

# DevNet, network virtualization and automation

## Training Lab. Environment

DEVASC VM, Webex Teams, ...

VM Emulator: VMWare Workstation, VM VirtualBox

Cisco Packet Tracer

Linux System

Python Programming Language

## Training Plan

### DevNet Developer Environment

- DevNet Overview
- DevNet resources :
  - Learning Labs - Self-paced tutorials that covers topics from basic coding to using REST APIs with various technologies
  - Sandboxes - Production-like development and testing environments for a host of technologies
  - Code Exchange - A repository of sample code written by other developers
  - Developer support - Support for developer related issues through tickets, live chats, and forums
  - Developer documentation - A central location for all of the product developer API documentation
- Automatization tools : Ansible, Puppet

### Software Development and Design

- Software Development Life Cycle (SDLC)
- Agile Methods : Agile Scrum, Lean, Extreme Programming (XP), Feature-Driven Development (FDD)
- Git
- GitHub
- Data Format : XML, JSON, YML

### Understanding and Using APIs

- APIs overview
- API Design Styles : Synchronous, Asynchronous
- Architectural Styles: RPC, SOAP, REST, ...
- Webhooks

## Network Fundamentals

- Overview
- IPv4, IPv6
- Ethernet

## Application Deployment and Security

- Deployment Models: bare metal, Virtual Machines (VMs), Container-based infrastructure, Serverless Computing.
- Types of Infrastructure: private cloud, public cloud, hybrid cloud, edge cloud.
- Dockers
- Continuous Integration/Continuous Deployment (CI/CD)

## Infrastructure and Automation

- Overview, Cisco Automation
- DevOps and SRE
- SDN overview
- Automation Tools overview
- Ansible
- Puppet
- Chef
- pyATS

## Cisco Platforms and Development

- Cisco SDK
- NETCONF
- RESTCONF
- Cisco IOS XE
- Cisco DNA Center