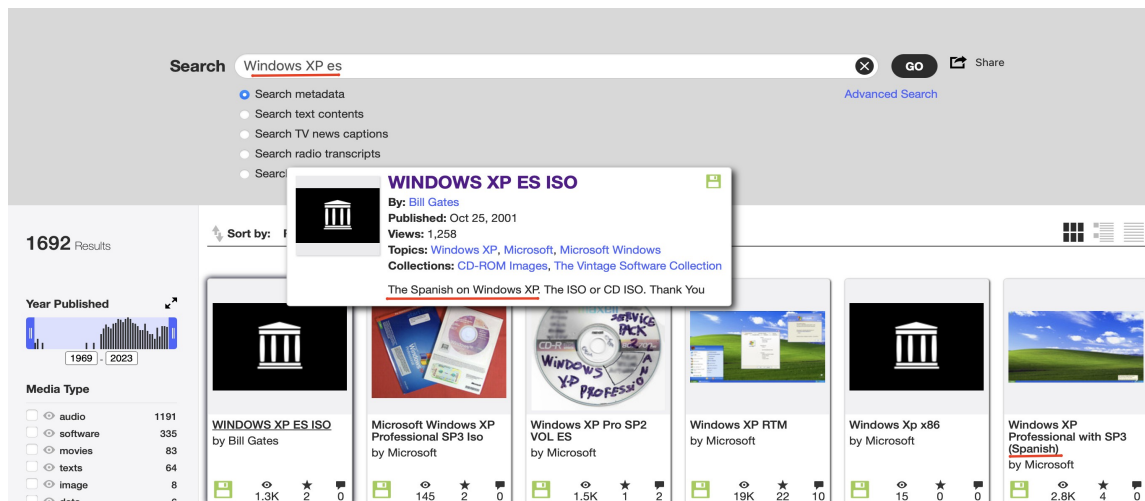


Download from Internet Archive

We go to the Internet Archive website and use the search bar to enter the operating system (you can also search for software and other items).

For example, typing *Windows XP español* will search for the Spanish version of Windows XP.



We can see several links from which to download it. Click on one of them, for example, *Windows XP ES ISO*.

We see that it includes an ISO image, and under *Show All*, we can view five original files.

Click on *Show All*.



Now we see the files we're actually interested in: the *.iso and the *.files.xml.

Click on the link to the file **WINDOWS_XP_ES_ISO.iso** to download it.

Files for windows-xp-es-iso

Name	Last modified	Size
Go to parent directory		
WINDOWS_XP_ES_ISO.iso (View Contents)	29-Oct-2020 00:53	660.8M
windows-xp-es-iso_archive.torrent	29-Oct-2020 06:57	27.4K
windows-xp-es-iso_files.xml	29-Oct-2020 06:57	1.4K
windows-xp-es-iso_meta.sqlite	29-Oct-2020 01:01	11.0K
windows-xp-es-iso_meta.xml	29-Oct-2020 06:57	860.0B

Once it's downloaded, move it to an empty folder or one with only a few files (to make a later step easier).

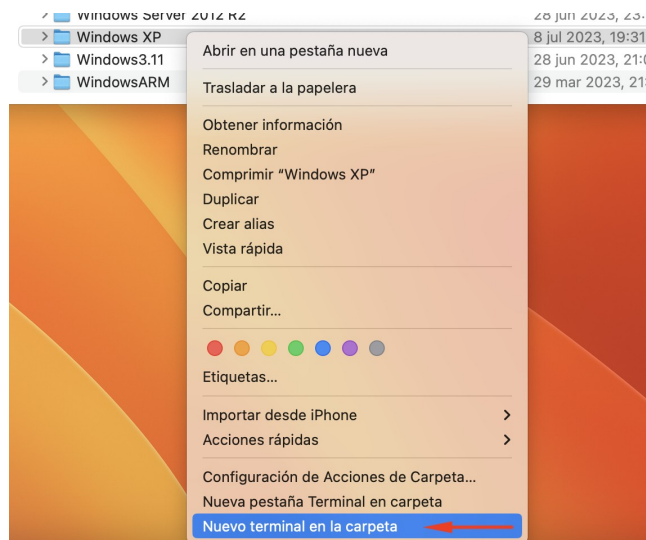
Now, click on the **windows-xp-es-iso.files.xml** file.

In the XML-formatted file, locate the entry for the ISO you downloaded and look for the **SHA1** hash.

This XML file does not appear to have any style information associated with it. The document tree is shown below.

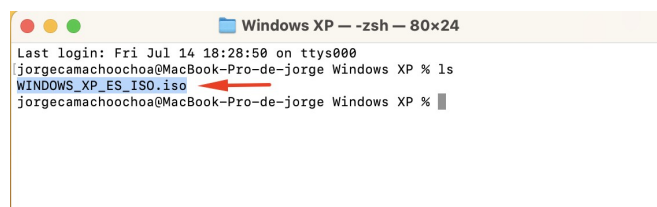
```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<files>
  <file name="WINDOWS_XP_ES_ISO.iso" source="original">
    <mtime>1603932834</mtime>
    <size>692912128</size>
    <md5>f67c352b759aa33866a94282df73a8b9</md5>
    <crc32>b0bc33cb</crc32>
    <sha1>9f288eb35ca90f463355b184f512b353a0770376</sha1>
    <format>ISO Image</format>
  </file>
  <file name="windows-xp-es-iso_archive.torrent" source="metadata">
    <btih>57acb5ca085a1a6cefd7b7416f8050cfddd0f2ce</btih>
    <mtime>1603954636</mtime>
    <size>28096</size>
    <md5>4323a8086de341301e5839c955ffb6fb</md5>
    <crc32>5f791130</crc32>
    <sha1>1d261fbb484029789e41133647d84f36e2c182f2</sha1>
    <format>Archive BitTorrent</format>
  </file>
  <file name="windows-xp-es-iso_files.xml" source="original">
    <format>Metadata</format>
    <md5>d9cb0188963636ebfc6b5f665b2ded08</md5>
  </file>
  <file name="windows-xp-es-iso_meta.sqlite" source="original">
    <mtime>1603933290</mtime>
    <size>11264</size>
    <md5>4fac61672ae5ec3f3235aa6aa2c6ba25</md5>
    <crc32>0da6f3b5</crc32>
    <sha1>bf5406751b2d0c206f080e6a07861dacc343cfc2</sha1>
    <format>Metadata</format>
  </file>
  <file name="windows-xp-es-iso_meta.xml" source="original">
    <mtime>1603954626</mtime>
    <size>860</size>
    <md5>00156f981658e78fd39eb3bb133252da</md5>
    <crc32>e0363870</crc32>
    <sha1>fbef3279cb2d583fda72c5dcaa92f11cff3556e6</sha1>
    <format>Metadata</format>
  </file>
</files>
```

Go to **Finder** and right-click on the folder where you placed the .iso file, then select **New Terminal at Folder**.



Once the Terminal opens—now set to that folder’s directory—run `ls` to list the files and confirm the presence of the `.iso` file you downloaded earlier.

Select the full filename of the `.iso` file and press **Command + C** to copy it.

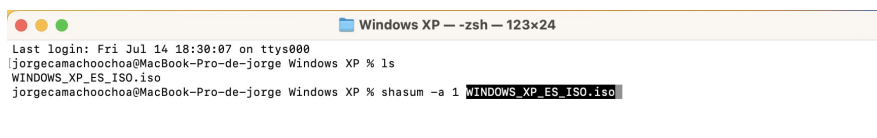


Now, in the Terminal, type:

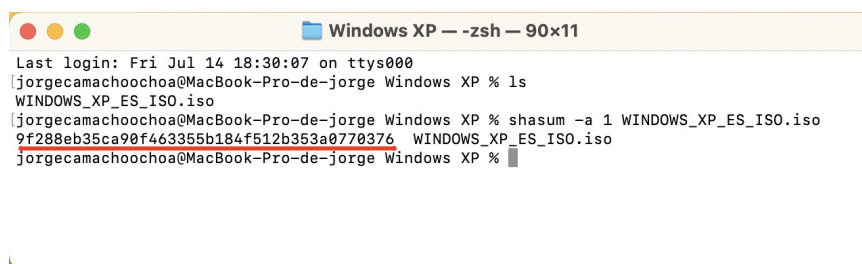
`shasum -a 1 "(Command + V)"`

(It’s important to place the filename in **quotes** to preserve any spaces and avoid errors.)

This command will paste the name and extension of the ISO file you copied earlier.



Then press **Enter**, and after a few seconds, a sequence of numbers and letters will appear—this is the **hash** generated from the ISO file you downloaded.



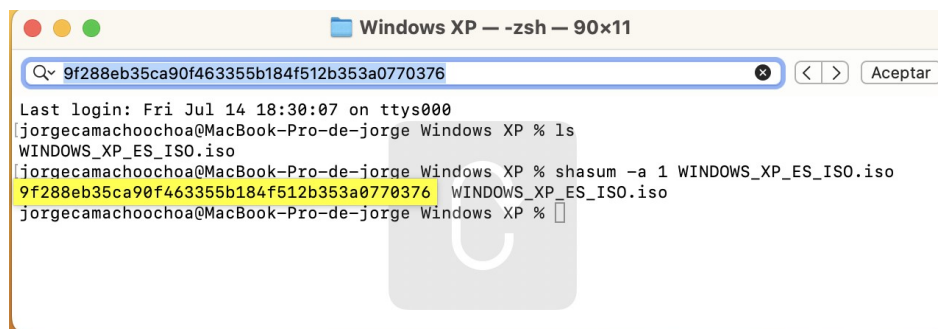
Now go back to the `.files.xml` page, locate the SHA1 value for the ISO file, and copy it using **Command + C.**

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="UTF-8" ?>
<files>
  <file name="WINDOWS_XP_ES_ISO.iso" source="original">
    <mtime>1603932834</mtime>
    <size>692912128</size>
    <md5>f67c352b759aa33866a94282df73a8b9</md5>
    <crc32>b0bc33eb</crc32>
    <sha1>9f288eb35ca90f463355b184f512b353a0770376</sha1>
    <format>ISO Image</format>
  </file>
  <file name="windows-xp-es_iso_archive.torrent" source="metadata">
    <btih>57acb5ca085a1a6cefd7b7416f8050cfddd0f2ce</btih>
    <mtime>1603954636</mtime>
    <size>28096</size>
    <md5>4323a8086da341301e5839c955ffb6fb</md5>
    <crc32>5f791130</crc32>
    <sha1>1d261fbb484029789e41133647d84f36e2c182f2</sha1>
    <format>Archive BitTorrent</format>
  </file>
  <file name="windows-xp-es-iso_files.xml" source="original">
    <format>Metadata</format>
    <md5>d9cb0188963636ebfc6b5f665b2ded08</md5>
  </file>
  <file name="windows-xp-es-iso_meta.sqlite" source="original">
    <mtime>1603933290</mtime>
    <size>11264</size>
    <md5>4fac61672ae5ec3f3235aa6aa2c6ba25</md5>
    <crc32>0da6f3b5</crc32>
    <sha1>bf5406751b2d0c206f080e6a07861dacc343cfc2</sha1>
    <format>Metadata</format>
  </file>
  <file name="windows-xp-es-iso_meta.xml" source="original">
    <mtime>1603954626</mtime>
    <size>860</size>
    <md5>00156f981658e78fd39eb3bb133252da</md5>
    <crc32>e0363870</crc32>
    <sha1>fbef3279cb2d583fda72c5dcaa92f11cfff3556e6</sha1>
    <format>Metadata</format>
  </file>
</files>
```

Now, in the Terminal, press **Command + F** (to search), then **Command + V** to paste the SHA1 value you copied earlier into the search bar.

When you press **Enter**, if the hashes match, the entire hash will briefly appear in yellow.



If they don't match, the text won't turn yellow.

With this, we've verified that the file downloaded from the internet has not been altered, from when it was uploaded by the user to Internet Archive until we downloaded it.

If we wanted to check that the file is original and hasn't been modified, we could use PGP (but this requires additional files) to verify its fingerprint. However, that's not necessary in this case since the virtual machine is independent of our system. If we suspect anything is wrong, simply deleting the virtual machine would be sufficient.