

OX PowerDNS

A Faster, Safer and More Secure Internet

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Stay Open. **OX**

The PowerDNS Organisation

An OX Company

- PowerDNS is a wholly owned subsidiary of Open-Xchange
- Focusing on DNS, Network and Infrastructure Security for Service Providers
- Mainly based in The Hague, Netherlands
 - Engineering, QA, EU Support, Product Management
 - Worldwide Sales & Professional Services (Consulting, Migration, Customization)



1999

Database driven DNS and geographical load balancing



2002 - 2006

PowerDNS Nameserver goes open source



2007 - 2013

Authoritative, Recursor open source products launched



2015 - 2016

PowerDNS merges with Open-Xchange, Malware-Protection & Parental Control

POWERDNS
AN OX COMPANY

2018 - 2019

DNS Privacy & Security, OX Protect

DNS Portfolio Overview

OX PowerDNS and DNS-based Solutions

OX PowerDNS Recursor



Reliable, fast and secure DNS resolving and caching server.

OX PowerDNS Authoritative Server



Versatile authoritative domain name hosting.

OX PowerDNS DNSdist



Load Balancing and DDoS protection for your DNS traffic.

OX Protect



Network-based security for mobile and fixed networks.

OX PowerDNS Recursor

Next Generation DNS Resolving

- High-performance, low latency DNS Resolver
- Reliable DNS service providing the power and flexibility modern DNS deployments require
 - Includes a Lua Scripting Engine for maximum flexibility
- Deployment and automation tools to manage large-scale deployments
- Automated reports, graphs and a real-time dashboard give details of the most important KPIs
 - Prometheus Reporting for easy monitoring integration



OX PowerDNS Authoritative Server

Scale-up Your DNS Hosting



- Versatile Authoritative server for hosting domain names
- Flexible and highly scalable to serve very large-scale hosting deployments and individual needs
- Leading DNSSEC implementation used by many of the worlds larger domain hosters
- Domain Management with ZoneControl
- Geographical load balancing sends visitors to the closest servers
- Multiple Database Backends including
 - MySQL, LDAP, Lua, GeoIP

OX PowerDNS DNSdist

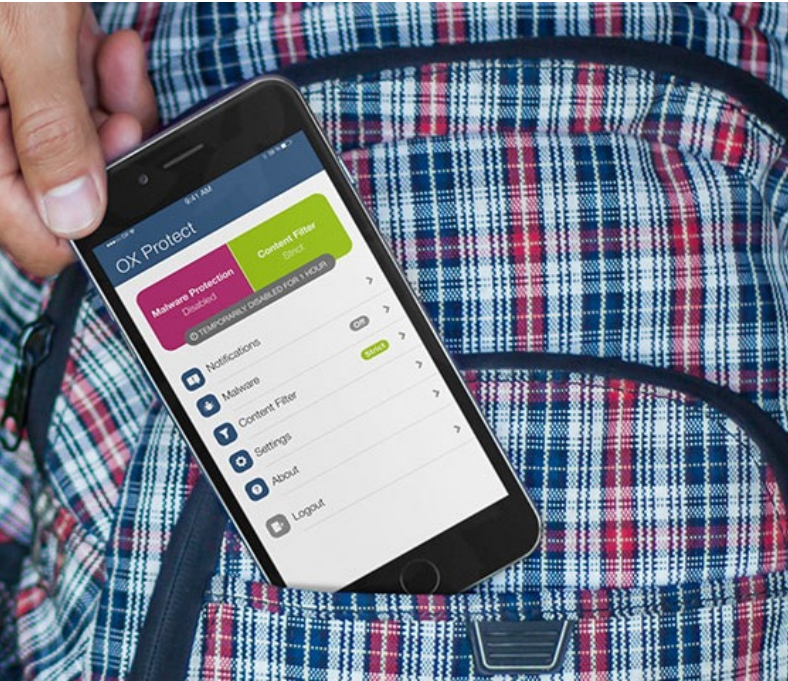
Superior Performance with DNS Proxy

- Load Balancer for DNS-traffic in front of recursive or authoritative servers
- Optimized to protect against malicious and abusive traffic such as DDoS attacks, DNS tunneling and exfiltration
- Flexible Lua policy engine allows customization to meet individual and local needs
- Supports DNS over TLS (DoT) and DNS over HTTPS (DoH)
- Works seamlessly with OX PowerDNS Recursor, but also with legacy DNS recursive servers
- Monitoring capabilities, including Prometheus support



OX Protect

Network-Based Security for Mobile and Fixed Networks



- Provides a secure connectivity experience for all connected devices (traditional and IoT devices) using the broadband/mobile network
- Offers safe browsing with protection for families (profiles, content restrictions, time windows) or for business
- Comes with a white-labeled web control panel and a brandable mobile app for iOS and Android
- Protects against malware and phishing, detects infected devices, notifies via text or push notifications
- Based on DNS filtering; supports encrypted traffic
 - No on-premise equipment required

DNS Privacy & Encryption

DNS Encryption with DoH and DoT

- Recently approved IETF Encryption standard for DNS
 - DNS over TLS (DoT)
 - DNS over HTTPS (DoH)
- Almost no ISPs or Mobile Operators support encrypted DNS today
(Many/most are using software that doesn't even support encrypted DNS)
- Browser Manufacturers are pushing to use this by default
- Mozilla are moving to using a set of Trusted Recursive Resolvers: **Completely bypassing operator DNS**
- Google Chrome will attempt to use DoH by default:
Will fallback to unencrypted *for the time being*; **Will offer OTT alternatives**

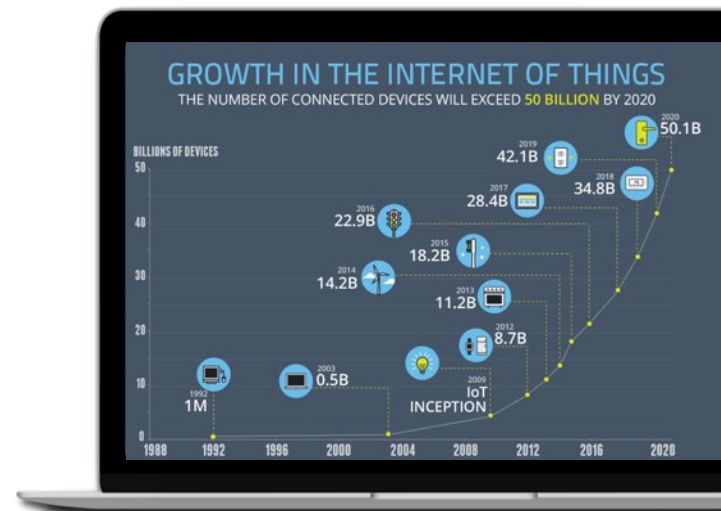
Browser Vendors are making Privacy and Encryption central to DNS deployments.

Network operators MUST deploy DoH/DoT in their network to keep control over DNS traffic and prevent it going to OTT vendors.

IoT Security

Protecting IoT Devices with DNS

- Number of IoT Devices is increasing exponentially, but they are hugely insecure:
 - Malware, Botnets, DDoS, Espionage, ...
 - Endpoint protection cannot be deployed
 - Network Operators must protect themselves and their customers
- OX Protect offers network-based IoT Protection
 - Detect and alert on potential infected IoT devices
 - Prevent Botnet activation
 - Protect your network from 'IoT' DNS based DDoS
 - Potential Revenue stream from IoT Device owners
- Network Security using DNS is the only cost-effective and scalable solution
 - Value-added service offering for providers
 - Secure connectivity and protection for subscribers



5G Is On Its Way

DNS software needs to meet 5G requirements

- 5G networks are being deployed
 - Improved bandwidth for subscribers and their devices
 - Wholesale architectural changes towards an SDN/NFV based network
 - Specific goals for new services such as VR/AR
- Typical legacy DNS deployments do not support 5G latency targets or architectural requirements
- OX PowerDNS supports 5G optimized DNS requirements such as VNF, Edge Computing, Encryption etc.

POWERDNS 

Deployment at the edge of the network

Software must be VNF (VMs, Containers etc) capable

High numbers of servers require orchestration

Support for control plane functionality (monitoring, deployment automation, configuration management etc.)

Encrypted DNS Support

Localized Content Server support

OX PowerDNS

Meeting your DNS software and architecture needs

NFV/Control Plane



Ansible automation:

- ✓ Deployment Automation
- ✓ Elastic Scaling
- ✓ Config Management

Monitoring & Reporting

- ✓ Prometheus API endpoints for statistics per server
- ✓ Metronome support
- ✓ Long-term query logging & searching
- ✓ End-To-End performance measurement

Latency



- ✓ Edge DNS service near the end-user
- ✓ Tiered caching
- ✓ DNS aware Load Balancing to optimise cache hits

Security and Privacy



Privacy

- ✓ DNS over HTTPS (DoH)
- ✓ DNS over TLS (DoT)
- ✓ DNSSEC signing and validation

Security Malware filtering

- ✓ System-Wide or Per-User Malware filtering
- ✓ Block/detect Phishing and Malware
- ✓ Alerting/Notification Support

Fast local content



- ✓ EDNS client-subnet support – Passing information about the original IP address to downstream server
- ✓ Locality Tagging

IoT



- ✓ Detect and alert when IoT devices are potentially infected with malware
- ✓ Prevent Botnet activation
- ✓ Protect your network from 'IoT' DNS based ddos.

Monitoring & Notifications

- Statistics-engine for rapid metrics displaying and monitoring
- Report-engine to automatically generate periodically reports about current and past performance
- Remotely pollable statistics using Prometheus
- Query-logging facility to store history of DNS queries and logs (advanced troubleshooting and investigation of malicious requests or DoS)



Open Source Based Success

Carrier-grade solutions for large network needs



- PowerDNS products are based on open-source software utilizing OSS benefits for customers:
 - Full access to source code of the core products
 - Strong and active community of contributors
 - Trust that the core products are mature and widely used
 - Open-Xchange maintains a commitment to keep the core of PowerDNS products open-source
- OX PowerDNS combines the best of the community version plus specific large network needs:
 - Providing the features and requirements necessary to operate DNS at scale
 - Specific functions for Telcos, Hosters, Network Operators and large enterprises
 - Feature requests and customization for commercial customers

Outstanding Support & Maintenance

We partner with our customers

- 24x7 OX Support from Open-Xchange experts and PowerDNS developers
- Hands-on installation and configuration assistance for optimal performance of your PowerDNS platform
- Local Professional Services team able to assist with advanced customization and migration
- Periodic DNS Health-check of DNS configurations on a regular basis
- Remote Monitoring service for additional support, quick troubleshooting and platform optimization
- Very active community that identifies and solves potential issues in pre-releases
- Bug-bounty program for waterproof security

24x7 Support



Prof. Services



Health-Check



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