Structured Data for DNS Access Denied Error Page

draft-wing-dnsop-structured-dns-error-page-01

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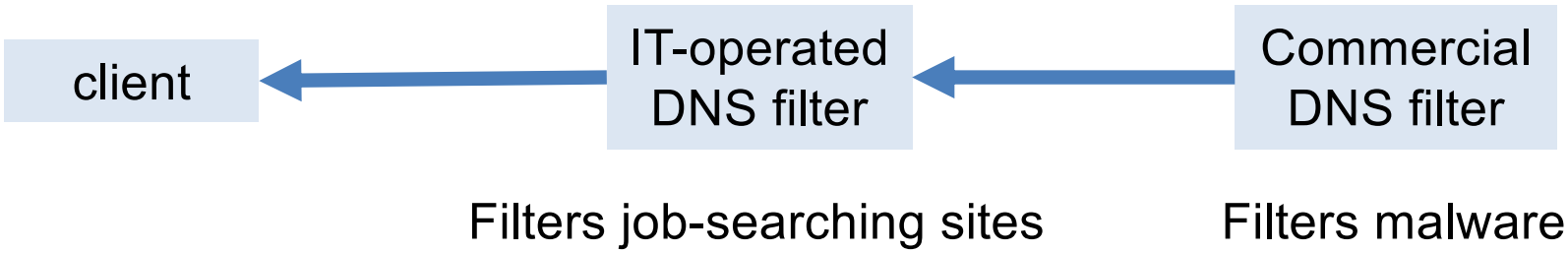
Purpose

- Parsable JSON for user and IT troubleshooting DNS filtering
- Client displays/logs the JSON with its own UI
- Headless devices (IoT)

- **Updates to address comments**
- **Replaces draft-reddy-dnsop-error-page**

Design

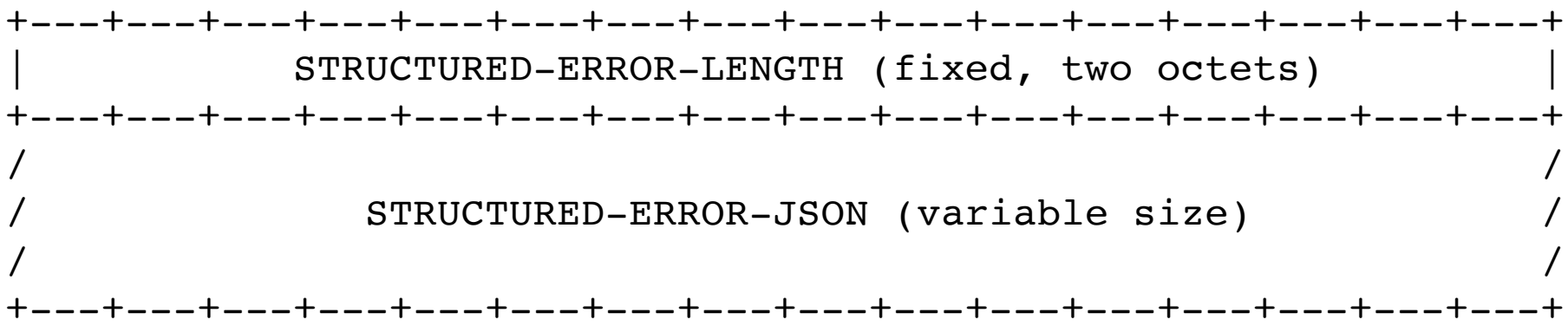
- Accommodates multiple filtering services



- Protocol permits IT organization to occlude, or pass along, details from upstream DNS filters
  - Correcting upstream filters often requires IT help

Structured Error EDNS(0) Option Code

- New EDNS0 option to explain the reason for DNS filtering



Example JSON

```
{
 "c": "?time=1621902483",        //Report misclassified filter

 "d": "ns.example.com",          //FQDN of DoH/DoT server

 "j": "malware present for 23 days",    //Justification

 "o": "example.net Filtering Service", //Organization

 "r": "?country=atlantis“                //Regulation
}
```

Mandatory

https://ns.example.com?time=1621902483&type=a&name=example.org

from DNS query

Security Considerations

- Encrypted and Authenticated DNS connection is mandatory
- Free-form text of “o” and “j” fields; no clickable links
- Isolated environment to process the “c” and “r” pages (like captive portals)
  - ❑ Label the page as not trusted
  - ❑ Do not send cookies
  - ❑ Disable JavaScript
  - ❑ Block auto-fill of credentials/personal information
  - ❑ Auto-Enable private browsing mode for the error page. Load the error page in a container isolated from other web activity.
- Processing “c” and “r” is optional; “j” contains text justification
  - Headless devices, IoT, etc.

Discussion Points

- Language of “j” and “o” fields
  - Language tag support removed (privacy, DNS packet has justification)
  - How to handle?
- Isolated browsing environment for “c” and “r”
  - Security vs harm tradeoff (e.g., creating trouble ticket requires login)

- Consider for WG adoption