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Modeling network data traffic for vulnerability scan using the TrafficREWIND test bench infrastructure of TIER1 data centers at JINR

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Modeling network data traffic is the most important task in the design and construction of new network centers and campus networks. The results of the analysis of models can be applied in the reorganization of existing centers and in the configuration of data routing protocols based on the use of links. The paper shows how constant monitoring of the main directions of data transfer allows optimizing the payload of links by methods of increasing the priority of a different type of traffic. The basic elements for solving this problem are given, which are various ways of coloring data. Today it can be implemented with the help of variable length subnet masks, additional fields in the transmitted frame "quality of service" (QoS) and Deep Packet Inspection (DPI). One of the newest ways is the method of mirroring visualizing the network at the application level (OSI level 7 model). The paper presents a plan for the deployment of a similar system in TIER1 and TIER2 centre at JINR using the Ixia TrafficREWIND technology as an example. An initial analysis of the traffic distribution in the data center is made, graphs are shown and conclusions are drawn on the implementation of the necessary measures to reduce the use of links. It is shown how you can scan for vulnerabilities on a data traffic model. The conclusion shows the benefits and disadvantages of method mirroring data.

Summary

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