



Automating Cisco ACI with Python

Day 2 Introduction



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- CCIE Routing & Switching - 2002
- CCIE Service Provider - 2006
- CCIE Security - 2007
- CCDE - 2013
- CCIE Data Center - 2013

Housekeeping Items

- + Use the Q&A box for questions
 - + These get submitted to me privately, then I can answer publicly
- + Class is recorded
 - + Check for a followup email after class for the link to the recording

Today's Agenda

- + Using the DevNet ACI Sandbox
- + ACI Object Model Review
- + ACI and Postman
- + Postman and Python
- + ACI Toolkit
- + Python Scripting Examples with ACI
- + Q&A



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Automating Cisco ACI with Python

Using the DevNet ACI Sandbox

Using the DevNet ACI Sandbox

- + Cisco offers two free sandboxes for testing out ACI
 - + ACI Simulator
 - + ACI Simulator AlwaysOn
 - + Both available at <https://devnetsandbox.cisco.com/RM/Topology>
- + ACI Simulator
 - + Requires a reservation
 - + Uses AnyConnect VPN Client
 - + Includes a Windows a Linux Jumpbox
 - + I.e. our Python environment
- + ACI Simulator AlwaysOn
 - + Requires no advance reservation or VPN access
 - + Reboots about every 15 minutes



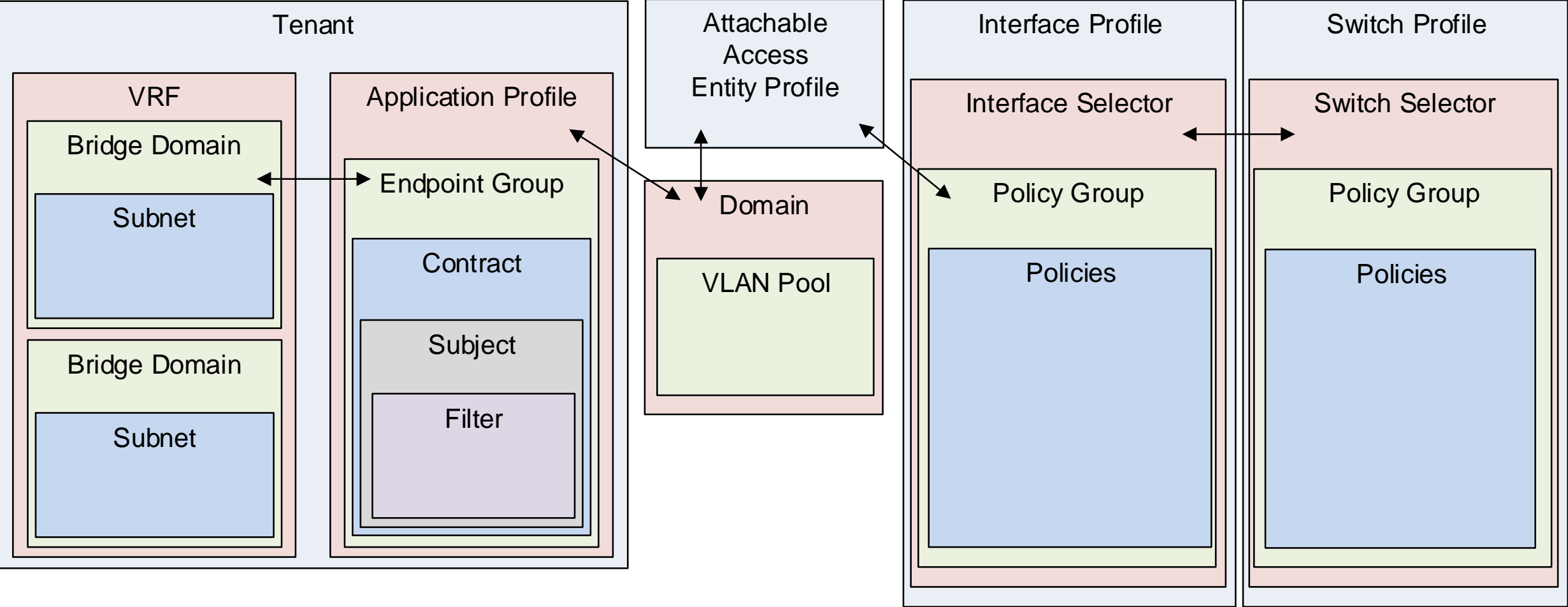
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ACI Object Model Review

ACI Object Workflow Review





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ACI and Postman

Overview of POSTman

- + What is POSTman?
 - + POSTman is a GUI tool for interacting with RESTful APIs
 - + More info at <https://www.getpostman.com/>
- + POSTman and APIC
 - + APIC uses RESTful APIs for all calls
 - + APIC objects support “save to xml/json”, and import into POSTman
 - + APIC API Inspector allows copy/paste into POSTman

Logging into APIC via POSTman

- + How to login to APIC from POSTman
 - + Google “POSTman login to APIC”
 - + <https://community.cisco.com/t5/data-center-documents/aci-automation-part-1-aci-with-postman-introduction/ta-p/3318219>
- + POSTman strings to login to APIC
 - + POST to URL `https://{{apic}}/api/aaaLogin.json`
 - + Where `{{apic}}` is your IP address or variable
 - + Body { "aaaUser" : { "attributes":
{"name":"{{username}}","pwd":"{{password}}"} } }
 - + Where `{{username}}` and `{{password}}` are credentials or variables

Using APIC API Inspector

- + Launch API Inspector from the APIC GUI
- + Perform a task in the APIC GUI
 - + E.g. Create a Tenant, VRF, BD, Subnet, etc.
- + Search the API inspector for POST messages
 - + Copy and paste URL to POSTman
 - + Copy and paste Body to POSTman
- + Re-run the call from POSTman with different variables



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Postman and Python

POSTman and Python

- + In Postman you can generate code snippets in various languages and frameworks
 - + e.g. Python
- + Select the request under your collection and click Code icon on the right panel to open the Code snippet tab
- + Select a language to view and copy your generated code snippet



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ACI Toolkit

ACI Toolkit

- + The ACI Toolkit is a set of pre-built python libraries that allow configuration of the Cisco APIC controller
 - + <https://github.com/datacenter/acitoolkit>
- + Download or clone the GIT repository to your jumpbox or local machine
 - + **git clone https://github.com/datacenter/acitoolkit.git**
- + After downloading, install using setuptools
 - + **cd acitoolkit**
 - + **python setup.py install**



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