Advantal™

ADVANTAL'S DOMAIN NAME SYSTEM (DNS)

High-Performance. Secure. Enterprise-Ready.

Advantal's Domain Name System (DNS) is built for mission-critical networks where uptime, security, and speed directly impact business continuity. Designed for large-scale infrastructures and regulated sectors, it ensures your digital foundation remains fast, resilient, and future-ready — even during peak traffic or global operations. With Advantal DNS, your network stays responsive, protected, and compliant, enabling uninterrupted business growth.

Why Advantal DNS?

- Modern enterprises cannot afford delays, blind spots, or downtime. Advantal DNS delivers:
- High availability across distributed environments
- Ultra-low latency resolution under heavy traffic
- Horizontal scalability for multi-site workloads
- Policy-driven automation to reduce manual effort
- Encrypted, compliant operations for governance
- Resilience without complexity, even during failures
- Ideal for organizations managing hundreds of thousands of endpoints, Advantal DNS guarantees continuous uptime and complete control across all DNS zones and nodes.

KEY FEATURES THAT SET ADVANTAL APART

- **Enterprise-Scale Performance:** Handles massive query volumes with near-zero latency. Support global server load balancing for handling huge traffic (for eg. 10 million request)
- **Unified Dashboard:** Web-based interface for real-time visibility, configuration, and troubleshooting.

- **Automation & Intelligent Ops:** Automated updates, patching, and event logging for accuracy and audit readiness.

- **Advanced Security:** Built-in defense against spoofing, hijacking, cache poisoning, and anomalies. Advanced AI based security system to ensure all major attack vectors.

- **Future-Ready Standards:** IPv4/IPv6, DNSSEC, Dynamic DNS with cryptographic signatures.

- **Disaster Recovery & Redundancy:** SQL backend with replication for fast failover.

- **Cost-Optimized Deployment:** Scales on native or virtual x86 environments with minimal hardware footprint.

Core Platform Capabilities

- **Long-Term Stability & Compliance:** Purpose-built for mission-critical environments with regulatory compliance and seamless integration.

- **Flexible Deployment Options:** Available as **physical or virtual appliance,** including hypervisor, management tools, and licenses.

- **Resilient Architecture:** Supports deployment across **3 active-active datacenter sites** for high availability and failover.

- **Dedicated UAT Environment:** At least **10% of production capacity,** identical OS and firmware for accurate testing.

- **Future-Proof Investment: 7-year non-EOL guarantee** for hardware and software to protect long-term investments.

- **Seamless Integration:** Works with **AD, NMS, SIEM, ITSM, PIMS, LMS, NTP**, **DHCP, Syslog,** etc. for unified enterprise operations.

- **Secure Time Synchronization:** Supports **SHA1-authenticated NTP sync** for integrity and compliance.

Licensing Requirements – Built for Enterprise Scale

- Provides **end-to-end enterprise-wide licensing,** covering users, concurrent sessions, VLANs, QPS capacity, DNS zones, domains, policies, appliances, and multi-location deployments — ensuring predictable scaling across all environments.

- A **publicly available OEM datasheet** offers full visibility into entitlements, capabilities, and compliance.

- All functional modules are **bundled into a single 7-year support package,** ensuring continuity, cost predictability, and unrestricted usage.

- The platform includes a **feature set that exceeds standard RFP** requirements, with all enhancements fully supported under the OEM's SLA for long-term reliability.

Architecture – High Availability by Design

- Built for **continuous uptime,** with active-active or active-standby configurations within sites, and active-active clustering across sites for true multi-location resilience.

- Incorporates **full redundancy** across hardware, network paths, and power systems, eliminating single points of failure.

- Offers **automated failover** that maintains client connections seamlessly, supported by real-time sync cycles of < 5 minutes.

- Enables **non-disruptive upgrades** with rollback and hitless failover, ensuring uninterrupted operations during maintenance windows.

- Fully compliant with **IPv4/IPv6 (RFC 3596)** and supports all major **IANA resource record types** (A, AAAA, NS, MX, CNAME, PTR, SRV, NAPTR).

- Includes **DNSSEC validation,** DNS64 (RFC 6147), and both recursive + iterative query handling for modern DNS workloads.

- Integrated **Global Traffic Management (GTM)** optimizes routing, balances load, and improves site-level fault tolerance.

Hardware Specifications – Robust & Enterprise-Grade

- Delivered as **fully rack-mountable appliances** with complete installation accessories for streamlined deployment.

- Offers a **dedicated, configurable management interface** to maintain strict separation between data and administrative traffic.

- Equipped with **redundant platinum-grade PSUs** and all required cabling to ensure high operational reliability.

- Provides **minimum 2×10G or 2×10/25G fiber connectivity** with multimode transceivers for high throughput and low latency.

- Includes comprehensive **remote and out-of-band management** capabilities, backed by required licenses for secure, uninterrupted access.

Performance – Built for Massive Scale

- Supports **500+ DNS zones,** each containing over **100,000 records,** making it suitable for large and dynamic enterprises.

- Delivers **500,000 QPS per appliance per site,** scalable up to **1 million QPS** without any hardware modifications.

- Allows **unlimited ACLs and security policies,** enabling granular control without performance trade-offs.

- Can sync or update **200+ records instantly** without impacting performance.

- Comes with a **complete QPS performance matrix** to assist in planning and validating scaling strategies.

DNS Features – Full Suite for Enterprise Control

- Provides **authoritative and caching DNS** services for comprehensive zone and response management.

- Delivers **traffic-aware smart responses** based on proximity, latency, system load, and availability.

- Includes **health checks,** automated failover mechanisms, and **LDAP zone resolution** with AD synchronization for directory-driven environments.

- Enables **selective cache flushing** via GUI/CLI/API, along with custom TTL controls and full record-level updates (MX/NS/SOA/PTR).

- Provides robust recursive resolving, poisoning protection, DNSSEC validation, and **source-based query rate limits.**

- Segregates **recursive and authoritative services** for enhanced security and policy control.

- Supports **IXFR (RFC 1995/5936),** DNS filtering, session persistence, round-robin responses, and complete API-based automation with ITSM integration.

- **Delivers seamless support for primary IP address mapping in secondary zones,** ensuring authoritative integrity and smooth zone synchronization across distributed environments.

- **Integrated PTR record management keeps reverse DNS perfectly aligned with A/AAAA updates,** eliminating manual intervention and guaranteeing consistency for compliance and operational accuracy.

- **Built-in persistence propagation optimizes synchronization cycles across member DNS servers,** reducing overhead and maintaining session integrity for high-performance enterprise workloads.

- **Advanced traffic engineering capabilities empower enterprises to manipulate and control DNS flows intelligently,** enabling optimized routing, load balancing, and performance tuning for dynamic network conditions.

- **Smart resolver technology ensures cached DNS responses are served in a round-robin manner,** delivering balanced query distribution and accelerating response times under peak load.

Security – Enterprise Protection Built In

- Ensures **secure, encrypted credential handling** across all components.

- Supports modern encrypted DNS standards: **DoT, DoH, and upcoming DoQ,** backed by hardened TLS protocols.

- Integrates with **Active Directory** for centralized identity and access management.

- Adheres to **RFC 9103** for secure zone transfers.

- Protects against spoofing, manipulation, redirection, and other DNS-layer attacks.

- Includes a **DNS firewall** with malware, botnet, and RPZ-based threat protection.

- Provides advanced **DDoS mitigation** across reflection, amplification, tunneling, and flood categories.

- Offers IP whitelisting/blacklisting, health checks, ingress restrictions, and mitigation for SYN/RST/ACK/FIN floods.

- Supports screening and delegation modes for layered, policy-driven DNS security.

Administration, Management & Reporting – Complete Visibility

- Separates **management and data planes** for secure operational governance.

- Offers secure access through GUI, SSH/RDP, and built-in SSL certificate management.

- Supports **TACACS+, RADIUS, and LDAP** for unified user and permission control.

- Generates comprehensive logs — audit logs, DNS logs, query/response logs, syslogs, and debug logs — with a **90+ days retention window.**

- Provides encrypted backups, scheduled remote backups, and multi-site HA sync for resilient operations.

- Offers real-time dashboards for **hardware health, top domains, QPS, cache ratios, and security insights.**

- Supports **SNMPv3,** packet capture tools, REST APIs, and advanced reporting.

- Delivers **single-package upgrades** for OS and application layers, simplifying patching and maintenance.

Deployment, Support & Training – Enterprise-Grade Services

- Ensures **100% migration** from any existing DNS platform, preserving all records and configurations.

- Includes **OEM-led onsite deployment,** ensuring best-practice implementation.

- Covers hardware and software under a comprehensive **AMC package.**

- Backed by **7-year global OEM support,** including updates, patches, and remote assistance.

- Annual system health checks maintain performance and compliance.

- Includes training + certification for **up to 10 personnel,** strengthening in-house operational capability.

ARCHITECTURE AND CAPABILITIES
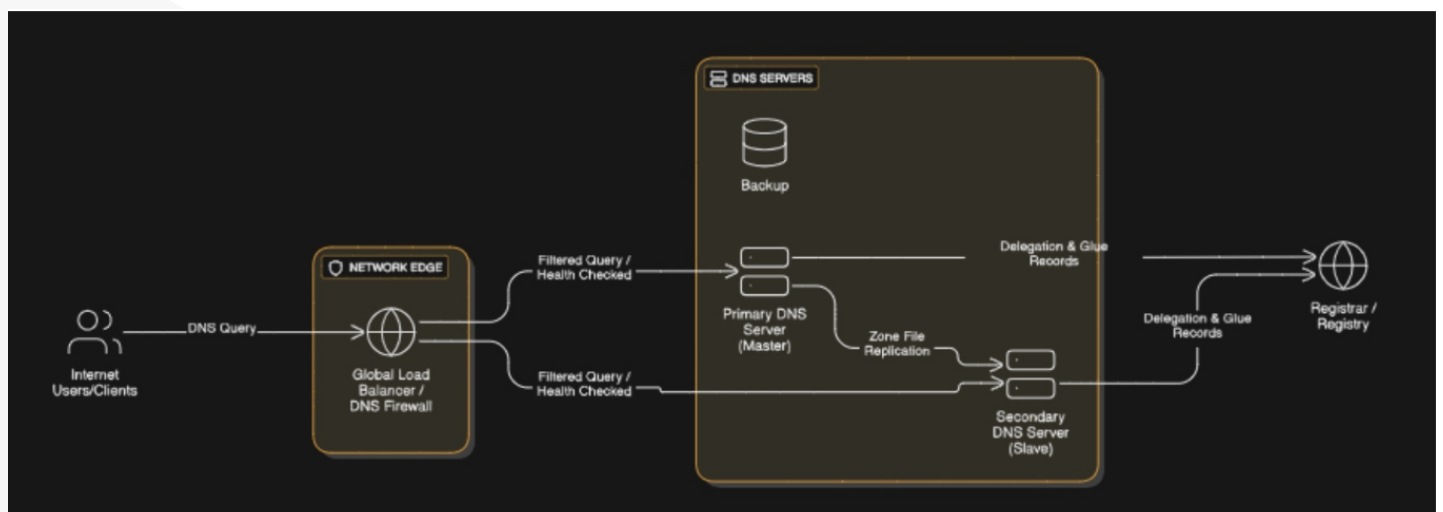
Centralized DNS Management Portal – Control at Scale

- Secured with **MFA and granular RBAC,** enabling precise admin and user access.

- Supports **logical grouping of DNS records** by department, user, application, or location for easier management.

- Enables complete **record synchronization** and full CRUD operations.

- Built-in validation ensures consistent and error-free updates.

- Includes a **maker-checker workflow** for auditability and governance.

- Provides detailed reporting, analytics dashboards, and integration with AD, ITSM systems, and APIs.

- Maintains full audit trails with **export to SIEM** for security monitoring.

- Supports non-disruptive patching, TLS controls, and built-in DDoS protections.

- Delivers **RTO $\leq$ 1 minute and RPO $\leq$ 15 minutes,** ensuring rapid recovery.

- Guarantees delivery of critical patches within **72 hours,** backed by 24×7 enterprise support.

SUMMARY – DNS FOR THE NEXT DECADE

Advantal's DNS brings **automation, encryption, scalability, and intelligence** into one unified platform.

It is engineered to secure, accelerate, and simplify DNS operations for organizations where uptime and security cannot be compromised.

This is DNS built for critical infrastructure — fast, resilient, compliant, and ready for the future.

CONTACT FOR SUPPORT

Corporate Office
Unit No. 527 and 528, 5th Floor, Vipul
Trade Centre, Sector 48, Sohna Road,
Gurugram, Haryana – 122018, India

Development Center
209, 1st Floor, Right Wing, MPSEDC
STP Building, Electronic Complex,
Pardeshipura, Indore,
Madhya Pradesh, India

For Sales Assistance
sales@advantal.net

+91-7314037720

kartikay.shukla@advantal.net

+91-9971161261

www.advantaltechnologies.com