IEEE 802.11 NFV Virtual Machine Performance Evaluation

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1 Summary of paper

This paper presents the NFV technique which mean virtualization of certain network devices, which can be used for quick deployment and reconfiguration. Furthermore the authors justify their paper topic by explaining that performance measurements of the NFV architecture CloudMAC. By executing performance tests of authors show that CloudMAC usage is similar to other hosted VM's.

2 Good things about the paper

- Good layout of the paper.
- Good explanation of the architecture behind the system
- Furthermore, good and detailed explanation of CloudMAC itself.
- Nice idea of measuring a weighted mean value inside the figures, made the visualization much better.

3 Major comments

- There are no references to previous work. This must be added.
- The paper needs to be proof read, there are many language mistakes and unfinished sentences.
- The paper mentions "Having systematically eliminated weaknesses in the CloudMAC architecture", however, the weaknesses and the solutions do not come forth in the paper.
- All figures must be referenced in the text.
- Specify performance parameters.

- The results from figure 5 and figure 6 are very hard to understand, figure 5 and 6 measures throughput, but figure 6 says it measures CPU usage. How is it possible to measure CPU usage in Mbps?

4 Minor comments

- Reference Figure 3.
- Figure 1 could be more explanatory, which Hypervisor is used? Explain all the headers.
- How often do you sample RSSI values?
- Since RSSI values can fluctuate depending on which hardware you use, how do you account for this in your reevaluation of WTP stations? Possibly, fluctuation in RSSI values could decrease your performance. Discussing this topic may be better.
- Performance parameters are mentioned, however, they are not furthermore specified. Throughput is one performance parameter, however, all should be mentioned in one section.
- - "as we are simply measuring the performance under load", what is performance here?
- Replace figure 7 with a figure that represents each core, it is impossible to have more than 100% CPU load. Even though it is mentioned that it is regarding single-core it would be much more appealing to see the load on each core.
- To not reference figures as "below".
- Please explain why DPDK or netmap would remove bottleneck.

5 Recommendations

(-2) The presentation must be altered since there doesn't exist any research motivation. The language of the paper must also be improved as many unfinished, as well as grammar errors. Furthermore, the paper doesn't fully discuss the outcome of the throughput in the conclusion. Figure 6 and figure 7 must also be altered.

6 Questions for conference

- Since RSSI values can fluctuate depending on which hardware you use, how do you account for this in your reevaluation of WTP stations? Possibly, fluctuation in RSSI values could decrease your performance.

- How do you measure different priorities of frames when the packet headers do not contain priorities?
- What traffic generator do you use?
- How many cores do you use? If all 16 cores are used, you have a very low CPU utilization of only 10.8% per core at max.
- In the paper you use only a switch, so why is the reason you use UDP packets? RAW IP packets would increase the throughput and results as they are smaller.
- You use netperf which is a layer 3 traffic receiver, since this is run within the user-space and will suffer from kernel-space interrupts, how can you guarantee that all packets are received by netperf at the correct time and thereby validating your results?