Linux, Privacy Tools, Encryption and Self-Hosting Server Report

Course Title: Open Source Course

Code: 24CS02EF

Student Name: M LOKESH

RegistraBon Number: 2400040448

B.Tech II Semester

Koneru Lakshmaiah Education Foundation

Academic Year: 2024–2025

Contents

1. About the Linux Distribution Used

Linux distributions are open-source operating systems based on the Linux kernel. For this project, I used **Ubuntu 22.04 LTS**, a stable, user-friendly and widely supported Linux distribution.

Key Features

- Long-Term Support (5 years security updates)

- GNOME desktop environment

- APT package management

- Strong community and documentation

- Stable for server and desktop usage

Why I Chose Ubuntu

- Easy installation

- Best beginner-friendly environment

- Excellent support for privacy and encryption tools

- Compatible with development workflows

2. Encryption and GPG

GPG (GNU Privacy Guard) is an open-source implementation of OpenPGP used to encrypt files, sign data and manage keys.

2.1 Generating GPG Keys

Commands used: gpg --full-

generate-key Process:

1. Select key type (RSA recommended)

2. Choose key size (4096 bits)

3. Enter validity period

4. Provide identity (Name + Email)

2.2 Exporting Public Key

gpg --export -a "Your Name" > public_key.asc

2.3 Encrypting a File

gpg -e -r "Recipient Name" file.txt

2.4 Decrypting a File

gpg -d file.txt.gpg

3. Sending Encrypted Email

Sending an encrypted email ensures privacy and prevents unauthorized access.

Procedure

1. Install **Thunderbird Mail** on Ubuntu.

2. Install the **OpenPGP built-in encryption tool**.

3. Import your GPG private key.

4. Import recipient's public key.

5. Compose email → Click *Encrypt* button.

Advantages

• Prevents MITM attacks

• Maintains confidentiality

• Secure communications for sensitive data

4. Five Privacy Tools (prism-break.org)

4.1   1. Signal Messenger

• End-to-end encrypted messaging

• Zero metadata policy

4.2   2. Tor Browser

• Anonymizes IP address

• Protects from tracking and fingerprinting

4.3   3. KeePassXC

• Secure password manager

• Local encrypted password database

4.4   4. ProtonMail

- End-to-end encrypted email

- Based in Switzerland (strict privacy laws)

4.5   5. VLC Media Player

- Open-source, telemetry-free multimedia player

5. Open Source (Course Code: 24CS02EF)

For this project, I used the **MIT License**, a widely-used permissive open-source license.

MIT License Key Features

- Allows free usage, modification and distribution

- Minimal restrictions

- Requires attribution to original authors

Reasons for Using MIT License

- Simple and permissive

- Ideal for educational and open-source contributions

- Encourages community adoption

6. Self-Hosted Server: Installation, Translation and Poster

Nextcloud gave me valuable hands-on experience in real-world software developmentc

6.1   About NEXT CLOUD

Nextcloud is an open-source file hosting and collaboration platform similar to Google Drive or Dropbox, but you can host it on your own server. It provides secure file storage, sharing, document editing, calendars, contacts, and team collaboration tools. Because it is self-hosted, you have full control over your data, privacy, and customization.
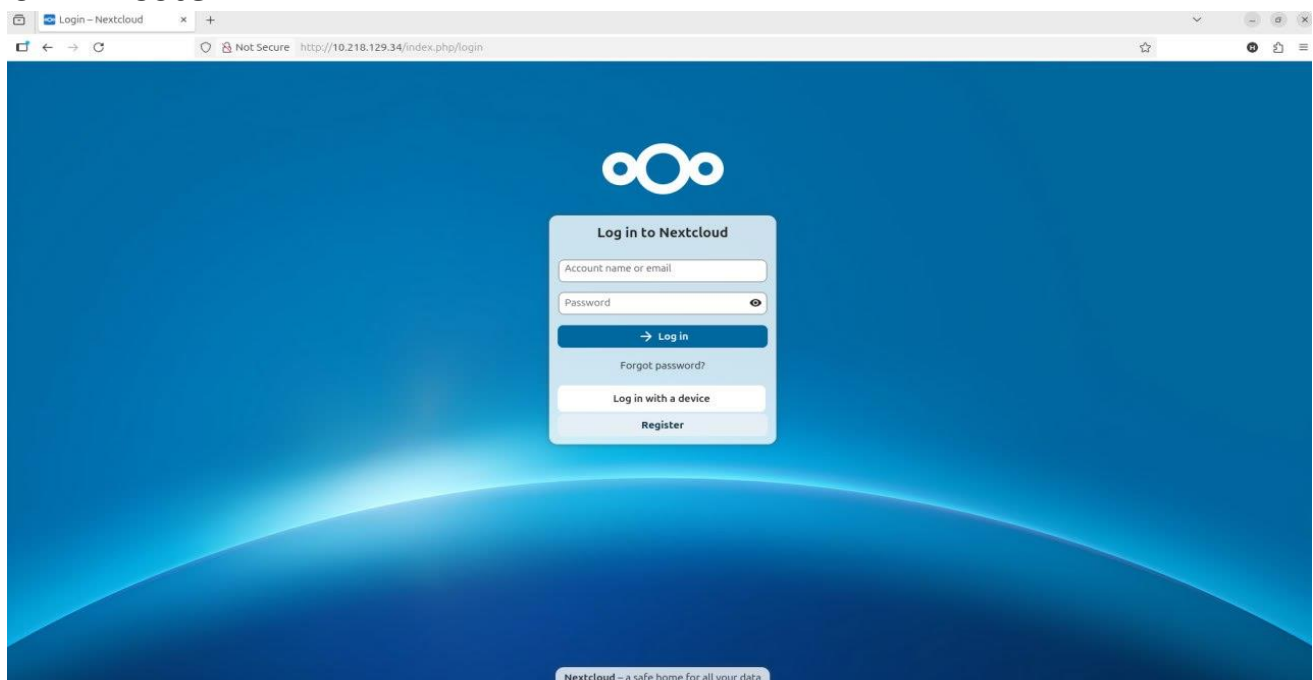
6.2

Installation Steps

1. Downloaded the Nextcloud server package from the official website.

    Installed a web server (Apache), PHP, and required extensions.

2. Set up a MySQL/MariaDB database for Nextcloud.

    Extracted the Nextcloud files into the web server

    directory. Configured permissions for Nextcloud

    folders.

3. Opened the installer in the browser and completed the setup.

6.3   Localized (Translated) Documentation

(Add your translated (Telugu/Hindi) paragraph here)
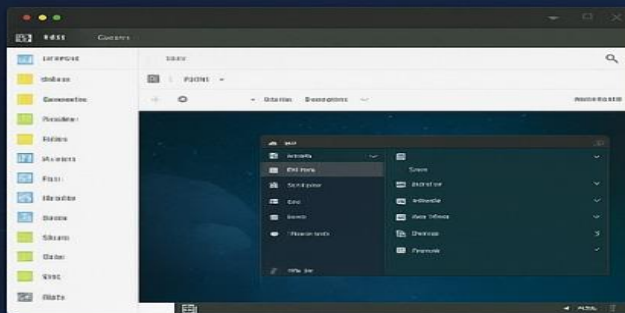
6.4   Poster

7. Open Source Contributions (PRs) and Status

This section documents my GitHub contributions with PR links, issues, and screenshots.

PR 1 Add Q281 & Q282 to JSON quiz (#6314)

https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes

- Issue Solved: I have added new quiz{'s}

  I have added new reference link{'s}

  I have made small correction/improvements
  - PR Link: https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes/pull/7247
  - Status: Merged

PR 2:Add React JS Tutorial Series (Kannada) – Script
   Kiddie #13036

  - Repository: https://github.com/EbookFoundation/free-programming-books/tree/main
- Issue Solved: Added comments explaining the logic

  - PR Link: https://github.com/EbookFoundation/free-programming-books/pull/13036
  - Status: APPORED

PR 3: Title of Issue

  - Repository: https://github.com/firstcontributions/first-contributions
  - Issue Solved: Before submitting this pull request, check the changes to see it's only the changes you made intentionally
    If there are changes to other lines you didn't make deliberately, it's possible that your IDE made the changes with a utility like prettier.

- PR Link https://github.com/firstcontributions/first-contributions/pull/107911

- Status: Merged

PR 4: Adding about self hosting server in local language

- Repository: https://github.com/KLGLUG/Y24OpenSourceEngineering
- Issue Solved: done documentation about my self hosting server in local language
- PR Link: https://github.com/KLGLUG/Y24OpenSourceEngineering/pull/112
- Status: Merged

PR 5: Repository: https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes

- Issue Solved: 6 advanced JavaScript interview questions
  Short, clear explanations for each
  Topics like type coercion, event loop, microtasks, TDZ, array behavior, etc.
- PR Link: https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes/pull/7246
- Status: MERGED

PR 6: Add my contribution file to the FirstTimersOnly repository

- Repository: https://github.com/abhishivam1/FirstTimersOnly
- Issue Solved: Replaced the reCAPTCHA widget and API with hCaptcha. Updated front-end and back-end configurations to integrate hCaptcha.
- PR Link: https://github.com/abhishivam1/FirstTimersOnly/pull/1
- Status: APPROAD

PR 7: Fix Q69 ambiguous box model question (#6923)

- Repository: https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes

- PR Link: https://github.com/Ebazhanov/linkedin-skill-assessments-quizzes/pull/7243

Visibility ▾   Organization ▾   Sort ▾

EbookFoundation/free-programming-books Add React JS Tutorial Series (Kannada) — Script Kiddie ✓
#13036 opened 10 hours ago by KL2400040448 ○ 4 tasks done   💬 4

abhishivam1/FirstTimersOnly Add my contribution file to the FirstTimersOnly repository
#1 opened 11 hours ago by KL2400040448

firstcontributions/first-contributions Add KL2400040448 to contributors ✓
#107911 opened 12 hours ago by KL2400040448   💬 1

Ebazhanov/linkedin-skill-assessments-quizzes Fix Go Q6 import statement (correct path + explanation) (#6951)
#7251 opened 20 hours ago by KL2400040448

zero-to-mastery/start-here-guidelines Add KL2400040448 to CONTRIBUTORS.md ✓
Awaiting Maintainer Validation
#23747 opened yesterday by KL2400040448   💬 5

sudheerj/javascript-interview-questions docs: add JavaScript interview FAQs (basic + advanced)
#341 opened yesterday by KL2400040448   ⊙ 1

Ebazhanov/linkedin-skill-assessments-quizzes Fix IT Ops answers Q18, Q20, Q31, Q43, Q51, Q52 (#3884)
#7250 opened yesterday by KL2400040448 • Changes requested   ⊙ 1   💬 8

Ebazhanov/linkedin-skill-assessments-quizzes Add OOP questions Q19, Q51, Q53, Q57, Q60, Q63, Q67, Q69, Q88, Q90, Q92, Q93, Q103, Q105, Q106 (#5797)
#7249 opened yesterday by KL2400040448 • Changes requested   ⊙ 1   💬 1

KLGLUG/Y24OpenSourceEngineering Nextcloud Server Connectivity Monitor
#112 opened 3 weeks ago by KL2400040448

NativeScript/NativeScript fix(core): make ProxyViewContainer.hidden hide child views (#10912) ✕
#10913 opened last month by KL2400040448 • Approved   💬 19

unoplatform/uno.extensions feat(Hosting): Add UseWindow factory to host builder ✕
#2931 opened last month by KL2400040448 • Review required   ⊙ 1   💬 2

unoplatform/uno.extensions fix(ThemeService): Only save theme on explicit user action ✕
#2913 opened on Oct 20 by KL2400040448 • Review required ◐ 3 of 7 tasks   💬 5

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12 Open ✓ 4 Closed

Visibility ▾   Organization ▾   Sort ▾

Ebazhanov/linkedin-skill-assessments-quizzes Add Q281 & Q282 to JSON quiz (#6314)
#7247 by KL2400040448 was merged yesterday • Approved   ⊙ 1   💬 1

Ebazhanov/linkedin-skill-assessments-quizzes Fix MongoDB Q97 wrong answer and correct Q103 wording
#7246 by KL2400040448 was merged yesterday • Approved   ⊙ 1   💬 1

Ebazhanov/linkedin-skill-assessments-quizzes Fix Q69 ambiguous box model question (#6923)
#7243 by KL2400040448 was merged yesterday • Approved   ⊙ 1   💬 3

firstcontributions/first-contributions Add CONTRIBUTION_CHECKLIST.md to help beginners track contribution steps
#106886 by KL2400040448 was closed 3 weeks ago ○ 8 tasks done   💬 22

8. LinkedIn Posts

1. Post on Self-Hosting Next cloud

https://www.linkedin.com/posts/m-lokesh-125240378_share-7399365204335124480-
7UhF?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAAF1LnK0B
kAqL_Qey4azavhqqvgfTtbPTVoU

2. Post on PR Merge

https://www.linkedin.com/posts/m-lokesh-125240378_all-merged-ugcPost-
7399455830439280640-
PyIa?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAAF1LnK0Bk
AqL_Qey4azavhqqvgfTtbPTVoU

3. Post on Blog Publication
https://www.linkedin.com/pulse/experience-open-source-engineering-m-lokesh-kpddf

Conclusion

In this report, I explored Linux, privacy tools, encryption, GPG, open-source licensing and self-hosted servers. Completing this project strengthened my understanding of secure digital practices, open-source contribution workflows and self-hosting technologies.