

RDAP Implementation

The registry system implements RDAP in accordance with RFC 9082 and RFC 9083, providing a JSON-based REST protocol for retrieving registry information. This implementation ensures full compliance with ICANN's RDAP Profile requirements while delivering robust registry data access capabilities.

Core Protocol Foundation

The base RDAP protocol implementation provides a comprehensive framework for registry data access through standardized JSON responses. The implementation includes:

- **Base Protocol Conformance** - Full implementation of RFC 9082 and RFC 9083, with registered extensions:
 - `icann_rdap_response_profile_1` for ICANN RDAP Response Profile compliance
 - `icann_rdap_technical_implementation_guide_1` for Technical Implementation Guide adherence
- **Query Processing** - Robust handling of:
 - Domain queries with full DNSSEC support
 - Nameserver queries with IPv4 and IPv6 support
 - Entity queries for contacts and registrars
 - Search functionality across all object types
- **Response Formatting** - Standardized JSON structures including:
 - Links and hypertext references
 - Notices and remarks
 - Events and timestamps
 - Status indicators
 - Public identifiers

Interoperability

The implementation ensures broad interoperability through:

- Strict adherence to RFCs 9082, 9083, 7480-7484
- Implementation of IANA-registered extensions only
- Standardized JSON response structures
- Comprehensive error handling
- Support for internationalized domain names

IANA-Registered RDAP Extensions

The platform implements the following IANA-registered RDAP extensions:

1. **ICANN RDAP Response Profile** (`icann_rdap_response_profile_1`)
 - Implements ICANN's standard response profile for gTLD registries
 - Ensures consistent response format across all ICANN-accredited registries
 - Includes mandatory notices and remarks for domain status
2. **ICANN RDAP Technical Implementation Guide** (`icann_rdap_technical_implementation_guide_1`)
 - Follows ICANN's technical implementation guidelines
 - Provides standardized error handling and response formatting
 - Implements required security and privacy controls

Related RFC Implementation

The platform implements the following RDAP-related RFCs:

1. **Core Protocol RFCs**
 - RFC 9082 - RDAP Query Format
 - RFC 9083 - JSON Responses for RDAP
2. **Supporting RFCs**
 - RFC 7480 - HTTP Usage in RDAP
 - RFC 7481 - Security Services for RDAP
 - RFC 7482 - Registration Data Access Protocol (RDAP) Object Tagging
 - RFC 7483 - JSON Responses for the Registration Data Access Protocol (RDAP)
 - RFC 7484 - Finding the Authoritative RDAP Service
 - RFC 7095 - Using the Internationalized Domain Names in Applications (IDNA) Protocol in the Registration Data Access Protocol (RDAP)
 - RFC 3339 - Date and Time on the Internet: Timestamps
3. **Related RFCs**
 - RFC 5910 - Domain Name System (DNS) Security Extensions Mapping for the Extensible Provisioning Protocol (EPP)

Redaction

Unstoppable Domains acknowledges that

<https://itp.cdn.icann.org/en/files/registry-operators/rdap-technical-implementation-guide-21feb24-en.pdf> section 1.1.3 indicates the required implementation of the redaction extension. The redaction extension is being planned for implementation in our registry system prior to onboarding an approved TLD for management.

Current state of redaction capabilities includes basic redaction behavior for data such as status changes, remarks, etc.

Review and comparison for <https://datatracker.ietf.org/doc/html/rfc9537> conformance, and any additional needed capabilities is targeted calendar Q4 2025 implementation.