Netdraft’s protocol is based on UDP message-response. The client is usually the last to communicate, finishing each exchange with an ACK packet.

I have identified the following messages:

# Hello

First packet sent from client to server (joing a draft)

## Client -> Server

c2:64:72:69:70:70:65:72:32:33:34

* c2:64
* 72:69:70:70:65:72:32:33:34 - username (“ripper234”)

## Server -> Client

ff:00:80:78:e5:1a:00:01:c2:64:03:03:41:79:61:c0:a8:00:06:09:72:69:70:70:65:72:32:33:34:c0:a8:00:02

* “ff:00:80:78:e5:1a:00:01:c2:64:03:03”
* “41:79:61” - “Aya” – the first player’s name
* c0:a8:00
* “72:69:70:70:65:72:32:33:34” – “ripper234”, second player’s name
* c0:a8:00
* 02

# Hello2

Following the first Hello packet

## Client -> Server

**ff:00:80**:78:25 - Ack

## Server -> Client

**ff:01:80**:78:e5:10:00:03:ff:0d:56:65:72:73:69:6f:6e:20:32:2e:30:30:32

* ff:00:80:78
* e5:10:00:03:ff:0d
* 56:65:72:73:69:6f:6e:20:32:2e:30:30:32 – “Version 2.002” (Netdraft version)

## Client -> Server

**ff:00:80**:78:25 – Ack

# Messaging - sending a message to the server

## Client -> Server

**ff:00:80**:30:99:0c:00:03:0a:52:6f:6e:20:74:6f:20:41:79:61

* **ff:00:80**
* 30:99
* 0c - Length
* 00:03
* 0a - Length
* 52:6f:6e:20:74:6f:20:41:79:61 - The message (“Ron to Aya”)

Another sample:

ff:01:80:30:99:09:00:03:07:70:69:6e:67:69:6e:67

* ff:01:80
* 30:99
* 09 - Length
* 00:03
* 07 - Length
* 70:69:6e:67:69:6e:67 – The message (“Pinging”)

## Server 🡪 Client

**ff:00:80**:30:19:02:80:78:e5:0d:00:03:01:0a:52:6f:6e:20:74:6f:20:41:79:61

* **ff:00:80**
* 30:19
* 02
* 80:78:e5
* 0d
* 00:03:01
* 0a
* 52:6f:6e:20:74:6f:20:41:79:61 - The message we just sent (“Ron to Aya”)

Another sample:

ff:01:80:30:19:04:80:78:e5:0a:00:03:01:07:70:69:6e:67:69:6e:67

* ff:01:80 – is the middle part a sequence number ?
* 30:19
* 04
* 80:78:e5
* 0a – Length of what follows
* 00:03:01
* 07 – Length of what follows
* 70:69:6e:67:69:6e:67 – the message we just sent (“Pinging”)

## Client 🡪 Server

ff:02:80:78:25 – Ack

# Messaging – getting a message from the server

## Server 🡪 Client

**ff:03:80**:78:e5:0d:00:03:00:0a:41:79:61:20:74:6f:20:52:6f:6e

* **ff:03:80**
* 78:e5:0d:00:03:00:0a:41
* 79:61:20:74:6f:20:52:6f:6e – “Aya to Ron” (The message)

## Client 🡪 Server

**ff:00:80**:78:25 - Ack

# Ping message

## Client 🡪 Server

**ff:02:80**:30:99:06:00:06:**ff:37:9d:6c:15**

* ff:02:80
* 30:99:06:00:06
* **ff:37:9d:6c:15**

## Server 🡪 Client

**ff:02:80**:30:19:05:80:78:e5:06:00:07:**ff:37:9d:6c:15**

* **ff:02:80**
* 30:19:05:80:78:e5:06:00:07
* **ff:37:9d:6c:15**

# Server is picking seat order

## Server 🡪 Client

ff:07:80:78:e5:01:00:04

## Client 🡪 Server

Ack

# Starting Draft

## Server 🡪 Client

ff:09:80:78:a5:02:00:06:fe

## Client 🡪 Server

ff:09:80:78:25:03:80:30:d9:02:00:07:fe

## Server 🡪 Client

ff:03:80:30:19

## Server 🡪 Client

ff:0a:80:78:e5:ea:00:05:3c:88:c6:fa:00:03:03:52:4f:45:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:03:52:4f:45:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:03:52:4f:45:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:13:52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00

* ff:0a:80:78:e5:ea:00:05:3c:88:c6:fa:00
* 03 – 3 packs
  + Pack 1
    - 03 – length of short name
    - 52:4f:45 – short name (ROE)
    - 13 – length of full name
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69 – full name (Rise of the Eldrazi)
    - 13 – the full name is transmitted twice, for some reason
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69
  + Pack 2
    - 03
    - 52:4f:45
    - 13
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69
    - 13
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69
  + Pack 3
    - 03
    - 52:4f:45
    - 13
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69
    - 13
    - 52:69:73:65:20:6f:66:20:74:68:65:20:45:6c:64:72:61:7a:69
* 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00

## Client -> Server

ff:0a:80:78:25 – Ack

# Pack content

Pack 1:

ff:0b:80:78:e5:ea:00:0a:0e:57:05:15:4e:65:61:72:2d:44:65:61:74:68:20:45:78:70:65:72:69:65:6e:63:65:42:05:0b:43:6f:72:70:73:65:68:61:74:63:68:52:04:13:53:6f:75:6c:73:75:72:67:65:20:45:6c:65:6d:65:6e:74:61:6c:42:01:0f:53:75:66:66:65:72:20:74:68:65:20:50:61:73:74:47:05:0b:53:74:6f:6d:70:65:72:20:43:75:62:55:03:11:56:65:6e:65:72:61:74:65:64:20:54:65:61:63:68:65:72:47:03:0c:41:75:72:61:20:47:6e:61:72:6c:69:64:42:06:0c:45:73:73:65:6e:63:65:20:46:65:65:64:55:02:11:48:61:6c:69:6d:61:72:20:57:61:76:65:77:61:74:63:68:52:02:0b:4f:67:72:65:20:53:65:6e:74:72:79:55:02:0a:4e:61:72:63:6f:6c:65:70:73:79:57:02:0b:45:6c:61:6e:64:20:55:6d:62:72:61:52:02:0f:47:6f:62:6c:69:6e:20:54:75:6e:6e:65:6c:65:72:55:04:08:4c:61:79:20:42:61:72:65

* ff:0b:80
* 78:e5:ea
* 00:0a
* 0e – number of cards in the pack (14)
  + First card:
    - 57 – the card’s color (“W”)
    - 05 - converted mana cost
    - 15 – length of card name
    - 4e:65:61:72:2d:44:65:61:74:68:20:45:78:70:65:72:69:65:6e:63:65 – Card name (“Near-Death Experience”)
  + Second card:
    - 42 – the card’s color (“B”)
    - 05 – converted mana cost
    - 0b – length of card name
    - 43:6f:72:70:73:65:68:61:74:63:68 – Card name (“Corpsehatch”)
  + Third card –
    - 52 – “R”
    - 04 - converted mana cost
    - 13 - length
    - 53:6f:75:6c:73:75:72:67:65:20:45:6c:65:6d:65:6e:74:61:6c (“Soulsurge Elemental”)
  + Forth
    - 42 – “B”
    - 01 - converted mana cost
    - 0f - length
    - 53:75:66:66:65:72:20:74:68:65:20:50:61:73:74 (“Suffer the past”)
  + Fifth
    - 47 – “G”
    - 05
    - 0b
    - 53:74:6f:6d:70:65:72:20:43:75:62 (“Stomer cub”)
  + Sixth
    - 55 – “U”
    - 03
    - 11
    - 56:65:6e:65:72:61:74:65:64:20:54:65:61:63:68:65:72 (“Venerated Teacher”)
  + Seventh
    - 47 – “G”
    - 03
    - 0c
    - 41:75:72:61:20:47:6e:61:72:6c:69:64 (“Aura Gnarlid”)
  + Eighth
    - 42 – “B”
    - 06
    - 0c
    - 45:73:73:65:6e:63:65:20:46:65:65:64 (“Essence Feed”)
  + Ninth
    - 55 – “U”
    - 02
    - 11
    - 48:61:6c:69:6d:61:72:20:57:61:76:65:77:61:74:63:68 (“Halimar Wavewatch”)
  + Tenth
    - 52 – “R”
    - 02
    - 0b
    - 4f:67:72:65:20:53:65:6e:74:72:79 – (“Ogre Sentry”)
  + Eleventh
    - 55 – “U”
    - 02
    - 0a
    - 4e:61:72:63:6f:6c:65:70:73:79
  + Twelfth
    - 57 – “W”
    - 02
    - 0b
    - 45:6c:61:6e:64:20:55:6d:62:72:61
  + Thirteenth
    - 52 – “R”
    - 02
    - 0f
    - 47:6f:62:6c:69:6e:20:54:75:6e:6e:65:6c:65:72
  + Forteenth
    - 55
    - 04
    - 08
    - 4c:61:79:20:42:61:72:65

# Draft Ping

As long as the draft is going on, the server is pinging the clients every second:

## Server 🡪 Client

ff:0c:80:78:e5:02:00:11:3b

0c is the seq number.

The last hex is the number of seconds left for the pick.

Other samples:

ff:0d:80:78:e5:02:00:11:3a

ff:0e:80:78:e5:02:00:11:39

ff:0f:80:78:e5:02:00:11:38

ff:10:80:78:e5:02:00:11:37

…

ff:18:80:78:e5:02:00:11:2f

ff:19:80:78:e5:02:00:11:2e

ff:1a:80:78:e5:02:00:11:2d

ff:1b:80:78:e5:02:00:11:2c

ff:1c:80:78:e5:02:00:11:2b

ff:1d:80:78:e5:02:00:11:2a

…

ff:2d:80:78:e5:02:00:11:1b

ff:2e:80:78:e5:02:00:11:1a

ff:2f:80:78:e5:02:00:11:19

Pick 2:

ff:32:80:78:e5:02:00:11:33

…

ff:36:80:78:e5:02:00:11:2f

ff:37:80:78:e5:02:00:11:2e

## Client -> Server

Ack

ff:0c:80:78:25

ff:0d:80:78:25

ff:0e:80:78:25

# Picking a card

## Client -> Server

* ff:04:80:30:99:03:00:0b
* 00 – pick number
* 03 – what card did the client pick (0/1 based?)

Another example:

* ff:05:80:30:99:03:00:0b
* 01
* 03

Another:

* ff:06:80:30:99:03:00:0b
* 02
* 07

Another:

* ff:07:80:30:99:03:00:0b
* 03
* 09

## Server 🡪 Client

Server responds with a new pack (no other ack) – we were the last client the server was waiting for.

* ff:04:80
* 30:19:30:80:78:e5:d8
* 00:0a
* 0d – number of cards
  + First card
    - 55
    - 02
    - 13
    - 43:6f:72:61:6c:68:65:6c:6d:20:43:6f:6d:6d:61:6e:64:65:72
  + … 47:07:0c:50:65:6c:61:6b:6b:61:20:57:75:72:6d:47:05:0b:42:72:6f:6f:64:77:61:72:64:65:6e:42:08:0d:53:6b:65:6c:65:74:61:6c:20:57:75:72:6d:42:03:12:50:65:72:69:73:68:20:74:68:65:20:54:68:6f:75:67:68:74:52:03:10:4c:61:76:61:66:75:6d:65:20:49:6e:76:6f:6b:65:72:57:01:0e:43:61:72:61:76:61:6e:20:45:73:63:6f:72:74:47:02:0c:4e:65:73:74:20:49:6e:76:61:64:65:72:42:01:10:44:65:6d:6f:6e:69:63:20:41:70:70:65:74:69:74:65:57:02:0b:45:6c:61:6e:64:20:55:6d:62:72:61:52:02:0f:47:6f:62:6c:69:6e:20:54:75:6e:6e:65:6c:65:72:55:04:08:4c:61:79:20:42:61:72:65:47:04:0a:4f:6e:64:75:20:47:69:61:6e:74

## Client 🡪 Server

Ack

# Decoded Protocol

## Connect packet

## “Ack” packet

**ff: <SEQUENCE\_NUMBER>:80**:78:25

Sequence number is rolling from 00 upword.

## Send message to Server

ff:01:80:30:99 + <Length of what follows> + 00:03 + <Length of what follows> + Message

## Message ACK from Server

???

## Pack content from Server

* ff <SEQ> 80:78:e5:ea:00:0a
* Number of cards
* For each card:
  + Color coded into a single uppercase letter (“BUWRG….”)
  + Converted mana cost
  + Length of name
  + Name