UD 09.
NETWORK ARCHITECTURE AND COMPONENTS
Activities

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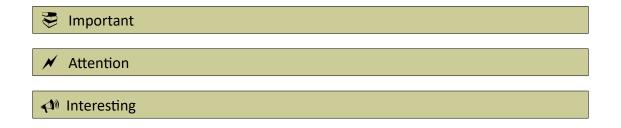
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Nomenclature

Throughout this unit different symbols will be used to distinguish important elements within the content. These symbols are:

⬗ Important

⚡ Attention

📢 Interesting

UT 09. NETWORK ARCHITECTURE AND COMPONENTS
ACTIVITIES

In these exercises you are going to make calculus and answer questions based on Ips and networks. Try to solve them on your own so you understand the concepts explained in the unit.

1. EXERCISE 1

Given the next IP:

159.14.227.121/13

Answer the next questions:

1. Which is the IP class?

2. Which is its scope?

3. Which is its subnet mask?

4. How can you express that IP in binary?

5. Which IP version is that IP?

2. EXERCISE 2

Given the next IP:

79.131.29.24/14

Answer the next questions:

1. Which is its mask?

2. Which is the first host of the network?

3. Which is the last host?

4. Which is the broadcast address?

3. EXERCISE 3

Given the next IPs:

a) fde4:0088:0000:0040:8000:0000:0000:002a

b) fd00::8000:0:0:c110

c) fd06:1200:8100:8400:2491:0000:0100:1000

d) fd20:202:0:1800::

Answer the next questions for each of them:

1. Which IP version is it?

2. Is it expressed in expanded or in compressed notation?

3. Express that IP in the other notation (if it's compressed, in expanded and the opposite).

4. EXERCISE 4

A client approaches you to ask you for a design of a network. The client has a factory with the next requirements:

• There are 5 production line controllers that need to receive the manufacturing orders a the same time

• There are 3 computers for the designers, that prepare the designs and send them to a computer shared among the factory network.

• There are 10 operator computers that connect to that shared computer, take the designs and send them to the production line controllers.

Think about the design of the network taking into account aspects like:

• Which topology would be the best for this case

• Whether the network would be wired, wireless, mixed...

• Which devices would you use to implement the network

• Which mask and IPs would you need to assign