



Task 10 Critical evaluation of my
Master 2 thesis, Mastering the securing
of VoIP and network services under
Linux

Prepared by

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Literary Criticism (3)

Task 10

Introduction

السلام عليكم

Assalamu Alaikum , May peace be upon you.

In this final presentation of the Literary Criticism 3 course, I will conduct a critical evaluation of my Master's thesis, entitled:
“Mastering the Security of VoIP and Network Services under Linux”
This analysis is carried out according to an objective, rigorous, and academic approach, in accordance with the course requirements.

1.Objectives of the thesis

The main objectives of my thesis were:

1. Securing VoIP communications against cyberattacks
2. Implementing a secure architecture on Linux
3. Protecting network services associated with VoIP
4. Improving the confidentiality and integrity of communications

2. Research Questions

The research questions were:

- How to effectively secure VoIP communications in a Linux environment?
- What are the security mechanisms suitable for network services?
- What solutions can reduce VoIP vulnerabilities?

These questions guided the entire design of the thesis.

3. Methodology Used

The adopted methodology includes:

- ☐ a literature review on VoIP security
- ☐ the implementation of a Linux
based infrastructure
- ☐ the use of security tools (firewall, encryption, network
configuration)
- ☐ a validation based on practical tests

4. Critical Evaluation – Strengths

✓ Relevance of the topic

The topic is very relevant, as VoIP is widely used and vulnerable to attacks such as:

- ❖ Interception
- ❖ denial of service
- ❖ clandestine eavesdropping

✓ **Practical approach**

The thesis includes a real implementation on Linux:

- ☐ service configuration
- ☐ protocol security
- ☐ functionality testing

This provides significant applied value.

✓ Technical understanding

The work shows a good mastery of:

- ☐ Linux systems
- ☐ Networks
- ☐ security tools

5. Critical evaluation – Limits

✗ Limitation 1:

Insufficient theoretical framework

The thesis does not rely enough on:

1. advanced theoretical models
 2. recognized frameworks in cybersecurity
- This reduces scientific depth.

✗ Limitation 2:

Lack of quantitative analysis

The results are not measured with:

- ☐ precise indicators
 - ☐ statistical methods
- A rigorous scientific validation is missing.

✗ Limit 3:

Lack of comparison

The report does not include:

- ❖ comparison between different VoIP solutions
- ❖ or different security techniques

✗ Limit 4:

Limited Environment

The tests are conducted in a local environment.

→ This limits the generalization of the results to large-scale real-world systems.

6. Overall critical analysis

Objectively:

- ✓ The report is solid from a technical standpoint
- ✓ It meets practical objectives

However:

- ✗ It lacks theoretical depth
- ✗ It lacks advanced scientific validation

7. Recommendations for improvement

To improve this work,

I propose:

1. Integrating modern theoretical models (Zero Trust, etc.)
2. Adding quantitative measures (latency, security, performance)
3. Comparing several VoIP solutions
4. Testing in a real or large-scale simulated environment
5. Integrating recent technologies:
 - artificial intelligence
 - intrusion detection

In conclusion,

This thesis constitutes a solid foundation in terms of practical implementation of VoIP security on Linux.

However, to reach an advanced research level, it requires:

- ☐ better theoretical integration
- ☐ more rigorous experimental validation

This self-assessment has allowed me to develop a critical vision essential for my doctoral journey in cybersecurity.

Thank you for your attention.

- 1) Master 2 Thesis of Mr. ALI MMADI, year 2019-2020, at the Higher Institute of Electronics and Computer Systems (IESI) in Madagascar
- 2) Internet Engineering Task Force (2004)
Baugher, M., et al.
The Secure Real-time Transport Protocol (SRTP) – RFC 3711
→ VoIP communications encryption
- 3) Nemeth, E., Snyder, G., Hein, T., & Whaley, B. (2017)
UNIX and Linux System Administration Handbook



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Thank you!!!

