

BLOOMBERG PRICELINK 4 INSTALLATION & TECHNICAL REFERENCE

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Pricelink 4 System Requirements

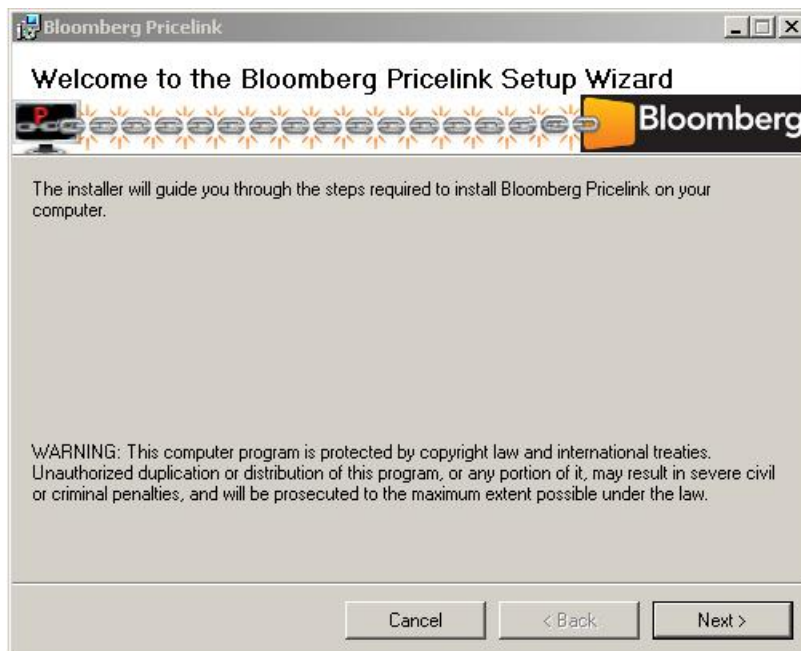
- Microsoft Windows NT4 or above, or Windows XP or above. Pricelink4 is compatible with Windows Vista (64) and Windows 7.
- Microsoft Excel 97 or above.
- Operational NIC (Network Interface Card), Ethernet.
- 2 MBs of Ram

Installing Pricelink 4

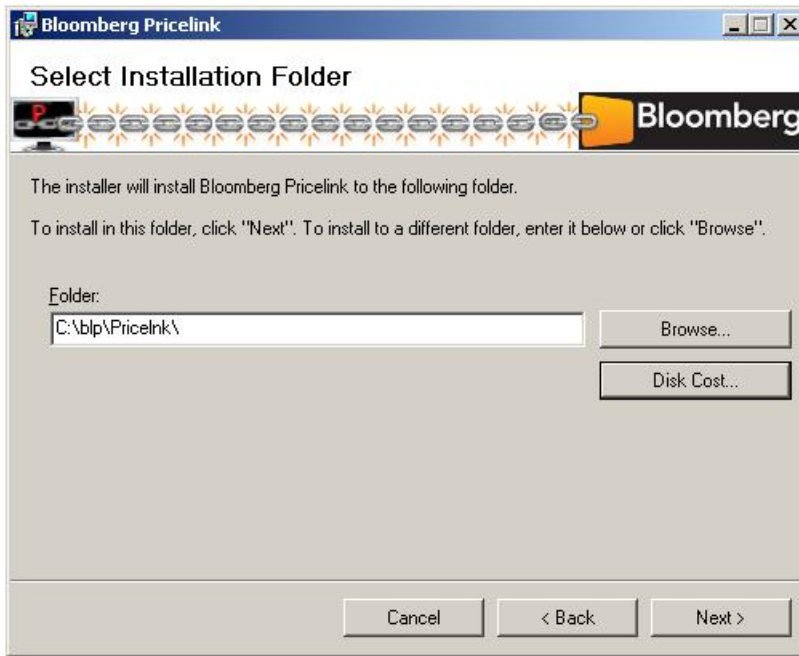
Take the following steps to install Pricelink 4. Steps underlined and in red are essential for a reliable installation of Pricelink 4. Skipping any of the installation steps described below may result in an incomplete installation and may require Pricelink 4 to be uninstalled and reinstalled again for proper operation.

N.B.
Pricelink 4 is implemented as a Windows service and, therefore, requires the user to have administrative privileges to be successfully installed.

1. Uninstall any previous versions of Pricelink and reboot the machine.
2. Ensure that there are no instances of Excel running.
3. Double click the file Pricelink.msi. After a few moments you should see the Pricelink setup wizard.



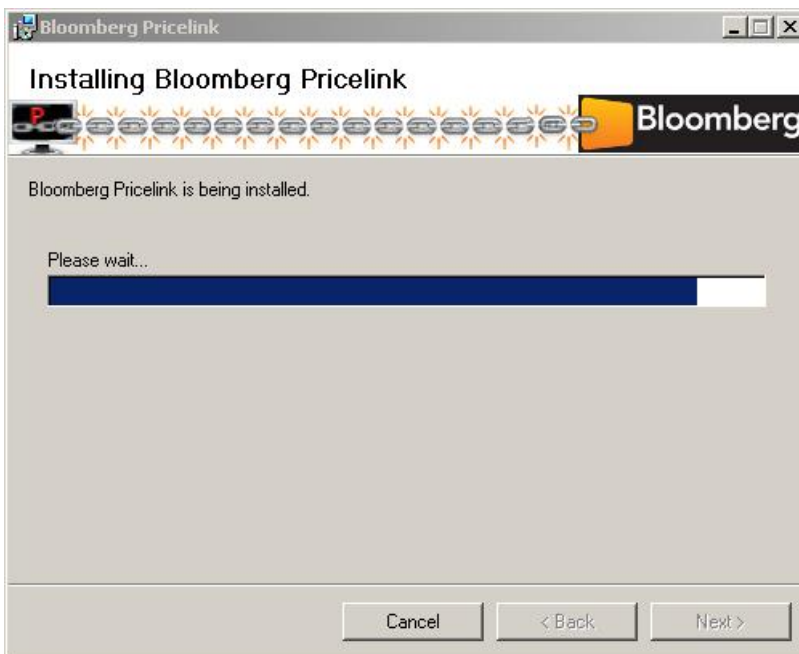
4. Click Next to show the following Dialog.



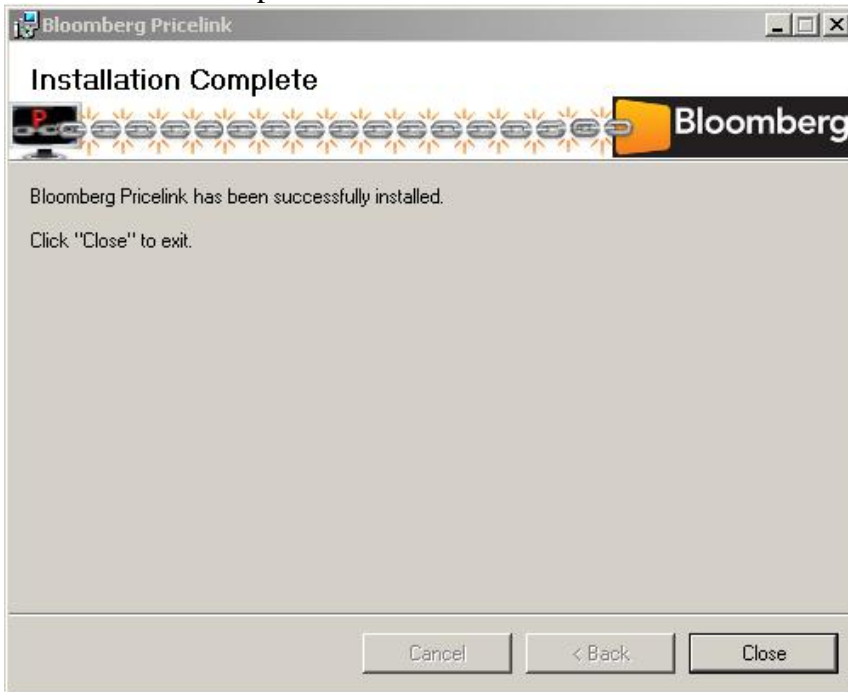
N.B.

If you failed to complete step 1 and have a previous version of Pricelink, the Installer should detect the presence of the current version and prompt you to uninstall it before continuing with the installation. In addition, the Installer should default to install Pricelink 4 in the same folder as the version being replaced. If it fails to do this, you should ensure that you manually modify the Destination Folder by clicking on the Browse button and selecting the location yourself. If you fail to do this, there is a likelihood that Excel will not be able to find the correct Pricelink Add-in resulting in unexpected behaviour.

5. Once you are happy with the Destination Folder click Next to display the following Dialog (or similar).



6. After a few minutes the installer should complete and present the “successfully installed” dialog. Click Finish to complete the installation.

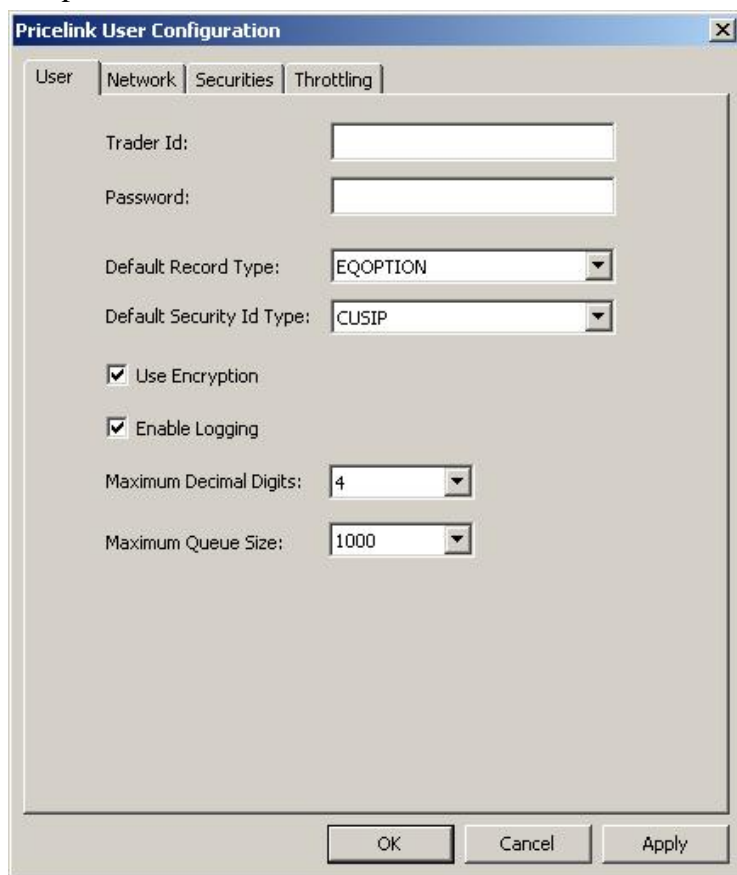


7. Pricelink 4 has now been successfully installed on your system. You will not, however, be able to contribute prices until it has been successfully configured. The configuration box will automatically open upon completion of the install wizard.

Configuring Pricelink 4

To configure Pricelink 4 take the following steps.

1. Enter or select the values provided to you by your Bloomberg representative in the User tab. If you are upgrading from a previous version of Pricelink, the values in the fields may already be populated. If that is the case, confirm the values you see with your Bloomberg representative. Once this step has been completed, select the Network tab.



The screenshot shows the 'Pricelink User Configuration' dialog box with the 'User' tab selected. The dialog has four tabs: 'User', 'Network', 'Securities', and 'Throttling'. The 'User' tab contains the following fields and options:

- Trader Id: [Empty text box]
- Password: [Empty text box]
- Default Record Type: [EQOPTION dropdown]
- Default Security Id Type: [CUSIP dropdown]
- Use Encryption
- Enable Logging
- Maximum Decimal Digits: [4 dropdown]
- Maximum Queue Size: [1000 dropdown]

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Apply'.

N.B.

If you've closed and need to re-locate the configuration box, select the Start Menu – choose Programs → Bloomberg Pricelink 4 → User Configuration. This will present the User Configuration screen.

N.B.

If you fail to enter valid values for all the fields before moving onto the next tab, you will be prompted to correct the values before being allowed to move to the next tab.

- The Network tab allows you to enter the network settings provided to you by your Bloomberg representative.

The screenshot shows the 'Pricelink User Configuration' dialog box with the 'Network' tab selected. The dialog has four tabs: 'User', 'Network', 'Securities', and 'Throttling'. The 'Data Driver' section contains two sub-sections: 'Primary' and 'Backup'. The 'Primary' section has an 'Address' field with the value '172 . 23 . 96 . 92' and a 'Port' field with the value '11011'. The 'Backup' section has an 'Address' field with the value '160 . 43 . 44 . 18' and a 'Port' field with the value '11011'. The 'Socks Config' section has a checkbox labeled 'Connect to Data Driver through a Socks 5 Server' which is currently unchecked. Below the checkbox are two sub-sections: 'Primary' and 'Backup'. The 'Primary' section has an 'Address' field and a 'Port' field, both of which are empty. The 'Backup' section also has an 'Address' field and a 'Port' field, both of which are empty. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Apply'.

At a minimum you must provide entries for the Primary and Backup Data Driver's IP address and port number.

If you connect through Socks 5 servers select the "Connect to Data Driver through a Socks 5 Server" check box which will enable the controls to enter Primary and Backup Socks server addresses.

- Pricelink 4 has now been successfully configured. Click OK to save the settings and exit.
- The machine will now have to be restarted for the settings to take effect.**
- After you have successfully restarted and logged in, Pricelink 4 will automatically connect to the Data Driver and bring up the contribution connection.
- If an admin login was used to install the software, the end-user may have to manually load the add-in in excel. To do this go to Excel Options, select Add-ins, select Manage Excel Add-ins, click in Browse and double click in the file Plink.xla located in the Pricelink 4 folder (C:\blp\Pricelink\Plink.xla).

Monitoring the Connection Status

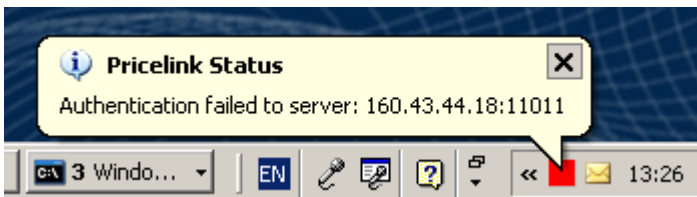
The state of the connection can be monitored by using the Desktop Notification Tool which will install an icon in your system tray that reflects the status of your connection.

1. If the icon is red

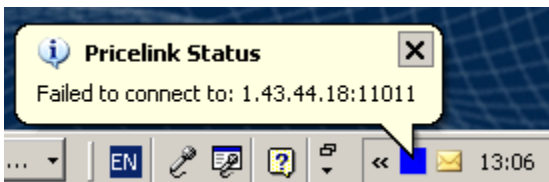


This means the Pricelink service has not been started correctly or that the contribution session has not been authenticated to the Data Driver.

If you hover over the icon with the mouse, the exact reason will appear in a tooltip.



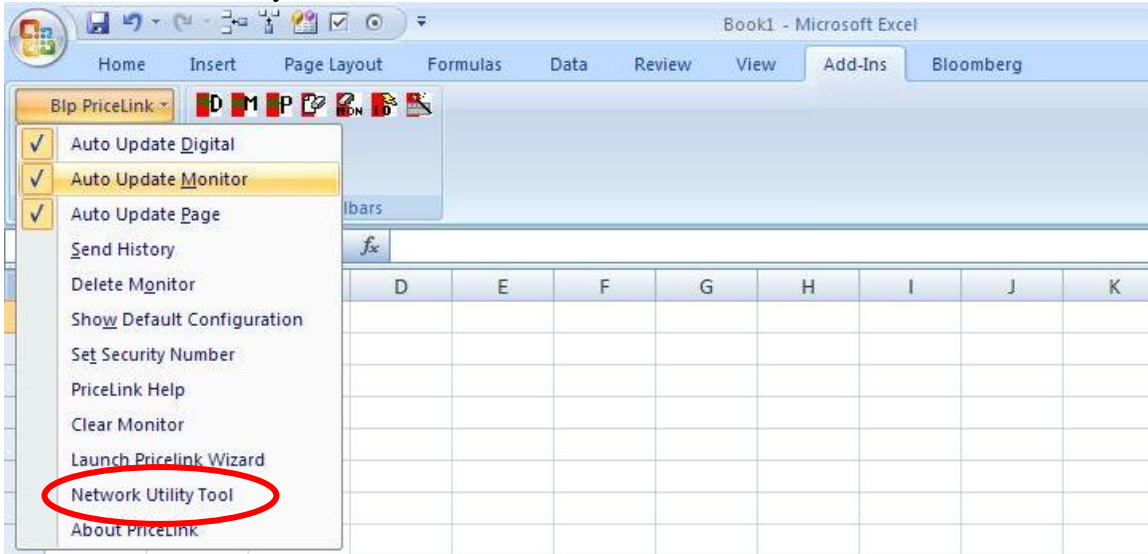
2. If the icon is blue



The contribution session could not establish a connection to the IP addresses specified in the network configuration tab. This is typically caused by a firewall issue.

Network Utility Tool

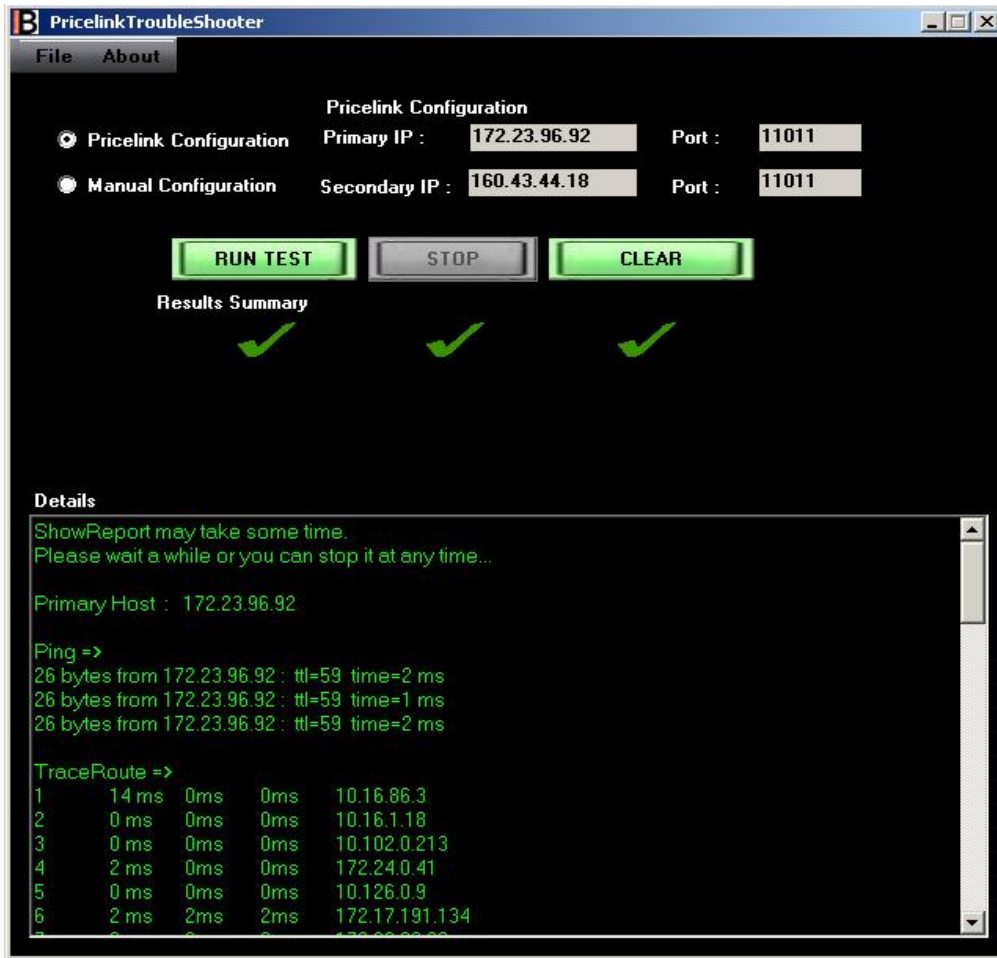
Pricelink 4 offers a Network Utility to help you determine where the connection is being blocked. To launch the Network Utility in Excel go to the Add-Ins tab, click in the Blp Pricelink menu, and select Network Utility Tool.



You should see the following screen:

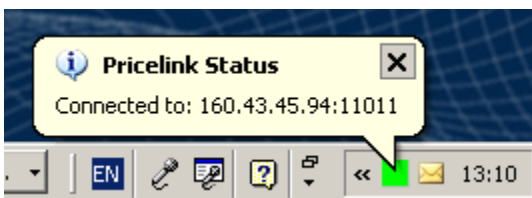


Your Pricelink IP addresses and port should be automatically populated with the values you entered in the Network tab of the Pricelink User Configuration. Confirm the values are correct and click in the RUN TEST button. The results of the test should display in the Details section of the screen.



You can highlight the text in the Details section of the screen, copy the text and send the information to your Bloomberg representative and your firewall administrator for troubleshooting.

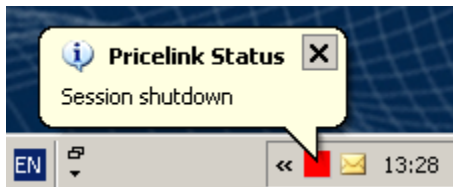
3. If the icon is green



The contribution session has been successfully established and is ready to accept pricing contributions.

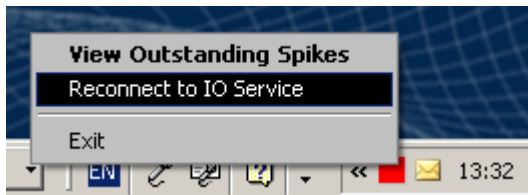
From time to time the status of the connection may change which will be reflected by the notification tool – if for any reason the contribution session becomes disconnected prices can still be submitted but they will be queued until the session can be re-established. If the disconnected state persists for any length of time then you should request assistance from Bloomberg technical support.

If the Pricelink service is ever shutdown the following message will appear



In this case you don't need to do anything – as soon as the service is restarted the notification tool will reconnect to the session and update its display according to the new status.

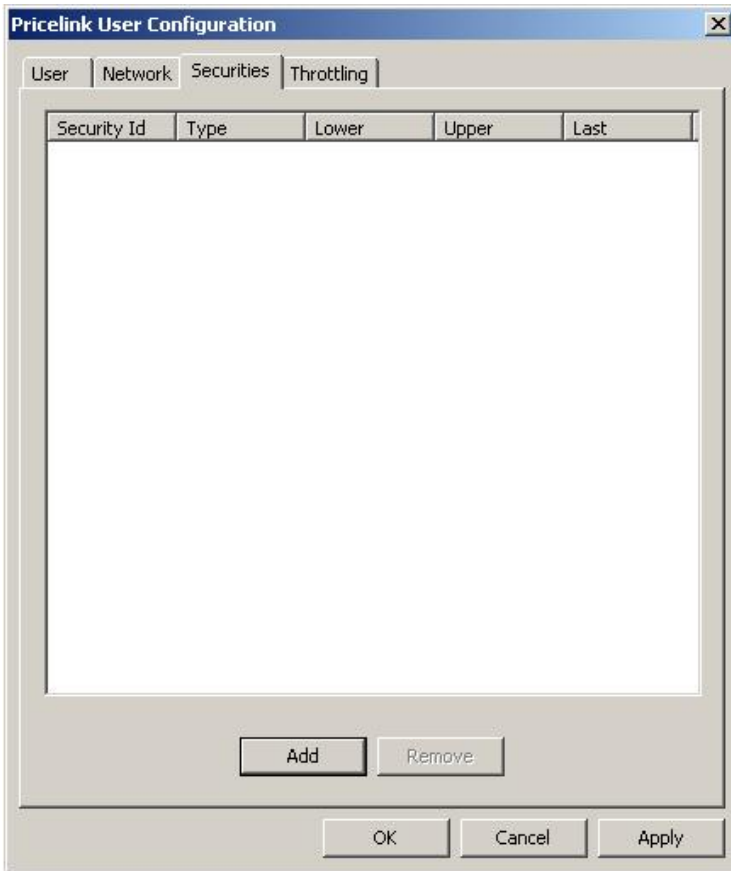
If you want to force the service to start or if at any time you suspect that the notification tool is not receiving accurate information from the session right click on the icon and from the popup menu choose "Reconnect to IO Service"



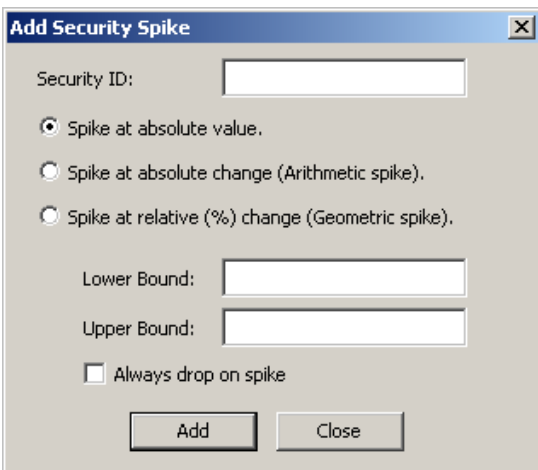
Configuring Spike Filters in Pricelink 4

Pricelink 4 supports the ability to configure and be notified of large changes in the values of contributed prices (spikes) and to notify the user that a spike has been detected.

Spikes are configured using the Securities tab of the Pricelink User Configuration tool



To add a spike filter click the add button which will show the following Dialog.



To configure a spike filter you must enter the security identifier that you would like configure filtering for – this must be the same identifier used to submit pricing data for this security.

The Pricelink spike filtering subsystem supports three user configurable filtering policies for a security. These are:

1. Absolute Filter

Using the absolute filter policy a user specifies that when a contributed price moves outside the configured range a spike will be generated. These bounds are never updated so if a security begins to trend in a given direction once the values have moved outside the configured range all prices will then spike.

e.g.

If you were to configure an absolute filter on security XYZ with a Lower Bound of 100 and an Upper Bound of 200 all contributions outside this range would generate a spike notification.

2. Arithmetic Filter

The arithmetic filter policy allows you to say that if the change in value between the last value and the current value exceeds a specified amount then a spike notification should be generated. This policy continuously monitors the values being submitted and adjusts its bounds accordingly.

e.g.

If you were to configure an arithmetic filter on security ABC with a Lower Bound of 10 and an Upper Bound of 20 following your first contribution the policy would monitor the absolute change in values and if they exceeded the bounds would generate a spike notification.

If your first contribution was 100.00 then the policy would update its bounds so that if you were to then send a value outside the range 90 to 120 a spike notification would be generated. If, however, your next contribution was 110 then the policy would update its bounds to be 100 and 130 ready for the next contribution and so on.

Using this filter policy allows the bounds to dynamically change to follow the change in price of the security.

3. Geometric Filter

The geometric filter policy works in a very similar way to an arithmetic filter but works as a percentage change in the contribution's value.

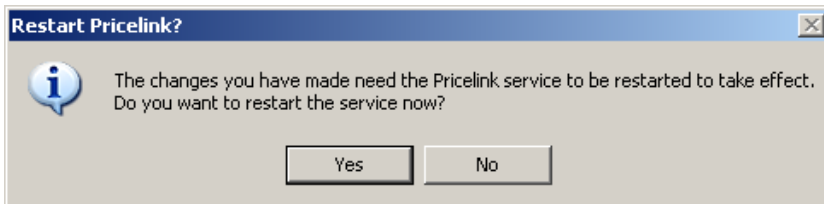
e.g.

You have configured a geometric filter on security HIJ with a Lower Bound of 10% and an Upper Bound of 20% and your last contribution was for 100.00. The current policy bounds would be 90 and 120 (any contributions outside this range would cause a spike notification) so if you sent 110 then the contribution would go through and update the bounds to 99 and 132 ready for the next value.

With this information you are able to decide on the spike filtering policy for the security and should therefore select the appropriate radio button and enter Upper and Lower Bounds.

The final control on this dialog is the “Always Drop on Spike” checkbox if you select this, spikes detected in this security’s queue will be automatically discarded when detected. Please note that if the "Always Drop on Spike" control is not selected and a spike occurs, Pricelink will stop sending data for that particular security until the spike has been resolved. Therefore, it is recommended that the "Always Drop on Spike" control is selected for automatic contributions where the contributor is not always able to resolve spikes on a timely basis.

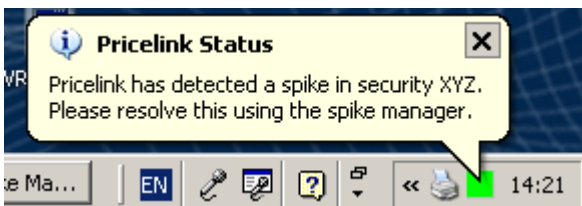
Once you finish configuring the spike filters and click in the Apply button, the following dialog will appear:



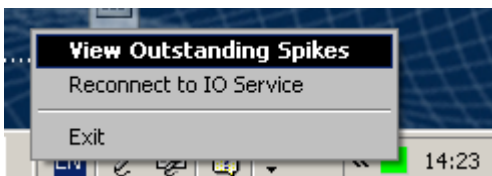
If you accept and have the necessary privileges to restart the service, the spike filters will take effect immediately. Otherwise, the filters will take effect the next time you reboot the machine.

Spike Notification

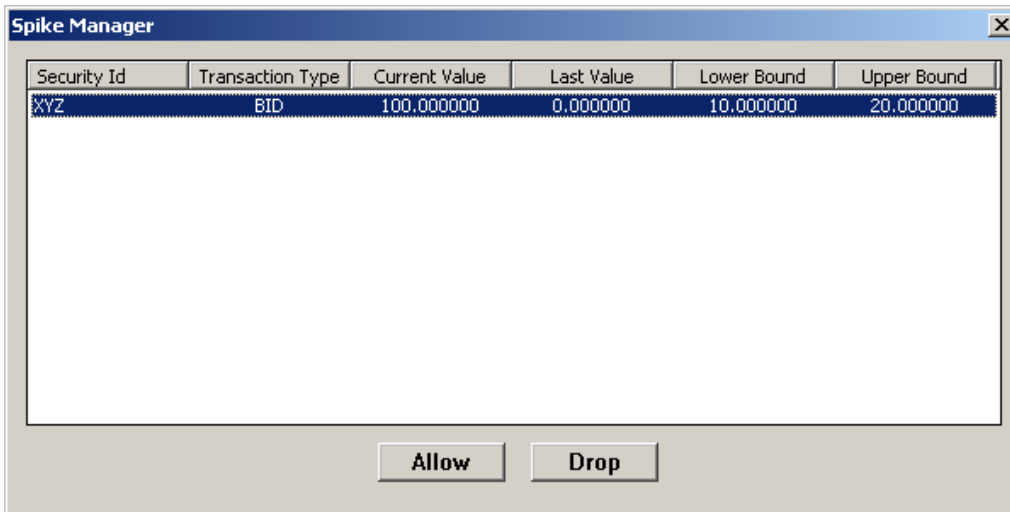
Unless using Pricelink’s programmatic API directly, to ensure that you are notified and able to respond to spike notifications you should ensure that you have the Pricelink Desktop Notification Tool running (as part of the installation process this tool is added to the startup folder in Windows and should always start when you login). When this tool is notified of a spike in a contribution queue it will display a message similar to below.



You can open the spike manager by double clicking the status icon or by right clicking the icon and choosing “View Outstanding Spikes”

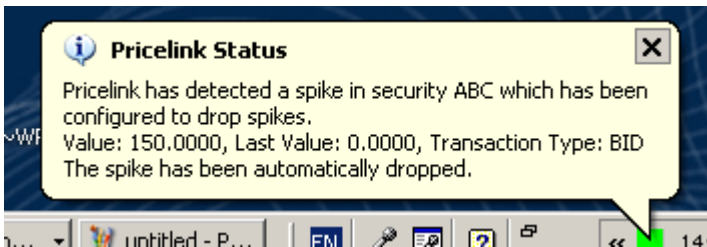


The spike manager displays a list of currently spiked securities and allows you to choose whether to allow the contribution to pass through, updating the spike policy bounds in the case of arithmetic and geometric policies, or to Drop the contribution which would not update the spike bounds.

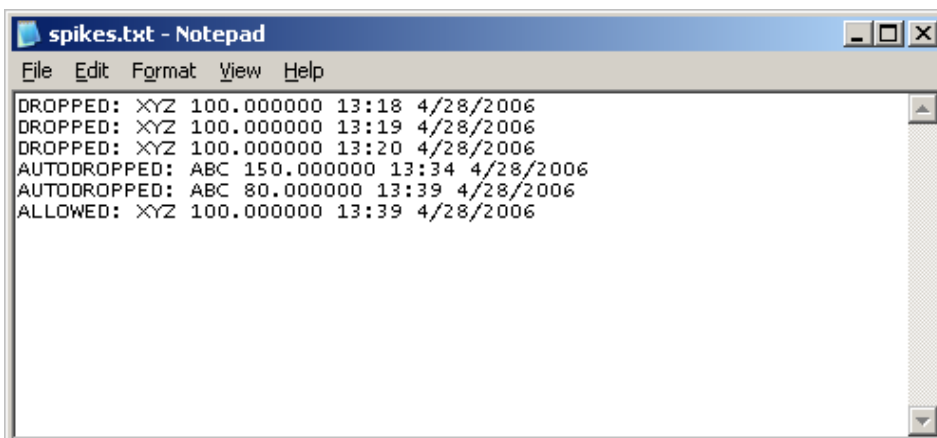


N.B. Pricelink 4 will not send any prices out for a particular instrument that still has an outstanding spike even if those prices are within the defined bounds.

If you have configured spike filters for a given security to be automatically dropped then you will see a notification similar to the one below in the event of a spike.

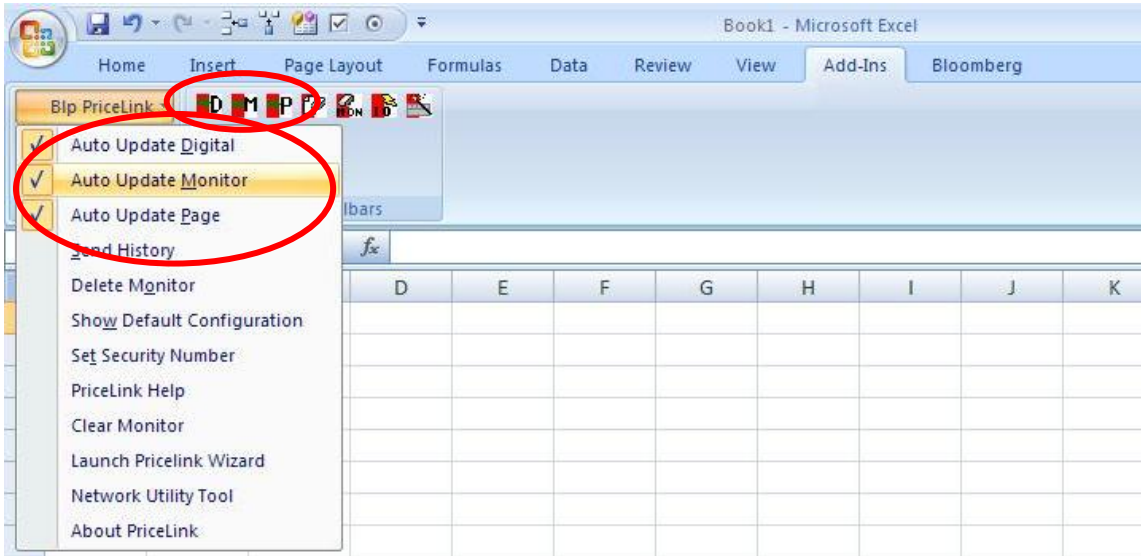


For logging purposes all allowed, dropped and auto dropped spiking decisions are recorded in a log file that by default is called spikes.txt and is located in the same directory as the Desktop Notification tool (C:\Blp\Pricelink\).



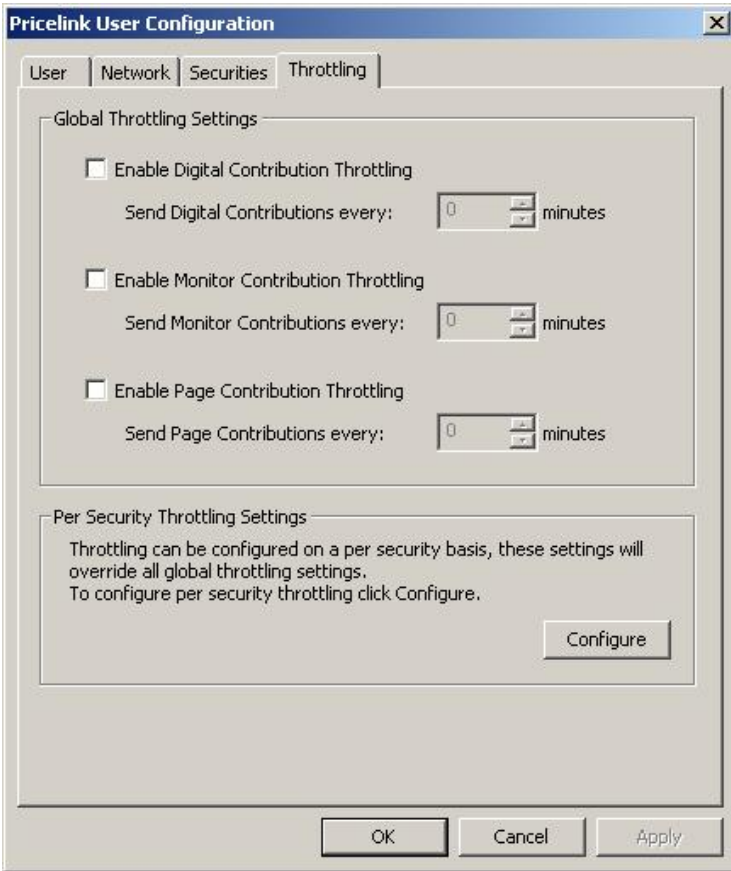
Sending Data to Bloomberg

Pricelink 4 allows contributors to send page-based data, digital prices (current day and historic), and to maintain the list of securities in their monitors. This can be done manually, by clicking in the different buttons in the Pricelink tool bar in excel, or automatically, when the different Auto Update flags have been checked off in the Pricelink menu in excel. In addition, Pricelink 4 offers the option to automatically send updates at specified time intervals set via the Throttling tab in the User Configuration.

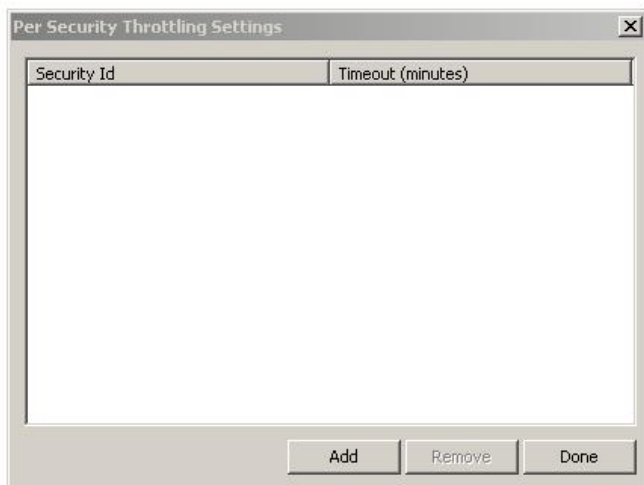


Clicking in the button with the letter D will force send all the digital prices in the spreadsheet. However, if the Auto Update Digital flag is checked off, the prices will be sent out automatically as soon as they change in the spreadsheet. The same principle applies for page-based data with the button with the letter P and the Auto Update Page flag and for the maintenance of the list of securities in monitors with the button with the letter M and the Auto Update Monitor. However, Bloomberg does not recommend the use of the Auto Update Monitor flag as this may result in excessive numbers of unnecessary updates being sent, causing monitors to blink frequently and, in extreme cases, slowness on the feed.

In order to setup the automatic updates at specified time intervals you need to launch the User Configuration and go to the Throttling tab.



If you select Enable Digital (price) Contributions Throttling and set the interval to every 5 minutes, Pricelink will check every 5 minutes if the cells with the values referenced in the formulas have changed and if they have, it will send an update to Bloomberg. The same logic applies for Monitor Contributions and Page Contributions throttling. In addition, you also have the option to enable periodic updates on a security by security basis with the Per Security Throttling Settings.



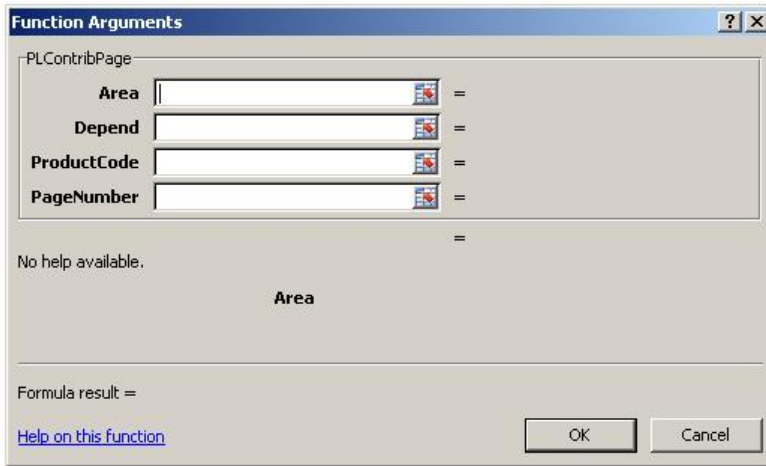
*N.B.
It is very important to note that the throttling settings only apply if you have disabled all 3 Auto Update Flags in the Blp Pricelink menu in Excel. If any of the Auto Update Flags is on, the Throttling settings will not take effect.*

Sending Page-based Data

PLContribPage Function

This formula allows you to send page-based data. This formula is subject to the Auto Update Page flag.

PLContribPage(Area, Depend, Product Code, PageNumber)



Return value:

Returns the number of cells contributed followed by the timestamp in parentheses ().
In an error occurs the function returns:

Error Message	Description
PLinkio Down	The Pricelink service is running but the session is closed. In this case the contributions are queued up to be sent when the session is opened.
Failed Contributing	The contribution is not valid.
Skip Page	The referenced value has changed but the data has not been sent to Bloomberg because the Auto Update Page flag is not on and the button with the letter "P" in the Pricelink toolbar hasn't been clicked to send the data.

Arguments:

Argument	Description	Valid Values
Area	Reference to the area of the spreadsheet that you wish to contribute as a page.	Example, A1:H12
Depend	Reference to the area of the spreadsheet containing dependent fields. In general, it should contain exactly the same data as Area. (It is needed in order to force Excel to recalculate properly.)	See Area values above.
ProductCode	A numeric value defining under which menu item (on the Bloomberg page display system) the page will appear.	Valid number corresponding to a menu item on the Bloomberg. Your Bloomberg Representative provides this!
PageNumber	A numeric value defining under which page number (within a menu item) the page will appear.	Valid number corresponding to a page number (within a menu item) on the Bloomberg. Your Bloomberg Representative provides this!

Sending Digital Prices

PLContribFull Function

This formula allows you to send current day prices. This formula is subject to the Auto Update Digital flag.

PLContribFull(Value, TransactionType, SecurityId, RecordType, SecurityIdType, Precision, FirmID, ConditionCode, Status)

Function Arguments

PLContribFull

Value =

TransactionType =

SecurityId =

RecordType =

SecurityIdType =

No help available.

Value

Formula result =

[Help on this function](#) OK Cancel

Function Arguments

PLContribFull

SecurityIdType =

Precision =

FirmID =

ConditionCode =

Status =

No help available.

SecurityIdType

Formula result =

[Help on this function](#) OK Cancel

Return value:

Returns the Price contributed followed by the timestamp in parentheses ().

This function automatically filters duplicates updates. If a contribution is duplicated the return value is preceded by an asterix (*).

In an error occurs the function returns:

Error Message	Description
PLinkio Down	The Pricelink service is running but the session is closed. In this case the contributions are queued up to be sent when the session is opened.
Failed Contributing	The contribution is not valid.
Skip Digital	The referenced value has changed but the data has not been sent to Bloomberg because the Auto Update Digital flag is not on and the button with the letter "D" in the Pricelink toolbar hasn't been clicked to send the data.

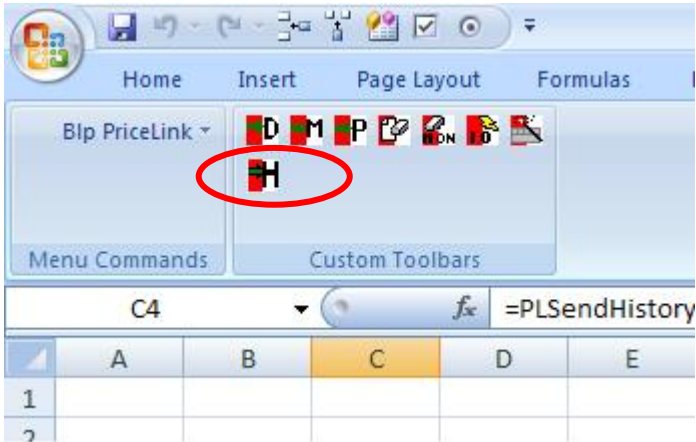
PLContribFull Arguments:

Argument	Description	Valid Values	
Value	Normally a cell reference, defining the location of the value (price) to be contributed from the spreadsheet.	Any cell number, e.g. E3	
TransactionType	Defines what the value represents, e.g. Bid or Ask price. It accepts a set of standard keywords, or a set of user-defined custom keywords.	Standard keywords are as follows: <ul style="list-style-type: none"> • Bid • Ask • BidSize • AskSize • BidSpread • AskSpread • BidYield • AskYield 	
SecurityId	The Security ID string used by Bloomberg to identify which security the price refers to. Normally SecId is a cell reference, which actually contains the Security ID.	A valid ISIN, CUSIP, or SEDOL number OR value pointing to the cell containing the SecID.	
RecordType	Any valid record types	Record Type	Value Represents
		FOREX	Foreign Exchange
		BOND	Bond
		ODDBOND	Odd Bond
		Slot41-Slot49	Additional slots
SecurityIdType	Standard used in identifying the securities contributed to Bloomberg	<ul style="list-style-type: none"> • SEDOL • ISIN • CUSIP • TICKER • VALOREN 	

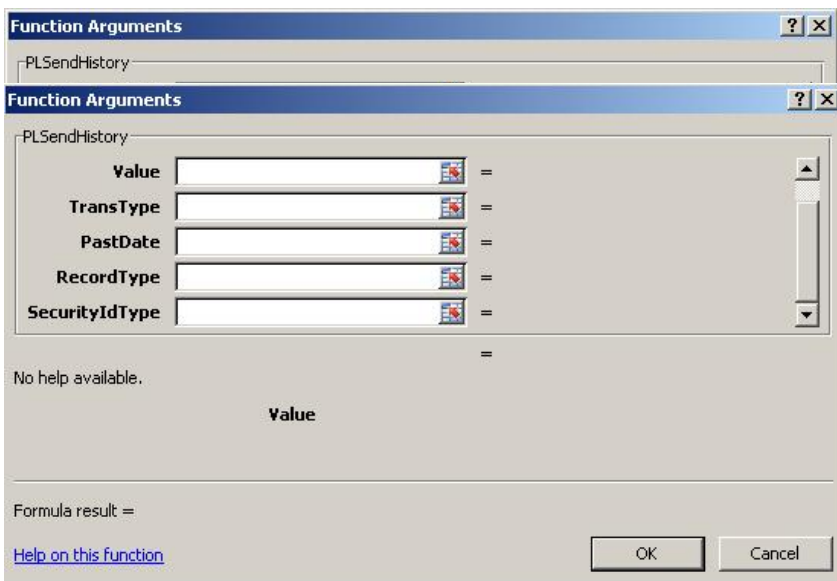
		<ul style="list-style-type: none"> • WPKN • FRENCHNUM • JAPANNUM • OPTION 						
Precision	Specifies the maximum number of digits after the decimal point. To use the default precision set up in your contribution system (see User Configuration), set Precision to -1(or any negative number).	Any number between 0 and 9.						
FirmID	This parameter is optional. It represents an ID that uniquely identifies a firm for this price. Contact your Bloomberg Representative to get a list of valid firm identifiers.	Any string, limited to 4 characters						
ConditionCode	This parameter is optional. It represents a condition code for this price and should only be used if agreed upon with your Bloomberg representative.	<table border="1"> <thead> <tr> <th>Condition Code</th> <th>Represents</th> </tr> </thead> <tbody> <tr> <td>Clear</td> <td>Clear Price</td> </tr> <tr> <td>Valid</td> <td>Valid Zero Price</td> </tr> </tbody> </table>	Condition Code	Represents	Clear	Clear Price	Valid	Valid Zero Price
		Condition Code	Represents					
		Clear	Clear Price					
Valid	Valid Zero Price							
Clear	Clear Price							
Valid	Valid Zero Price							
Status	This parameter is optional. It represents the status of the "market" at the time the price was generated.	This should only be used if agreed upon with your Bloomberg representative						

PLSendHistory Function

This formula allows you to send historical values up to 30 days back. Before using this formula, contact your Bloomberg representative to make sure your feed has been configured to allow historic updates. This formula is NOT subject to the Auto Update Digital setting and in order to send the data you must always push the button with the letter “H” in the Pricelink toolbar in excel.



PLSendHistory(SecurityId, Value, TransType, PastDate, RecordType, SecurityIdType)



Return value:

Returns the string RETR01 followed by the timestamp in parentheses ().

In an error occurs the function returns:

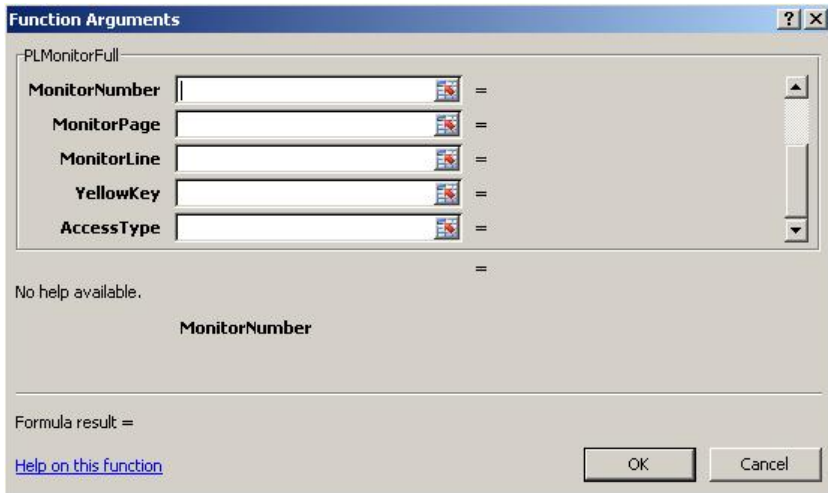
Error Message	Description
PLinkio Down	The Pricelink service is running but the session is closed. In this case the contributions are queued up to be sent when the session is opened.
Failed Contributing	The contribution is not valid.
Skip History	The referenced value has changed, but the data hasn't been sent to Bloomberg because the the button with the letter "H" in the Pricelink toolbar hasn't been clicked to send the data.

Argument	Description	Valid Values	
SecurityId	The Security ID string used by Bloomberg to identify which security the price refers to. Normally SecId is a cell reference, which actually contains the Security ID.	A valid ISIN, CUSIP, or SEDOL number OR value pointing to the cell containing the SecID.	
Value	Normally a cell reference, defining the location of the value (price) to be contributed from the spreadsheet.	Any cell number, e.g. E3	
TransType	Defines what the value represents, e.g. Bid or Ask price. It accepts a set of standard keywords, or a set of user-defined custom keywords.	Standard keywords are as follows: <ul style="list-style-type: none"> • Bid • Ask • BidSize • AskSize • BidSpread • AskSpread • BidYield • AskYield 	
PastDate	The date the price applies to. Typically reference to a cell in excel date format.	Any date in the past that is not holiday or falls in a weekend.	
RecordType	Any valid record types	Record Type	Value Represents
		FOREX	Foreign Exchange
		BOND	Bond
		ODDBOND	Odd Bond
		Slot41-Slot49	Additional slots
SecurityIdType	standard used in identifying the securities contributed to Bloomberg	<ul style="list-style-type: none"> • SEDOL • ISIN • CUSIP • TICKER • VALOREN • WPKN • FRENCHNUM • JAPANNUM • OPTION 	

Maintaining the List of Instruments in a Monitor

PLMonitorFull Function

PLMonitorFull(SecurityId, SecurityIdType, MonitorID, MonitorNumber, MonitorPage, MonitorLine, YellowKey, AccessType)



Return value:

Returns the Security ID contributed followed by the timestamp in parentheses ().

In an error occurs the function returns:

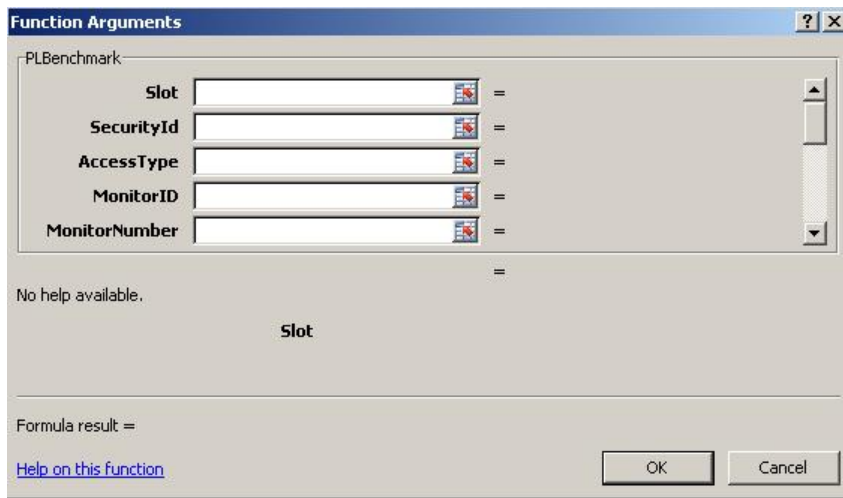
Error Message	Description
PLinkio Down	The Pricelink service is running but the session is closed. In this case the contributions are queued up to be sent when the session is opened.
Failed Contributing	The contribution is not valid.
Skip Monitor	The referenced value has changed but the data has not been sent to Bloomberg because the Auto Update Monitor flag is not on and the button with the letter "M" in the Pricelink toolbar hasn't been clicked to send the data.

Arguments:

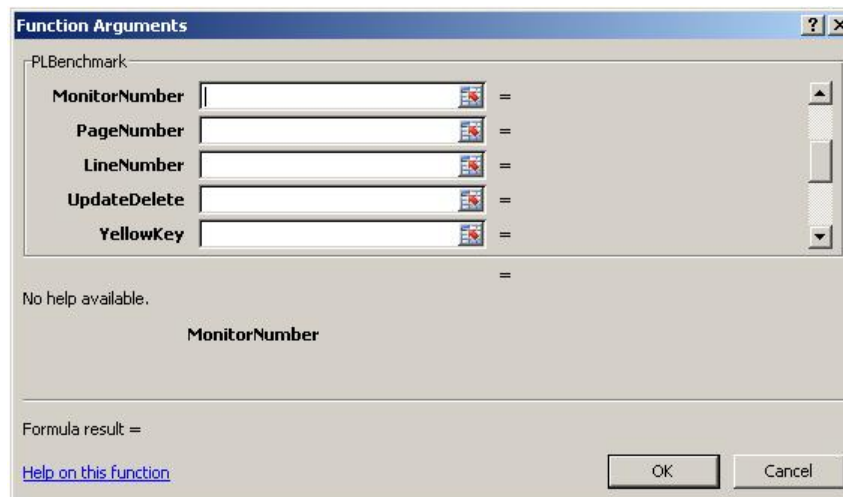
Argument	Description	Valid Values	
SecurityId	The Security ID string used by Bloomberg to identify which security the price refers to. Normally this is a number (or sequence of letters and numbers) defined using the ISIN, CUSIP or SEDOL standards. SecId can also be a cell reference, pointing to another cell containing the actual Security ID.	A valid ISIN, CUSIP, or SEDOL number or value pointing to the cell containing the SecID.	
SecurityIdType	standard used in identifying the securities contributed to Bloomberg	<ul style="list-style-type: none"> • SEDOL • ISIN • CUSIP • TICKER • VALOREN • WPKN • FRENCHNUM • JAPANNUM • OPTION 	
MonitorID	This is a unique number identifying the contributor's Bloomberg Monitor page.	This numeric identifier is provided by your Bloomberg Representative.	
MonitorNumber	A numeric identifier dedicated to an individual Contributor per Monitor ID.	This numeric identifier is provided by your Bloomberg Representative.	
MonitorPage	A numeric identifier pointing to a specific "page" within each Monitor Number (MonNum) per Monitor ID (MonID).	Any valid page number	
MonitorLine	Allows you to specify which line, within the "page", your security contribution should appear.	Any number between 1 to 40 depending on how many instruments per page the monitor has been setup for. In addition, "M" can also be sent, if Bloomberg is to sort the instruments by maturity.	
YellowKey	A name specifying the type of Security or Yellow Key you are contributing.	<ul style="list-style-type: none"> • Comdty • Equity • Muni • Pfd • Client • M-Mkt • Govt • Corp • Index • Crncy • Mtge 	
AccessType	A number that specifies the identifier type in use. For a complete list of valid Access Types refer to Table 1.	Access Type	Value Represents
		23	CUSIP
		31	TICKER
		33	ISIN

PLBenchmark Function

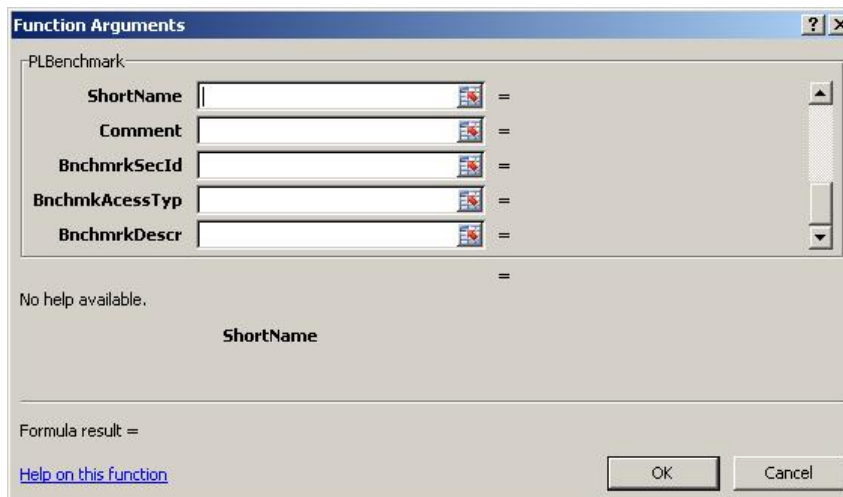
PLBenchmark(Slot, SecurityID, AccessType, MonitorId, MonitorNumber, PageNumber, LineNumber, UpdateDelete, YellowKey, ShortName, Comment, BnchmrkSecId, BnchmkAccessType, BnchmkDesc)



The dialog box titled "Function Arguments" for the PLBenchmark function. The "Slot" argument is selected and highlighted in the list. The list includes Slot, SecurityID, AccessType, MonitorID, and MonitorNumber. Below the list, the text "No help available." is displayed, followed by the selected argument "Slot". The "Formula result =" field is empty. At the bottom, there is a "Help on this function" link and "OK" and "Cancel" buttons.



The dialog box titled "Function Arguments" for the PLBenchmark function. The "MonitorNumber" argument is selected and highlighted in the list. The list includes MonitorNumber, PageNumber, LineNumber, UpdateDelete, and YellowKey. Below the list, the text "No help available." is displayed, followed by the selected argument "MonitorNumber". The "Formula result =" field is empty. At the bottom, there is a "Help on this function" link and "OK" and "Cancel" buttons.



The dialog box titled "Function Arguments" for the PLBenchmark function. The "ShortName" argument is selected and highlighted in the list. The list includes ShortName, Comment, BnchmrkSecId, BnchmkAccessType, and BnchmkDescr. Below the list, the text "No help available." is displayed, followed by the selected argument "ShortName". The "Formula result =" field is empty. At the bottom, there is a "Help on this function" link and "OK" and "Cancel" buttons.

Return value:

Returns the Security ID contributed followed by the timestamp in parentheses ().
In an error occurs the function returns:

Error Message	Description
PLinkio Down	The Pricelink service is running but the session is closed. In this case the contributions are queued up to be sent when the session is opened.
Failed Contributing	The contribution is not valid.
Skip Monitor	The referenced value has changed but the data has not been sent to Bloomberg because the Auto Update Monitor flag is not on and the button with the letter "M" in the Pricelink toolbar hasn't been clicked to send the data.

Arguments:

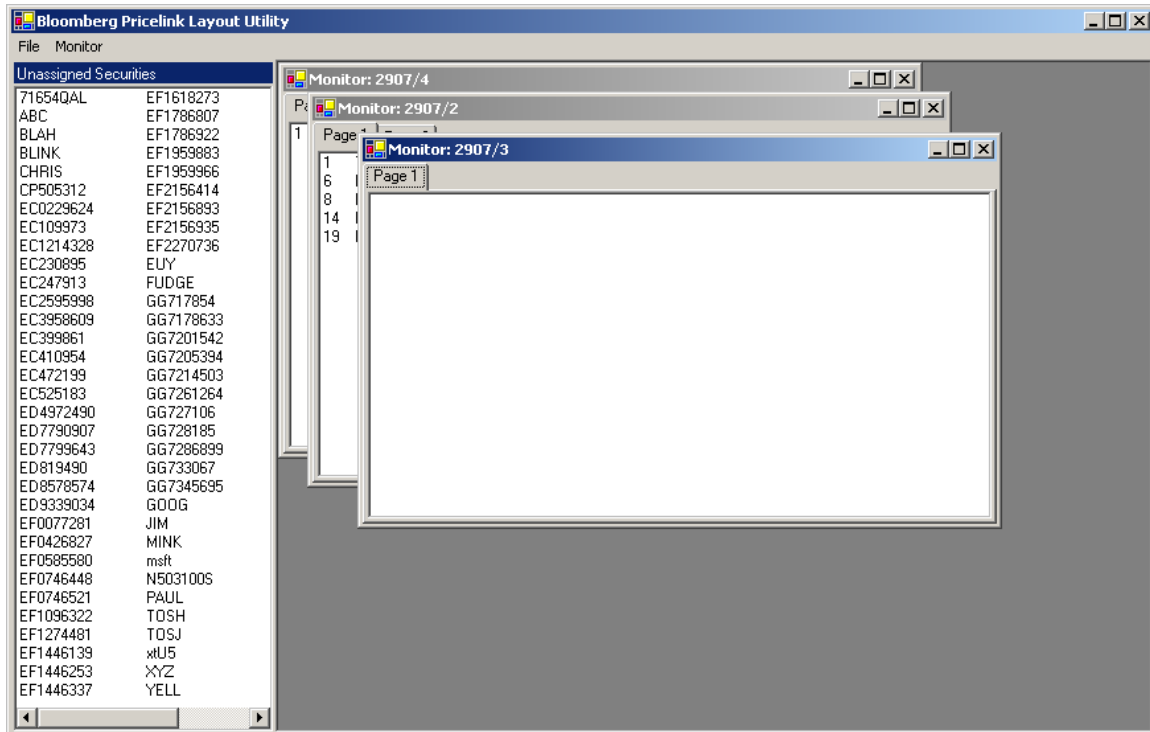
Argument	Description	Valid Values	
		Slot	Value Represents
Slot	The Slot is used by Bloomberg to identify what pricing source you want to feed using this formula. This is a one character field that tells Bloomberg if you will feed your primary or secondary fixed income pricing or your currency pricing source	F	Bond
		O	OddBond
		C	Currency
		41-49	Additional slots
SecurityId	The Security ID string used by Bloomberg to identify which security the price refers to. Normally this is a number (or sequence of letters and numbers) defined using the ISIN, CUSIP or SEDOL standards. SecId can also be a cell reference, pointing to another cell containing the actual Security ID.	A valid ISIN, CUSIP, or SEDOL number or value pointing to the cell containing the SecID.	
AccessType	A number that specifies the identifier type in use. For a complete list of valid Access Types refer to Table 1.	Access Type	Value Represents
		23	CUSIP
		31	TICKER
		33	ISIN
MonitorID	This is a unique number identifying the contributor's Bloomberg Monitor page.	This numeric identifier is provided by your Bloomberg Representative.	
MonitorNumber	A numeric identifier dedicated to an individual Contributor per Monitor ID.	This numeric identifier is provided by your Bloomberg Representative.	
PageNumber	A numeric identifier pointing to a specific "page" within each Monitor Number (MonNum) per Monitor ID (MonID).	Any valid page number	
LineNumber	Allows you to specify which line, within the "page", your security contribution should appear.	Any number between 1 to 40 depending on how many instruments per page the monitor has been setup for. In addition, "M" can also be sent, if	

		Bloomberg is to sort the instruments by maturity.	
UpdateDelete	One character field that tells Bloomberg if the instrument needs to be updated or deleted from the monitor.	LoadInd	Value Represents
		U	Update
		D	Delete
YellowKey	A one character field specifying the type of Security or Yellow Key you are contributing.	YellowKey	Value Represents
		1	Cmdty
		2	Equity
		3	Muni
		4	Pfd
		5	Client
		6	M-Mkt
		7	Govt
		8	Corp
		9	Index
		A	Crncy
		B	Mtge
ShortName	This parameter is optional. It represents the description of the instrument.	Any string, limited to 14 characters	
Comment	This parameter is optional. It can be used to send any comments pertaining to the instrument.	Any string, limited to 30 characters	
BnchmkSecId	This parameter is optional. The BenchmarkId string is used by Bloomberg to identify what the benchmark for the instrument referenced in the formula is. Normally this is a number (or sequence of letters and numbers) defined using the ISIN, CUSIP or SEDOL standards. SecId can also be a cell reference, pointing to another cell containing the actual Benchmark ID.	A valid ISIN, CUSIP, or SEDOL number or value pointing to the cell containing the BenchmarkId.	
BnchmkAccessTyp	A number that specifies the identifier type in use for the benchmark. For a complete list of valid Access Types refer to Table 1.	Access Type	Value Represents
		23	CUSIP
		31	TICKER
		33	ISIN
BnchmkkDescr	This parameter is optional. It represents the description of the benchmark.	Any string, limited to 20 characters	

Pricelink Monitor Layout Utility

Pricelink 4 includes a tool to control the layout of securities on GDCO screens this is the Monitor Layout Utility.

To start the Monitor Layout Utility go to the Start Menu and select Programs -> Bloomberg Pricelink 4 -> Monitor Layout Utility.



The Monitor Layout Utility screen consists of two areas:

The area on the left labelled Unassigned Securities contains a list of all the securities that you have submitted prices for but have not yet assigned to a monitor and the area on the right shows a list of monitors to which you have already assigned securities.

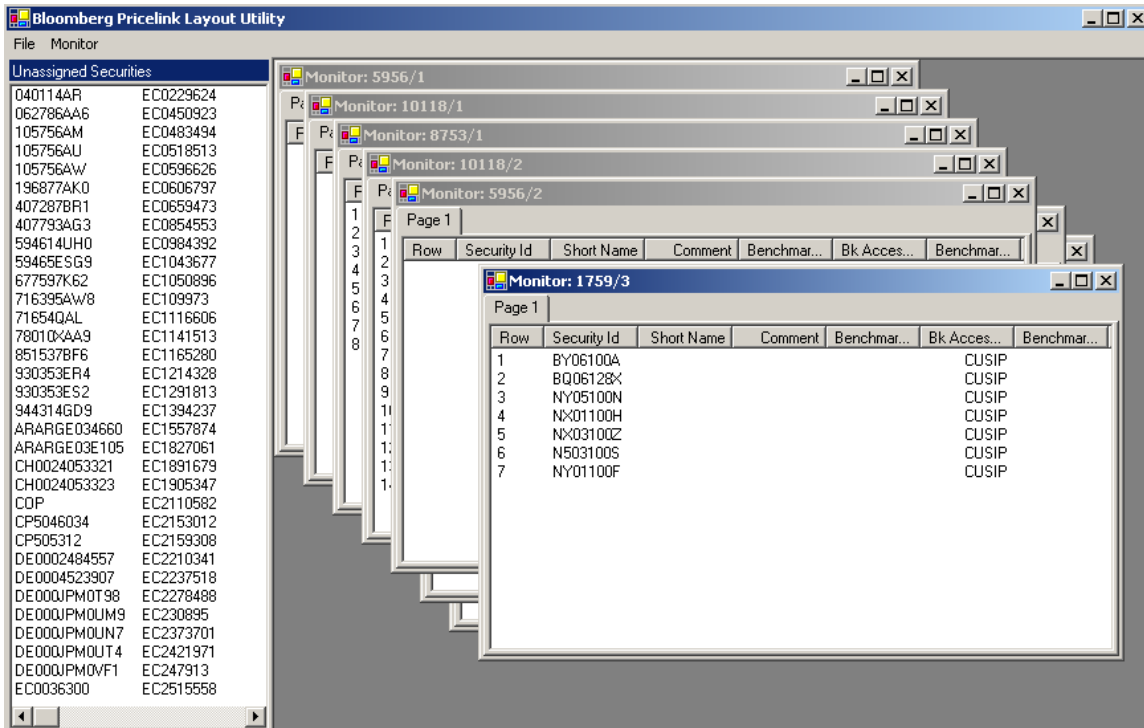
Creating a new Monitor and Assigning Securities to it.

To create a new Monitor choose File | New Monitor to present the Create New Monitor property sheet

Enter values for the Monitor Name and Number, choose the Slot, the Access Type, the Bloomberg Yellow Key and the desired Page Size, check if you want the instruments sorted by maturity and, then click OK.

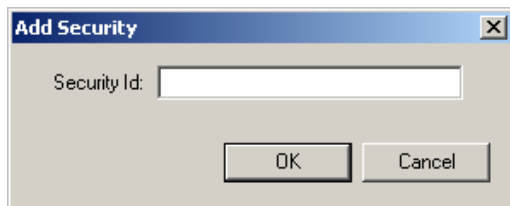
Name	This is a unique number identifying the contributor's Bloomberg Monitor page.	This numeric identifier is provided by your Bloomberg Representative.	
MonitorNumber	A numeric identifier dedicated to an individual Contributor per Monitor ID.	This numeric identifier is provided by your Bloomberg Representative.	
Slot	The Slot is used by Bloomberg to identify what pricing source you want to feed using this formula. This is a one character field that tells Bloomberg if you will feed your primary or secondary fixed income pricing or your currency pricing source	Slot	Value Represents
		F	Bond
		O	OddBond
		C	Currency
		41-49	Additional slots
Access Type	This field specifies the identifier type in use.	Choose from the pick list.	
Yellow Key	This field specifies the type of Security or Yellow Key you are contributing.	Choose from the pick list.	
Page Size	A number indicating how many securities per page you want displayed in the monitor.	15 or 20 for a single column monitor and 30 or 40 for a double column monitor.	

This will add a Monitor form to the right hand area with one Page.



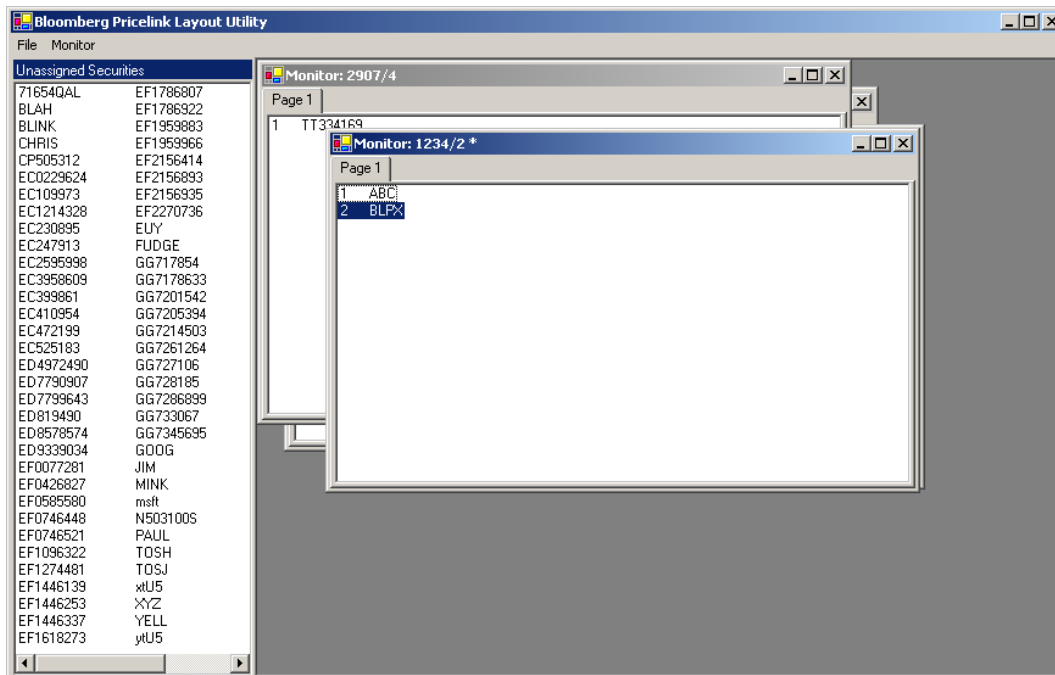
To assign securities to the Monitor you can do one of two things.

1. Drag securities from either the Unassigned Securities list or from another Monitor Form.
2. Choose Monitor | Add Security to present the Add Security Dialog



Enter the Security Id of the security that you want to add to this Monitor and click OK. This will add the security to the end of the Monitor page but it can then be dragged and dropped to the location you require.

Once the instrument has been added to the monitor, you can click on it to define the security properties and add a Short Name, a Comment, or the Benchmark details.

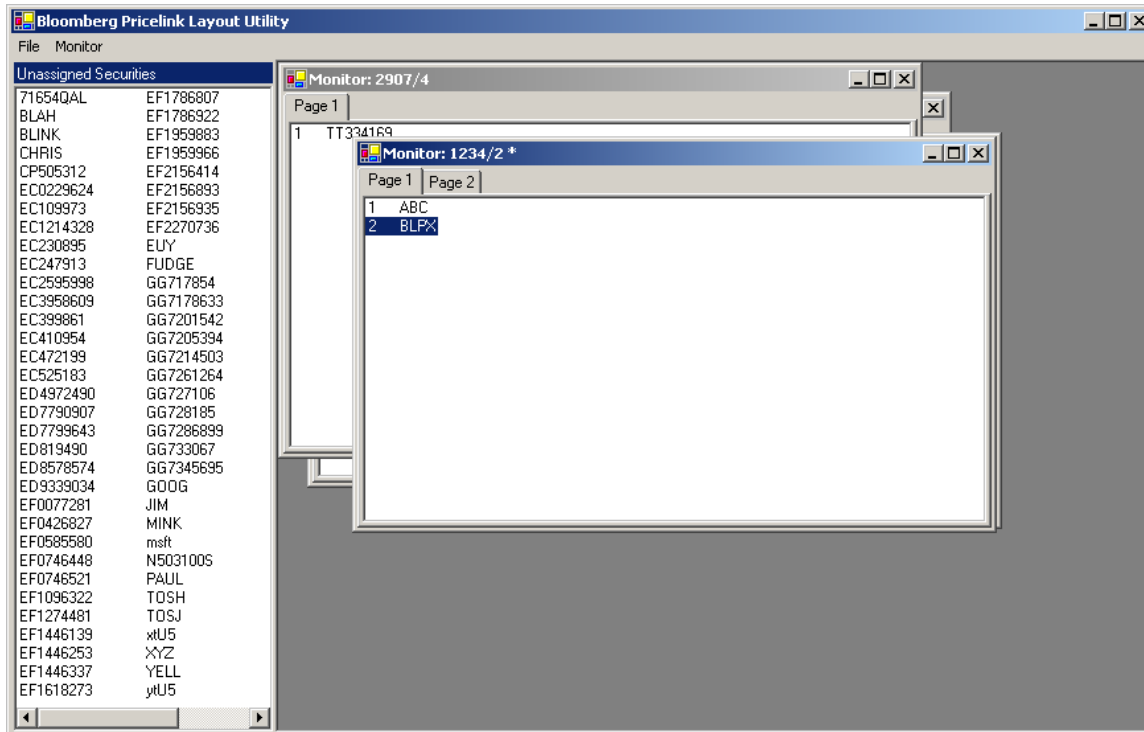


Once the instrument has been added to the monitor, you can click on it to define the security properties and add a Short Name, a Comment, or the Benchmark details if so desired.



ShortName	This parameter is optional. It represents the description of the instrument.	Any string, limited to 14 characters
Comment	This parameter is optional. It can be used to send any comments pertaining to the instrument.	Any string, limited to 30 characters
Benchmark Id	This parameter is optional. The BenchmarkId string is used by Bloomberg to identify what the benchmark for the instrument referenced in the formula is. Normally this is a number (or sequence of letters and numbers) defined using the ISIN, CUSIP or SEDOL standards. SecId can also be a cell reference, pointing to another cell containing the actual Benchmark ID.	A valid ISIN, CUSIP, or SEDOL number or value pointing to the cell containing the BenchmarkId.
Bk Access Type	This parameter specifies the identifier type in use for the benchmark.	Choose from the pick list.
BenchmarkDesc	This parameter is optional. It represents the description of the benchmark.	Any string, limited to 20 characters

To add pages to the Monitor choose Monitor | Insert Page.



Once you are happy with the layout of the Monitor choose File | Send Changes to send the layout to Bloomberg for the active Monitor or File | Send All Changes to send the layout for all the Monitors you currently have open.

Viewing or Changing a Monitor's Properties

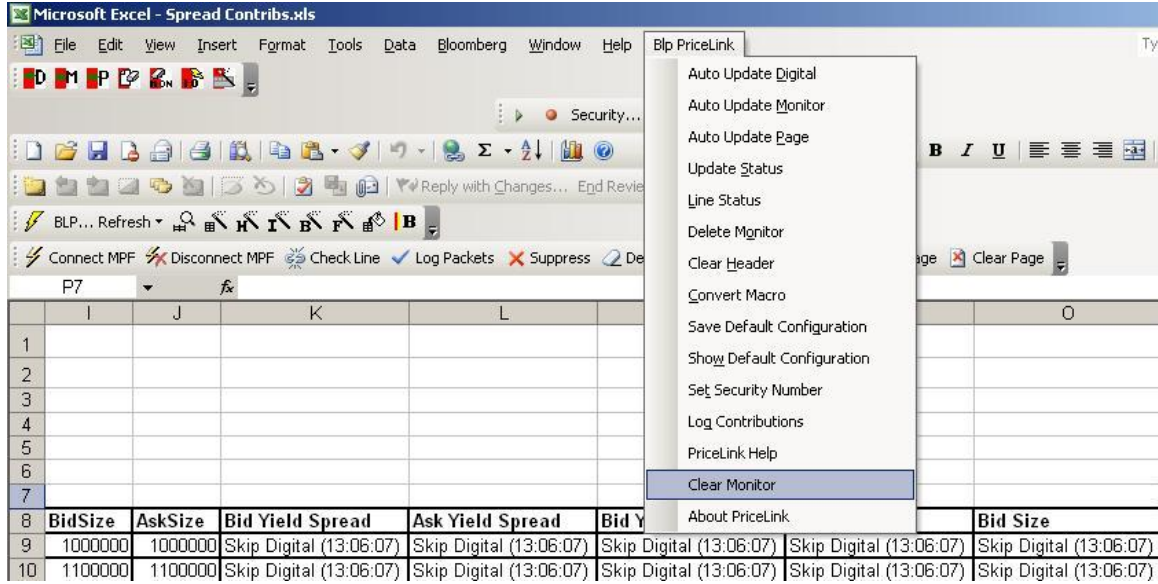
To view or change a Monitor's properties choose Monitor | Properties to display the Monitor Properties Dialog.



Clearing a Monitor

From Excel

To clear your page from excel go to the Blp Pricelink, select Clear Monitor, enter the monitor id and the monitor number, and click en ok.

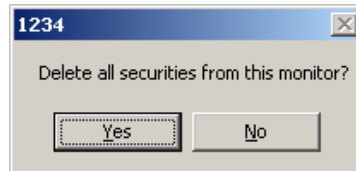
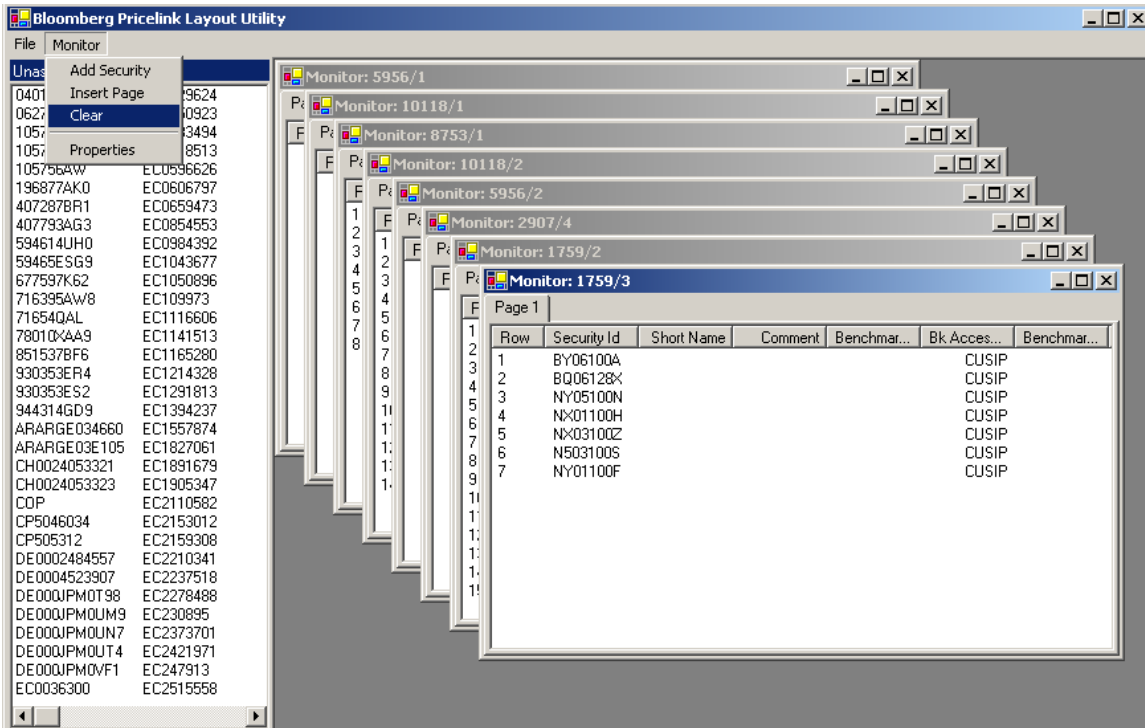


The screenshot shows the Microsoft Excel interface with the 'Blp Pricelink' menu open. The 'Clear Monitor' option is highlighted. The spreadsheet below shows columns for BidSize, AskSize, Bid Yield Spread, Ask Yield Spread, Bid Y, and Bid Size. The data in rows 9 and 10 is as follows:

	BidSize	AskSize	Bid Yield Spread	Ask Yield Spread	Bid Y	Bid Size
9	1000000	1000000	Skip Digital (13:06:07)	Skip Digital (13:06:07)	Skip Digital (13:06:07)	Skip Digital (13:06:07)
10	1100000	1100000	Skip Digital (13:06:07)	Skip Digital (13:06:07)	Skip Digital (13:06:07)	Skip Digital (13:06:07)

From the Monitor Layout Utility

To clear a Monitor of its securities make the Monitor the active Monitor and choose Monitor | Clear, this will prompt you for confirmation, send the changes to Bloomberg immediately and clear the Monitor form to allow you to assign different securities to this Monitor.



Pricelink ActiveX

Pricelink also offers a library of objects that allow you to build your own custom applications to contribute data to Bloomberg in Pricelink format. This library is installed for all users during standard Pricelink 4 installation process. All Pricelink functionality available via Excel formulas is also available via the library.

The C# Runtime Callable Wrappers for the Pricelink 4 COM API can be found in the Interop.Pricelink.dll in the Pricelink 4 installation directory.

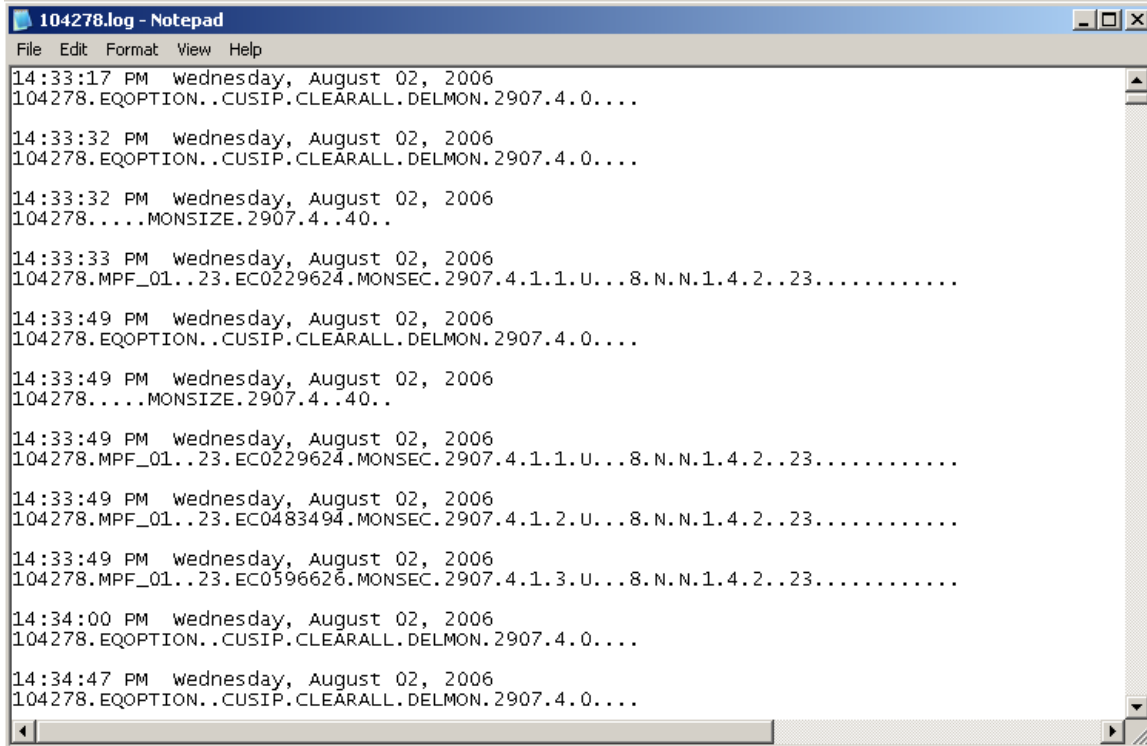
For details on the available Pricelink functionality in the ActiveX, please check the Pricelink ActiveX User Guide available in the Bloomberg website.

Encryption

Pricelink uses the RC2 encryption protocol for the initial login and private key exchanges; it uses a custom protocol along the lines of SSL/TLS using RSA for handshake and session key exchanges and, if Encryption is checked off in the configuration screen, it uses the DES encryption protocol for data transfer.

Logs

In addition to the spike logs discussed in the Configuring Spike Filters in Pricelink 4 section of this document, Pricelink 4 generates a log of everything it sends out to Bloomberg. This log is located in C:\blp\PriceLnk\logs and the name of the file is your TraderId.log (i.e. 104235.log)



```
104278.log - Notepad
File Edit Format View Help
14:33:17 PM Wednesday, August 02, 2006
104278.EQOPTION..CUSIP.CLEARALL.DELMON.2907.4.0....
14:33:32 PM Wednesday, August 02, 2006
104278.EQOPTION..CUSIP.CLEARALL.DELMON.2907.4.0....
14:33:32 PM Wednesday, August 02, 2006
104278.....MONSIZE.2907.4..40..
14:33:33 PM Wednesday, August 02, 2006
104278.MPF_01..23.EC0229624.MONSEC.2907.4.1.1.U...8.N.N.1.4.2..23.....
14:33:49 PM Wednesday, August 02, 2006
104278.EQOPTION..CUSIP.CLEARALL.DELMON.2907.4.0....
14:33:49 PM Wednesday, August 02, 2006
104278.....MONSIZE.2907.4..40..
14:33:49 PM Wednesday, August 02, 2006
104278.MPF_01..23.EC0229624.MONSEC.2907.4.1.1.U...8.N.N.1.4.2..23.....
14:33:49 PM Wednesday, August 02, 2006
104278.MPF_01..23.EC0483494.MONSEC.2907.4.1.2.U...8.N.N.1.4.2..23.....
14:33:49 PM Wednesday, August 02, 2006
104278.MPF_01..23.EC0596626.MONSEC.2907.4.1.3.U...8.N.N.1.4.2..23.....
14:34:00 PM Wednesday, August 02, 2006
104278.EQOPTION..CUSIP.CLEARALL.DELMON.2907.4.0....
14:34:47 PM Wednesday, August 02, 2006
104278.EQOPTION..CUSIP.CLEARALL.DELMON.2907.4.0....
```

The Pricelink 4 Package

1. plink.xla

Plink.xla is an Excel add-in. The start-up module makes the price contribution functions available in all Excel spreadsheets.

2. plinksvc.exe

Plinksvc.exe is a Windows service. It maintains the connection to the contributions servers and manages the flow of data to Bloomberg.

3. plnotify.exe

Plnotify.exe is a Windows application. It reports the status of the connection and any spikes to the user. In addition, it gives the user access to the spike manager.

4. plconfig.exe

Plconfig.exe is a Windows application. It contains the Pricelink 4 configuration details specific to the machine.

5. plpkt14.exe

Plpkt14.exe is a Windows application. It enables the user to maintain the list of securities in his monitors graphically without the use of Excel formulas.

6. plinkxl.dll

Plinkxl.dll is a Dynamic Link Library. It contains the functions callable from Excel.

7. plink.dll

Plink.dll is a Dynamic Link Library. It contains the functions to communicate with the plinksvc Windows service.

8. NetworkUtilityStartUp.exe

NetworkUtilityStartUp.exe is a Windows application used to launch the Pricelink Network Utility Tool.

Pricelink 4 Example Spreadsheets

Filename (Location)	Long Form
Page.xls (C:\Blp\PriceLnk)	An example Workbook file illustrating usage of the PLContribPage function.
Digital.xls (C:\Blp\PriceLnk)	An example workbook file serving as a template guiding users on the usage of the functions: PLContribFull PLMonitorFull PLSetMonSize
Benchmark.xls (C:\Blp\PriceLnk)	An example workbook file serving as a template guiding users on the usage of the functions: PLBenchmark PLContribFull

Table 1 - Access Type

01	CINS	13	Danish	27	Belgian Loan
02	Sedol 1	14	Austrian	28	UK Epic Code
03	Sedol 2	15	Luxembourg	29	Hong Kong
04	Euro Clear Number	16	Misc. Domestic	30	Equity Ticker & Exchange
05	Cedel	17	Norway	31	Ticker
06	Valoren	18	Euro Com	32	Tokyo Special
07	Wertpap	20	Italy	33	New ISIN
08	ISIN	21	Sweden	35	TBA Mortgage Security
09	Japanese	22	Japan Company	99	Clear Page
10	French	23	CUSIP		
11	Belgian	24	Spain		
12	Dutch	26	Singapore		