Two-weekly Report

Group number: **Group 6**Project: **3**

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After the group discussion, our group roughly specified the metrics that would be needed for the hardware evaluation before the service migration. The parameters are CPU, RAM, bandwidth between target and destination host, and there are several other parameters that are also important to the assessment of whether to start the migration, such as workload size, latency, estimated migration time and total migration time.

I was working on getting the hardware information from the Windows and Linux host, which is easily done by running the built-in command. As bandwidth is also a critical factor in the migration assessment, I found a tool that does this. It is called iperf. Iperf can measure network performance between systems running different operating systems and is easy to set up. For experimenting, I measured the bandwidth between a Windows server and a Linux client and the result can be seen in figure 1.

```
C:\Users\minht\iperfsiperf3 -s

Gerver listening on 5201

Accepted connection from 192.168.0.151, port 56238

5] local 192.168.0.151 port 5201 connected to 192.168.0.151 port 56239

1D) Interval Transfer Bandwidth

5] 0.00-1.00 sec 65.9 MBytes 602 Mbits/sec

5] 1.00-2.00 sec 71.6 MBytes 601 Mbits/sec

5] 4.00-5.00 sec 71.6 MBytes 601 Mbits/sec

5] 4.00-7.00 sec 71.6 MBytes 608 Mbits/sec

5] 5.00-6.00 sec 72.1 MBytes 608 Mbits/sec

5] 6.00-7.00 sec 71.0 MBytes 608 Mbits/sec

5] 6.00-10.01 sec 70.0 MBytes 609 Mbits/sec

5] 6.00-10.01 sec 70.0 MBytes 609 Mbits/sec

5] 6.00-10.01 sec 70.0 MBytes 601 Mbits/sec

5] 6.00-10.01 sec 70.0 MBytes 602 Mbits/sec

5] 6.00-10.01 sec 70.0 MBytes 603 Mbits/sec

5] 6.00-10.01 sec 600 MBytes 60.00 bits/sec sender

5] 0.00-10.01 sec 600 MBytes 60.00 bits/sec sender

5] 0.00-10.01 sec 600 MBytes 60.00 bits/sec sender

6] 0.00-10.01 sec 655 MBytes 549 Mbits/sec receiver

6] Server listening on 5201
```

Figure 1: Bandwidth between Windows and Linux hosts

The following week, our group decided to find out how we could work with Prometheus, a continuous monitoring tool. I experimented with using the tool in Linux to retrieve metrics such as CPU, memory, disk usage, etc. Since the Prometheus tool returns all information in the form of a list, which I find quite difficult to follow, I additionally use the tool Grafana to illustrate the output of Prometheus in a more graphical way. Figure 2 shows the output from Prometheus in Grafana.

Prometheus returns many metrics and I am currently struggling to understand and evaluate them all. Therefore, my next tasks in the coming weeks will be to share the experiment results with other team members and to clarify all the necessary metrics.



Figure 2: Metrics presentation in Grafana