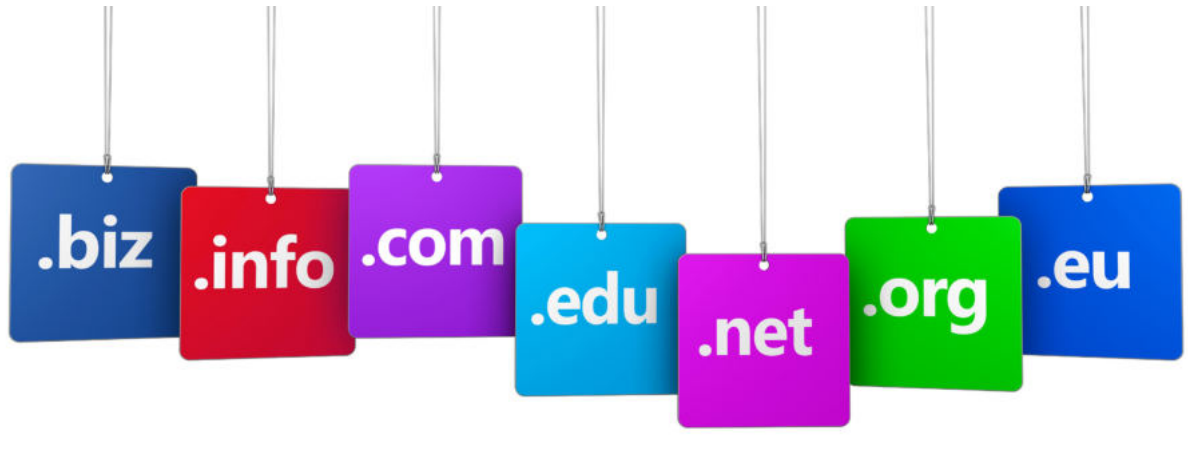
Domain name system (Operate C 4.3)

EUCIP CORE SYLLABUS 3.1

A **Domain Name System (DNS)** helps users find their way through the Internet. Every computer has a unique address on the Internet which is called **Internet Protocol (IP)** and every computer with an IP can have unlimited domain names. As it is very difficult to remember IP addresses, the DNS makes it easier by allowing a string of letters, i.e. **domain name**, to be used instead of the **IP address.** The action of translation the name into an IP address is called **resolving the domain name.** This means reaching a specific website IP address by entering its domain name. As we have just seen, the most basic task of a DNS is to translate host names into IP addresses. A DNS makes it possible to assign names to organisations.
A **domain name** is made up of two or more parts separated by dots. The rightmost label conveys the top-level domain, while each label to the left specifies a subdivision or sub-domain. A domain name can contain 255 characters maximum and can be purchased from a registrar.

A **hostname** is a domain name which has one or more associated IP addresses. If you want to see the corresponding IP address of a domain name, you have to use the 'ping' command. On the contrary, if you want to find the hostname, or domain name, of an IP address, you have to send a message to the IP address requesting the computer located at that IP address to return its name.
The Domain Name System (DNS) consists of a hierarchical set of **DNS servers**. Each domain or sub-domain has one or more authoritative DNS servers. At the top of the hierarchy, there are the **root name servers** which are the servers to query when looking up, i.e. resolving a **top-level domain (TLD)** name.
A **hostname**, or **site name**, is the unique name by which a network-attached device is known on a network. The hostname is used to identify a particular host in various forms of electronic communication. It is the left part of a full Internet address.



Top-Level Domain Servers

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1 **After studying the previous page, cover it and try this test. You have to choose the right answer for each question.**

1. A domain name system...
- **a.** is a synonym of IP address.
- **b.** is just one for every computer.
- **c.** can be associated to many IPs.
- **d.** is just one of the many domain names that a computer with an IP can have.

2. A DNS is...
- **a.** an unlimited string of letters.
- **b.** a sequence of 255 numbers.
- **c.** a string of 255 characters maximum.
- **d.** the same as an IP address.

3. Resolving a domain name means...
- **a.** translating an IP address into a domain name.
- **b.** translating a domain name into an IP address.
- **c.** translating IP addresses into host names.
- **d.** translating IP addresses into site names.

4. A domain name does not...
- **a.** help users find their way in the Internet.
- **b.** assign names to organisations.
- **c.** have dots.
- **d.** have a hierarchy.

5. A domain name...
- **a.** can be purchased from a registrar.
- **b.** has a top-level domain on the left.
- **c.** has a sub-domain on the right.
- **d.** has no top-level domain.

6. DNS...
- **a.** is a hierarchical level of servers.
- **b.** is a hierarchical level of DNS servers.
- **c.** has root name servers at the bottom of the hierarchy.
- **d.** has only one DNS root name server.

7. TLD means...
- **a.** Transmission level domain
- **b.** Top level domain
- **c.** Top location domain
- **d.** Tree level domain

8. A host name...
- **a.** is also called site name.
- **b.** is a domain name associated to a single IP address.
- **c.** is the right part of an Internet address.
- **d.** is a root name server.

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