

基于多领域分布式 SDN 控制器的故障移除研究

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摘要: 针对多领域分布式 SDN 控制器的故障移除问题, 提出了 FMMD(多领域分布式 SDN 故障转移机制)故障移除方法, 主要解决了由于控制器故障而产生的独立交换机重新加入网络而存在的两个问题: 第一、独立交换机如何快速地重新加入到网络中(如何快速地恢复整个网络的通信); 第二、如何防止由于新的交换机的加入而使控制器产生过载. 通过实验表明, FMMD 故障移除方法能够有效降低故障转移时间和端到端平均延迟时间, 还有效提高了 SDN 网络的可扩展性和弹性性能.

关键词: 软件定义网络; 多领域分布式 SDN 控制器; 故障移除

Failover Based on Multi-Domain Distributed

SDN Controller Research

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Abstract: The method of FMMD(Failover Mechanisms for Multi-domain Distributed SDN Controllers) Failover is proposed in this paper to solve the problem of fault removal for multi-domain distributed SDN controller. The two problems that independent switch rejoin in the network resulting from a failure of the controller are mainly solved. First, how to quickly rejoin the independent switch to the network (how to quickly restore the communication of whole network); Second, how to prevent the overload of controller due to the addition of new switches. Experiment shows that the method of FMMD Failover can effectively reduce the time of fault transfer and the average delay time of the end to end, and the scalability and flexibility of the SDN network are effectively improved.

Key words : Software-Defined Network (SDN); Multi-domain distributed controllers; Failover

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