neət

NEAT Policy

tom@erg.abdn.ac.uk

Tom Jones, Gorry Fairhurst,
Anna Brunstrom

NEAT - Key Features

- Single API to transport
- Single-Sided deployment
- Callback Driven
- **Policy**
- Multistreaming
- Multipath
- Security

neat

Terms

- **Application Requirement**
- **Transport** - transport protocol to try
- Path
  - **Interface** - physical network interface
  - **Source Address** - IP address on interface
  - **Destination Address**

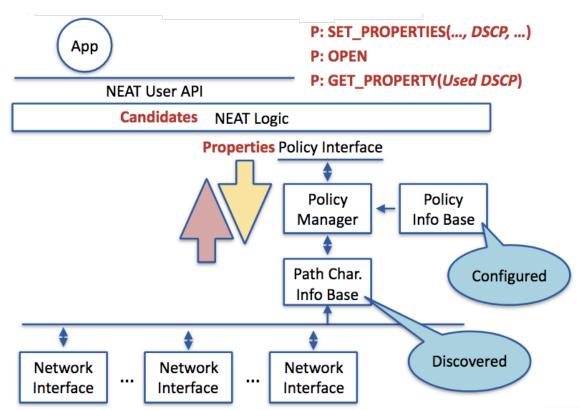- **Candidate** - triple of above (Interface, Path, Transport)

neət

Really quite easy

- Give me a reliable transport on a low latency path

neət

Really quite easy

- Give me a reliable transport on a low latency path
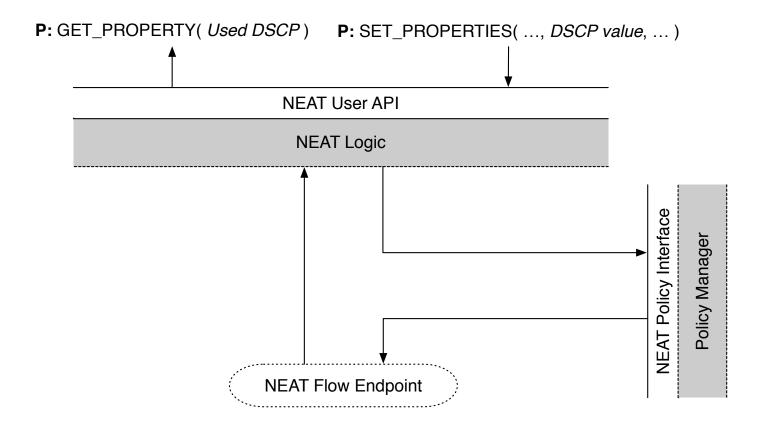
Devil is in the details

- Give me a reliable transport on a low latency path

- Give me (TCP, MPTCP, SCTP, QUIC) on a path with latency of (<5ms), with small networking buffering, high capacity, etc …

- A comprehensive method is too hard to standardise at the moment

neət

NEAT Policy API Interface

P: GET_PROPERTY(*Used DSCP*)   P: SET_PROPERTIES(…, *DSCP value*, …)

NEAT User API

NEAT Logic

NEAT Policy Interface

Policy Manager

NEAT Flow Endpoint

neat

Policy Manager Components

- Rules Engine

- Policy Information Base
  - Configured
- Characteristics Information Base
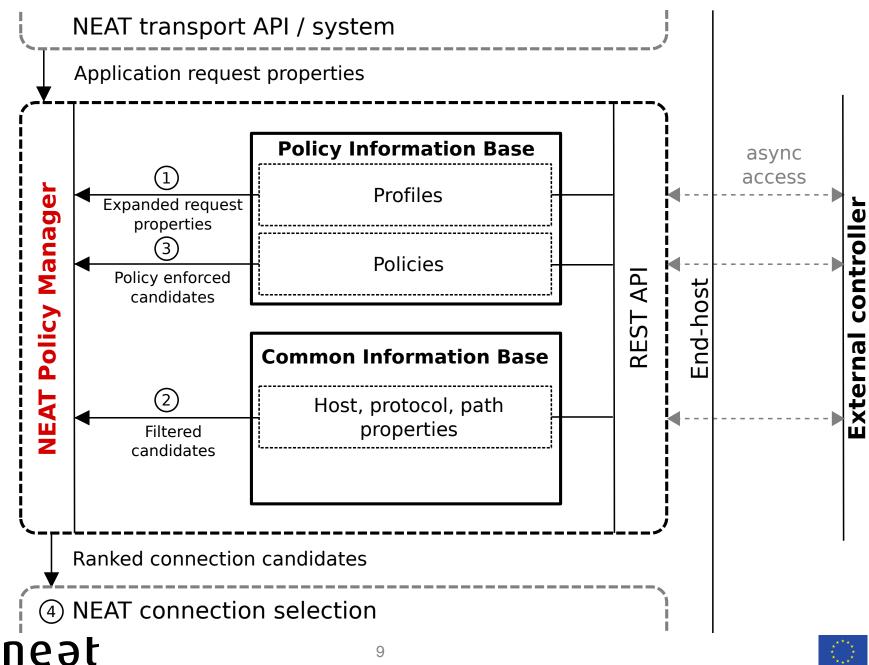 - Discovered

neat

Information Base Properties

- Per **Interface**
  - Transport protocols
  - Latency
  - Message size
  - …

  - PvD carries very similar information

Lessons Learned

- CIB collects highly useful information for selection

- Maintaining the CIB is difficult
  - Entries change over time
  - Entries may be removed, validity checked and new properties added

  - Solution depends on the context
    - SDN is different to Mobile

neət

Recommendations to TAPS

- Architecture needs to capture basic features of a policy system
    - External interfaces help with evolution
- A comprehensive method is too hard to standardise at the moment

- High level abstraction is very powerful (reliable, low latency, high capacity…)

neɘt

Questions?

neət

More on NEAT

- https://neat-project.org

- https://github.com/neat-project/neat

- https://tools.ietf.org/html/draft-fairhurst-taps-neat-01

- https://tools.ietf.org/html/draft-grinnemo-taps-he-03

neət