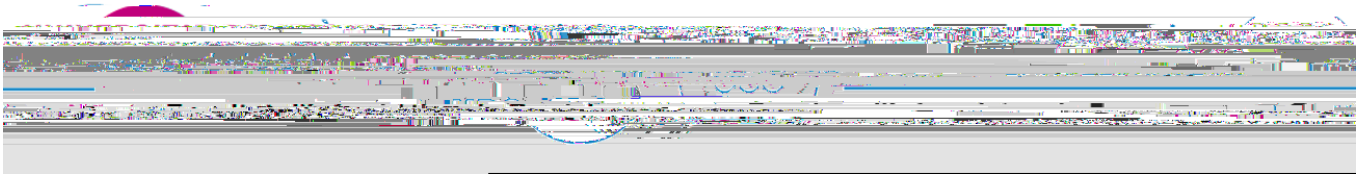

A COMPREHENSIVE STUDY ON OPENWISP FOR EVOLVING INFRASTRUCTURE NEEDS

Index

6 Ubiquitous

1 Introduction

1.1. Background and Context

This document is a Bachelor's Thesis for a Computer Engineering

teachers and staff gain digital literacy so that they can ultimately transfer the knowledge to students (Team4Tech, n.d.).

At UPC's Center for Development and Coop,

In the case of Hahatay, a northern Senegalese community where AUCOOP has a project, their infrastructure would benefit from having more network monitoring tools. Moreover, they would benefit of a user management systems in order to avoid usage abuses.

In addressing these challenges, open-source software emerges as a key solution. Why? Open-source solutions offer several advantages including cost-effectiveness, flexibility and adaptability, community support, and an inherent transparency that fosters trust. Such attributes are especially vital when resources are limited and adaptability is essential.

And when discussing open source solutions, OpenWISP emerges as a promising tool. Originating in 2008 from the Italian project ProvinciaWi-Fi (Barcelo et al., 2012), this open-source network management system offers capabilities that could simplify the tasks associated with Wi-Fi management. The goal of this project is to deeply explore the potential and intricaci OpenWISP in cooperation contexts specifically, emphasising its potential benefits and applicability.

1.3. Scope and Objectivfi∃

project originated by a group of free network activists back in 2013; the intention was to create a common solution for the deploi

Usability	- Ope

a robust, collaborative global Wi-Fi network. However, its specific focus on academic institutions may limit its application in diverse contexts, especially in areas without solid academic infrastructures s

3 Methodology

3.

3.1.2. Research Desgn

The naure o

Additionally, weekly meetings were scheduled with the project director to review the progress and decide the approach for the goals

QQ3 . Temporal planning: the definition of tasks and situating them over a Gantt diagram will take 25 hours. Aside from

3.2.2. Final tasks

In the initial tasks we maintain the whole set of the

need in-depth experience. To participate it is possible that a router and an Ethernet cable

GF3 - Review and Refinement: Share the draft with peers, professionals, or the thesis

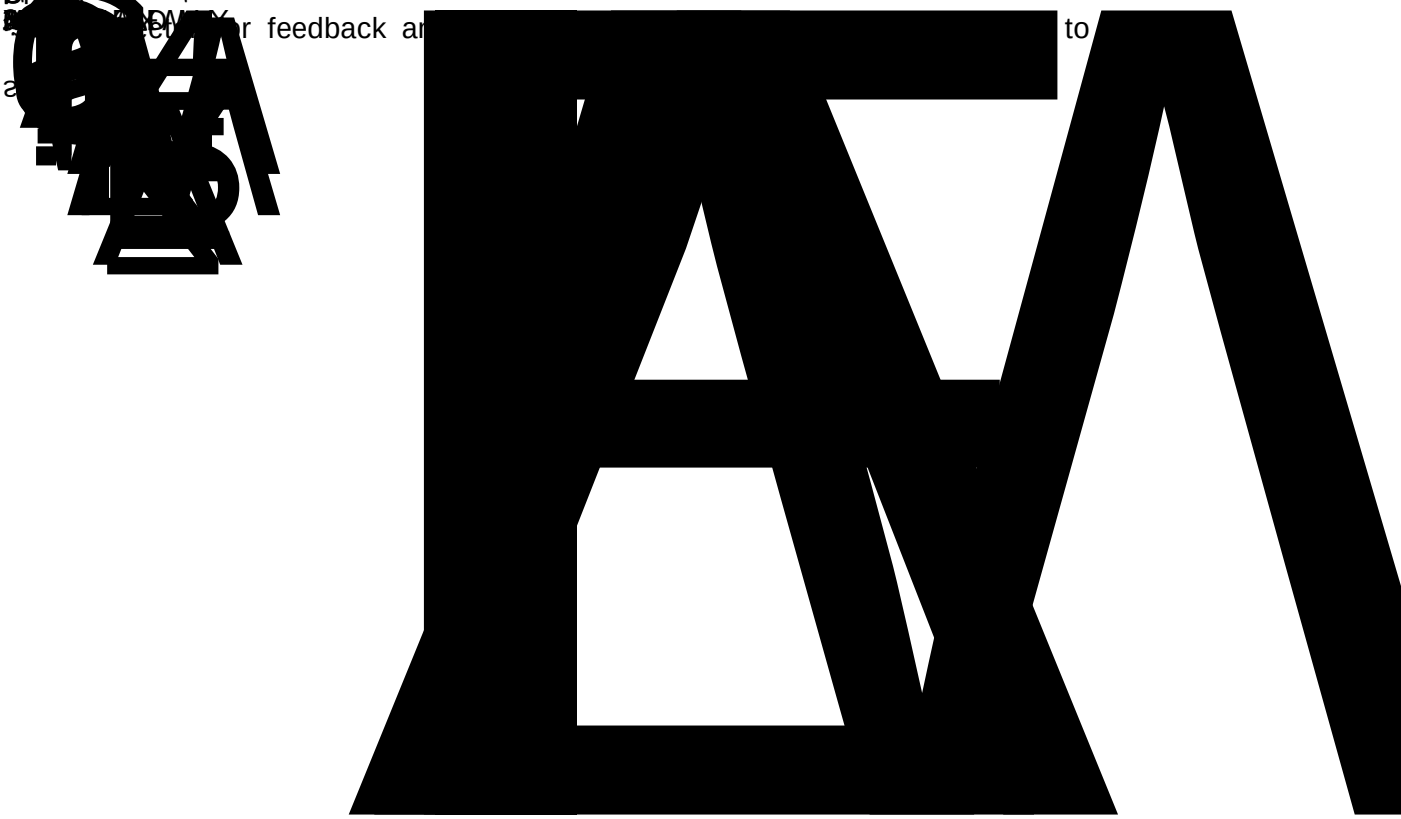

Table 2[2]: Annual and hourly salary for the different role

A for the rest of the Hardware needed, it will be provided by the AC department of the

Workspace Intene and wate since the reerche live in a reidece haln in Barceona? the ret of the workspace is 560€ with funitue Intene and wate inclue and those price cannot be

old la oo

Dptu obn f	B n pvo u)Ù*
Contingencies	235654
Incidents	39641
Upubm)Ù*;	3863/ : 6

Table 7

Table 9[10]: Hour distribution for the diffr

F

4 Sustainability re

Social: Communities in need of OpenWISP tools can benefit from this thesiIJ work si=ce it helps to bridge the k=owledge gap required to operate OpenWISP. All ki=ds of organisations can get gras

4.4. Conclusions

We are member

5.1. Specific needs of Hahatay

The

resources based on the roles of individual users within an organisation, and it offers several significant advantages. Firstly, it bolsters security measures by ensuring that potential threats from human errors are limited.

Consider a scenario where an employee in marketing is compromised through a phishing attack; the risk is significantly mitigated if their role does not grant them access to sensitive company data.

Furthermore, RBAC simplifies the task for network administrators. Instead of individually adjusting access for every user, they can modify permissions based on roles, leading to a streamlined process that ensures users get timely access to the network resources necessary for their tasks.

Since having roles is so significant, our first contact

The actual c

In OpenWISP automatic channel selection, from version 2.0.0 does not exist. For this reason, the only way to change the channel is to manually change the values of the channel at each device. Since there is no possibility to enable automatic selection, a Wi-Fi analyser tool could be ð

There

configuration of OpenWrt services”. To do this, it is required to edit the switch port configuration which is diff

Regular A P

6 Ubiquitous Access and User-Centred Design

A consistent and comp

Finally, it is essential to discuss achieve !yl'!=

A. Ope

bp

environment th content

introduce discrepancies from actual setups. This isolation of VMs can also sometimes prevent seamless communication with other systems.

The qualitative highlights are:

Tutorial: The basic set-up of the server is a process with a curated tutorial at the GitHub repository.

Documentation: There is no straightforward documentation on how to integrate the differe the controller an API.

Communication in Virtual Environments: Setting t˜

checkboxes, usually there also exists an “Advanced Mode (JSON)” where you can add the configuratit

oreover, as

Dynamic Configuration Protocol (DHCP), al Domain Name System (DNS) al also testin it.

Comprehensive monitoring charts covering packet loss, latency, and interface tra c, with varying resolutions from a day to a year.

Configurable alerts for real-time network issue detection.

Admin dashboard that offers a holistic view of network status, including device online/o ine metrics and a geographic map (for OpenWISP users).

Ex nsibility with custom metrics, charts, and an API for device data retrieval based on NetJ

developers can find them all in the

As an obstacle, th

8

Cuevas, A. (2020, Oc

OpenWIS

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Bmtp- b ebubcbtf jt gps bo PqfoXJTQ efqmpznfou- bt tipxo jo Gjhvsf 2/ Gps uijt qvsqptf- uifsf tpnf SECNT tvqqpsufe mjlf QptuhsfTRM ps NzTRM B dfousbmj{fe ebubcbtf tupsft bmm jogpsnbujpo/ Uif ejgg npevmft dbo ibwf uifjs tqfdjòd ubcmft ps fsfou pg ubcmft xj{ uijt dfousbmj{fe ebubcbtf/ Fbdi npevmf Ò tupsft

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C. Key features and functionalities of the module marketplace

In the previous section, we mentioned the key features the marketplace. Here are these features with further details:

Bqqfoejy C; Ufdiojdbm Eftjho gps b npevmf Nbslfuqmbdf

- *Joufsbd*

Bqqfoej