



# US Equity algoseek Daily OHLC Adjusted Guide

Version 1.0.0 (Jun 2024)





## CONTACT US

We are here to help you do great things with our market and reference data. For questions, feedback, and other concerns, you may reach our team of experts using the following contact information:

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## TABLE OF CONTENTS

REVISION SUMMARY	4
INTRODUCTION	5
EXCHANGE MARKET HOURS	5
DATA ORGANIZATION AND FILE FORMAT	6
CORPORATE EVENTS	8
APPENDIX A. OHLCV CALCULATIONS FROM TRADE EVENTS	9
APPENDIX B. ALGOSEEK VS INDUSTRY STANDARD LOGIC	13



# REVISION SUMMARY

Effective Date	Version	Revision Type	Description
Jun 10, 2024	1.0.0	Release	An initial version of the dataset



## INTRODUCTION

This guide describes the Daily OHLC Adjusted data calculated using algoseek logic for US Equities.

The dataset is based on sophisticated algoseek logic for extracting accurate Open/High/Low/Close trades from the Trades of the Securities Information Processor (SIP) data, also known as the “Consolidated Feed” for all listed stocks, ETNs, ETFs, ADRs, and funds. This dataset contains OHLCV data adjusted by corporate events along with raw data.

For all information about corporate events applied to adjust the data and implemented logic for adjusting, see the ‘Corporate Events’ section.

There are two data aggregation options for this dataset that provide exactly the same data fields:

**tradedate:** one CSV file with data for all symbols per trading day

**secid:** one CSV file with data for all trading days per Security ID - a unique security identifier used by algoseek that remains unchanged when the ticker changes

## EXCHANGE MARKET HOURS

The US Stock Market trading hours are split into the pre-market, market, and post-market hours.

**Pre-Market Hours:** 04:00:00 to 09:30:00 (excluding)

**Market Hours:** 09:30:00 to 16:00:00 (excluding)

**Post-Market Hours:** 16:00:00 to 20:00:00

**Note:** Occasionally, trade events are recorded several minutes after 20:00.

## Market Holidays and Early Closes

The stock market is closed for trading on most US holidays. For reference, algoseek publishes a list of historical holidays, which is available at `s3://us-equity-market-holidays/holidays.csv` (direct download link: <https://us-equity-market-holidays.s3.amazonaws.com/holidays.csv>).

Markets sometimes close early at 13:00:00 on the day before holidays such as Independence Day and Thanksgiving. You can download algoseek’s early close date and time list from AWS S3 storage at



s3://us-equity-market-holidays/earlycloses.csv (or use a direct link [us-equity-market-holidays.s3.amazonaws.com/earlycloses.csv](https://us-equity-market-holidays.s3.amazonaws.com/earlycloses.csv)).

## DATA ORGANIZATION AND FILE FORMAT

algoseek provides Equity market data in plain-text CSV files. The first row of the CSV file is a fixed header, and then rows of data corresponding to individual events (see Table 1). By default, the dataset is organized either by trading day or by secid. It means, for example, that all daily Open/Close data for Mar 3, 2020, are stored in a separate CSV file under a tradedate aggregation. For the secid-based aggregation, all data for the security with an ID 33449 (AAPL) for a single year is stored in a separate CSV file.

Table 1 below summarizes the name, description, and data type for each data field (column). The Field order below is for Secid-based aggregation. For tradedate-based data aggregation the “TradeDate” is the first column and “SecId” is the second.

**Table 1: CSV File Fields Schema**

Field	Type (Format)	Description
TradeDate	string (yyyymmdd)	Trading date in yyyymmdd format
Ticker	string	Symbol name
SecId	integer	algoseek unique Security ID
Open	decimal	Primary exchange opening trade (see section “Opening Trade”)
High	decimal	Highest trade price from any exchange excluding FINRA
Low	decimal	Lowest trade price from any exchange excluding FINRA
Close	decimal	Primary exchange closing trade (see section “Closing Trade”)
MarketHoursVolume	integer	Total trading volume during regular market hours only
MarketHoursFinraVolume	integer	FINRA/TRF trading volume during regular market hours only (normal trade day is 09:30:00 to 16:00:00 ET). FINRA/TRF represents off-exchange trading.



DailyVolume	integer	Total trading volume for the whole day (includes pre, regular, and post-market)
DailyFinraVolume	integer	FINRA/TRF trading volume for the whole day (includes pre-, regular, and post-market)
MarketHoursVWAP	decimal	Volume weighted average price during regular market hours, normally between 09:30:00 and 16:00:00 ET plus the Opening and Closing Cross (which may be after 16:00:00 ET).
DailyVWAP	decimal	Volume weighted average price for the whole day including pre-, regular, and post-market trades.
OpenAdj	decimal	Backward adjusted price of opening trade
HighAdj	decimal	Backward adjusted trade with the highest price
LowAdj	decimal	Backward adjusted trade with the lowest price
CloseAdj	decimal	Backward adjusted price of closing trade
MarketHoursVolumeAdj	integer	Backward adjusted total trading volume during regular market hours only
MarketHoursFinraVolumeAdj	integer	Backward adjusted FINRA/TRF trading volume during regular market hours only
DailyVolumeAdj	integer	Backward adjusted total trading volume for the whole day
DailyFinraVolumeAdj	integer	Backward adjusted FINRA/TRF trading volume for the whole day
MarketHoursVWAPAdj	decimal	Backward adjusted volume weighted average price during regular market hours
DailyVWAPAdj	decimal	Backward adjusted volume weighted average price for the whole trading day

## Bar Notes

**MarketHoursVWAP and DailyVWAP:** Market hours volume weighted average price (VWAP) is calculated as

$$\text{sum(TradePrice} \times \text{TradeSize)} / \text{sum(TradeSize)}$$



where

$$\text{sum(TradeSize)} = \text{MarketHoursVolume}$$

### FINRA/TRF vs Exchange Trades

FINRA Trade Reporting Facility (TRF) allows for reporting of trades that do not take place on an exchange, this includes Dark Pools, Broker-Dealer internal trading, Over the Counter (OTC), etc.

## CORPORATE EVENTS

Table 2: Corporate Event's effect on Price and/or Volume

Corporate Event	Affects Price	Affects Volume
Bonus issue in the same class	Yes	Yes
Bonus issue in a different class	Yes	No
Capital Reduction	Yes	Yes
Consolidation	Yes	Yes
Distribution	Yes	No
Cash Dividend	Yes	No
Script dividend in the same class	Yes	Yes
Script dividend in a different class	Yes	No
De-merger	Yes	No
Entitlement in the same class	Yes	No
Entitlement in a different class	Yes	No
Capital Return	Yes	No
Rights in the same class	Yes	No
Rights in a different class	Yes	No
Security Swap	Yes	Yes
Reclassification	Yes	Yes
Any subdivision (by any stock split, stock dividend, reclassification, recapitalization, or otherwise) or combination (by the reverse stock split, reclassification, recapitalization, or otherwise) of the Class A Common Stock.	Yes	Yes





## APPENDIX A. OHLCV CALCULATIONS FROM TRADE EVENTS

This section describes algoseek logic for daily bar calculations based on events from the Trade Only dataset. The logic is based on sophisticated Equity Primary Daily OHLC dataset logic for extracting accurate official opening and closing cross prices. Please also refer to Equity Trade Only Guide for more details on data fields and condition flags used.

In this section Market hours refer to 9:30:00 (including) - 16:00:00 (excluding) for regular trading days and to 9:30:00 (including) - 13:00:00 (excluding) when there was an early close.

### Filtering

- Exclude any trade with Price = 0
- Exclude any trade with Quantity = 0
- Exclude Trade Cancel events
- Exclude the original trade that was canceled later

### Opening Trade

The Opening Trade is selected from the following priority order list:

- the event with the tOfficialOpen flag with the largest volume from the Primary Exchange
- the event with the tOpeningPrint flag with the largest volume from the Primary Exchange
- a Regular Open from the Primary Exchange
- a Regular First from the Primary Exchange
- the TRADE NB event with the tOfficialOpen flag and the largest volume among exchanges excluding FINRA
- the TRADE NB event with the tOpeningPrint flag and the largest volume among exchanges excluding FINRA
- a Regular Open based on the TRADE NB event selected among exchanges excluding FINRA
- a Regular First based on the TRADE NB event selected among exchanges excluding FINRA
- the TRADE event with the tOfficialOpen flag and the largest volume among exchanges excluding FINRA
- the TRADE event with the tOpeningPrint flag and the largest volume among exchanges excluding FINRA
- a Regular Open based on the TRADE event selected among exchanges excluding FINRA
- a Regular First based on the TRADE event selected among exchanges excluding FINRA



## Regular Open

The Regular Open corresponds to the first event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tExtendedHours, tDerivativelyPrices, tStockOption, tAveragePrice, tRule155
- the largest volume between 09:30:00 (including) and 09:40:00 (including)

## Regular First

Regular First is the first event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155
- not having tOddLot flag set
- not having tExtendedHours flag set
- the event time is within market hours

## Closing Trade

The Closing Trade is selected from the following priority order list:

- the event with the tOfficialClose flag with the largest volume from the Primary Exchange
- the event with the tClosingPrint flag with the largest volume from the Primary Exchange
- a Regular Close from the Primary Exchange
- a Regular Last from the Primary Exchange
- the TRADE NB event with the tOfficialClose flag and the largest volume among exchanges excluding FINRA
- the TRADE NB event with the tClosingPrint flag and the largest volume among exchanges excluding FINRA
- a Regular Close based on the TRADE NB event selected among exchanges excluding FINRA
- a Regular Last based on the TRADE NB event selected among exchanges excluding FINRA
- the TRADE event with the tOfficialClose flag and the largest volume among exchanges excluding FINRA
- the TRADE event with the tClosingPrint flag and the largest volume among exchanges excluding FINRA
- a Regular Close based on the TRADE event selected among exchanges excluding FINRA



- a Regular Last based on the TRADE event selected among exchanges excluding FINRA

## Regular Close

The Regular Close is the first event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tExtendedHours, tDerivativelyPrices, tStockOption, tAveragePrice, tRule155
- the largest volume between 16:00:00 (including) and 16:05:00 (including) for regular trading days or between 13:00:00 (including) and 13:05:00 (including) for an Early Close

## Regular Last

Regular Last is the last event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155
- not having tOddLot flag set
- not having tExtendedHours flag set
- the event time is within market hours

## Daily High

Daily High is the first event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155
- not having tOddLot flag set
- not having tExtendedHours flag set
- the exchange is not FINRA
- the event with the largest price within market hours

## Daily Low

Daily Low corresponds to the first event satisfying all the conditions below:

- not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)
- not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155



- not having tOddLot flag set
- not having tExtendedHours flag set
- the exchange is not FINRA
- the event with the smallest price within market hours

## Volume

All events are accounted for unless any of the flags from Table 3 are present. For ListedMarketHoursVolume, events with the tExtendedHours flag are also excluded. Among the events containing the flag from Table 3 only one selected opening/closing trade volume per exchange is accounted for. For ListedMarketHoursVolume and ListedTotalVolume columns, only events from Public Listed exchanges are accounted for. For the FinraMarketHoursVolume and FinraTotalVolume columns, only events from the FINRA Exchange are accounted for.

**Table 3: Flags for Trade Events to be Excluded During Volume Calculations**

Bit Mask Position	Flags
24	tOfficialClose
26	tOfficialOpen
6	tOpeningPrints
7	tClosingPrints



## APPENDIX B. ALGOSEEK VS INDUSTRY STANDARD LOGIC

**Table 4: Flags for Trade Events to be Included During Daily High/Low Calculations for Industry Standard Logic**

Bit Mask Position	Flags
0	tRegular
5	tIntermarketSweep
6	tOpeningPrints
7	tClosingPrints
14	tOutOfSequence
21	tCross
29	tTradeThroughExempt

**Table 5: Flags for Trade Events to be Excluded During Daily High/Low Calculations for Industry Standard Logic**

Bit Mask Position	Flags
1	tCash
2	tNextDay
3	tSeller
9	tDerivativelyPriced
10	tFormT
13	tExtendedHours
18	tStockOption
20	tAveragePrice
22	tPriceVariation
23	tRule155
24	tOfficialClose



25	tPriorReferencePrice
26	tOfficialOpen
27	tCapElection
31	tOddLot

Table 6: algoseek vs Industry Standard Logic

algoseek	Industry Standard
<b>Filtering</b>	
<ul style="list-style-type: none"> <li>Exclude any trade with Price = 0</li> <li>Exclude any trade with Quantity = 0</li> <li>Exclude Trade Cancel events</li> <li>Exclude the original trade that was canceled later</li> </ul>	<ul style="list-style-type: none"> <li>Exclude any trade with Price = 0</li> <li>Exclude any trade with Quantity = 0</li> <li>Exclude Trade Cancel events</li> <li>Exclude the original trade that was canceled later</li> </ul>
<b>Open/Close</b>	
<p>By priority:</p> <ul style="list-style-type: none"> <li>the event with the tOfficialOpen/ tOfficialClose flag with the largest volume from the Primary Exchange</li> <li>the event with the tOpeningPrints/ tClosingPrints flag with the largest volume from the Primary Exchange</li> <li>a Regular Open/Close from the Primary Exchange</li> <li>a Regular First/Last from the Primary Exchange</li> <li>the TRADE NB event with the tOfficialOpen/ tOfficialClose flag and the largest volume among exchanges excluding FINRA</li> <li>the TRADE NB event with the tOpeningPrints/ tClosingPrints flag and the largest volume among exchanges excluding FINRA</li> <li>a Regular Open/Close based on the TRADE NB event selected among exchanges excluding FINRA</li> <li>a Regular First/Last based on the TRADE NB event selected among exchanges excluding FINRA</li> <li>the TRADE event with the tOfficialOpen/ tOfficialClose flag and the largest volume among exchanges excluding FINRA</li> </ul>	<p>The first/last event starting from 09:30 am with TRADE NB EventType. If no event has TRADE NB type, the first/last event with TRADE EventType is chosen instead.</p> <p><b>Note:</b> an event with a zero quantity does apply for Open/Close</p>



<ul style="list-style-type: none"> <li>• the TRADE event with the tOpeningPrints/ tClosingPrints flag and the largest volume among exchanges excluding FINRA</li> <li>• a Regular Open/Close based on the TRADE event selected among exchanges excluding FINRA</li> <li>• a Regular First/Last based on the TRADE event selected among exchanges excluding FINRA</li> </ul> <p>The Regular Open/Close:</p> <ul style="list-style-type: none"> <li>• not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)</li> <li>• not having either of the following flags set: tExtendedHours, tDerivativelyPrices, tStockOption, tAveragePrice, tRule155</li> <li>• the largest volume between 09:30:00/16:00:00 (13:00:00 for an Early Close) (including) and 09:40:00/16:05:00 (13:05:00 for an Early Close) (including)</li> </ul> <p>Regular First/Last:</p> <ul style="list-style-type: none"> <li>• not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)</li> <li>• not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155</li> <li>• not having tOddLot flag set</li> <li>• not having tExtendedHours flag set</li> <li>• the event time is within market hours</li> </ul>	
High/Low	
<ul style="list-style-type: none"> <li>• not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags)</li> <li>• not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155</li> <li>• not having tOddLot flag set</li> <li>• not having tExtendedHours flag set</li> <li>• the exchange is not FINRA</li> <li>• the event with the highest/lowest price within market hours</li> </ul>	<p>The trade with the highest (lowest) price starting from 09:30 am is chosen for which the following two conditions are met:</p> <ul style="list-style-type: none"> <li>• At least one flag from Table 4 is present</li> <li>• None of the flags from Table 5 is present</li> </ul> <p>If no trades apply for the condition above, the largest (smallest) price with TRADE NB (if available) starting from 09:30 am is chosen instead</p>



	<b>Note:</b> we take into account Opening/Closing Trade when calculating Highest/Lowest Trade
<b>Volume</b>	
<ul style="list-style-type: none"><li>• not having either of the following flags set: tOfficialOpen, tOfficialClose, tOpenindPrints, tClosingPrints</li><li>• additionally included selected one opening/closing event volume per exchange</li><li>• events with the tExtendedHours flag are excluded from MarketHoursVolume</li></ul>	<ul style="list-style-type: none"><li>• not having either of the following flags set: tOfficialOpen, tOfficialClose</li></ul>