Datafeed Toolbox

For Use with MATLAB®

- Computation
- Visualization
- Programming

User's Guide

Version 1

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Getting Started

What Is the Datafeed Toolbox?

This document describes the Datafeed Toolbox for MATLAB®. The Datafeed Toolbox effectively turns your MATLAB workstation into a financial data acquisition terminal. Using the Datafeed Toolbox, you can download a wide variety of security data from financial data servers into your MATLAB workspace. Then, you can pass this data to MATLAB or to another toolbox, such as the Financial Toolbox, for further analysis.

Communicating with a Financial Data Server

The Datafeed Toolbox supports connections to six financial data servers, provided by the following corporations:

- Bloomberg L. P. (`http://www.bloomberg.com`)
- FactSet Research Systems, Inc. (`http://www.factset.com`)
- Hyperfeed Technologies, Inc. (`http://www.hyperfeed.com`)
- FT Interactive Data Corporation (`http://www.FTInteractiveData.com`)
- Thomson Corporation (`http://www.thomson.com`)
- Yahoo!, Inc . (`http://www.yahoo.com`)

Bloomberg, FT Interactive Data, and Hyperfeed all require that you install proprietary software on your PC.

To connect to FactSet, Thomson Datastream, or Yahoo!, you need access to the Internet. FactSet additionally requires that you be licensed to use FactSet's FAST technology.

There are four steps involved in communicating with a financial data server using this toolbox. They are

This chapter uses the Bloomberg financial data server as an example of how to establish communication with a financial data server and retrieve data. Communication with other supported data servers is accomplished with a virtually identical set of toolbox functions.

Communication Management

For each of the supported financial data servers, the Datafeed Toolbox uses the following set of core functions to manage communication:

- `bloomberg`, `datastream`, `factset`, `hyperfeed`, `idc`, or `yahoo`: Establishes a connection to the appropriate data server.
- `isconnection`: Verifies that a connection is working.
- `get`: Retrieves connection properties.
- `close`: Terminates the connection.

An additional function, `fetch`, obtains the desired data from the data server and transfers it to your PC.

Example: The bloomberg Function

Connect to the Bloomberg data server using the `bloomberg` function. The connection requires a port number and an IP address.

The syntax for the `bloomberg` function is

```
Connect = bloomberg(PortNumber, 'IPAddress')
```

The IP address is entered as a MATLAB string. For example, the expression

```
c = bloomberg(8194, '123.456.54.123')
```

returns a Bloomberg connection object:

```
c =

    connection: 84554360
     ipaddress: '123.456.54.123'
          port: 8194
```

The `connection` field within the object `c` contains the Bloomberg connection handle that will be used in processing future data requests.

If you want to accept the default port number and IP address provided when your Bloomberg software was installed, enter

```
c = bloomberg
```

with no arguments.

Verifying the Connection

To verify that a data server connection is valid and open, use the `isconnection` function. For a connection object `c` previously created with one of the above connection functions,

```
x = isconnection(c)
```

returns `x = 1` if the connection is valid and open or `x = 0` if the connection is closed or invalid.

Retrieving Connection Properties

To retrieve the properties of a connection object, use the function `get`. This function returns different values depending upon which data server is being used.

Example: Retrieving Bloomberg Connection Properties

For the Bloomberg connection

```
c = bloomberg(8194, '123.456.54.123')
```

the command

```
p = get(c)
```

returns the list of all valid connection properties and their values associated with the connection object `c`:

```
p =
    connection: 84554360
     ipaddress: '123.456.54.123'
          port: 8194
        socket: 248
       version: 1.8000
```

The `get` function can return specific properties of a connection object. For example, to obtain the port number and Bloomberg version for the connection object `c`, use the format

```
p = get(c,{'Port';'Version'})
```

which returns

```
p =
        port: 8194
    version: 1.8000
```

When returning a single property, for example, the connection handle, the function

```
p = get(c,'Connection')
```

returns

```
p =
    84554360
```

For a single returned property the output is not a structure.

Disconnecting from a Data Server

To close a data server connection and disconnect, use the `close` function with the format

```
close(Connect)
```

You must have previously created the connection object with one of the connection functions.

Retrieving Data

The `fetch` function controls data retrieval from a data server connection. `fetch` returns different information depending upon which data server is being accessed. See the version of `fetch` appropriate for your data server for further information.

Example: Retrieving Bloomberg Data

This section illustrates the use of the `fetch` function to retrieve data from a Bloomberg data server. Versions of the `fetch` function that retrieve data from other data servers work similarly.

Retrieving Header (Bloomberg Default) Data

A header (default) data request to Bloomberg returns a fixed set of field data. Not all fields in the header data are relevant for a specific security.

Determining Header Fields. The list of valid header fields is stored in the file `@bloomberg/bbfields.mat`. Use the MATLAB `load` command

```
load @bloomberg/bbfields
```

to load this file. The variable `headerfieldnames` contains the list of header field names.

Obtaining Data. To retrieve header data from the Bloomberg connection, use `fetch` with the syntax

```
data = fetch(Connect, 'Security', 'HEADER', 'Flag')
```

where

- `Connect` is a Bloomberg connection object established with the `bloomberg` function.
- `Security` is the list of securities for which data is requested.

Note Security names are case sensitive for Bloomberg `fetch`.

- The `'HEADER'` argument is entered literally.
- `Flag` denotes the dates for which data can be retrieved. `Flag` has three possible values:
  - `DEFAULT` fills all fields with data from the most recent date with a bid, ask, or trade.
  - `TODAY` fills the fields with data from today only.
  - `ENHANCED` fills the fields with data for the most recent event for each individual field. In this case, for example, the bid and ask group fields could come from different dates.

Commands of the form

```
data = fetch(Connection, Security)
data = fetch(Connection, Security, 'HEADER')
data = fetch(Connection, Security, 'HEADER', 'DEFAULT')
```

are equivalent.

The returned data has a fixed set of fields. For example, a header inquiry for the security `IBM US Equity` returns data of the form:

```
          Status:0
            Open:93
TodaysOpenPrice:93
       HighPrice:93.1875
TodaysHighPrice:93.1875
        LowPrice:89
 TodaysLowPrice:89
      LastPrice:90.9375
TodaysLastPrice:0
    SettlePrice:NaN
        BidPrice:0
 TodaysBidPrice:NaN
        AskPrice:0
 TodaysAskPrice:NaN
       YieldBid:NaN
 TodaysYieldBid:NaN
       YieldAsk:NaN
```

```
    TodaysYieldAsk:NaN
           LimitUp:NaN
         LimitDown:NaN
      OpenInterest:3359000
 LastPriceYesterday:95
             Scale:1
     LastPriceTime:0.4993
  LastTradeExchange:7
     TickDirection:-1
           BidSize:0
     TodaysBidSize:NaN
           AskSize:NaN
     TodaysAskSize:0
      BidCondition:NaN
      AskCondition:NaN
 LastTradeCondition:NaN
LastMarketCondition:NaN
        Monitorable:1
       TotalVolume:60018500
  TodaysTotalVolume:0
 TotalNumberOfTicks:63318
TodaysTotalNumberofTicks:63318
    SessionStartTime:0.3958
      SessionEndTime:0.6875
            Currency:538989397
              Format:0
         SecurityKey:{'IBM US Equity'}
            AsOfDate:730441
       TodaysAsOfDate:730441
```

Not all fields are applicable to `IBM US Equity`, the security about which we inquired.

Retrieving Field Data

The `fetch` function with the `GETDATA` argument obtains Bloomberg field data. The entire set of field data provides statistics for all possible securities but does not apply universally to any one security.

Determining Field Names. The file `@bloomberg/bbfields.mat` stores the complete list of valid field names. Use the function

```
load @bloomberg/bbfields
```

to load this file. You will see a list of four variables:

```
bbcategories
bbfieldids
bbfieldnames
headerfieldnames
```

The variable `bbfieldnames` contains a list of field names. This list includes the header field names plus numerous others. The other variables loaded extend the list of field names.

Obtaining Data. To obtain data for specific fields of a given security, use the `fetch` function with the syntax

```
d = fetch(Connect, Security, 'GETDATA', Fields)
```

For example, use the `bloomberg` function to establish a connection `c1` to a Bloomberg data server.

```
c1 = bloomberg(8234, '123.457.78.999')
```

Then

```
d = fetch(c1,'IBM US Equity','GETDATA', {'Open';'Last_Price'})
```

returns

```
d =
          Open: 126.2500
    Last_Price: 125.1250
```

Retrieving Time Series Data

The `fetch` function with the `TIMESERIES` argument returns price and volume data for a particular security on a specified date. Time series data for a given security and a specific date are returned using the syntax

```
data = fetch(Connection, Security, 'TIMESERIES', Date)
```

`Date` may be a MATLAB date string or serial date number.

To obtain time series data for the current day, you can use the alternate form of the function

```
data = fetch(Connection, Security, 'TIMESERIES', now)
```

To obtain time series data for IBM using an existing connection `c1`, enter the function

```
data = fetch(c1, 'IBM US Equity', 'TIMESERIES', '11/16/99')
```

The result will look like this:

```
data =

31.00     730440.31          130.00         1000.00
32.00     730440.31          130.00          200.00
32.00     730440.35          129.50        10000.00
31.00     730440.35          129.50          100.00
32.00     730440.35          129.50          100.00
 1.00     730440.56          129.25         4000.00
31.00     730440.56          129.38         1500.00
32.00     730440.56          129.50          500.00
 1.00     730440.56          129.63         5000.00
31.00     730440.56          129.63          400.00
32.00     730440.56          129.63          200.00
 1.00     730440.56          129.69         5000.00
31.00     730440.56          129.69          500.00
32.00     730440.56          129.69          500.00
31.00     730440.56          129.75          100.00
32.00     730440.56          130.00          100.00
 1.00     730440.56          130.00         5000.00
 1.00     730440.56          129.88         5000.00
```

```
31.00      730440.56          129.88          300.00
```

Column 1 contains the tick type flag, column 2 contains the time stamp in MATLAB serial date number format, column 3 contains the tick value, and column 4 contains the number of shares in the transaction.

Retrieving Historical Data

Use the `fetch` function with the `HISTORY` argument to obtain historical data for a specific security.

For a specified field of a particular security use the syntax

```
d = fetch(Connect,Security,'HISTORY',Field,FromDate,ToDate)
```

to obtain historical data. Data for the field is returned for the date range from `FromDate` to `ToDate`. See “Determining Field Names” on page 1-10 for instructions on determining valid field names.

For example, to obtain the closing price for IBM for the dates July 15, 1999 to August 2, 1999 using the connection `c1`, enter

```
data = fetch(c1, 'IBM US Equity', 'HISTORY', 'Last_Price',...
'07/15/99', '08/02/99')

data =

     730316.00        136.31
     730317.00        136.25
     730320.00        134.63
     730321.00        128.25
     730322.00        129.00
     730323.00        123.88
     730324.00        124.81
     730327.00        123.00
     730328.00        126.25
     730329.00        128.38
     730330.00        125.38
     730331.00        125.69
     730334.00        122.25
```

Column 1 contains the date represented as a MATLAB date number, and column 2 contains the last price.

Finding Ticker Symbols

You can use the `fetch` function with the `LOOKUP` argument to find a ticker symbol when you are uncertain what the symbol might be. Use the syntax

```
data = fetch(Connect, SearchString, 'LOOKUP', Market)
```

to locate a specific ticker symbol.

The `SearchString` argument is the comparison string used in the lookup operation, and `Market` indicates the type of security (the market in which the security trades). The allowable values for `Market` are

- `Comdty` (Commodities)
- `Corp` (Corporate bonds)
- `Curncy` (Currencies)
- `Equity` (Equities)
- `Govt` (Government bonds)
- `Index` (Indexes)
- `M-Mkt` (Money Market securities)
- `Mtge` (Mortgage-backed securities)
- `Muni` (Municipal bonds)
- `Pfd` (Preferred stocks)

For example, using `fetch` with the connection `c1` to look up the ticker symbol for New Zealand government bonds

```
data = fetch(c1, 'New', 'LOOKUP', 'Govt')
```

returns a list of possible values:

```
data =

'NZTB     New Zealand Treasury Bill NZGB     New Zealand Governme'
'NZGB     New Zealand Government Bond NZ       New Zealand Govern'
'NZ       New Zealand Government International Bond HCNZ     Hous'
'ECNZ     Electric Corporation of New Zealand Bond NZTB NZGB NZ H'
```

Datafeed Toolbox Graphical User Interface

The Datafeed Toolbox provides a graphical user interface (GUI) consisting of two dialog boxes. The Datafeed dialog box consists of two tabbed dialog boxes, one to establish a data server connection, and the second to retrieve data from the server. The second dialog box, the Securities Lookup dialog box, enables you to find the ticker symbol for a specific security when you know at least part of the name of the security.

For additional information about the Datafeed dialog box, see

- “Connecting to a Data Server” on page 1-15
- “Data Retrieval” on page 1-17

To learn about setting overrides on retrieved data, see

- “Setting Overrides” on page 1-18

For additional information about the Securities Lookup dialog box, see

- “Securities Lookup Dialog Box (Bloomberg, FT Interactive Data)” on page 1-19

Datafeed Dialog Box

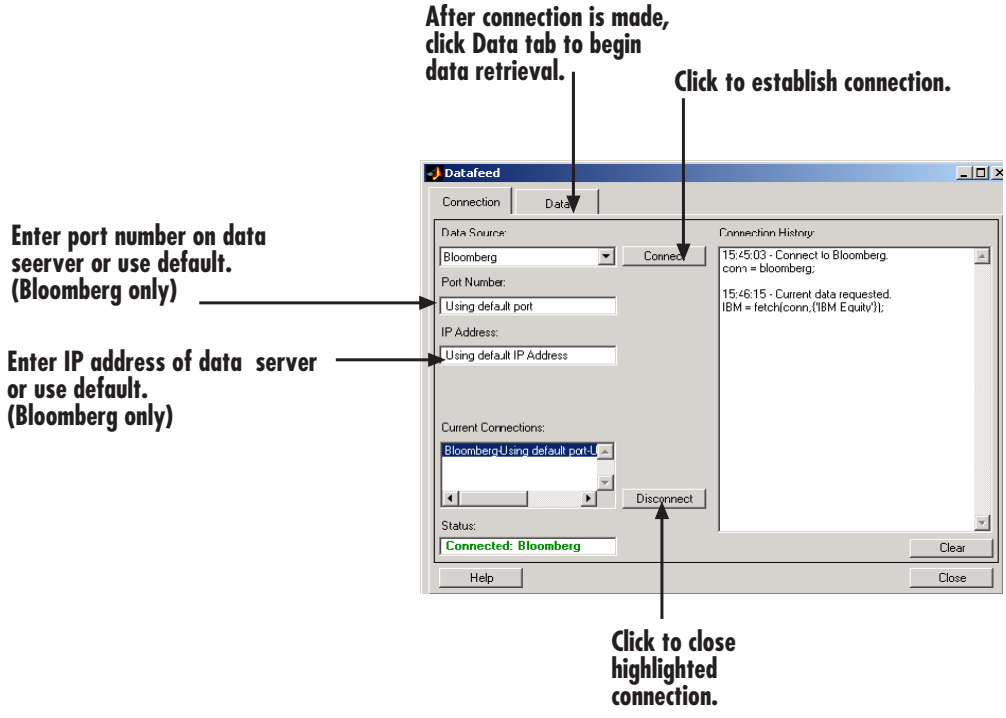
The Datafeed dialog box establishes the connection with the data server and manages the retrieval of data. Enter the function `dftool` to display the Datafeed dialog box on your screen. The Datafeed dialog box consists of two tabbed dialog boxes:

- The **Connection** tab establishes communication with a data server. (See “Connecting to a Data Server” on page 1-15.)
- The **Data** tab specifies the data request. (See “Data Retrieval” on page 1-17.)

Connecting to a Data Server

The **Connection** tab establishes a connection to one or more data servers. For FactSet, Yahoo!, and FT Interactive Data connections, choose the data

server from the **Data Source** choices and click the **Connect** button. For a Bloomberg connection, you can specify a specific IP address and port number on the Bloomberg server, or alternatively, just click the **Connect** button and accept the default values provided when the Bloomberg software was installed on your machine.



1 (Bloomberg only) Enter the port number on the data server in the **Port Number** box (or use default).

2 (Bloomberg only) Enter the IP address of the data server in the **IP Address** box (or use default).

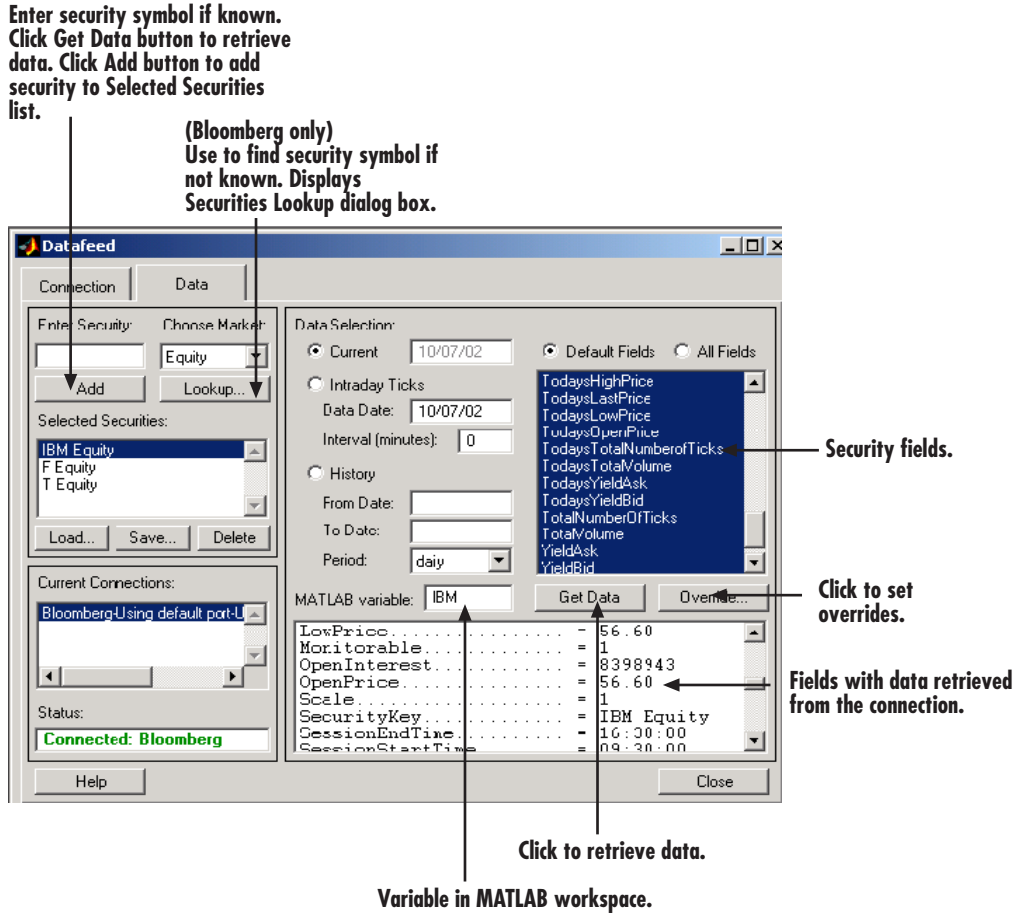
3 Click the **Connect** button to establish the connection.

4 When the `Connected` message appears in the **Status** box, click the **Data** tab to begin the process of retrieving data from the data server. (For information on the **Data** tab, see “Data Retrieval” on page 1-17.)

5 Click the **Disconnect** button to terminate the session highlighted in the **Current Connections** box.

Data Retrieval

The **Data** tab manages the retrieval of data from the data server. It also allows you to access a dialog box to set overrides on the data.



1 Enter the security symbol in the **Enter Security** box.

2 Indicate the type of data you are seeking in the **Data Selection** pane.

3 Indicate whether you want the default or full set of data in the **Fields** pane.

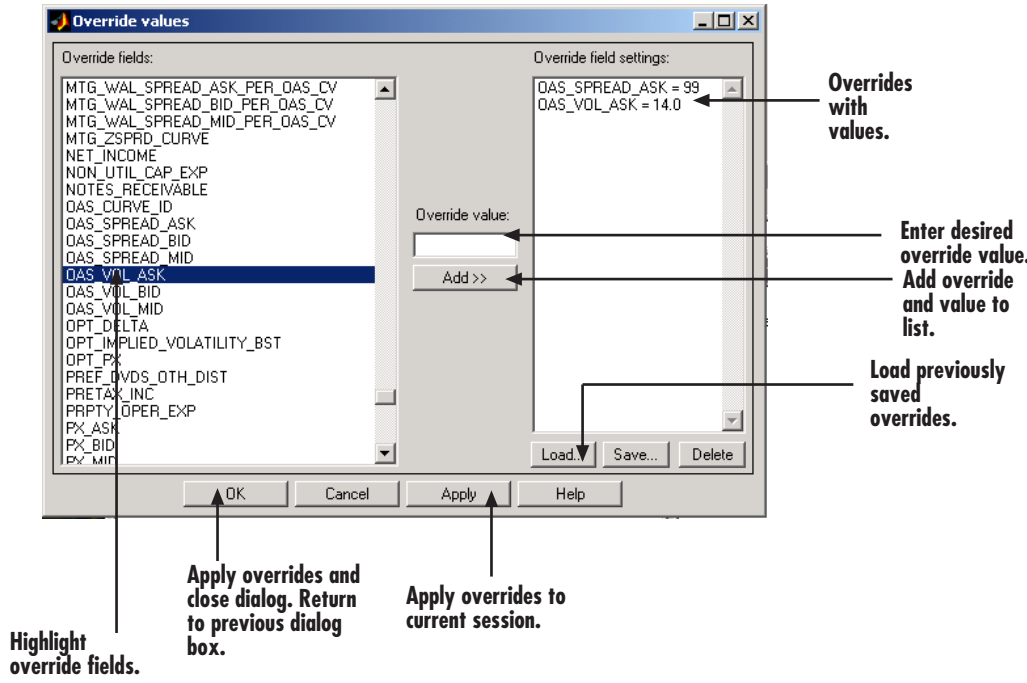
4 Click the **Get Data** button to retrieve data from the data server.

5 Click the **Override** button if you want to set overrides on the data you request from the data server.

Note If you do not know the symbol for a security, you can use the **Lookup** button to find the name of the security. (See "Securities Lookup Dialog Box (Bloomberg, FT Interactive Data)" on page 1-19.)

Setting Overrides

Click the **Override** button if you want to set overrides on the data you obtain. The Override values dialog box will open.

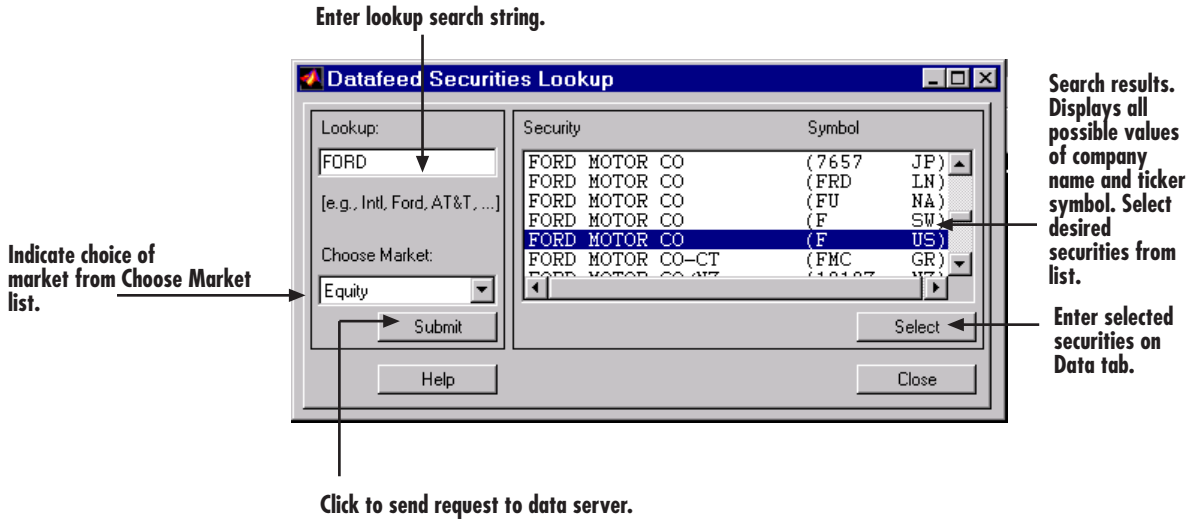


Securities Lookup Dialog Box (Bloomberg, FT Interactive Data)

Click the **Lookup** button of the Datafeed dialog box **Data** tab to display the Securities Lookup dialog box. See “Data Retrieval” on page 1-17 for information about the **Data** tab.

The Securities Lookup dialog box provides a means to obtain the ticker symbol for a particular security when you know part of the name. You can then enter the ticker symbol into the **Enter Security** field on the **Data** tab. It is essential that you enter the ticker symbol as specified; otherwise, the data server may provide no data or provide data for some other security.

Alternatively, you can highlight one or more securities in the list and click **Select**. The selected securities are added to the **Selected Securities** list on the **Data** tab.


Enter lookup search string.
Datafeed Securities Lookup
Lookup:
FORD
[e.g., Intl, Ford, AT&T, ...]
Choose Market:
Equity
Submit
Help
Security
Symbol
FORD MOTOR CO (7657 JP)
FORD MOTOR CO (FRD LN)
FORD MOTOR CO (FU NA)
FORD MOTOR CO (F SW)
FORD MOTOR CO (F US)
FORD MOTOR CO-CT (FMC GR)
Select
Close
Indicate choice of market from Choose Market list.
Search results. Displays all possible values of company name and ticker symbol. Select desired securities from list.
Enter selected securities on Data tab.
Click to send request to data server.

2

Functions — By Category

Bloomberg Functions

This section provides detailed descriptions of the Bloomberg functions in the Datafeed Toolbox.

`bloomberg`	Connect to Bloomberg
`close`	Close Bloomberg connection
`fetch`	Request data from Bloomberg
`get`	Bloomberg connection properties
`isconnection`	True if valid Bloomberg connection
`pricevol`	Price and volume (demonstration)
`showtrades`	Recent trade data (demonstration)
`stockticker`	Trades with volumes (demonstration)

Purpose

Connect to Bloomberg

Syntax

```
Connect = bloomberg(PortNumber, 'IPAddress')
Connect = bloomberg
```

Arguments

`PortNumber`	Port on machine where connection is being made.
`IPAddress`	A MATLAB string containing the Internet address of machine where connection is being made.

Description

`Connect = bloomberg(PortNumber, 'IPAddress')` establishes a connection to a Bloomberg data server using the port number, `PortNumber`, and the Internet address, `IPAddress`.

`Connect = bloomberg` establishes a connection to a Bloomberg data server using port number 8194 and the default Internet address provided when the Bloomberg software was installed on your machine.

Examples

```
c = bloomberg(8194,'111.222.33.444')
```

makes a connection to the Bloomberg server on port 8194 of the machine with Internet address 111.222.33.444.

See Also

`close`, `fetch`, `get`, `isconnection` (Bloomberg functions)

close

Purpose

Close Bloomberg connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	Bloomberg connection object created with the `bloomberg` function.

Description

`close(Connect)` closes the connection to the Bloomberg data server.

Examples

```
c = bloomberg(8194,'111.222.33.444')
```

establishes a Bloomberg connection, `c`.

```
close(c)
```

closes this connection.

See Also

`bloomberg`

Purpose

Request data from Bloomberg

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'HEADER', 'Flag', 'Ident')
data = fetch(Connect, 'Security', 'GETDATA', 'Fields',
'Override', 'Ident', 'Values')
data = fetch(Connect, 'Security', 'TIMESERIES', 'Date',
'Minutes', 'TickField')
data = fetch(Connect, 'Security', 'HISTORY, 'Fields',
'FromDate', 'ToDate', 'Period', 'Currency', 'Ident')
ticker = fetch(Connect, 'SearchString', 'LOOKUP', 'Market')
data = fetch(Connect, 'Security', 'REALTIME', 'Fields',
MATLABProg)
data = fetch(Connect, Security, 'STOP')
```

Arguments

`Connect`	Bloomberg connection object created with the `bloomberg` function.
`Security`	A MATLAB string containing the name of a security in a format recognizable by the Bloomberg server. You can substitute a CUSIP number for a security name if you want.

Note The `Security` argument may be a cell array of strings containing a list of securities.

Flag	A MATLAB string indicating the dates from which data is to be retrieved. Possible values are DEFAULT: Data from most recent bid, ask, or trade. If a *Flag* value is not specified, 'DEFAULT' is assumed. TODAY: Today's data only. ENHANCED: Data from most recent date of each individual field.
Currency	(Optional) Currency in which historical returns are provided. Valid currencies are listed in the file @bloomberg/bbfields.mat. Default = [].
Ident	(Optional) Security type identifier. Valid security type identifiers are listed in the file @bloomberg/bbfields.mat. Default = [].
Fields	A MATLAB string or cell array of strings indicating specific fields for which data is requested. Valid field names are listed in the file @bloomberg/bbfields.mat. The variable bbfieldnames contains the list of field names. Default = [].
Override	(Optional) String or cell array of strings containing override field list. Default = [].
Values	(Optional) String or cell array of strings containing override field values.
Date	Date string or serial date number indicating date for the time series. Specify now for today's time series data.
Minutes	(Optional) Tick interval in minutes.
TickField	(Optional) The field can be specified as a string or numeric value (e.g., TickField = 'Trade' or TickField = 1 return data for ticks of type Trade. Use the function dftool('ticktypes') to return the list of intraday tick fields.

`FromDate` Beginning date for historical data.

`ToDate` End date for historical data.

`Period` (Optional) Period of the data. A MATLAB three-part string with the format:

```
'Frequency Days Data'
```

`Frequency` Values
`d`: daily (default)
`w`: weekly
`m`: monthly
`q`: quarterly
`y`: yearly

`Days` Values
`o`: omit all days for which there is no data (default)
`i`: include all trading days
`a`: include all calendar days

`Data` Values
`b`: report missing data using Bloomberg (default)
`s`: show missing data as last found value
`n`: report missing data as `NaN`

For example, `'dan'` returns daily data for all calendar days, reporting missing values as `NaN`. If a value is unspecified (e.g., `' n'`), the unspecified values are replaced by defaults.

Note If *`Period`* is not specified, default values are used.

Currency	(Optional) Currency type. The file `@bloomberg/bbfields.mat` lists the supported currencies.
Market	A MATLAB string indicating the market in which a particular security trades. *Market* values are `Comdty`: (Commodities) `Corp`: (Corporate bonds) `Equity`: (Equities) `Govt`: (Government bonds) `Index`: (Indexes) `M-Mkt`: (Money Market securities) `Mtge`: Mortgage-backed securities) `Muni`: (Municipal bonds) `Pfd`: (Preferred stocks)
`MATLABProg`	A string that is the name of any valid MATLAB program.

Description

For a given security, `fetch` returns header (default), current, time series, real time, and historical data via the Bloomberg connection.

`data = fetch(Connect, 'Security')` fills the header fields with data from the most recent date with a bid, ask, or trade.

`data = fetch(Connect, 'Security', 'HEADER', 'Flag','Ident')` returns data for the most recent date of each individual field for the specified security type identifiers, based upon the value of *Flag*.

- If *Flag* is `DEFAULT`, `fetch` fills the header fields with data from the most recent date with a bid, ask, or trade. This is the equivalent of `data = fetch(Connect,'Security')`.
- If *Flag* is `TODAY`, `fetch` returns the header field data with data from today only.

- If *Flag* is ENHANCED, fetch returns the header field data for the most recent date of each individual field. In this case, for example, the bid and ask group fields could come from different dates.

`data = fetch(Connect, 'Security', 'GETDATA', 'Fields', 'Override', 'Ident', 'Values')` returns the current market data for the specified fields of the indicated security. You can further specify the data with the optional *Override* , *Values* and *Ident* arguments.

`data = fetch(Connect, 'Security', 'TIMESERIES', 'Date', 'Minutes', 'TickField')` returns the tick data for a security for the specified date. You can further specify the data with the optional `Minutes` and `TickField` arguments.

You can specify `TickField` as a string or numeric value, e.g., `TickField = 'Trade'` or `TickField = 1` returns data for ticks of type `Trade`. The function `dftool('ticktypes')`returns the list of intraday tick fields. Intraday tick data requested with an interval is returned with the columns representing

- Time
- Open
- High
- Low
- Value of last tick
- Volume total value of ticks
- Total value of ticks for the time range
- Number of ticks

Columns 7 and 8 are provided only if they make sense for the requested field.

For today's tick data, specify

```
data = fetch(Connect,'Security', 'TIMESERIES', now)
```

For today's trade time series aggregated into five-minute intervals, enter

```
data = fetch(Connect,'Security','TIMESERIES', ...
now, 5, 'Trade')
```

`data = fetch(Connect, 'Security', 'HISTORY', 'Fields', 'FromDate', 'ToDate', 'Period', 'Currency', 'Ident')` returns historical data for the specified field for the date range `FromDate` to `ToDate`. You can further specify the date range by setting the time period with the optional *`Period`* argument. You can further specify the data to be returned by appending the *`Currency`* or *`Ident`* argument.

`ticker = fetch(Connect, 'SearchString', 'LOOKUP', 'Market')` uses `SearchString` to find the ticker symbol for a security trading in a designated market. The output `ticker` is a column vector of possible ticker values.

Note If you supply *`Ident`* without a period or currency, enter `[]` for the missing values.

`data = fetch(Connect, 'Security', 'REALTIME', 'Fields', MATLABProg)` subscribes to a given security or list of securities, requesting the indicated fields, and runs any specified MATLAB function. See `pricevol`, `showtrades` , or `stockticker` for information on the data returned by asynchronous Bloomberg events.

`data = fetch(Connect, Security, 'STOP')` unsubscribes the list of securities from processing Bloomberg real-time events.

Examples

Returning Header Data

```
D = fetch(C,'ABC US Equity')
```

returns the header data for a United States equity with ticker `ABC`.

Opening and Closing Prices

```
D = fetch(C,'ABC US Equity','GETDATA',...
{'Last_Price';'Open'})
```

returns the opening and closing prices.

Override Fields

```
D = fetch(C,'3358ABCD4 Corp', 'GETDATA',...
{'YLD_YTM_ASK','ASK','OAS_SPREAD_ASK','OAS_VOL_ASK'},...
{'PX_ASK','OAS_VOL_ASK'}, {'99.125000','14.000000'})
```

returns the requested fields given override fields and values.

Time Series

```
D = fetch(C,'ABC US Equity','TIMESERIES', now)
```

return today's time series.

Time Intervals

```
D = fetch(C,'ABC US Equity','TIMESERIES', now, 5,'Trade')
```

returns today's trade time series for the given security aggregated into five-minute intervals.

Default Closing Price

```
D = fetch(C,'ABC US Equity','HISTORY','Last_Price',...
'8/01/99', '8/10/99')
```

returns the closing price for the given dates using the default period of the data.

Monthly Closing Price

```
D = fetch(C,'ABC US Equity','HISTORY','Last_Price',...
'8/01/99', '9/30/00','m')
```

returns the monthly closing price for the given dates for the given security.

See Also

`bloomberg`, `close`, `get`, `isconnection` (Bloomberg functions)

Purpose

Bloomberg connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	Bloomberg connection object created with the `bloomberg` function.

`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Property names are
	`Connection`
	`IPAddress`
	`Port`
	`Socket`
	`Version`

Description

`value = get(Connect, 'PropertyName')` returns a MATLAB structure containing the value of the specified properties for the Bloomberg connection object.

`value = get(Connect)` returns the value for all properties.

Examples

```
c = bloomberg(8194,'111.222.33.444')
```

establishes a Bloomberg connection, `c`.

The syntax

```
p = get(c, {'Port', 'IPAddress'})
```

returns

```
p =
      port: 8194
      ipaddress: 111.222.33.444
```

See Also

`bloomberg`, `close`, `fetch`, `isconnection` (Bloomberg functions)

Purpose

True if valid Bloomberg connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	Bloomberg connection object created with the `bloomberg` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid Bloomberg connection, and `x = 0` if it is not.

Examples

The function

```
c = bloomberg(8194,'111.222.33.444')
```

establishes a Bloomberg connection, `c`.

Then

```
x = isconnection(c)
x = 1
```

indicates that `c` is a valid Bloomberg connection.

See Also

`bloomberg`, `close`, `fetch`, `get` (Bloomberg functions)

pricevol

Purpose

Price and volume (demonstration)

Syntax

```
pricevol(InputList)
```

Arguments

`InputList`	Fields for which real-time data is sought.

Description

`pricevol(InputList)` demonstrates the Bloomberg real-time data import functionality. `InputList` is an input list of the elements:

`InputList(1) = COM.Bloomberg.Data.1`	Bloomberg handle
`InputList(2) = 1`	Event ID
`InputList(3) = ('Security')`	Security string
`InputList(4) = 1`	Cookie
`InputList(5) = 2`	Field number ID
`InputList(6) = {[43.58]}`	Return data for the given tick
`InputList(7) = 0`	Status
`InputList(8)`	Structure containing the above fields
`InputList(9) = 'Data'`	Event type

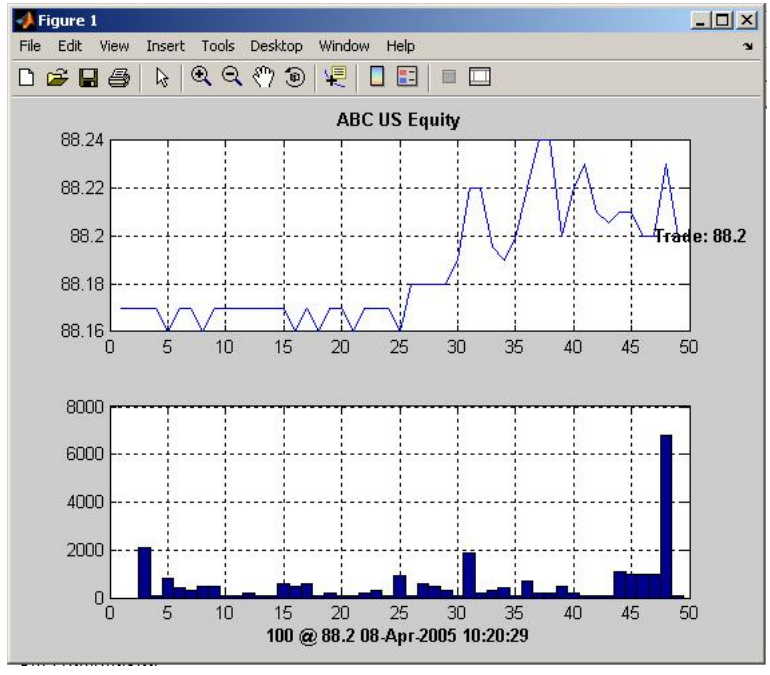
The input argument `InputList(8)` contains the necessary information to process real-time events.

Examples

The following example shows the use of this function.

```
b = bloomberg;
d = fetch(b,'ABC US Equity','REALTIME',...
{'Last_Trade','Volume'},'pricevol');
```

The output displays the most recent `Trade` and `Volume` in the figure and shows the most recent trade with volumes.



See Also

`showtrades`, `stockticker`

showtrades

Purpose

Recent trade data (demonstration)

Syntax

```
showtrades(InputList)
```

Arguments

`InputList`	Fields for which real-time data is sought.

Description

`showtrades(InputList)` demonstrates the Bloomberg real-time data import functionality. `InputList` is an input list of the elements:

`InputList(1) = COM.Bloomberg.Data.1`	Bloomberg handle
`InputList(2) = 1`	Event ID
`InputList(3) = ('Security')`	Security string
`InputList(4) = 1`	Cookie
`InputList(5) = 2`	Field number ID
`InputList(6) = {[43.58]}`	Return data for the given tick
`InputList(7) = 0`	Status
`InputList(8)`	Structure containing the above fields
`InputList(9) = 'Data'`	Event type

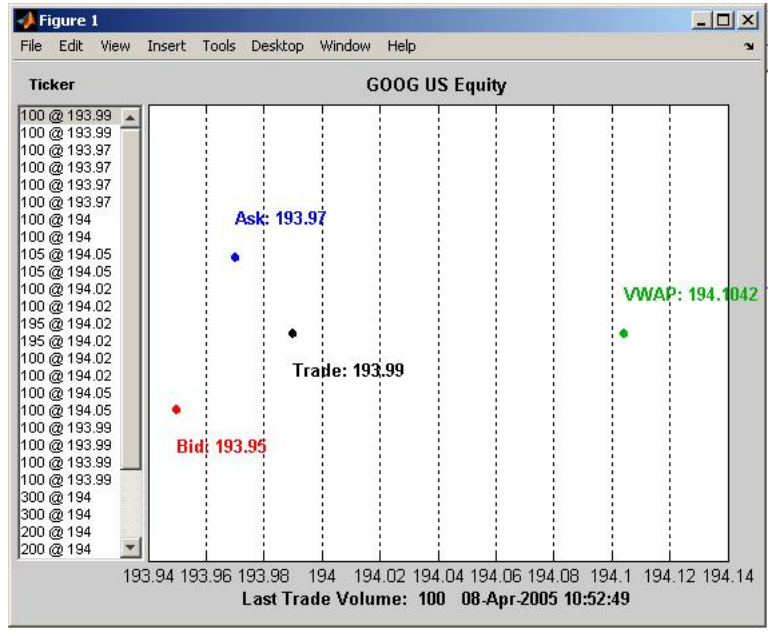
The input argument `InputList(8)` contains the necessary information to process real-time events.

Examples

The following example shows the use of this function.

```
b = bloomberg;
d = fetch(b,'GOOG US Equity','REALTIME',...
{'Last_Trade','Bid','Ask','Volume','VWAP'},'showtrades');
```

The output shows the most recent `Trade`, `Bid`, `Ask` and `VWAP` (volume-weighted adjusted price) and a list of the most recent trades with volumes.



See Also

`pricevol`, `stockticker`

stockticker

Purpose

Trades with volumes (demonstration)

Syntax

```
stockticker(InputList)
```

Arguments

`InputList`	Fields for which real-time data is sought.

Description

`stockticker(InputList)` demonstrates the Bloomberg real-time data import functionality. `InputList` is an input list of the elements:

`InputList(1) = COM.Bloomberg.Data.1`	Bloomberg handle
`InputList(2) = 1`	Event ID
`InputList(3) = ('Security')`	Security string
`InputList(4) = 1`	Cookie
`InputList(5) = 2`	Field number ID
`InputList(6) = {[43.58]}`	Return data for the given tick
`InputList(7) = 0`	Status
`InputList(8)`	Structure containing the above fields
`InputList(9) = 'Data'`	Event type

The input argument `InputList(8)` contains the necessary information to process real-time events.

Examples

The following example shows the use of this function. The output provides a list of trades with volumes for each requested security.

```
b = bloomberg;
d = fetch(b,{'IBM US Equity','EMC US Equity','NTAP US Equity'},...
'REALTIME',{'Last_Trade','Volume'},'stockticker');
** EMC US Equity ** 0 @ 12.65 08-Apr-2005 10:24:57
```

```
** IBM US Equity ** 0 @ 88.17 08-Apr-2005 10:24:57
** NTAP US Equity ** 0 @ 29.02 08-Apr-2005 10:24:57
** EMC US Equity ** 200 @ 12.66 08-Apr-2005 10:24:58
** EMC US Equity ** 1400 @ 12.65 08-Apr-2005 10:24:58
** EMC US Equity ** 3100 @ 12.66 08-Apr-2005 10:25:00
** IBM US Equity ** 1300 @ 88.17 08-Apr-2005 10:25:00
.
.
.
```

See Also

pricevol, showtrades

Thomson Datastream Functions

This section provides detailed descriptions of the Thomson Datastream API interface functions in the Datafeed Toolbox.

`close`	Close Thomson Datastream connection
`datastream`	Thomson Datastream API connection
`fetch`	Request data from Thomson Datastream
`get`	Thomson Datastream connection properties
`isconnection`	True if valid Thomson Datastream connection

Purpose

Close Thomson Datastream connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	Thomson Datastream connection object created with the `datastream` function.

Description

`close(Connect)` closes the connection to the Thomson Datastream data server.

See Also

`datastream`

datastream

Purpose

Thomson Datastream API connection

Syntax

```
Connect = datastream('UserName', 'Password', 'Source', 'URL')
```

Arguments

`UserName`	User name.
`Password`	User password.
`Source`	To connect to the Thomson Datastream API, enter `'Datastream'` in this field.
`URL`	Web URL.

Note Thomson assigns the values you need to enter for each argument. Enter all arguments as MATLAB strings.

Description

`Connect = datastream('UserName', 'Password', 'Source', 'URL')` makes a connection to the Thomson Datastream API, which provides access to the Thomson Datastream content.

Examples

Use the `datastream` function to establish a connection to the Thomson Datastream API, which provides you access to the Thomson Datastream content.

```
Connect = datastream('User1','Pass1','Datastream',...
'http://159.104.6.234/Dataworks/Enterprise/1.0')
```

See Also

`close`, `fetch`, `get`, `isconnection` (Thomson Datastream functions)

Purpose

Request data from Thomson Datastream

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'Fields')
data = fetch(Connect, 'Security', 'Fields',
'Date')
data = fetch(Connect, Security, 'Fields',
'FromDate', 'ToDate')
data = fetch(Connect, Security, 'Fields',
'FromDate', 'ToDate', 'Period')
data = fetch(Connect, Security, 'Fields',
'FromDate', 'ToDate', 'Period,
'Currency')
```

Arguments

`Connect`	Thomson Datastream connection object created with the `datastream` function.
`Security`	MATLAB string containing the name of a security in a format recognizable by the Thomson Datastream data server.
`Fields`	(Optional) MATLAB string or cell array of strings indicating the data fields for which data is to be retrieved.
`Date`	(Optional) MATLAB string indicating a specific calendar date for which data is requested.
`FromDate`	(Optional) Start date for historical data.

`ToDate`	(Optional) End date for historical data. If `ToDate` is provided, `FromDate` cannot be an empty value.
`Period`	(Optional) Period within a date range. *`Period`* values are `'d'`: daily values `'w'`: weekly values `'m'`: monthly values
`Currency`	(Optional) Currency in which the data is reported.

Note You can input the optional arguments `Fields`, `FromDate`, `ToDate`, `Period`, and `Currency` as MATLAB strings or empty arrays (`[ ]`).

Description

`data = fetch(Connect, 'Security')` returns the default time series for the indicated security.

`data = fetch(Connect, 'Security', '`*`Fields`*`')` returns data for the specified security and fields.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'Date')` returns data for the specified security and fields on a particular date.

`data = fetch(Connect, Security, '`*`Fields`*`', 'FromDate', 'ToDate')`returns data for the specified security and fields for the indicated date range.

`data = fetch(Connect, Security, '`*`Fields`*`', 'FromDate', 'ToDate', '`*`Period`*`')` returns instrument data for the given range with the indicated period.

`data = fetch(Connect, Security, '`*`Fields`*`', 'FromDate', 'ToDate', '`*`Period`*`, '`*`Currency`*`')` additionally specifies the currency in which the data is reported.

Examples

Here are some examples of using the Datastream `fetch` command to obtain data from Thomson Datastream.

`data = fetch(Connect, 'ICI')` and `data = fetch(Connect, 'ICI', 'P')` both return the trailing one-year price time series for the given instrument. (`'P'` is the default value for the `'Field'` argument.)

`data = fetch(Connect, 'ICI', {'P', 'PO'}, '08/01/2005')` returns the closing and opening prices for the given instrument on the given date.

`data = fetch(Connect, {'ICI', 'IBM'}, {'P', 'PO'}, '8/01/2003', '8/01/2005, 'M')` returns the monthly closing and opening prices for the indicated securities during the specified date range.

See Also

`close`, `datastream`, `get`, `isconnection` (Thomson Datastream functions)

Purpose

Thomson Datastream connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	Thomson Datastream connection object created with the `datastream` function.

`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Property names are
	`user`
	`datasource`
	`endpoint`
	`wsdl`
	`sources`
	`systeminfo`
	`version`

Description

`value = get(Connect, 'PropertyName')` returns the value of the specified properties for the Thomson Datastream connection object.

`value = get(Connect)` returns a MATLAB structure where each field name is the name of a property of `Connect`, and each field contains the value of that property.

See Also

`close`, `datastream`, `fetch`, `isconnection` (Thomson Datastream functions)

Purpose

True if valid Thomson Datastream connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	Thomson Datastream connection object created with the `datastream` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid Thomson Datastream connection, and `x = 0` if it is not.

Examples

The function

```
c = datastream
```

establishes a connection to the Thomson Datastream API. Then

```
x = isconnection(c)
x = 1
```

indicates that `c` is a valid Thomson Datastream connection.

See Also

`close`, `datastream`, `fetch`, `get` (Thomson Datastream functions)

FactSet Functions

This section provides detailed descriptions of the FactSet FAST interface functions in the Datafeed Toolbox.

`close`	Close FactSet connection
`factset`	Connect to FactSet
`fetch`	Request data from FactSet
`get`	FactSet connection properties
`isconnection`	True if valid FactSet connection

Purpose

Close FactSet connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	FactSet connection object created with the `factset` function.

Description

`close(Connect)` closes the connection to the FactSet data server.

See Also

`factset`

factset

Purpose

Connect to FactSet

Syntax

```
Connect = factset('UserName','SerialNumber','Password', 'ID')
```

Arguments

`UserName`	User login name.
`SerialNumber`	User serial number.
`Password`	User password.
`ID`	FactSet customer identification number.

FactSet assigns the values for all of the above input arguments.

Description

`Connect = factset('UserName','SerialNumber','Password', 'ID')` connects to the FactSet FAST interface.

Examples

```
Connect = factset('username','1234','password','fsid')
Connect =

       user: 'username'
     serial: '1234'
   password: 'password'
        cid: 'fsid'
```

See Also

`close`, `fetch`, `get`, `isconnection` (FactSet functions)

Purpose

Request data from FactSet

Syntax

```
data = fetch(Connect)
data = fetch(Connect, 'Library')
data = fetch(Connect, 'Security', 'Fields')
data = fetch(Connect, 'Security', 'Fields',
'Date')
data = fetch(Connect, 'Security', 'Fields',
'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'FromDate',
'ToDate', 'Period')
```

Arguments

`Connect`	FactSet connection object created with the `factset` function.
`Library`	FactSet formula library.
`Security`	A MATLAB string or cell array of strings containing the names of securities in a format recognizable by the FactSet server.
`Fields`	A MATLAB string or cell array of strings indicating the data fields for which data is to be retrieved.
`Date`	Date string or serial date number indicating date for the requested data. If today's date is entered, yesterday's data is returned.
`FromDate`	Beginning date for date range.

`ToDate`	End date for date range.
`Period`	Period within date range. *`Period`* values are `'d'`: daily values `'b'`: business day daily values `'m'`: monthly values `'mb'`: beginning monthly values `'me'`: ending monthly values `'q'`: quarterly values `'qb'`: beginning quarterly values `'qe'`: ending quarterly values `'y'`: annual values `'yb'`: beginning annual values `'ye'`: ending annual values

Description

`data = fetch(Connect)` returns the names of all available formula libraries.

`data = fetch(Connect, 'Library')` returns the valid field names for a given formula library.

`data = fetch(Connect, 'Security', '`*`Fields`*`')` returns data for the specified security and fields.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'Date')` returns security data for the specified fields on the requested date.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'FromDate', 'ToDate')` returns security data for the specified fields for the date range `FromDate` to `ToDate`.

`data = fetch(Connect, 'Security', 'FromDate', 'ToDate', '`*`Period`*`')` returns security data for the date range `FromDate` to `ToDate` with the indicated period.

Examples

Example 1: Obtain the names of the available formula libraries.

```
D = fetch(Connect)
```

Example 2: Obtain the valid field names for the `FactSetSecurityCalcs` library.

```
D = fetch(Connect,'fs')
```

Example 3: Obtain closing price of a given security.

```
D = fetch(Connect,'ABC','price')
```

Example 4: Obtain the closing price for the given dates for a given security using the default period of the data.

```
D = fetch(C,'ABC','price','8/01/99','8/10/99')
```

Example 5: Obtain the monthly closing price for the given dates for a given security.

```
D = fetch(C,'ABC','price','8/01/99','8/10/99','m')
```

See Also

`close`, `factset`, `get`, `isconnection` (FactSet functions)

Purpose

FactSet connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	FactSet connection object created with the `factset` function.

`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Property names are
	`user`
	`serial`
	`password`
	`cid`

Description

`value = get(Connect, 'PropertyName')` returns the value of the specified properties for the FactSet connection object.

`value = get(Connect)` returns a MATLAB structure where each field name is the name of a property of `Connect`, and each field contains the value of that property.

Examples

Use the `factset` function to establish a connection to FactSet.

```
Connect = factset('Fast_User','1234','Fast_Pass','userid')
```

Now use the get function to retrieve the connection property value.

```
h = get(Connect)

h=

       user: 'Fast_User'
     serial: '1234'
   password: 'Fast_Pass'
        cid: 'userid'

get(Connect, 'user')

ans =

Fast_User
```

See Also

close, fetch, factset, isconnection (FactSet functions)

isconnection

Purpose

True if valid FactSet connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	FactSet connection object created with the `factset` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid FactSet connection, and `x = 0` if it is not.

Examples

The function

```
c = factset
```

establishes a FactSet connection.

Then

```
x = isconnection(c);
```

```
x = 1
```

indicates that `c` is a valid FactSet connection.

See Also

`close`, `fetch`, `factset`, `get` (FactSet functions)

Hyperfeed Functions

This section provides detailed descriptions of the Hyperfeed functions in the Datafeed Toolbox.

`close`	Close Hyperfeed connection
`fetch`	Request data from Hyperfeed
`get`	Hyperfeed connection properties
`hyperfeed`	Connect to Hyperfeed
`isconnection`	True if valid Hyperfeed connection

close

Purpose

Close Hyperfeed connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	Hyperfeed connection object created with the `hyperfeed` function.

Description

`close(Connect)` closes the connection to the Hyperfeed data server.

See Also

`hyperfeed`

Purpose

Request data from Hyperfeed

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'Fields')
data = fetch(Connect, 'Security', 'Date')
data = fetch(Connect, 'Security', 'Fields',
'Date')
data = fetch(Connect, 'Security', 'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'Fields',
'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'FromDate',
'ToDate', 'Period')
```

Arguments

`Connect`	Hyperfeed connection object created with the `hyperfeed` function.
`Security`	A MATLAB string or cell array of strings containing the names of a securities in a format recognizable by the Hyperfeed server.

`Fields`	A MATLAB string or cell array of strings indicating the data fields for which data is to be retrieved. Some possible values are
	`Symbol`
	`Last`
	`Date`
	`Time`
	`Change`
	`Open`
	`High`
	`Low`
	`Volume`

`Date`	Date string or serial date number indicating date for the requested data. If today's date is entered, yesterday's data is returned.

`FromDate`	Beginning date for historical data.
`ToDate`	End date for historical data.
`Period`	Period within date range. *`Period`* values are `'d'`: daily `'w'`: weekly `'m'`: monthly `'v'`: dividends

Description

`data = fetch(Connect, 'Security')` returns data for all fields from Hyperfeed's Web site for the indicated securities.

`data = fetch(Connect, 'Security', '`*`Fields`*`')` returns data for the specified fields.

`data = fetch(Connect, 'Security', 'Date')` returns all security data for the requested date.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'Date')` returns security data for the specified fields on the requested date.

`data = fetch(Connect, 'Security', 'FromDate', 'ToDate')` returns security data for the date range `FromDate` to `ToDate`.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'FromDate', 'ToDate')` returns security data for the specified fields for the date range `FromDate` to `ToDate`.

`data = fetch(Connect, 'Security', 'FromDate', 'ToDate', '`*`Period`*`')` returns security data for the date range `FromDate` to `ToDate` with the indicated period.

Examples

Obtain the closing price for Coca Cola on April 6, 2000.

```
c = hyperfeed('History');

ClosePrice = fetch(c,'ko','Close','Apr 6 00')

ClosePrice =

     730582.00          45.75
```

See Also

`close`, `get`, `hyperfeed`, `isconnection` (Hyperfeed functions)

Purpose

Hyperfeed connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	Hyperfeed connection object created with the `hyperfeed` function.

`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Property names are
	`Connection`
	`IPAddress`
	`Port`
	`Socket`
	`Version`

Description

`value = get(Connect, 'PropertyName')` returns the value of the specified properties for the Hyperfeed connection object.

`value = get(Connect)` returns a MATLAB structure where each field name is the name of a property of `Connect`, and each field contains the value of that property.

Examples

Use the `hyperfeed` function to establish a connection to Hyperfeed.

```
c = hyperfeed('Price')
```

Now use the `get` function to retrieve the connection property value.

```
h = get(c, Connection)

h=

connection: 3
table: 'Price'
```

See Also

`close`, `fetch`, `hyperfeed`, `isconnection` (Hyperfeed functions)

hyperfeed

Purpose

Connect to Hyperfeed

Syntax

```
Connect = hyperfeed(Table)
```

Arguments

Table	A MATLAB string indicating the Hyperfeed table (database) to access. Possible values are
	`Price` (Default)
	`Profile`
	`History`

Description

`Connect = hyperfeed(Table)` connects to the indicated Hyperfeed table.

Examples

```
c = hyperfeed('Price')
```

connects to the Hyperfeed Price table.

See Also

`close`, `fetch`, `get`, `isconnection` (Hyperfeed functions)

Purpose

True if valid Hyperfeed connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	Hyperfeed connection object created with the `hyperfeed` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid Hyperfeed connection, and `x = 0` if it is not.

Examples

The function

```
c = hyperfeed
```

establishes a Hyperfeed connection, `c`, to the Price table.

Then

```
x = isconnection(c);
```

```
x = 1
```

indicates that `c` is a valid Hyperfeed connection.

See Also

`close`, `fetch`, `get`, `hyperfeed` (Hyperfeed functions)

FT Interactive Data Functions

This section provides detailed descriptions of the FT Interactive Data functions in the Datafeed Toolbox.

`close`	Close FT Interactive Data connection
`fetch`	Request data from FT Interactive Data
`get`	FT Interactive Data connection properties
`idc`	Connect to FT Interactive Data
`isconnection`	True if valid FT Interactive Data connection

Purpose

Close FT Interactive Data connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	FT Interactive Data connection object created with the `idc` function.

Description

`close(Connect)` closes the connection to the FT Interactive Data server.

Examples

```
c = idc
```

establishes an FT Interactive Data connection, `c`.

```
close(c)
```

closes this connection.

See Also

`idc`

fetch

Purpose

Request data from FT Interactive Data

Syntax

```
data = fetch(Connect, 'Security', 'Fields')
data = fetch(Connect, 'Security', 'Fields',
'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'Fields',
'FromDate', 'ToDate',  'Period')
data = fetch(Connect,'','GUILookup','GUICategory')
```

Arguments

`Connect`	FT Interactive Data connection object created with the `idc` function.
`Security`	A MATLAB string containing the name of a security in a format recognizable by the FT Interactive Data server.
`Fields`	A MATLAB string or cell array of strings indicating specific fields for which data is to be provided. Valid field names are in the file `@idc/idcfields.mat`. The variable `bbfieldnames` contains the list of field names.
`FromDate`	Beginning date for historical data.
`ToDate`	End date for historical data.
`Period`	Period within date range.
`GUICategory`	GUI category. Possible values are `F` (All valid field categories) `S` (All valid security categories)

Description

`data = fetch(Connect, 'Security', 'Fields')` returns data for the indicated fields of the designated securities. Load the file `idc/idcfields` to see the list of supported fields.

`data = fetch(Connect, 'Security', 'Fields', 'FromDate', 'ToDate')` returns historical data for the indicated fields of the designated securities.

`data = fetch(Connect, 'Security', 'Fields', 'FromDate', 'ToDate', 'Period')` returns historical data for the indicated fields of the designated securities with the designated dates and period. Consult the Remote Plus documentation for a list of valid `'Period'` values.

`data = fetch(Connect,'','GUILookup','GUICategory')` opens the FT Interactive Data dialog box for selecting fields or securities.

Examples

```
D = fetch(Connect,'','GUILOOKUP','S')
```

opens the dialog box for looking up securities.

```
D = fetch(Connect,'','GUILOOKUP','F')
```

opens the dialog box for selecting fields.

See Also

`close`, `get`, `idc`, `isconnection` (FT Interactive Data functions)

get

Purpose

FT Interactive Data connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	FT Interactive Data connection object created with the `idc` function.

`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Property names are
	`Connected`
	`Connection`
	`Queued`

Description

`value = get(Connect, '`*`PropertyName`*`')` returns the value of the specified properties for the FT Interactive Data connection object.'*`PropertyName`*' is a string or cell array of strings containing property names.

`value = get(Connect)` returns a MATLAB structure. Each field name is the name of a property of `Connect`, and each field contains the value of that property.

See Also

`close`, `fetch`, `idc`, `isconnection` (FT Interactive Data functions)

Purpose

Connect to FT Interactive Data

Syntax

```
Connect = idc
```

Description

`Connect = idc` connects to the FT Interactive Data server. `Connect` is a connection handle used by other functions to obtain data.

Examples

```
c = idc
```

makes a connection to the FT Interactive Data server.

See Also

`close`, `fetch`, `get`, `isconnection` (FT Interactive Data functions)

isconnection

Purpose

True if valid FT Interactive Data connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	FT Interactive Data connection object created with the `idc` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid FT Interactive Data connection, and `x = 0` if it is not.

Examples

The function

```
c = idc
```

establishes an FT Interactive Data connection, `c`.

Then

```
x = isconnection(c)
x = 1
```

indicates that `c` is a valid FT Interactive Data connection.

See Also

`close`, `fetch`, `get`, `idc` (FT Interactive Data functions)

Yahoo! Functions

This section provides detailed descriptions of the Yahoo! functions in the Datafeed Toolbox.

`close`	Close Yahoo! connection
`fetch`	Request data from Yahoo!
`get`	Yahoo! connection properties
`isconnection`	True if valid Yahoo! connection
`yahoo`	Connect to Yahoo!

close

Purpose

Close Yahoo! connection

Syntax

```
close(Connect)
```

Arguments

`Connect`	Yahoo! connection object created with the `yahoo` function.

Description

`close(Connect)` closes the connection to the Yahoo! data server.

See Also

`yahoo`

Purpose

Request data from Yahoo!

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'Fields')
data = fetch(Connect, 'Security', 'Date')
data = fetch(Connect, 'Security', 'Fields',
'Date')
data = fetch(Connect, 'Security', 'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'Fields',
'FromDate', 'ToDate')
data = fetch(Connect, 'Security', 'FromDate',
'ToDate', 'Period')
```

Arguments

`Connect`	Yahoo! connection object created with the `yahoo` function.
`Security`	A MATLAB string or cell array of strings containing the names of securities in a format recognizable by the Yahoo! server.

`Fields`	A MATLAB string or cell array of strings indicating the data fields for which data is to be retrieved. For current market data the values are
	`Symbol`
	`Last`
	`Date`
	`Time`
	`Change`
	`Open`
	`High`
	`Low`
	`Volume`
	For historical data the values are

```
Close
Date
High
Low
Open
Volume
Adj.  Close*
```

`Date`	Date string or serial date number indicating date for the requested data. If today's date is entered, yesterday's data is returned.
`FromDate`	Beginning date for historical data.
`ToDate`	End date for historical data.
`Period`	Period within date range. *`Period`* values are `'d'`: daily `'w'`: weekly `'m'`: monthly `'v'`: dividends

Description

`data = fetch(Connect, 'Security')` returns data for all fields from Yahoo!'s Web site for the indicated securities.

`data = fetch(Connect, 'Security', '`*`Fields`*`')` returns data for the specified fields.

`data = fetch(Connect, 'Security', 'Date')` returns all security data for the requested date.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'Date')` returns security data for the specified fields on the requested date.

`data = fetch(Connect, 'Security', 'FromDate', 'ToDate')` returns security data for the date range `FromDate` to `ToDate`.

`data = fetch(Connect, 'Security', '`*`Fields`*`', 'FromDate', 'ToDate')` returns security data for the specified fields for the date range `FromDate` to `ToDate`.

`data = fetch(Connect, 'Security', 'FromDate', 'ToDate', 'Period')` returns security data for the date range `FromDate` to `ToDate` with the indicated period.

Examples

Example 1: Obtain the closing price for Coca Cola on April 6, 2000.

```
c = yahoo;

ClosePrice = fetch(c,'ko','Close','Apr 6 00')

ClosePrice =

     730582.00         45.75
```

Example 2: Use the Yahoo! data server to obtain the last prices for a set of equities.

```
y = yahoo;

FastFood = fetch(y, {'ko', 'pep', 'mcd'},'Last')

FastFood =
    Last: [3x1 double]

FastFood.Last

ans =

         42.96
         45.71
         23.70
```

See Also

`close`, `get`, `isconnection` , `yahoo` (Yahoo! functions)

Purpose

Yahoo! connection properties

Syntax

```
value = get(Connect, 'PropertyName')
value = get(Connect)
```

Arguments

`Connect`	Yahoo! connection object created with the `yahoo` function.
`PropertyName`	(Optional) A MATLAB string or cell array of strings containing property names. Currently the only property name recognized is `url`.

Description

`value = get(Connect, 'PropertyName')` returns the value of the specified properties for the Yahoo! connection object.

`value = get(Connect)` returns a MATLAB structure where each field name is the name of a property of `Connect`, and each field contains the value of that property.

Examples

Use the `yahoo` function to establish a connection to Yahoo!.

```
c = yahoo

c =

    url: 'http://quote.yahoo.com'
```

Now use the `get` function to retrieve the connection property value.

```
get(c, 'url')

ans =

    url: 'http://quote.yahoo.com'
```

See Also

`close`, `fetch`, `isconnection` , `yahoo` (Yahoo! functions)

Purpose

True if valid Yahoo! connection

Syntax

```
x = isconnection(Connect)
```

Arguments

`Connect`	Yahoo! connection object created with the `yahoo` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid Yahoo! connection, and `x = 0` if it is not.

Examples

The function

```
c = yahoo
```

establishes a Yahoo! connection, `c`.

Then

```
x = isconnection(c)
x = 1
```

indicates that `c` is a valid Yahoo! connection.

See Also

`close`, `fetch`, `get`, `yahoo` (Yahoo! functions)

yahoo

Purpose

Connect to Yahoo!

Syntax

```
Connect = yahoo
Connect = yahoo('URL', 'IPAddress', PortNumber)
```

Arguments

`URL`	Must be `'http://quote.yahoo.com'`.
`IPAddress`	A MATLAB string containing the Internet address of proxy server machine.
`PortNumber`	Port number on proxy server.

Description

`Connect = yahoo` verifies that the URL `http://quote.yahoo.com` is accessible and creates a connection handle.

`Connect = yahoo('URL', 'IPAddress', PortNumber)` connects to Yahoo! through a proxy server using the IP address and port number provided. This form of the `yahoo` function may be required when connecting to Yahoo! from behind an internal firewall.

Examples

Use the `yahoo` function to establish a connection to the Yahoo! data server.

```
Connect = yahoo

Connect =

    url: 'http://quote.yahoo.com'
```

Use the `yahoo` function to establish a connection to the Yahoo! data server, providing an IP address and port number on a proxy server.

```
Connect = yahoo('http://quote.yahoo.com','111.222.33.444',5678)

Connect =

    url: 'http://quote.yahoo.com'
```

```
          ip: '111.222.33.444'
        port: 5678
```

See Also

close, fetch, get, isconnection (Yahoo! functions)

A

Related Information

Additional Software

Obtaining Client Software

If you want to use the Datafeed Toolbox to retrieve data from Bloomberg, Hyperfeed, or FT Interactive Data Corporation data servers, you need to install client software available from each of these companies. If client software is not properly licensed for your machine, you will receive the error message

```
Invalid MEX-file
```

when attempting to connect to the data server.

Information about the services offered by these companies is available on the Web at

`http://www.bloomberg.com`

`http://www.hyperfeed.com`

`http://www.FTInteractiveData.com`

Contact your data server sales representative for information.

Connecting to FactSet

To connect to FactSet using the Datafeed Toolbox, you must be licensed to use FactSet's FAST technology. You can find further information on FactSet's Web site (`http://www.factset.com`).

Connecting to the Thomson Datastream API

To connect to the Thomson Datastream API via the Web, you require a user name, password, and URL, all of which Thomson will provide. For further information, consult Thomson's Web site (`http://www.thomson.com`).

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