- Although the model is hardware platform dependent, we consider that the models on the other hardware platforms are easily developed. First, our modelling technique is concise and it specifies the power as functions with a few parameters. Second, most assumptions on power consumptions are confirmed in section 4 and we believe that they would be true on other platforms. An example assumption is that power consumed by the DDR device is proportional to the access rate [byte/s].
- In addition, although the model focuses on a specific PC which is implemented in terms of current technology, we believe that the modelling method which the paper proposes is applicable to model multi-core software routers in the future due to the following reasons: First, the hardware platforms of multicore software routers and PCs of current technology are similar as described in section 3.1. Second, since most technologies of devices including memory devices are mature, it is expected that their performances and consumed energy are gradually improved.

Finally, we note that the current model does not precisely estimate power consumed by longest-prefix matching when the number of entries in the NPHT is large. This modelling is necessary to model backbone routers and thus we are on the way to extend the model so as to provide such modeling.

7. CONCLUSION

This paper develops a power consumption model of a multicore software ICN router focusing on power consumed by packet forwarding and packet-level caching. We develop the model from a PC hardware platform and the NDNx/CCNx source code assuming that commercial multicore software routers and PC-based routers similarly consume power. We obtain several lessons from developing the precise power consumption model. We believe that modeling power consumptions is as an important research topic in networking communities as in hardware/system communities wherein power consumption models of memory devices [10] and server systems [21] are developed.

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