Rationale, Design, and Implementation of the Network Neutrality Bot

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Network neutrality

Network neutrality is a cornerstone of the Internet.
Problem

- How do we know whether ISPs respect network neutrality?

- Broadband contracts allow them to do almost as they please.

- Deep information asymmetry for users.
Objective

Better understanding of the *actual* practices.
Method

- Lightweight “bot” program for interested users.
- Distributed QoS measurements using various protocols.
- Bottom-up collection of the results.
Development

- Written in Python.
- Open-source (GPLv3).
- Public Git repositories:
  - http://github.com/neubot/neubot
  - http://github.com/bassosimone/neubot
Releases

- A patch release every 7-10 days (release early, release often).

- A minor release every 2-3 months.

- A major release “when needed”.

- The first public release (Neubot 0.3) to be available soon.
  - We’re working at http://www.neubot.org and to write documentation.
A quick tour of Neubot 0.3
Rendezvous
Updates
Speedtest details

GET /speedtest/negotiate
GET /speedtest/negotiate
HEAD /speedtest/latency
GET /speedtest/download
POST /speedtest/upload
POST /speedtest/collect
Components

Neubot server

rendezvous.py  speedtest.py

http/servers.py

net/* .py

Internet

net/* .py

http/servers.py  http/clients.py

ui .py  rendezvous .py  speedtest .py

Neubot agent
What’s next?
Peer-to-peer
Thank you

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► Website
  ▶ http://www.neubot.org
  ▶ http://nexa.polito.it/neubot

► Git tree
  ▶ http://github.com/neubot/neubot
  ▶ http://github.com/bassosimone/neubot