CASHIER IN THE CLOUD

A Cloud-Based Point of Sale Platform by C24

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EXECUTIVE SUMMARY

The retail and hospitality industries are increasingly moving toward connected, data-driven business operations. Traditional Point of Sale (POS) systems, which often rely on isolated computers and locally stored databases, can create limitations in data accessibility, operational visibility, scalability, and business continuity.

Cashier in the Cloud by C24 is designed to address these challenges by connecting cashier operations and business data to a centralized cloud-based platform.

C24 aims to provide businesses with a more connected POS environment in which sales, inventory, product information, and customer records can be synchronized with centralized infrastructure.

The platform is designed around a practical principle: businesses should be able to operate while maintaining a reliable connection to their central business data.

INTRODUCTION

The Traditional POS Challenge

Many conventional POS installations operate through independent local databases.

Although this approach can be effective for individual terminals, it may create challenges when businesses expand:

- Sales information is distributed across multiple terminals.
- Inventory updates may not be immediately visible across locations.
- Management may lack centralized operational visibility.
- Data consolidation can require manual processes.
- Hardware failures can disrupt access to important business information.
- Expanding the system may require additional local infrastructure.

These limitations can become more significant as businesses grow.

The C24 Approach

C24 introduces a cloud-connected POS architecture that links cashier terminals with centralized cloud infrastructure.

Instead of treating each cashier as an isolated system, C24 is designed to synchronize operational information into a centralized environment.

This approach supports improved data availability, centralized management, and future scalability.

PRODUCT OVERVIEW

What is Cashier in the Cloud?

Cashier in the Cloud is a cloud-connected Point of Sale solution developed by C24.

Its intended capabilities include:

- Sales transaction management.
- Product and merchandise management.
- Inventory and stock synchronization.
- Customer information management.
- Multi-terminal data consolidation.
- Centralized business information.
- Cloud-based data access.
- Infrastructure designed for business continuity.

The platform is intended to support businesses that require reliable cashier operations and centralized information management.

Core Data Components

C24's synchronization architecture is designed around four principal data categories:

Product Master Data

Contains product codes, descriptions, prices, categories, and other product information.

Inventory Data

Contains stock balances and inventory movements associated with products and locations.

Sales Data

Contains transaction headers, transaction details, quantities, prices, payment information, and transaction references.

Customer Data

Contains customer identification and relevant customer records maintained by the business.

SYSTEM ARCHITECTURE

Individual Cashier Data Environment

The C24 architecture is designed to support individual cashier data environments.

Each cashier terminal maintains its own operational local data files. This arrangement helps isolate cashier-level data operations and reduces direct file-writing conflicts between terminals.

Each terminal can therefore manage its own transactions without requiring multiple cashiers to write to the same local data file.

Event-Driven Data Synchronization

C24's proposed synchronization mechanism is event-driven.

Rather than exporting entire database files at fixed intervals, the application initiates data synchronization when a user successfully saves a record.

The conceptual workflow is:

- A cashier creates or updates a business record.
- The application saves the record to its local data file.
- The application confirms that the save operation succeeded.

- The relevant changed record is prepared for export.
- The exported data is placed into a persistent synchronization queue.
- The synchronization service transmits the data to the cloud.
- The cloud platform validates and processes the incoming data.
- The receiving infrastructure confirms successful processing.

This approach is intended to reduce unnecessary data transfers and minimize synchronization delays.

Importantly, the local data files do not need to be closed after every successful save. The application can read and export the relevant saved records while continuing normal cashier operations, subject to appropriate file locking and consistency controls.

Data Exchange

Text-based file is proposed as a practical data interchange format between cashier applications and cloud infrastructure.

Each synchronization batch can contain:

- Customer identification.
- Cashier terminal identification.
- Transaction identification.
- Record identification.
- Operation type, such as INSERT, UPDATE, or DELETE.
- Timestamp.
- Relevant business data.
- Batch identification and sequence information.

The receiving system should validate the batch before applying the changes.

Centralized Cloud Processing

The cloud environment receives and consolidates synchronized data from individual cashier terminals.

The central platform is intended to maintain a consistent representation of product, inventory, sales, and customer information.

The architecture must preserve relationships between related records. For example, a sales transaction and its associated transaction details should be processed as one logical unit.

CLOUD INFRASTRUCTURE

Primary & Standby Infrastructure

C24 is evaluating a geographically distributed infrastructure design to improve service continuity.

A proposed architecture includes:

- **Primary Infrastructure:** USA.
- **Standby Infrastructure:** Europe.
- **Independent Backup Storage:** Separate cloud object storage.
- **Traffic Management:** Health monitoring and controlled traffic redirection.

The purpose of this design is to reduce dependence on a single infrastructure location. The standby environment would maintain a synchronized copy of the relevant business data and could be promoted when the primary environment becomes unavailable.

Disaster Recovery

A disaster recovery strategy should address:

- Infrastructure failure.
- Network interruption.
- Storage failure.
- Database corruption.
- Software malfunction.
- Unexpected interruption.

Promotion of a standby server should involve health verification, data consistency checks, and protection against split-brain conditions.

When the original primary infrastructure becomes available again, it should be resynchronized before returning to normal production operations.

Backup Strategy

Replication and backup serve different purposes.

Replication supports service continuity, while independent backups protect historical data against accidental deletion, corruption, or other incidents.

C24's proposed backup strategy includes encrypted backups, retention policies, restoration testing, and independent storage.

DATA SECURITY & PRIVACY

Security is an essential component of a cloud-based POS platform. C24's security design should incorporate the following principles:

Secure Data Transmission

Communication between cashier terminals and cloud infrastructure should use HTTPS with modern TLS encryption.

Access Control

Access to business data and administrative functions should be controlled through authentication, authorization, and user-based permissions.

Customer Data Isolation

Each business customer should have logically separated data and access boundaries.

A customer should not be able to access another customer's business records.

Data Integrity

Synchronization processes should include:

- Record validation.
- Unique transaction identifiers.
- Sequence verification.
- Duplicate detection.
- Delivery acknowledgements.
- Error logging and retry mechanisms.

Backup Protection

Backups should be encrypted and protected through controlled access, retention management, and restoration procedures.

C24 should implement applicable data protection and privacy requirements in the jurisdictions where it operates.

SCALABILITY

C24 is intended to support growth from individual cashier terminals to larger multi-terminal and multi-location deployments.

The proposed architecture supports scaling through:

- Customer-level data separation.
- Independent cashier data environments.
- Incremental synchronization.
- Centralized cloud processing.
- Expandable computing and storage resources.
- Geographically distributed infrastructure.

As customer volumes increase, infrastructure capacity can be expanded according to actual workload requirements.

Performance testing and capacity planning will be essential to determine the appropriate limits for each deployment.

BUSINESS APPLICATIONS

Cashier in the Cloud is designed for businesses that require connected cashier operations and centralized business information.

Potential applications include:

- Retail stores.
- Supermarkets.
- Restaurants and food businesses.
- Wholesale and distribution businesses.
- Multi-branch retail operations.
- Other businesses requiring inventory and transaction management.

The platform's intended value is to connect day-to-day cashier operations with a centralized information environment.

KEY BENEFITS

The C24 approach is designed to deliver several operational benefits.

Centralized Information

Business information from multiple cashier terminals can be consolidated into a central cloud environment.

Reduced Manual Consolidation

Automated synchronization can reduce the need for manual data collection and transfer

Improved Data Availability

Centralized data can support business reporting and management access, subject to service availability and access permissions.

Independent Cashier Data Environments

Individual cashier local data file environments help reduce direct file conflicts between terminals.

Scalable Infrastructure

Cloud infrastructure provides a path to expand resources as business requirements grow.

Business Continuity Planning

A geographically distributed standby design can provide an additional recovery option.

TECHNOLOGY ROADMAP

C24's development roadmap may include the following stages:

Phase 1 — Core POS & Cloud Synchronization

- Cashier transaction processing.
- Product master synchronization.
- Inventory synchronization.
- Sales synchronization.
- Customer data synchronization.
- Cloud-based data consolidation.

Phase 2 — Infrastructure Resilience

- Primary and standby infrastructure.
- Automated health monitoring.
- Disaster recovery procedures.
- Independent backup infrastructure.
- Recovery testing.

Phase 3 — Advanced Business Intelligence

- Centralized reporting.
- Multi-location business analytics.
- Sales performance monitoring.
- Inventory insights.
- Customer activity analysis.

Phase 4 — Ecosystem Expansion

- Third-party integrations.
- Business management integrations.
- API-based connectivity.
- Additional cloud services.
- International market expansion.

CONCLUSION

Cashier in the Cloud by C24 represents a cloud-oriented approach to modern Point of Sale operations.

By connecting individual cashier environments with centralized cloud infrastructure, C24 aims to help businesses improve information accessibility, operational coordination, and infrastructure scalability.

Its proposed event-driven synchronization model is designed to transfer only relevant changes rather than repeatedly transmitting entire database files.

Combined with data validation, secure communication, independent backups, and geographically distributed infrastructure, this architecture provides a foundation for a scalable cloud-connected POS platform.

C24's long-term objective is to make cashier operations more connected, accessible, and adaptable to the changing needs of businesses.

ABOUT US

C24 Holdings

Developer of Cashier in the Cloud.

Product: Cashier in the Cloud
Category: Cloud-Based Point of Sale (POS)
Technology Focus: Cloud Computing, POS Systems, Data Synchronization, Business Infrastructure

Tagline: Cashier in the Cloud.



DISCLAIMER

This white paper describes the C24 product concept and proposed technical architecture. Features and infrastructure components described as proposed or planned should not be interpreted as already deployed, independently certified, or commercially guaranteed. Actual availability, performance, security controls, and service levels depend on the final implementation and applicable service agreements.

