Cisco Modeling Labs System Overview

Overview of CML 2.0

Cisco Modeling Labs 2.0 is a major update of the entire Cisco Modeling Labs (CML) network simulation platform. While the platform still uses KVM as the hypervisor to run the same network OS virtual machine (VM) images, we have completely rewritten the rest of the platform. For example, we replaced the desktop GUI application with a new HTML5 browser-based user interface (UI). The software that orchestrates and runs the simulation is brand new and has a much smaller memory footprint. We greatly simplified the installation and initial simulation creation to improve the user experience. The virtual machines in the network simulations are connected via a custom-designed fabric. These changes provide for a more secure, easier-to-use network simulation platform and enable new core concepts in the product.

Starting with CML 2.0, you can think of each of your network topologies as a *lab*. You create and modify your labs on the CML server. With some limitations, you can modify the topology while the lab simulation is running. For example, you can change the connections between nodes, and you can add new nodes and connect them to the topology without stopping the simulation. Labs are also persistent by default now, unlike in the 1.x versions of the product. That is, when you stop a simulation, the disk images for the VMs in the lab are not discarded. This persistence preserves the state of each node, including crypto keys, license keys, and newly-installed packages.

CML 2.0 is built on top of REST-based web service APIs designed with both security and automation in mind. You can use these APIs to create labs and drive the entire simulation lifecycle programmatically. The new release was designed "API first" to ensure that fine-grained operations are exposed via the APIs in a consistent way. The product uses these APIs in its own user-facing interfaces:

- the HTML5 UI

- companion utilities, such as the Breakout Tool

- the Python client library

CML enables you to create and run virtual networks. You can use these labs for personal study for certification, for teaching networking classes, and for testing out new protocols or configuration changes. With the changes in the 2.0 release, CML also becomes part of a larger NetDevOps ecosystem, enabling you to test and validate network changes in an automated workflow. CML 2.0 is a complete rewrite of the product and introduces

fundamental changes. If you use CML 1.x or Cisco VIRL Personal Edition 1.x, then we recommend that you read the entire CML 2.0 release notes before you get started.

Software Version History

Version	Release Date	Initial Release
CML-Enterprise 2.0	April-14-2020	Initial release
CML-Personal 2.0	May-12-2020	Initial release