

Architecture for Inspecting Bluetooth Traffic in Software-Defined Networks

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Software-Defined Networking (SDN) gained popularity in recent years for network management, network function virtualization (NFV) and its integration in wireless networks. The current work proposes a traffic anomaly detection solution for Bluetooth (BT) networks that is based on an SDN architecture. It is focused on identifying potential security threats. The SDN context provides a fully configurable and dynamic environment to monitor the traffic. The solution relies on Layer 2 information found in the BT packets, more specifically, information regarding transmission signal strength, noise and packet frequency. Using an Uber-tooth One monitoring device, packets are intercepted in the SDN data plane and are forwarded to the SDN control plane for traffic analysis. Practical experiments were made using several BT devices placed at different transmission distances. The performance of the solution is analyzed and compared to other results from related studies. The experimental results offer pertinent insight, as on average, the threats can be identified in under 10 milliseconds.

Authors: Mr BOUARU, Radu (Technical University of Cluj-Napoca); PECULEA, Adrian (Technical University of Cluj-Napoca); BUZURA, Sorin (Technical University of Cluj-Napoca); Dr IANCU, Bogdan (Technical University of Cluj-Napoca, Computer Science Department); CEBUC, Emil-Ioan (Agency ARNIEC/RoEduNet, Technical University of Cluj-Napoca); DĂDĂRLAT, Vasile Teodor (Technical University of Cluj Napoca)

Presenters: PECULEA, Adrian (Technical University of Cluj-Napoca); CEBUC, Emil-Ioan (Agency ARNIEC/RoEduNet, Technical University of Cluj-Napoca)

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