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The SOA record and its serial number: what each field means and when it matters

Domains & DNS

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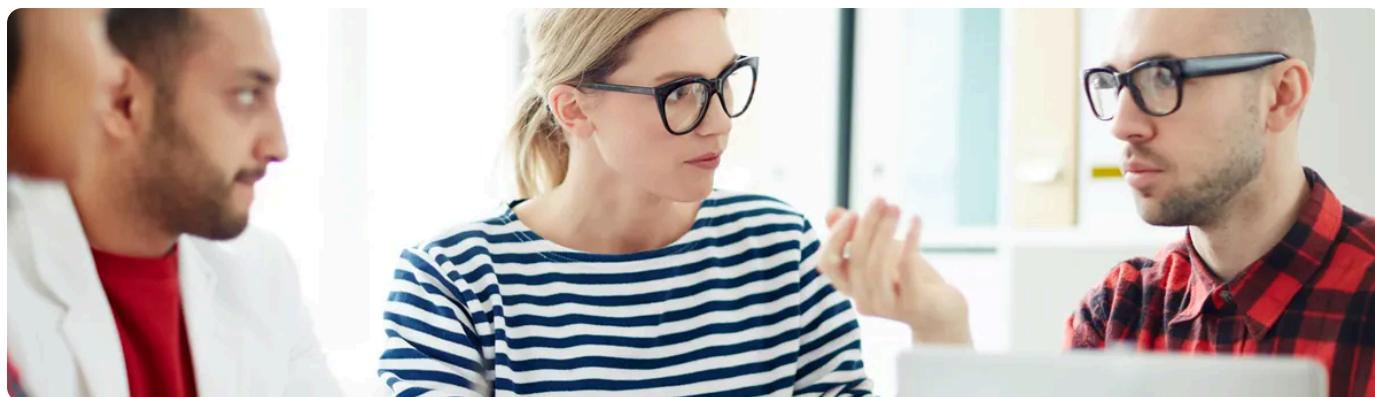
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The short answer: the **SOA** (Start of Authority) is the first record in every DNS zone. It names the primary nameserver and the person responsible for the zone, and it carries a **serial number** plus four timers: they tell secondary nameservers when to fetch the zone again, and tell resolvers how long to remember that a name **does not exist**. On cPanel hosting the server writes and updates it for you; you read it when you are chasing a change that “does not show up”. If you run a **VPS with your own DNS server**, keeping it right is your job.

The SOA fields, one by one

Field	What it means
Primary nameserver (MNAME)	The nameserver holding the original copy of the zone. The secondaries copy from it.
Responsible person (RNAME)	An e-mail address written with a dot instead of the @ : <code>hostmaster.example.com.</code> means <code>hostmaster@example.com</code> .
Serial number	The zone’s version. Secondaries only copy the zone when this number goes up . The usual convention is the date followed by a counter: <code>YYYYMMDDnn</code> .
Refresh	How often (in seconds) secondaries ask the primary whether the serial has changed.
Retry	If that question fails, how long they wait before asking again.
Expire	If this much time passes without reaching the primary, the secondaries stop answering for the zone.
Minimum (the last number)	Today it does something else: it is how long a resolver keeps the answer “this name does not exist” (negative caching). The lower of this number and the SOA’s own TTL applies.

Reading and checking the SOA

1

Look at the domain's SOA from a command line: `dig example.com SOA +short`

```
ns1.example.net. hostmaster.example.com. 2026101601 3600 1800
```

```
1209600 86400
```

The fields come in the order of the table: the serial is the third one. If you do not have dig, see **checking DNS from the command line**. (example: *example.com* is a domain reserved for examples, and *192.0.2.10* and *2001:db8::10* are documentation addresses; replace them with yours.)

2

Compare the serial on every nameserver. List them with `dig example.com NS +short`, then ask each one: `dig @ns1.example.net example.com SOA +short`. If one shows a lower number, it has not received the latest version of the zone yet, and that is the one handing out the old answer.

3

On cPanel hosting you do not touch the SOA: when you save a record in the **Zone Editor**, the server bumps the serial itself. If the serial did not change after an edit, the edit was not saved.

4

On a VPS running BIND (this one is for people who run their own DNS): after editing the zone file, raise the serial, check the file with `named-checkzone example.com /path/to/example.com.db` and only then reload the zone with `rndc reload example.com`. Paths depend on the installation.

5

Created a subdomain and it “does not exist” for you only? If you tested it before creating it, your resolver stored the “does not exist” answer for the time in the SOA’s last field. Ask the nameserver directly with `dig @ns1.example.net name.example.com` to see the truth, and **check where else the cache hides**.

Never lower the serial. If someone types it by hand lower than it was (for example, switching from a plain counter to the date format the wrong way round), the secondaries ignore every change until the number climbs past the old one. There is a proper procedure to fix it (serial arithmetic, from RFC 1982); do not guess, ask for help.

The date format is a free clue: with YYYYMMDDnn, one glance tells you the day the zone last changed and how many edits happened that day. It is the quickest answer to “was my change saved?”.

Serial numbers that do not match between nameservers, or a zone that will not update? Tell us the domain and what you changed.

[Open a support ticket](#)

SEE ALSO

[Checking DNS from the command line: dig and nslookup, and how to read the answer](#)

[I changed the DNS and nothing shows yet: TTL, cache, and the four places to check](#)

[Nameservers: what they are and which ones to use with us](#)

[Pointing a domain at your own VPS: nameservers and glue records](#)

[How long DNS changes take to propagate](#)

[Reading a whole DNS zone line by line: names, trailing dots, TTL and the @ sign](#)



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