



Resource Records

Resource records comprise the data within a DNS zone. There is no fixed limit to the number of resource records a zone can own. In general, there can be zero, one, or more resource records of a given type. However, there are constraints on the number of certain types of records a zone can have.

All resource records have these required entries:

- **Name**—Name (host) that owns the record, such as example.com.
- **Class (not required for all formats)**—DNS supports only the IN (Internet) class of record.
- **TTL (time to live)**—Amount of time to store the record in cache, in seconds. If you do not include a TTL, Cisco Prime Network Registrar uses the zone default TTL, defined in the SOA resource record.
- **Type**—Type of the record, such as A, NS, SOA, and MX. There are many types that various RFCs define, although ten or fewer are in common use.
- **Record data**—Data types whose format and meaning varies with record type.

Table A-1 lists all the resource record types Cisco Prime Network Registrar supports. It provides the field syntax and the field descriptions, as well as how the fields are represented in the Cisco Prime Network Registrar GUI.

Table A-1 Resource Records

Record	No.	Name	Syntax and Description	RFC
A	1	Host Address—Name-to-address mapping for the zone	<pre>name ttl class A address</pre> <p>Web UI: Add or Edit Host for Zone page: Hostname, IP Address or Resource Records for Zone page: Name, TTL, Type, Data</p> <pre>nrcmd> zone example.com addRR host123 3600 IN A 192.168.40.123</pre>	1035

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
A6	38	IPv6 Address— (Obsolete; use AAAA records instead)	<p><i>name ttl class A6 address</i></p> <p>In the data, the suffix address is an IPv6 address encoded in network order (high-order octet first). There must be exactly enough octets in this field to contain a number of bits equal to 128 minus prefix length, with 0 to 7 leading pad bits to make this field an integral number of octets. Pad bits, if present, must be set to zero when loading a zone file and ignored on reception. For example:</p> <p>2001:0:734c:c0::</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=A6, Data=<i>prefixlength suffixaddr prefixname</i>, with data in the form:</p> <p>0 2345:00c1:ca11:0001:1234:5678:9abc:def0</p> <pre>nrcmd> zone example.com addRR host456 A6 0 1345:c1:ca11:1:1234:5678:9abc:def0</pre>	6563
AAAA	28	IPv6 Address—	<p><i>name ttl class AAAA address</i></p> <p>Data is the IPv6 address format of eight sets of four hexadecimal digits, separated by colons. The first set of four digits is the high-order 16 bits of the address. You can omit leading zeros in sets and omit a value in a set if the value of the set is zero.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=AAAA, Data=<i>address</i></p> <pre>nrcmd> zone example.com addRR host456 AAAA 1345:c1:ca11:1:1234:5678:9abc:def0</pre>	3596
AFSDB	18	Andrew File System (AFS) Data Base—	<p><i>name ttl class AFSDB subtype hostname</i></p> <p>Subtype is either 1—AFS cell database server, or 2—DCE authentication name server. Hostname is the domain name of host that has a server for the cell named by the owner.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=AFSDB, Data=<i>subtype hostname</i></p> <pre>nrcmd> zone example.com addRR host4 AFSDB 1 AFSDBhost.example.com.</pre>	1183

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
CNAME	5	Canonical Name— Aliases or nicknames	<p><i>alias ttl class CNAME canonicalname</i></p> <p>You cannot have any other resource records associated with a CNAME. Aliases are useful when you want the outside world to know a single, easily remembered name. You can also use aliases when a host changes its name. In that case, ensure that you have a CNAME pointer so that when people use the original name, it can be resolved to the newer one.</p> <p>Web UI: Resource Records for Zone page: Name=<i>alias</i>, TTL, Type=CNAME, Type, Data=<i>canonicalname</i></p> <pre>nrcmd> zone example.com addRR host456 CNAME host1234</pre>	1035
DHCID	49	Dynamic Host Configuration Identifier— (RFC 4701)	<p><i>name ttl class DHCID data</i></p> <p>The DNS server uses this RR to allow DHCP clients and servers to update DNS automatically. This RR is not user-configurable. The data is the result of a one-way hash computation of the client message and the domain name. Sample RR output for an IPv6 address:</p> <pre>chi6.example.com IN DHCID (AAIBY2/AuCccgoJbaxcQc9TUapptP6910jxfNuVAA2kjEA=)</pre>	4701
HINFO	13	Host Info— Hardware and software information for the host	<p><i>name ttl class HINFO cpu os</i></p> <p>Data is the hardware (CPU) and operating system.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=HINFO, Data=<i>cpu os</i></p> <pre>nrcmd> zone example.com addRR host5 HINFO CPU1 OS2</pre>	1035
ISDN	20	Integrated Services Digital Network (ISDN) Address—	<p><i>name ttl class ISDN ISDNnumber [subaddr]</i></p> <p>Data is the ISDN number of the owner and Direct Dial In, if any, and an optional ISDN subaddress string</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=ISDN, Data=<i>ISDNnumber [subaddr]</i></p> <pre>nrcmd> zone example.com addRR host6 ISDN ISDN88888</pre>	1183
MB	7	Mailbox Domain Name—	<p><i>name ttl class MB mbox</i></p> <p>Data is the domain name of the host with the specified mailbox.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=MB, Data=<i>mbox</i></p> <pre>nrcmd> zone example.com addRR host7 MB mailbox.example.com.</pre>	1035

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
MG	8	Mail Group Member—	<p><i>name ttl class MG mgroup</i></p> <p>Data is the domain name of the mailbox group (mailing list).</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=MG, Data=mgroup</p> <pre>nrcmd> zone example.com addRR host7 MG mbgroup.example.com.</pre>	1035
MINFO	14	Mailbox Info—	<p><i>name ttl class MINFO respmbx errormbx</i></p> <p>Data is the mailbox responsible for the mailing list, and the mailbox to receive error messages.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=MINFO, Data=respmbx errormbx</p> <pre>nrcmd> zone example.com addRR host7 MINFO resp.example.com. error.example.com.</pre>	1035
MR	9	Mail Rename—	<p><i>name ttl class MR newmbx</i></p> <p>Data is the mailbox name to rename the owner mailbox.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=MR, Data=newmbx</p> <pre>nrcmd> zone example.com addRR host7 MR renamemb.example.com.</pre>	1035
MX	15	Mail Exchanger— Where to deliver the mail for a domain name	<p><i>name ttl class MX pref mxname</i></p> <p>Data is the preference value (16-bit integer for the preference for the record, with lower values having preference), and the domain name of the mail exchanger for the owner.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=MX, Data=pref mxname</p> <pre>nrcmd> zone example.com addRR host8 MX 10 exchanger.example.com.</pre>	1035

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
NAPTR	35	Naming Authority Pointer—Produces a new domain label or Universal Resource Identifier (URI). You can then use DNS to look up services for many resource names that are not in domain name syntax.	<p><i>name ttl class NAPTR order pref flags serv regexp replace</i></p> <ul style="list-style-type: none"> <i>order</i>—16-bit integer for the order in which to process the NAPTR records to ensure the correct ordering of rules, with low numbers processed before high numbers. <i>pref</i>—16-bit unsigned integer for the order in which to process NAPTR records with equal <i>order</i> values, with low numbers processed before high numbers. <i>flags</i>—Character-string containing flags to control aspects of rewriting and interpreting fields, single characters from the set [A-Z0-9] (not case-sensitive); the S, A and U flags denote a terminal lookup, the P flag says that the remainder of the application-side algorithm should be carried out protocol-specific. <i>serv</i>—Valid protocols or services. <i>regexp</i>—String containing a substitution expression applied to the original string held by the client to construct the next domain name to look up. (For common regex usage, see Table 5-4 on page 5-34). <i>replace</i>—Next FQDN to query for NAPTR, SRV, or address records, depending on the value of the <i>flags</i> field. <p>Web UI: Resource Records for Zone page: Name, State, TTL, Type=NAPTR, Data=<i>order pref flags service regexp replace</i></p> <pre>nrcmd> zone 8.6.4.e164.arpa addRR 4.3.2.1.6.7.9 naptr 100 10 u sip+E2U /^.*\$/sip:info@tele2.se/ .</pre>	2915
NS	2	Name Server—Authoritative server for the zone	<p><i>name ttl class NS nameserver</i></p> <p>Machines that provide name service must not reside in the owner domain. For each domain, you must have at least one NS record. NS records for a domain must exist in both the zone that delegates the domain and in the domain itself. NS record names must have an equivalent A record (they cannot point to an alias).</p> <p>Web UI: Add or Edit Zone page Nameservers: NS TTL, Add Nameserver</p> <pre>nrcmd> zone example.com addRR @ NS DNSserv2.example.com.</pre>	1035

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
NSAP	22	Network Service Access Point (NSAP) Address—	<p><i>name ttl class NSAP NSAPAddr</i></p> <p>Data is the <i>NSAPAddr</i>—Octet values assigned by the assigning authority, a character string of the type used in TXT and HINFO records (see RFC 1706).</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=NSAP, Data=<i>NSAPAddr</i></p> <pre>nrcmd> zone example.com addRR host10 NSAP 39840f80005a000000001e13708002010726e00</pre>	1706
PTR	12	Pointer—Reverse mapping	<p><i>name ttl class PTR dname</i></p> <p>Data is the domain name of host having the reverse record indicated by the owner. PTR records are used for reverse mapping, specifically in the in-addr.arpa zones for translation of addresses to names. PTRs use official names, not aliases. The name in a PTR record is the local IP address portion of the reverse name.</p> <p>Web UI: Resource Records for Zone page: Name, State, TTL, Type=PTR, Data=<i>dname</i></p> <pre>nrcmd> zone example.com addRR 45.40.168.192.in-addr.arpa. PTR host1234</pre>	1035
RP	17	Responsible Person—	<p><i>name ttl class RP mbox txtthost</i></p> <p>Data is the domain name of the mailbox for the responsible person, and the domain name of host where TXT records exist.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=RP, Data=<i>mbox txtthost</i></p> <pre>nrcmd> zone example.com addRR host7 RP resp.example.com. text.example.com.</pre>	1183
RT	21	Route Through—	<p><i>name ttl class RT pref intermediatehost</i></p> <p>Data is the <i>pref</i>—16-bit integer for preference to give to this record among others of the same owner, and <i>intermediatehost</i>—domain name of the host serving as intermediate to reach the owner.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=RT, Data=<i>pref intermediatehost</i></p> <pre>nrcmd> zone example.com addRR host7 RT 10 routthru.example.com.</pre>	1183

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
SOA	6	Start of Authority— Every zone must have a single SOA record	<p><i>name ttl class SOA primeserver hostmaster (serial refresh retry expire minimum)</i></p> <p>Web UI: Add or Edit Zone page SOA Attributes: Serial Number, SOA TTL, Nameserver, Contact E-Mail, Secondary Refresh, Secondary Retry, Secondary Expire, Minimum TTL</p> <pre>nrcmd> zone example.com addRR @ 172800 IN SOA ns hostmaster 1 10800 3600 604800 86400</pre>	1035
SRV	33	Service Location—	<p><i>name ttl class SRV priority weight port target</i></p> <ul style="list-style-type: none"> • <i>priority</i>—16-bit priority to give the record among the owner SRV records. • <i>weight</i>—16-bit load to give the record at the same priority level. • <i>port</i>—16-bit port on which to run the service. • <i>target</i>—Domain name of host running on the specified port. <p>Administrators can use several servers for a single domain, move services between hosts with little difficulty, and designate some hosts as primary servers for a service and others as backups. Clients ask for a specific service or protocol for a domain and receive the names of any available servers. See Chapter 30, “Configuring DNS Update” for how this record affects Windows servers.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=SRV, Data=<i>priority weight port target</i></p> <pre>nrcmd> zone example.com addRR host2 SRV 10 1 60 host7.example.com.</pre>	2782
TXT	16	Text—	<p><i>name ttl class TXT textstring</i></p> <p>Data is one or more text character strings that can contain any type of information.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=TXT, Data=<i>textstring</i></p> <pre>nrcmd> zone example.com addRR host2 TXT "this message"</pre>	1035

Table A-1 Resource Records (continued)

Record	No.	Name	Syntax and Description	RFC
WKS	11	Well Known Services—	<p><i>name ttl class WKS addr protocol servicelist</i></p> <ul style="list-style-type: none"> <i>addr</i>—32-bit IP address. <i>protocol</i>—8-bit IP protocol number, which can be TCP or UDP. <i>servicelist</i>—Variable-length bit map in 8-bit multiples of services, which can be TIME, TELNET, FTP, or SMTP. <p>Web UI: Resource Records for Zone page: Name, TTL, Type=WKS, Data=<i>addr protocol servicelist</i></p> <pre>nrcmd> zone example.com addRR host8 WKS 192.168.40.56 TCP TELNET</pre>	1035
X25	19	X.25 Address—	<p><i>name ttl class X25 PSDNaddr</i></p> <p>Data is the character string of the Public Switch Data Network (PSDN) address in the X.121 numbering plan associated with the owner.</p> <p>Web UI: Resource Records for Zone page: Name, TTL, Type=X25, Data=<i>PSDNaddr</i></p> <pre>nrcmd> zone example.com addRR host9 IN X25 311061700956</pre>	1183