ACTION PLAN

Simon Duchateau

Content

1. Reason for this research

The reason Eurofins want to do some research for this topic is because you can see that more What is an families and companies own IoT (Internet of Things) devices. IoT device? An IoT device is a device that is connected to a local or public network and that can communicate with other device on the network. But the difference between a regular PC or server is that IoT devices make processes in your company or household easier. These devices are very useful and nice to have in a company or in your household. But these devices also have some drawbacks. They can also cause network breaches. These device are more vulnerable because they sometimes need to have open ports but also have running services. You can see a network breach as an unwanted entrance for people with malicious ideas. That is why Eurofins want to make a service that alerts the client when there is an IoT device on the network but also explains common threats this device brings with it. This way they can adjust their security planning or maybe ask for help.

2. Project goals

The goal of this project is to make clients aware of possible network breaches on their network, because the cyber world is growing fast and companies need to be prepared. This scan will not help in case somebody already entered your network but is will help you to be more secure.

3. Business case

If I deliver this project to the costumer they can provide their clients with this scan. This means they install this software on the clients system and also provide them information. They give some information about how the dashboard works and what they can do with it. The software stays installed in the clients network. This way he can check on regular bases.

4. Organization description

Eurofins Digital Testing, and its division Eurofins Cyber Security, is a global leader in independent Quality Assurance, (QA), testing and cyber security for software systems and devices with operations in Belgium, Hong Kong, the Netherlands, Sweden, the UK and the USA. We help businesses in mediatech, fintech, energy, governmental and the other industries assure quality in their digital transformations towards Industry 4.0.

We are a trusted provider in a broad spectrum of quality solutions covering:

- Managed test services & augmented test resourcing
- Industry recognized advisory & training, including Eurofins Academy
- Lab-based testing services & infrastructure
- Test automation & Conformance testing services & tools
- Comprehensive cyber security services & tools

Eurofins Digital Testing is part of Eurofins Scientific, which has more than 800 laboratories in 47 countries and around 45,000 employees worldwide. Founded in 1987, Eurofins is highly regarded in testing, with a level of expertise that makes it the first call for businesses around the world.

Eurofins Digital Testing: Your trusted partner in quality

+47 000 Employees → 32 years of testing experience with best-in-class staff.

+800 Test Sites → Fastest growing network in the world with more than 400 million tests a year

Active in +50 countries → Serving customers all over the world and further expanding our global presence.

€4,56 Billion Revenue → Brilliant financial result in 2019 and year -on -year forecasted growth in the years to follow.
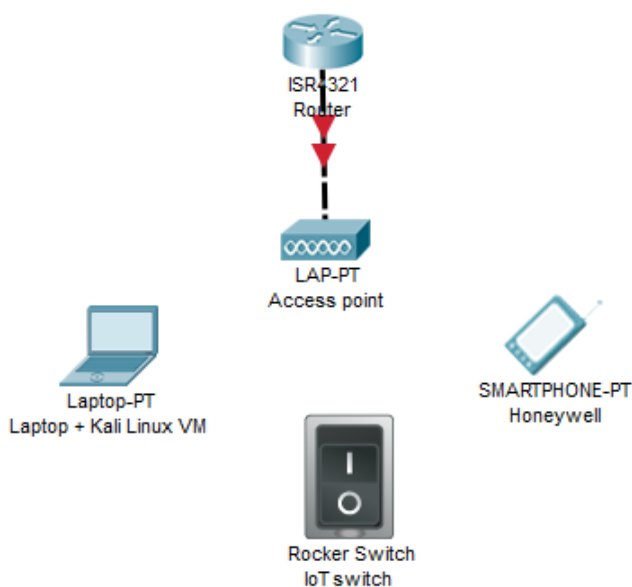
5. Practical

I will create and test this project in a Kali Linux Virtual machine. Why Kali? I wanted to use a Linux distributing because in the future the company want to use this project as a service they can offer their clients and because Linux requires less hardware resource it looks more efficient to me. But also I am more known with writing Linux script then writing PowerShell scripts. So my decision was make rather quickly. Linux has a lot of different distributions so I had to choice one. I think I made the rather obvious choice. By using Kali I already had the most of software I need installed on the system.
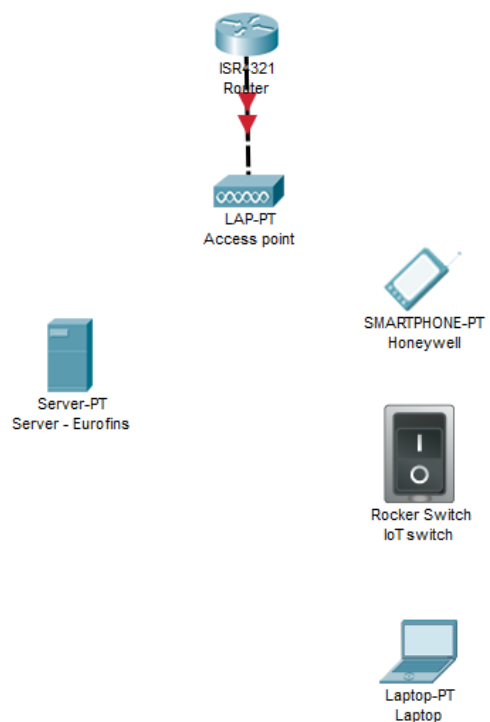
After I had chosen the distribution I wanted to use I need to know how I wanted to use it. For testing purpose I created a Virtual machine with Kali Linux and connected it to my own local network. I chanced the network settings to a bridged network adaptor. I have done this so the Virtual machine can request his own IP-address within my network.

Practical in the future, the company wants to give this as a service so I was thinking of an software package we install in their network. By doing this we can leave it there and check on different times. But it is also a possibility that we offer them a raspberry pi or a small computer with our service. The idea is that we check when we install our software and maybe come back after a year and check if they have improved their network security.

Test phase

ISR-321 Router

LAP-PT Access point

Laptop-PT Laptop + Kali Linux VM

SMARTPHONE-PT Honeywell

Rocker Switch IoT switch

End product

ISR-321 Router

LAP-PT Access point

Server-PT Server - Eurofins

SMARTPHONE-PT Honeywell

Rocker Switch IoT switch

Laptop-PT Laptop

6. Planning

1. Step 1 (Week 1 - 3)

As a first step, I will mainly do research. This step is very important knowing what to make as the base of this project. I am going to define what I want as results and how to get them. Also presenting my idea to the company is one of the importing things. This way he can give me feedback and if necessary I can change my way of looking at the project.

2. Step 2 (Week 2)

The company has given me a perfect idea of what they want but also a name of a program that is almost the thing they want. With this feedback I can look at the program and presented they a concrete idea of my project.

3. Step 3 (week 5 – 7)

Actual start of the build. In this step I am going to start the implementation of my project. I now have a clear idea of what the company expect from me. This step is just writing a basic script that does a network scan. I also don't want to go in depth this week because I want to be sure my base is reliable.

4. Step 4 (Week 8 – 12)

I now have a basic script that does a scan of my network. But this isn't what the client wants. The client wants to specifically scan for IOT devices. In this step I want to finetune my script from a basic scan to a script that only looks for IOT devices. I will not delete my basic script, because this could be an extra service.

5. Step 5 (Week 6)

If my base script is finished it will perform a perfect scan of my network. I can collect the data I want from the scan and I can insert this data into a database. Also the structure of this database is important. If I take my time to do this properly and correctly the next steps will be easier.

6. Step 6 (Week 6 -12)

My data is now retrieved from my scan and stored inside my database. This means everything in the background is finished the only thing that remains is creating a nice interface for the client. In this step I want to create an API that connects to my database and gives a nice readable output to the client output readable for the client.

7. Step 7

Because I create an API, I can make different kind of dashboards. But I will start by creating one for windows clients. I choose windows because windows is the most known OS for people without IT knowledge.

7. Information gathering and reporting

I will get my information mainly from 3 resources. The first one is my own knowledge. Combining everything I know and have learned in the past years. The second one is things my mentor says. He also mentions things I need to research and also can be very useful. The last one is the resource I use the most. I can do a lot of research on the internet to get detailed information on topics.

To be sure the client gets the wanted result you need to check back to him on regular bases. In my case I will see my client every week on Friday. The purpose of this meeting is to let him know what I have done and what would be my next steps. By doing this he will always know what I am doing and in case if needed adjust my plan.

Because this is my internship I am still at school. The school also need to be aware of what I am doing at my internship. I will do this by writing down every day what I have done and send this end the end of every week to my school. But I will also have some meetings to talk to my teacher and answer questions if they have any questions.

8. Sources

https://www.eurofins-digitaltesting.com/$

https://en.wikipedia.org/wiki/Action_plan