Reserving N and N+1 Ports with PCP: Preserving Parity & Contiguity

draft-boucadair-pcp-rtp-rtcp

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M. Boucadair & S. Sivakumar

Update since IETF#83

- Several implementations exist, e.g.,
  - Including commercial CGNs (DS-Lite Context)
  - PCP Client implementation (see http://www.ietf.org/proceedings/82/slides/pcp-8.pdf)
  - Integrated in Linphone SIP UA (http://tools.ietf.org/html/draft-boucadair-pcp-nat64-experiments-00#section-2.8)
- Simple solution for a well defined problem
  - SIP traversal when PCP-controlled NAT is in the path between the SIP UA and P-CSCF/SBE-DBE/Proxy Server
  - HNT and symmetric SIP are not required in the P-CSCF/SBE-DBE/Proxy Server
  - This is a real differentiator for PCP compared to other mechanisms to control NAT
- No issue has been reported to us
- We request to assign a stable code point for this option
  - Adopt this document as WG item

Excerpt of a configuration file of a PCP Server (Thanks W*)

```
description "web"
   lifetime minimum 60 maximum 1200
   max-description-size 20
   opcode
      get
      map
      announce
   exit
   option
      description
      port-reservation
      third-party
      prefer-failure
      exit
exit
```

Example of a PCP Request with RTP/RTCP Option

```
Version: 1
R bit: Request (0)
Opcode: MAP (0x01)
Requested Lifetime: 36000 sec
PCP Client's IP Address:
  2001:688:1f94:3000:289f:db7:e8ae:2988
            (2001:688:1f94:3000:289f:db7:e8ae:2988)
MAP Request Protocol: UDP (17)
Internal Port: 7076
Suggested External Port: 7076
Suggested External IP Address: ::ffff:0.0.0.0
```

Option Code: RTP (0x84) Option Length: 0 bytes Data: (NULL)

Example of a PCP Response with RTP/RTCP Option

```
Version: 1
R bit: Response (1)
Opcode: Unknown (0x81)
Result Code: 0
Lifetime: 36000 sec
Epoch Time: 1
MAP Response Protocol: UDP (17)
Internal Port: 7076
Assigned External Port: 7076
Assigned External IP Address: ::ffff:161.105.194.14
   (::ffff:161.105.194.14)
```

Option Code: RTP (0x84) Option Length: 0 bytes Data: (NULL)