Mapping of Address and Port using Translation (MAP-T)

2012-11-06
Main changes since last draft

• Moved NAT64-related (MAP-T) text from draft-ietf-softwire-map-01 into draft-ietf-softwire-map-t-00

• Number of editorial changes/additions to clarify:
  – Forwarding behavior (Section 6)
  – MAP-T use for IPv4-IPv6 communication (9.3)
  – Backwards compatibility with NAT64 (9.2)
  – Hub&spoke set-up (9.1)
Specifications

• MAP-T
  – https://datatracker.ietf.org/doc/draft-ietf-softwire-map-t/

• Shared spec core with MAP-E
  – Port mapping algorithm
  – BMR
  – FMR
  – DMR. (MAP-T uses IPv6 prefix, MAP-E an IPv6 address. BR IPv4 address is optional)

• Different
  – Data path. MAP-T uses NAT64 (RFC6145), MAP-E IPinIP (RFC2473)
  – ICMP handling
Discussions and updates

• Which configuration options of RFC 6145 may, should, or must, be chosen.
  – BR and CE MUST use same configuration options

• Handle of the “null-checksum UDP datagrams”
  – Configuration function: add encapsulation header for null-checksum UDP packets (1%)

• MAP-T, which converts fragments that have DF=1 into fragments that have DF=0, is in conflict with RFC 4821.
  – Configuration function: add encapsulation header for MF=1 and DF=1 packets (0.1%)
Testing

• Interop event at IETF84 and subsequent testing demonstrated MAP-T interoperability between 4 implementations.

• MAP-T CE compatibility with classic NAT64 BR gateways also verified

• Testing with hosts and real internet traffic has so far shown user-experience to be the same as with NAT44
  – No technical show stoppers
Next steps

• Align with MAP-E draft on making core spec and mapping algorithm more readable
  – Technically both drafts are stable

• Address any open questions.
MAP-T use case
More references

• MAP Testing Results

• Experience from MAP-T Testing

• Uses cases for MAP-T

• Experience from Double Translation and Encapsulation (MAP) Testing