Market Replay User's Guide
Version 6.1

Disclaimer

Change Notices

The following change notices are provided to assist users of the CBOE*direct* market replay system in determining the impact of changes to their processing.

If you have any questions or review comments about this document, please contact Odalys Castro at (312) 786-8817.

Date	**Version**	**Description of Change**
5/18/11	6.1	Updated screen shots.
		Enhanced the graph description section.
		Updated the CBOE logo.
12/31/10	6.0	Captured new web screens
11/02/05	5.10b	Modified to include displays for single acronym and automated auctions
6/17/05	5.08	Updated all display to reflect current data.
2/6/04	5.01b	Removed the Customizing Windows section
		Added RFQs and Composite displays
1/23/04	5.01b	First draft.

Table of Contents

Introduction

Purpose

This user guide was written to assist users in utilizing all of the features of the Market Replay system.

Intended Audience

This user guide is intended for Help Desk Administrators, System Operators or any person interested in Market Replay functions for CBOE*direct*.

Conventions Used in this Guide

The Market Replay system for CBOE*direct* was designed so that you can perform all of your Market Replay activities by trading session. More than one Market Replay window can be active at the same time. Some window control functions can also be activated by using keyboard commands.

Section 1 of the document illustrates the most efficient way to perform Market Replay functions. Additional information about each of the Menu Bar options and window configuration can be found in Section 2: Reference Guide.

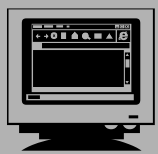
There are several conventions used throughout this guide to help trigger important information:

Bolding Used to highlight menu selections (e.g., **Login**) and button names (e.g., **Update**)

Brackets [ ] Used to highlight keyboard commands (e.g., [Ctrl]-[P]). Note that when [Alt] or [Ctrl] are used in conjunction with another key, hold down the first key while pressing the second.

➯ Note: This notation is used to indicate important information you should note when performing the associated function.

Valid Codes & Definitions This graphic will appear in the margin when there is information relating to valid system codes and definitions.



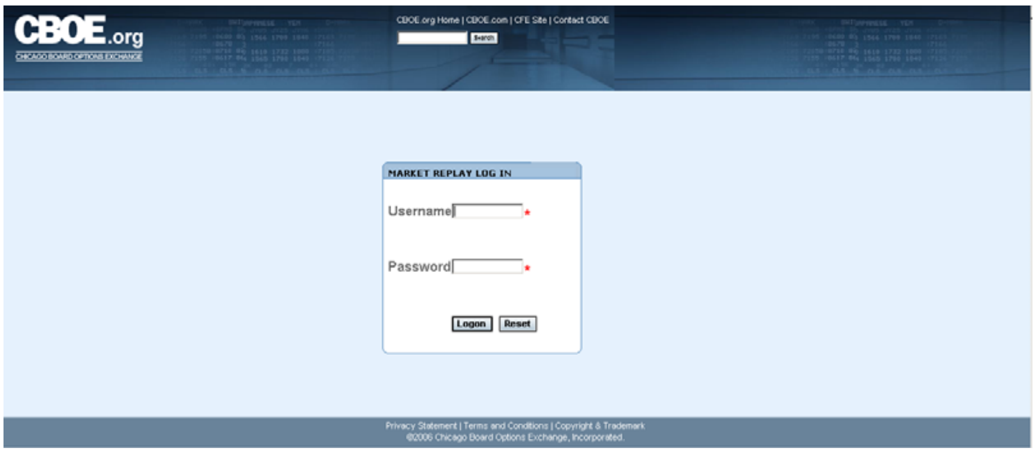
Section 1: Market Replay

This section of the user guide will direct you through all functions of the Market Replay system.

Getting Started

To launch the Market Replay application, enter the URL: http://marketreplay.cboe.com/ on your web browser.

The following Login window will display.

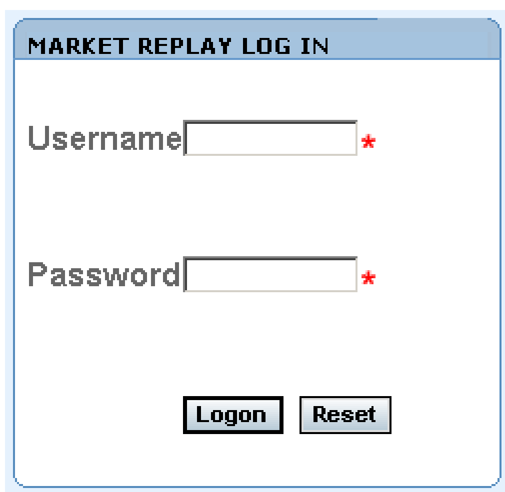


Login

In order to login to CBOE's Market Replay application, you will need to acquire, from CBOE, a valid user name, password and a RSA SecurID token value.

Enter your **Username**.

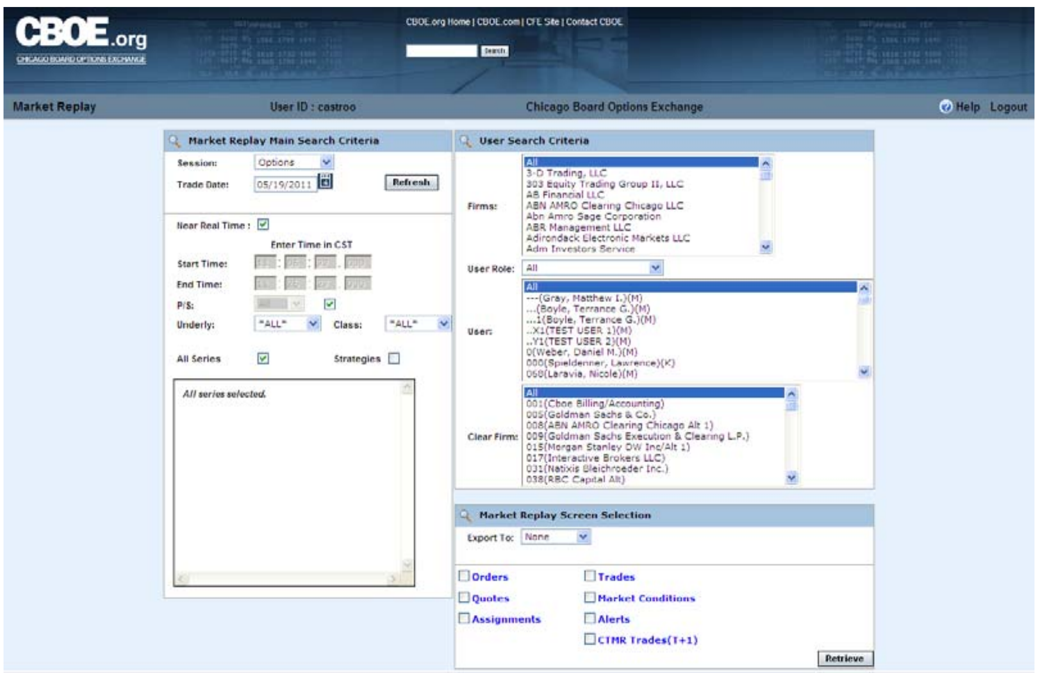
In the **Password** field, type in your password followed by your RSA token value**.** Do not enter a space between the password and token value.



If you incorrectly typed in your Username or Password, click **Reset**. The login window will clear. Re-enter your User name. Re-enter your Password followed by your RSA token value. Click **Logon**.

If you get a message indicating **Next Token Mode** when you login, please do the following:

- Open a browser and go to http://rsa.cboe.com
- Enter username and passcode when prompted: Enter the code displayed in the RSA SecurID window.
- You should receive a message that they are in next code mode.
- Be sure to wait for the RSA software application to flip to a new 8 digit tokencode, then enter that new tokencode.
- You should now get a message that they've been successfully authenticated.
- Please wait 90 seconds before attempting a login to Market Replay.
- After a successful login, Market Replay's main window will display.

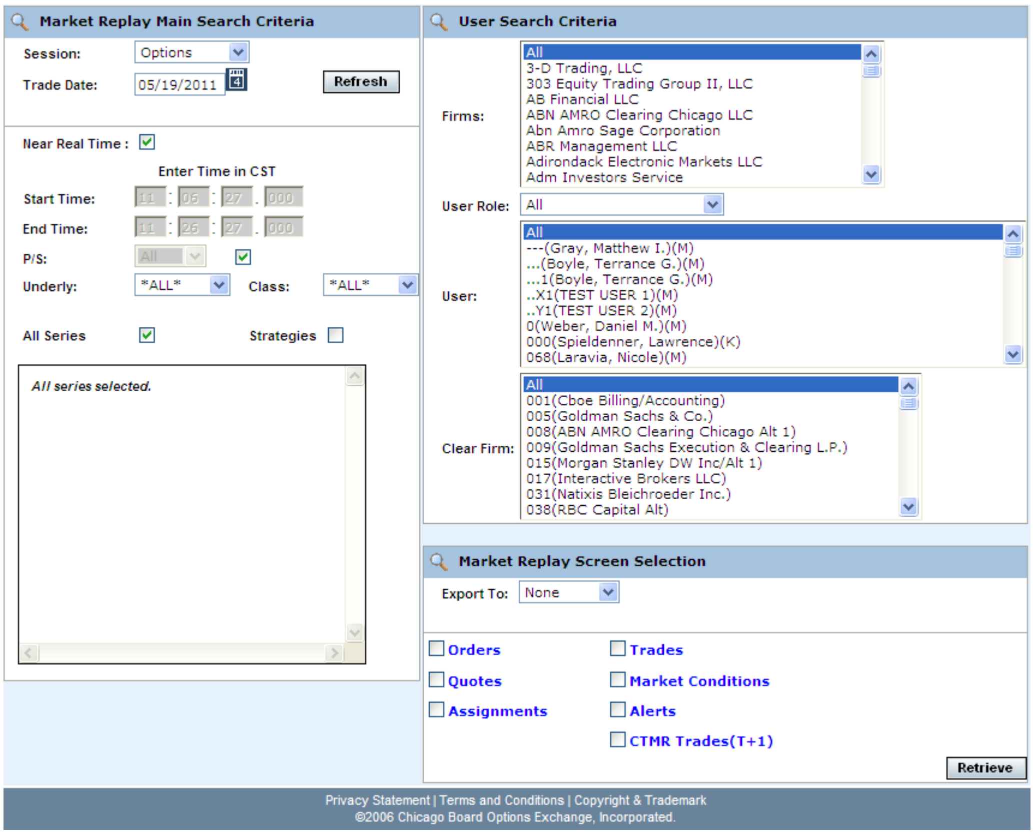


You are now ready to use Market Replay's functionality.

Display Trading Information

The Market Replay window allows you to specify the type of trading data you wish to view by session. The window defaults to the Options session and the current business day.

To easily understand the data represented in Market Replay, the window displays are presented as single data types (i.e. Trades) rather than combination displays (i.e. Trades & Orders).

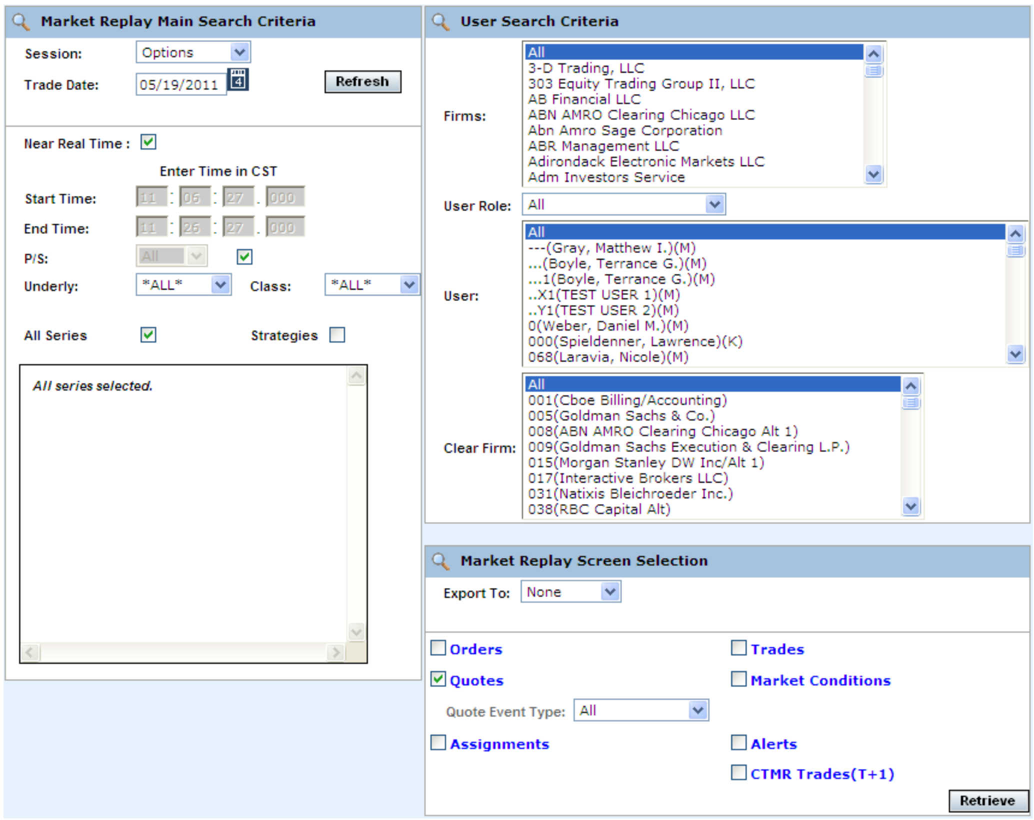


At this point, you can obtain current trading information for any CBOE*direct* trading session.

Selection Parameters

The Market Replay window allows you to specify the type of trading data you wish to view by session. The window defaults to the Options session and the current business day.

To easily understand the data represented in Market Replay, the window displays are presented as single data types (i.e. Trades) rather than combination displays (i.e. Trades & Orders).



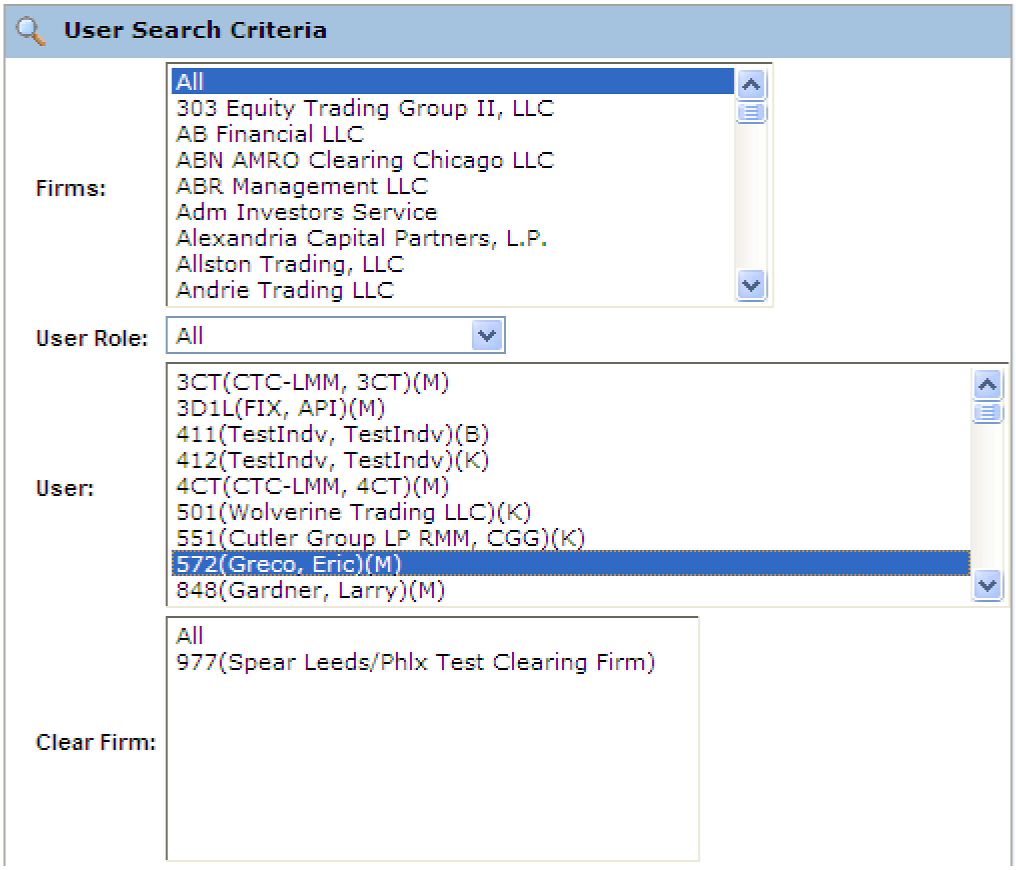
The Market Replay window is split into three panels: Market Replay Main Search Criteria, User Search Criteria and Market Replay Screen Selections. This window is used to set limitations for your data request.

The Market Replay Main Search Criteria section of the window allows you to select:

- The session and trade date
- Near real-time monitoring or a fixed time range
- Underlying and Class selections or select classes by Post and Station (P/S)

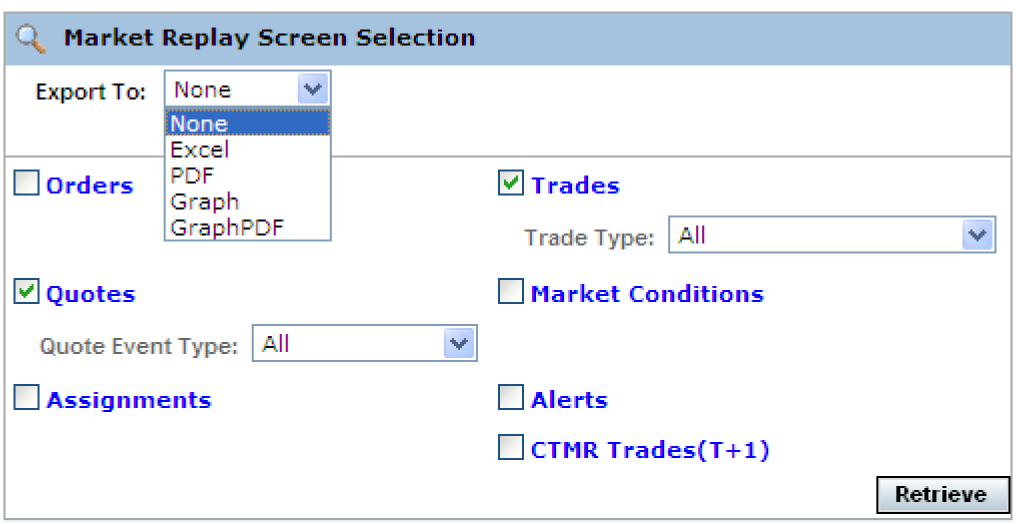
The User Search Criteria section allows you to filter your Market Replay requests by Firm, User Role, Market Maker, or Clearing Firm.

If you select only one user from the User list, only the Clearing Firm for that user will display in the Clear Firm list box.



The Market Replay Screen Selection section allows you to filter your Market Replay requests by Orders, Quotes, Trades, Assignments, Market Conditions, Alerts and CTMR Trades.

You can also export the data to Excel or PDF formats.

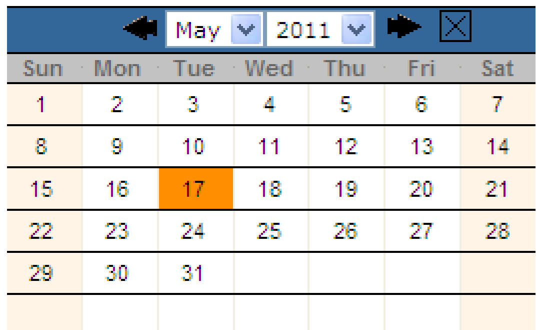


Orders

Market Replay allows you to retrieve order information. Make your selections from the **Market Replay Main Search Criteria** section of the window.

- Select the trading session from the **Session** drop down list.
- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.
- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  ✎ **Note**: The data warehouse maintains trade information for three years.

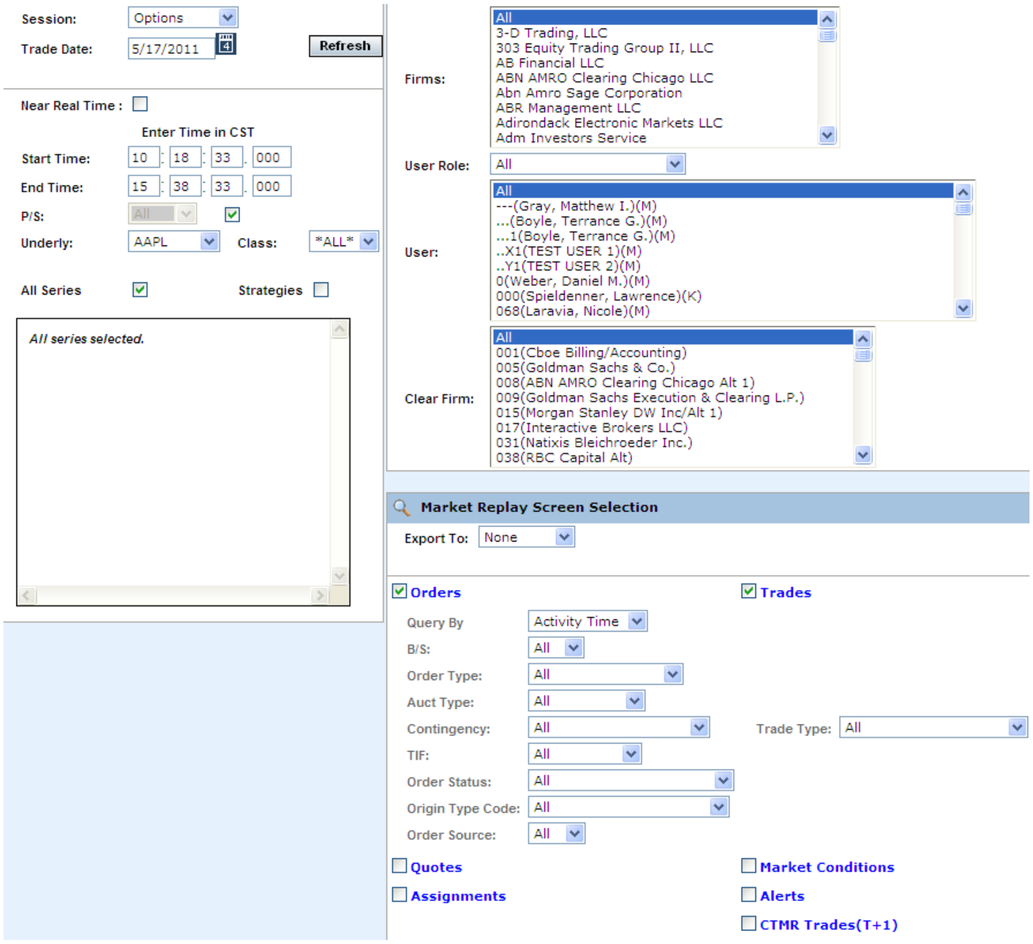


- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.
- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  ✎ **Note**: The maximum valid time range is 20 minutes.

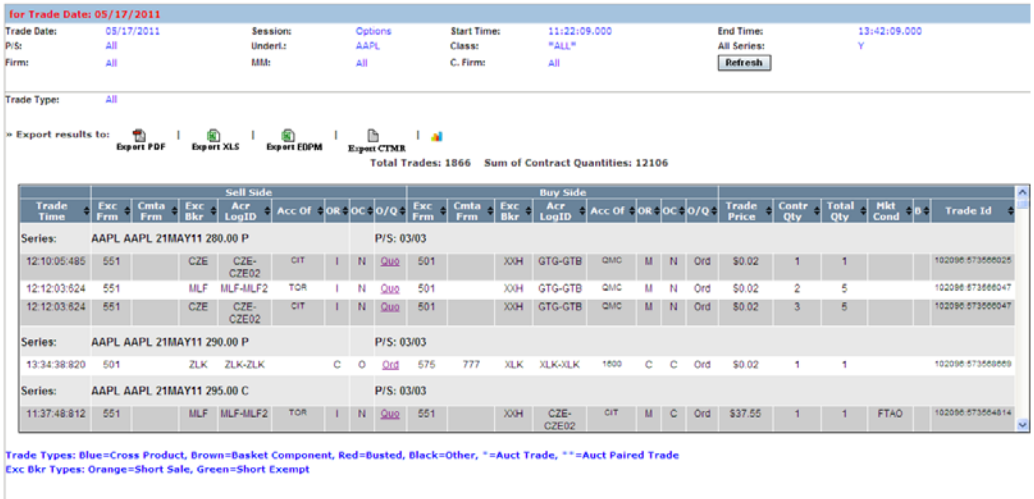
- Class/Series selection by post and station (**P/S**)
  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.
- Class/Series selection
  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.
  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

    ✎ **Note:** You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **Orders**.
- You can further filter your order requests by: Query (Activity Time or Receive Time), Buy/Sell (B/S), Order Type, Auction Type, Contingency, TIF, Order Status, Origin Type Code or Order Source. Make your selections from the corresponding dropdown lists. The default for the filters is **All**.

- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the Customize and Export Data section, page 39.
- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Orders** window will display with the requested data.



The example above displays all the order activity that occurred in the Options (W_MAIN) session on May 17, 2011 from 11:22:09 to 13:42:09 for all the Call and Put series in the AAPL class.

Market Replay gives you the ability to sort on the contents of any column in the display by clicking on the column heading.

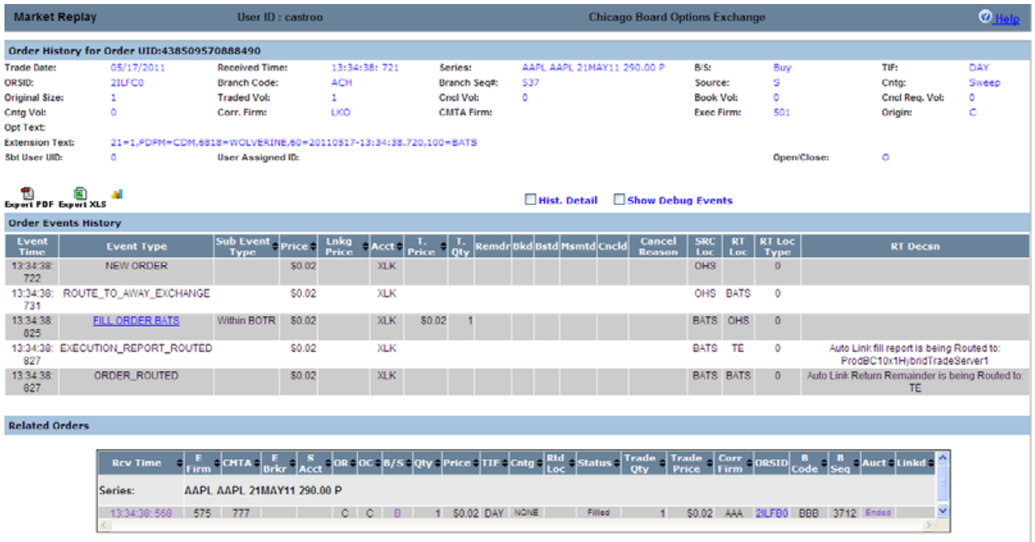
Click **Refresh** at anytime to update the query.

Most of the fields in the Orders display are descriptive. The following table describes valid system codes found in the order display.

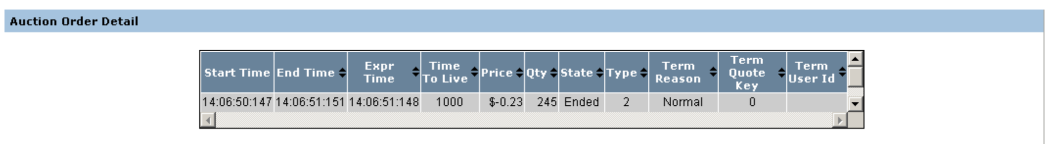
Valid Codes& Definitions

Column	Description
OR & CVG	CUSTOMER = C, CTI Equivalent - Non Member, Customer Segregated Account FIRM = F CTI Equivalent - Firm Trader, House Account BROKER_DEALER = B CUSTOMER_BROKER_DEALER= X MARKET_MAKER = M MARKET_MAKER_AWAY = N CTI1Origin1 = V - Member, Customer Segregated Account CTI1Origin2 = E - Member, House Account CTI1Origin5 = Q - Member, SIPC Protected Account CTI3Origin1 = G - User Proxy for trader, Customer Segregated Account CTI3Origin2 = H - User Proxy for trader, House Account CTI3Origin5 = R - User Proxy for trader, SIPC Protected Account CTI4Origin2 = O - Non Member, House Account CTI4Origin5 = T - Non Member, SIPC Protected AccounT PRINCIPAL = P PRINCIPAL_ACTING_AS_AGENT = A SATISFACTION = S
OC	O=Open, C=Close
TIF	D=Day, G=Good until cancelled, T=Good until expire time

To view order details, click on the corresponding value in the ORSID column for the selected data row. The order history window will display.



If the order is an Auction order, the Auction order details display in the lower portion of the window.

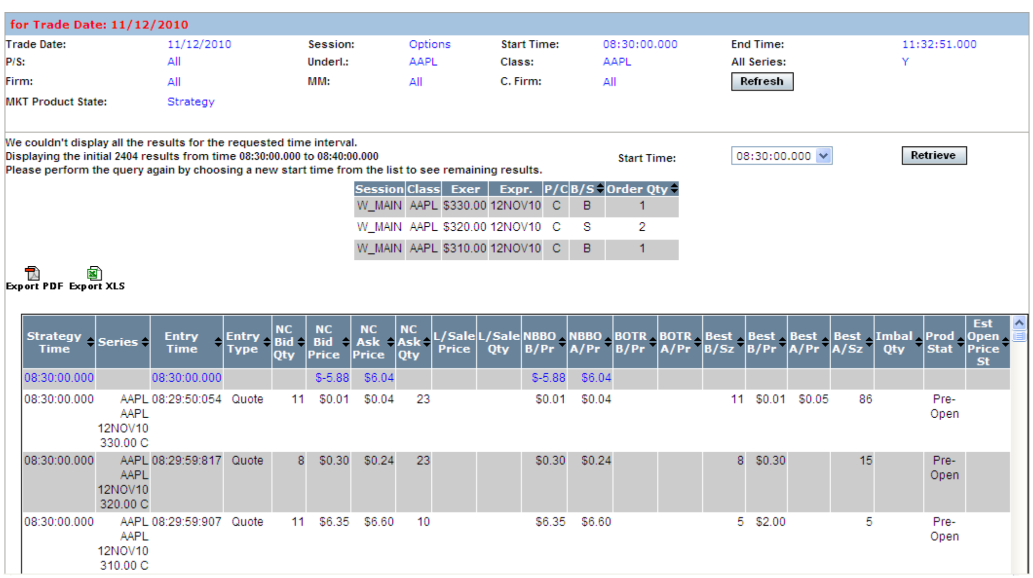


Valid Codes& Definitions

Column	Description
Start Time	When auction starts and RFQ is sent
End Time	When auction processing completes, including fill allocation (time when finished expiring the auction)
Expr Time	When auction processing completes, including fill allocation (time when CBOE starts processing the auction expiration.
Time to Live (sec)	Configured and calculated auction timeout period in milliseconds. It is the time period in milliseconds for which the auction will be live/active. Once the time to live expires, the auction order will get traded.
Price	Auction starting price
Qty	Auction quantity
State	State of the auction: Started or Ended
Type	Internalization, strategy, regular single, HAL, SAL, unspecified

Term Reason	Auction terminate reason: UNSPECIFIED = 0 ORDER_MARKETABLE_AGAINST_BOOK = 1 ORDER_MARKETABLE_AGAINST_AUCTION = 2 QUOTE_BID_LOCK = 3 QUOTE_ASK_LOCK = 4 QUOTE_BID_TRIGGER = 5 QUOTE_ASK_TRIGGER = 6 QUOTE_MARKETABLE_AGAINST_AUCTION = 7 Q_ORDER_LOCK = 8 Q_ORDER_TRIGGER = 9 Q_ORDER_MARKETABLE_AGAINST_AUCTION = 10 AUCTION_RESPONSE = 11 NEW_AUCTION = 12 AUCTIONED_ORDER_CANCEL = 13 PRODUCT_STATE_CHANGE = 14
Term Quote Key	The quote key value for the terminated the auction.
Term User ID	The identification of the user who terminated the auction.

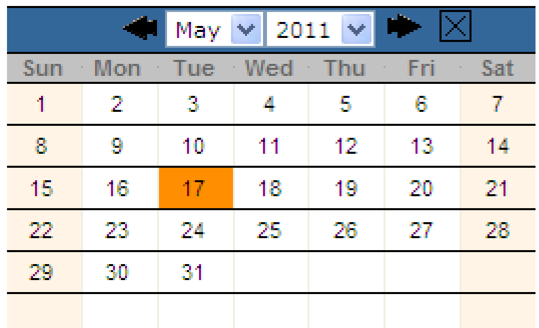
To view market conditions, click on the **Derived Market** link.



Quotes Market Replay allows you to retrieve quote information. Make your selections from the **Market Replay Main Search Criteria** section of the window.

- Select the trading session from the **Session** drop down list.
- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.
- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  ✍ **Note**: The data warehouse maintains trade information for three years.

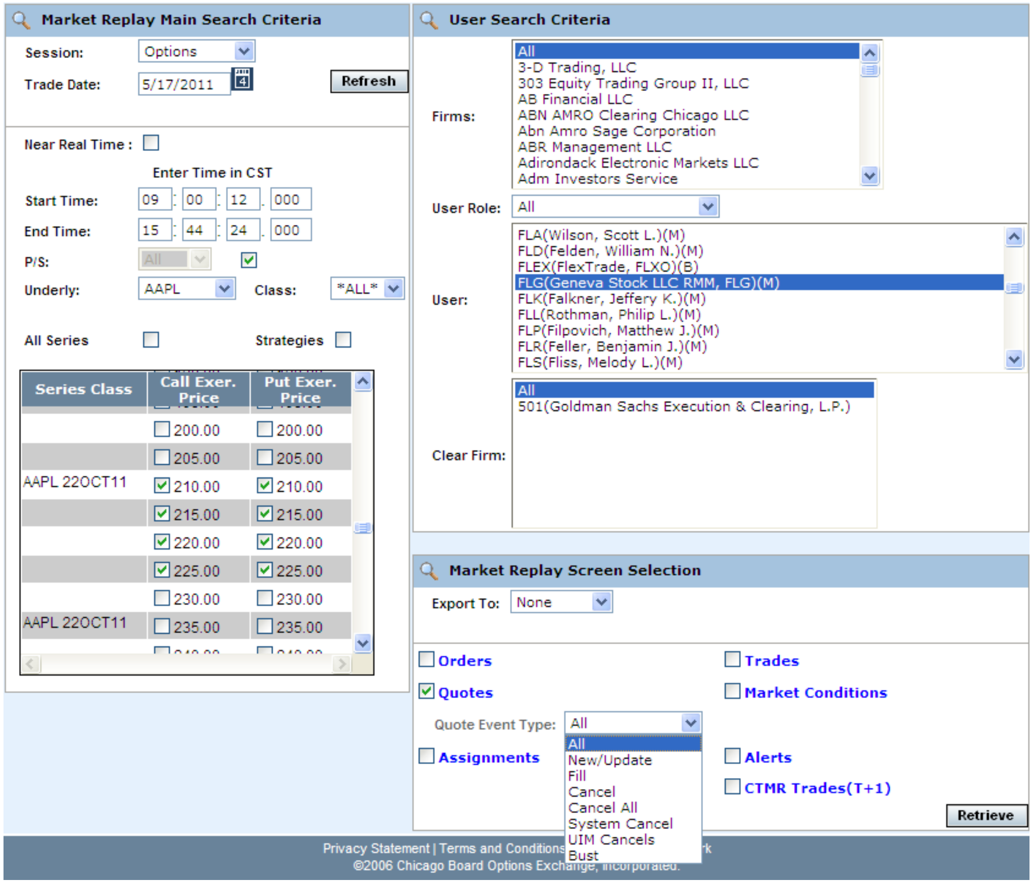


- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.
- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  ✍ **Note**: The maximum valid time range is 20 minutes.

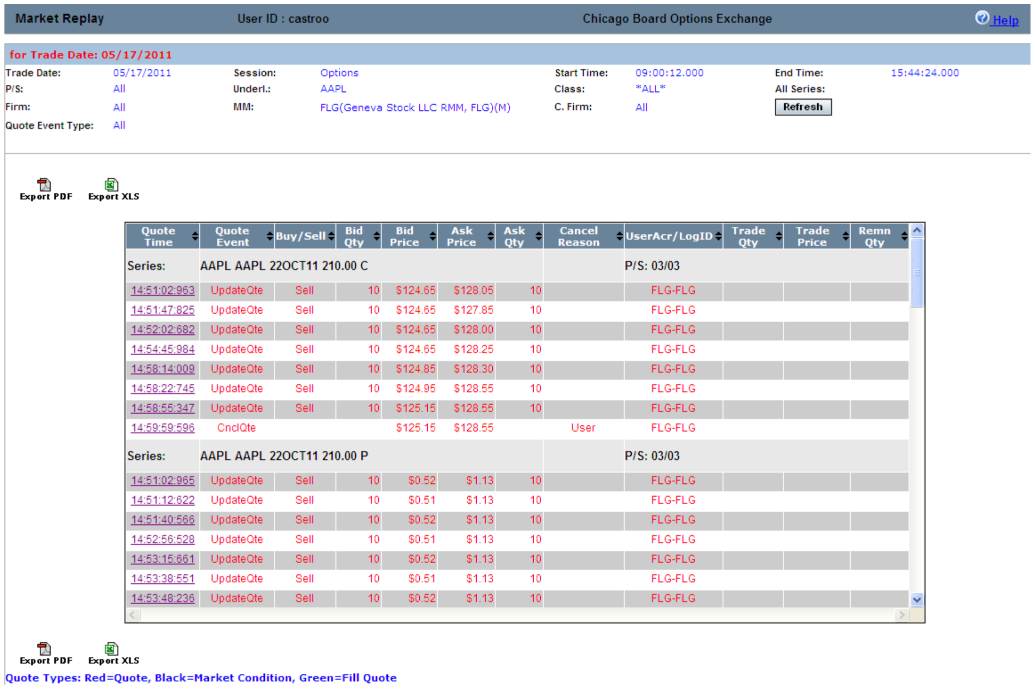
- Class/Series selection by post and station (**P/S**)
  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.
- Class/Series selection
  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.
  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

    ✍ **Note:** You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **Quotes**.
- You can further filter your quote requests by **Quote Event Type**. Make your selections from the corresponding dropdown lists. The default for the filters is **All**.

- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the Customize and Export Data section, page 39.
- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Quotes** window will display with the requested data.



Market Replay | User ID : castroo | Chicago Board Options Exchange | Help

for Trade Date: 05/17/2011

Trade Date:	05/17/2011	Session:	Options	Start Time:	09:00:12.000	End Time:	15:44:24.000
P/S:	All	Underl.:	AAPL	Class:	*ALL*	All Series:	
Firm:	All	MM:	FLG(Geneva Stock LLC RMM, FLG)(M)	C. Firm:	All	Refresh	
Quote Event Type:	All						

Export PDF Export XLS

Quote Time	Quote Event	Buy/Sell	Bid Qty	Bid Price	Ask Price	Ask Qty	Cancel Reason	UserAcr/LogID	Trade Qty	Trade Price	Remn Qty
Series:	AAPL AAPL 22OCT11 210.00 C							P/S: 03/03			
14:51:02:963	UpdateQte	Sell	10	$124.65	$128.05	10		FLG-FLG			
14:51:47:825	UpdateQte	Sell	10	$124.65	$127.85	10		FLG-FLG			
14:52:02:682	UpdateQte	Sell	10	$124.65	$128.00	10		FLG-FLG			
14:54:45:984	UpdateQte	Sell	10	$124.65	$128.25	10		FLG-FLG			
14:58:14:009	UpdateQte	Sell	10	$124.85	$128.30	10		FLG-FLG			
14:58:22:745	UpdateQte	Sell	10	$124.95	$128.55	10		FLG-FLG			
14:58:55:347	UpdateQte	Sell	10	$125.15	$128.55	10		FLG-FLG			
14:59:59:596	CnclQte			$125.15	$128.55		User	FLG-FLG			
Series:	AAPL AAPL 22OCT11 210.00 P							P/S: 03/03			
14:51:02:965	UpdateQte	Sell	10	$0.52	$1.13	10		FLG-FLG			
14:51:12:622	UpdateQte	Sell	10	$0.51	$1.13	10		FLG-FLG			
14:51:40:566	UpdateQte	Sell	10	$0.52	$1.13	10		FLG-FLG			
14:52:56:528	UpdateQte	Sell	10	$0.51	$1.13	10		FLG-FLG			
14:53:15:661	UpdateQte	Sell	10	$0.52	$1.13	10		FLG-FLG			
14:53:38:551	UpdateQte	Sell	10	$0.51	$1.13	10		FLG-FLG			
14:53:48:236	UpdateQte	Sell	10	$0.52	$1.13	10		FLG-FLG			

Export PDF Export XLS

Quote Types: Red=Quote, Black=Market Condition, Green=Fill Quote

In the example above, quote information for all classes in underlying symbol AAPL, displays for user FLG.

Market Replay gives you the ability to sort on the contents of any column in the display by clicking on the column heading.

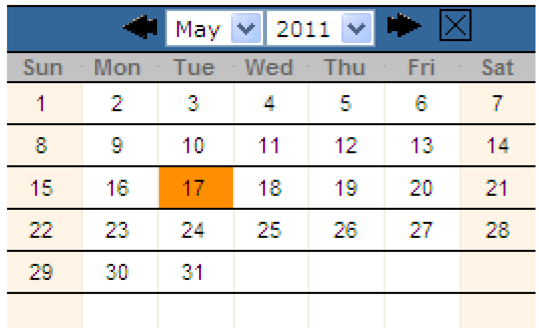
Click **Refresh** at anytime to update the window display.

Market Conditions

To obtain current market condition information. Make your selections from the **Market Replay Main Search Criteria** section of the window.

- Select the trading session from the **Session** drop down list.
- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.
- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  ✎ **Note**: The data warehouse maintains trade information for three years.

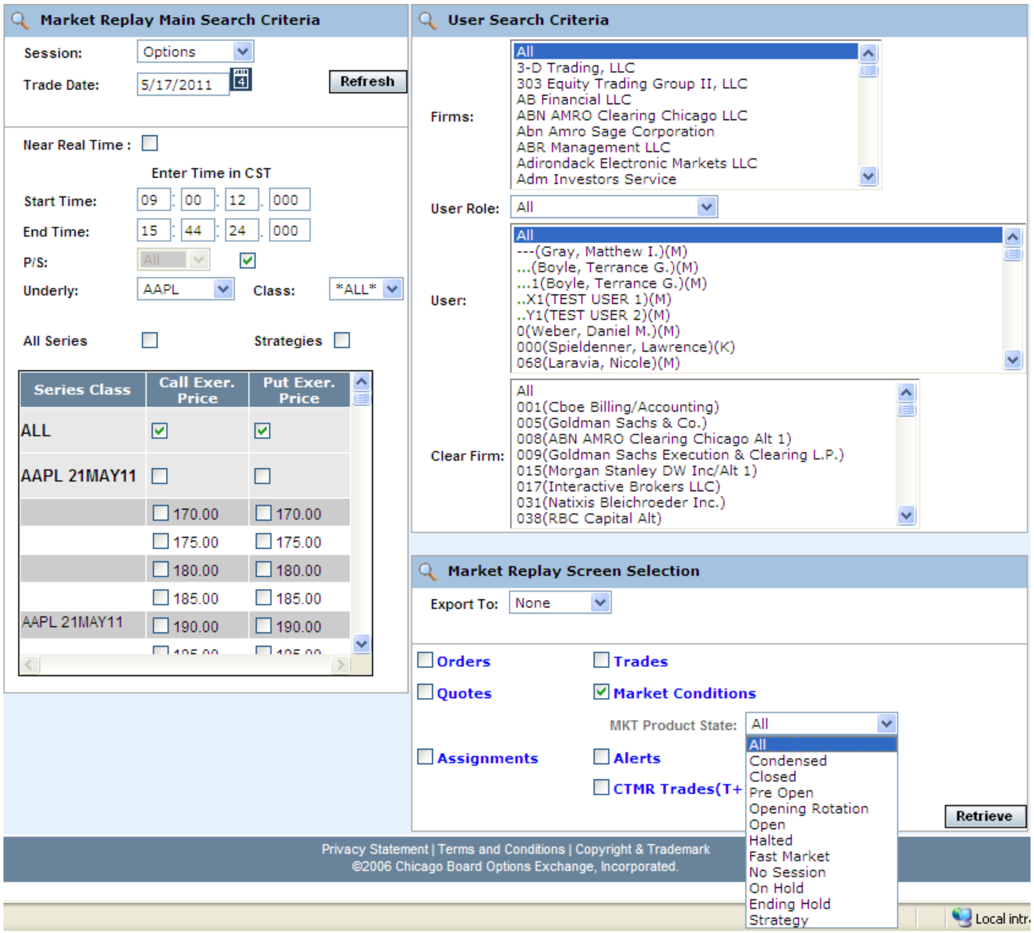


- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.
- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  ✎ **Note**: The maximum valid time range is 20 minutes.

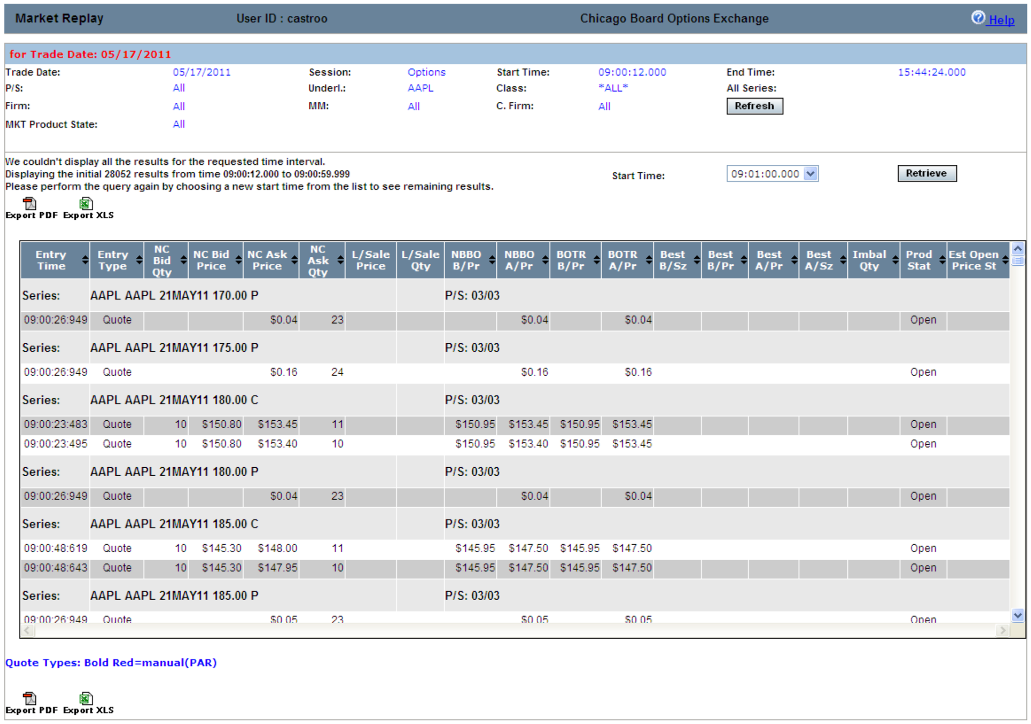
- Class/Series selection by post and station (**P/S**)
  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.
- Class/Series selection
  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.
  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

    ✎ **Note:** You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **Market Conditions**.
- You can further filter your market condition requests by **Product State**. Make your selections from the corresponding dropdown lists. The default for the filters is **All**.

- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the Customize and Export Data section, page 39.
- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Market Conditions** window will display with the requested data.



Details are provided for all the market events that occurred in the Options session for all the Put/Call series in the AAPL class.

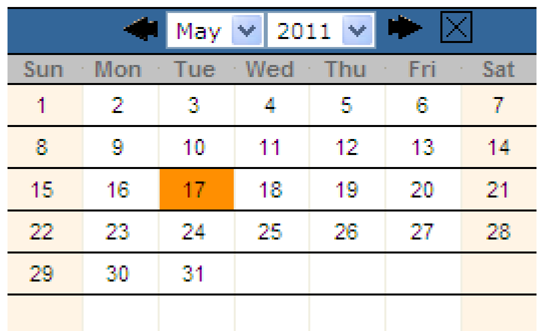
Scroll down on your scroll bar to view all the events for each series.

Market Replay gives you the ability to sort on the contents of any column in the display by clicking on the column heading.

Trades Market Replay allows you to retrieve trade information. Make your selections from the **Market Replay Main Search Criteria** section of the window.

- Select the trading session from the **Session** drop down list.
- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.
- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  ✎ **Note**: The data warehouse maintains trade information for three years.



- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.
- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  ✎ **Note**: The maximum valid time range is 20 minutes.

- Class/Series selection by post and station (**P/S**)
  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.
- Class/Series selection
  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.
  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

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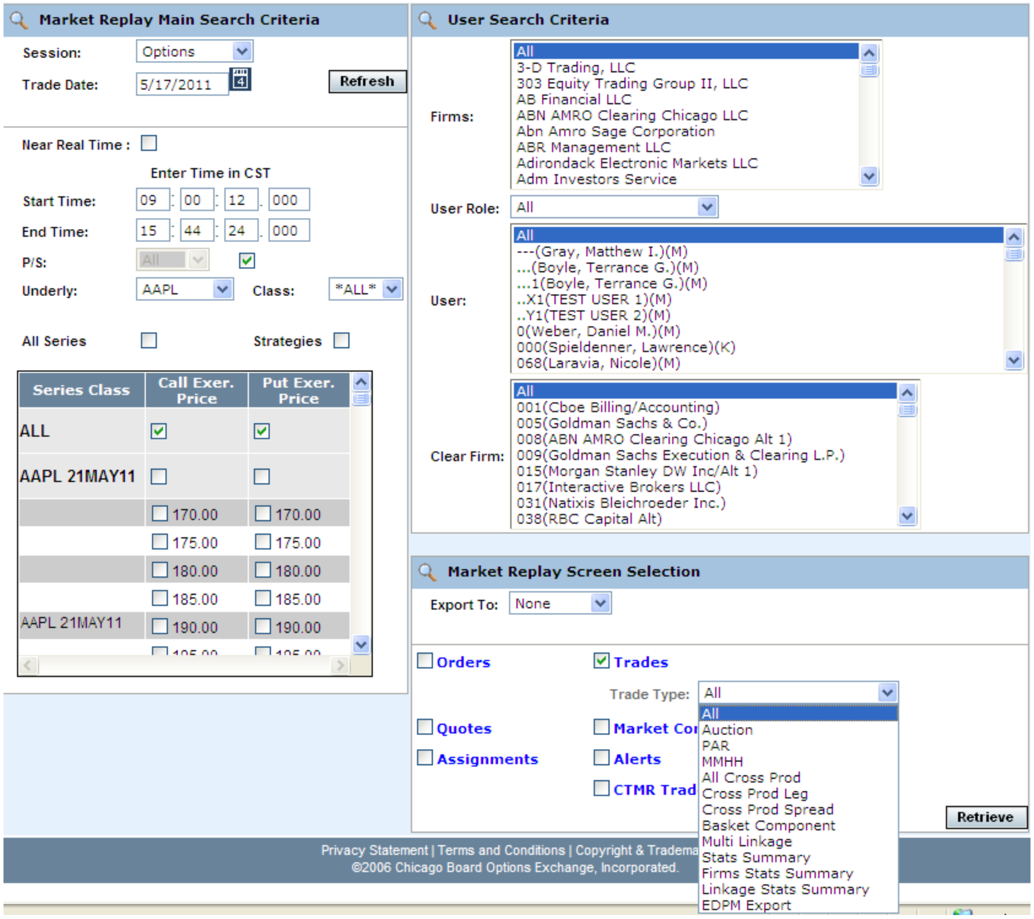
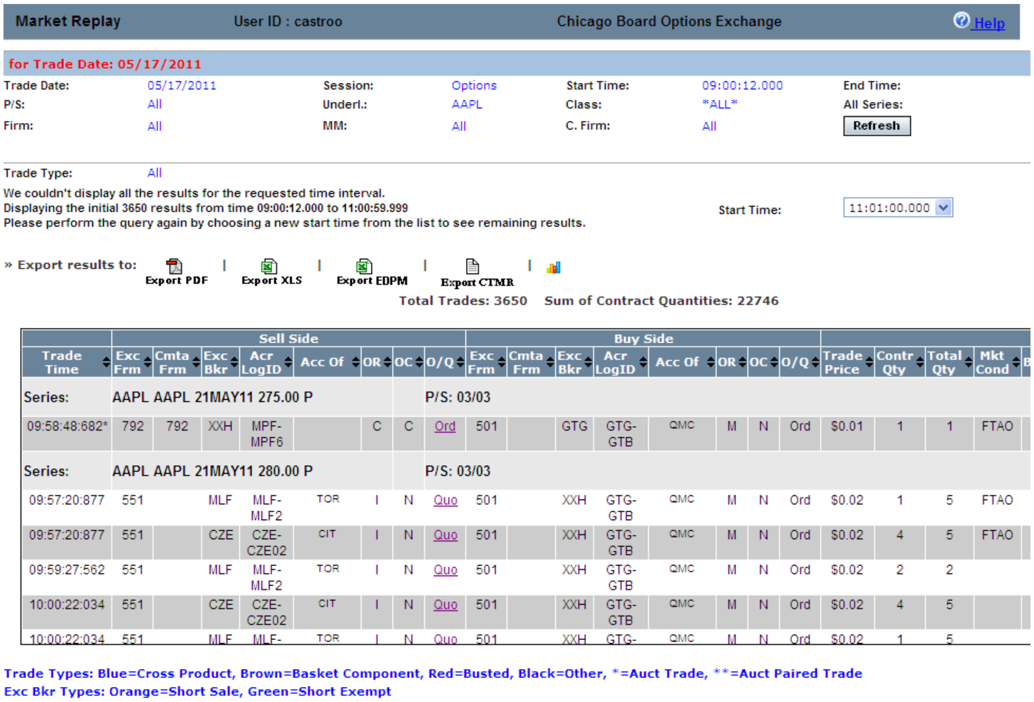


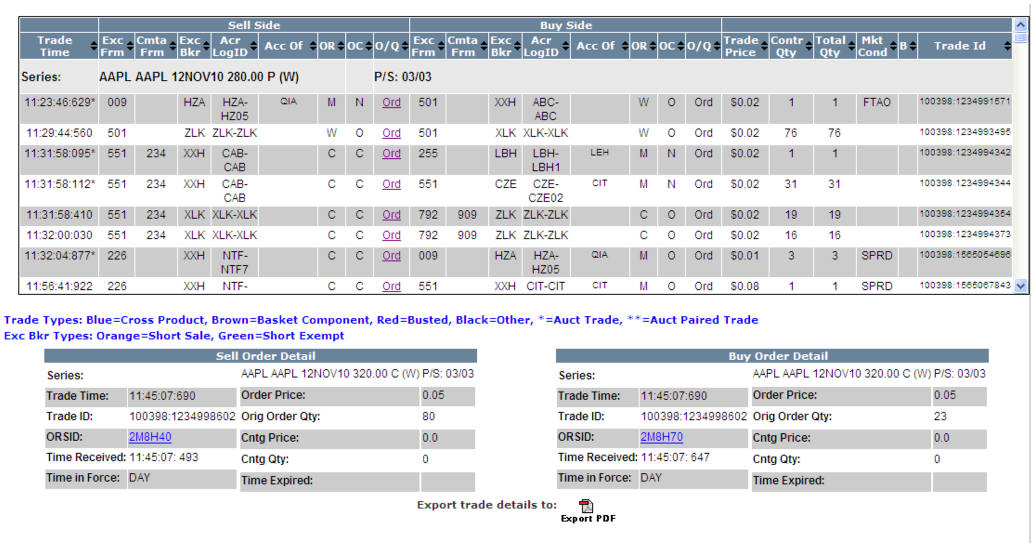
- To further filter your request, select to retrieve **Trades**.
- You can further filter your trades request by **Trade Types**. Make your selections from the corresponding dropdown lists. The default for the filters is **All**.

- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the Customize and Export Data section, page 39.
- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Trades** window will display with the requested data.

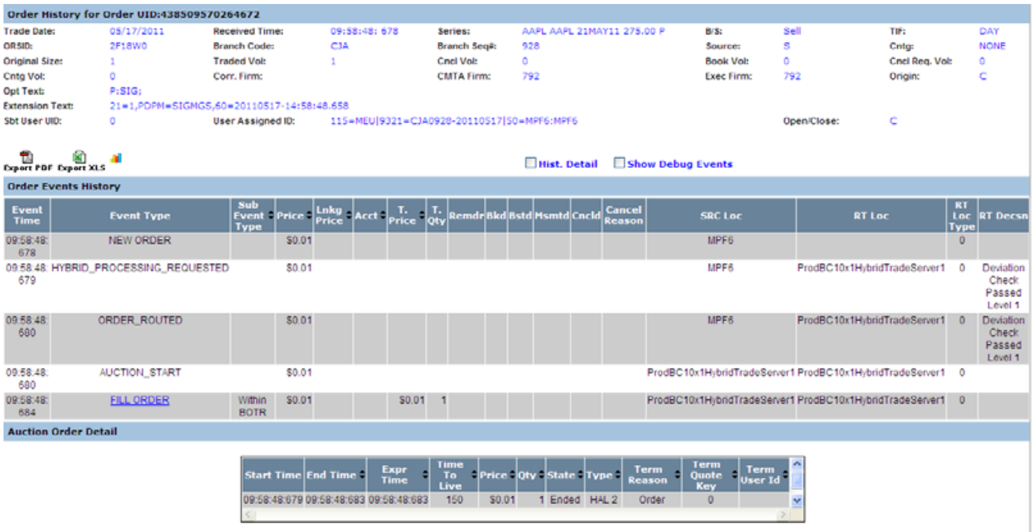


The example above displays all the trades that occurred in the W_MAIN session on May 17, 2011, for the AAPL class. The total number of trades represents all the trades in the display.

Click on the **Ord** or **Quo** link in the O/Q column to display order and quote details.



Click on the ORSID link to view details on related orders.



Trade details are provided as well as system specific information. Valid codes and column definitions that are represented in the Trades window are defined in the table below.

Market Replay gives you the ability to sort on the contents of any column in the display by clicking on the column heading.

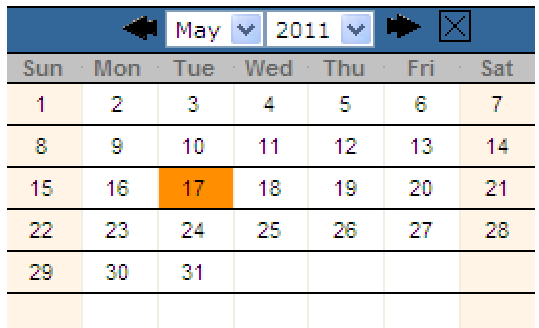
Valid Codes& Definitions

Column	Description
OR	P/A Linkage = 'A' B/D = 'B' CUSTOMER = 'C' Customer-FBW = 'D' Member, House Account **=** 'E' FIRM = F' User Proxy for trader, Customer Segregated **=** 'G' User Proxy for trader, House Account **=** 'H' In-Crowd MM = 'I' Firm - FBW = 'J' B/D-FBW='K' Firm-FBW='L' MARKET_MAKER = 'M' Away MM='N' Non Member, House Account='O' Principle Linkage = 'P' Member, SIPC Protected Account = 'Q' User Proxy for trader, SIPC Protected Account = 'R' Satisfaction Linkage = 'S' Non Member, SIPC Protected Account='T' M-FBW='U' Member, Customer Segregated Account='V' Broker/Dealer-FBW='W' Customer Broker/Dealer='X' Underly Specialist='Y' N,Y-FBW='Z'
OC	O=Open, C=Close
Sell Acc of	This column will be populated with a Q account if this side of the trade was originated by a DPM, otherwise, it will be populated with the Broker or Market Maker acronym. If the order originator is not a Market Maker or a broker, then the value in this field will not be validated by CBOE*direct*.
Buy Acc of	This column represents the buyer's account information. If this is a trade from a quote, the Q account or Market Maker acrynom is displayed. If this is a trade from an order, it is a free form field for the firm.
Mkt Cond	CANC=trade bust report CNCO=trade bust report for opening trade FTAO=used if the first trade for product occurs after the opening OPNT=used if first trade for product occurs during opening REOP=trade that occurs during an opening rotation that is not the first rotation of the day
S (Trade Source)	How the trade was entered. SYSTEM or MANUAL. The Help Desk has the ability to enter a manual trade (block trade)
B	The letter 'B' stands for Bust. An ***** displayed in this column represents a busted trade.

Assignments Market Replay allows you to retrieve user assignment information. Make your selections from the **Market Replay Main Search Criteria** section of the window.

- Select the trading session from the **Session** drop down list.
- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.
- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  Note: The data warehouse maintains trade information for three years.

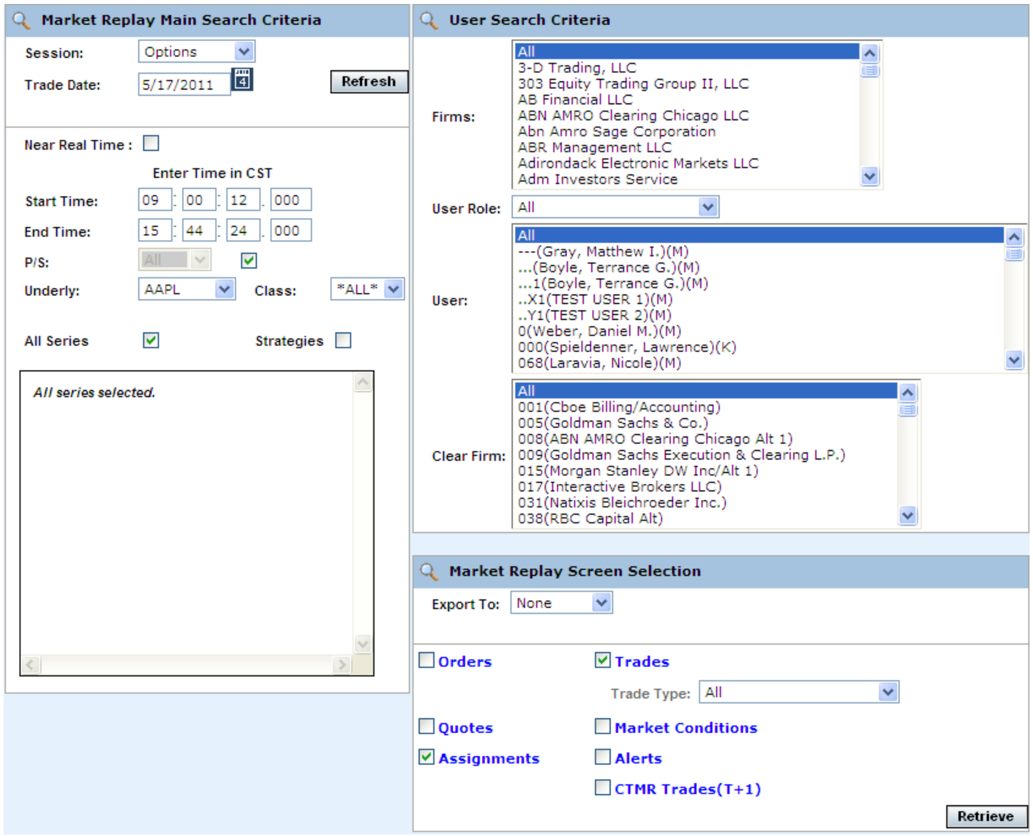


- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.
- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  Note: The maximum valid time range is 20 minutes.

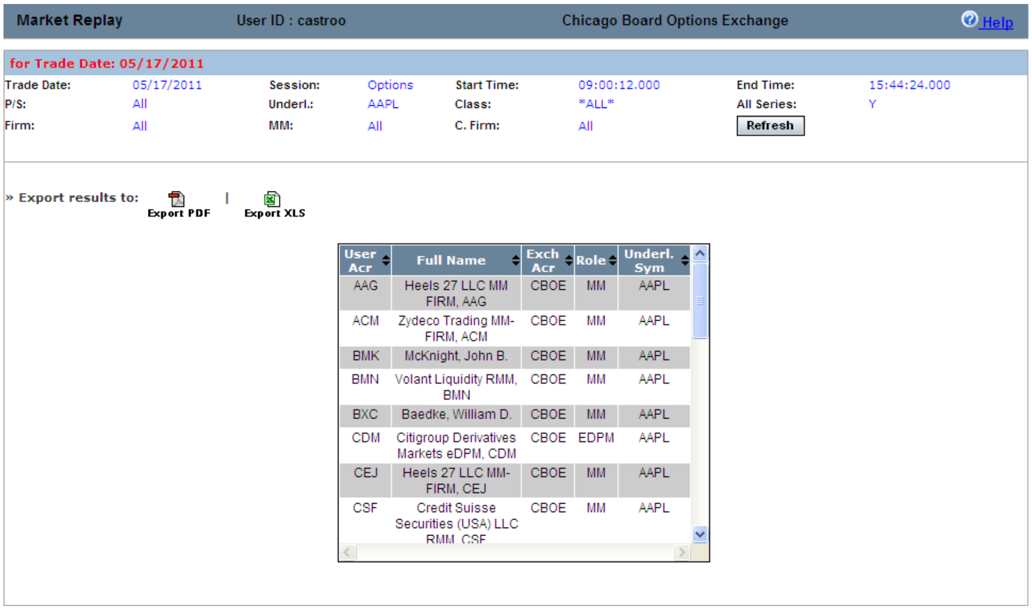
- Class/Series selection by post and station (**P/S**)
  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.
- Class/Series selection
  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.
  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

    Note: You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **Assignments**.

- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the *Customize and Export Data* section, page 39.
- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Assignments** window will display with the requested data.



User Acr	Full Name	Exch Acr	Role	Underl. Sym
AAG	Heels 27 LLC MM FIRM, AAG	CBOE	MM	AAPL
ACM	Zydeco Trading MM-FIRM, ACM	CBOE	MM	AAPL
BMK	McKnight, John B.	CBOE	MM	AAPL
BMN	Volant Liquidity RMM, BMN	CBOE	MM	AAPL
BXC	Baedke, William D.	CBOE	MM	AAPL
CDM	Citigroup Derivatives Markets eDPM, CDM	CBOE	EDPM	AAPL
CEJ	Heels 27 LLC MM-FIRM, CEJ	CBOE	MM	AAPL
CSF	Credit Suisse Securities (USA) LLC RMM, CSF	CBOE	MM	AAPL

The example above displays the user assignments on May 17, 2011 for the class, AAPL.

Alert Messages

The Alerts message display allows you to view types of trade throughs that have occurred in CBOE*direct*.

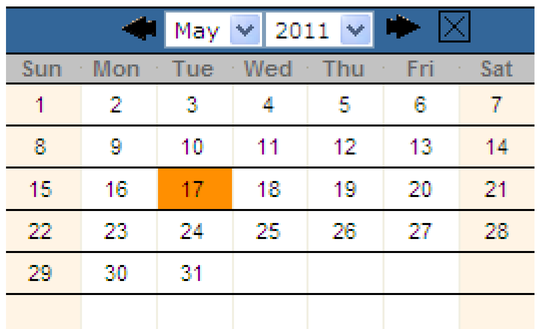
- Select the trading session from the **Session** drop down list.

  ⇘ **Note**: Alert messages are not available for the OneChicago, CFE Options and Futures sessions.

- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.

- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  ⇘ **Note**: The data warehouse maintains trade information for three years.



- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.

- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  ⇘ **Note**: The maximum valid time range is 20 minutes.

- Class/Series selection by post and station (**P/S**)

  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.

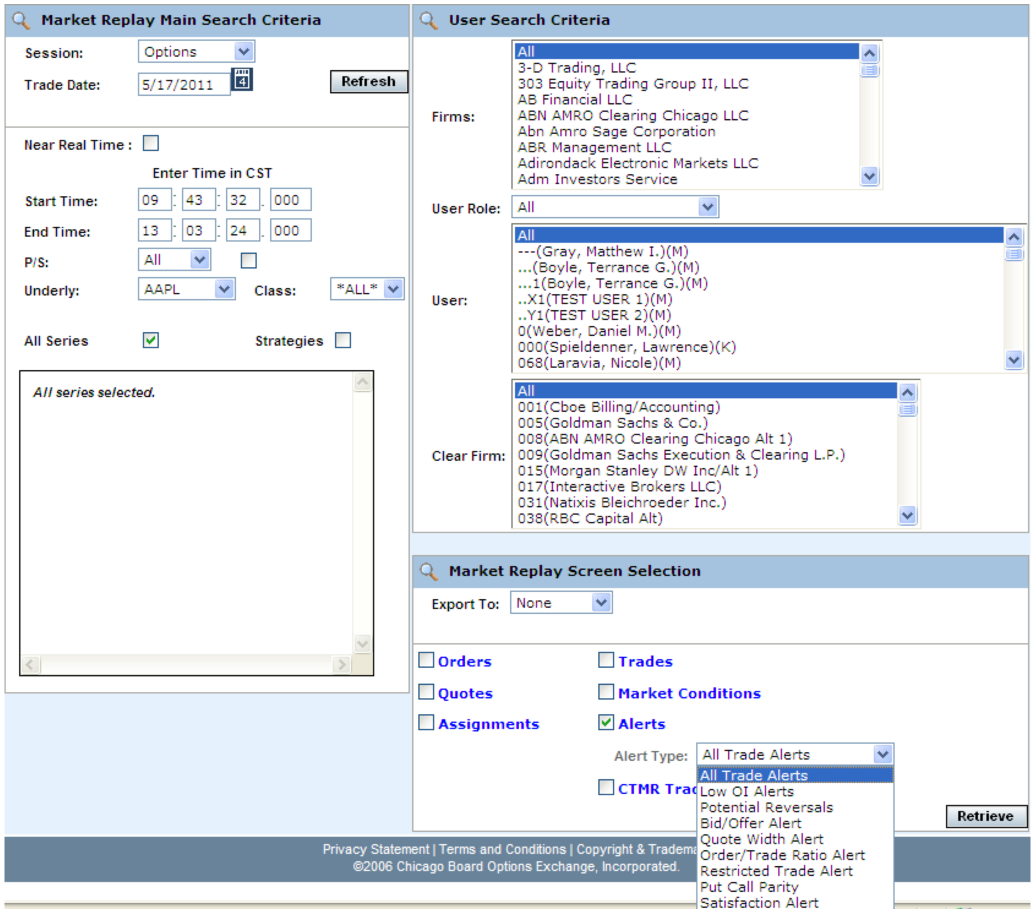
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.

- Class/Series selection

  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.

  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

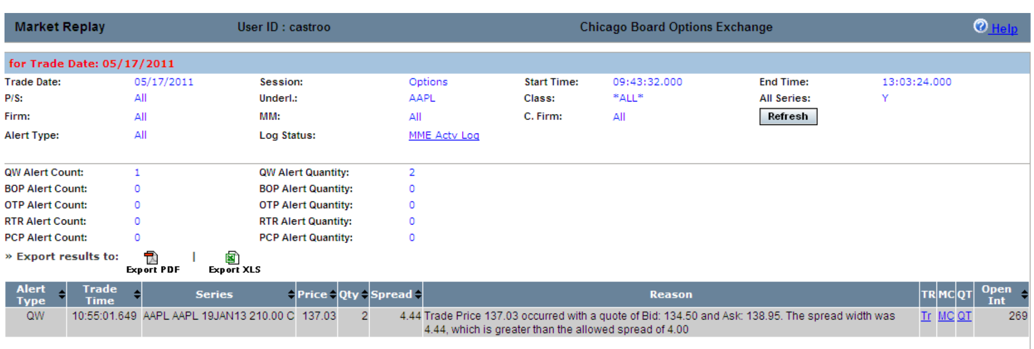
    ⇘ **Note:** You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **Alerts**.

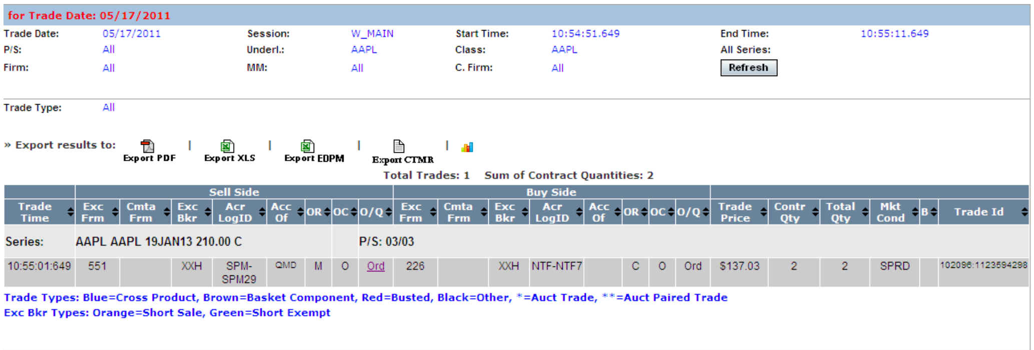
- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the *Customize and Export Data* section, page 39.

- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **Alerts** window will display with the requested data.



The **Alert Messages** window above displays all the alerts that occurred on May 17, 2011 from 09:43:32 to 13:03:24 for all the AAPL class. If there is any related trade / order activity in the alert, it is shown in the bottom half of the display.

Click the **TR** link to view trade summary data.



for Trade Date: 05/17/2011

Trade Date:	05/17/2011	Session:	W_MAIN	Start Time:	10:54:51.649	End Time:	10:55:11.649
P/S:	All	Underl.:	AAPL	Class:	AAPL	All Series:	
Firm:	All	MM:	All	C. Firm:	All	Refresh	

Trade Type: All

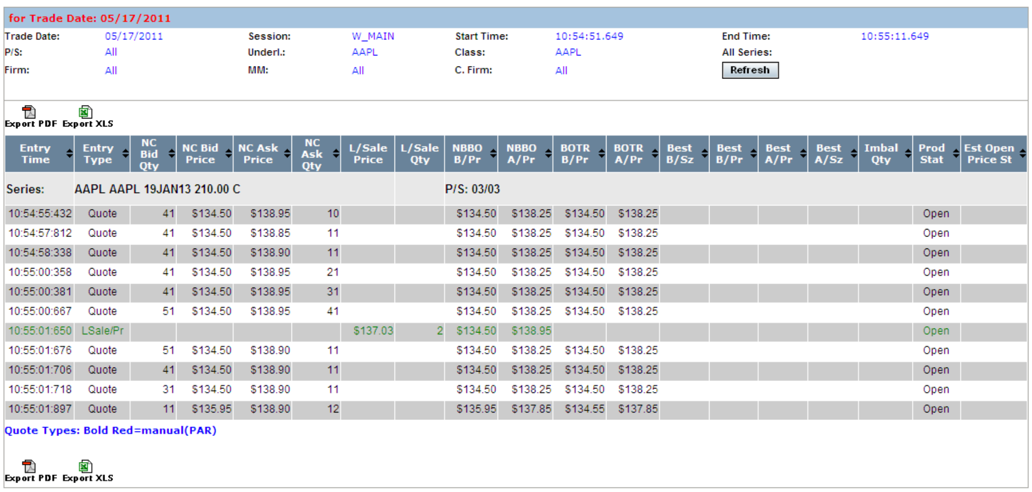
» Export results to: Export PDF | Export XLS | Export EDPM | Export CTMR |

Total Trades: 1 Sum of Contract Quantities: 2

	Sell Side								Buy Side													
Trade Time	Exc Frm	Cmta Frm	Exc Bkr	Acr LogID	Acc Of	OR	OC	O/Q	Exc Frm	Cmta Frm	Exc Bkr	Acr LogID	Acc Of	OR	OC	O/Q	Trade Price	Contr Qty	Total Qty	Mkt Cond	B	Trade Id
Series:	AAPL AAPL 19JAN13 210.00 C							P/S: 03/03														
10:55:01:649	551		XXH	SPM-SPM29	QMD	M	O	Ord	226		XXH	NTF-NTF7		C	O	Ord	$137.03	2	2	SPRD		102096:1123594298

Trade Types: Blue=Cross Product, Brown=Basket Component, Red=Busted, Black=Other, *=Auct Trade, **=Auct Paired Trade
Exc Bkr Types: Orange=Short Sale, Green=Short Exempt

To view market condition information, click the **MC** link.



for Trade Date: 05/17/2011

Trade Date:	05/17/2011	Session:	W_MAIN	Start Time:	10:54:51.649	End Time:	10:55:11.649
P/S:	All	Underl.:	AAPL	Class:	AAPL	All Series:	
Firm:	All	MM:	All	C. Firm:	All	Refresh	

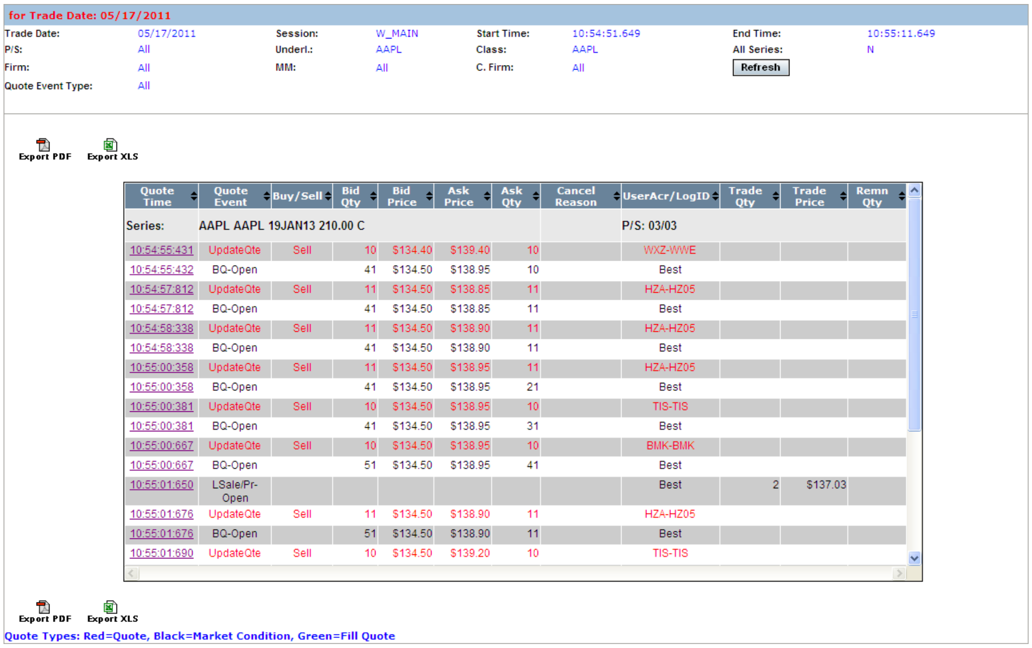
Export PDF Export XLS

Entry Time	Entry Type	NC Bid Qty	NC Bid Price	NC Ask Price	NC Ask Qty	L/Sale Price	L/Sale Qty	NBBO B/Pr	NBBO A/Pr	BOTR B/Pr	BOTR A/Pr	Best B/Sz	Best B/Pr	Best A/Pr	Best A/Sz	Imbal Qty	Prod Stat	Est Open Price St
Series:	AAPL AAPL 19JAN13 210.00 C							P/S: 03/03										
10:54:55:432	Quote	41	$134.50	$138.95	10			$134.50	$138.25	$134.50	$138.25						Open	
10:54:57:812	Quote	41	$134.50	$138.85	11			$134.50	$138.25	$134.50	$138.25						Open	
10:54:58:338	Quote	41	$134.50	$138.90	11			$134.50	$138.25	$134.50	$138.25						Open	
10:55:00:358	Quote	41	$134.50	$138.95	21			$134.50	$138.25	$134.50	$138.25						Open	
10:55:00:381	Quote	41	$134.50	$138.95	31			$134.50	$138.25	$134.50	$138.25						Open	
10:55:00:667	Quote	51	$134.50	$138.95	41			$134.50	$138.25	$134.50	$138.25						Open	
10:55:01:650	LSale/Pr					$137.03	2	$134.50	$138.95								Open	
10:55:01:676	Quote	51	$134.50	$138.90	11			$134.50	$138.25	$134.50	$138.25						Open	
10:55:01:706	Quote	41	$134.50	$138.90	11			$134.50	$138.25	$134.50	$138.25						Open	
10:55:01:718	Quote	31	$134.50	$138.90	11			$134.50	$138.25	$134.50	$138.25						Open	
10:55:01:897	Quote	11	$135.95	$138.90	12			$135.95	$137.85	$134.55	$137.85						Open	

Quote Types: Bold Red=manual(PAR)

Export PDF Export XLS

Quote summary information can be viewed by clicking on the **QT** link.



for Trade Date: 05/17/2011

Trade Date:	05/17/2011	Session:	W_MAIN	Start Time:	10:54:51.649	End Time:	10:55:11.649
P/S:	All	Underl.:	AAPL	Class:	AAPL	All Series:	N
Firm:	All	MM:	All	C. Firm:	All	Refresh	
Quote Event Type:	All						

Export PDF Export XLS

Quote Time	Quote Event	Buy/Sell	Bid Qty	Bid Price	Ask Price	Ask Qty	Cancel Reason	UserAcr/LogID	Trade Qty	Trade Price	Remn Qty
Series:	AAPL AAPL 19JAN13 210.00 C							P/S: 03/03			
10:54:55:431	UpdateQte	Sell	10	$134.40	$139.40	10		WXZ-WWE			
10:54:55:432	BQ-Open		41	$134.50	$138.95	10		Best			
10:54:57:812	UpdateQte	Sell	11	$134.50	$138.85	11		HZA-HZ05			
10:54:57:812	BQ-Open		41	$134.50	$138.85	11		Best			
10:54:58:338	UpdateQte	Sell	11	$134.50	$138.90	11		HZA-HZ05			
10:54:58:338	BQ-Open		41	$134.50	$138.90	11		Best			
10:55:00:358	UpdateQte	Sell	11	$134.50	$138.95	11		HZA-HZ05			
10:55:00:358	BQ-Open		41	$134.50	$138.95	21		Best			
10:55:00:381	UpdateQte	Sell	10	$134.50	$138.95	10		TIS-TIS			
10:55:00:381	BQ-Open		41	$134.50	$138.95	31		Best			
10:55:00:667	UpdateQte	Sell	10	$134.50	$138.95	10		BMK-BMK			
10:55:00:667	BQ-Open		51	$134.50	$138.95	41		Best			
10:55:01:650	LSale/Pr-Open							Best	2	$137.03	
10:55:01:676	UpdateQte	Sell	11	$134.50	$138.90	11		HZA-HZ05			
10:55:01:676	BQ-Open		51	$134.50	$138.90	11		Best			
10:55:01:690	UpdateQte	Sell	10	$134.50	$139.20	10		TIS-TIS			

Export PDF Export XLS

Quote Types: Red=Quote, Black=Market Condition, Green=Fill Quote

Click **Refresh** at anytime to update the search results.

CTMR Trades

The CTMR trades display allows you to view trade match information for CBOE*direct*.

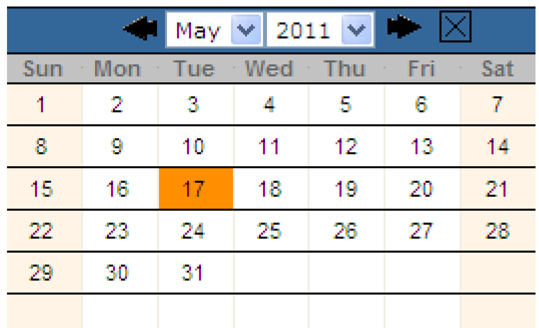
- Select the trading session from the **Session** drop down list.

  Note: CTMR trades are not available for the OneChicago, CFE Options and Futures sessions.

- The date of the request defaults to the current business day and is displayed in the **Trade Date** text box.

- To choose a previous trading day, click on the calendar button. The following calendar window will display.

  Note: The data warehouse maintains trade information for three years.



- Click on the trade day you wish to query. The date will display in the **Trade Date** text box.

- Choose the time of your request as near real time by selecting the **Near Real Time** checkbox. If you would like to select a fixed time range, deselect the **Near Real Time Monitoring** checkbox. Enter the **Start Time** and **End Time** by, hour:minutes:seconds:milliseconds (i.e. Start Time: 10:48:00:000, End Time: 13:55:00:000).

  Note: The maximum valid time range is 20 minutes.

- Class/Series selection by post and station (**P/S**)

  - To query all the class and series at every post/station, select the **P/S** checkbox. The **P/S** drop down list will gray out, defaulting to query **ALL** post/stations.

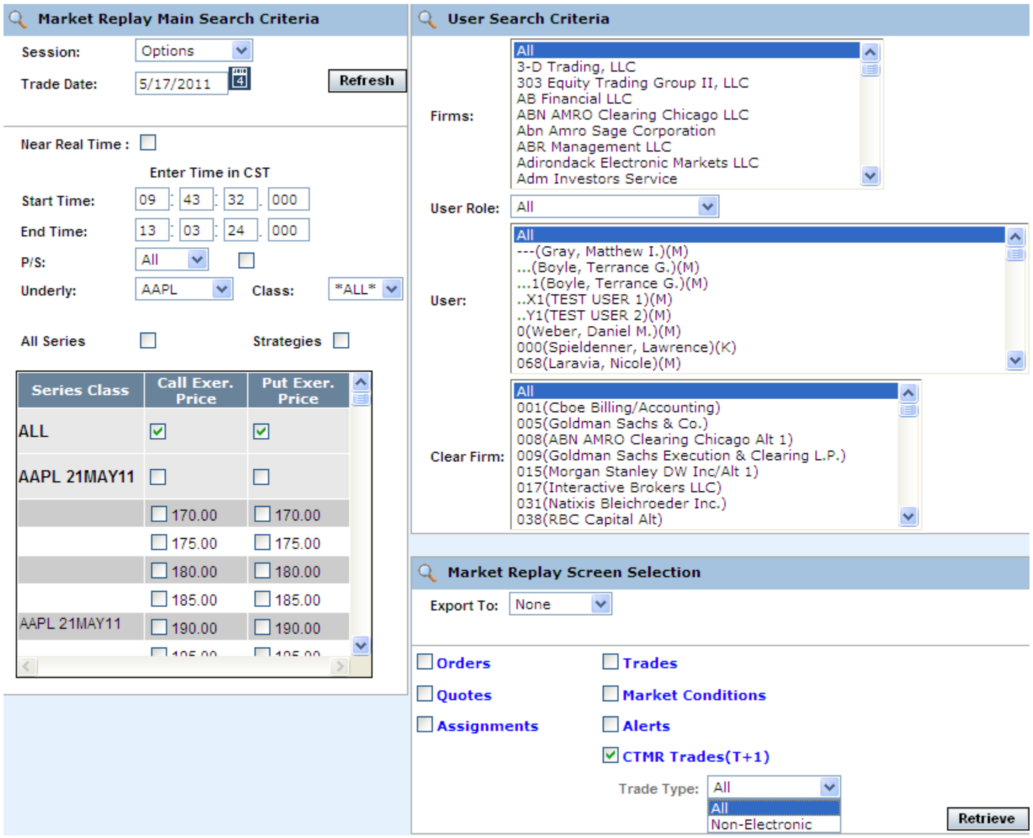
  - If you wish to generate data for all the class and series activity for a specific Post and Station, select the Post/Station from the **P/S** drop down list box.

- Class/Series selection

  - Select the underlying security from the **Underly** drop down list box or select a class from the **Class** drop down list box. Select **ALL** for both to retrieve all class and series information.

  - Specify the series you are interested in viewing by clicking on the corresponding checkbox.

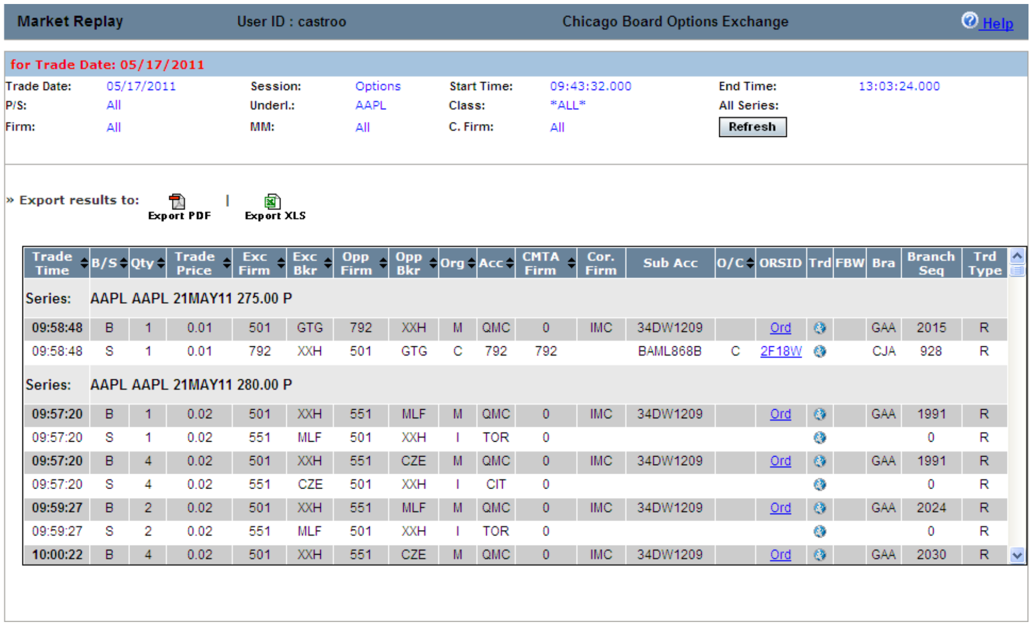
    Note: You must select a series, clearing firm or broker in order to retrieve the data.



- To further filter your request, select to retrieve **CTMR Trades (T+1)**.

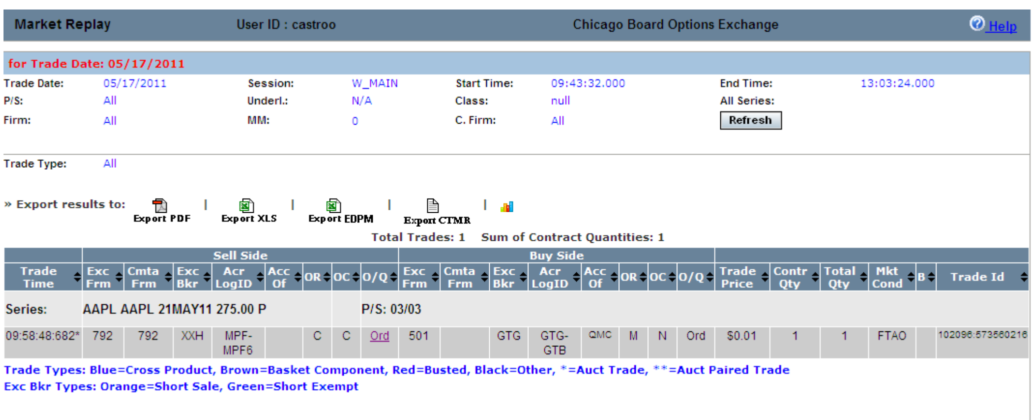
- To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the *Customize and Export Data* section, page 39.

- If you are satisfied with your selections and would like to view the data, click **Retrieve**. The **CTMR** window will display with the requested data.



The example above shows trade match data for the AAPL class that occurred on May 17, 2011 from 09:43:32 to 13:03:24.

From the Trd (Trade) column, click on the Globe icon to view CBOEdirect trade history.



To save the query results to an Excel, PDF, Graph or Graph PDF format, select either format from the **Export To**: drop down list. For export details, refer to the *Customize and Export Data* section, page 39.

Ending a Market Replay Session

Exit the System

To exit the Market Replay system, click **Logout**. The application will be closed and you will be returned to your system desktop.

Section 2: Reference Guide

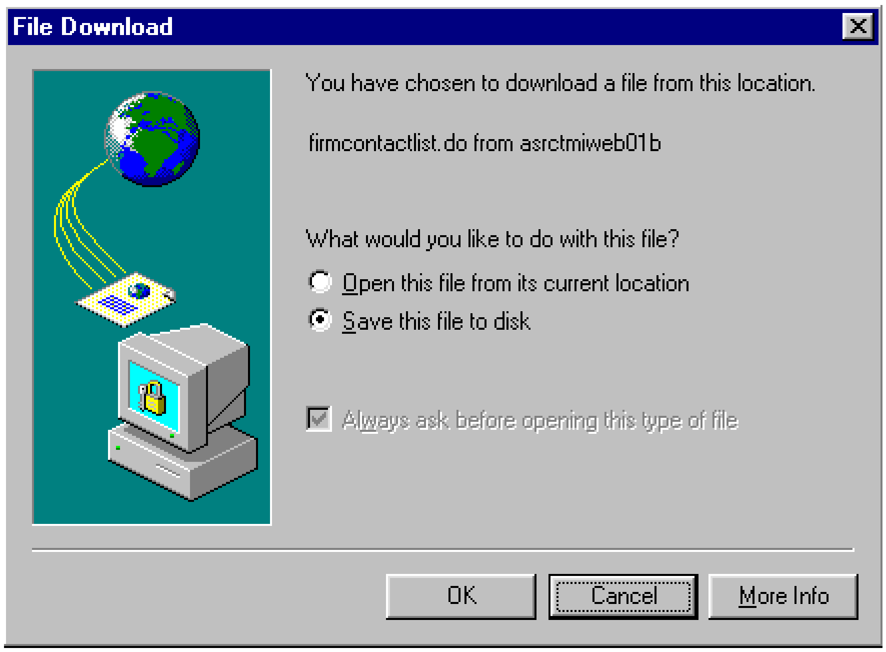
Customize and Export Data

Exporting Data

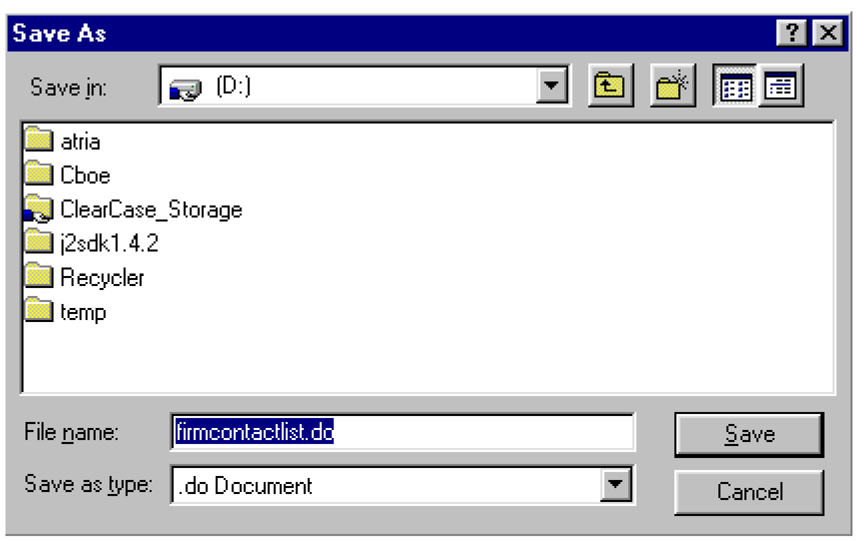
CTM windows that exhibit data in column format can be exported to different file formats.

Export to CSV Format

- Click **CSV** (Comma Separated Values). The File Download window will display. The window defaults to **Save this file to disk**.



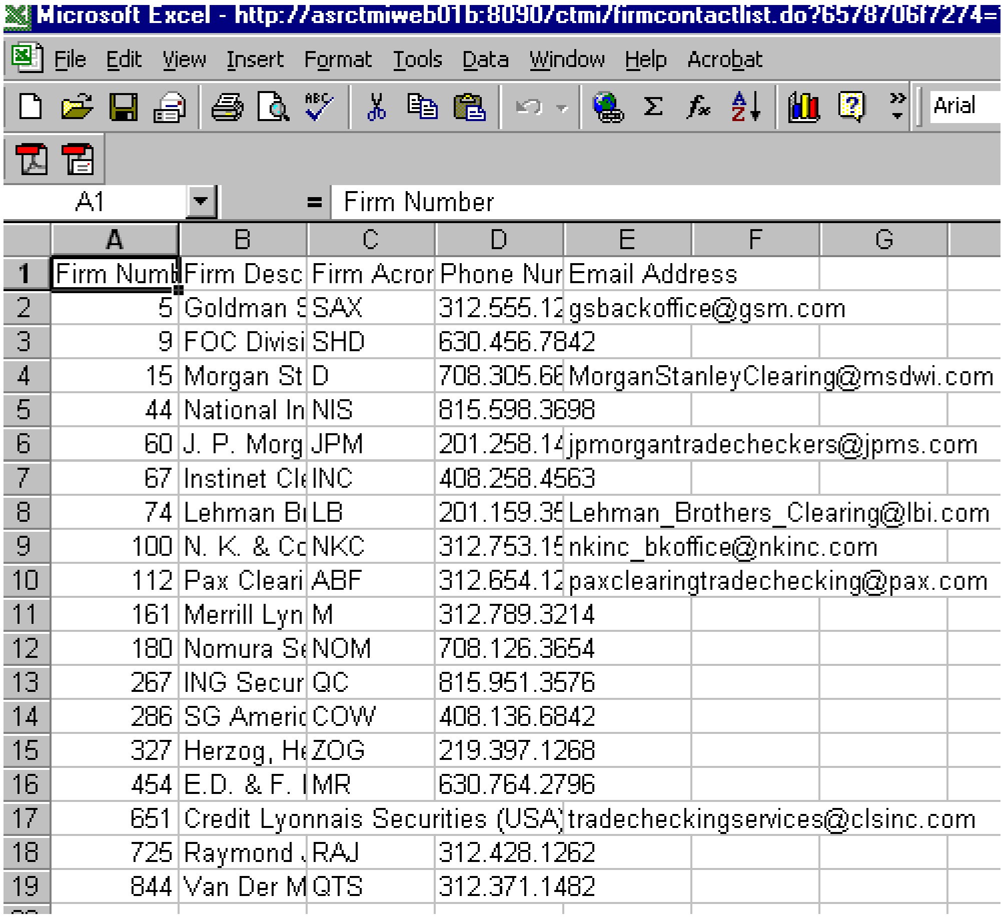
- Click **OK**. The Save As window displays.



- Select the location where you want to save the file and enter the file name.

- Click **Save**. Your file will be saved in CVS format.
- To exit the window without saving, click **Cancel**.

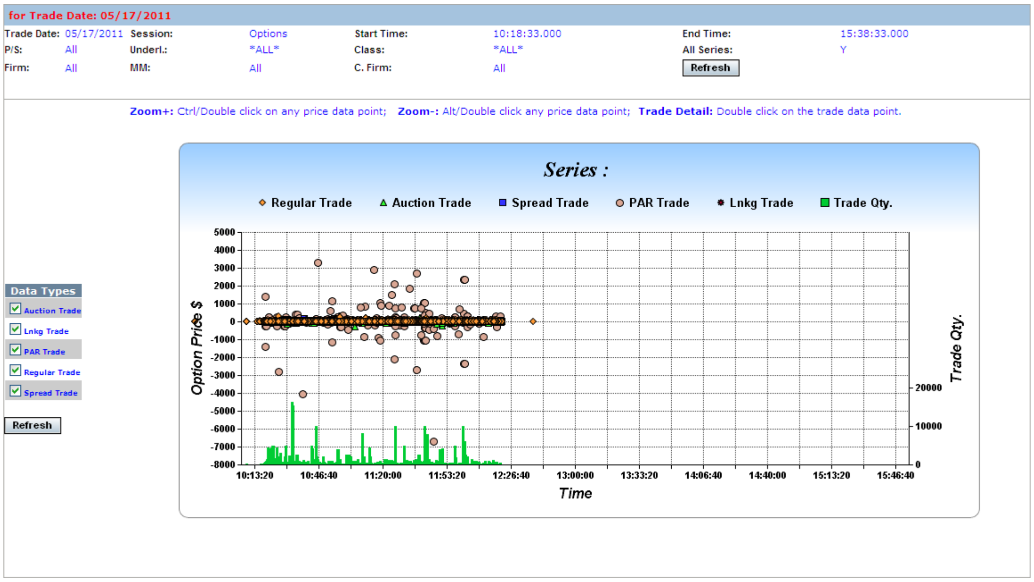
Export to Excel
If you wish to export the data to an Excel spreadsheet, click **Excel**. The system will open an Excel window and export the data.



	A	B	C	D	E	F	G
1	Firm Numb	Firm Desc	Firm Acror	Phone Nur	Email Address		
2	5	Goldman S	SAX	312.555.12	gsbackoffice@gsm.com		
3	9	FOC Divisi	SHD	630.456.7842			
4	15	Morgan St	D	708.305.66	MorganStanleyClearing@msdwi.com		
5	44	National In	NIS	815.598.3698			
6	60	J. P. Morg	JPM	201.258.14	jpmorgantradecheckers@jpms.com		
7	67	Instinet Cl	INC	408.258.4563			
8	74	Lehman Br	LB	201.159.35	Lehman_Brothers_Clearing@lbi.com		
9	100	N. K. & Co	NKC	312.753.15	nkinc_bkoffice@nkinc.com		
10	112	Pax Cleari	ABF	312.654.12	paxclearingtradechecking@pax.com		
11	161	Merrill Lyn	M	312.789.3214			
12	180	Nomura Se	NOM	708.126.3654			
13	267	ING Secur	QC	815.951.3576			
14	286	SG Americ	COW	408.136.6842			
15	327	Herzog, He	ZOG	219.397.1268			
16	454	E.D. & F. I	MR	630.764.2796			
17	651	Credit Lyonnais Securities (USA)			tradecheckingservices@clsinc.com		
18	725	Raymond J	RAJ	312.428.1262			
19	844	Van Der M	QTS	312.371.1482			

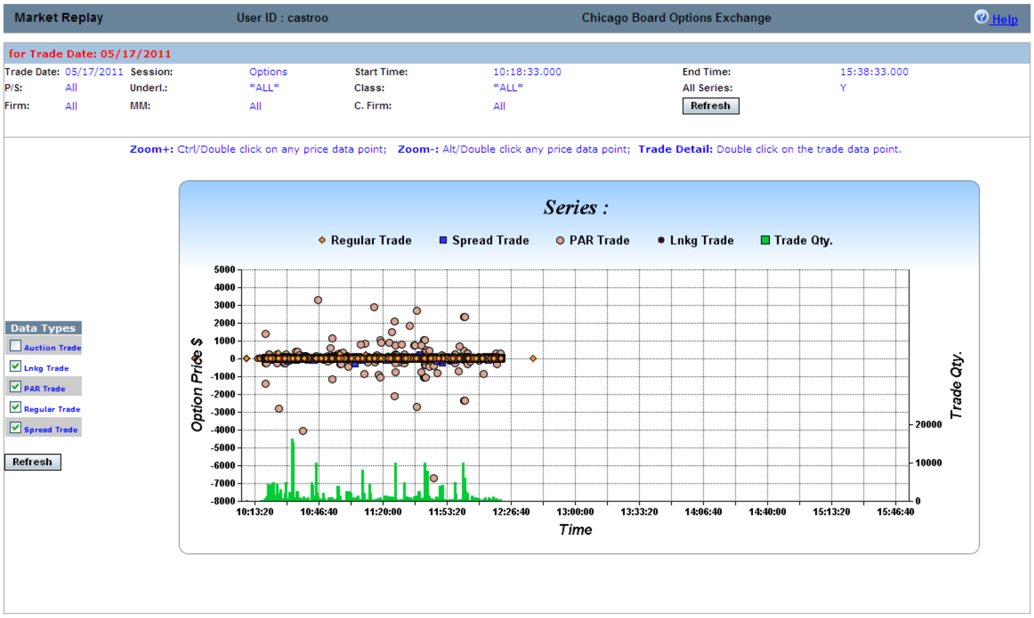
Export to a Graph

If you wish to export the data to a graph, select **Graph** from the **Export To** drop down list or click on the graph icon,  when it appears in the search results. The Market Replay system will export the data to a graph.



Graphs will appear according to the type of data being reported. In the example above, trade data was converted to graph format. The details below pertain to the above trade data graph but can apply to other data types such as orders or quotes.

- Hover on any of the price data points to display the trade data.
- Double-click on any of the price data points to open the Trade Summary window for that particular trade.
- The graph above displays data types for trades that occurred through regular trades, spreads, auctions, linkage and PAR. To remove a data type from the graph, deselect the type from the Data Types legend and click **Refresh**. The graph will rebuild without the deselected data type. In the example below, trades that occurred through auctions were removed from the graph display.



- Click **Refresh** at anytime to update the window.