

协议无感知转发环境下的转发规则冲突检测

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摘 要: 协议无感知转发(POF)是对基于 OpenFlow 协议的 SDN 架构的一种扩展性改进,POF 交换机无需了解转发协议即可完成转发操作,控制器因此获得了最大程度的可编程能力,可以更加灵活地控制网络,但这同时也带来了新的转发规则定义冲突问题,以往的 OpenFlow 控制器的冲突检测方法不再适用.在对 POF 中规则冲突问题进行分析的基础上,提出一种以流为单位的基于交换机流表匹配的转发规则冲突检测方案,并在 POF 控制器中实现.实验结果证明此规则冲突检测方案不仅实现简单而且快速准确.

关键词: 软件定义网络;协议无感知转发;规则冲突检测;流匹配

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Rule Conflict Detection in Protocol-Oblivious Forwarding

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Abstract: Protocol-Oblivious Forwarding(POF) is an extension for OpenFlow based SDN architecture. POF switch can handle flows without knowing the forwarding protocols, which provides controller the highest programmability to control the network more flexibly. Because of POF's new mechanism, traditional approach for rule conflict detection in other OpenFlow controller is no more applicable. This paper gives analysis of rule conflict problem in POF and introduce a flow level rule conflict detection method, which based on flow table matching, and implements it in current POF controller. The evaluation shows it fast and accurate.

Key words: software-defined networking; POF; rule conflict detection; flow matching

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