SUPA Information Model

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IETF94
Agenda

- Motivation for building an Information Model
- How this I-D relates to the SUPA milestones
- I-D Status and Open Issues
- Next Steps
Motivation (1)

- Define a single, extensible framework for representing different types of policies
  - This version focuses on ECA policies
  - Declarative policy work put in Appendix

- Information Model is independent of language, protocol, repository, and content and structure of policy
  - BUT, changes being made to help build YANG data models

- Without an Information Model…
  - Resulting data models will be silos, making interoperability difficult
  - Different types of policies (e.g., imperative, procedural, declarative, functional) will themselves be silos
  - Different actors want to author different policies using different grammars
  - No Interoperability with Chef/Puppet/, AWS Cloud Formation Templates, …
Motivation (2)

- Policies are used by multiple actors
  - App developers, operators, security and compliance teams, administrators, end-users, … each has different concepts and terms

- Policies exist at different levels of abstraction
  - Per-port, -device, -network, -VM, -application, -service, …

- Different Policies exist for different operations on the same device
  - Monitoring vs. configuration vs. audit
  - Deployment vs. backup vs. provisioning vs. billing vs. retirement …

- Policies focused on different technologies and vendors must be able to work collaboratively
  - Requires a common set of concepts and vocabulary across domains
  - An E2E policy affects multiple actors, technologies, and vendors

- Policies help heterogeneous systems interoperate
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Relation to SUPA WG Milestones

• Policy-based management framework scope, and how it relates to existing IETF work
  – Information Model defines common terminology and concepts that different vendors and technologies can use

• Different YANG models
  – Shows how to standardize common policy concepts with different YANG models

• Applicability Document
  – Shows how different examples are supported by the model

• Other
  – Strong synergy with TMF and ONF
  – Thinking of writing open source model and examples
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Policy Info Model Overview
Status

• **Model Changes**
  – Simplified model, and building out the rest
  – Including examples where possible

• **Document Changes**
  – Moved declarative policy to a set of Appendices
  – More complete and illustrated rationale for model

• **Open Questions**
  – Should it contain comparisons to previous IETF policy work?
  – Should it contain comparison to other notable policy work?
  – Should it contain detailed worked examples (e.g., policy-based SFC)?

• **Status**
  – Roughly 70% finished
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Next Steps

• Synergy with Other SDOs
  – I-D is focused on building YANG data models
  – TMF ZOOM is focused on building a complete info model; data models are less developed
  – ONF focused on intent-based (i.e., declarative) policy, but needs a way to interoperate with other types of policies

• Thinking of building DSL(s) based on the info model to show advantage in translating to multiple data models

• Need more feedback
Questions?

“Create like a god. Command like a king. Work like a slave”
- Constantin Brancusi
Four Different ECA Policy Examples

- **draft-ietf-netmod-acl-model-02** (uses ‘matches’ and ‘actions’ lists)
  - Defines filtering on source & dest port range, DSCP, protocol, IP version, and MAC address
  - Defines permit and deny packet handling action

- **draft-hares-i2rs-bnp-eca-data-model-00** (uses ‘rule group’ and ‘rule’ leaf-lists, and ‘rule-match-act’ list containing ‘bnp-matches’ and ‘bnp-action’)
  - Defines filtering on interface, L1-L4 header, packet size, or service header
  - Defines L1-L4 actions, service actions, or forwarding on interface, next hop, route attributes, or RIB route attributes

- **draft-dunbar-i2rs-discover-traffic-rules-00** (uses RBNF)
  - Defines filtering on L2-L4 header, VLAN, VNID, service chain ID, size, event, …
  - Defines egress port specific actions including adding VLANID tags, removing service header fields, forwarding traffic out of a particular interface or tunnel, …

- **draft-shaikh-rtgwg-policy-model-00** (uses policy-definition’ leaf-lists with ‘conditions’ and ‘actions’ presence containers)
  - Defines filtering on how a route was installed, neighbor set, BGP-specific parameters, …
  - Defines accept & reject route and IGP actions