ETHICAL HACKING





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The Role of the Ethical Hacker



Ethical hacking is a pre-emptive form of information security, and certified Ethical Hackers can also land roles as penetration testers. An ethical hacker is expected to be a computer and networking expert who methodically attempts to penetrate a computer system or network with the authorization of its owners with the purpose of finding security vulnerabilities that a malevolent hacker could detect and exploit to the detriment of the network.

Ethical hackers use the same procedures and techniques to assess and circumvent a system's

defenses as the malevolent hacker would, but rather than benefiting from any vulnerabilities found, they document this flaw and provide actionable advice on how to fix it so the organization can improve its overall security. In some instances, the Ethical Hacker is also expected to help fix such vulnerabilities.

More often than not, a Certified Ethical Hacker has acquired a certification in how to look for the weaknesses and vulnerabilities in target systems while using the same knowledge and tools as a malicious hacker.

Different bodies might offer different certifications. While a lot of organizations overlook the importance of Ethical Hacking, more often than not, vulnerabilities tend to be found in poorly designed system configurations, hardware or software faults, and operational flaws in process or technical countermeasures.

One of the first documented examples of Ethical Hacking was the United States government's 'Red Team' project, devised to hack into its own computer systems. Today, Ethical Hacking has become a major sub-industry within the information security sector, and has expanded to also cover the physical and human elements of an organization's defenses. It should be noted that a successful test doesn't necessarily mean a network or system is 100% safe, but it should be able to withstand automated attacks and unskilled hackers.

Job Profile Of An Ethical Hacker

Here are the responsibilities and functions you may be expected to take up, as a professional

Ethical\White-Hat Hacker:



Conduct Network Penetration tests to find and fix security vulnerabilities.



Conduct application analysis, malware analysis, and protocol analysis.



Reverse engineer programs, software, and algorithms



Debug programs and software packages

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Salary Review For Ethical Hacker (USA)

The average salary scale for ethical hackers in the United States is approximately \$80,000. Because Ethical Hacking is a fairly new profession, experience level determines salary to a large extent. While most job adverts reveal that having a first degree in computer science or information technology related discipline is key, certifications are also very important to attract higher pay. Statistics say majority (81%) of security experts believe certification is a crucially important hiring criterion.

Salary Review by Years of Experience (USA)

As earlier stated, experience matters a lot in this field, and experienced Ethical Hackers stand to earn much more than the average. Entry-level professionals can expect a pay-range of \$50, 000 to \$100,000 as an annual pay package, though the actual figure varies by organization and location, while mid-career professionals can expect to earn anywhere between \$100,000 and \$120,000. More Experienced professionals can expect to take home salaries over \$120,000. The table below indicates the figures for each career-level, based on years of experience.

| Salary Range (USD) | Years | Definition |
|--------------------|--------------|-------------|
| \$50000-100000 | 0-5 | Entry Level |
| \$100000-120000 | 5-10 | Mid-Career |
| \$120000 and above | 10 and above | Experienced |

Table 1.0 Salary Review by Experience

Salary Review By Certification (USA)

Certified Ethical Hackers earn well more than the average salary, in this sector. Professional credentials affect the pay significantly. The three major certifications in this sector are:

Certified Ethical Hacker (CEH)

GIAC (Global Information Assurance Certification) Penetration Tester (GPEN) Offensive Security Certified Professional (OSCP)

Of these, the Certified Ethical Hacker is the most popular and sought-after certification. On average, CEH-certified professionals take home take home salaries that are 8.9% more than the average salary for non-certified professionals at the same level of experience, while GPEN holders can expect to receive a 10 % boost over the others at the same level. OSCP certificates are lesser known but according to statistics the average pay for professionals with OSCP Certification is 4% higher compared to all experts with the same job title.

| Certification | Salary Difference from Professionals at same level |
|--|---|
| GIAC (Global Information Assurance Certification) Penetration Tester (GPEN) | 10% |
| Certified Ethical Hacker (CEH) | 8.9% |
| Offensive Security Certified Professional (OSCP) | 4% |

Table 2.0 Salary Review by Certification

Salary Review by Location (USA)

San Francisco is at the top end of the spectrum with regards to remuneration for professionals. Ethical Hackers in this location enjoy a pay package higher than the national average (of approximately \$110,000). Boston and Houston also offer higher pay margin, while professionals in Denver, Austin, and Minneapolis have to settle for packages that are below the national average.



Table 3.0 Salary Review by Location

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Salary Review (India).



Statistics indicate that the average salary for an **Ethical Hacker** in **India** is

Rs 343,232 per year.

There is a significant increase in pay with experience.

Salary Review By Years Of Experience (India)

The figures shown below include salary and all other form of compensation for an Ethical Hacker in India. Available Statistics indicate that the salary range for Entry-level Ethical Hackers is about Rs300,000 to Rs. 500,000, while Mid-career professionals can expect to earn between Rs. Rs.500,000 to Rs.800,000. Experienced Ethical Hackers can expect to receive INR 800,000 and above, depending upon company and location

| Salary (Rupees) | Years | Definition |
|-------------------|--------------|-------------|
| ₹300000-500000 | 0-5 | Entry Level |
| ₹500000-800000 | 5-10 | Mid-Career |
| ₹800000 and above | 10 and above | Experienced |

Table 4.0 Salary Review by Years of Experience.

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Salary Review by Certification (India)

Professionals with CEH certification earn a median salary of about Rs.350,000 in a year.

| Certification | Salary Difference from Average |
|-------------------|--------------------------------|
| CEH Certification | 16% |

Table 5.0 Salary Review by Certification

Salary Review by Location (Certified Ethical Hackers, India)

Here are the salary figures for Certified Ethical Hackers, by location (city):

| Location | Salary Range (Rupees) |
|-----------|-------------------------|
| Bangalore | Rs 247,157 - Rs 968,74 |
| Mumbai | Rs 179,097 - Rs 800,165 |
| Pune | Rs 152,605 - Rs 704,739 |
| Chennai | Rs 196,579 - Rs 839,881 |
| Hyderabad | Rs 231,576 - Rs 888,157 |

Table 6.0 Salary Review by Location

As is obvious from the table, Bangalore leads the pack, with certified Hackers able to command salaries over 900,000 INR per annum.

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Salary Distribution By Gender

In the United States, the profession of Ethical Hacking is dominated by men, as the figures below indicate. While there are no definite gender figures about India, indices show that 95% of certified ethical backers are men:

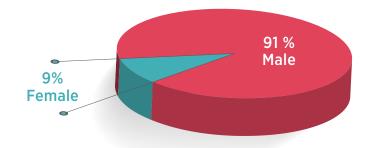


Table 7.0 Ratio of Men/Women in Ethical Hacking



In conclusion, Ethical Hacking is a much sought-after new-age profession in IT Security, with an increasing number of young IT whiz-kids drawn to Ethical Hacking by the lure of the salaries on offer, as well as the tremendous scope of the field.

In some industries, the ethical hacker is sometimes called a legal or white-hat hacker, and a malicious hacker is termed a black-hat hacker. Any business that has a network connected to the Internet or offers an online service should contemplate subjecting its network to a standard penetration test by Ethical Hackers. Various standards such as the Payment Card Industry Data Security Standard necessitate companies to carry out penetration testing from both an internal and external perspective on an annual basis and after any significant change in the infrastructure or applications.

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