

# Domain Name System

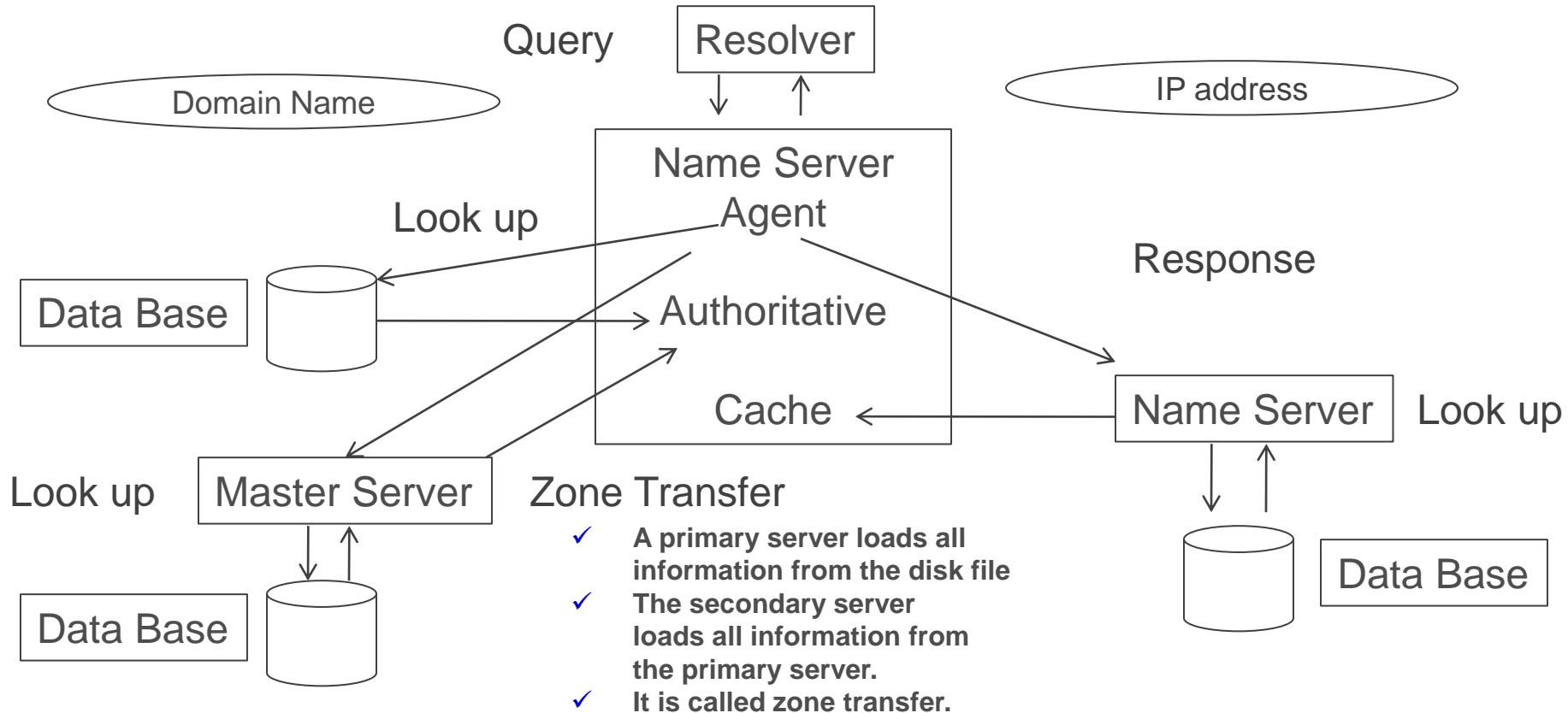


By

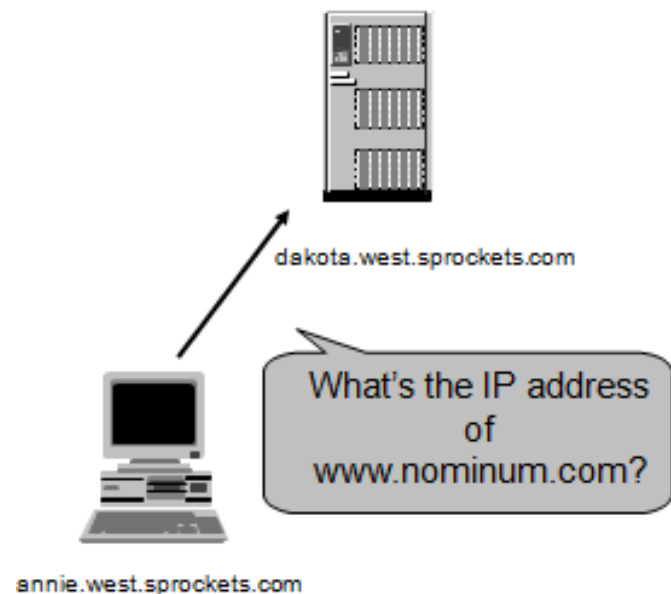
Dr M. Senthilkumar  
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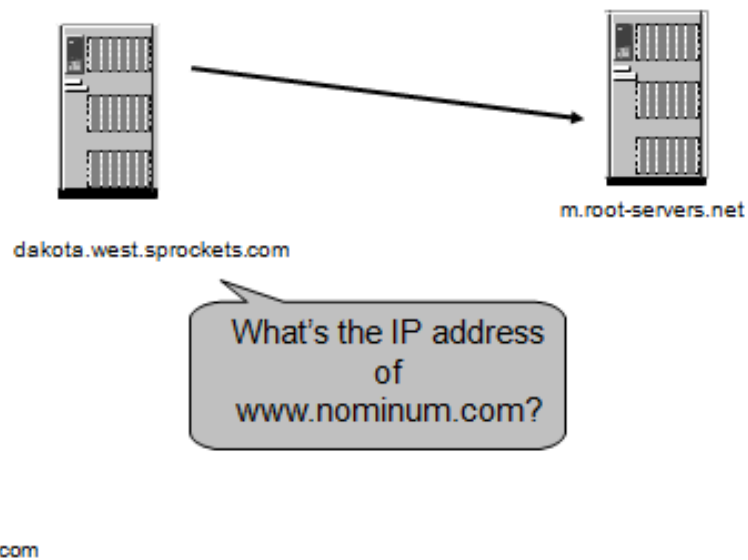
# DNS – Name Resolution



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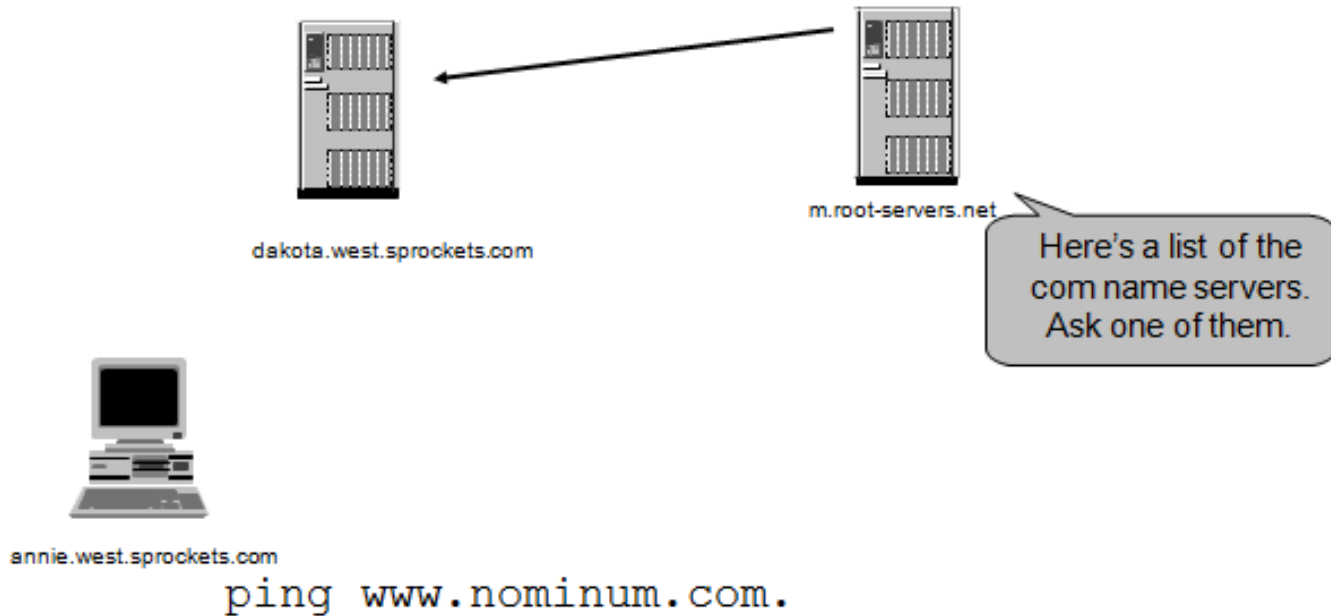


ping www.nominum.com.

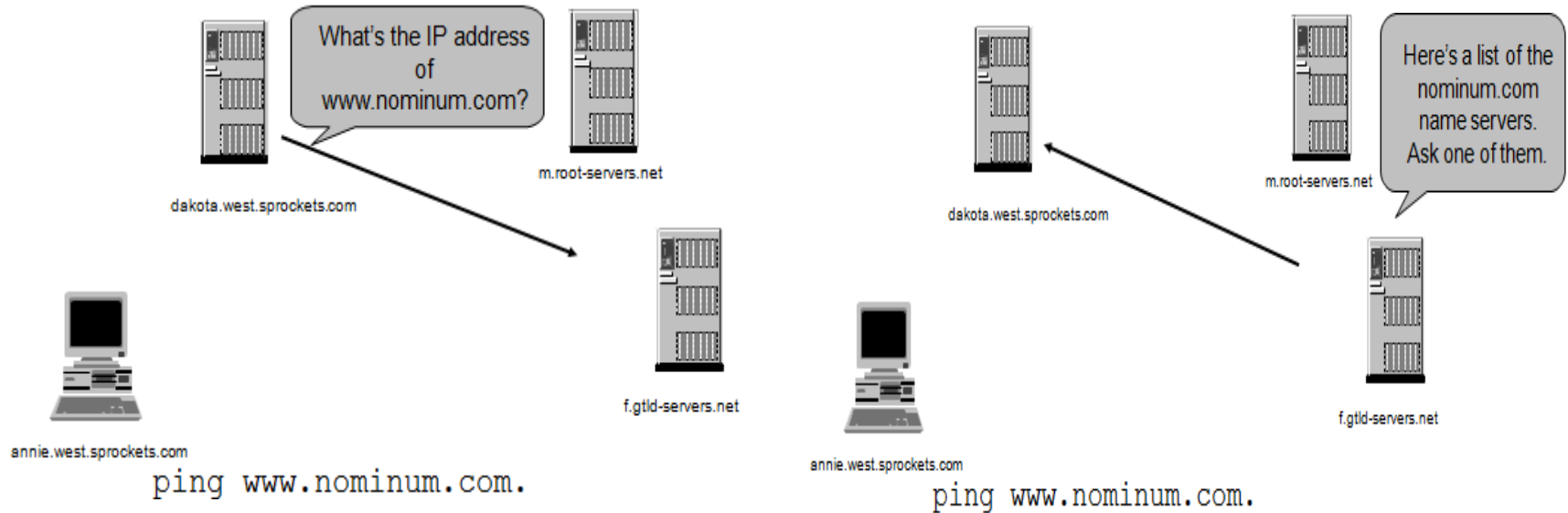


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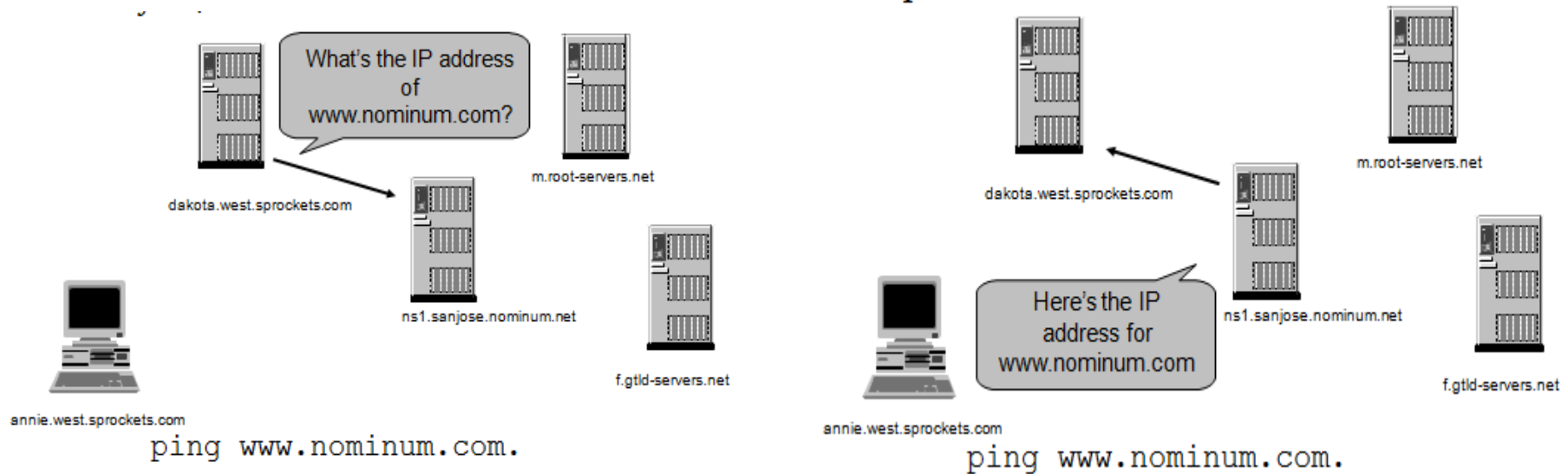
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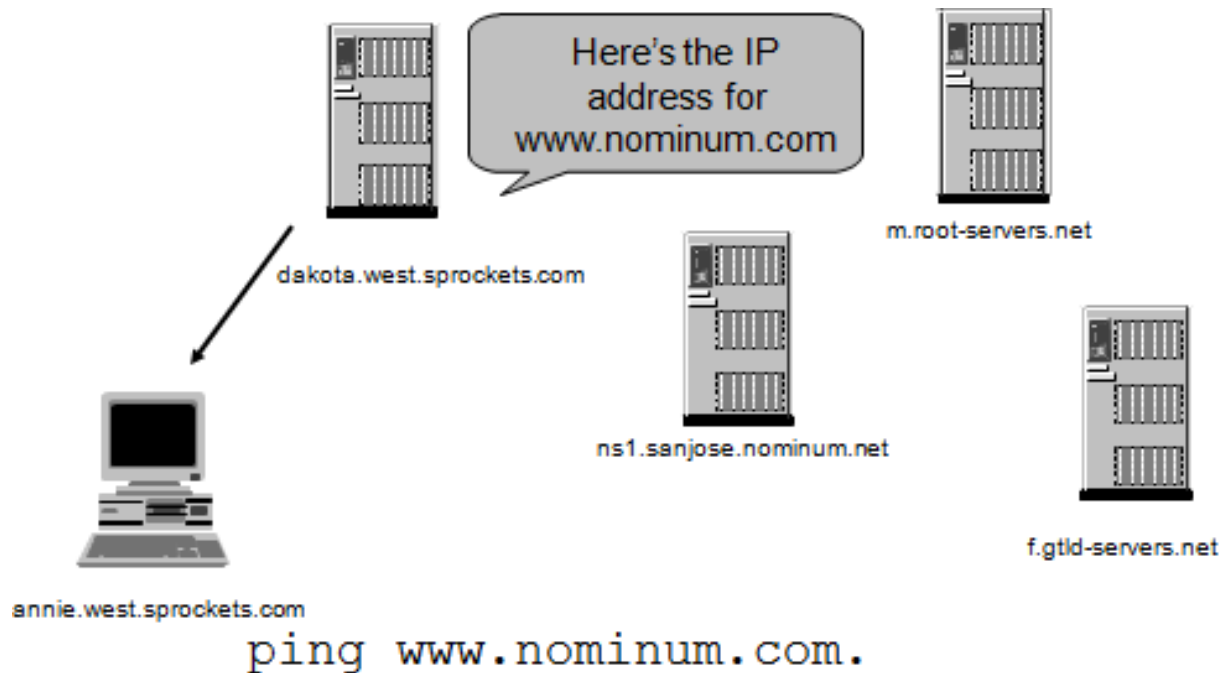
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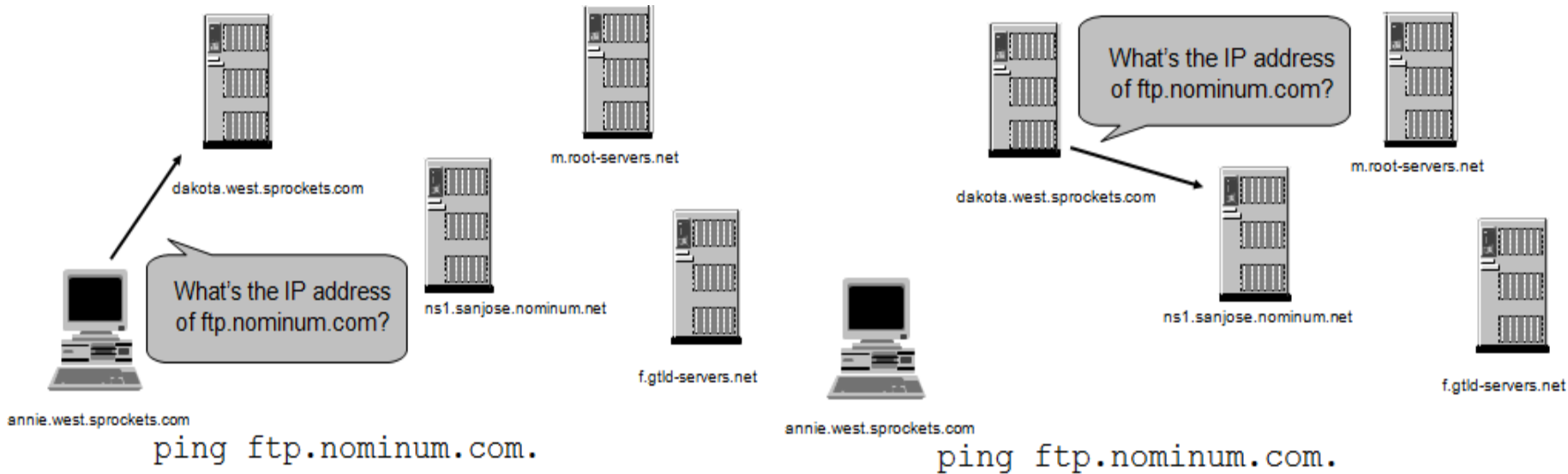
# DNS – Name Resolution



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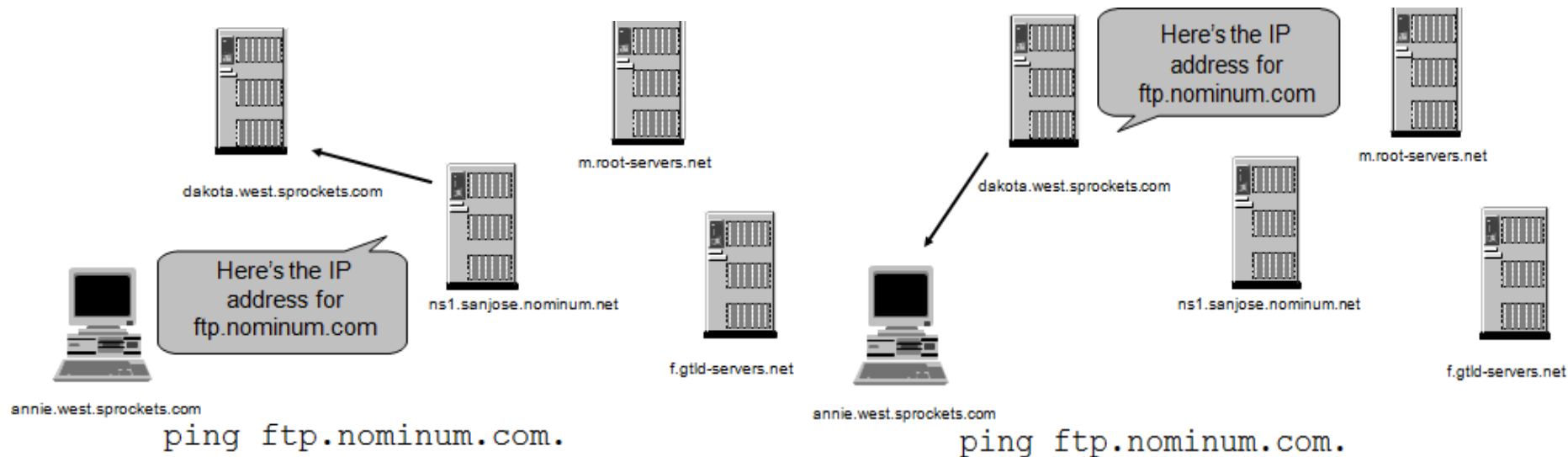


# DNS – Name Resolution ( Caching )



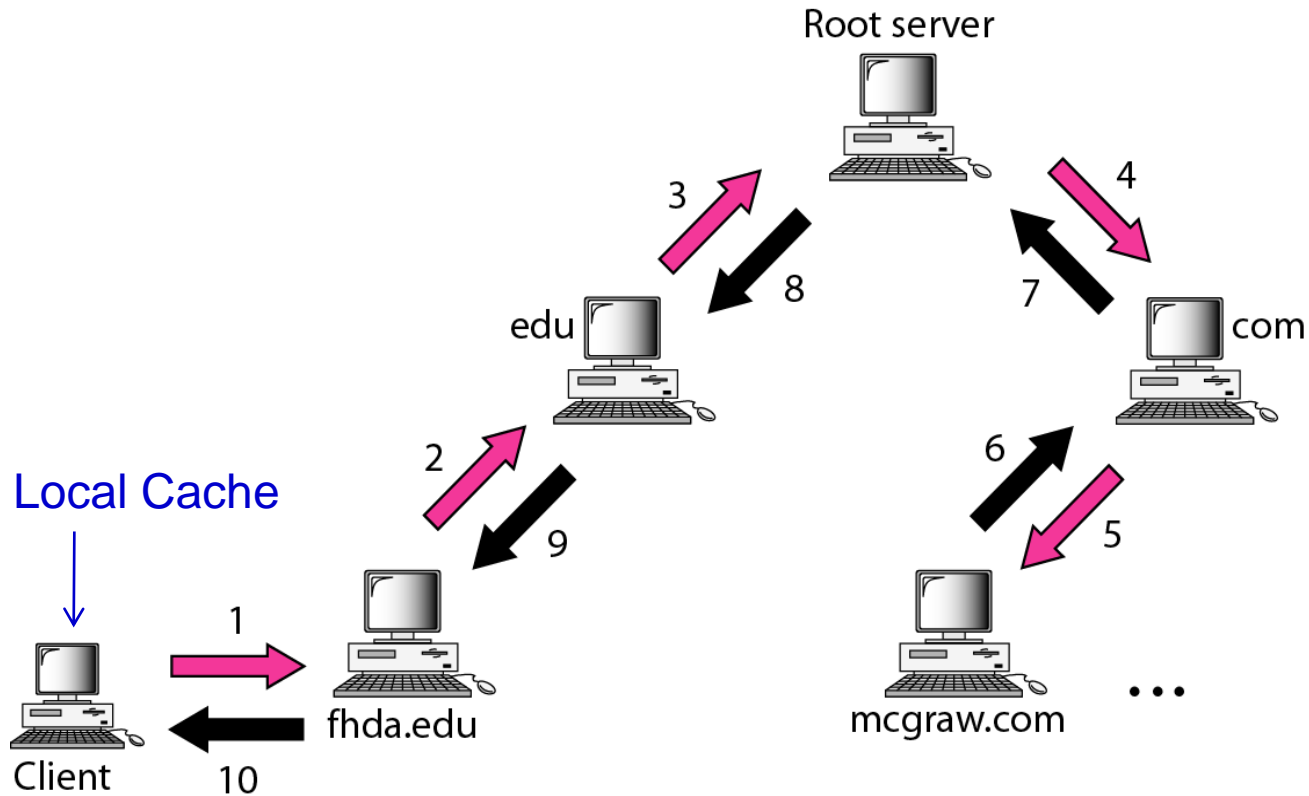


# DNS – Name Resolution ( Caching )



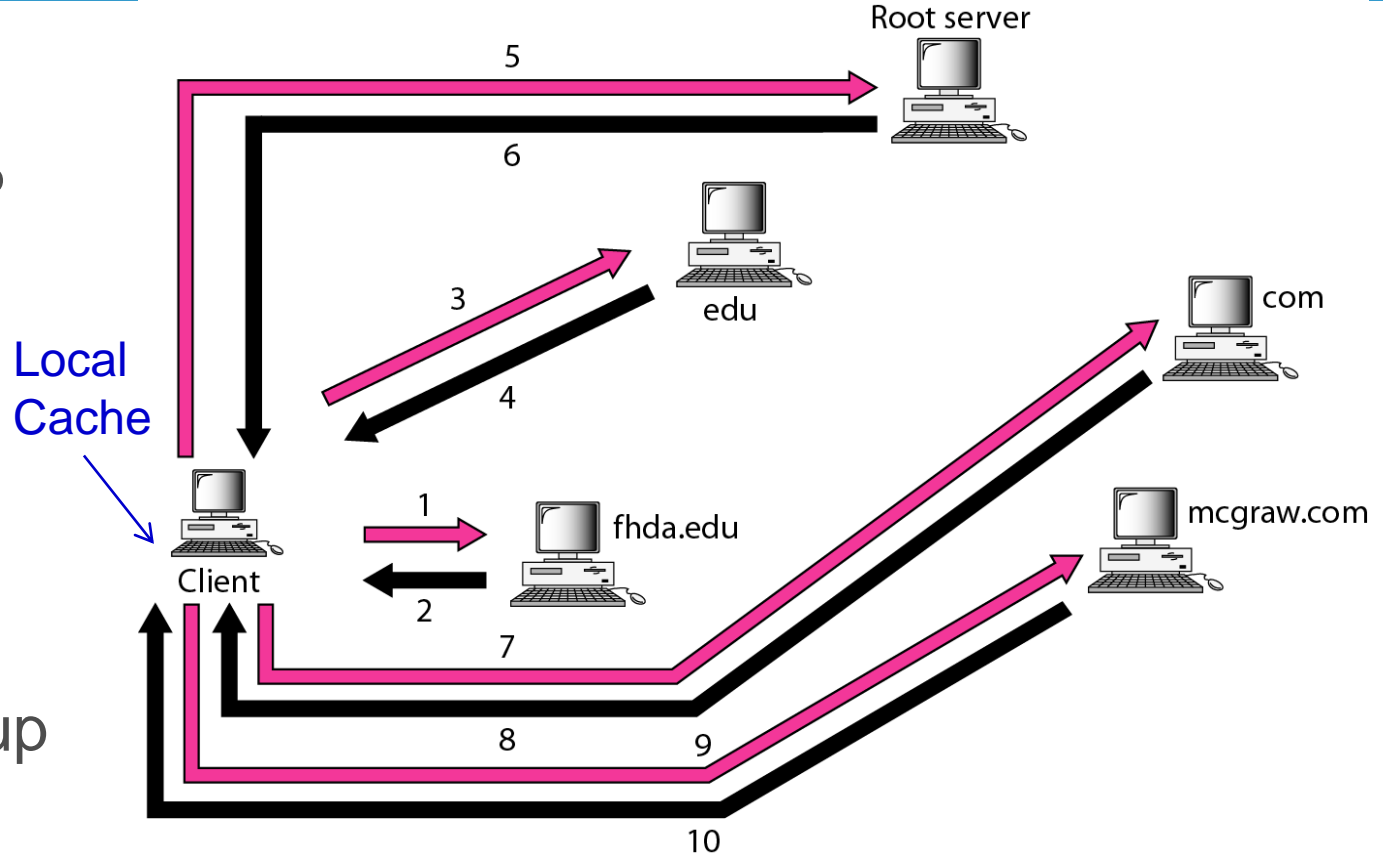
# DNS – Name – Address Resolution - Recursive

- ✓ Mapping a Name to IP address
- ✓ Mapping a IP address to a Name
- ✓ DNS Lookup

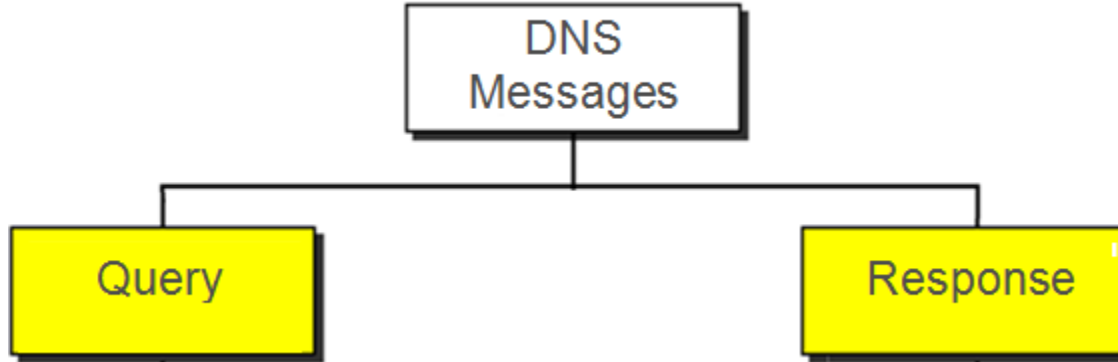


# DNS – Name – Address Resolution - Iterative

- ✓ Mapping a Name to IP address
- ✓ Mapping a IP address to a Name
- ✓ DNS Lookup



# DNS – Messages



Query message consists of

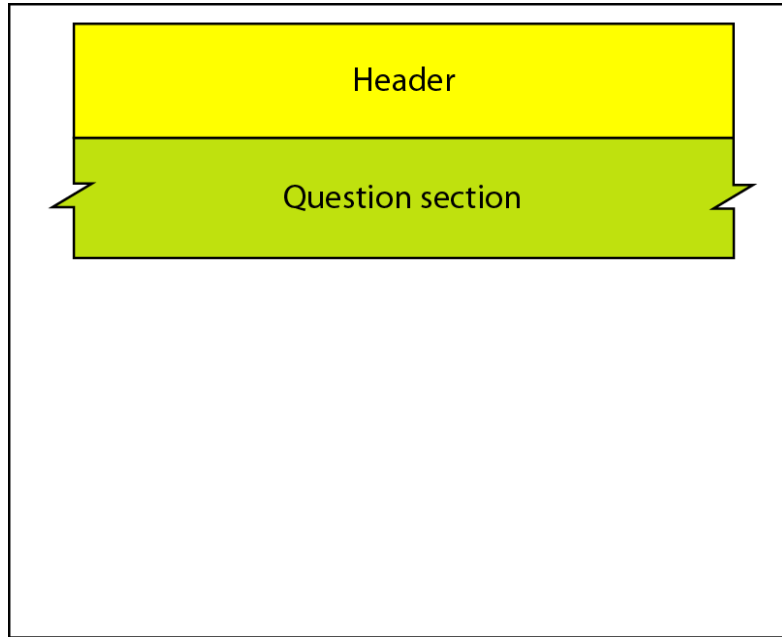
- ✓ Header
- ✓ Question records

Resource Records

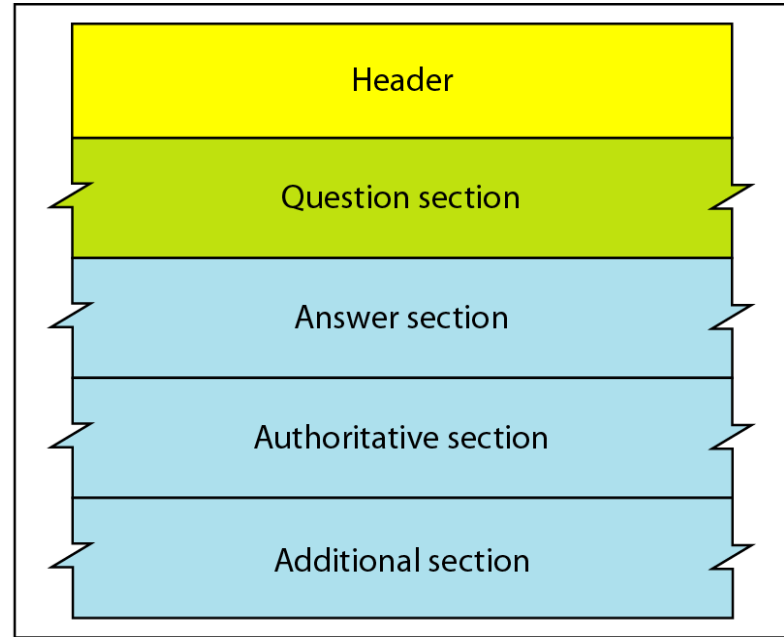
Response message consists of

- ✓ Header
- ✓ Question records
- ✓ Answer records
- ✓ Authoritative records
- ✓ Additional records

# DNS – Messages



a. Query



b. Response

# DNS – Header

Identification	Flags
Number of question records	Number of answer records (all 0s in query message)
Number of authoritative records (all 0s in query message)	Number of additional records (all 0s in query message)

# DNS – Registrars

## Commercial Entity by ICANN

- ✓ Check for Uniqueness of the Domain
- ✓ Adds a New Domain in DNS Database
- ✓ Fee is Charged

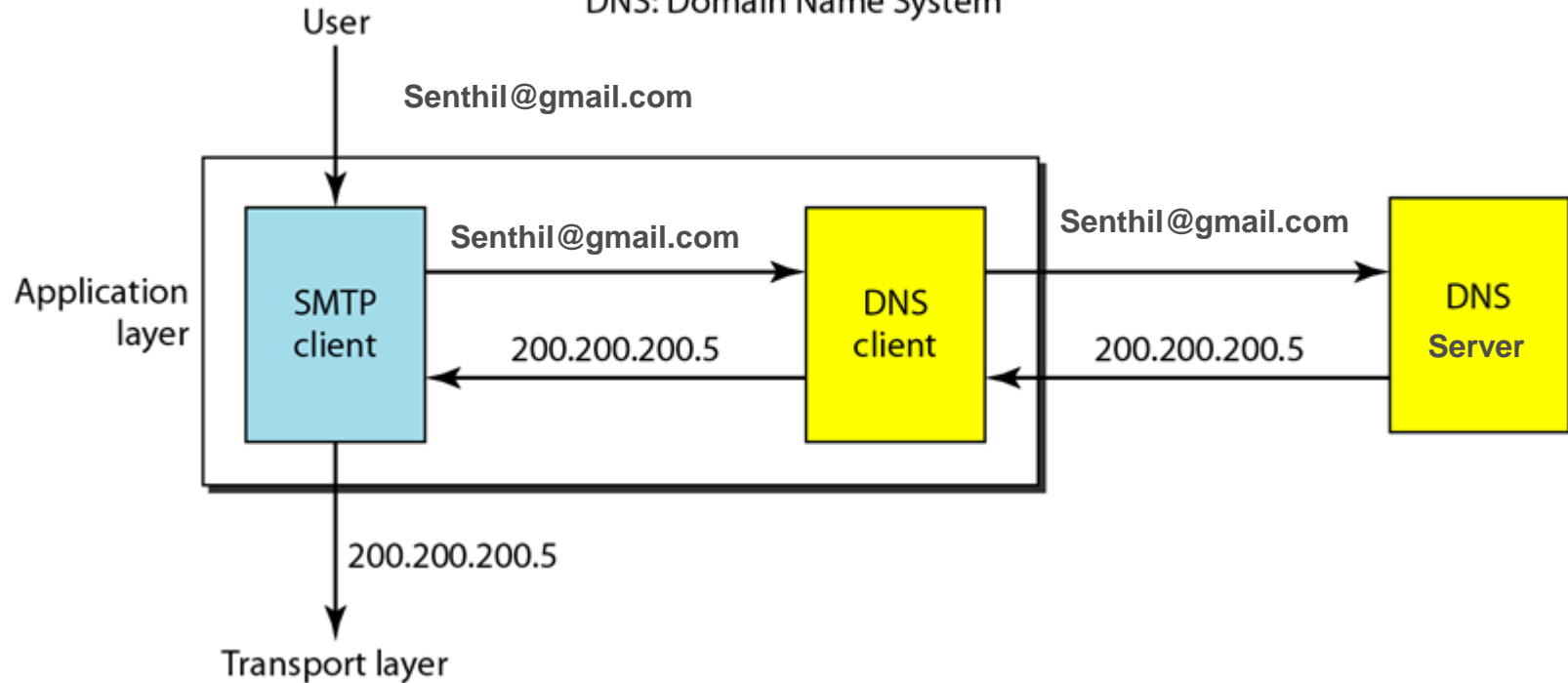
# DNS – Port Numbers

- ✓ DNS can use the services of UDP or TCP using the well-known port 53



# DNS – Example – Email Service

SMTP: Simple Mail Transfer Protocol (e-mail)  
DNS: Domain Name System



# References

- ✓ Books: Data communication and Networking, Behrouz A Forouzan, Fourth edition
- ✓ Computer Networks, Andrew S. Tanenbaum, 4th edition, PHI
- ✓ Data Communication and Networks, Achyut Godbole, 2007, TMH.
- ✓ Computer Networks: Protocols, Standards, and Interfaces, Uyles Black, 2nd ed, PHI
- ✓ Various relevant websites
- ✓ Referred to slides by David Conrad at [nominum.com](http://nominum.com)

Thank You