C-I6041E - Data Security and Blockchainrete:
Lab_A01 – Basic Instructions Set and Tools

1. Which command allows having a basic information about the configuration?

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   Configuration of your computer:

   Device IP address(es): . . . .

   Subnet Mask(s): . . . .

   Default Gateway(s): . . . .

   Please note here below all the MAC Addresses (also named physical addresses) of your computer. Which command is giving this information? (on a Windows machine, on a Linux machine, on a MacOS).

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   . . . .

   Which command allows getting more detailed informations?

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   Please check the IP configuration of your computer in the laboratory:

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2. Please make sure that the network is only using the protocol IPv4 and not IPv6. Use the GUI (graphical user interface) and document all steps to do that:

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3. Please study the PING command using it to reach a neighbor computer in the same LAN.

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Which command allows sending a PING with 62 bytes PAYLOAD?

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Which command allows sending an infinite sequence of PING with 62 bytes PAYLOAD, and a TTL to 5?

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4. Which command allows checking the ARP table on your computer?

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Which command allows Emptying the ARP table? Under which condition?

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5. Please activate the IPv6 protocol and re-execute the commands used in all previous points.

Please comment the results and changes with respect to the option with IPv4 only.

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6. Create a TXT-file where you report the outcomes of all commands and results.

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7. Launch the WIRESHARK application and study options it offers to capture traffic from all possible interfaces. Configure it to collect traffic form the Ethernet card iof your computer.

8.   Try sending a ping to a neighbour machine and log the related packets.

9.   WIRESHARK will log all traffic received and sent through the NIC (Network Interface Card). Please study the options to filter the traffic in order to analyze only the traffic of interest (for example the traffic sent and received by its own computer).

10   Please empty the ARP table and cerify that the computer is sending an ARP request to the machine targeted by the PING command prior to send the PING itself.

       Trace a full exchange (ARP and PING packets).

       Please export the exchange to a TXT-file names ARP_PING_EXCHANGE.TXT

11   Please redo the previous point pinging a machine external to the LAN, for example the GOOGLE DNS server 8.8.8.8.

       Comment the results of the analysis.