CROSS-PLATFORM DATA SYNCHRONIZATION METHOD PATENT

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ABSTRACT

A method and system for real-time synchronization of data across multiple computing platforms utilizing distributed ledger technology and intelligent conflict resolution. The invention enables seamless data consistency across heterogeneous enterprise environments through automated state management and selective data replication protocols.

BACKGROUND OF INVENTION

Field of Invention

[0001] The present invention relates to enterprise data management systems, specifically to methods and systems for maintaining data consistency across multiple computing platforms in distributed enterprise environments.

Prior Art

[0002] Existing solutions for cross-platform data synchronization typically rely on centralized database architectures that create single points of failure and introduce latency in distributed environments. Prior attempts to solve this problem have not adequately addressed the challenges of real-time synchronization across heterogeneous systems while maintaining data integrity and managing conflict resolution.

SUMMARY OF INVENTION

[0003] The present invention provides a novel approach to cross-platform data synchronization through:

a) Implementation of distributed ledger technology for maintaining transaction history

b) Intelligent conflict resolution using machine learning algorithms

c) Selective data replication based on configurable business rules

d) Real-time state management across distributed nodes

e) Automated recovery and reconciliation protocols

DETAILED DESCRIPTION

System Architecture

[0004] The system comprises:

Distributed Node Network

- Primary nodes for data storage and processing

- Secondary nodes for redundancy and load balancing

- Edge nodes for local data caching

Synchronization Engine

- State management module

- Conflict detection algorithms

- Resolution protocol handler

- Transaction logging system

Data Synchronization Protocol

[0005] The synchronization process follows these steps:

Initial State Capture

Change Detection

Conflict Analysis

Resolution Implementation

State Propagation

Verification and Confirmation

Conflict Resolution Methodology

[0006] The system employs a proprietary algorithm for resolving data conflicts:

Timestamp-based prioritization

Business rule evaluation

Machine learning-based pattern recognition

Administrative override protocols

Audit trail generation

CLAIMS

A method for synchronizing data across multiple computing platforms comprising:

a) Establishing a distributed network of nodes

b) Implementing real-time state management

c) Executing intelligent conflict resolution

d) Maintaining transaction integrity through distributed ledger technology

The method of claim 1, wherein the distributed network includes:

a) Primary storage nodes

b) Processing nodes

c) Edge caching nodes

d) Redundancy nodes

The method of claim 1, wherein conflict resolution comprises:

a) Automated pattern recognition

b) Rule-based decision making

c) Machine learning optimization

d) Administrative intervention protocols

DRAWINGS

[0007] Figure 1: System Architecture Diagram

[0008] Figure 2: Data Flow Schematic

[0009] Figure 3: Conflict Resolution Flowchart

[0010] Figure 4: Node Network Topology

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ASSIGNMENT

All rights, title, and interest in this patent are assigned to:

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CERTIFICATION

I hereby certify that I am authorized to execute this patent application on behalf of Summit Digital Solutions, Inc.

Executed this 15th day of March, 2021

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