Policy Implementation Model in ONAP

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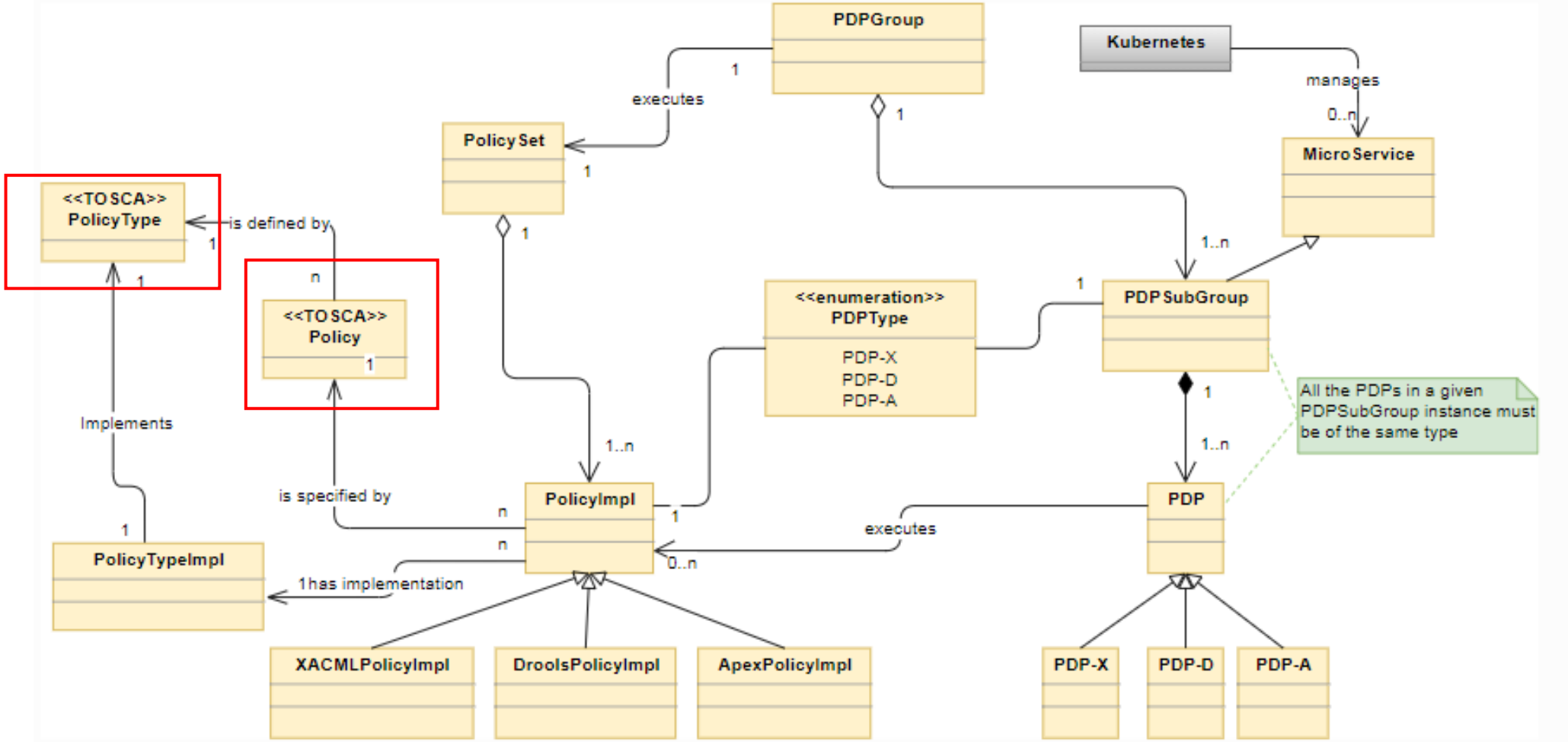
2020.6.22

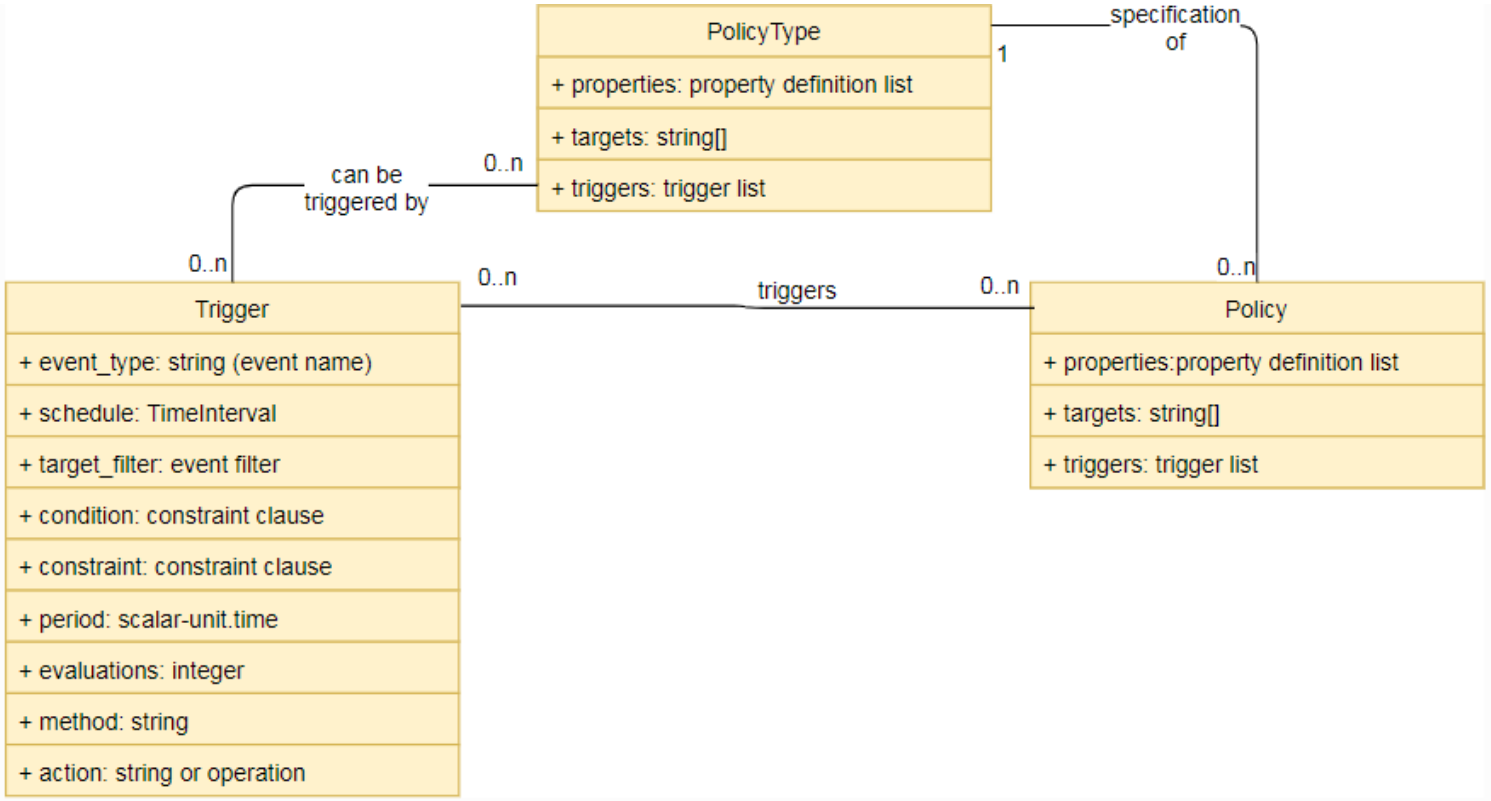
Reference

- https://onap-doc.readthedocs.io/projects/onap-policy-parent/en/latest/architecture/architecture.html#policy-type-design
- https://onap-doc.readthedocs.io/projects/onap-policy-parent/en/latest/design/design.html#design-label
- https://onap-doc.readthedocs.io/projects/onap-policy-parent/en/latest/architecture/tosca-policy-primer.html#tosca-label

Policy Implementation framework – Modeling View

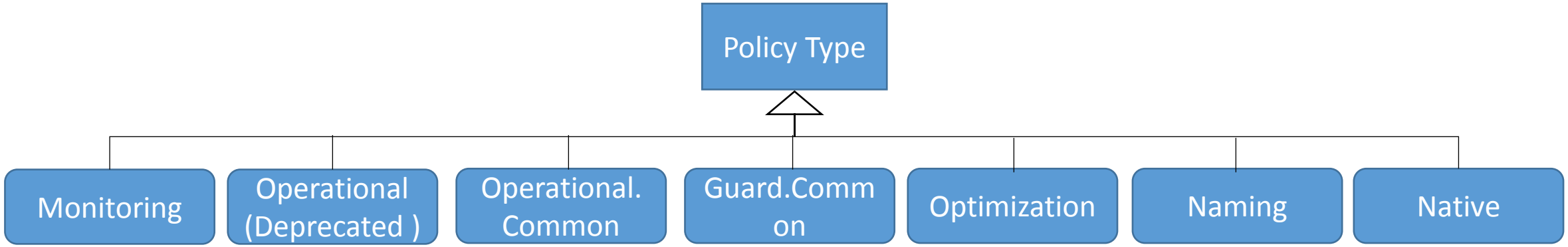


TOSCA Policy Concepts



- Policy Type
  - A Policy Type definition in TOSCA includes properties, targets, triggers.
- Policy
  - Instances of Policy types with specified valued and entities.
- Trigger
  - A Trigger defines an event, condition, and action that is used to initiate execution of a policy associated with it.

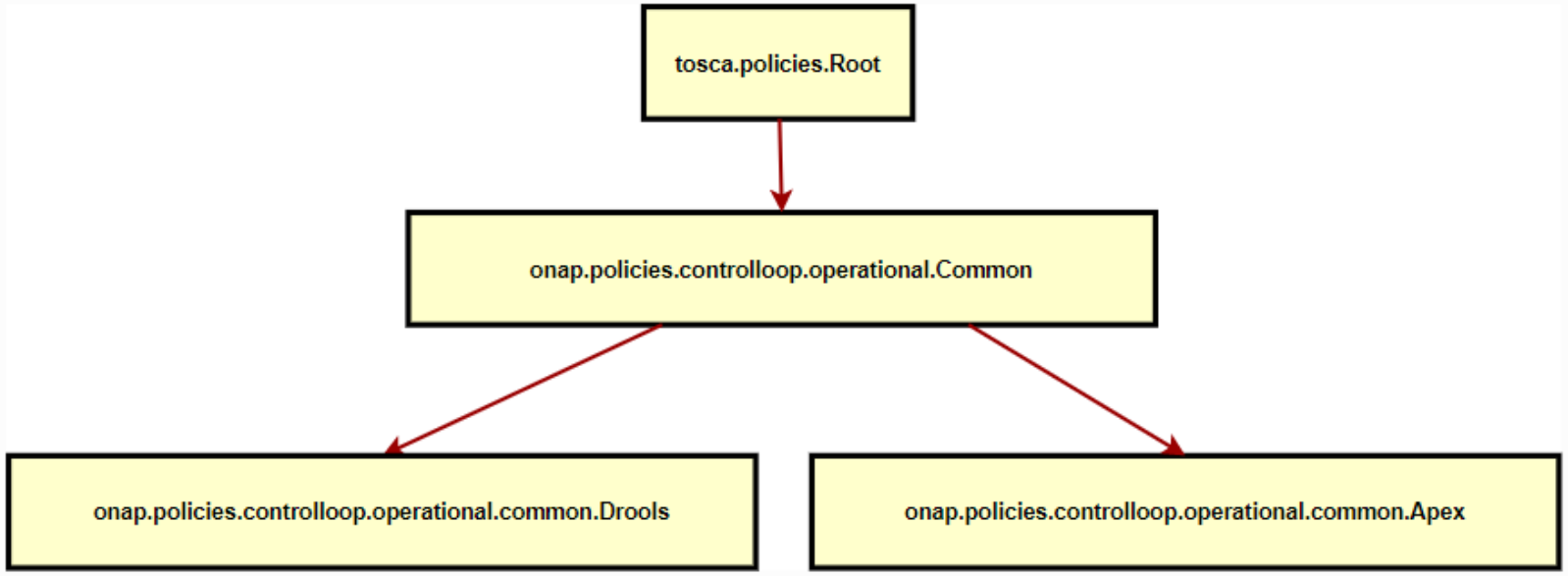
Policy type



- Monitoring - This is a base Policy Type that supports Policy driven DCAE microservice components used in a Control Loops. The implementation of this Policy Type is done in the XACML PDP.
- Operational(Deprecated) - This policy type is used to support legacy YAML definitions for actor/action operational policies for control loops.
- Naming - Naming policies are used in SDNC to enforce which naming policy should be used during instantiation.
- Native - This is the Base Policy Type used by PDP engines to support their native language policies. PDP engines inherit from this base policy type to implement support for their own custom policy type.

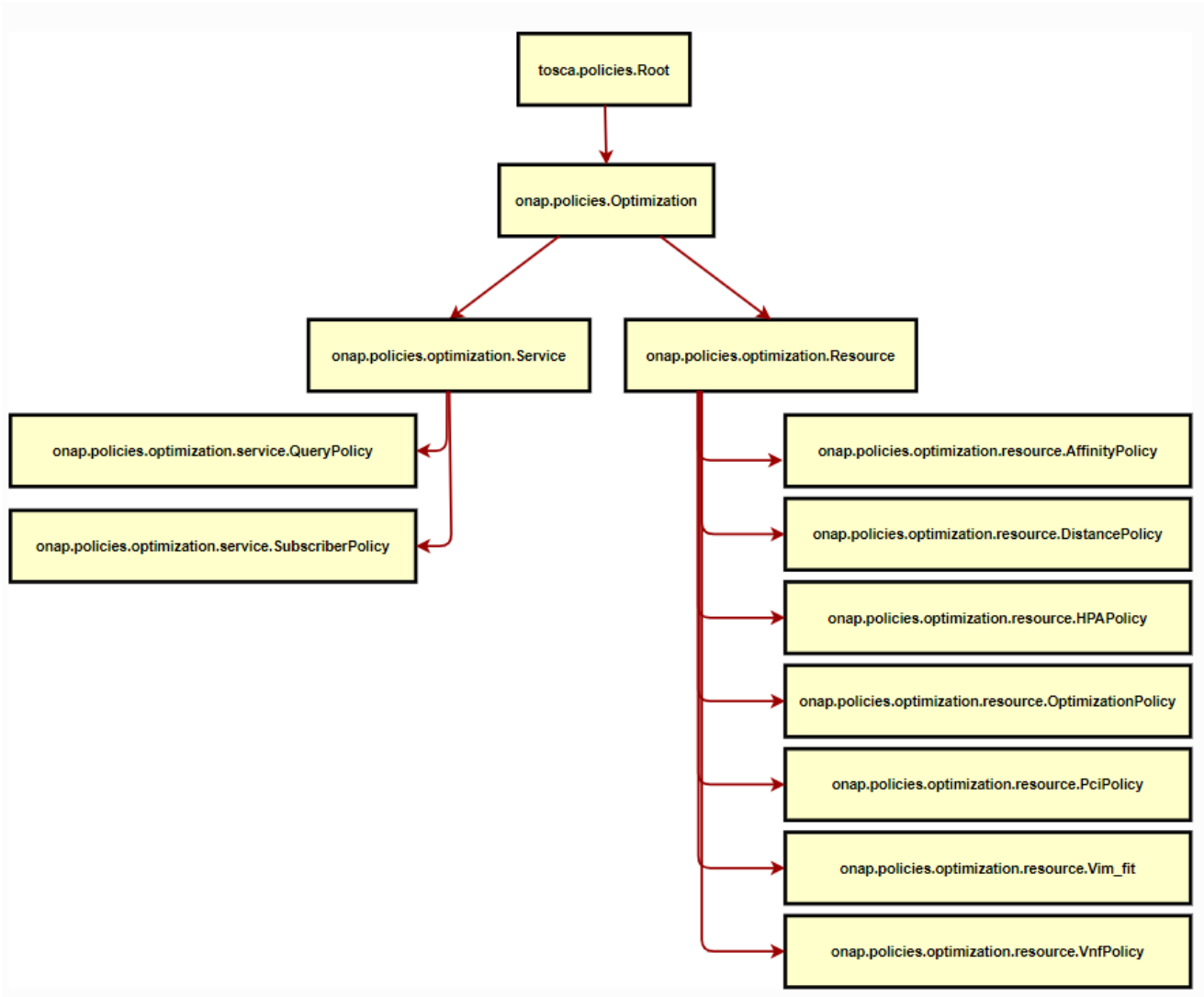
Policy type

- Guard(common) - This base policy type is the the type definition for Control Loop guard policies for frequency limiting, blacklisting and min/max guards to help protect runtime Control Loop Actions from doing harm to the network.
- Operational(common) - This is the new Operational Policy Type introduced in Frankfurt release to fully support TOSCA Policy Type.



Policy type - Optimization

- The Optimization Base Policy Type supports the OOF optimization policies.



R7 Policy requirements for E2E slicing and Model Work

- Identified requirements from E2E Network Slicing case:
  - Scenario 1 - Templates or instances selections
    - Suggested policy: HPA Policy
  - Scenario 2 - Control-loop and configuration changes
    - Suggested policy: Operational Policy
- Model Work for R7
  - Document Policy type and Policy information model in Modeling Subcommittee.

Policy Example - **vFirewall.policy.operational.input.tosca.yaml**

```yaml
tosca_definitions_version: tosca_simple_yaml_1_1_0
topology_template:
    policies:
    -   operational.modifyconfig:
            type: onap.policies.controlloop.operational.common.Drools
            type_version: 1.0.0
            version: 1.0.0
            name: operational.modifyconfig
            metadata:
                policy-id: operational.modifyconfig
            properties:
                id: ControlLoop-vFirewall-d0a1dfc6-94f5-4fd4-a5b5-4630b438850a
                timeout: 1200
                abatement: false
                trigger: unique-policy-id-1-modifyConfig
                operations:
                -   id: unique-policy-id-1-modifyConfig
                    description: Modify the packet generator
                    operation:
                        actor: APPC
                        operation: ModifyConfig
                        target:
                            targetType: VNF
                            entityIds:
                                resourceID: bbb3cefd-01c8-413c-9bdd-2b92f9ca3d38
                            payload:
                                streams: '{"active-streams": 5 }'
                    timeout: 300
                    retries: 0
                    success: final_success
                    failure: final_failure
                    failure_timeout: final_failure_timeout
                    failure_retries: final_failure_retries
                    failure_exception: final_failure_exception
                    failure_guard: final_failure_guard
                controllerName: frankfurt
```

Thank You!