Survey of Recursive Resolvers

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Implementation Practices

Measurements

Measurements of recursive resolvers were carried out through probing from SamKnows clients inside of networks.

- **Validator**: The resolver checks signatures when requested to do so.

- **DNSSEC Aware Resolver**: The resolver retrieves and passes back to the client the full set of keys, signatures, etc. that enable the client to validate.

- **Other**: The resolver does not provide enough functionality to enable the client to do his own validation.
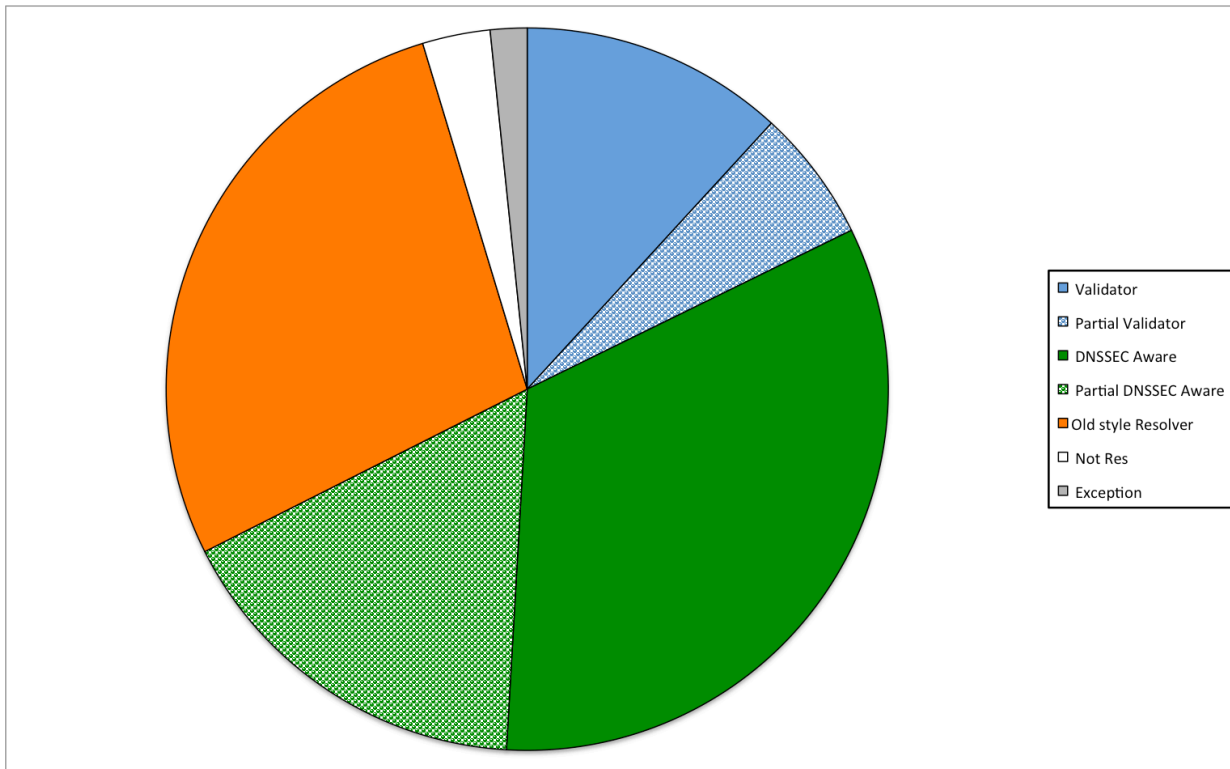
Measurements – Edge Cases

The detailed probing comprised 13 tests for both basic functionality and specific edge cases, e.g.

- Support for large responses via large packets and/or TCP

- Support for DNAME

- Support for NSEC3

- Support for unknown (new) record types

Measurements – SamKnows Results

>1/6 Validators
- 2/3 Full
- 1/3 Partial

1/2 DNSSEC Aware
- 2/3 Full
- 1/3 Partial

>1/4 Broken

~ 5% Other

Legend:
- Validator
- Partial Validator
- DNSSEC Aware
- Partial DNSSEC Aware
- Old style Resolver
- Not Res
- Exception

Findings

Many resolvers are DNSSEC Aware. This is good news.

- Of these, a significant portion have specific limitations. Improvement is needed.

Some resolvers check signatures, i.e. are Validators.

- Some of these also have specific limitations.