Contents

• About PowerDNS
• Name servers
  ○ Authoritative
  ○ Recursor
• Tools
  ○ Troubleshooting, analysis
• APIs
  ○ Command line based
  ○ Web/JSON/RESTful
  ○ Direct database provisioning
  ○ Troubleshooting
  ○ Remote upgrade/patch distribution
• Web interface
About PowerDNS

- PowerDNS is the name of the company and the products: Authoritative & Recursor
- Founded in 1999
- Powers ±30% of all domains in Europe at least, 75+% of DNSSEC worldwide
- Major SLA-supported users include lots of telecommunications companies named after their country
- 100% SLA-backed support
Name servers: Authoritative

- Standards compliant serving of DNS information from all relevant databases
  - Text files, dynamic scripts in various languages
  - Native support for legacy BIND zonefiles
- Leading DNSSEC implementation worldwide, hosting >75% of all DNSSEC domains
- Powerful dynamic abilities
  - Geographical load balancing
  - Content redirection, 'best answer' generation
- Supported on generic hardware running generic operating systems
Name servers: Recursor

- Standards compliant resolution of domain names
  - Strive for maximum resolution percentage
  - or conversely, least customer complaints

- Powerful dynamic abilities
  - Content redirection
  - 'best answer' generation
  - query & answer modification
  - Filtering

- Supported on generic hardware running generic operating systems
Name servers: Further details

- Please consult the document "PowerDNS Offerings" for further details on
  - Compliance Matrix
  - Hardware requirements
  - Platform requirements
  - Statistics provided
  - Training possibilities

- Full documentation on http://doc.powerdns.com/
Tools: analysis and troubleshooting

- Various specialist tools are provided for packet-based trouble shooting
- dnsscope: query/answer latency time statistics
- dnsreplay: replay existing traffic against reference nameservers
- dnsgram: per-time period sampling of traffic to determine overloads
- dnswash: anonimize PCAP traces, hiding IP addresses, for third party analysis
APIs

- PowerDNS offers a variety of APIs for remote:
  - Statistics
  - Provisioning
  - Zone editing
  - Master/slave operations
  - Log-file investigations
  - Configuration (updates)
  - Stop/Start/Upgrade/Rerstart

- Available over:
  - Local socket
  - "raw" TCP/IP
  - RESTful API direct
  - Centrally administered indirect (bulk) API
APIs: "web 2.0" / JSON

- All APIs are exposed via a JSON interface
- This interface is used by our native web management interface
- But is also open for direct customer or integrator use
- Use of http and JSON makes for easy integration and embedding in existing frameworks
Web interface

- Used for:
  - Viewing statistics (numbers & graphs)
  - Viewing and editing domains
  - Notifications to slaves, trigger slaves to update zones
  - Cache flushing / Bulk cache flushing
  - Log searching / Bulk log searching
  - Version management, triggering stop/start/upgrade/restart
- https encrypted, user/password managed
- Can manage dozens or hundreds of PowerDNS servers
- Supports auth & recursive from one interface
- Please see document "PowerDNS Web Control Panel" for further details
PowerDNS

Authoritative

PowerDNS Recursor

Relational Database

"BIND" Zonefiles

Lua Scripts

Generic Scripts

RESTful/JSON client

Web Browser

PowerDNS Control

pdns2graphite

Graphite Engine

pdns_control
pdnssec

PowerDNS Manager

rec_control

PowerDNS Authoritative

PowerDNS Recursor

"Policy lists"