#### Fábio de Magalhães Network Security

**TIMOR-LESTE NETWORK OPERATORS' GROUP** Community Event/Gathering 2024



**CONFERENCE** 

# About me:

#### Fábio de Magalhães •••



fabio-de-magalhaes-3a328a124



@f4bio\_rosano

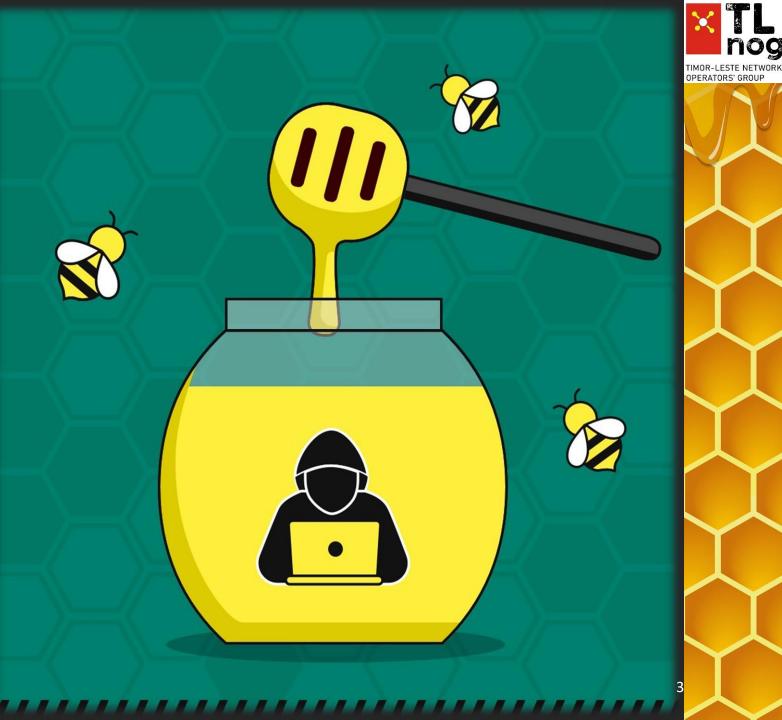


# contents

- What is Honeypot & Honeynet
- Types of Honeypot
- Deploy Honeypot
- How scenario of Honeypot?
- Honeypot Tools
- Example/use case
- Benefit of Honeypot

#### Credits: Mr. Adli Wahid

(APNIC Community Honeynet Project) for the some of the contests of this slide. adli@apnic.net



#### Lance Spitzner, The Honeynet Project

How can we defend against an enemy, when we don't even know who the enemy is?

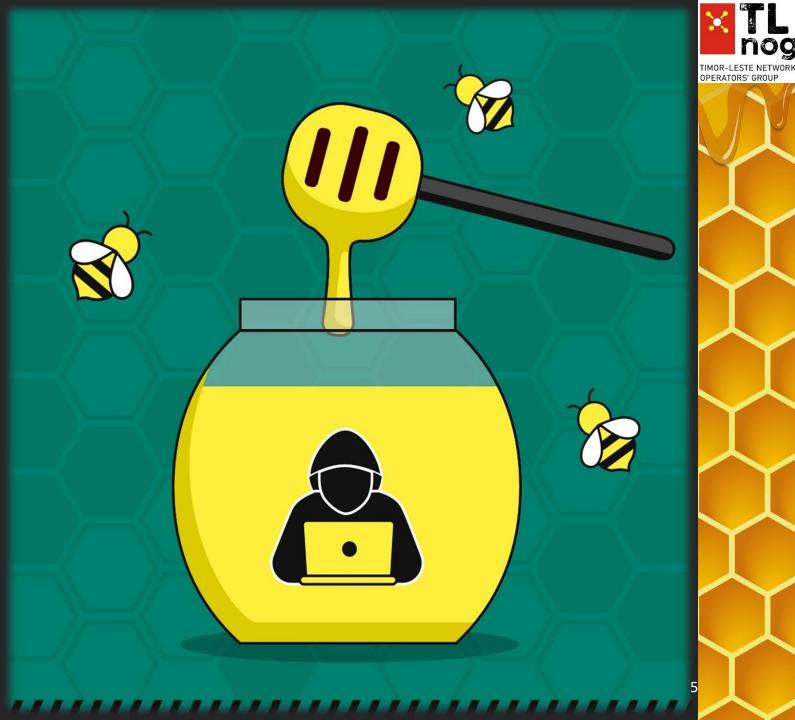
# KNOU Your Enery Learning about security threats



PROJECT

# what is





# HONEYPOT

- A honeypot is a system or software designed to mimic a real system or network, but actually serves only as a trap for attackers.
- Its purpose is to attract the attention of attackers, learn their attack methods, and gather information that can be used to improve the security of the real system.



## HONEYNET

# is a decoy network that contains more of honeypots.



#### **Types of Honeypot**

#### Low & Medium Interaction Honeypot:

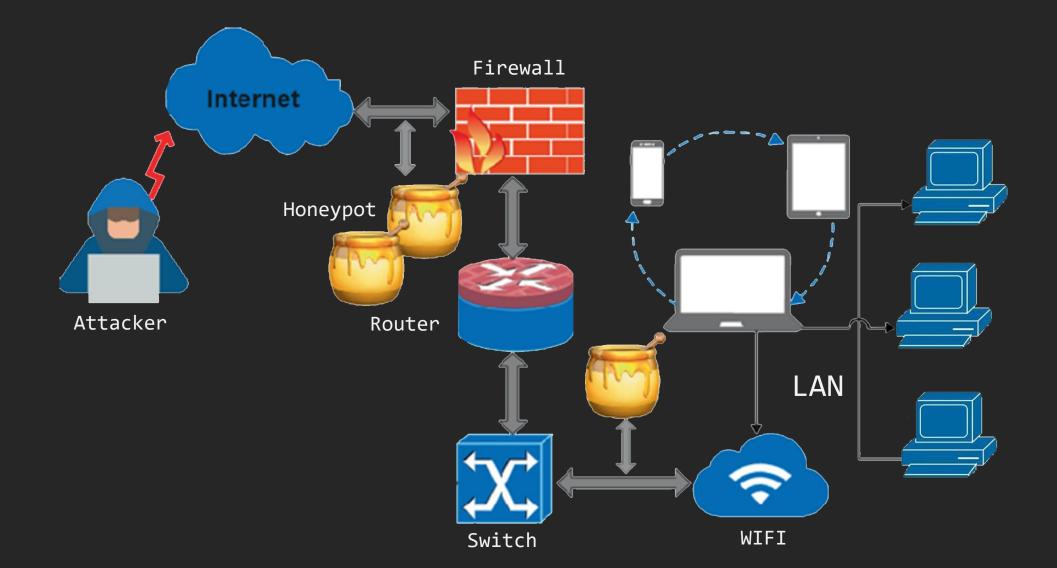
- Emulate the behavior of a more limited system. Typically used to detect more general attacks without exposing too much detail information's.
- Easier to deploy, configure and requires less maintenance. Example: Emulate SSH (22) / Telnet (23) Service and wait for connection

#### High Interaction Honeypot:

- Type of honeypot that simulates many aspects of a real operating system and applications.
- Allows for deep interaction with the attacker.
- Tends to be more difficult to set up and requires more intensive maintenance.

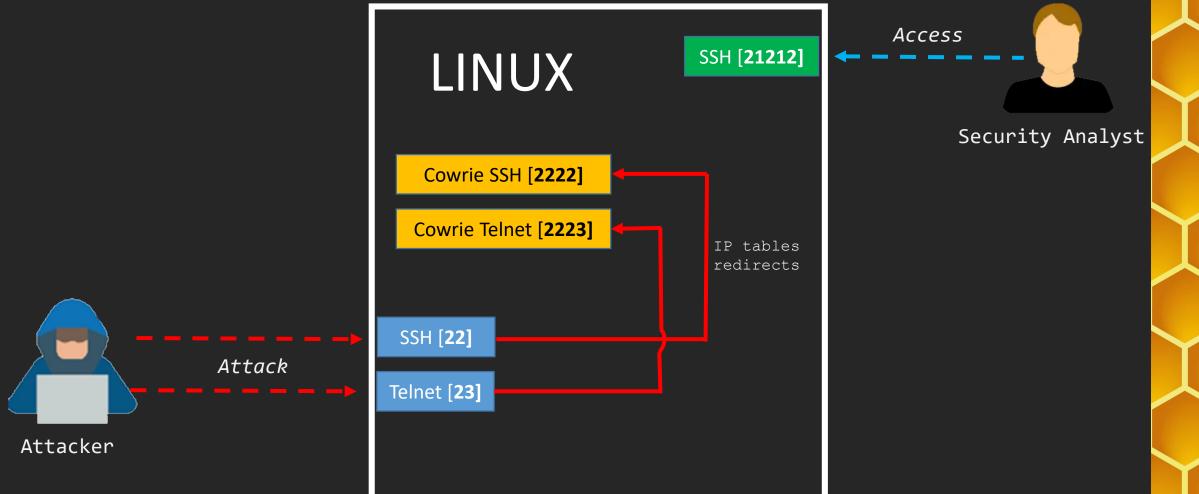
Example: Setup a real system with services enabled

## How to Deploy Honeypot?





## **How scenario of Honeypot?**



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### Honeypot Software (1)

| Category | Name            | Feature / Purpose  |  |  |
|----------|-----------------|--|--|--|
| SSH      | Cowrie          | SSH and Telnet Honeypot designed to log brute force attacks.               |  |  |
|          | Кірро           | SSH Honeypot designed to log brute force attacks.                          |  |  |
| Database | mysql-honeypotd | low interaction MySQL honeypot written in C.                               |  |  |
|          | ElasticPot      | an Elasticsearch Honeypot.   |  |  |
| Web      | Glastopf        | Web Application Honeypot.  |  |  |
|          | Wordpot         | WordPress Honeypot.  |  |  |
|          | Drupo           | Drupal Honeypot.   |  |  |
| Service  | DDospot         | NTP, DNS, SSDP, Chargen and generic UDP-based amplification DDoS honeypot. |  |  |
|          | Dionaea         | using libemu to detect shell codes (ftp, http, mssql, mysql).              |  |  |



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### Honeypot Software (2)

| Category               | Name                    | Feature / Purpose   |  |
|------------------------|-------------------------|---|--|
| Honeypot<br>deployment | Community Honey Network | deployments honeypots and honeypot management tools.  |  |
|                        | Modern Honey Network    | Multi-snort and honeypot sensor management  |  |
|                        | T-Pot                   | is the all in one, optionally distributed, multi arch<br>(amd64, arm64) honeypot platform, supporting 20+<br>honeypots. |  |
|                        | Community Honey Network | deployments honeypots and honeypot management tools.  |  |
| USB                    | Ghost                   | for malware that propagates via USB storage devices.  |  |
| Server                 | Amun                    | Vulnerability emulation honeypot.   |  |
| Honeytokens            | CanaryTokens            | Self-host able honey token generator and reporting dashboard.   |  |



#### Example/use case

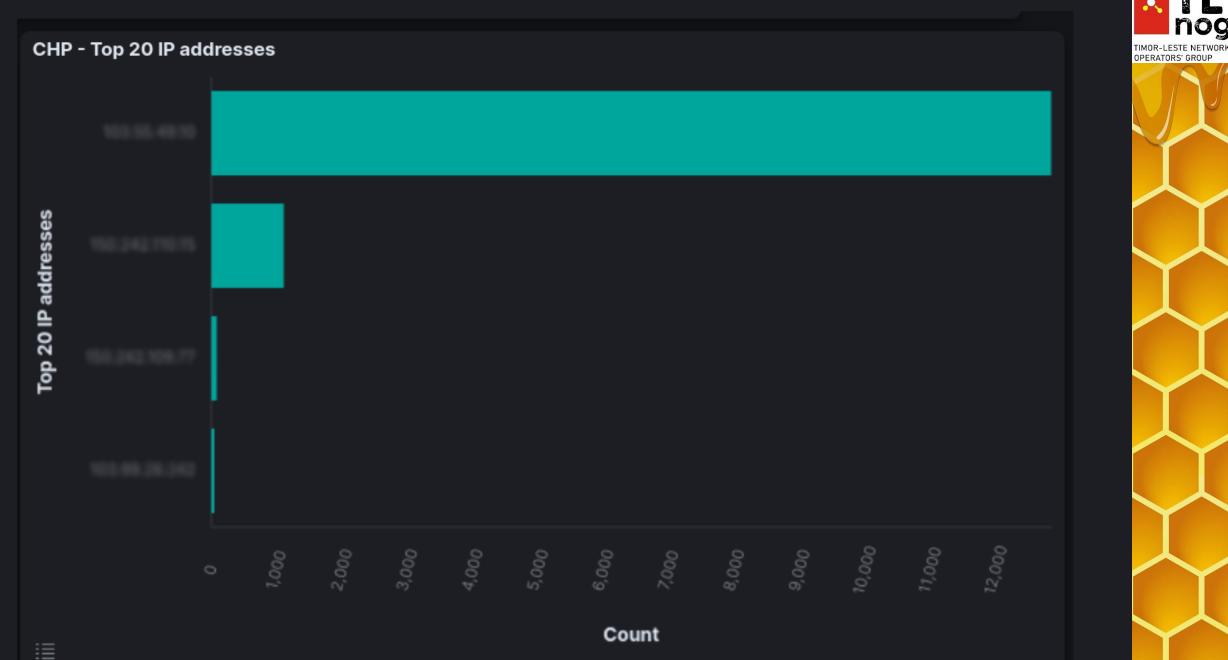


#### Source: APNIC Community Honeynet Project - Kibana Dashboard

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Source: APNIC Community Honeynet Project - Kibana Dashboard

#### CHP - Usernames



#### ssh\_username.keyword: Descending - Count

Δ



**CHP** - Passwords



ssh\_password.keyword: Descending - Count

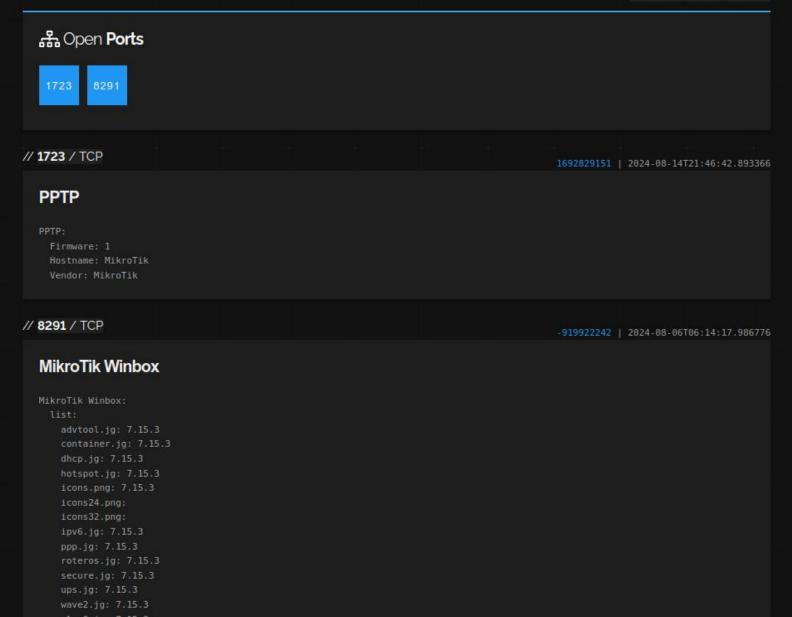
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#### Cikarang Waluya Palawad © OpenMapTiles Satellite @ MapTiler © OpenStreetMap contributors

// LAST SEEN: 2024-08-14

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|---|--|---------------------|---|------------|
| e\e ①   | 9/96 security vendors flagged this URL as malicious            |                     | C Reanalyze 으 Search 跳 Graph  | TIMOR-LES  |
| / 96  |  |                     | Status Content type Last Analysis Date<br>504 text/html 15 days ago |            |
| Score Community   | /html ip   |                     |   |            |
| DETECTION DETAILS   | сомминту   |                     |   |            |
| Crowdsourced context  |  |                     |   |            |
| HIGH 0 MEDIUM 0 LC  | W 0 INFO 1 SUCCESS 0   |                     |   |            |
| <ul> <li>Find more information on C</li> <li>└→ Behaviors: SSH Bruteforc</li> </ul> | rowdSec CTI - according to source CrowdSec - 2 months ago<br>e |                     |   |            |
| Security vendors' analysis 🔅  |  |                     | Do you want to automa   | te checks? |
| Antiy-AVL   | () Malicious   | BitDefender         | () Phishing   |            |
| Criminal IP   | () Malicious   | CrowdSec            | () Malicious  |            |
| G-Data  | () Phishing  | GreenSnow           | () Malicious  |            |
| IPsum   | () Malicious   | Lionic              | () Malicious  |            |
| SOCRadar  | () Malicious   | AlphaSOC            | (j) Suspicious  |            |
| ArcSight Threat Intelligence  | (i) Suspicious   | BlockList           | (j) Suspicious  |            |
| Abusix  | 🕑 Clean  | Acronis             | 🕢 Clean   | 18         |
| ADMINUSLabs   | 🕗 Clean  | AILabs (MONITORAPP) | 🕑 Clean   |            |

|  | IP Abuse Reports for                    |   |                    |  |  |  |  |
|--|---|---|--------------------|--|--|--|--|
| This IP address has been reported a total of <b>4,178</b> times from 943 distinct sources. was first reported on December 2nd 2023, and the most recent report was <b>31 minutes ago</b> . |   |   |                    |  |  |  |  |
| Recent Reports: We have received reports of abusive activity from this IP address within the last week. It is potentially still actively engaged in abusive activities.                    |   |   |                    |  |  |  |  |
| Reporter   | IoA Timestamp in UTC                    | Comment   | Categories         |  |  |  |  |
| ✓ ■ <u>serverobot.de</u>   | 2024-08-19 03:06:37<br>(31 minutes ago) | Aug 19 05:05:35 mailserver sshd[915068]: pam_unix(ss<br>hd:auth): authentication failure; logname= uid=0<br>show more | Brute-Force<br>SSH |  |  |  |  |
| ✓ <u>■ taipei101.xyz</u>   | 2024-08-19 02:28:06<br>(1 hour ago)     | Aug 18 22:22:52 us1-bms-f7b96252 sshd[479153]: Faile<br>d password for invalid user csserver from 103.55<br>show more | Brute-Force<br>SSH |  |  |  |  |
| ✓ ■ agreppin   | 2024-08-19 02:27:56<br>(1 hour ago)     | 2024-08-19 02:27:56 albla SSH   | Brute-Force<br>SSH |  |  |  |  |
| ✓ <b>●</b> PulseServers  | 2024-08-19 02:21:49<br>(1 hour ago)     | SSH Brute-Force Attack on a server hosted by PulseSer<br>vers.com - CA10 Honeypot<br>                                 | Brute-Force<br>SSH |  |  |  |  |
| ✓ <u> </u>   | 2024-08-19 01:16:01<br>(2 hours ago)    | Aug 19 04:14:13 alek-test sshd[964959]: pam_unix(ssh d:auth): authentication failure; logname= uid=0 show more        | Brute-Force<br>SSH |  |  |  |  |
| ✓ <b>■</b> jbgalleries.net   | 2024-08-19 00:11:51<br>(3 hours ago)    | Multi Failed Login Attempts   | Brute-Force<br>SSH |  |  |  |  |
| ✓ <u>nohacefaltapapel-</u><br><u>et.net</u>  | 2024-08-18 23:59:58<br>(3 hours ago)    | 2024-08-19T01:58:49.102771milloweb sshd[4591]: Faile<br>d password for invalid user maill from 103.55.49<br>show more | Brute-Force<br>SSH |  |  |  |  |
| ✓ <u>      LoNET</u>   | 2024-08-18 21:33:02                     | Report 1303604 with IP 1935787 for SSH brute-force att  | Brute-Force        |  |  |  |  |

(6 hours ago)

ack by source 2310384 via ssh-honeypot/0.2.0+h ...

SSH ]

show more





### **Benefit of Honeypot**

• Early Detection:

Honeypot can detect attacks before they reach the actual system.

• Attacker Behavior:

Allows in-depth analysis of attacker attack methods and tactics.

#### Information Gathering:

Provides valuable data about security threats that can be used to improve overall security.

• Education and Training:

Honeypot can be used to train and educate security personnel about possible attacks.







# Happy Honeypotting....!!!