BABEL IN BIRD
IMPLEMENTATION STATUS UPDATE

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IETF 101, 22nd March 2018
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!
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

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