



Introduction to CTFs

What are CTFs and how to get started

LosFuzzys

October 9, 2023

Introduction



- ~ 15 active Member
- Meet every Wednesday 18:15
(Infeldgasse 16a, ground floor)
- Regular competing in security competitions, host CTFs, trainings and workshops





What are CTFs?

- Capture the Flag
- Competitions with a focus on cybersecurity
- 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



Team rating

	2023	2022	2021	2020	2019	2018	2017	2016	2015
	2014	2013	2012	2011					

Place	Team	Country	Rating
1	Blue Water		1272.461
2	kamarunionen	DK	1030.562
3	C4T BUT S4D	RU	1010.123
4	JustCallTheFish	PL	887.259
5	r3kapig	DE	822.413
6	SKSD	PL	761.927
7	organizers	CH	708.467
8	thehackerscrew		701.765
9	Project Sekai		684.336
10	WreckTheLine		677.514

Full rating | Rating formula

Upcoming events

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

Now running

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

Past events

With scoreboard		All	
Place	Team	Country	Points
1	Rajdp Dey Sarkar		0.000
2	webhunter		0.000
3	ZzR0_1g0n		0.000

3 teams total | Tasks and writeups

MapleCTF 2023				
Oct. 02, 2023 00:00 UTC On-line Weight voting in progress				
Place	Team	Country	Points	
1	thehackerscrew		48,100	
2	Tower of Hanoi		35,846	
3				
4				
5				

Jeopardy-CTFs

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	flagception	chess-base
1	66	75

sead22

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

How do Jeopardy-CTFs work?



FuzzyLand FAQ Users Scoreboard Challenges [Create](#) [Logout](#) [Help](#) [About](#) [Contact](#)

Register Login

misc

flag format

1

intro

- bob: What is a flag?
- alice: LosCTF{this_is_how_a_flag_looks_like}

Author: verr

Flag

Submit

sead22

Schrel Stage 1

30

Human-Necrosis Mutation Tr

40

Black Box

70

Insurance App - Stage 2

40

Hash Lottery

70

The screenshot shows a Jeopardy-style CTF interface. On the left, a sidebar lists categories: misc, sead22, and Insurance App - Stage 2. Under misc, there's a challenge titled 'flag format' worth 1 point, with an intro section containing two messages from users 'bob' and 'alice'. Below this is a form with a 'Flag' input field and a 'Submit' button. In the center, there's a large challenge card for 'flag format'. To its right, under sead22, are three challenges: 'Schrel Stage 1' (30 points), 'Human-Necrosis Mutation Tr' (40 points), and 'Black Box' (70 points). To the right of these, under Insurance App - Stage 2, are 'Insurance App - Stage 2' (40 points) and 'Hash Lottery' (70 points). At the bottom, there are navigation links for FuzzyLand, FAQ, Users, Scoreboard, Challenges, Create, Logout, Help, and About.

How do Jeopardy-CTFs work?



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- bob: What is a flag?
- alice: LosCTF{this_is_how_a_flag_looks_like}

Author: verr

Submit

LosCTF{this_is_how_a_flag_looks_like}

40 60

sead22

Schrei Stage 1

30

Human-Necrosis Mutation Tr

40

Black Box

70

Insurance App - Stage 2

40

Hash Lottery

70

The screenshot shows a Jeopardy-style CTF interface. On the left, there's a sidebar with categories like 'misc' and 'sead22'. Under 'misc', there's a challenge titled 'flag format' worth 1 point. The challenge details page shows the question 'What is a flag?' and the answer 'LosCTF{this_is_how_a_flag_looks_like}'. Below the challenge are two boxes for submitting the answer: one for 40 points and one for 60 points. On the right, there are other challenges: 'Insurance App - Stage 2' (40 points) and 'Hash Lottery' (70 points). The top navigation bar includes links for FuzzyLand, FAQ, Users, Scoreboard, Challenges, Create, Logout, Register, and Login.

How do Jeopardy-CTFs work?



FuzzyLand FAQ Users Scoreboard Challenges Notifications Profile Settings

misc

flag format

1

sead22

Schrei Stage 1
30

Human-Necrosis Mutation Tr.
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Black Box
70

Challenge 477 Solves X

flag format

1

intro

- bob: What is a flag?
- alice: LosCTF[this_is_how_a_flag_looks_like]

Author: verr

Flag Submit

Correct

Insurance App - Stage 2
40

Hash Lottery
70

The screenshot shows a Jeopardy-CTF interface. On the left, there's a sidebar with categories like 'misc' and 'sead22'. Under 'misc', there's a challenge titled 'flag format' worth 1 point. The challenge details modal is open, showing the question text and a list of hints. Below the hints, it says 'Author: verr'. There's a text input field for the answer and a 'Submit' button. A green 'Correct' button is visible at the bottom of the modal. To the right of the modal, there are other challenges: 'Insurance App - Stage 2' (40 points) and 'Hash Lottery' (70 points). At the top, there's a navigation bar with links like 'FAQ', 'Users', 'Scoreboard', 'Challenges', 'Notifications', 'Profile', and 'Settings'.

AD-CTFs

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

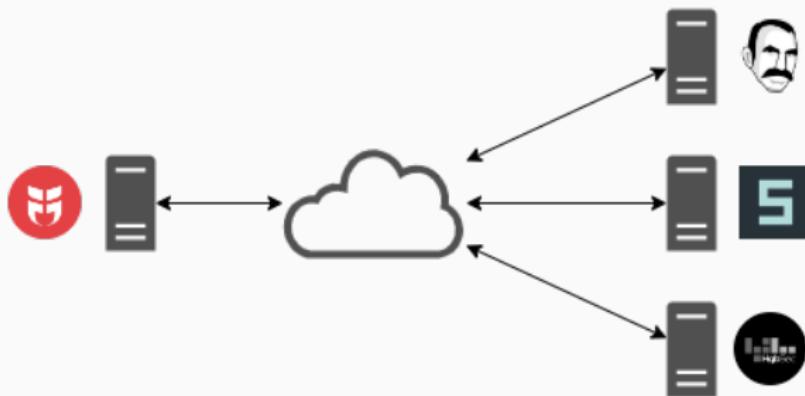
How do AD-CTFs work?



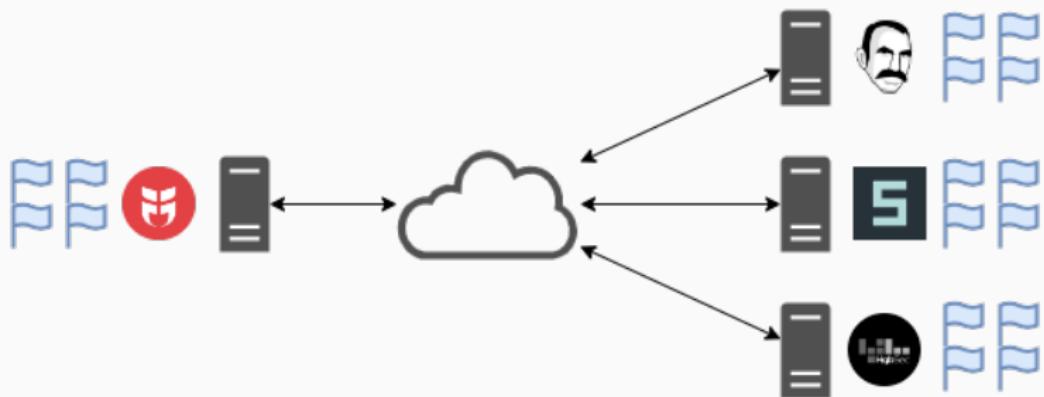
How do AD-CTFs work?



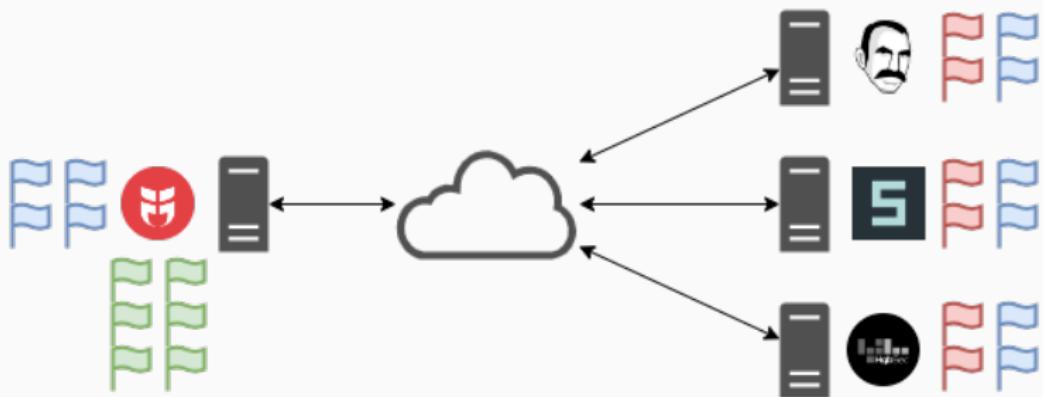
How do AD-CTFs work?



How do AD-CTFs work?



How do AD-CTFs work?



Introduction Challenges



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 Linux USB Sticks