

# Introduction to CTFs

What are CTFs and how to get started

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LosFuzzys

October 8, 2023

# Introduction

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# \$whoarewe

- 15 active Member
- Meet every Wednesday 18:15
- Regular competing in security competitions
- Host CTFs, trainings and workshops



# Overview

What are CTFs?

- **Capture the Flag**
- Competitions with a focus on cyber security
- Either online (mostly) or offline (typically for finals)
- Usually take 24 hours, 36h or even longer

There are usually the following gamemodes

- Jeopardy (most common)
- Attack-Defense

Flag?

LosCTF{this\_could\_be\_a\_flag}

# CTFTime

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CTF TIME

CTFs Upcoming Archive Calendar Teams FAQ Contact us About Sign in

## Team rating

| Place | Team            | Country | Rating   |
|-------|-----------------|---------|----------|
| 1     | Blue Water      |         | 1272.461 |
| 2     | kalmarunionen   | DK      | 1030.562 |
| 3     | C4T BUT S4D     | RU      | 1010.123 |
| 4     | justCallTheFish | DK      | 887.259  |
| 5     | r3kag1          | DK      | 822.413  |
| 6     | SKSD            | DK      | 761.927  |
| 7     | organizers      | CH      | 708.467  |
| 8     | thihackerscrew  |         | 701.765  |
| 9     | Project Sekai   |         | 684.336  |
| 10    | WreckTheLine    |         | 677.514  |

Full rating | Rating formula

## Now running

| Event                               | Format  | Start Date               | End Date                | Teams     | Status        |
|-------------------------------------|---------|--------------------------|-------------------------|-----------|---------------|
| Balsn CTF 2023                      | On-line | Sat, Oct. 07, 2023 02:00 | Mon, Oct. 09, 02:00 UTC | 128 teams | (0d 12h more) |
| SunshineCTF 2023                    | On-line | Sat, Oct. 07, 2023 14:00 | Mon, Oct. 09, 14:00 UTC | 120 teams | (1d 22m more) |
| BlackHat MEA CTF Qualification 2023 | On-line | Sun, Oct. 08, 2023 13:00 | Mon, Oct. 09, 13:00 UTC | 58 teams  | (0d 23h more) |

## Past events

| Event                                    | Format  | Start Date              | End Date                            | Teams     | Status        |
|--|---------|-------------------------|-------------------------------------|-----------|---------------|
| Ground Zero-Hackathon-CTF 2023, Siliguri | On-line | Oct. 04, 2023 06:30 UTC | Siliguri, West Bengal 734001, India | 128 teams | (0d 12h more) |

With scoreboard All

## Upcoming events

| Open  | Finals       |                     |                         |          |       |
|---|--------------|---------------------|-------------------------|----------|-------|
| Hackers 2023                                | France, Lyon | Fri, Oct. 13, 09:00 | Sat, Oct. 14, 06:00 UTC | 7 teams  | 21h   |
| TCP1P CTF 2023: First Step Beyond Nusantara | On-line      | Fri, Oct. 13, 13:00 | Sun, Oct. 15, 13:00 UTC | 95 teams | 2d 0h |

3 teams total | Tasks and writeups

| Event         | Format  | Start Date              | End Date | Teams                     | Status |
|---------------|---------|-------------------------|----------|---------------------------|--------|
| MapleCTF 2023 | On-line | Oct. 02, 2023 00:00 UTC | On-line  | Weight voting in progress |        |

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# Jeopardy-CTFs

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# Challenge Categories

Most of the time, challenges fall in one of these Categories

- Reverse engineering
- Binary exploitation
- Websecurity
- Cryptography
- Miscellaneous

Other categories can be

- Web3 (Smart contract security)
- Digital forensics
- Programming challenges
- Open-source intelligence gathering (OSINT)

# How do Jeopardy-CTFs work?

FuzzyLand   FAQ   Users   Scoreboard   Challenges   [Register](#)   [Login](#)

misc

|                  |                   |                  |
|------------------|-------------------|------------------|
| flag format<br>1 | flagception<br>66 | chess-base<br>75 |
|------------------|-------------------|------------------|

sead22

|                                  |                                  |                               |                               |
|----------------------------------|----------------------------------|-------------------------------|-------------------------------|
| Schrei Stage 1<br>30             | Schrei Stage 2<br>40             | Insurance App - Stage 1<br>40 | Insurance App - Stage 2<br>40 |
| Human-Necrosis Mutation Tr<br>40 | Human-Necrosis Mutation Tr<br>40 | Totally Secure Drive<br>60    | Hash Lottery<br>70            |
| Black Box<br>70                  |                                  |                               |                               |

# How do Jeopardy-CTFs work?

The screenshot shows a Jeopardy-CTF interface. On the left, there's a sidebar with categories: 'misc' and 'sead22'. Under 'misc', there's a challenge titled 'flag format' worth 1 point. Under 'sead22', there are three challenges: 'Schrei Stage 1' (30 points), 'Human-Necrosis Mutation Tr' (40 points), and 'Black Box' (70 points). The main area displays the details for the 'flag format' challenge. It shows the title 'flag format', the point value '1', and a note '[intro]'. Below this is a list of messages:

- bob: What is a flag?
- alice: LosCTF[this\_is\_how\_a\_flag\_looks\_like]

Author: verr. There's a form with a 'Flag' input field and a 'Submit' button. Below the form are two buttons: '40' and '60'. To the right, there are other challenges: 'Insurance App - Stage 2' (40 points) and 'Hash Lottery' (70 points). At the top right, there are links for 'Register' and 'Login'.

# How do Jeopardy-CTFs work?

The screenshot shows a Jeopardy-CTF interface. On the left, there's a sidebar with categories: 'misc' and 'sead22'. Under 'misc', there's a challenge titled 'flag format' with a value of 1. Under 'sead22', there are three challenges: 'Schrei Stage 1' (30), 'Human-Necrosis Mutation Tr' (40), and 'Black Box' (70). The main area displays a challenge details page for 'flag format' worth 1 point. The title is 'flag format'. Below it is a text box containing the flag: `LosCTF(this_is_how_a_flag_looks_like)`. There's a 'Submit' button next to it. Above the text box, there's an 'intro' link. Below the text box, there's a note: 'Author: verr'. To the right of the challenge details, there are two more challenges: 'Insurance App - Stage 2' (40) and 'Hash Lottery' (70).

FuzzyLand

FAQ

Users

Scoreboard

Challenges

Register

Login

misc

flag format

1

intro

- bob: What is a flag?
- alice: LosCTF(this\_is\_how\_a\_flag\_looks\_like)

Author: verr

Submit

Schrei Stage 1

30

Human-Necrosis Mutation Tr

40

Black Box

70

flag format

1

LosCTF(this\_is\_how\_a\_flag\_looks\_like)

Submit

40

60

Insurance App - Stage 2

40

Hash Lottery

70

# How do Jeopardy-CTFs work?

The screenshot shows a Jeopardy-CTF interface. On the left, there's a sidebar with categories: 'misc' (containing 'flag format' with 1 point) and 'sead22' (containing 'Schrei Stage 1' (30), 'Human-Necrosis Mutation Tr' (40), and 'Black Box' (70)). The main area displays a challenge titled 'flag format' worth 1 point. It includes an 'intro' button and a list of messages from users 'bob' and 'alice'. Below the challenge is a 'Flag' input field and a 'Submit' button. A green 'Correct' message is displayed at the bottom. To the right, another sidebar shows challenges: 'Insurance App - Stage 2' (40) and 'Hash Lottery' (70). At the top of the screen, there are navigation links: FuzzyLand, FAQ, Users, Scoreboard, Challenges, Admin Requests, Notifications, Profile, Settings, and a help icon.

# AD-CTFs

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# Challenge Categories

Every team gets a server with vulnerable services

Goals

- Fix the own services
- Exploit the other teams

Typical categories

- Reverse engineering
- Binary exploitation
- Websecurity

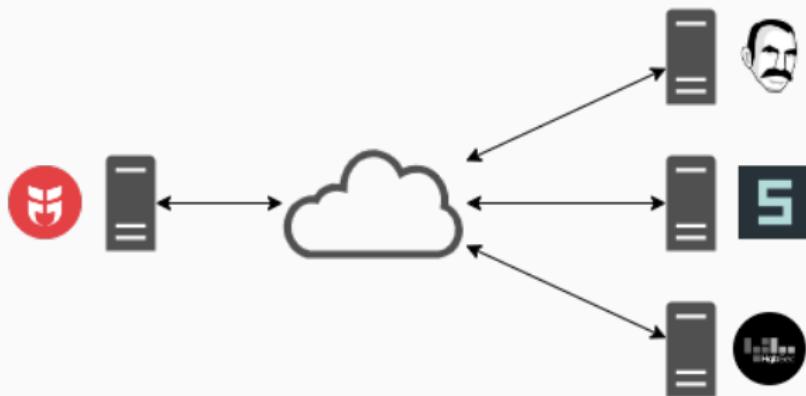
# How do AD-CTFs work?



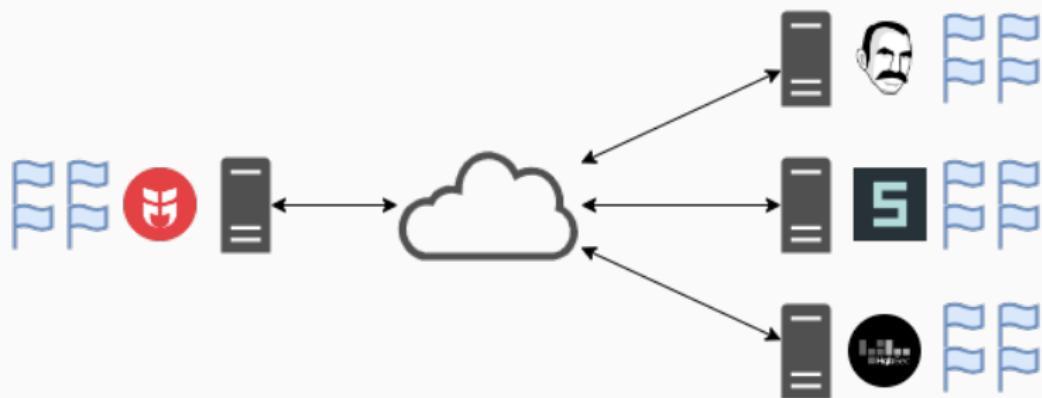
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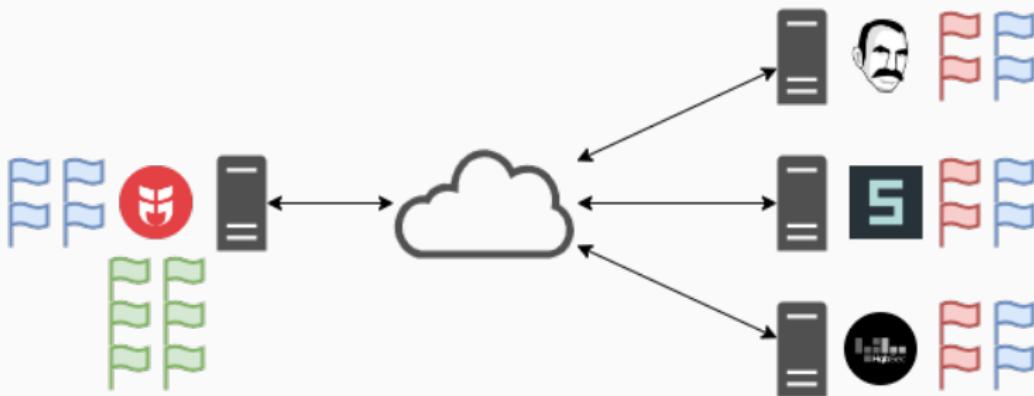
# How do AD-CTFs work?



# How do AD-CTFs work?



# How do AD-CTFs work?



# Introduction Challenges

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We prepared some challenges for you to try out.

<https://fuzzy.land> in the section **Intro to CTFs**

- Buffer Overflow 0 (Binary exploitation)
- My first reversing challenge (Reverseengineering)
- Session Rookie (Websecurity)
- My first Contract (Web3, Blockchain)
- Superior roman cipher (Cryptography)
- Network Rookie (Websecurity, Forensics)

We have LinuxUSB Sticks