

## Abstract

The data center is a room or place that is designed to accommodate all IT infrastructure, which is currently in great demand by companies. In the data center, there are several types of topologies, one of which is the Jellyfish Topology. The problem with Jellyfish topology is the problem of link failure. To be able to handle the Jellyfish topology problem, it is necessary to add a program to the controller, in the form of the shortest path algorithm, namely the Floyd Warshall algorithm and Johnson algorithm and using the Software Defined Network network architecture. On network architecture Software Defined Network is known to overcome the occurrence of interference in the form of link failure. To find out the right algorithm applied to the Jellyfish topology, simulations are carried out with parameters convergence time, packet loss and throughput. From the results of the simulations conducted, it was found that the Floyd Warshall algorithm had superior results against all parameters tested compared to Johnson's algorithm. So, the suitable shortest path algorithm applied to the Jellyfish topology is the Floyd Warshall algorithm.

**Keywords:** Link failure, Floyd Warshall, Johnson, Jellyfish, Data Center