BABEL IN BIRD

IMPLEMENTATION STATUS UPDATE

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THE BIRD ROUTING DAEMON

For those who don't know:

The BIRD project aims to develop a fully functional dynamic IP routing daemon primarily targeted on (but not limited to) Linux, FreeBSD and other UNIX-like systems and distributed under the GNU General Public License.

- From-scratch implementation of major routing protocols

- Speaks BGP, OSPF, RIP, BDF, RA and now Babel

- Clean architecture, very readable code

- No problems handling the full BGP routing table (scalable!)

- Developed by a bunch of friendly and meticulous Czech people

http://bird.network.cz

BABEL IN BIRD

- Initial implementation (by yours truly) in 2015

- Implementation experience talk at IETF 95

- First released in Bird 1.6 (April 2016)

- Implemented RFC6126 with no extensions

  - IPv6 only (no dual-stack support in Bird 1.6)

- Interoperable with babeld

UPDATES SINCE IETF 95

- Bird 2.0 released in December 2017, 2.0.2 released today

  - IPv4 support!

    - v4 routes over v6 Babel transport

  - Updates to support RFC6126bis:

    - Sub-TLVs parsed and mandatory bit honoured
    - Hello flags parsed and unicast hellos discarded

  - Source-specific routing (first extension!)

    - Implements draft-ietf-babel-source-specific-03
    - Core protocol code change < 200 lines
    - Speaks to babeld git, but not old versions (new wire format)

UPDATES SINCE IETF 95 (CONT.)

- Additional unreleased changes:

    - Acknowledged retractions (the "Chouasne algorithm")

        ○ Pending code review

    - Partial unicast implementation

        ○ Not shared with anyone yet

FUTURE PLANS / IDEAS

- Further experiments with unicast

- Security (DTLS and/or HMAC)

- WiFi link parameter detection and metrics

- Scaling and packet transmission optimisations

This is not a promise of features to come, and there is no schedule!

Patches always welcome!

COMPUTER SCIENCE
DATAVETENSKAP

SUMMARY

- Full RFC6126bis protocol implementation in Bird 2.0

  - Interoperates with deployed babeld

- Source-specific routing available in Bird git

  - Does **not** interoperate with old babeld

- Security and unicast work pending

- Please test it and report back! Patches also welcome

  http://bird.network.cz