LINK ERROR DETECTION AND FAILURE RECOVERY IN

SOFTWARE DEFINED NETWORKING

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Problem Statement:

The present networking system is decentralized and the functionality is distributed. While this admits more freedom to respond to a failure event, it ultimately means that each controller application must include its own recovery logic, which makes the code more difficult to write and potentially more error-prone.Software Defined Networks makes the network centralized and execute the task in a systematic fashion. It has two main parts. ie., Data plane and Control plane. The whole network is monitored using SDN Controller which is considered to be the brain of the network. Any modification in the network such as updations and deletions are only done via the Controller. Our project is mainly focused on link error detection and recovery. A network is can be said reliable if there is no packet drop and its communication is done without any delay. Both of these are affected if a link is failed and so the links in the network must be kept resilient.This project deals with an unique mechanism to overcome the link failures. Our project ensures that the packet is rerouted properly to the destination node even if the link fails and the restoration policy of the state is taken into consideration. This will make the network reliable and this is done in a virtualized environment called mininet in order to provide with better results.

Block Diagram:

C:\Users\HP-USER\Desktop\block diagram final (2).png

Metrics For Evaluation:

* + Link failure
  + Rule space overhead
  + Average recovery time (ms)
  + Number of entries per switch vs Number of switches(N)
  + Time(ms) vs Number of entries per switch

Module Split-Up:

**Detection Module :**

Environmental Setup

Packet Transmitted and Detection of link failure

( Thillairaja S T S)

**Path Calculation and Recovery Module:**

Handling the failed link using the Alternate Back Paths.

Shortest Path Calculation for Re-routing.

(Swetha V S)

Port calculation and Stored packets are sent using fast rerouting technique .

Rule Placements.

(Sunil N K )

Storing of dropped packets in compression state -pending