

Cisco DevNet Express Cisco DNA Sandbox v3.0a

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About This Demonstration

This guide for the preconfigured Cisco® DevNet Express Cisco DNA sandbox includes:

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Note: This dCloud demonstration was designed specifically for use with the [DevNet Express for Cisco DNA v3 content](#).

Requirements

The table below outlines the requirements for this preconfigured demonstration.

Table 1. Requirements

Required	Optional
<ul style="list-style-type: none"> • Laptop with HTML5 browser. Google Chrome suggested* • Login credentials for developer.cisco.com • Login credentials for developer.webex.com • Cisco Webex Teams™ Client (www.webex.com) 	<ul style="list-style-type: none"> • Cisco AnyConnect

Table 2. Pre-Event Preparation for completing from your Laptop

Required	Optional
<ul style="list-style-type: none"> • Laptop with HTML5 browser. Google Chrome suggested* • Login credentials for developer.cisco.com • Login credentials for developer.webex.com 	<ul style="list-style-type: none"> • Cisco AnyConnect® • Cisco Browser (Chrome) • Personal Laptop Setup as Development Environment per instructions at: http://learninglabs.cisco.com/modules/dev-setup • Cisco Webex Teams Client

Components

- Cisco DNA-Center 1.2

- Cisco CSR1000 with IOS XE 16.08
- Cisco Meraki
- Cisco NFVIS 3.7
- Cisco CMX 10.4
- Centos 7 (as hosted development environment)

Features

DevOps Human-Interaction Perspective	<ul style="list-style-type: none"> • Interact using the Cisco Webex Teams REST APIs • Interact with the Meraki APIs • Interact with the Cisco DNA Center Platform APIs
Infrastructure Perspective	<ul style="list-style-type: none"> • Device Programmability using RESTCONF on CSR1000 • Device Programmability using NETCONF/Yang on CSR1000 • Device Programmability with NFVIS
Controller Perspective	<ul style="list-style-type: none"> • Cisco DNA Center Platform REST APIs – Getting started using Inventory, Topology, Device Count • CMX REST APIs • NFVIS APIs

About This Solution

This DevNet Express Cisco DNA sandbox allows you to learn about the building blocks of the Cisco Digital Network Architecture (Cisco DNA). It includes an introduction to REST APIs, how to code in Python, and how to use programmability in the context of controllers and device-level interfaces. To access these learning lab materials, log in to the DevNet Learning Labs using your DevNet credentials: <https://learninglabs.cisco.com/tracks/dnav3-track>.

Cisco DNA is an open, extensible, and software-driven architecture. This structure provides application developers with a variety of ways to approach programmability and automation for both physical and virtual networks environments using Cisco and third-party environments. Cisco DNA also complements Cisco's data center based Application Centric Infrastructure (ACI) technology by extending a policy-driven approach and software strategy throughout the entire network, from campus to branch, wired to wireless, and core to edge.

Cisco DNA has five fundamental design principles for the networking software stack:

- **Virtualize everything** to give organizations freedom of choice to run any service anywhere, independent of the underlying platform. It can be physical or virtual, on-premise or in the cloud.
- **Designed for automation** to make networks and services on those networks easy to deploy, manage, and maintain, which fundamentally changes the approach to network management.
- **Pervasive analytics** to provide insights on the operation of the network, IT infrastructure, and the business relative to information that only the network can provide.
- **Service management** delivered from the cloud to unify policy and orchestration across the network enabling the agility of cloud with the security and control of on-premises solutions.
- **Open, extensible, and programmable at every layer** to integrate Cisco and third-party technology, open APIs, and a developer platform to support a rich ecosystem of network-enabled applications.

Cisco DNA takes network programmability to the next step and beyond. It integrates network controllers with IoT, the cloud, virtualization, automation, security, collaboration, and more. This functionality assists businesses with creating new applications to better analyze, automate, and manage the network for their customers and for their own infrastructure. This network management can be combined with other tools, such as CMX, so that customer behavior can be tracked to better improve engagement and sales.

Topology

This content includes preconfigured users and components to illustrate the scripted scenarios and features of the solution. Most components are fully configurable with predefined administrative user accounts. You can see the IP address and user account credentials to use to access a component by clicking the component icon in the **Topology** menu of your active session and in the scenario steps that require their use.

Figure 1. Sandbox Topology

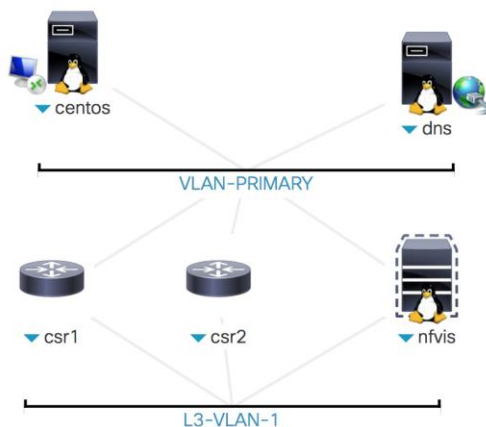


Table 3. Equipment Details

Name	Description	Version	IP Address	Username	Password
Centos	Development Environment (devbox)	Centos 7	198.18.134.48	developer	C1sco12345
NFVIS	NFVIS Appliance	3.7.1-FC2	198.18.134.46	admin	C1sco12345_
Csr1	CSR1000V	16.08.01	198.18.134.11	admin	C1sco12345
Csr2	CSR1000V	16.08.01	198.18.134.12	admin	C1sco12345
Meraki AO	Meraki Always On Sandbox	NA	http://cs.co/9001DV8Vc	devnetmeraki@cisco.com	ilovemeraki
CMX AO	CMX Always On Sandbox	B1371	http://cs.co/9005DV8T9	learning@cisco.com	learning
Cisco DNA Center AO	Cisco DNA Center Always On Sandbox	1.2	http://cs.co/9007DV8rl	devnetuser	Cisco123!

Get Started

BEFORE PRESENTING

Cisco dCloud strongly recommends that you perform the tasks in this document with an active session before presenting in front of a live audience. This will allow you to become familiar with the structure of the document and content.

It may be necessary to schedule a new session after following this guide in order to reset the environment to its original configuration.

PREPARATION IS KEY TO A SUCCESSFUL PRESENTATION.

Follow the steps to schedule a session of the content and configure your presentation environment.

1. Initiate your dCloud session. [\[Show Me How\]](#)

NOTE: It may take up to 10 minutes for your session to become active.

2. For best performance, connect to the workstation with **Cisco AnyConnect VPN** [\[Show Me How\]](#) and the **local RDP client on your laptop** [\[Show Me How\]](#)
 - CentOS Dev Environment: **198.18.134.48**, Username: **developer**, Password: **C1sco12345**.

Scenario 1. Schedule a Session

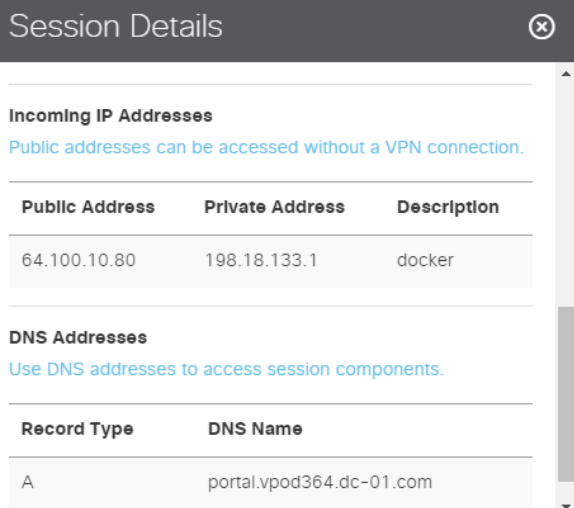
This scenario describes how to schedule a session by using a Guacamole connection.

NOTE: Using this method, you can access DevNet Express Cisco DNA components without using AnyConnect VPN. This method works best for accessing an active session with minimal interaction. However, you may experience connection and performance issues when using this method.

1. Browse to dcloud.cisco.com, select the location closest to you, and log in with your Cisco.com credentials.
2. Schedule a session. [[Show Me How](#)]
3. Test your connection. [[Show Me How](#)]
4. Verify that the status of your session is **Active** in **My Dashboard > My Sessions**.

NOTE: It may take up to 60 minutes for your session to become active.

5. Click **View** to open the active session.
6. Open the **Session Details** and select the **Public Address** of the active session.



The screenshot shows a 'Session Details' window with a close button (X) in the top right corner. It contains two sections: 'Incoming IP Addresses' and 'DNS Addresses'. The 'Incoming IP Addresses' section includes a note: 'Public addresses can be accessed without a VPN connection.' Below this is a table with three columns: 'Public Address', 'Private Address', and 'Description'. The 'DNS Addresses' section includes a note: 'Use DNS addresses to access session components.' Below this is a table with two columns: 'Record Type' and 'DNS Name'.

Public Address	Private Address	Description
64.100.10.80	198.18.133.1	docker

Record Type	DNS Name
A	portal.vpod364.dc-01.com

7. Start a web browser and navigate to <http://<public-address>:8443/dcloud/#/Login>, where <public-address> is the public address of your session.

8. Log in using the credentials located in the **AnyConnect Credentials** section of **Session Details**.

Session Details

AnyConnect Credentials

Connect up to 16 devices to the session via Cisco AnyConnect.

Host: https://dcloud-rtp-anyconnect.cisco.com

Users: v364user1

Password: af1663

Incoming IP Addresses

Public addresses can be accessed without a VPN connection.

Public Address	Private Address	Description
64.100.10.80	198.18.133.1	docker

9. After you log in, you have public Guacamole access to the DevNet Express Cisco DNA sandbox.

NOTE: Using the above method, you can connect without the use of AnyConnect VPN to the listed components in the sandbox utilizing a web browser. It works best for accessing an active session with minimal interaction. However, many users experience connection and performance issues with this method.

Appendix A. Resources

Refer to the following resources for more information:

- View the DevNet Express Cisco DNA modules content: <https://learninglabs.cisco.com/tracks/dnav3-track>
- Visit the Cisco dCloud help page: <https://dcloud-cms.cisco.com/help>.
- Access all available Cisco dCloud content: <https://dcloud.cisco.com>.
- Contact Us: <https://dcloud-cms.cisco.com/help/dcloud-service-provider-contacts>.
- Contact Us: <https://dcloud-cms.cisco.com/help/dcloud-internet-of-everything-contacts>.
- Contact Us: <https://dcloud-cms.cisco.com/help/dcloud-analytics-automation-contacts>.



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