Panzura CloudFS for Manufacturing

Modern manufacturing firms contend with massive, complex product design and engineering datasets, demanding seamless collaboration across geographically dispersed teams and adherence to stringent industry regulations. Efficiently and securely managing this critical file data, without impeding productivity, represents a significant challenge for manufacturing IT leaders.

Panzura CloudFS is a hybrid cloud file services platform purpose-built to address the demanding needs of manufacturing organizations. By providing instant global synchronization of design and engineering files, it ensures fluid collaboration and eliminates version control headaches. The platform's intelligent deduplication and compression significantly reduce the storage footprint of large CAD, CAE, and CAM files, translating to substantial cost savings.

Critically, Panzura CloudFS delivers robust resilience against ransomware, safeguarding invaluable intellectual property and minimizing costly production downtime. With comprehensive visibility and control, compliance and data governance become streamlined across distributed manufacturing environments. As product complexity and data volumes continue their upward trajectory, CloudFS offers the essential seamless scalability and, importantly, prepares your rich product data to fuel future innovations through AI-powered workflows for design optimization, predictive maintenance, and supply chain management.

Consolidate Distributed Data and File Shares

Manufacturing firms often grapple with critical product data scattered across various plant file servers, individual workstations, and even cloud storage, leading to version control nightmares with essential design files and manufacturing specifications. Replicating files across different facilities consumes unnecessary storage and renders real-time co-editing between sites practically impossible.

Panzura CloudFS, a hybrid cloud file platform powered by a global file system, unifies distributed data into a single, authoritative data repository that is universally visible and accessible across the entire manufacturing enterprise.

Minimize Storage Costs and Control Data Proliferation

CloudFS transforms files into objects and eliminates redundant data blocks at an exceptionally granular level — down to 128kb blocks — before storing them in your chosen cloud or object storage. Its global deduplication mechanism performs advanced, inline block-level deduplication on all data within the object store, continuously identifying redundancies every 60 seconds before data is committed to

storage. On average, CloudFS customers experience a 35% reduction in overall data volume, with some achieving reductions of up to 80%.

Enable Seamless Collaboration Across Sites

With CloudFS, all users within your manufacturing ecosystem work directly from the authoritative dataset residing in your cloud or on-premises object storage. No file replication between sites, alterations to existing workflows, or changes in user behavior are necessary – users interact with files in their familiar manner, while CloudFS delivers a local-like file access experience.

Maintain Real-Time File Consistency Across Locations

At the heart of CloudFS lies a global file system uniquely capable of immediate global file synchronization across all manufacturing locations within your network. Every time a user opens a file, it reflects the most recent modifications, regardless of where or when the file was last updated.

This real-time file consistency, spanning every location in the global file network, empowers users to eliminate version control issues and confidently work with the authoritative file, always incorporating the latest changes.

Empower Collaborative Design and Engineering Workflows

CloudFS facilitates seamless cross-site collaboration on critical manufacturing workflows in a way unmatched by other solutions. Instantaneous, automatic file locking secures a file for editing the moment it is opened. Manufacturing applications that support element or byte-range locking, such as SolidWorks and others, benefit from CloudFS, allowing multiple users to concurrently work within the same file without overwriting each other. This provides the same collaborative experience as if users were working in the same physical location, even when separated by vast distances.

Enable High-performance Remote Work

CloudFS enables VPN-less access for remote users and those on mobile devices, via Panzura Edge. Access is available via desktop app, mobile app, and browser. CloudFS also works seamlessly with cloud VDI solutions to deliver the ultimate high performance file experience for all users, even if they're working remotely without a high speed internet connection.

Fortify Critical Data Against Loss and Corruption

CloudFS protects against ransomware and other data damage or deletion by making data immutable so it cannot be changed. Every 60 seconds, every location syncs data into the object store simultaneously, where it is stored in a Write-Once, Read-Many (WORM) format and further protected by global, immutable snapshots so a global recovery point is never more than 60 seconds away. Files, folders, or the entire file system can be restored to a precise point in time.

Catch and Stop Ransomware

An extended capability of the CloudFS hybrid cloud platform, Panzura Detect and Rescue identifies ransomware in real time and stops it automatically by switching off the affected users, followed by a comprehensive ransomware tracker to help administrators rapidly identify and recover damaged files. Meanwhile, CloudFS's data insights and intelligence layer — Panzura Data Services — enables configurable alerting on suspicious user behavior, e.g. multiple file copy or move actions that may indicate data exfiltration.

Restore Damaged or Lost Data

In the event of any file damage – whether caused accidentally or as part of a wider encryption attack such as a ransomware event – individual files, folders, or the entire file system can be restored to a pristine state with no data loss, and minimal disruption.

Read-only system snapshots are taken on a scheduled basis, and record the file system at that point in time. Additionally, snapshots are taken at every site location in the CloudFS every 60 seconds. This provides the ability to restore any file to any point in time as required.

Ensure Data Compliance

CloudFS equips your manufacturing organization with cyberstorage, embedding NIST cybersecurity principles directly into the storage infrastructure, bolstering your security posture with multiple layers of defense and resilience. Leveraging cyberstorage ensures your organization maintains security and compliance by providing advanced data protection and management throughout all phases of your product lifecycle. With built-in end-to-end encryption, immutable storage capabilities, and granular access controls, CloudFS safeguards critical manufacturing data—including design files, engineering specifications, manufacturing processes, and sensitive supplier information—against unauthorized access, breaches, and cyber threats like ransomware.

FIPS 140-3 certification guarantees that data remains securely encrypted both in transit and at rest, rendering it unreadable even if intercepted. Continuous monitoring and automated compliance tracking further ensure adherence to industry standards and regulatory requirements, significantly mitigating risks, protecting intellectual property, and maintaining the trust of partners and customers.

Ready for Evolving Industry Standards

CloudFS is compatible with a wide array of object storage solutions that are FedRAMP Moderate or High approved. Its FIPS 140-3 certification aligns with stringent security requirements, ensuring CloudFS can be confidently deployed for even the most sensitive manufacturing workloads.

Maintain High Availability for Critical Data and Operations

CloudFS delivers the high availability (HA) that manufacturing organizations require to maintain uninterrupted production and engineering workflows. Each manufacturing site always has read access to data from every other site, as well as read access to the authoritative dataset securely stored in the cloud. In the event of a disaster at one location, every other location already possesses access to the necessary data for immediate recovery.

Three flexible options for CloudFS virtual nodes offer high availability tailored to your specific requirements and budget.
- Local High Availability: Employs an active/passive standby pair of nodes for rapid failover within a single location.
- Global High Availability: A standby node assumes lock management for a failed CloudFS node in the event of a regional outage.
- Instant Node: Provides sub-5-minute recovery, including boot time, without requiring a dedicated standby node, by utilizing available virtual machine CPU and memory resources.

Cloud Mirroring provides high availability for your object store by enabling a passive, identical copy of your data in a secondary hyperscaler or low cost object store provider such as Wasabi, Backblaze or Seagate Lyve Cloud. In the event of a primary object store outage, all CloudFS nodes will fail-over to the secondary store for read and write operations, with no disruption to users.

Regional Store allows globally dispersed organizations to operate up to 4 active copies of the object store in different cloud regions offered by their choice of AWS or Azure. These regional buckets are synced via the hyperscaler back-end network and allow office locations in each region to read and write data over the shortest possible distance to maximize performance. Should a single object store become unavailable, the CloudFS nodes will fail over to an object store in the next closest region.
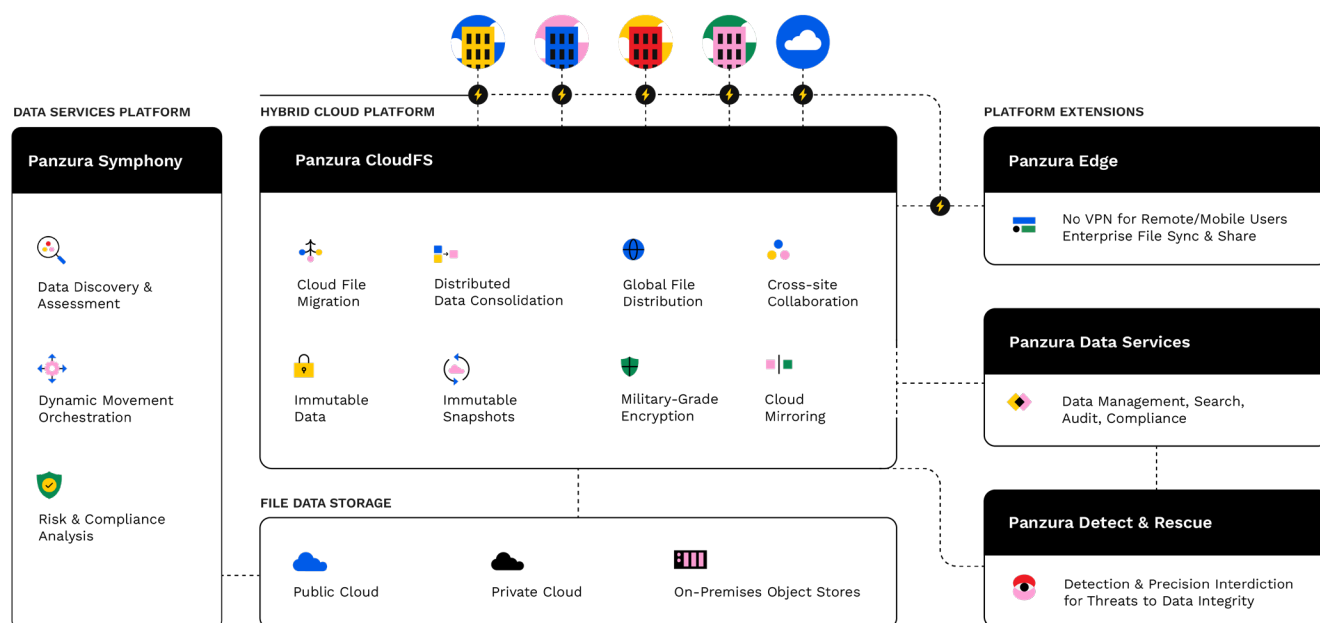
Unlock the Potential of AI in Manufacturing

Accelerate AI model training on your unstructured manufacturing data by strategically positioning it closer to your Large Language Models (LLMs) with CloudFS. If you utilize a cloud-based AI solution hosted by the same provider as your object storage, simply deploy a CloudFS node within the same cloud region. This configuration allows you to leverage CloudFS's S3 interface to efficiently scan your file system without incurring egress fees. For on-premises LLM deployments with cloud-based object storage, be mindful of potential egress costs or consider an object store provider offering zero egress charges.

To further enhance security and efficiency for advanced AI use cases, take a look at how Panzura Symphony functions as a Zero Trust Data Broker, streamlining secure data access for training your LLMs.

Work with your data, the way that works for you

Every part of Panzura's data management solution has been specifically and intentionally designed to let you put data at the fingertips of the people who need it, the moment they need it, while keeping it secure, protected against threats, and compliant with external regulations as well as internal mandates.

DATA SERVICES PLATFORM

Panzura Symphony

- Data Discovery & Assessment
- Dynamic Movement Orchestration
- Risk & Compliance Analysis

HYBRID CLOUD PLATFORM

Panzura CloudFS

- Cloud File Migration
- Distributed Data Consolidation
- Global File Distribution
- Cross-site Collaboration
- Immutable Data
- Immutable Snapshots
- Military-Grade Encryption
- Cloud Mirroring

FILE DATA STORAGE

- Public Cloud
- Private Cloud
- On-Premises Object Stores

PLATFORM EXTENSIONS

Panzura Edge
- No VPN for Remote/Mobile Users Enterprise File Sync & Share

Panzura Data Services
- Data Management, Search, Audit, Compliance

Panzura Detect & Rescue
- Detection & Precision Interdiction for Threats to Data Integrity

Panzura empowers today's digital-first organizations to do impossible things with file data, making them more agile, efficient, and productive. They trust Panzura to help them consolidate dispersed data, see and manage data in and out of the cloud, make it more cyber-resilient and AI-ready, and ensure it is available to people and processes where and when it's needed.

Discover how Panzura can fuel your success at **panzura.com.**