ENDURADATA

PROTECTING, DELIVERING AND LEVERAGING DATA

EDpCloud For Tech People With No NDA

Features & Architecture Overview

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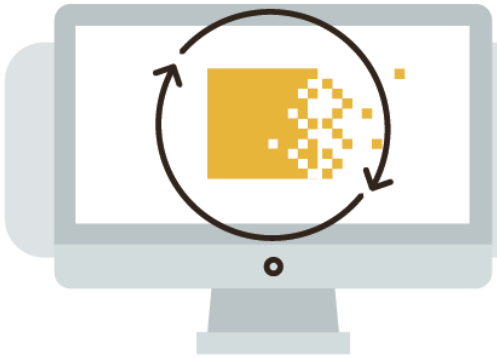
Enduradata Confidential

SOLUTION: EDpCloud



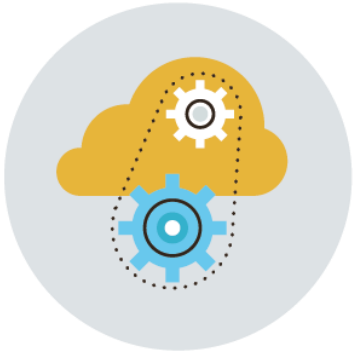
EDpCloud

EnduraData EDpCloud:
Automated and encrypted data movement between business processes, heterogeneous systems and different geographic sites.

Accelerated data movement solution for:

Multiple Platform

Multiple Sites



The Cloud

Big Data

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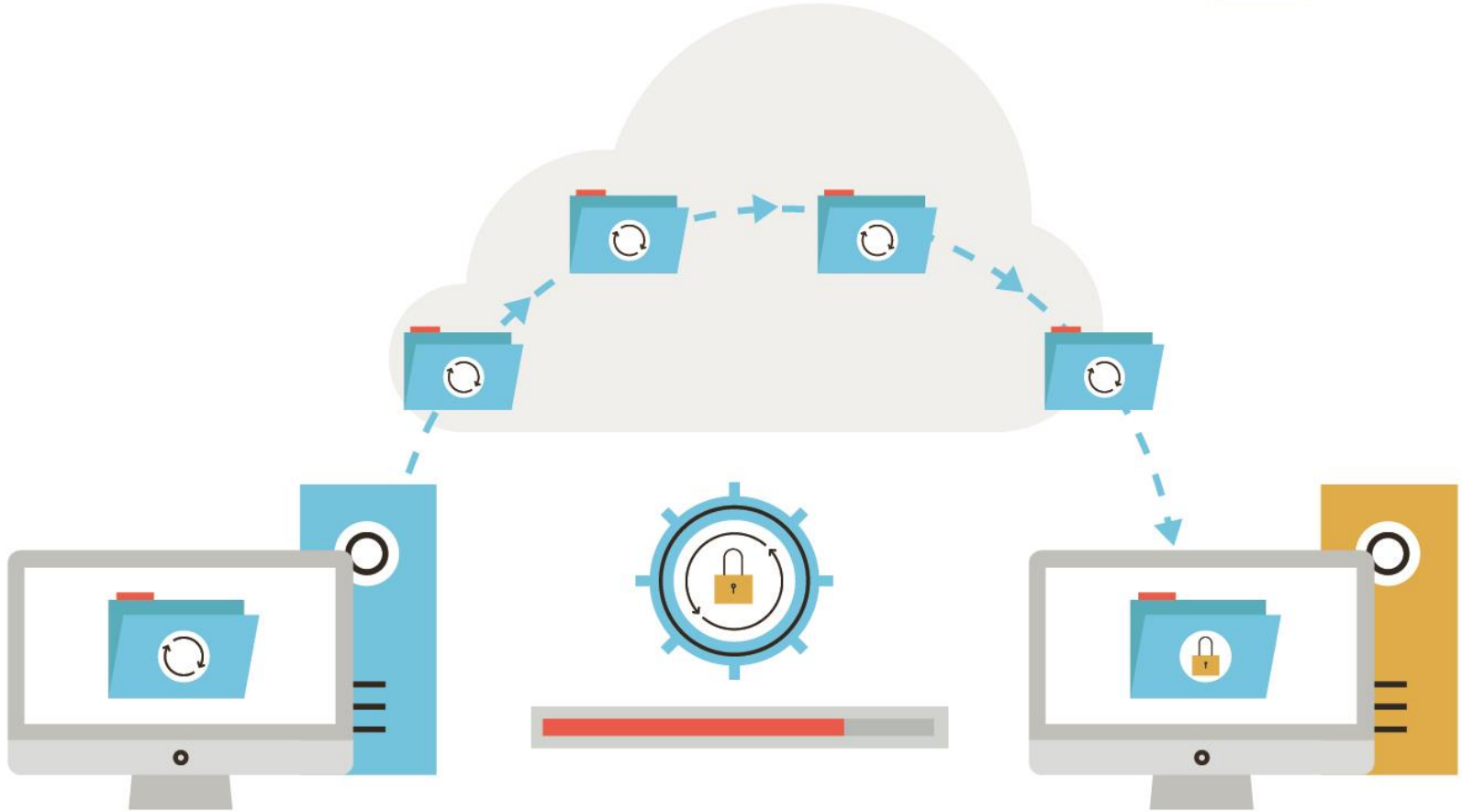

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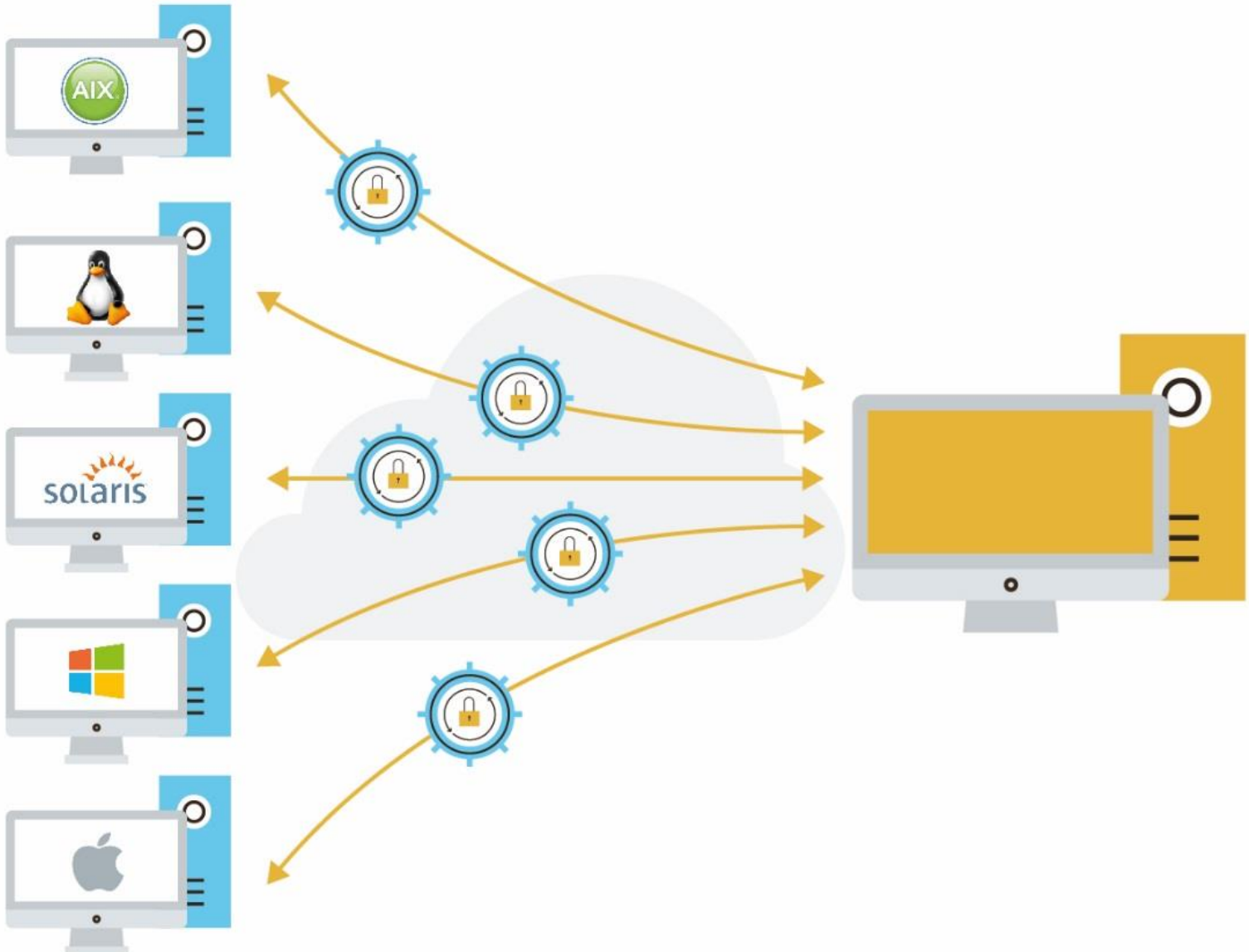

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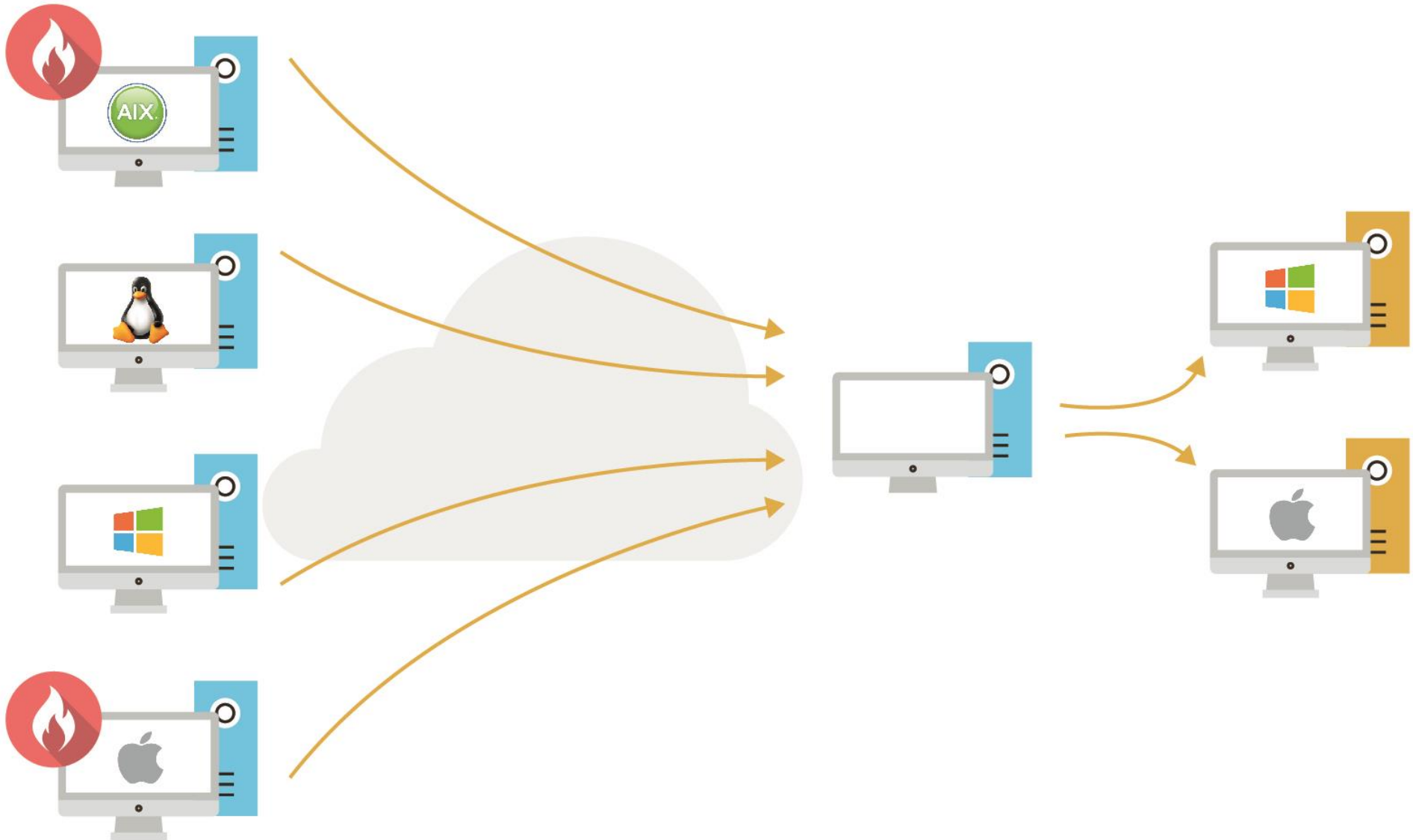
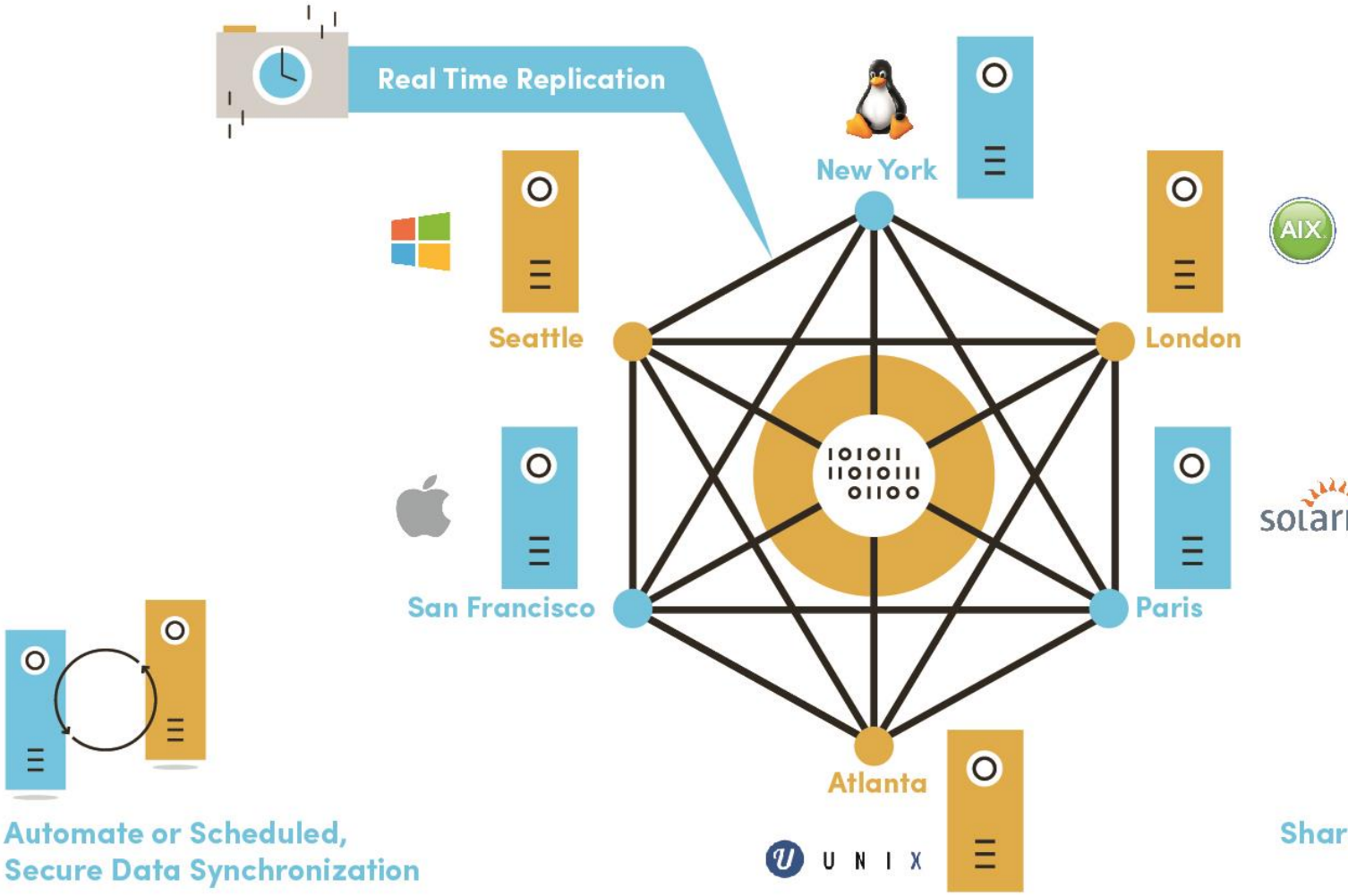
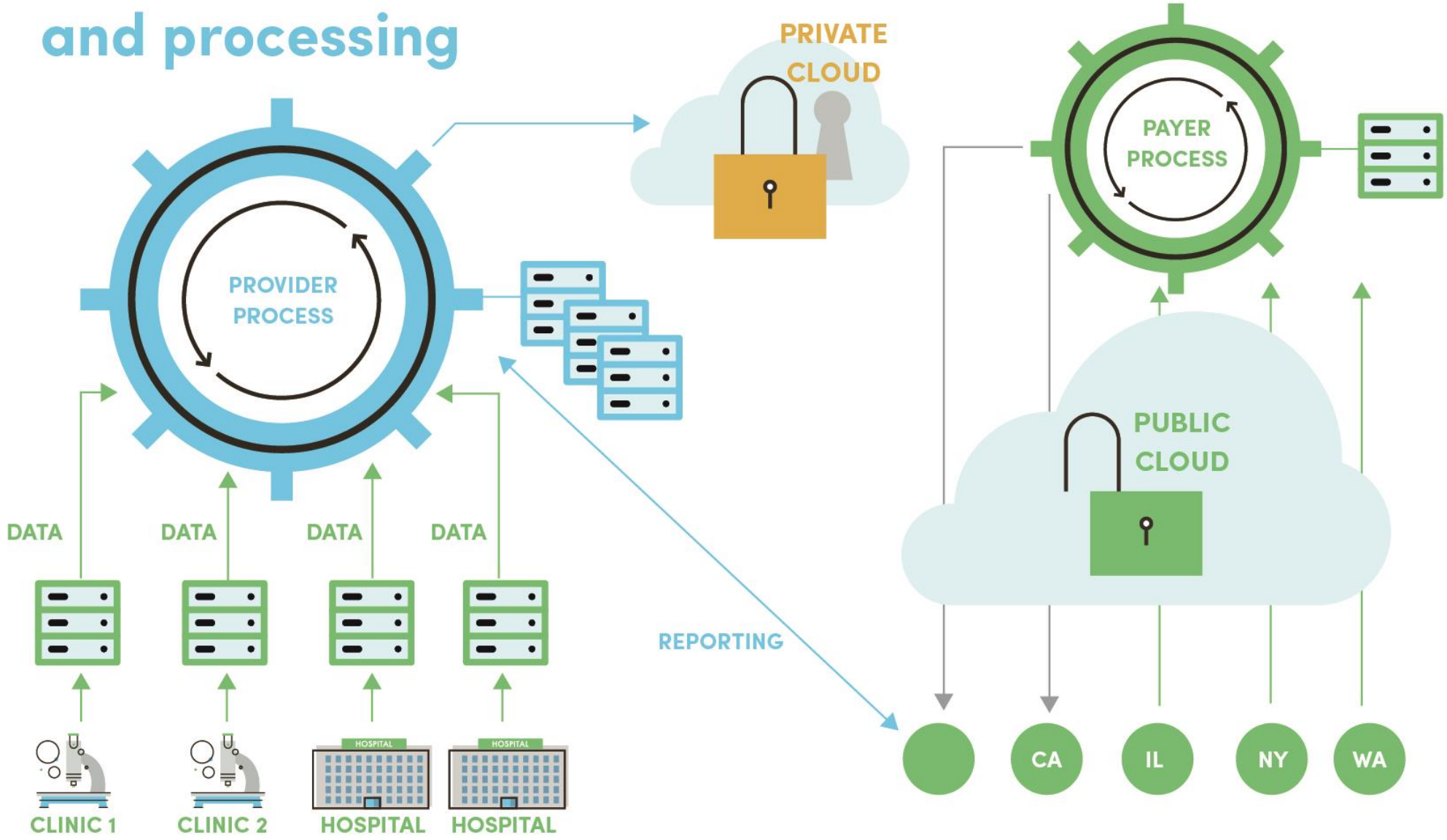


EDpCloud Suite:

Transfer data between different OS's and different locations



Healthcare:Automated data movement and processing



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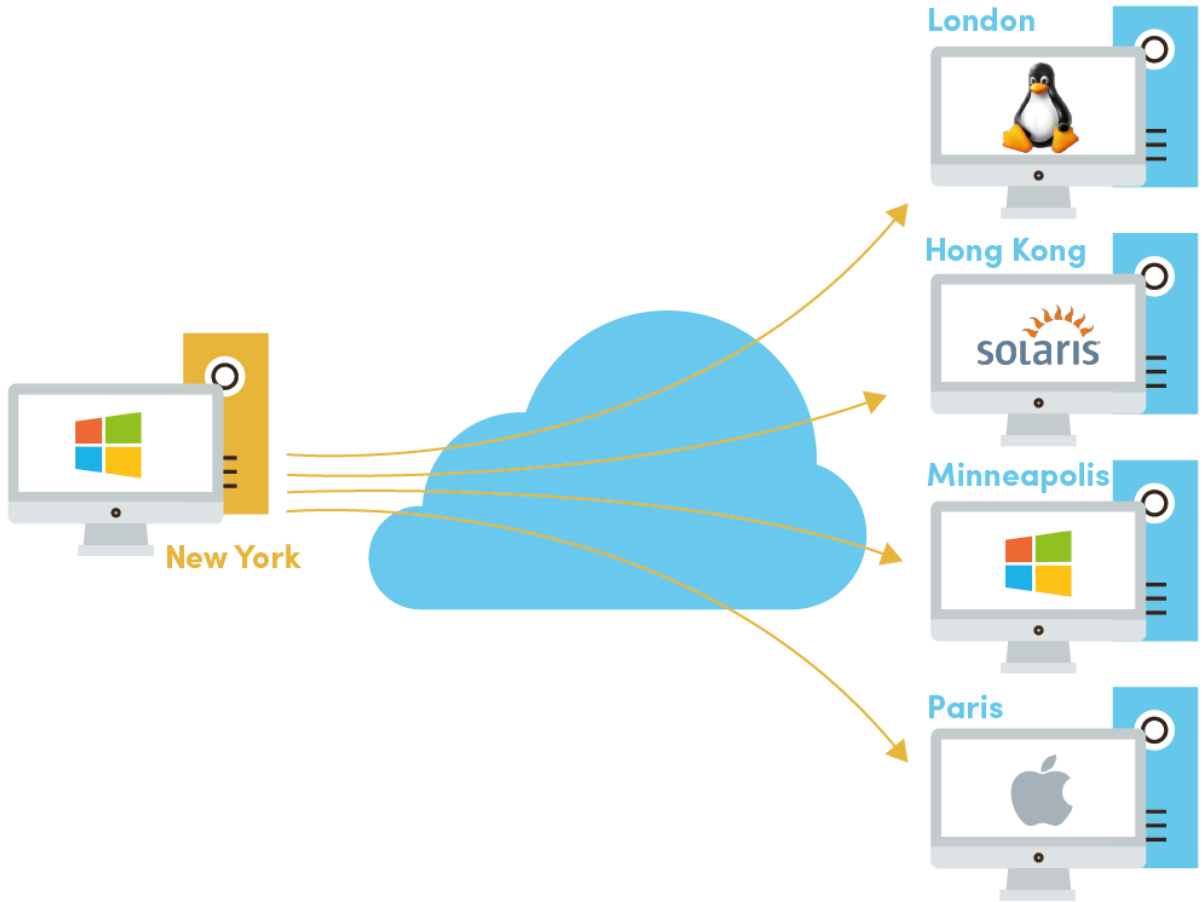
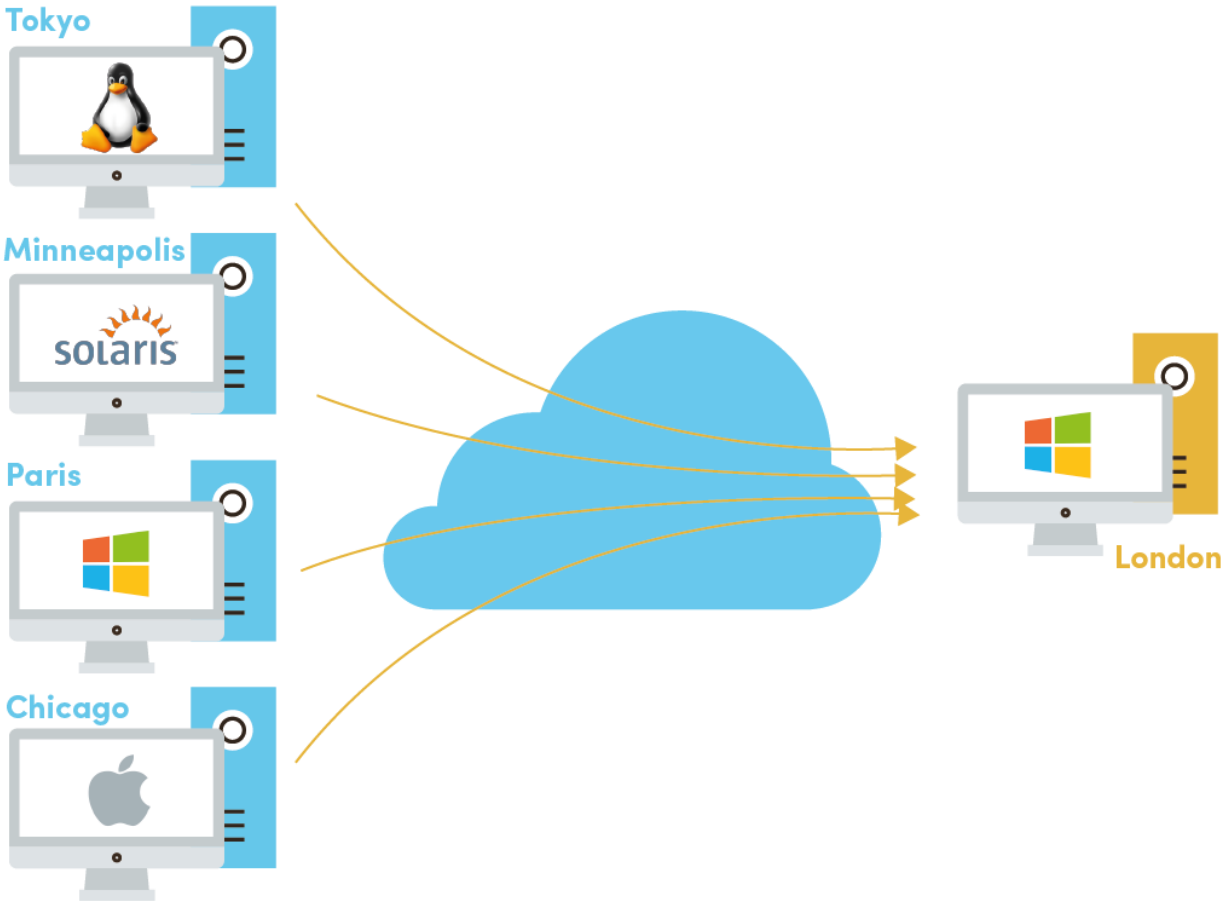
EDpCloud One To Many Replication:
Distribute data automatically anywhere



- Cross Platform
- VUpdates (Windows, Linux)
- Scheduled Updates
- Data movement/sync
- Automate Workflow
- Relay & Forward Data
- Share Data
- Open File Support

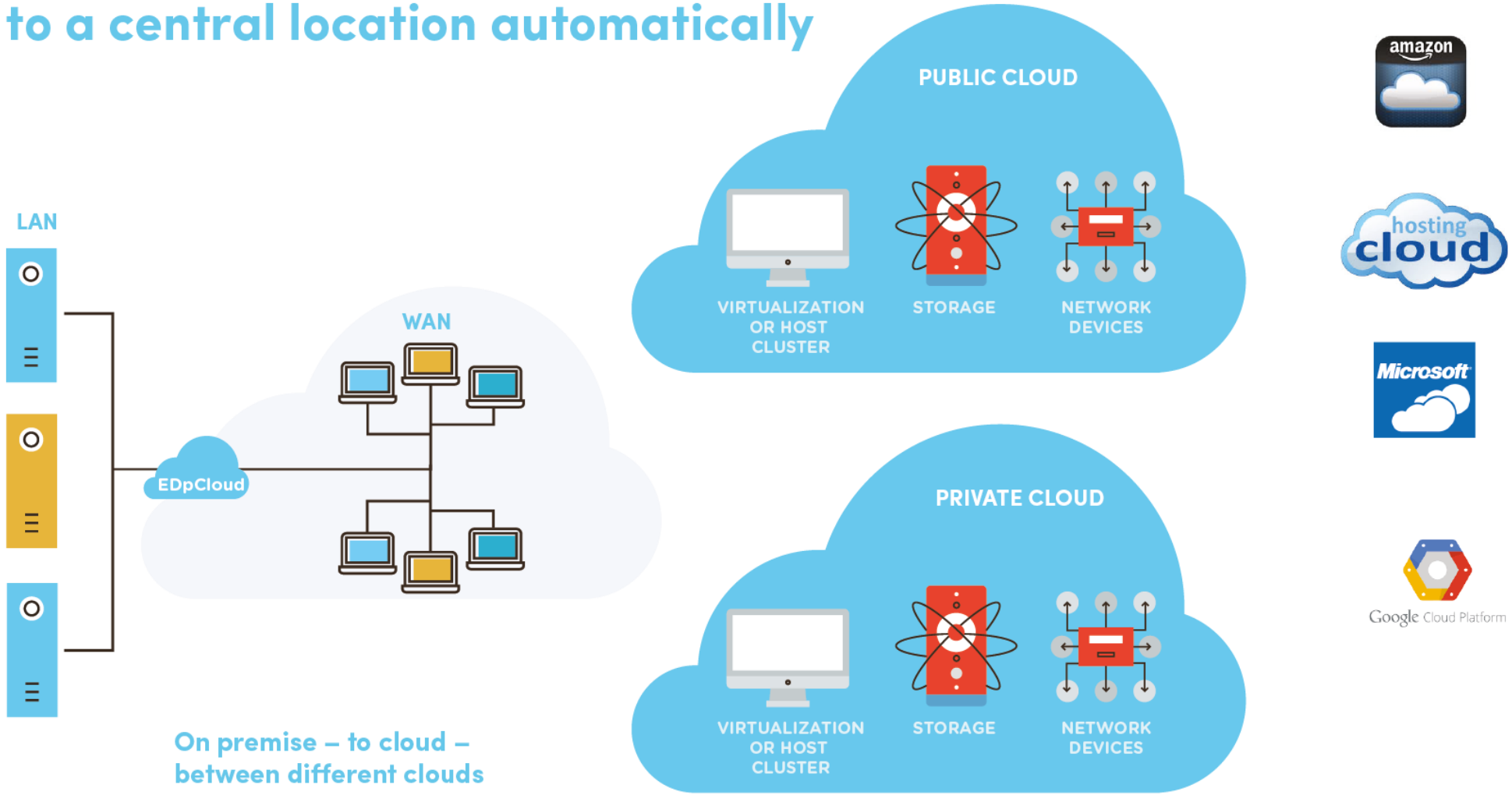
EDpCloud Many To One Replication:
Bring data to a central location automatically



- Backup Consolidation
- Data Aggregation
- Data Migration
- Data Sharing
- Versioning
- Continuous Data Protection (CDP)
- Virtual machines
- Physical machines.

Use EDpCloud in:

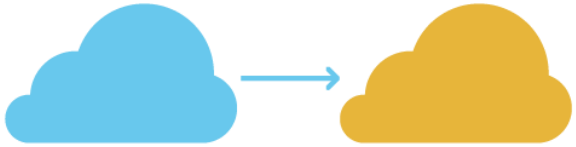
Private – Public – HybridBring data to a central location automatically



On premise – to cloud – between different clouds

Migration Uses

Automated Data Migration & Movement

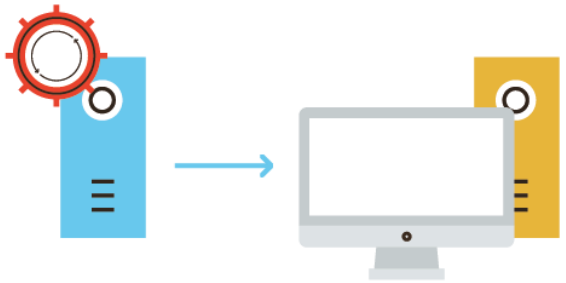


Cloud to Cloud

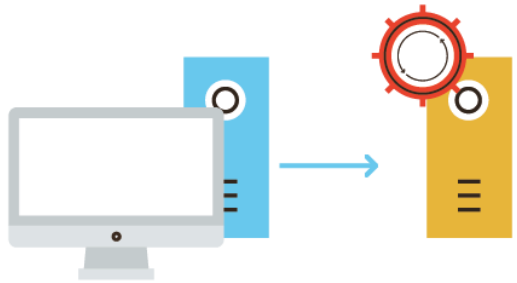
Platforms to Cloud

Cloud to platforms

Big Data Aggregation,
Cluster to cluster

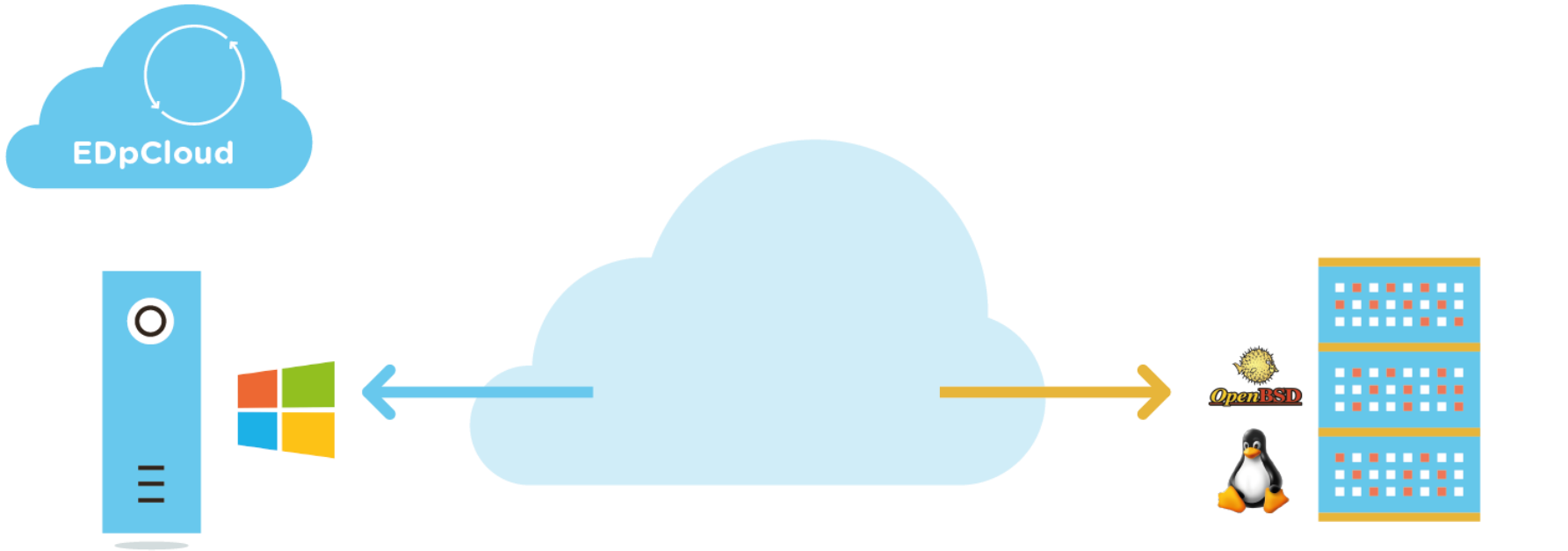


Virtual to Physical Machines



Physical to Virtual Machines

Ransomware Protection with multi OS, versioning & isolation



DENVER

Replicate/Back up Data from Windows servers

ATLANTA

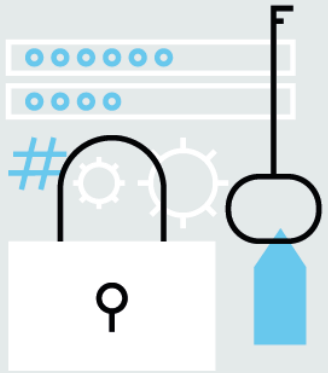
Save on/Restore from a LINUX/OpenBSD server

Security & Encryption

Data streams are encrypted (AES 128 by default)

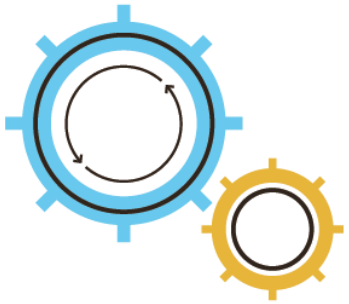
Data can remain encrypted at rest if you chose to

Other rules: Regex on both sender and receiver.



Multiple authentications:

- Hosts allowed
- Passwords for management
- Passwords for transport
- File encryption keys



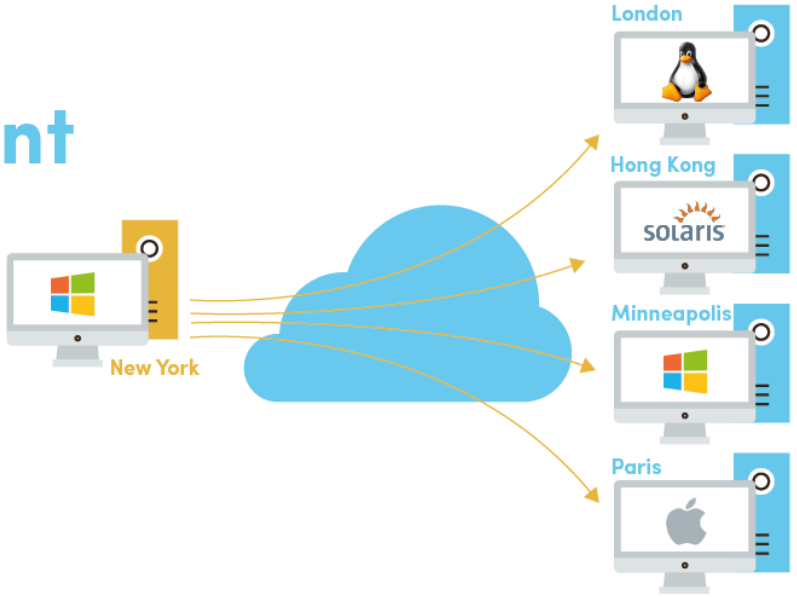
Configuration and Management

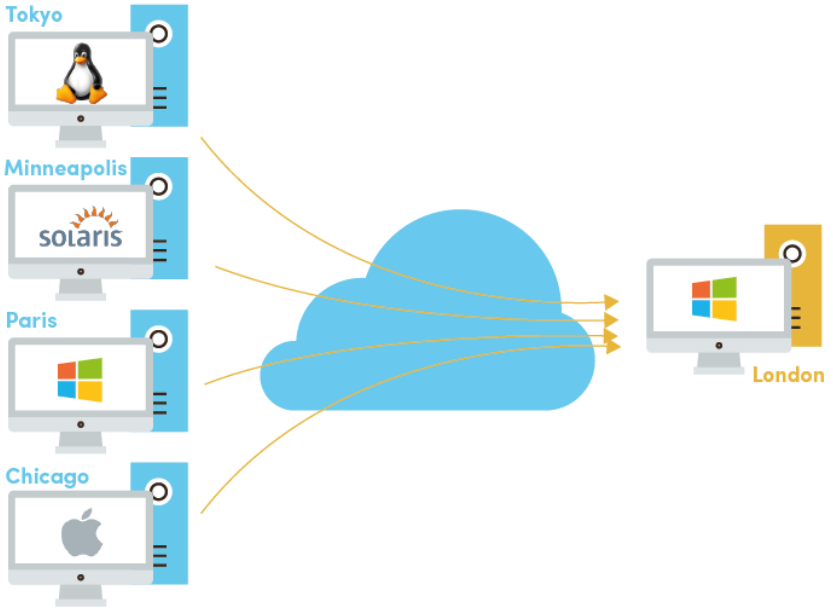
XML Configurations:

- One to One
- One to Many
- Many to One
- Many to Many
- Bidirectional:
  - / to / on Linux
  - C: to C: etc.

Command Line

Browser GUI.





Bandwidth & Compression

Reduce bandwidth used & sync time by sending only deltas (small blocks that changed)

Use bandwidth throttling

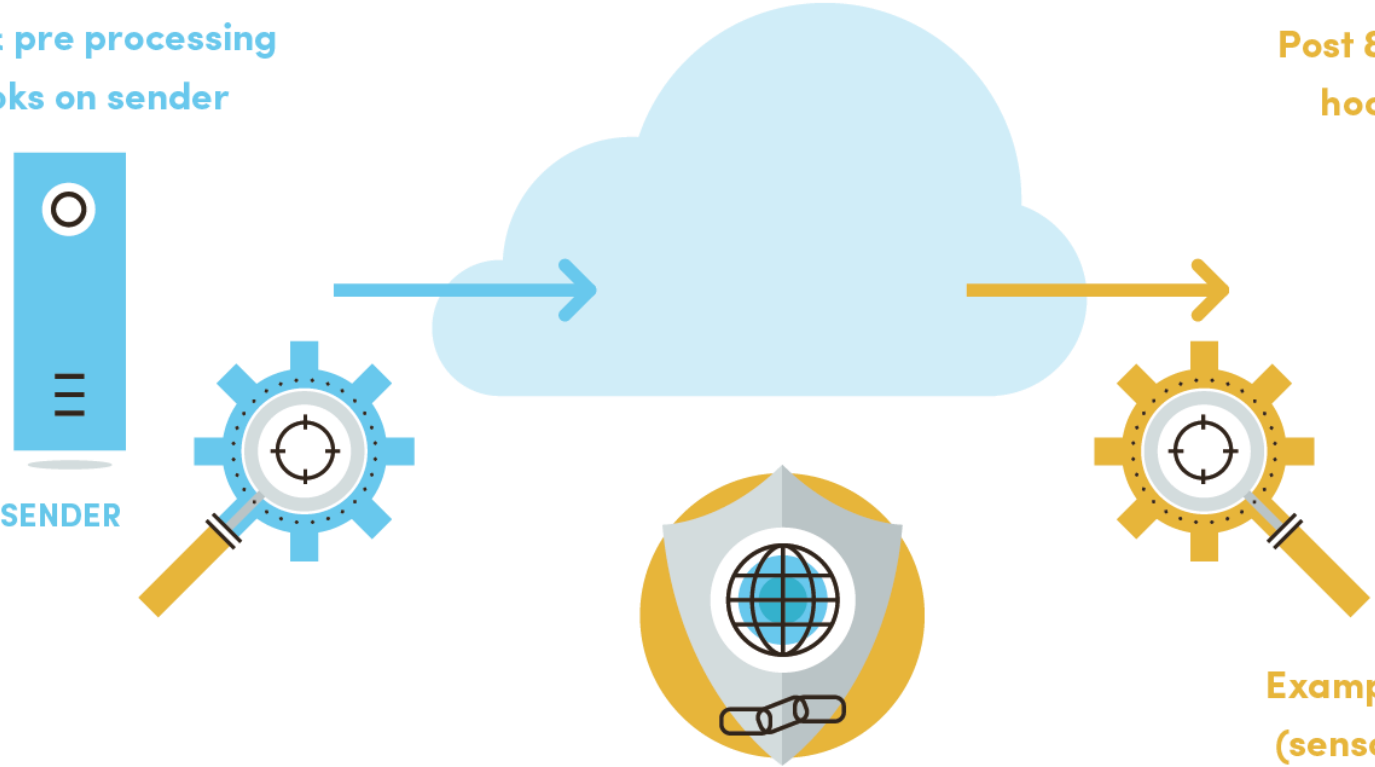
Use adaptive compression

Use Pause and Resume: Start at time T1 pause at time T2, resume at time Tn ...

Post/Pre & Isolation

Post & pre processing hooks on sender

Post & pre processing hooks on receiver



Isolation of receiver from sender (See ransomware).

Example data ingestion (sensors, reports, etc.)

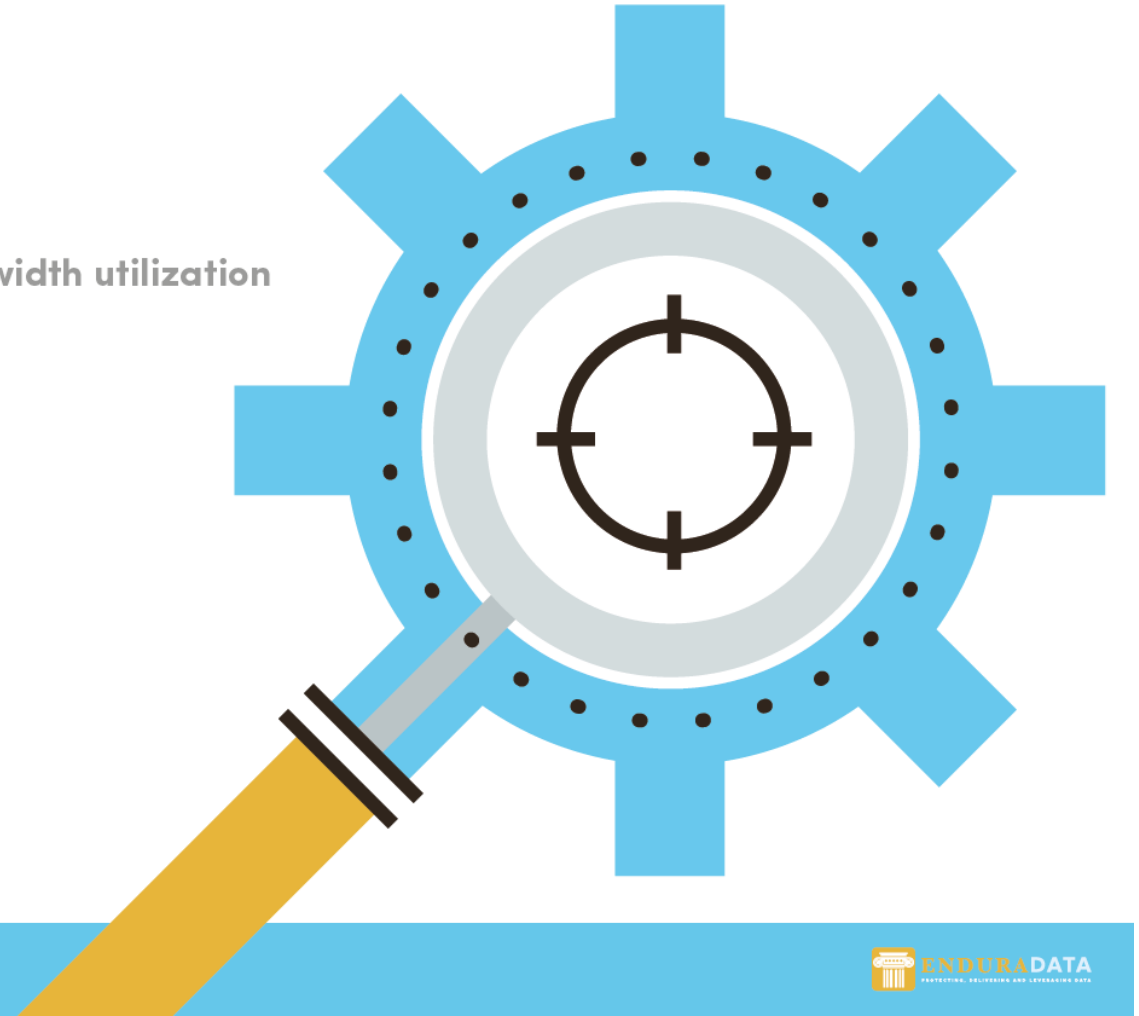
Email Alerts

- Configure alerts to notify you on failures
  - Network to remote down
  - Replication failures
  - Disk space issues
  - etc.

- Receive alerts only from sender
- Receive alerts only from receiver
- Receive alerts from both.

Learning algorithms

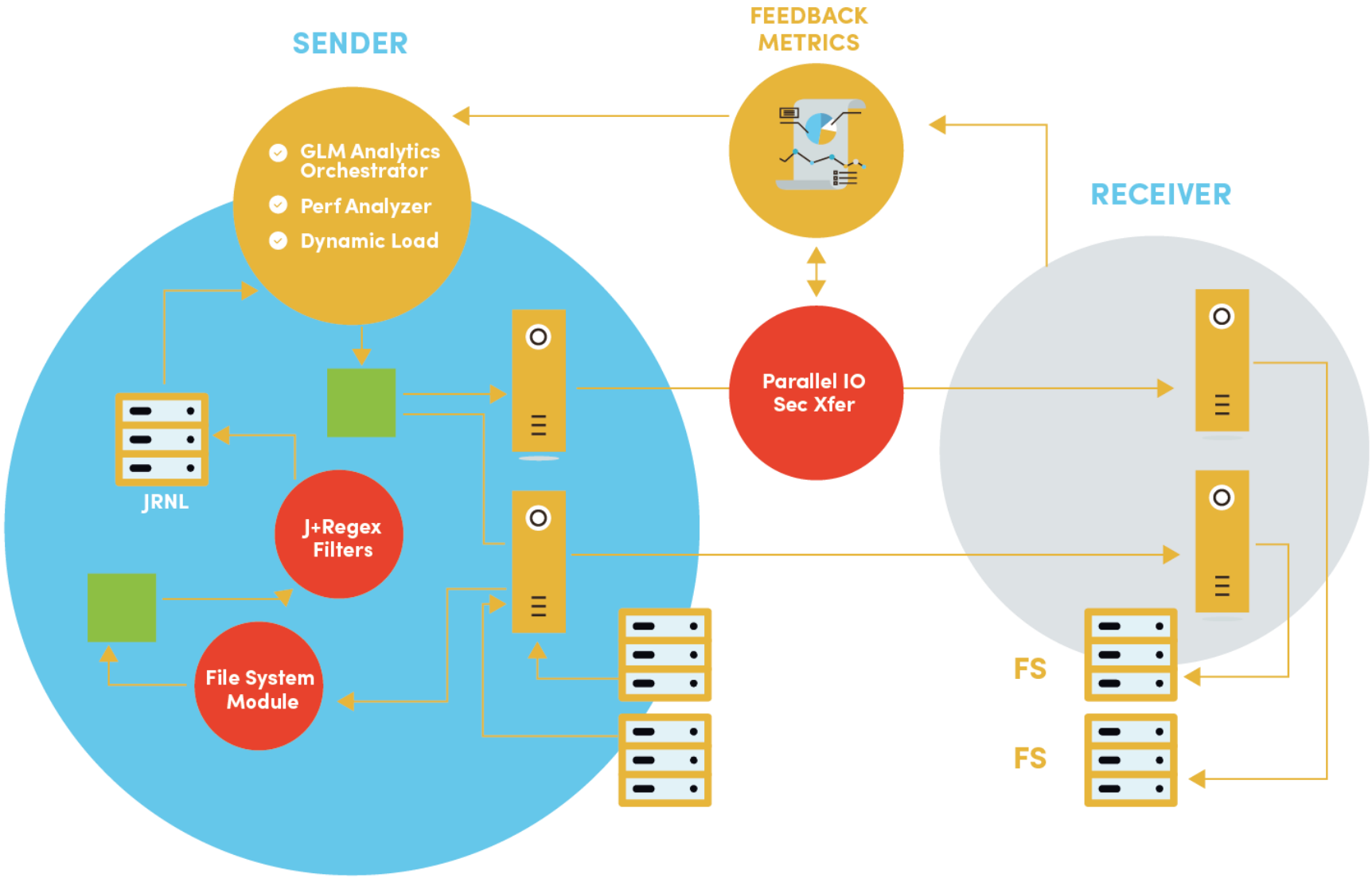
- Some Machine Learning:
  - When to use parallel Disk I/O
  - Parallel Streams for efficient bandwidth utilization
  - Learn from past performance
  - Learn from current performance
  - Self Tune, Predict ETA
  - CPU Load optimization
  - Balance I/O, CPU usage.

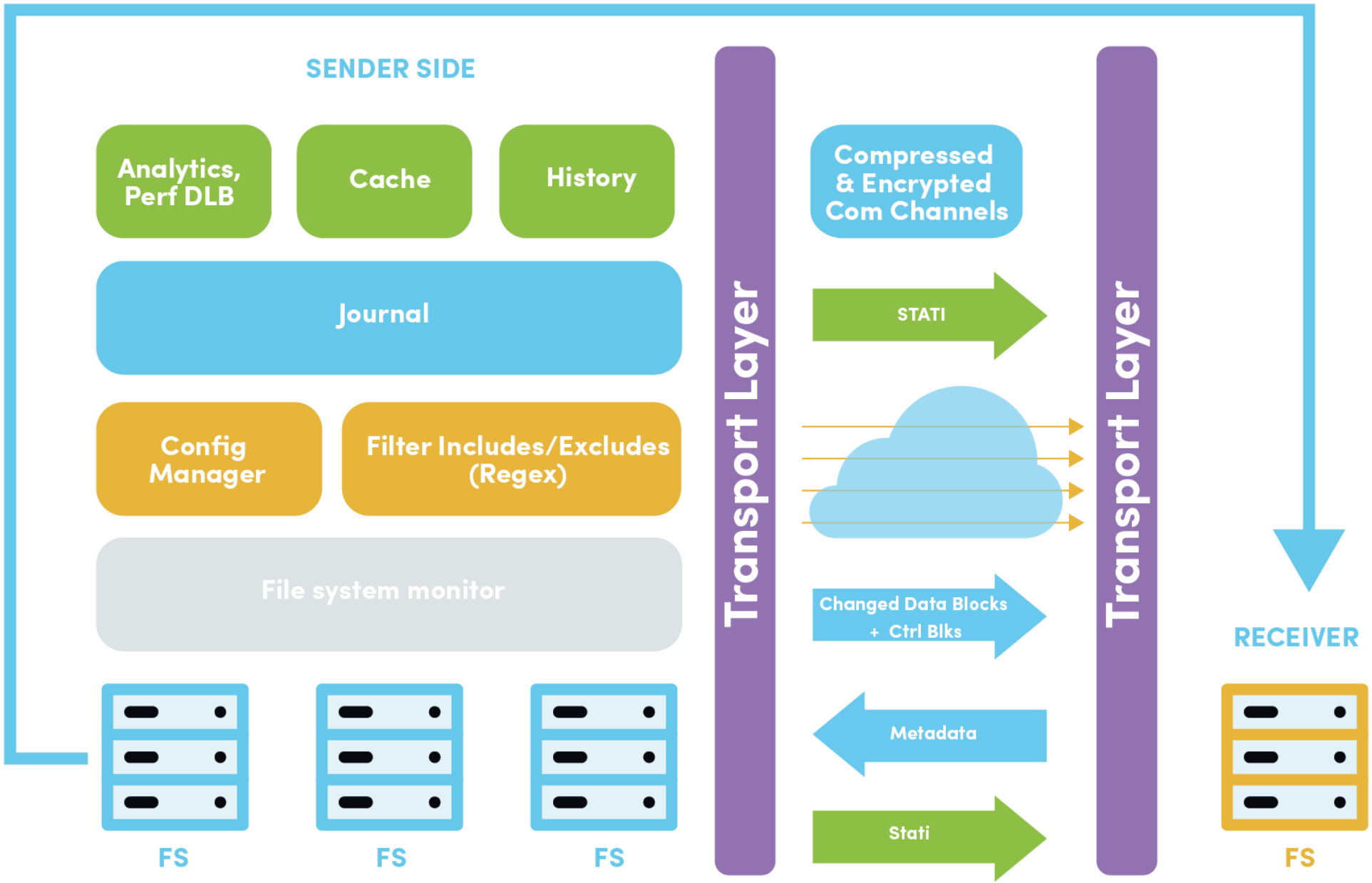


Journal File Changes: Rules & Policies

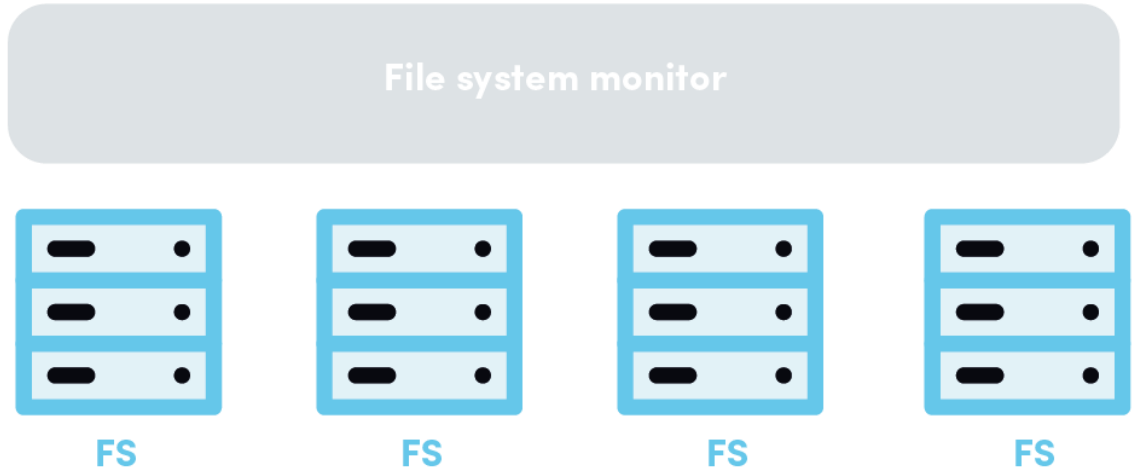
- Journal file changes for each subscriber:
  - If subscriber is interested in a file system
    - && If it matches a regex in includes
    - && If it does not match regex in exclude.
  - Then pass to transport layer

Brief Overview of the architecture

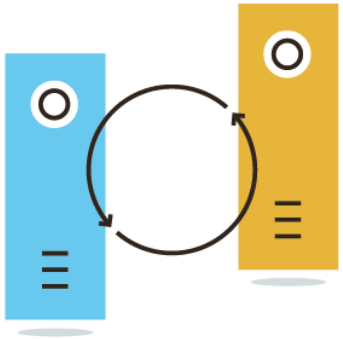



SENDER SIDE
Analytics, Perf DLB
Cache
History
Journal
Config Manager
Filter Includes/Excludes (Regex)
File system monitor
FS
FS
FS
Transport Layer
Compressed & Encrypted Com Channels
STATI
Changed Data Blocks + Ctrl Blks
Metadata
Stati
Transport Layer
RECEIVER
FS

Sender side: real time module: Monitors data and metadata changes



- Monitor I/O changes:
- Mutator system calls:
  - Write
  - Truncate
  - Chmod
  - Chgrp
  - Chown
  - Rename
  - Delete
  - Symlink
  - Mkdir
  - Rmdir
  - Change attributes



Data Transfer

- Use multiple threads: 1 thread per stream or more
- Get info from journal
- Slice and dice to create well balanced payloads
- Group compressing and non compressing blocks
- Consolidate operations if needed
- Consolidate blocks if needed (dedupe)
- Adaptively compress and encrypt
- Send only what has changed (plus some delta).

ACLs and Security preservation

Windows to Windows:
acls and permissions

Windows to Linux:
Files owned by root
or specified user

Mac, Linux, Solaris:
Posix acls (setfacl, getfacl)
between same platform

TBD: Windows2unix:
Samba style sec mappings.

Mac, Linux, Solaris:
uid, gid, ... mode bits

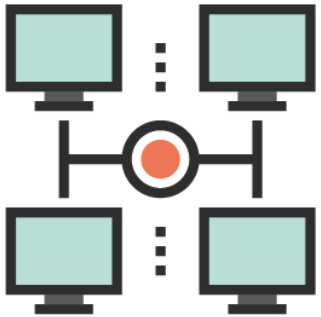
Some operations are more complex:

Rename across multiple machines

Traditional File systems: Rename is:

-Copy

-Delete



EnduraData: Rename is more efficient & faster:

-Attempt rename on remote

- Copy to remote if different or missing

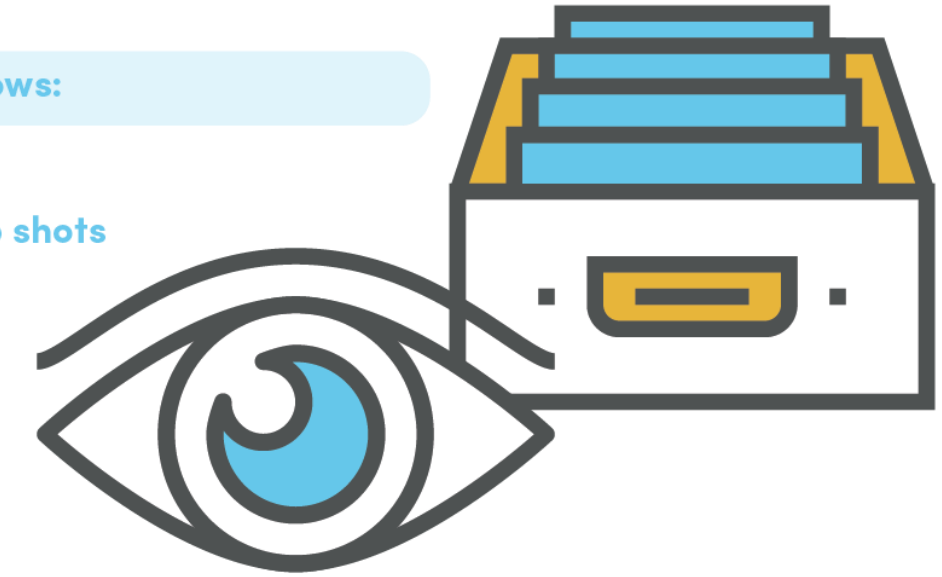
- Delete.

Deal with open files

Windows:

-VSS

-Snap shots



Re-queue changes.

Management

- XML configurations
- CLI or Browser management & configurations
- Scheduled
- Real Time
- Pause/Resume/Cancel
- Priority control
- Qeue, put, get
- History and logs.

Requirements

- VM or Physical machine memory: 8GB
- Network: LAN, WAN, MAN or Internet
- CPU speed: min 1Ghz
- Available free storage for logs, binaries, history, libraries: 4GB
- Operating systems supported:
  - ✓ Windows XP, 2003, Win7, Win8, Win 2008, Win 10, win 2012, 2016, …
  - ✓ Linux
  - ✓ Solaris x86
  - ✓ Solaris Sparc
  - ✓ AIX
  - ✓ OpenBSD
  - ✓ Mac/OSX
  - ✓ Other Unix

Requirements for Linux Real Time

Kernel >= 2.4
Util-Linux >= 2.18

Major features

- Cross platform between operating systems
- Replicates between SARC & Intel & IBM power
- Supports most operating systems
- Real-time
- Scheduled
- On demand
- Pause
- Resume
- Bandwidth throttling
- Multiple streams
- Parallel I/O.

Major features

- Replicate only file changes (deltas) .
- Adaptive compression
- Encryption
- Meta data (permissions, ACLs) sync
- Aggregate data from multiple locations
- Multi-cloud support
- On-premise support
- On-premise to cloud
- Cloud to on premise
- VM to VM
- VM to Physical
- Physical to Physical
- Physical to VM.

Major features

- Bandwidth throttling and control .
- One to one
- One to many
- Many to one
- Cascaded and mesh transfers
- Post and Pre processing hooks
- Filter files with includes regular expressions
- Filter files with excludes regular expressions
- Transfer PHI and confidential information.

Major features

- Server isolation for ransomware protection
- Versions and archives
- Bidirectional
- Multi-directional
- Open file support
- File name case preservation
- Data distribution
- Data aggregation
- Data migration
- Support for renames, deletes, meta data change, data changes, etc.

Major features

- Support for a very large number of files .
- Support for very large files (Limit dictated only by the OS)
- Support for many file systems including network file systems
- Data immediately available and usable on the destination (No need for restore)
- Conflict detection
- File change and replication history
- Tools for storage management and monitoring
  (Find files modified files, sizes, md5, etc).

Get Started now

Cross Platform file Replication Software

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