



ASCII Numbers

ASCII Numbers 



Medium

General Skills

picoGym Exclusive

AUTHOR: LT 'SYREAL' JONES

Description

Convert the following string of ASCII numbers into a readable string:

```
0x70 0x69 0x63 0x6f 0x43 0x54 0x46 0x7b 0x34 0x35 0x63 0x31  
0x31 0x5f 0x6e 0x30 0x5f 0x71 0x75 0x33 0x35 0x37 0x31 0x30  
0x6e 0x35 0x5f 0x31 0x6c 0x6c 0x5f 0x74 0x33 0x31 0x31 0x5f  
0x79 0x33 0x5f 0x6e 0x30 0x5f 0x6c 0x31 0x33 0x35 0x5f 0x34  
0x34 0x35 0x64 0x34 0x31 0x38 0x30 0x7d
```

Hints 

1 2

CyberChef is a great tool for any encoding but especially ASCII.

31,178 users solved



85%
Liked



 picoCTF{FLAG}

Submit
Flag

Author: The Analyst: Hyposelenia

Challenge: ASCII Numbers

Category: General Skills

Date: 01/18/26



I. Objective

The objective of this challenge is to decode a given sequence of **ASCII values** represented in **hexadecimal format** and retrieve the hidden message (flag). This task helps develop familiarity with common encoding formats used in cybersecurity and Capture The Flag (CTF) challenges.

II. Background

In many CTF challenges, information is not shown directly as readable text. Instead, it is encoded using different number systems or character encodings such as ASCII, hexadecimal, or binary. Understanding how these encodings work is essential for interpreting hidden data, reversing simple obfuscation, and solving beginner-level cybersecurity problems.

The **ASCII Numbers** challenge focuses on recognizing hexadecimal values and converting them back into readable ASCII characters.

III. Tool Used

- **Oracle VirtualBox (Kali Linux)** – Used as the Linux environment
- **Linux Terminal** – Used to execute decoding commands
- **Cyberchef** – Used to decode hexadecimal values into readable text

IV. Methodology

1. Copied the given string of ASCII numbers from the challenge.
2. Opened a web browser.
3. Searched for **CyberChef**.
4. Pasted the string of ASCII numbers into the input field of CyberChef.
5. Selected the **“From Hex”** operation (double-clicked to apply it).
6. Observed the decoded output.
7. Copied the decoded flag and pasted it into the submission field.



V. Result

picoCTF{45c11_n0_qu35710n5_1ll_t311_y3_n0_l135_445d4180}

The screenshot displays the CyberChef web application. On the left, the 'Operations' sidebar lists various tools like 'To Base64', 'From Base64', 'To Hex', 'From Hex', 'To Hexdump', 'From Hexdump', 'URL Decode', 'Regular expression', 'Entropy', 'Fork', 'Magic', 'Data format', 'Encryption / Encoding', and 'Public Key'. The 'Recipe' panel is active, showing a 'From Hex' operation with a 'Delimiter' set to 'Auto'. The 'Input' panel contains a long hex string: 0x70 0x69 0x63 0x6f 0x43 0x54 0x46 0x7b 0x34 0x35 0x63 0x31 0x31 0x5f 0x6e 0x30 0x5f 0x71 0x75 0x33 0x35 0x37 0x31 0x30 0x6e 0x35 0x5f 0x31 0x6c 0x6c 0x5f 0x74 0x33 0x31 0x31 0x5f 0x79 0x33 0x5f 0x6e 0x30 0x5f 0x6c 0x31 0x33 0x35 0x5f 0x34 0x34 0x35 0x64 0x34 0x31 0x38 0x30 0x7d. The 'Output' panel shows the decoded result: picoCTF{45c11_n0_qu35710n5_1ll_t311_y3_n0_l135_445d4180}. At the bottom, there is a 'BAKE!' button and an 'Auto Bake' checkbox.

[https://toolbox.itsec.tamu.edu/#recipe=From_Hex\('Auto'\)](https://toolbox.itsec.tamu.edu/#recipe=From_Hex('Auto'))



VI. Explanation

You might ask, what's ASCII? Well... **ASCII (American Standard Code for Information Interchange)** is a character encoding standard where each character (letters, numbers, symbols) is represented by a number. For example:

- A = 65 (decimal)
- a = 97 (decimal)

These numbers can be written in different number systems, such as **decimal**, **binary**, or **hexadecimal**.

Hexadecimal (hex) is a base-16 number system that uses:

0–9 and A–F

Hex is commonly used in computing because it is shorter and easier to read than binary.

The challenge provided values like:

0x70 0x69 0x63 0x6f 0x43 0x54 0x46 ...

Each value:

- Starts with 0x, indicating **hexadecimal**
- Represents one ASCII character

For example:

- 0x70 → 112 (decimal) → p
- 0x69 → 105 (decimal) → i
- 0x63 → 99 (decimal) → c
- 0x6f → 111 (decimal) → o

When decoded continuously, these characters form the readable string:

picoCTF{...}

So, try to take advantage with that with other names outside picoCTF, especially in the competition you join.

Also, this is the difference between the two, you might need it.



ASCII

A character encoding

Represents characters

Example: p

Human-readable

Hexadecimal

A number system

Represents values

Example: 0x70

Compact, machine-friendly

Hex is often used to **store or display ASCII values**, but it is not an encoding itself—it is just a way to write numbers.

For the tool I used, **CyberChef** is an online tool commonly used in cybersecurity for:

- Encoding and decoding data
- Converting between formats (hex, ASCII, Base64, etc.)
- Analyzing suspicious or obfuscated data

In this challenge, CyberChef’s “**From Hex**” operation was used to convert hexadecimal values into readable ASCII characters automatically, making it an efficient and beginner-friendly solution.

VII. Conclusion

The **ASCII Numbers** challenge demonstrates how simple encoding techniques are used to hide information in CTF challenges. By understanding the relationship between hexadecimal values and ASCII characters, the encoded message was successfully decoded using CyberChef. This challenge reinforces the importance of recognizing common encodings and using appropriate tools to analyze and decode data efficiently.

— The Analyst: Hyposelenia