

Cleo Harmony 6

CLEO INTEGRATION CLOUD (CIC): PRIVATE CLOUD - DATA MOVEMENT

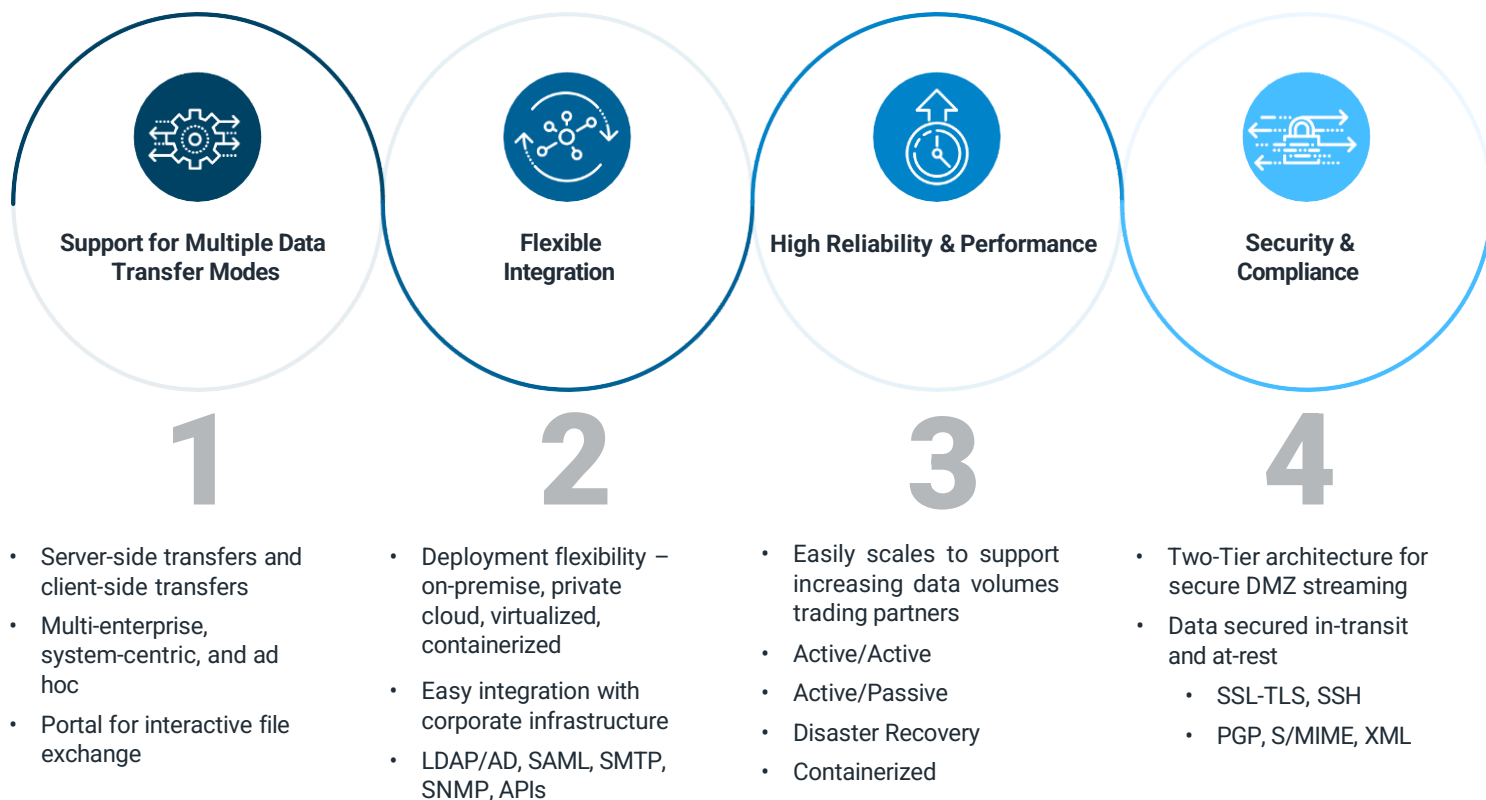
Eliminate the friction, complexity, and effort of connecting your supply chain

Cleo Harmony simplifies managed file transfer, delivering secure, reliable, and scalable data exchange to rapidly connect your business. As a private cloud and container-ready MFT platform, Cleo Harmony enables multi-enterprise supply chain and internal transfer workflows while maintaining visibility, governance, and control across trading partners, internal systems, cloud applications, and modern cloud-native infrastructure.

Cleo Harmony's comprehensive capabilities eliminate file transfer complexity while increasing operational resilience, security, and agility. The platform helps your business:

- **Rapidly onboard trading partners**, and connect file systems, cloud storage applications, logging tools, message queues and data for the creation of streamlined end-to-end workflows.
- **Maintain security and compliance with centralized governance** with encryption, auditing, and monitoring capabilities that provide visibility and control over all file transfer activity.
- **Increase operational efficiency** through automated workflows, event-driven processing, and exception handling that reduce manual intervention and ensure reliable data movement.
- **Adapt quickly to changing business requirements** with flexible deployment options, including private cloud, virtualized or containerized architecture that support evolving partner requirements, increasing transaction volumes, and cloud-native operational models.

CIC Data Movement (Powered by Cleo Harmony®)



Cleo Harmony Enterprise Architecture Designed for Resilience, Security, and Flexibility

Eliminate single points of failure, deliver exceptional throughput, and scale to support growing transaction volumes and partner requirements.

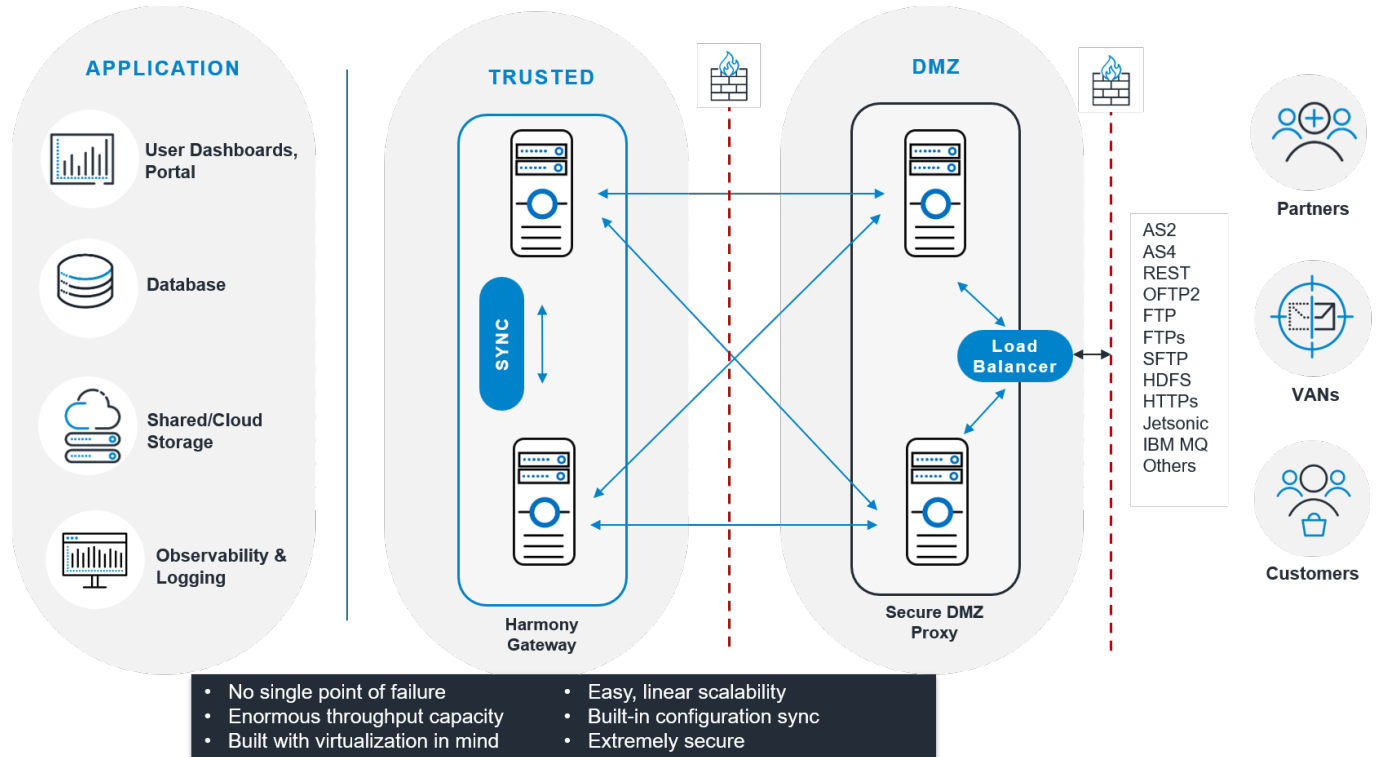


Diagram: Cleo Harmony Active-Active Deployment architecture

Containerized Cleo Harmony Architecture for Modern, Agile, and Streamlined DevOps

Cleo Harmony Containerization reimagines how your integration infrastructure is built, deployed, and managed.

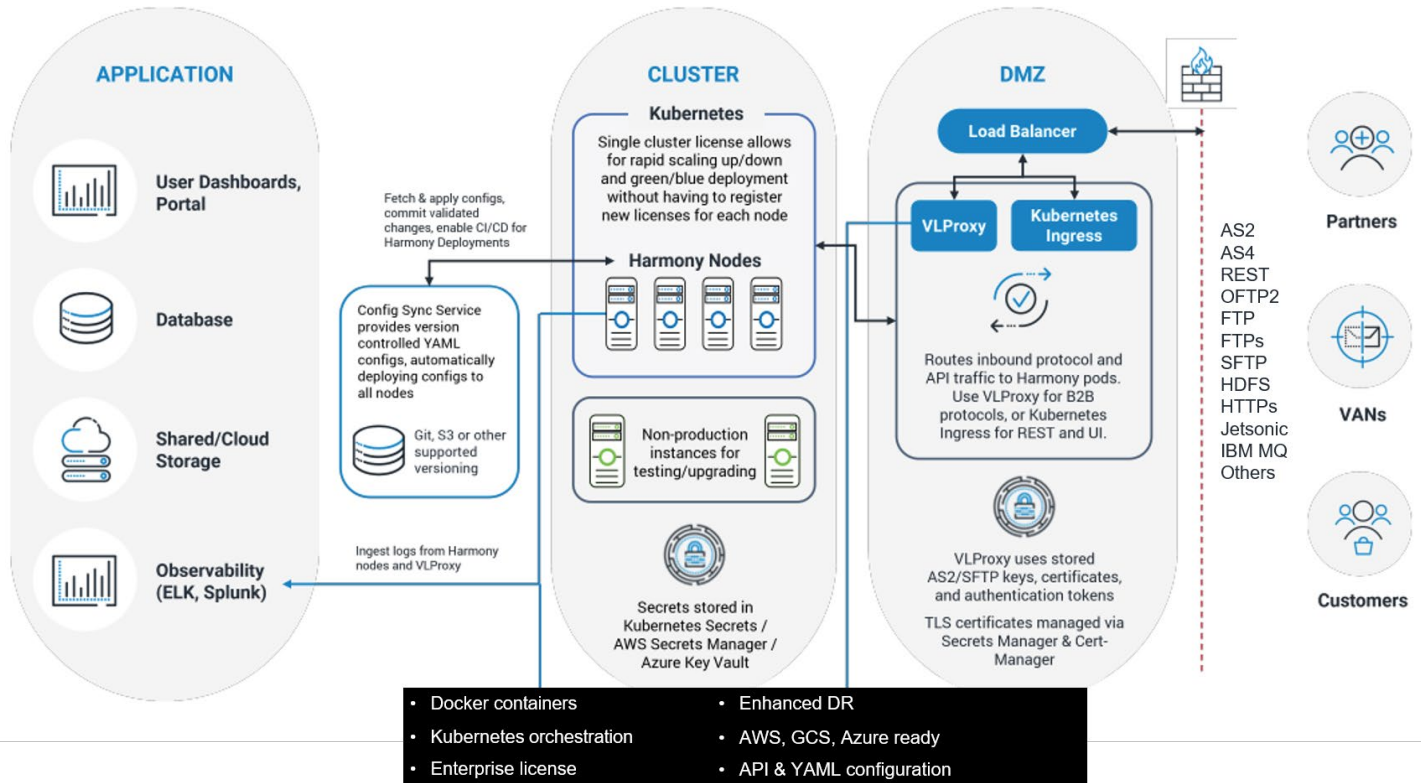


Diagram: Cleo Harmony Containerization architecture

Core Capabilities

At the center of Cleo Harmony is a set of core capabilities to design, deploy, operate, and optimize end-to-end business workflows.

ROUTING AND ORCHESTRATION

Dynamic data movement of multi-enterprise, multi-application data flows that power business ecosystems

- Protocol connector depth & preconfigured trading partner connections
- Batch and real-time transfers; scheduled and event-based
- Secure content collaboration and file acceleration

BUSINESS INTELLIGENCE ENABLEMENT

Comprehensive support for business intelligence tools to enable business insight and drive better decision-making

- Powerful application connectors to cloud storage repositories
- Relational database integration
- Support a variety of business intelligence and data analytics tools

SUPPLY CHAIN COLLABORATION

Eliminate the siloed approach to integration, and maintain operational governance and control over your trading partner and integration environment

- Maintain secure user-level access and permissions-based control
- Provide secure data rooms for human/human and human/system interactions
- Collaborate with key external trading partners to boost trust and drive new revenue

Key Technical Outcomes

The depth and breadth of the technical capabilities empower organizations to deliver technical outcomes with ease, resulting in improved organizational agility.

ORCHESTRATE AND AUTOMATE INTEGRATION FLOWS

Connect and integrate partners, SaaS, and legacy file systems for seamless integration across your ecosystem

- Increase data accuracy, reliability, and operational consistency across deployment environments
- Leverage a rich and diverse library of business and application connectors

CREATE FRICTIONLESS END-TO-END PROCESSES

Business process optimization and integration on a single platform

- Optimize key revenue-driving business processes
- Enable integration that spans business, operational, and cloud-native ecosystems

CENTRALIZE THE FULL ISSUE LIFECYCLE

Take direct action with self-service exception management

- Resend, reprocess, and share transactions with trading partners and internal stakeholders
- Single pane of glass for all stages of the support process

ELASTICALLY SCALE

Gain the power of resilient web-scale and cloud-native platform technologies

- Support propulsive business growth
- Flexibly scale and dynamically adapt to meet peak seasonal Demand while supporting modern deployment strategies

Key Business Outcomes

Cleo Integration Cloud empowers technical and business users to deliver business outcomes that result in improved customer experiences and stronger ecosystem partnerships.

OPTIMIZE EXCEPTION MANAGEMENT

Take direct action to proactively address issues

- Hands-on troubleshooting to ensure critical response-time SLAs
- Custom alert notifications for events/non-events to accelerate error identification and resolution

IMPROVE GOVERNANCE

Dynamically manage integrations across external ecosystem partners

- Rapidly adapt to meet evolving trading partner change requirements
- Handle any integration demand

BUSINESS CONTINUITY

Advanced support for always-on business continuity

- Active/Active. Database independent dataflows for highly-available data movement systems
- Avoid data loss, and enable disaster recovery and event handling

Operational Ecosystem Connectors

Integrate your entire ecosystem. Achieve frictionless integration with flexible and versatile connectors to enable on-premise and cloud application integration use cases, supporting a wide array of modern technical or business requirements

CLOUD AND DATA STORAGE

Meet evolving trading partner requirements that are moving away from traditional on-premise file systems to cloud-native solutions

- Amazon S3
- Microsoft Azure Blob Storage
- Google Cloud Storage Buckets
- Apache HBase
- Cloudera
- SharePoint

SECURITY INFRASTRUCTURE

Leverage extensible platform features to optimize administrative and security capability and control for all users and your trading community

- Secure Access Control (AD/LDAP)
- Antivirus and content scanning (ICAP)

HIGH-SPEED FILE TRANSFER

Enable rapid data acceleration to support replication, backup, disaster recovery, and data lake ingestion, as well as batch and streaming processes for large file and data set transfer

- Cleo Jetsonic™ (pTCP)

LOGGING

Leverage enterprise logging capabilities for secure, observable, and compliant business.

- Splunk
- Datadog
- GCP

BUSINESS PROTOCOL

Gain speed in business transactions by utilizing protocols with built in business controls including digital receipts and signatures for your business document exchanges

- AS2, AS4
- ebXML (ebMS 2.0)
- OFTP2
- RosettaNet (RNIF)

INTERNET PROTOCOL

Leverage standard data transfer protocols to universally move data with time-tested security

- HTTPs
- FTPs
- SFTP (SSH FTP)
- SMTPs

INDUSTRY PROTOCOL

Utilize industry-specific standards to send and receive data across organizational lines and keep data secure and your business compliant with regulatory mandates like HIPAA and SEPA

- MLLP

INFRASTRUCTURE

Support message queues, connect traditional file servers, and integrate modern cloud-native and legacy systems

- Ordinary file
- Windows File Share (SMB/CIFS)
- IBM MQ
- Kafka
- AMQP (Azure Service Bus and more)
- Java Message Service (JMS)
- Microsoft Message Queuing (MSMQ)
- Mainframe (iSeries AS400)

Security Features

Cleo Integration Cloud provides flexible control to ensure the integrity and security of your sensitive and proprietary data

AUTHORIZATION

- OAuth 2.0 access tokens

AUTHENTICATION

- SAML integration support for identity providers including OneLogin, Auth0, Azure Active Directory, and more

CERTIFICATE ALGORITHMS/FORMATS

RSA, DSA, X.509 (CER, DER), PKCS #12 (P7B), PKCS #8 (PEM, P8), ECDSA, ED25519

DATA INTEGRITY ALGORITHMS

SHA-2 (256, 384, 512), CRC-32, Poly1305

ENCRYPTION

- PGP encryption-handling capabilities
- SSL/TLS up to TLS 1.3 connection security

KEY EXCHANGE ALGORITHMS

- PSK, DH, DHE, RSA, ECDH, ECDHE

SIGNATURE ALGORITHMS

- RSA, DSA, RSASSA-PSS, RSAES-OAEP, ECDSA

ENCRYPTION ALGORITHMS

AES (128, 192, 256), Twofish, SEED, Camellia (128, 256), Chacha20

PROXY

- Perimeter layer security model
- Forward, reverse, and forward-reverse proxy
- Multi-protocol support for proxy integration

Developer Features

Extend the power of Cleo Integration Cloud. Design and build custom integrations, automate deployment workflows, and provision systems for highly efficient, fully automated integration operations across traditional and containerized environments.

DEVELOPER RESOURCES

- [Cleo GitHub](#)
- [Cleo Developer](#)

Platform Certifications

Cleo Integration Cloud for private cloud deployments is designed for data security, process integrity, and system interoperability. Tested and certified, Cleo's platform enables customers to comply with constantly evolving EDI, B2B and industry regulations and mandates.

Drummond Certified
AS2 and AS4



Odette-certified
OFTP2 validations



Platform Support

Cleo Integration Cloud support outcomes are backed by over 700 collective years of team experience in driving expedited resolutions to even the most complex integration issues.

SUPPORT

Cleo provides exceptional customer support to optimize incident management and accelerate resolution for production and non-production technical issues

- 24/7 technical support coverage
- Phone, web, email
- Anytime access via customer portal and knowledge base (KB)

SERVICES

Your roadmap to successful integration modernization starts with Cleo for end-to-end implementation, migration, and operations

- Business consulting, strategy, design, testing, and deployment
- Implementation/migration services available
- Cleo University (training) & Cleo Connect (annual customer conference)

PLATFORM UPDATES

Mitigate risk, stay ahead of compliance requirements, and keep your integration capabilities on the cutting edge

- Regular updates with new features and technical capability enhancements
- Platform release with major upgrade to features and functionality
- Release notes and detailed technical product documentation and user guides

CUSTOMER SUCCESS

Dedicated to your success with dynamic support for every integration stage backed by experience from thousands of successful deployments

- Dedicated customer success manager
- Guidance based on well-established best practices
- Metric-driven health score monitoring relative to benchmarks

System Requirements

- Cleo Harmony provides additional options for virtual environments and Java runtime environments support.
- Depending on the number of trading partners/simultaneous connections or OS specifications, greater hardware requirements may be necessary.
- Additional disk space for logging is required, average of 50 KB per transfer (or 50 GB disk space needed for every 1 million transfers), and depending on purge settings.

Cleo Integration Cloud provides the industry's most flexible and versatile deployment options — including private cloud, virtualized, and containerized architectures — that easily map to your business objectives. For more information on deployment options, platform packages and pricing, contact Cleo today.



Ready to explore Cleo's AI-native supply chain orchestration solutions?

Schedule your personalized demo to learn how you can power your supply chain intelligence layer on Cleo.

REQUEST DEMO

Recognized "Leader" in iPaaS and EDI categories on G2 Crowd



About Cleo Integration Cloud

Cleo Integration Cloud (CIC) is an AI-powered platform, purpose-built to design, build, operate, and optimize supply chain processes by bringing together API, MFT, EDI, non-EDI integrations, and managed services through modern supply chain solutions. Cleo's solutions provide its customers strategic end-to-end visibility into and control over revenue-critical business flows occurring across their ecosystems of partners and customers, marketplaces, and internal cloud and on-premise applications. More than 4,000 middle-market and enterprise customers across transportation & logistics, wholesaling & distribution, and manufacturing industries rely on Cleo to rapidly onboard trading partners, enable integrations between applications, and streamline supply chain workflow through proactive insights.