# TvTrader

## Features

* Automated cryptocurrency trading based on email alerts
* (Trailing) Stoploss protection
* Minimum gain protection

## How does it work?

This application reads email alerts send by TradingView (or any other party that can send alerts via email) and places orders based on those emails.

The email subject needs to contain with a very specific syntax, indicating the type of order, the exchange and account to use and the asset to buy:

|  |
| --- |
| ORDERTYPE\_EXCHANGE\_ACCOUNTNAME\_ASSET |

Examples:

BUY\_BITTREX\_BTC\_ARK would indicate to buy ARK at Bittrex using the account specified as ‘BTC’.

SELL\_BITTREX\_ICHI\_ETH would indicate to sell ETH at Bittrex using the account specified as ‘ICHI’.

See the ‘Configuration’ section for details on how to setup accounts for the application.

## Supported exchanges

* Bittrex
  + Ordertypes: BUY/SELL

## Planned Exchanges

* Binance
* Poloniex
* ??

## Installation

Before running the application, make sure you have installed Java by running the following command:

|  |
| --- |
| Java -version |

The following (similar) output should be shown:

|  |
| --- |
| C:\Users\USERNAME>java -version  java version "1.8.0\_151"  Java(TM) SE Runtime Environment (build 1.8.0\_151-b12)  Java HotSpot(TM) 64-Bit Server VM (build 25.151-b12, mixed mode) |

If the command is ‘unknown’, please go to the Oracle website and download and install the latest JRE:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

To start the application, navigate to the JAR-file and run the following command:

|  |
| --- |
| Java -jar TvTrader.jar |

You can download the JAR-file from this Github or download the source code and compile it yourself using Maven. See <https://maven.apache.org/> for more information on how to do this.

## Configuration

This section will provide a (detailed) description of all the settings configurable by the user.

These settings are contained in a file called *config.properties.*

This file should be in the same directory as the jar-file.

Unless indicated otherwise, all settings are *mandatory* and in *lowercase*.

### Intervals

All intervals are whole numbers (integers) in seconds.

|  |
| --- |
| mail\_polling\_interval=20  stoploss\_polling\_interval=1800  open\_orders\_polling\_interval=120  open\_orders\_expiration\_time=30  ticker\_refresh\_rate=5  asset\_refresh\_rate=5 |

|  |  |
| --- | --- |
| Property | Description |
| mail\_polling\_interval | Indicates how often to fetch new emails. |
| stoploss\_polling\_interval | Indicates how often to check for stoploss conditions. |
| open\_orders\_polling\_interval | Indicates how often to check for expired open orders. |
| open\_orders\_expiration\_time | Indicates after how many seconds an order should be considered ‘expired’. (And should therefore be cancelled.)  Cancelled orders are not replaced. |
| ticker\_refresh\_rate | Indicates how often to refresh the ticker prices. |
| asset\_refresh\_rate | Indicates how often to refresh your altcoin balances. |

***NOTE:***  
*Please use common sense when setting these intervals*.

Checking for new emails, stoploss conditions or open orders every second is not going improve your trading experience. It will however most likely result in your api-keys getting banned or your mail provider blocking you temporarily.

#### Exchange Intervals

We fetch ‘aggregated’ data from the exchange whenever possible. This reduces unnecessary API-calls. Most exchanges have some sort of cap on how often you can contact them within a given timeframe.

In plain English this means we fetch all tickers or account balances in one go and then store it in memory. These intervals indicate how long we should retain this data before refreshing it.

This data is refreshed on demand. For example, we don’t fetch tickers if there are no orders.

Reasoning:  
I mostly trade the 1H charts. TradingView sends most orders on the hour and in one go. It makes sense for me to refresh the tickers/balances only every so often (usually after 5 seconds). These values don’t change much for me in five seconds so there is no use in requesting this information more often.

However, I understand each person has its own trading style. Therefore these intervals are provided.

### Mail settings

This section deals with the settings required for fetching e-mails from the mail provider. Your email provider should have documentation regarding these settings. *The application only supports IMAP settings!*

See the Email Setup section for more information on setting up a Gmail account with the application.

|  |
| --- |
| # use IMAP-settings  host=imap.gmail.com  username=[USER\_EMAIL]  password=[PASSWORD]  inbox=INBOX  port=995 |

|  |  |
| --- | --- |
| Property | Description |
| host | Host name for your provider. |
| username | Your email address. |
| password | Your password.  Some providers (like Gmail) will require that you set up a separate ‘application password’. See the Email setup section for more information. |
| inbox | Indicates what folder to use in your inbox.  Default inbox = INBOX. |
| port | What port to use for the connection. |

### Account settings

You can configure the application to use different accounts depending on your needs. Some users like to use different accounts with different apikeys for different base currencies (One for BTC, one for ETH, etc.) These can be configured here.

There can only be one account with a specific name per exchange. You can however use the same apikey for different accounts. This way you can for example use different stoplosses for different strategies/timeframes while still using only one account at the exchange.

Accounts listed here without having associated account details will result in the application exiting.

*Usage example:*

Exchange: Bittrex

Accounts: accountone, accounttwo

|  |
| --- |
| bittrex.account=accountone accounttwo |

| Property | Description |
| --- | --- |
| [EXCHANGE].account | Space (‘ ‘) separated list of account names.  This property lists all the accounts to be used with this exchange.  *Note:*  Using an exchange without specifying it in the ‘exchanges’ property will result in the accounts being ignored. |

### Account details

Account detail settings should be pre-fixed with the exchange and account name like this:

Exchange: Bittrex  
Account name: accountone

|  |
| --- |
| bittrex.accountone.maincurrency=btc |

#### Properties

|  |
| --- |
| maincurrency=maincurrency  apikey=apikey  secret=secret  buylimit=decimal number  stoploss=decimal number  trailingstoploss=decimal number  minimumgain=decimal number |

|  |  |
| --- | --- |
| Property | Description |
| Maincurrency | The main currency to use for trading. |
| Apikey | Your apikey. |
| Secret | Your secret. |
| Buylimit | The maximum amount of main currency INCLUDING FEES to be used for buy-orders. |
| Stoploss | This property will trigger an emergency sell if the current value has dropped this much percentage points from the original bought price.  0 = disabled.  Example:  Stoploss = 10.  Your original bought price (buy limit) is 100.  The stoploss property will trigger an emergency sell if the current value of your asset drops below 90. |
| trailingstoploss | This property will trigger an emergency sell if the current value has dropped this much percentage points from the highest value this asset has been since monitoring.  Example:  trailingstoploss = 10.  Your original bought price (buy limit) is 100.  The price rises to 150.  The trailingstoploss property will trigger an emergency sell if the current value of your asset drops below 135. |
| minimumgain | Minimum gain (profit) in percentage points EXCLUDING FEES to be met before the bot will honor sell orders.  0 = disabled.  Example:  Minimum gain = 1.  Your original bought price is 100.  The bot will only sell if the current value of your asset is higher than 101 after fees. |

#### Stoploss vs Trailing stoploss

*Short explanation:*  
You can set different percentages for your stoploss and trailing stoploss.

The stoploss percentage is used while the current value of the asset is < the original bought price.

The trailing stoploss percentage is used once the current value is >= the original bought price.

*Detailed explanation:*   
The application switches to trailing stoploss (tssl) the moment a tssl-signal can’t trigger a ‘losing’ trade.

Imagine the following scenario:  
Stoploss = 20  
Trailingstoploss = 10  
Boughtprice = 100

At this moment the stoploss will be triggered if the current value drops to 80.  
Imagine the price rises to 105. The stoploss will still only be triggered if the price drops to 80.

The application will switch to the trailingstoploss percentage once the current value of the asset rises to ~110.

Should the current value rise to 120 then the stoploss trigger will rise to (120 \* 0.9 =) 108.

There is however a cornercase where the application will switch back to the original stoploss price:

Imagine the price fluctuates a little around your original bought price. One check the price is 90 (stoploss mode) then the price rises to 110 (tssl-mode) and the next check it’s 99 (stoploss mode). You wouldn’t want the application to sell at a loss for 99, would you? \*

To prevent premature (losing) sales right after a sharp drop in price, the application will switch back to the regular stoploss percentage if the price drops below the original bought price again. If the current value drops to 99, the stoploss trigger will reset to 80 again.

\*This does indicate that you might be using a tssl-percentage that is too tight.

### Optional settings

These settings are optional. If you don’t want to use them remove the entire entry from the file.

|  |
| --- |
| expected\_sender = TradingView <noreply@tradingview.com> |

|  |  |
| --- | --- |
| Property | Description |
| expected\_sender | The expected sender for email alerts.  Emails from other senders will be ignored.  If this property is not set the application will default to [noreply@tradingview.com](mailto:noreply@tradingview.com) |

## TradingView setup

TODO

## Email setup

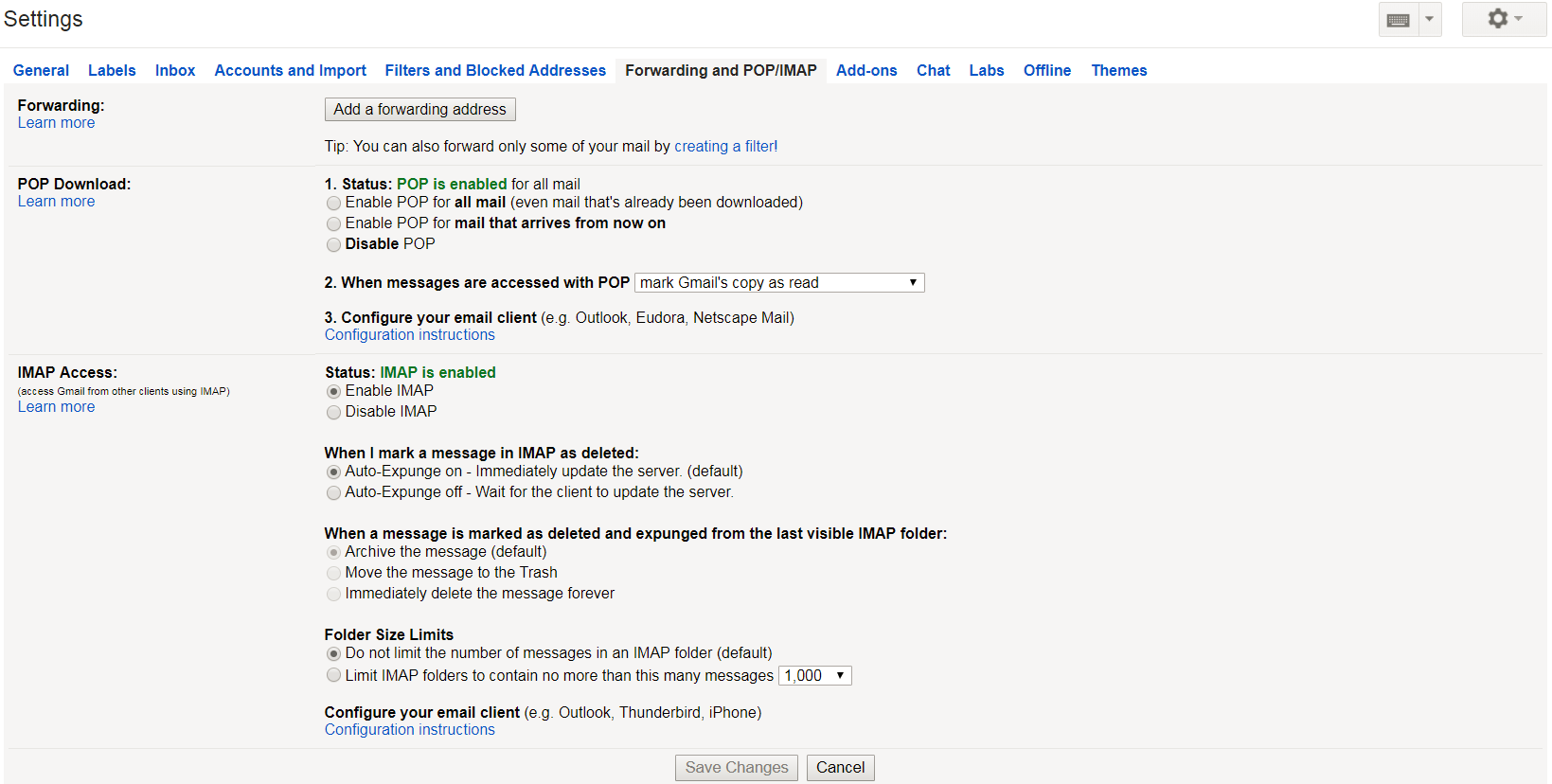
This section will show an example on how to setup Gmail for use with the application.

Consider setting up a separate email-address just for the alerts. The application will expunge (delete) all processed emails. (This includes all non-alert emails).

Furthermore, the application will check all emails in the inbox on every restart. This might take a while depending on the amount of emails to process.

### Gmail

In Gmail go to “Settings” => “Forwarding and POP/IMAP”:



Use the following settings:

* Enable IMAP.
* Auto-Expunge on – Immediately update the server.
* Archive the message.
* Do not limit the number of messages in an IMAP folder.

Configuration settings:

|  |  |
| --- | --- |
| Protocol | imaps |
| Host | imap.gmail.com |
| Port | 993 |
| Inbox | INBOX (default) |

See also: <https://support.google.com/mail/answer/7126229?hl=en>

*Don’t forget to press “Save Changes”.*

Next go to <https://support.google.com/accounts/answer/185833?hl=en> and follow the instructions under “How to generate an App password”. **This is the password you need to use in the configuration file.**

I do believe you need to have 2FA-enabled.

## Known Bugs/Issues

### Multiple buys

|  |  |
| --- | --- |
| **Exchange:** | Bittrex |
| **Priority:** | Low |
| **Description:** | On rare occasions Bittrex sends back the following response when we request the current balance of a currency:   |  | | --- | |  |   This is however the same response we get when this currency hasn’t been bought before. (No wallet has been created yet, therefore Bittrex sends back ‘null’ instead of ‘0’).  Currently we treat this response as if we have no balance which results in buy orders getting placed, regardless of actual balance.  The impact of this issue, in my opinion, is low. Multiple buys only happen on rare occasions due to an improper response from the exchange.  No ETA will be given on a fix. |

## FAQ

### Can I use something else than TradingView?

You can.

The application basically fetches emails from an expected sender and places orders at an exchange based on the subject lines of those emails.

If you can find a platform (or write one yourself) that can send email alerts in the proper format, the application will threat them no different than TradingView alerts.

### When will exchange XXX be added?

Exchanges I plan on adding are listed in the section ‘Planned Exchanges’. However, I can’t give an estimate on any release dates.

I am one junior developer with a fulltime day-job. While I try to work on this project as much as possible, life does get in the way.

It will be there when it’s done.

### What settings should I enable on my apikey?

TODO

### Command Line?! Don’t you have a GUI?

Nope.

### I found a bug!

If you find a bug, or believe something is a bug, please file a report on Github detailing the issue. Preferably adding the debug.log file.

The only sensitive information in the logfile would be your api-keys, which are useless without the secret. However, feel free to “find and replace all” them. I don’t need that information. Thank you.