

ZU
YD

MICT1 Group 3

EXERCISES WEEK 4

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Assignment

Investigate the provided file “data”, which contains a dump of 162 clusters of 4k from an unknown file system.

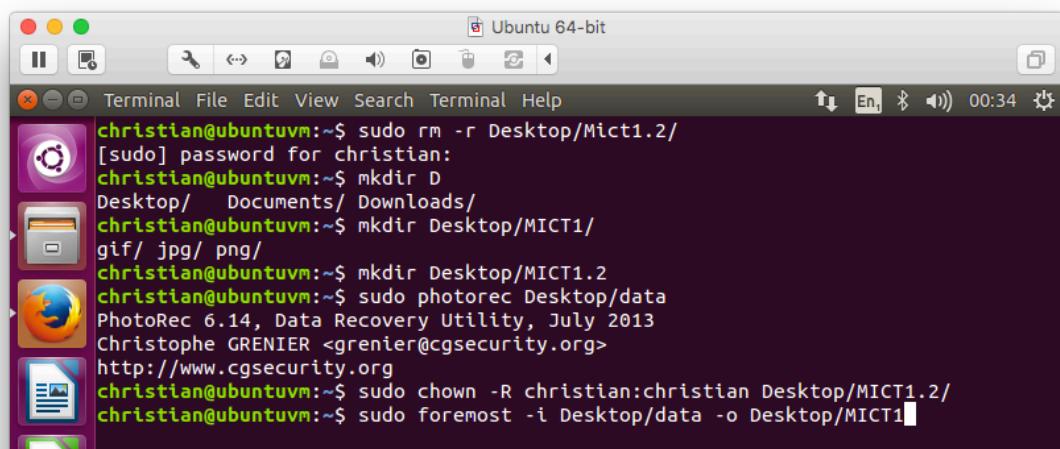
See if you can find some usable files that could have been in either RAM- and/or Disk-slack.
Report your findings.

Method

We analyzed the supplied file with *Synalyze It!*. Synalyze It! is a hex editor for Mac OS X. Using UTF-8 encoding we scrolled through the binary file until we discovered JFIF text strings, which seemed to indicate we were looking at possibly multiple JPEG files. Using the JFIF file format we tried to extract the images without success. After some trial and error we chose for a different approach: We fired up our good old Ubuntu virtual machine and used a File Carver to carve the image for usable files. The carver of our choice was foremost.

https://en.wikipedia.org/wiki/JPEG_File_Interchange_Format

<https://www.w3.org/Graphics/JPEG/jfif3.pdf>



The screenshot shows a terminal window titled "Ubuntu 64-bit". The terminal session starts with:

```
christian@ubuntuvm:~$ sudo rm -r Desktop/Mict1.2/
[sudo] password for christian:
```

Then, the user creates a directory structure:

```
christian@ubuntuvm:~$ mkdir D
Desktop/ Documents/ Downloads/
christian@ubuntuvm:~$ mkdir Desktop/MICT1/
gif/ jpg/ png/
```

Next, the user runs the PhotoRec utility:

```
christian@ubuntuvm:~$ mkdir Desktop/MICT1.2
christian@ubuntuvm:~$ sudo photorec Desktop/data
PhotoRec 6.14, Data Recovery Utility, July 2013
Christophe GRENIER <grenier@cgsecurity.org>
http://www.cgsecurity.org
```

Finally, the user changes ownership and runs the foremost utility:

```
christian@ubuntuvm:~$ sudo chown -R christian:christian Desktop/MICT1.2/
christian@ubuntuvm:~$ sudo foremost -i Desktop/data -o Desktop/MICT1
```

Results

Obviously we recovered the starwars jpeg files. We got two jpeg files which are, apart from their size, pretty much equal to eachother. It looks like the latter jpeg is the thumbnail image of the first:



While investigating the metadata of the image using our hex editor we discovered the jpeg files have been edited, or at least been opened with Adobe Creative Cloud Photoshop.

The evidence file also contained a png image file. There is not much to this image since the resolution is only 1 by 1 pixel. Lastly the image contained a corrupted GIF file which we were unable to restore or recover any useful information.