fastFOREX FIOTECH

Complete Institutional Financial API Integration Manual

Production Base URL: https://fastforex.fiotech.org | Protocol: REST / JSON / WebSockets

Interactive Sandbox: https://fastforex.fiotech.org/swagger-ui/index.html

1. Overview & System Architecture

fastFOREX by Fiotech provides real-time, low-latency currency exchange rates, foreign exchange (FX) market data, cryptocurrency valuations, and precious & base metals spot prices. Engineered for mission-critical enterprise systems, fintech platforms, payment gateways, ERPs, and automated trading algorithms.

Key Capabilities:

- 160+ Sovereign Currencies: Real-time midpoint exchange rates aggregated from top liquidity providers.
- 500+ Cryptocurrencies: Live prices across 2,300+ trading pairs refreshed continuously every second.
- Precious & Base Metals: Spot and quote prices for Gold (XAU), Silver (XAG), Platinum, Palladium, Copper, etc.
- Vercel KV / Upstash Redis Edge Caching: High throughput sliding-window rate limiting and sub-5ms latency.
- 55+ Years of Historical Depth: Daily, hourly, and minute granularity back to 1970 for backtesting.

2. Authentication & Security Standard

All API endpoints require a valid API key passed either via URL query parameter or HTTP request header. Demo keys are available for integration testing.

```
// 1. Query Parameter Authentication (Recommended for simple GET requests)
GET https://fastforex.fiotech.org/fetch-all?from=USD&api_key=YOUR_API_KEY

// 2. HTTP Header Authentication (Enterprise Best Practice)
GET https://fastforex.fiotech.org/fetch-all?from=USD
X-API-Key: YOUR_API_KEY
```

Standard HTTP Response Envelope (Compliance with api-contract.MD):

```
{
  "base": "USD",
  "results": { "EUR": 0.923, "GBP": 0.789, "JPY": 154.6 },
  "updated": "2026-09-19 09:18:07 UTC",
  "ms": 2
}
```

3. Foreign Exchange (Forex) Endpoints

GET /fetch-all

Returns live midpoint exchange rates from a specified base currency against all supported 160+ world currencies.

Parameters: from (string, default: USD), api_key (string, required)

```
// Request
GET /fetch-all?from=USD&api_key=demo

// Response (200 OK)
{
  "base": "USD",
  "results": {
    "EUR": 0.923,
    "GBP": 0.789,
    "JPY": 154.6,
    "VND": 25420.0,
    "CAD": 1.394,
    "AUD": 1.532,
    "CHF": 0.884
  },
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 1
}
```

GET /fetch-one

Returns real-time exchange rate between a specific base currency and a single target currency.

Parameters: from (string, required), to (string, required), api_key (string, required)

```
// Request
GET /fetch-one?from=USD&to=EUR&api_key=demo

// Response (200 OK)
{
  "base": "USD",
  "result": { "EUR": 0.923 },
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 1
}
```

GET /fetch-multi

Fetches live exchange rates for a specified list of target currencies in a single batch call.

Parameters: from (string, required), to (comma-separated string, e.g. EUR,GBP,JPY), api_key (string, required)

```
// Request
GET /fetch-multi?from=USD&to=EUR,GBP,JPY,AUD&api_key=demo

// Response (200 OK)
{
  "base": "USD",
  "results": { "EUR": 0.923, "GBP": 0.789, "JPY": 154.6, "AUD": 1.532 },
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 1
}
```

GET /convert

Converts an exact numerical amount from one currency to another using real-time rates.

Parameters: from (string), to (string), amount (number, e.g. 1000), api_key (string)

```
// Request
GET /convert?from=USD&to=EUR&amount=100&api_key=demo

// Response (200 OK)
{
  "base": "USD",
  "amount": 100,
  "result": { "rate": 0.923, "converted": 92.3 },
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 1
}
```

4. Historical & Time-Series Endpoints

GET `/historical`

Retrieves end-of-day historical closing rates for any date dating back to 1970.

Parameters: date (YYYY-MM-DD, required), from (string, default: USD), api_key (string)

```
// Request
GET /historical?date=2024-01-15&from=USD&api_key=demo

// Response (200 OK)
{
  "date": "2024-01-15",
  "base": "USD",
  "results": { "EUR": 0.912, "GBP": 0.784, "JPY": 145.8 },
  "ms": 2
}
```

GET `/time-series`

Generates a chronological time-series array of exchange rates between two dates for charting and trend analysis.

Parameters: from (string), to (string), start (YYYY-MM-DD), end (YYYY-MM-DD), api_key (string)

```
// Request
GET /time-series?from=USD&to=EUR&start=2024-01-01&end=2024-01-05&api_key=demo

// Response (200 OK)
{
  "base": "USD",
  "target": "EUR",
  "start": "2024-01-01",
  "end": "2024-01-05",
  "results": {
    "2024-01-01": 0.908,
    "2024-01-02": 0.911,
    "2024-01-03": 0.914,
    "2024-01-04": 0.912,
    "2024-01-05": 0.915
  }
}
```

5. Cryptocurrency & Metals APIs

GET `/crypto/fetch-prices`

Live pricing for 500+ cryptocurrencies with updates every second.

Parameters: pairs (comma-separated, e.g. BTC/USD,ETH/USD,SOL/USD), api_key (string)

```
// Request
GET /crypto/fetch-prices?pairs=BTC/USD,ETH/USD,SOL/USD&api_key=demo

// Response (200 OK)
{
  "prices": {
    "BTC/USD": 67420.5,
    "ETH/USD": 3540.25,
    "SOL/USD": 148.8
  },
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 2
}
```

GET /metals/spot

Real-time spot rates for Gold (XAU), Silver (XAG), Platinum (XPT), Palladium (XPD), Copper, and base metals.

Parameters: metal (symbol, e.g. XAU), currency (default: USD), api_key (string)

```
// Request
GET /metals/spot?metal=XAU&currency=USD&api_key=demo

// Response (200 OK)
{
  "metal": "XAU",
  "currency": "USD",
  "unit": "troy_oz",
  "price": 2684.50,
  "updated": "2026-09-19 09:20:00 UTC",
  "ms": 2
}
```

6. Admin Portal API Specification (api-contract.MD)

Enterprise management endpoints follow the standardized response envelope defined in api-contract.MD with camelCase naming, 1-based pagination, and structured error codes.

GET `/api/admin/stats`

Template 4: Fetches real-time system metrics, throughput curves, cache hit ratios, and call distribution.

Parameters: None (Authenticated via Session or Admin Bearer Token)

```
// Response (200 OK)
{
  "success": true,
  "data": {
    "totalApiCallsToday": 148920,
    "activeKeys": 36420,
    "cacheHitRatio": 98.6,
    "rateLimitViolations": 14,
    "hourlyThroughput": [ { "hour": "00:00", "calls": 4200 }, ... ],
    "endpointDistribution": [ { "endpoint": "/fetch-all", "calls": 82000 }, ... ]
  },
  "message": "System statistics retrieved successfully",
  "messageCode": "SUCCESS",
  "timestamp": "2026-09-19T09:20:00.000Z"
}
```

GET `/api/admin/keys`

Template 2: Paginated list of client API keys with multi-field search and sorting.

Parameters: page (int >= 1), pageSize (int <= 100), search (string), status (ACTIVE/INACTIVE), sortBy, sortDirection

```
// Response (200 OK)
{
  "success": true,
  "data": {
    "data": [
      { "id": "demo", "key": "demo", "name": "Global Demo Client", "plan": "ENTERPRISE", "status":
"ACTIVE", "callsUsed": 18450 }
    ],
    "pagination": { "page": 1, "pageSize": 10, "total": 12, "totalPages": 2, "hasNext": true,
"hasPrevious": false },
    "metadata": { "sortBy": "createdAt", "sortDirection": "DESC" }
  },
  "message": "API keys retrieved successfully",
  "messageCode": "SUCCESS",
  "timestamp": "2026-09-19T09:20:00.000Z"
}
```

7. Multi-Language Integration Code Samples

Node.js / TypeScript:

```
import axios from 'axios';

async function getLiveRates() {
  const response = await axios.get('https://fastforex.fiotech.org/fetch-all', {
    params: { from: 'USD', api_key: process.env.FASTFOREX_API_KEY },
    timeout: 5000
  });
  console.log('USD to EUR:', response.data.results.EUR);
  return response.data;
}
```

Python 3 (requests):

```
import requests

url = "https://fastforex.fiotech.org/convert"
params = {"from": "USD", "to": "EUR", "amount": 250, "api_key": "YOUR_API_KEY"}
res = requests.get(url, params=params).json()
print(f"Converted: {res['result']['converted']} EUR")
```

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