Key Facts

- Project announced October 2018
- Platform launched April 2019
- More than 20,000 unique visits
- Currently hosts 22 browser-based lessons with 70 labs, ranging from YAML and Python fundamentals to workflow design
- More than 6,600 lessons completed
- More than 500 lessons initiated by users each week
- Community outreach began in June 2019
- Approximately 60 community members (comparable to several other, older open source networking projects)
- 22 code contributors from a variety of organizations
- Non-code contributions from individuals and organizations including PacketPushers, Red Hat/Ansible, and Cumulus Networks

NRE Labs is an open source educational project focused on network automation and the discipline of network reliability engineering (NRE).

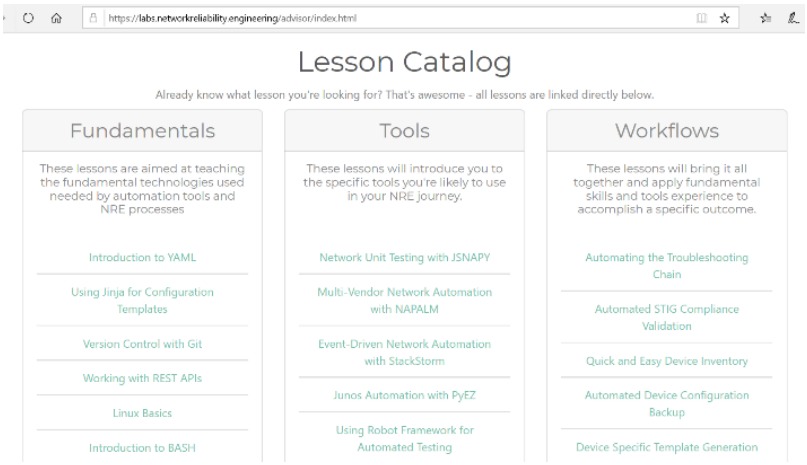
The project provides a hands-on platform where network engineers can learn automation tools and techniques that they can immediately apply to real-world problems and tasks. Network engineers can also share ideas and workflows with their peers via their own lesson contributions.

Why NRE Labs?

While the networking industry has dreamed of automation for years, little has been accomplished to date. Network engineers often lack comfort with automation tools and techniques developed by other parts of the infrastructure sphere. In addition, many automation courses assume learners already know Python or other scripting languages, or they expect students to download and deploy a variety of tools before they can even start learning. Finally, many tools and courses are not tailored to the needs or interests of network engineers.

NRE Labs was designed to eliminate as many of these obstacles as possible. It's free. No complicated set up is required—everything runs in the browser. Users are not tracked, and no personal information is required to use the platform or participate in the community. It's open source, vendor-independent, and assumes a heterogenous environment. And lessons in NRE Labs are organized into real-life NetOps contexts and workflows.

Designed to be accessible by anyone, NRE Labs starts with the basics. Users can then select additional lessons as they see fit, based on their comfort level and interests. More advanced topics include troubleshooting, configuration, testing, and verification. In the future, new lessons will dive deeper into these topics, covering the spectrum of NetOps workflows.



NRE Labs Architecture

There are two main components of NRE Labs: the platform ("Antidote") and the curriculum.

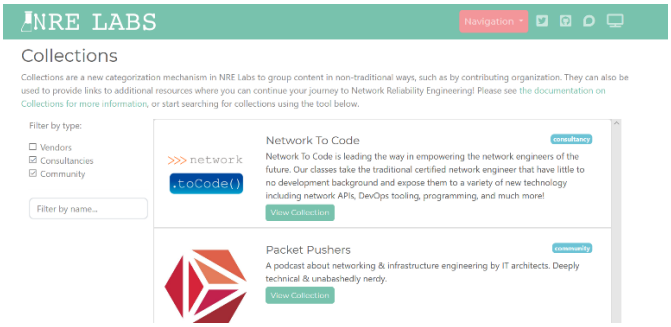
Antidote, built on Kubernetes, automatically configures everything needed for each lesson, such as network devices, a container for a Python script, and calls to automation tool UIs or a terminal displaying the CLI. The Antidote platform provides curriculum authors with a wide selection of tools for designing and displaying their content, with minimal infrastructure setup. This allows authors to readily contribute their core expertise without requiring extensive development experience.

This approach, coupled with the browser-based UI, also streamlines learning for users, who get preconfigured environments where they can work with live automation tools and scripts.

NRE Labs Community

The open source, community-centric nature of the project provides a natural setting for working network engineers to collaborate with peers on NetOps challenges, to exchange sample scripts, and to teach others what they've learned by contributing lessons based on their experiences.

In addition to the barrier-free, no-strings-attached user experience, the project's permissive licensing provides a range of possibilities for companies interested in network automation and network reliability engineering. Vendors may choose to contribute lessons that support automation adoption in environments using their tools. VARs and training companies may use the platform to run their own lessons and courses. Contributed lessons can be tagged in branded Collections, simplifying navigation for users as well as highlighting work from the community's most active contributors.



NRE Labs hopes to transition its operations to an independent open source foundation or conservancy in the near future, and will formalize relationships with sponsoring organizations at that time.

Getting Started

To get started, learners can simply go to https://labs.networkreliability.engineering/, select a lesson, and dive in.

For additional information, participants can visit https://community.networkreliability.engineering/, a one-stop site for all active or potential contributors. The site is fully indexed and searchable, with links and notes to weekly community meetings as well as archives relating to various technical aspects of the platform and curriculum development.

The NRE Labs community also provides information about the project as well as NRE-related topics on bi-weekly video streams and on Twitter. Links to these can be found on the Labs and Community pages.

For real-time help with any aspect of the project, users and contributors are encouraged to join the NRE Labs Discord server at https://discord.gg/fRuSUyD.

New contributors should also review documentation at https://antidoteproject.readthedocs.io/en/latest/community.html and visit https://github.com/nre-learning.