List of DNS record types

This **List of DNS record types** provides an overview of types of resource records (database records) stored in the zone files of the Domain Name System (DNS).

The DNS implements a distributed, hierarchical, and redundant database for information associated with Internet domain names and addresses. In these domain servers, different record types are used for different purposes.

Resource records

Type	Value (decimal)	Defining RFC	Description	Function
A	1	RFC 1035[1]	address record	Returns a 32-bit IPv4 address, most commonly used to map hostnames to an IP address of the host, but also used for DNSBLs, storing subnet masks in RFC 1101, etc.
AAAA	28	RFC 3596[2]	IPv6 address record	Returns a 128-bit IPv6 address, most commonly used to map hostnames to an IP address of the host.
AFSDB	18	RFC 1183	AFS database record	Location of database servers of an AFS cell. This record is commonly used by AFS clients to contact AFS cells outside their local domain. A subtype of this record is used by the obsolete DCE/DFS file system.
APL	42	RFC 3123	Address Prefix List	Specify lists of address ranges, e.g. in CIDR format, for various address families. Experimental.
CERT	37	RFC 4398	Certificate record	Stores PKIX, SPKI, PGP, etc.
CNAME	5	RFC 1035 [3][1]	Canonical name record	Alias of one name to another: the DNS lookup will continue by retrying the lookup with the new name.
DHCID	49	RFC 4701	DHCP identifier	Used in conjunction with the FQDN option to DHCP
DLV	32769	RFC 4431	DNSSEC Lookaside Validation record	For publishing DNSSEC trust anchors outside of the DNS delegation chain. Uses the same format as the DS record. RFC 5074 describes a way of using these records.
DNAME	39	RFC 2672	delegation name	DNAME creates an alias for a name and all its subnames, unlike CNAME, which aliases only the exact name in its label. Like the CNAME record, the DNS lookup will continue by retrying the lookup with the new name.
DNSKEY	48	RFC 4034	DNS Key record	The key record used in DNSSEC. Uses the same format as the KEY record.
DS	43	RFC 4034	Delegation signer	The record used to identify the DNSSEC signing key of a delegated zone
HIP	55	RFC 5205	Host Identity Protocol	Method of separating the end-point identifier and locator roles of IP addresses.
IPSECKEY	45	RFC 4025	IPSEC Key	Key record that can be used with IPSEC
KEY	25	RFC 2535[4] and RFC 2930[5]	key record	Used only for SIG(0) (RFC 2931) and TKEY (RFC 2930).[6] RFC 3445 eliminated their use for application keys and limited their use to DNSSEC.[7] RFC 3755 designates DNSKEY as the replacement within DNSSEC.[8] RFC 4025 designates IPSECKEY as the replacement for use with IPsec.[9]
KX	36	RFC 2230	Key eXchanger record	Used with some cryptographic systems (not including DNSSEC) to identify a key management agent for the associated domain-name. Note that this has nothing to do with DNS Security. It is Informational status, rather than being on the IETF standards-track. It has always had limited deployment, but is still in use.
LOC	29	RFC 1876	Location record	Specifies a geographical location associated with a domain name

MX	15	RFC 1035 [3][1]	mail exchange record	Maps a domain name to a list of message transfer agents for that domain
NAPTR	35	RFC 3403	Naming Authority Pointer	Allows regular expression based rewriting of domain names which can then be used as URIs, further domain names to lookups, etc.
NS	2	RFC 1035 [3][1]	name server record	Delegates a DNS zone to use the given authoritative name servers
NSEC	47	RFC 4034	Next-Secure record	Part of DNSSEC—used to prove a name does not exist. Uses the same format as the (obsolete) NXT record.
NSEC3	50	RFC 5155	NSEC record version 3	An extension to DNSSEC that allows proof of nonexistence for a name without permitting zonewalking
NSEC3PARAM	51	RFC 5155	NSEC3 parameters	Parameter record for use with NSEC3
PTR	12	RFC 1035 [3][1]	pointer record	Pointer to a canonical name. Unlike a CNAME, DNS processing does *NOT* proceed, just the name is returned. The most common use is for implementing reverse DNS lookups, but other uses include such things as DNS-SD.
RRSIG	46	RFC 4034	DNSSEC signature	Signature for a DNSSEC-secured record set. Uses the same format as the SIG record.
RP	17	RFC 1183	Responsible person	Information about the responsible person(s) for the domain. Usually an email address with the @ replaced by a .
SIG	24	RFC 2535	Signature	Signature record used in SIG(0) (RFC 2931) and TKEY (RFC 2930).[8] RFC 3755 designated RRSIG as the replacement for SIG for use within DNSSEC.[8]
SOA	6	RFC 1035 [3][1]	start of [a zone of] authority record	Specifies *authoritative* information about a DNS zone, including the primary name server, the email of the domain administrator, the domain serial number, and several timers relating to refreshing the zone.
SPF	99	RFC 4408	Sender Policy Framework	Specified as part of the SPF protocol as an alternative to of storing SPF data in TXT records. Uses the same format as the earlier TXT record.
SRV	33	RFC 2782	Service locator	Generalized service location record, used for newer protocols instead of creating protocol-specific records such as MX.
SSHFP	44	RFC 4255	SSH Public Key Fingerprint	Resource record for publishing SSH public host key fingerprints in the DNS System, in order to aid in verifying the authenticity of the host. RFC 6594 defines ECC SSH keys and SHA-256 hashes. See the IANA SSHFP RR parameters registry [10] for details.
TA	32768	N/A	DNSSEC Trust Authorities	Part of a deployment proposal for DNSSEC without a signed DNS root. See the IANA database [11] and Weiler Spec [12] for details. Uses the same format as the DS record.
TKEY	249	RFC 2930	secret key record	A method of providing keying material to be used with TSIG that is encrypted under the public key in an accompanying KEY RR.[13]
TSIG	250	RFC 2845	Transaction Signature	Can be used to authenticate dynamic updates as coming from an approved client, or to authenticate responses as coming from an approved recursive name server[14] similar to DNSSEC.
TXT	16	RFC 1035 [3][1]	Text record	Originally for arbitrary human-readable *text* in a DNS record. Since the early 1990s, however, this record more often carries machine-readable data, such as specified by RFC 1464, opportunistic encryption, Sender Policy Framework, DKIM, DMARC DNS-SD, etc.

Other types and pseudo resource records

Other types of records simply provide some types of information (for example, an HINFO record gives a description of the type of computer/OS a host uses), or others return data used in experimental features. The "type" field is also used in the protocol for various operations.

Code	Number	Defining RFC	Description	Function
*	255	RFC 1035 [3][1]	All cached records	Returns all records of all types known to the name server. If the name server does not have any information on the name, the request will be forwarded on. The records returned may not be complete. For example, if there is both an A and an MX for a name, but the name server has only the A record cached, only the A record will be returned. Sometimes referred to as "ANY", for example in Windows nslookup and Wireshark.
AXFR	252	RFC 1035 [3][1]	Authoritative Zone Transfer	Transfer entire zone file from the master name server to secondary name servers.
IXFR	251	RFC 1996	Incremental Zone Transfer	Requests a zone transfer of the given zone but only differences from a previous serial number. This request may be ignored and a full (AXFR) sent in response if the authoritative server is unable to fulfill the request due to configuration or lack of required deltas.
OPT	41	RFC 2671	Option	This is a "pseudo DNS record type" needed to support EDNS

Obsolete record types

Progress has rendered obsolete some of the originally-defined record-types. Of the records listed at IANA, some have limited use, for various reasons. Some are marked obsolete in the list, some are for very obscure services, some are for older versions of services, and some have special notes saying they are "not right".

- Obsoleted by RFC 973: MD(3), MF (4), MAILA (254)
- Records to publish mailing list subscriber lists in the DNS: MB(7), MG(8), MR(9), MINFO(14), MAILB (253). The intent, as specified by RFC 883, was for MB to replace the SMTP VRFY command, MG to replace the SMTP EXPN command, and MR to replace the "551 User Not Local" SMTP error. Later, RFC 2505 recommended that both the VRFY and EXPN commands be disabled, making the use of MB and MG unlikely to ever be adopted.
- Declared "not to be relied upon" by RFC 1123 (with further information in RFC 1127): WKS(11)[15]
- Mistakes: NB(32), NBSTAT(33) (from RFC 1002); the numbers are now assigned to NIMLOC and SRV.
- Obsoleted by RFC 1035: NULL(10) (RFC 883 defined "completion queries" (opcode 2 and maybe 3) which used this record, RFC 1035 later reassigned opcode 2 to be "status" and reserved opcode 3.)
- Defined as part of early IPv6 but downgraded to experimental by RFC 3363: A6(38), Later downgraded to historic in RFC 6563.
- Obsoleted by DNSSEC updates (RFC 3755): NXT(30). At the same time, the domain of applicability for KEY and SIG was also limited to not include DNSSEC use.
- Part of the first version of DNSSEC (RFC 2065).
- Not in current use by any notable application: HINFO(13), RP(17), X25(19), ISDN(20), RT(21), NSAP(22), NSAP-PTR(23), PX(26), EID(31), NIMLOC(32), ATMA(34), APL(42)
- Defined by the Kitchen Sink [16] internet draft, but never made it to RFC status: SINK(40)
- A more limited early version of the LOC record: GPOS(27)
- IANA reserved, no RFC documented them [17] and support was removed from BIND in the early 90s: UINFO(100), UID(101), GID(102), UNSPEC(103)

RP(17) may be used for certain human-readable information regarding a different contact point for a specific host, subnet, or other domain level label separate than that used in the SOA record.

Further reading

- "IANA DNS Parameters registry" [11]. Retrieved 2008-05-25..
- "Google's Guide to DNS Records" [18]. Retrieved 2010-12-09..

References

[1] Paul Mockapetris (November 1987). "RFC 1035: Domain Names - Implementation and Specification" (http://tools.ietf.org/html/rfc1035#page-12). Network Working Group of the IETF (Internet Engineering Task Force). p. 12. .

[2] "RFC 3596: DNS Extensions to Support IP Version 6" (http://tools.ietf.org/html/rfc3596#section-2). The Internet Society. October 2003. .

[3] http://tools.ietf.org/html/rfc1035#page-12

[4] RFC 2535, §3

[5] RFC 3445, §1. "The KEY RR was defined in [RFC 2930]..."

[6] RFC 2931, §2.4. "SIG(0) on the other hand, uses public key authentication, where the public keys are stored in DNS as KEY RRs and a private key is stored at the signer."

[7] RFC 3445, §1. "DNSSEC will be the only allowable sub-type for the KEY RR..."

[8] RFC 3755, §3. "DNSKEY will be the replacement for KEY, with the mnemonic indicating that these keys are not for application use, per [RFC3445]. RRSIG (Resource Record SIGnature) will replace SIG, and NSEC (Next SECure) will replace NXT. These new types completely replace the old types, except that SIG(0) [RFC2931] and TKEY [RFC2930] will continue to use SIG and KEY."

[9] RFC 4025, Abstract. "This record replaces the functionality of the sub-type #4 of the KEY Resource Record, which has been obsoleted by RFC 3445."

[10] http://www.iana.org/assignments/dns-sshfp-rr-parameters/dns-sshfp-rr-parameters.xml

[11] http://www.iana.org/assignments/dns-parameters

[12] http://www.watson.org/~weiler/INI1999-19.pdf

[13] RFC 2930, §6. "... the keying material is sent within the key data field of a TKEY RR encrypted under the public key in an accompanying KEY RR [RFC 2535]."

[14] RFC 2845, abstract

[15] RFC 1123 section 2.2, 5.2.12, 6.1.3.6

[16] http://www.tools.ietf.org/html/draft-eastlake-kitchen-sink

[17] http://www.ops.ietf.org/lists/namedroppers/namedroppers.2004/msg00949.html

[18] https://www.google.com/support/a/bin/answer.py?hl=en&answer=48090

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