

# Theoretical Questions DNS

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## 1 Theoretical questions

1. Indicate the elements of a Resource Record (RR):

2. Indicate the types of records you know ("query types"). Do the following records exist: ANY, NS, CNAME, PTR, MXEX, HINFO, A, AXFR, HELO, PTR?

3. What type of record (RR - query type) should be requested for a reverse domain resolution?

4. To what time does the one obtained in a query correspond if the aa flag is deactivated?

5. To what time does the one obtained in a query correspond if the aa flag is activated?  
Who decided that time?

6. To which domain are reverse resolution requests made? If we want to perform the reverse resolution of 163.117.141.114, which record should we query and from which domain? Why does it have such an unusual format? Is there always a unique response for this type of request?

7. A DNS *resolver* receives a DNS response message from the server `dns.examen.es` with the flags `qr`, `aa`, and `tc` set to 1, and the rest of the flags set to 0. What can you deduce about the query in terms of the transport protocol, type of request (recursive, iterative, or mixed), or the type of server that responded (primary, secondary, intermediate)?

8. What happens if we use the UDP protocol for DNS? And what if we use TCP? Are both valid? In which cases are they used?

9. What is the purpose of the `rd` (Recursion Desired) bit in the header of a DNS request? If the server receives a request with this header activated, should it provide an iterative or recursive response? Is the server obligated to do anything? Why?

