

POCO – K-Means : Optimasi Penempatan Kontroler pada SDN

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Abstract

Software Defined Network (SDN) is a network architecture where the control plane is an external entity called a controller. On a large scale SDN network consists of several controllers that distribute network management, where each controller has logically centralized but physically distributed [1]. Controller is the network center in the SDN so that the location of the controller in the network is very important because it has an impact on the performance of the network produced. One important parameter in measuring network performance is latency. Latency is the time needed to send a packet from the sender to the recipient. One of the causes of latency is the distance between node and controller [2]. Therefore, it is necessary to use clustering to minimize the distance between node and controller. The clustering method used is K-Means and latency measurements using the POCO toolset that is commonly used for optimization simulations in the MATLAB environment. The test results show that the POCO-K-Means method can be applied to the placement of the controller according to the scenario and topology used in this work. The optimal number of cluster is 4 with SSE = 175.5260 and average latency = 0.13ms.

Keywords: Software Defined Network, Controller Placement, Latency, K-Means, POCO
