









## 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

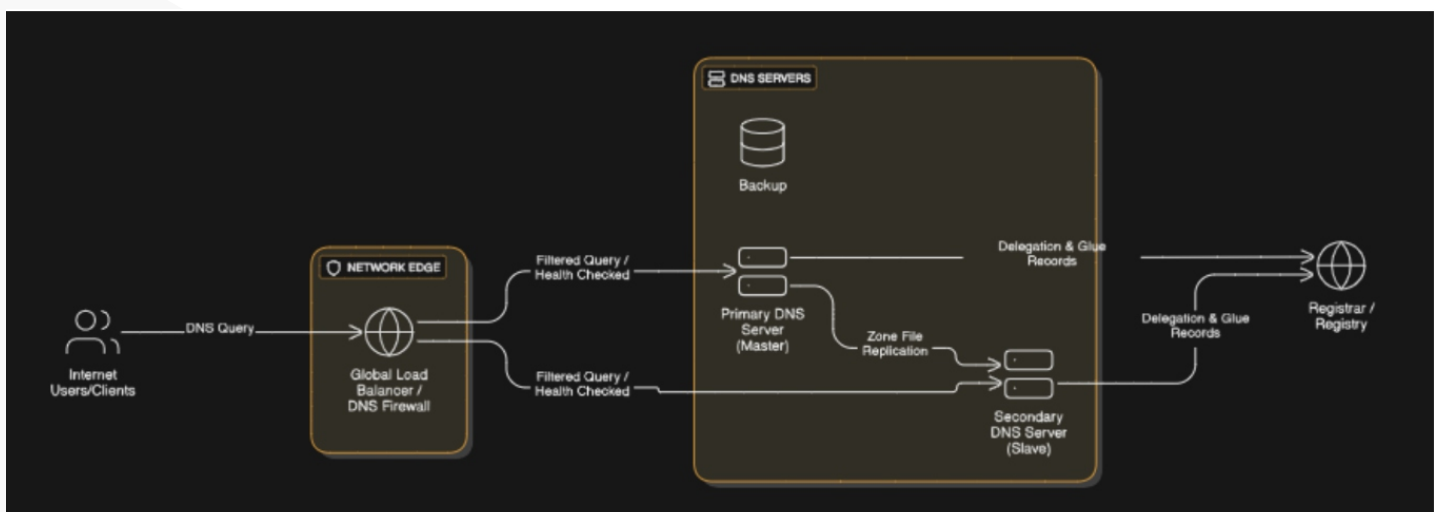
-  Separates **management and data planes** for secure operational governance.
-  Offers secure access through GUI, SSH/RDP, and built-in SSL certificate management.
-  Supports **TACACS+, RADIUS, and LDAP** for unified user and permission control.
-  Generates comprehensive logs – audit logs, DNS logs, 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 ≤ 1 minute and RPO ≤ 15 minutes**, ensuring rapid recovery.
-  Guarantees delivery of critical patches within **72 hours**, backed by 24x7 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

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