

DHCPv6 implementation validation using Scapy and Lettuce. Forge Project.

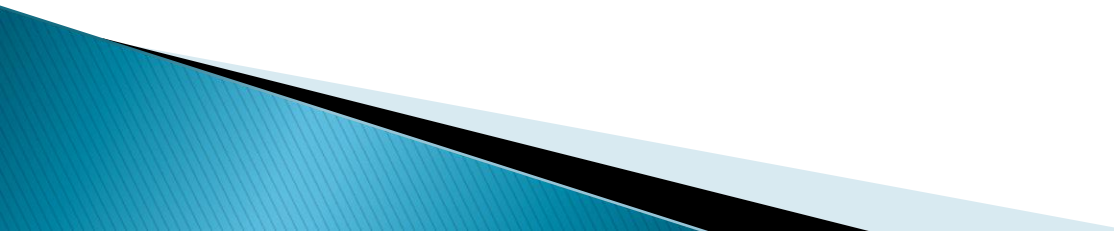
Włodzimierz Wencel



Goal of the Forge project:

- ▶ Design and implementation project for the automatic validation of DHCP server implementation. That would replace TAHI project.

TAHI

- ▶ To setup testing environment you need:
 - FreeBSD (32bit)
 - 2 ethernet connections
 - 1 serial connection
 - ▶ Written in Perl what makes it complicated and sometimes incomprehensible.
 - ▶ Weak test documentation
 - ▶ Closed with last day of 2012 year.
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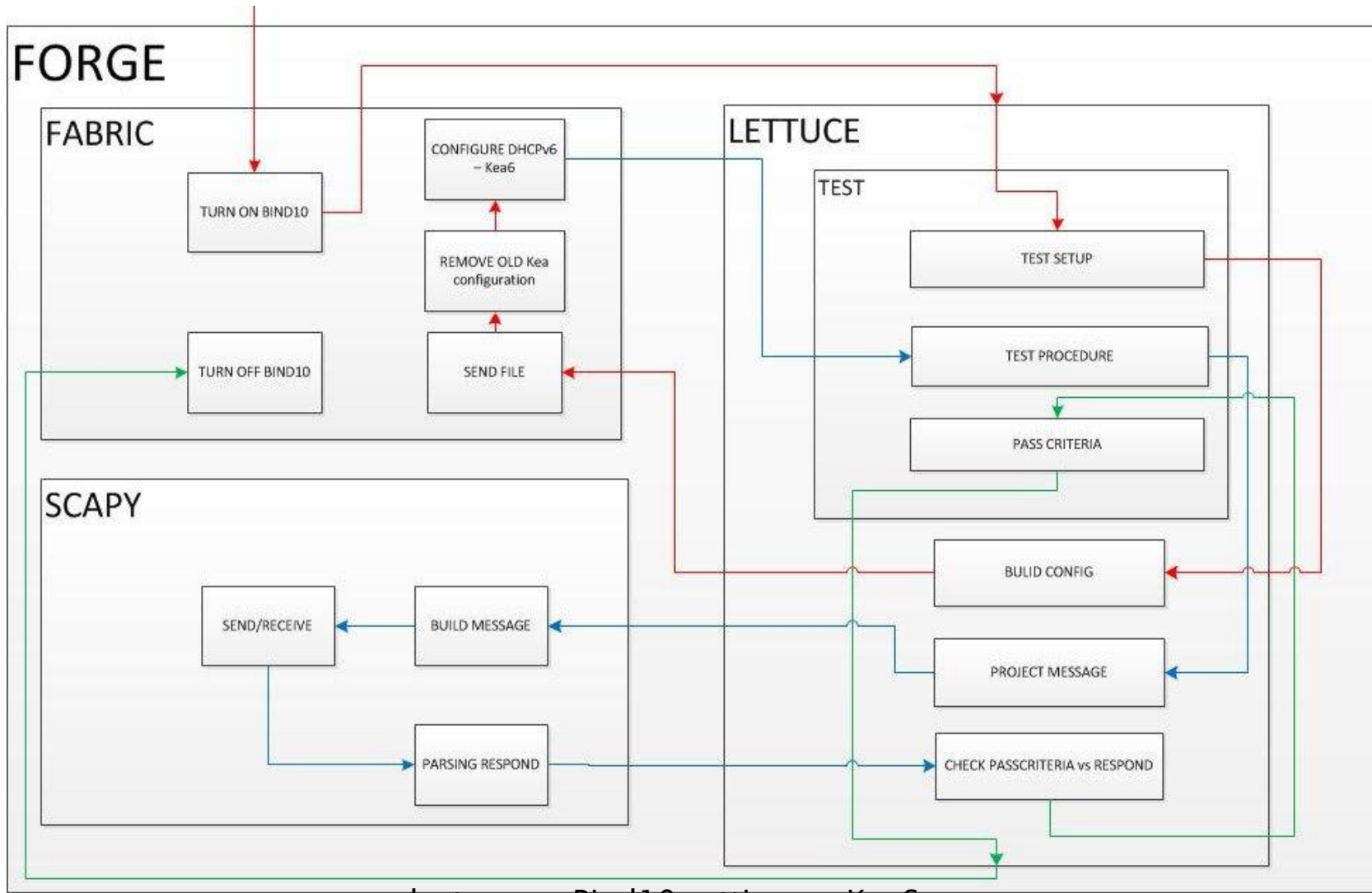
TAHI tests:

- ▶ Tests for DHCPv6 – 318
 - 147 – Server DHCPv6
 - 115 – RFC 3315
 - 21 – RFC 3633 (Prefix)
 - 15 – RFC 3736 (Stateless)
 - 153 – Client DHCPv6
 - 18 – Relay Agent DHCPv6

Forge Project

- ▶ Easy to setup and run.
- ▶ Written in Python
 - Lettuce (BDD) for testing
 - Scapy for send/receive messages
 - Fabric for server management
- ▶ Automatic generation of the configuration for Kea6
- ▶ Automatic process of turning on/off, cleaning and setting Kea6 configuration.
- ▶ Comprehensive management system for tests, you can start tests using:
 - tags,
 - names of test sets,
 - by exact test names,
 - by IP version
- ▶ Test report in xUnit and/or html. With option to save test history.
- ▶ Automatic generation of User Help

How does Forge work? (single test)

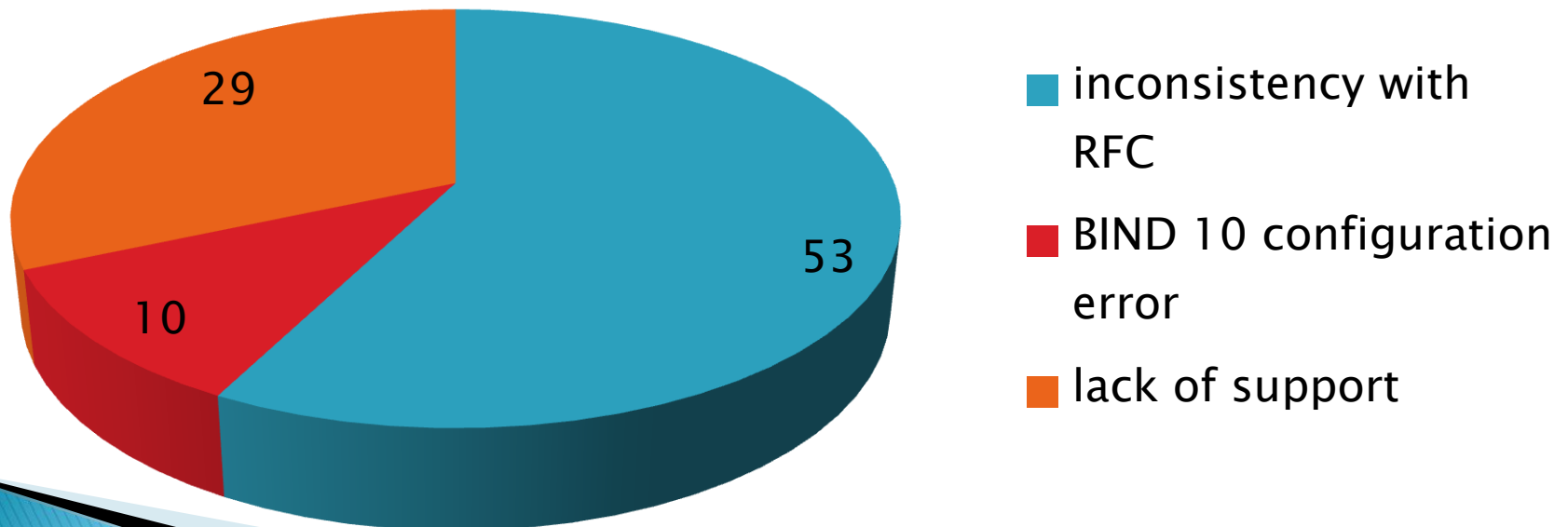


- red - turn on Bind10 setting up Kea6
- blue - test procedure
- green - turn off Bind10

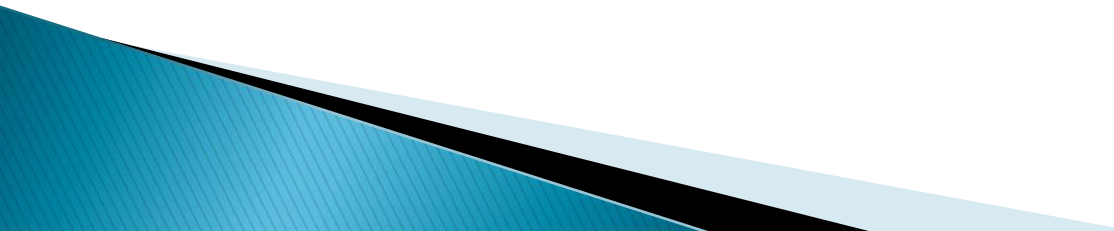
Forge – tests

- ▶ 135 tests – RFC 3315
 - ▶ BIND 10 GIT downloaded 2013.6.11
- PASS RATE: 32%

Error Types



Plans for Forge Project

- ▶ Automatic generation of the configuration for Dibbler and ISC DHCPv6.
 - ▶ Automatic process of turning on/off, cleaning and setting Dibbler and ISC DHCPv6 configuration.
 - ▶ More tests!
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More Forge information?

▶ Team:

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- Rafał Jankowski (Gdansk University, DHCPv4 validation)
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- Stephen Morris (ISC, engineering manager)
- Jeff Wright (ISC, QA manager)

▶ Links:

- wiki – <http://bind10.isc.org/wiki/DhcpTesting>
- GIT repo – <https://github.com/isc-projects/forge>

Thanks for attention.
Wlodek Wencel

