

SD-EON 中基于 NFV 映射的 QoE 算法

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摘要: 为解决大数据和云计算等新技术的兴起弱化了传统光网络客户体验 (QoE) 应对能力的问题, 提出一种在软件定义弹性光网络 (SD-EON) 架构下开展网络功能虚拟化 (NFV) 映射计算请求的 QoE 研究方案. NFV 映射方案秉承标准化图像分割机制 (ND) 思想, 结合网络业务请求特征按照拟定的 QoE 思路, 从全局搜索与网络业务映射请求相适配的网元集和链路集建立出多个子图序列. 再经过相交处理评估出可靠的序列子集用于实施映射作业. 最后构建模拟环境考察 QoE 算法的映射成效. 经频繁测试后统计的数据表明, QoE 算法在 VON 映射后的全网载荷布局方面表现出了显著的相对优势, 具有良好的全局性和应用性.

关键词: 软件定义弹性光网络; 虚拟光网络; 约束; 映射; 客户体验

QoE algorithm design based on NFV mapping in SD-EON

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Abstract: In order to solve the problem that the rise of new technologies such as big data and cloud computing weakens the coping ability of traditional optical network customers to experience (QoE), a QoE research scheme is proposed to carry out the (NFV) mapping computing request of network function virtualization under the framework of software-defined flexible optical network (SD-EON). The NFV mapping scheme adheres to the idea of standardized image segmentation mechanism (ND) and combines the characteristics of network service request according to the proposed QoE idea, and establishes multiple subgraph sequences from the network element set and link set which are suitable for global search and network service mapping request. Then a reliable subset of sequences is evaluated by intersection processing for the implementation of mapping operations. Finally, a simulation environment is constructed to investigate the mapping effect of QoE algorithm. The statistical data after frequent tests show that the QoE algorithm has a significant comparative advantage in the load layout of the whole network after VON mapping, and has good global and application.

Key words: SD-EON; VON; Constraint; Mapping; QoE

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