## UPD Throughput

## Task 1. Linear Regression

Table 1 shows the results of performance of network devices No. 1 and No. 2. They are the result of an experiment series to test the method of measuring performance. It is known that for all devices, the 1G interface was tested with a homogeneous UDP traffic.

Тable 1. The measurement result of UDP Throughput, Mbit/s.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **№** | **Device** | **Clock frequency** | **UDP Throughput, Mbit/s** | **Utilization of CPU, %** | **Temperature of CPU, °С** |
| 1 | 1 | 1 500 | 600 | 50 | 38 |
| 2 | 1 | 1 500 | 650 | 55 | 45 |
| 3 | 1 | 1 500 | 700 | 60 | 52 |
| 4 | 1 | 1 500 | 750 | 65 | 60 |
| 5 | 1 | 1 500 | 900 | 70 | 67 |
| 6 | 2 | 2 600 | 750 | 35 | 30 |
| 7 | 2 | 2 600 | 800 | 40 | 31 |
| 8 | 2 | 2 600 | 850 | 45 | 32 |
| 9 | 2 | 2 600 | 900 | 50 | 33 |
| 10 | 2 | 2 600 | 600 | 30 | 28 |

Based on the data from Table 1, it is necessary to predict UDP Throughput of Device No. 3. If performance for Device №3 is:

• Processor clock frequency: 2,000 GHz.

• CPU utilization: 40%.

• CPU temperature: 54 °C.

**Task 2. Multiple Linear Regression.**

Predict the values of CPU utilization and CPU temperature of network device No. 4 which has a clock frequency of 1,700 GHz for the UDP Throughput values from Table 2.

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **UDP Throughput, Mbit/s** | **Utilization of CPU, %** | **Temperature of CPU, °С** |
| 1 | 50 | ? | ? |
| 2 | 100 | ? | ? |
| 3 | 150 | ? | ? |
| 4 | 200 | ? | ? |
| 5 | 250 | ? | ? |
| 6 | 300 | ? | ? |
| 7 | 350 | ? | ? |
| 8 | 400 | ? | ? |
| 9 | 450 | ? | ? |
| 10 | 500 | ? | ? |