



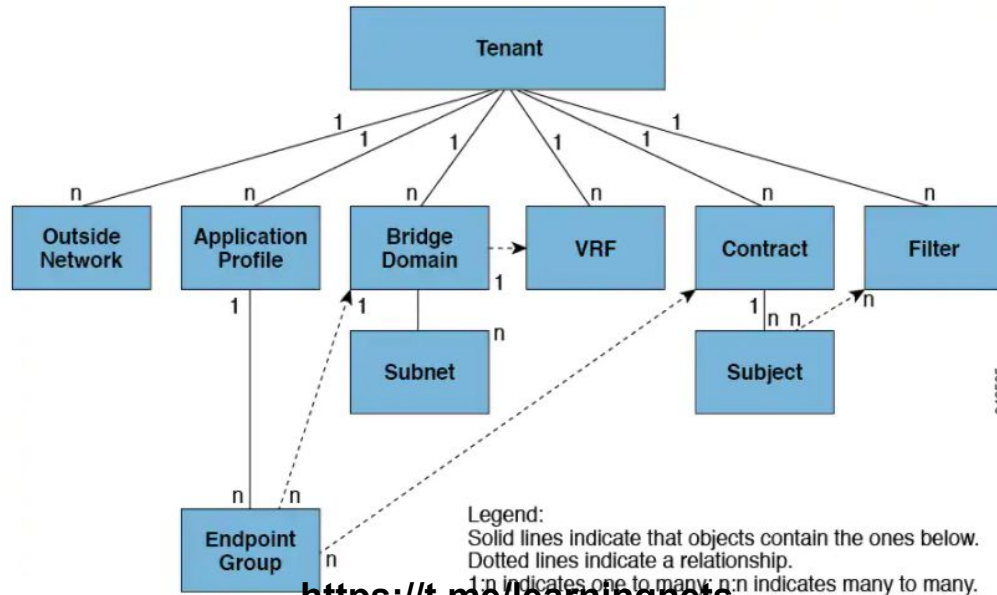
Automating Cisco ACI with Python

Advanced ACI automation with Python Scripts

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Tenants

A tenant (fvTenant) is a logical container for application policies that enable an administrator to exercise domain-based access control.



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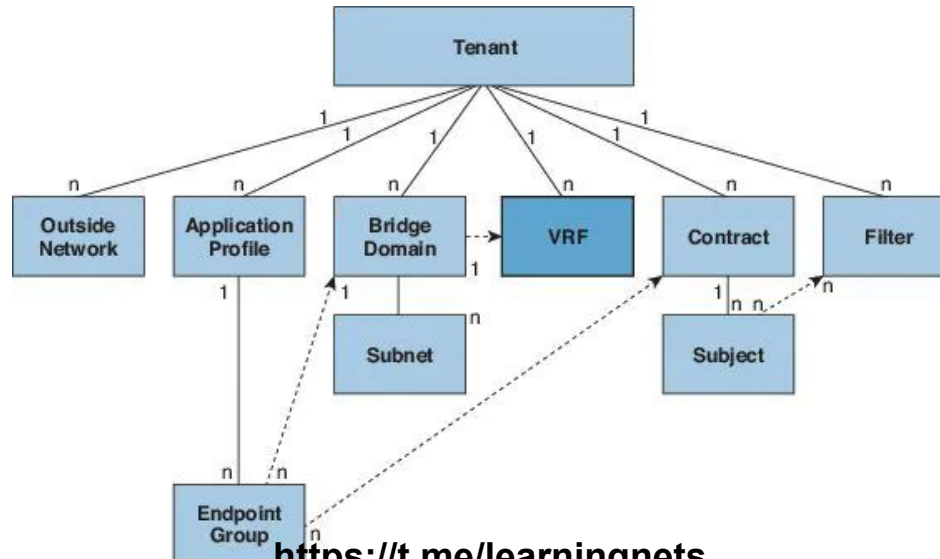
Exercises

check_acitoolkit.py
tenant_simple_creation.py
tenant_simple_deletion.py

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Virtual Routing and Forwarding (VRF)

A Virtual Routing and Forwarding (VRF) object (fvCtx) or context is a tenant network (called a private network in the APIC GUI). A tenant can have multiple VRFs.



Exercises

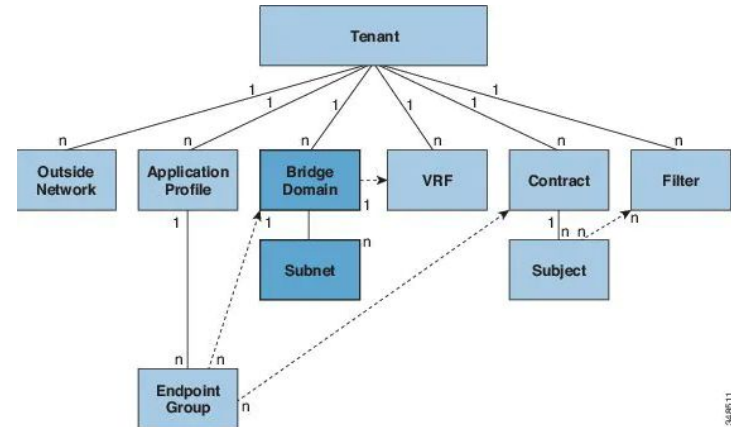
`bridge_domain_simple_creation.py`

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Bridge Domains and Subnets

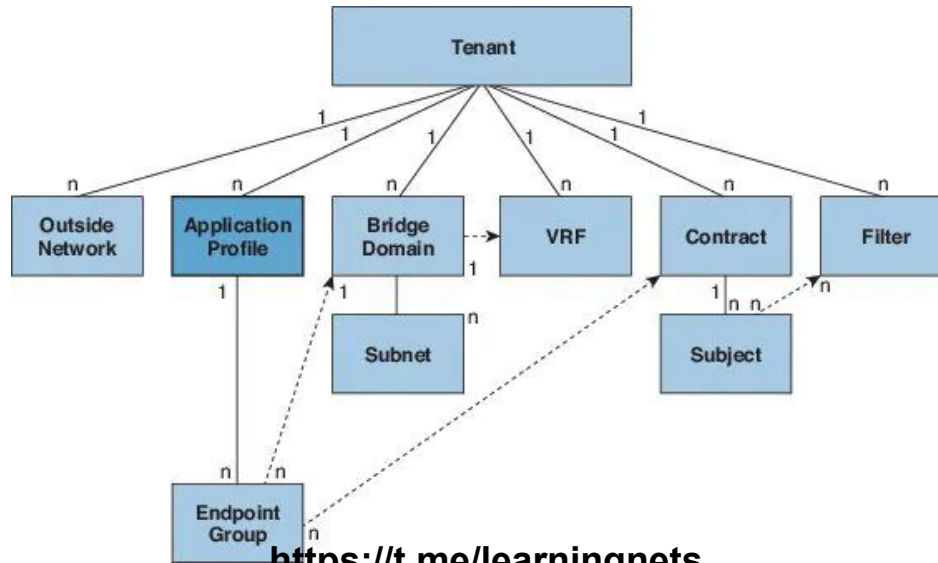
A bridge domain (fvBD) represents a Layer 2 forwarding construct within the fabric.

A BD must be linked to a VRF (also known as a context or private network). With the exception of a Layer 2 VLAN, it must have at least one subnet (fvSubnet) associated with it. The BD defines the unique Layer 2 MAC address space and a Layer 2 flood domain if such flooding is enabled.



Application Profiles

An application profile (fvAp) defines the policies, services and relationships between endpoint groups (EPGs).

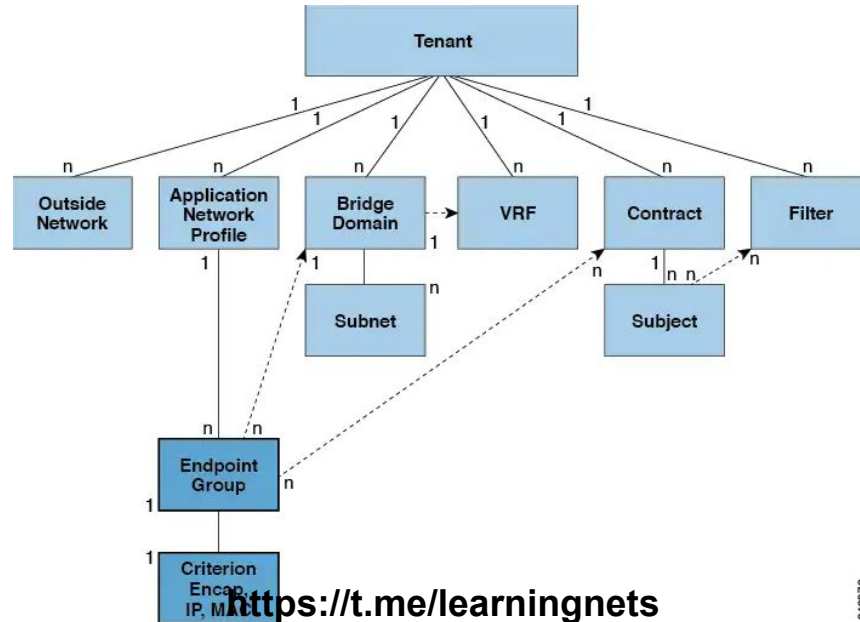


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Endpoint groups (EPG)

The endpoint group (EPG) is the most important object in the policy model.



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Exercises

[epg_simple_creation.py](#)

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**Can we go further and
create multiple Tenants
or Bridge domains at once?**

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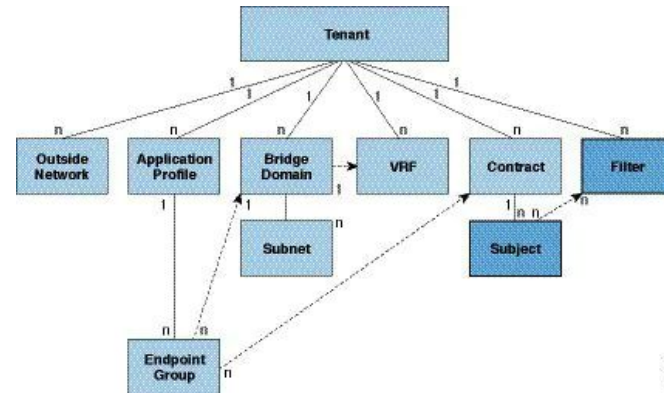
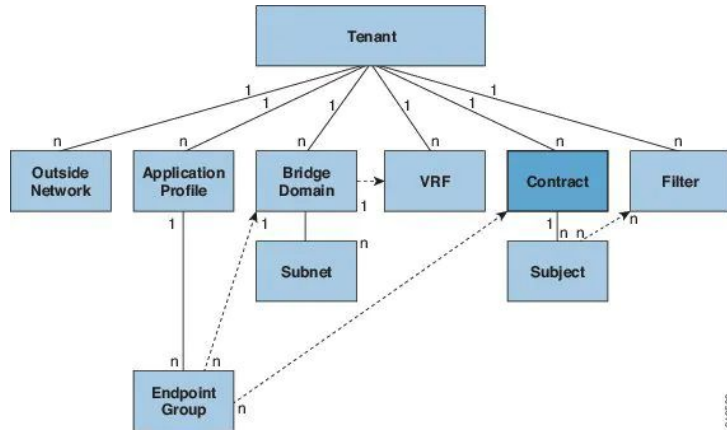
Exercises

tenant_multiple_creation.py
tenant_multiple_creation_from_csv.py
bridge_domain_creation_from_csv.py
bridge_domain_creation_from_yaml.py
epg_creation_from_yaml.py

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Contracts

In addition to EPGs, contracts (vzBrCP) are key objects in the policy model. EPGs can only communicate with other EPGs according to contract rules.



Label, subject, alias and filter managed-objects enable mixing and matching among EPGs and contracts so as to satisfy various applications or service delivery requirements

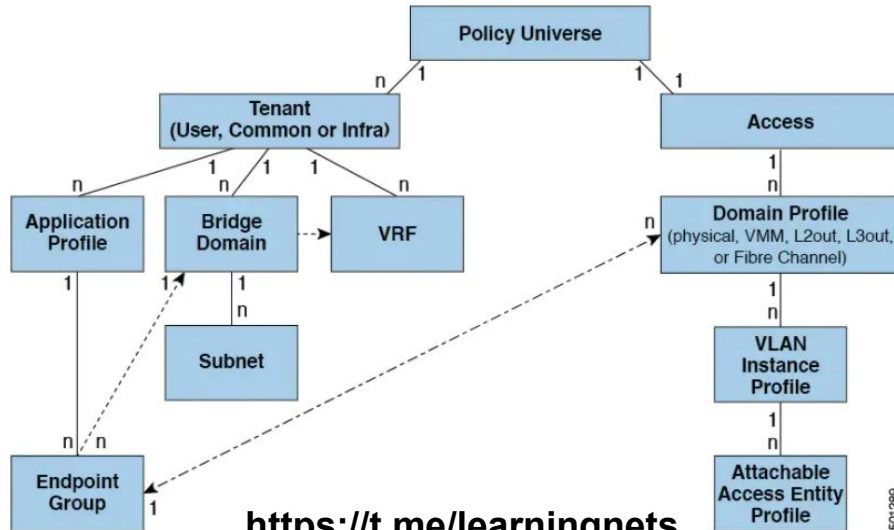
Exercises

`contract_between_epgs.py`

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VLANs and EPGs

In the policy model, EPGs are tightly coupled with VLANs. For traffic to flow, an EPG must be deployed on a leaf port with a VLAN in a physical, VMM, L2out, L3out, or Fiber Channel domain.



Exercises

epg_deploy_to_interface.py
epg_deploy_to_multiple_interfaces.py
epg_physical_domain_association.py

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Q&A

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Closing Remarks & Recommendations

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