

PACKET GENERATOR FOR MONITORING PACKETS IN NETWORK

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Abstract

The networks are getting bigger and more complicated, yet managers and rely on basic tools like a ping to solve problems. We offer ourselves an automatically managed approach for testing and debugging networks called as "Automatic Test Packet Generation" (ATPG). Reads the ATPG router settings and a device-free model. This model is used to minimum set of test packets generation and use each link in the network or (max) exercise every rule in the network. Test packets are sent, and shows it that failure to locally localize a separate mechanism error. ATPG can find both functional (for example, the wrong firewall can find rule) and performance issues. ATPG completion but static checking goes out of the first task (which does not have to detect envelope or performance errors) or error localization (which only provides envelope-provided mistakes to localize). We explain our prototype ATPG implementation and two results real world data set: Backbone Network of Stanford University and Internet 2. We know that a small number of test packets are sufficient. Examine all the rules in these networks: for example, 4000 packets can cover all rules in the Stanford Backbone Network, while 54 are enough to cover all the links. Send 4000 test packs per second 10 times link capacity is less than 1%. ATPG code and data set is usually available.

Keywords: Test Packet Generation, Network, Software-Defined Networks (SDN), QoS.

I. INTRODUCTION

It's a bad thing to debug network daily. Network engineer router boots with false configuration, fiber cut, faulty interface, fault cables, software bugs, connected links, and a number of reasons that are due to the network. Report abuse network engineers using the most equipment to bite insects and track root causes using a combination of intellects and intuition [1]. Debugging

The network is just as ^{difficult} as getting a network large (modern data centers can contain 10 000 switches, one campus network can serve 50,000 users, 100 GB / s long distance link can take 100 000 flow) and getting more complicated (over 6000 RFC software is based on RFCs software source code lines, and network chips often contain billions of doors). It's a freight network engineer "owner of complexity" are labeled. See two examples. Example 1: Assume that a router starts with a wrong line card Alice falling packets quietly, which manages 100 routers, many complain about consumers who complain about the ticket connectivity. First of all, Alice checks every router to see if the layout was recently changed and concludes that the layout was unblocked. Next, Alice uses her knowledge of topologies to terminal the defective tool with ping and traceroute [2]. Lastly, he calls a partner to change the line card. It is certain that this video traffic has been a particular point of view the row in a router, but the tokens because the packages have been left bucket rate is too low. It's not clear how Ellis can track such a performance error by using the ping and traceroute. It is difficult to trace a network problem for three reasons. First, forwarding is divided into several different routes: firewall and their forwarding tables, filter rules, and other configuration parameters. Second, forwarding the state is difficult to observe because it is usually required manually. There are three logins in each box in the network, there updating many different

programs, protocols, and humans Moving State. When Alice uses Ping and Trainer. She is using raw lens to make the current Inspection State for the indicator to prevent failure. Customers can customize the ATPG to meet their needs; for example, they can only choose to check for network greed Check each rule (rule cover) to ensure (link cover) or security Policy. ATPG can be customized to access or with performance. ATPG can adapt such obstacles only a few places in the network require test packets or use special router to generate test packages from each port. ATPG can also be viewed to allocate more test packages to practice more important rules, for instance, may be a healthcare network Add more test packets to the firewall rules to ensure HIPPA Compliance [3].

II. RELATED WORK

We already know the techniques create a test packet from the layout. Close to The work we know is offline tools that check invoices in networks. Try to complete NICE completely in the control ship Add a code path to the symbolically controller applications with simple switch / host model. In figure Airplane, Anteater Model information such as bounce satisfaction Checks against issues and settings with a set Header Space Analysis Uses a Geometric Model Hard checking, loops detection, and sliding validation. Recently, SOFT [4] was proposed to confirm the stability between the different The Open Flow Agent Processing Process is responsible SDN controller controlling and database airlines on the plane. ATPG Check these checkers directly by checking the data plane And there is an important combination of

dynamic or performance errors they cannot be captured otherwise. At the end of the end in the wrong evaluation of the network investigations have been used for a long time in work. Recently, Low quality, non-organized data, mining as router configuration and the network ticket attracted its interest [5]. On the contrary, the main part of the ATP is not a localization error, but determine the end of determining a compact set it covers every single rule or every link. Mapping Setup and network surveillance have already been set I discovered [6]. ATPG detection improvements the ruler's position in the router order and data airplane information. In addition, ATPG is not limited to test greed, but for advanced testing can be applied Performance Features There are many tips for measuring friendly measurement Architecture for networks. Our approach is These Tips: Input and Ports prevention may be due to an ATPG test packet and injection Points using current deployments of measuring instruments. Our work is closely related to work in programming languages and symbolic debugging. We initially tried KLEE was used to use and slow it up to 10 times Even the unwanted header space frame. We explain this is basically because we are in our framework directly Offer a packet instead of solving obstacles Using SMT Solentar. However, more work is needed Understanding differences and potential opportunities.

III. ATPG METHODOLOGY

We applied a prototype system to automatically disorder Create a set for router settings and test packages.

The network monitor assumes that it has special test agents they are able to send network tables / networks. Network Reads the monitoring database and prepares test packages and directs every agent to send the appropriate agent. Currently, Test packet by IP Proto fields and TCP / UDD Port number, but other fields, such as IP options, may also be is used. If some tests fail, the monitor chooses extra Test packets with safe packages to solve the problem. The process does not happen until the fault has been identified. Monitor Uses JSON to communicate with test agents, and uses The SQLite wire effectively matches the search test packets. We can use ATPG to monitor link performance, Rows, and classes in QoS classes, and even monitoring SLAs [7].

Congestion: If a row is congested, packets will experience Late long delay can be considered as one (performance) Error ATPG gives us a way To test measure Tripoli between each pair of test terminals; Once the dimension passes, local space will be replaced Serious rows, with regular errors. With properHeader, we can test links or rows as Alice's secondIssue [8].

Similarly, we can measure the available for a link bandwidth, or for a particular service class. ATPG Test pack header will generate every link to test, Or each row, or every service class; a series of packages with these headers can then be used to measure bandwidth. Our prototype was designed to minimize the digestionthere is no change in the network besides adding terminalthe edge. The network requires rapid evaluation, as followsExpansion is possible [9].

Supportive Routers: The new feature can be included Switch / router, so that a central

ATPG system can send router to send / receive test packages. In fact, for manufacturers Examination goals, it is possible that almost every trade Switch / router can do it already; we only need an open interface to control them

SDN-Based Testing in Software-Defined Networks (SDN) Just like Open Flow the controller can direct Switch to send and receive test packets to switch and forward Control plan to control the aircraft plane test performance Packets require concrete time on the router [10].

SYSTEM ARCHITECTURE:

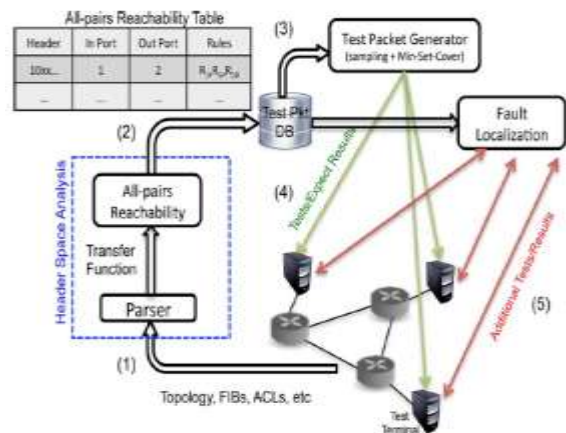


Fig.1 System Architecture

As shown in Fig.1 is a block diagram of the ATPG system. The system first collects all forwarding states from the network (step 1). It is usually included in reading FIBs, ACLs, and config files as well as getting topology. Header uses space analysis to access all the term terminals (step 2) of the ATPG.

IV. CONCLUSION

There is a basic problem for a test ISPs and large data center operators. Send inquiry between each pair of edge ports are very complete and notable. This It's enough to

find a minimal set of end-end packets Every link However, by doing this requires the abstract path Device in specific configuration files (for example, header space) Generating headers and links they arrive (for example, access to all pairs) And finally determine a minimum set of test packages (minimal cover cover). Even the main problem automatically Require test packages for efficient lifting testing the techniques were found at the ATPG. However, with ATPG, much gets more than envelope testing same frame The ATPG can access the test policy (by testing all rules including drop rules) and performance health (By collecting performance measures such as delays and losses with test packet). Our process is also checked Localization Scheme also used a simple mistake Header Space Framework As in software testing, officiallyModels help maximize the coverage of the test while examining Packet. Network managers today use primitive tools such as a ping and traceroute the result of our survey is that they are interesting for more advanced tools. Indicates other fields of engineering these wishes are not unacceptable: for example, both ASIC and software design industries indicate billions of rupees the dollar tool provides technologies for businesses who are stable and dynamics validation. Inside The fact is, we have built and designated our system several months after months We surprised the ATPG was a famous Hardware Chip Testing, where it automatically stands for test patterns Breed We hope the network ATPG will also be equal Useful for auto-dynamic testing of output networks.

V. REFERENCES

- [1] "Beacon," [Online]. Available: <http://www.beaconcontroller.net/>
- [2] Y. Bejerano and R. Rastogi, "Robust monitoring of link delays and faults in IP networks," *IEEE/ACM Trans. Netw.*, vol. 14, no. 5, pp. 1092–1103, Oct. 2006.
- [3] A. Dhamdhere, R. Teixeira, C. Dovrolis, and C. Diot, "Netdiagnoser: Troubleshooting network unreachabilities using end-to-end probes and routing data," in *Proc. ACM CoNEXT*, 2007, pp. 18:1–18:12.
- [4] M. Kuzniar, P. Peresini, M. Canini, D. Venzano, and D. Kostic, "A SOFT way for OpenFlow switch interoperability testing," in *Proc. ACM CoNEXT*, 2012, pp. 265–276.
- [5] P. Gill, N. Jain, and N. Nagappan, "Understanding network failures in data centers: Measurement, analysis, and implications," in *Proc. ACM SIGCOMM*, 2011, pp. 350–361.
- [6] N. Duffield, "Network tomography of binary network performance characteristics," *IEEE Trans. Inf. Theory*, vol. 52, no. 12, pp. 5373–5388, Dec. 2006.
- [7] R. R. Kompella, J. Yates, A. Greenberg, and A. C. Snoeren, "IP fault localization via risk modeling," in *Proc. NSDI*, Berkeley, CA, USA, 2005, vol. 2, pp. 57–70.
- [8] B. Lantz, B. Heller, and N. McKeown, "A network in a laptop: Rapid prototyping for software-defined networks," in *Proc. Hotnets*, 2010, pp. 19:1–19:6.
- [9] H. Mai, A. Khurshid, R. Agarwal, M. Caesar, P. B. Godfrey, and S. T. King, "Debugging the data plane with Anteater," *Comput. Commun. Rev.*, vol. 41, no. 4, pp. 290–301, Aug. 2011.
- [10] A. Markopoulou, G. Iannaccone, S. Bhattacharyya, C.-N. Chuah, Y. Ganjali, and C. Diot, "Characterization of failures in an operational ip backbone network," *IEEE/ACM Trans. Netw.*, vol. 16, no. 4, pp. 749–762, Aug. 2008