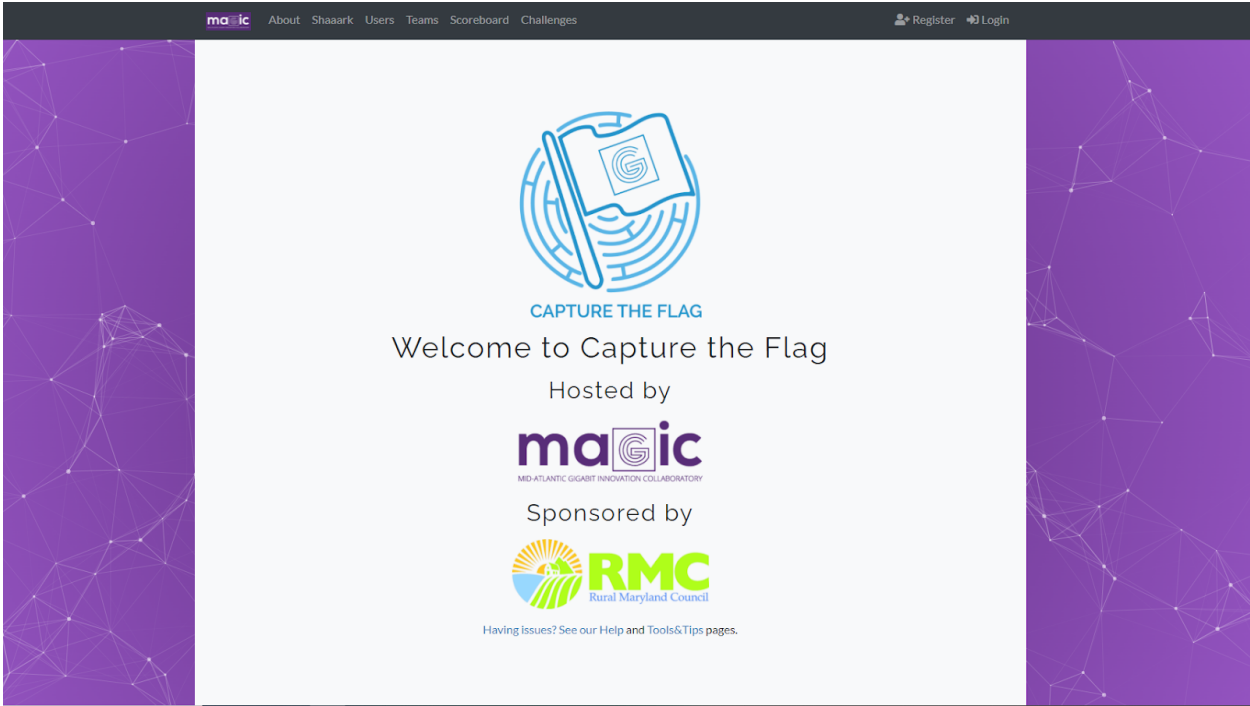



# Online CTF Information Packet for Teams




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CAPTURE THE FLAG

Welcome to Capture the Flag

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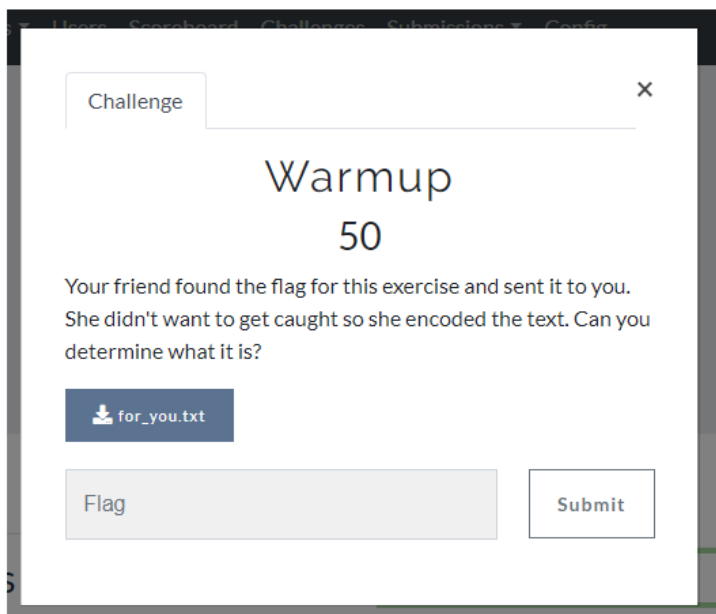
Having issues? See our [Help](#) and [Tools&Tips](#) pages.

The Capture the Flag (CTF) events are based on content originally developed by the cybersecurity professionals at Johns Hopkins Applied Physics Lab and further extended and modified by MAGIC. The content consists of sets of puzzles that require using various hacking tools, coding skills, and just plain puzzle solving to find the answers, which are short strings of code called “flags”. Once located, the flags are entered into a scoreboard, which keeps a tally for

# flag{this\_is\_a\_10\_pt\_flag}

for all teams. The team with the most points at the end of the timed competition wins.

**Puzzle example:** In this example, you would download the **for\_you.txt** file and examine the content to figure out the answer. That answer is entered into the flag field and submitted. If the answer is correct, you will collect 50 points.



# Team Instructions

CTF Platform website

Each team can consist of up to 4 team members. When registering, each member of the team should list their team name on the participant registration. Teams can start scoreboard registration the Wednesday before the competition date. We reset our system on the Tuesday before the competition to confirm new puzzles and reset the scoreboard. If a user or team registers before that date, their registration will be deleted from the system during the reset. A team/user can register right up to the beginning of the competition.

All registration questions must be answered. A valid email address must be provided. If your email cannot be validated during the registration process, you may not get access to the competition scoreboard. Your registration receipt will have the information needed to complete registration on the competition website.

## User Registration- Competition Site

All registration questions must be answered and are required. Please give a username that is appropriate. A valid email must be provided. In affiliation please put your host location or educational organization. Please enter a password that is at least four characters long and that you will remember and finally please enter your full First and last name

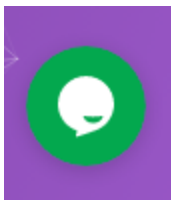
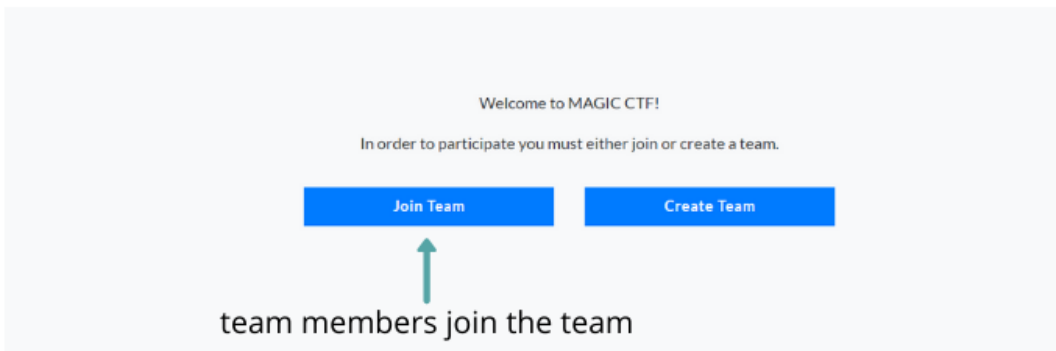
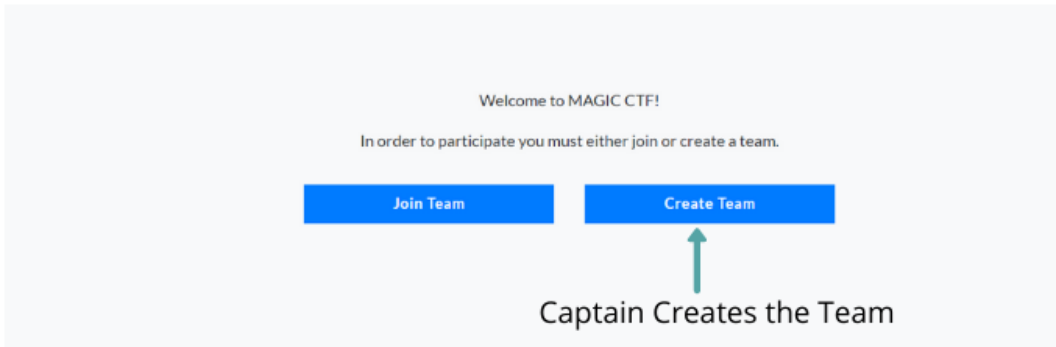
The image shows a registration form for 'maaic'. The form is centered on a white background with a purple border. The background features a purple geometric pattern of interconnected lines and dots. The form fields are as follows:

- User Name**: A text input field with the placeholder text 'Your username on the site'.
- Email**: A text input field with the placeholder text 'Never shown to the public'.
- Affiliation**: A text input field with the placeholder text 'School, College/University, Business'.
- Password**: A text input field with the placeholder text 'Password used to log into your account'.
- Full Name**: A text input field with the placeholder text 'Enter your full name (first + last)'.

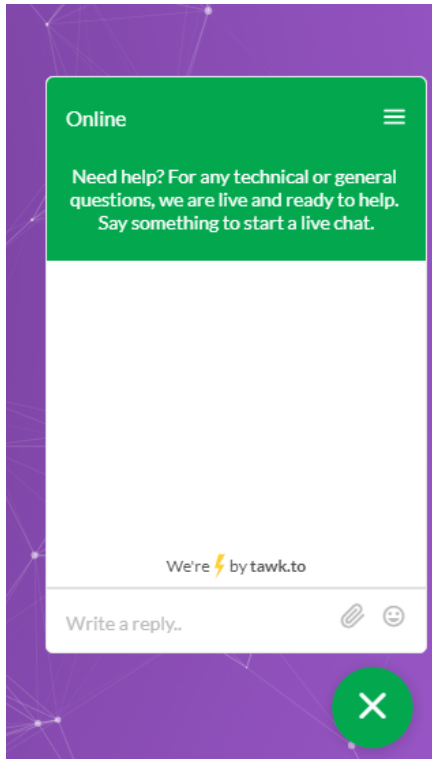
A blue 'Submit' button is located at the bottom right of the form.

## Team Registration

A person from each team should be designated as team captain. The team captain will register the team name on the competition site, [online.ctfmagic.org](https://online.ctfmagic.org) first. Once the team captain registers the team and creates a team password, the captain will pass along the team password for the other members to register to that team. Each member needs to create their individual credentials on the scoreboard and join the correct team created by their captain.



An online Chat will also be available on the competition website. The chat window will be located at the bottom right of the competition page. If you don't see the chat icon, support is not available to take questions. This chat window is for general questions or technical issues competitors may have during competition. We can't give answers about individual questions, but we can try to steer you in the correct direction.



\*\*\*The competition may include Easter Eggs(ctf icon, excluding the front page) within some of the puzzles, or a puzzle that may have a deliberate error which makes it unsolvable. If you find our Easter eggs or determine a puzzle does indeed have a snippet error, contact our chat personnel about an error. If your team finds the puzzle error first, each team member will get a prize. Winners of these found “**errors**” will be decided at the end of the competition by the time stamp of the incoming message to the chat system. You will be notified by email.

## Puzzle Information

The challenge puzzles are distributed by level of difficulty during the competition. We have several challenge levels.

**Level 0 puzzles:** Very basic beginner level puzzles. This level is composed of puzzles that require basic search knowledge. Google is your friend for these puzzles. The idea is to give participants the skill of how and where to find the resources they will need to solve the other level puzzles. This also allows beginners to get points on the board.

**Level 1 puzzles:** These puzzles delve into the basics of different tool sets you can use and the type of code conversions that may be required to find the answer. Hex to decimal, hash, etc. This level also introduces logical progression skills.

**Level 2 puzzles:** Puzzles in this level require more progressive thinking skills. Understanding how different tools work together to solve the challenge. These puzzles require several steps to solve.

**Level 3 puzzles** are broken down into two categories. Windows and Linux. This is a higher difficulty level.

- **Windows:** Challenges specific to the Windows operating system. This level requires a good understanding of Windows and its policies and processes. You also need to understand the windows command line.
- **Linux:** Challenges specific to the Kali Linux operating system. This level requires a very good understanding of Linux and its command line syntax. A Linux environment is available for use in beta format to help with these puzzles.

**Investigation Level Puzzles** are a series of forensic puzzles that must be solved in a certain order and limit the number of solves allowed. These puzzles are extremely difficult and require the user to download forensic evidence.

- Some of the downloaded files needed for these puzzles will set off any anti-virus software you may have installed on your computer system. Although the files **DO NOT** contain viruses, there are certain “virus” markers that most virus software look for.
- A local download folder should be created that is Excluded from the antivirus software. This will allow the user to download the file for use in solving the puzzles. You should google “excluding a folder from {my anti-virus software}”. This will give you directions on how to create an excluded folder specific to your antivirus software. Ex: “Excluding a folder from Norton”

**Web Puzzles** are challenges that require access to a fictitious website to perform various tasks to location flags within the site. This may include the use of Steganography, cookie investigations, hashing passwords, etc.

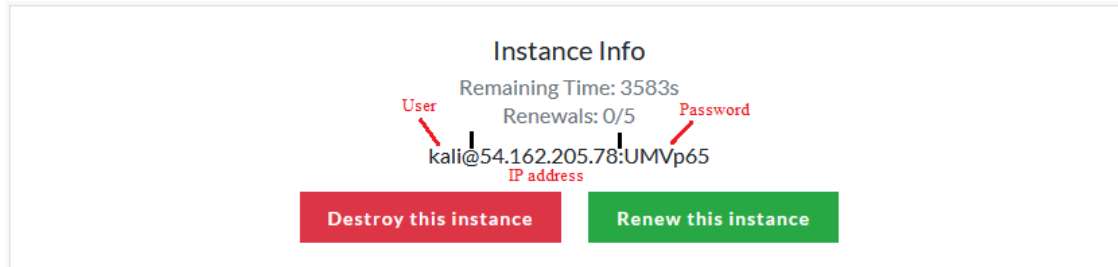
There is no wrong way to work these puzzles. Your teams can break the competition down into sections or have a team member assigned to a specific level to solve the problem. You don't have to solve the levels in order. Do a round robin style and answer what you can quickly then go back for a second pass of the more difficult challenges. You can use any tools or online knowledge base you need to help. However, using personnel resources that are not registered team members is prohibited.

Please read the competition rules and 10 Principles of Ethical Hacking. We take the principles of ethical hacking very seriously and hope that our competitors will adhere to honest competition.



# Shaaark(beta)

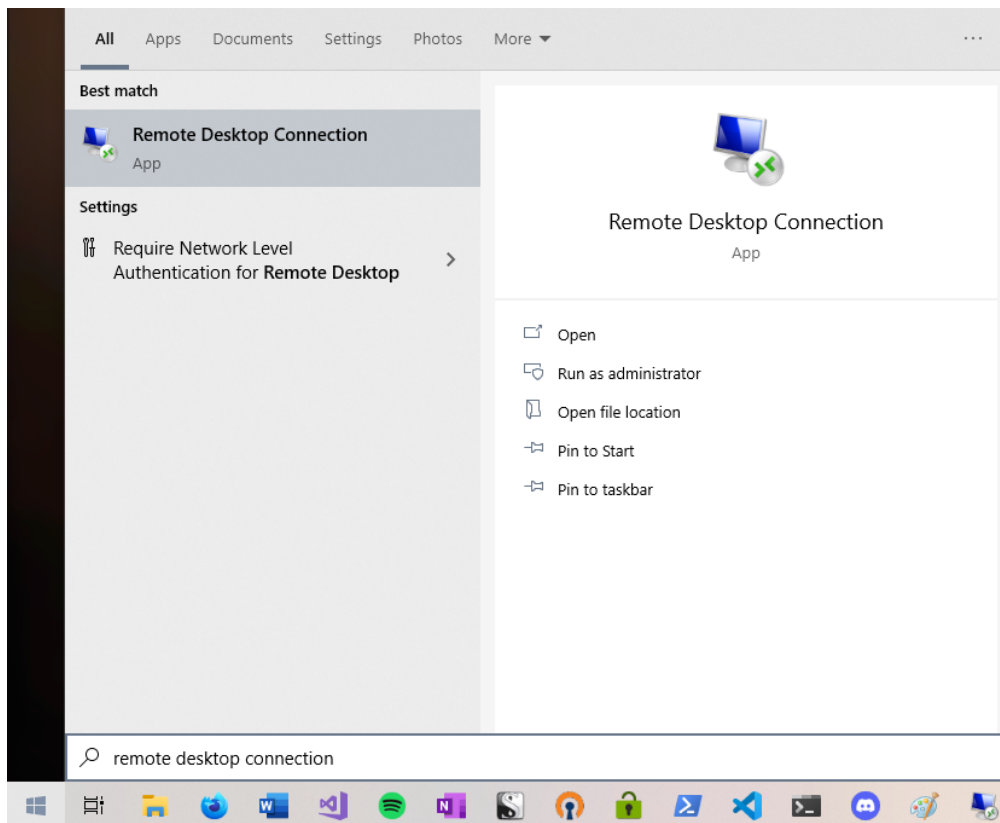
Shaaark is an addin to the CTF platform that allows teams to create a Kali Linux instance to use during the completion. Each team should only utilize one(1) instance for the competition. **This iteration is currently in beta testing**, so use at your own **discretion** and please report any bugs you may find when using. This allows us to make corrections for future releases.



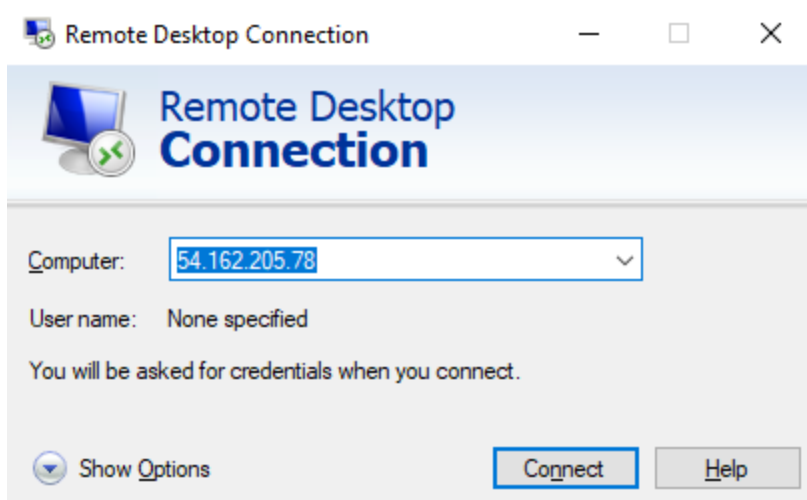
## Connection using xRDP (Remote Desktop Connection) – Recommended

*Requirements: Windows 7 or later*

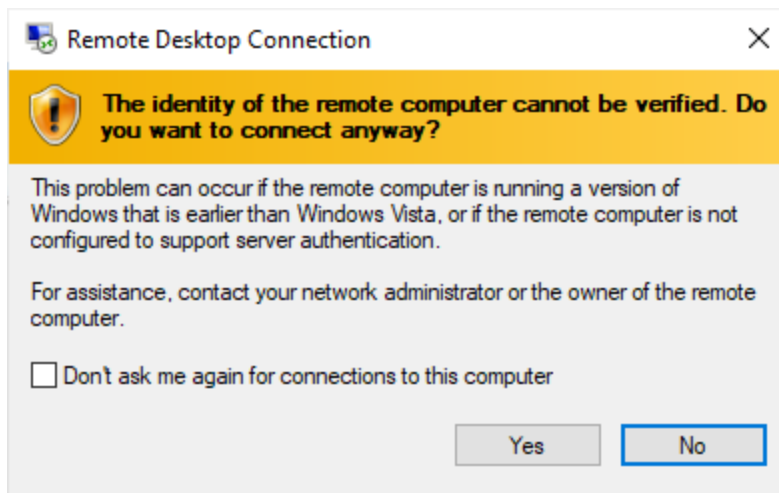
1. Click on the *Start menu* in the bottom-left corner and type in “remote desktop connection” or “rdp” and press ENTER.



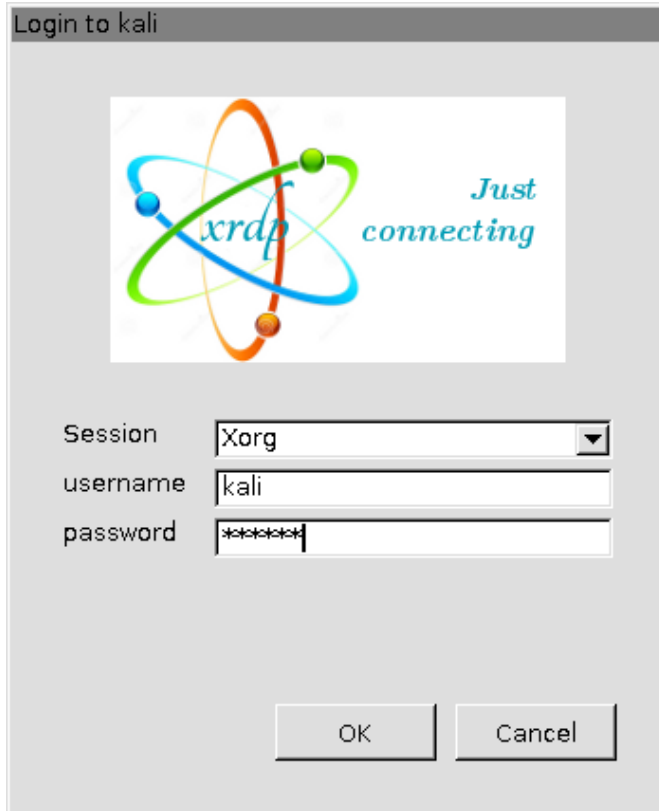
2. In the *Computer* field, type in the IP address given to you and click *Connect*.



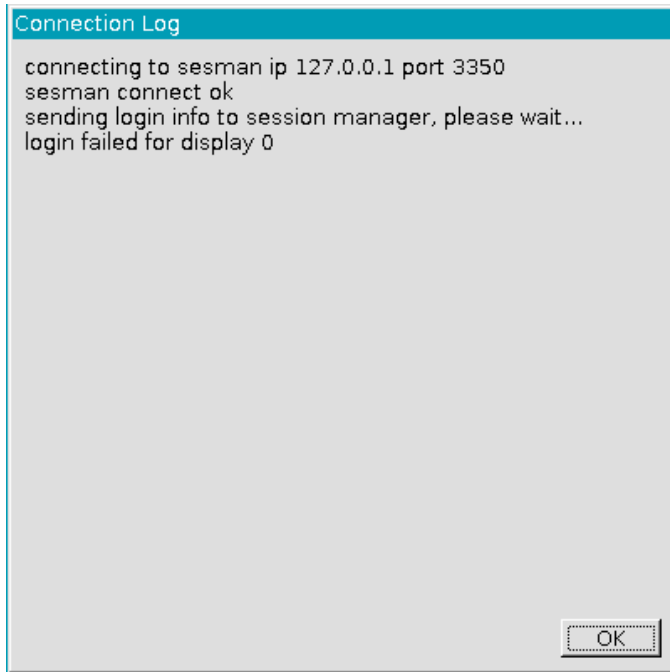
3. When prompted by a warning popup, press Yes to continue.



4. At the login screen, leave the *Session* option as the default and login using "kali" as the username and the password given to you. When ready, press OK to login.  
Note: Copy-paste will not work on the login screen.



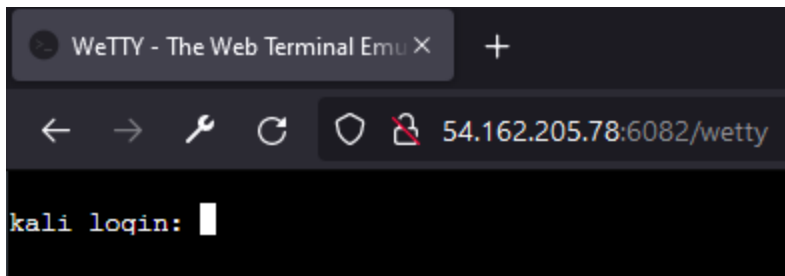
NOTE: If presenting with a screen like the following when attempting to login, it's likely that the credentials have been incorrectly typed in.



### Connection using WeTTY (Web TTY)

*Requirements:* Modern web browser

1. Navigate to <http://<IP>:6082/wetty> in your preferred web browser.



2. Login using the username “kali” and the password given to you.  
NOTE: The password *will* be invisible when typed in.

```
kali login: kali
Password:
Linux kali 5.15.0-kali3-cloud-amd64 #1 SMP Debian 5.15.15-1kali2 (2022-01-25) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Jan 28 19:53:40 UTC 2022 from 73.134.167.248 on pts/0
└─(Message from Kali developers)
|
| This is a cloud installation of Kali Linux. Learn more about
| the specificities of the various cloud images:
| => https://www.kali.org/docs/troubleshooting/common-cloud-setup/
|
└─(Run: "touch ~/.hushlogin" to hide this message)
(kali@kali) ~
└─$
```

## Connection using SSH

*Requirements:* SSH2 client

1. Enter into your terminal: "ssh kali@<IP address>" and press ENTER.

```
felix@UME0PF7F:~$ ssh kali@54.162.205.78
```

2. When prompted, type in "yes" to the warning notice.

```
The authenticity of host '54.162.205.78 (54.162.205.78)' can't be established.
ECDSA key fingerprint is SHA256:cYnN600XEm+1VzrrDtIk5GQr2Bm4CuSRmxXjsPSQA3c.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
```

3. At the password prompt, type in the given password and press ENTER when finished.  
NOTE: The password *will* be invisible when being typed in.

```
felix@UME0PF7F:~$ ssh kali@54.162.205.78
kali@54.162.205.78's password:
Linux kali 5.15.0-kali3-cloud-amd64 #1 SMP Debian 5.15.15-1kali2 (2022-01-25) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun Jan 30 00:38:38 2022 from localhost
┌─(Message from Kali developers)
│
│ This is a cloud installation of Kali Linux. Learn more about
│ the specificities of the various cloud images:
│ - https://www.kali.org/docs/troubleshooting/common-cloud-setup/
│
└─(Run: "touch ~/.hushlogin" to hide this message)
┌─(kali@kali)-[~]
└─$
```

# Competition Rules

## Participation Criteria:

- Each individual who participates in the Competition (“Participant”) must be at least 13 years of age.
- Participants Must be a current student in an accredited middle school, high school, or home schooled program. College level students must be currently enrolled in an accredited undergraduate program.
- Post graduate or certified professionals in the field of Cybersecurity are prohibited from competition.
- Previous MAGIC CTF winners are excluded from participation.

By participating in the Competition challenges, you agree to these Competition Rules with respect to the current Competition.

1. Individuals and/or Teams may not interfere with the progress of other individuals/Teams, nor with the operation of the Competition’s infrastructure. More specifically, attacking the scoring server, other Teams, or machines not explicitly designated as targets is cheating. This includes both breaking into such machines, and denying others access to them or the ability to solve problems. Sharing keys or providing overly-revealing hints with other teams is cheating, as is being directly assisted by personnel outside the Team (using tools from the internet is OK; asking people on the internet to help solve the problem is not). We encourage participants to solve problems in novel and creative ways using all available resources, but we do require that Participants solve the problems themselves.
2. All information provided to establish an account must be true and correct. You are responsible for keeping such information up-to-date. Failure to keep your account up-to-date may, among other things, jeopardize your eligibility to compete.
3. You must utilize appropriate usernames and team ids. No usernames and IDs will be allowed that promote a negative connotation or meaning. MAGIC will disqualify a participant if we deem inappropriate IDs are being used. This includes icons and emojis.
4. MAGIC runs an honest, ethically responsible competition. At any time, in the sole and absolute discretion of MAGIC, we shall be entitled to disqualify a Participant and/or Team in the event of a failure to meet relevant eligibility criteria or any other violation or suspected violation of these Competition Rules.

5. Professional teams and teams that have professional skill levels and rankings should not participate in this beginner-level educational competition. MAGIC strictly aims to host a beginner competition meant for educational purposes and to allow participants to "get their foot in the door" of cybersecurity. Professional or ranked teams will automatically be disqualified at the end of the event.
6. Competition problems(challenges) or other content on the MAGIC site remains the property of MAGIC. MAGIC reserves all rights to such materials. You are authorized to access and use such materials solely with respect to registration for and/or participation in virtual CTF by you. You may not use the MAGIC site or any materials on it (including but not limited to the Competition problems) for any unauthorized purpose.
7. In this competition, tie breaks are essentially resolved by time. If two teams have the same score at the conclusion of the competition, the team with the oldest score timestamp will be declared the winner.



## **10 Principles of Ethical Hacking**

- 1. I will respect other users and not use information to harm another person or organization.***
  - Network and/or computer use should always be used in a respectful manner for the greater good.
  - I will respect the privacy and dignity of Internet users. I will not use, copy, or delete another user's files, folders, or passwords. I will not use the Internet for inappropriate or illegal use.
- 2. I will be honest, ethical, moral and true to my word while using my technical skills.***
  - I will report any illegal activity or threatening material I come across.
- 3. I will treat others online and in digital environments as I would want to be treated.***
  - I will not use any digital network to harm the reputation of, harass, or threaten others.
- 4. I will be courageous in the face of adversity and continually challenge myself.***
  - I will keep my technical skills up to date and continue to learn.
  - I will persevere even when the challenges are difficult or seemingly impossible.
- 5. I will strive to have a positive attitude and be civil at all times even when the technology is not functioning properly.***
  - Technology can be unreliable and inconsistent; therefore patience and understanding are virtues that need to be practiced at all times. Always have a backup ready in case of technological failure.
- 6. I will approach every digital task with passion, conviction and persistence.***
  - I will acknowledge my computer and networking privileges and use these privileges to enhance learning and to benefit all.
- 7. I will work to reach my full potential while applying hacking techniques.***
  - I will perform services only in areas I am competent in. I will rely upon other qualified professionals for assistance in matters that are beyond my area of expertise.
  - I will do my best to thoroughly examine and analyze all evidence, and will not withhold any of my findings.

8. ***I will take full responsibility for my digital actions and their consequences.***
  - I will refrain from doing harm, vandalizing, or destroying hardware, software or networking access.
  - I will always acknowledge my errors and will not distort or alter the facts.
  - I am to be committed to the integrity of hacking, and will avoid situations where I might contribute to the wrongdoing of others.
  
9. ***I will be thankful for and generous with my time and talents by sharing with other users.***
  - When I am able, I will assist any individual who is in need of tech support or guidance at appropriate times.
  
10. ***I will be humble and always act with integrity. I will not seek fame or fortune but use my skills to understand, alert and keep the public safe from harm.***

**GOOD LUCK!**