

Prefixlen Draft

OPSAWG, IETF 122
2025-03-17

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draft-ietf-opsawg-prefix-lengths

- Services want to know the **width of IP space** used by a ‘customer’
 - Blocklisting/throttling
 - Rate limiting/CAPTCHAs
 - etc.
- Prefixlen files
 - Specify a customer’s assignment size
 - Similar technical concept as Geofeeds
 - Networks benefit by publishing prefixlen files as it **reduces collateral damage** to their customers

Prefixlen CSV files

- Example prefixlen file content:
 - `2001:db8::/32,56`
 - `192.0.2.0/24,32`
- First field specifies the prefix
- Second field specifies the allocation size **within** that prefix

Longest prefix matching

- Example prefixlen file content:
 - `2001:db8::/32,120`
 - `2001:db8:abcd::/48,64`
- Services consuming prefixlen files need to do **longest prefix matching**

Handling CGNAT

- Example prefixlen file content:
 - `192.0.2.0/24,40`
- Prefix length for CGNAT case
 - $\text{prefix_length} + \log_2(\text{number_of_cgn_end_sites})$
 - Above example: 192.0.2.0/24 containing 65,536 end sites

Publishing prefixlen files

- In the WHOIS as part of the **inetnum:** class
 - `inetnum: 192.0.2.0/24`
 - `remarks: Prefixlen https://example.com/prefixlen`
- **Alternative 1: prefixlen: attribute**
 - `inetnum: 192.0.2.0/24`
 - `prefixlen: https://example.com/prefixlen`
- **Alternative 2: draft-ymbk-opsawg-rpsl-extref-02**
- Same principles apply to RDAP
- **Optional signature** for authentication using RPKI

Prefixlen-finder

- Find and dump prefixlen files for specific prefixes or RIRs
- Prototype **available on GitHub**
 - <https://github.com/massimocandela/prefixlen-finder>

Further considerations

- Data in prefixlen files might be **inaccurate**
 - On purpose or by mistake
- Attackers could use prefixlen files to “better” **focus DDoS** traffic towards a specific customer
- Scanners could use prefixlen files to improve their **IPv6 scanning** reconnaissance

Updates since IETF 121

- Adopted as **WG draft**
- Expanded **Security Considerations** to discuss the potential of incorrect data in prefixlen files
- Fixed one typo