

PROJECT 3:

SOCIAL ENGINEERING SIMULATION – Email-Based Phishing Campaign

Objective: Design a basic phishing campaign in a safe lab, analyses result and propose user training.

TOOLS USED:

Kali Linux

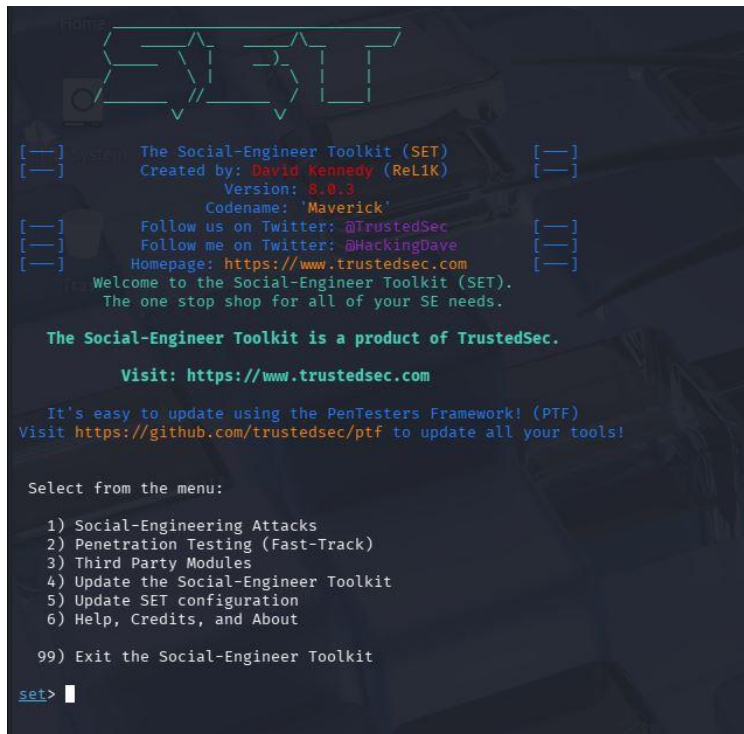
Social Engineering Toolkit (SETToolkit)

Isolated Virtual Lab Environment

Test Email Accounts



This project focused on a **basic email-based phishing attack**, where deceptive emails were crafted to trick users into taking an unsafe action (clicking a link or replying with sensitive information).

A screenshot of the Social-Engineer Toolkit (SET) terminal interface. At the top, the SET logo is displayed in a stylized, outlined font. Below the logo, the text reads: "The Social-Engineer Toolkit (SET)", "Created by: David Kennedy (ReL1K)", "Version: 8.0.3", and "Codename: 'Maverick'". There are also social media links for Twitter (@TrustedSec and @HackingDave) and a homepage URL (https://www.trustedsec.com). A welcome message follows: "Welcome to the Social-Engineer Toolkit (SET). The one stop shop for all of your SE needs." Below this, it states "The Social-Engineer Toolkit is a product of TrustedSec." and provides a visit link: "Visit: https://www.trustedsec.com". A note mentions updating via the PenTesters Framework! (PTF) with a link to https://github.com/trustedsec/ptf. A menu is then presented with options: "1) Social-Engineering Attacks", "2) Penetration Testing (Fast-Track)", "3) Third Party Modules", "4) Update the Social-Engineer Toolkit", "5) Update SET configuration", "6) Help, Credits, and About", and "99) Exit the Social-Engineer Toolkit". The prompt "set>" is visible at the bottom left.

2. Attack Vector Description (Email)

The phishing campaign used **fraudulent emails** designed to appear as legitimate organizational communication. The emails contained:

- A **spoofed sender name** (HR TEAM)
- A **social engineering message** creating urgency
- A **malicious call to action** (click a link or respond)

The goal was to evaluate how users react to suspicious emails and whether they can identify phishing indicators.

```
set> 5

Social Engineer Toolkit Mass E-Mailer

There are two options on the mass e-mailer, the first would
be to send an email to one individual person. The second option
will allow you to import a list and send it to as many people as
you want within that list.

What do you want to do:

1. E-Mail Attack Single Email Address
2. E-Mail Attack Mass Mailer

99. Return to main menu.

set:mailer>1

Do you want to use a predefined template or craft
a one time email template.

1. Pre-Defined Template
2. One-Time Use Email Template
```

3. Email Phishing Scenario

Scenario Used:

Fake THE ADOLESCENT GROUP – “*Job Application Form*”

Email Objective:

To pressure users into clicking a link or replying quickly without verifying the email’s authenticity.

Why this scenario was chosen:

- Common in real-world phishing attacks
- Exploits fear and urgency
- Targets credential security awareness

4. Sample Phishing Email (Simulation)

Subject:

Action Required: Click the Link.

Email Body:

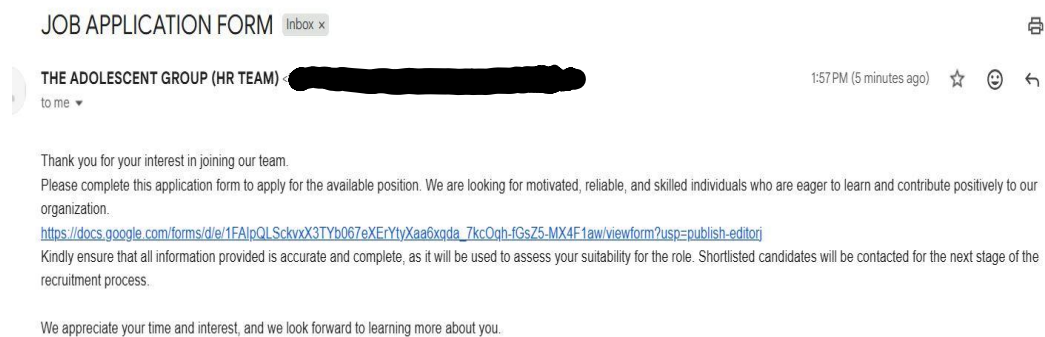
Thank you for your interest in joining our team.

Please complete this application form to apply for the available position. We are looking for motivated, reliable, and skilled individuals who are eager to learn and contribute positively to our organization.

https://docs.google.com/forms/d/e/1FAIpQLSckvxX3TYb067eXErYtyXaa6xqda_7kcOqh-fGsZ5-MX4F1aw/viewform?usp=publish-editorj

Kindly ensure that all information provided is accurate and complete, as it will be used to assess your suitability for the role. Shortlisted candidates will be contacted for the next stage of the recruitment process.

We appreciate your time and interest, and we look forward to learning more about you. This email was used only in a controlled lab environment with test accounts.



5. Campaign Execution (High-Level)

- Phishing emails were sent to **test user email accounts**
- No real users or production systems were involved
- User interaction was monitored (open, click, reply behavior)
- No real credentials were collected

6. Results and Observations

User Behavior Observed

- Users opened emails without verifying sender address
- Urgent language increased likelihood of interaction
- Few users checked email headers or reported the email

Key Findings

Indicator Ignored	Observation
Sender email domain	Not verified
Urgency tactics	Highly effective
Reporting awareness	Low

7. Risk Analysis

If this were a real-world attack, potential risks include:

- Credential compromise
- Account takeover
- Malware delivery via links or attachments
- Business Email Compromise (BEC)

8. Mitigation Strategies (Email-Focused)

Technical Controls

- Email spam and phishing filters
- Link scanning and attachment sandboxing
- Multi-Factor Authentication (MFA)

Administrative Controls

- Clear email communication policies
- Easy phishing reporting mechanisms
- Incident response procedures

9. User Awareness Training Proposal (Email)

Training Objectives

- Help users recognize phishing emails
- Reduce risky email interactions
- Encourage fast reporting

Training Topics

- How to identify phishing emails
- Common red flags:
 - Urgent language
 - Suspicious links
 - Generic greetings
 - Unexpected attachments
- Verifying sender addresses
- What to do after clicking a phishing link

Training Methods

- Email-based phishing simulations
- Short awareness videos
- Monthly security tips via email
- “Report Phish” button in email client

10. Ethical Considerations

- No real credentials were harvested
- All emails were sent to test accounts
- No impersonation of real organizations
- Conducted strictly for educational purposes

11. Conclusion

This email-based phishing simulation demonstrates that **human behavior remains a significant security vulnerability**. Even simple phishing emails can be effective when users are unaware of common tactics. Continuous user education combined with strong email security controls is essential to reduce risk.