

An introduction to CTF

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What is a CTF?

- Information security competition
- Usually organized by a university/security organization
- Solve security challenges and earn points by 'finding the flag'
- Compete with teams all over the world
- Fun way to learn about security!

Types of CTF events

- **Jeopardy**

- Most popular type
- Questions in different categories
- Gain points by solving the questions

CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5	CATEGORY 6
\$100	\$100	\$100	\$100	\$100	\$100
\$200	\$200	\$200	\$200	\$200	\$200
\$300	\$300	\$300	\$300	\$300	\$300
\$400	\$400	\$400	\$400	\$400	\$400
\$500	\$500	\$500	\$500	\$500	\$500

- **Attack-defense**

- Teams have their own network and services
- Goal is to attack other teams (attack points) and protect your services (defense points)
- You can have a mix of styles as well

TEAM BLUE
VS
TEAM RED

When and where?

- **When**

- Events are organized throughout the year
- Usually during weekends
- Check upcoming events on: ctftime.org

- **Where**





- Usually online
- Occasionally, you have live events as well






How does it work?

- Sign up for a team
- Register team on ctftime.org
- Pick an event and register the team for it
- Log in when the event starts and solve challenges
- You can work on challenges till the end time of the event
- Team ranking is published on ctftime.org
- Points over all events are aggregated for global team ranking
- Discuss/write about the challenges you solved/found interesting

ctftime.org

- Past and upcoming **events**
- Teams and **rankings** (country/university/global)
- **Write-ups** (solutions) to challenges
- **Ratings** of past CTF events

Upcoming events 			
Open		Finals	
Format	Name	Date	Duration
	THC CTF 2018 ✂ Toulouse, France	Fri, March 09, 20:00 — Sat, March 10, 16:00 UTC 26 teams	20h
	N1CTF 2018 🌐 On-line	Sat, March 10, 01:00 — Mon, March 12, 01:00 UTC 83 teams	2d 0h
	Tunisie Telecom Security Day ✂ Tunis, Tunisia	Tue, March 13, 09:00 — Tue, March 13, 16:00 UTC 5 teams	7h

Team rating			
2018 2017 2016 2015 2014 2013 2012 2011			
Place	Team	Country	Rating
👑 1	dcua		226.917
2	ncraneco		152.550
3	Harekaze		136.981
4	Epic Leet Team		136.396
5	Made In MIM		113.828

What can I expect?

- Challenges are in **various categories**
- Challenges will have **varying difficulty** (and hence varying number of points)
- Common categories (and examples):
 - Crypto (attack poorly implemented/vulnerable crypto protocol)
 - Reverse Engineering (analysis of binary files)
 - Forensics (discover hidden information in images/audio files/network traffic etc.)
 - Web (exploit vulnerabilities in websites)
 - Misc (can be anything!)

What can I expect?

- Questions can be quite challenging.
- It is very possible that you spend an entire CTF and don't manage to solve anything.
- Training outside of CTFs can be very helpful
 - Websites with mock CTF challenges
 - Training sessions with teammates

What can I expect?

- Time commitments
 - Not binding - participate whenever possible
 - More members = more events/more player rotation/more players per event = More points
- Background in security
 - Not required - basic CS knowledge and programming sufficient to get started
 - Beginners are welcome!
 - You do not need to be familiar with all categories!

A typical CTF team consists of players having varying skill levels in various categories

A few resources to get started

- OverTheWire overthewire.org/wargames/ : Practice challenges for different skill levels
- <http://pwnable.kr/> : Practice challenges in exploitation
- <https://w3challs.com/> : Practice challenges for different skill levels (with forums)
- Video (from Stevens): Building a Competitive Hacking [CTF] Team <https://www.usenix.org/conference/enigma2016/conference-program>

Next steps!

- Create an EPFL CTF team :)
- Name? - Register on ctftime.org
- Member list
- Communication channels
 - Mailing list - for important announcements
 - Slack - for discussion during events/training

Next steps!

- Training
 - Share resources
 - Find experienced players or trainers in various categories
- Pick events to participate in
 - Frequency
 - Number of players
 - Difficulty level

Thank you!

Questions/Suggestions?