Babel profile for Homenet
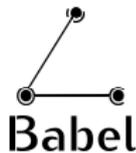
draft-chroboczek-homenet-babel-profile-00

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Babel

Problem statement and outline

Two issues:

- Babel is a flexible protocol, and different implementations interoperate to the extent possible (but no more);
- the interactions between HNCP and Babel are subtle and quick to anger.

Outline:

- Babel profile for Homenet
  (in current draft);
- interactions between HNCP and Babel
  (not written yet).

Babel profile for Homenet

Background

Babel is a flexible protocol. Two implementations of Babel will interoperate to the extent possible.

Example 1:

- – implementation A routes IPv6 and IPv4;
- – implementation B routes IPv6 only.

Then implementations A and B will exchange IPv6 routes, but obviously not IPv4 routes.

Babel profile for Homenet
Background 2

Babel is a flexible protocol. Two implementations of Babel will interoperate to the extent possible.

Example 2:

- – implementation X assigns a metric of 96 to wired links;
- – implementation Y assigns a metric of 1 to wired links.

Then a network with both implementations will suffer from sub-optimal routing.

Babel profile for Homenet

The Babel profile of Homenet specifies:

– the subset of the protocol that an implementation MUST implement;

– the values that a Homenet implementation MUST assign to its parameters.

It consists of

– 5 requirements that should be non-controversial;

– 1 requirement that might be contentious;

– 1 requirement that needs clarification.

Babel profile for Homenet

IPv4 support

> *REQ3: a Homenet implementation of Babel*
> *SHOULD implement the IPv4 subset of the*
> *protocol [...]*

Should this be MUST?

Personal (pessimistic) take: it doesn't matter much, since everybody will implement IPv4 for the foreseeable future. Either SHOULD or MUST is fine.

Babel profile for Homenet

Security

> *REQ5: a Homenet implementation of Babel MUST implement HMAC-based authentication, as defined in RFC 7298, MUST implement the two mandatory-to-implement algorithms defined in RFC 7298, and MUST enable and require authentication when instructed to do so by HNCP.*

Does this reflect WG consensus?

How is that supposed to work? How does HNCP instruct Babel to use security?

Interactions between HNCP and Babel

HNCP uses Babel to announce routes. The precise rules are nowhere written down:

- if an HNCP node receives a DHCPv6 prefix delegation, it announces a source-specific default route over Babel;
- if an HNCP node receives a DHCPv4 lease and wins the election for NAT gateway, it announces a (non-specific) default route over Babel;
- if an HNCP node assigns a prefix to an attached link, it announces a route towards this prefix over Babel.

If these rules are not uniform, sub-optimal routing and even routing failures may occur.

Conclusion

Suggest writing a single two-part document:

- – Babel profile for Homenet
  (based on current draft?);
- – interactions between HNCP and Babel
  (not written yet).

Humbly suggest that this should be a working group document.