

Environment Switching

The DeepAgent Kraken trading bot supports switching between TESTNET and MAINNET environments. This document explains how to configure and use this functionality.

Overview

The environment switching functionality allows the bot to:

1. Start in TESTNET mode for paper trading
2. Automatically switch to MAINNET after a specified period if performance criteria are met
3. Manually switch between environments through the API or Grafana dashboard
4. Use different API keys and configurations for each environment

Configuration

Environment Settings

Environment settings are configured in `config/env.yaml`:

```
# Current trading environment (testnet or mainnet)
environment: testnet

# Whether to automatically switch from TESTNET to MAINNET based on performance
auto_switch_enabled: true

# Duration in hours to run in TESTNET before considering switch to MAINNET
testnet_duration_hours: 48

# Minimum number of trades required before considering switch to MAINNET
min_trades_for_switch: 10

# Maximum drawdown percentage allowed for switch to MAINNET
max_drawdown_pct_for_switch: 4.0
```

Environment Variables

You can also configure the environment using environment variables:

- DEEPAGENT_ENV: Current environment (testnet or mainnet)
- DEEPAGENT_AUTO_SWITCH_ENABLED: Whether to enable automatic switching (true or false)
- DEEPAGENT_TESTNET_DURATION_HOURS: Hours to run in TESTNET before considering switch
- DEEPAGENT_MIN_TRADES_FOR_SWITCH: Minimum trades required for switch

- `DEEPAGENT_MAX_DRAWDOWN_PCT_FOR_SWITCH`: Maximum drawdown percentage allowed for switch

Exchange API Keys

Exchange API keys are configured separately for each environment:

- TESTNET keys: `config/testnet/<exchange>.json`
- MAINNET keys: `config/mainnet/<exchange>.json`

Example for Bybit:

```
// config/testnet/bybit.json
{
  "api_key": "YOUR_BYBIT_TESTNET_API_KEY",
  "api_secret": "YOUR_BYBIT_TESTNET_API_SECRET"
}

// config/mainnet/bybit.json
{
  "api_key": "YOUR_BYBIT_MAINNET_API_KEY",
  "api_secret": "YOUR_BYBIT_MAINNET_API_SECRET"
}
```

Automatic Switching

The bot will automatically switch from TESTNET to MAINNET if all of the following criteria are met:

1. The bot has been running in TESTNET for at least `testnet_duration_hours` (default: 48 hours)
2. At least `min_trades_for_switch` trades have been executed (default: 10 trades)
3. The maximum drawdown is less than `max_drawdown_pct_for_switch` (default: 4%)

The environment check runs every 5 minutes (configurable via `env_check_interval` in the main config).

Manual Switching

API Endpoints

You can manually switch environments using the following API endpoints:

- GET `/api/env`: Get current environment status
- POST `/api/env/testnet`: Switch to TESTNET
- POST `/api/env/mainnet`: Switch to MAINNET
- POST `/api/env/toggle`: Toggle between TESTNET and MAINNET

Grafana Dashboard

The environment can also be switched from the Grafana dashboard:

1. Open the “DeepAgent Environment Monitor” dashboard
2. Use the “Switch to TESTNET” or “Switch to MAINNET” links in the “Environment Control” panel

Switching Process

When switching environments, the bot will:

1. Close all open positions on the current environment
2. Update the environment setting
3. Reinitialize exchange connectors with the new environment’s API keys
4. Continue trading in the new environment

Monitoring

Environment status and performance metrics are available in:

1. The Grafana dashboard (“DeepAgent Environment Monitor”)
2. Prometheus metrics:
 - `deepagent_current_env`: Current environment (0=TESTNET, 1=MAINNET)
 - `deepagent_env_switch_total`: Total number of environment switches
 - `deepagent_time_in_env_hours`: Time spent in current environment in hours

Docker Configuration

When running with Docker, you can set the initial environment in `docker-compose.yml`:

```
services:
  bot:
    environment:
      - DEEPAGENT_ENV=testnet
      - DEEPAGENT_AUTO_SWITCH_ENABLED=true
      - DEEPAGENT_TESTNET_DURATION_HOURS=48
      - DEEPAGENT_MIN_TRADES_FOR_SWITCH=10
      - DEEPAGENT_MAX_DRAWDOWN_PCT_FOR_SWITCH=4.0
```