NEAT - Key Features

- Single API to transport
  - Ordered or Un-ordered delivery
  - Explicit support for multistreaming and multipath
  - Support for security
  - Single-sided (remote does not need to use NEAT)

- Policy-based selection
  - Optional policy manager
  - Flow/Application properties represented in JSON
Policy Example: Transport Selection

• App Sends JSON requiring reliable transport

```
{}
    "transport": {
        "value": "reliable"
    }
}
```

• NEAT proposes a set of candidates (SCTP, TCP, ... MPTCP)

• NEAT performs happy eyeballs
  
  (draft-grinnemo-taps-he)

• A NEAT Flow Endpoint is used for communication
NEAT User API: Properties

- App
- Properties

NEAT User API

NEAT Logic

Policy Interface

- Policy Manager
- Policy Info Base

Path Char. Info Base

Network Interface

Network Interface

Network Interface

P: SET_PROPERTIES(..., DSCP, ...)
P: OPEN
P: GETPROPERTY(Used DSCP)

Configured

Discovered
NEAT User API: Properties

P: SET_PROPERTIES(\ldots, \textit{DSCP}, \ldots)

P: OPEN

P: GETPROPERTY(\textit{Used DSCP})
NEAT User API: Properties

P: SET_PROPERTIES(..., DSCP, ...)
P: OPEN
P: GETPROPERTY(Used DSCP)
NEAT User API: NEAT Flow Endpoint

App

NEAT User API

NEAT Logic

Transport Protocol

Transport Protocol

Network Interface

Happy Eyeballs
NEAT User API: NEAT Flow Endpoint

App

NEAT User API

NEAT Logic

Transport Protocol

Happy Eyeballs

Network Interface
Policy Example: App Preference

• App Sends JSON requiring a network specific property

{  
  "profile":"low_latency"
}

• NEAT Policy Manager proposes candidates
  • Interface with lowest known latency (measured or signalled) will be first candidate

• NEAT Logic creates a NEAT Flow
NEAT User API: NEAT Flow Endpoint

App

NEAT User API

NEAT Logic

Transport Protocol...

Transport Protocol

Transport selection

Network Interface...

Path selection

Network Interface

Network Interface

Network Interface
NEAT User API: NEAT Flow Endpoint

App

NEAT User API

NEAT Logic

Transport Protocol

Network Interface

Transport selection

Path selection
NEAT User API: Callback-based

Expects an event-loop to read/write data
Next Steps

• Please use/play with our running code and our example apps...

• Rev -01 - minor fixes that did not make -00

• What does the WG see happening next?

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