STUN/TURN using PHP in Despair (STuPiD)

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Motivation

- End-to-end streams with TCP-characteristics are required
  - End-to-end secure chatting
  - File Transfer

- InBand Bytestreams (IBB) have limitations
  - Bandwidth limitation

- Home network is behind a NAT
  - Not as simple to penetrate for TCP
  - Symmetric NAT is an open issue

- Relay solutions not widely deployed
  - XMPP: SOCKS5 servers
  - SIP: TURN-TCP
Deployment of Relays

- High bandwidth costs
  - No business model

- Not easy to deploy for a user
  - Requires external server with root access
  - Requires knowledge about Linux/UNIX
  - Requires knowledge about the server software

- External web space with PHP is available
  - Install a PHP script to get a relay
Example: Sender

POST /stupid.php?chid=i781hf64-0 HTTP/1.0
User-Agent: Example/1.11.4
Accept: */*
Host: example.org
Connection: Keep-Alive
Content-Type: application/octet-stream
Content-Length: 11

Hello World

HTTP/1.1 200 OK
Date: Sun, 05 Jul 2009 00:20:34 GMT
Server: Apache/2.2
Cache-Control: no-cache, must-revalidate
Expires: Sat, 26 Jul 1997 05:00:00 GMT
Vary: Accept-Encoding
Content-Length: 0
Keep-Alive: timeout=1, max=400
Connection: Keep-Alive
Content-Type: application/octet-stream
Example: Receiver

GET /stupid.php?chid=i781hf64-0 HTTP/1.0
User-Agent: Example/1.11.4
Accept: */*
Host: example.org
Connection: Keep-Alive

HTTP/1.1 200 OK
Date: Sun, 05 Jul 2009 00:21:29 GMT
Server: Apache/2.2
Cache-Control: no-cache, must-revalidate
Expires: Sat, 26 Jul 1997 05:00:00 GMT
Vary: Accept-Encoding
Content-Length: 11
Keep-Alive: timeout=1, max=400
Connection: Keep-Alive
Content-Type: application/octet-stream

Hello World