



# Specifications Document for the RTRS Subscription Service



## Revision History

2.6	January 2008	Original Documentation
2.7	August 2012	Updated to reflect addition of new field “Unable to Verify Dollar Price Indicator” and change to the value disseminated in the “Par Traded” field for trades over \$1 million from “1MM+” to “MM+”. Updated business continuity information.
2.8	November 2012	Changes announced in August 2012 became effective. Updated the “Par Traded” field to reflect that trades with a par amount of \$5 million or greater will show par value as “MM+” until five days after the trade date.
2.9	August 2015	Updated to reflect new file retrieval process for bulk trade data files via MSRB Gateway and the hours for Email Support under the Resources and Support page.
3.0	July 2016	Updated to reflect addition of a new field for an indicator for customer trades involving non-transaction-based compensation arrangements (NTBC), a new field for an indicator for inter-dealer transactions executed with or using the services of an alternative trading system (ATS), and a change to the value disseminated in the “Yield” field for customer trades as described in MSRB Notices 2015-07 and 2016-09.

## Table of Contents

<b>Resources and Support .....</b>	<b>4</b>
<b>Introduction .....</b>	<b>5</b>
<b>Background .....</b>	<b>6</b>
<b>RTRS System Hours .....</b>	<b>7</b>
<b>Real-Time Trade Data .....</b>	<b>8</b>
<b>Replays And Snapshots .....</b>	<b>9</b>
<b>Access Real-Time Trade Messages .....</b>	<b>11</b>
<b>Bulk Trade Files .....</b>	<b>12</b>
<b>Access Day Replay And Bulk Trade Files .....</b>	<b>13</b>
<b>Trade Data Fields .....</b>	<b>14</b>
<b>System Messages .....</b>	<b>17</b>
<b>Trade Message Format .....</b>	<b>18</b>
<b>Appendix A .....</b>	<b>24</b>

## Resources and Support

MSRB Website: [www.msrb.org](http://www.msrb.org)

EMMA Website: <http://emma.msrb.org>

For assistance, contact MSRB Support at 202-838-1330 or

[MSRBsupport@msrb.org](mailto:MSRBsupport@msrb.org)

Live Support: 7:30 a.m. - 6:30 p.m. ET

Email Support: 7:00 a.m. - 7:00 p.m. ET

Municipal Securities Rulemaking Board

1300 I Street NW, Suite 1000

Washington, DC 20005

Tel: 202-838-1500

Fax: 202-898-1500

## Introduction

The Municipal Securities Rulemaking Board (MSRB) protects investors, issuers of municipal securities, entities whose credit stands behind municipal securities and public pension plans by promoting a fair and efficient municipal market. The MSRB fulfills this mission by regulating securities firms, banks and municipal advisors that engage in municipal securities and advisory activities. To further protect market participants, the MSRB promotes disclosure and market transparency through its Electronic Municipal Market Access (EMMA®) website, provides education and conducts extensive outreach. The MSRB has operated under Congressional mandate with oversight by the Securities and Exchange Commission since 1975.

The EMMA website is a centralized online database operated by the MSRB that provides free public access to official disclosure documents and trade data associated with municipal bonds issued in the United States. In addition to current credit rating information, the EMMA website also makes available real-time trade prices and primary market and continuing disclosure documents for over one million outstanding municipal bonds, as well as current interest rate information, liquidity documents and other information for most variable rate municipal securities.

The MSRB's Real-Time Transaction Reporting System (RTRS) is designed to increase price transparency through the collection and dissemination of information about transactions occurring in the municipal securities market.

The purpose of this document is to provide the specifications and requirements to access, retrieve and understand the trade data from RTRS.

## Background

The MSRB requires dealers in most instances to report their municipal securities transactions to the MSRB within 15 minutes of the time of trade.<sup>1</sup> Municipal securities transactions are published in real-time messages and in bulk files.

RTRS provide a Real-Time data feed which is sent to subscribers over the Internet or by leased lines using MQ Series or a TCP Socket.<sup>2</sup> For business continuity purposes, RTRS also provides a Day Replay file containing all the messages sent in the feed during the day. The Real-Time data feed and the Day Replay File consist of messages about transactions processed by RTRS that day, regardless of their trade date, on a “first in, first out” basis.

Bulk Trade files are posted by 6:00 a.m. Eastern Time each day showing a summary of all the published transactions for a single trading day regardless of the day the trade report was processed. For each trade date, three files are published: the T+1, T+5 and T+20 files. The T+1 file is published on the next business day after trade date. The T+5 file is published a week later and replaces the T+1 file. The T+20 file is published 20 business days after trade date and replaces both of the earlier Bulk Trade Files.

Bulk Trade files remain available securely through the MSRB Gateway system for up to 20 days after the trade date. For trade data beyond 20 days, the MSRB provides bulk trade files for purchase.<sup>3</sup>

---

<sup>1</sup> Dealers have more time to report transactions in certain cases. These transactions still will be reported to subscribers immediately upon receipt at RTRS.

<sup>2</sup> Subscribers are responsible for all telecommunications charges for leased lines.

<sup>3</sup> Information on the MSRB Data Subscription Services are available on [www.msrb.org](http://www.msrb.org).

## RTRS System Hours

RTRS publishes transaction data in real-time each business day beginning at 7:00 a.m. Eastern Time. RTRS continues to publish until all data that was required to be published that day is successfully published.

Real-time transactions submitted to RTRS after 8:00 p.m. Eastern Time will be sent when RTRS begins publishing the next RTRS business day.<sup>4</sup>

Bulk trade files for previous days will be available at the RTRS website each day from 6:00 a.m. to 10:00 p.m. Eastern Time or on CD-ROM at the option of the subscriber or purchaser.

### Timeline (all times are Eastern Time)

#### **By 6:00 a.m.**

Heartbeat for the day's real-time feed will begin.  
T+1, T+5 and T+20 reports are made available.

#### **7:00 a.m. to 7:30 a.m.**

Real-time feed: RTRS generated modifications for trades previously submitted where par can now be disseminated.  
Real-time feed: All new trade messages submitted to RTRS since 8:00 p.m. system close on the previous business day.

#### **7:30 a.m. until finished (after 8:00 p.m)**

Real-time feed: All new trade messages submitted to RTRS between 6:30 PM and 8:00 PM system close.  
Heartbeats end for the day after system close message.

#### **By Midnight**

Day Replay file for that day.

---

<sup>4</sup> Dealers are required to submit transactions to RTRS in real-time up to 6:30 p.m Eastern. RTRS, however, continues to receive messages until 8:00 p.m. and continues to broadcast all transactions received until they all have been sent.

## Real-Time Trade Data

RTRS real-time data is available by a streaming “real-time push.” RTRS provides both primary and backup service if requested. Each trade message has a unique Sequential Number and a Broadcast Time indicating when the message was published. The Sequential Number and Broadcast Time for a message is the same for all subscribers. Modification and cancellation messages submitted by dealers are disseminated in real time and will contain a complete set of fields.

Trade messages are sent in comma-delimited format using numerically tagged fields. Tags that have a null value in a particular trade message are omitted. This approach provides version independence and allows the possibility for new fields to be added as needed in the future. Messages have the same format on both the TCP Socket and MQ Series feeds. If a subscriber connects after the day's broadcasting has begun, it is the subscriber's responsibility to request any missed messages. One comprehensive file of all real-time trade messages and system open and closed messages sent during the day are made available the next day in the same delimited, tagged format. Sample messages are attached in Appendix A.

To receive real-time trade messages via a TCP Socket, subscribers are responsible for proper firewall configuration. Subscribers must maintain an open Socket connection and must read data from the Socket as trade and heartbeat messages are streamed from the MSRB. Heartbeat messages are sent once every 60 seconds in the absence of real-time messages, even in the event that a system message has been broadcast indicating that system processing has been interrupted. Heartbeat messages contain a timestamp but do not have a Sequential Number. Heartbeat messages indicate that the connection is working properly but there are no messages to send. A two-character CRLF marks the end of each message. If subscribers fail to receive trade messages or heartbeats for more than 120 seconds, the subscriber should assume that there has been a connection failure, then proceed to close its current connection, and attempt to reconnect to the RTRS dissemination service.

To receive real-time trade messages via MQ Series, subscribers must license and configure their own MQ software. There are no heartbeats on MQ Series connections. A two-character CRLF is also present on the MQ Series messages.



## Bandwidth Requirements

The maximum size of each real-time message is expected to be less than 500 bytes; an entire daily real-time feed is expected to total less than 25 megabytes. It is also expected that the real-time system will experience sharp peaks of activity. It is recommended, therefore, that subscribers who do not wish to experience occasionally lengthy delays make 256K bandwidth or more available for the real-time feed.

To meet the bandwidth requirements, additional information on RTRS website addresses or how to install dedicated leased lines can be provided to subscribers as requested.

## Replays and Snapshots

If a subscriber detects that a message or a series of messages was missed, the subscriber can request a trade message replay or snapshot. Requesting a message replay will prompt the system to begin re-sending all messages from a specific point in the real-time feed.

Requesting a snapshot will prompt the system to re-send only one or more specified messages in a range by Sequential Number.

Replay and snapshot requests are for trade messages only; system messages are not re-sent. Subscribers will receive an error message if a requested Sequential Number is invalid.



Note that replay and snapshot messages do not apply to subscribers using Websphere MQ which is designed to guarantee delivery of the real-time data messages.


To request a message replay, the subscriber must send a message with the Sequential Number from which they would like the replay to start. A two-character CRLF marks the end of each message. Trade messages will be re-sent from that Sequential Number forward until the subscriber has caught up to the most recent message. Message replay is only available for the current day's messages. The prior day's messages can only be retrieved from the other files made available. It is important to note that during a replay, a subscriber may receive a trade message with the same Sequential Number a second time. During a replay subscribers should use the Sequential Number and RTRS Control Number to ensure older trade modifications do not overwrite newer trade

modifications. A subscriber should pull replay trade data prior to 7:00 a.m and after 6:00 p.m. Eastern to minimize potential data quality issues.

To request a message snapshot, a subscriber must send a snapshot request message containing the range of Sequential Numbers of the trade messages to be re-sent. A two-character CRLF marks the end of each message. Trade messages that are sent as a result of a snapshot request are sent interspersed with current trade messages. A snapshot request is available only for the current day's trade messages. It is important to note that after a snapshot request, a subscriber may receive a trade message with a Sequential Number out of order. As with a replay request, subscribers should use the Sequential Number and RTRS Control Number to ensure older trade modifications do not overwrite newer trade modifications. A subscriber should execute a snapshot in batches of 100 messages, with a three to five second pause between requests to minimize potential data quality issues.

### Replay and Snapshot Messages

Message	Format	Example
Replay	1=R,400=Sequential Number	1=R,400=5021
Snapshot	1=S,300=Beginning Sequential Number,301= Ending Sequential Number	1=S,300=1472,301=1473

 A Day Replay file also is available to real-time subscribers. The Day Replay file contains all the messages broadcast during a business day. The file naming convention for Day Replay file is "R*mmddy*.LOG", where *mmddy* represents month, day and year of the day the trade reports were disseminated.

For more information about the Day Replay file, see the Accessing the Day Replay and Bulk Trade Files section.

## Access Real-time Trade Messages


To begin receiving real-time trade messages, a subscriber must log in. The login message consists of the subscriber's name and password. To obtain a username and password for accessing real-time trade messages, contact MSRB Support at 202-838-1330.

A two-character CRLF marks the end of each message. If the name and password are correct, the first message returned will either be a trade or a heartbeat message. If authentication fails, subscribers will receive a login failure error message; the server then terminates the connection and the subscriber will need to reconnect.

### Login Message

Message	Format	Example
Login	1=L,200=username,201=password	1=L,200=jdoe,201=12345678

Subscribers receiving real-time trade messages via a TCP Socket will be provided with an MSRB Gateway account. Once an MSRB Gateway account is established, users can manage their passwords. To confirm your access to, log in at [www.msrb.org](http://www.msrb.org) using the username and password provided.

 MSRB Gateway subscriber passwords expire on an annual basis. Email reminders are sent to the address provided on the MSRB Gateway account to notify users when their passwords are about to expire.

## Bulk Trade Files

In addition to real-time data, the MSRB provides a daily data file by 6:00 a.m. consisting of the trades with the previous business day's trade date (T+1 Reports). Files consisting of trades from five business days (T+5 Reports) and 20 business days (T+20 Reports) after the trade date are also published.<sup>5</sup>

The T+5 and T+20 Reports contain exact par values for those transactions with a par value over \$5 million. In the T+1 Report they were previously shown with a par value of "MM+" along with any modifications received by RTRS since the T+1 report was produced.

Trade data is made available in the same format as the real-time messages for the convenience of real-time subscribers, or in common comma-delimited format for easy importation into commonly used database and spreadsheet applications. The common comma-delimited format is not numerically tagged like the real-time messages. Each trade transaction shows the most recent version of the trade in RTRS at the time the file was created (for example, if a trade has been modified only its modification will appear, its previous version will not). Cancelled trades are not included. Only the trade files produced in the last 10 business days are available for download at any given time. A written request will need to be submitted to MSRB for trade files not available on the FTP site.


The file naming convention for the data files are shown below. (Note: *ddmmyyyy* represents day, month and year in all file names)

T+1 tagged file	T1- <i>ddmmyyyy</i> TGD.TXT
T+1 untagged file	T1- <i>ddmmyyyy</i> .TXT
T+5 tagged file	T5- <i>ddmmyyyy</i> TGD.TXT
T+5 untagged file	T5- <i>ddmmyyyy</i> .TXT
T+20 tagged file	T20- <i>ddmmyyyy</i> TGD.TXT
T+20 untagged file	T20- <i>ddmmyyyy</i> .TXT

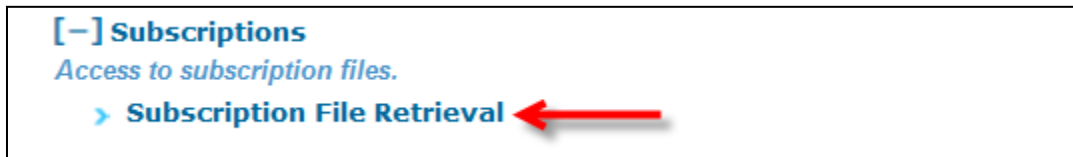
<sup>5</sup> Subscribers to the T+5 Report have access to the T+20 Report which contains transactions showing the effects of any modifications received at RTRS since the T+5 report was produced. When processing a T+5 or T+20 report, first delete all prior trades having that trade date, as some trades may have been cancelled or modified, and the T+20 report only shows current status with cancelled trades omitted.

## Access Day Replay and Bulk Trade Files

To obtain a username and password for accessing the Bulk Trade Files or the Day Replay file, subscribers must request an MSRB Gateway account from MSRB Support at 202-838-1330. To confirm your access, log in at [www.msrb.org](http://www.msrb.org) using the username and password provided. Once an MSRB Gateway account is established, users can manage their passwords using the MSRB Gateway website.

 MSRB Gateway subscriber passwords expire on an annual basis. Email reminders are sent to the address provided on the MSRB Gateway account to notify users when their passwords are about to expire.

From the Gateway Main Menu, expand the **Subscriptions** option and click on




### Subscription File Retrieval.

A list of files appears on the screen. Click on the file you would like to download. The most recent files posted appear under the heading **Current**. Files from prior days appear under the heading **Archive**.

Subscribers who wish to establish an automated computer-to-computer connection must write and install a file retrieval application for that purpose. The file retrieval page will accept a *<target>* variable which will allow the application to download only the required files:

Target	Result
<i>Replay</i>	Downloads current Day Replay files
<i>Comprehensive-Fixed</i>	Downloads current Bulk Trade fixed-width format files
<i>Comprehensive-TDG</i>	Downloads current Bulk Trade tagged format files
<i>&lt;nothing&gt;</i>	Downloads all current Day Replay and Bulk Trade Data Files

 The MSRB provides resources for developers, including example PowerShell, Linux scripts and related ReadMe files, in a file directory available through MSRB Gateway. To access the developer resources, click on the **Subscription File Retrieval** link, and then click on the **resources for developers, including**

**sample scripts, are located here** link. The contents of the directory may be updated from time to time.

## Trade Data Fields

The trade data fields that are disseminated for a trade are listed below:

### **Message Type**

Type of message sent in the real-time broadcast; a trade message, a heartbeat message or a system message. Only used in real-time messages, not in bulk files.

### **Sequential Number**

Unique sequential number of the trade message. If more than one message has been published for a trade due to modification or cancellation, the trade is uniquely identified by the RTRS ID described below.

### **RTRS Control Number**

The RTRS ID for the transaction. This may be used to apply subsequent modifications and cancellations to an initial transaction.

### **Trade Type Indicator**

Type of trade: an inter-dealer trade, a purchase from a customer by a dealer, or a sale to a customer by a dealer.

### **Transaction Type Indicator**

An indicator showing that the message is a new transaction, or modifies or cancels a previously disseminated transaction. Only used in real-time messages, not in bulk files.

### **CUSIP**

The CUSIP number of the issue traded.

### **Security Description**

Text description of the security.

### **Dated Date**

Dated date of the issue traded.

### **Coupon (if available)**

Interest rate of the issue traded. For zero-coupon bonds, this field is blank.

**Maturity Date**

Maturity date of the issue traded.

**When-Issued Indicator (if applicable)**

Indicates whether the issue traded on or before the issue's initial settlement date.

**Assumed Settlement Date (if applicable)**

For new issues where the initial settlement date is not known at the time of execution, this field is a date 15 business days after trade date. If this field is populated there will be no data in settlement date.

**Trade Date**

The date the trade was executed.

**Time of Trade**

The time of trade execution reported by the dealer.

**Settlement Date (if known)**

The settlement date of the trade, if known. If this field is populated there will be no data in assumed settlement date.

**Par Traded**

The par value of the trade. Trades with a par amount over \$5 million will show par value as "MM+" until five days after their trade date.

**Dollar Price**

The dollar price of the trade. For customer trades, the dollar price of the trade will be disseminated, as reported by the dealer.

**Yield (if applicable)**

The yield of the trade. For customer and inter-dealer trades, yield is calculated by RTRS when it can be computed from dollar price.

**Broker's Broker Indicator (if applicable)**

An indicator used in inter-dealer transactions that were executed by a broker's broker, including whether it was a purchase or sale by the broker's broker.

**Weighted Price Indicator (if applicable)**

An indicator that the transaction price was a “weighted average price” based on multiple transactions done at different prices earlier in the day to accumulate the par amount needed to make this transaction.

**List Offering Price/ Takedown Indicator (if applicable)**

- An indicator showing that the transaction price was reported as a trade in a new issue by a sole underwriter, syndicate manager, syndicate member, selling group member or distribution participant to a customer at the published list offering price on the first day of trading.
- An indicator showing that the transaction was by a sole underwriter or syndicate manager to a syndicate member, selling group member, or distribution participant (“RTRS Takedown Transaction”).

**RTRS Publish Date**

For real time data, the date the message was published to subscribers. For bulk files, the date the data was produced for the report.

**RTRS Publish Time**

The time the message was published to subscribers. For bulk files, the time the data was produced for the report.

**Version Number**

Version number of the message or file format used in the message or file.

**Unable to Verify Dollar Price Indicator (if applicable)**

An indicator that the dollar price calculated by the MSRB does not match the dollar price submitted by the dealer, but falls within a one dollar tolerance for dissemination.



## System Messages

RTRS sends messages daily to indicate the when transaction data publishing begins (open) and ends (close). RTRS sends an open message at the start of business each day. The open message also includes modifications showing exact par values for transactions that were initially broadcast with a par value of “MM+.”<sup>6</sup>

RTRS sends a close message to advise subscribers that it is closed for the day. The close message also contains the final Sequence Number for the day, a count of trades sent during the day and the total par value of trades sent during the day.

Special system messages may be sent if publishing needs to be interrupted. When message publishing is resumed after an interrupt message, the first message subscribers will receive will be a resume message.

---

<sup>6</sup> Transactions with a par value exceeding \$5 million will show a par value of “MM+” until five days after trade date.

## Trade Message Format

### Trade Message and Bulk Files in Trade Message Format

Field Name	Field ID	Always Present?	Values	Format/Length
Message Type	1	Y (only in used in trade messages)	T - Trade	One character
Sequential Number	2	Y (only in used in trade messages)		Up to 16 digits
RTRS Control Number	4	Y		Up to 16 characters
Trade Type Indicator	5	Y	D - Inter-dealer P - Purchase from Customer S - Sale to Customer	One character
Transaction Type Indicator	6	Y (only in used in trade messages)	I - Instruct M - Modify C - Cancel	One character
CUSIP	7	Y		Nine characters including the checksum digit
Security Description	8	Y		Up to 120 characters of free format text
Dated Date	9	Y		<i>yyyymmdd</i>
Coupon	10	N		Fixed decimal, up to 6 digits <i>nnn.nnn</i>
Maturity Date	11	Y		<i>yyyymmdd</i>
When-Issued Indicator	12	N	Y - When Issued	One character
Assumed Settlement Date	13	N		<i>yyyymmdd</i>

### Trade Message and Bulk Files in Trade Message Format (Cont)

Field Name	Field ID	Always Present?	Values	Format/Length
Trade Date	14	Y		<i>yyyymmdd</i>
Time of Trade	15	Y		<i>hhmmss (24 hour time)</i>
Settlement Date	16	N		<i>yyyymmdd</i>
Par Traded	17	Y		Fixed decimal, up to 12 digits <i>nnnnnnnnnn.nn</i> or "MM+"
Dollar Price	18	Y		Fixed decimal, up to seven digits <i>nnnn.nnn</i>
Yield	19	N		Fixed decimal, up to six digits, may be negative <i>[-]nnn.nnn</i>
Broker's Broker Indicator	20	N	S - Broker's Broker sale P - Broker's Broker purchase	One character
Weighted Price Indicator	21	N	Y - Weighted Price	One character
List Offering Price/Takedown Indicator	22	N	Y – List Offering Price/Takedown	One character
RTRS Publish Date	23	Y		<i>yyyymmdd</i>
RTRS Publish Time	24	Y		<i>hhmmss</i>
Version Number	25	Y		Up to four digits, fixed decimal <i>nn.nn</i>

## Trade Message and Bulk Files in Trade Message Format (Cont)

Field Name	Field ID	Always Present?	Values	Format/Length
Unable to Verify Dollar Price Indicator	26	N	Y – Unable to Verify Dollar Price	One character
Alternative Trading System (ATS) Indicator	27	N	Y - Alternative Trading System	One character
Non-Transaction-Based Compensation Arrangements (NTBC) Indicator	28	N	Y - Non-Transaction-Based Compensation Arrangements	One character

## Heartbeat Message Format

Field	Field ID	Always Present?	Values	Format
Message Type	1	Y	H	One character
Timestamp	3	Y		<i>hhmmss</i>

### System Open/Close Message Format

Field	Field ID	Always Present?	Values	Format
Message Type	1	Y	O – Open C - Close I – Interrupted, R - Resumed	One character
Timestamp	3	Y		<i>hhmmss</i>
Last Sequential Number Sent	100	Y (On Open and Close messages)		Up to 16 digits
Total Day's Trades Sent*	101	Y (On Close message)		Up to seven digits
Total Day's Par Amount*	102*	Y (On Close message)		Up to 14 digits, fixed decimal <i>nnnnnnnnnnnnnn.nn</i>



The values for “Total Day’s Trades Sent” (Field ID 101) and “Total Day’s Par Amount” (Field ID 102) are the sum for those trades broadcast that day that traded that day (*i.e.*, with that day’s trade date). “Total Day’s Trades Sent” is a sum of those trades, not of their messages (*i.e.*, if there is more than one message for a trade that trade still is counted only once). “Total Day’s Par Amount” is a sum of all the pars for those trades as they stand when the system message is sent (*i.e.*, cancellations and modifications to par amounts on these trades is applied). Neither of these values includes trades broadcast that day but traded before that day.

### Error Message Format

Field	Field ID	Always Present?	Values	Format
Message Type	1	Y	E - Error	One character
Timestamp	3	Y		<i>hhmmss</i>
Error Type	500	Y	L – Login failure I – Invalid sequential number requested for replay or snapshot.	One character

## Business Continuity

The MSRB maintains a hot-site from which it provides real-time feed subscribers with a second source for the feed in the event that it can no longer be broadcast from the RTRS primary site. Subscribers will be provided with the IP addresses of the servers at both the production and disaster recovery sites. Only the production site is guaranteed to be available during normal business operations. These sites will be running in parallel as much as possible, however the sequence numbers of the messages distributed from each site and the total number of messages distributed from each site may not match due to differences in processing speeds for each site. The final state of each trade at the end of the day will be identical between the sites.

Should a subscriber elect to connect to only one of the sites at a time, in the event of a communications failure for any reason, it will be the subscriber's responsibility to change their active connection and submit a Replay Request or a snapshot to obtain a missed message. The Day Replay File and Bulk Report Files will continue to be available at the RTRS FTP servers. The RTRS FTP servers maintain redundant services that are transparent to the end user when the connection is made using fully qualified DNS names.

## Appendix A

### Sample System Messages

System Open

1=O, 3=073000, 100=5467995

Trade Message

1=T, 2=1976323, 3=093001, 4=123, 5=D

Heartbeat

1=H, 3=095325

System Close

1=C, 3=183000, 100=98760043, 101=28765, 102=12543982000.00

System Interrupted

1=I, 3=104704

System Resumed

1=R, 3=145632

### Sample Subscriber Messages

Login

1=L,200=username,201=password

Replay Request

1=R,400=Sequential Number

Snapshot Request

1=S,300=Beginning Sequential Number,301= Ending Sequential Number

### Sample Error Messages

Login Failure

1=E, 3=073000, 500=L

Invalid Sequential Number requested for replay or snapshot

1=E, 3=104232, 500=I





## RTRS Subscriber Reports

	<b>Trades included</b>	<b>Modifications</b>	<b>Cancellations</b>	<b>Par Shown</b>
<b>Real-time feed</b>	All sent to RTRS that day by 8:00 p.m. regardless of trade date	All sent to RTRS and all previously submitted trades where par now can be disseminated	All sent to RTRS	“MM+” for trades over \$5 million par and less than T+5
<b>Day Replay</b> (a copy of all messages broadcast real-time throughout one day)	All sent to RTRS that day by 8:00 p.m. regardless of trade date	All sent to RTRS and all previously submitted trades where par now can be disseminated	All sent to RTRS	“MM+” for trades over \$5 million par and less than T+5 on day originally broadcast
<b>T+1 Report</b>	T+1 trade dates only	Latest version of trade only	No	“MM+” for trades over \$5 million par
<b>T+5 Report</b> (includes a separate T+20 report)	T+5 trade dates only	Latest version of trade only	No	All
<b>Historical Data</b> (trades older than T+5)	T+x through y only (timespan requested)	Latest version of trade only	No	All