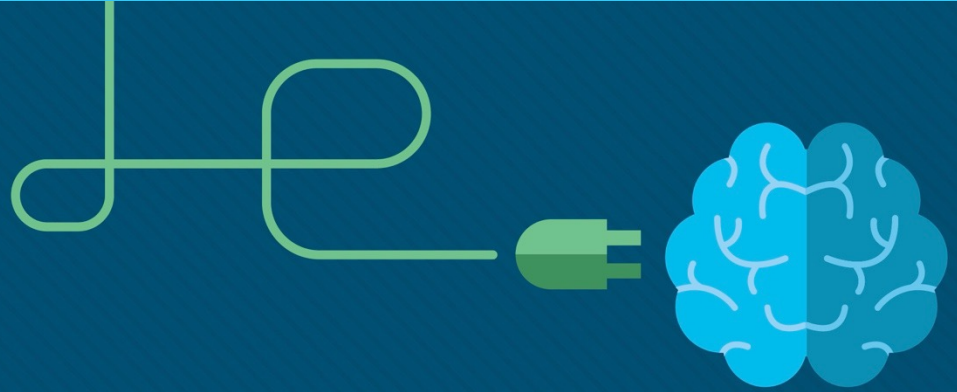


Module 2: The DevNet Developer Environment

DevNet Associate v1.0

Module Objectives

Module Title: The DevNet Developer Environment

Module Objective: Implement a development environment using DevNet resources.

Topic Title	Topic Objective
DevNet Overview	Explain how DevNet encourages communities of network programmers.
Exploring DevNet Online Resources	Investigate DevNet online resources.

2.1 DevNet Overview

What is DevNet?

DevNet is a fully-integrated developer program comprising a website, an interactive developer community, coordinated developer tools, integrated discussion forums, and sandboxes. It consists of the following features:

- **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

2.2 Exploring DevNet Online Resources

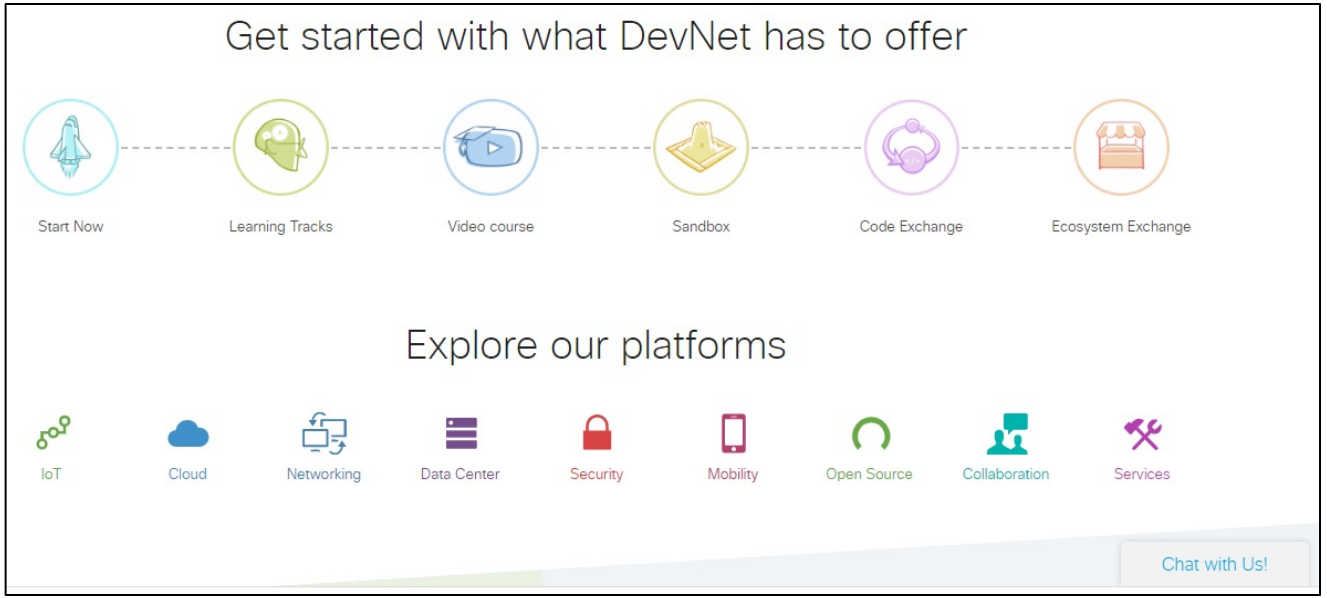
Getting Started with DevNet Resources

DevNet provides developers a starting point for all Cisco APIs, including API documentation, education, and developer support.

To get an overview of DevNet, visit the DevNet Home page at developer.cisco.com

The site offers the following:

- Start Now
- Learning Tracks
- Video Course
- Sandbox
- Code Exchange
- Ecosystem Exchange



DevNet Learning Labs

DevNet Learning Labs provide:

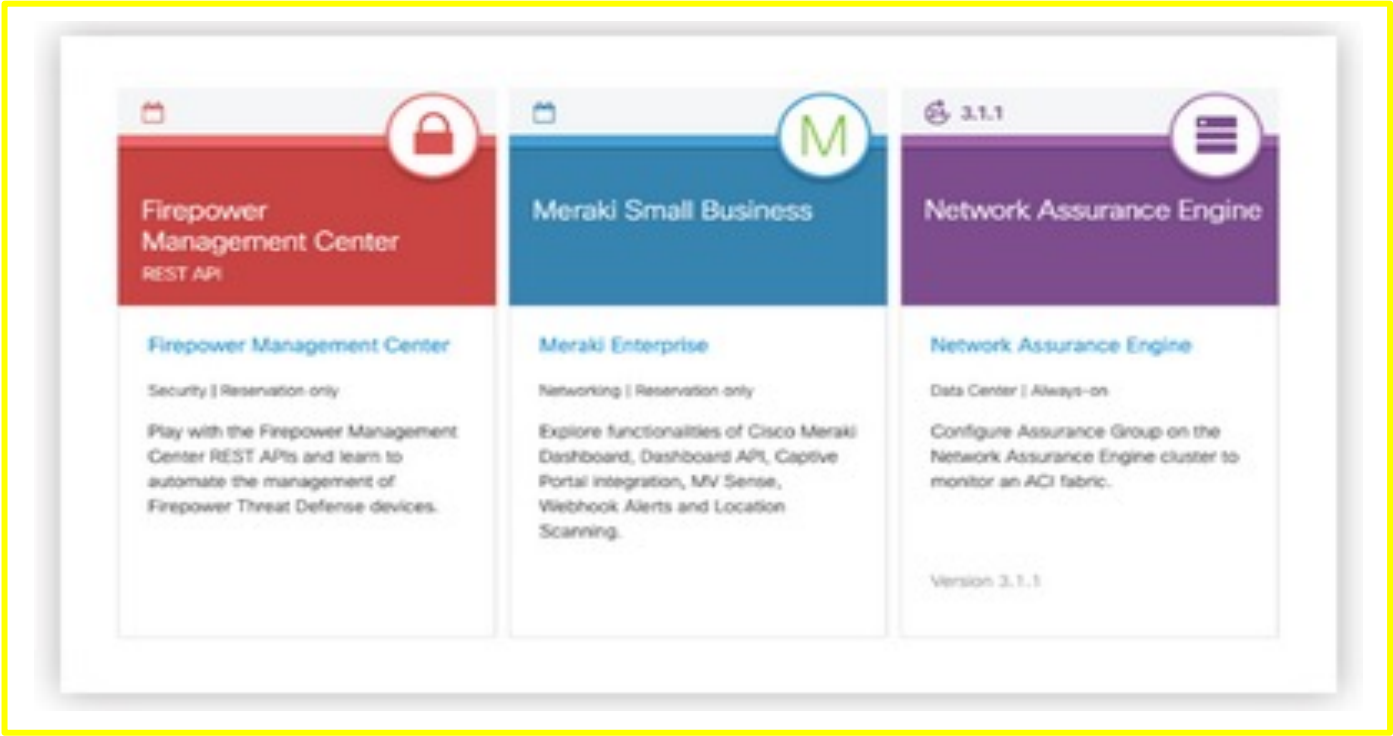
- **Tutorials** – Cover engineering technologies, programming languages, and concepts such as model-driven programmability, REST APIs, Python, and JavaScript.
- **A walk-through for using a DevNet Sandbox** - A pre-configured environment that is already installed with Cisco platforms.

DevNet Learning Labs also enables you to:

- **Set up a development environment** - For practicing tasks on a local computer
- **Mimic the overall DevNet site** - Using tutorials on coding, collaboration, IoT, data centre, mobility (mobile and wireless), and networking.

DevNet Sandbox

DevNet offers a host of sandboxes that enables hands-on exploration of software and APIs.



DevNet Exchanges

DevNet provides multiple ways for community members to share with each other. These are called Exchanges.

Currently, the following exchanges are available:

- **Automation Exchange** – This exchange provides a collection of network automation use cases with different solutions and toolkits.
- **Code Exchange** – This exchange is a repository of source code or tools. It uses the GitHub API, as well as human moderators, to categorize and display hundreds of related repositories.
- **Ecosystem Exchange** – In this exchange, one can find over 1,500 solutions across different technologies, industries, and geographies to begin solution design and development.

Find a Use Case in Automation Exchange

- The Automation Exchange provides various use cases for network automation that include:
  - Listing of data
  - Adding configurations
  - Activating policies across domains, users, or devices

- The listings are for different tool sets such as Ansible or Puppet, and different infrastructure scenarios, such as:
  - Campus or Branch
  - Data Centre
  - Service Provider

DevNet Developer Support

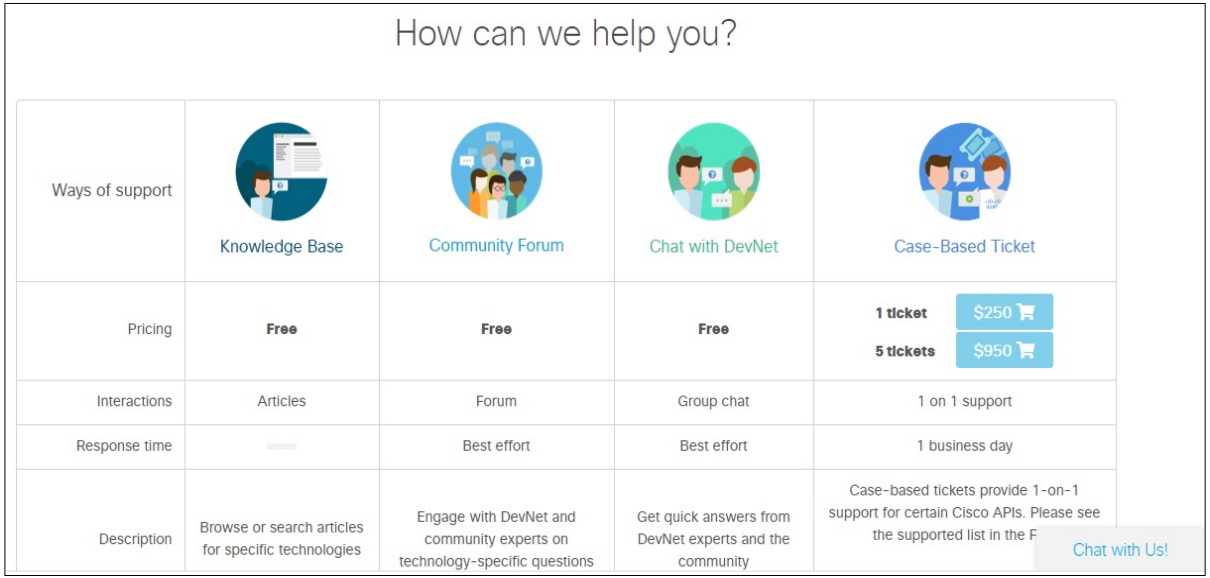
DevNet offers developer support and can help troubleshoot integrations, API connections, and other specialty questions about developer use cases on Cisco products.
Visit the website developer.cisco.com/support for more information.

One can get support by:

- Logging a ticket
- Posting to a community forum
- Accessing a WebEx Teams space

DevNet Developer Support (Contd.)

- **Knowledge Base** - Consists of troubleshooting articles for reference.
- **Support Case** - A case-based ticket used for one-on-one support with a response time of one business day.
- **Forums in the Cisco Developer Community** - To view community forums, visit https://devnetsupport.cisco.com and click Community.



Lab – Explore DevNet Resources

In this lab, you will complete the following objectives:

- **Part 1**: Find and Navigate a Learning Lab
- **Part 2**: Explore More Resources

2.3 DevNet Developer Environment Summary

What did I learn in this module?

- DevNet provides developers with a starting point for all Cisco APIs.
- Online Resources include DevNet Learning Labs, DevNet video courses, DevNet Sandbox, DevNet Exchanges, and extensive DevNet Support.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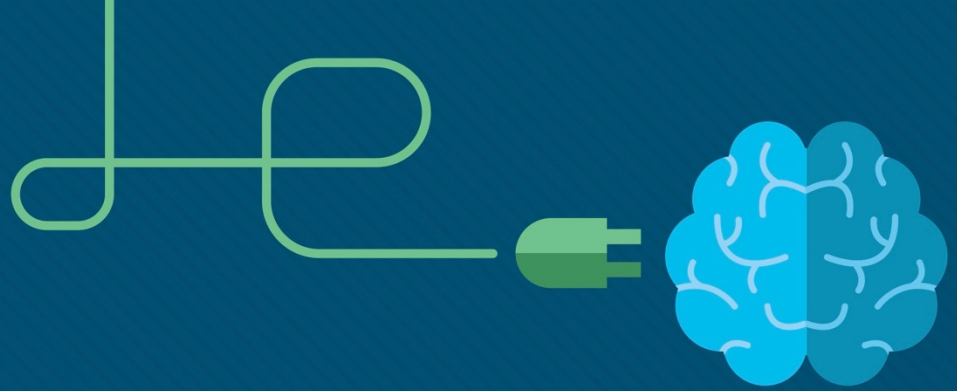

Module 1: Course Introduction

DevNet Associates v1.0

Course Overview

The DevNet Associate course will cover the basics of software development, networking fundamentals and automation. It will comprise of the following modules:

- **Understanding and Using APIs Module**: In this module, you will learn about APIs, their benefits, and how to troubleshoot them.
- **Software Development and Design Module**: In this module, you will learn the main concepts of software development and be equipped with the necessary tools to write quality code.
- **Network Fundamentals Module**: In this module, you will learn about the basics of network, network devices, network protocols, and troubleshooting connectivity issues.
- **Infrastructure and Automation module**: In this module, you learn to manage the infrastructure with automation, instead of manually setting up the infrastructure.
- **Cisco Platforms and Development:** In this module, you will learn about data centers and networking including data models and security.

Module Objectives

Module Title: Course Introduction

Module Objective: Use basic Python programming and Linux skills.

Topic Title	Topic Objective
Your Lab Environment	Install a virtual lab environment.
Linux	Manage the Linux file system and permissions.
Python	Use basic Python programming

1.1 Your Lab Environment

Set Up Your Lab Environment

- With virtualization, virtual computers can operate and run within physical computers. These computers are called Virtual Machines (VMs).
- VMs are often called guests, and physical computers are often called hosts.
- Anyone with a modern computer and operating system can run virtual machines.

Lab – Install the Virtual Lab Environment

In this lab, you will complete the following objectives:

- **Part 1**: Prepare a Computer for Virtualization
- **Part 2**: Explore the DEVASC VM GUI
- **Part 3**: Create Lab Environment Accounts
- **Part 4**: Install Webex Teams on your Device

1.2 Linux

Linux for DevNet

- Linux has gained widespread use in servers, Internet of Things (IoT) devices, networking equipment, smartphones, and many other devices that may not seem as even being computers.
- All coding labs in this course are performed on a Linux-based VM.

Lab – Linux Review

In this lab, you will complete the following objectives:

- **Part 1**: Launch the DEVASC VM
- **Part 2**: Review Command Syntax Navigation
- **Part 3**: Review File Management
- **Part 4**: Review Regular Expressions
- **Part 5**: Review System Administration

How did you do on the Linux Review Lab?

- If there was any issue with the Linux Review lab, then take the Linux Unhatched course.
- The Linux Unhatched course is a free, online, and self-paced course.

1.3 Python

The Power of Code

In this video, you will view experts talking about their experiences and passion towards coding.

Python Programming

- Python is an easy to learn programming language.
- Few factors that make Python a great tool for learning basic coding are:
  - **It is easy to learn** - the time needed to learn Python is shorter than for many other languages.
  - **It is easy to use for writing new software** – it is possible to write code faster when using Python.
  - **It is easy to obtain, install and deploy** - Python is free, open and multiplatform.
- Python provides a solid foundation and allows to learn other programming languages (for example, C++, Java, or C) much easier and faster.

Lab - Python Programming Review

In this lab, you will complete the following objectives:

- **Part 1**: Launch the DEVASC VM
- **Part 2**: Start Python and VS Code
- **Part 3**: Review Data Types and Variables
- **Part 4**: Review Lists and Dictionaries
- **Part 5**: Review the Input Function
- **Part 6**: Review If, For, and While Functions
- **Part 7**: Review Methods for File Access

How did you do on the Python Programming Review Lab?

- If there was any issue with the Python Programming lab, take the Python Essentials course listed in the Student Resources page.
- The Python Essentials course is a free, online, and self-paced course.

1.4 Course Introduction Summary

What did I learn in this module?

- This Course Introduction module was designed to help you prepare to take the DevNet Associate (DEVASC) course.
- The Install the Virtual Lab Environment gets you and your PC ready for the coding labs you will find in this course.
- The Linux Review and Python Programming Review labs help you to determine whether you are ready with the prerequisite knowledge and skills required to successfully take the DEVASC course.


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