

RemotePlus User Guide

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Chapter 2 Preface

Audience for This Manual

This manual is designed for ICE Data Services' clients using RemotePlus℠. The manual assumes that the user has a fundamental knowledge of global financial markets, computers, and Microsoft® Excel®. Some chapters assume a familiarity with programming concepts and structures. The manual includes instructions on how to customize your applications using the RemotePlus Application Programming Interface (API)

How this Guide is Organized

The RemotePlus User's Guide is organized as follows:

Chapter 3, Overview
Provides a brief overview of RemotePlus benefits and features, and the applications and environments in which RemotePlus runs.

Chapter 4, RemotePlus for Excel
Discusses what you need to know to use RemotePlus for Excel: how to start the service and retrieve data, how to look up security identifiers and data items online, and how to create and use list files. It also includes a number of data retrieval examples.

Chapter 5, RemotePlus Template
Discusses what you need to know to use the RemotePlus Template: how to edit the template and retrieve data either on an automated schedule or manually refreshing it.

Chapter 6, Data Retrieval Requests
Provides syntax and examples of RemotePlus requests for retrieving data and disconnecting from the server.

Chapter 7, VBA Macro
Sample VBA macro and description of the RemotePlus VBA class.

Chapter 8, Installation & Troubleshooting
Describes installing RemotePlus for Windows, changing RemotePlus settings, and communications troubleshooting.

Chapter 9, Error Messages
Describes the system messages and error conditions that can occur when you run RemotePlus.

Chapter 10, Key Prefixes
Lists the key prefixes used to retrieve data in RemotePlus.

Chapter 11, Settings File
Provides definitions for the tags for the RemotePlus.XML file for RemotePlus 4.0.

Chapter 12, Efficiency Considerations
Provides helpful hints for efficient use of RemotePlus.

Related Documentation

- The RemotePlus Data Item Codes list offers a quick way to view data items available through RemotePlus. The guide includes a description of available data, access keys, periodicity, data sources, update frequencies, and additional considerations for accessing data.

- The RemotePlus Guide To Data offers a description of data items available through RemotePlus.
- Quick Reference cards summarize RemotePlus features “at-a-glance”. The RemotePlus Data Quick Reference card lists the most common RemotePlus data item mnemonics along with a description of the item and the item format.

Conventions Used in This Manual

- **Bold text** is used for emphasis.
- *Italic text* is used for conditional or variable information, and for date formats.
- Input, movement, and function keys are enclosed in brackets, e.g., “Type **[Ctrl] + d**” means “Type the Control plus D keys”.
- “Dialog box” refers to a window displayed in Windows applications (e.g., Excel) used to specify data requests or system requirements.
- “Click” or “Click on” refers to the action you must take with your mouse button for RemotePlus to complete an operation, e.g., click **OK.**
- “Press **[↵]**” means that you should press the Enter (or Return) key.

Chapter 3 RemotePlus Overview

This chapter provides a brief overview of RemotePlus and the applications and environments in which it runs, as well as how to construct data requests.

Introduction

RemotePlus integrates with your applications, such as Microsoft Excel, and other analytical software. RemotePlus communicates with ICE Data Services host server system, letting you look up and retrieve global financial and research data into a spreadsheet. You can access a comprehensive range of current and historical security information that includes pricing, evaluations, and reference data on more than 13,000,000 issues worldwide.

RemotePlus lets you concentrate on research and analytical efforts. You don't have to learn new applications or deal with multiple data delivery methods. The system provides an easy-to-learn and easy-to-use means of specifying and retrieving data.

Applications and Environments

Operating Systems

RemotePlus supports the following operating systems for end-user data retrieval:

- **Excel Addin Version 4.0** - Windows 10 or newer and Excel 2016 or newer. Both 32-bit and 64-bit versions
- **Native HTTPS POST interface -** See Chapter 4 for more information.
- **Application Programming Interface (API) for VBA** - Windows 10 or newer and Excel 2016 or newer. Both 32-bit and 64-bit versions

Communications Options

RemotePlus supports the following methods of direct connection to ICE Data Services' host system:

- **Internet** (HTTPS)
- **Leased line**

Maintenance Windows

The Remoteplus maintenance window is Saturday 8pm (ET) to Sunday 8am (ET). During this time RemotePlus may be unavailable or return unexpected results. The ETD (Exchange Traded Derivatives) service has a maintenance window every Saturday between 1 pm - 8 pm ET. ETD is one of the sources for RemotePlus so any request for ETD data could be unavailable or return unexpected results during the ETD maintenance window.

RemotePlus retrieves information for the securities and data items that you specify. Optionally, you can specify the date or date range for the data. This section describes how you enter each of these elements: security identifiers, data items, and dates.

Securities

You enter security identifiers separated by commas. You can use a wide variety of security identifiers including, but not limited to:

- U.S./Canadian Ticker Symbols*
- CUSIP® Numbers
- SEDOL® Numbers
- ISO Currency Codes
- ISIN Numbers**

Please refer to **Chapter 10, Key Prefixes** for a list of identifier types you may use.

You can mix different types of identifiers in a single request. In some cases, you must qualify identifiers with a security prefix, such as “CD:” for Commodity futures contracts.

If you do not know the identifier for a security, you can use the RemotePlus **Security Lookup** feature (as described in **Chapter 4, RemotePlus for Excel**) for assistance in locating the identifier.

*The use of ticker symbols as input keys is not recommended as they are not unique across exchanges. To aid in differentiating between exchanges the following ticker suffixes are allowed.

Suffix	Description
-BZ	BATS BZX Exchange
-TC	Toronto Stock Exchange
-VC	TSX Venture Exchange

**We do not recommend using an ISIN identifier to access pricing data as ISIN numbers are not exchange specific. You may specify the 2 character ISO country code after the ISIN to specify the country you would like prices from. For example, by default RemotePlus will convert the ISIN US4592001014 to the CUSIP identifier. If you wanted to request German prices; however, you would append the country code for Germany (DE) to the end of the ISIN as follows, “US4592001014@DE” causing RemotePlus to convert the ISIN to the German SEDOL in order to retrieve data.

List Files

The RemotePlus list file feature lets you refer to a list of security identifiers or data items by entering the name of the file containing the list. You enter the name of the file preceded by an exclamation mark to specify a list file in a data request. For example:

Entry	Action
!MYLIST.LST	Enters contents of MYLIST.LST stored in the same directory you installed RemotePlus.
!C:\MYDATA\ MYLIST.LST	Enters contents of C:\MYDATA\MYLIST.LST

You can create a list file from a spreadsheet (assuming the identifiers are in the first column) by saving the spreadsheet in “CSV” format. (Select **File-Save As...** and choose file type CSV.)

Security Prefixes

In cases where your security identifier entry might be interpreted ambiguously, you must preface the identifier with a code. For example, to identify a commodity or futures contract, you must preface the contract code with “CD:”. To specify the S&P 500 contract for September 2013, you would type “CD:SP13U0”. All security identifier prefixes have the form:

[prefix]:<identifier>

When you use Security Lookup to locate security identifiers, RemotePlus includes a prefix where needed. (Refer to **Chapter 10, Key Prefixes** for a list of prefixes.)

Prefacing Lists of Identifiers

To save typing, you can preface a list of security identifiers in parentheses. For example, MM:(TCMS5Y01, TCMS5Y05, TCMS5Y10) specifies the Money Market Identifiers for constant maturity U.S. Treasury securities for 1, 5, and 10 years. The prefix “MM:” applies to each identifier in the list. You can preface identifiers in a list file the same way. For example, CD:!COMM.TXT specifies that each identifier in the list file COMM.TXT is a commodity symbol. (Refer to **Chapter 10, Key Prefixes** for a list of prefixes.)

Items

You enter data item mnemonics separated by commas. A data item mnemonic is a code that uniquely identifies the type of data you want to retrieve. You can use **RemotePlus Item Lookup** (as described in **Chapter 4, RemotePlus for Excel**) for assistance in locating data item mnemonics. Optionally, you can specify the name of a list file containing a list of data items. (For a comprehensive list of the data items available in RemotePlus, refer to the *RemotePlus Data Item Codes*.)

RemotePlus uses three types of data items:

- **Time-independent**: Retrieves a single value for each security. For example, data item DES1 retrieves the issuer name.
- **Time-series**: Retrieves data for a single period or consecutive periods. For example, data item PRC retrieves the best price or evaluation.
- **Record**: Retrieves a set of fields for each security, rather than a single value. For example, data item NXDV retrieves one or more records describing dividends and splits.

You can combine time-series and time-independent data items in a single retrieval. You should retrieve record data items **one at a time**; otherwise data is returned in an unpredictable format.

Best Price/Evaluation

In RemotePlus, item PRC retrieves the best price/evaluation. (Item L:PRC retrieves the latest best price/evaluation available.) The best price/evaluation may be either the price generally accepted as the most appropriate representation of a security’s closing market value based on individual market conventions, or an evaluation. ICE Data Services’ bid side evaluations are market based measurements that represent our good faith opinion as to what the holder would receive in an orderly transaction (typically in an institutional round lot position) under current market conditions. L:PRC and PRC use a hierarchy of price/evaluation types specific to asset type and market.

Dates

You can specify a date, or range of dates, for time-series data items. (If you omit dates for time-series data items, RemotePlus retrieves the latest available data values.) The following examples illustrate the more common date forms RemotePlus accepts.

Periodicity	Date Formats	Example
Daily	mm/dd/yyyy	06/04/2014
	mmm d yyyy or mmm dd yyyy	Jun 4 2014 or Jun 04 2014
	yyyymmdd	20140604
	d mmm yyyy or dd mmm yyyy	4 Jun 2014 or 04 Jun 2014
Monthly	mm/yy or mm yy or mmyy	06/14 or 06 14 or 0614
	mmm yyyy	Jun 2014
	m..m yyyy	June 2014
	yyyymm	201406
Quarterly	yyyyq	20141
Annual	yyyy	2014

When you type a single date, you receive a single period of data; when you type both a Start Date and an End Date, you receive the data spanning the date range. You may also enter a list of non-consecutive dates to retrieve data for those specific dates. RemotePlus interprets dates in conjunction with periodicity, where necessary, converting the data to the periodicity you specify.

Record Data Item Dates

Record data items can be retrieved for specific ranges of dates. Unlike time-series data items, you cannot retrieve a record for each consecutive date. As the default, RemotePlus retrieves the latest available data values. In Excel, this occurs when you do not specify Start and End dates. Record data items are identified by “Record” in their description in RemotePlus Item Lookup.

Date Ranges

When you use both a Start and End date, you retrieve data for that time frame. The following examples illustrate common ways of specifying ranges. Each shows the periodicity RemotePlus infers from the dates.

Start	End	Result
20130604	20140604	daily time series
6/2014	6/2013	monthly time series, latest to earliest
20141	20142	quarterly time series
1999	2014	annual time series
20140604	-9	10 days, through June 4, 2014; *see* Relative Dates
*	-9	latest 10 periods of natural periodicity of data items. (“*” is a special date)
*		latest single period of natural periodicity of data items requested

With Periodicity set to **Auto** in Excel or not specified in the GET command for users who programmed to the RemotePlus API, the dates you enter determine the data periodicity. The RemotePlus Periodicity field can be used to return data with a different periodicity from that implied by the dates you enter.

Lists of Dates

In Excel, you can enter a single date or a list of comma-separated dates to retrieve data for non-consecutive dates. For example, “4/27/14,5/2/14,5/7/14” returns data for those three dates, respectively. When using the “As List” option, you may also enter a filename preceded by a “!” to indicate a file containing multiple dates. The dates in the file must be entered on separate lines of the file. The “As List” option for dates must be selected for lists of dates.

Available Periodicities

In general, you can retrieve data at less than “natural” periodicity, but not the reverse. For example, pricing/evaluation data, normally stored on a daily basis, can be retrieved at any of the periodicities shown below. RemotePlus compacts certain data (e.g., latest close, highest high, etc.). If periodicity is not specified (Auto) the periodicity of the first item in the request will set the periodicity for the entire request.

Option	Description
A or Annual	Annual (Fiscal year for fundamental data)
Q or Quarterly	Quarterly (Fiscal quarter for fundamental data)
M or Monthly	Monthly
W or Weekly	Weekly - Values for Fridays

Option	Description
D or Daily	Daily - Monday through Friday
D7 or Daily - 7-Day Week	Daily - Monday through Sunday
DX7 or Daily except Sunday	Daily - Monday through Saturday
N, blank, or Auto	“Natural” periodicity

Retrieving a Range of Data for a Specific Period

You can use a single date with the appropriate periodicity to get a range of data. In general, you receive a range of values when you specify a periodicity and a single date implying a less frequent periodicity. For example:

Start	End	Periodicity	Result
2014		Daily	Daily time series
May 14		Daily	Daily time series
May 04	May 14	Daily	Daily time series
20040501	20140501	Auto	Daily time series
20040501	20140501	Monthly	Monthly time series
20040501	20140501	Weekly	Weekly time series of Friday values
200405	20140501	Auto	Monthly time series

You can specify one date (either Start or End) as an asterisk (*) to retrieve time series values for the latest "*n*" time periods; then, specify the other date as a negative number representing the number of periods to go back in time. The "*" date retrieves the most recent data for each security/data item combination. The dates match the first security and data item retrieved when you retrieve titles; these titles may not match subsequent securities when you mix active securities with inactive ones or combine data items updated on different schedules. For example:

Start	End	
*	-14	Returns the most recent 15 periods of data, from earliest to latest

You can specify one date (either **Start** or **End**) as a date; then, specify the other date as a positive (or negative) number representing the number of periods to go forward (or backward) in time. For example:

Start	End	
20140523	+9	Returns 10 periods of data starting with May 23, 2014

Last Available Value Option

RemotePlus can return the most recent available value on or before a requested date for timeseries retrieval. For instance, when retrieving a timeseries of pricing/evaluation data where the dates requested include holidays, using the Last Available Value Option will return data for all of these dates (no "N/A" data will be returned).

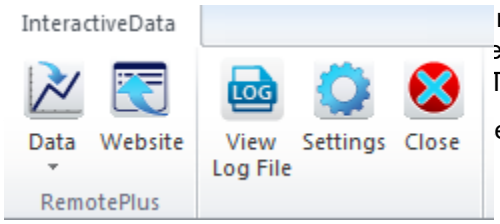
Chapter 4 RemotePlus for Excel

This chapter describes how to use RemotePlus for Microsoft Excel. Refer to **Chapter 8, Installation and Troubleshooting** for details on how to install RemotePlus for Excel on your PC and for a list of error messages (and their descriptions) you may encounter when running RemotePlus.

Starting RemotePlus for Excel

From the Windows Start Menu, select Programs - Interactive Data – RemotePlus.

You may be prompted with a warning that the spreadsheet you are opening contains macros. Click "Yes" or "Enable Macros" to proceed.



must be set to medium (recommended) or low to accept the
eck your security settings in Excel 2007 and 2010 by
Trust Center Settings – Macro Settings.

e that a new ribbon, InteractiveData, has been added to the

Figure 2-1. RemotePlus InteractiveData Ribbon

You use this ribbon to retrieve data, look up security identifiers, and modify your communications settings.

- The **Data** option allows you to retrieve data into your worksheet; as described in "Retrieving Data", below. The **Data** option has a sub menu.
  - The **Security Lookup** option allows you to search for security identifiers based on various criteria; as described in "RemotePlus Lookup", later in this chapter.
  - **View Log File** allows you to view the log file which contains the requests and responses made if the feature is enabled.
  - **About** displays the RemotePlus splash screen which shows the version number installed.
- The **Website** button is a hyperlink to the RemotePlus home page.
- **View Log File** allows you to view the log file which contains the requests and responses made if the feature is enabled.
- The **Settings** option is where you specify your RemotePlus User ID/password, tracing settings, and behavior options.
- The **Close** button closes the RemotePlus addin, but does not close Excel itself.

Retrieving Data

To retrieve data into your worksheet:

1. Click Data from the InteractiveData ribbon. RemotePlus displays the Interactive Data RemotePlus Data Retrieval Dialog Box (Figure 2-2).

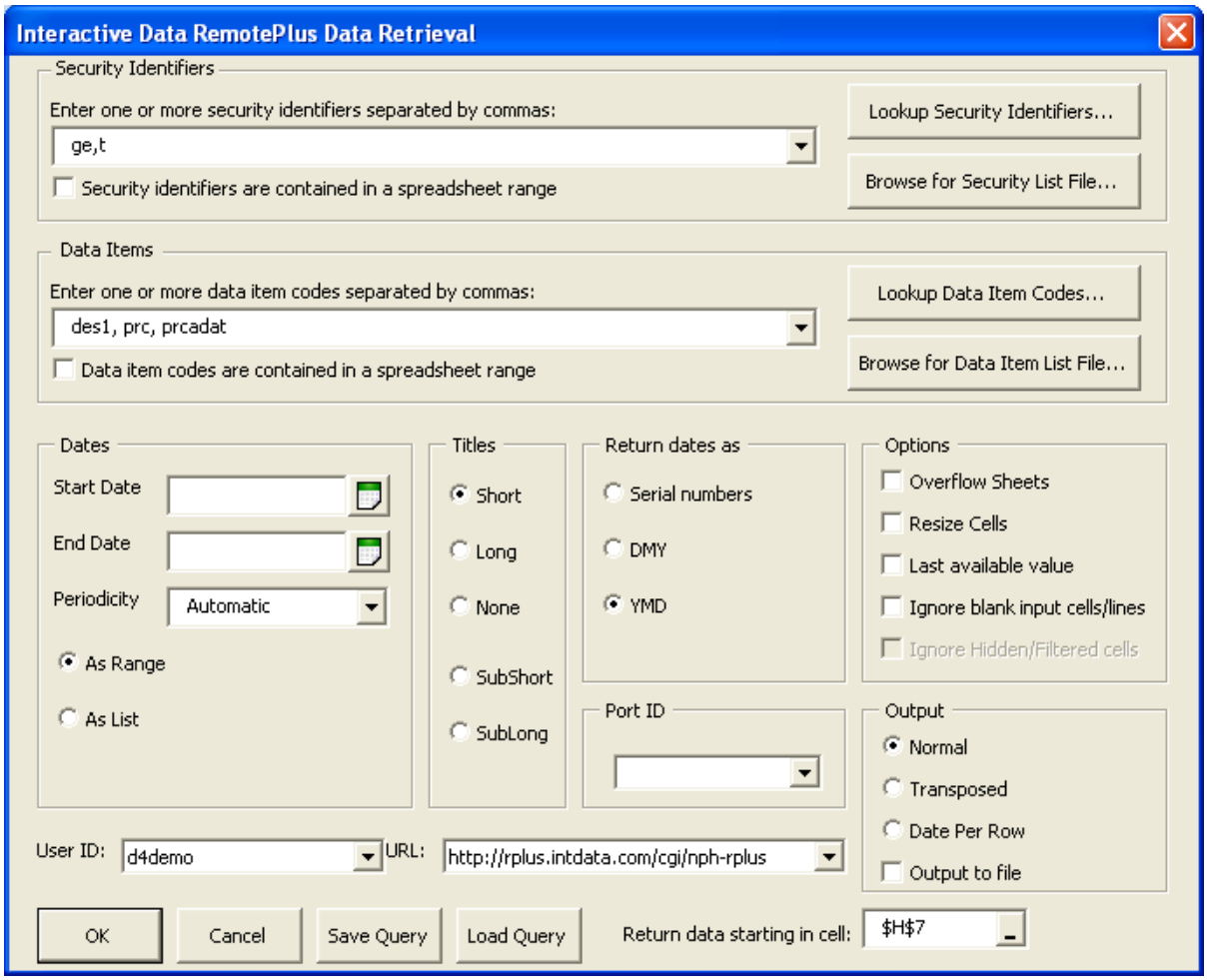


Figure 2-2. Interactive Data RemotePlus Data Retrieval Dialog Box

2. Use the Interactive Data RemotePlus Data Retrieval Dialog Box to specify the data you want to retrieve. The Dialog Box's components are described in "Interactive Data RemotePlus Data Retrieval Dialog Box", below.

3. Click **OK** to retrieve the specified data. When you issue a data request using the example above, RemotePlus retrieves issuer name, best price/evaluation and the date of the bset price/evaluation for General Electric and AT&T (Figure 2-3). **Note**: You can escape the data retrieval process at any time by clicking Cancel.

	DES1	PRC	PRCADAT
GE	GENERAL ELECTRIC CO	23.86	20130522
T	AT&T INC	36.62	20130522

Figure 2-3. Data Retrieval Example

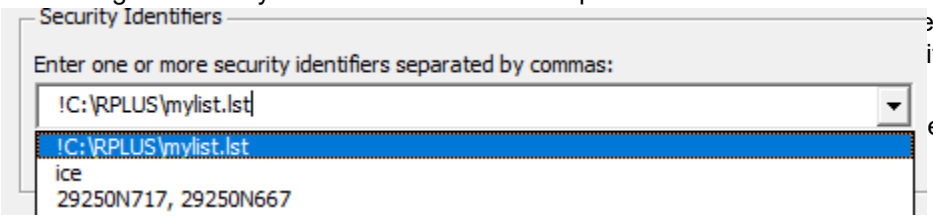
Interactive Data RemotePlus Data Retrieval Dialog Box

The Interactive Data RemotePlus Data Retrieval Dialog Box has several components that allow you to define your data retrieval request.

Security Identifiers

You can enter security identifiers; for example, ticker symbols, CUSIP numbers, SEDOL numbers; in the Data Retrieval box as follows:

- Identifiers separated by commas; e.g., “ibm, B1HHZN, 49427TAA”. If you are unsure of a security’s identifier, you can use the RemotePlus lookup feature by clicking on the “Lookup Security Identifiers…” button. Any identifiers selected will be appended to existing securities in the entry field.
- A list file of securities (local text file name, preceded by a “!”); e.g., “!c:\mylist.lst”. **Note**: You can browse for a list file of securities by clicking on the “Browse for Security List File…” button.
- A range of security identifiers located in the spreadsheet. Click on the “Security identifiers are



e. **Note**: If this option is
ity List File will be
e by clicking on the

  - We do not recommend using an ISIN identifier to access pricing data as ISIN numbers are not exchange specific. You may specify the 2 character ISO country code after the ISIN to specify the country you would like prices from. For example, by default RemotePlus will convert the ISIN US4592001014 to the CUSIP identifier. If you wanted to request German prices; however, you would append the country code for Germany (DE) to the end of the ISIN as follows, “US4592001014@DE” causing RemotePlus to convert the ISIN to the German SEDOL in order to retrieve data.

Data Item Codes

You can enter data item codes or mnemonics; for example, DES1 (issuer description), or PRC (best price or evaluation) in the Data Retrieval box as follows. Refer to the *RemotePlus Data Item Codes* list for a comprehensive list of data items available in RemotePlus.

- Codes separated by commas; e.g., “des1, des2, prc, prcadat”. If you are unsure of an item code, you can use the RemotePlus lookup feature by clicking on the “Lookup Data Item Codes…” button. Any codes selected are appended to existing codes in the entry field.
- A list file of item codes (local text file name, preceded by a “!”); e.g.,“!c:\rplus\myitems.lst”. **Note**: You can browse for a list file of data items by clicking on the “Browse For Data Item List File…” button.
- A range of data item codes located in the spreadsheet. Click on the “Data item codes are contained in a spreadsheet range” box and then highlight or type in the range. **Note**: If this option is being used the buttons for Lookup Data Item Codes and Browse for Data Item List File will be disabled.
- Previously entered data items contained in a drop-down history list, available by clicking on the down arrow next to the Data Item Codes box.

Dates (optional)

Dates (either as a range or as a list) and the data frequency

- As a Range:
  Start Date (optional) - First date in range (use "*", the default value, for most recent data), offset from end date ("+n" or "-n"), manually enter a date, or use the calendar feature to select a date.
  End Date (optional) - Last date in range (use date, "*", "+n", or "-n"), manually enter a date, or use the calendar feature to select a date.

  Note: For dividend record items, the start date must be the most recent date in the request (i.e., the last date in the request range). See "Retrieving Record Data" in this chapter for more details.
- As a List (optional): List of comma-separated dates **Note**: This option can be used to retrieve data for non-consecutive dates.
- Periodicity (optional): Data frequency; e.g., annual, quarterly, monthly, weekly, daily or auto (system default, the "natural" periodicity of the data item)

Titles (optional)

Descriptive information for data items requested

- Short (default): Security identifier and data item mnemonic; e.g., IBM, EPSY
- Long: Complete title; e.g., "International Business Machs.", "Latest 12-Month EPS"
- None: No title information retrieved
- Subshort: (for titles on record items and Short Description) Key and Item *specifiers* with sub item names
- Sublong: (for titles on record items and Long Description) Key and Item *names* with sub item names

Note: Subshort and Sublong will only work for one data item code at a time. You may not request multiple data item codes when using these title options.

Return Dates As (optional)

RemotePlus includes an option that lets you return dates to Excel as either DMY (day month year) or YMD (year month day) or "serial numbers". Excel stores dates internally as numbers, starting with January 1, 1900. Each consecutive day represents one serial number; i.e., January 1, 1900 = 1; January 2, 1900 = 2; etc. You can use Excel's arithmetic and formatting capabilities on these serial dates; e.g., you can easily calculate the time to maturity or call for a particular bond using the maturity and call dates.

Note: Serial numbers do not affect weekly, monthly, quarterly, or annual dates; these have no serial equivalent.

Port ID (optional)

By default this feature is hidden, but you may activate it in the Settings by adding a Port ID. The Port ID (portfolio identifier) allows you to specify your own custom identifier (up to four characters) to indicate the queries requested with that Port ID should be billed separately on your invoice. This is helpful if you are running specific requests on behalf of your clients. Each of your clients could have their own Port ID enabling you to attribute how much of your invoice was attributable to requests on behalf of each client.

Output

- **Normal:** Lets you display the data in your Excel spreadsheet horizontally (default)
- **Transpose**: Lets you display the data in your Excel spreadsheet vertically.
- **Date Per Row**: Like Transpose each row represents a date, but unlike Transpose the identifiers are vertical as well rather than horizontal.

  Note: May only be used when requesting more than one identifier and more than one date.
- **Output to file:** allows you to output the data to a .csv or .txt file.

Note: You can change the delimiter used in the output file in the Settings. The default is comma delimited.

Options (optional)

- **Overflow Sheets:** If your request returns enough data that it cannot fit on the current spreadsheet this option will cause the remaining data to be output onto another new worksheet(s).
- **Resize Cells:** Automatically change the width of the cells to fit the data returned
- **Last available value:** Data returned for most recent value on or before specified dates for time-series retrieval.

Note: This option can be used to return data for holiday dates; the previous day's value is returned.

- **Ignore blank input cells/lines:** If you have a list file or highlight a range of cells to be used as an input for your identifiers you can choose to ignore any blank entries. By default, this option is not checked off and blank cells/lines will be maintained when the data is output. If this option is selected any blank cells/lines will be ignored and the output will not have any data for the blank cell/line.
- **Ignore hidden/Filtered cells:** If you select a range of cells which contain filtered or hidden cells you may choose to ignore them. Any data in those hidden or filtered cells will not be used. The default behavior is to not ignore hidden or filtered cells.

Return Data Starting in Cell

Cell location where data is to be returned (may be different than currently highlighted cell in spreadsheet).

User ID:

You may specify the RemotePlus User ID to be used when making your RemotePlus request in the Settings and then change which RemotePlus User ID is used by selecting it from the drop down menu.

URL:

You may specify the URL to be used when making your RemotePlus request in the Settings and then change which URL is used by selecting it from the drop down menu.

Save Query:

This button allows you to save your RemotePlus query for later by saving the RemotePlus request as a RPQ file. This is especially useful if you do similar requests frequently as it will save you time re-entering the request. Only the User ID and Port ID are not saved.

Load Query:

You may load any RemotePlus RPQ file and the details from the request in the RPQ file will populate the Data Retrieval Dialog Box.

Special Data Codes

RemotePlus identifies when it cannot retrieve data for your request in different ways:

- *When the data you request is not available*, the RemotePlus Excel addin returns “#N/A” for “Not Available”. This could include scenarios where the data is not expected like factors for equity or you do not have the needed account privilege for the data in question as well as scenarios where the data simply is not available.
- *When RemotePlus encounters an error in processing your request*, it returns an error number and a message in two cells of your spreadsheet. RemotePlus does not retrieve data after it encounters an error, so the error information always comes at the end of whatever data has been successfully retrieved. For a list of error codes, their meanings and resolutions refer to **Chapter 9, Error Messages**.

RemotePlus Lookup

RemotePlus includes a “lookup” facility that lets you search for security identifiers and data item mnemonics in the ICE Data Services system.

- You can access Security Lookup (described in “Security Lookup”, below) from the IntractiveData Ribbon/Menu under Data.
- You access Item Lookup (described in “Item Lookup” later in this chapter) from the Interactive Data RemotePlus Data Retrieval Dialog Box.

Security Lookup

RemotePlus Security Lookup works differently for different types of securities. Each Security Lookup category is tailored to the features of the security type. For example, Lookup for Corporate and Government Bonds lets you specify a coupon rate as part of your selection criteria while Lookup for Municipal Bonds lets you specify a state as part of your selection criteria.

To access Security Lookup, you click the **Lookup Security Identifiers** button from the InteractiveData Ribbon/Menu under Data or **Security Lookup** from the Interactive Data RemotePlus Data Retrieval Dialog Box. When you first launch RemotePlus and access Security Lookup, you will want to select the major asset type you are searching for first as that selection will either activate relevant search criteria or deactivate others. (Figure 2-4).

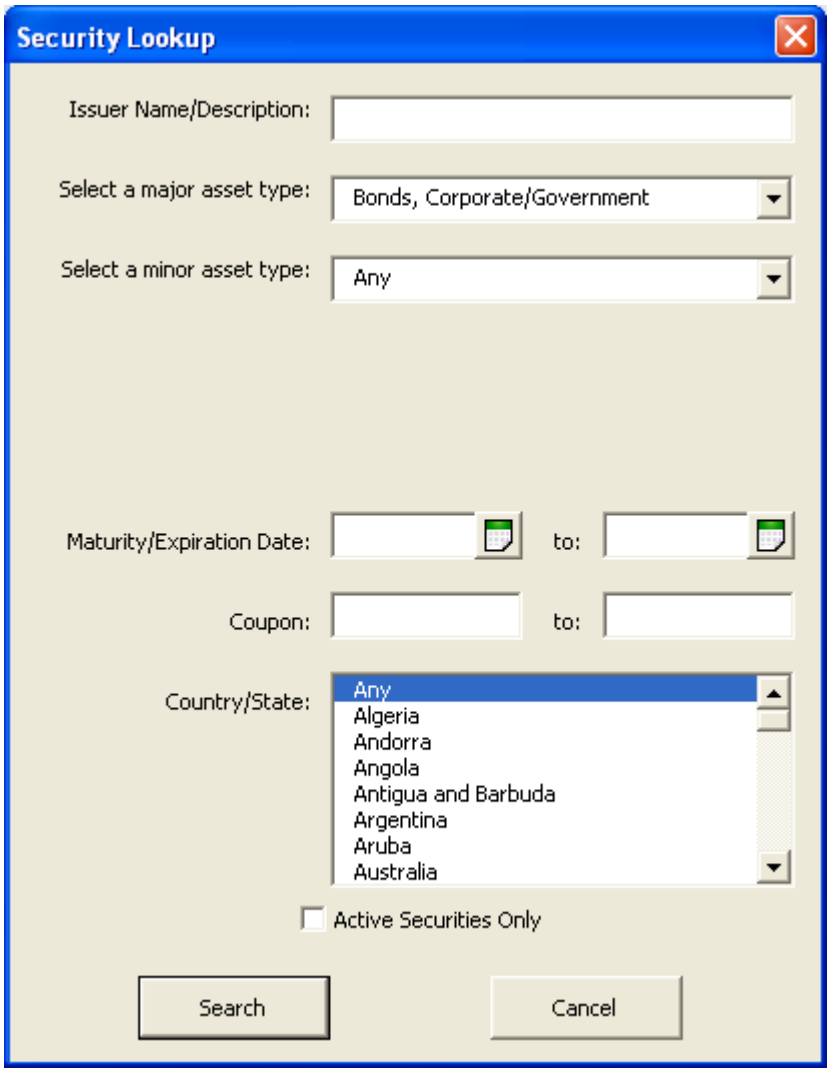


Figure 2-4. Select Type of Security using the Select a major asset type drop down menu.

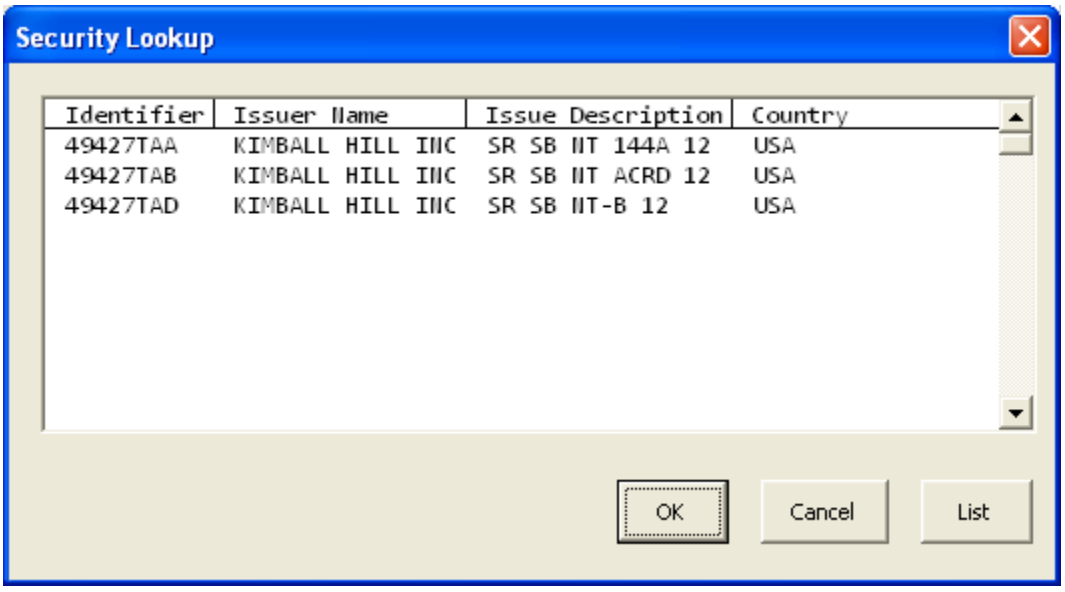


Figure 2-5. Security Lookup Results Example

The Security Lookup Dialog Box layout differs by asset category; however, many features are common to all security lookup categories:

- **Search** button: Searches for the specified security identifiers.
- **Security selection:** Select individual, or groups of, retrieved security identifiers as follows:
  - *To select a single security,* click on the security name.
  - *To select a contiguous range of securities,* click and drag to highlight the ones you want to select.
  - *To select a group of non-contiguous securities,* press [Ctrl] while clicking on the ones you want to select.
  - *To select all retrieved securities in the window,* click on the first security in the list, and press [Shift] + [End].
- **OK** button: Appends selections in the Securities field of the Interactive Data RemotePlus Data Retrieval Dialog Box (or in a worksheet cell from the InteractiveData Menu).
- **Cancel** button: Escapes Security Lookup.
- **List...** button: Allows you to create a security list file containing the identifiers you've selected. Lookup displays the Save Identifiers as List Dialog Box. Using standard Windows conventions, you can save your list as a list file (.LST extension) to the drive and directory of your choice. If you have selected one security and click on the List button, you will be prompted to save all securities meeting your criteria in the list file.

Note: When you access Security Lookup from the InteractiveData Menu, Lookup places the identifier in the highlighted cell in your worksheet rather than placing the security identifier in the Interactive Data RemotePlus Data Retrieval Dialog Box.

Data Displayed by Security Lookup

The following table shows the information Security Lookup displays for each security type.

Security Type	Search Criteria	Data Displayed
Bonds - Corporate Bonds - Government	• Active Securities • Bond Type • Minor Asset Type • Country • Coupon Rate • Maturity Date	• Identifier • Issuer Name • Issue Description • ISO Country Code
Bonds -Municipal	• Issuer • State • Obligation • Coupon Rate • Maturity Date	• Identifier • Issuer Name • Coupon Rate • Maturity Date
Collateralized Mortgage Obligations Asset-Backed Securities	• Active Securities • Issuer • Coupon Rate • Maturity Date • Series	• Identifier • Issuer Name • Issue Description • Coupon Rate • Maturity Date
Commodities Futures	• Active Securities • Commodity • Minor Asset Type • Expiration Date	• Identifier • Description • Expiration Date
Currencies	• Currency Description	• ISO Currency Code • Currency Description
Equities	• Active Securities • Minor Asset Type • Country • Name	• Identifier • Issuer Name • Issue Description • ISO Country Code
Events - Database Updating	• Event Name	• Event Identifier • Event Description
Indices	• Index Name	• Identifier • Index Description
Money Markets	• Instrument Name	• Security Identifier • Description
Options (includes Options on Futures)	• Instrument • Minor Asset Type • Active Options • Expiration Date • Strike Price • Option Type (Side)	• Identifier • Description • Option Type (Side) • Expiration Date • Strike Price
Leveraged Loans	• Deal Name	• IDII

Security Type	Search Criteria	Data Displayed
	• Maturity Date	• CUSIP • Deal Name • Facility Type • Maturity

Security Lookup Examples

The following sections show examples of how to use Lookup to access information for different types of securities. In these examples, Security Lookup is accessed from the Interactive Data RemotePlus Data Retrieval Dialog Box.

Searching for Corporate/Government Bonds or CMOs/Asset-Backed Securities

Lookup functions similarly for corporate/government bonds and CMOs/asset-backed securities. Corporate/Government Bond Security Lookup also lets you click **Bond Type** and **Country** buttons to select from a list and use as additional search criteria; CMO/Asset-Backed Security Lookup also lets you define a series number as part of your search criteria. This example shows how you would use Corporate/Government Bonds Lookup to search for active Ford Motor Credit Company corporate bond issues in the United States:

1. From the **Select a major asset type** menu select, Bonds, Corporate/Government.
2. Search for active Ford Motor Credit Company issues: click **Active Securities Only** to place a check mark in the field.
3. From the **Select a minor asset** type menu select Corporate.
4. Type “Ford Motor Credit” in the Issuer Name to Find field. Click **Find**.
5. Select United States from the Country/State: list. Click **Search**.
6. **Coupon**: Coupon lets you search for a particular rate or a range of rates. For this example, type “5.625” (for 5 5/8) as the Minimum Coupon Rate and type “8” as the Maximum Coupon Rate. Click **OK**.

   Note: To search for an individual rate just type in one coupon rate in the first coupon input box.
7. **Maturity/Expiration Date:** Maturity lets you search for a particular maturity date or a range of maturity dates. For this example, type “20140101” in the first input box and “20240101” in the Ending Date field.

   Note: To search for an individual maturity date just type in one date in the first Maturity/Expiration Date input box. You would then enter a matching date. The required date format is *ccyymmdd.*

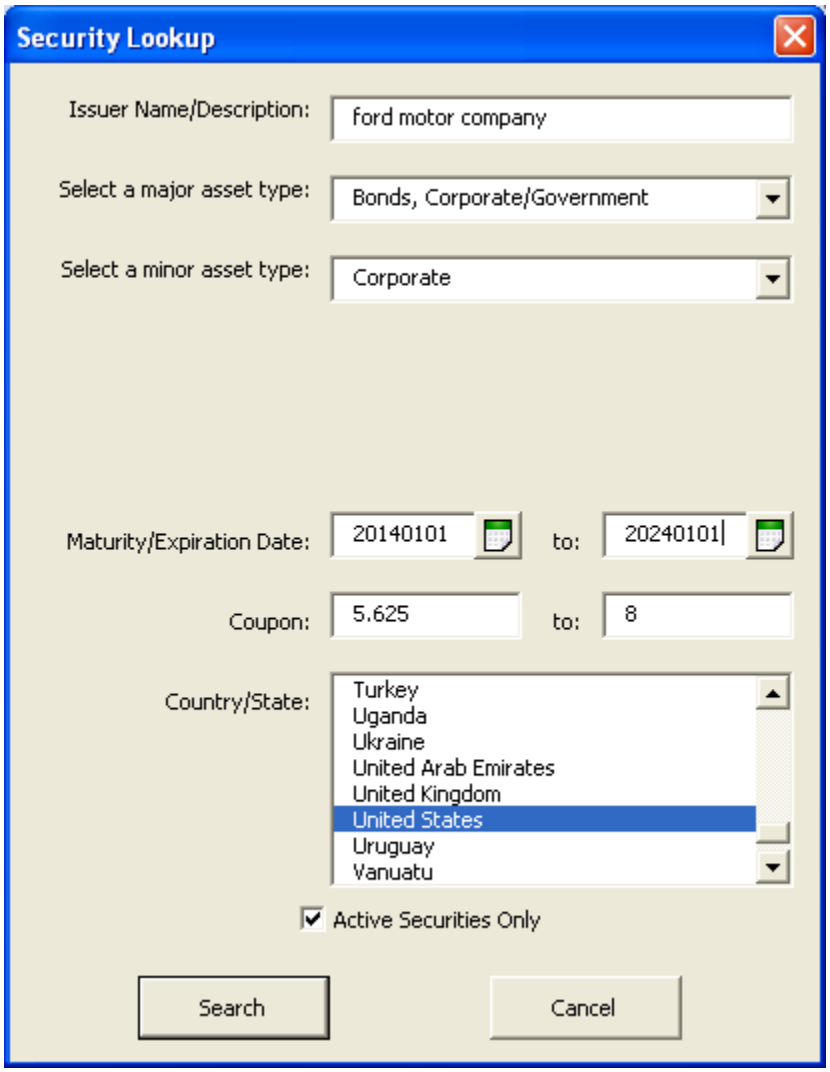


Figure 2-6. Bond Lookup Example

Click **Search**. Lookup displays the securities that match the search criteria in the main window.

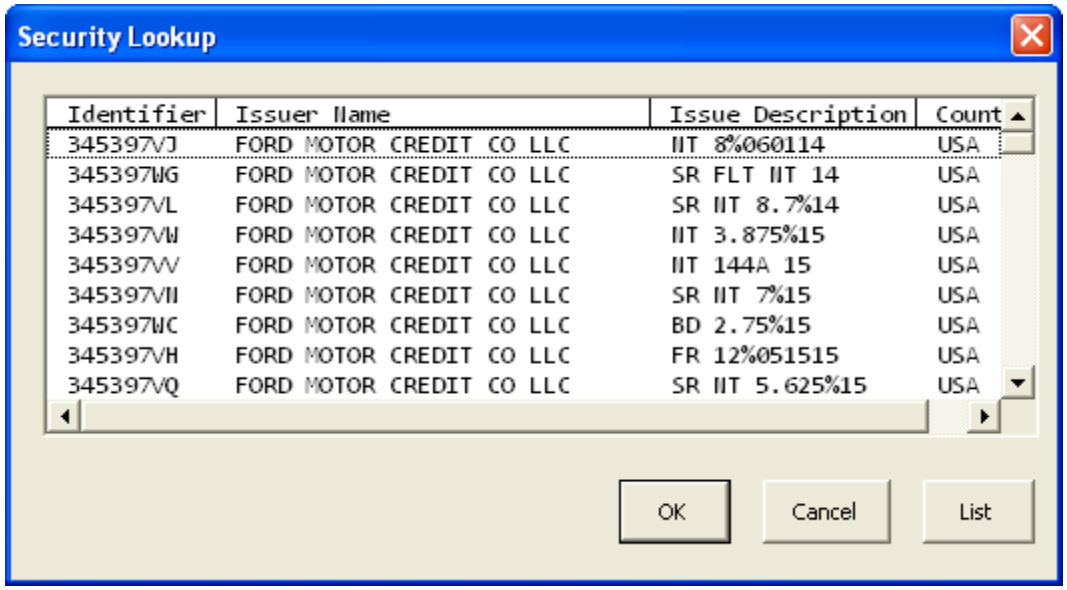


Figure 2-7. Bond Lookup Results Example

8. From the list of displayed securities, click on the one(s) you want to research further.
9. Click **OK.** RemotePlus places the selected security identifiers in the **Security Identifiers** field of the Interactive Data RemotePlus Data Retrieval Dialog Box, separated by commas.

Searching for Equities

This example shows how you would use Equities Lookup to search for IBM common stock listed in multiple countries. The results are saved to a list (.LST) file:

1. From the **Select a major asset type** menu select, Equities.
2. Search for active IBM issues; click **Active Securities Only** to place a check mark in the field.
3. From the **Select a minor asset** type menu select Common.
4. Select -Any Country- from the **Country/State** list.
5. Type “ibm” in the **Issuer Name/Description** field.
6. Click **Search**. Lookup displays all occurrences of active IBM common stock. Use the horizontal scroll bar to view information not displayed in the dialog box. The Found field shows that thirteen issues matched the search criteria (Figure 2-8).

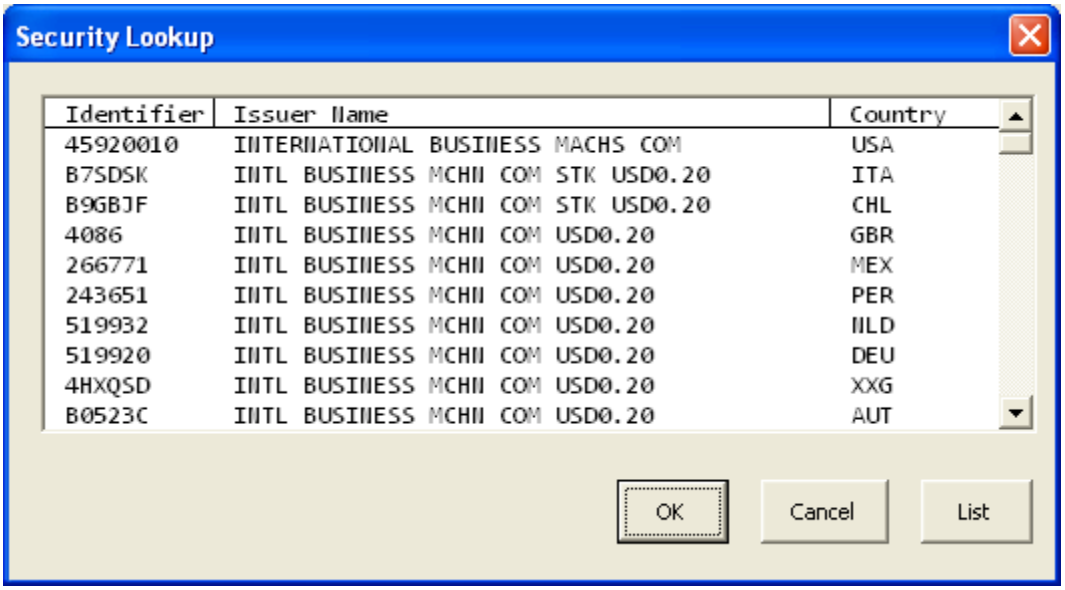


Figure 2-8. Common Stock Lookup Example

7. Click **List...**. Lookup displays the Save Identifiers as List Dialog Box (Figure 2-9). If you have only selected one security, RemotePlus will prompt you to save all found securities in your list file.

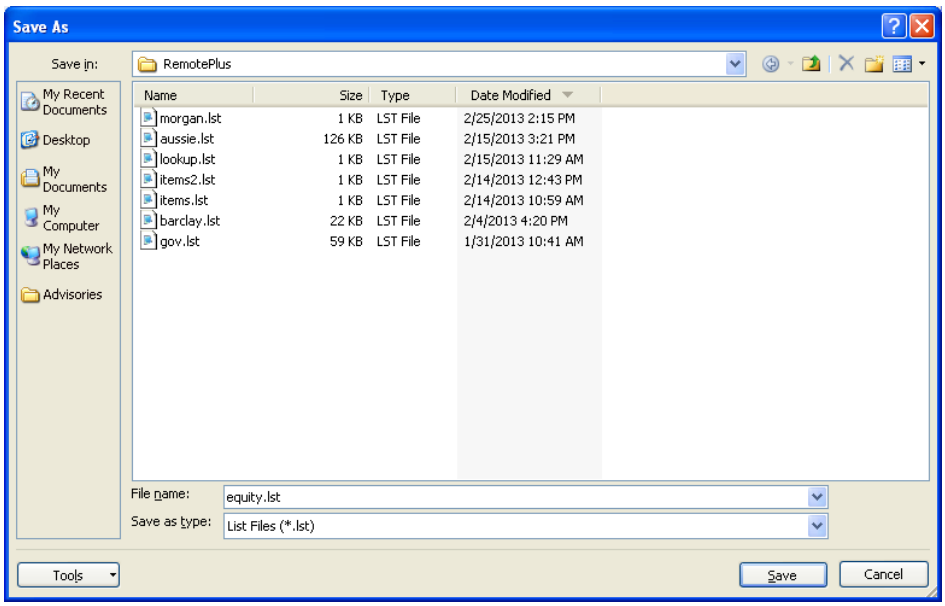


Figure 2-9. Save Identifiers as List Dialog Box

8. Type “equity.lst” in the **File Name:** field; select List Files (*.LST) in the **Save File as Type:** field. Click **Save**.

   Note: The Save Identifiers as List Dialog Box lets you overwrite, or append, an existing list file.

9. RemotePlus places the list file name (C:\Documents and Settings*user name*\Application Data\Interactive Data\RemotePlus\EQUITY. LST) in the **Security Identifiers:** field of the Interactive Data RemotePlus Data Retrieval Dialog Box, preceded by an exclamation mark to denote a list file name.

Item Lookup

RemotePlus Item Lookup works the same way for all data item categories. You select the security type and/or data type in which you want to search and specify the data item.

To access Item Lookup, you click the **Lookup Data Item Codes** button in the Interactive Data RemotePlus Data Retrieval Dialog Box. When you first log on to RemotePlus and access Item Lookup, Lookup displays the Item Lookup dialog box to select the security type and/or data type (Figure 2-11).

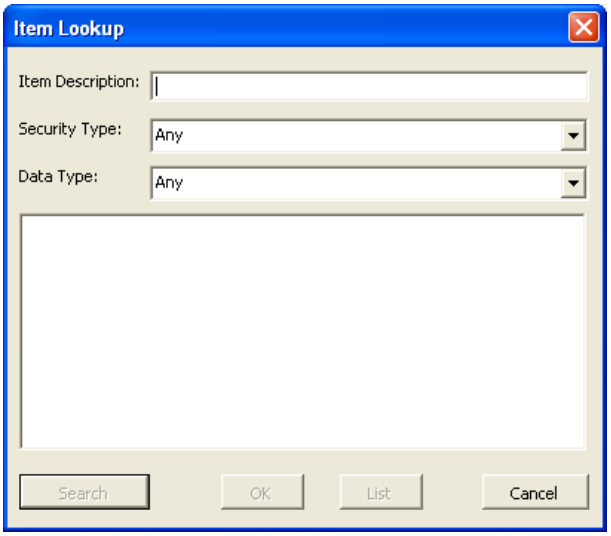


Figure 2-11. Item LookupDialog Box

The Item Lookup Dialog Box uses the following conventions:

- **Item Description:** lets you type the name (or partial name) of the data item you want to search for.
- **Security Type:** (optional) allows you to search for items relevant to a specific security type.
- **Data Type:** (optional) allows you to search for items relevant to a specific type of data.

Note: You must specify either a Security Type or a Data Type

- **Search** button: searches for the specified data items.
- **Item selection**: selects individual, or groups of, retrieved data items as follows:
  - *To select a single data item,* click on the data item name.

- *To select a contiguous range of data items,* click and drag to highlight the ones you want to select.
- *To select a group of non-contiguous data items,* press [Ctrl] while clicking on the ones you want to select.
- *To select all retrieved items in the window,* click on the first item in the list and then press [Shift]+[End].

- **OK** button: inserts selections in the Items field of the Interactive Data RemotePlus Data Retrieval Dialog Box.
- **List...** button: creates a data item list file. Lookup displays the Save Identifiers as List Dialog Box. Using standard Windows conventions, you can save your list as a list file (.LST extension) or text file (.CSV extension) to the drive and directory of your choice. You can append or overwrite an existing list file. If you have selected only one item and click on the List button, you will be prompted to save all items meeting your criteria in the list file.
- **Cancel** button: escapes Item Lookup.

The following example shows how you would search for the Ask Yield data item for municipal bonds:

1. Click the **Item Lookup** button in the Interactive Data RemotePlus Data Retrieval Dialog Box. RemotePlus displays the Item Lookup Dialog Box.
2. Click **Item Type...** Select Bond Data, Municipal as the search category. Click **OK**.
3. Type “yield” at the Look for:
4. Click **Find**. Lookup displays the data item mnemonics and names that match the search criteria. The Found field shows that four data items matched the search criteria (Figure 2-13).
5. Select Ask Yield from the list of displayed data items. The Chosen field shows that you’ve selected one data item.

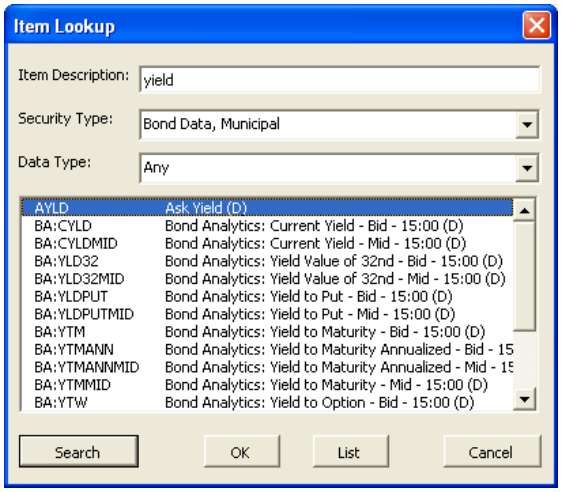


Figure 2-13. Municipal Bond Ask Yield Item Lookup Example

6. Click **OK.** RemotePlus places the selected data item in the **Data Item Codes** field of the Interactive Data RemotePlus Data Retrieval Dialog Box.

Data Retrieval Examples

This section contains several additional data retrieval examples for RemotePlus for Excel.

- **Retrieving time-series data—**shows several examples of retrieving time-series data such as price and volume over different date ranges.
- **Retrieving record data—**includes dividend history information for equities and call schedule information for bonds.
- **Retrieving pricing or evaluations data—**describes how to retrieve prices or evaluations into a worksheet containing a list of securities.

Retrieving Time-Series Data

This section provides a series of examples showing how to retrieve data into a RemotePlus for Excel worksheet.

Retrieving Data for a Single Security

To retrieve the best price/evaluation for IBM common stock on March 25, 2013, open the Interactive Data RemotePlus Data Retrieval Dialog Box and make entries shown in Figure 2-14. Click **OK** or press **[↵].**

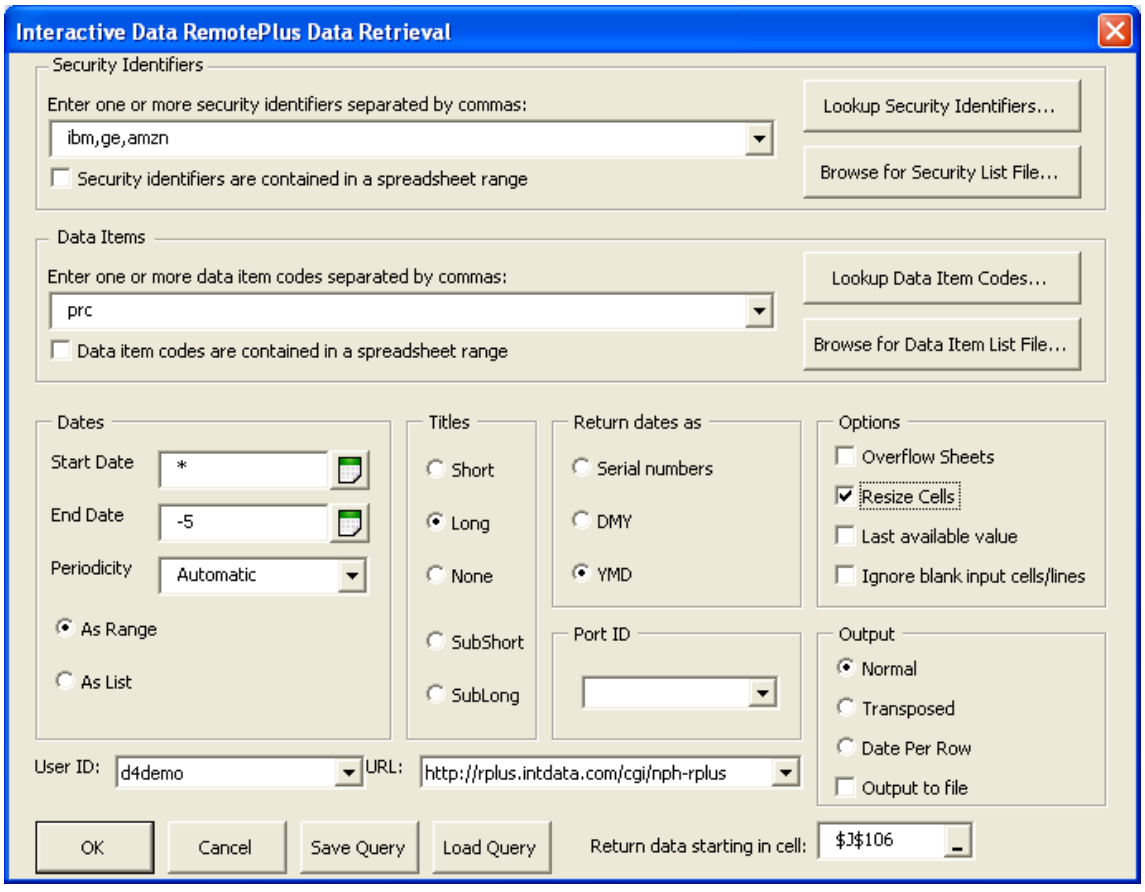


Figure 2-14. Single Security Data Request

This retrieves three cells of data that include title information (Figure 2-15).

	PRC	PRCADAT
IBM	210.74	20130325

Figure 2-15. Sample Single Data Retrieval

Retrieving Data for Several Securities Over a Time Period

To retrieve best prices/evaluations for several securities (tickers: IBM, GE, AMZN) for the last six days, open the Interactive Data RemotePlus Data Retrieval Dialog Box and make the entries shown in Figure 2-16. Click OK or press **[↵].** Note that the Titles – Long option has been selected.

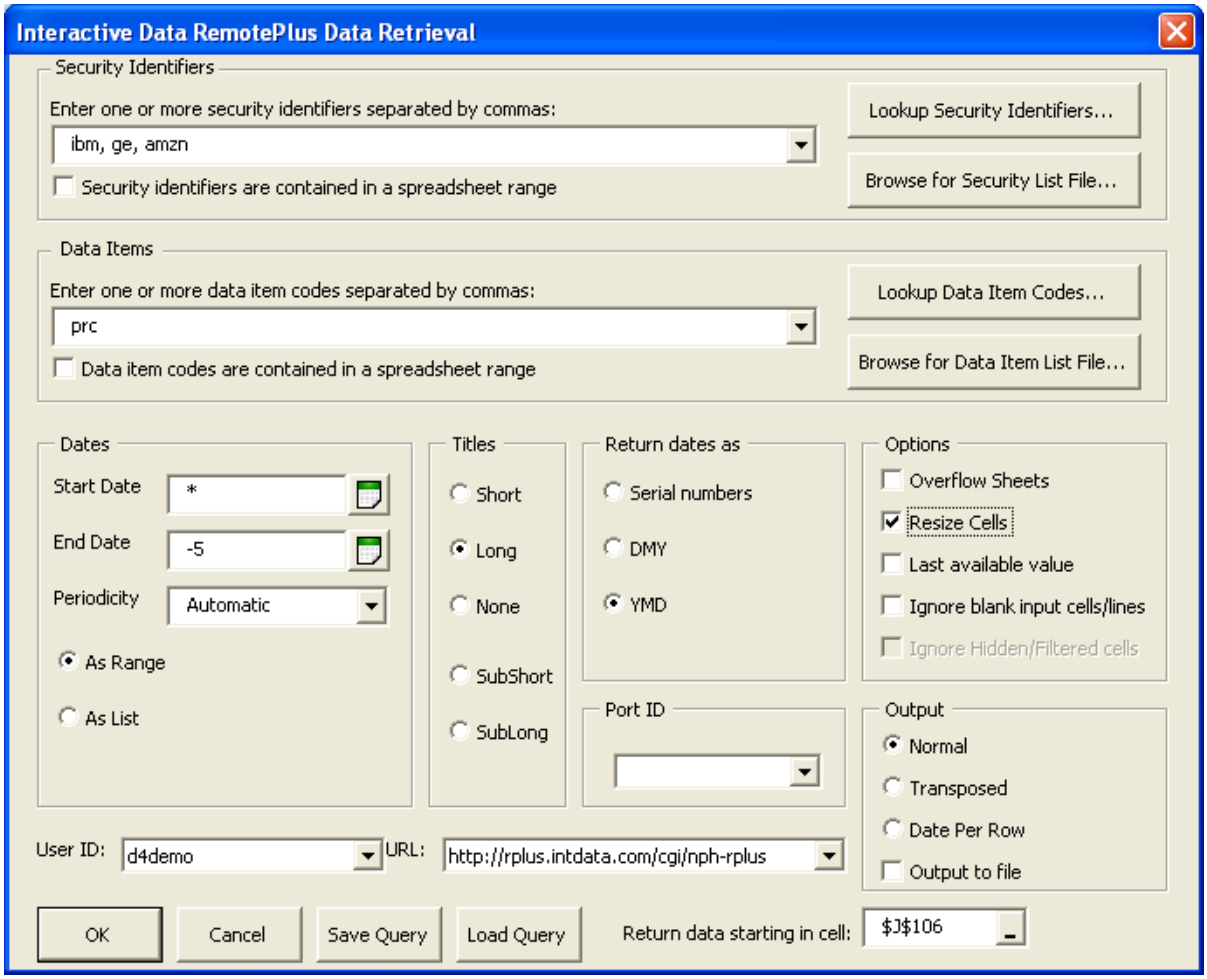


Figure 2-16. Multiple Security Data Request

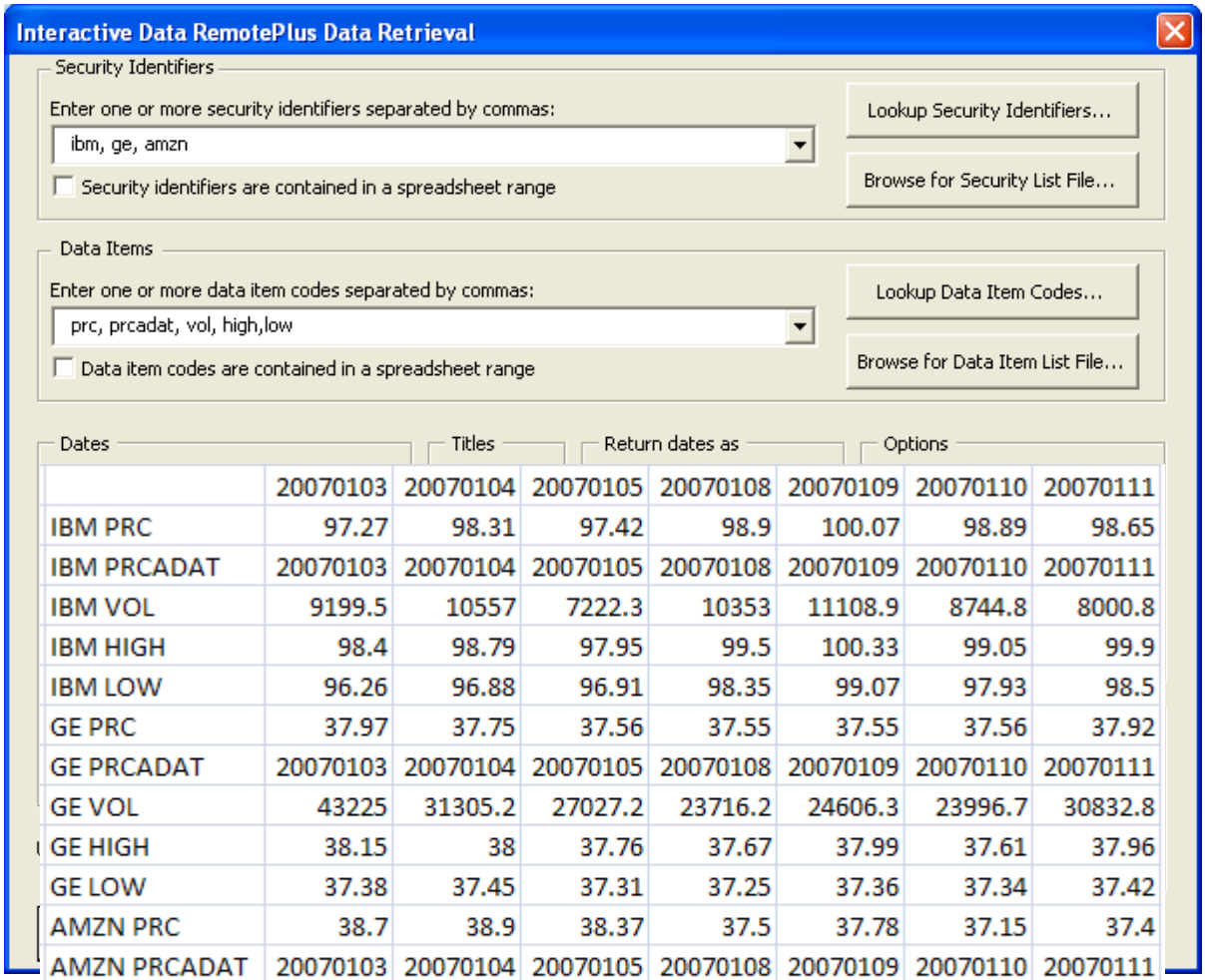
Figure 2-17 shows an example of prices/evaluations retrieved for several stocks over a time period.

Best Price/Evaluation	20110111	20110110	20110107	20110106	20110105	20110104
INTERNATIONAL BUSINESS MACHS	147.28	147.64	147.93	148.66	147.05	147.64
GENERAL ELECTRIC CO	18.63	18.51	18.43	18.56	18.64	18.61
AMAZON COM INC	184.34	184.68	185.49	185.86	187.42	185.01

Figure 2-17. Sample Several Securities Over a Time Period with Titles=Long

Retrieving Data for Several Securities and Data Items

To retrieve volume, high, and low for the three securities, for the first seven trading days of 2007, open the Interactive Data RemotePlus Data Retrieval Dialog Box and make entries shown in Figure 2-18. Click OK or press **[↵]**.



	20070103	20070104	20070105	20070108	20070109	20070110	20070111
IBM PRC	97.27	98.31	97.42	98.9	100.07	98.89	98.65
IBM PRCADAT	20070103	20070104	20070105	20070108	20070109	20070110	20070111
IBM VOL	9199.5	10557	7222.3	10353	11108.9	8744.8	8000.8
IBM HIGH	98.4	98.79	97.95	99.5	100.33	99.05	99.9
IBM LOW	96.26	96.88	96.91	98.35	99.07	97.93	98.5
GE PRC	37.97	37.75	37.56	37.55	37.55	37.56	37.92
GE PRCADAT	20070103	20070104	20070105	20070108	20070109	20070110	20070111
GE VOL	43225	31305.2	27027.2	23716.2	24606.3	23996.7	30832.8
GE HIGH	38.15	38	37.76	37.67	37.99	37.61	37.96
GE LOW	37.38	37.45	37.31	37.25	37.36	37.34	37.42
AMZN PRC	38.7	38.9	38.37	37.5	37.78	37.15	37.4
AMZN PRCADAT	20070103	20070104	20070105	20070108	20070109	20070110	20070111
AMZN VOL	12409.49	6319.607	6623.82	6784.631	5703.051	6527.99	6465.519
AMZN HIGH	39.06	39.14	38.79	38.31	38.06	37.7	38
AMZN LOW	38.05	38.26	37.6	37.17	37.34	37.07	37.17

Figure 2-19. Sample Multiple Data Retrieval

Figure 2-20 shows the same data with rows and columns reversed by clicking on the **Transpose** button in the **Data** Dialog Box prior to the data retrieval:

Figure 2-20. Multiple Data Retrieval (Transposed)

	IBM PRC	IBM PRCADAT	IBM VOL	IBM HIGH	IBM LOW	GE PRC	GE PRCAD	GE VOL	GE HIGH	GE LOW	AMZN PR(	AMZN PR(	AMZN VO	AMZN HIG	AMZN LOW
20070103	97.27	20070103	9199.5	98.4	96.26	37.97	20070103	43225	38.15	37.38	38.7	20070103	12409.49	39.06	38.05
20070104	98.31	20070104	10557	98.79	96.88	37.75	20070104	31305.2	38	37.45	38.9	20070104	6319.607	39.14	38.26
20070105	97.42	20070105	7222.3	97.95	96.91	37.56	20070105	27027.2	37.76	37.31	38.37	20070105	6623.82	38.79	37.6
20070108	98.9	20070108	10353	99.5	98.35	37.55	20070108	23716.2	37.67	37.25	37.5	20070108	6784.631	38.31	37.17
20070109	100.07	20070109	11108.9	100.33	99.07	37.55	20070109	24606.3	37.99	37.36	37.78	20070109	5703.051	38.06	37.34
20070110	98.89	20070110	8744.8	99.05	97.93	37.56	20070110	23996.7	37.61	37.34	37.15	20070110	6527.99	37.7	37.07
20070111	98.65	20070111	8000.8	99.9	98.5	37.92	20070111	30832.8	37.96	37.42	37.4	20070111	6465.519	38	37.17

Dividend Records

To retrieve the five “most-recent” dividend records (data item NXDV) for a security, open the Interactive Data RemotePlus Data Retrieval Dialog Box and make entries shown in Figure 2-21. Click OK or press **[↵]**.

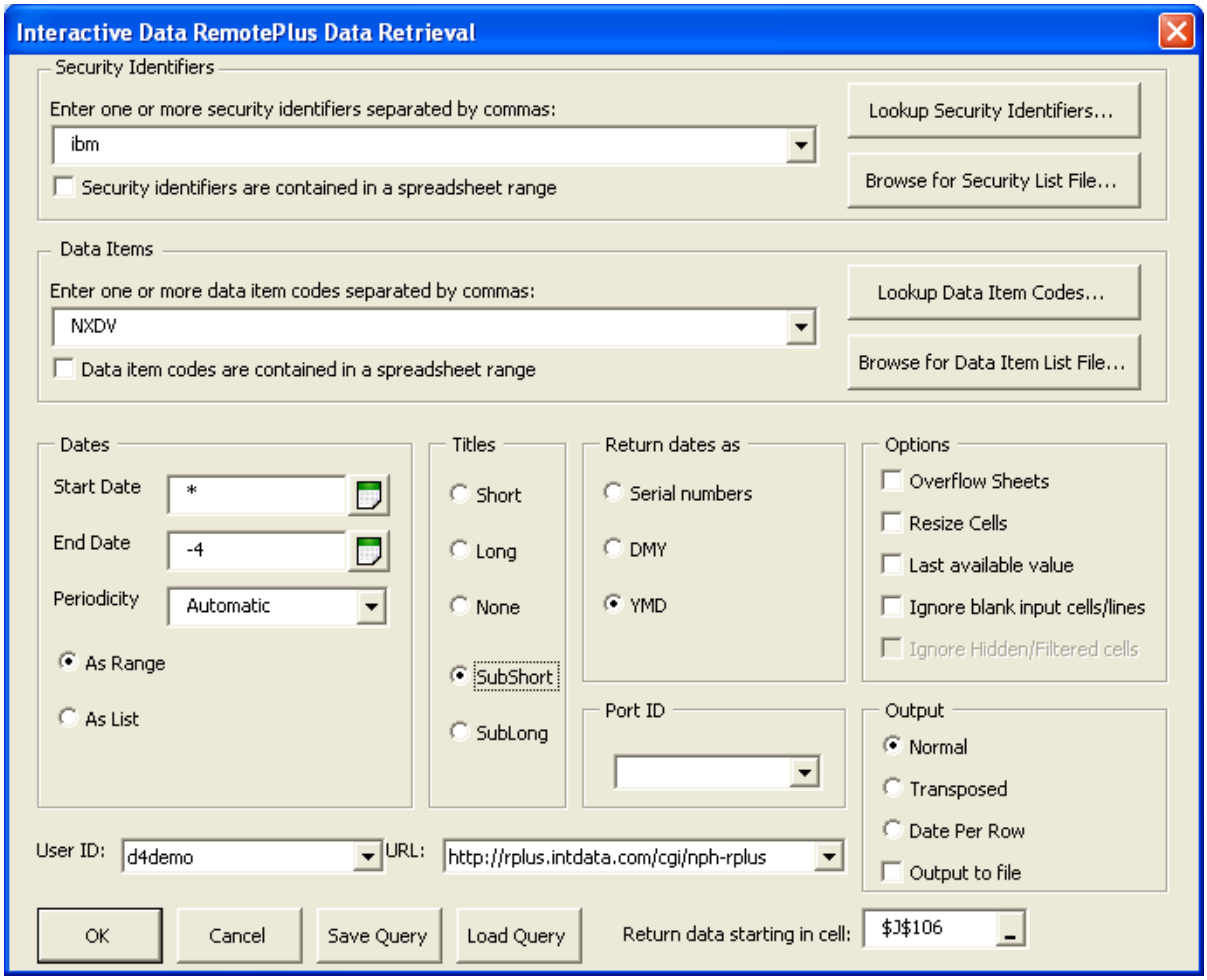


Figure 2-21. Single Security / Record Data Item Request

Figure 2-22 shows an example of dividend records retrieval over a period of time.

Identifier	Item	Date	Identifier	Pay Type	Div. Amt./Rate	Record Date	Pay Date
IBM	NXDV	20130206	45920010	0	0.85	20130208	20130309
IBM	NXDV	20121107	45920010	0	0.85	20121109	20121210
IBM	NXDV	20120808	45920010	0	0.85	20120810	20120910
IBM	NXDV	20120508	45920010	0	0.85	20120510	20120609
IBM	NXDV	20120208	45920010	0	0.75	20120210	20120310

Figure 2-22. Dividend Record Retrieval

Note: You should not mix record data items, such as NXDV, with non-record data items in your data retrieval. The results may be unpredictable.

Bond Call Schedule Records

To retrieve bond call schedule information (data item “cscd”), open the Interactive Data RemotePlus Data Retrieval Dialog Box and make the entries shown in Figure 2-23. Click **OK** or press **[↵]**.

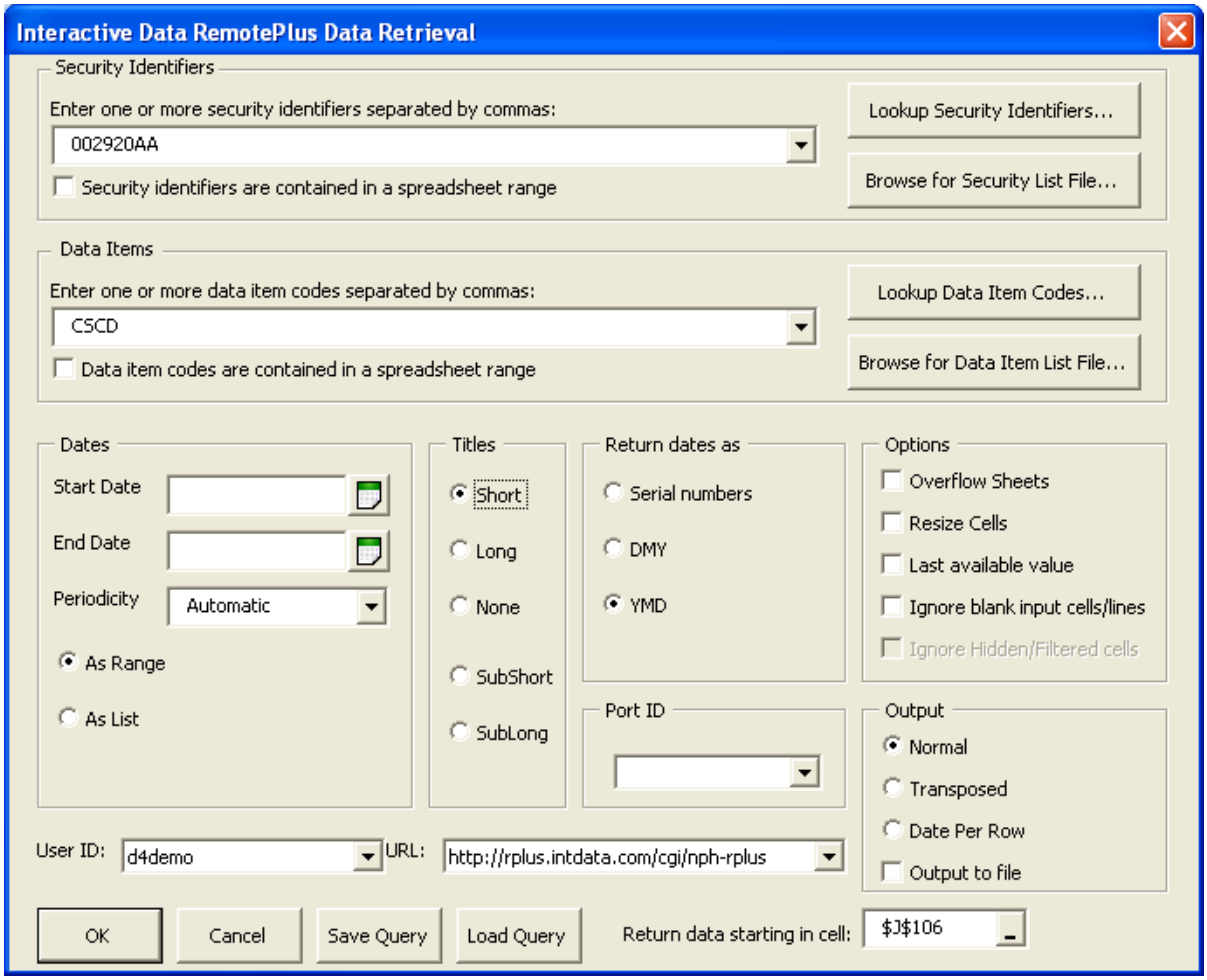


Figure 2-23. Single Security / Record Data Item Request

Figure 2-24 shows an example of bond schedule information.

002920AA	CSCD	20061015	100
002920AA	CSCD	20111015	100
002920AA	CSCD	20161015	100
002920AA	CSCD	20211015	100
002920AA	CSCD	20261015	100
002920AA	CSCD	20311015	100
002920AA	CSCD	20361015	100
002920AA	CSCD	20411015	100
002920AA	CSCD	20461015	100

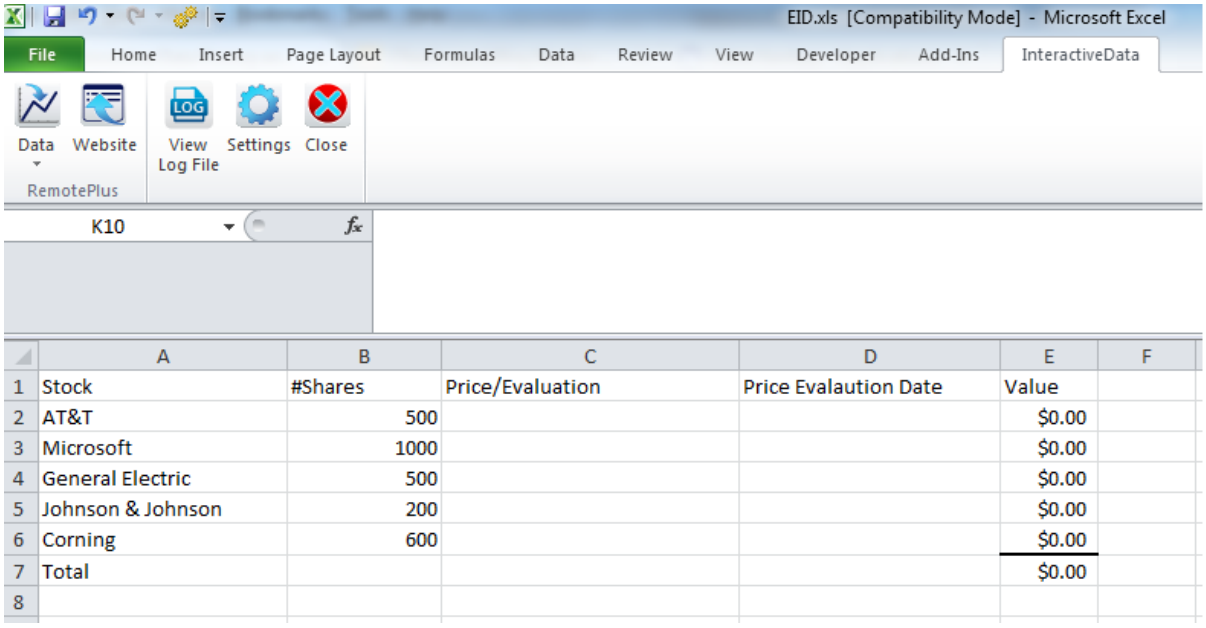
Figure 2-24. Call Schedule Retrieval

Retrieving Pricing and Evaluation Data

You can retrieve pricing and evaluations data for a list of securities in RemotePlus for Excel. RemotePlus retrieves the latest closing prices or evaluations for the securities.

To retrieve pricing/evaluations data in RemotePlus for Excel:

1. Create a worksheet containing the securities for which you wish to retrieve pricing and evaluation data (Figure 2-25). **Note**: The “Value” column consists of “#Shares” multiplied by “Price/Evaluation.”



	A	B	C	D	E	F
1	Stock	#Shares	Price/Evaluation	Price Evalaution Date	Value	
2	AT&T	500			$0.00	
3	Microsoft	1000			$0.00	
4	General Electric	500			$0.00	
5	Johnson & Johnson	200			$0.00	
6	Corning	600			$0.00	
7	Total				$0.00	
8						

Figure 2-25. Security List File

2. Use **InteractiveData** – **Data** to retrieve the closing prices or evaluations for the list file of securities (data item “I:prc”). Enter the cell into which the prices/evaluations are to be retrieved and stored in the Return Data Starting In field. For this example, the starting cell is C2, and Titles is set to **None**. Figure 2-26 shows the **Data** request for this list of securities.

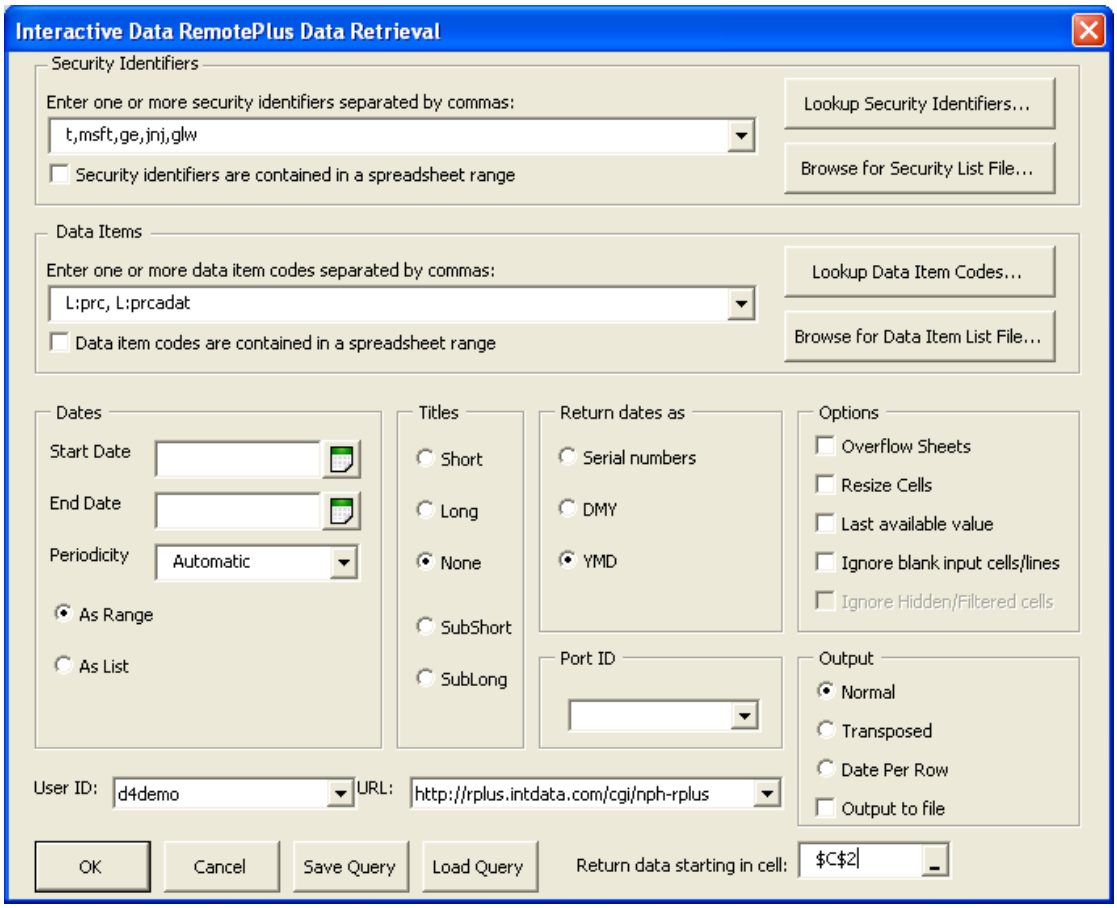
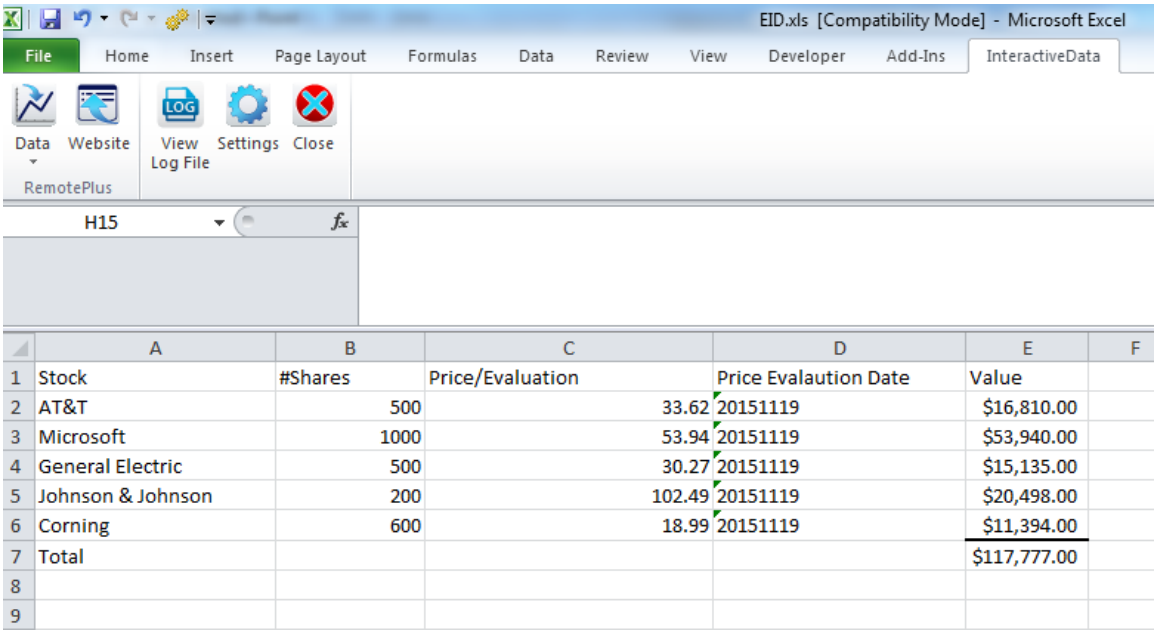


Figure 2-26. Data Request

3. Click **OK** to retrieve the data into the appropriate cells. Excel automatically populates the values for the securities in the list (Figure 2-27).



	A	B	C	D	E	F
1	Stock	#Shares	Price/Evaluation	Price Evalaution Date	Value	
2	AT&T	500	33.62	20151119	$16,810.00	
3	Microsoft	1000	53.94	20151119	$53,940.00	
4	General Electric	500	30.27	20151119	$15,135.00	
5	Johnson & Johnson	200	102.49	20151119	$20,498.00	
6	Corning	600	18.99	20151119	$11,394.00	
7	Total				$117,777.00	
8						
9						

Figure 2-27. Populated Security List File

Checking Database Updates in Excel

ICE Data Services posts “database update events” once particular data sets are available for retrieval. We recommend that you check for the existence of the database update event prior to attempting your data retrieval.

Method 1: Ping a RemotePlus Event

1. Click on the **Lookup Security Identifiers** button in dialog box.

2. Select Events, Database Updating from the “Select a major asset type:” pull down menu, Search for Prices, and click the **Search** button. The dialog box shown in Figure 2-28 will appear.



Figure 2-28. Database Update Event Lookup

This dialog box lists the event name, and its description. Select the events you want to check (which data sets have been updated or not). These selected events will now appear in your Security Identifiers field in the Interactive Data RemotePlus Data Retrieval Dialog Box (Figure 2-29).

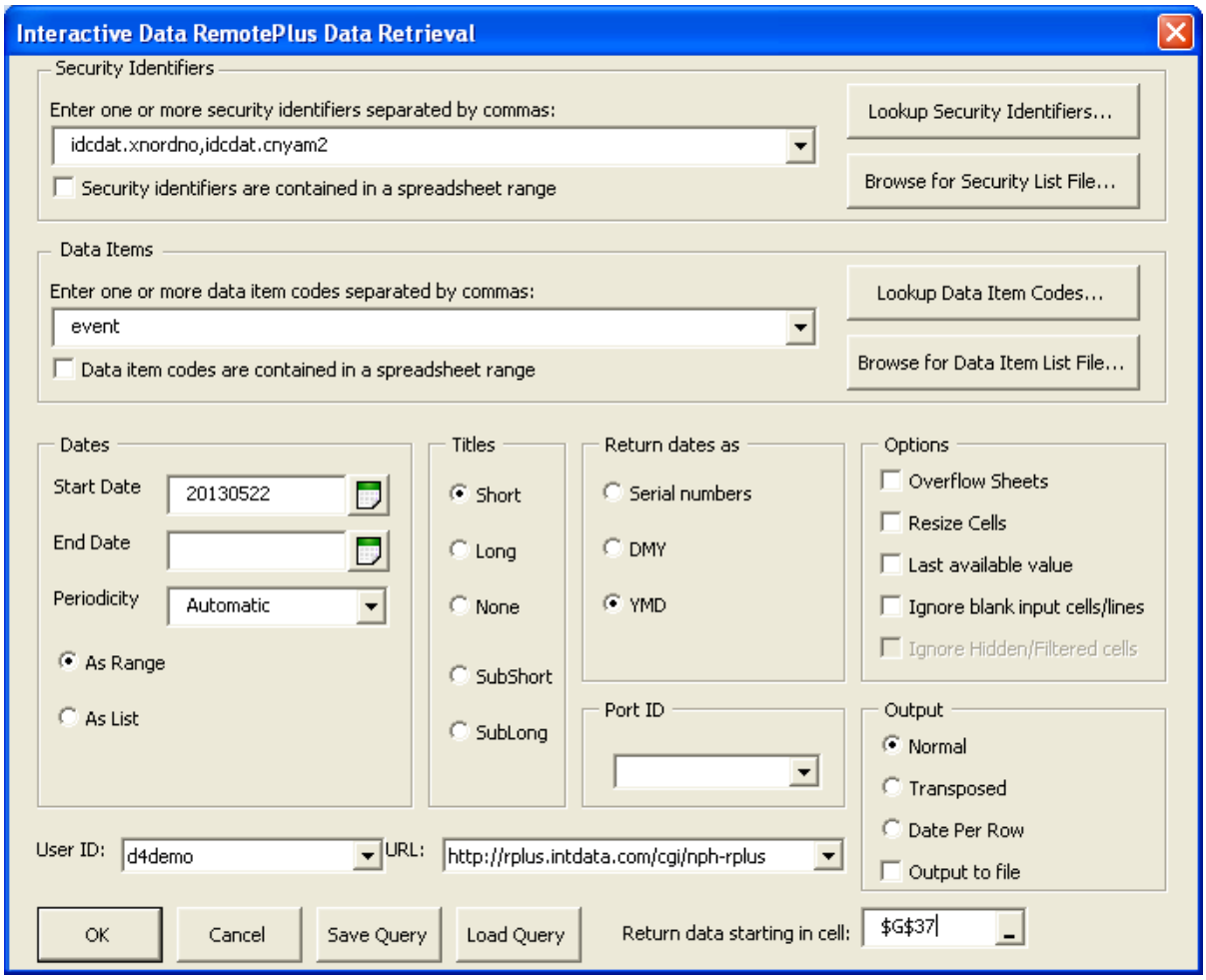


Figure 2-29. Interactive Data RemotePlus Data Retrieval Dialog Box

3. In the Data Item Codes field, enter the item name “event” (Refer to the *RemotePlus Data Item Codes* list for details on the event item.)

4. In the Start Date field, enter the date for which you want to check the event. A response of “Present” indicates data is updated in ICE Data Services’ system. Figure 2-30 indicates the data for NYSE prices have not yet been posted, but the prices for Norwegian Stock Exchange have been updated and may be retrieved into your spreadsheet.

	EVENT
IDCDAT.XNORDNO	Present
IDCDAT.CNYAM2	Not Present

Figure 2-30. Event Check for IDCGDB.XNORDNO and IDCDAT.CNYAM2

Method 2: Check the RemotePlus Website

You may verify on the RemotePlus website when particular data sets are available. The events page can be found at: https://rplus.icedataservices.com/help/rpevents.html

Note: You may be prompted for your RemotePlus User ID and password which you will need to enter in lower-case as it is case sensitive.

How to Read the Tables

Latin America						
Event (closing prices)	**Event Name**	**Expected**	**Cancelled**	**Holiday Event Name**	**Latest Release**	
					Date	**Time**
Interactive Data Pricing and Reference Data Evaluations (Latin American Issues)	IDCGDB.XIESUS.*date*	16:30	09:00	IDCGDB.XIESUSH.*date*	2013/05/22	16:18:35
Argentina (closing prices)	IDCGDB.XAR1.*date*	16:45	09:00	IDCGDB.XAR1H.*date*	2013/05/22	16:36:30
Brazil - Sao Paolo, Rio De Janeiro (closing prices)	IDCGDB.XBR1.*date*	17:00	09:00	IDCGDB.XBR1H.*date*	2013/05/22	17:09:20
Chile - Santiago (closing prices)	IDCGDB.XCL1.*date*	17:00	09:00	IDCGDB.XCL1H.*date*	2013/05/22	16:47:18
Mexico (closing prices)	IDCGDB.XMX1.*date*	17:00	09:00	IDCGDB.XMX1H.*date*	2013/05/22	16:56:08
Peru (closing prices)	IDCGDB.XPE1.*date*	16:30	09:00	IDCGDB.XPE1H.*date*	2013/05/22	16:26:53
Venezuela (closing prices)	IDCGDB.XVE1.*date*	14:45	09:00	IDCGDB.XVE1H.*date*	2013/05/22	13:50:24

- Event: identifies the name of the database update event.
- Event Name: identifier which you can use in a RemotePlus request to verify if it has updated. If the event is present the event name will be highlighted along with the Latest Release column which contains the date and time of the latest update.
- Expected: the time the event is expected to update. Actual posting times may differ due to market conditions, data source problems, etc. Expected times are provided only as a guideline.
- Cancelled: the time an event is canceled or reset.
- Holiday Event Name: If applicable, the holiday event name lists the identifier for the event that identifies a country, market, or source is on holiday. If the holiday event is present the holiday event name will be highlighted rather than the event name. The Latest Release column will list the date and time the holiday event updated. Note: not every table has a Holiday Event Name column.
- Latest Release: Lists the most recent date and time the event updated.

@Refresh Function

This feature is only available in version 4.0.4.13 and greater of RemotePlus' Excel add-in. If you are using an earlier version you will need to download the latest version from the RemotePlus website https://rplus.icedataservices.com/download/index.html

How to use:

In the Data Items field of RemotePlus' Excel add-in enter @refresh(item,time) where item is the RemotePlus item mnemonic such as CEP:BID or PRC while time is the number of minutes between updates. Only whole numbers may be specified for the time variable. You may enter multiple @refresh functions if you need multiple items updating on a schedule, and they can be mixed with regular items.

For example: PRC,@REFRESH(CEP:BID,15),DES1,@REFRESH(CEP:BCHMK,30) to automatically update CEP at intervals of 15 and 30 minutes.

When you hit the "OK" button to run the query, a Microsoft Web Query is created for each @refresh function you specified. The output cells will have their background color changed to light blue so you

can visually identify which cells will be updating automatically. If you need to modify the web query you can do so by right clicking on a cell with the web query then select “Data Range Properties”. From there you can modify the time interval, if it updates when the workbook opens, the name of the query, and other details. If you need to modify the identifiers used it is best to delete the original web query and make a new one.

Please note:

- Avoid using the Transpose feature with the @refresh function. A Microsoft web query is made for every column which means the more columns you have the slower the response will be.
- This feature does not work with record items which are items that return more than one data point.
- Avoid overlapping web queries in the same column. Otherwise, web queries which return multiple results may potentially overwrite each other’s' data.
- Requests made by a web query will not be recorded in the RemotePlus log file.
- Only latest data will be returned. Any date(s) specified will be ignored.
- The number of cells automatically updating should be kept small enough that they can update with the time interval you specify. For example: You may have more cells updating when your time interval is 10 minutes compared to if your time interval is 5 minutes.
- For each refresh you will be billed as if you manually made the requests for data.
- By default the web queries are set to update when the workbook opens. This can be modified in the Data Range Properties of the web query.
- **Your RemotePlus userid/password are embedded in XML code of the web query**. Therefore, a Microsoft Excel spread sheet with a web query you generated will have your credentials and any requests made by the web query will be billed under your credentials.

Creating a List File in Excel

You can create a “list” file containing identifiers (e.g., CUSIP numbers, SEDOL numbers, tickers) and then use that file to retrieve data. (You can create list files of data items; however, this function is most commonly used to create a list of security identifiers.)

Note: You can also use RemotePlus Lookup to create security or data item list files from the results of your search. For details, refer to “RemotePlus Lookup”.

To create a list file for use in RemotePlus for Excel:

1. Compile a list of the identifiers for which you want to retrieve data frequently. The list can include any valid identifiers.

   Note: You may use Notepad or any other text editor to create a list file of securities or items. Security identifiers or items should be entered one per line.

2. Enter the identifiers in successive rows of the “A” column of a new worksheet, one identifier to a cell.
3. Click **File - Save As**.
4. Select CSV (Comma delimited) from the Save File as Type: list.
5. When the system prompts you for the file name, type the name you want to give to your list file. The file type defaults to “.CSV”; however, you should specify a file type of “.LST”. Otherwise, you must specify the file extension (e.g., “CSV”) when you enter the list name in the data retrieval dialog box.

   Note: In newer versions of Excel, you may get a message that the selected file type does not support multiple sheets.

6. Click **OK** and RemotePlus for Excel saves the information in column A as a .CSV format file.

Chapter 5 Data Retrieval Requests

RemotePlus API

In addition to the predefined utilities detailed in the previous section, RemotePlus offers programmatic access to its server. In this way, you can incorporate data calls to RemotePlus directly into your own applications. RemotePlus clients may use HTTP POST to send their requests to the RemotePlus web server https://rplus.icedataservices.com/cgi/ids-rplus

RemotePlus supports HTTP/1.0 as well as HTTP/1.1. If you specify HTTP/1.1 and do not specify a Content-length you should expect the response to be returned in chunks.

- For specific information regarding HTTP errors (such as “401 Forbidden”), refer to: http://www.w3.org/Protocols/rfc2616/rfc2616-sec10.html
- For sample Perl™, C#, Java™ and VBA based programs using HTTP POST, please visit the RemotePlus website at https://rplus.icedataservices.com/download.

We recommend that you code your request to include a Cyclic Redundancy Check (CRC), which tells you that all data has been received and that the data received in the response exactly matches the data sent by RemotePlus. Use the “Done=flag” to receive the CRC or the “Done=request” flag, if you do not want to receive a CRC.

Overview

Syntax

The general syntax for a RemotePlus request takes the form:

request-name,arg1,arg2,...,argN[,]

where

Commas separate the request name and arguments. The comma following the final argument is optional.

request-name is a RemotePlus data retrieval language request.

arg1,..,argN are individual tokens or a list of tokens.

- If a token contains one or more commas (,), double quote (“) characters, equal signs (=) or parentheses where the syntax does not specifically expect such a character, it must be enclosed in double quotes (e.g., “CUSIP8=‘45840J10’” or “S,067760”).
- If a token contains a double quote (“) character, it must be coded with two double quote (“) characters.

A list is a set of tokens. If more than one token is in the list, the list should be enclosed in parentheses and individual tokens separated by one or more commas. Example:

(PRC,PRCADAT,PRCNOTE)

Output

The response to a request will be one or more lines (or rows) of output. Each line of output sent to the workstation is terminated by a line-feed (LF) character. If TERM mode is in effect (i.e., input/output is via a Terminal Emulator), each line is terminated by a carriage return (CR). For output to a disk file, each line is written as a separate record, and there is no special termination character.

A line of output can contain an error message, a “canned” response (e.g., OK) or a set of data values separated by commas. Any output, other than a numeric data value, will be delimited by double quote (“) characters. If an alphabetic data value contains a double quote (“) character, it will be returned as two double quote (“) characters. Commas may be returned as data and will be contained within double quotes (“) characters. Do not parse on commas within double quotes (“) characters.

Errors

An error message is returned in the following form:

“!E*nnn*”,“*text*”

where

nnn is the error code.

text is the error message text.

If an error is detected which results in an error message, the request is terminated. Certain fatal errors will cause the server to terminate the session. If the message text contains a variable field, the error message is written to the log file. Refer to Chapter 9. Error Messages for a list of error messages.

GET

Purpose

The GET request retrieves data using keys, items and dates. All time series retrieved with a single GET request will have the same periodicity. Descriptive items can be included with time dependent items, and the date range and period will be ignored.

Format

GET,keys,items[,[sdate][,[edate][,[period]]]]

[,TITLES={SHORT|LONG|SUBSHORT|SUBLONG}]
[,DATEFORM={YMD|DMY|SERIAL}]
[,ROWTYPE={RECDATE,ENTITY}]
[,COL=DATES]

[JOBID=xxxx]

where:

keys is a list of security identifiers. You should separate keys with commas and enclose the list in parentheses. The parentheses are optional when you specify only one key. Do not enclose keys in single or double quotes.

A key can be a company or security identifier (such as a CUSIP, SEDOL, ISIN or ticker)

In cases where security identifiers might be interpreted ambiguously, you must preface the identifier with a prefix code (e.g., to identify the S&P 500 futures contract for September 2010, use the “CD:” preface; “CD:SP10U0”). Security identifier prefixes take the form: [*prefix*]:<*identifier*>. For additional information on prefixes see **Chapter 10 Key Prefixes** for details or the “Help” section of the RemotePlus website.

items is a list of data item specifiers. Separate items by commas and enclose the list in parentheses. Parentheses are optional when you specify only one item.

This argument is a data item code representing a piece of financial data. Examples include PRC for Best Price/Evaluation, MDAT for Maturity Date, and ATYPE for Asset Type. Refer to the *RemotePlus Data Item Codes* list for a list of data items.

RemotePlus uses three types of data items:

Time-independent: Retrieves a single value for each security. For example, data item DES1 retrieves the issuer name.

Time-series: Retrieves data for a single period, a range of consecutive periods, or any number of non-consecutive periods. For example, data item PRC retrieves the best price or evaluation

Record: Retrieves a set of fields for each security, rather than a single value, For example, data item NEDA2 retrieves one or more records describing dividends and splits.

RemotePlus also includes special data items such as @dateof and @movavg. You can include data item specifiers as a list file in the same way as a key list file, above.

sdate, edate

Specifies a date range, or *sdate* (with comma and *edate* omitted) specifies a single date. Date specifiers can be a single date or two dates, denoting a date range. One of the dates can be an integer indicating the number of periods or events leading (+) or lagging (-) the specified date. Use an asterisk (*) to represent the latest date having a value (either a reported value or an NA) for a single period or for a range.

The following combinations of *sdate* and *edate* are valid:

*, date	date1, date2	*, -n	date, -n	
	*	date, +n	date, *	date

(date1, date2, date3…,daten)

Specifies a list of independent dates, This list of dates is used for requesting non-consecutive dates, Date specifiers must be comma-separated and enclosed in parentheses,

For single dates, ranges of dates or lists of dates, you can enter dates in daily, monthly, quarterly, or annual format. Valid date formats include the following:

Ann	Quart	Monthly	Weekly	Daily
yycc	ccyyq	ccyymm	ccyymmdd	ccyymmdd
	q/ccyy	mm/ccy	mm/dd/ccyy	mm/dd/ccyy
		m..m	m..m dd	m..m dd
			dd/m..m/ccy	dd/m..m/ccy

Note: Unless otherwise specified, the date format you use to enter your date(s) will determine the periodicity of the data that is returned, For example, if you request pricing/evaluations with a monthly date, your request will return monthly data.

period specifies the periodicity. In most cases, you leave this blank to indicate the periodicity implied by the date format. When you use the latest indicator (*), either with no second date or with a period offset (a lead or lag indicator), the system assumes the periodicity to be the “natural” period associated with the data item. For pricing data, the “natural” period is daily; for fundamental data, the “natural” period is annual. Valid period specifiers include:

A: Annual (Fiscal year for fundamental data)

CA: Calendar Annual

Q: Quarterly (Fiscal quarter for fundamental data)

CQ: Calendar Quarter

M: Monthly

W: Weekly - Value for Friday

D: Daily - Monday through Friday

DX6: Daily Except Saturday

DX7: Daily Except Sunday

D7: Daily - Seven days per Week

V: Aperiodic event data

TITLES

Returns key, item and date text information in addition to data. Key and item titles are either in short form (their specifiers) or long form (names associated with their specifiers). Note that if no option for TITLES is requested, the data will be returned without headers.

SHORT: (for Short Description) Key and Item *specifiers*

LONG: (for Long Description) Key and Item *names*

SUBSHORT: (for titles on record items and Short Description) Key and Item *specifiers* with sub item names

SUBLONG: (for titles on record items and Long Description) Key and Item names with sub item *names*

SUBSHORT and SUBLONG will only work for one data item code at a time. You may not request multiple data item codes when using these title options.

The placement of the titles text depends on the number of keys and items requested.

DATEFORM

Governs the format of daily dates returned as either data or titles. Options and their meanings are:

YMD return dates as yyyymmdd (e.g., 19970221)

DMY return dates as dd mmm yy (e.g., 21 Feb 97)

SERIAL return dates as the number of days since December 31, 1899. This is the form in which spreadsheets such as Microsoft Excel store daily dates (e.g., 35493).

If you do not specify the DATEFORM option, RemotePlus returns data representing daily dates in the form they are stored in their respective databases (typically yymmdd or yyyymmdd); RemotePlus returns titles in the form dd mmm yy.

ROWTYPE Modifies the output for titles for record items.

RECDATE specifies that each item be on a separate line and, where titles are requested, (entity, item, date) head each line. **Note:** This option overrides COL=DATES (see below)

ENTITY specifies that the entity name be present for each row when titles are requested.

ARRAY similar to RECDATE option except that, when titles are requested, only entity and item head each line. **Note:** This option overrides COL=DATES (see below)

COL Specifies the orientation of output data. The RemotePlus server normally determines the orientation based on the number of items and entities, the number of periods requested, and the periodicity and type of selected items.

ITEMS one row of output is produced for each key. Each column is a different item. This orientation can be used (and is the default) only when a single value is being returned for each item.

DATES one row of output is produced for each key/item pair. Each column is a separate date. DATES is the default for time-series items if the number of periods returned is greater than one, and no record type item is specified. **Note:** This option is overridden when ROWTYPE= ENTITY or ARRAY or when dates or period are not specified.

OPT LASP specifies that RemotePlus will return the most recent value on, or before, a requested date, for each security and date in your request.

JOBID JOBID (a.k.a. PORT ID a.k.a. portfolio identifier) allows you to specify your own custom identifier (up to four characters) to indicate the queries requested with that Port ID should be billed separately on your invoice. This is helpful if you are running specific requests on behalf of your clients. Each of your clients could have their own Port ID enabling you to identify how much of your invoice was attributable to requests on behalf of each client. At the end of your GET request specify JOBID=*xxxx* where *xxxx* is your custom identifier.

Usage

1. GET results are returned as rows. Default row output is ordered by key first, then by item within each key. If data are requested for only a single time period (e.g., only an **sdate** value is specified, or no dates are specified), each row represents a set of values for a given security or entity. The order of the values in a given row is the same as the order that the items are requested in the GET command. The format of each row is comma-separated variables; no comma follows the last value. Commas may be returned as data and will be contained within double quotes (“) characters. Do not parse on commas within double quotes (“) characters.

The output row format is: value-1,value-2,...,value-n

2. For time series data (where more than one time period is requested), each row represents a set of values for a given key-item combination. The date range defines the order of values in a row. To order data from latest to earliest, enter the most recent date first. Reverse the date order to get earliest to latest.
3. For record data, where a single item results in the return of multiple sub-items, one row of output is returned for each record.
4. For event data, such as capital actions, one row of output is returned for each event. When a date range is specified with a periodicity of “V”, **sdate** must be later than **edate**. In this case all events occurring between the two dates are returned, starting with the most recently occurring event.

   Optionally, when period “V” is specified, **edate** can be specified as *-n*, in which case n+1 events are returned, starting with the most recent event occurring on or before **sdate**. In this case, **sdate** can be specified as either an absolute date or “*”.
5. For **sdate** and **edate**:

When you specify a year, the century is optional. If no century is present, and the year is in the range 0-50, RemotePlus assumes 20 for the century (i.e., year 11 represents 2011).

Quarters are specified as a number from 1 to 4.

If **sdate** equals **edate**, or **edate** is null, a single data point is returned. If the entire date-clause is null, the most recent value is returned.

6. When you specify TITLES in the GET command, RemotePlus modifies the output row formats as illustrated below. **Note**: that keys, items and dates are returned as text. In the cases below, TITLES = SHORT:

   – GET with one key and one item for multiple dates:

“key”,“date-1”,“date-2”,...,“date-n”
“item”,value-1,value-2,...,value-n

   – GET with one key and multiple items for multiple dates:

```
“key”, “date-1”, “date-2”,..., “date-n”
“item-1”,value-1,value-2,...,value-n
“item-2”,value-1,value-2,...,value-n
```

   – GET with multiple keys and one item for multiple dates:

```
“item”,“date-1”,“date-2”,..., “date-n”
“key-1”,value-1,value-2,...,value-n
“key-2”,value-1,value-2,...,value-n
```

   – GET with multiple keys and multiple items for multiple dates:

```
“ ”,“date-1”, “date-2”,..., “date-n”
“key-1 item-1”,value-1,value-2,...,value-n
“key-1 item-2”,value-1,value-2,...,value-n
“key-2 item-1”,value-1,value-2,...,value-n
“key-2 item-2”,value-1,value-2,...,value-n
```

   – GET with multiple keys and multiple items for a single date:

```
“date”, “item-1”, “item-2”,..., “item-n”
“key-1”,value-1,value-2,...,value-n
“key-2”,value-1,value-2,...,value-n
```

Setting TITLES = LONG in the above cases would return the same formats. Keys and items would be replaced by their respective descriptions.

7. When TITLES, ROWTYPE and COLS are specified in the GET command, the output row formats are modified as illustrated below. Note that keys, items and dates are returned as text. In the cases below, TITLES=SHORT, COL=DATES and ROWTYPE=ENTITY.

   – GET with one key and one item for multiple dates:

     “item”, “date-1”, “date-2”,..., “date-n”
     “key”,value-1,value-2,...,value-n

   – GET with one key and multiple items for multiple dates:

     “ ”, “date-1”, “date-2”,...,”date-n”
     “key-1 item-1”,value-1,value-2,...,value-n
     “key-1 item-2”,value-1,value-2,...,value-n

   – GET with multiple keys and one item for multiple dates:

     “item”, “date-1”,“date-2”,..., “date-n”
     “key-1”,value-1,value-2,...,value-n
     “key-2”,value-1,value-2,...,value-n

- GET with multiple keys and multiple items for multiple dates:

  " ", "date-1", "date-2",..., "date-n"
  "key-1 item-1",value-1,value-2,...,value-n
  "key-1 item-2",value-1,value-2,...,value-n
  "key-2 item-1",value-1,value-2,...,value-n
  "key-2 item-2",value-1,value-2,...,value-n

- GET with multiple keys and multiple items for a single date:

  "date", "item-1", "item-2",..., "item-n"
  "key-1",value-1,value-2,...,value-n
  "key-2",value-1,value-2,...,value-n

8. The date output formats for the TITLES option are:

Annual: yyyy where yyyy represents the year (e.g., 2011).

Quarterly: qn yy where n represents the quarter number (1, 2, 3, 4) in the year (e.g., Q4 10).

Monthly: mmm yy where mmm represents the month (JAN,...,DEC) in the year (e.g., JAN 11)

Weekly: dd mmm yy which represents the daily date of the last business day of a week (e.g., 21 DEC 10) usually a Friday. The DATEFORM option can be used to change the format to yyyymmdd or a serial number.

Daily: dd mmm yy (e.g., 17 OCT 10). The DATEFORM option can be used to change the format to yyyymmdd or a serial number.

9. GET may retrieve data using dates of a less frequent periodicity than the natural periodicity of the data. Daily market data, such as price, can be retrieved using weekly, monthly, quarterly and annual dates. For example, the items HIGH, LOW, PRC and VOL return the highest high, lowest low, best price evaluation, and total volume for each period in a series of monthly dates.

10. Not available data is indicated by one of the following (see D for more details):

"!NA" not available
"!NH" holiday (only applicable to US/Canadian securities)
"!NE" not expected (e.g., prices for future dates)
"!NR" not reported
"!N5" an error code 5000 was returned
"!N6" an error code 6000 was returned
"!N7" an error code 7000 was returned
"!N8" an error code 8000 was returned

10. Since not all keys in GET requests are identifiable unambiguously by context, certain keys require a prefix to indicate the type of key. For information on prefixes, refer to the *RemotePlus Data Item Code List* or the "Help" section of the RemotePlus website, RemotePlus follows these rules to determine the type of key if no prefix has been specified:

    - If the key contains eight or nine characters, then the key is assumed to be a CUSIP number.
    - If the key is a six or seven characters, then the key is assumed to be a SEDOL or IDII code.
    - If the key is a four-digit number, then the key is assumed to be a currency code. Otherwise, the key is assumed to be a ticker symbol and is mapped to a CUSIP number.

- If the key is neither a ticker or ICE Data Services symbol, then it is used as is and returns the first available data that is found for that key.

11. The GET command and its arguments are not case sensitive.
12. The syntax for several "special" data items that may be retrieved through RemotePlus is shown below. Refer to the "Special Items" section of the *RemotePlus Data Item Codes* list for more details.

Data item	Use	Syntax
@dateof	Retrieves the date associated with a data value.	@dateof(item)
@movavg	Calculates moving average.	@movavg(item, number of periods)
@movmed	Calculates moving medians.	@movmed(item, number of periods)
@part	Returns only the subitem specified of the record item specified rather than the entire record.	@part(item,subitem*1*,subitem*2*,subitem*N*)
@snap	Returns the FX rate for the snapshot specified	@snap(item,snap id)
Event	Determines whether a particular data set has been updated (returns "Present" or "Not Present").	Event, where "key" is name1.name2[.date]
EventRec	Determines whether a particular data set has been updated (returns "Present" or "Not Present") and if the event is present it returns the date and time it updated.	Event, where "key" is name1.name2[.date]

Examples

```
      1. Best price for IBM on Sept 30, 2010:
GET,IBM,PRC,20100930
Response:   134.14
      2. Best price and volume for IBM and DEC from Sept 25, 2010 to the
         latest date:
GET,(IBM,DEC),(PRC,VOL),20100925,*
Response:   134.65,134.89,135.48,134.14
6155.512,7484.022,5151.624,6432.129
0.36,0.345,0.32,0.31
544.35,585.9,966.7,876.4
      3. Best price and volume for IBM from Sept 25, 2010 to the latest
         date, including key and item specifiers and dates (note that this
         is the "single key" version of titles):
GET,IBM,(PRC,VOL),9/25/10,*,,TITLES=SHORT
Response:   "IBM",20100927,20100928,20100929,20100930
"PRC",134.65,134.89,135.48,134.14
"VOL",6155.512,7484.022,5151.624,6432.129
This format of placing the key in the upper left corner of the output is
also used when a "single key" and "single item" are requested with titles.
      4. Best price for IBM from Sept 25, 2010 to the latest date,
         including key and item specifiers and dates, reordering the
         output so that columns are dates and rows include key and item
         specifiers (ROWTYPE=ENTITY):
GET,IBM,(PRC,VOL),9/25/10,*,,TITLES=SHORT,COL=DATES,ROWTYPE=ENTITY
Response:   " ", "27 SEP 10","28 SEP 10","29 SEP 10","30 SEP 10"
"IBM PRC",134.65,134.89,135.48,134.14
"IBM VOL",6155.512,7484.022,5151.624,6432.129
```

5. Best price for IBM and DEC from Sept 25, 2010 to the latest date, including key and item specifiers and dates (note that this is the "single item" version of titles):

```
GET,(IBM,DEC),PRC,20100925,*,,TITLES=SHORT
Response:
"PRC","7 SEP 10", "28 SEP 10", "29 SEP 10", "30 SEP 10"
"IBM",134.65,134.89,135.48,134.14
"DEC",0.36,0.345,0.32,0.31
```

6. Best price for IBM and DEC from Sept 25, 2010 to the latest date, including key and item specifiers and dates (note that this is the "multiple key, multiple item" version of titles):

```
GET,(IBM,DEC),(PRC,VOL),20100925,*,,TITLES=SHORT
Response:   " ","27 SEP 10","28 SEP 10","29 SEP 10","30 SEP 10"
"IBM PRC",134.65,134.89,135.48,134.14
"IBM VOL",6155.512,7484.022,5151.624,6432.129
"DEC PRC",0.36,0.345,0.32,0.31
"DEC VOL",544.35,585.9,966.7,876.4
```

7. Best price and volume for DEC from Sept 26, 2010 to the latest date, including key and item descriptions and dates (note that this is the "single key" version of titles using the long option):

```
GET,DEC,(PRC,VOL),20100926,*,,TITLES=LONG
Response:   "DECADE RESOURCES LTD","27 SEP 10","28 SEP 10","29 SEP 10","30
SEP 10"
"Best Price/Evaluation",0.36,0.345,0.32,0.31
"Volume",544.35,585.9,966.7,876.4
```

8. Weekly high, low and best price, date of best price and volume for Microsoft common stock over the last year, most recent data first (assuming the current date is Oct 1, 2010):

```
GET,MSFT,(HIGH,LOW,PRC,PRCADAT,VOL),*,-51,W
Response:   25.52,25.53,24.3,24.45,24.6403,… ,26.16
24.36,24.09,23.74,23.32,23.51,… ,24.43
24.775,25.22,23.85,24.29,23.93, …,24.96
20100924,20100917,20100910,… ,20100806,20
100730,20100723,20100716,20100709,… ,274135.903
```

9. All dividends reported by IBM in 1996, using the item NXDV. Note that because the item NXDV does not include the ex-date, TITLES=SHORT is specified to return the date (ex-date) of each event. Note that the dates are specified in reverse order (most recent date first):

```
GET,IBM,NXDV,19961231,19960101,V,TITLES=SHORT
Response:   "IBM","NXDV","6 NOV 96","45920010",0,0.35,961108,961210
      "IBM","NXDV","7 AUG 96","45920010",0,0.35,960809,960910
      "IBM","NXDV","8 MAY 96","45920010",0,0.35,960510,960610
      "IBM","NXDV","7 FEB 96","45920010",0,0.25,960209,960309
```

10. The four most recently reported dividends for IBM, starting with today:

```
GET,IBM,NXDV,*,-3,V,TITLES=SHORT
Response:
"IBM","NXDV","6 AUG 10","45920010",0,0.65,100810,100910
"IBM","NXDV","6 MAY 10","45920010",0,0.65,100510,100610
"IBM","NXDV","8 FEB 10","45920010",0,0.55,100210,100310
"IBM","NXDV","6 NOV 09","45920010",0,0.55,091110,091210
```

11. This request retrieves the same data as in example 11, but requests that all dates are returned in the form yyyymmdd:

```
GET,IBM,NXDV,*,-3,V,TITLES=SHORT,DATEFORM=YMD
Response:  "IBM","NXDV",20100806,"45920010",0,0.65,20100810,20100910
"IBM","NXDV",20100506,"45920010",0,0.65,20100510,20100610
```

```
"IBM","NXDV",20100208,"45920010",0,0.55,20100210,20100310
"IBM","NXDV",20091106,"45920010",0,0.55,20091110,20091210
```

Security Lookup

Purpose

To look up a list of identifiers which meet a criteria you specify

Format

SCR,(items),table,[where clause],[max rows],[start row], [count]

where:

items is a list of data item specifiers. Separate items by commas and enclose the list in parentheses. Parentheses are optional when you specify only one item.

This argument is a data item code representing data found in the table specified. Examples include DES1 for Issuer Description, MDAT for Maturity Date, and RATE for Coupon Rate. Refer to the Tables & Items section for a list of data items specific to each table.

table The table you wish you query. Tables may not be joined.

Where clause Optional statement for narrowing down the results.

max rows Specifies the maximum number of rows to be returned.

Start row Specifies which row to start returning data for. For example, if you did a request for the first 100 rows you might want to follow that up with a second request for the next 100 rows. In that case the start row variable would be 101 and your max rows variable would be 100.

Count F=C returns the total number of rows found in the first row returned. Leave off F=C if you do not want the count.

Tables & Items

Many asset types have two tables; an issuer and an issue table. For example: To lookup a bond you would first find the issuer ID of the desired issuer. Then you would query the relevant issue table using the issuer ID.

Please note: The issuer id is an internal identifier and is subject to change. For example, issuer ABC might have an issuer id of 123456 but the issuer id could be amended, or deleted without warning at any time.

When searching descriptions you may use an asterisk * as a wild card. For example: "Des1 Contains 'gold*' will return all rows which have a description which starts with “gold”. You may use more than one wild card if desired.

PNSBONDI: Bond Issuers

Item	Description	Type	Format	Screenable
DES1	Issuer Description	Character	X30	Yes
ISSUERID	Issuer Identifier	Character	X6	No
TYPE	TYPE of bond CP = Corporate and GV = Government	Character	X2	Yes

Example:

SCR,(ISSUERID),(PNSBONDI),"Des1 Contains 'ford* motor*' and TYPE = 'CP'",999999,1

PNSBOND: Government and Corporate Bonds

Item	Description	Type	Format	Screenable
AFLG	Active Flag (1 = Active, 0 = Inactive)	Character	X1	Yes
CTRY	Country (Refer to PNSCODES section for all possible codes)	Character	X3	Yes
DES1	Issuer Description	Character	X30	No
DES2	Issue Description	Character	X31	No
ISSUERID	Issuer Identifier	Character	X6	Yes
MDAT	Maturity Date	Date	ccyymmdd	Yes
RATE	Coupon Rate	Float	N8.5	Yes
SECID	Security Identifier. Returns either a SEDOL/IDII code or the CUSIP/CINS	Character	X8	No
TYPE	Asset Type (Refer to PNSCODES section for all possible codes)	Character	X2	Yes

Example:

SCR,(SECID,DES1,DES2,CTRY),(PNSBOND),"TYPE contains 'CP' AND AFLG = 1 AND ISSUERID in ('016883','016884','016885','016886','016887','016888','016889','016890') AND CTRY in ('USA') AND Rate between 0 and 5 AND MDAT between 20160630 and 20360630",1000,1,F=C

PNSCMOI: CMO/ABS issuers

Item	Description	Type	Format	Screenable
DES1	Issuer Description	Character	X30	Yes
ISSUERID	Issuer Identifier	Character	X6	Yes

Example:

SCR,(ISSUERID),(PNSCMOI),"Des1 Contains 'Chase*'",999999,1

PNSCMO: CMOs

Item	Description	Type	Format	Screenable
AFLG	Active Flag (1 = Active, 0 = Inactive)	Integer	N1	Yes
DES1	Issuer Description	Character	X30	No
DES2	Issue Description	Character	X32	No
ISSUERID	Issuer Identifier	Character	X6	Yes
MDAT	Maturity Date	Date	ccyymmdd	Yes
RATE	Coupon Rate	Float	N??	Yes

SECID	CUSIP minus the check digit	Character	X8	Yes
SERIES	Series Name	Character	X16	Yes

Example:

SCR,(SECID,DES1,DES2),(PNSCMO),"AFLG = 1 AND ISSUERID in ('000996','000997','000998','000999','001000','001001','001002','001003','001004','001005') AND Rate between 0 and 5 AND MDAT between 20160615 and 20360615 AND Series = '2003-C2'",1000,1,F=C

PNSCOND: Commodities

Item	Description	Type	Format	Screenable
COMDID	2 Character Commodity Code to be used as the security identifier	Character	X2	Yes
DES1	Issuer Description	Character	X40	Yes
TYPE	Type of Commodity (Refer to PNSCODES section for all possible codes)	Character	X2	Yes

Example:

SCR,(COMDID),(PNSCOMD),"Des1 Contains 'gold*' AND TYPE = 'MT'",999999,1

PNSCONDF: Futures

Item	Description	Type	Format	Screenable
AFLG	Active Flag (1 = Active, 0 = Inactive)	Integer	N1	Yes
COMDID	2 Character Commodity Code	Character	X1	Yes
DES1	Issuer Description	Character	X40	No
EXDT	Expiration Date	Date	ccyymmdd	Yes
SECID	Security Identifier	Character	X9	Yes

Example:

SCR,(SECID,DES1,EXDT),(PNSCOMDF),"AFLG = 1 AND COMDID in ('GM','AU','GD','G','GL','TA','KI','GC','GH','WG') AND Exdt between 20160630 and 20170131",1000,1,F=C

PNSSTOK: Equities

Item	Description	Type	Format	Screenable
AFLG	Active Flag (1 = Active, 0 = Inactive)	Integer	N1	Yes
CTRY	Country (Refer to PNSCODES section for all possible codes)	Character	X3	Yes
DESC	Description	Character	X60	Yes
SECID	Security Identifier. Returns either a	Character	X8	Yes

	SEDOL/IDII code or the CUSIP/CINS			
TYPE	Asset Type (Refer to PNSCODES section for all possible codes)	Character	X2	Yes

Example:

SCR,(SECID,DESC,CTRY),(PNSSTOK),"Desc Contains 'intercontinental*' AND TYPE in ('CM') AND AFLG = 1 AND CTRY in ('USA')",1000,1,F=C

PNSLEVLOAN: Leveraged Loans aka Bank Loans

Item	Description	Type	Format	Screenable
IDII	IDII code	Character	X7	Yes
CUSP	CUSIP	Character	X9	Yes
DES1	Deal Name	Character	X30	Yes
DES2	Facility Type	Character	X31	Yes
MDAT	Maturity Date	Date	ccyymmdd	Yes

Example:

SCR,(IDII,CUSP,DES1,DES2,MDAT),(PNSLEVLOAN),"DES1 = 'turtle*' AND MDAT between 20150301 and 20160630",1000,1,F=C

PNSINDX: Indices

Item	Description	Type	Format	Screenable
DESC	Description	Character	X60	Yes
SECID	Security Identifier. Returns either a SEDOL code or the CUSIP	Character	X8	Yes

Example:

SCR,(SECID,DESC),(PNSINDX),"Desc Contains 'NYSE*'",1000,1,F=C

PNSOPTI: Option Issuers

Item	Description	Type	Format	Screenable
DES1	Issuer Description	Character	X30	Yes
INSTID	Issuer Identifier	Character	X6	Yes
TYPE	Option Type (Refer to PNSCODES section for all possible codes). If not specified it is assume TYPE = E (Equity)	Character	X1	Yes

Example:

SCR,(INSTID,DES1),(PNSOPTI),"Des1 Contains 'ICE*' AND TYPE = 'E'",999999,1

PNSOPT: Options

Item	Description	Type	Format	Screenable
EXDT	Expiration Date	Date	ccyymmdd	Yes
INSTID	Issuer Identifier	Character	X6	Yes
SECID	Security Identifier	Character	X8	Yes
SIDE	0 = Call, 1 = Put	Integer	N1	Yes
STRIKE	Strike Price	Float	N7.3	Yes

Example:

SCR,(SECID,INSTID,Side,Exdt,Strike),(PNSOPT),"INSTID in ('002597') AND EXDT >= 20160606 AND Strike between 5 and 150 AND Exdt between 20160630 and 20161031 AND Side =0",1000,1,F=C

PNSMUNI: Municipal Bond Issuers

Item	Description	Type	Format	Screenable
DES1	Issuer Description	Character	X90	Yes
ISSUERID	Issuer Identifier	Character	X7	Yes
OBLG	Obligation Code (Refer to PNSCODES section for all possible codes)	Character	X1	Yes
STATE	Two digit state, or territory code (Refer to PNSCODES section for all possible codes)	Character	X2	Yes

Example:

SCR,(ISSUERID),(PNSMUNI),"Des1 Contains 'Dunstable*' AND STATE in ('20') AND OBLG in ('A')",999999,1

Special Note: The following two tables are not screenable and have a different syntax. In order to retrieve data you must issue a NAM command.

MUNI: Municipal Bonds

Item	Description	Type	Format	Screenable
ISSUERID	Issuer Identifier	Character	X7	Yes
CUSIP	CUSIP minus the check digit	Character	X8	No
DESC	Description	Character	X90	No

Example

NAM,ENT,MUNI,"('14244:A','9813:A'),4.5%,20210515",1000,1

Where:

ENT ENT returns the entire row from the table. You many only specify ENT

MUNI The table

Where clause In Parenthesis specify the ISSUERIDs from the PNSMUNI table.

If desired you may specify a coupon rate such as 4.5%. Ranges are not allowed

If desired you may specify a maturity date *ccyymmdd*. Ranges are not allowed.

1000 Specifies the maximum number of rows to be returned.

1 specifies which row to start returning data for.

PNSCURR: Currencies

Item	Description	Type	Format	Screenable
DESC	Currency Description	Character	X60	Yes
ISOCODE	ISO Currency Code	Character	X7	No

Example

NAM,ENT,CURR,"Canadian*",1000,1

PNSCODES

It is recommended you programmically download the list of possible codes periodically (for example every 30 days) to get the most up to date list. Although changes are typically rare new codes are not announced. To request all possible codes use the following request.

SCR,(TABLE,ITEM,CODE,VALUE),PNSCODES,,99999,1

Here is an abbreviated example of the output

"PNSBONDI","TYPE","CP","Corporate"

"PNSBONDI","TYPE","GV","Government"

Here is how to read the example. For the item TYPE which is found in the PNSBONDI table (bond issuer table) the possible values are…

Code	Description
CP	Corporate
GV	Government

This would be different from the item TYPE which is found in the PNSSTOK table (equity)

```
"PNSSTOK","TYPE","AD","ADRs/GDRs"
"PNSSTOK","TYPE","CF","Closed End Fund"
"PNSSTOK","TYPE","CM","Common"
"PNSSTOK","TYPE","CP","Convertible Preferred"
"PNSSTOK","TYPE","DR","Depository Receipts"
"PNSSTOK","TYPE","FD","Fixed Dividend"
"PNSSTOK","TYPE","IF","International Funds"
```

```
"PNSSTOK","TYPE","MF","Mutual Fund"
"PNSSTOK","TYPE","OT","Other"
"PNSSTOK","TYPE","PF","Preferred"
"PNSSTOK","TYPE","RE","REIT"
"PNSSTOK","TYPE","RT","Rights"
"PNSSTOK","TYPE","SP","Special"
"PNSSTOK","TYPE","UI","Unit Investment Trusts"
"PNSSTOK","TYPE","UT","Unit Trusts"
"PNSSTOK","TYPE","UN","Units"
"PNSSTOK","TYPE","WT","Warrants"
```

Computing the CRC

The Cyclical Redundancy Check (CRC) string is always the final line of the response and consists of the characters \CRC=xxxx followed by a newline. The “xxxx” consists of an unsigned short hexadecimal integer value that can be compared with the computed value to make sure that all the data was received correctly. (If a CRC check is not required the block could be used as an end marker after which the HTTP connection can be closed.)

The server computes the reported CRC value on the data portion of the response and includes any newlines. In this example that would be:

“INTERNATIONAL BUSINESS MACHS”

or as a string represented in C notation

“\“INTERNATIONAL BUSINESS MACHS\”\n”

Note: A line of data always has a newline at the end, and this newline must be used in the CRC calculation.

Here is the code used in the calculation of the CRC value:

```
/*---------------------------------------------------------------------*/
/*  Lookup tables for the crc nibbles.                                 */
/*---------------------------------------------------------------------*/
static unsigned short crcvals[] = {
       0x0000, 0xc0c1, 0xc181, 0x0140,
       0xc301, 0x03c0, 0x0280, 0xc241,
       0xc601, 0x06c0, 0x0780, 0xc741,
       0x0500, 0xc5c1, 0xc481, 0x0440
     };
static unsigned short crcvals2[] = {
       0x0000, 0xcc01, 0xd801, 0x1400,
       0xf001, 0x3c00, 0x2800, 0xe401,
       0xa001, 0x6c00, 0x7800, 0xb401,
       0x5000, 0x9c01, 0x8801, 0x4400
     };
/**********************************************************************/
/*  Procedure Name:     crccalc                                       */
/*  Description:        Do the actual CRC calculations.               */
/*  Inputs:             c       -- The character involved.            */
/*                      x       -- Pointer to the CRC involved.       */
/*  Outputs:            None                                          */
/*  Comment:            This code assumes integers are the same size as */
/*                      pointers.  It is therefore NON-PORTABLE       */
/**********************************************************************/
static void crccalc(char c, unsigned short *x)
{
    unsigned short ax, dx;
    unsigned short part;
    ax   = c & 0xff;                        /* Only retain lower byte.      */
    ax  ^= *x;                              /* XOR it with the CRC.         */
    part = ax >> 8;                         /* Fetch top byte of the CRC    */
    dx   = crcvals[ax & 0x0f];              /* Lookup for first nibble.     */
    dx  ^= crcvals2[(int)(ax & 0xf0) >> 4]; /* XOR in for second nibble.    */
    ax   = dx & 0x00ff;                     /* Split into high/low bytes    */
    dx  &= 0xff00;                          /* Use top order as is.         */
    ax  ^= part;                            /* XOR lower part with CRC.     */
    *x   = dx + ax;                         /* Stuff into place.            */
}
/**********************************************************************/
/*  Procedure Name:     crc16                                         */
/*  Description:        Compute a CRC for a string.                   */
/*  Inputs:             thecrc  -- Pointer to the crc involved.       */
/*                      p       -- Pointer to the string              */
/*  Outputs:            None                                          */
/*  Comment:            thecrc should be 0 on the first crc16 call    */
/**********************************************************************/
void crc16(unsigned short *thecrc, char *p)
{
    unsigned char   token;
    for (token = 0; token = (unsigned char)(*p); p++)
        if  (token < 0x7f || token > 0x9f)
            crccalc(*p, thecrc);
}
```

Chapter 6 VBA Macro

If you are creating your own Microsoft Excel Macro you may reference the RemotePlus 4.0 Excel add-in. This allows you to create your own custom Excel add-in, worksheet, or template to retrieve data using RemotePlus.

With the RemotePlus.xlam file open you will need to reference “InteractiveDataRemotePlusAPI” in the VBA Editor by going to Tools → References…

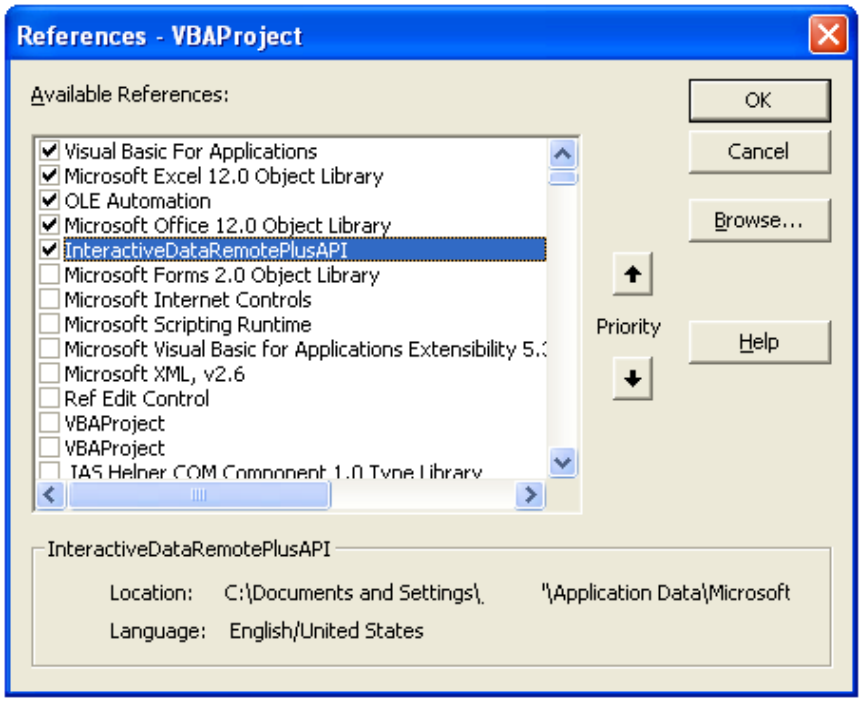


Figure 6-1 – VBA References

RemotePlus Class Variables

Below are the variables for the RemotePlus VBA class. If the optional variables are not specified the settings in the RemotePlus.xlm file are used except for FFGmode for which the default is false and returnDateIn which returns the data as string variable by default.

Variable Name	Variable Type	Description
idcqry	String	This is the actual RemotePlus request. See **Chapter 6 Data Retrieval Requests** for details.
returnDataIn	String	(optional) Valid values are either an Excel cell address (such as "B5"), a named range, or a filename preceded by 2 exclamation points ("!!C:\myoutput.txt"). If not specified data is returned as a string variable.
Username	String	(optional) the RemotePlus User ID in lower-case. The default value is whatever is set as 'primary' User ID in Settings.
Password	String	(optional) the RemotePlus password in lower-case. The default value is the password for the 'primary' User ID in

		Settings.
URL	String	(optional) the RemotePlus URL . The default value is "https://rplus.icedataservices.com/cgi/ids-rplus"
DoTranspose	Boolean	(optional) If the output is horizontal this feature will make it vertical and vice versa.
DoOverflow	Boolean	(optional) If the results do not fit on the active worksheet this option allows the rest of the data to go onto a new sheet or sheets as needed, effectively creating an infinitely-sized worksheet for your output. Overflow sheets will be named with "Down#" and "Right#" where the number is how many sheets down and/or right it would be from the main sheet.
DoResize	Boolean	(optional) Automatically changes the width of the applicable cells to fit the data.
ShowProgressWindow	Boolean	(optional) A message box shows on-screen while your request is processing. It shows a count of how many rows have been processed.
FFGMode	Boolean	(optional) Like Transpose each row represents a date, but unlike Transpose the identifiers are vertical as well rather than horizontal. Default is False. **Note:** May only be used when requesting more than one identifier and more than one date.

Simple Sample Macro

```
Sub sample()
' Initialize private RemotePlus object
Dim RPL as RemotePlus
Set RPL = RemotePlus()

' Optionally set property overrides here. For example, here's how you'd 'set the logfile:
RPL.LogFile = "C:\rplus\sample.log"
' to get the results in the active cell:
RPL.Query "get,ibm,des1",ActiveCell.Address
' or to get the results into a variable called Output:
Dim Output as String

Output = RPL.Query("get,ibm,des1")
MsgBox "Output is " & Output

End Sub
```

Block Retrieval

An alternative to creating your own macro is to create an Excel template using the block retrieval method. The template would allow you specify one or more RemotePlus requests which would populate the results in a cell address(s) of your choosing.

In an Excel worksheet you must name a range “IDCDATA”. This range must be two columns wide, but can be any number of rows. We recommend you locate the IDCDATA range somewhere not visible to the end user of your template where they can’t delete or modify the contents of those cells.

The first column of the IDCDATA range specifies where you want to start outputting data. For example: A1

The second column contains your GET command which is your request for data (as described in **Chapter 6, Data Retrieval Requests**).

Each row of the IDCDATA range represents a separate RemotePlus request which are run sequentially starting with the first row in the range. To initiate the request(s) in the IDCDATA range you may use the shortcut key specified in the settings (as described in **Chapter 8, Installation and Troubleshooting**)

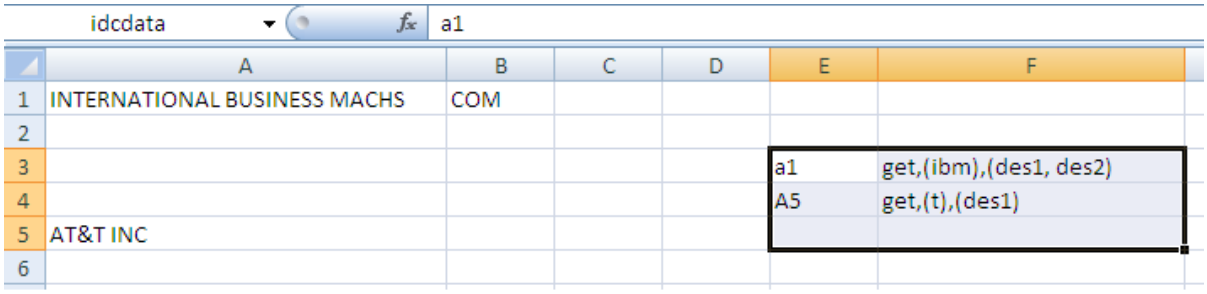


Figure 6-2 – Example Excel Template Using Block Retrieval Method.

Chapter 7 Installation and Troubleshooting

This chapter discusses installing RemotePlus for Windows, changing RemotePlus settings, and communications troubleshooting.

System Requirements

For RemotePlus version 4.0:

Microsoft Windows 7 or newer and Excel 2007 or newer. Both 32-bit and 64-bit versions

Installing RemotePlus for Windows

The RemotePlus for Windows software may be downloaded and installed from the RemotePlus Web site (https://rplus.icedataservices.com/download). Procedures vary for installing the software within each environment; however, in general, you should follow these steps to install RemotePlus:

- Run the installation program.
- Enter your RemotePlus User ID/password in the settings.
- Run a test data retrieval to verify the installation.

Software Download and Setup

To download RemotePlus from the RemotePlus Web site, go to Step 1.

1. Access the RemotePlus Web site (https://rplus.icedataservices.com/download). **Note**: You must enter your User ID and password to access this site. Please contact your ICE Data Services representative if you need help.
2. Click on the link for the version of software you wish to download.
3. Select whether you want to run the program from the Web site or save the file to disk.
4. Click **OK** to execute Install. The install wizard will guide you through the software installation process, prompting you to specify the hard drive and directory into which you want to install RemotePlus (the default is C:\Progam Files \Interactive Data\RemotePlus). You can use this directory or specify one with another name that you have read/write access to.
5. Start RemotePlus by clicking on the shortcut created in your Start Menu in the Interactive Data group.
6. When you start RemotePlus for the first time you will be prompted with a RemotePlus Parameter Settings Dialog Box as shown in Figure 8-1. See “Settings” below for details on information in all of the Settings tabs.

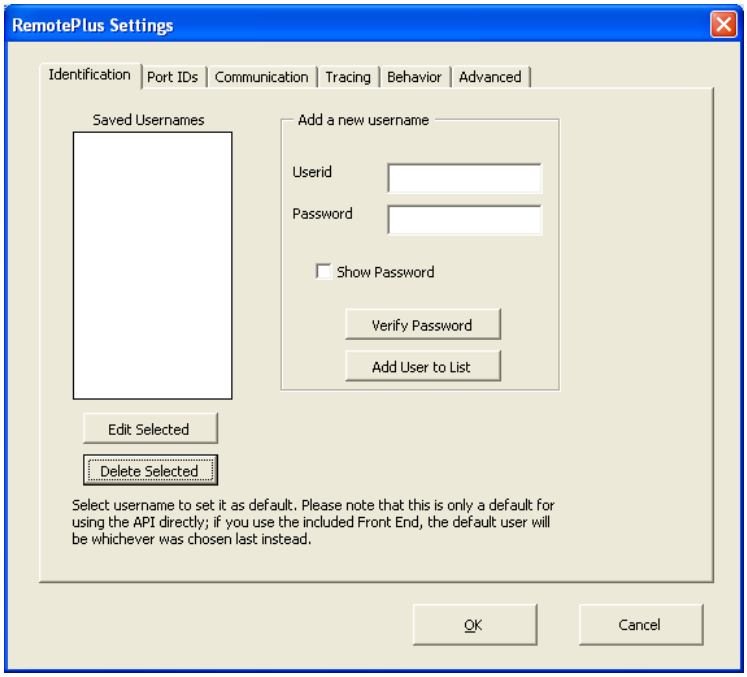


Figure 7-1. RemotePlus Parameter Settings Dialog Box

7. When you have entered all of your settings, click the **OK** button to store your selections.

Identification (information on your username(s) / password(s))

User ID

Enter the User ID supplied to you by your ICE Data Services representative. This User ID generally starts with “d4”.

Note: Both the User ID and password are case sensitive.

Password

Enter the password supplied to you by your ICE Data Services representative. Note that the password is not displayed in the dialog box field for security reasons. You may override it by selecting “Show Password” checkbox.

Verify Password

Once you have typed in a User ID and password you can verify the combination is correct before exiting the settings.

Add User to List

Adds the User ID to the list of saved User IDs on the left. The User IDs in this list will appear on the User ID drop down menu on the Interactive Data RemotePlus Data Retrieval Dialog Box.

Edit Selected:

Allows you to edit the User ID selected in the list of saved usernames

Delete Selected

Allows you to delete the User ID selected in the list of saved usernames

Port IDs (Portfolio Identifiers)

The Port ID (portfolio identifier) allows you to specify your own custom identifier (up to four characters) to indicate the queries requested with that Port ID should be billed separately on your invoice. This is helpful if you are running specific requests on behalf of your clients. Each of your clients could have their own Port ID enabling you to identify how much of your invoice was attributable to requests on behalf of each client.

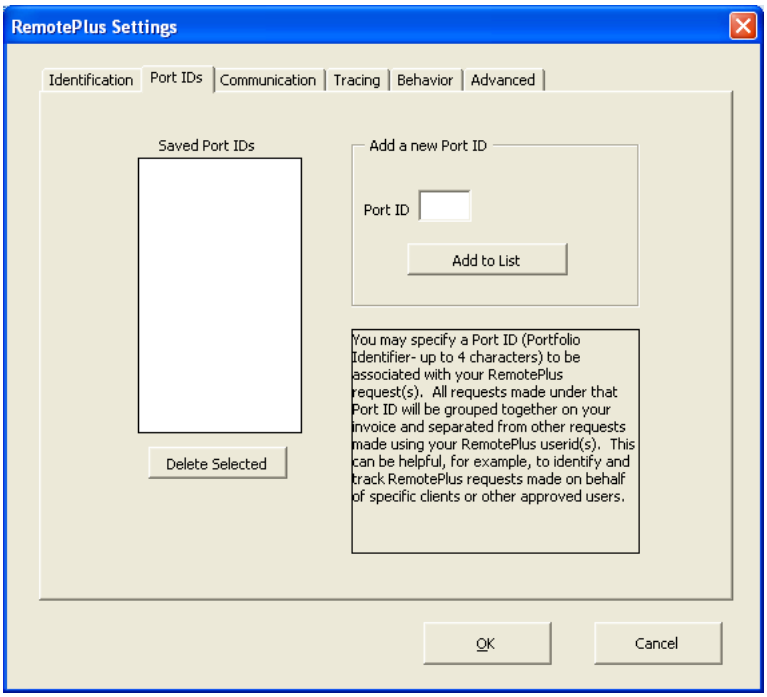


Figure 7-2. Port IDs

Add to List

Adds the Port ID to the list of saved Port IDs on the left. The Port IDs in this list will appear on the Port ID drop down menu on the Interactive Data RemotePlus Data Retrieval Dialog Box.

Delete Selected

Allows you to delete the Port ID selected in the list of saved Port IDs

Communication (RemotePlus URL see Figure 8-3)

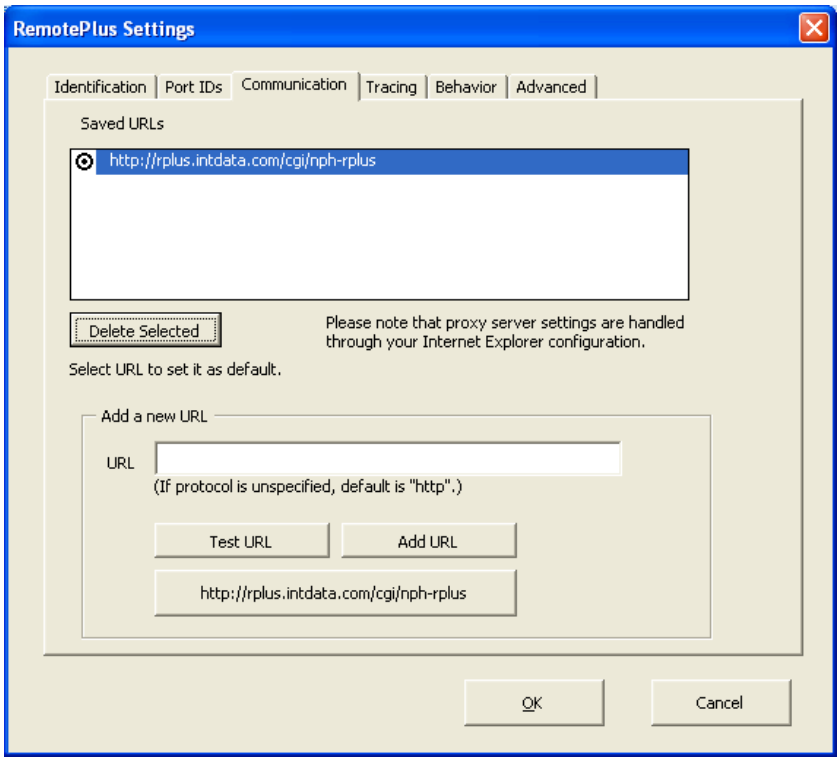


Figure 7-3. Communications Settings

Delete Selected

Allows you to delete the URL selected in the list of saved URLs

Test URL

Once you have typed in a URL you can verify it is an accurate RemotePlus URL before adding it.

Add URL

Adds the URL typed in the URL box to the list of Saved URLs. The Saved URLs will appear in the URL drop down box on the Interactive Data RemotePlus Data Retrieval Dialog Box.

https://rplus.icedataservices.com

This is the default RemotePlus URL. Clicking this button will paste that URL into the URL box.

Tracing options allow you to capture the requests and responses between the RemotePlus client software and the host server. This can be a useful tool in diagnosing problems. The default options for tracing are shown in Figure A-4. By default, each time you re-start RemotePlus, the logging starts anew and overwrites the logging for past sessions in that file unless you check off the Append check box. You may also disable tracing by unchecking the Enabled check box.

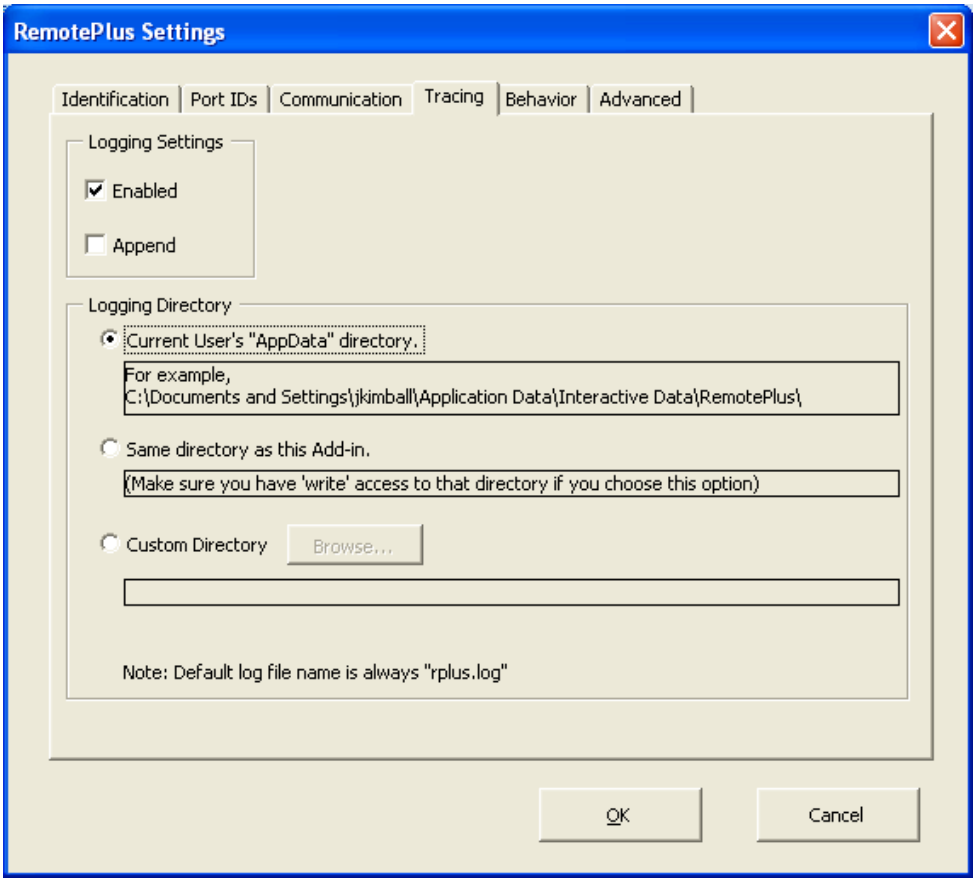


Figure 7-4. Tracing Settings

Logging Directory

Current User's "AppData" directory. By default the logging is saved to the users Application Data directory file C:\Documents and Settings*user name*\Application Data\Interactive Data\RemotePlus\rplus.log where *user name* is the user's Microsoft Windows user name.

Same directory as this Add-in: The rplus.log file is saved in whatever directory you have installed or saved the add-in.

Note: Make sure you have write access to that directory if you choose this option.

Custom Directory: You specify the directory where the log file is saved.

Note: Make sure you have write access to that directory if you choose this option.

Behavior (allows you to modify how the add-in behaves)

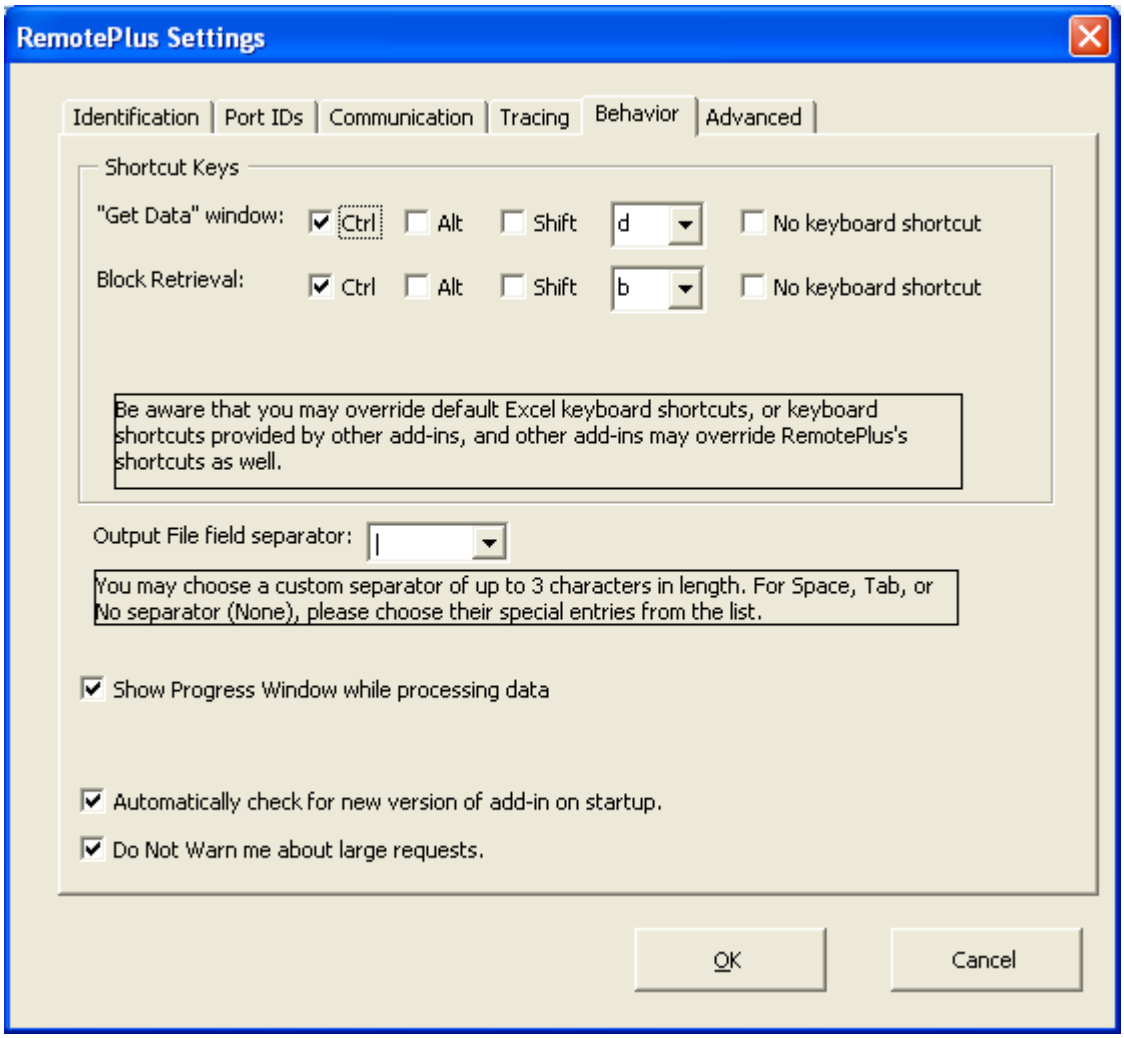


Figure 7-5. Behavior Settings

"Get Data" window: By default, there is no shortcut key specified to open the Interactive Data RemotePlus Data Retrieval Dialog Box. You can uncheck the No keyboard shortcut box and specify your own shortcut key using the options to the left.

Block Retrieval: By default, there is no shortcut key specified to run a block retrieval request (as described in **Chapter 7, VBA Macro).** You can uncheck the No keyboard shortcut box and specify your own shortcut key using the options to the left.

Output File field separator: If you choose to use the output to file option rather than have the output go into Excel you can change the default delimiter which is a comma.

Show Progress Bar while processing data: By default a progress bar will show the progress of your request, assuming it is a large enough request to warrant it. You may prevent the progress bar from showing by unchecking this box.

Advanced (Saving Settings and API Defaults)

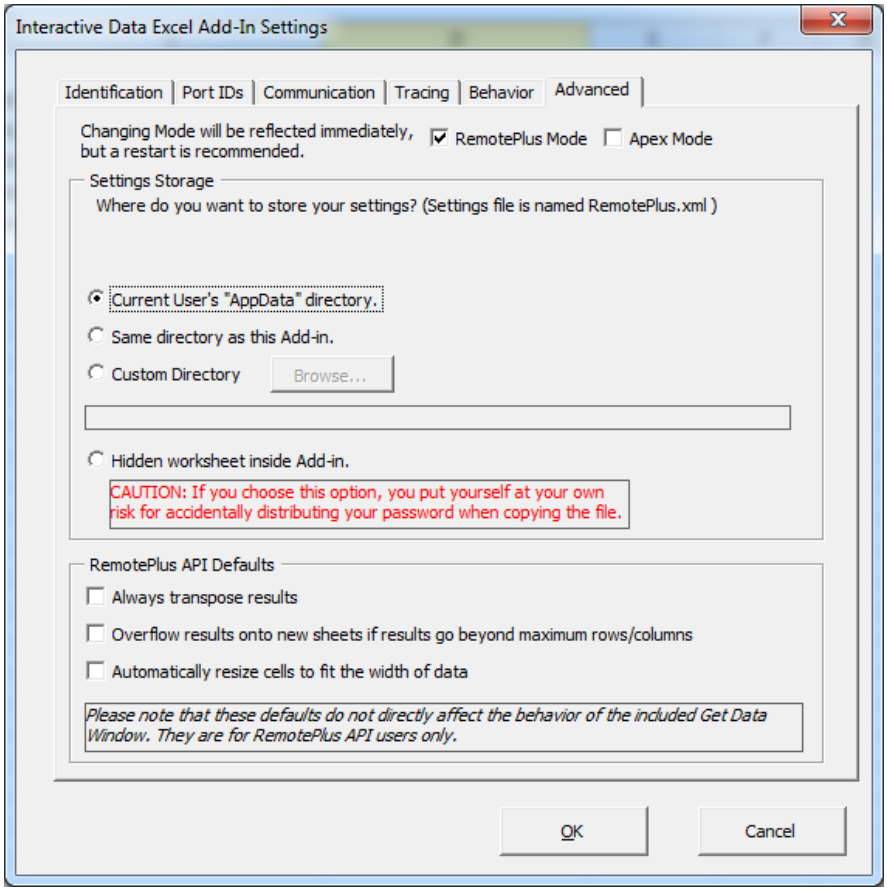


Figure 7-6. Advanced Settings

Modes

RemotePlus Mode: Use this mode to access RemotePlus

Apex Mode: Only use this if you also have access to *Apex® On Demand*

Settings Storage

Current User's "AppData" directory: By default the settings are saved in an XML file saved in C:\Documents and Settings*user name*\Application Data\Interactive Data\RemotePlus\RemotePlus.xml. where *user name* is the user's Microsoft Windows user name.

Same directory as this Add-in: The RemotePlus.xml file is saved in whatever directory you have installed or saved the add-in.

Note: Make sure you have write access to that directory if you choose this option.

Custom Directory: You specify the directory where the settings file is saved.

Note: Make sure you have write access to that directory if you choose this option.

Hidden worksheet inside Add-in: Saves your settings in a hidden worksheet within the add-in itself. This is useful if you plan to install the add-in on a USB memory stick and use it on different PCs.

NOTE: IF YOU CHOOSE THIS OPTION, YOU PUT YOURSELF AT RISK FOR ACCIDENTLY DISTRIBUTING YOUR PASSWORD WHEN COPYING OR SAVING THIS FILE ONTO OTHER PCs.

API Defaults

These settings do not affect the selections chosen in the Interactive Data RemotePlus Data Retrieval Dialog Box. These settings are intended for advanced users who are using the VBA RemotePlus class when writing their own VBA macro.

Always Transpose Results: Takes the results returned by the RemotePlus server and transposes them. So if the data is horizontal this feature will make it vertical and vice versa.

Overflow results onto new sheets if results go beyond maximum rows/columns: If the results do not fit on the active worksheet this option allows the rest of the data to go onto a new sheet or sheets as needed.

Automatically resize cells to fit the width of data: Automatically changes the width of the applicable cells to fit the data.

Changing Your RemotePlus Settings

If, at any time after you install RemotePlus, you wish to change your settings, you may access the RemotePlus Parameter Settings by clicking on the Settings button in the RemotePlus ribbon.

Once you have made your changes, click the **OK** button to store those changes. Clicking the **Cancel** button will exit you from the Settings dialog without saving any changes.

Uninstalling RemotePlus

If you wish to uninstall RemotePlus from your PC, you may do so by selecting Add/Remove programs from Settings/Control Panel on your Windows Start menu. Locate the entry for “Interactive Data RemotePlus” in the list and click on the Remove button.

Uninstalling RemotePlus removes all of the system files that were put on your workstation during the installation of RemotePlus. Any user-defined files (spreadsheets, list files, etc.) are **not** deleted.

Troubleshooting

This section helps you to answer the question “How do I connect to ICE Data Services?”

General Information

You need to know your:

- Username and password
- RemotePlus URL (https://rplus.icedataservices.com/cgi/ids-rplus**)**
- Have a copy of your rplus.log file and RemotePlus.xml file available to email to your ICE Data Services support representative.

Diagnosing Communications Problems

This section helps you diagnose communications problems and identifies possible causes and solutions. Locate the message below and follow the steps given. If the problem persists, contact your ICE Data Services support representative and identify as accurately as you can the error message you receive. Please have your troubleshooting information (including log files) handy, since your representative needs to know your communications settings to help diagnose your problem.

Cannot establish reconnection

The server is not responding. Typically, the server is temporarily unavailable; try reconnecting.

Cannot initiate data server

The server is not responding. Typically, the server is temporarily unavailable; try reconnecting.

Could not connect to ICE Data Services

There is a problem with your TCP/IP or Internet connection. Contact ICE Data Services.

Password or User ID is incorrect

Check the spelling of the Password and User ID in the RemotePlus settings.

You can also get this error message when the system is busy or unavailable. If the User ID and password appear to be correct, simply attempt to reconnect or, if the problem persists, contact ICE Data Services.

Format of RemotePlus Server in parameter file is incorrect or RemotePlus Server Name is incorrect

Check the RemotePlus Server name field in the RemotePlus Parameter Settings.

Cannot find IP address of RemotePlus server

Contact ICE Data Services for help.

Cannot find IP address of proxy server

Check the RemotePlus Parameter Settings to verify that proxy server information has been entered correctly.

Timeout occurred while connecting

Check the RemotePlus Parameter Settings to verify that the server name field is filled in correctly. If this is not the problem, contact ICE Data Services.

Unrecognized HTTP error

Check the RemotePlus Parameter Settings to verify that the RemotePlus server name, proxy server name and port # have been entered correctly. If this does not solve the problem, contact ICE Data Services.

Could not send request due to broken HTTP connection

Contact ICE Data Services.

Could not receive data due to broken HTTP connection

Contact ICE Data Services.

Chapter 8 Error Messages

This chapter describes the system messages and error conditions that can occur when you run RemotePlus. If you contact ICE Data Services for help with a system message, please note the error number and the exact wording of the message.

!E – Error Messages

Code Problem/Solution

!E1 - !E5
Internal error. Please report error code and command to ICE Data Services.

!E6 The input file cannot be found. Please check and try again.

You specified that input requests were to be read from a CMS file, but the file could not be found.

!E7 Internal error. Please report error code and command to ICE Data Services.

!E10 Data request terminated by user.

You canceled your RemotePlus transaction.

!E19 Command contains characters within the data request that cannot be processed. Please check and try again

Review the command and replace unrecognized characters.

!E20 Unrecognized command. Please check and try again.

You specified a command that the system does not understand. Review the command names and check your spelling.

!E21 Expanded code: !E21 Parse error on *xxxx*.

Report error code and command to ICE Data Services.

!E22 The key specifier '*xxxx*' does not exist. Please check and try again.

The code you specified for a company or security does not exist. Check your spelling or use RemotePlus Lookup to look up the code.

!E23 The data item '*xxxx*' does not exist. Please check and try again.

The code you specified for a data item does not exist. Check your spelling or use RemotePlus Lookup to look up the code.

!E25 The key list is not formatted correctly. Please check and try again.

The format of the security list is incorrect. Check the list of keys to be sure there are matching parentheses and each key is separated by a comma.

!E26 The item list is not formatted correctly. Please check and try again.

The format of the item list is incorrect. Check the list of items to be sure there are matching parentheses and each item is separated by a comma.

!E29 The date '*xxxx'* in a date list is not an actual date. Please check and try again.

Check the format of the dates in your date list.

!E30 The date list is not formatted properly. Please check and try again.

Check to make sure your list of dates is enclosed in parentheses and that the dates within are separated by commas.

!E38 Insufficient memory on host server to perform this request. Please contact ICE Data Services.

Report error code and command to ICE Data Services.

!E40 A parameter beginning with '*xxxx*' could not be recognized. Please check and try again.

!E41 Keyword value beginning with '*xxxx*' could not be recognized. Please check and try again.

!E50 Insufficient disk space on host server. Unable to complete request.

!E52 No value provided for keyword '*xxxx*'. Please check and try again.

!E90 Access privileges are not available for user '*xxxx*'. Call ICE Data Services for information.

The User ID you entered is not valid for the system. Be sure you have entered your User ID correctly in your communications settings. Call ICE Data Services if the problem persists.

!E91 Access to '*xxxx*' data is not authorized. Call ICE Data Services for information.

Your User ID has not been validated to access this data. Contact ICE Data Services for information if you are interested in using this data.

!E92 Access to item '*xxxx*' for key '*xxxx*' is not authorized. Call ICE Data Services for information.

Your User ID has not been validated to access this data. Call ICE Data Services for information if you are interested in using this data.

!E93 Use of directed access item '*xxxx*' is not authorized. Call ICE Data Services for information.

You cannot use directed access.

!E94 Use of SCR command is not authorized. Call ICE Data Services for information.

You cannot use SCR commands.

!E96 You have exceeded the maximum number of allowed concurrent connections to RemotePlus for your User ID.

You have too many requests running concurrently. Wait for some to finish before trying again.

!E100 Bad data retrieved for item '*xxxx'*

Call ICE Data Services for information.

!E133 HTTP error0

There was a problem with the HTTP connection. Try running the query again.

!E201 Unable to find list.

The list specified in your data request could not be located. Make sure that you have spelled it correctly, and that the file exists in the current (or specified) directory. Make sure that the file exists with a .LST extension if you have not specified an extension. Refer to "List Files" in **Chapter 3, RemotePlus Overview**, for details.

!E203 Invalid list file '*xxxx*'.

An I/O error occurred while reading a list file. Verify that the specified list is accessible and that the contents are formatted correctly.

!E204 Disconnected due to inactivity.

More than 15 minutes elapsed between the time the query was written to IDCQUERY.VTF and the time the response was read from IDCREPLY.VTF.

!E205 Invalid list file for 'xxx': line 'y'

The text file may contain non-printable characters. You may have saved your list file in a format other than “text”; also, the key field of the list may exceed 100 characters.

!E301 The period code ‘*xxxx*’ could not be recognized. Please check and try again.

The periodicity code entered is not one of the recognized values. Review the list of valid periodicity codes.

!E302 The date ‘*xxxx*’ could not be interpreted as entered. Please check and try again.

The format of the date you entered in your data request is invalid. Check your start and end dates or list of dates for valid formats.

!E304 The data item ‘*xxxx*’ is not available for the specified periodicity.

A conflict has occurred between the “natural” periodicity of the data and the date you entered. Check the data item’s periodicity and enter a valid date.

!E305 List or Global file name ‘*xxxx*’ not found. Please check and try again.

The filename entered for a List or a Global file does not exist. Check the spelling of the name and make sure it exists.

!E306 Internal error – please report error code and command to ICE Data Services.

!E307 The TITLES option ‘*xxxx*’ is unknown. Valid values are SHORT or LONG.

!E308 The COL option ‘*xxxx*’ is unknown or used incorrectly. Valid values are ITEMS or DATES.

!E309 The date range ‘*xxxx*’ to ‘*xxxx*’ contains no business days. Please check and try again.

The date range did not contain any business days (Monday – Friday). For example, RemotePlus generates this error when two dates are consecutive weekend days.

!E310 The key prefix ‘*xxxx*’ is unknown. Please check and try again.

The prefix specified was not one of the permitted values. Examples of valid key prefixes include C:, S:, I:, etc. Refer to **Chapter 10, Key Prefixes** for a full list of prefixes.

!E311 The key ‘*xxxx*’ is inconsistent with the type of key required for item ‘*xxxx*’.

For example, a CUSIP (C:*xxxxxxxx*) was specified for an EXSHARE data item ‘*xxxx*’. Refer to **Chapter 10, Key Prefixes** for a full list of prefixes.

!E317 Item ‘*xxxx*’ can only be retrieved beginning with most recent value.

This error occurs for certain data items when they are requested in ascending chronological order. Change the request so that the more recent values are retrieved first.

!E318 The data item ‘*xxxx*’ is not available for the specified periodicity.

You have requested data for a periodicity that is not available. For example, daily sales.

!E319 The combination of start date ‘*xxxx*’, and date ‘*xxxx*’ and period ‘*xxxx*’ is inconsistent.

This error occurs if the specified periodicity code does not agree with the implied periodicity of the specified dates.

!E320 The database containing item ‘*xxxx*’ is currently not available. Try again later.

!E321 Unknown function name ‘*xxxx*’ was detected. Please check and try again.

RemotePlus special item (i.e., @DATEOF) was incorrectly specified. Check spelling and try again.

!E322 The DATEFORM option ‘*xxxx*’ is unknown. Valid values are YMD, SERIAL, or DMY.

!E325 The function argument ‘*xxxx*’ is not numeric or exceeds 260.

The RemotePlus special item was requested for too many periods. Reset the periodicity to less than 260 periods.

!E327 Item '*xxxx*' used with the function is not numeric or not a time-series.

!E328 Item '*xxxx*' is not supported by this version of RemotePlus.

!E329 The character string '*xxxx*' is not a valid form for an item.

!E330 Unable to open user specification file in DISK mode.

Report error code and command to ICE Data Services.

!E331 Unable to open user output file in DISK mode.

Report error code and command to ICE Data Services.

!E332 Item list contains more than '*xxxx*' items.

The item list is too large; break the list into smaller sets.

!E333 The ROWTYPE option '*xxxx*' is unknown. Valid values are RECDATE, ENTITY, or ARRAY.

!E334 The name '*xxxx*' is not a valid event name. Please check and try again.

Refer to the Security Lookup category of Events for a list of valid database update events.

!E335 Event facility not available. Try again at a later time.

!E336 Start date '*xxxx*' and end date '*xxxx*' have different periodicity.

!E337 A relative date '*xxxx*' must be used with a latest or actual date.

!E338 Two relative dates '*xxxx*' and '*xxxx*' have been used. At least one date must be "*" or a specific date.

The combination of start date and end dates used in the data request are not valid.

!E339 The item '*xxxx*' contains an unknown isors value '*xxxx*'. Please contact ICE Data Services.

!E340 The date '*xxxx*' cannot be used with ANALYSTICS item '*xxxx*'.

!E341 TITLES cannot be used when the first item is descriptive and the latest multiple values for a time series are requested.

Check the syntax of the GET command in your report. Review the list of valid options for the GET command in **Chapter 6, Data Retrieval Requests**

!E342 Global file '*xxxx*' is improperly formatted. Please report to ICE Data Services.

!E377 The OPT value '*xxxx*' is unknown. Valid options are LASP or MF.

Check the syntax of your GET request. The only valid options are LASP or MF.

!E381 @PART requires numeric second argument

Check the syntax of the @PART function.

!E407 - !E1100
Internal error – report error code and command to ICE Data Services

Note: TCP/IP users receive error messages !E1301-1384 in place of the !E1101-1184 messages documented here; however, the definitions for the "1300" series messages match those for "1100" series messages.

!E1104 Internal error – report error code and command to ICE Data Services

!E1105 Internal error – report error code and command to ICE Data Services

!E1122 - !E1125
Internal error – report error code and command to ICE Data Services.

!E1181 - !E1185
Unable to allocate memory. Make adjustments and try again.

The system was unable to allocate the memory required. Make sure the PC has the minimum acceptable RAM required for your installation. Refer to **Chapter 8, Installation and Troubleshooting** for details. If the error persists, make note of the error number and contact ICE Data Services.

!E1201 - !E1236
Internal error – report error and command to ICE Data Services.

!E1250 Socket error: Cannot create network socket.

Contact ICE Data Services for help.

!E1251 Format of RemotePlus Server in parameter file is incorrect.

Check the RemotePlus Server name field in the RemotePlus Parameter Settings.

!E1252 Cannot find IP address of RemotePlus server.

Contact ICE Data Services for help.

!E1253 Cannot find IP address of proxy server.

Check the RemotePlus Parameter Settings to verify that proxy server information has been entered correctly.

!E1254 Timeout occurred while connecting.

Check the RemotePlus Parameter Settings to verify that the server name field is filled in correctly. If this is not the problem, contact ICE Data Services

!E1255 RemotePlus User ID or password is incorrect – check communication settings.

!E1256 RemotePlus Server Name is incorrect.

Check the RemotePlus Server name URL field in the RemotePlus Settings.

!E1257 Unrecognized HTTP error.

Check the RemotePlus Parameter Settings to verify that the RemotePlus server name, proxy server name and port # have been entered correctly. If this does not solve the problem, contact ICE Data Services

!E1258 Could not send request due to broken HTTP connection.

Contact ICE Data Services.

!E1259 Could not receive data due to broken HTTP connection.

Contact ICE Data Services.

!E1260 An internal error has occurred. Please report to Interactive Data.

!E1261 Could not write to temporary file. Check disk space.

!E1265 Incorrect version response from server.

Please report error to ICE Data Services.

!E1301 - !E1384
TCP/IP users receive error messages !E1301 - 1384 in place of messages !E1101-1184. The definitions for “1300” series messages match those for “1100” series.

!E1400 - !E1450
: Contact your network administrator for instructions on these errors.

!1600 and above
: Internal error: ICE Data Services has been notified.

Chapter 9 Key Prefixes

For an up-to-date list of key prefixes, refer to the RemotePlus Web site at https://rplus.icedataservices.com/help/index.html

Chapter 10 Settings File

RemotePlus.XML

This XML file contains the details specified in the settings for version 4.0. The user may specify in the application settings dialog box where they want the RemotePlus.xml file saved. Below are the tags found in the file and their description for informational purposes. You should not manually edit the file. Improperly editing the file could result in RemotePlus not functioning correctly. Please make changes using the Settings options in the addin itself. If you do choose to edit the file manually you should close Excel first.

Tag	Description
<remoteplus version="**4.0.x.x.x**">	Version of the RemotePlus software which last saved your settings, Not necessarily the current version you are running.
<users>	The user is the RemotePlus User ID and password base 64 encoded.
<user primary="true">xxxxxxxxxxxxxxxxxxx</user>	The user primary is the User ID/combination that acts as the default for those users who opt to write their own applications which utilize the RemotePlus.XML file.
<user> xxxxxxxxxxxxxxxxxxx </user>	RemotePlus 4.0 allows users to enter more than one User ID/password combination. Therefore you can have more than one user tag.
</users>	
<proxyinfo> xxxxxxxxxxxxxxxxxxx proxyinfo>	The proxyinfo is the proxy server userid and password base 64 encoded.
<urls>	urls is where the RemotePlus URL is specified
<url primary="true">https://rplus.icedataservices.com/cgi/ids-rplus</url>	The URL primary is the URL that acts as the default for those users who opt to write their own applications which utilize the RemotePlus.XML file.
<url>**xxxxxxx**</url>	RemotePlus 4.0 allows users to enter more than one URL. Therefore you can have more than one url tag.
</urls>	
<apex><domain/></apex>	Only applicable on to Apex® On Demand Users

<portids>	Users can specify their own custom portid (portfolio identifier) up to four characters. Requests done under a portid will be segregated on your invoice).
<portid>**ABC**</portid>	RemotePlus 4.0 allows users to enter more than one portid. Therefore you can have more than one portid tag.
</portids>	
<logging>	The requests and the data returned can be saved in a log file.
<mode>**session**</mode>	Two possible options - “session” saves the requests and responses made during the current session. When a new session is started the log file is over written. “Append” saves the old sessions data and appends the new sessions data to the end of the file.
<directory>**%APPDATA%**</directory>	The user has the ability to specify where the log file will be saved. Valid values are: **%APPDATA%** - To specify the "%APPDATA%\Interactive Data\RemotePlus\" directory. (Usually something like C:\Users*yourusername*\Application Data\Roaming\Interactive Data\RemotePlus\ ). This directory is guaranteed to be writable by the current user. **%SAMEDIR%** - To specify the same directory as wherever the add-in is running from. Or a fully-qualified directory pathname, such as C:\My Logs\
</logging>	
<flags>	There are many options available in 4.0. These flags address the status of those options.
<transpose>**off**</transpose>	For those users who opt to write their own applications which utilize the RemotePlus.XML file the transpose flag, if on, would transpose the results from RemotePlus. If off then the results remained unchanged.

<overflow>**off**</overflow>	For those users who opt to write their own applications which utilize the RemotePlus.XML file the overflow flag, if on, would add new worksheets in the event the current worksheet could not contain the data being returned.
<autoresize>**off**</autoresize>	For those users who opt to write their own applications which utilize the RemotePlus.XML file the auto resize flag, when on, will automatically resize the cells in Excel where the data has been output to fit the data. Off would leave the cell width unchanged.
<showprogresswindow>**on**</showprogresswindow>	A status/progress window will appear if a request takes a sufficient amount of time to process. You may turn this feature off.
<autoversioncheck>**on**</autoversioncheck>	Checks if the number identifiers multiplied by the number items multiplied by the number of dates requested is greater than 50,000. If yes a warning message is displayed before processing the request.
<outputseparator>**,**</outputseparator>	For users who wish to output data from RemotePlus into a file you can specify a custom delimiter to be used.
</flags>	
<shortcuts>	By default there are no shortcuts setup
<getdata>**^d**</getdata>	Shortcut to make the data retrieval user form appear. ^ represents "Ctrl" % represents "Alt" + represents "Shift" If you wish to combine with a letter key, use lowercase letters only.
<blockretrieval />	Shortcut to run a block retrieval ^ represents "Ctrl" % represents "Alt" + represents "Shift" If you wish to combine with a letter key, use lowercase letters only.
</shortcuts>	
<apex><customurl/></apex>	Only applicable on to Apex® On Demand Users
</remoteplus>	

Chapter 11

Efficiency Considerations

This chapter provides some general guidelines for the efficient use of RemotePlus. While this chapter is primarily oriented towards users who are writing their own application programs, it also has applicability to users of the RemotePlus spreadsheet interface.

Efficient Data Retrievals

In general, the more data included in a single data request, the more efficient your application. This is best illustrated by a sample application (see below).

Assume that you have an application that requires you to retrieve prices/evaluations for a list of securities. The list of securities is contained in a file or database, where each record contains information such as CUSIP number, amount held, cost, etc. The simplest way to write the application is to read a record from the file, retrieve that security's price/evaluation using RemotePlus, update the record with the new price/evaluation and then retrieve the next record. This technique results in one RemotePlus request per security.

Request 1: GET,IBM,PRC

Request 2: GET,T,PRC

Request x: GET,GE,PRC

A more efficient method is to issue one RemotePlus request to retrieve all the desired prices/evaluations. In order to request all the data at once, you need to first predetermine the securities for which you need to retrieve data. The simplest way to do this is to perform an additional step where you read through the security list file and construct a list of security identifiers. This list can then be used to form a RemotePlus request that retrieves the prices/evaluations. It may be easier to write the list as a file (for example, seclist.lst)

GET,(IBM,T,GE),PRC

Alternatively, you may want to retrieve the price/evaluation and the security identifier associated with the price/evaluation. This enables you to verify that the list of prices/evaluations corresponds to your security list file. A simple way to have RemotePlus return the security identifier is to specify the TITLES=SHORT option, in which case you get an extra row of data (which you can discard) and an extra column which contains the identifiers.

GET,(IBM, T,GE),PRC,,, ,TITLES=SHORT

Just as you can retrieve data for multiple securities with a single RemotePlus request, you can also retrieve multiple data items. Make sure, however that you do not forget to enclose your list of items in parentheses.

GET,(IBM, T,GE),(PRC,PRCADAT),, ,TITLES=SHORT

---

1. Do not include identifiers in quotes. For example, GET,(“IBM”,“T”,“GE”),PRC should instead be formatted as GET,(IBM,T,GE),PRC.
2. ISIN identifiers are not recommended to be used when exchange specific data is requested. RemotePlus will convert the ISIN to an exchange-specific CUSIP or SEDOL.

3. It is more efficient to use a CUSIP or SEDOL rather than other types of identifiers. RemotePlus attempts to convert all other identifiers to CUSIP or SEDOL.
4. Unless you are certain that the identifier contains them, do not use non-alphanumeric characters.
5. Inspect identifier lists regularly for obsolete or invalid identifiers.
6. Inspect similar queries for overlapping data requests.
7. Typically, record items cannot be requested with non-record items. Exceptions apply. The item ZEOBZ for example may be included as the last item in a request with a record item.
8. Multiple requests run simultaneously on a single User ID can impact system performance.
9. When setting up very large automated requests or prior to conducting a very large test, please contact your ICE Data Services representative who will review your requests with you.

End of Block Item

In order to ensure that an application can process data correctly and can identify the end of a data request block, RemotePlus offers an “end of block” item that can be included as the last item in a data request. By including this item (ZEOBZ) and checking for the value that it returns ($ZEOBZ$), your application can verify that all of the data requested has been returned.

You can retrieve this item as you would any other item. The security id entered in the GET request is ignored, and the value “$ZEOBZ$” will be returned regardless of what security identifier key is included in the GET request.

Note that the ZEOBZ item is periodicity-independent and may be used in combination with any record/schedule item or in a time-series data retrieval.