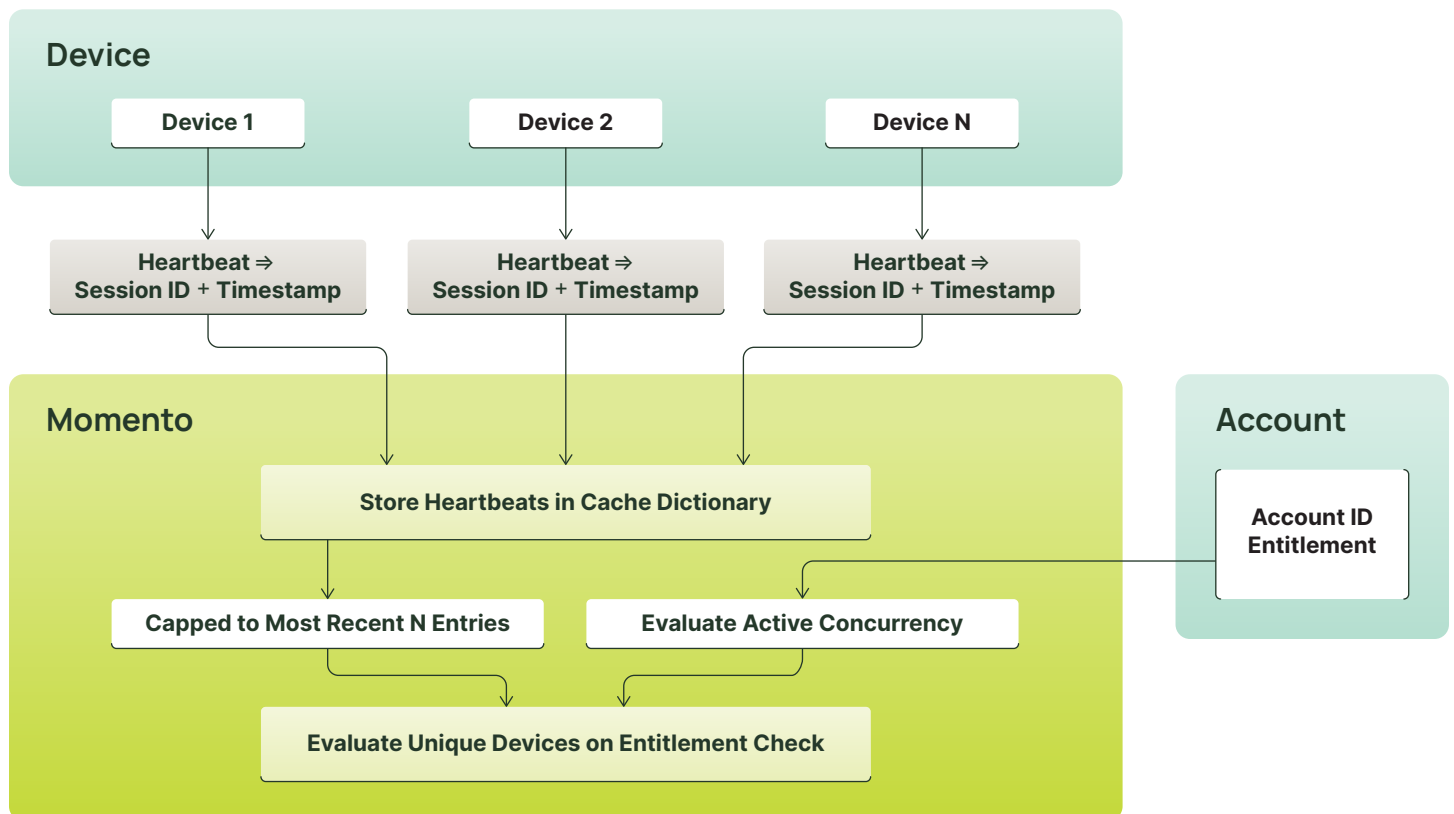# Concurrent device tracking

Control access to your applications without buffering, lag, or errors

Concurrency tracking safeguards against abuse, ensures fair usage, and provides real-time insights into user behavior. It goes beyond simple access monitoring by enabling real-time usage analysis across devices, locations, and content while also preventing unauthorized access and enforcing device limits to maintain security and resource efficiency.

Overview

Momento Topics makes implementing real-time concurrency tracking easy, by eliminating the need for complex infrastructure.

Device

| Device 1 | Device 2 | Device N |

Heartbeat ⇒ Session ID + Timestamp (×3)

Momento

Store Heartbeats in Cache Dictionary

Capped to Most Recent N Entries

Evaluate Active Concurrency

Evaluate Unique Devices on Entitlement Check

Account

Account ID Entitlement

Building blocks

Token Vending Machine

- Issues short-lived session tokens with limited permissions
- Embeds the account ID within the token for security

Concurrency Checker

- Retrieves the latest record of active sessions from Momento
- Counts active connections in the record
- Compares the count with the allowed concurrency limit

Device Heartbeat

- Devices publish heartbeats at regular intervals to the designated Momento topic
- Heartbeats include device ID and other relevant information

Heartbeat Handler

- Stores received heartbeats in interval-based cache dictionaries in Momento
- Assigns a TTL to each dictionary for automatic cleanup

Capabilities of Momento for concurrency monitoring

Real-time Monitoring
Enables dynamic resource management and immediate responses to changes in usage

Scalability
Handles high-traffic applications automatically and effortlessly

Simplified Infrastructure
Eliminates the need for complex infrastructure compared to traditional methods

Enhanced Security
Automatically prevents unauthorized access and account sharing

Benefits gained using Momento for concurrency monitoring

Prevents abuse & ensures fair use

Delivers a smooth user experience

Provides valuable insights into user behavior

You can find the code to implement this concurrency tracker pattern in Momento Docs: docs.momentohq.com.

Let's Go!

gomomento.com