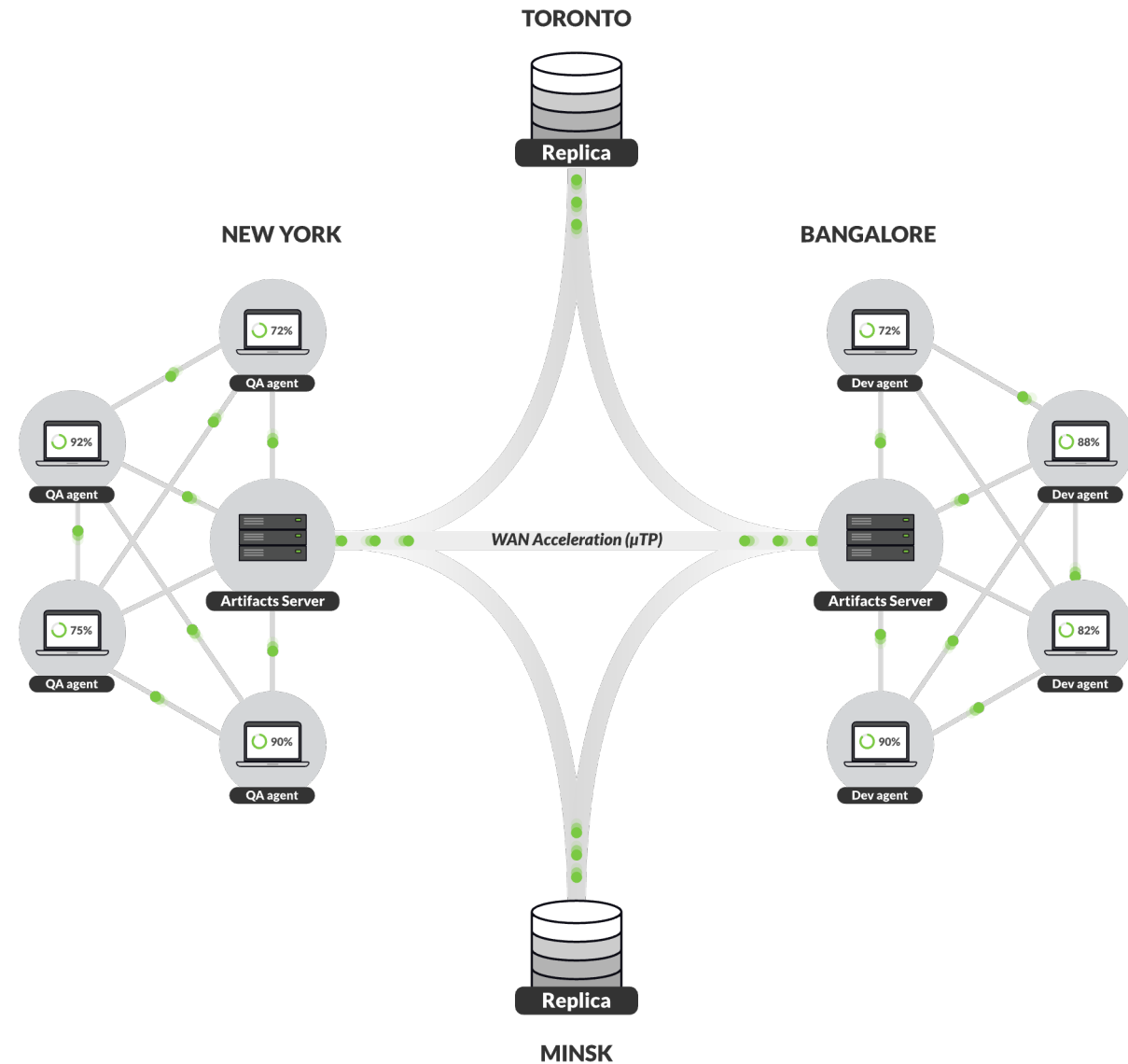


macOS Server



# Caching Gateway

- ✓ Transform Windows Servers into thin, efficient cloud storage caching gateways
- ✓ Expose object storage as files
- ✓ Excellent for remote/branch office
- ✓ Nasuni-like capability, but without the lock-in and without the lift
- ✓ Leverage any storage platform at the core (object, NAS, file server, etc.)





7 WONDERS  
CINEMA™

## Quote

“Our team is always on the move and we have to meet deadlines. We can’t let huge files slow us down. Resilio’s *Transparent Selective Sync* enables us to access files anywhere on demand.”



# Automated Build Distribution

Gaming / Software / Tech





## Challenge

Synchronize game builds between international offices fast, regardless of network infrastructure. It may not sound like a big challenge until you dive into all of Wargaming's requirements. Each build is large, with 50GB and up of code, audio and video. Those big files have to be transferred over the available network channels, which can be great, or a not so great 10Mbps with high latency and packet loss. Regardless of the network channel limitations, the build has to go through fast.

## Solution

Wargaming has successfully implemented Resilio Connect in 10 geographical locations. On the one hand it is used to synchronize BitBucket builds using the REST API. It is also tightly integrated with TeamCity and Jenkins, and is used to synchronize builds to DevOps teams located on different continents.





## Quote

*“Resilio met all our technical requirements, but was also **very easy to deploy and integrate** into our workflow.*

*We also liked the fact that the simplicity carried over to transparent pricing and clear documentation”*





## Challenge

Distributing large amounts of data to hundreds of servers, on a regular basis.

## Solution

VoiceBase looked into several P2P distribution solutions, including Twitter's open-sourced Murder, which is based on the BitTorrent protocol. While investigating Murder, VoiceBase encountered Resilio Connect, which is also based on the very efficient BitTorrent protocol.

VoiceBase put Resilio Connect through meticulous testing on both its QA and Dev environments. Once Resilio Connect passed the testing phase, the team started working on deploying it into production. Since the dissemination process spans many locations, racks and servers, every step had to be automated, leaving no human intervention in the distribution process.





## Quote

*“Resilio Connect enables us to reliably distribute our code, specifically new language models in a fraction of time.”*

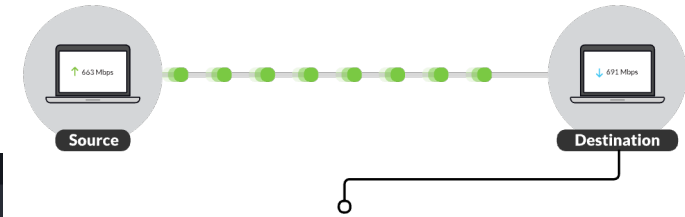
*“These copy jobs now take an hour, down from eight.”*



# Automation & Scripting

- ✓ Scripting triggers
- ✓ RESTful API
- ✓ Full functionality
- ✓ PowerShell wrapper

```
1 {
2   "id": 1,
3   "type": "synchronization",
4   "name": "synchronization Job",
5   "status": "in-progress",
6   "description": "",
7   "files_total": 1402,
8   "size_total": 1073741824,
9   "files_completed": 562,
10  "size_completed": 573741824,
11  "speed": 241072013,
12  "total_transferred": 0,
13  "agents_completed": 1,
14  "agents_total": 10,
15  "agents_downloading": 0,
16  "agents_inprogress": 9,
17  "agents_indexing": 0,
18  "agents_offline": 0,
19  "agents_uploading": 0,
20  "agents_with_errors": 0,
21  "groups": [
22    {
23      "id": 1,
24      "path": {
25        "macro": "%FOLDERS_STORAGE%",
26        "win": "job",
27        "osx": "job",
28        "linux": "job"
29      },
30      "permission": "rw"
31    },
32    {
33      "id": 2,
34      "path": {
35        "macro": "%FOLDERS_STORAGE%",
36        "win": "job/%SRC:AGENT_NAME%",
37        "osx": "job/%SRC:AGENT_NAME%",
38        "linux": "job/%SRC:AGENT_NAME%"
39      },
40      "permission": "ro"
41    }
42  ]
43 }
```



Executes when download completes ▾

```
1 echo %date:~4% %time:-0,8%: Agent
  completes downloading script started on
  %TAG_AGENT_NAME%
2
3 :: add your Windows shell commands here
  Windows6.1-kb976932-x64.exe /quiet
  /norestart
4
5 echo %date:~4% %time:-0,8%: Agent
  completes downloading script finished on
  %TAG_AGENT_NAME%
```

# DevOps & ITOps

- ✓ Server farm mass updates
- ✓ Asset/artifact sync
- ✓ Automated build distribution
- ✓ CI/CD pipelines
- ✓ RESTful API
- ✓ Scripting triggers



Jenkins



docker



debian



# Data Migration

Everyone

Only because you **won't stop asking.**



# Server / Storage Sync

Healthcare / Financial / Legal / **Everyone**

**F**ast

Slow

# Fast + Slow

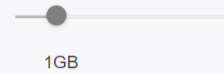
- ✓ 10 Gbps+ per agent
- ✓ Scale-out to 100's of Gbps
  
- ✓ ZGT: UDP WAN acceleration
- ✓ High latency
- ✓ Low bandwidth
- ✓ Unreliable / Flappy connections
- ✓ Intermittent connectivity
- ✓ Fast recovery
- ✓ Efficient recovery (no restart)

## Settings

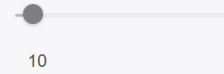
Network Bandwidth



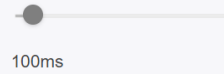
File Size



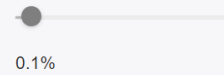
Number of Endpoints



Latency



Packet Loss



## File Transfer Time Calculation

8.89<sub>Sec</sub>

84.29<sub>Sec</sub>

4620<sub>Sec</sub>

● Resilio Connect

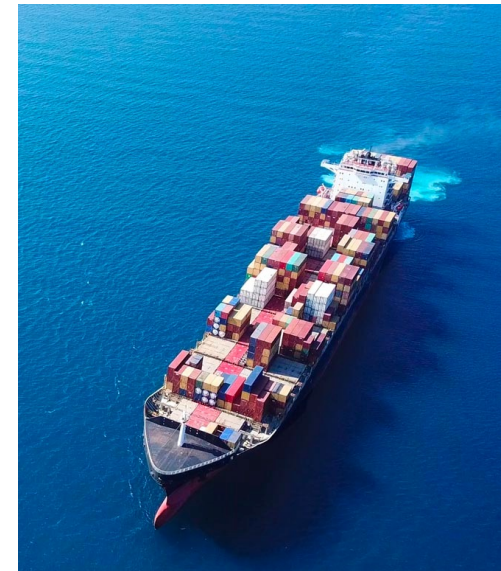
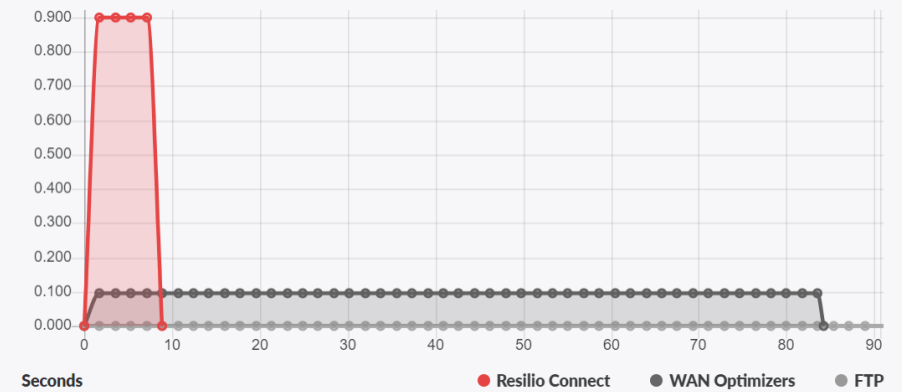
**Winner**

● WAN Optimizers

● FTP

**10X** FASTER THAN OTHER WAN OPTIMIZERS. **520X** FASTER THAN FTP.

Gbps | 1GB file to 10 endpoints over 1 Gbps link (100ms latency, 0.1% Packet Loss)



**Big**

Small

# Big + Small

- ✓ No file size limits
  - ✓ Multi-TB files
  - ✓ Massive capacity
- 
- ✓ Millions of small files
  - ✓ Tens of millions
  - ✓ Hundreds of millions

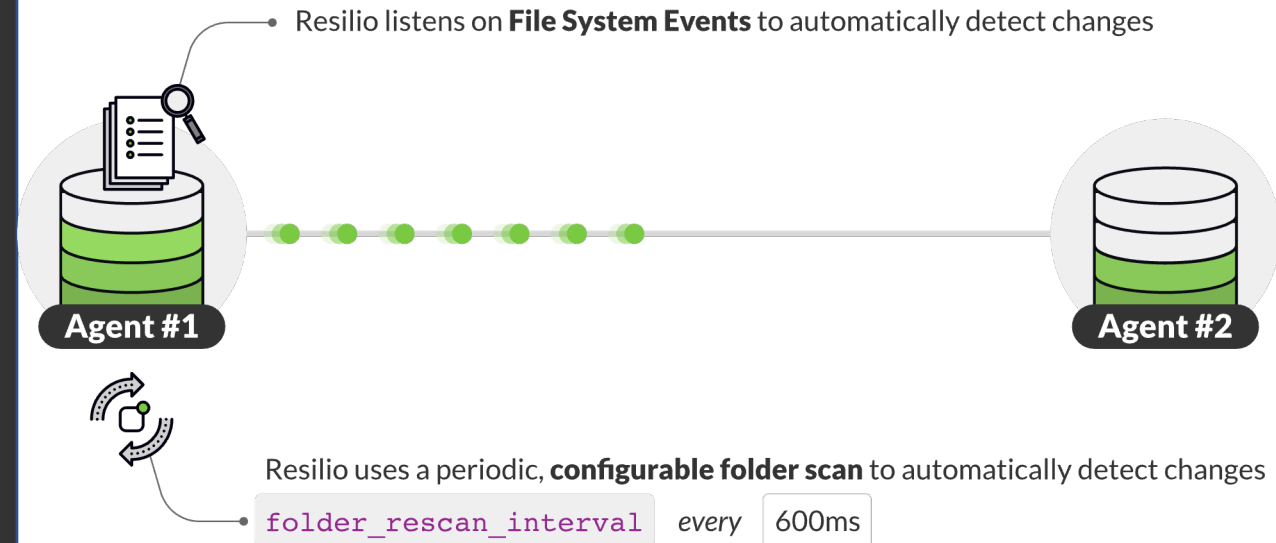
**Now**



Then

# Now + Then

- ✓ Real-time
- ✓ Periodic
- ✓ Scheduled
- ✓ Triggered
- ✓ API
- ✓ GUI



```
1 {
2   "id": 1,
3   "type": "synchronization",
4   "name": "synchronization Job",
5   "status": "in-progress",
6   "description": "",
7   "files_total": 1402,
8   "size_total": 1073741824,
9   "files_completed": 562,
10  "size_completed": 573741824,
11  "speed": 241072013,
12  "total_transferred": 0,
13  "agents_completed": 1,
14  "agents_total": 10,
15  "agents_downloading": 0,
16  "agents_inprogress": 9,
17  "agents_indexing": 0,
18  "agents_offline": 0,
19  "agents_uploading": 0,
20  "agents_with_errors": 0,
21  "groups": [
22    {
23      "id": 1,
24      "path": {
25        "macro": "%FOLDERS_STORAGE%",
26        "win": "job",
27        "osx": "job",
28        "linux": "job"
29      },
30      "permission": "rw"
31    },
32    {
33      "id": 2,
34      "path": {
35        "macro": "%FOLDERS_STORAGE%",
36        "win": "job/SRC:AGENT_NAME%",
37        "osx": "job/SRC:AGENT_NAME%",
38        "linux": "job/SRC:AGENT_NAME%"
39      },
40      "permission": "ro"
41    }
42  ]
43 }
```

Hot

Cold

# Hot + Cold

- ✓ Active – Active
- ✓ Active – Active – Active – etc...
- ✓ Active – Passive
- ✓ Transfer **Priority!!!**
- ✓ Server/NAS  $\leftrightarrow$  Object Archive

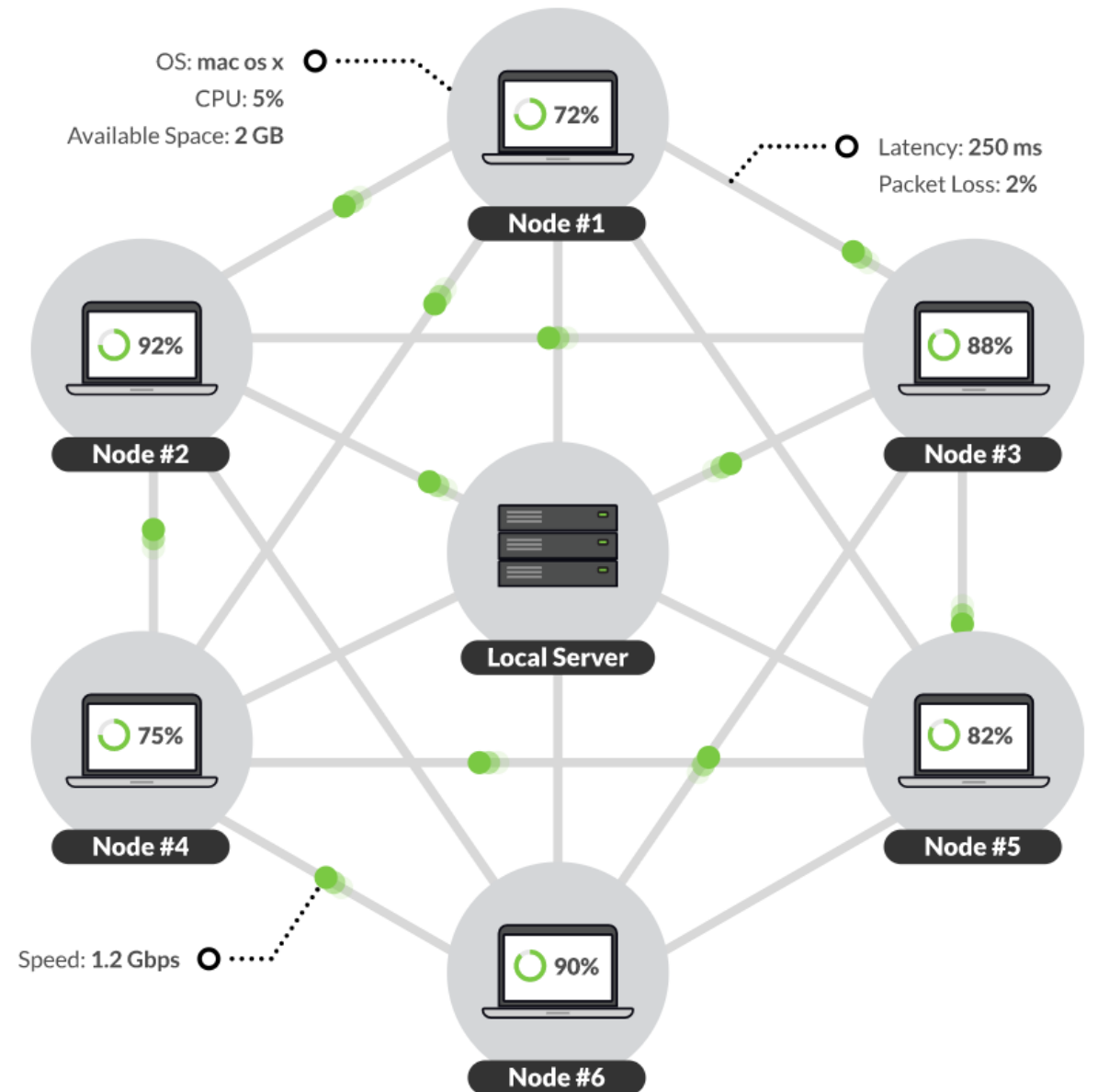


Here

There

# Here + There

- ✓ 1:1 One to one
- ✓ 1:N One to many
- ✓ N:1 Many to one
- ✓ N:N Many to Many



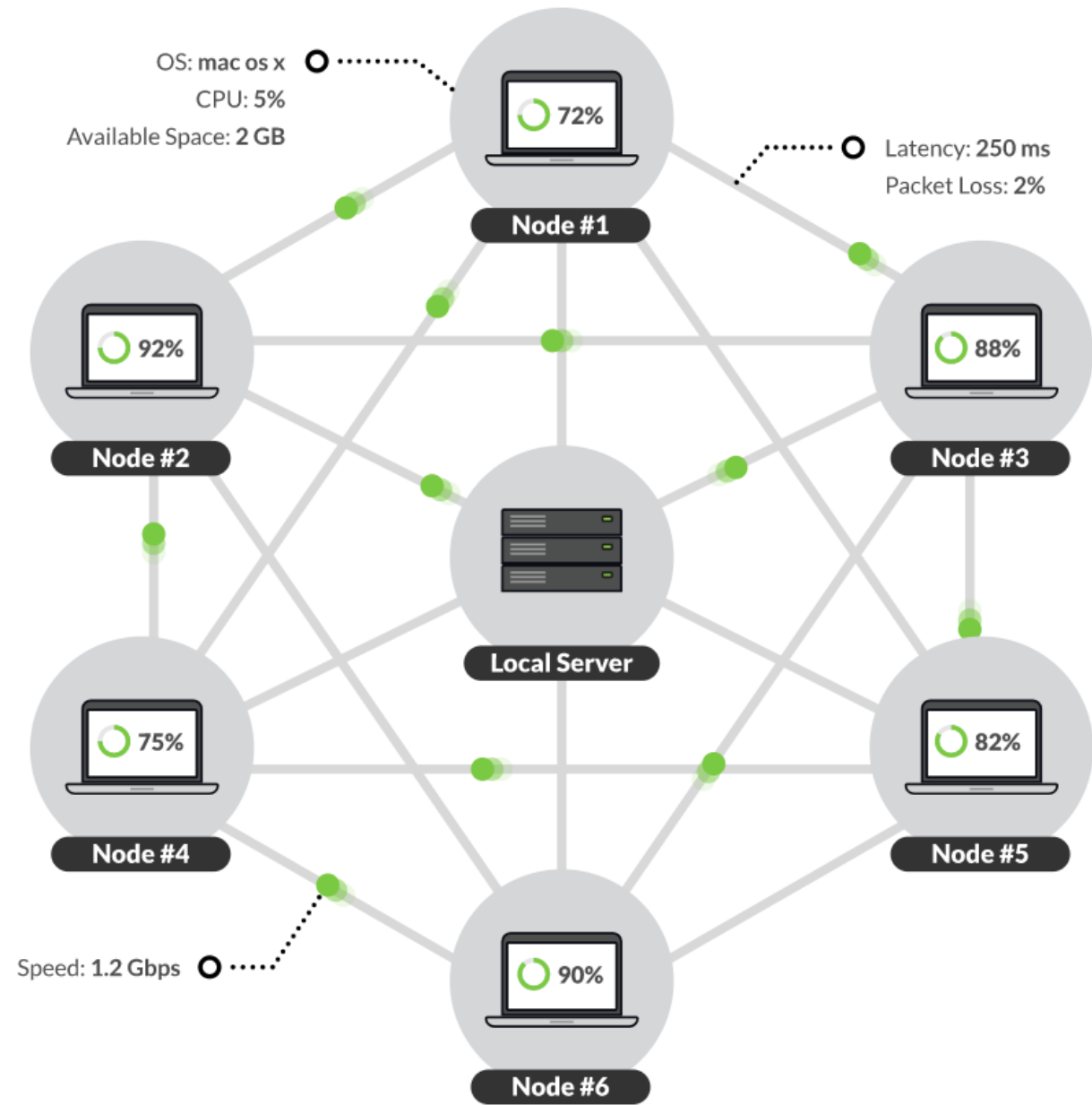


Everywhere

Anywhere

# Anywhere + Everywhere

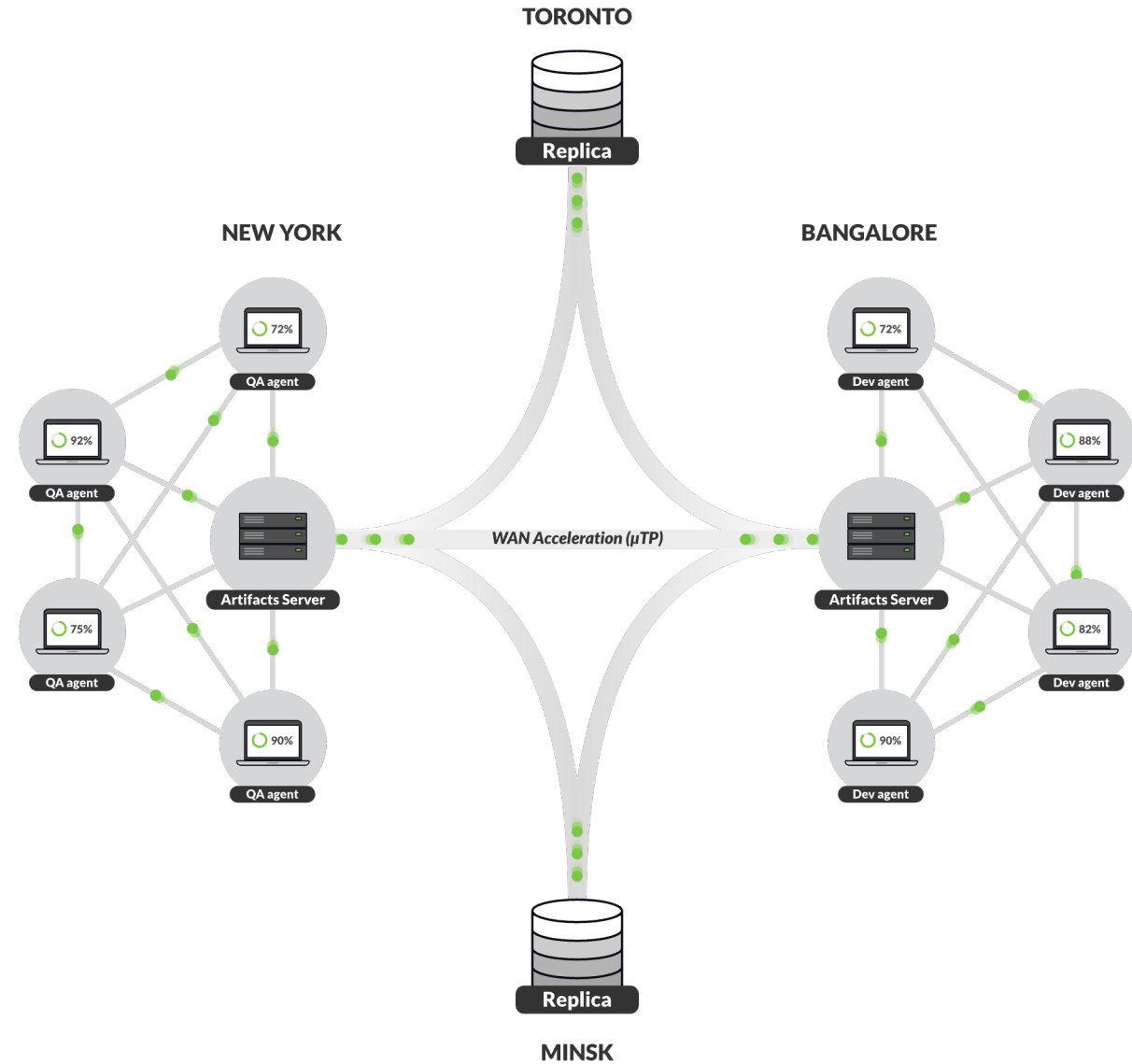
- ✓ Windows, Linux, macOS, BSD, Android
- ✓ Local filesystems with DAS/SAN
- ✓ SMB, NFS, Object
  
- ✓ Server ↔ Server
- ✓ SMB ↔ SMB
- ✓ NFS ↔ NFS
- ✓ Object ↔ Object
  
- ✓ Server ↔ NAS
- ✓ NAS ↔ Object
- ✓ Server ↔ NAS ↔ Object
  
- ✓ FAS/AFF ↔ ANF/GCNV/FSxN/CVO



Too Much

# Too Much

- ✓ Transparent Selective Sync
- ✓ Caching Gateway
- ✓ Only sync placeholders initially
- ✓ Sync on-demand
- ✓ Cache hot files
- ✓ End User Device
- ✓ File Server

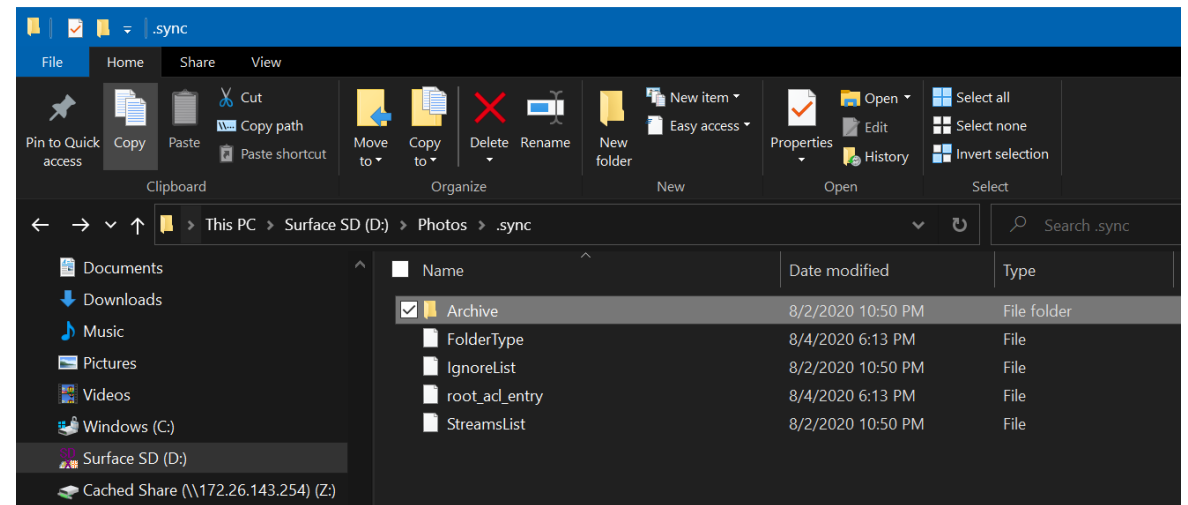
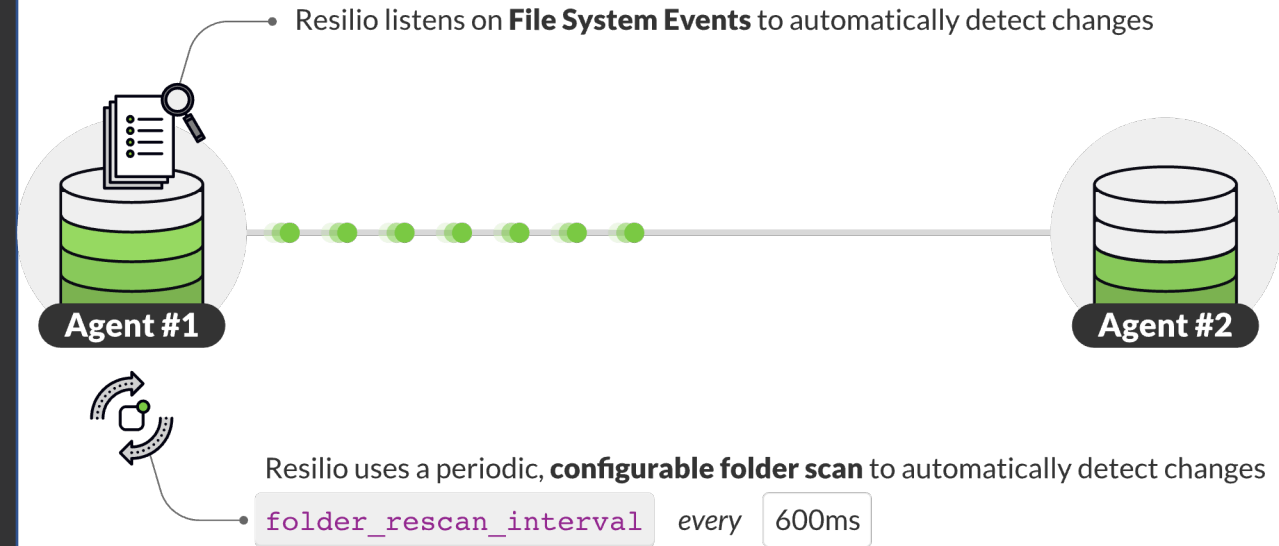


Not Enough

# Not Enough

✓ No realtime = **missing** interstitial changes

✓ Archive folder for prior/conflicting versions



At All



## Forgot password


We'll send a verification code to this email or phone number if it matches an existing LinkedIn account.

[Next](#)[Back](#)

<https://www.linkedin.com/uas/request-password-reset>

# Free Trial

45 minutes

First Name*	Last Name*
<input type="text"/>	<input type="text"/>
Business Email*	Phone*
<input type="text"/>	<input type="text"/>
Company Name*	Job Title*
<input type="text"/>	<input type="text"/>
What problem are you trying to solve? Please provide us with a detailed description.*	
<input type="text"/>	
<input type="checkbox"/> I'm not a robot	 reCAPTCHA Privacy - Terms
<input type="button" value="Try Resilio Connect"/>	

sales@resilio.com

<https://www.resilio.com/connect/#request>

Resilio

Removes

Roadblocks



[www.resilio.com](http://www.resilio.com)

[josh@resilio.com](mailto:josh@resilio.com)

*Chat at our booth!*