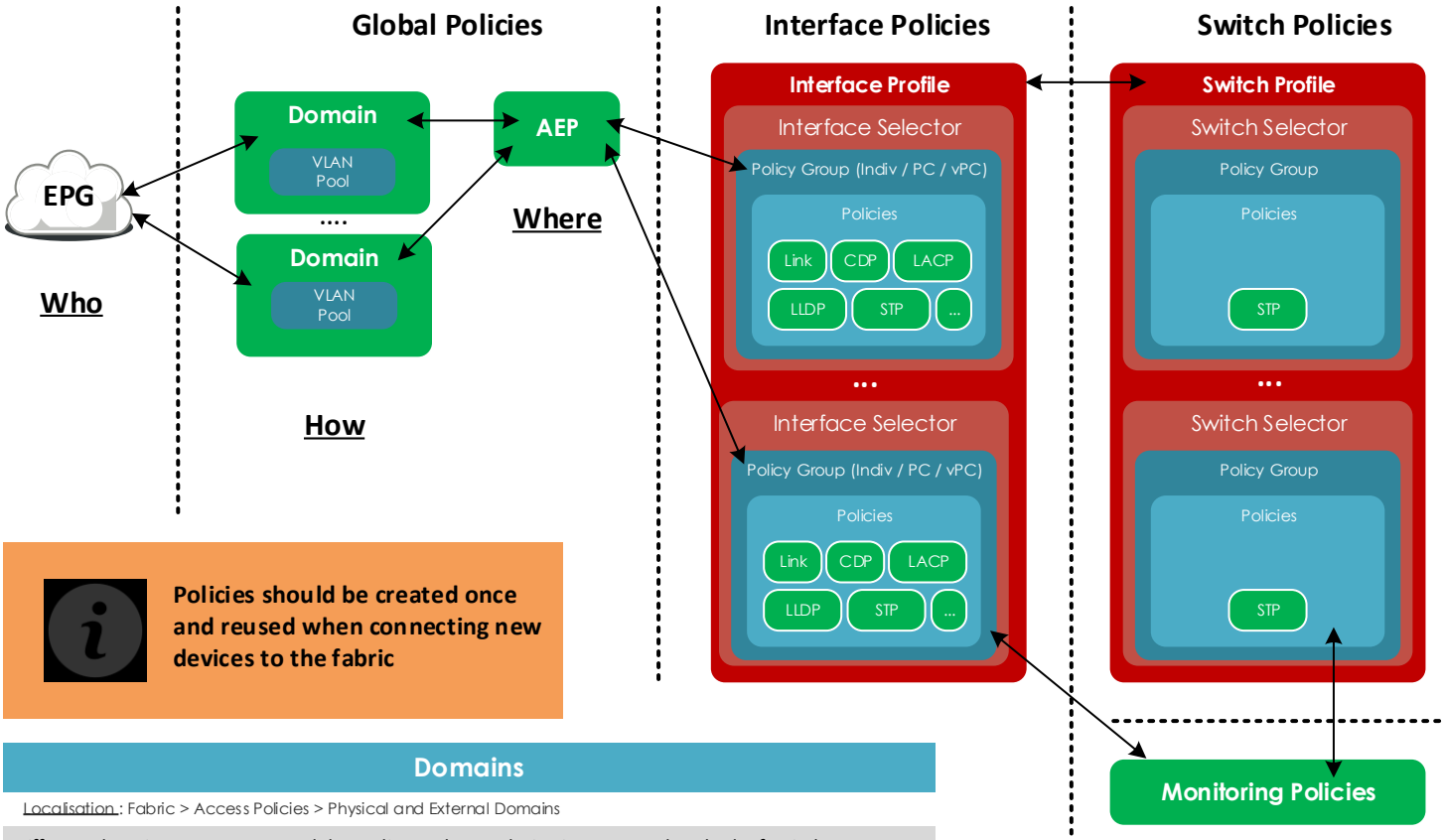
NetworkLife
Another packet in the network....

Cisco ACI – Fabric Access Policies

Relationships between an interface and an EPG



Policies should be created once and reused when connecting new devices to the fabric

Domains

Localisation : Fabric > Access Policies > Physical and External Domains

Different domain types are created depending on how a device is connected to the leaf switch.
There are four different domain types:

Domain types

Physical	Generally used for bare metal servers or servers
External Bridged	Used for Layer 2 connections. Example: connect an existing switch trunked-up to a leaf
External Routed	Used for Layer 3 connections. Example: connect a WAN router to the leaf
VMM Domains	Used for virtual connections. Example: VMware, HyperV, OpenStack...

localisation : Virtual Networking > VMM Domains

VLAN Pools

Localisation : Fabric > Access Policies > Pools > Vlan

VLAN pools contain the VLANs used by the EPGs the domain will be tied to

A domain is associated to a single VLAN pool

VLAN Pool

Static	Physical port
Dynamic	Virtual port (VMM Domain)

Interfaces Policies

Localisation : Fabric > Access Policies > Policies > Interface

Define the interfaces behavior and features to be configured on a specific interfaces. The **interfaces policies** are objects to be reused into **Interface Policy Groups**.

1G-auto | 10G-auto | LLDP-on | LLDP-off | MCP-on | LACP-active | ...

Attachable Access Entity Profiles (AEPs)

Localisation : Fabric > Access Policies > Policies > Global > Attachable Access Entity Profiles

Grouping domains with similar requirements

AEP

Ex: ESXi-AEP

- Domain — *Ex: VMM Domain*
- Interfaces Policy Group — *Ex: ESXI-IPG*

Interfaces Policy Groups

Localisation : Fabric > Access Policies > Interface > Leaf Interface > Policy Groups

Interface policy groups are **templates** to dictate port behavior and are **associated to an AEP**.

Interfaces Policy Group

- Access Port
- Port-Channel
- vPC

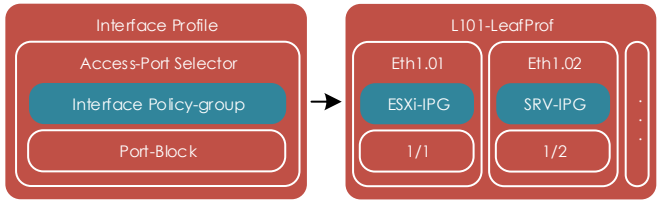
each policy group represents a single logical interface on the switches.

10 PCs/vPCs = 10 policy groups

Interfaces Profiles

Localisation : Fabric > Access Policies > Interface > Leaf Interface > Profiles

help tie the pieces together. Interface profiles contain blocks of ports - interface selectors - and are also tied to the interface policy groups described in the previous paragraph



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Standalone Server

1 Configure VLAN Pool
Localisation : Fabric > Access Policies > Pools > Vlan

Name: **Baremetal.VLANPool**
Allocation Mode: **Static**
Encapsulation blocks: **Range From Vlan-1 To Vlan-100**

2 Configure Physical Domain
Localisation : Fabric > Access Policies > Physical and External Domains > Physical Domains

Name: **Servers.PhysDom**
Vlan Pool: **Baremetal.VLANPool**
AEP: <empty>

3 Configure AEP
Localisation : Fabric > Access Policies > Policies > Global > Attachable Access Entity Profiless

Name: **Baremetal.AEP**
Domain: **Servers.PhysDom**
Interface Policy Group: <empty>

4 Configure Interface Policies
Localisation : Fabric > Access Policies > Policies > Interface

Create all necessary objects.
Name: <feature>-<status
Example: **cdp-on**, **lldp-off** ....

5 Configure Interface Policy Groups
Localisation : Fabric > Access Policies > Interface > Leaf Interface > Policy Groups > Leaf Access Port

Name: **Baremetal.APIPG**
Link: default (10G)
STP: STP-BPDU-Guard-on
PFC: PFC-auto
PC Policy : N/A
AAEP: **Baremetal.AEP**

6 Configure Interface Profiles
Localisation : Fabric > Access Policies > Interface > Leaf Interface > Profiles

Name: **Leaf101-LeafProf**
- Access Port Selector: **Eth1.01**
  - Access Block Port: **1/1**
  - Interface Policy Group: **Baremetal.APIPG**

7 Configure Switch Policy Groups
Localisation : Fabric > Access Policies > Switches > Leaf Switches > Policy Groups

Name: **DefaultLeaf-SPG**
Leave all policies to Default

8 Configure Switch Profiles
Localisation : Fabric > Access Policies > Switches > Leaf Switches > Profiles

Name: **Leaf101-SwitchProf**
Leaf Selector
Name: **Leaf101-LeafSelector**
Block: **101**
Policy Group: **DefaultLeaf-SPG**

Associated Interface Selector Profiles: **Leaf101-LeafProf**

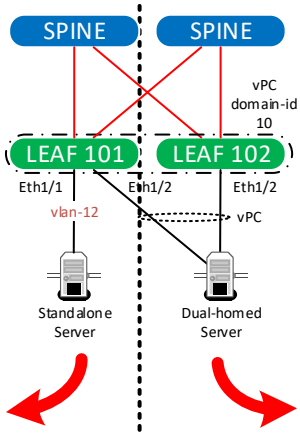
Switch to Tenant tab

9 Deploy the EPG
Localisation : ***Tenant*** > Application Profiles > MyAP > Application EPG > MyEPG

1) Right click on « Domains »
- Click « Deploy to Physical Domain »
- Choose **Servers.PhysDom**

2) Right click on « Static Port »
- click « Deploy static EPG on PC, VPC or interface
- Select « Port »
Choose the right leaf node and interface
- Specify the port encapsulation with a VLAN id corresponding to the VLANs allowed in the VLAN Pool.

Configuration Steps



Don't forget to Deploy your EPG from the Tenant tab when the Fabric Poliy is ready !

vPC

1 Configure VLAN Pool
Localisation : Fabric > Access Policies > Pools > Vlan

Reuse **Baremetal.VLANPool**

2 Configure Physical Domain
Localisation : Fabric > Access Policies > Physical and External Domains > Physical Domains

Reuse **Servers.PhysDom**

3 Configure AEP
Localisation : Fabric > Access Policies > Policies > Global > Attachable Access Entity Profiless

Reuse **Baremetal.AEP**

4 Configure Interface Policies
Localisation : Fabric > Access Policies > Policies > Interface
Reuse previously created objects

5 Configure Interface Policy Groups
Localisation : Fabric > Access Policies > Interface > Leaf Interface > Policy Groups > VPC Interfaces

Name: **VPC10-SERVER1.VPCIPG**
Link: default (10G)
STP: STP-BPDU-Guard-on
PFC: PFC-auto
LACP: LACP-active
AAEP: **Baremetal.AEP**

6 Configure Interface Profiles
Localisation : Fabric > Access Policies > Interface > Leaf Interface > Profiles

Name: **Leaf101-LeafProf**
- Access Port Selector: **Eth1.02**
  - Access Block Port: **1/2**
  - Interface Policy Group: **VPC10-SERVER1.VPCIPG**

Name: **Leaf102-LeafProf**
- Access Port Selector: **Eth1.02**
  - Access Block Port: **1/2**
  - Interface Policy Group: **VPC10-SERVER1.VPCIPG**

Switch to Tenant tab

9 Deploy the EPG
Localisation : ***Tenant*** > Application Profiles > MyAP > Application EPG > MyEPG

1) Right click on « Domains »
- Click « Deploy to Physical Domain »
- Choose **Servers.PhysDom**

2) Right click on « Static Port »
- click « Deploy static EPG on PC, VPC or interface
- Select **« Virtual Port Channel »**
- Specify the « path » by selecting the previously created object **VPC10-SERVER1.VPCIPG**
- Define the encapsulation and select Mode Trunk
- **Submit**, you're done !

Best Practices

Policies	Reuse whenever possible
	One object per port policy (lacp-on, lacp-off, lldp-on, lldp-off…etc.), can be scripted for reuse.
	Naming must clearly describe the setting.
	Create switch profile for each leaf individually
	Create 1 port-block per interface – more granular for later potential modification
Domains	1 Physical Domain per Tenant for Baremetals
	1 Physical Domain per Tenant for External Connectivity
	If VMM domain shared accross multiple Tenants, a single VMM domain can be created and associated with all leaf ports where ESXi servers are connected
AEPs	Multiple domains can be associated to a single AEP for simplicity's sake.
	There are some cases where multiple AEPs may need to be configured to enable the infrastructure VLAN, such as overlapping VLAN pools, or to limit the scope of the presence of VLANs across the fabric.

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