

Fernglas

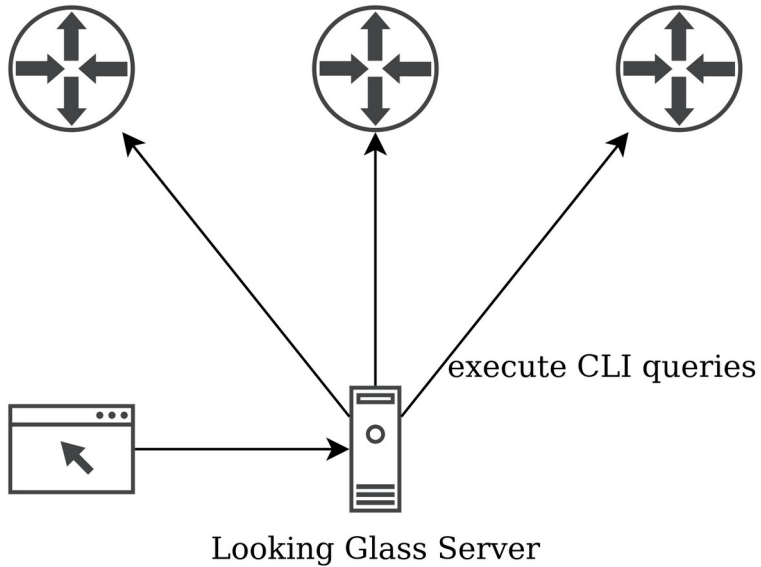
A BMP based looking glass



Briefly about us

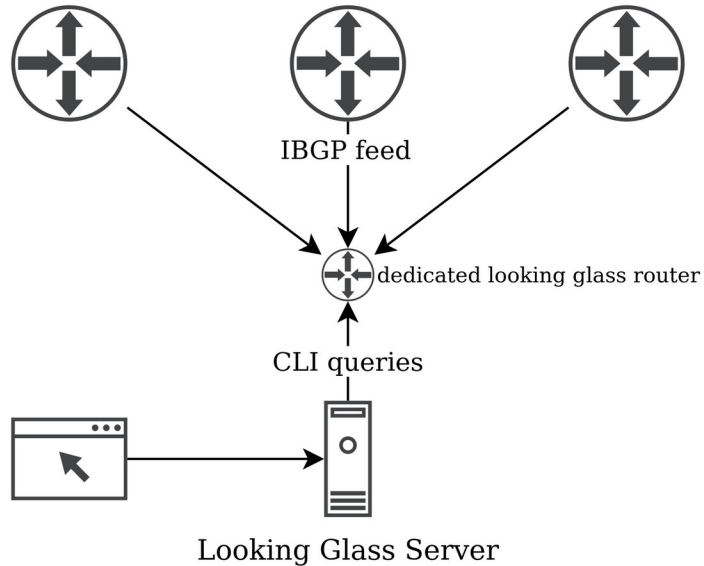
- WOBCOM GmbH
 - Regional ISP from Wolfsburg, Germany
 - Subsidiary of the municipal utilities company
 - Backbone including PoPs in Frankfurt, Berlin, Düsseldorf, Amsterdam
- Yureka Lilian
 - Used to be a hobbyist networker
 - Not (just) hobbyist anymore
 - Talk to me about network visualisation, NixOS and trains

Traditional Looking Glass



- ♥ Detailed and accurate output
- 💩 Remote code execution as a service
→ Query has to be carefully filtered
- 💩 Causes load on prod routers
→ Has to be rate-limited
- 💩 Depending on routers: slow
- 💩 Vendor specific interface

Dedicated Looking Glass Router



♥ Queries are decoupled from prod
→ liability issues solved

♥ Can be a software router

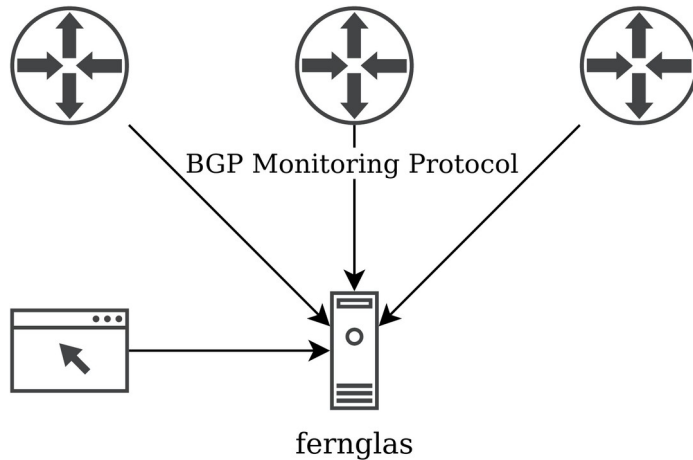
♥ → bird / gobgp / openbgpd

♥ Many available solutions

♥ → bird-lg / NLNOG lg

💩 But the data quality suffers

BGP Monitoring Protocol / Fernglas



- ♥ Written in Rust; distributed as fully statically linked binary
- ♥ Takes BMP and BGP feeds directly
- ✨ BMP transmits session state and even filtered routes
- ⚠ Be careful when deploying BMP: some implementations are buggy

More about Fernglas

- Implementation of lookup table based on the Tree-bitmap algorithm described by W. Eatherton, Z. Dittia, G. Varghes.
- Deduplication of route attributes using reference-counting smart pointers using Arc and the `weak_table` crate
- Streaming API responses while the tables are still being scanned
- Ongoing/future work:
 - Improved frontend ; expose more query options
 - "History feature"

Thank you!



github.com/wobcom/fernglas
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