Capture the Flag Game in the KYPO Cyber Range

PA197 Secure Network Design

April 3, 2019

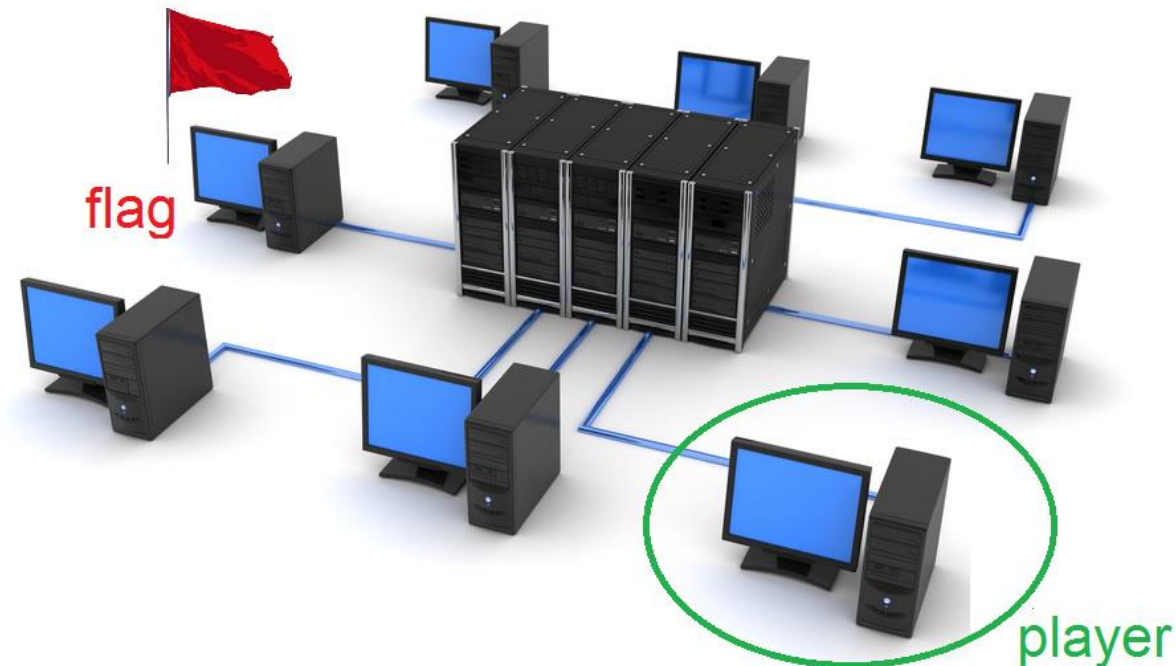**Valdemar Švábenský, Jan Vykopal**
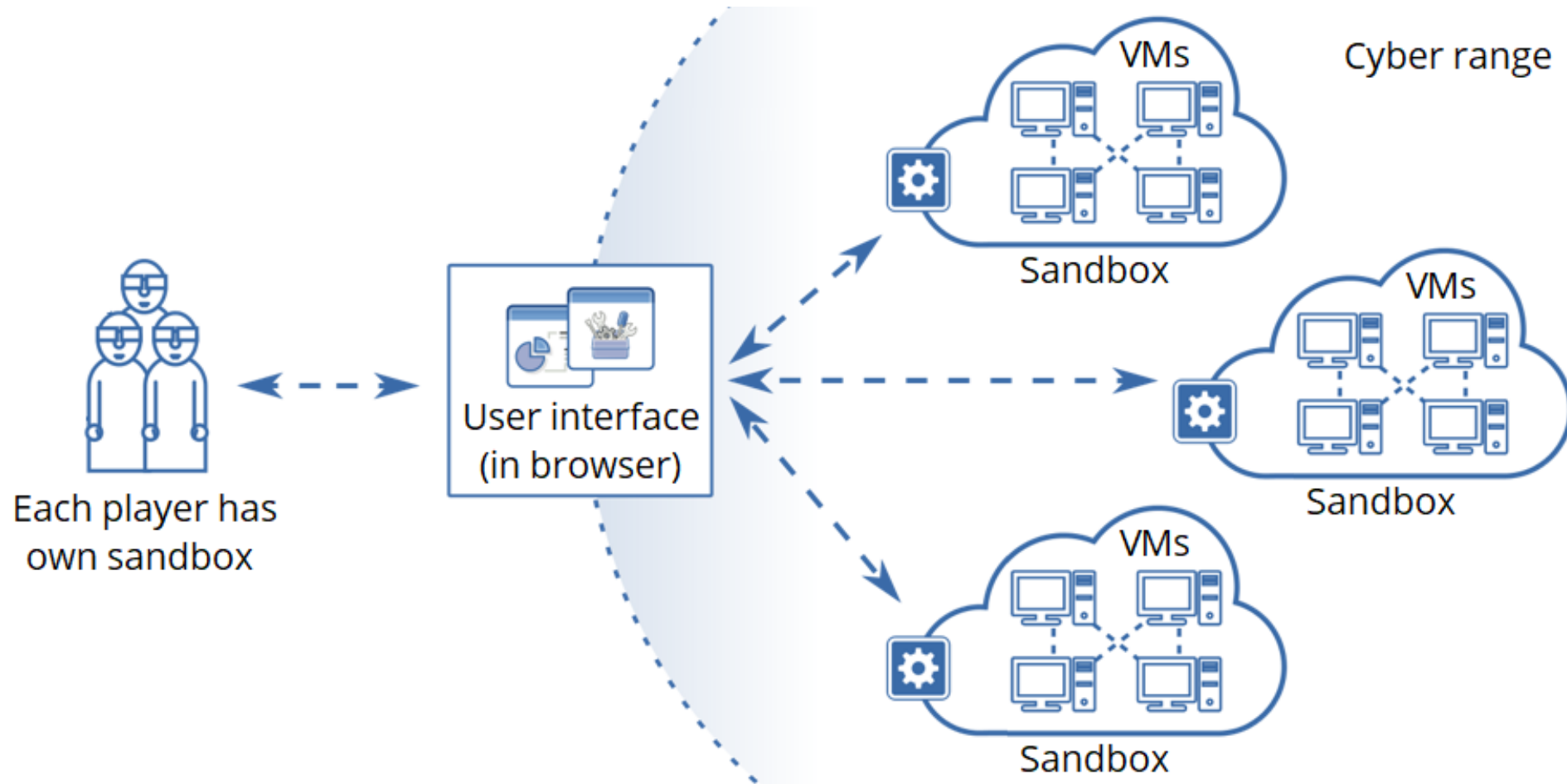Masaryk University, Czech Republic

KYPO
BY CSIRT-MU

Capture the Flag (CTF) game

- Game-like activity for **exercising cybersecurity skills**
- Origins: hacker conference DEF CON, 2002
- We focus on **Attack-only** games (penetration testing)

KYPO infrastructure for CTF games

Each player has own sandbox

User interface (in browser)

Cyber range

VMs

Sandbox

VMs

Sandbox

VMs

Sandbox

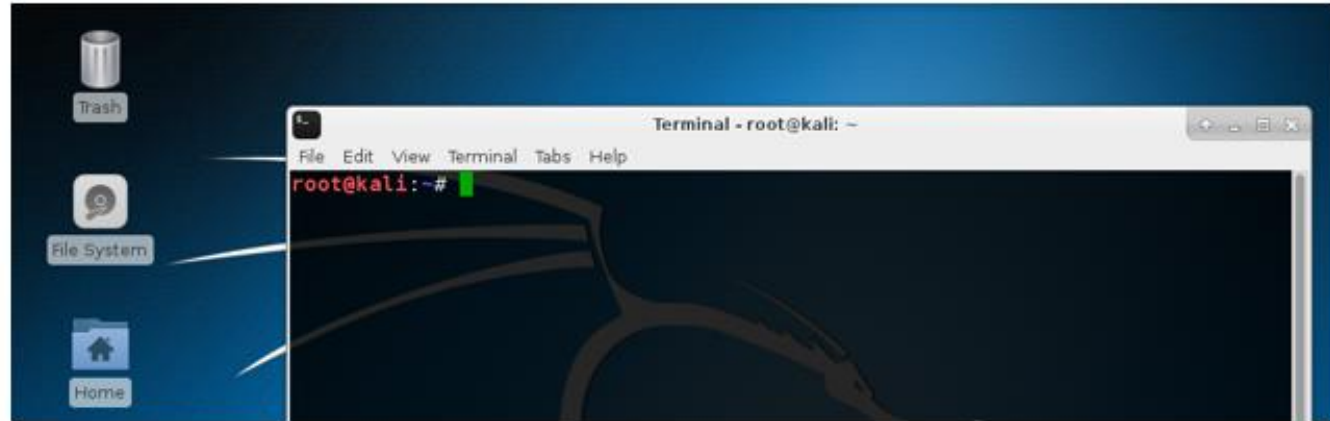# CTF games in KYPO: topology and machine view

Kali-attacker / 10.10.20.2

connect →

HTTP-server / 10.10.10.2

Level 1

Task: Scan the HTTP server.

Flag format: The number of the highest open port.

Enter the flag here. | Submit

Points available: 6/8

Need help?

Hint 1: What tool to use
Hint 2: How to use the tool

Show Hint 1 (-2 points)

Use **nmap**.

Your tasks

1. **Log in** at **kypo2.ics.muni.cz** via Shibboleth (use Chrome browser)
2. **Open two browser tabs**: **Game** and **Topology**
3. In the **Topology** tab, access the **Attacker machine** (login/password: root/toor)
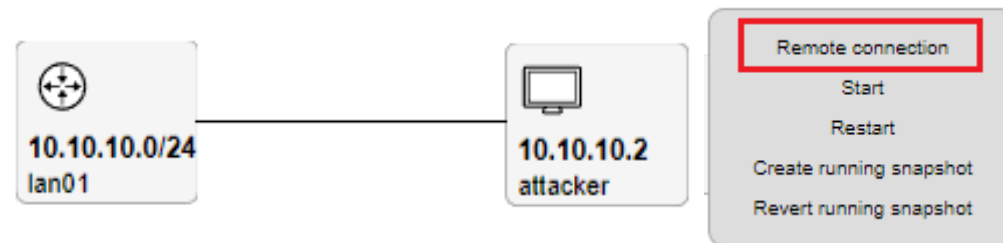
4. In the **Game** tab, start the game and **read the instructions**
5. **Have fun** and try everything! :)

Resources

- https://www.youtube.com/watch?v=ThBpRBpyxLI
- https://github.com/CSIRT-MU/edu-resources
- https://www.kali.org/
- https://defcon.org/

Homework

CTF game enhancement

Create new levels, hints, better texts and descriptions, or other types of content that would improve the educational aspects of the game you have played.

See IS MU for detailed assignment.

Due Wednesday, April 10, 10:00 (to be submitted in IS MU)

Interested in cybersecurity?

Join us!
- You will learn **practical** cybersecurity topics
- **Join us** to cooperate on interesting projects

Cybersecurity Laboratory at FI MU - kypo.fi.muni.cz

Computer **S**ecurity **I**ncident **R**esponse **T**eam of **M**asaryk **U**niversity

@csirtmu   **csirt.muni.cz**

THANK YOU! QUESTIONS?

JOIN US AT CSIRT-MU :)

csirt.muni.cz, kypo.fi.muni.cz

@csirtmu

Valdemar Švábenský et al.

svabensky@ics.muni.cz

KYPO
BY CSIRT-MU