Datafeed Toolbox™ 3
User's Guide

MATLAB®

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Datafeed Toolbox™ User's Guide

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Getting Started

Product Overview

This toolbox, used with the MATLAB® product, effectively turns your MATLAB workstation into a financial data acquisition terminal. The toolbox enables you to:

- Retrieve and analyze a wide variety of security data from financial data servers in MATLAB.
- Access market, time-series, and historical market data in MATLAB.
- Monitor the status and history of each connection to a supported data service provider.
- Fetch data fields for multiple securities in a single call.
- Look up security ticker symbols from the toolbox GUI or the MATLAB command line.

About Data Servers and Data Service Providers

In this section...

Supported Data Service Providers

This toolbox supports connections to financial data servers that the following corporations provide:

- Bloomberg L.P. (`http://www.bloomberg.com`)
- FactSet Research Systems, Inc. (`http://www.factset.com`)
- Federal Reserve Economic Data (FRED) (`http://research.stlouisfed.org/fred2/`)
- Haver Analytics (`http://www.haver.com`)
- Interactive Data Pricing and Reference Data (`http://www.interactivedata-prd.com/`)
- Kx Systems, Inc. (`http://www.kx.com`)
- Thomson Reuters (`http://www.thomsonreuters.com/`)
- Yahoo!, Inc. (`http://finance.yahoo.com`)

Data Server Connection Requirements

To connect to some of these data servers, additional requirements apply.

Additional Software Requirements

The following data service providers require you to install proprietary software on your PC:

- Bloomberg

Note You must have a Bloomberg® software license for the host on which the Datafeed Toolbox™ and MATLAB software are running.

- Interactive Data Pricing and Reference Data's RemotePlus™
- Haver Analytics
- Kx Systems. Inc.
- Reuters

You must have a valid license for required client software on your machine. If you do not, the following error message appears when you try to connect to a data server:

```
Invalid MEX-file
```

For more information about how to obtain required software, contact your data server sales representative.

Proxy Information Requirements

The following data service providers may require you to specify a proxy host and proxy port plus a username and password if the user's site requires proxy authentication:

- FactSet
- Federal Reserve Economic Data
- Thomson Datastream
- Yahoo!

For information on how to specify these settings, see "Specifying Proxy Server Settings" in the MATLAB documentation.

FactSet Data Service Requirements

You need a license to use FactSet® FAST technology. For more information, see the FactSet Web site at `http://www.factset.com`.

Reuters Data Service Requirements

Configuring Reuters® Connections Using the Reuters Configuration Editor software. You must use the Reuters Configuration Editor to configure your connections as follows:

1. In a DOS prompt, set your `CLASSPATH` environment variable:

   ```
   set CLASSPATH=%CLASSPATH%; ...
   $MATLAB/toolbox/datafeed/datafeed/config_editor.jar
   ```

2. Navigate to the Datafeed Toolbox folder:

   ```
   cd %MATLAB%\toolbox\datafeed\datafeed
   ```

3. Enter the following command to run the Reuters Configuration Editor:

   ```
   starteditor
   ```

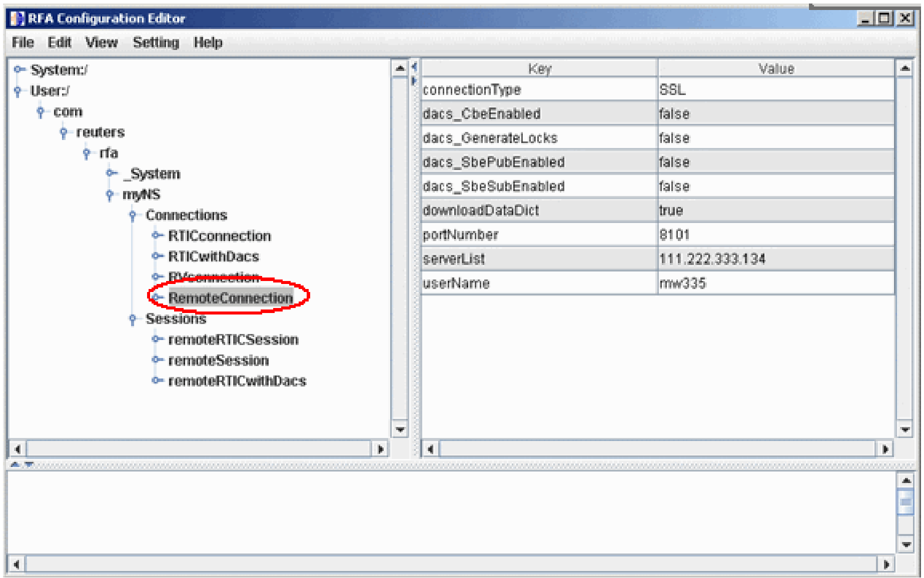
4. Load the sample configuration file.

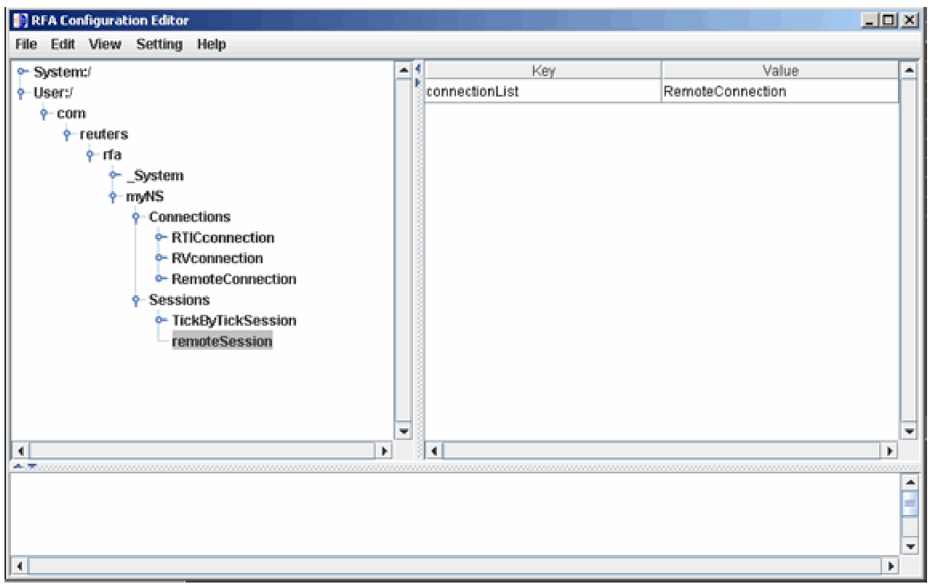
   a. Click **File > Import > File**.

   b. Select the file `%MATLAB%\toolbox\datafeed\datafeed\sampleconfig.xml`.

5. Modify `sampleconfig.xml` based on the site-specific settings that you obtain from Reuters.

6. Define a namespace, a connection, and a session associated with the connection. The following example adds the session `remoteSession` with the namespace `MyNS` to the connection list for the connection `remoteConnection`.





7 If you are not DACS enabled, disable DACS.

a Add the following to your connection configuration:

```
dacs_CbeEnabled=false
dacs_SbePubEnabled=false
dacs_SbeSubEnabled=false
```

b If you are running an SSL connection, add the following to your connection configuration:

```
dacs_GenerateLocks=false
```

For more information, see the `reuters` function reference page.

Troubleshooting Issues with Reuters Configuration Editor. These errors occur when you attempt to use the Reuters Configuration Editor to configure connections on a machine on which an XML Parser is not installed.

```
java com.reuters.rfa.tools.config.editor.ConfigEditor
org.xml.sax.SAXException: System property
org.xml.sax.driver not specified
at org.xml.sax.helpers.XMLReaderFactory.createXMLReader(Unknown
Source)
at com.reuters.rfa.tools.config.editor.rfaConfigRuleDB.rfaConfi
gRuleDB.java:56)
at com.reuters.rfa.tools.config.editor.ConfigEditor.init
(ConfigEditor.java:86)
at (com.reuters.rfa.tools.config.editor.ConfigEditor.
(ConfigEditor.java:61) at
com.reuters.rfa.tools.config.editor.ConfigEditor.main
(ConfigEditor.java:1303)
```

To address this problem, download an XML parser file, and then include a path to this file in your `CLASSPATH` environment variable.

The following example shows how to set your `CLASSPATH` environment variable to include the XML parser file `C:\xerces.jar` (downloaded from `http://xerces.apache.org/xerces-j/index.html`):

```
set CLASSPATH=%CLASSPATH%;...
  matlabroot\toolbox\datafeed\datafeed\config_editor.jar;...
  c:\xerces.jar
```

Thomson Data Service Requirements

You need the following to connect to Thomson® data servers:

- A license for Thomson® DataWorks®.
- To connect to the Thomson® Datastream® API from the Web, you need a user name, password, and URL provided by Thomson.

For more information, see the Thomson Web site at `http://www.thomsonreuters.com`.

Communicating with Financial Data Servers

Communication Management

In this section...

Communicating with Data Servers

This section uses the Bloomberg financial data server as an example of how to retrieve data with the Datafeed Toolbox software. You can communicate with other supported data servers using a similar set of toolbox functions.

Core Functions

The following set of core functions manage communication with each supported financial data server.

- To establish a connection to the appropriate data server, use:
  - `blp`
  - `datastream`
  - `factset`
  - `fred`
  - `haver`
  - `idc`
  - `kx`
  - `reuters`
  - `yahoo`
- To retrieve connection properties, use `get`.
- To terminate a connection, use `close`.

Connecting to the Bloomberg Data Server

This example shows how to use the `blp` function to connect to the Bloomberg data server.

Note If you have not used the `blp` function before you will need to add the file `blpapi3.jar` to the MATLAB java classpath. Use the `javaaddpath` function or edit your `classpath.txt` file.

Connection Object Properties

In this section...

The syntax for the Bloomberg V3 connection object constructor is:

```
b = blp;
```

How to Retrieve Connection Properties

To retrieve the properties of a connection object, use the `get` function. This function returns different values depending upon which data server you are using.

```
get(b)

b =

      session: [1x1 com.bloomberglp.blpapi.Session]
    ipaddress: 'localhost'
         port: 8194.00
```

You can get the values of the individual properties by using the property names:

```
get(b,{'port','session'})

ans =

       port: 8194.00
    session: [1x1 com.bloomberglp.blpapi.Session]
```

For example, return just the connection handle with the `ipaddress` argument:

```
ip = get(b,{'ipaddress'})
ip =
    localhost
```

Note A single property is not returned as a structure.

Example: Retrieving Data on a Security

Establish a connection, `b`, to a Bloomberg data server:

```
b = blp;
```

Use the `blp.timeseries` method to return data on a security:

```
d = timeseries(b,'IBM US Equity','11/16/2009');
d(1:10,:)
ans =

    'TRADE'    [734093.40]    [127.17]    [2802.00]
    'TRADE'    [734093.40]    [127.05]    [ 100.00]
    'TRADE'    [734093.40]    [127.05]    [ 110.00]
    'TRADE'    [734093.40]    [127.04]    [ 100.00]
    'TRADE'    [734093.40]    [127.04]    [ 100.00]
    'TRADE'    [734093.40]    [127.09]    [ 100.00]
    'TRADE'    [734093.40]    [127.09]    [ 100.00]
    'TRADE'    [734093.40]    [127.09]    [ 125.00]
    'TRADE'    [734093.40]    [127.05]    [ 100.00]
    'TRADE'    [734093.40]    [127.05]    [ 200.00]
```

If the final input argument is not a range it must be a whole date value, i.e. `'11/16/2009'` but not `'11/16/2009 12:30:00'` or `730316` but not `730316.5`. The code `timeseries(b,'IBM US Equity', now)` will error. Use one of MATLAB's rounding functions to ensure a whole date value:

```
d = timeseries(b,'IBM US Equity',floor(now));
```

To return data on a particular field for a range of dates, use the `blp.history` method:

```
data = history(b,'IBM US Equity','Last_Price','07/15/99','08/02/99')
data =

     730316.00        122.33
     730317.00        122.27
```

```
730320.00         120.81
730321.00         115.09
730322.00         115.77
730323.00         111.17
730324.00         112.01
730327.00         110.38
730328.00         113.30
730329.00         115.21
730330.00         112.51
730331.00         112.79
730334.00         109.71
```

Disconnecting from Data Servers

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

```
close(b)
```

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

3

Example: Retrieving Bloomberg Data

Using blp Methods

In this section...

About This Example

The following example illustrates the use of the `blp` methods to retrieve data from a Bloomberg data server.

Note If you have not used the `blp` function before you will need to add the file `blpapi3.jar` to the MATLAB java classpath. Use the `javaaddpath` function or edit your `classpath.txt` file.

Retrieving Field Data

The `getdata` method obtains Bloomberg field data. The entire set of field data provides statistics for all possible securities, but it does not apply universally to any one security.

Obtaining Data

To obtain data for specific fields of a given security, use the `getdata` function with the following syntax:

```
d = getdata(Connect, Security, Fields)
```

For example, use the Bloomberg connection object `c` to retrieve the values of the fields `Open` and `Last_Price`:

```
d = getdata(c,'IBM US Equity', {'Open';'Last_Price'})
d =
    Open: 126.2500
    Last_Price: 125.1250
```

Retrieving Time Series Data

The `timeseries` method returns price and volume data for a particular security on a specified date. Use the following command to return time-series data for a given security and a specific date:

```
data = timeseries(Connection, Security, Date)
```

`Date` can be a MATLAB date string or serial date number. If the final input argument is not a range it must be a whole date value, i.e. `'11/16/2009'` but not `'11/16/2009 12:30:00'` or `730316` but not `730316.5`. The code `timeseries(b,'IBM US Equity', now)` will error. Use one of MATLAB's rounding functions to ensure a whole date value.

To obtain time-series data for the current day, use the alternate form of the function:

```
data = timeseries(Connection, Security, floor(now))
```

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

```
data = timeseries(c1, 'IBM US Equity', floor(now));
```

Retrieving Historical Data

Use the `history` method to obtain historical data for a specific security.

To obtain historical data for a specified field of a particular security, run:

```
d = history(Connect,Security,Field,FromDate,ToDate)
```

`history` returns data for the date range from `FromDate` to `ToDate`.

For instructions on determining valid field names, see .

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 = history(c1, 'IBM US Equity', 'Last_Price',...
'07/15/99', '08/02/99');
```

Datafeed Toolbox Graphical User Interface

Introduction

You can use the Datafeed Toolbox Graphical User Interface (GUI) to connect to and retrieve information from some supported data service providers.

This GUI consists of two dialog boxes:

- The Datafeed dialog box. Use this dialog box to connect to and retrieve data from the following service providers:
  - Bloomberg
  - Interactive Data Pricing and Reference Data's RemotePlus
  - Yahoo!®

  For more information on how to use this dialog box, see "Using the Datafeed Dialog Box" on page 4-3.
- The Securities Lookup dialog box. You can use this dialog box to find the ticker symbol for a security when you know part of the security name. Use this dialog box with connections to the following service providers:
  - Bloomberg
  - Interactive Data Pricing and Reference Data's RemotePlus

  For more information on how to use this dialog box, see "Using the Datafeed Securities Lookup Dialog Box" on page 4-6.

Using the Datafeed Dialog Box

In this section...

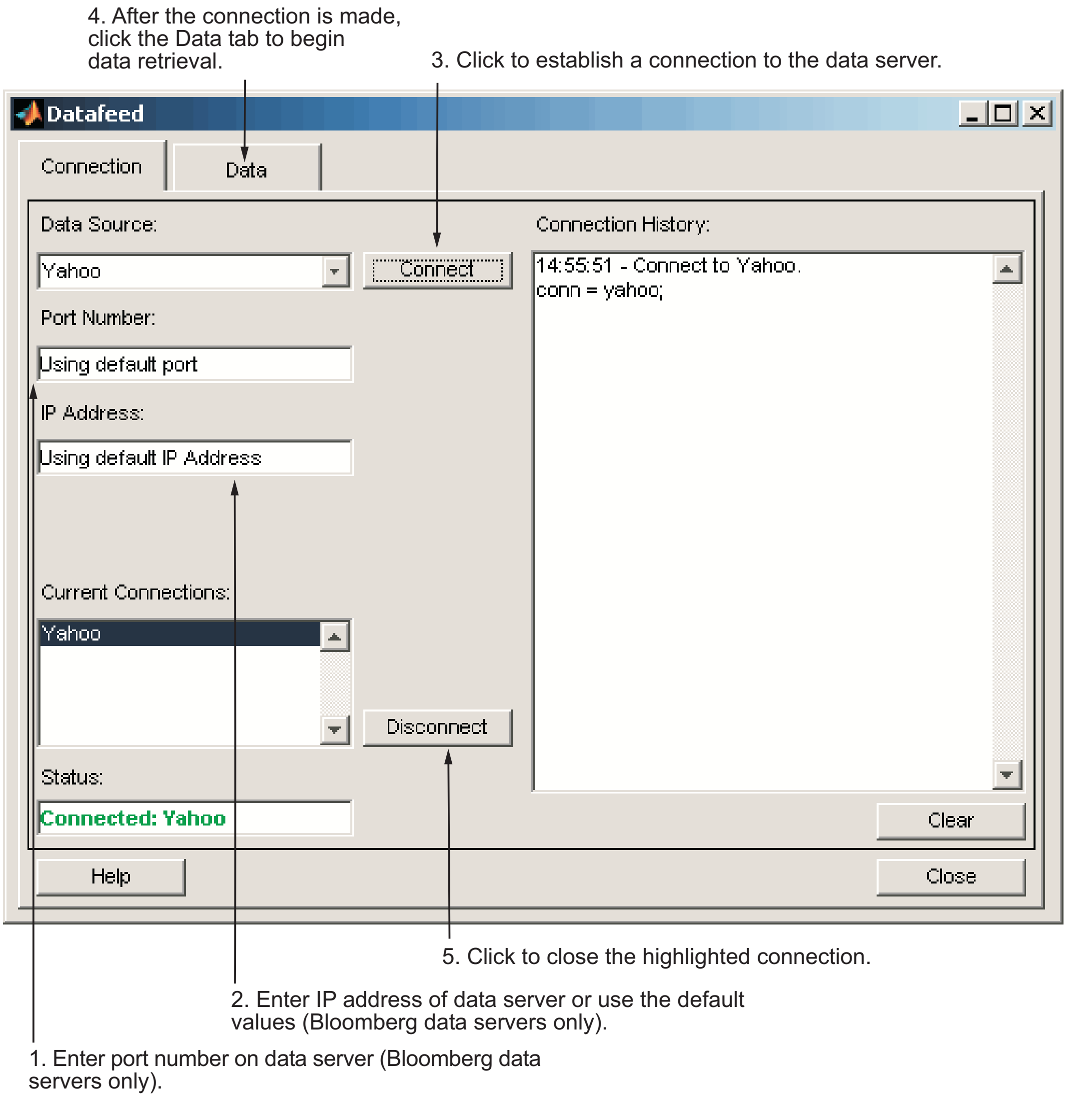
About the Datafeed Dialog Box

The Datafeed dialog box establishes the connection with the data server and manages data retrieval. To display this dialog box, enter the `dftool` command in the MATLAB Command Window.

The Datafeed dialog box consists of two tabs:

- The **Connection** tab establishes communication with a data server. For more information, see “Connecting to Data Servers” on page 4-4.
- The **Data** tab specifies the data request. For more information, see “Retrieving Data” on page 4-5.
- You can also set overrides for the data you retrieve. For more information, see “Setting Overrides” on page 4-8.

The following figure summarizes how to connect to data servers and retrieve data using the Datafeed dialog box.



The Datafeed Dialog Box

Connecting to Data Servers

1. Click the **Connect** button to establish a connection.

2 When the `Connected` message appears in the **Status** field, click the **Data** tab to begin the process of retrieving data from the data server. For more information, see "Retrieving Data" on page 4-5.

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

For Bloomberg data servers, you must also specify the port number and IP address of the server:

1 Enter the port number on the data server in the **Port Number** field.

2 Enter the IP address of the data server in the **IP Address** field.

3 To establish a connection to the Bloomberg data server, follow steps 1 through 3 above.

Tip You can also connect to the Bloomberg data server by selecting the **Connect** button and accepting the default values.

Retrieving Data

The **Data** tab allows you to retrieve data from the data server as follows:

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

2 Indicate the type of data to retrieve in the **Data Selection** field.

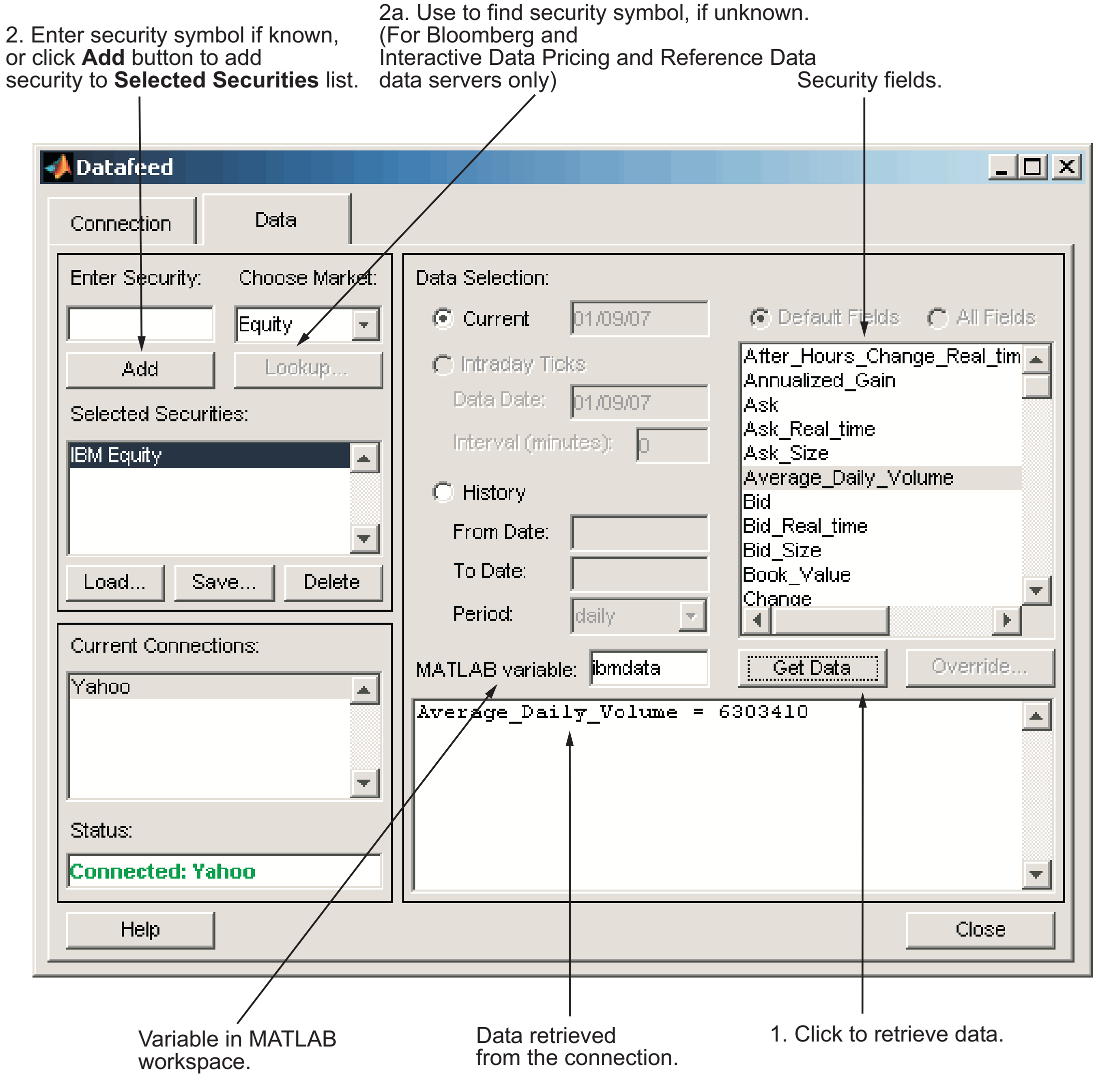
3 Specify whether you want the default set of data, or the full set:

- Select the **Default fields** button for the default set of data.
- Select the **All fields** button for the full set of data.

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

5 (Optional) Click the **Override** button if you want to set overrides on the data you request from the data server. For more information, see "Setting Overrides" on page 4-8.

The following figure summarizes these steps.



Using the Datafeed Securities Lookup Dialog Box

When requesting data from Bloomberg or Interactive Data Pricing and Reference Data's RemotePlus servers, you can use the Datafeed Securities

Lookup dialog box to obtain the ticker symbol for a given security if you know only part of the security name.

1 Click the **Lookup** button on the Datafeed dialog box **Data** tab. The Securities Lookup dialog box opens.

2 Specify your choice of market in the **Choose Market** field.

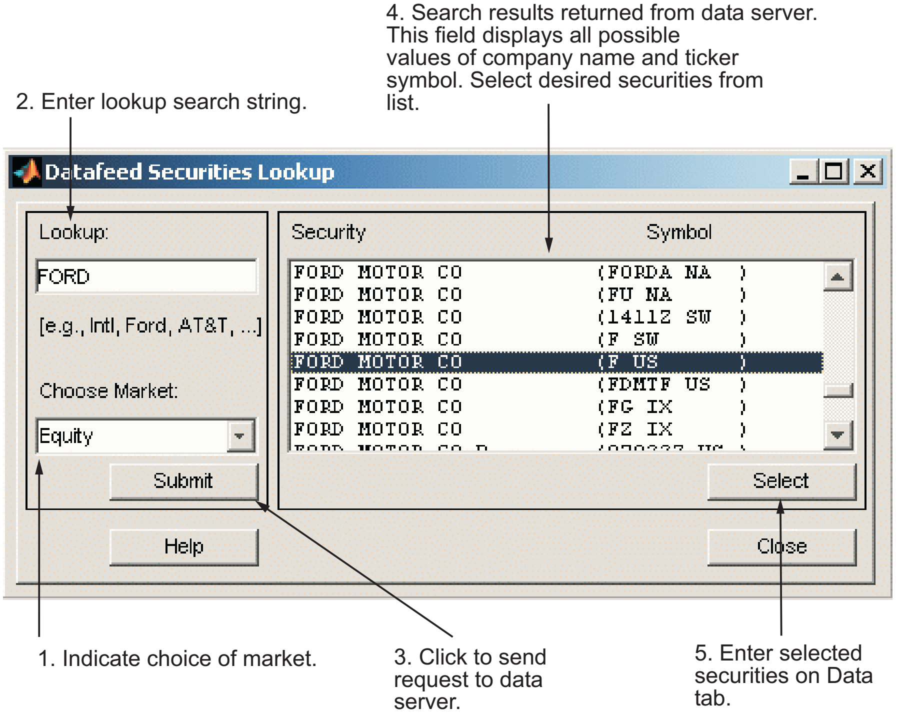
3 Enter the known part of the security name in the **Lookup** field.

4 Click **Submit**. All possible values of the company name and ticker symbol corresponding to the security name you specified display in the **Security** and **Symbol** list.

5 Select one or more securities from the list, and then click **Select**.

   The selected securities are added to the **Selected Securities** list on the **Data** tab.

The following figure summarizes these steps.

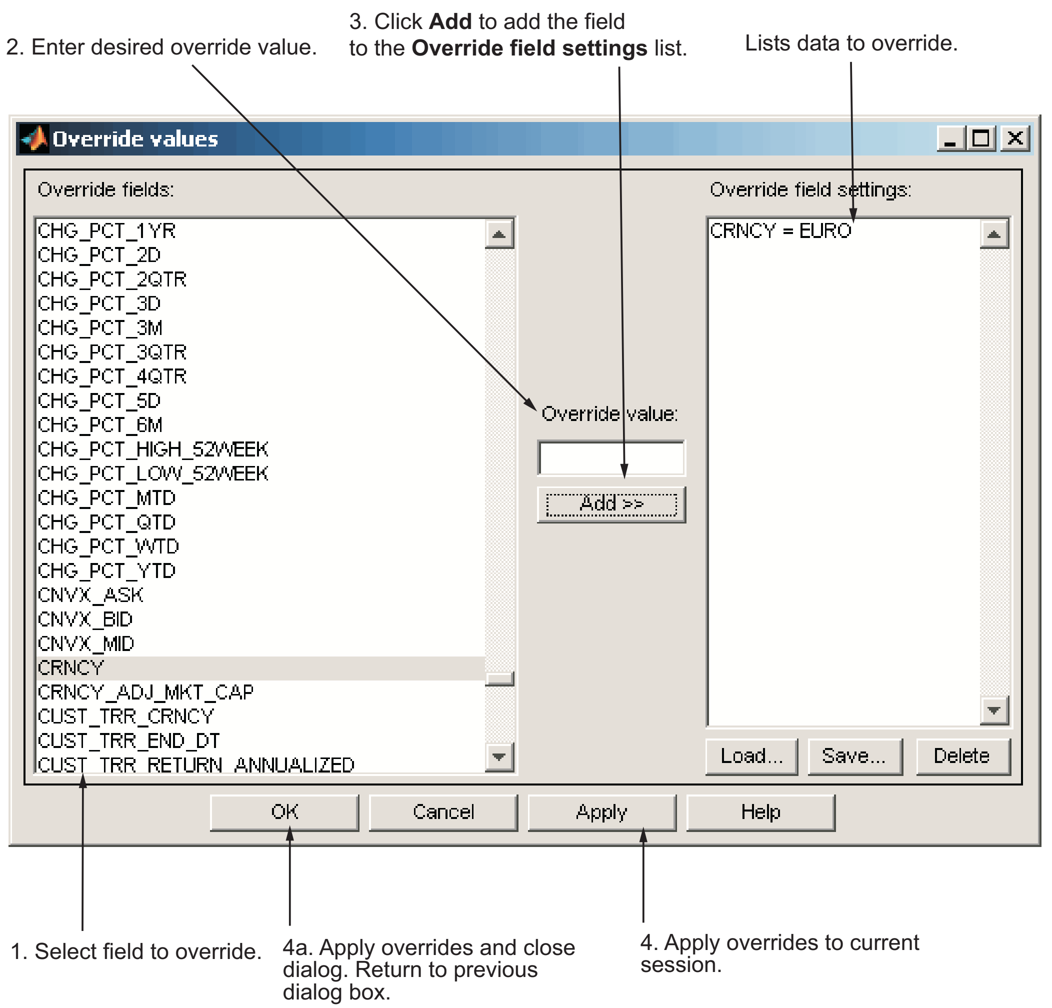


Setting Overrides

To set overrides on retrieved data:

1. Click the **Override** button. The Override values dialog box opens.
2. Select the field to override from the **Override fields** selection list.
3. Enter the desired override value in the **Override value** field.
4. Click **Add** to add the field to override to the **Override field settings** list.
5. Click **Apply** to apply overrides to the current session and keep the Override values dialog box open, or click **OK** to apply the overrides and close the dialog box.

The following figure summarizes these steps.



2. Enter desired override value.
3. Click **Add** to add the field to the **Override field settings** list.
Lists data to override.
Override values
Override fields:
CHG_PCT_1YR
CHG_PCT_2D
CHG_PCT_2QTR
CHG_PCT_3D
CHG_PCT_3M
CHG_PCT_3QTR
CHG_PCT_4QTR
CHG_PCT_5D
CHG_PCT_6M
CHG_PCT_HIGH_52WEEK
CHG_PCT_LOW_52WEEK
CHG_PCT_MTD
CHG_PCT_QTD
CHG_PCT_WTD
CHG_PCT_YTD
CNVX_ASK
CNVX_BID
CNVX_MID
CRNCY
CRNCY_ADJ_MKT_CAP
CUST_TRR_CRNCY
CUST_TRR_END_DT
CUST_TRR_RETURN_ANNUALIZED
Override value:
Add >>
Override field settings:
CRNCY = EURO
Load...
Save...
Delete
OK
Cancel
Apply
Help
1. Select field to override.
4a. Apply overrides and close dialog. Return to previous dialog box.
4. Apply overrides to current session.

Function Reference

Bloomberg

`blp`	Bloomberg V3 communications server connection
`blp.close`	Close connection to Bloomberg V3 data server
`blp.display`	Display Bloomberg V3 connection object
`blp.get`	Get Bloomberg V3 connection properties
`blp.getdata`	Current Bloomberg V3 data
`blp.history`	Bloomberg V3 historical data
`blp.realtime`	Bloomberg V3 realtime data retrieval
`blp.stop`	Unsubscribe real time requests for Bloomberg V3
`blp.timeseries`	Bloomberg V3 intraday tick data

Datastream

`datastream`	Establish connections to Thomson Datastream API
`datastream.close`	Close connections to Thomson Datastream data servers
`datastream.fetch`	Request data from Thomson Datastream data servers
`datastream.get`	Retrieve properties of Thomson Datastream connection objects
`datastream.isconnection`	Verify whether connections to Thomson Datastream data servers are valid

FactSet

`factset`	Establish connections to FactSet data servers
`factset.close`	Close connections to FactSet data servers
`factset.fetch`	Request data from FactSet data servers
`factset.get`	Retrieve properties of FactSet connection objects
`factset.isconnection`	Verify whether connections to FactSet data servers are valid

FRED

`fred`	Connect to FRED data servers
`fred.close`	Close connections to FRED data servers
`fred.fetch`	Request data from FRED data servers
`fred.get`	Retrieve properties of FRED connection objects
`fred.isconnection`	Verify whether connections to FRED data servers are valid

Haver Analytics

`haver`	Connect to local Haver Analytics database
`haver.aggregation`	Set Haver Analytics aggregation mode
`haver.close`	Close Haver Analytics database
`haver.fetch`	Request data from Haver Analytics database
`haver.get`	Retrieve properties from Haver Analytics connection objects
`haver.info`	Retrieve information about Haver Analytics variables
`haver.isconnection`	Verify whether connections to Haver Analytics data servers are valid
`haver.nextinfo`	Retrieve information about next Haver Analytics variable
`havertool`	Run Haver Analytics graphical user interface (GUI)

Interactive Data Pricing and RemotePlus

`idc`	Connect to Interactive Data Pricing and Reference Data's RemotePlus data servers
`idc.close`	Close connections to Interactive Data Pricing and Reference Data's RemotePlus data servers
`idc.fetch`	Request data from Interactive Data Pricing and Reference Data's RemotePlus data servers
`idc.get`	Retrieve properties of Interactive Data Pricing and Reference Data's RemotePlus connection objects
`idc.isconnection`	Verify whether connections to Interactive Data Pricing and Reference Data's RemotePlus data servers are valid

Kx Systems

`kx`	Connect to Kx Systems, Inc. kdb+ databases
`kx.close`	Close connections to Kx Systems, Inc. kdb+ databases
`kx.exec`	Run Kx Systems, Inc. kdb+ commands
`kx.fetch`	Request data from Kx Systems, Inc. kdb+ databases
`kx.get`	Retrieve Kx Systems, Inc. kdb+ connection object properties
`kx.insert`	Write data to Kx Systems, Inc. kdb+ databases
`kx.isconnection`	Verify whether connections to Kx Systems, Inc. kdb+ databases are valid
`kx.tables`	Retrieve table names from Kx Systems, Inc. kdb+ databases

Reuters

`reuters`	Create Reuters sessions
`reuters.close`	Release connections to Reuters data servers
`reuters.fetch`	Request data from Reuters data servers
`reuters.get`	Retrieve properties of Reuters session objects
`reuters.history`	Request data from Reuters Time Series One
`reuters.stop`	Unsubscribe securities

Reuters Datascope Tick History

`rdth`	Connect to Reuters Datascope Tick History
`rdth.close`	Close Reuters Datascope Tick History connection
`rdth.fetch`	Request Reuters Datascope Tick History data
`rdth.get`	Get Reuters Datascope Tick History connection properties
`rdth.isconnection`	Verify whether Reuters Datascope Tick History connections are valid
`rdthloader`	Retrieve data from Reuters Datascope Tick History file

Reuters Knowledge Direct

`rkd`	Establish Reuters Knowledge Direct connection
`rkd.close`	Close Reuters Knowledge Direct connection
`rkd.fetch`	Request Reuters Knowledge Direct data
`rkd.get`	Get properties of Reuters Knowledge Data connection
`rkd.isconnection`	Verify whether Reuters Knowledge Data connections are valid

Reuters Newscope

`rnseloader`	Retrieve data from Reuters Newscope sentiment archive file

Yahoo!

`yahoo`	Connect to Yahoo! data servers
`yahoo.close`	Close connections to Yahoo! data servers
`yahoo.fetch`	Request data from Yahoo! data servers
`yahoo.get`	Retrieve properties of Yahoo! connection objects
`yahoo.isconnection`	Verify whether connections to Yahoo! data servers are valid

6

Functions — Alphabetical List

bloomberg

Purpose

Connect to Bloomberg data servers

`bloomberg` is not recommended. Use `blp` instead.

Syntax

`c = bloomberg`

Description

`c = bloomberg` establishes a connection, `c`, to a Bloomberg data server. It uses port number `8194` and the default internet address provided when you installed the Bloomberg software on your machine.

Examples

Establish a connection, `c`, to a Bloomberg data server:

```
c = bloomberg
```

See Also

`bloomberg.close`, `bloomberg.fetch`, `bloomberg.get`, `bloomberg.isconnection`

Purpose

Close connections to Bloomberg data servers

`bloomberg` is not recommended. Use `blp` instead.

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

Establish a Bloomberg connection `c`:

```
c = bloomberg
```

Close this connection:

```
close(c)
```

See Also

`bloomberg`

bloomberg.fetch

Purpose

Request data from Bloomberg data servers

`bloomberg.fetch` is not recommended. Use `blp.getdata`, `blp.history`, `blp.realtime`, or `blp.timeseries` instead.

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'HEADER', 'Flag', 'Ident')
data = fetch(Connect, 'Security', 'GETDATA', 'Fields',
   'Override', 'Values', 'Ident')
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')
```

Description

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

`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. Alternatively, you could use the command `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', 'Values', 'Ident')` 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.

Note If a call to the fetch function with the `GETDATA` argument encounters an invalid security in a list of securities to retrieve, it returns `NaN` data for the invalid security's fields.

`data = fetch(Connect, 'Security', 'TIMESERIES', 'Date', 'Minutes', 'TickField')` returns the tick data for a single security for the specified date. You can further specify data with the optional `Minutes` and `TickField` arguments. If there is no data found in the specified range, `fetch` returns an empty matrix.

You can specify `TickField` as a string or numeric value. For example, `TickField = 'Trade'` or `TickField = 1` returns data for ticks of type `Trade`. The function `dftool('ticktypes')` returns the list of intraday tick fields. `fetch` returns intraday tick data requested with an interval with the following columns:

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

The `fetch` function returns columns 7 and 8 only if they make sense for the requested field.

For today's tick data, enter the command:

```
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 set the time period with the optional `Period` argument to return a more specific data set. You can further specify returned data by appending the `Currency` or `Ident` argument.

Note If a call to the `fetch` function with the `HISTORY` argument encounters an invalid security in a list of securities to retrieve, it returns no data for any securities in the list.

`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.

Arguments

`Connect`	Bloomberg connection object created with the `bloomberg` function.
`'Security'`	A MATLAB string containing the name of a security, or a cell array of strings containing a list of securities, specified in a format recognizable by the Bloomberg server. You can substitute a `CUSIP number` for a security name as needed. You can only call a single security when using the `TIMESERIES` flag as well.

Note This argument is case sensitive.

`'Flag'` A MATLAB string indicating the dates for which to retrieve data. Possible values are:

- `DEFAULT`: Data from most recent bid, ask, or trade. If you do not specify a `Flag` value, `fetch` uses the default value of `'DEFAULT'`.
- `TODAY`: Today's data only.
- `ENHANCED`: Data from most recent date of each individual field.

`'Currency'`	(Optional) Currency in which the `fetch` function returns historical data. A list of valid currencies appears in the file `@bloomberg/bbfields.mat`. Default = `[]`.
`'Ident'`	(Optional) Security type identifier. A list of valid security type identifiers appears in the file `@bloomberg/bbfields.mat`. Default = `[]`.

'Fields'	A MATLAB string or cell array of strings specifying specific fields for which you request data. A list of valid field names appears 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, serial date number, or cell array of dates that specifies dates for the time-series data. Specify `now` to retrieve today's time-series data.
'Minutes'	(Optional) Numeric value for tick interval in minutes.
'TickField'	(Optional) You can specify a string or numeric value for this field. For example, `TickField = 'Trade'` or `TickField = 1` return data for ticks of type `Trade`. Use the command `dftool('ticktypes')` to return the list of intraday tick fields.
'FromDate'	Beginning date for historical data.

Note You can specify dates in any of the formats supported by `datestr` and `datenum` that display a year, month, and day.

'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

- `s`: Semiannually
- `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, `fetch` returns a default value.

Note If you do not specify a value for `Period`, `fetch` uses default values.

`'Currency'` (Optional) Currency type. The file `@bloomberg/bbfields.mat` lists supported currencies.

`'Market'` A MATLAB string indicating the market in which a particular security trades. Possible 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.

Examples

Retrieving Header Data

Retrieve header data for a United States equity with ticker `ABC`:

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

Retrieving Opening and Closing Prices

Retrieve the opening and closing prices:

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

Retrieving Override Fields

Retrieve the requested fields, given override fields and values:

```
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'})
```

Retrieving Time Series Data

Retrieve today's time series:

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

Retrieving Time Series Data, Aggregated into Time Intervals

Retrieve today's trade time series for the given security, aggregated into five-minute intervals:

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

Retrieving Time Series Default Closing Price

Retrieve the closing price for the given dates, using the default period of the data:

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

Retrieving Monthly Closing Price

Retrieve the monthly closing price for the specified dates:

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

See Also

`bloomberg`, `bloomberg.close`, `bloomberg.get`, `bloomberg.isconnection`

bloomberg.get

Purpose

Retrieve Bloomberg connection object properties

`bloomberg.get` is not recommended. Use `blp.get` instead.

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

Establish a connection, `c`, to a Bloomberg data server:

```
c = bloomberg
```

Retrieve this connection's properties:

```
p = get(c, {'Port', 'IPAddress'})
p =
     port: 8194
```

```
ipaddress: 111.222.33.444
```

See Also

`bloomberg`, `bloomberg.close`, `bloomberg.fetch`, `bloomberg.isconnection`

bloomberg.getdata

Purpose

Current Bloomberg data

Syntax

```
d = getdata(b,s,f)
d = getdata(b,s,f,o,ov)
```

Description

`d = getdata(b,s,f)` returns the data for the fields `f` for the security list `s`. This method uses the Bloomberg ActiveX® interface and does not support overrides. For more robust functionality, refer to the `bloomberg.fetch` method.

`d = getdata(b,s,f,o,ov)` returns the data for the fields `f` for the security list `s` using the override fields `o` with corresponding override values, `ov`.

Examples

The command

```
d = getdata(c,'ABC US Equity',{'LAST_PRICE';'OPEN'})
```

returns the today's current and open price of the given security.

The command

```
d = getdata(c,'3358ABCD4 Corp',...
    {'YLD_YTM_ASK','ASK','OAS_SPREAD_ASK','OAS_VOL_ASK'},...
    {'ASK','OAS_VOL_ASK'},{'99.125000','14.000000'})
```

returns the requested fields given override fields and values.

See Also

`bloomberg.fetch`, `bloomberg.history`, `bloomberg.lookup`, `bloomberg.realtime`, `bloomberg.timeseries`

Purpose

Historical Bloomberg data

`bloomberg.history` is not recommended. Use `blp.history` instead.

Syntax

```
d = history(c,s,f,fromdate,todate)
d = history(c,s,f,fromdate,todate,per)
d = history(c,s,f,fromdate,todate,per,cur)
```

Description

`d = history(c,s,f,fromdate,todate)` returns the historical data for the security list `s` for the fields `f` for the dates `fromdate` to `todate`. This method uses the Bloomberg ActiveX interface. For more robust functionality, refer to the `bloomberg.fetch` method.

`d = history(c,s,f,fromdate,todate,per)` returns the historical data for the field, `f`, for the dates `fromdate` to `todate`. `per` specifies the period of the data:

`'d'`	Daily.
`'w'`	Weekly.
`'m'`	Monthly.
`'q'`	Quarterly.
`'y'`	Yearly.
`' o'`	Omit all days for which there is no data.
`' i'`	Include all trading days.
`' a'`	Include all calendar days.
`'  b'`	Report missing data using Bloomberg default.
`'  s'`	Show missing data as last found value.
`'  n'`	Report missing data as `Nan`.

For example, `per = 'dan'` returns daily data for all calendar days reporting missing data as `NaN`'s. `per = '  n'` returns the data using the default periodicity and default calendar reporting missing data as `NaN`'s.

If you do not specify `per`, the method uses default period for the data.

`d = history(c,s,f,fromdate,todate,per,cur)` returns the historical data for the security list `s` for the fields `f` for the dates `fromdate` to `todate` based on the given currency, `cur`. Load the file `bloomberg/bbfields` to see the list of supported currencies.

Examples

Example 1

The command

```
d = history(c,'ABC US Equity','LAST_PRICE','8/01/99',...
'8/10/99')
```

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

Example 2

The command

```
D = HISTORY(c,'ABC US Equity','LAST_PRICE','8/01/99',...
'8/10/99','m')
```

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

Example 3

The command

```
D = HISTORY(c,'ABC US Equity','LAST_PRICE','8/01/99',...
'8/10/99','m','USD')
```

returns the monthly closing price converted to US dollars for the given dates for the given security.

Example 4

The command

```
D = HISTORY(c,'ABC US Equity','LAST_PRICE','8/01/99',...
'8/10/99',[],'USD')
```

returns the closing price converted to US dollars for the given dates for the given security using the default period of the data.

bloomberg.isconnection

Purpose

Verify whether connections to Bloomberg data servers are valid

`bloomberg` is not recommended. Use `blp` instead.

Syntax

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

Arguments

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

Description

`x = isconnection(Connect)` returns `x = 1` if the connection to the Bloomberg data server is valid, and `x = 0` otherwise.

Examples

Establish a connection, `c`, to a Bloomberg data server:

```
c = bloomberg
```

Verify that `c` is a valid connection:

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

See Also

`bloomberg`, `bloomberg.close`, `bloomberg.fetch`, `bloomberg.get`

Purpose

Verify if valid Bloomberg field

`bloomberg` is not recommended. Use `blp` instead.

Syntax

`x = isfield(b,f)`

Description

`x = isfield(b,f)` returns true if specified field, `f`, is a valid Bloomberg field and false otherwise. `f` can be a cell array of strings. `b` is the Bloomberg connection handle.

Examples

```
x = isfield(b,{'LAST_PRICE','VOLUME','OPEN','HIGH'})
```

returns

```
x =          1      1      1      1
```

See Also

`bloomberg.close`, `bloomberg.fetch`, `bloomberg.get`, `bloomberg.isconnection`

bloomberg.lookup

Purpose

Bloomberg security search

`bloomberg` is not recommended. Use `blp` instead.

Syntax

`d = lookup(b,s,market)`

Description

`d = lookup(b,s,market)` returns the list of matching securities given the security search string `s` and market `m`. This method uses the Bloomberg ActiveX interface.

Examples

The command

```
D = LOOKUP(C,'Intl Bus Mac','Equity')
```

returns the securities along with their ticker symbols matching the search string `'Intl Bus Mac'` for the `Equity` market. Valid market types 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)

See Also

`bloomberg.fetch`, `bloomberg.getdata`

Purpose

Bloomberg realtime data retrieval

`bloomberg.realtime` is not recommended. Use `blp.realtime` instead.

Syntax

`realtime(c,s,f,api)`

Description

`realtime(c,s,f,api)` subscribes to a given security or list of securities `s` requesting the fields `f` and runs the specified function by `api`. See the function `bloomberg.showtrades` for information on the data returned by asynchronous Bloomberg events.

Examples

The command

```
realtime(c,'ABC US Equity',{'Last_Trade','Volume'},...
'stockticker')
```

subscribes to the security `ABC US Equity` requesting the fields `Last_Trade` and `Volume` to update in realtime running the function `stockticker`.

See Also

`bloomberg.fetch`, `bloomberg.getdata`, `bloomberg.pricevol`, `bloomberg.stop`, `bloomberg.stockticker`, `bloomberg.showtrades`

bloomberg.pricevol

Purpose

Price and volume (demonstration)

`bloomberg` is not recommended. Use `blp` instead.

Syntax

`pricevol(InputList)`

Arguments

`InputList`	Fields from which you request real-time data.

Description

`pricevol(InputList)` demonstrates the Bloomberg real-time data import functionality, where `InputList` is an input list of elements as described in the following table.

`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 previous fields
`InputList(9) = 'Data'`	Event type

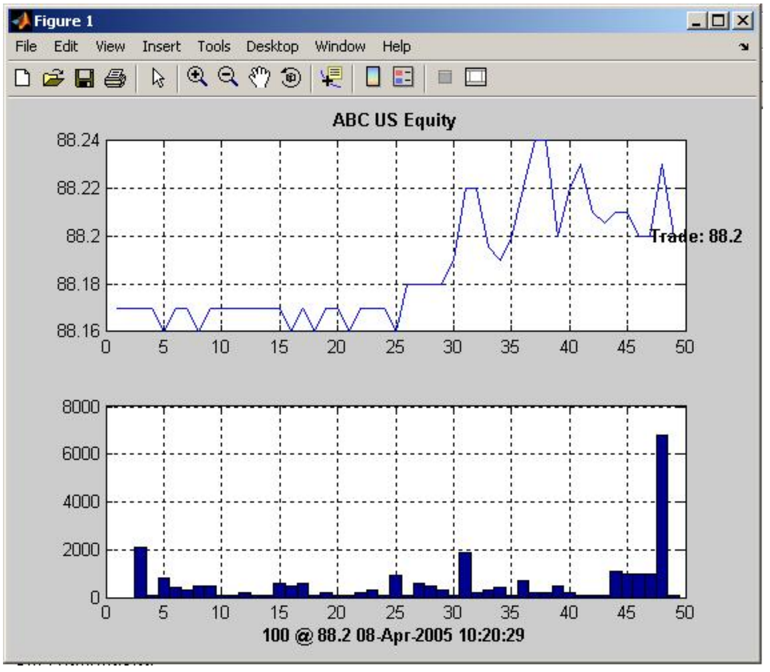
The input argument `InputList(8)` contains the information required to process real-time events.

Examples

Display the most recent `Trade` and `Volume` values in a figure window and show the most recent trade with volumes:

```
b = bloomberg;
d = fetch(b, 'ABC US Equity', 'REALTIME', ...
```

```
{'Last_Trade', 'Volume'}, 'pricevol');
```



See Also

`bloomberg.showtrades`, `bloomberg.stockticker`

bloomberg.showtrades

Purpose

Recent trade data (demonstration)

`bloomberg` is not recommended. Use `blp` instead.

Syntax

```
showtrades(InputList)
```

Arguments

`InputList`	Fields from which you request real-time data.

Description

`showtrades(InputList)` demonstrates the Bloomberg real-time data import functionality, where `InputList` is an input list of elements as described in the following table:

`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 information required to process real-time events.

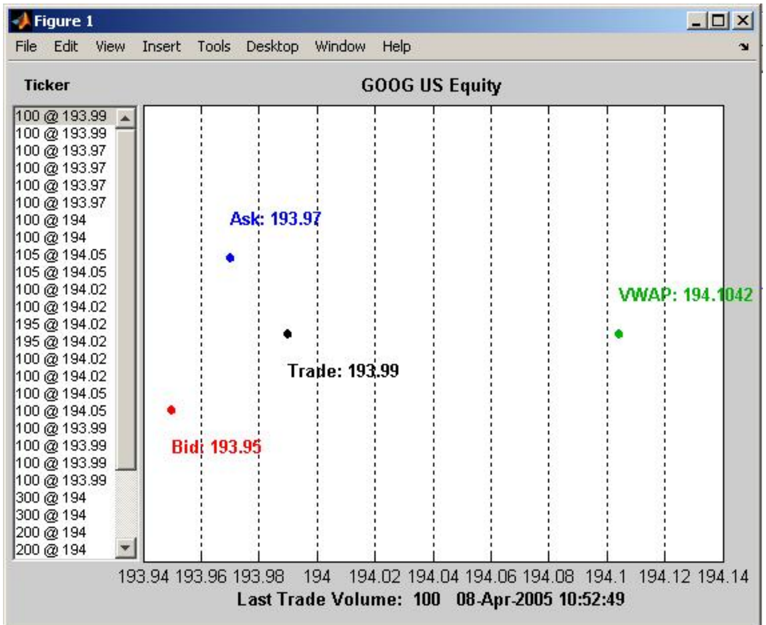
Examples

Establish a connection, `c`, to a Bloomberg data server:

```
c = bloomberg;
```

Display the most recent `Trade`, `Bid`, `Ask`, and `VWAP` (volume-weighted adjusted price), and a list of the most recent trades with volumes:

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



See Also

`bloomberg.pricevol`, `bloomberg.stockticker`

bloomberg.stockticker

Purpose

Trades with volumes (demonstration)

`bloomberg` is not recommended. Use `blp` instead.

Syntax

`stockticker(InputList)`

Arguments

`InputList`	Fields from which you request real-time data.

Description

`stockticker(InputList)` demonstrates the Bloomberg real-time data import functionality, where `InputList` is an input list of elements as described in the following table.

`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 information required to process real-time events.

Examples

Retrieve 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

`bloomberg.pricevol`, `bloomberg.showtrades`

bloomberg.stop

Purpose

Stop Bloomberg realtime data retrieval

`bloomberg` is not recommended. Use `blp` instead.

Syntax

```
stop(c,s)
stop(c,s,api)
```

Description

`stop(c,s)` desubscribes a given security or list of securities `s`. Data events for the security no longer process.

`stop(c,s,api)` desubscribes a given security or list of securities `s` and unregisters the specified callback `api`.

To desubscribe all securities and turn off data event handling, use `close(c)`.

The Bloomberg connection is now closed.

Examples

Example 1

The command

```
stop(C,'ABC US Equity')
```

desubscribes from the security `ABC US Equity`.

Example 2

The command

```
stop(C,'ABC US Equity','stockticker')
```

desubscribes from the security `ABC US Equity` and turns off data event handling by the function `stockticker`.

Example 3

The command

```
STOP(C,'','STOCKTICKER')
```

turns off data event handling by the function `stockticker`.

See Also

bloomberg.fetch, bloomberg.getdata, bloomberg.pricevol, bloomberg.realtime, bloomberg.stockticker, bloomberg.showtrades

bloomberg.timeseries

Purpose

Bloomberg intraday tick data

`bloomberg.timeseries` is not recommended. Use `blp.timeseries` instead.

Syntax

```
d = timeseries(c,s,f,t)
d = timeseries(c,s,f,{startdate,enddate})
d = timeseries(c,s,f,t,b)
```

Description

`d = timeseries(c,s,f,t)` returns the tick data for the security `s` for the date `t`. This method uses the BloombergActiveX interface. For more robust functionality, refer to the `bloomberg.fetch` method.

`d = timeseries(c,s,f,{startdate,enddate})` returns the tick data for the security `s` for the date range defined by `startdate` and `enddate`.

`d = timeseries(c,s,f,t,b)` returns the tick data for the security `s` for the date `t` in intervals of `b` minutes for the field, `f`. Intraday tick data requested with an interval is returned with the columns representing `Time`, `Open`, `High`, `Low`, `Last Price` and `Volume` of the ticks in the bar.

Examples

Example 1

The command

```
d = timeseries(c,'ABC US Equity','Last Price',floor(now))
```

returns today's time series for the given security with the timestamp and tick value.

Example 2

The command

```
d = timeseries(c,'ABC US Equity','Last Price',floor(now),5)
```

returns today's `Last Price` series for the given security aggregated into 5-minute intervals minute intervals.

Example 3

The command

```
d = timeseries(c,'ABC US Equity','Last Price',...
{'12/08/2008 00:00:00','12/10/2008 23:59:59.99'},5)
```

returns the `Last Price` series for 12/08/2008 and 12/10/2008 for the given security, aggregated into 5-minute intervals.

See Also

`bloomberg.fetch`, `bloomberg.getdata`, `bloomberg.history`

blp

Purpose

Bloomberg V3 communications server connection

Syntax

`c = blp`

Description

`c = blp` makes a connection to the local Bloomberg V3 communications server.

Examples

Establish a connection, `c`, to a Bloomberg data server:

```
c = blp
```

See Also

`blp.close`, `blp.getdata`, `blp.history`, `blp.realtime`, `blp.timeseries`

Purpose Close connection to Bloomberg V3 data server

Syntax `close(C)`

Description `close(C)` closes the connection, `C`, to the Bloomberg V3 session.

blp.display

Purpose Display Bloomberg V3 connection object

Syntax

```
disp = display(c)
```

Description `disp = display(c)` displays the Bloomberg V3 connection object.

Purpose Get Bloomberg V3 connection properties

Syntax

```
V = get(C,'PropertyName')
V = get(C)
```

Description `V = get(C,'PropertyName')` returns the value of the specified properties for the Bloomberg V3 connection object. `'PropertyName'` is a string or cell array of strings containing property names. The property names are `session`, `ipaddress`, and `port`.

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

See Also `blp.getdata`, `blp.history`, `blp.realtime`, `blp.timeseries`

blp.getdata

Purpose

Current Bloomberg V3 data

Syntax

```
D = getdata(B,S,F)
D = getdata(B,S,F,O,OV)
```

Description

`D = getdata(B,S,F)` returns the data for the fields `F` for the security list `S` for the Bloomberg V3 connection object `B`

`D = getdata(B,S,F,O,OV)` returns the data for the fields `F` for the security list `S` using the override fields `O` with corresponding override values `OV`.

Examples

`D = getdata(C,'ABC US Equity',{'LAST_PRICE';'OPEN'})` returns today's current and open price of the given security.

`D = fetch(C,'3358ABCD4 Corp','GETDATA',{'YLD_YTM_ASK','ASK','OAS_SPREAD_ASK','OAS_VOL_ASK'}, {'ASK','OAS_VOL_ASK'},{'99.125000','14.000000'})` returns the requested fields given override fields and values.

See Also

`blp`, `blp.history`, `blp.realtime`, `blp.timeseries`

Purpose

Bloomberg V3 historical data

Syntax

```
D = history(S,F,FromDate,ToDate)
D = history(C,S,F,FromDate,ToDate,Per)
D = history(S,F,FromDate,ToDate,Per,Cur)
```

Description

`D = history(S,F,FromDate,ToDate)` returns the historical data for the security list `S` for the fields `F` for the dates `FromDate` to `ToDate`.

`D = history(C,S,F,FromDate,ToDate,Per)` returns the historical data for the field, `F`, for the dates `FromDate` to `ToDate`. `Per` specifies the period of the data. For example, `Per = {'daily','calendar'}` returns daily data for all calendar days reporting missing data as `NaN`. `Per = {'actual'}` returns the data using the default periodicity and default calendar reporting missing data as `NaN`. The possible values of `Per` are as follows:

Value	Time Period
`daily`	Daily
`weekly`	Weekly
`monthly`	Monthly
`quarterly`	Quarterly
`semi_annually`	Semi annually
`yearly`	Yearly
`actual`	Anchor date specification
`calendar`	Anchor date specification
`fiscal`	Anchor date specification
`non_trading_weekdays`	Non trading weekdays
`all_calendar_days`	Return all calendar days
`active_days_only`	Active trading days only

Value	Time Period
previous_value	Fill missing values with previous values
nil_value	Fill missing values with NaN

D = history(S,F,FromDate,ToDate,Per,Cur) returns the historical data for the security list S for the fields F for the dates FromDate to ToDate based on the given currency, Cur. Load the file bloomberg/bbfields to see the list of supported currencies.

Examples

D = history(C,'ABC US Equity',... 'LAST_PRICE','8/01/99','8/10/99') returns the closing price for the given dates for the given security using the default period of the data.

D = history(C,'ABC US Equity',... 'LAST_PRICE','8/01/99','8/10/99','monthly') returns the monthly closing price for the given dates for the given security.

D = history(C,'ABC US Equity',... 'LAST_PRICE','8/01/99','8/10/99','monthly','USD') returns the monthly closing price converted to US dollars for the given dates for the given security.

D = history(C,'ABC US Equity',... 'LAST_PRICE','8/01/99','8/10/99', {'daily','actual','all_calendar_days', 'nil_value'},'USD') returns the daily closing price converted to US dollars for the given dates for the given security.

D = history(C,'ABC US Equity',... 'LAST_PRICE','8/01/99','8/10/99',[],'USD') returns the closing price converted to US dollars for the given dates for the given security using the default period of the data.

See Also

blp, blp.realtime, blp.timeseries

Purpose

Bloomberg V3 realtime data retrieval

Syntax

```
[SUBS,T] = realtime(C,S,F,API)
```

Description

`[SUBS,T] = realtime(C,S,F,API)` subscribes to a given security or list of securities `S` requesting the fields `F` and runs the specified function by `API`. It returns the subscription list, `SUBS` and the timer `T` associated with the real time callback for the subscription list. Run the example `v3showtrades` for information on the data returned by asynchronous Bloomberg events. Type `help v3showtrades` for information on the example.

Examples

`realtime(C,'ABC US Equity',{'Last_Trade','Volume'},'v3stockticker')` subscribes to the security `ABC US Equity` requesting the fields `Last_Trade` and `Volume` to update in realtime while running the function `v3stockticker`.

See Also

`blp`, `blp.history`, `blp.timeseries`

blp.stop

Purpose

Unsubscribe real time requests for Bloomberg V3

Syntax

```
stop(B,SUBS,T)
stop(B,SUBS,T,S)
```

Description

`stop(B,SUBS,T)`unsubscribes all real time requests associated with the Bloomberg connection, `B`, and subscription list, `SUBS`.`T` is the timer associated with the real time callback for the subscription list.

`stop(B,SUBS,T,S)`unsubscribes all real time requests associated with the Bloomberg unsubscribes real time requests for each security, `S`, on the subscription list, `SUBS`. `T` is the timer associated with the real time callback for the subscription list.

Purpose Bloomberg V3 intraday tick data

Syntax

```
D = timeseries(C,S,T)
D = timeseries(C,S,{StartDate,EndDate})
D = timeseries(C,S,T,B,F)
```

Description

`D = timeseries(C,S,T)` returns the raw tick data for the security `S` for the date `T`.

`D = timeseries(C,S,{StartDate,EndDate})` returns the raw tick data for the security `S` for the date range defined by `StartDate` and `EndDate`.

`D = timeseries(C,S,T,B,F)`returns the tick data for the security `S` for the date `T` in intervals of `B` minutes for the field, `F`. Intraday tick data requested with an interval is returned with the columns representing Time, Open, High, Low, Last Price, number of ticks and Volume of the ticks in the bar.

Examples

`D = timeseries(C,'ABC US Equity',FLOOR(NOW))` returns today's time series for the given security. The timestamp and tick value are returned.

`D = timeseries(C,'ABC US Equity',FLOOR(NOW),5,'Trade')` returns today's Trade tick series for the given security aggregated into 5 minute intervals.

`D = timeseries(C,'ABC US Equity',{'12/08/2008 00:00:00','12/10/2008 23:59:59.99'},5,'Trade')`returns the Trade tick series for 12/08/2008 and 12/10/2008 for the given security aggregated into 5 minute intervals.

See Also

`blp`, `blp.history`, `blp.realtime`

datastream

Purpose

Establish connections to Thomson Datastream API

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 for you 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 Thomson Datastream software content.

Examples

Establish a connection to the Thomson Datastream API:

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

See Also

`datastream.close`, `datastream.fetch`, `datastream.get`, `datastream.isconnection`

datastream.close

Purpose

Close connections to Thomson Datastream data servers

Syntax

```
close(Connect)
```

Arguments

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

Description

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

See Also

`datastream`

datastream.fetch

Purpose

Request data from Thomson Datastream data servers

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, or cell array of strings containing names of multiple securities. This data is 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 to retrieve data.
`'Date'`	(Optional) MATLAB string indicating a specific calendar date for which you request data.
`'FromDate'`	(Optional) Start date for historical data.

'ToDate'	(Optional) End date for historical data. If you specify a value for 'ToDate', 'FromDate' cannot be an empty value. **Note** You can specify dates in any of the formats supported by datestr and datenum that show a year, month, and day.
'Period'	(Optional) Period within a date range. Period values are: • 'd': daily values • 'w': weekly values • 'm': monthly values
'Currency'	(Optional) Currency in which fetch returns the data.

Note You can enter 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')` also specifies the currency in which to report the data.

Note The Thomson Datastream interface returns all data as strings. For example, it returns `Price` data to the MATLAB workspace as a cell array of strings within the structure. There is no way to determine the data type from the Datastream® interface.

Examples

Retrieving Time Series Data

Return the trailing one-year price time series for the instrument `'P'`, which is the default value for the `'Fields'` argument using the command:

```
data = fetch(Connect, 'ICI')
```

Or the command:

```
data = fetch(Connect, 'ICI', 'P')
```

Retrieving Opening and Closing Prices

Return the closing and opening prices for the instruments `P` and `PO` on the date September 1, 2007.

```
data = fetch(Connect, 'ICI', {'P', 'PO'}, '09/01/2007')
```

Retrieving Monthly Opening and Closing Prices for a Specified Date Range

Return the monthly closing and opening prices for the securities `ICI` and `IBM` from 09/01/2005 to 09/01/2007:

```
data = fetch(Connect, {'ICI', 'IBM'}, {'P', 'PO'}, ...
'09/01/2005', '09/01/2007', 'M')
```

See Also

`datastream.close`, `datastream`, `datastream.get`, `datastream.isconnection`

datastream.get

Purpose

Retrieve properties of Thomson Datastream connection objects

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. Valid property names include: • `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`. Each field contains the value of the property.

See Also

`datastream.close`, `datastream`, `datastream.fetch`, `datastream.isconnection`

Purpose

Verify whether connections to Thomson Datastream data servers are valid

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` otherwise.

Examples

Establish a connection to the Thomson Datastream API:

```
c = datastream
```

Verify that `c` is a valid connection:

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

See Also

`datastream.close`, `datastream`, `datastream.fetch`, `datastream.get`

factset

Purpose

Establish connections to FactSet data servers

Syntax

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

Arguments

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

Note FactSet assigns values to all input arguments.

Description

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

Examples

Establish a connection to a FactSet server:

```
Connect = factset('username', '1234', 'password', 'fsid')
Connect =
       user: 'username'
     serial: '1234'
   password: 'password'
        cid: 'fsid'
```

See Also

`factset.close`, `factset.fetch`, `factset.get`, `factset.isconnection`

factset.close

Purpose Close connections to FactSet data servers

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.fetch

Purpose

Request data from FactSet data servers

Syntax

```
data = fetch(Connect)
data = fetch(Connect, 'Library')
data = fetch(Connect, 'Security', 'Fields')
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 to retrieve data.
`Date`	Date string or serial date number indicating date for the requested data. If you enter today's date, `fetch` returns yesterday's data.
`FromDate`	Beginning date for date range.

Note You can specify dates in any of the formats supported by `datestr` and `datenum` that display a year, month, and day.

`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 specified period.

Examples

Retrieving Names of Available Formula Libraries

Obtain the names of available formula libraries:

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

Retrieving Valid Field Names of a Specified Library

Obtain valid field names of the `FactSetSecurityCalcs` library:

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

Retrieving the Closing Price of a Specified Security

Obtain the closing price of the security `IBM`:

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

Retrieving the Closing Price of a Specified Security Using Default Date Period

Obtain the closing price for `IBM` using the default period of the data:

```
D = fetch(C, 'IBM', 'price', '09/01/07', '09/10/07')
```

Retrieving the Monthly Closing Prices of a Specified Security for a Given Date Range

Obtain the monthly closing prices for `IBM` from 09/01/05 to 09/10/07:

```
D = fetch(C, 'IBM', 'price', '09/01/05', '09/10/07', 'm')
```

See Also

`factset.close`, `factset`, `factset.isconnection`

Purpose

Retrieve properties of FactSet connection objects

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

Establish a connection to a FactSet data server:

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

Retrieve the connection property value:

```
h = get(Connect)
h=
       user: 'Fast_User'
     serial: '1234'
   password: 'Fast_Pass'
```

```
        cid: 'userid'
```

Retrieve the value of the connection's `user` property:

```
get(Connect, 'user')
ans =
Fast_User
```

See Also

`factset.close`, `factset.fetch`, `factset`, `factset.isconnection`

Purpose Verify whether connections to FactSet data servers are valid

Syntax `x = isconnection(Connect)`

Arguments

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

Description `x = isconnection(Connect)` returns `x = 1` if the connection to the FactSet data server is valid, and `x = 0` otherwise.

Examples Establish a connection, `c`, to a FactSet data server:

```
c = factset
```

Verify that `c` is a valid connection:

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

See Also `factset.close`, `factset.fetch`, `factset`, `factset.get`

fred

Purpose

Connect to FRED data servers

Syntax

```
Connect = fred(URL)
Connect = fred
```

Arguments

`URL`	Create a connection using a specified URL.

Description

`Connect = fred(URL)` establishes a connection to a FRED data server.

`Connect = fred` verifies that the URL `http://research.stlouisfed.org/fred2/` is accessible and creates a connection.

Examples

Connect to the FRED data server at the URL `http://research.stlouisfed.org/fred2/`:

```
c = fred('http://research.stlouisfed.org/fred2/')
```

See Also

`fred.close`, `fred.fetch`, `fred.get`, `fred.isconnection`

fred.close

Purpose

Close connections to FRED data servers

Syntax

```
close(Connect)
```

Arguments

`Connect`	FRED connection object created with the `fred` function.

Description

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

Examples

Make a connection `c` to a FRED data server:

```
c = fred('http://research.stlouisfed.org/fred2/')
```

Close this connection:

```
close(c)
```

See Also

`fred`

fred.fetch

Purpose

Request data from FRED data servers

Syntax

```
data = fetch(Connect, 'Security')
data = fetch(Connect, 'Security', 'D1')
data = fetch(Connect, 'Security', 'D1', 'D2')
```

Arguments

`Connect`	FRED connection object created with the `fred` function.
`'Security'`	MATLAB string containing the name of a security in a format recognizable by the FRED server.
`'D1'`	MATLAB string or date number indicating the date from which to retrieve data.
`'D2'`	MATLAB string or date number indicating the date range from which to retrieve data.

Description

For a given security, `fetch` returns historical data using the connection to the FRED data server.

`data = fetch(Connect, 'Security')` returns data for the security `Security`, using the connection object `Connect`.

`data = fetch(Connect, 'Security', 'D1')` returns data for the security `Security`, using the connection object `Connect`, for the date `D1`. If you specify today's date for `D1`, `fetch` returns data from yesterday.

`data = fetch(Connect, 'Security', 'D1', 'D2')` returns all data for the security `Security`, using the connection object `Connect`, for the date range `'D1'` to `'D2'`.

Note You can specify dates in any of the formats supported by `datestr` and `datenum` that show a year, month, and day.

Examples

Fetch all available daily U.S. dollar to euro foreign exchange rates:

```
d = fetch(f,'DEXUSEU')
d =
                 Title: 'U.S. / Euro Foreign Exchange Rate'
              SeriesID: 'DEXUSEU'
                Source:
      'Board of Governors of the Federal Reserve System'
               Release: 'H.10 Foreign Exchange Rates'
    SeasonalAdjustment: 'Not Applicable'
             Frequency: 'Daily'
                 Units: 'U.S. Dollars to One Euro'
             DateRange: '1999-01-04 to 2006-06-19'
           LastUpdated: '2006-06-20 9:39 AM CT'
                 Notes: 'Noon buying rates in New York City for
                          cable transfers payable in foreign currencies.'
                  Data: [1877x2 double]
```

Fetch data for 01/01/2007 through 06/01/2007:

```
d = fetch(f, 'DEXUSEU', '01/01/2007', '06/01/2007)
d =
                 Title: ' U.S. / Euro Foreign Exchange Rate'
              SeriesID: ' DEXUSEU'
                Source:
      ' Board of Governors of the Federal Reserve System'
               Release: ' H.10 Foreign Exchange Rates'
    SeasonalAdjustment: ' Not Applicable'
             Frequency: ' Daily'
                 Units: ' U.S. Dollars to One Euro'
             DateRange: ' 1999-01-04 to 2006-06-19'
           LastUpdated: ' 2006-06-20 9:39 AM CT'
                 Notes: ' Noon buying rates in New York City for
                          cable transfers payable in foreign currencies.'
                  Data: [105x2 double]
```

See Also

`fred.close`, `fred.get`, `fred.isconnection`

fred.get

Purpose

Retrieve properties of FRED connection objects

Syntax

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

Arguments

`Connect`	FRED connection object created with the `fred` function.
`'PropertyName'`	A MATLAB string or cell array of strings containing property names. Property names are: • `'url'` • `'ip'` • `'port'`

Description

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

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

Examples

Establish a connection, `c`, to a FRED data server:

```
c = fred('http://research.stlouisfed.org/fred2/')
```

Retrieve the port and IP address for the connection:

```
p = get(c, {'port', 'ip'})
p =
     port: 8194
     ip: 111.222.33.444
```

See Also

`fred.close`, `fred.fetch`, `fred.isconnection`

fred.isconnection

Purpose

Verify whether connections to FRED data servers are valid

Syntax

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

Arguments

`Connect`	FRED connection object created with the `fred` function.

Description

`x = isconnection(Connect)` returns `x = 1` if a connection to the FRED data server is valid, and `x = 0` otherwise.

Examples

Establish a connection, `c`, to a FRED data server:

```
c = fred('http://research.stlouisfed.org/fred2/')
```

Verify that `c` is a valid connection:

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

See Also

`fred.close`, `fred.fetch`, `fred.get`

haver

Purpose Connect to local Haver Analytics database

Syntax `H = haver(Databasename)`

Arguments

`Databasename`	Local path to the Haver Analytics database.

Description `H = haver(Databasename)` establishes a connection to a Haver Analytics database.

Examples Create a connection to the Haver Analytics database at the path `d:\work\haver\data\haverd.dat`:

```
H = haver('d:\work\haver\data\haverd.dat')
```

See Also `haver.close`, `haver.fetch`, `haver.get`, `haver.isconnection`

Purpose Set Haver Analytics aggregation mode

Syntax

```
X = aggregation (C)
X = aggregation (C,V)
```

Description

`X = aggregation (C)` returns the current aggregation mode.

`X = aggregation (C,V)` sets the current aggregation mode to `V`. The following table lists possible values for `V`.

Value of `V`	Aggregation mode	Behavior of `aggregation` function
0	`strict`	`aggregation` does not fill in values for missing data.
1	`relaxed`	`aggregation` fills in missing data based on data available in the requested period.
2	`forced`	`aggregation` fills in missing data based on some past value.
-1	Not recognized	`aggregation` resets `V` to its last valid setting.

See Also

`haver`, `haver.close`, `haver.fetch`, `haver.get`, `haver.infohaver.isconnection`, `haver.nextinfo`

haver.close

Purpose Close Haver Analytics database

Syntax `close(H)`

Arguments

`H`	Haver Analytics connection object created with the `haver` function.

Description `close(H)` closes the connection to the Haver Analytics database.

Examples Establish a connection `H` to a Haver Analytics database:

```
H = haver('d:\work\haver\data\haverd.dat')
```

Close the connection:

```
close(H)
```

See Also `haver`

Purpose

Request data from Haver Analytics database

Syntax

```
D = fetch(H,S)
D = fetch(H,S,Startdate,Enddate)
D = fetch(H,S,Startdate,Enddate,P)
```

Arguments

`H`	Haver Analytics connection object created with the `haver` function.
`S`	Haver Analytics variable.
`Startdate`	MATLAB string or date number indicating the `startdate` from which to retrieve data.
`Enddate`	MATLAB string or date number indicating the `enddate` of the date range.
`P`	A specified period. You can enter the period as: • `D` for daily values • `W` for weekly values • `M` for monthly values • `Q` for quarterly values • `A` for annual values

Description

`fetch` returns historical data via a Haver Analytics connection object.

`D = fetch(H,S)` returns data for the Haver Analytics variable `S`, using the connection object `H`.

`D = fetch(H,S,Startdate,Enddate)` returns data for the Haver Analytics variable `S`, using the connection object `H`, between the dates `Startdate` and `Enddate`.

`D = fetch(H,S,Startdate,Enddate,P)` returns data for the Haver Analytics variable `S`, using the connection object `H`, between the dates `Startdate` and `Enddate`, in time periods specified by `P`.

Examples

Establish a Connection to a Haver Analytics Database

Connect to the Haver Analytics daily demonstration database `haverd.dat`:

```
H = haver('d:\work\haver\data\haverd.dat')
```

Retrieving Variable Data

Return data for the variable `FFED`:

```
D = fetch(H,'FFED')
```

Retrieving Variable Data for a Specified Date Range

Return data for `FFED` from 01/01/1997 to 09/01/2007:

```
D = fetch(H,'FFED','01/01/1997','09/01/2007')
```

Retrieving Monthly Variable Data for a Specified Date Range

Return data for `FFED`, converted to monthly values, from 01/01/1997 to 09/01/2007:

```
D = fetch(H,'FFED','01/01/1997','09/01/2007','M')
```

See Also

`haver.close`, `haver.get`, `haver.isconnection`, `haver`, `haver.info`, `haver.nextinfo`

haver.get

Purpose Retrieve properties from Haver Analytics connection objects

Syntax

```
V = get(H,'PropertyName')
V = get(H)
```

Arguments

`H`	Haver Analytics connection object created with the `haver` function.
`'PropertyName'`	A MATLAB string or cell array of strings containing property names. The property name is `Databasename`.

Description

`V = get(H,'PropertyName')` returns a MATLAB structure containing the value of the specified properties for the Haver Analytics connection object.

`V = get(H)` returns a MATLAB structure, where each field name is the name of a property of `H`. Each field contains the value of the property.

Examples

Establish a Haver Analytics connection, `HDAILY`:

```
HDAILY = haver('d:\work\haver\data\haverd.dat')
```

Retrieve the name of the Haver database:

```
V = get(HDAILY,{'databasename'})
V=
databasename: d:\work\haver\data\haverd.dat
```

See Also

`haver.close`, `haver.fetch`, `haver.isconnection`, `haver`

haver.info

Purpose

Retrieve information about Haver Analytics variables

Syntax

`D = info(H,S)`

Arguments

`H`	Haver Analytics connection object created with the `haver` function.
`S`	Haver Analytics variable.

Description

`D = info(H,S)` returns information about the Haver Analytics variable, `S`.

Examples

Establish a Haver Analytics connection `H`:

```
H = haver('d:\work\haver\data\haverd.dat')
```

Request information for the variable after `FFED`:

```
    D = info(H,'FFED2')
  VarName: 'FFED2'
         StartDate: '01-Jan-1991'
           EndDate: '31-Dec-1998'
         NumberObs: 2088
         Frequency: 'D'
       DateTimeMod: 1.1335e+009
         Magnitude: 0
      DecPrecision: 2
           DifType: 1
           AggType: 'AVG'
          DataType: '%'
             Group: 'Z05'
            Source: 'FRB'
        Descriptor:
    'Federal Funds [Effective] Rate (% p.a.)'
       ShortSource: 'History'
```

```
LongSource: 'Historical Series'
```

See Also

haver.close, haver.get, haver.isconnection, haver, haver.nextinfo

haver.isconnection

Purpose

Verify whether connections to Haver Analytics data servers are valid

Syntax

`X = isconnection(H)`

Arguments

`H`	Haver connection object created with the `haver` function.

Description

`X = isconnection(H)` returns `X = 1` if the connection is a valid Haver Analytics connection, and `X = 0` otherwise.

Examples

Establish a Haver connection `H`:

```
H = HAVER('d:\work\haver\data\haverd.dat')
```

Verify that `H` is a valid Haver Analytics connection:

```
X = isconnection(H)
X = 1
```

See Also

`haver.close`, `haver.fetch`, `haver.get`, `haver`

Purpose

Retrieve information about next Haver Analytics variable

Syntax

```
D = nextinfo(H,S)
```

Arguments

`H`	Haver Analytics connection object created with the `haver` function.
`S`	Haver Analytics variable.

Description

`D = nextinfo(H,S)` returns information for the next Haver Analytics variable after the variable, `S`.

Examples

Establish a Haver Analytics connection `H`:

```
H = haver('d:\work\haver\data\haverd.dat')
```

Request information for the variable following `FFED`:

```
D = nextinfo(H,'FFED')
VarName: 'FFED2'
         StartDate: '01-Jan-1991'
           EndDate: '31-Dec-1998'
         NumberObs: 2088
         Frequency: 'D'
       DateTimeMod: 1.1335e+009
         Magnitude: 0
      DecPrecision: 2
           DifType: 1
           AggType: 'AVG'
          DataType: '%'
             Group: 'Z05'
            Source: 'FRB'
        Descriptor:
    'Federal Funds [Effective] Rate (% p.a.)'
       ShortSource: 'History'
```

```
LongSource: 'Historical Series'
```

See Also

haver.close, haver.get, haver, haver.info, haver.isconnection

Purpose

Run Haver Analytics graphical user interface (GUI)

Syntax

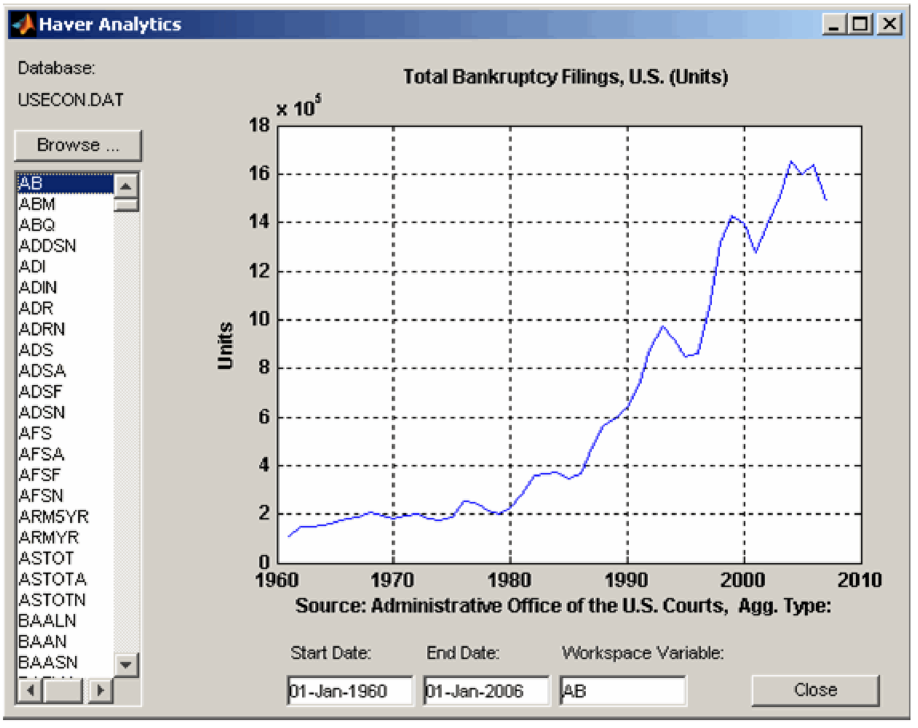
```
havertool(H)
```

Arguments

`H`	Haver Analytics connection object created with the `haver` function.

Description

`havertool(H)` runs the Haver Analytics graphical user interface (GUI). The GUI appears in the following figure.



The GUI fields and buttons are:

- **Database**: The currently selected Haver Analytics database.
- **Browse**: Allows you to browse for Haver Analytics databases, and populates the variable list with the variables in the database you specify.
- **Start Date**: The data start date of the selected variable.
- **End Date**: The data end date of the selected variable.
- **Workspace Variable**: The MATLAB variable to which `havertool` writes data for the currently selected Haver variable.
- **Close**: Closes all current connections and the Haver Analytics GUI.

Examples

Establish a Haver Analytics connection `H`:

```
H = haver('d:\work\haver\data\haverd.dat')
```

Open the graphical user interface (GUI) demonstration:

```
havertool(H)
```

See Also

`haver`

Purpose Connect to Interactive Data Pricing and Reference Data's RemotePlus data servers

Syntax

```
Connect = idc
```

Description `Connect = idc` connects to the Interactive Data Pricing and Reference Data's RemotePlus server. `Connect` is a connection handle used by other functions to obtain data.

Examples Connect to an Interactive Data Pricing and Reference Data's RemotePlus server:

```
c = idc
```

See Also `idc.close`, `idc.fetch`, `idc.get`, `idc.isconnection`

idc.close

Purpose

Close connections to Interactive Data Pricing and Reference Data's RemotePlus data servers

Syntax

`close(Connect)`

Arguments

`Connect`	Interactive Data Pricing and Reference Data's RemotePlus connection object created with the `idc` function.

Description

`close(Connect)` closes the connection to the Interactive Data Pricing and Reference Data's RemotePlus server.

Examples

Establish an Interactive Data Pricing and Reference Data's RemotePlus connection, `c`:

```
c = idc
```

Close this connection:

```
close(c)
```

See Also

`idc`

Purpose

Request data from Interactive Data Pricing and Reference Data's RemotePlus data servers

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`	Interactive Data Pricing and Reference Data's RemotePlus connection object created with the `idc` function.
`'Security'`	A MATLAB string containing the name of a security in a format recognizable by the Interactive Data Pricing and Reference Data's RemotePlus server.
`'Fields'`	A MATLAB string or cell array of strings indicating specific fields for which to provide data. 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.

Note You can specify dates in any of the formats supported by `datestr` and `datenum` that show a year, month, and day.

`'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 Interactive Data Pricing and Reference Data's RemotePlus dialog box for selecting fields or securities.

Examples

Open the dialog box to look up securities:

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

Open the dialog box to select fields:

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

See Also

`idc.close`, `idc.get`, `idc`, `idc.isconnection`

Purpose

Retrieve properties of Interactive Data Pricing and Reference Data's RemotePlus connection objects

Syntax

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

Arguments

`Connect`	Interactive Data Pricing and Reference Data's RemotePlus 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 Interactive Data Pricing and Reference Data's RemotePlus 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

`idc.close`, `idc.get`, `idc`, `idc.isconnection`

idc.isconnection

Purpose

Verify whether connections to Interactive Data Pricing and Reference Data's RemotePlus data servers are valid

Syntax

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

Arguments

`Connect`	Interactive Data Pricing and Reference Data's RemotePlus connection object created with the `idc` function.

Description

`x = isconnection(Connect)` returns `x = 1` if the connection is a valid Interactive Data Pricing and Reference Data's RemotePlus connection, and `x = 0` otherwise.

Examples

Establish an Interactive Data Pricing and Reference Data's RemotePlus connection `c`:

```
c = idc
```

Verify that `c` is a valid connection:

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

See Also

`idc.close`, `idc.fetch`, `idc.get`, `idc`

Purpose

Connect to Kx Systems, Inc. kdb+ databases

Syntax

```
K = kx(IP,P)
K = kx(IP,P,ID)
```

Arguments

IP	IP address for the connection to the Kx Systems, Inc. kdb+ database.
P	Port for the Kx Systems, Inc. kdb+ database connection.
ID	The *username:password* string for the Kx Systems, Inc. kdb+ database connection.

Description

`K = kx(IP,P)` connects to the Kx Systems, Inc. kdb+ database given the IP address `IP` and port number `P`.

`K = kx(IP,P,ID)` connects to the Kx Systems, Inc. kdb+ database given the IP address `IP`, port number `P`, and *username:password* string `ID`.

Before you connect to the database, add The Kx Systems, Inc. file `jdbc.jar` to the MATLAB `javaclasspath` using the `javaaddpath` command. The following example adds `jdbc.jar` to the MATLAB `javaclasspath` `c:\q\java`:

```
javaaddpath c:\q\java\jdbc.jar
```

Note In earlier versions of the Kx Systems, Inc. kdb+ database, this jar file was named `kx.jar`. If you are running an earlier version of the database, substitute `kx.jar` for `jdbc.jar` in these instructions to add this file to the MATLAB `javaclasspath`.

Examples

Run the following command from a DOS prompt to specify the port number `5001`:

```
q tradedata.q -p 5001
```

Connect to a Kx Systems, Inc. server using IP address `LOCALHOST` and port number `5001`:

```
K = kx('LOCALHOST',5001)
handle: [1x1 c]
        ipaddress: 'localhost'
        port: 5001
```

See Also

`kx.close`, `kx.exec`, `kx.get`, `kx.fetch`, `kx.tables`

Purpose

Close connections to Kx Systems, Inc. kdb+ databases

Syntax

`close(K)`

Arguments

`K`	Kx Systems, Inc. kdb+ connection object created with the `kx` function.

Description

`close(K)` closes the connection to the Kx Systems, Inc. kdb+ database.

Examples

Close the connection, `K`, to the Kx Systems, Inc. kdb+ database:

```
close(K)
```

See Also

`kx`

kx.fetch

Purpose

Request data from Kx Systems, Inc. kdb+ databases

Syntax

```
D = fetch(K,KSQL)
D = fetch(K,KSQL,P1,P2,P3)
```

Arguments

`K`	Kx Systems, Inc. kdb+ connection object created with the `kx` function.
`KSQL`	The Kx Systems, Inc. kdb+ command.
`P1,P2,P3`	Input parameters for the `KSQL` command.

Description

`D = fetch(K,KSQL)` returns data from a Kx Systems, Inc. kdb+ database in a MATLAB structure where `K` is the Kx Systems, Inc. kdb+ object and `KSQL` is the Kx kdb+ command. `KSQL` can be any valid kdb+ command. The output of this method is any data resulting from the command specified in `KSQL`.

`D = fetch(K,KSQL,P1,P2,P3)` executes the command specified in `KSQL` with one or more input parameters, and returns the data from this command.

Examples

Run the following command from a DOS prompt to specify the port number `5001`:

```
q tradedata.q -p 5001
```

Connect to a Kx Systems, Inc. server using IP address `LOCALHOST` and port number `5001`:

```
K = kx('localhost',5001);
```

Retrieve data using the command `select from trade`:

```
D = fetch(K,'select from trade');
D =
```

```
     sec: {5000x1 cell}
         price: [5000x1 double]
        volume: [5000x1 int32]
      exchange: [5000x1 double]
          date: [5000x1 double]
```

Retrieve data, passing an input parameter `'ACME'` to the command `select from trade`:

```
D = fetch(K,'totalvolume','ACME');
D =
      volume: [1253x1 int32]
```

This is the total trading volume for the security `ACME` in the table `trade`. The function `totalvolume` is defined in the sample Kx Systems, Inc. kdb+ file, `tradedata.q`.

See Also

`kx.exec`, `kx.insert`, `kx`

kx.get

Purpose

Retrieve Kx Systems, Inc. kdb+ connection object properties

Syntax

```
V = get(K,'PropertyName')
V = get(K)
```

Arguments

`K`	Kx Systems, Inc. kdb+ connection object created with the `kx` function.
`'PropertyName'`	A string or cell array of strings containing property names. The property names are: • `'handle'` • `'ipaddress'` • `'port'`

Description

`V = get(K,'PropertyName')` returns a MATLAB structure containing the value of the specified properties for the Kx Systems, Inc. kdb+ connection object.

`V = get(K)` returns a MATLAB structure where each field name is the name of a property of `K` and the associated value of the property.

Examples

Get the properties of the connection to the Kx Systems, Inc. kdb+ database,`K`:

```
V= get(K)
V =
   handle:  [1x1 c]
       ipaddress: 'localhost'
       port: '5001'
```

See Also

`kx.close`, `kx.exec`, `kx.fetch`, `kx.insert`, `kx`

Purpose

Run Kx Systems, Inc. kdb+ commands

Syntax

```
exec(k,command)
exec(k,command,P1,P2,P3)
exec(k,command,p1)
exec(k,command,p1,p2)
exec(k,command,p1,p2,p3)
exec(k,command,p1,p2,p3,sync)
```

Arguments

`K`	Kx Systems, Inc. kdb+ connection object created with the `kx` function.
`Command`	Kx Systems, Inc. kdb+ command issued using the Kx Systems, Inc. kdb+ connection object created with the `kx` function.
`P1,P2,P3`	Input parameters for `Command`.

Description

`exec(k,command)` executes the specified `command` in Kx Systems, Inc. kdb+ without waiting for a response.

`exec(k,command,P1,P2,P3)` executes the specified `command` with one or more input parameters without waiting for a response.

`exec(k,command,p1)` executes the given `command` with one input parameter without waiting for a response.

`exec(k,command,p1,p2)` executes the given `command` with two input parameters without waiting for a response.

`exec(k,command,p1,p2,p3)` executes the given `command` with three input parameters without waiting for a response.

`exec(k,command,p1,p2,p3,sync)` executes the given `command` with three input parameters synchronously and waits for a response from the database. Enter unused parameters as empty. You can enter `sync` as 0 (default) for asynchronous commands and as 1 for synchronous commands.

Examples

Example 1

Retrieve the data in the table `trade` using the connection to the Kx Systems, Inc. kdb+ database, `K`:

```
K = kx('localhost',5001);
```

Use the `exec` command to sort the data in the table `trade` in ascending order.

```
exec(K,'`date xasc`trade');
```

Subsequent data requests also sort returned data in ascending order.

Example 2

After running

```
q tradedata.q -p 5001
```

at the DOS prompt, the commands

```
K = KX('localhost',5001);
EXEC(K,'`DATE XASC `TRADE');
```

sort the data in the table `trade` in ascending order. Data later fetched from the table will be ordered in this manner.

See Also

`kx.fetch`, `kx.insert`, `kx`

Purpose

Write data to Kx Systems, Inc. kdb+ databases

Syntax

```
insert(k,tablename,data)
x = insert(k,tablename,data,sync)
```

Arguments

K	The Kx Systems, Inc. kdb+ connection object created with the kx function.
Tablename	The name of the Kx Systems, Inc. kdb+ Tablename.
Data	The data that insert writes to the Kx Systems, Inc. kdb+ Tablename.

Description

insert(k,tablename,data) writes the data, data, to the Kx Systems, Inc. kdb+ table, tablename.

x = insert(k,tablename,data,sync) writes the data, data, to the Kx Systems, Inc. kdb+ table, tablename, synchronously. For asynchronous calls, enter sync as 0 (default), and for synchronous calls, enter sync as 1.

Examples

For the connection to the Kx Systems, Inc. kdb+ database,K, write data from ACME to the specified table:

```
insert(K,'trade',{'`ACME',133.51,250,6.4,'2006.10.24'})
```

See Also

kx.close, kx.fetch, kx.get, kx.tables

kx.isconnection

Purpose

Verify whether connections to Kx Systems, Inc. kdb+ databases are valid

Syntax

`X = isconnection(K)`

Arguments

`K`	Kx Systems, Inc. kdb+ connection object created with the `kx` function.

Description

`X = isconnection(K)` returns `X = 1` if the connection to theKx Systems, Inc. kdb+ database is valid, and `x = 0` otherwise.

Examples

Establish a connection to a Kx Systems, Inc. kdb+ database, `K`:

```
K = kx('localhost',5001);
```

Verify that `K` is a valid connection:

```
X = isconnection(K)
X = 1
```

See Also

`kx.close`, `kx.fetch`, `kx.get`, `kx`

Purpose Retrieve table names from Kx Systems, Inc. kdb+ databases

Syntax

```
T = tables(K)
```

Arguments

`K`	The Kx Systems, Inc. kdb+ connection object created with the `kx` function.

Description `T = tables(K)` returns the list of tables for the Kx Systems, Inc. kdb+ connection.

Examples Retrieve table information for the Kx Systems, Inc. kdb+ database using the connection `K`:

```
T = tables(k)
T =
      'intraday'
    'seclist'
      'trade'
```

See Also `kx.exec`, `kx.fetch`, `kx.insert`, `kx`

rdthloader

Purpose

Retrieve data from Reuters Datascope Tick History file

Syntax

```
x = rdthloader(file)
x = rdthloader(file,'date',{DATE1})
x = rdthloader(file,'date',{DATE1, DATE2})
x = rdthloader(file,'security',{SECNAME})
x = rdthloader(file,'start',STARTREC)
x = rdthloader(file,'records', NUMRECORDS)
```

Arguments

Specify the following arguments as name-value pairs. You can specify any combination of name-value pairs in a single call to `rdthloader`.

`file`	Reuters Datascope Tick History file from which to retrieve data.
`'date'`	Use this argument with `{DATE1, DATE2}` to retrieve data between and including the specified dates. Specify the dates as numbers or strings.
`'security'`	Use this argument to retrieve data for `SECNAME`, where `SECNAME` is a cell array containing a list of security identifiers for which to retrieve data.
`'start'`	Use this argument to retrieve data beginning with the record `STARTREC`, where `STARTREC` is the record at which `rdthloader` begins to retrieve data. Specify `STARTREC` as a number.
`'records'`	Use this argument to retrieve `NUMRECORDS` number of records.

Description

`x = rdthloader(file)` retrieves tick data from the Reuters Datascope Tick History file `file` and stores it in the structure `x`.

`x = rdthloader(file,'date',{DATE1})` retrieves tick data from `file` with date stamps of value `DATE1`.

x = rdthloader(file,'date',{DATE1, DATE2}) retrieves tick data from file with date stamps between DATE1 and DATE2.

x = rdthloader(file,'security',{SECNAME}) retrieves tick data from file for the securities specified by SECNAME.

x = rdthloader(file,'start',STARTREC) retrieves tick data from file beginning with the record specified by STARTREC.

x = rdthloader(file,'records', NUMRECORDS) retrieves NUMRECORDS number of records from file.

Examples

Retrieve all ticks from the file file.csv with date stamps of 02/02/2007:

```
x = rdthloader('file.csv','date',{'02/02/2007'})
```

Retrieve all ticks from file.csv between and including the dates 02/02/2007 and 02/03/2007:

```
 x = rdthloader('file.csv','date',{'02/02/2007',...
'02/03/2007'})
```

Retrieve all ticks from file.csv for the security XYZ.O:

```
x = rdthloader('file.csv','security',{'XYZ.O'})
```

Retrieve the first 10,000 tick records from file.csv:

```
x = rdthloader('file.csv','records',10000)
```

Retrieve data from file.csv, starting at record 100,000:

```
x = rdthloader('file.csv','start',100000)
```

Retrieve up to 100,000 tick records from file.csv, for the securities ABC.N and XYZ.O, with date stamps between and including the dates 02/02/2007 and 02/03/2007:

```
x = rdthloader('file.csv','records',100000,...
               'date',{'02/02/2007','02/03/2007'},...
```

```
'security',{'ABC.N','XYZ.O'})
```

See Also

`reuters`, `rnseloader`

Purpose Close Reuters Datascope Tick History connection

Syntax `close(r)`

Description `close(r)` closes the Reuters Datascope Tick History connection, `r`.

See Also `rdth`

rdth.fetch

Purpose

Request Reuters Datascope Tick History data

Syntax

```
x = fetch(r,sec)
x = fetch(r,sec,tradefields,daterange,reqtype,messtype,
   exchange,domain)
```

Description

`x = fetch(r,sec)` returns information about the security, `sec`, such as the code, currency, exchange, and and name.

`x = fetch(r,sec,tradefields,daterange,reqtype,messtype,exchange,domain)` returns data for the request security, `sec`, based on the type request and message types, `reqtype` and `messtype`, respectively. Data for the fields specified by `tradefields` is returned for the data range bounded by `daterange`. `domain` specifies the security type.

Tip Specifying the `exchange` of the given security improves the speed of the data request.

To obtain more information request and message types and their associated field lists, use the command `get(r)`.

Examples

To create a Reuters Datascope Tick History connection, the command

```
r = rdth('user@company.com','mypassword')
```

returns

```
r =
client: [1x1 com.reuters.datascope.tickhistory. ...
webservice.client.RDTHApiClient]
user: 'user@company.com'
password: '**********'
```

To get information pertaining to a particular security, the command

```
d = fetch(r,'GOOG.O',{'Volume','Price','Exchange ID'},...
{'09/05/2008 12:00:00','09/05/2008 12:01:00'},...
'TimeAndSales','Trade','NSQ','EQU')
```

returns

```
d =
'#RIC'      'Date[L]'        'Time[L]'         'Type'...
     'Ex/Cntrb.ID'    'Price'
'GOOG.O'    '05-SEP-2008'    '12:00:01.178'    'Trade'...
    'NAS'            '443.86'
'Volume'
'200'
```

The command

```
d = fetch(r,'GOOG.O',{'Volume','Close'},{'09/05/2008'},...
'EndOfDay','End Of Day','NSQ','EQU')
```

returns

```
d =
    '#RIC'      'Date[L]'        'Time[L]'       ...
  'Type'    'Close'     'Volume'
    'GOOG.O'    '05-SEP-2008'    '23:59:00.000'   ...
 'End Of Day'    '444.25'    '4538375'
```

The exchange of the security is `x.Exchange` or `NSQ`. To determine the asset domain of the security, use the value of `x.Type`, in this case 113. Using the information from `v = get(r)`,

```
j = find(v.InstrumentTypes.Value == 113)
```

returns

```
j =46
```

The command

```
v.InstrumentTypes.Value(j)
```

returns

```
ans =
   113
```

The command

```
v.InstrumentTypes.Name(j)
```

returns

```
ans =
    'Equities'
```

The command

```
v.AssetDomains.Value(strcmp(v.InstrumentTypes.Name(j),...
v.AssetDomains.Name))
```

returns

```
ans =
    'EQU'
```

Knowing the security exchange and domain helps the interface to resolve the security symbol and return data more quickly.

See Also

`rdth`, `rdth.close`, `rdth.get`

Purpose

Get Reuters Datascope Tick History connection properties

Syntax

```
v = get(r,'propertyname')
v = get(r)
```

Description

`v = get(r,'propertyname')` returns the value of the specified properties for the `rdth` connection object. `'PropertyName'` is a string or cell array of strings containing property names.

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

Properties include:

- `AssetDomains`
- `BondTypes`
- `Class`
- `Countries`
- `CreditRatings`
- `Currencies`
- `Exchanges`
- `FuturesDeliveryMonths`
- `InflightStatus`
- `InstrumentTypes`
- `MessageTypes`
- `OptionExpiryMonths`
- `Quota`
- `RestrictedPEs`
- `Version`

Examples

To create a Reuters Datascope Tick History connection, the command

```
r = rdth('user@company.com','mypassword')
```

returns

```
r =
client: [1x1 com.reuters.datascope.tickhistory. ...
webservice.client.RDTHApiClient]
user: 'user@company.com'
password: '**********'
```

To get a listing of properties for the rdth connection, the command

```
v = get(r)
```

returns

```
v =

             AssetDomains: [1x1 struct]
                BondTypes: {255x1 cell}
                    Class: 'class com.reuters. ...
datascope.tickhistory.webservice.client.RDTHApiClient'
                Countries: {142x1 cell}
            CreditRatings: {82x1 cell}
               Currencies: [1x1 struct]
                Exchanges: [1x1 struct]
    FuturesDeliveryMonths: {12x1 cell}
           InflightStatus: [1x1 com.reuters.datascope. ...
tickhistory.webservice.types.InflightStatus]
          InstrumentTypes: [1x1 struct]
             MessageTypes: [1x1 struct]
       OptionExpiryMonths: {12x1 cell}
                    Quota: [1x1 com.reuters.datascope. ...
tickhistory.webservice.types.Quota]
            RestrictedPEs: {2758x1 cell}
                  Version: [1x1 com.reuters.datascope. ...
```

```
tickhistory.webservice.types.Version]
```

See Also

`rdth`, `rdth.fetch`

rdth.isconnection

Purpose

Verify whether Reuters Datascope Tick History connections are valid

Syntax

`x = isconnection(r)`

Description

`x = isconnection(r)` returns 1 if `r` is a valid `rdth` client and 0 otherwise.

Examples

Verify that `r` is a valid connection:

```
r = rdth('user@company.com','mypassword');
x = isconnection(r)
x = 1
```

See Also

`rdth`, `rdth.close`, `rdth.fetch`, `rdth.get`

Purpose

Connect to Reuters Datascope Tick History

Syntax

```
r = rdth(username,password)
```

Description

`r = rdth(username,password)` creates a Reuters Datascope Tick History connection to enable intraday tick data retrieval.

Examples

To create a Reuters Datascope Tick History connection, the command

```
r = rdth('user@company.com','mypassword')
```

returns

```
r =
client: [1x1 com.reuters.datascope.tickhistory. ...
webservice.client.RDTHApiClient]
user: 'user@company.com'
password: '**********'
```

Suppose you want to get the intraday price and volume information for all ticks of type Trade. To determine which fields apply to the message type `Trade` and the `requestType` of the Trade message, the command:

```
v = get(r,'MessageTypes')
```

returns

```
v = RequestType: {31x1 cell}
Name: {31x1 cell}
Fields: {31x1 cell}
```

The command

```
v.Name
```

then returns

```
ans =
```

```
'C&E Quote'
'Short Sale'
'Fund Stats'
'Economic Indicator'
'Convertibles Transactions'
'FI Quote'
'Dividend'
'Trade'
'Stock Split'
'Settlement Price'
'Index'
'Open Interest'
'Correction'
'Quote'
'OTC Quote'
'Stock Split'
'Market Depth'
'Dividend'
'Stock Split'
'Market Maker'
'Dividend'
'Stock Split'
'Intraday 1Sec'
'Dividend'
'Intraday 5Min'
'Intraday 1Min'
'Intraday 10Min'
'Intraday 1Hour'
'Stock Split'
'End Of Day'
'Dividend'
```

The command

```
j = find(strcmp(v.Name,'Trade'));
```

returns

```
j =     8
```

The command

```
v.Name{j}
```

returns

```
ans = Trade
```

The command

```
v.RequestType{8}
```

returns

```
ans = TimeAndSales
```

The command

```
v.Fields{j}
```

returns

```
ans =
    'Exchange ID'
    'Price'
    'Volume'
    'Market VWAP'
    'Accumulative Volume'
    'Turnover'
    'Buyer ID'
    'Seller ID'
    'Qualifiers'
    'Sequence Number'
    'Exchange Time'
    'Block Trade'
    'Floor Trade'
    'PE Ratio'
```

```
'Yield'
'Implied Volatility'
'Trade Date'
'Tick Direction'
'Dividend Code'
'Adjusted Close Price'
'Price Trade-Through-Exempt Flag'
'Irregular Trade-Through-Exempt Flag'
'TRF Price Sub Market ID'
'TRF'
'Irregular Price Sub Market ID'
```

To request the Exchange ID, Price, and Volume of a security's intra day tick for a given day and time range the command

```
x = fetch(r,'ABCD.O',{'Exchange ID','Price','Volume'},...
{'09/05/2008 12:00:06','09/05/2008 12:00:10'},...
'TimeAndSales','Trade','NSQ','EQU');
```

returns data similar to

```
x =

    'ABCD.O'  '05-SEP-2008'  '12:00:08.535' ...
   'Trade'    'NAS'    '85.25'    '100'
    'ABCD.O'  '05-SEP-2008'  '12:00:08.569' ...
   'Trade'    'NAS'    '85.25'    '400'
```

To request the Exchange ID, Price, and Volume of a security's intraday tick data for an entire trading day, the command

```
x = fetch(r,'ABCD.O',{`Exchange ID','Price','Volume'},...
'09/05/2008','TimeAndSales','Trade','NSQ','EQU');
```

returns data similar to

```
x =
```

```
'ABCD.O'    '05-SEP-2008'    '08:00:41.142'...
'Trade'    'NAS'    '51'        '100'
'ABCD.O'    '05-SEP-2008'    '08:01:03.024'...
'Trade'    'NAS'    '49.35'    '100'
'ABCD.O'    '05-SEP-2008'    '19:37:47.934'...
'Trade'    'NAS'    '47.5'    '1200'
'ABCD.O'    '05-SEP-2008'    '19:37:47.934'...
'Trade'    'NAS'    '47.5'    '300'
'ABCD.O'    '05-SEP-2008'    '19:59:33.970'...
'Trade'    'NAS'    '47'      '173'
```

To clean up any remaining requests associated with the rdth connection use:

```
close(r)
```

See Also

`rdth.close`, `rdth.fetch`, `rdth.get`

Purpose

Create Reuters sessions

Syntax

```
r = reuters (sessionName, serviceName)
r = reuters (sessionName, serviceName, user, position)
```

Arguments

`r`	Reuters session object created with the `reuters` function
`sessionName`	Name of the Reuters session, of the form `myNameSpace::mySession`
`serviceName`	Name of the service you use to connect to the data server.
`user`	User ID you use to connect to the data server
`position`	IP address of the data server to which you connect to retrieve data.

Description

You must configure your environment before you use this function to connect to a Reuters data server. For more information, see “Reuters Data Service Requirements” on page 1-5.

`r = reuters (sessionName, serviceName)` starts a Reuters session where `sessionName` is of the form `myNameSpace::mySession` and `serviceName` specifies the name of the service you use to connect to the data server.

`r = reuters (sessionName, serviceName, user, position)` starts a Reuters session where `sessionName` is of the form `myNameSpace::mySession` and `serviceName` is the service to use, `user` is the user ID, and `position` is the IP address of the machine to which you connect to retrieve data. Use this form of the command if you require DACS authentication.

Examples

Connecting to Reuters Data Servers

Connect to a Reuters data server with session name `'myNS::remoteSession'` and service name `'dIDN_RDF'`:

```
r = reuters ('myNS::remoteSession', 'dIDN_RDF')
r =
session: [1x1 com.reuters.rfa.internal.session.SessionImpl]
user: []
serviceName: 'dIDN_RDF'
standardPI:
[1x1 com.reuters.rfa.common.StandardPrincipalIdentity]
eventQueue: [Error]
marketDataSubscriber:
[1x1 com.reuters.rfa.internal.session.
MarketDataSubscriberImpl]
marketDataSubscriberInterestSpec:
[1x1 com.reuters.rfa.session.MarketDataSubscriber
InterestSpec]
client:
[1x1 com.mathworks.toolbox.datafeed.MatlabReutersClient]
mdsClientHandle:
[1x1 com.reuters.rfa.internal.common.HandleImpl]
```

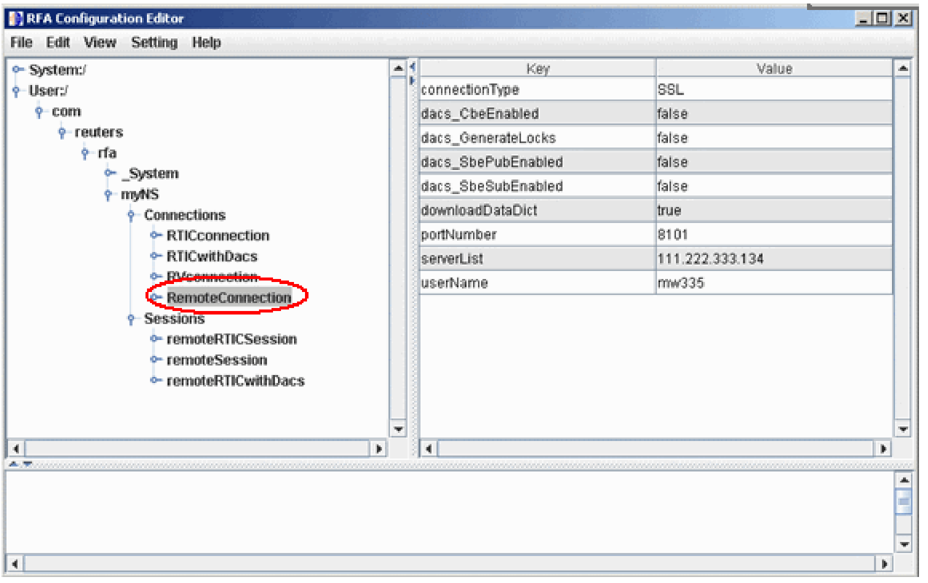
Note If you do not use the Reuters DACS authentication functionality, the following error message appears:

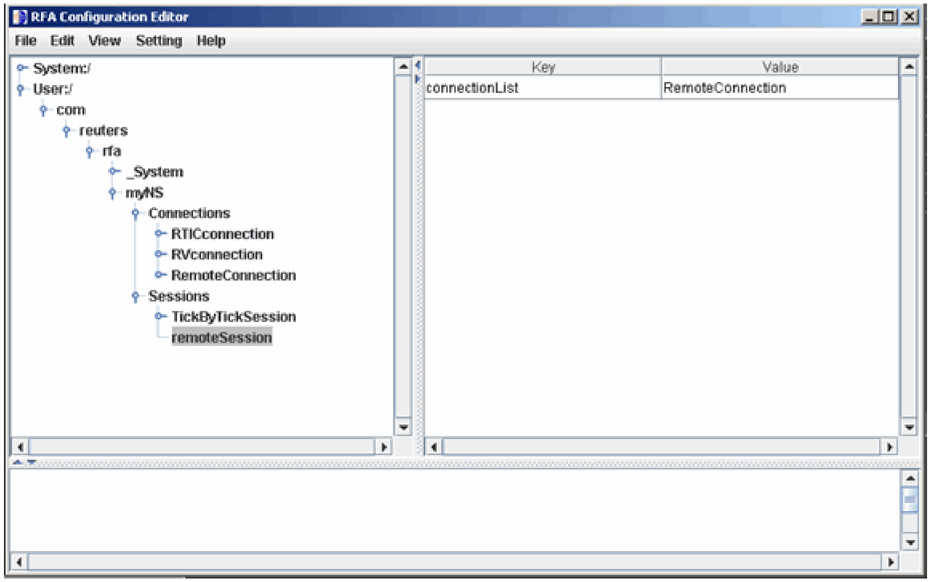
```
com.reuters.rfa.internal.connection.ConnectionImpl
initializeEntitlementsINFO:
com.reuters.rfa.connection.ssl.myNS.RemoteConnection
DACS disabled for connection myNS::RemoteConnection
```

Connecting to Reuters Data Servers Using DACS Authentication

1 Connect to a Reuters data server using DACS authentication, with session name `'myNS::remoteSession'`, service name `'dIDN_RDF'`, user id `'ab123'`, and data server IP address `'111.222.333.444/net'`:

```
r = reuters ('myNS::remoteSession', 'dIDN_RDF', ...
'ab123', '111.222.333.444/net')
```





2 Add the following to your connection configuration:

```
dacs_CbeEnabled=false
dacs_SbePubEnabled=false
dacs_SbeSubEnabled=false
```

3 If you are running an SSL connection, add the following to your connection configuration:

```
dacs_GenerateLocks=false
```

Connecting to Reuters Data Servers Without DACS Authentication

Connect to a Reuters data server with session name `'myNS::remoteSession'` and service name `'dIDN_RDF'`, without using DACS:

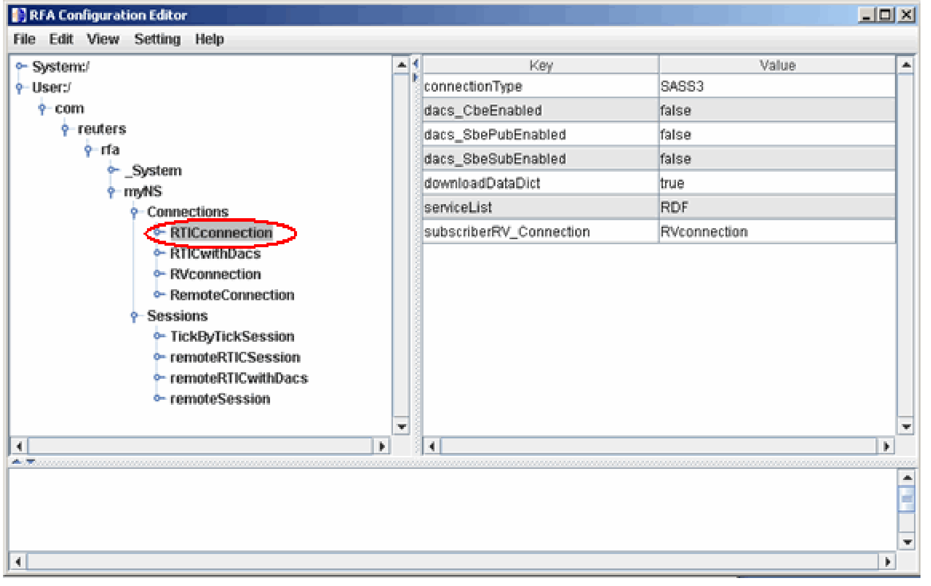
```
r = reuters ('myNS::remoteSession', 'dIDN_RDF')
```

Establishing an RTIC (TIC-RMDS Edition) Connection to Reuters Data Servers

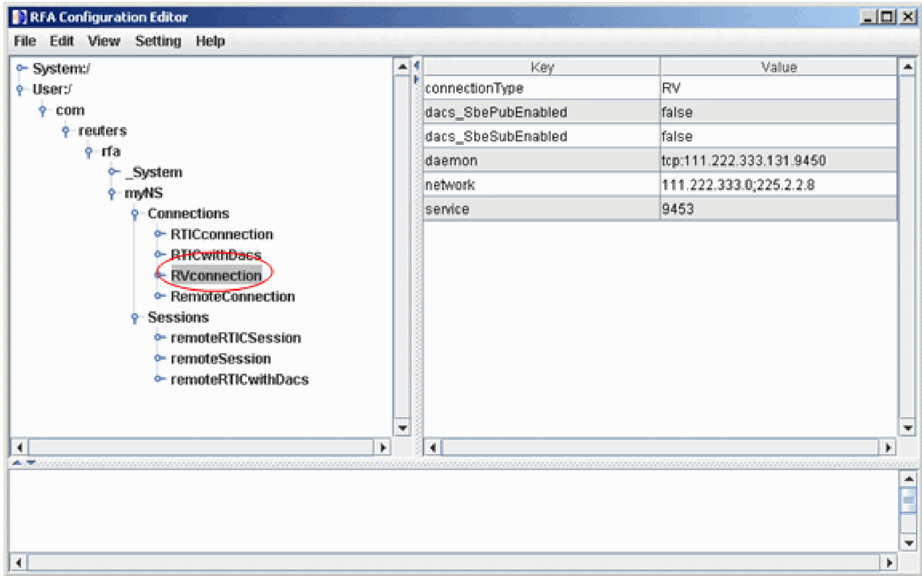
- **Non-DACs-enabled**

  Make an RTIC (TIC-RMDS Edition) connection to a Reuters data server without DACS authentication, with session name `'myNS::remoteRTICSession'`, service name `'IDN_RDF'`:

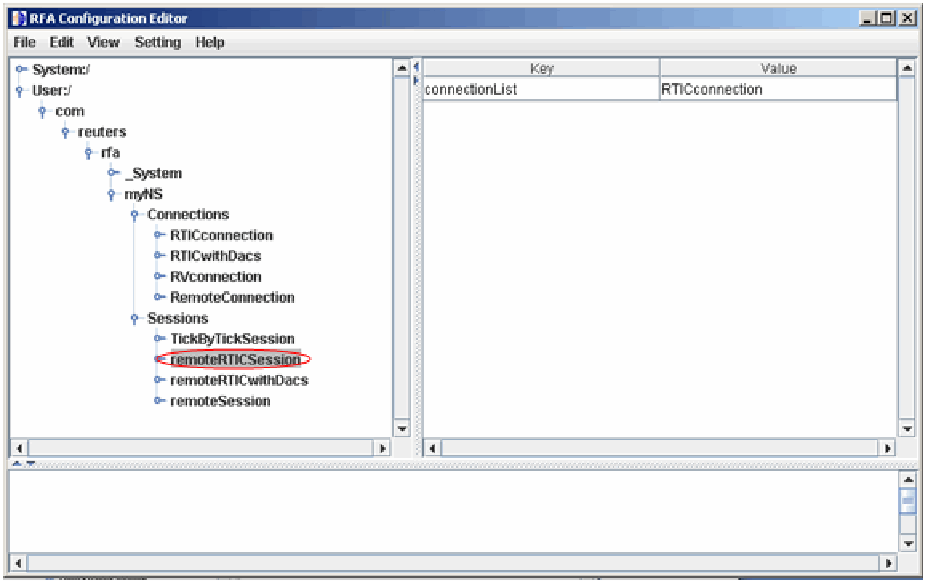
  ```
  r = reuters ('myNS::remoteRTICSession','IDN_RDF')
  ```

  This RTIC connection depends on the key subscriber `RVConnection`. Your `RVConnection` configuration should look as follows:



The `RTICConnection` configuration is referenced by the session `remoteRTICSession`, as shown in the following figure.


RFA Configuration Editor
File Edit View Setting Help
System:/
User:/
com
reuters
rfa
_System
myNS
Connections
RTICconnection
RTICwithDacs
RVconnection
RemoteConnection
Sessions
TickByTickSession
remoteRTICSession
remoteRTICwithDacs
remoteSession
Key
Value
connectionList
RTICconnection

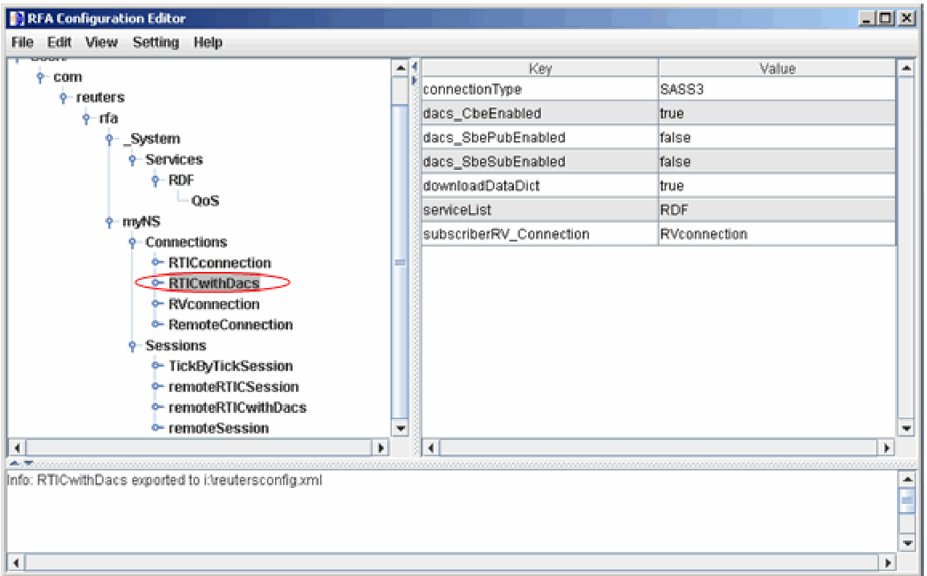
Messages like the following may appear in the MATLAB Command Window when you establish a non-DACs-enabled connection. These messages are informational and can safely be ignored.

```
Oct 5, 2007 2:28:31 PM
com.reuters.rfa.internal.connection.
ConnectionImpl initializeEntitlements
INFO: com.reuters.rfa.connection.ssl....
   myNS.RemoteConnection
DACS disabled for connection myNS::RemoteConnection
```

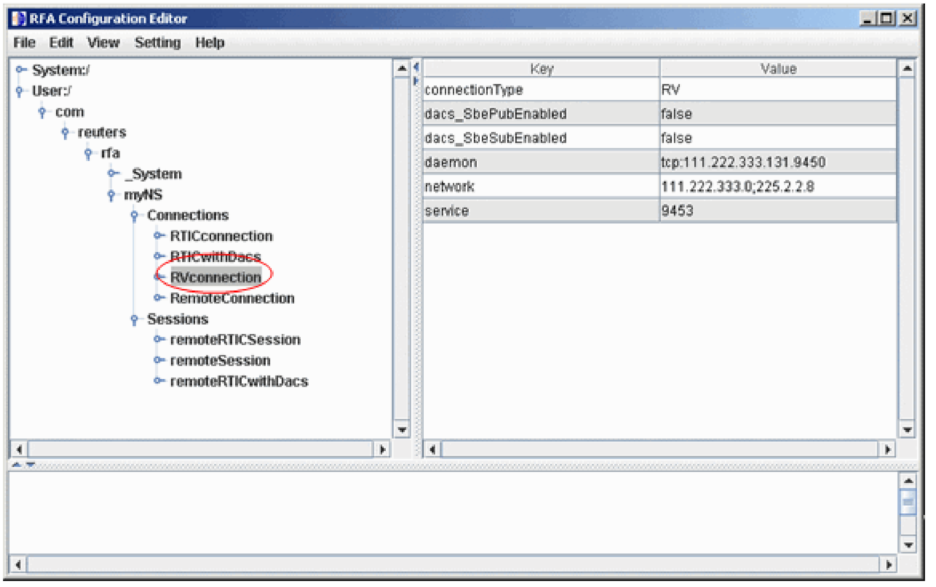
- **DACs-enabled**

  Make an RTIC (TIC-RMDS Edition), DACS-enabled connection to a Reuters data server, with session name `'myNS::remoteRTICWithDACs'`, service name `'IDN_RDF'`, user id `'ab123'`, and data server IP address `'111.222.333.444/net'`:

  ```
  r = reuters ('myNS::remoteRTICWithDACs', 'IDN_RDF', ...
  'ab123', '111.222.333.444/net')
  ```



This RTIC connection depends on the key subscriber `RVConnection`. Your `RVConnection` configuration should look as follows:



Messages like the following may appear in the MATLAB Command Window when you establish a DACs-enabled connection. These messages are informational and can be ignored safely.

```
Oct 5, 2007 2:27:14 PM ...
com.reuters.rfa.internal.connection.
ConnectionImpl$ConnectionEstablishmentThread runImpl
INFO: com.reuters.rfa.connection.sass3.myNS.RTICwithDacs
Connection successful: ...
    componentName :myNS::RTICwithDacs,
subscriberRVConnection:
{service: 9453, network: 192.168.107.0;225.2.2.8,
daemon: tcp:192.168.107.131:9450}
Oct 5, 2007 2:27:14 PM
com.reuters.rfa.internal.connection.sass3....
    Sass3LoggerProxy log
INFO: com.reuters.rfa.connection.sass3.myNS.RTICwithDacs
SASS3JNI: Received advisory from RV session@
```

```
(9453,192.168.107.0;225.2.2.8,tcp:192.168.107.131:9450):
 _RV.INFO.SYSTEM.RVD.CONNECTED
Oct 5, 2007 2:27:14 PM
com.reuters.rfa.internal.connection.ConnectionImpl
makeServiceInfo
WARNING: com.reuters.rfa.connection.sass3....
    myNS.RTICwithDacs
Service list configuration has no
    alias defined for network
serviceName IDN_RDF
```

If messages like the following appear in the MATLAB Command Window when you establish a DACs-enabled connection:

```
SEVERE: com.reuters.rfa.entitlements._Default.Global
DACS initialization failed:
com.reuters.rfa.dacs.AuthorizationException:
Cannot start the DACS Library thread due to -
Cannot locate JNI library - RFADacsLib
```

Then add an entry to the `$MATLAB/toolbox/local/librarypath.txt` file that points to the folder containing the following files:

- `FDacsLib.dll`
- `sass3j.dll`
- `sipc32.dll`

See Also

`reuters.fetch`

Purpose

Release connections to Reuters data servers

Syntax

```
close(r)
```

Arguments

`r`	Reuters session object created with the `reuters` function

Description

`close(r)` releases the Reuters connection `r`.

Examples

Release the connection `r` to the Reuters data server, and unsubscribe all requests associated with it:

```
close(r)
```

See Also

`reuters`

reuters.fetch

Purpose Request data from Reuters data servers

Syntax

```
d = fetch (r,s)
d = fetch (r,s, callback)
d = fetch(r,s,[],f)
```

Arguments

`r`	Reuters session object created with the `reuters` function
`s`	Reuters security object
`callback`	MATLAB function that runs for each data event that occurs

Description

`d = fetch (r,s)` returns the current data for the security `s`, given the Reuters session object `r`.

`d = fetch (r,s, callback)` uses the Reuters session object `r` to subscribe to the security `s`. MATLAB runs the `callback` function for each data event that occurs.

`d = fetch(r,s,[],f)` requests the given fields `f`, for the security`s`, given the Reuters session object `r`.

Examples

Retrieving Current Securities Data

Retrieve the current data for the security `GOOG.O` using the Reuters session object `r`:

```
d = fetch(r,'GOOG.O')
```

Following is a partial listing of the returned security data:

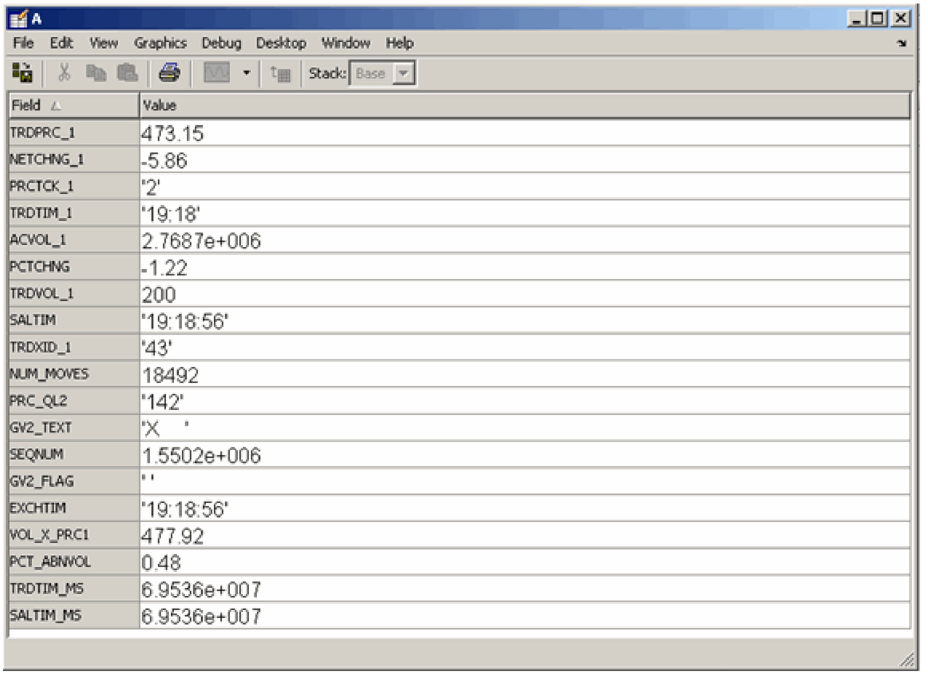
```
d =
PROD_PERM: 74.00
RDNDISPLAY: 66.00
DSPLY_NAME: 'DELAYED-15GOOGLE'
```

```
RDN_EXCHID: 'O'
TRDPRC_1: 474.28
TRDPRC_2: 474.26
TRDPRC_3: 474.25
TRDPRC_4: 474.25
TRDPRC_5: 474.25
NETCHNG_1: -4.73
HIGH_1: 481.35
LOW_1: 472.78
PRCTCK_1: '1'
CURRENCY: '840'
TRADE_DATE: '30 APR 2007
```

Subscribing to a Security

To subscribe to a security and process the data in real time, specify a `callback` function. MATLAB runs this function each time it receives a real-time data event from Reuters. In this example, the callback function, `rtdemo`, returns the subscription handle associated with this request to the base MATLAB workspace, `A`. The `openvar` function is then called to display `A` in the Variable Editor. A partial list of the data included in `A` appears in the figure.

```
d = fetch(r,'GOOG.O','rtdemo')
openvar('A')
```



Field	Value
TRDPRC_1	473.15
NETCHNG_1	-5.86
PRCTCK_1	'2'
TRDTIM_1	'19:18'
ACVOL_1	2.7687e+006
PCTCHNG	-1.22
TRDVOL_1	200
SALTIM	'19:18:56'
TRDXID_1	'43'
NUM_MOVES	18492
PRC_QL2	'142'
GV2_TEXT	'X '
SEQNUM	1.5502e+006
GV2_FLAG	' '
EXCHTIM	'19:18:56'
VOL_X_PRC1	477.92
PCT_ABNVOL	0.48
TRDTIM_MS	6.9536e+007
SALTIM_MS	6.9536e+007

See Also

`reuters`, `reuters.close`, `reuters.stop`

Purpose

Retrieve properties of Reuters session objects

Syntax

```
e = get(r)
e = get(r,f)
```

Arguments

`r`	Reuters session object created with the `reuters` function
`f`	Reuters session properties list

Description

`e = get(r)` returns Reuters session properties for the Reuters session object `r`.

`e = get(r,f)` returns Reuters session properties specified by the properties list `f` for the Reuters session object `r`.

See Also

`reuters`

reuters.history

Purpose

Request data from Reuters Time Series One

Syntax

```
d = history(r,s)
d = history(r,s,p)
d = history(r,s,f)
d = history(r,s,f,p)
d = history(r,s,d)
d = history(r,s,startdate,enddate)
d = history(r,s,startdate,enddate,p)
d = history(r,s,f,startdate,enddate)
d = history(r,s,f,startdate,enddate,p)
```

Description

`d = history(r,s)` returns all available daily historical data for the RIC, `s`, for the Reuters session object `r`.

`d = history(r,s,p)` returns all available historical data for the RIC, `s`, for the Reuters session object `r`. `p` specifies the period of the data,

- `'d'` - daily (default)
- `'w'` - weekly
- `'m'` - monthly

Note Reuters Time Series One will only return two years of daily data, five years of weekly data, or ten years of monthly data from the current date.

`d = history(r,s,f)` returns all available historical data for the RIC, `s`, and fields, `f`, for the Reuters session object `r`.

`d = history(r,s,f,p)` returns all available historical data for the RIC, `s`, and fields, `f`, for the Reuters session object `r`. `p` specifies the period of the data.

`d = history(r,s,d)` returns the historical data for the RIC, `s`, for the given date, `d`, for the Reuters session object `r`.

`d = history(r,s,startdate,enddate)` returns the daily historical data for the RIC, `s`, for the given date range defined by `startdate` and `enddate`.

`d = history(r,s,startdate,enddate,p)` returns the daily historical data for the RIC, `s`, for the given date range defined by `startdate` and `enddate`. `p` specifies the period of the data.

`d = history(r,s,f,startdate,enddate)` returns the daily historical data for the RIC, `s`, for the given date range defined by `startdate` and `enddate`.

`d = history(r,s,f,startdate,enddate,p)` returns the historical data for the RIC, `s`, and fields, `f`, for the given date range defined by `startdate` and `enddate`. `p` specifies the period of the data.

Examples

`d = history(r,'WXYZ.O')` returns a structure containing all available historical end of day daily data for the RIC `wxyz.o`, for the Reuters session object `r`.

`d = history(r,'WXYZ.O','close')` returns a structure with the fields `date` and `close` containing all available historical end of day daily data for the RIC `wxyz.o`.

`d = history(r,'WXYZ.O','close','m')` returns all available monthly data.

`d = history(r,'WXYZ.O','01-03-2009','02-24-2009')` returns all available daily data for the date range 01-03-2009 to 02-24-2009. Note that only two years worth of daily data, five years worth of weekly data, and 10 years of yearly data from today's date is made available by Reuters.

```
d =
history(r,'WXYZ.O',{'close','volume'},'01-03-2009','02-24-2009')
```

returns all available daily data for the date range 01-03-2009 to 02-24-2009 for the fields `date`, `close` and `volume`.

```
d =
history(r,'WXYZ.O',{'close','volume'},'01-03-2009','02-24-2009','w')
```

returns all available weekly data for the date range 01-03-2009 to 02-24-2009 for the fields `date`, `close` and `volume`.

See Also `reuters`, `reuters.fetch`

Purpose

Unsubscribe securities

Syntax

```
stop(r)
stop(r,d)
```

Arguments

`r`	Reuters session object created with the `reuters` function
`d`	Subscription handle returned by `reuters/fetch`

Description

`stop(r)` unsubscribes all securities associated with the Reuters session object `r`.

`stop(r,d)` unsubscribes the securities associated with the subscription handle `d`, where `d` is the subscription handle returned by `reuters/fetch`.

Examples

Unsubscribe securities associated with a specific request `d` and a Reuters connection object `r`:

```
stop(r,d)
```

Unsubscribe all securities associated with the Reuters connection object `r`:

```
stop(r)
```

See Also

`reuters.fetch`, `reuters`

rkd

Purpose

Establish Reuters Knowledge Direct connection

Syntax

`r = rkd (username, password)`

Arguments

`username`	User name required for a Reuters Knowledge Direct connection.
`password`	Password required for a Reuters Knowledge Direct connection.

Description

`r = rkd (username, password)` establishes a Reuters Knowledge Direct connection.

Examples

Establish a Reuters Knowledge Direct connection `r`:

```
r = rkd('username', 'password')
r =
        user: 'username'
    password: '********'
```

See Also

`rkd.fetch`

Purpose

Close Reuters Knowledge Direct connection

Syntax

```
close(c)
```

Arguments

`c`	Reuters Knowledge Direct connection object.

Description

`close(c)` closes a Reuters Knowledge Direct connection.

Examples

Close the Reuters Knowledge Direct connection `c`:

```
close(c)
```

See Also

`rkd`

rkd.fetch

Purpose

Request Reuters Knowledge Direct data

Syntax

```
y = fetch (r,s)
y = fetch (r,s, 'name1', value1, 'name2', value2 ...)
```

Arguments

`r`	Reuters Knowledge Direct connection object.
`s`	Name of security for which to request data.

Optional Input Arguments

`'companyIdType'` Specify the type of security for which to request data. Valid values are:

- `'TICKER'` (default)
- `'RIC'`
- `'VALOR'`
- `'CUSIP'`
- `'ISIN'`
- `'SEDOL'`
- `'ESTIMATEID'`

`'countryCode'` Enter a string value for `'countryCode'`, for example, `'US'`. This field is empty by default.

`'fperiod'` (fiscal year)	Specify one or more fiscal years for which to return data. Enter multiple values as a cell array of strings. Valid values are: • `'PRVS2'` • `'PRVS'` • `'CURR'` • `'NEXT'` • `'NEXT2'` `'fperiod'` is empty by default. This returns data for the previous three years.
`'esttype'`	Specify the type of estimate data to return. Enter multiple values as a cell array of strings. Valid values are: • `'$PRIMARY'` • `'EPS'` • `'EPSEBG'` • `'EPSREP'` • `'FFO'` • `'REVENUE'` • `'EBITDA'` • `'CPS'` • `'DPS'` • `'NAV'` • `'NPROFIT'` • `'NPROFITREP'` • `'NPROFITEBG'` • `'OPROFIT'`

- 'PPROFIT'
- 'PPROFITREP'
- 'PPROFITEBG'
- 'EBIT'
- 'LTGROWTH'
- 'TARGETPRICE'
- 'STOPINION'
- 'SUPOPINION'
- 'ROA'
- 'ROE'
- 'BVPS'

	'esttype' is empty by default. This returns data for the previous three years for all esttypes.
'agg' (aggregation)	Enter multiple values for agg as a cell array of strings. Valid values are as follows: • 'ATTR' (attributed) • 'CONS' (consensus) • 'ALL' (attributed and consensus) 'agg' is empty by default.
'earntype'	Get primary earnings data by assigning '$PRIMARYEARN' to 'earntype'. This field is empty by default.

`'hperiod'` (historical period)	Specify a time period for which to obtain consensus estimates. This argument applies only to reports whose `reportType` value is `ConsensusEstimates`. Valid values are as follows: • `'CURR'` (Current period) • `'1WA'` (one week ago) • `'1MA'` (one month ago) • `'2MA'` • `'3MA'` • `'4MA'` • `'5MA'` • `'6MA'` • `'7MA'` • `'8MA'` • `'9MA'` • `'10MA'` • `'11MA'` • `'12MA'` • `'13MA'` • `'14MA'` • `'15MA'` • `'16MA'` • `'17MA'` • `'18MA'` • `'3MHST'` (3-month history)

	• '12MHST' • '18MHST' 'hperiod' is empty by default. This returns the current data.
'rTime' (real-time request)	Entering 1 for 'rTime' makes a real-time request for earnings estimates. This field is empty by default.
'reportType'	Specify what type of report to return. Valid values are: • 'EarningsEstimates' • 'ConsensusEstimates' • 'EarningsEstimatesMetaInfo'

Description

y = fetch (r,s) requests estimate data for all esttype fields of the security s, from the Reuters Knowledge Direct connection r.

y = fetch (r,s, 'name1', value1, 'name2', value2 ...) requests estimate data for all fields of the security s, from the Reuters Knowledge Direct connection r for an optional input list of parameter name/value pairs. For more information, see “Optional Input Arguments” on page 6-132.

Examples

1 Request EPS earnings estimates for company 'XYZ':

```
d = fetch(r,'XYZ','esttype','EPS')
d =
      ReutersResearchAPIResponse: [1x1 struct]
    GetEarningsEstimatesResponse: [1x1 struct]
                          Status: [1x1 struct]
                            Name: [1x1 struct]
                            CoId: [1x1 struct]
                        Security: [1x1 struct]
                        Exchange: [1x1 struct]
```

```
              Country: [1x1 struct]
                SecId: [1x1 struct]
       MarketDataItem: [1x1 struct]
               Sector: [1x1 struct]
             Industry: [1x1 struct]
              Primary: [1x1 struct]
             Currency: [1x1 struct]
      CurFiscalPeriod: [1x1 struct]
               Annual: [1x1 struct]
              Interim: [1x1 struct]
             FYActual: [1x1 struct]
             FYPeriod: [1x1 struct]
             ActValue: [1x1 struct]
```

2 Display information about the company:

```
Company = [{'XYZ'} d.Name.value;...
         {'ID'}          d.CoId.value(1);...
         {'Primary'}     d.Primary.value{1};...
         {'Primary'}     d.Primary.value{2};...
         {'Primary'}     d.Primary.value{3};...
         {'Primary'}     d.Primary.value{4};...
         {'Primary'}     d.Primary.value{5};...
         {'' ''};...
         {'Sector'}      d.Sector.value{1};...
         {'Code'}        d.Sector.code{1};...
         {'Set'}         d.Sector.set{1};...
         {'' ''};...
         {'Industry'}    d.Industry.value{1};...
         {'Code'}        d.Industry.code{1};...
         {'Set'}         d.Industry.set{1};...
         {'' ''};...
         {'Currency'}    d.Currency.value{1};...
         {'Code'}        d.Currency.code{1};...
         {'Set'}         d.Currency.set{1};...
         {'Type'}        d.Currency.type{1};...
         {'' ''};...
```

```
            {'Fiscal Year'}  d.CurFiscalPeriod.fYear{1};...
            {'End Month'}    d.CurFiscalPeriod.fyem{1};...
            {'Period Type'}  d.CurFiscalPeriod.periodType{1};...
            ]
Company =
    'XYZ'            'XYZ Inc.'
    'ID'              'US_33584
    'Primary'         'PRX'
    'Primary'         'Mean'
    'Primary'         'EPS'
    'Primary'         'Q'
    'Primary'           [1x278 char]
               ''                  ''
    'Sector'          'Technology'
    'Code'            '57'
    'Set'             'RBSS2004'
               ''                  ''
    'Industry'          [1x28  char]
    'Code'            '57211'
    'Set'             'RBSS2004'
               ''                  ''
    'Currency'        'U.S. Dollars'
    'Code'            'USD'
    'Set'             'ISO'
    'Type'            'CONSENSUS'
               ''                  ''
    'Fiscal Year'     '2008'
    'End Month'       '12'
    'Period Type'     'Q'
```

3 Display security data (partial data appears here due to space constraints):

```
SecurityInfo = [...
  {'Code' 'Country' '' '' 'Sec IDs' '' ''};...
  {'' 'Set' 'Code' 'XYZ' 'Set' 'Type' 'ID'};...
  d.Security.code d.Country.set d.Country.code d.Country.value ...
```

```
  {'' '' ''};
  cell(6,4) d.SecId.set d.SecId.type d.SecId.value;...
   ]
SecurityInfo =
        'Sec IDs'               ''                 ''
        'Set'          'Type'           'ID'
    ''                 ''                ''
        'LOCAL'        'RIC'            'XYZ.O'
        'LOCAL'        'Display RIC'    'XYZ.OQ'
        'LOCAL'        'TICKER'         'XYZ'
        'LOCAL'        'ISIN'           'US33584P5089'
        'LOCAL'        'SEDOL'          'A0208X3'
        'LOCAL'        'CUSIP'          '33584P508'
```

4 Display market data:

```
MarketData = [{'Code' 'Type' 'Unit' 'Updated' 'Data'};...
  d.MarketDataItem.currCode d.MarketDataItem.type...
  d.MarketDataItem.unit d.MarketDataItem.updated ...
  d.MarketDataItem.value]
MarketData =
    'Code' 'Type'       'Unit' 'Updated'               'Data'
    'USD'  'CLPRICE'    'U'    '2008-01-18T00:00:00'   '600.250000'
    'USD'  'SHARESOUT'  'U'                       []   '312840485'
    'USD'  'MARKETCAP'  'M'                       []   '187782.5011'
    'USD'  '52WKHIGH'   'U'    '2007-11-07T00:00:00'   '747.2400'
    'USD'  '52WKLOW'    'U'    '2007-03-05T00:00:00'   '437.0000'
```

5 Display EPS data:

```
ActualsData = [{'Year' 'Type' 'End Year' 'End Month' ...
'Updated' 'Value'}; ...
  d.FYPeriod.fYear d.FYPeriod.periodType d.FYPeriod.endCalYear ...
  d.FYPeriod.endMonth d.ActValue.updated d.ActValue.value]
ActualsData =
'Year'   'Type'  'End Year' 'End Month' 'Updated'             'Value'
'2007'   'Q'     '2007'      '9'      '2007-10-18T20:03:53'   '3.9100'
```

```
'2007'   'Q'   '2007'   '6'    '2007-07-19T20:07:43'   '3.5600'
'2007'   'Q'   '2007'   '3'    '2007-04-19T20:06:47'   '3.6800'
'2006'   'A'   '2006'   '12'   '2007-01-31T21:06:56'   '10.5900'
'2006'   'Q'   '2006'   '12'   '2007-01-31T21:05:45'   '3.1800'
'2006'   'Q'   '2006'   '9'    '2006-10-19T20:04:12'   '2.6200'
'2006'   'Q'   '2006'   '6'    '2006-07-20T20:05:12'   '2.4900'
'2006'   'Q'   '2006'   '3'    '2006-04-20T20:06:09'   '2.2900'
'2005'   'A'   '2005'   '12'   '2006-02-01T19:09:12'   '5.7000'
'2005'   'Q'   '2005'   '12'   '2006-02-01T19:09:12'   '1.5400'
'2005'   'Q'   '2005'   '9'    '2005-10-20T20:06:53'   '1.5100'
'2005'   'Q'   '2005'   '6'    '2005-07-21T20:08:38'   '1.3600'
'2005'   'Q'   '2005'   '3'    '2005-04-21T20:23:25'   '1.2900'
'2004'   'A'   '2004'   '12'   '2005-02-02T17:45:56'   '2.7500'
'2004'   'Q'   '2004'   '12'   '2005-02-02T17:45:56'   '0.9200'
'2004'   'Q'   '2004'   '9'    '2004-10-22T12:13:38'   '0.7000'
```

See Also

rkd

Purpose

Get properties of Reuters Knowledge Data connection

Syntax

```
v = get(c, 'propertyname')
v = get(c)
```

Arguments

`c`	Reuters Knowledge Data connection object created with the `rkd` function.
`'propertyname'`	A string or cell array of strings containing names of the connection object's properties. `user` is a valid property name.

Description

`v = get(c, 'propertyname')` returns the values of the specified properties of the Reuters Knowledge Data connection object.

`v = get(c)` returns a structure where each field name is the name of a property of `c`, and each field contains the name of the property.

See Also

`rkd`, `rkd.close`, `rkd.fetch`

rkd.isconnection

Purpose Verify whether Reuters Knowledge Data connections are valid

Syntax

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

Arguments

`c`	Reuters Knowledge Data connection object created with the `rkd` function.

Description `x = isconnection(c)` returns `x = 1` if the connection is valid. Otherwise `x = 0`.

Examples Establish a Reuters Knowledge Data connection:

```
c = rkd
```

Verify that the connection, `c`, is valid:

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

See Also `rkd`, `rkd.close`, `rkd.fetch`, `rkd.get`

Purpose

Retrieve data from Reuters Newscope sentiment archive file

Syntax

```
x = rnseloader(file)
x = rnseloader(file, 'date', {DATE1})
x = rnseloader(file, 'date', {DATE1, DATE2})
x = rnseloader(file, 'security', {SECNAME})
x = rnseloader(file, 'start', STARTREC)
x = rnseloader(file, 'records', NUMRECORDS)
```

Arguments

Specify the following arguments as name-value pairs. You can specify any combination of name-value pairs in a single call to `rnseloader`.

`file`	Reuters Newscope sentiment archive file from which to retrieve data.
`'date'`	Use this argument with `{DATE1, DATE2}` to retrieve data between and including the specified dates. Specify the dates as numbers or strings.
`'security'`	Use this argument to retrieve data for `SECNAME`, where `SECNAME` is a cell array containing a list of security identifiers for which to retrieve data.
`'start'`	Use this argument to retrieve data beginning with the record `STARTREC`, where `STARTREC` is the record at which `rnseloader` begins to retrieve data. Specify `STARTREC` as a number.
`'records'`	Use this argument to retrieve `NUMRECORDS` number of records.

Description

- `x = rnseloader(file)` retrieves data from the Reuters Newscope sentiment archive file `file`, and stores it in the structure `x`.
- `x = rnseloader(file, 'date', {DATE1})` retrieves data from `file` with date stamps of value `DATE1`.

- `x = rnseloader(file, 'date', {DATE1, DATE2})` retrieves data from `file` with date stamps between `DATE1` and `DATE2`.
- `x = rnseloader(file, 'security', {SECNAME})` retrieves data from `file` for the securities specified by `SECNAME`.
- `x = rnseloader(file, 'start', STARTREC)` retrieves data from `file` beginning with the record specified by `STARTREC`.
- `x = rnseloader(file, 'records', NUMRECORDS)` retrieves `NUMRECORDS` number of records from `file`.

Examples

- Retrieve data from the file `file.csv` with date stamps of `02/02/2007`:

```
x = rnseloader('file.csv','date',{'02/02/2007'})
```

- Retrieve data from `file.csv` between and including `02/02/2007` and `02/03/2007`:

```
 x = rnseloader('file.csv','date',{'02/02/2007',...
'02/03/2007'})
```

- Retrieve data from `file.csv` for the security `XYZ.O`:

```
x = rnseloader('file.csv','security',{'XYZ.O'})
```

- Retrieve the first 10000 records from `file.csv`:

```
x = rnseloader('file.csv','records',10000)
```

- Retrieve data from `file.csv`, starting at record 100000:

```
x = rnseloader('file.csv','start',100000)
```

- Retrieve up to 100000 records from `file.csv`, for the securities `ABC.N` and `XYZ.O` , with date stamps between and including the dates `02/02/2007` and `02/03/2007`:

```
x = rnseloader('file.csv','records',100000,...
               'date',{'02/02/2007','02/03/2007'},...
               'security',{'ABC.N','XYZ.O'})
```

See Also

`reuters`, `rdthloader`

yahoo

Purpose

Connect to Yahoo! data servers

Syntax

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

Arguments

`URL`	Must be `http://quote.yahoo.com`.
`IPAddress`	A MATLAB string containing the IP address of the 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

Connect to the Yahoo! data server:

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

Connect 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

`yahoo.close`, `yahoo.fetch`, `yahoo.get`, `yahoo.isconnection`

yahoo.close

Purpose

Close connections to Yahoo! data servers

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`

yahoo.fetch

Purpose

Request data from Yahoo! data servers

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 name of a security in a format recognizable by the Yahoo! server.

Note Retrieving historical data for multiple securities at one time is not supported for Yahoo. You can fetch historical data for only a single security at a time.

`Fields` A MATLAB string or cell array of strings indicating the data fields for which to retrieve data. A partial list of supported values for current market data are:

- `'Symbol'`
- `'Last'`
- `'Date'`
- `'Time'`
- `'Change'`
- `'Open'`
- `'High'`
- `'Low'`
- `'Volume'`

A partial list of supported values for historical data are:

- `'Close'`
- `'Date'`
- `'High'`
- `'Low'`
- `'Open'`
- `'Volume'`
- `'Adj Close'`

For a complete list of supported values for market and historical data, see `yhfields.mat`.

`Date`	Date string or serial date number indicating date for the requested data. If you enter today's date, `fetch` returns yesterday's data.
`FromDate`	Beginning date for historical data.

> **Note** You can specify dates in any of the formats supported by `datestr` and `datenum` that show a year, month, and day.

`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 security.

> **Note** This function does not support retrieving multiple securities at once. You must fetch a single security at a time.

`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

Retrieving Last Prices for a Set of Equities

Connect to 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
```

Retrieving a Closing Price on a Specified Date

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

```
c = yahoo;
ClosePrice = fetch(c,'ko','Close','Apr 6 00')
ClosePrice =
  1.0e+005 *
    7.3058    0.0005
```

See Also

`yahoo.close`, `yahoo.get`, `yahoo.isconnection`, `yahoo`

yahoo.get

Purpose Retrieve properties of Yahoo! connection objects

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`. Each field contains the value of the property.

Examples

Connect to a Yahoo! data server:

```
c = yahoo
c =

     url: 'http://finance.yahoo.com'
      ip: []
    port: []
```

Retrieve the URL of the connection:

```
get(c, 'url')

ans =

http://finance.yahoo.com
```

See Also

`yahoo.close`, `yahoo.fetch`, `yahoo.isconnection`, `yahoo`

yahoo.isconnection

Purpose Verify whether connections to Yahoo! data servers are valid

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` otherwise.

Examples Connect to a Yahoo! data server:

```
c = yahoo
```

Verify that the connection, `c`, is valid:

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

See Also `yahoo.close`, `yahoo.fetch`, `yahoo.get`, `yahoo`

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Examples

Use this list to find examples in the documentation.

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