



Internet.nl

How to get a 100% score

Ralph Dolmans
ralph@nlnetlabs.nl

Internet.nl

- Test adoption modern Internet standards
 - Not exclusively security standards!
- The bar is set high, but 100% is possible
 - 7479 websites in our hall of fame
- Test score equally divided over categories

Modern Internet standards

Connection test

- IPv6
- DNSSEC

Website test

- IPv6
- DNSSEC
- HTTPS

Email test

- IPv6
- DNSSEC
- DMARC, DKIM, SPF
- STARTTLS

Website test IPv6 + DNSSEC

- IPv6 – 11 points = 1/3 website test
 - IPv6 reachable webserver **0, 1** or **5**
 - IPv6/IPv4 difference **0** or **1**
 - IPv6 reachable nameserver **0, 1** or **5**
- DNSSEC – 5 points = 1/3 website test
 - **0** (bogus), **1** (insecure) or **5** (secure)

Website test HTTPS

- Binary scoring (**0** or **5**) for:
 - *TLS connection*: TLS version, Cipher suites, Key exchange parameters, no TLS compression, Secure renegotiation, No client-initiated renegotiation
 - *Certificate*: Trust of chain, Public key length, Certificate signature, Domain name on certificate
 - *HTTP*: Enforced HTTPS
- HSTS **0**, **1** or **5**
- No scoring for DANE and HTTP compression in website test

Email test IPv6 + DNSSEC

- IPv6 – 10 points = 1/4 email test
 - IPv6 reachable mailservers **0**, **1** or **5**
 - IPv6 reachable nameservers **0**, **1** or **5**
- DNSSEC – 5 points = 1/4 email test
 - **0** (bogus), **1** (insecure) or **5** (secure)

Email test anti spoofing + STARTTLS

- Anti spoofing - 1/4 email test:

- DMARC **0** or **1**
- DKIM **0** or **1**
- SPF **0** or **1**

Scoring model for the **current** internet.nl version

- STARTTLS **0** or **1** - 1/4 email test

- No scoring for DANE, TLS settings and TLS certificate

Email test anti spoofing + STARTTLS

- Anti spoofing - 1/4 email test:

- DMARC **0, 1** or **5**
- DKIM **0** or **5**
- SPF **0, 1** or **5**

Scoring model for the **next** internet.nl version

- STARTTLS according to NCSC guidelines - 1/4 email test

- Including DANE!

Future plans

- Verify DMARC, DKIM and SPF validation
- Verify DANE validation
- Verify DKIM and SPF configuration

- Open source release!