

SPIN Demonstrator

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Holland Strikes Back
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Intro: Purpose of this session

- Elucidate goal / motivation of SPIN*:
 - Protect infrastructure operators (such as SIDN)
 - Give users more control over their in-home IoT
 - Preserve trust in the internet
- Technical deepening of the SPIN-concept

*Security and Privacy for In-home Networks

Typical home net

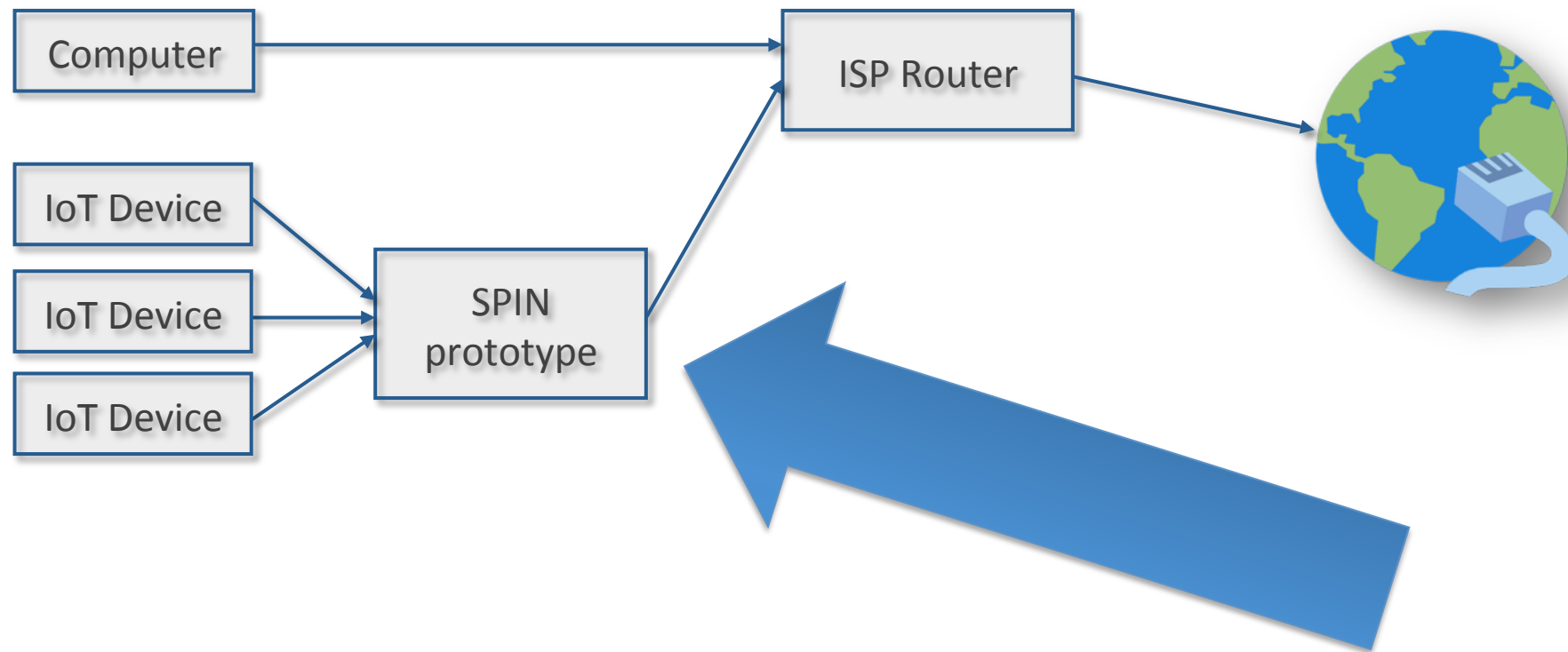


Ideal position for SPIN functionality



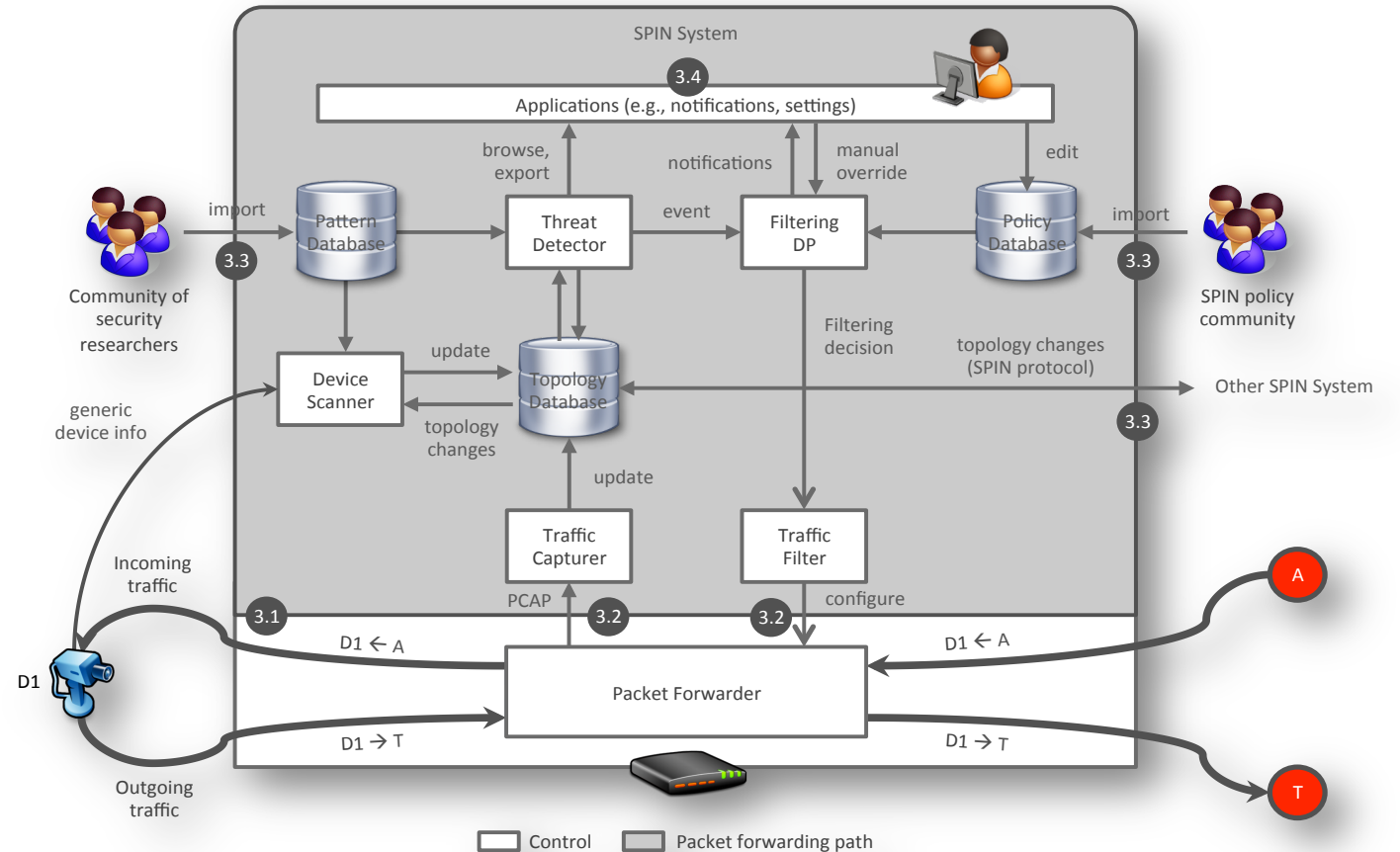
Current prototype

- Open source firmware
- OpenWRT based
- Focus on IoT devices with ‘predictable behavior’



The SPIN design principles and architecture

- SPIN controller
 - Visualize traffic
 - Monitor devices
 - Control traffic
- Processing is done locally
 - User in control
 - But largely automated



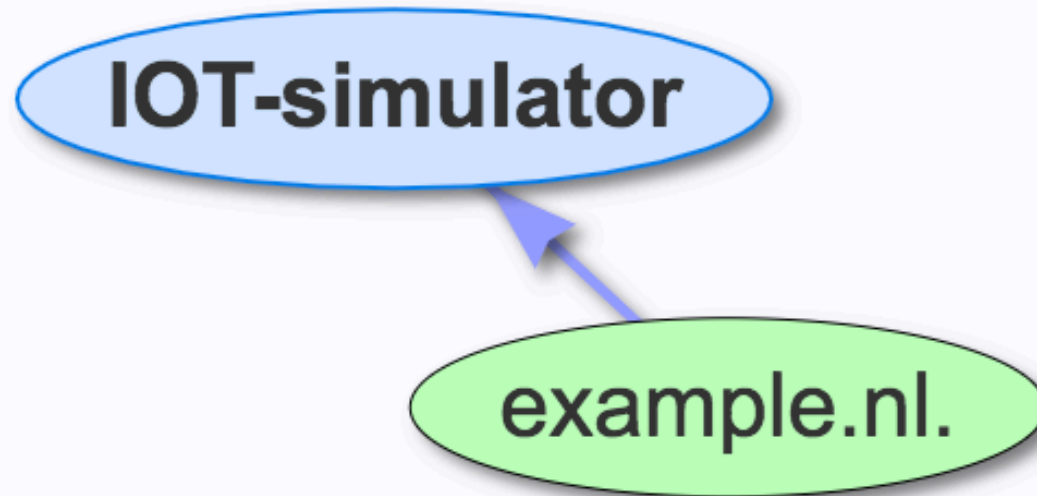
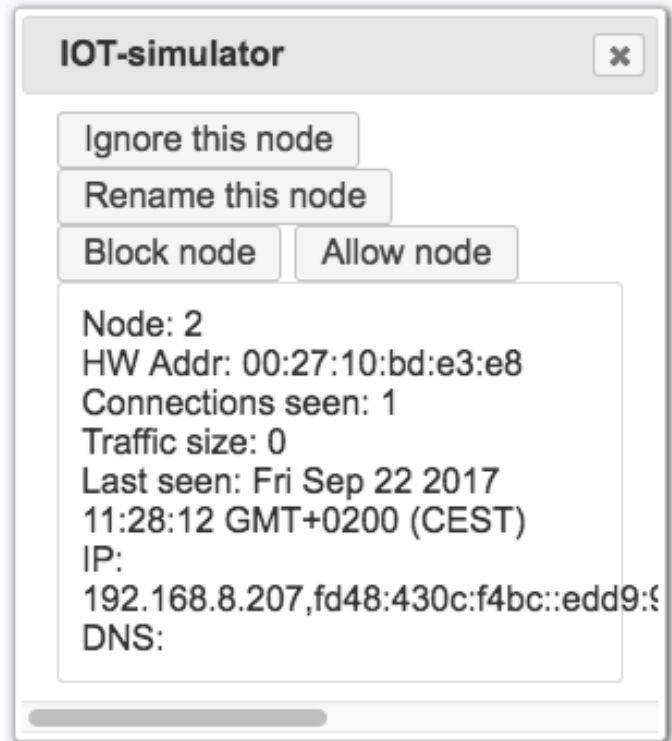
Demo!

STAND BACK

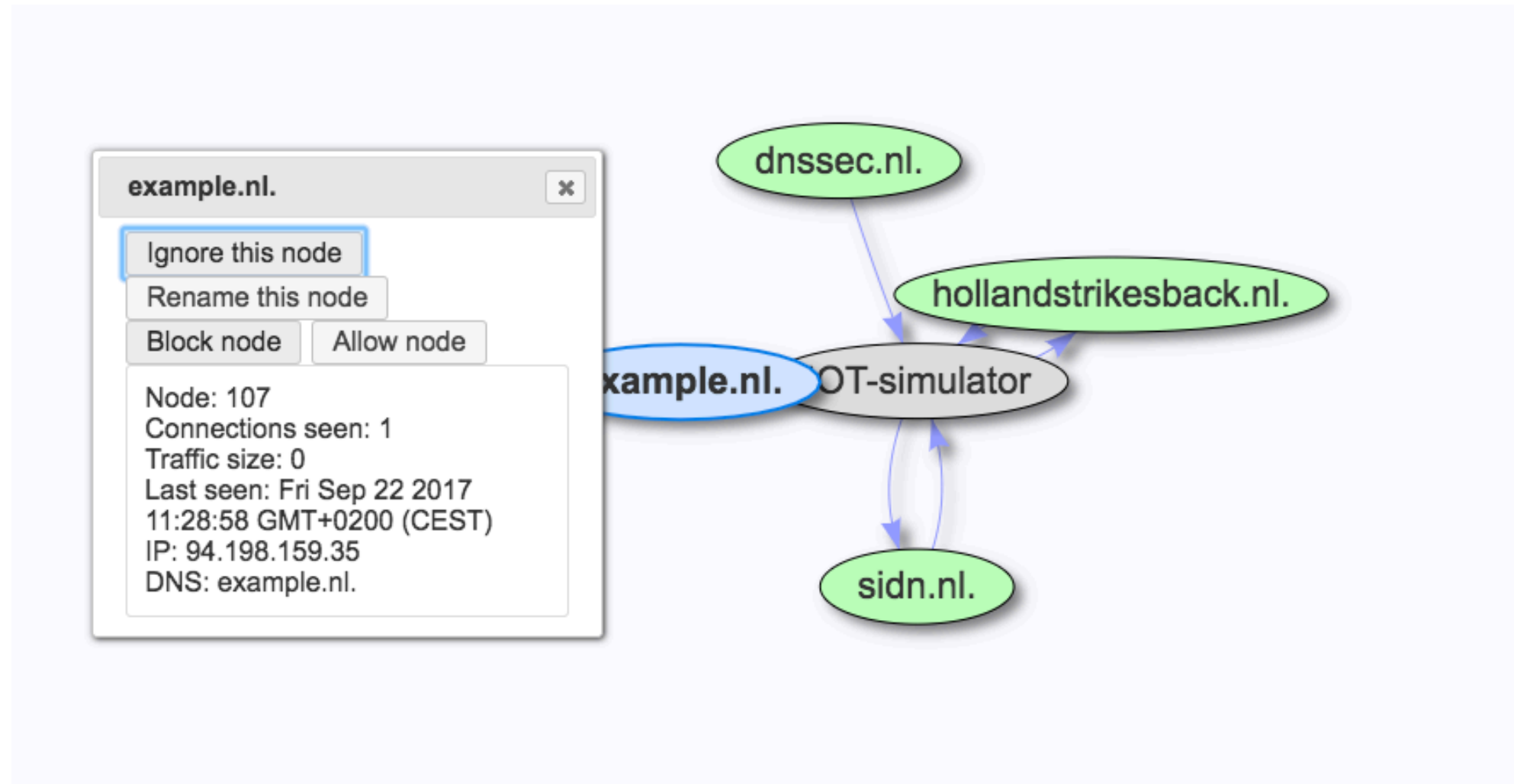


**I'M GOING TO TRY
SCIENCE**

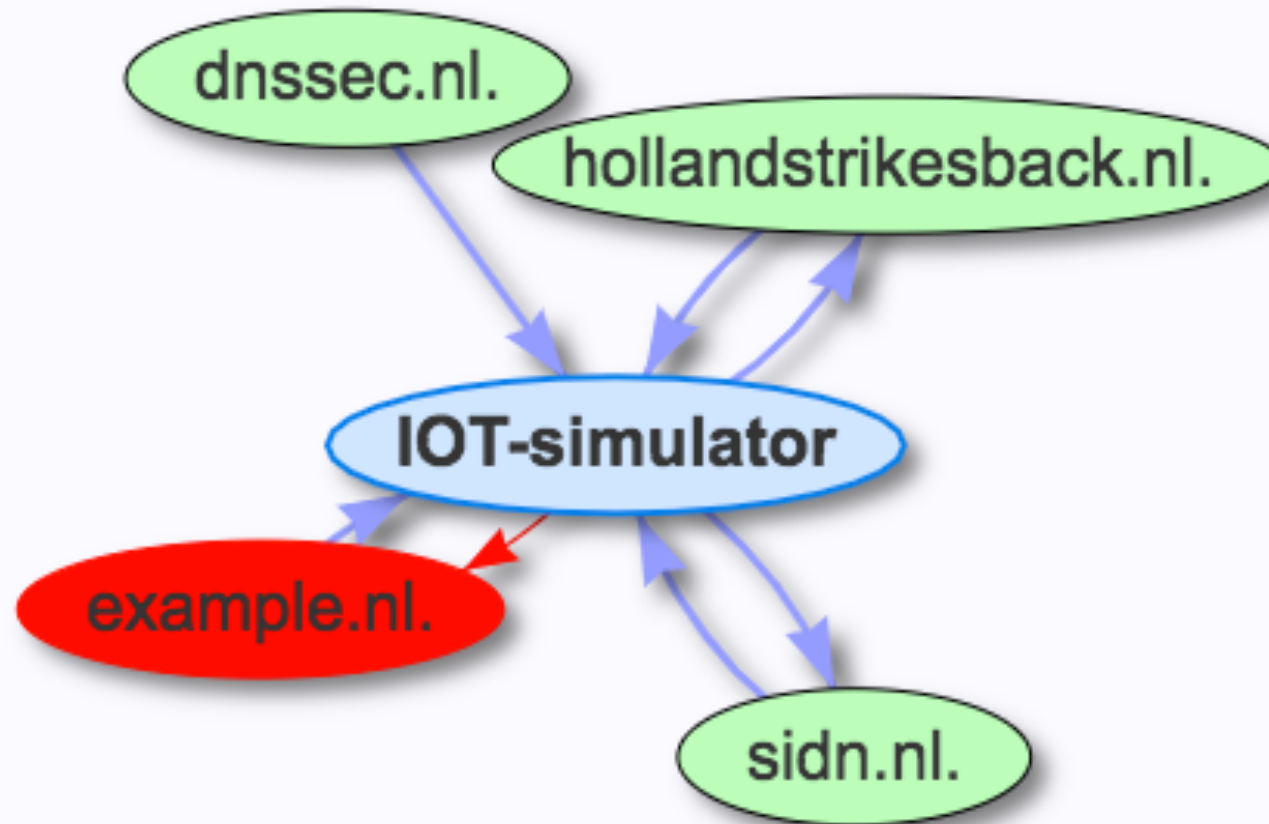
Demo – step 1



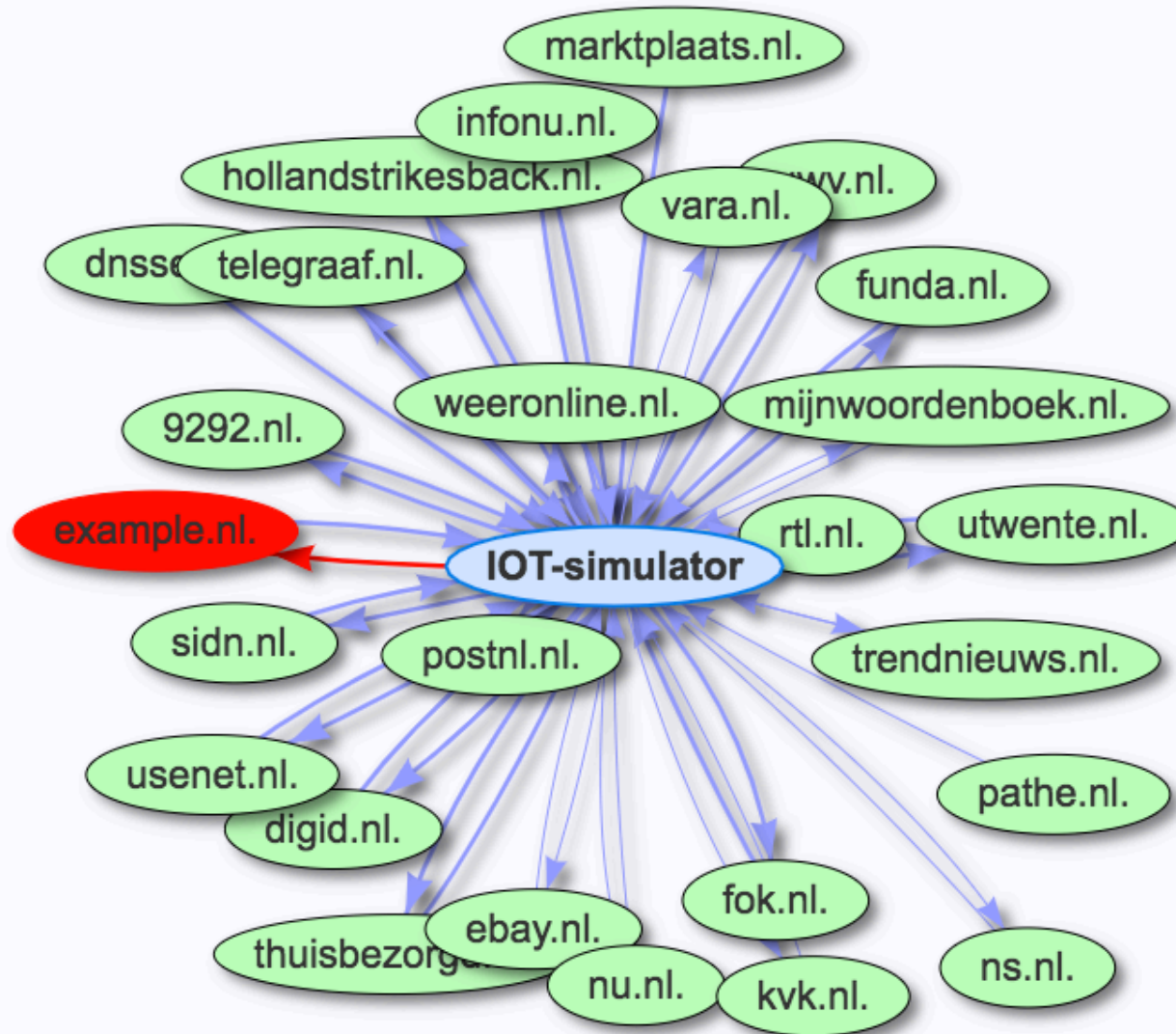
Demo – step 2



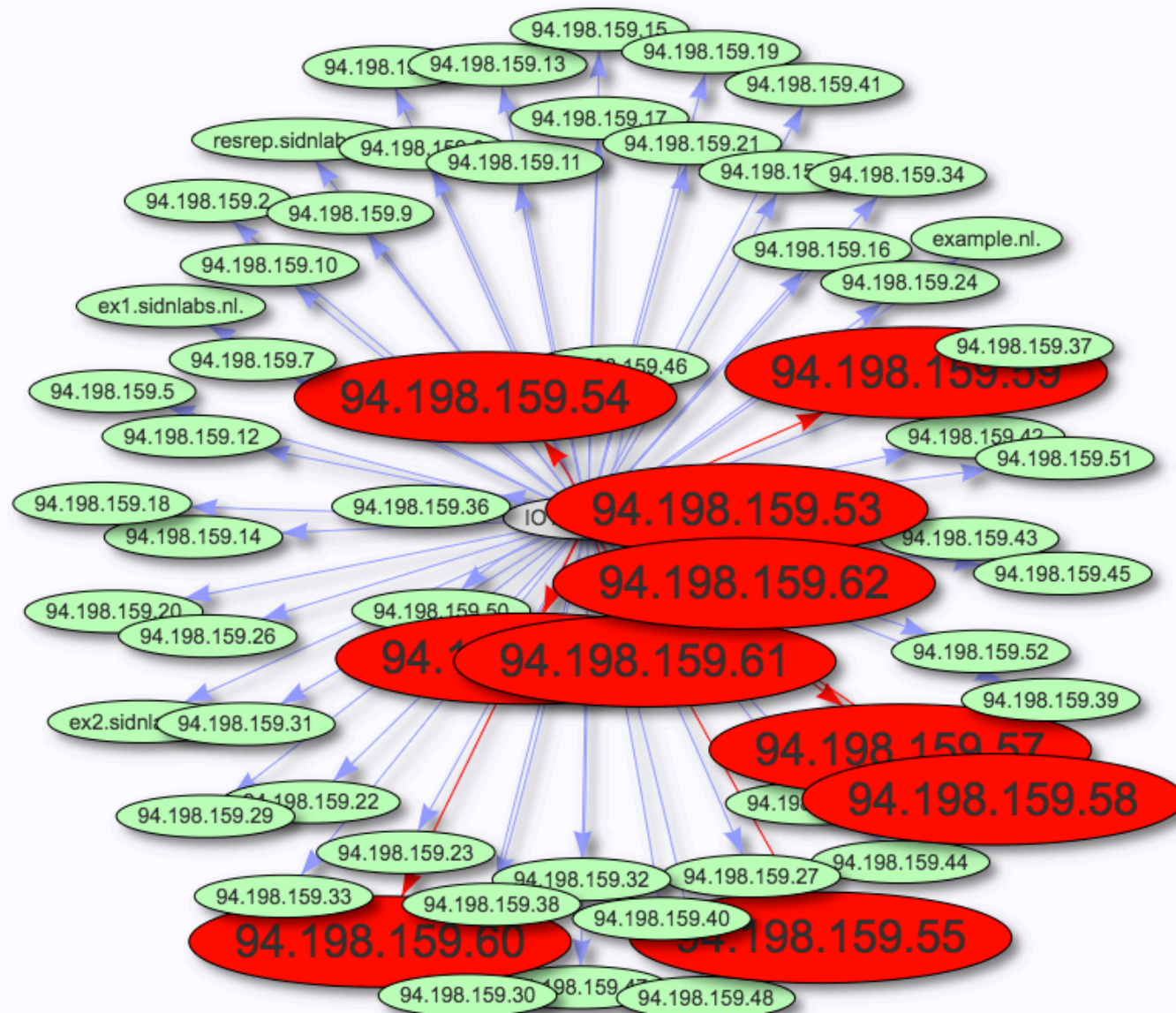
Demo – step 3



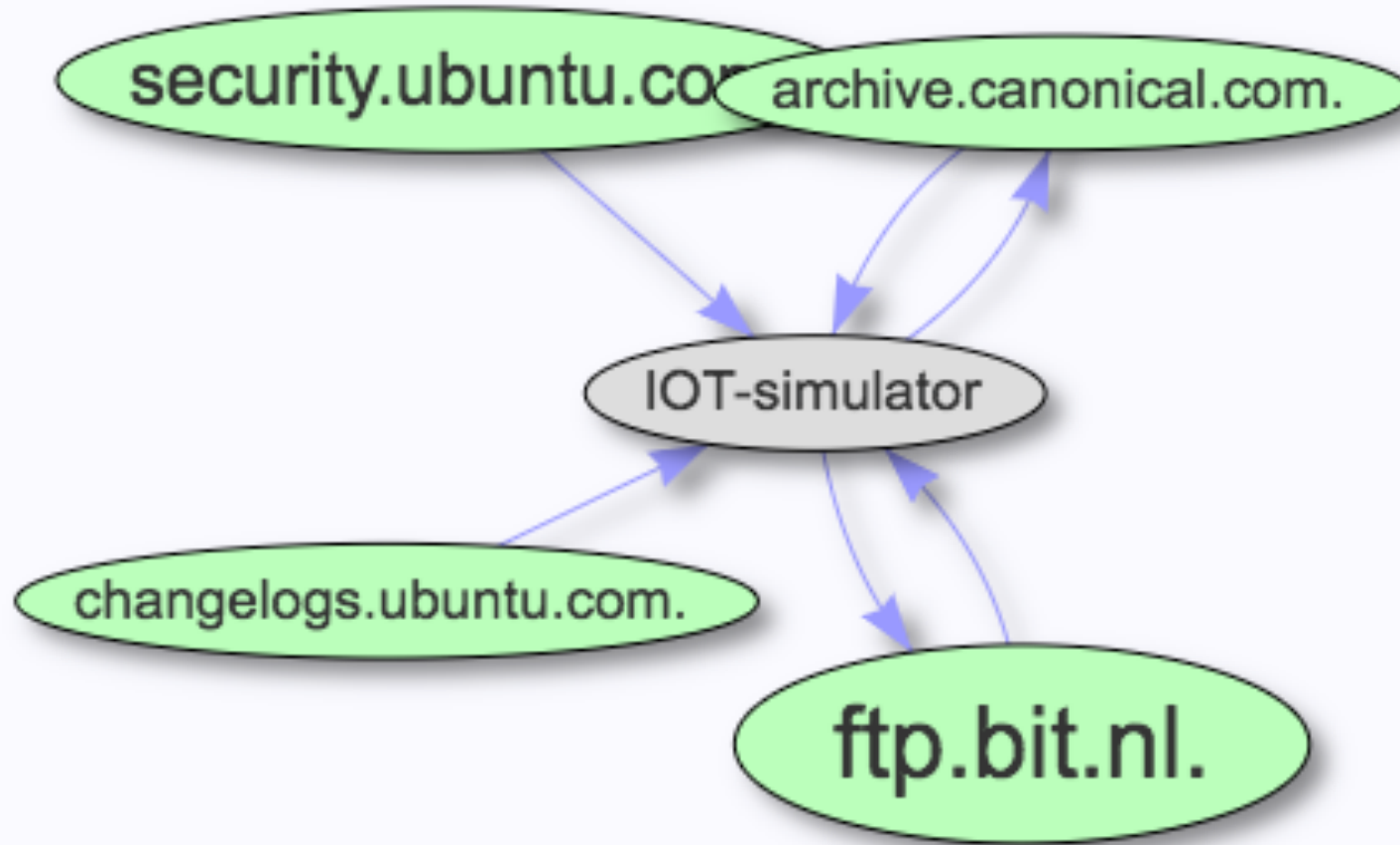
Demo – step 4



Demo – step 5



Demo – Ubuntu update



What did we just see?

- ‘Security and Privacy for In-home Networks’
 - Prototype on OpenWRT and GL-Inet hardware
- Research the user-empowerment part:
 - Detect anomalies in the home network
 - Automatically block suspicious traffic to/from IoT devices
 - Inform the end user about the system’s findings and actions
 - Allow the user to configure security and privacy parameters



GL-Inet hardware

Future Work

- Refinements (cool interface!)
- (Collaborate on) a platform for sharing IoT device information
 - In a uniform, standardized way
 - Repositories for known bad devices/versions
 - Trusted traffic profiles
 - “My TV should stream the news and Netflix, but do nothing else”
- Interested in collaboration? Come talk!

Vision

- Get it into deployed devices
 - Bullguard Dojo seems similar, but is proprietary and cloud based
 - So is the Bitdefender Box
 - NIC.CZ Turris router comes closer, Heimdall too
- Contribute to an open standard
 - For everyone to implement in their products
- Work on interoperable 'IoT security/privacy standards'
 - Protocols
 - Data formats
 - API's

Questions, discussions and feedback

<http://tinyurl.com/spindemonstrator>

**THANK
YOU!**