

Updated on 29/11/2023

Sign up

NixOS training: The package manager

2 days (14 hours)

Presentation

The [NixOS](#) training course will introduce you to this Linux distribution based on cross-platform Nix package management. You'll discover the software's full range of tools for updating the system.

During this training course, you will be taught how to install, configure and upgrade NixOS, so that you are ready to use the software without encountering any major problems.

Become able to reproduce a complete system on another machine, or control dependencies to minimize the volume of applications. Learn the Nix language for describing packages, configurations, variants and compositions.

This course will be presented with the latest version of NixOS released on November 30, 2022, [NixOS 22.11 \(Raccoon\)](#).

Objectives

- Developing an ISO
- Controlling different types of packages
- Writing a NixOS module
- Know the reproducibility of a system
- How to use Home Manager

Target audience

- **Linux system administrators**
- Developers

Prerequisites

Knowledge of system programming.

NixOS training program

Introduction to NixOS

- Introducing NixOS
- Features
- Nix Expression Language
- Nixpkgs
- Home Manager

Installation

- Get NixOS
- Install NixOS
- Configuration
- NixOS upgrade
- Building a NixOS ISO (Live)

Configuration

- Configuration syntax
 - Abstractions
 - Modularity
- Package management
- User management
- File systems
- GPU acceleration
- Xfce desktop environment
- Input methods
- Profiles

Administration

- Service control
- Stop and restart
- User sessions
- Management Group
- Logging
- Cleaning the Nix Store
- Container control
 - Imperative container management
 - Declarative specification of containers
 - Networking containers
- Troubleshooting

Development

- Obtaining sources
- Writing NixOS modules
- Building specific parts of NixOS
- What happens during a system change?
- Writing documentation
- Installer test
- Test NixOS

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.