

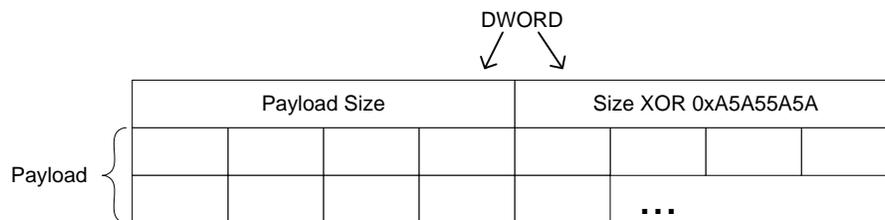
Telos 2101 / TWOx12 / Nx12 Control Protocol

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This document describes the low-level control protocol for the Telos 2101 / TWOx12 / Nx12 products. Clients connect to the Telos device over a TCP/IP connection. The default port for the connection is 9998. After a connection is established, the client sends data packets to the server for each request. The server responds with similarly formatted data packets.

Data Packet Format

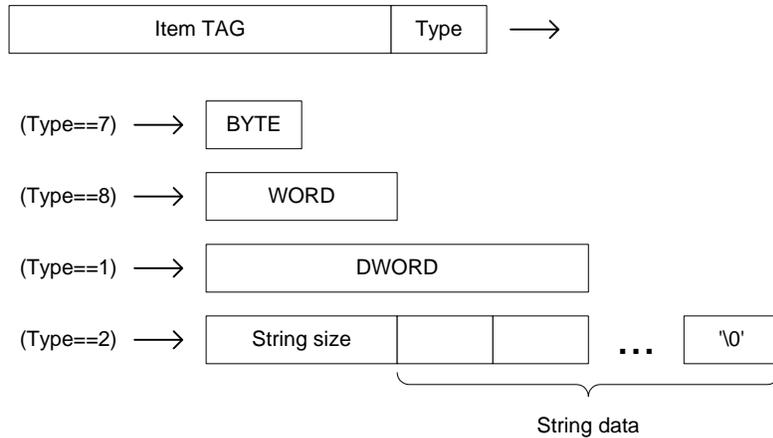
All data packets have the format illustrated below. Please note that all WORD and DWORD values are in network byte order.



The payload size is a DWORD indicating the size of the payload section. The next DWORD is the size XOR 0xA5A5A5A. The first DWORD in the payload section contain the message ID and the following WORD indicates how many items will follow:



Each item starts with a DWORD tag. This is the ID of the item. The next byte indicates the type of the item, which can be one of the following: BYTE (7), WORD (8), DWORD (1), or string (2). For the BYTE, WORD and DWORD types the item data follows the type byte. For the string type, a WORD will indicate the length of the string data.



It is important to note that string items always include a final '\0' terminating character in the string data.

The pages that follow show examples of each message that the server understands or sends back. The order of the items in the message is not guaranteed. Clients should be prepared to accept message items in any order. Messages may also contain additional items. The client should ignore any extra items that may be present in the message.

Feedback

Please address any questions or comments to Ioan Rus by email at ioan@telos-systems.com.

Messages Sent by Client to Server

Login (user='user',password='pwd')

Full Packet

Packet data:

```

0000: 00 00 00 1D A5 A5 5A 47 00 00 00 00 02 55 53  .....ZG.....US
0010: 45 52 02 00 05 75 73 65 72 00 50 41 53 53 02 00  ER...user.PASS..
0020: 04 70 77 64 00                                     .pwd.

```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 1D                                     ....
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 47                                     ..ZG
```

Message ID:

```
0008: 00 00 00 00                                     ....
Message ID=0
```

Item Count:

```
000C: 00 02                                         ..
Item Count=2
```

Item 0 tag:

```
000E: 55 53 45 52                                     USER
Tag="USER"
```

Item 0 type:

```
0012: 02                                               .
Type=ARRAY
```

Item 0 array size:

```
0013: 00 05                                         ..
Array size=5
```

Item 0 string data:

```
0015: 75 73 65 72 00                                     user.
```

Item 1 tag:

```
001A: 50 41 53 53                                     PASS
Tag="PASS"
```

Item 1 type:

```
001E: 02                                               .
Type=ARRAY
```

Item 1 array size:

```
001F: 00 04                                         ..
Array size=4
```

Item 1 string data:

0021: 70 77 64 00

pwd.

EnumerateShows ()

Full Packet

Packet data:

0000: 00 00 00 06 A5 A5 5A 5C 00 00 00 01 00 00z\.....

Packet Breakdown

Payload size (network byte order):

0000: 00 00 00 06

Payload size XOR 0xA5A55A5A:

0004: A5 A5 5A 5C ..z\

Message ID:

0008: 00 00 00 01

Message ID=1

Item Count:

000C: 00 00 ..

Item Count=0

EnumerateHostsForShow (show= ' show1 ')

Full Packet**Packet data:**

```
0000: 00 00 00 13 A5 A5 5A 49 00 00 00 02 00 01 53 48 .....ZI.....SH
0010: 4F 57 02 00 06 73 68 6F 77 31 00                OW...show1.
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 13                ....
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 49                ..ZI
```

Message ID:

```
0008: 00 00 00 02                ....
Message ID=2
```

Item Count:

```
000C: 00 01                    ..
Item Count=1
```

Item 0 tag:

```
000E: 53 48 4F 57                SHOW
Tag="SHOW"
```

Item 0 type:

```
0012: 02                          .
Type=ARRAY
```

Item 0 array size:

```
0013: 00 06                    ..
Array size=6
```

Item 0 string data:

```
0015: 73 68 6F 77 31 00          show1.
```

EnumerateHostsForShow(host='host1')

Full Packet**Packet data:**

```
0000: 00 00 00 13 A5 A5 5A 49 00 00 00 15 00 01 48 4F .....ZI.....HO
0010: 53 54 02 00 06 68 6F 73 74 31 00          ST...host1.
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 13          ....
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 49          ..ZI
```

Message ID:

```
0008: 00 00 00 15          ....
```

Message ID=21

Item Count:

```
000C: 00 01          ..
```

Item Count=1

Item 0 tag:

```
000E: 48 4F 53 54          HOST
```

Tag="HOST"

Item 0 type:

```
0012: 02          .
```

Type=ARRAY

Item 0 array size:

```
0013: 00 06          ..
```

Array size=6

Item 0 string data:

```
0015: 68 6F 73 74 31 00          host1.
```

ConnectToShow(session=1,show_name='show1',show_pass='pwd',host='host1')

Full Packet

Packet data:

```

0000: 00 00 00 34 A5 A5 5A 6E 00 00 00 04 00 04 53 53  ...4..Zn.....SS
0010: 4E 5F 01 00 00 00 01 53 48 4F 57 02 00 06 73 68  N_.....SHOW...sh
0020: 6F 77 31 00 50 41 53 53 02 00 04 70 77 64 00 48  ow1.PASS...pwd.H
0030: 4F 53 54 02 00 06 68 6F 73 74 31 00                OST...host1.

```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 34 ...4
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 6E ..Zn
```

Message ID:

```
0008: 00 00 00 04 ....
Message ID=4
```

Item Count:

```
000C: 00 04 ..
Item Count=4
```

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01 .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01 ....
Value=1 (0x1)
```

Item 1 tag:

```
0017: 53 48 4F 57 SHOW
Tag="SHOW"
```

Item 1 type:

```
001B: 02 .
Type=ARRAY
```

Item 1 array size:

```
001C: 00 06 ..
Array size=6
```

Item 1 string data:

```
001E: 73 68 6F 77 31 00 show1.
```

Item 2 tag:

0024: 50 41 53 53 PASS
Tag="PASS"

Item 2 type:

0028: 02 .
Type=ARRAY

Item 2 array size:

0029: 00 04 ..
Array size=4

Item 2 string data:

002B: 70 77 64 00 pwd.

Item 3 tag:

002F: 48 4F 53 54 HOST
Tag="HOST"

Item 3 type:

0033: 02 .
Type=ARRAY

Item 3 array size:

0034: 00 06 ..
Array size=6

Item 3 string data:

0036: 68 6F 73 74 31 00 host1.

ChangeShow(session=1,show_name='show1',show_pass='pwd')

Full Packet

Packet data:

```

0000: 00 00 00 27 A5 A5 5A 7D 00 00 00 03 00 03 53 53  ...'..Z}.....SS
0010: 4E 5F 01 00 00 00 01 53 48 4F 57 02 00 06 73 68  N_.....SHOW...sh
0020: 6F 77 31 00 50 41 53 53 02 00 04 70 77 64 00    owl.PASS...pwd.

```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 27  ...'
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 7D  ..Z}
```

Message ID:

```
0008: 00 00 00 03  ....
Message ID=3
```

Item Count:

```
000C: 00 03  ..
Item Count=3
```

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01  .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01  ....
Value=1 (0x1)
```

Item 1 tag:

```
0017: 53 48 4F 57  SHOW
Tag="SHOW"
```

Item 1 type:

```
001B: 02  .
Type=ARRAY
```

Item 1 array size:

```
001C: 00 06  ..
Array size=6
```

Item 1 string data:

```
001E: 73 68 6F 77 31 00  show1.
```

Item 2 tag:

0024: 50 41 53 53
Tag="PASS"

PASS

Item 2 type:

0028: 02
Type=ARRAY

.

Item 2 array size:

0029: 00 04
Array size=4

..

Item 2 string data:

002B: 70 77 64 00

pwd.

EnumerateDirectors (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 05 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55 . .ZU
```

Message ID:

```
0008: 00 00 00 05 . . . .
Message ID=5
```

Item Count:

```
000C: 00 01 . .
Item Count=1
```

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01 .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01 . . . .
Value=1 (0x1)
```

AttachToDirector(session=1,dir_name='dir1')

Full Packet**Packet data:**

```

0000: 00 00 00 1B A5 A5 5A 41 00 00 00 06 00 02 53 53  .....ZA.....SS
0010: 4E 5F 01 00 00 00 01 44 4E 41 4D 02 00 05 64 69  N_.....DNAM...di
0020: 72 31 00                                     r1.

```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 1B .....

```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 41 ..ZA

```

Message ID:

```
0008: 00 00 00 06 .....
Message ID=6

```

Item Count:

```
000C: 00 02 ..
Item Count=2

```

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
Tag="SSN_"

```

Item 0 type:

```
0012: 01 .
Type=DWORD

```

Item 0 data:

```
0013: 00 00 00 01 ....
Value=1 (0x1)

```

Item 1 tag:

```
0017: 44 4E 41 4D DNAM
Tag="DNAM"

```

Item 1 type:

```
001B: 02 .
Type=ARRAY

```

Item 1 array size:

```
001C: 00 05 ..
Array size=5

```

Item 1 string data:

```
001E: 64 69 72 31 00 dir1.

```

AttachAsTalent (session=1)

Full Packet**Packet data:**

```

0000: 00 00 00 0F A5 A5 5A 55 00 00 00 07 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .

```

Packet Breakdown**Payload size (network byte order):**

```

0000: 00 00 00 0F                                     . . . .

```

Payload size XOR 0xA5A55A5A:

```

0004: A5 A5 5A 55                                     ..ZU

```

Message ID:

```

0008: 00 00 00 07                                     . . . .

```

*Message ID=7***Item Count:**

```

000C: 00 01                                       ..

```

*Item Count=1***Item 0 tag:**

```

000E: 53 53 4E 5F                                     SSN_

```

*Tag="SSN_"***Item 0 type:**

```

0012: 01                                               .

```

*Type=DWORD***Item 0 data:**

```

0013: 00 00 00 01                                     . . . .

```

Value=1 (0x1)

PostBusyAllButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 08 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  . .ZU
```

Message ID:

```
0008: 00 00 00 08  . . . .
```

Message ID=8

Item Count:

```
000C: 00 01  . .
```

Item Count=1

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01  .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01  . . . .
```

Value=1 (0x1)

PostDelayDumpButton (session=1, down=true)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 09 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 44 4F 57 4E 01 00 00 00 01
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB
```

Message ID:

```
0008: 00 00 00 09 . . . .
```

Message ID=9

Item Count:

```
000C: 00 02 . .
```

Item Count=2

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01 .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01 . . . .
```

Value=1 (0x1)

Item 1 tag:

```
0017: 44 4F 57 4E DOWN
```

Tag="DOWN"

Item 1 type:

```
001B: 01 .
```

Type=DWORD

Item 1 data:

```
001C: 00 00 00 01 . . . .
```

Value=1 (0x1)

PostDialKey (session=1, key=50)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 0A 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 4B 45 59 5F 01 00 00 00 32
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 ..... . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB
```

Message ID:

```
0008: 00 00 00 0A .....
Message ID=10
```

Item Count:

```
000C: 00 02 ..
Item Count=2
```

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01 .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01 .....
Value=1 (0x1)
```

Item 1 tag:

```
0017: 4B 45 59 5F KEY_
Tag="KEY_"
```

Item 1 type:

```
001B: 01 .
Type=DWORD
```

Item 1 data:

```
001C: 00 00 00 32 ...2
Value=50 (0x32)
```

PostDropButton (session=1, column=1)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 0B 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 43 4F 4C 5F 01 00 00 00 01
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 .....

```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB

```

Message ID:

```
0008: 00 00 00 0B .....
Message ID=11

```

Item Count:

```
000C: 00 02 ..
Item Count=2

```

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
Tag="SSN_"

```

Item 0 type:

```
0012: 01 .
Type=DWORD

```

Item 0 data:

```
0013: 00 00 00 01 ....
Value=1 (0x1)

```

Item 1 tag:

```
0017: 43 4F 4C 5F COL_
Tag="COL_"

```

Item 1 type:

```
001B: 01 .
Type=DWORD

```

Item 1 data:

```
001C: 00 00 00 01 ....
Value=1 (0x1)

```

PostHoldButton (session=1, column=1)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 0C 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 43 4F 4C 5F 01 00 00 00 01
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB
```

Message ID:

```
0008: 00 00 00 0C . . . .
```

Message ID=12

Item Count:

```
000C: 00 02 . .
```

Item Count=2

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01 .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01 . . . .
```

Value=1 (0x1)

Item 1 tag:

```
0017: 43 4F 4C 5F COL_
```

Tag="COL_"

Item 1 type:

```
001B: 01 .
```

Type=DWORD

Item 1 data:

```
001C: 00 00 00 01 . . . .
```

Value=1 (0x1)

PostLineButton (session=1, line=2, column=1)

Full Packet**Packet data:**

```

0000: 00 00 00 21 A5 A5 5A 7B 00 00 00 0D 00 03 53 53  ...!...Z{.....SS
0010: 4E 5F 01 00 00 00 01 4C 49 4E 45 01 00 00 00 02  N_.....LINE.....
0020: 43 4F 4C 5F 01 00 00 00 01                          COL_.....

```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 21                                     ...!
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 7B                                     ..Z{
```

Message ID:

```
0008: 00 00 00 0D                                     ....
Message ID=13
```

Item Count:

```
000C: 00 03                                         ..
Item Count=3
```

Item 0 tag:

```
000E: 53 53 4E 5F                                     SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01                                               .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01                                     ....
Value=1 (0x1)
```

Item 1 tag:

```
0017: 4C 49 4E 45                                     LINE
Tag="LINE"
```

Item 1 type:

```
001B: 01                                               .
Type=DWORD
```

Item 1 data:

```
001C: 00 00 00 02                                     ....
Value=2 (0x2)
```

Item 2 tag:

```
0020: 43 4F 4C 5F                                     COL_
Tag="COL_"
```

Item 2 type:

0024: 01
Type=DWORD

.

Item 2 data:

0025: 00 00 00 01
Value=1 (0x1)

....

PostMuteButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 0E 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  . .ZU
```

Message ID:

```
0008: 00 00 00 0E  . . . .
Message ID=14
```

Item Count:

```
000C: 00 01  . .
Item Count=1
```

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01  .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01  . . . .
Value=1 (0x1)
```

PostNextButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 0F 00 01 53 53  .....ZU.....SS
0010: 4E 5F 01 00 00 00 01                               N_.....
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  ..ZU
```

Message ID:

```
0008: 00 00 00 0F  ....
```

Message ID=15

Item Count:

```
000C: 00 01  ..
```

Item Count=1

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01  .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01  ....
```

Value=1 (0x1)

PostRecordButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 10 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  . .ZU
```

Message ID:

```
0008: 00 00 00 10  . . . .
```

Message ID=16

Item Count:

```
000C: 00 01  . .
```

Item Count=1

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01  .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01  . . . .
```

Value=1 (0x1)

PostSpeakerButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 11 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F                                     . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55                                     ..ZU
```

Message ID:

```
0008: 00 00 00 11                                     . . . .
Message ID=17
```

Item Count:

```
000C: 00 01                                         ..
Item Count=1
```

Item 0 tag:

```
000E: 53 53 4E 5F                                     SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01                                             .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01                                     . . . .
Value=1 (0x1)
```

PostText(session=1,type=33,line=2,text='This is my text')

Full Packet

Packet data:

```

0000: 00 00 00 38 A5 A5 5A 62 00 00 00 12 00 04 53 53  ...8..Zb.....SS
0010: 4E 5F 01 00 00 00 01 54 54 59 50 01 00 00 00 21  N_.....TTYP....!
0020: 4C 49 4E 45 01 00 00 00 02 54 45 58 54 02 00 10  LINE.....TEXT...
0030: 54 68 69 73 20 69 73 20 6D 79 20 74 65 78 74 00

```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 38  ...8
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 62  ..Zb
```

Message ID:

```
0008: 00 00 00 12  ....
Message ID=18
```

Item Count:

```
000C: 00 04  ..
Item Count=4
```

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01  .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01  ....
Value=1 (0x1)
```

Item 1 tag:

```
0017: 54 54 59 50  TTYP
Tag="TTYP"
```

Item 1 type:

```
001B: 01  .
Type=DWORD
```

Item 1 data:

```
001C: 00 00 00 21  ...!
Value=33 (0x21)
```

Item 2 tag:

```
0020: 4C 49 4E 45  LINE
```

Tag="LINE"

Item 2 type:

0024: 01
Type=DWORD

.

Item 2 data:

0025: 00 00 00 02
Value=2 (0x2)

....

Item 3 tag:

0029: 54 45 58 54
Tag="TEXT"

TEXT

Item 3 type:

002D: 02
Type=ARRAY

.

Item 3 array size:

002E: 00 10
Array size=16

..

Item 3 string data:

0030: 54 68 69 73 20 69 73 20 6D 79 20 74 65 78 74 00

PostTransferButton (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 13 00 01 53 53  .....ZU.....SS
0010: 4E 5F 01 00 00 00 01                               N_.....
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  ..ZU
```

Message ID:

```
0008: 00 00 00 13  ....
Message ID=19
```

Item Count:

```
000C: 00 01  ..
Item Count=1
```

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01  .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01  ....
Value=1 (0x1)
```

PostUpdateAll (session=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F A5 A5 5A 55 00 00 00 14 00 01 53 53  . . . . .ZU . . . . .SS
0010: 4E 5F 01 00 00 00 01                               N_ . . . . .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 55  . .ZU
```

Message ID:

```
0008: 00 00 00 14  . . . .
Message ID=20
```

Item Count:

```
000C: 00 01  . .
Item Count=1
```

Item 0 tag:

```
000E: 53 53 4E 5F  SSN_
Tag="SSN_"
```

Item 0 type:

```
0012: 01  .
Type=DWORD
```

Item 0 data:

```
0013: 00 00 00 01  . . . .
Value=1 (0x1)
```

PostMuteRinger (session=1, on=true)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 16 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 4F 4E 5F 5F 01 00 00 00 01
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB
```

Message ID:

```
0008: 00 00 00 16 . . . .
```

Message ID=22

Item Count:

```
000C: 00 02 . .
```

Item Count=2

Item 0 tag:

```
000E: 53 53 4E 5F SSN_
```

Tag="SSN_"

Item 0 type:

```
0012: 01 .
```

Type=DWORD

Item 0 data:

```
0013: 00 00 00 01 . . . .
```

Value=1 (0x1)

Item 1 tag:

```
0017: 4F 4E 5F 5F ON_
```

Tag="ON_"

Item 1 type:

```
001B: 01 .
```

Type=DWORD

Item 1 data:

```
001C: 00 00 00 01 . . . .
```

Value=1 (0x1)

PostAcousticAdapt (session=1, on=true)

Full Packet**Packet data:**

```
0000: 00 00 00 18 A5 A5 5A 42 00 00 00 17 00 02 53 53 .....ZB.....SS
0010: 4E 5F 01 00 00 00 01 4F 4E 5F 5F 01 00 00 00 01
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 18 .....

```

Payload size XOR 0xA5A55A5A:

```
0004: A5 A5 5A 42 ..ZB

```

Message ID:

```
0008: 00 00 00 17 .....

```

*Message ID=23***Item Count:**

```
000C: 00 02 ..

```

*Item Count=2***Item 0 tag:**

```
000E: 53 53 4E 5F SSN_

```

*Tag="SSN_"***Item 0 type:**

```
0012: 01 .

```

*Type=DWORD***Item 0 data:**

```
0013: 00 00 00 01 .....

```

*Value=1 (0x1)***Item 1 tag:**

```
0017: 4F 4E 5F 5F ON_

```

*Tag="ON_"***Item 1 type:**

```
001B: 01 .

```

*Type=DWORD***Item 1 data:**

```
001C: 00 00 00 01 .....

```

Value=1 (0x1)

Messages Sent by Server to Client

```
EnumerateShowsCallback (show=' show1 ', reqPass=yes, active=yes, host='host1', last
=yes)
```

Full Packet

Packet data:

```
0000: 00 00 00 00 00 05 53 48 4F 57 02 00 06 73 68 6F  ....SHOW...sho
0010: 77 31 00 50 41 53 53 01 00 00 00 01 41 43 54 56  w1.PASS.....ACTV
0020: 01 00 00 00 01 48 4F 53 54 02 00 06 68 6F 73 74  ....HOST...host
0030: 31 00 4C 41 53 54 01 00 00 00 01                1.LAST.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 00  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 05 53 48  ..SH
```

Message ID:

```
0008: 4F 57 02 00  OW..
Message ID=1331102208
```

Item Count:

```
000C: 06 73  .s
Item Count=1651
```

Item 0 tag:

```
000E: 68 6F 77 31  how1
Tag="how1"
```

Item 0 type:

```
0012: 00  .
Type=ARRAY
```

Item 0 array size:

```
0013: 50 41  PA
Array size=20545
```

Item 1 tag:

```
0015: 53 53 01 00  SS..
Tag="SS"
```

Item 1 type:

```
0019: 00  .
Type=ARRAY
```

Item 1 array size:

```
001A: 00 01  ..
Array size=1
```

Item 2 tag:

001C: 41 43 54 56 Tag="ACTV"	ACTV
Item 2 type:	
0020: 01 Type=DWORD	.
Item 2 data:	
0021: 00 00 00 01 Value=1 (0x1)
Item 3 tag:	
0025: 48 4F 53 54 Tag="HOST"	HOST
Item 3 type:	
0029: 02 Type=ARRAY	.
Item 3 array size:	
002A: 00 06 Array size=6	..
Item 3 string data:	
002C: 68 6F 73 74 31 00	host1.
Item 4 tag:	
0032: 4C 41 53 54 Tag="LAST"	LAST
Item 4 type:	
0036: 01 Type=DWORD	.
Item 4 data:	
0037: 00 00 00 01 Value=1 (0x1)
Item 5 tag:	
003B: CC CC CC CC

EnumerateShowsForHostCallback (show= ' show1 ' , last=yes)

Full Packet**Packet data:**

```
0000: 00 00 00 17 00 02 53 48 4F 57 02 00 06 73 68 6F  . . . . .SHOW...sho
0010: 77 31 00 4C 41 53 54 01 00 00 00 01                w1.LAST.....
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 17                . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 48                ..SH
```

Message ID:

```
0008: 4F 57 02 00                OW..
Message ID=1331102208
```

Item Count:

```
000C: 06 73                      .s
Item Count=1651
```

Item 0 tag:

```
000E: 68 6F 77 31                how1
Tag="how1"
```

Item 0 type:

```
0012: 00                          .
Type=ARRAY
```

Item 0 array size:

```
0013: 4C 41                      LA
Array size=19521
```

Item 1 tag:

```
0015: 53 54 01 00                ST..
Tag="ST"
```

Item 1 type:

```
0019: 00                          .
Type=ARRAY
```

Item 1 array size:

```
001A: 00 01                      ..
Array size=1
```

Item 2 tag:

```
001C: CC CC CC CC                . . . .
```

EnumerateHostsCallback (host='host1', last=yes)

Full Packet**Packet data:**

```
0000: 00 00 00 01 00 02 48 4F 53 54 02 00 06 68 6F 73  ....HOST...hos
0010: 74 31 00 4C 41 53 54 01 00 00 00 01                t1.LAST.....
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 01                ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 48 4F                ..HO
```

Message ID:

```
0008: 53 54 02 00                ST..
Message ID=1398014464
```

Item Count:

```
000C: 06 68                      .h
Item Count=1640
```

Item 0 tag:

```
000E: 6F 73 74 31                ost1
Tag="ost1"
```

Item 0 type:

```
0012: 00                          .
Type=ARRAY
```

Item 0 array size:

```
0013: 4C 41                      LA
Array size=19521
```

Item 1 tag:

```
0015: 53 54 01 00                ST..
Tag="ST"
```

Item 1 type:

```
0019: 00                          .
Type=ARRAY
```

Item 1 array size:

```
001A: 00 01                      ..
Array size=1
```

Item 2 tag:

```
001C: CC CC CC CC                ....
```

EnumerateDirectorsCallback(session=1,dirName='dir1',talent=yes,free=yes,last=yes)

Full Packet

Packet data:

```
0000: 00 00 00 02 00 05 53 53 4E 5F 01 00 00 00 01 44 .....SSN_.....D
0010: 4E 41 4D 02 00 05 64 69 72 31 00 54 4C 4E 54 01 NAM...dir1.TLNT.
0020: 00 00 00 01 46 52 45 45 01 00 00 00 01 4C 41 53 ....FREE.....LAS
0030: 54 01 00 00 00 01 T.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 02 ..... 
```

Payload size XOR 0xA5A5A5A5:

```
0004: 00 05 53 53 ..SS 
```

Message ID:

```
0008: 4E 5F 01 00 N_.. 
```

Message ID=1314849024

Item Count:

```
000C: 00 00 .. 
```

Item Count=0

SendShowInfo (session=1,maxLines=12,hybrids=2)

Full Packet**Packet data:**

```
0000: 00 00 00 03 00 03 53 53 4E 5F 01 00 00 00 01 4E  ....SSN_.....N
0010: 4C 49 4E 01 00 00 00 0C 4E 48 59 42 01 00 00 00  LIN.....NHYB....
0020: 02  .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 03  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53  . .SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  . .
Item Count=0
```

SendMode (session=1, talent=yes)

Full Packet

Packet data:

```
0000: 00 00 00 04 00 02 53 53 4E 5F 01 00 00 00 01 54  ....SSN_.....T
0010: 4C 4E 54 01 00 00 00 01  LNT.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 04  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendShowChange (session=1,newShow='newShow',oldShow='oldShow')

Full Packet**Packet data:**

```
0000: 00 00 00 05 00 03 53 53 4E 5F 01 00 00 00 01 4E  ....SSN_.....N
0010: 45 57 53 02 00 08 6E 65 77 53 68 6F 77 00 4F 4C  EWS...newShow.OL
0020: 44 53 02 00 08 6F 6C 64 53 68 6F 77 00          DS...oldShow.
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 05                                     ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53                                     ..SS
```

Message ID:

```
0008: 4E 5F 01 00                                     N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00                                         ..
Item Count=0
```

SendRecord(session=1,on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 06 00 02 53 53 4E 5F 01 00 00 00 01 4F  ....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01  N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 06  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendBusyAll (session=1,on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 07 00 02 53 53 4E 5F 01 00 00 00 01 4F .....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01 N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 07 .....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53 ..SS
```

Message ID:

```
0008: 4E 5F 01 00 N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00 ..
Item Count=0
```

SendTransfer (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 08 00 02 53 53 4E 5F 01 00 00 00 01 4F .....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01                               N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 08                                           ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53                                           ..SS
```

Message ID:

```
0008: 4E 5F 01 00                                           N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00                                               ..
Item Count=0
```

SendMute (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 09 00 02 53 53 4E 5F 01 00 00 00 01 4F  ....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01  N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 09  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendRingMute (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 0A 00 02 53 53 4E 5F 01 00 00 00 01 4F  . . . . .SSN_ . . . . .O
0010: 4E 5F 5F 01 00 00 00 01  N_ . . . . .
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 0A  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  . .SS
```

Message ID:

```
0008: 4E 5F 01 00  N_ . .
Message ID=1314849024
```

Item Count:

```
000C: 00 00  . .
Item Count=0
```

SendDelayDump (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 0B 00 02 53 53 4E 5F 01 00 00 00 01 4F  ....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01  N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 0B  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendHandset (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 0C 00 02 53 53 4E 5F 01 00 00 00 01 4F  ....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01  N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 0C  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendSpeaker (session=1, on=yes)

Full Packet

Packet data:

```
0000: 00 00 00 0D 00 02 53 53 4E 5F 01 00 00 00 01 4F .....SSN_.....O
0010: 4E 5F 5F 01 00 00 00 01                               N_.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 0D                                           ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53                                           ..SS
```

Message ID:

```
0008: 4E 5F 01 00                                           N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00                                               ..
Item Count=0
```

SendLineState(session=1,line=3,col=1,state=3,elapsedSec=25)

Full Packet

Packet data:

```

0000: 00 00 00 0E 00 05 53 53 4E 5F 01 00 00 00 01 4C  ....SSN_.....L
0010: 49 4E 45 01 00 00 00 03 43 4F 4C 5F 01 00 00 00  INE.....COL_....
0020: 01 53 54 41 54 01 00 00 00 03 54 49 4D 45 01 00  .STAT.....TIME..
0030: 00 00 19                                     ...
    
```

Packet Breakdown

Payload size (network byte order):

```

0000: 00 00 00 0E                                     ....
    
```

Payload size XOR 0xA5A55A5A:

```

0004: 00 05 53 53                                     ..SS
    
```

Message ID:

```

0008: 4E 5F 01 00                                     N_..
    Message ID=1314849024
    
```

Item Count:

```

000C: 00 00                                     ..
    Item Count=0
    
```

SendSeizeLine (session=1, line=3, col=1)

Full Packet**Packet data:**

```
0000: 00 00 00 0F 00 03 53 53 4E 5F 01 00 00 00 01 4C  ....SSN_.....L
0010: 49 4E 45 01 00 00 00 03 43 4F 4C 5F 01 00 00 00  INE.....COL_....
0020: 01  .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 0F  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendRingLine (session=1, callerId='555-1212', line=3)

Full Packet

Packet data:

```
0000: 00 00 00 10 00 03 53 53 4E 5F 01 00 00 00 01 43  ....SSN_.....C
0010: 4C 49 44 02 00 09 35 35 35 2D 31 32 31 32 00 4C  LID...555-1212.L
0020: 49 4E 45 01 00 00 00 03  INE.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 10  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendDropLine (session=1,callerId='555-1212',line=3)

Full Packet

Packet data:

```
0000: 00 00 00 11 00 03 53 53 4E 5F 01 00 00 00 01 43  ....SSN_.....C
0010: 4C 49 44 02 00 09 35 35 35 2D 31 32 31 32 00 4C  LID...555-1212.L
0020: 49 4E 45 01 00 00 00 03  INE.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 11  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendAnswerLine (session=1, callerId='555-1212', line=3, col=1)

Full Packet**Packet data:**

```
0000: 00 00 00 12 00 04 53 53 4E 5F 01 00 00 00 01 43  ....SSN_.....C
0010: 4C 49 44 02 00 09 35 35 35 2D 31 32 31 32 00 4C  LID...555-1212.L
0020: 49 4E 45 01 00 00 00 03 43 4F 4C 5F 01 00 00 00  INE.....COL_....
0030: 01  .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 12  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 04 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

SendSelectLine (session=1, callerId='555-1212', line=3, col=1)

Full Packet**Packet data:**

```
0000: 00 00 00 13 00 04 53 53 4E 5F 01 00 00 00 01 43  . . . . .SSN_ . . . . .C
0010: 4C 49 44 02 00 09 35 35 35 2D 31 32 31 32 00 4C  LID...555-1212.L
0020: 49 4E 45 01 00 00 00 03 43 4F 4C 5F 01 00 00 00  INE... .COL_ . . . . .
0030: 01  .
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 13  . . . .
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 04 53 53  . .SS
```

Message ID:

```
0008: 4E 5F 01 00  N_ . .
Message ID=1314849024
```

Item Count:

```
000C: 00 00  . .
Item Count=0
```

SendDialKey (session=1, key=53)

Full Packet

Packet data:

```
0000: 00 00 00 14 00 02 53 53 4E 5F 01 00 00 00 01 4B  ....SSN_.....K
0010: 45 59 5F 01 00 00 00 35  ..SS
                                EY_.....5
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 14  ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 02 53 53  ..SS
```

Message ID:

```
0008: 4E 5F 01 00  N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00  ..
Item Count=0
```

```
SendText(session=1,type=43,text='Text string as received from client',line=3)
```

Full Packet

Packet data:

```
0000: 00 00 00 15 00 04 53 53 4E 5F 01 00 00 00 01 54 .....SSN_.....T
0010: 54 59 50 01 00 00 00 2B 54 45 58 54 02 00 24 54 TYP....+TEXT..$T
0020: 65 78 74 20 73 74 72 69 6E 67 20 61 73 20 72 65 ext string as re
0030: 63 65 69 76 65 64 20 66 72 6F 6D 20 63 6C 69 65 ceived from clie
0040: 6E 74 00 4C 49 4E 45 01 00 00 00 03 nt.LINE.....
```

Packet Breakdown

Payload size (network byte order):

```
0000: 00 00 00 15 .....

```

Payload size XOR 0xA5A55A5A:

```
0004: 00 04 53 53 ..SS

```

Message ID:

```
0008: 4E 5F 01 00 N_..
Message ID=1314849024

```

Item Count:

```
000C: 00 00 ..
Item Count=0

```

SendError(nSession=1,code=3,text='Error text')

Full Packet**Packet data:**

```
0000: 00 00 00 16 00 03 53 53 4E 5F 01 00 00 00 01 45  ....SSN_.....E
0010: 4E 55 4D 01 00 00 00 03 45 54 58 54 02 00 0B 45  NUM.....ETXT...E
0020: 72 72 6F 72 20 74 65 78 74 00                      rror text.
```

Packet Breakdown**Payload size (network byte order):**

```
0000: 00 00 00 16                      ....
```

Payload size XOR 0xA5A55A5A:

```
0004: 00 03 53 53                      ..SS
```

Message ID:

```
0008: 4E 5F 01 00                      N_..
Message ID=1314849024
```

Item Count:

```
000C: 00 00                      ..
Item Count=0
```