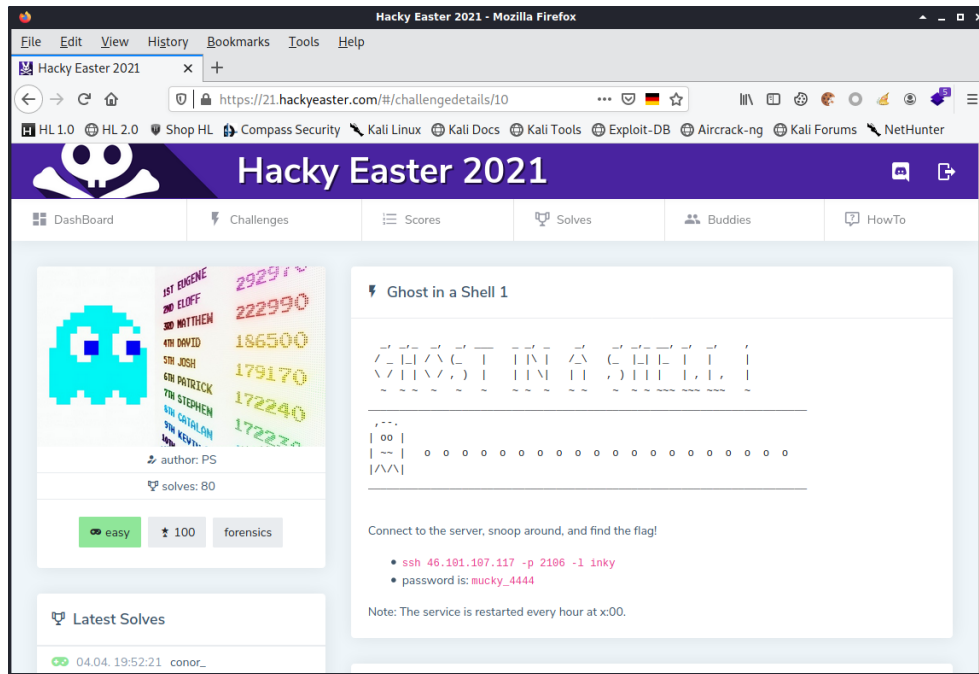


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Ghost in a Shell 1

1. Click the **Ghost in a Shell 1** image:



2. Open a Terminal window.
3. Execute the following command, from the Terminal window, to open a ssh session to server **46.10.107.117**, port **2106**, as user **inky**:

ssh 46.101.107.117 -p 2106 -l inky

```
inky@46.101.107.117's password:
```

4. Type **mucky_4444** and then press the **Enter** key:

[illegible]

Find the flag!

366dce1a9491:~\$

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5. Execute the following command, from the Terminal window, to list the contents of the current directory, in the long format:

ls -la

```
total 40
drwxr-xr-x  1 root  root    4096 Apr  4 19:00 .
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 ..
-rwxr-xr-x  1 root  root      15 Apr  4 19:00 .bashrc
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 images
-rwxr-xr-x  1 root  root    2183 Feb 27 17:53 notes.txt
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 text
```

6. Execute the following command, from the Terminal window, to list the contents of the **images** directory, in the long format:

ls -la images

```
total 304
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 .
drwxr-xr-x  1 root  root    4096 Apr  4 19:00 ..
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 ...
-rwxr-xr-x  1 root  root   23864 Feb 27 17:53 ghost_1.png
-rwxr-xr-x  1 root  root   25957 Feb 27 17:53 ghost_2.png
-rwxr-xr-x  1 root  root   37335 Feb 27 17:53 ghost_3.png
-rwxr-xr-x  1 root  root   30530 Feb 27 17:53 ghost_4.png
-rwxr-xr-x  1 root  root   27476 Feb 27 17:53 ghost_5.png
-rwxr-xr-x  1 root  root   35378 Feb 27 17:53 ghost_6.png
-rwxr-xr-x  1 root  root   31358 Feb 27 17:53 ghost_7.png
-rwxr-xr-x  1 root  root   32507 Feb 27 17:53 ghost_8.png
-rwxr-xr-x  1 root  root   27413 Feb 27 17:53 ghost_9.png
```

7. Execute the following command, from the Terminal window, to list the contents of the **images/...** directory, in the long format:

ls -la images/...

```
total 36
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 .
drwxr-xr-x  1 root  root    4096 Apr  3 05:23 ..
-rwxr-xr-x  1 root  root   20263 Feb 27 17:53 ...
```

8. Execute the following command, from the Terminal window, to display the first **16** hexadecimal bytes in the **images/.../...** file:

head -c 16 images/.../... | xxd

```
00000000: 8950 4e47 0d0a 1a0a 0000 000d 4948 4452  .PNG.....IHDR
```

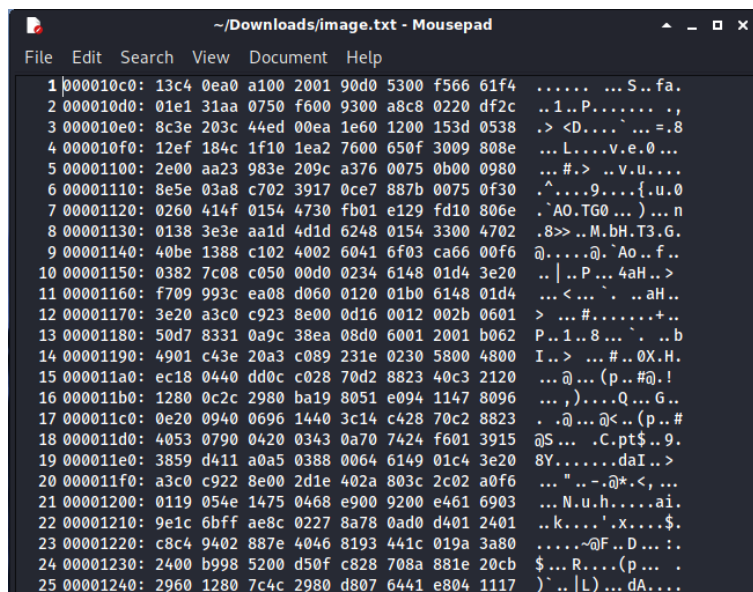
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9. Execute the following command, from the Terminal window, to display the hexadecimal bytes in the **images/.../...** file:

xxd images/.../...

```
.
.
.
00004e90: dddd 6b67 eccd 380f f319 b3ff 6777 7767  ..kg..8.....gwwg
00004ea0: e7ec 015b 5b9b 9b57 af5e d9e0 c77e 0afc  ...[[..W.^...~..
00004eb0: 7fd6 8199 f1b5 6147 ed00 0000 2574 4558  ....aG....%tEX
00004ec0: 7464 6174 653a 6372 6561 7465 0032 3032  tdate:create.202
00004ed0: 302d 3037 2d30 3154 3136 3a30 333a 3235  0-07-01T16:03:25
00004ee0: 2b30 303a 3030 2e0a d15a 0000 0025 7445  +00:00...Z...%tE
00004ef0: 5874 6461 7465 3a6d 6f64 6966 7900 3230  Xtdate:modify.20
00004f00: 3230 2d30 352d 3138 5431 353a 3233 3a35  20-05-18T15:23:5
00004f10: 392b 3030 3a30 3059 fd1c e800 0000 0049  9+00:00Y.....I
00004f20: 454e 44ae 4260 82                                END.B`.
```

10. **Right click** in the Terminal window and then select **Save Contents...** from the drop-down list.
11. Name the file **image.txt**
12. Start **Mousepad** and then open the **image.txt** file:



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13. Scroll to the **End** of the file:

```

977 00004dc0: db61 de0f 90c4 d5ad 9199 8476 b728 fb01 .a.....V.(..
978 00004dd0: 04ce 1281 9174 04ae 6df3 d30f 60e0 cae6 .....t..m...`...
979 00004de0: 4ee7 d5c0 59de 4fd5 0f60 e7ca 66af 2d81 N...Y.O...`..f-..
980 00004df0: bd9d 2d86 fd00 f9f4 2702 67c1 cf2f 3f80 ..-.....'.g../?.
981 00004e00: 1f67 22d0 4963 7077 9bb4 1fa0 00fb 672a .g".Icpw.....g*
982 00004e10: d074 6770 96f5 d3f0 0328 c8c6 d5ad 9d06 .tgp.....(.....
983 00004e20: 55e0 1ab1 0f30 141b 571b aa08 887d 800a U....0..W....}..
984 00004e30: 9c55 0495 9381 b3d0 dfbc 42a7 1fa0 1ee7 .U.....B.....
985 00004e40: 32b0 3bf0 9460 6f97 d007 6888 b3a2 606b 2.;..`o...h...`k
986 00004e50: bbbc 0eec ed6e 6f6d 92f0 03b4 c9fe b910 .....nom.....
987 00004e60: b867 047b d7ce 039f df7c 803e d8b8 72e5 .g.{.....|.>..r.
988 00004e70: 420a ae99 b5e0 2cea 77ce c3fe 0abf f800 B.....,w.....
989 00004e80: fdb2 bf71 e5ea d5cd cdad aded eded 9d9d ...q.....
990 00004e90: dddd 6b67 eccd 380f f319 b3ff 6777 7767 ..kg..8.....gwwg
991 00004ea0: e7ec 015b 5b9b 9b57 af5e d9e0 c77e 0afc ... [..W.^...~..
992 00004eb0: 7fd6 8199 f1b5 6147 ed00 0000 2574 4558 .....aG...%tEX
993 00004ec0: 7464 6174 653a 6372 6561 7465 0032 3032 tdate:create.202
994 00004ed0: 302d 3037 2d30 3154 3136 3a30 333a 3235 0-07-01T16:03:25
995 00004ee0: 2b30 303a 3030 2e0a d15a 0000 0025 7445 +00:00 ...Z...%tE
996 00004ef0: 5874 6461 7465 3a6d 6f64 6966 7900 3230 Xtdate:modify.20
997 00004f00: 3230 2d30 352d 3138 5431 353a 3233 3a35 20-05-18T15:23:5
998 00004f10: 392b 3030 3a30 3059 fd1c e800 0000 0049 9+00:00Y.....I
999 00004f20: 454e 44ae 4260 82                                END.B`.
1000 366dce1a9491:~$
1001|

```

14. Remove lines **1000** and **1001**
15. Save the updated file.
16. Execute the following command, from the Terminal window, to display the hexadecimal bytes in the **images/.../...** file:

```
xxd -l 0x10c0 images/.../...
```

```

.
.
.
00001020: 2c45 dd02 2017 0024 0049 a802 2017 01f4 ,E.. ..$.I.. ...
00001030: 0161 09f2 1600 b900 2001 4842 4e01 d422 .a..... .HBN.."
00001040: 80cd 00b0 04b5 03a8 9e01 2001 4845 1580 ..... .HE..
00001050: 23b5 08a0 0f08 0ba8 1600 f510 3009 4032 #.....0.@2
00001060: 720a 201f 0ce6 5010 84a8 1d40 710b 1009 r. ....P....@q...
00001070: 8080 2a00 f2c1 60fa 8010 a01e 02d2 0b00 ..*...`.....
00001080: 1280 64e4 1440 de0e 441f 10e6 503b 80e2 ..d..@..D...P;..
00001090: 1a50 1200 0d59 00d4 15a1 f401 610e b503 .P...Y.....a...
000010a0: a817 0024 0002 7a0a a016 01f4 01e1 12aa ...$.z.....
000010b0: 0750 bc0f 0009 808a 2c00 f27d 02f0 03c2 .P.....,...}....

```

17. **Right click** in the Terminal window and then select **Save Contents...** from the drop-down list.
18. Name the file **image2.txt**
19. Execute the following command, from the Terminal window, to close the ssh session:

```
exit
```

```
Connection to 46.101.107.117 closed.
```

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20. Execute the following command, from the Terminal window, to open the **image2.txt** in **Mousepad**:

mousepad image2.txt

```

1 00003060: 501c 0460 1e04 60ea 8cea de80 7110 8079 P..`.....q..y
2 00003070: c629 00dc 1aac 8400 b477 77e0 bf1d dd99 .).....vw....
3 00003080: b1b0 10e4 ef44 7766 c4f9 5cf4 65e3 2cee .....Dwf...\e.,
4 00003090: ff08 5fe5 ddd1 3fff ef86 4ff9 b9e8 3fe1 .._...?...0...?
5 000030a0: df0b 9ff2 f7a3 02f0 f3e1 5bff a9f6 0520 .....[....
6 000030b0: fd3b 8d00 c677 2c00 4f47 dff2 4733 aebe .;..lw..OG..G3..
7 000030c0: 9297 123e 2b99 e71c ded8 57a2 aff2 62f4 ...>+....W...b.
8 000030d0: 1a6f 25bc d718 b505 e034 fdad 6ed7 8ebf .o%.....4..n...
9 000030e0: ea20 0032 0840 84da 02f0 20fd ad22 0082 . .2.@......"
10 000030f0: 00bc 0b01 3807 0188 2008 4091 0ae0 1de9 . .8.... @.....
11 00003100: 6f15 01d8 4aff b010 800b 1080 081d 09c0 o...J.....
12 00003110: 56ed f8ab 8e20 0077 1080 7310 8008 b505 V....w..s....
13 00003120: e05d e96f 1501 d84c ffb0 1080 0b10 8008 .]o...L.....
14 00003130: 1d09 c06e edf8 ab8e 2000 b711 8073 1080 ...f... ..s..
15 00003140: 0895 05e0 f44e fa5b 4500 aea6 7f58 08c0 .....N.[E...X..
16 00003150: 0508 4084 da19 c0ed f4b7 7ab5 76fc 5547 ..@.....z.v.UG
17 00003160: 1080 5b08 c039 0840 0404 a023 aea4 7f58 ..[.9.@...#...X
18 00003170: 08c0 0508 4084 da02 702b fdad 5ea9 1d7f ...H...p+..^...
19 00003180: d5d9 48ff b08a dc18 0001 b800 0170 e354 ..H.....p.T
20 00003190: 1080 8dda f157 1d04 4006 0188 503b 0310 .....W...@...P;..
21 000031a0: ee0b b25f 3bfe ea93 fe61 35b7 1208 0198 ..._...a5.....
22 000031b0: 0701 b820 7d21 1037 0652 d602 37b7 1104 ...}!7.R..7...
23 000031c0: 0198 0701 b820 7d1d 005b c195 9d60 cd2d .....}[...`+-
24 000031d0: 0440 00e6 4100 2e48 5f07 c046 3065 2550 .@..A..H...F0e%P
25 000031e0: 99e3 8019 5f78 0460 1e04 e01c e134 300b ....x.`.....40.
  
```

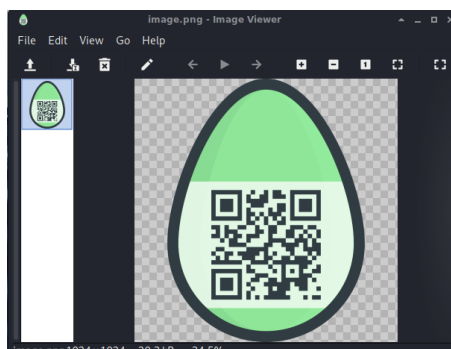
21. Delete lines **1** to **731** and line **270**.
22. Save the updated file.
23. Execute the following commands, from the Terminal window, to create a file **image.png**:

```

cat image2.txt > image.xxd
cat image.txt >> image.xxd
xxd -r image.xxd > image.png
  
```

24. Execute the following command, from the Terminal window, to open the **image.png** file in **Ristretto**:

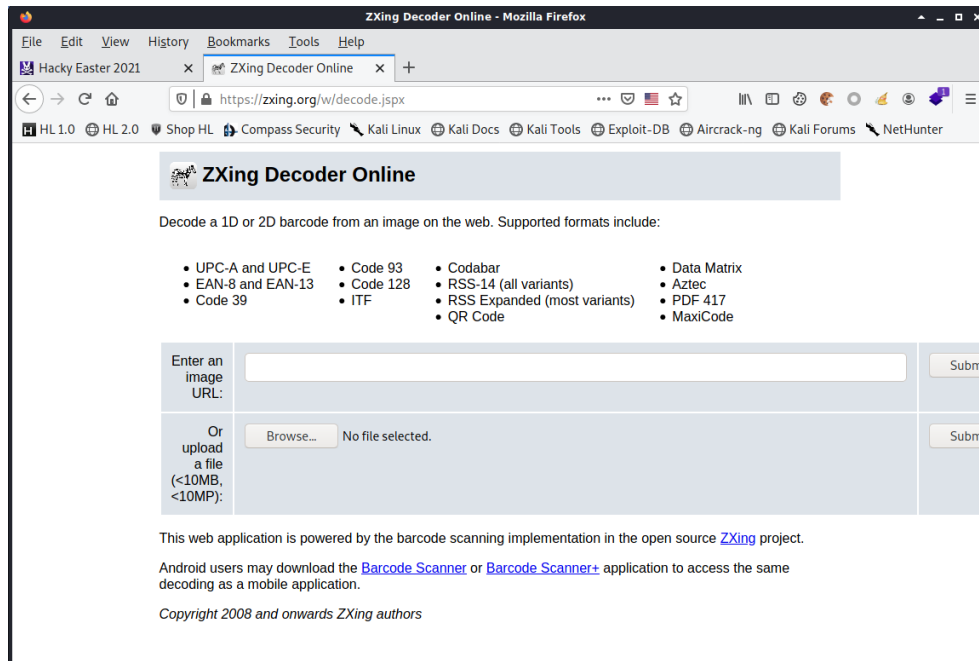
ristretto image.png



25. Close **Ristretto**
26. Close the Terminal window.
27. Click the **Second** tab.

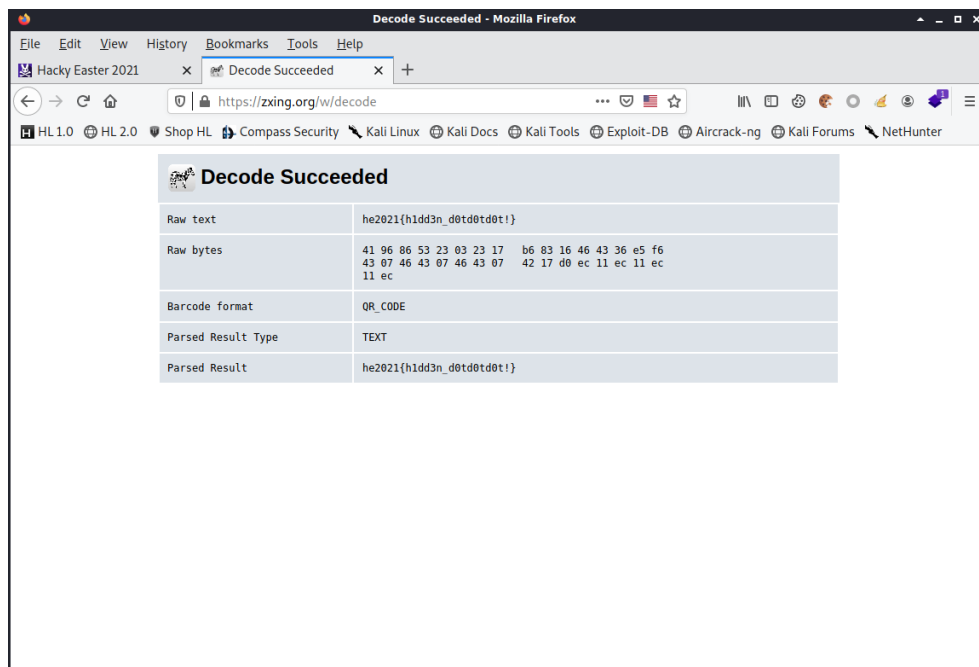
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28. Navigate to <https://zxing.org>:



29. Click the **Browse...** button and then open the **image.png** file.

30. Click the **Submit Query** button:



31. Close the **Second** tab.

Flag: **he2021{h1dd3n_d0td0td0t!}**