

# RAKE and SEED Packets Decoded

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## 0.1 Revision History

Date	Version	Notes
11/2025	1.0	Decoded RAKE and SEED sample messages

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# 1 Overview

This document provides a detailed explanation of a sample of packets in the corresponding pcap to facilitate member firms' development efforts. The decoded sample messages follow the TXSE RAKE framing and session protocol and the SEED order entry protocol. Please refer to the TXSE RAKE and SEED protocol specifications for additional details, such as field order, bit length and field type.

The following conventions are used to communicate the details of the decoded packets:

- All images are Wireshark's packet exports:
  - The top two frames depict summary information related to the TXSE sample packet
  - The third frame depicts the networking and application decoded details.
  - The bottom frame depicts the byte offset and the HEX/ASCII representation of the application data.
- Each portion of the decoded TXSE message from the third frame and the corresponding HEX portion in the bottom frame have the same color to help align the decode values with the HEX representation. Some colors are reused for clarity only.

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## 2 RAKE TCP

RAKE TCP is a framing and session protocol built on top of TCP/IP. It defines a payload agnostic framing layer along with a set of authentication and session messages.

### 2.1 LogonRequest Message

The LogonRequest sample message is frame #1 in the pcap file. The TCP data portion (RAKE application payload) begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
1	238.0.0.1	238.0.0.2	TXSE_RAKE_TCP	35	LogonRequest
<p>Frame 1: Packet, 101 bytes on wire (808 bits), 101 bytes captured (808 bits)            Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)            Internet Protocol Version 4, Src: 238.0.0.1 (238.0.0.1), Dst: 238.0.0.2 (238.0.0.2)            Transmission Control Protocol, Src Port: 53730, Dst Port: 4552, Seq: 918269710, Ack: 404551135, Len: 35  <b>TXSE RAKE TCP LogonRequest</b>                Message Length: <u>33</u>                Message Type: <u>'5'</u>                Session: <u>0</u>                SenderComp: <u>OEMANJUL</u>                Token: <u>OEMANJUL</u>                Next Sequence Number: <u>1</u></p>					
<pre> 0000  00 00 00 00 00 00 00 00 00 00 08 00 00 45 00 0010  00 57 57 a8 40 00 40 06 06 f5 ee 00 00 01 ee 00 0020  00 02 d1 e2 11 c8 36 bb af 0e 18 1c f5 df 80 18 0030  00 fb 7d 73 00 00 01 01 08 0a 56 f8 1a 93 ec d9 0040  55 c8 21 00 35 00 00 00 00 00 00 00 00 4f 45 4d 0050  41 4e 4a 55 4c 4f 45 4d 41 4e 4a 55 4c 01 00 00 0060  00 00 00 00 00           </pre>					

## 2.2 LogonResponse Message

The LogonResponse sample message is frame #2 in the pcap file. The TCP data portion (RAKE application payload) begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
2	238.0.0.2	238.0.0.1	TXSE_RAKE_TCP	33	LogonResponse
<p>Frame 2: Packet, 99 bytes on wire (792 bits), 99 bytes captured (792 bits)            Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)            Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)            Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404551135, Ack: 918269745, Len: 33  <b>TXSE RAKE TCP LogonResponse</b>                Message Length: <u>31</u>                Message Type: <u>'1'</u>                Session: <u>4918266356351489172</u>                    Environment: DA11                    Timestamp: Nov 13, 2025 07:52:36.000000000 EST                Next Sequence Number: <u>1</u>                Highest Known Sequence: <u>12000</u>                Response Code: SUCCESS (<u>0</u>)                Number of Stream IDs: <u>3</u>                Instance: <u>1105044219</u></p>					
<pre> 0000  00 00 00 00 00 00 00 00 00 00 08 00 00 45 00  .....E. 0010  00 55 b3 ed 40 00 40 06 aa b1 ee 00 00 02 ee 00  .U..@. .... 0020  00 01 11 c8 d1 e2 18 1c f5 df 36 bb af 31 80 18  .....6..1.. 0030  00 55 f4 a1 00 00 01 01 08 0a ec d9 55 c9 56 f8  .U.....U.V. 0040  1a 93 1f 00 31 94 d4 15 69 31 31 41 44 01 00 00  ....1...i11AD... 0050  00 00 00 00 00 e0 2e 00 00 00 00 00 00 00 03 fb  ..... 0060  a2 dd 41           </pre>					

## 3 SEED

TXSE SEED is a high-performance binary order entry protocol. Messages are encapsulated in RAKE TCP frames.

### 3.1 DefineSymbol Messages

After a successful Logon, TXSE applications will utilize the SEED protocol to transmit symbol definition messages. The symbol definition contains instrument details and trading parameters for a security. Multiple DefineSymbol messages may be bundled within a single TCP packet.

#### 3.1.1 DIS Symbol Definition

Frame #5 in the pcap file depicts the Symbol definition for Disney (DIS), which has SymbolID = 2820. The TCP application data for the DefineSymbol message along with RAKE header begins at byte offset 0x1d40 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
5	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	37	DefineSymbol

```

Frame 5: Packet, 9264 bytes on wire (74112 bits), 9264 bytes captured (74112 bits) on interface 0
Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)
Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)
Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404648752, Ack: 918269745, Len: 9198
...
TXSE RAKE TCP SequencedMessage
  Message Length: 35
  Message Type: '2'
  Stream ID: 0
  Sequenced Payload: 73 bf f5 67 50 13 92 77 18 04 0b 44 49 53 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 02 00 64 00 00 00
  Wireshark Lua fake item
    TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ DefineSymbol
      Message Type: 's'
      Transact Time: 1763038390789862847
      Symbol ID: 2820
      CMS Symbol Root: DIS
      CMS Symbol Suffix: <represented as 0x20>
      Matching Engine Id: 2
      Bit Fields: 0
      Is Test: 0
      Round Lot Size: 100
  ...
  ...
1d30  20 20 20 20 20 20 20 20 20 20 20 20 01 00 64 00 00 00      ..d...
1d40  23 00 32 00 73 bf f5 67 50 13 92 77 18 04 0b 44      #.2.s..gP..w...D
1d50  49 53 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20  IS
1d60  00 64 00 00 00 23 00 32 00 73 d2 92 00 51 13 92      .d...#.2.s...Q..
1d70  77 18 05 0b 44 49 53 4f 20 20 20 20 20 20 20 20 20  w...DISO
  ...

```

#### 3.1.2 MSFT Symbol Definition

Frame #6 in the pcap file depicts the Symbol definition for Micorsoft (MSFT), which has SymbolID = 7039. The TCP application data for the DefineSymbol message along with RAKE header begins at byte offset 0x19b2 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
6	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	37	DefineSymbol
<p>Frame 6: Packet, 8280 bytes on wire (66240 bits), 8280 bytes captured (66240 bits) on Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)</p> <p>Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)</p> <p>Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404805802, Ack: 918269745, Len: 8214</p> <p>...</p> <p>TXSE RAKE TCP SequencedMessage</p> <p>Message Length: 35</p> <p>Message Type: '2'</p> <p>Stream ID: 0</p> <p>Sequenced Payload: 73 2b d5 ec 2d 1d 92 77 18 7f 1b 4d 53 46 54 20 20 20 20 20 20 20 20 20 20 01 00 28 00 00 00</p> <p>Wireshark Lua fake item</p> <p>TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ DefineSymbol</p> <p>Message Type: 's'</p> <p>Transact Time: 1763038433161041195</p> <p>Symbol ID: 7039</p> <p>CMS Symbol Root: MSFT</p> <p>CMS Symbol Suffix: &lt;represented as 0x20&gt;</p> <p>Matching Engine Id: 1</p> <p>Bit Fields: 0</p> <p>Is Test: 0</p> <p>Round Lot Size: 40</p> <p>...</p> <p>19a0 20 20 20 20 20 20 20 20 20 20 02 00 64 00 ..d.</p> <p>19b0 00 00 23 00 32 00 73 2b d5 ec 2d 1d 92 77 18 7f ..#.2.s+...W..</p> <p>19c0 1b 4d 53 46 54 20 20 20 20 20 20 20 20 20 20 .MSFT</p> <p>19d0 20 01 00 28 00 00 00 23 00 32 00 73 d0 76 85 2e ..(...#.2.s.v..</p> <p>19e0 1d 92 77 18 80 1b 4d 53 46 55 20 20 20 20 20 ..W...MSFU</p>					

## 3.2 DIS LimitOrder to Sell 100 Shares

A decoded sample order for “Long Sell 100 Shares of DIS at \$105.00” and TXSE’s response.

Frame #7 in the pcap file depicts the SEED LimitOrder to sell 100 shares of DIS at \$105.00. This order will sit on the book. The TCP application data for the LimitOrder message along with RAKE header begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
7	238.0.0.1	238.0.0.2	TXSE_SEED_UNSEQ	42	LimitOrder
<p>Frame 7: Packet, 108 bytes on wire (864 bits), 108 bytes captured (864 bits) on Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)</p> <p>Internet Protocol Version 4, Src: 238.0.0.1 (238.0.0.1), Dst: 238.0.0.2 (238.0.0.2)</p> <p>Transmission Control Protocol, Src Port: 53730, Dst Port: 4552, Seq: 918269796, Ack: 404995302, Len: 42</p> <p>TXSE RAKE TCP UnsequencedMessage</p> <p>Message Length: 40</p> <p>Message Type: '6'</p> <p>Unsequenced Payload: 4c 00 02 00 00 04 00 00 00 00 00 00 00 64 00 00 00 11 01 00 00 04 0b 00 49 d9 71 02 00 00 00 50 4f 1c 01 66 de ab 00</p> <p>Wireshark Lua fake item</p> <p>TXSE SEED Binary Order Entry Protocol v0.8 (Unsequenced) TXSE SEED UNSEQ LimitOrder</p> <p>Message Type: 'L'</p> <p>Presence Bits: 00 02 00 00</p> <p>Client Order Id: 4</p> <p>Quantity: 100</p> <p>Bit Fields: 273</p>					



Side: 1 (Long Sell) Locate Required: 0 TIF: 1 (SYS) Capacity: 1 (Agency) Is ISO: 0 Is Hidden: 0 Is Post Only: 0 Cancel At Entry if Crossed Markets: 0 Symbol ID: <u>2820</u> Price: <u>10500000000</u> <u>\$105.0000</u> User Data: <u>48376750704185168</u>	
0000	00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00 .....E.
0010	00 5e 58 38 40 00 40 06 06 5e ee 00 00 01 ee 00 .^X8@.@..^.....
0020	00 02 d1 e2 11 c8 36 bb af 64 18 23 bc e6 80 18 .....6..d.#....
0030	16 b5 74 10 00 00 01 01 08 0a 56 f8 5e 9d ec d9 ..t.....V.^....
0040	99 38 <u>28 00</u> <u>36 4c</u> <u>00 02 00 00</u> <u>04 00 00 00 00 00</u> .8(.6L.....
0050	<u>00 00</u> <u>64 00 00 00</u> <u>11 01 00 00</u> <u>04 0b</u> <u>00 49 d9 71</u> ..d.....I.q
0060	<u>02 00</u> <u>00 00</u> <u>50 4f 1c 01 66 de ab 00</u> ....PO..f...

### 3.3 DIS LimitOrderAccepted

Frame #8 in the pcap file depicts the SEED LimitOrderAccepted for the LimitOrder to sell 100 shares of DIS at \$105.00. The TCP application data for the LimitOrderAccepted message along with RAKE header begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
8	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	68	LimitOrderAccepted

Frame 8: Packet, 134 bytes on wire (1072 bits), 134 bytes captured (1072 bits) on Ethernet II, Src: 00:00:00\_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00\_00:00:00 (00:00:00:00:00:00)

Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)

Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404995302, Ack: 918269838, Len: 68

TXSE RAKE TCP SequencedMessage

Message Length: 66

Message Type: '2'

Stream ID: 2

Sequenced Payload: 49 07 0e 00 00 30 33 c5 f9 ab 9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00 00 00 64 00 00 11 01 00 00 04 0b 00 49 d9 71 02 00 00 00 00 00 00 50 4f 1c 01 66 de ab 00 54 58 53 45 20 20

Wireshark Lua fake item

TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ LimitOrderAccepted

Message Type: 'I'

Presence Bits: 07 0e 00 00

Transact Time: 1763052240605885232

Order Id: 25552130

Client Order Id: 4

Quantity: 100

Bit Fields: 273

Side: 1 (Long Sell)

Locate Required: 0

TIF: 1 (SYS)

Capacity: 1 (Agency)

Is ISO: 0

Is Hidden: 0

Is Post Only: 0

Cancel At Entry if Crossed Markets: 0

Symbol ID: 2820

Price: 10500000000 \$105.0000

Self-Match Prevention Scope: By Member (0)

Self-Match Prevention Instruction: No Self Match Prevention (0)

Price Slide Instruction: No Price Slide (0)

User Data: 48376750704185168

MPID: TXSE

Member Group: <represented as 0x20>

0000	00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00	.....E.
0010	00 78 b5 53 40 00 40 06 a9 28 ee 00 00 02 ee 00	.x.S@.@..(.....
0020	00 01 11 c8 d1 e2 18 23 bc e6 36 bb af 8e 80 18	.....#.6.....
0030	00 55 1b e4 00 00 01 01 08 0a ec d9 99 d5 56 f8	.U.....V.
0040	5e 9d 42 00 32 02 49 07 0e 00 00 30 33 c5 f9 ab	^.B.2.I...03...
0050	9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00	.W.....
0060	00 00 00 64 00 00 00 11 01 00 00 04 0b 00 49 d9	...d.....I.
0070	71 02 00 00 00 00 00 00 50 4f 1c 01 66 de ab 00	q.....PO..f...
0080	54 58 53 45 20 20	TXSE

### 3.4 DIS LimitOrder to Buy 50 Shares

A decoded sample order to “Buy 50 Shares of DIS at \$105.00” and TXSE’s response. All SEED LimitOrder type messages from a member to TXSE are encapsulated within RAKE Unsequenced messages. TXSE’s SEED level responses however are encapsulated within RAKE Sequenced messages.

Frame #9 in the pcap file depicts the SEED LimitOrder to buy 50 shares of DIS at \$105.00. This order will match the earlier sell side order. The TCP application data for LimitOrder message along with RAKE header begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
9	238.0.0.1	238.0.0.2	TXSE_RAKE_UNSEQ	42	LimitOrder
Frame 9: Packet, 108 bytes on wire (864 bits), 108 bytes captured (864 bits)					
Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)					
Internet Protocol Version 4, Src: 238.0.0.1 (238.0.0.1), Dst: 238.0.0.2 (238.0.0.2)					
Transmission Control Protocol, Src Port: 53730, Dst Port: 4552, Seq: 918269856, Ack: 404995388, Len: 42					
TXSE_RAKE_TCP_UnsequencedMessage					
Message Length: 40					
Message Type: '6'					
Unsequenced Payload: 4c 00 02 00 00 05 00 00 00 00 00 00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9 71 02 00 00 00 85 a3 c7 7e 19 a1 57 00					
Wireshark Lua fake item					
TXSE SEED Binary Order Entry Protocol v0.8 (Unsequenced) TXSE SEED UNSEQ LimitOrder					
Message Type: 'L'					
Presence Bits: 00 02 00 00					
Client Order Id: 5					
Quantity: 50					
Bit Fields: 272					
Side: 0 (Buy)					
Locate Required: 0					
TIF: 1 (SYS)					
Capacity: 1 (Agency)					
Is ISO: 0					
Is Hidden: 0					
Is Post Only: 0					
Cancel At Entry if Crossed Markets: 0					
Symbol ID: 2820					
Price: 10500000000 \$105.0000					
User Data: 24665453847094149					
0000	00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00	.....E.			
0010	00 5e 58 46 40 00 40 06 06 50 ee 00 00 01 ee 00	..^XF@.@..P.....			
0020	00 02 d1 e2 11 c8 36 bb af a0 18 23 bd 3c 80 18	.....6....#.6....			
0030	16 b5 35 87 00 00 01 01 08 0a 56 f8 76 c7 ec d9	..5.....V.v...			
0040	b1 71 28 00 36 4c 00 02 00 00 05 00 00 00 00 00	.q(.6L.....			
0050	00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9 71	..2.....I.q			
0060	02 00 00 00 85 a3 c7 7e 19 a1 57 00	.....~..W.			

### 3.5 DIS LimitOrderAccepted

Frame #10 in the pcap file depicts the SEED LimitOrderAccepted to buy 50 shares of DIS at \$105.00. This order will match the earlier sell side order. The TCP application data for the LimitOrderAccepted message along with RAKE header begins at byte offset 0x42 in the packet.

Num	Source IP	Dest IP	Protocol	Length	Type
10	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	68	LimitOrderAccepted
Frame 10: Packet, 240 bytes on wire (1920 bits), 240 bytes captured (1920 bits)					
Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)					
Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)					
Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404995388, Ack: 918269898, Len: 174					
TXSE RAKE TCP SequencedMessage					
Message Length: 66					
Message Type: '2'					
Stream ID: 2					
Sequenced Payload: 49 07 0e 00 00 2f 9d 73 6a ad 9e 77 18 02 e6 85 01 00 00 00 00 05 00 00 00 00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9 71 02 00 00 00 00 00 00 85 a3 c7 7e 19 a1 57 00 54 58 53 45 20 20					
Wireshark Lua fake item					
TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ					
LimitOrderAccepted					
Message Type: 'I'					
Presence Bits: 07 0e 00 00					
Transact Time: 1763052246791331119					
Order Id: 25552386					
Client Order Id: 5					
Quantity: 50					
Bit Fields: 272					
Side: 0 (Buy)					
Locate Required: 0					
TIF: 1 (SYS)					
Capacity: 1 (Agency)					
Is ISO: 0					
Is Hidden: 0					
Is Post Only: 0					
Cancel At Entry if Crossed Markets: 0					
Symbol ID: 2820					
Price: 10500000000 \$105.0000					
Self-Match Prevention Scope: By Member (0)					
Self-Match Prevention Instruction: No Self Match Prevention (0)					
Price Slide Instruction: No Price Slide (0)					
User Data: 24665453847094149					
MPID: TXSE					
Member Group: <represented as 0x20>					
...					
0000	00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00	.....E.			
0010	00 e2 b5 61 40 00 40 06 a8 b0 ee 00 00 02 ee 00	...a@.@.....			
0020	00 01 11 c8 d1 e2 18 23 bd 3c 36 bb af ca 80 18	.....#.<6....			
0030	00 55 67 ea 00 00 00 01 01 08 0a ec d9 b1 fe 56 f8	.Ug.....V.			
0040	76 c7 42 00 32 02 49 07 0e 00 00 2f 9d 73 6a ad	v.B.2.I.../.sj.			
0050	9e 77 18 02 e6 85 01 00 00 00 00 05 00 00 00 00	.w.....			
0060	00 00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9	...2.....I.			
0070	71 02 00 00 00 00 00 00 85 a3 c7 7e 19 a1 57 00	q.....~.W.			
0080	54 58 53 45 20 20 33 00 32 02 45 2f 9d 73 6a ad	TXSE 3.2.E/.sj.			
0090	9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00	.w.....			
00a0	00 00 00 00 49 d9 71 02 00 00 00 02 4d a8 00 00	...I.q....M...			
00b0	00 00 00 00 32 00 00 00 32 00 00 00 33 00 32 02 45	...2...2...3.2.E			
00c0	2f 9d 73 6a ad 9e 77 18 02 e6 85 01 00 00 00 00	/.sj..w.....			
00d0	05 00 00 00 00 00 00 00 49 d9 71 02 00 00 00 00	.....I.q....			
00e0	02 4d a8 00 00 00 00 00 32 00 00 00 00 00 00 00	.M.....2.....			



### 3.6 DIS OrderExecuted: TXSE's Response to Seller

Frame #10 in the pcap file also contains the SEED OrderExecuted message to sell 100 shares of DIS at \$105.00. Some key points are:

- The OrderExecuted message is bundled in the same TCP packet as the LimitOrderAccepted message (See Section 3.5).
- The starting byte offset of the OrderExecuted message along with RAKE header is 0x86.
- The OrderExecuted message is for OriginalClientID = 4, which references the "Long Sell for 100 shares of DIS" (See Section 3.2 and 3.3).

Num	Source IP	Dest IP	Protocol	Length	Type
10	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	53	LimitOrderAccepted
<p><b>Frame 10:</b> Packet, 240 bytes on wire (1920 bits), 240 bytes captured (1920 bits) on Ethernet II, Src: 00:00:00_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00_00:00:00 (00:00:00:00:00:00)</p> <p>Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)</p> <p>Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404995388, Ack: 918269898, Len: 174</p> <p>...</p> <p><b>TXSE RAKE TCP SequencedMessage</b></p> <p>Message Length: 51</p> <p>Message Type: '2'</p> <p>Stream ID: 2</p> <p>Sequenced Payload: 45 2f 9d 73 6a ad 9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00 00 00 49 d9 71 02 00 00 00 02 4d a8 00 00 00 00 00 32 00 00 00 32 00 00 00</p> <p>Wireshark Lua fake item</p> <p>TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ OrderExecuted</p> <p>Message Type: 'E'</p> <p>Transact Time: 1763052246791331119</p> <p>Order Id: 25552130</p> <p>Original Client Order Id: 4</p> <p>Price: 10500000000 \$105.0000</p> <p>Execution Id: 11029762</p> <p>Executed Quantity: 50</p> <p>Leaves Quantity: 50</p> <p>...</p> <p>0000 00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00 .....E.</p> <p>0010 00 e2 b5 61 40 00 40 06 a8 b0 ee 00 00 02 ee 00 ...a@. @.....</p> <p>0020 00 01 11 c8 d1 e2 18 23 bd 3c 36 bb af ca 80 18 .....#. &lt;6.....</p> <p>0030 00 55 67 ea 00 00 01 01 08 0a ec d9 b1 fe 56 f8 .Ug.....V.</p> <p>0040 76 c7 42 00 32 02 49 07 0e 00 00 2f 9d 73 6a ad v.B.2.I..../.sj.</p> <p>0050 9e 77 18 02 e6 85 01 00 00 00 00 05 00 00 00 00 .w.....</p> <p>0060 00 00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9 ...2.....I.</p> <p>0070 71 02 00 00 00 00 00 85 a3 c7 7e 19 a1 57 00 q.....~.W.</p> <p>0080 54 58 53 45 20 20 33 00 32 02 45 2f 9d 73 6a ad TXSE 3.2.E/.sj.</p> <p>0090 9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00 .w.....</p> <p>00a0 00 00 00 00 49 d9 71 02 00 00 00 02 4d a8 00 00 ....I.q.....M...</p> <p>00b0 00 00 00 32 00 00 00 32 00 00 00 33 00 32 02 45 ...2...2...3.2.E</p> <p>00c0 2f 9d 73 6a ad 9e 77 18 02 e6 85 01 00 00 00 00 /.sj..w.....</p> <p>00d0 05 00 00 00 00 00 00 00 49 d9 71 02 00 00 00 .....I.q.....</p> <p>00e0 02 4d a8 00 00 00 00 32 00 00 00 00 00 00 00 .M.....2.....</p>					

### 3.7 DIS OrderExecuted: TXSE's Response to Buyer

Frame #10 in the pcap file also contains the SEED OrderExecuted message to buy 50 shares of DIS at \$105.00. Some key points are:

- The OrderExecuted message is bundled in the same TCP packet as the LimitOrderAccepted message (See Section 3.5).
- The starting byte offset of the OrderExecuted message along with RAKE header is 0xbb.
- The OrderExecuted message is for OriginalClientID = 5, which references the “Buy 100 shares of DIS” (See Section 3.4 and 3.5).

Num	Source IP	Dest IP	Protocol	Length	Type
10	238.0.0.2	238.0.0.1	TXSE_SEED_SEQ	53	LimitOrderAccepted

**Frame 10:** Packet, 240 bytes on wire (1920 bits), 240 bytes captured (1920 bits) on Ethernet II, Src: 00:00:00\_00:00:00 (00:00:00:00:00:00), Dst: 00:00:00\_00:00:00 (00:00:00:00:00:00)  
 Internet Protocol Version 4, Src: 238.0.0.2 (238.0.0.2), Dst: 238.0.0.1 (238.0.0.1)  
 Transmission Control Protocol, Src Port: 4552, Dst Port: 53730, Seq: 404995388, Ack: 918269898, Len: 174

...

**TXSE RAKE TCP SequencedMessage**  
 Message Length: 51  
 Message Type: '2'  
 Stream ID: 2  
 Sequenced Payload: 45 2f 9d 73 6a ad 9e 77 18 02 e6 85 01 00 00 00 00 05 00 00 00 00 00 00 49 d9 71 02 00 00 00 02 4d a8 00 00 00 00 00 32 00 00 00 00 00 00 00 00  
 Wireshark Lua fake item  
 TXSE SEED Binary Order Entry Protocol v0.8 (Sequenced) TXSE SEED SEQ OrderExecuted  
 Message Type: 'E'  
 Transact Time: 1763052246791331119  
 Order Id: 25552386  
 Original Client Order Id: 5  
 Price: 10500000000 \$105.0000  
 Execution Id: 11029762  
 Executed Quantity: 50  
 Leaves Quantity: 0

0000	00 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00	.....E.
0010	00 e2 b5 61 40 00 40 06 a8 b0 ee 00 00 02 ee 00	...a@. ....
0020	00 01 11 c8 d1 e2 18 23 bd 3c 36 bb af ca 80 18	.....#. <6....
0030	00 55 67 ea 00 00 01 01 08 0a ec d9 b1 fe 56 f8	.Ug.....V.
0040	76 c7 42 00 32 02 49 07 0e 00 00 2f 9d 73 6a ad	v.B.2.I.../.sj.
0050	9e 77 18 02 e6 85 01 00 00 00 00 00 05 00 00 00	.w.....
0060	00 00 00 32 00 00 00 10 01 00 00 04 0b 00 49 d9	...2.....I.
0070	71 02 00 00 00 00 00 00 85 a3 c7 7e 19 a1 57 00	q.....~..W.
0080	54 58 53 45 20 20 33 00 32 02 45 2f 9d 73 6a ad	TXSE 3.2.E/.sj.
0090	9e 77 18 02 e5 85 01 00 00 00 00 04 00 00 00 00	.w.....
00a0	00 00 00 00 49 d9 71 02 00 00 00 02 4d a8 00 00	....I.q....M...
00b0	00 00 00 32 00 00 00 32 00 00 00 33 00 32 02 45	...2...2...3.2.E
00c0	2f 9d 73 6a ad 9e 77 18 02 e6 85 01 00 00 00 00	/.sj..w.....
00d0	05 00 00 00 00 00 00 00 00 49 d9 71 02 00 00 00	.....I.q....
00e0	02 4d a8 00 00 00 00 32 00 00 00 00 00 00 00	.M.....2.....