Nasdaq Greeks and Vols

Product Overview

Nasdaq Greeks and Vols is a comprehensive data feed providing Option Greeks, Implied Volatilities, and Theoretical Prices for all U.S Option Instruments. Data is streaming during both the Regular and Extended Hours of the Equity Market Sessions with updates every 60 seconds.

Publisher

Nasdaq Investment Intelligence is a leading source of market data, global indexes, and investment data and analytics. Powering price discovery and decisions around the globe, our data is distributed to millions of people daily, providing them with innovative real-time and historical information, as well as analytic solutions designed for investors of all sizes and at every stage of the investment lifecycle. To learn more about the company, technology solutions and career opportunities, visit us on LinkedIn, on Twitter @Nasdaq, or at www.nasdaq.com.

Data Types

All numeric fields are signed big-endian (network byte order) binary encoded numbers and the timestamp is updated in milliseconds.

Delivery

Nasdaq Data Link (NDL) provides a modern and efficient method of delivery for realtime data and other financial information. Data is made available through a suite of APIs, allowing for effortless integration of data from disparate sources, and a dramatic reduction in time to market for customer-designed applications. The API is highly scalable, and robust enough to support the delivery of real-time exchange data.

This repository provides an SDK for developing applications to access the NDL API. While the SDK is open source, connecting to the API does require credentials, which are provided by Nasdaq during an on-boarding process.

For more information please use the link- https://github.com/Nasdaq/CloudDataService

Contents

Message Formats

Heartbeat Message:

Heartbeat messages are available to ensure connection to the data feed.

Heartbeat Message Details:

Field	Name	Type	Description
Message Type	msgtype	string	Value = “0”
Timestamp	timestamp	long	The UTC (Universal Time, Coordinated) time, giving the number of milliseconds since the Unix epoch (midnight, January 1, 1970).

Heartbeat Message Schema:


```
    },
    {
      "type": "record",
      "name": "Heartbeat",
      "namespace": "com.nasdaq",
      "fields": [
        {
          "name" : "msgType",
          "type" : "string"
        },
        {
          "name": "timestamp",
          "type": "long"
        }
      ],
      "version" : "1"
    }
  ]
}
```

Nasdaq Greeks and Vols Message:

The following message provides streaming updates for the Option Greeks, Delta, Gamma, Vega, Theta, Rho as well as Implied Volatility and Theoretical Price for each instrument.

Nasdaq Greeks and Vols Message Details:

Field	Name	Type	Description
Message Type	msgtype	string	Value = “G”
Timestamp	timestamp	long	The timestamp for values
Option	option	string	Unique identifier of the option contract
Underlying	underlying	string	Underlying symbol associated with the Option
Delta	delta	double	Compares the rate of change between the underlying asset price and the option instrument price
Gamma	gamma	double	Provides the rate of change for an option instrument’s delta value based on a single point move in the underliers price
Vega	vega	double	Measures an option instrument’s change in price relative to a single point move in implied volatility of the underlying instrument
Theta	theta	double	Represents the rate of decline in the value of an option instrument over time as the expiration date approaches
Rho	rho	double	Measures the price change for an option instrument relative to a change in the risk-free rate of interest
Implied Volatility	impliedvolatility	double	Provides the market forecast of expected movements in the underlying instrument over the duration of the option instrument’s life
Theoretical Price	theoreticalprice	double	Provides an estimated price of an option instrument that can be used alongside market prices

Nasdaq Greeks and Vols Message Schema:


```
 [
{
 "type": "record",
 "name": "GreeksAndVols",
 "namespace": "com.nasdaq.options.analytics",
 "fields": [
  {
   "name" : "msgType",
   "type" : "string"
  },
{
   "name": "timestamp",
   "type": "long"
  },
  {
   "name": "option",
   "type": "string"
  },
  {
   "name": "underlying",
   "type": "string"
  },
  {
   "name": "delta",
   "type": "double"
  },
  {
   "name": "gamma",
   "type": "double"
  },
  {
   "name": "vega",
   "type": "double"
  },
  {
   "name": "theta",
   "type": "double"
  },
  {
   "name": "rho",
   "type": "double"
  },
  {
   "name": "impliedVolatility",
   "type": "double"
  },
  {
   "name": "theoreticalPrice",
   "type": "double"
  }
 ],
```

Appendix G – Documentation Version Control Log

Version	Change	Date
Nasdaq Greeks and Vols 1.0	Initial Streaming Specification for Nasdaq Greeks and Vols	**June 1, 2023**