

Towards Realizing the Importance of Placing Fog Computing Facilities at the Central Office of a PON

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(Pt9)Abstract—This paper highlights the importance of accommodating Fog computation capability in a Passive Optical Network (PON). Fog computation is referred to as a decentralized computing infrastructure at the network access segment so as to facilitate computation capability closer to end users. PON is seen to be one of the key players in expansion of communication networks. It has paved the way in realizing high speed broadband Internet access to the end users. This paper presents an architecture, namely Fog Co-located Optical Line Terminal (FC-OLT). The FC-OLT architecture is the first effort towards presenting an integrated architecture of Fog computation facilities and PON. This architecture is presented considering Time Division Multiplexing (TDM)-PON (TDM-PON) topology. Along with explaining importance of this architecture in improving QoS/QoE parameters, we point out several important research issues in order to provide direction for future research. Initial performance measurement of FC-OLT presented in this paper reveals that FC-OLT architecture can contribute a great deal of in improving traffic performance.

(Pt9)Keyword—TDM-PON, Fog computing, traffic latency, virtualization.



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