Recursive Resolver & Authoritative DNS

DNS SOLUTION FOR ISPS

High Performance
High Security

DNS ACCELERATION

Recursive DNS resolver improving subscriber satisfaction with usually >80% of queries answered directly from the cache.

HIGH PERFORMANCE

One DnsMARA can replace many legacy systems based on BIND so that ISPs can simplify their deployment, improve overall performance and enhance their resilience against DOS attacks.

IMPROVED SECURITY

ISPs using DnsMARA are much better protected against threats. Time and money spent on handling subscriber complaints, solving network issues and doing post-attack forensics is significantly reduced.

FULL REPORTING & THREAD ANALYSIS

Graphical reports on performance, usage and system health available. Management can access reports to efficiently control and coordinate tasks and next actions.

DNS MARA

SINGLE UNIT XXL

- ✔ Up to 1.6 million queries per second
- ✔ Large RAM cache to accelerate DNS service
- ✔ Redundant Power Supply
- ✔ Carrier Grade Hardware

Recursive DNS Resolver

- Flexible DNS deployment
- Easily configurable access control
- Limiting recursive DNS services only to valid users
- Direct access to local authoritative DNS data
- Targeted cache cleaning capability
- Prefetching
- Cache Poisoning protection
- DNS-0x20 support
- DNS record TTL adjustment
- Optimized DNSSEC validation
- IPv6 support
- Large RAM cache accelerating DNS service
- High performance: one DnsMARA replacing many legacy servers

Authoritative DNS Server

- Flexible DNS deployment
- Full management of zones
- Easily configurable access control
- TSIG support for secure DNS zone transfers
- DNSSEC support
- Protection against spoofed data
- Automated zone signing
- Key rollover assistance
- IPv6 support
- High performance

Management & Reporting

- Innovative Web GUI
- Management via HTTPS to appliance
- Role-based access control
- Transaction-based commit-system
- Shell-access (CLI) via serial console, VGA, or SSH
- Real-time monitoring & status data
- Powerful reporting & live statistics
- Backup & Restore capability
- Automatic alerts via SNMP or email
- Logging to remote Syslog server
- Multi-Language support
- Easy system for firmware upgrades

Maxiumum Security

- Denial of Service (DoS) Protection:
    - ✓ Individual DoS / DDoS profiles
    - ✓ Global IP reputation and Botnet database
- Embedded stateful firewall
    - ✓ allow only UDP port 53
    - ✓ tracking UDP protocol states
    - ✓ preventing cache poisoning
- Intrusion detection and prevention
    - ✓ drop known DNS vulnerabilities
    - ✓ drop malformed or invalid DNS requests
    - ✓ mitigate DNS amplification attacks
    - ✓ block DNS abuse
- Response rate limiting (RRL)
- Separate isolated implementation of recursive DNS server and authoritative DNS server

Network Appliances
Securing Your Freedom

MARA SYSTEMS

CARRIER GRADE HARDWARE

DNS availability, performance and security are crucial for every ISP. That is why MARA Systems only provides latest hardware generation and IT findings to deliver the most secure and robust DNS Solution on the market.

FLEXIBLE DEPLOYMENT

DnsMARA can be licensed for different roles: Recursive DNS resolver and/or Authoritative DNS server.

RELIABLE PLATFORM

Exceptionally optimized and hardened Linux platform, tailored for high availability, security and performance needs. System booting from read-only, compressed image.

COST EFFECTIVE

Robust and cost-effective. Save costs and time spent on managing DNS infrastructure.

SERVICES / SUPPORT

- Dedicated technical support
- Installation & configuration
- Maintenance updates
- Firmware upgrades
- Hardware warranty
- Product manuals & FAQs

Product & Technical Specifications

Full Appliances	M-1U-0200	L-1U-0200	XL-1U-0200	XXL-1U-0200
Max. Queries per Second	200.000	400.000	800.000	1.600.000
RAM	8 GB ECC	16 GB ECC	24 GB ECC	32 GB ECC
SSD	120 GB	120 GB	120 GB	120 GB
Redundant Power Supply	-	-	✓	✓
Hardware Remote Management	✓	✓	✓	✓
Form Factor Rackmount	1U	1U	1U	1U
Optional Upgrades				
1 Gbps RJ-45 or Fiber	✓	✓	✓	✓
10 Gbps RJ-45 or SFP+	-	✓	✓	✓

Software only Appliances	M 2018	L 2018	XL 2018	XXL 2018
Max. Queries per Second	200.000	400.000	800.000	1.600.000
Max. CPU cores	2	4	8	16
Max. RAM	8 GB	16 GB	24 GB	32 GB

DNS Best Practice

The separation of roles is a fundamental principle in DNS best practice architectures:

Recursive DNS Resolver

- Dedicated recursive resolvers for subscribers
- Only reachable from the subscribers
- Not reachable from the Internet
- Preventing cache poisoning
- Accelerating DNS for subscribers

Authoritative DNS server

- Not allowing any recursive requests
- Only answering requests to authoritative zones
- Less security exposure because not vulnerable to any issues related to DNS caching

With DnsMARA the ISP can chose between different deployments:

All Services on same Server

- Recursive and authoritative DNS service both on the same physical server
- Separate processes, each sandboxed and using independent implementations
- Offered on different IP addresses and VLANs or NICs
- More cost effective

Dedicated Servers

- Dedicated physical servers for each DNS service
- Maximum performance, resilience, redundancy and security

Network Appliances
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MARA SYSTEMS