Pelion

OpenVPN

An overview of **Pelion's** resilient architecture

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OpenVPN

OpenVPN allows for ad-hoc access to a customer subscriber base. The OpenVPN facilitates client-server communications by establishing a secure tunnel between the VPN (Virtual Private Network) client and customer subscribers.

This suits the customer who needs to access their subscribers infrequently for monitoring purposes or simple “check-ups”. OpenVPN requires a third-party VPN Client application to work, meaning it can be used on a desktop OS or even a smartphone application. OpenVPN, unlike IPSec or other types of tunnels, is for temporary use and is not up at all times.

Technical Description

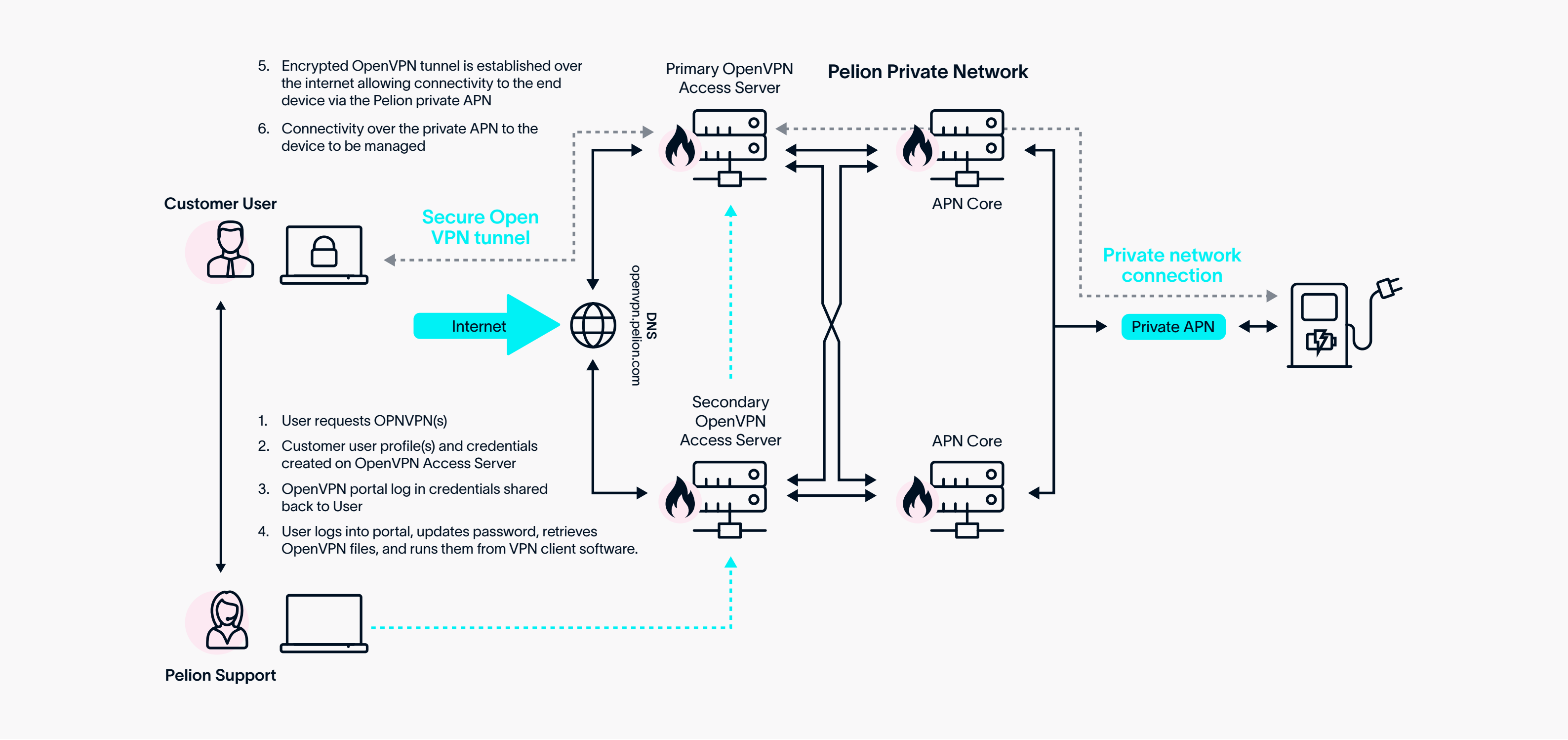
To use OpenVPN, authentication details are provided to the customer as a certificate, this is then loaded to a VPN client (e.g., Viscosity) and provides impromptu connection to subscribers, for any of the many reasons remote access to devices is required.

The customer should note that this connection is on a per user basis (no concurrent sessions from the same credentials). If the customer wishes for more than one user to access the subscriber base simultaneously, Pelion firmly recommends one OpenVPN account per user.

Architecture

Pelion has deployed OpenVPN as a resilient solution which utilises OpenVPN AS (Access Server). There is an OpenVPN server deployed per Data Centre, each of which has a GRE tunnel to both pairs of the Pelion APN cores, per DC, using BGP to control which path the traffic flows.

Each OpenVPN Server has its own unique database instance which securely stores all customer connection details for authentication. Both database instances work in a master-master replication setup meaning any changes made on one is automatically copied across to the other ensuring that if one ever goes down then connectivity can be resumed automatically.



5. Encrypted OpenVPN tunnel is established over the internet allowing connectivity to the end device via the Pelion private APN
6. Connectivity over the private APN to the device to be managed

1. User requests OPNVPN(s)
2. Customer user profile(s) and credentials created on OpenVPN Access Server
3. OpenVPN portal log in credentials shared back to User
4. User logs into portal, updates password, retrieves OpenVPN files, and runs them from VPN client software.

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Where a customer initially requires OpenVPN access to their Pelion connected devices, a request is raised either through the Account Manager, or as a request to Pelion Support (**support@pelion.com**). The former route should be used if this is the first and there is a requirement to agree commercial terms.

Pelion Support will create the OpenVPN user using our internal toolset which generates a profile and credentials across the resilient Access Server architecture. Support will then provide the credentials for the customer OpenVPN user to access our online OpenVPN management portal. The user must change their password on first login.

From the portal the user downloads the profile and credentials. These are run from the customers VPN client software of choice. This creates a VPN tunnel to the Access Server and utilises firewall rules-based onward connectivity over the Pelion private APN to the customer's devices (additional layer of security on direct OpenVPN).

Security Features

Pelion has approached our OpenVPN service offering based on the principles of ensuring security and availability of service. This includes the following features to deliver on those principles:

- OpenVPN Enterprise licensed deployment
- OpenVPN cryptographic layer
- High availability, redundant architecture
- Pelion software defined firewalling

OpenVPN uses several layers of connection security with a lot of public documentation surrounding this, protocols include AES-256 bit encryption as a standard and many other encryption techniques.

Service Features

- Certificate-based VPN
- Site-to-Site (One-to-Many) communications
- Suited for ad-hoc access to subscribers

Pelion

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