

# Nexus

## Reverse Proxy Server

### Secure your Web Applications

If you operate a mobile network, securing your web applications is crucial to protect sensitive data, prevent unauthorised access, and guard against cyberattacks that cause service outages which frustrate subscribers and hurt your revenue.

Integrating a **reverse proxy server** adds a security layer to shield your applications and optimises the performance and availability of your web services.

**Nexus** is a reverse proxy server designed specifically for mobile networks. Unlike traditional firewalls that broadly filter traffic, Nexus sits between your subscribers and backend servers, actively managing and securing traffic to protect your web applications. It also helps optimise performance by load balancing traffic and reducing latency, which improves the overall user experience.

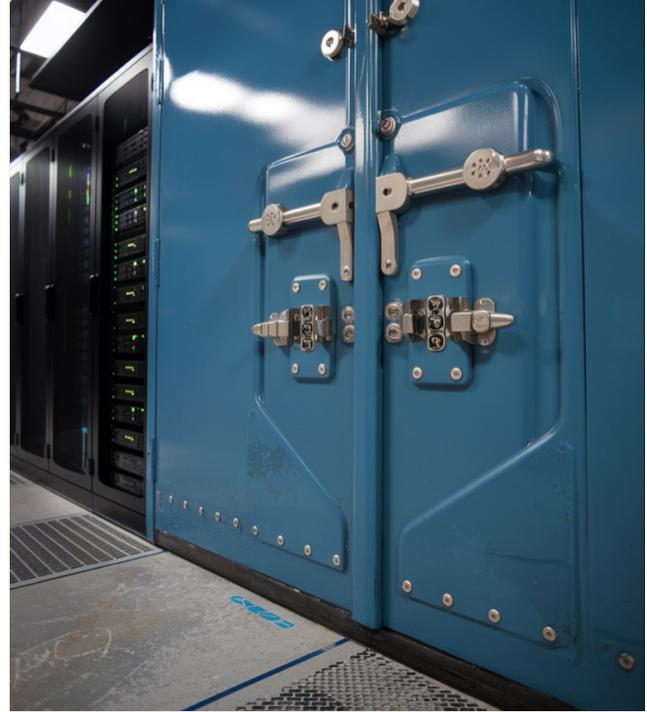
By performing HTTPS web app traffic encryption and decryption (SSL/TLS termination), Nexus frees backend web server resources, inspects encrypted traffic for threats, and lets you provide your web applications with custom data (inside HTTPS headers), such as subscribers' MSISDNs.

In summary, choosing Nexus will secure the network's web applications while ensuring reliable, high-quality services for your mobile subscribers.

### Core Functionality

- **Routes Web App Content:** The reverse proxy directs user requests to the appropriate backend servers, forwarding client (subscriber) requests to the correct web server and returning their responses. This process enhances security and supports load balancing.
- **Hides and Protects Backend Servers:** Nexus protects your backend servers, such as customer portals and content delivery servers, from direct exposure to the internet and mobile devices. This extra layer of security hides your private infrastructure from the outside world.
- **Performs SSL/TLS Termination:** The proxy server blocks malicious attacks (like DDoS attacks and hacking attempts) from hackers by securing subscriber communications with web applications using SSL or TLS encryption.
- **Load Balances Web App Traffic:** If you have multiple servers handling requests (from mobile apps and websites), the reverse proxy distributes incoming traffic evenly across them. This ensures no single server gets overwhelmed, improving performance and reliability.

For a list of product features, see page 2.



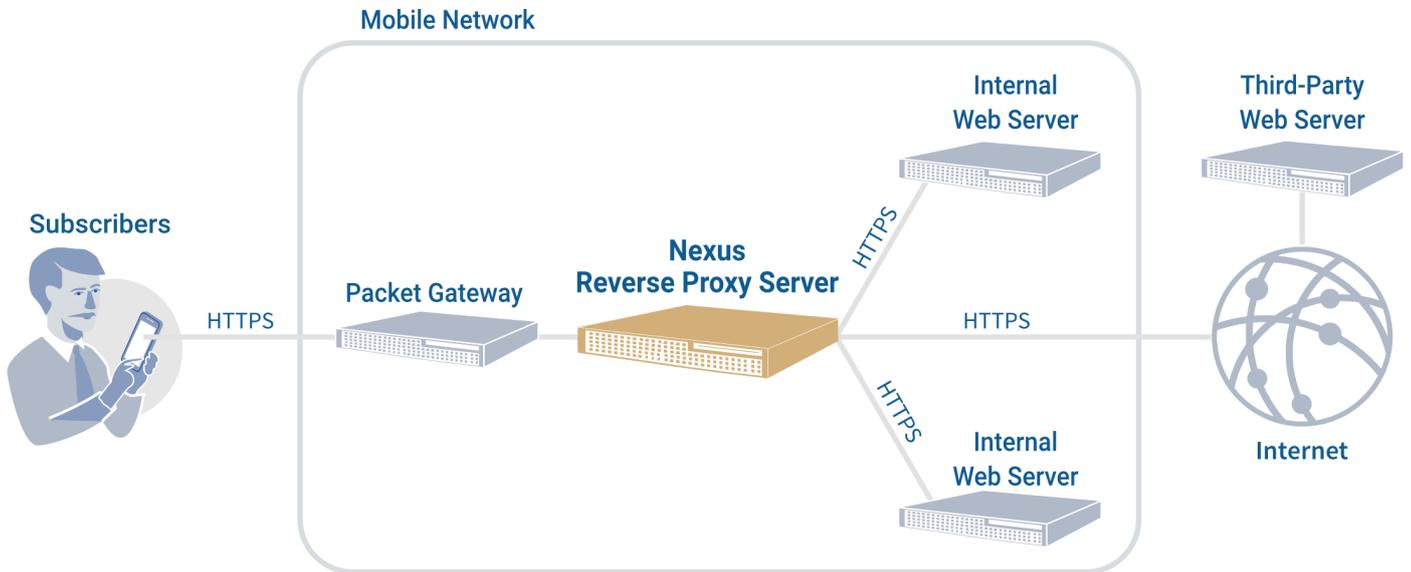
### Product Benefits

- ✓ Provides encrypted subscriber MSISDNs to authorised web applications.
- ✓ Enables you to enrich web apps with custom data (in HTTPS headers).
- ✓ Upgrades to a fully functional Web Application Firewall.
- ✓ Provides a cost-efficient reverse proxy server.

### Business Benefits

- ✓ **Cost Efficiency:** Nexus reduces infrastructure costs by optimising server resource usage thereby minimising the need for additional hardware.
- ✓ **Increased Customer Retention:** Nexus provides faster app load times and reliable service delivery to enhance user satisfaction, leading to higher customer retention.
- ✓ **Data Revenue Protection:** Nexus mitigates downtime and service disruptions to ensure uninterrupted revenue streams from your data services.
- ✓ **Scalability for Growth:** Nexus scales to accommodate massive subscriber growth without compromising web application performance.

## Reverse Proxy Server Network Architecture



## Features

- ✓ **Reverse Proxy Content Routing:** Directs traffic to the appropriate backend servers hosting your web applications, enhancing security, providing scalability, and improving efficiency and user experience.
- ✓ **Header Enrichment:** Adds, modifies, or removes custom HTTPS headers to provide additional content (such as subscriber information) to web applications hosted on backend servers.
- ✓ **Load Balancing:** Distributes subscriber web app requests evenly among servers by distributing traffic based on server capacity, optimising performance and resource use.
- ✓ **Reliability and Availability:**
  - **Automatic Failover:** Ensures uninterrupted service by rerouting traffic during failures.
  - **Backend Retry Mechanism:** Reattempts failed requests to improve reliability and ensure successful web app responses.
  - **Health Checks:** Ensures only healthy servers handle traffic, improving reliability.
  - **Connection Pooling and Timeouts:** Reduces latency and optimises resource usage by reusing connections and closing idle ones.
- ✓ **High Performance:** Provides high TPS performance for millions of concurrent subscribers by pooling connections, processing concurrent requests, and keeping connections alive.
- ✓ **SSL/TLS Termination:** Encrypts and decrypts traffic freeing up backend server resources, inspecting encrypted traffic for malicious payloads, and enriching HTTPS headers with custom data.
- ✓ **User Interfaces:** Provides a CLI for configuration and a web UI for monitoring and obtaining usage statistics.
- ✓ **[Upgrade Option] Web Application Firewall (WAF) Functionality:**
  - Monitors threats + analyses user behaviours in real-time and generates reports and logs.
  - Protects against top 10 common OWASP threats and DDoS and zero-day attacks.
  - Enforces signature-based security policies and custom security rules.
  - Limits app loads with IP rates and restricts access by IPs, geolocations and only mobiles.

## Why Pharos?

### Our formula for your success:

- ✓ We craft fully functional solutions to address technical challenges using people with deep knowledge of multiple technologies.
- ✓ We use our vast telecom expertise to distill complex requirements and technologies into effective solutions.

### Telco Expertise

Since 1997, we have been actively engaged in the telecom industry, acquiring extensive expertise and knowledge in telco networks and technologies.

### History Of Innovation

Our history reflects a strong record of delivering innovative solutions through our mature technology framework, custom-tailored to meet the specific needs of our customers.

### CONTACT

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### In-House Technology

We believe technology should support business needs. With a broad technology portfolio and industry experience, we craft solutions tailored to your requirements.