

Network Security Challenge 05 - Easy

The government is beginning to doubt the competence of their “IT-Security Consultant” and has requested a demonstration of his skill. They requested implementations of the three MAC algorithms HMAC, CBC-MAC, and CMAC.

However, Nolan misinterpreted the HMAC task and tried to find the connection between Hash¹ and MACs. Now he is not in a condition to implement the correct HMAC algorithm, which is why you need to help him out.

The server sends you a challenge message. You need to compute all three MACs for this message using the key `KEY = b'1337133713371337'`. The server expects the MACs in the following format, where each MAC has been base64 encoded:

```
answer = f'{hmac};{cbc_mac};{cmac}'
```



Exercise 5–1 is hosted at netsec.net.in.tum.de at port 20105.

The `Crypto.Cipher` (pycryptodome) and `hashlib` (standard library) modules are allowed for this challenge.

The `Crypto.Hash` and `hmac` modules are **forbidden** and using them will result in zero points for this challenge.

We recommend connecting to the server using `netcat` (`man nc`) first.

It is advisable to have a Linux system at hand for the challenges. Our servers and clients are written in python.

¹<https://en.wikipedia.org/wiki/Hashish>