ZEAL EKREBE

STUDENT, MASTER OF INFORMATION SYSTEMS SECURITY AND ASSURANCE

SECURITY OF SOFTWARE DEFINED NETWORK WITH SOFTWARE DEFINED PERIMETER

The purpose of this research is to present valuable insight into the concepts of Software Defined Networking (SDN) and Software Defined Perimeters (SDP) - unlocking the possibility and potential of improved design, effectiveness, management and security of the ever fast growing proliferation of today's networks. This research proposes an integrated solution that has its focus on a Software Defined Network and Security of Software Defined Network with Software Defined Perimeter. SDP is an approach to cyber security that mitigates all network-based attacks by ensuring that all connections to services available and running on a network infrastructure are secure, based on a need-to-know model in which device posture and identity are verified before access to application infrastructure is granted; whether the assets are on-premise or in a public or private cloud, a DMZ, a server in a data centre, or even inside an application server. SDN is an approach to computer networking that gives network administrators the ability to manage network services through abstraction of higher-level functionality – a separation of the control plane from the data plane. SDPs and SDNs both essentially have same architectural setup – control plane (controller), a flow protocol (for communication between the control and data planes), and a data plane (where the devices are found); making an integration of these concepts into one solution possible.

Research Advisors: Dr. Pavol Zavarsky, Dr. Dale Lindskog