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A Document Roadmap for the Domain Name System (DNS) Specifications
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Abstract

This document contains a roadmap to the Requests for Comments (RFC) documents relating to the Domain Name System (DNS). This roadmap provides a brief summary of the documents defining DNS and the various extensions. This serves as a guide and quick reference for DNS Implementers, as well as others.

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[1.](#) Introduction

The Domain Name System (DNS) is a critical piece of communication for Internet hosts. As DNS has evolved over the years, many distinct documents have become part of the standard, updating older documents either partially or completely.

This document is intended as an introduction to DNS, and also an attempt to organize the work from over the years. It provides a brief summary of the RFC documents that define DNS. This should be useful to implementers and others on the relevance and significance of the work that relate to DNS.

This roadmap includes a brief description of the contents of each DNS-related RFC. In addition, a letter code after each RFC indicates its category in the RFC document process. The explanations of these codes are described in [\[RFC2026\]](#).

S - Standards Track (either Proposed Standard, Draft Standard or Internet Standard)

E - Experimental

I - Informational

H - Historic

B - Best Current Practice

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U - Unknown (or not formally defined)

The DNS consists of multiple portions which could be implemented. These parts are (but are not restricted to): an Authoritative Server (which includes managing the storage of zone data) and a Caching Server.

The roadmap is broken up into several sections. [Section 2](#) describes the core functionality. [Section 3](#) lists the RFCs which are required to implement a DNS Server [Section 3.1](#) lists the DNS Resource Record (RR) Types needs [Section 4](#) discusses managing DNS zone data and updating DNS Zones [Section 5](#) covers DNS Security (DNSSEC), how to implement it.

Experimental extensions which are not yet standard track, as well as documents which help to document behavior of the DNS but are not required are in [Section 6](#). Current Best Practices are described in [Section 7](#).

For the definition of DNS terms or phrases, please refer to the DNS Terminology document [[RFC7719](#)]

[1.1](#). Notational Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

[1.2](#). DNS Terminology

[RFC7719] I: "DNS Terminology"

Since the DNS has been defined in dozens of different RFC over several decades, the terminology used by developers, implementors and operators of the DNS protocol sometimes changed over time. This document captured how terms were defined in the original standards,

and if they have different meanings today.

[2.](#) Core Functionality and Specifications

[RFC1034] U: "Domain Names - Concepts and Facilities"

[RFC1035] S: "Domain Names - Implementation and Specification"

[RFC2181] S: "Clarifications to the DNS Specification"

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[3.](#) Implementation

[RFC2308] S: "Negative Caching of DNS Queries (DNS NCACHE)"

[RFC5001] S: "DNS Name Server Identifier (NSID) Option"

[RFC4343] S: "Domain Name System (DNS) Case Insensitivity Clarification"

[RFC6604] S: "xNAME RCODE and Status Bits Clarification"

[RFC3597] S: "Handling of Unknown DNS Resource Record (RR) Types"

[RFC4592] S: "The Role of Wildcards in the Domain Name System"

[RFC1536] I: "Common DNS Implementation Errors and Suggested Fixes"

[RFC7766] S: "DNS Transport over TCP - Implementation Requirements"

[3.1.](#) DNS Resource Record (RR) Types

[4.](#) DNS Zones

[4.1.](#) Managing DNS Zone Data

[4.2.](#) Updating DNS Zones

[4.3.](#) Name Server Management

5. DNS Security (DNSSEC)

[RFC4033] S: "DNS Security Introduction and Requirements"

[RFC4034] S: "Resource Records for the DNS Security Extensions"

[RFC4035] S: "Protocol Modifications for the DNS Security Extensions"

[RFC3225] S: "Indicating Resolver Support of DNSSEC"

[RFC3226] S: "DNSSEC and IPv6 A6 aware server/resolver message size requirements"

[RFC4470] S: "Minimally Covering NSEC Records and DNSSEC On-line Signing"

[RFC4955] S: "DNS Security (DNSSEC) Experiments"

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[RFC5155] S: "DNS Security (DNSSEC) Hashed Authenticated Denial of Existence"

[RFC6840] S: "Clarifications and Implementation Notes for DNS Security (DNSSEC)"

[RFC4956] E: "DNS Security (DNSSEC) Opt-In"

[RFC6841] I: "A Framework for DNSSEC Policies and DNSSEC Practice Statements"

6. IANA Considerations

7. Security Considerations

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