Leveraging Docker-based containers to teach cyber security

Introduction

Teaching cyber security concepts in an effective way has always been a challenging task. Practically demonstrating the security concepts, threats and attacks in action is an attractive approach. In this work, we use Docker-based containers to demonstrate and teach various security threats using hands on approach.

The Challenge

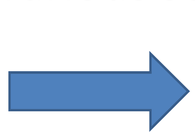
A need for practical approach to teach cyber security

- Must allow the user to visualize concepts.
- Must enable the user to '*learn by doing*'.
- Easily configurable and accessible

Cloud based

- Using elastic and scalable cloud resources
- Support large number of users if required

Operating System and Internet Browser Independent.



Our Approach

- Dockerize different security related tools and concepts
- Use a cloud-based platform to allow user access to different dockerized security tools
- Allow the users to experience the security threats and problems themselves.

Comparative Analysis

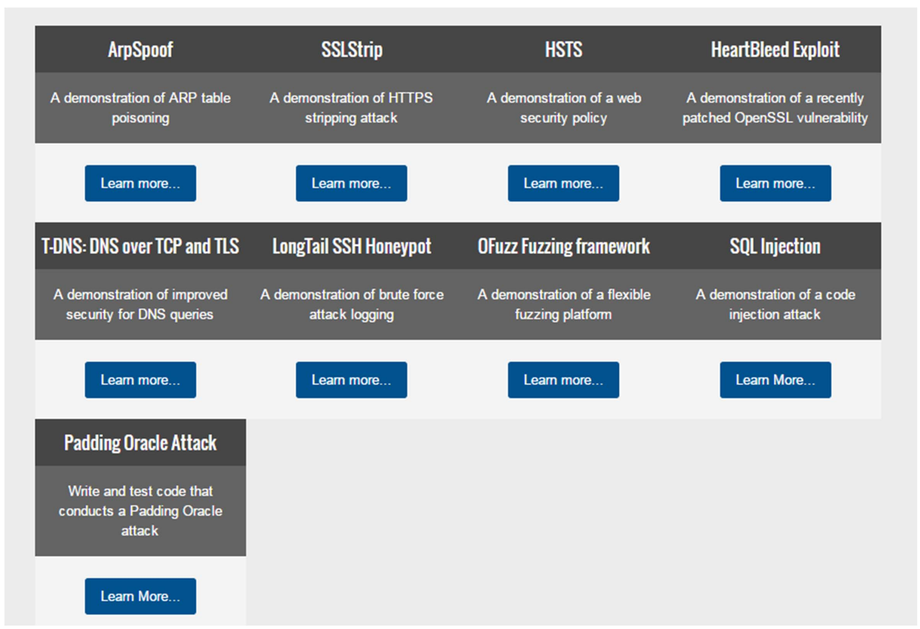
- Our Docker-based Approach
- User-machine based

- Access our website through internet and use the tools.
- User doesn't worry about security, and resources.

- Download and install the tools
- Risk your computer's security
- Allocate resources so high processing power required
- Eliminate the risk once done.

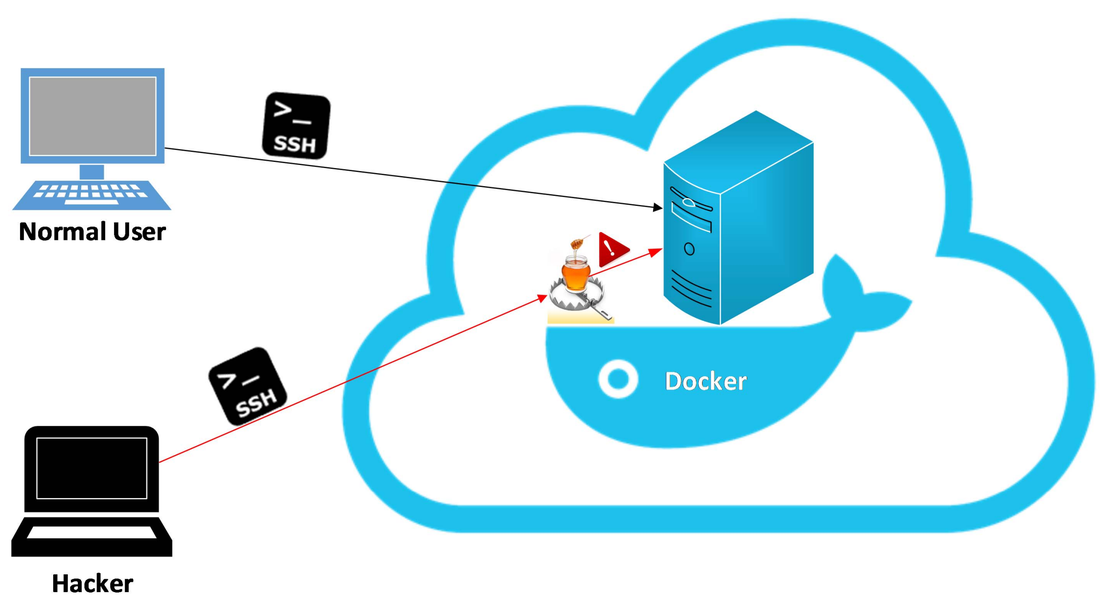
Current Status

- 9 different scenarios available (more scenarios to be added).



- Accessed by users from 4 different continents

SSH Honeypot Example



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Faheem Zafari, Kelu Diao, Tian Wang,
Rajesh Kalyanam, Baijian Yang, CIT