

Greening Potential Estimation of Data Network Equipment

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Abstract—Green Internet is becoming a major concern recently. The main concept of it is to improve energy efficiency in the Internet for reduction of unnecessary energy consumption. Generally, energy consumption of data network equipment in the Internet is unknown although they use a substantial amount of energy. In this area, there is a lack of deeper related studies with a special focus on wired networking and it still remains to be many challenges. This paper aims at exploring an impact of data network equipment for greening the Internet. We first introduce backgrounds and motivations of green networking. Secondly, we estimate energy consumption, costs, and energy savings potential of data network equipment in detail. Thirdly, we assess impacts of it based on IP traffic type and propose new viewpoint on energy efficiency focused on the quality of service (QoS). Lastly, we propose the future works for green networking from the perspective of QoS.

Keyword—Energy efficiency, green networking, QoS, data network equipment



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