

# PaperTrader Protocol Specification

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# 1 Introduction

This is the document for the specification of PaperTrader. PaperTrader is an application for 'fake' trading assets, to practice investing. The document contains explanations on how to implement the papertrader protocol. It should be noted that the document isn't 'production-ready' until this sentence is removed. The document will go over the roles of the master server, and the worker servers, how they interact with each other, and finally, suggestions on server side implementations.

## 2 Overview

This section contains the required terminology and modelling of the PaperTrader infrastructure.

### 2.1 Terminology

#### 2.1.1 Inner World

This is Master server, and all worker servers. This should be kept under high lockdown. Meaning, critical data should be kept secure.

#### 2.1.2 Outer World

This is the frontend, including the desktop client, mobile client, or the website client. The data here is controlled by the authorization of the account.

#### 2.1.3 Critical Data

Critical Data are all data types that shouldn't be tampered with without authorization. For example, accounts, personal information, messages, and in this context user's portfolios.

#### 2.1.4 User/Client

In this context it is the frontend, which is either the desktop client, mobile client, or the website client.

#### 2.1.5 User/Client Data

This is the data of the user. The meaning depends on the specific context. It could mean the personal information, credentials, etc. Most of the time it means data that is attached to a data transfer to identify client (IP?).

#### 2.1.6 Master Server

This is the main server that MUST be run when deploying the application. Contains critical data, it would only interact to the outside world by the worker servers.

### 2.1.7 Worker Servers

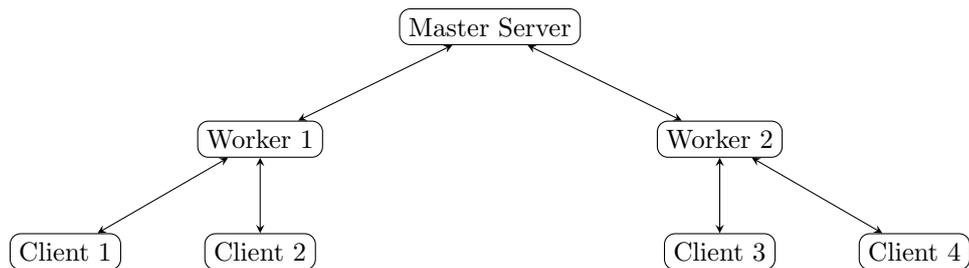
These are servers that contact the outer world. Worker Servers will interact with the Master Server acting like a 'cache' servers. Data should be routed through worker servers to the master server. The main job for worker server is to add timestamps onto commands sent from the user. The data sent to the main server must contain the data of the client/user. There MUST be ATLEAST one instance running to have a functional infrastructure.

### 2.1.8 User Accounts

This is the account that abstractly is a the data structure that contains information about hte user and their account.

## 2.2 Infrastructure Model

A fully deployed infrastructure cotains *ONE* master server, *ATLEAST* one worker server, theoretically across the world to maintain speed and reliability. An overview diagram of the infrastructure:



### 2.2.1 Master Server Infrastructure Model

The master server is contains critical data. It can be defined into modules as demonstrated in the following diagram:

