Energy efficiency in data center networks is increasingly becoming a gold standard for implementers. Energy costs are becoming high while performance is highly demanded. And while efforts are directed to the design of energy efficient networks, a number of open issues require addressing including: scalability, fault tolerance, efficiency in performance though their presence does not outweigh the benefits of networks energy-aware. Truly, we observe that improvements in computer networks hardware performance comes with increasing energy consumption. To address these complementary challenges, this paper technically surveys existing, approaches and techniques (virtualization, energy-aware routing, among others), tools, and architectures employed in energy efficient computer networks. We have also provided a thorough review of data centre networks: server centric, switch centric and dual centric architectures with a view to inform developers and implementers of the overhead given architectural choice, identified challenges and opportunities. We conclude upon the survey that dual centric computer networks architectures have various nice properties for practical computer networks and provide flexible choices in designing of computer network architectures.
References

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Index Terms

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Keywords