What are Guard Filters?

- Guard Filters are a Policy Type that define one or more filters used to guard actions taken on an entity in the network.
  - Actions: configure, reboot, scale-up, scale-down, etc.
  - Decisions based on guard filter policies are made by the XACML PDP (Policy Decision Point) using the Decision API
    - Return a "permit" or "deny"
  - Decisions are enforced by applications that attempt to perform an operation on a network element
    - Typically, the Decision API call is being performed within a set of rules loaded into the Drools or Apex PDP

Note

- Be aware that the terms blacklist and whitelist will be replaced very soon with more socially acceptable terminology
  - Blacklist → deny
  - Whitelist → permit

Guard Filter Features

- Inherits from a common guard policy type, as do 3 predecessors from earlier releases
  - Blacklist, Frequency Limiter, MinMax
- More flexibility than previous Blacklist policy type from earlier Policy Framework releases
  - Ability to specify blacklist vs whitelist precedence
  - Ability to group filters together into one policy in order to more accurately specify intent of what a DevOps team needs to guard.

- One of the issues with single policies designating a single guard directive, is "How does each policy relate to other policies?"
  - Policies that specify more global target, may dominate a decision
    - Blacklisting ALL vnf types will cause a deny vs a single whitelist for a specific vnf-id
- Filter Guard can help solve those situations

Guard Filter can help

- Teams should group filters and organize policies together to ensure intent is satisfied

- Testing is imperative

- Will not solve every situation

PDP Grouping can also help

- The ability to group XACML PDP's with sets of guard policies deployed to each group
    - This will require your enforcement points to retrieve decisions from a designated Decision API endpoint

XACML PDP Configuration

- Can also change default combining algorithm for XACML PDP guard application that enforces guard policies
  - XACML combining algorithm's help determine overall decision strategy for all the loaded policies
  - Default algorithm out-of-box: deny-overrides
  - Others to chose from: permit-overrides, permit-unless-deny, deny-unless-permit

Links

Link to Guard Filter Policy Type

https://github.com/onap/policy-models/blob/master/models-examples/src/main/resources/policytypes/onap.policies.controlloop.guard.common.Filter.yaml

Link to Tutorial Files

https://wiki.onap.org/display/DW/2021-02-04+LFN+Virtual+DDF

Link to Decision API Documentation

https://docs.onap.org/projects/onap-policy-parent/en/latest/xacml/decision-api.html