Communicating Proxy Configurations in Provisioning Domains

draft-ietf-intarea-proxy-config-pvd-01

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Motivation

Discover "modern" proxy types (connect-udp, connect-ip, connect-tcp, etc)

Work with existing, simple proxy configuration mechanisms (typing a name into a UI field)

Don't rely on PAC files, WPAD

...
Protocol Overview

Use the PvD (Provisioning Domain) JSON format from RFC 8801 to add support for proxies:

• Ask a known proxy about other proxy protocols it supports — upgrade to secure MASQUE protocols, etc.

• Ask a known proxy about the configuration it has (which domains are allowed, etc)

• Learn about proxies offered by a network PvD
Related proxy discovery

Allows "upgrade" from legacy proxy types to template-based proxies (CONNECT-UDP, etc)

I also have URLs for UDP and IP proxying
Proxy applicability discovery (split DNS, etc)

A proxy only allows access to certain hosts, or from certain users (not an "open" proxy)

```
{
    "identifier": "proxy.example.org",
    "expires": "2023-06-24T06:00:00Z",
    "prefixes": [],
    "dnsZones": ["corp.example.com"]
}
```
Network-provided proxy discovery

Network (ISP, carrier) provides a proxy that can assist in mobility (AT-SSS) or privacy (act as a first-hop Private Relay proxy)
Example

Given a known proxy name proxy.example.org, the client will request:

```
:method = GET
:scheme = https
:authority = proxy.example.org
:path = /.well-known/pvd
accept = application/pvd+json
```
Example

:status = 200
content-type = application/pvd+json
content-length = xxx

{
    "identifier": "proxy.example.org.",
    "expires": "2023-06-23T06:00:00Z",
    "prefixes": [],
    "proxies": [
        {
            "protocol": "http-connect",
            "proxy": "proxy.example.org:80"
        },
        {
            "protocol": "connect-udp",
            "proxy": "https://proxy.example.org/masque{\target_host,target_port}"
        }
    ]
}
Recent and open issues

- Adding ALPN hints
- Split DNS configs
- Authentication hints?