Policy Framework Prototype for ONOS - DTU Orbit (09/04/2019)

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The Software Defined Networking (SDN) and Network Function Virtualization (NFV) paradigms can provide increased levels of flexibility, automation and programmability to fields related to Cloud and 5G technologies. One field that can benefit greatly from SDN/NFV is that of policy-based network management. Building upon previous work, this paper presents a network policy framework prototype for the ONOS SDN controller. This paper presents an architecture, where the policy manager and the different policy types are disaggregated as different applications (communicating through dedicated REST APIs). This allows for the ad-hoc installation and removal of new policy types to the policy framework, without causing systemwide disruptions. Details of the underlying framework design are provided, together with concrete insight on the network policy prototype implementation. The prototype is then validated through three Proof of Concept (PoC) policy types, a firewall, a NAT and a connectivity policy.

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