# Cloud Customer Certification Lab

Rapidly validate new network features, avoid network downtime, and maximize returns on operational investments

### Challenge

Enterprises and service providers are under increasing pressure to introduce new features into their production environment. The high rate of change and the rapid adoption of new services without proper validation, however, make this a risky endeavor.

### Solution

Juniper's Cloud Customer Certification Lab, a Testing as a Service (TaaS) offering, provides access to a virtualized test environment where organizations can validate and replicate designs, topologies, protocols, or network services prior to deployment, minimizing the risk of network failures or downtime.

### Benefits

- **Reduce time to deployment:** Dramatically improve project times by using virtualized components
- **Gain scalability and flexibility:** Dynamically change network designs and configurations to mimic production networks—typically unfeasible with physical networks
- **Realize cost savings:** Avoid capital expenditures related to the acquisition of testing infrastructure while reducing operational expenses

More than ever, enterprises and service providers of all sizes rely on networks to support their business communications, operations, and transactions. Network virtualization, digital transformation, and the desire to expand into new markets are putting tremendous pressure on network design, engineering, and operational teams to work together to develop and rapidly deploy new network features to make this vision a reality.

## The Challenge

Enterprises and service providers alike are under growing pressure to develop, test, and deploy new features in their production networks as quickly as possible. Satisfying these demands requires organizations to equip their operational networks with the latest, most up-to-date hardware and software offerings.

Unfortunately, in their haste to roll out these new services to remain competitive, businesses sometimes fail to properly validate them, leading to problems such as network failures, downtime, or unanticipated deployment costs. In order to mitigate these risks, you need a laboratory environment where you can test, validate, and replicate designs, topologies, protocols, and other network services prior to actual deployment—without incurring excessive additional expenses.

## The Juniper Networks Cloud CCL Solution

Juniper Networks® Cloud Customer Certification Lab (CCL) is a web-based service that allows networking professionals to build instantaneous virtualized models of their operational networks in a cloud environment. This service lets you validate new features or specific network deployments before implementing them in your production environment, without requiring intensive capital investments. Cloud CCL allows you to virtually replicate physical networks consisting of Juniper Networks Junos® operating system-based virtual devices and leading-edge testing tools.

## Features and Benefits

| Feature | Feature Description | Benefits |
|---------|---------------------|----------|
| Virtualized test environment as a service | Cloud-based platform in which virtualized network topologies can be created and validated within a safe test environment before integrating them into your operational network | • Mitigate the risks of unproven features and increase confidence in your results<br>• Dramatically reduce costs by avoiding capital and operating expenses required in physical-only labs<br>• Enjoy a higher degree of flexibility, scalability, and reusability |
| Realistic scenario | Access to all virtual Juniper products running the same Junos OS and software found on physical Juniper hardware—not an emulator or simulator | • More accurately replicate commercial networks<br>• Ensure that results are consistent with real-world network behavior<br>• Provide real hands-on experience with the latest networking technology |
| Just-in-time provisioning | Availability of virtual, on-demand network resources that can be modified, ordered, and implemented much more quickly than on physical networks | • Build network topologies in virtually real time<br>• Make modifications with total agility<br>• Accelerate time-to-market of new services, increasing your company's competitiveness, revenue, and profitability |
| Test automation | Juniper's Test Automation Framework, which is based completely on open-source tools and frameworks like Robot, Ansible, and Jenkins | • Avoid time-consuming manual testing<br>• Improve network quality and availability by reducing errors<br>• Improve cost efficiency |
| Managed version | Premium service modality, including Juniper consulting services and testing engineers for the definition of the test strategy, planning and execution, issue debugging and triage, issue resolution, and test reports and procedures development | • Reduce complexity by relying on Juniper expertise<br>• Avoid resource constraints and delays associated with internal resources<br>• Free up time for more strategic tasks, resulting in a more efficient and productive workforce |

## Solution Components

Cloud CCL is a Software as a Service (SaaS) offering from Juniper Professional Services. It is available 24x7 and is hosted in dedicated data centers owned and operated by Juniper Networks. The key components of Cloud CCL are described below.

### Web-Based Topology Editor

A key feature of the Juniper Networks Cloud CCL solution, the Topology Editor is a GUI-based network design tool that lets you build intricate topologies via a simple drag-and-drop interface. It also supports SSH/HTTP access to devices from the GUI.
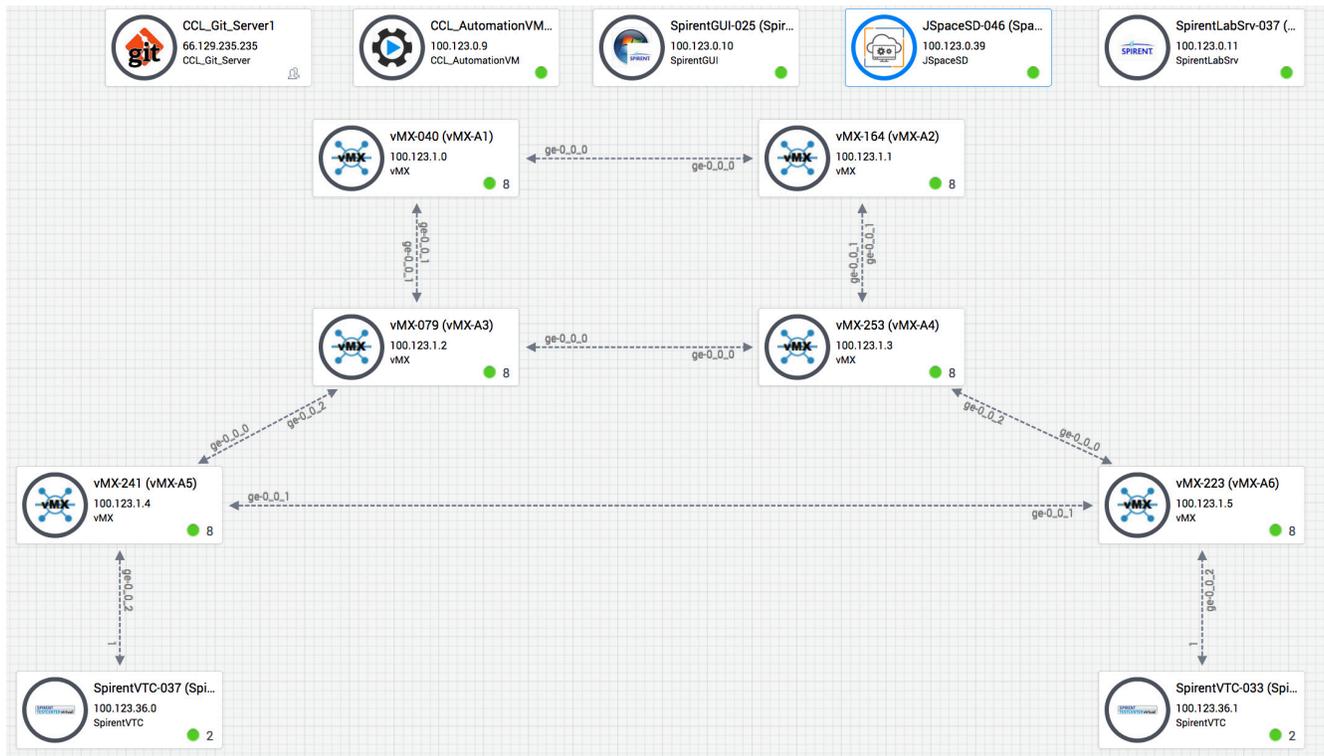


Figure 1: Cloud CCL's Topology Editor makes it easy to design your own network topologies.

## Open Source-Based Test Automation Framework

Cloud CCL integrates Juniper's Test Automation Framework, based on open-source tools and frameworks such as Robot, Ansible, and Jenkins, eliminating time-consuming manual test cycles.

This environment provides access to sample test scripts, letting you import, create, and execute new Python- or Robot-based scripts to track test reports using an open-source orchestrator such as Jenkins. Additionally, Juniper Professional Services can develop specific test scripts that are relevant to your specific use cases and test environments.
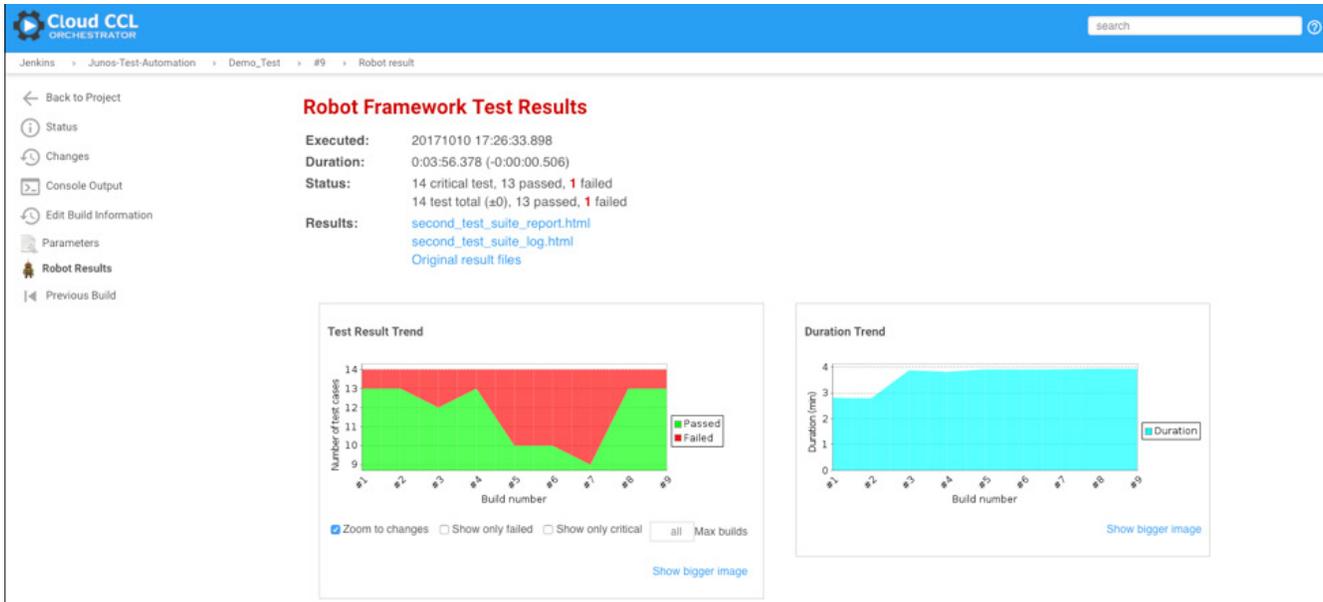


Figure 2: Cloud CCL's Test Orchestrator platform shows test case results and analyzes trends across executions.

## Summary—A Robust Virtualized Lab Environment to Simulate Network Designs and Features

The Juniper Networks Cloud CCL service provides a virtualized test environment where you can build virtual network topologies and configurations, leveraging Juniper's Testing Automation Framework to automate the testing and validation process for new network features before deploying them in a production environment. The platform comes standard with virtualized components (including third-party traffic controllers), eliminating the need to build or lease physical labs, reducing the need for operational resources, and reducing time to market for new features. This provides you with tremendous business agility and maximizes your return on operational investments.

## Next Steps

For more information about the Juniper Cloud CCL service, please contact your Juniper service sales representative.

## About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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