

Finatrades Dual-Wallet System

Technical Documentation

1. Why Two Wallet Types?

Gold prices change constantly. Some users want price exposure, others want stability. Finatrades provides two wallet types to address both needs:

MPGW - Market Price Gold Wallet

- Value fluctuates with live gold market prices
- If gold price rises, your value increases
- If gold price falls, your value decreases
- Best for: Investment and trading

FPGW - Fixed Price Gold Wallet

- Value is locked at the price you purchased
- Uses FIFO (First-In-First-Out) batch consumption
- Each batch remembers its purchase price
- Best for: Savings and stability

2. How FPGW Batches Work (FIFO)

When you buy gold into FPGW, it creates a "batch" with the locked price:

```
Batch 1: 50g @ $140/g (Jan 1)
Batch 2: 30g @ $145/g (Jan 5)
Batch 3: 20g @ $143/g (Jan 7)
Total: 100g
```

When you spend 60g, FIFO means oldest gold is used first:

- First 50g comes from Batch 1 @ \$140
- Next 10g comes from Batch 2 @ \$145
- Batch 3 remains untouched

3. The Four Balance Buckets

Each wallet type (MPGW and FPGW) has four separate buckets:

- **AVAILABLE** - Can spend, send, or withdraw freely
- **PENDING** - Waiting for confirmation (deposits being verified)
- **LOCKED_BNSL** - Committed to Buy Now Sell Later plans
- **RESERVED_TRADE** - Reserved for FinaBridge trade finance

IMPORTANT: Only "Available" gold can be spent!

4. P2P Transfer Flow

When sending gold to another user:

1. Sender chooses wallet type (MPGW or FPGW) and amount
2. Sender's Available !' Reserved (gold is held)

3. Receiver sees request with [Accept] [Reject] + 24hr timer
4. If Accept: Receiver's Available increases (same wallet type)
5. If Reject/Expire: Sender's gold returns to Available

KEY RULE: Market!'Market, Fixed!'Fixed (no mixing allowed)

5. Data Storage Structure

- **wallets** - Legacy total gold balance
- **vaultOwnershipSummary** - Dual-wallet buckets (MPGW/FPGW × 4 statuses)
- **fpgw_batches** - Individual FPGW batches with locked prices
- **vaultLedgerEntries** - Audit trail of all movements
- **transactions** - Transaction history
- **certificates** - Digital ownership certificates

6. Gold-Only Compliance Rule

Single Source of Truth: Gold grams is the ONLY authoritative balance.

- Storage: All ledgers, wallets, locks store gold grams ONLY
- Display: UI shows gold as primary, USD as ""H equivalent"
- Disclaimer: "USD is an equivalent value. Your real balance is gold."
- MPGW: $\text{USD} = \text{gold grams} \times \text{current market price}$
- FPGW: $\text{USD} = \text{gold grams} \times \text{locked purchase price}$