# MARKETVIEW ADVANCED DESKTOP PLUGIN USER GUIDE

**User Guide**

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# Company Overview

## Drillinginfo

MarketView by Drillinginfo is an award-winning provider of desktop analytics, risk management, and data integration solutions for the global commodity trade. Some of the largest energy and commodity companies in the world trust MarketView by Drillinginfo to manage millions of data points, both public and customer proprietary, in support of risk management and trading decision support on an enterprise-wide basis. MarketView by Drillinginfo offers an extensive library of energy and commodity data sets including real-time exchange, price reporting agencies, brokers, government reporting, emerging markets, and specialty data.

Founded in 1996, MarketView by Drillinginfo has been an industry leader in energy and commodity data management solutions that fully integrate real-time and historical market data and customer proprietary data using the internet and enterprise network systems. We focus exclusively on the energy and agricultural industries, and pride ourselves in understanding how our customers use and analyze commodity market information to operate their businesses.  With offices in Chicago, Houston, Calgary, Sao Paulo, London, and Singapore, MarketView by Drillinginfo is advantageously positioned to support its customers globally.

## User Manual Disclaimer

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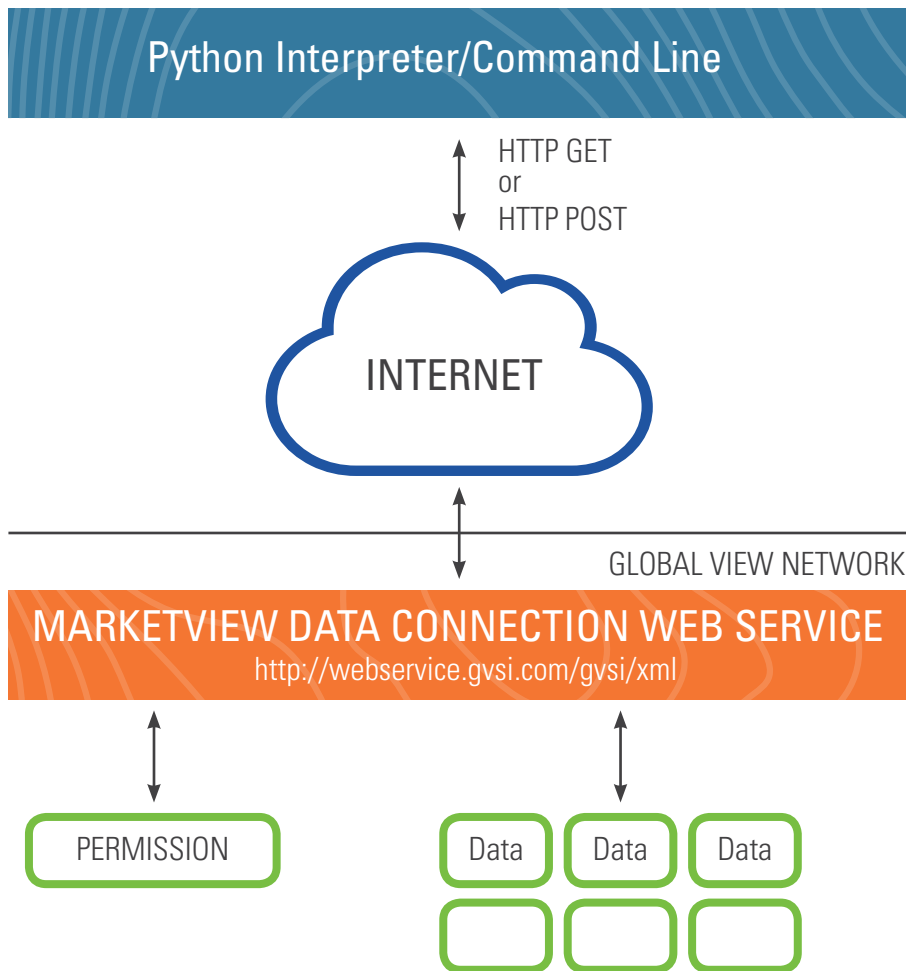
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# Overview and Architecture

## Python Overview

The MarketView Advanced Desktop Plugin allows customers to leverage the power of Python combined with a robust and nimble Web Service to pull in and perform in-depth, complex analysis on Futures, Spot, Forward Curve, and Futures Options prices from a comprehensive selection of MV data.

### Data Flow Diagram

```
         ┌────────────────────────────────────────────────┐
         │        Python Interpreter/Command Line          │
         └────────────────────────────────────────────────┘
                              ↕  HTTP GET
                                 or
                                 HTTP POST

                         ☁  INTERNET

         ────────────────────────────────────────────────
                                          GLOBAL VIEW NETWORK
                              ↕
         ┌────────────────────────────────────────────────┐
         │   MARKETVIEW DATA CONNECTION WEB SERVICE         │
         │        http://webservice.gvsi.com/gvsi/xml       │
         └────────────────────────────────────────────────┘
              ↕                          ↕
         ┌──────────────┐      ┌──────┐┌──────┐┌──────┐
         │  PERMISSION  │      │ Data ││ Data ││ Data │
         └──────────────┘      └──────┘└──────┘└──────┘
                               ┌──────┐┌──────┐┌──────┐
                               └──────┘└──────┘└──────┘
```

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# Requirements

## Minimum Requirements

- MarketView Advanced Desktop Plugin is solely compatible with Python 3 or higher.

- Open-source library "Requests". If the user does not have this installed, open the command prompt and type, "pip3 install requests". If you do not have "Requests" downloaded and saved locally, please download here: https://github.com/requests/requests.

- MarketView will set the user up with a login and password, as well as permission the component that allows them to have access to **Web Service 3.0**—the service which we have wrapped our Python SDK around.

# SDK Files and Classes

*GvWSConnection.py*: This file contains the main class for communication with the Web Service called GvWSConnection.

> **GviResult** class – This is a helper class that represents one row in a returned data set.

> **ConvertedSymbol** class – This class helps to define all the unit and currency conversions for a given symbol.

> **Enumerator** classes – These help users define particular parameters that must be used when requesting certain types of data.

> > "QuoteFields" lists all the fields permitted in Quote requests.

> > "CurrencySources" will list all the supported unit and currency options for a given symbol.

> > "TimeSeriesFields" will list the supported fields for Daily, Weekly, Monthly, Quarterly, etc. aggregations.

*gwsExample.py*: This file contains examples of each type of request that is supported by the Python SDK. It allows for a basic understanding of symbols, fields, unit/currency conversions, etc. that a user can request.

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# Error Codes

| Error Code | Error Type |
|------------|------------|
| 101 | Invalid credentials |
| 102 | Invalid request format |
| 401 | User unauthorized |
| 405 | HTTP method is not allowed |
| 408 | Request Timeout |

# Authentication

```
import datetime

from GvWSConnection import QuoteFields, GvWSConnection, ConvertedSymbol,
Currencies, CurrencySources, Units


conn = GvWSConnection("yourusername", "yourpassword")


USERNAME = 'yourusername'

PASSWORD = 'yourpassword'
```

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# Outputting Data

As shown in the 'gws_example.py' file, you can build a table and send data to it with the prepackaged code we have below:

```python
def pretty_print_table(table):
    items_len = len(table[0])
    lengths = [0] * items_len
    for item in table:
        for index in range(items_len):
            l = len(item[index])
            if lengths[index] < l:
                lengths[index] = l

    format_str = ""
    for ln in lengths:
        format_str += "{:>" + str(ln + 1) + "}|"

    header = format_str.format(*table[0])
    separator = '-' * len(header)
    print(separator)
    print(header)
    print(separator)
    for row in table[1:]:
        row_str = format_str.format(*row)
        print(row_str)
    print(separator)
    print("")


def print_results(result, start_column=0):
    table = [result[0].field_names[start_column:]]
    for row in result:
        values = list(row.values())
        str_values = [str(x) for x in values[start_column:]]
        table.append(str_values)
    pretty_print_table(table)
```

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# Python Basic Request Types

## GetQuote

This request will return the latest pricing for a given symbol for all available requested fields.

```python
conn = GvWSConnection("yourusername", " yourpassword ")
quote_result = conn.get_quote('/GCL')
q = quote_result[0]
print("symbol: {} open: {} high: {} low: {} last: {} date: {}".format(
    q.symbol, q.open, q.high, q.low, q.last, q.trade_date))

print("Done!")
```

## GetQuote Currency Conversion

This request will return the latest pricing for a given symbol for all requested fields available. In addition, it converts the currency and lot units to US Cents per Gallon instead of the default Currency and Lot Unit

```python
print("Latest Data for Crude (Converted), Heating, Oil, and Nat Gas")
gcl_converted = ConvertedSymbol("/GCL", currency=Currencies.USC, currency_
source=CurrencySources.USF,
                    unit=Units.GAL)
q2 = conn.get_quote([gcl_converted, '/GHO', '/GNG'])
print_results(q2)
```

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## GetDaily

This request will return the last ten days of data for the symbol(s) of your choice.

```
conn = GvWSConnection("yourusername", " yourpassword ")
print("Last 10 Days of NYMEX Benchmark Data:")
d1 = conn.get_daily(['/GCL','/GRB','/GNG'], num_of_bars=10)
print_results(d1)
```

## GetDaily Date Range

This request will return the range of data you designate for the symbol(s) of your choice.

```
conn = GvWSConnection("yourusername", " yourpassword ")
from_date = datetime.date(2017, 9, 1)
to_date = datetime.date(2017,9, 8)

d2 = conn.get_daily_range('/GCL', from_date, to_date)
print_results(d2)
```

## GetForwardCurve

This request will return the entire forward curve for the symbol root you pass. You are required to pass the curve date, which will display the entire curve "as of" an effective date.

```
conn = GvWSConnection(USERNAME, PASSWORD)
curve_date = datetime.date(2017, 9, 5)
print("Forward curve for /GCL, date: %s" % (curve_date.strftime("%Y-%m-%d")))
f1 = conn.get_forward_curve('/GCL',curve_date)
print_results(f1)
```

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## GetChain

*Please be sure to have QuoteFields and TimeSeriesFields Classes defined*
This request will return a snapshot (most recent pricing) for an entire curve.

```
conn = GvWSConnection(USERNAME, PASSWORD)
print("Snapshot of /GCL Data")
f1 = conn.get_curve('/GCL',fields=QuoteFields.STANDARD)
print_results(f1)
```

## GetIntraday

This request will return hourly time series data for /GCL for the last five days. Time intervals can be requested as 5, 15, 30, 60 minute bars.

```
conn = GvWSConnection(USERNAME, PASSWORD)
print("Crude Oil Hourly Bars")
d2 = conn.get_intraday('/GCL', bar_interval=60,days_back=5)
print_results(d2)
```

## GetIntraday Date Range

This request will return hourly time series data for /GCL for the date range of your choice. Time intervals can be requested as 5, 15, 30, 60 minute bars.

```
from_date = datetime.date(2017, 9, 1)
to_date = datetime.date(2017,9, 8)
d2 = conn.get_intraday('/GCL', bar_interval=60,start_date=from_date,end_
date=to_date)
print_results(d2)
```

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