

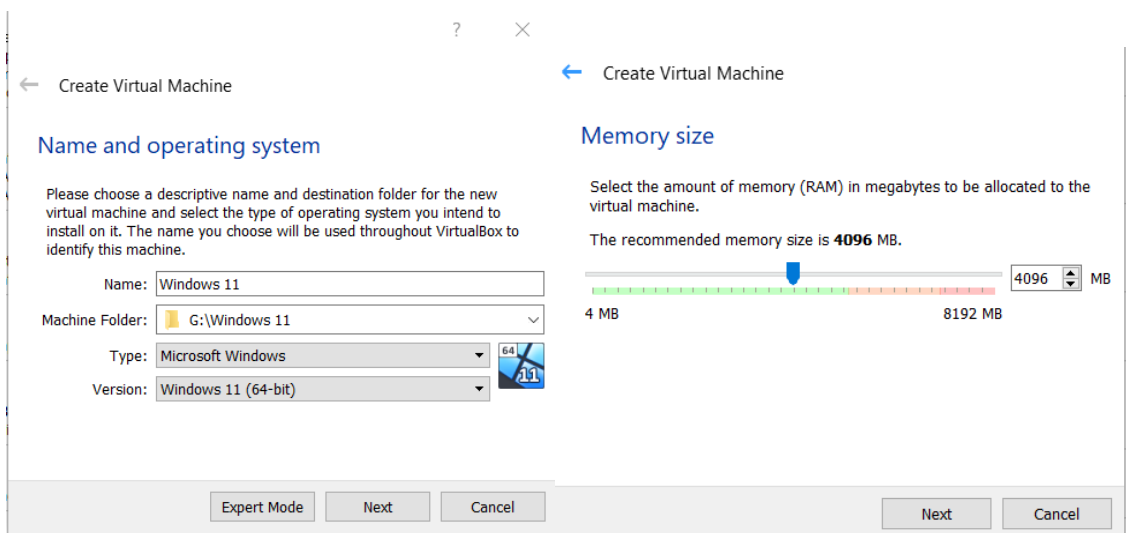
## ASSIGNMENT UNIT 6

### Installing Windows 11 and skipping TPM

There are two important requirements before installing Windows 11:

Once I have updated *VirtualBox* to the latest version, I will show you the steps that I have been taken to install Windows 10.

- Firstly, I have selected to allocate 4096 MB for RAM memory, and a hard disk of 80,00 GB. Later, I have chosen the type of hard disk as VDI (VirtualBox Disk Image), with a dynamically allocated storage.



### File location and size

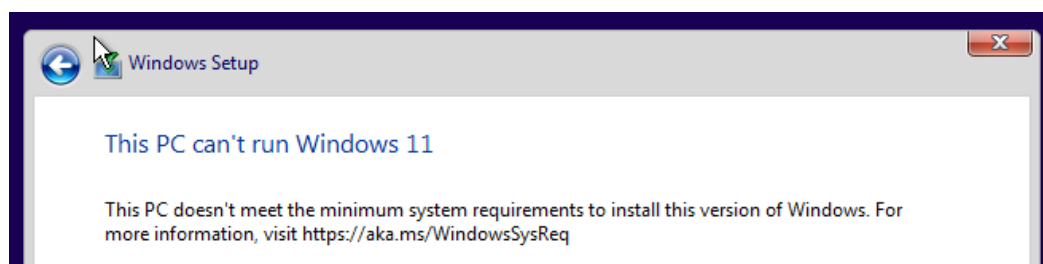
Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

G:\Windows 11\Windows 11\Windows 11.vdi

Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.

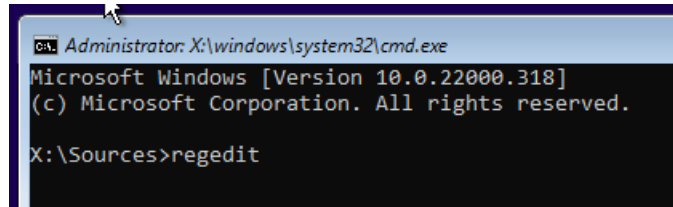
4,00 MB 80,00 GB 2,00 TB

- Firstly, it's important to type any key while VirtualBox is initialising Windows 11 boot. Once I am installing Windows 11, soon will be appear this screen:

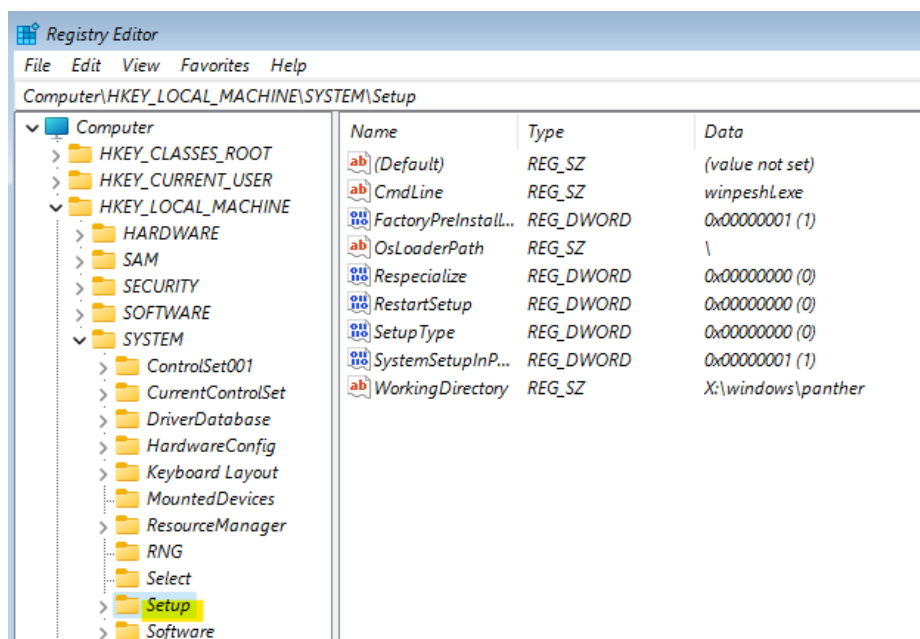


To fix this, I need to follow the following steps to skip TPM (the page used to check this steps is from: <https://www.repairwin.com/how-to-install-windows-11-on-virtualbox-even-without-tpm/>):

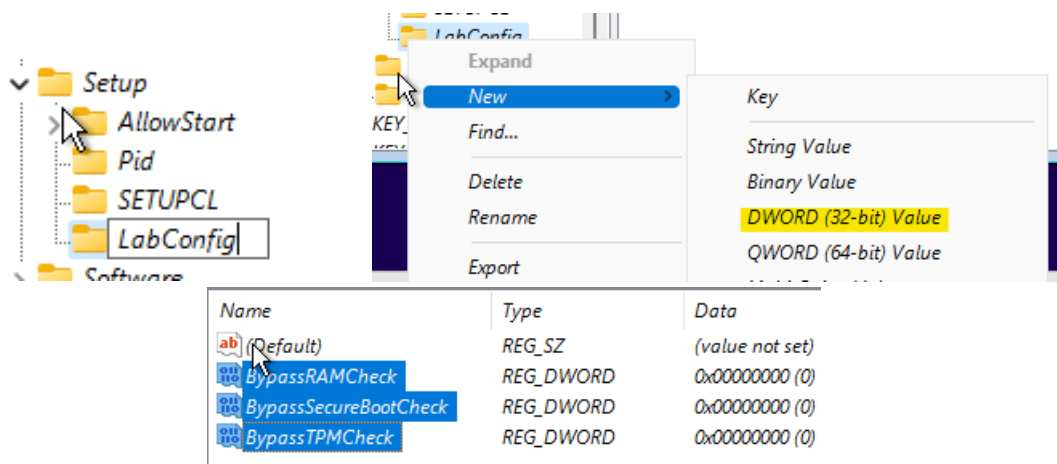
1. I hit Shift + F10 on the keyboard's virtual machine to open *cmd*.
2. I enter the following command: *regedit*



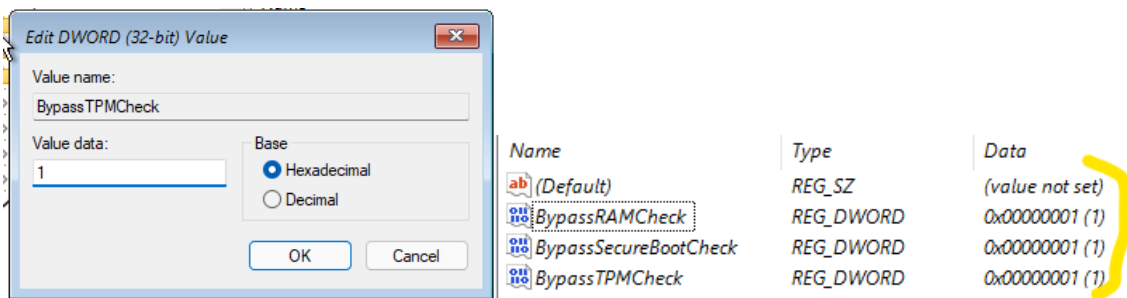
3. Then, in Registry Editor, I navigate to the following key:
  - a. HKEY\_LOCAL\_MACHINE\SYSTEM\Setup



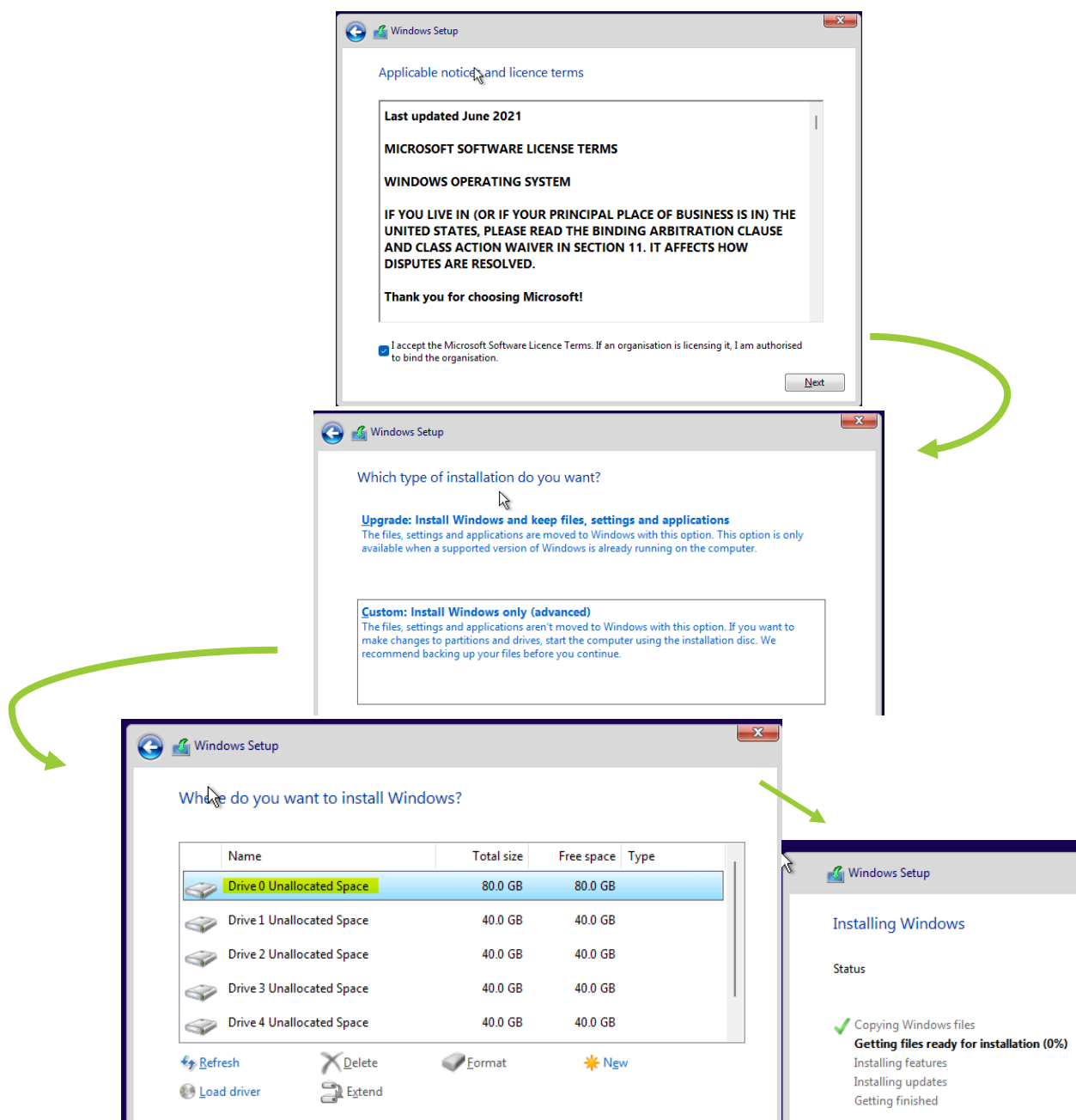
4. In Setup, I will create a New Key named LabConfig. Inside that key, I will choose to create New > DWORD(32-bit) Value. Then, I will create the following keys:
  - BypassRAMCheck
  - BypassSecureBootCheck
  - BypassTPMCheck



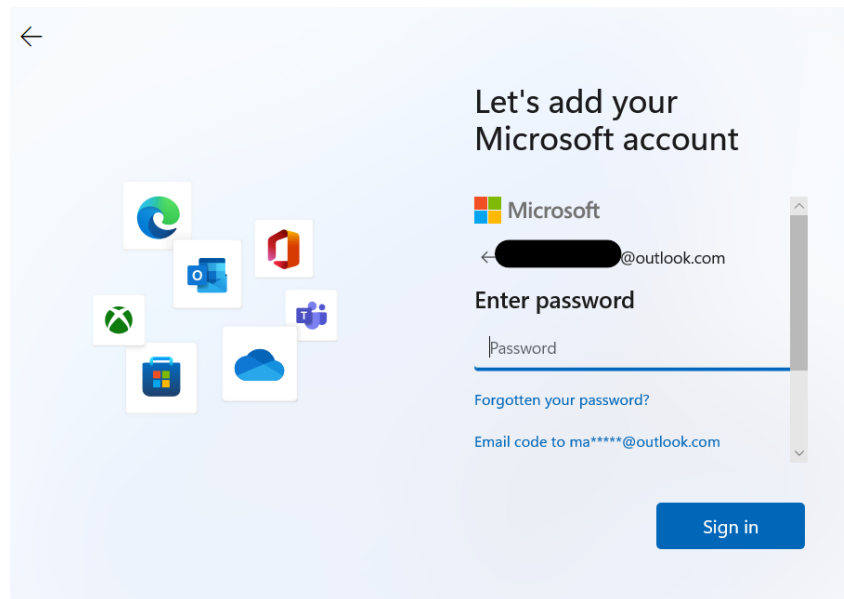
- Once created, I need to open one-by-one and type 1 at Value Data box and apply changes.



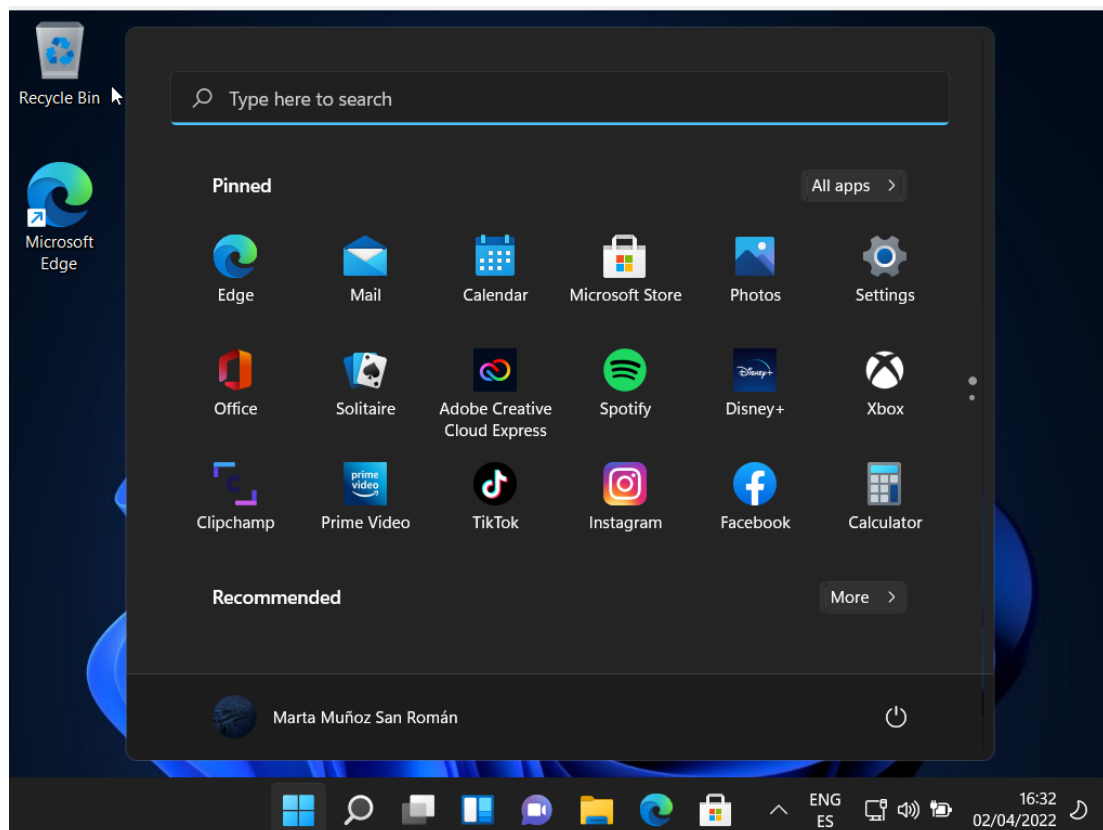
- Then, a normal installation of Windows 11 would appear. I will choose the Custom type of installation, and the “principal” Drive that I have created in VirtualBox, with 80 GB. The other drives are for the other part of the assignment. The Windows 11 version I have choose is the *Windows 11 Pro* edition.



Later, I will choose the region as Spain and the keyboard layout as Spanish. I've been signed up with an outlook account:



Now, as you can see, Windows 11 has been installed and it's running (primarily, I have changed the theme to a dark one because I personally hate white themes...):

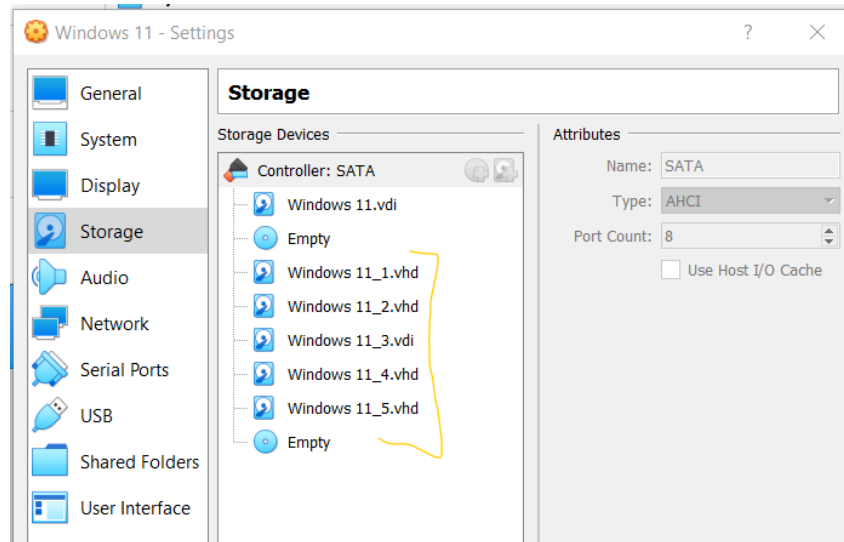


## Creating the RAIDs

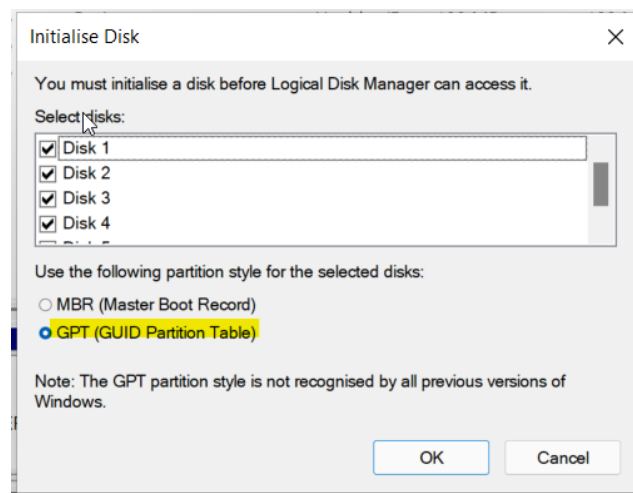
Once Windows 11 is installed, we are going to try the following tools:

- **Create a RAID 0 (striped volume) using two virtual disks.**

Firstly, from VirtualBox, I have to create five empty virtual hard disks, because I will need them for the RAID 0, RAID 1 and RAID 5:



Once I initialize the Disk Management tool in Windows 11, it asks me to initialise the disks. I have used the GPT partition table style:

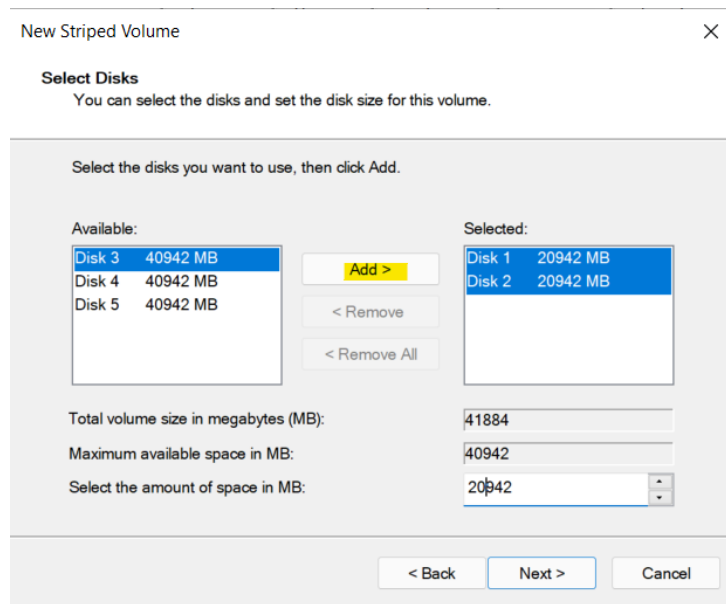


In Windows 11, I execute Disk management and select the unallocated volume of "Disk 1". Later, I will choose the following option to create the first striped volume (RAID 0):

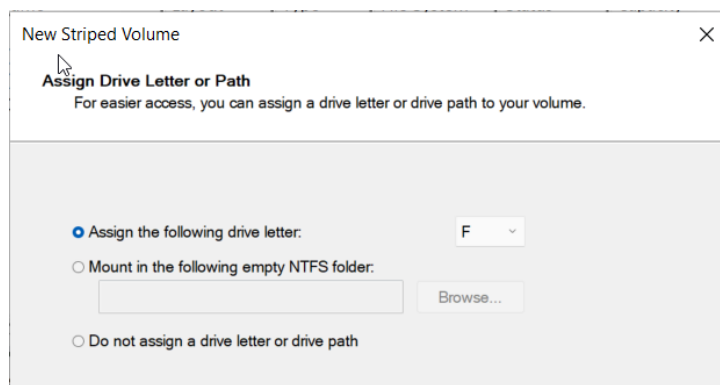


In the Stripped Volume Wizard, I click on Next and in this window, I will Select the two disk that I have created before (Disk 1 and Disk2) and Add Disk 2 to the "Selected" box.

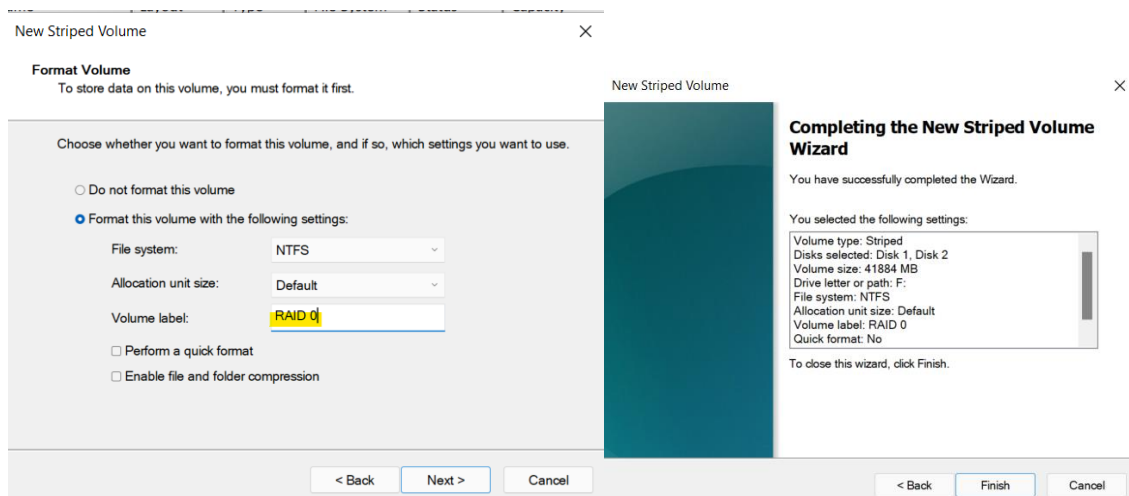
There, I will select an amount space of 20.942 MB for example:



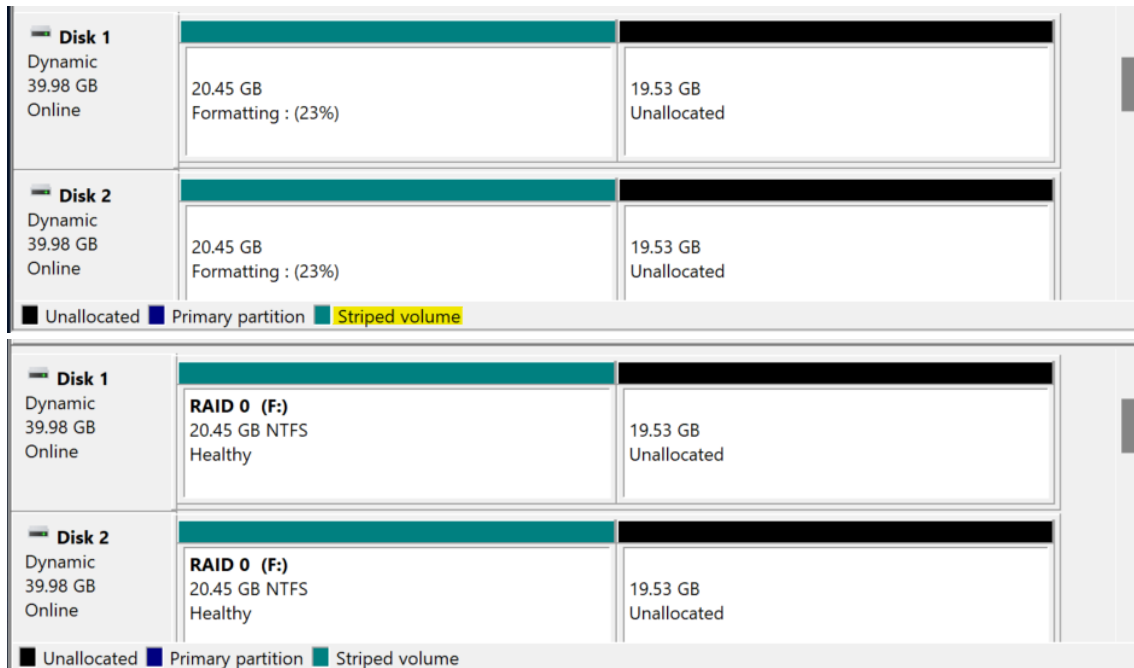
I will assign the letter “F” to this drive and continue with the wizard:



Finally, I will name the Volume Label as “RAID 0” (Stripped Volume 1) and pass to the last step, to click on *Finish*. When the setup finish, the system will make a warning, because the selected drives are going to be transformed into logical drives. I click on Yes, and the Disks will be formatted.

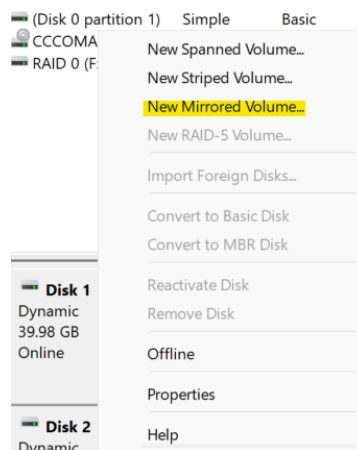


This is the result. I need wait until it has been formatted:

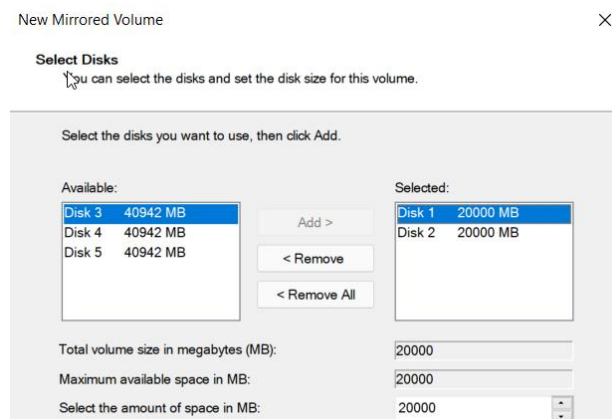


- Create a RAID 1 (mirrored volume) using two virtual disks.

As I have done on the previous RAID 0, I will right-click on the Unallocated space and select the “New Mirrored Volume...” option:



In the next step, the Wizard will ask to select disks and set their size for the Mirrored volume. I will add both disk to the “Selected” box and organized their size in 20.000 MB:



I assign the letter “G” for the Drive Letter:

New Mirrored Volume

**Assign Drive Letter or Path**  
For easier access, you can assign a drive letter or drive path to your volume.

☒ Assign the following drive letter: G

☐ Mount in the following empty NTFS folder:  
 Browse...

☐ Do not assign a drive letter or drive path

Finally, I will assign the Volume’s label as “RAID 1” (Mirrored Volume 1) and click on Next. Then, I will finish the steps to create the new mirrored volume.

New Mirrored Volume

**Format Volume**  
To store data on this volume, you must format it first.

Choose whether you want to format this volume, and if so, which settings you want to use.

☐ Do not format this volume

☒ Format this volume with the following settings:

File system: NTFS

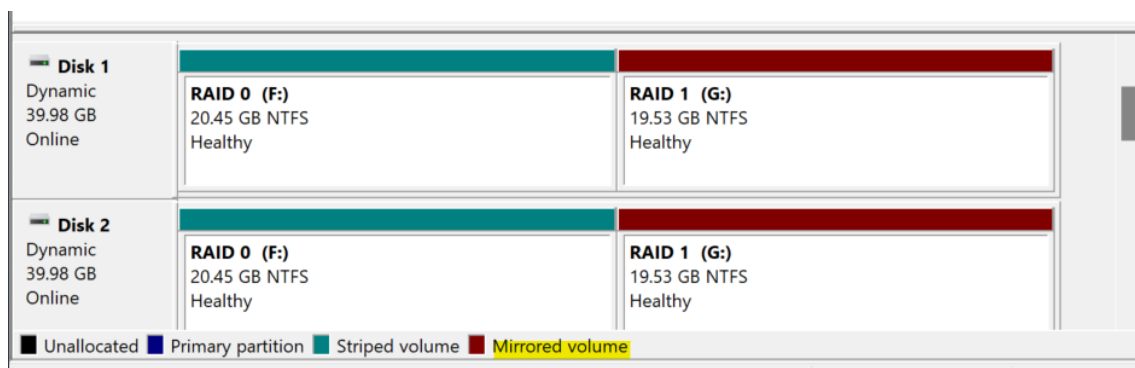
Allocation unit size: Default

Volume label: RAID 1

☐ Perform a quick format

☐ Enable file and folder compression

This is the result, showed in the Disk Management:

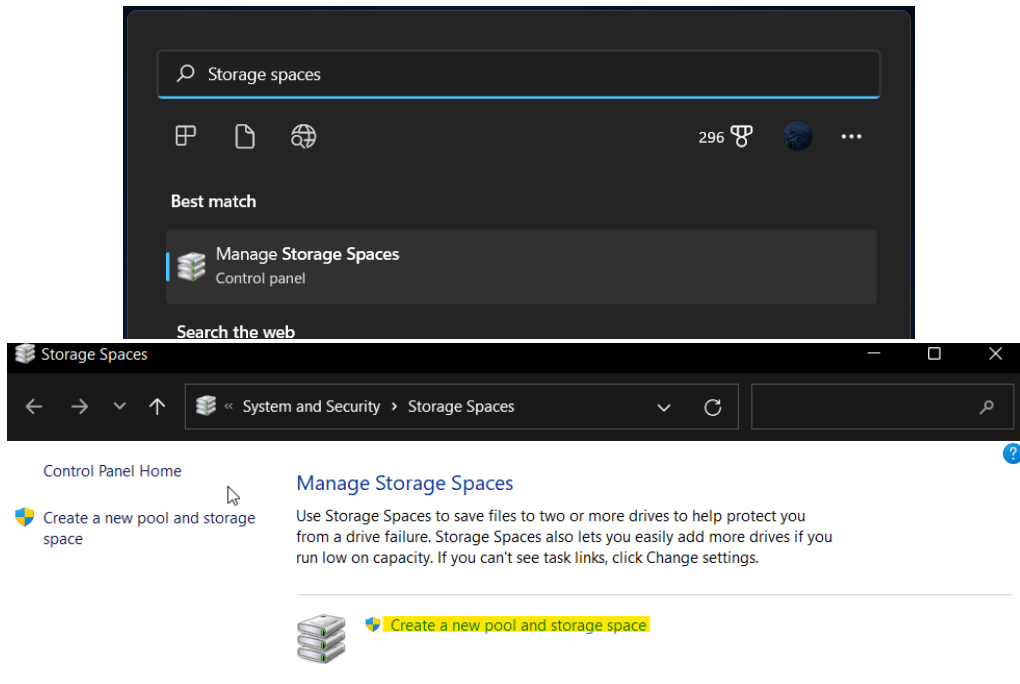


- Create a RAID 5 using three virtual disks and the tool “Storage spaces”.

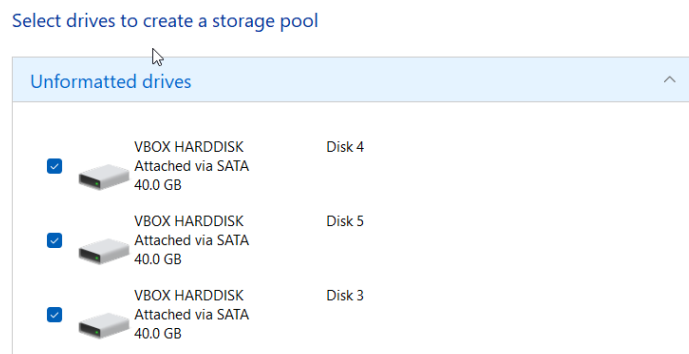
RAID 5 uses at least three hard drives and strips data across multiple hard drives to improve performance through simultaneous access, but unlike RAID 0, RAID 5 includes correction codes (parity bits) between the data. So, according to this small explanation (taken from <https://www.ontrack.com/en-us/data-recovery/raid/raid5>), I need to have three different drives.

So, I look forward the tool in Windows 11, which will take me to a function of the Control Panel:





Once I click on “Create a new pool and storage space”, it will show the following detected Disks:



Once I have chosen the three disks, I enter a new name for the drive (“RAID 5” for example) and select the “H” as the Drive Letter. The resiliency type is “Parity”, as it needs at least three drives. Then, I can proceed to create the storage space:

Enter a name, resiliency type and size for the storage space

Name and drive letter

Name:

Drive letter:

File system:

Resiliency

Resiliency type:

**i** A parity storage space writes your data with parity information, helping to protect you from a single drive failure. A parity storage space requires at least three drives.

Size

Total pool capacity: 118 GB

Available pool capacity: 117 GB

Size (maximum):  GB

As you see, the size is as follows, with a total pool of 118 GB and an available capacity of 111 GB:

Size			
Total pool capacity:	118	GB	
Available pool capacity:	117	GB	
Size (maximum):	74.0	GB	▼
Including resiliency:	111	GB	

In Storage Spaces, the Manage Storage Spaces has the RAID 5 created, with three physical drives attached to it.

### Manage Storage Spaces

Use Storage Spaces to save files to two or more drives to help protect you from a drive failure. Storage Spaces also lets you easily add more drives if you run low on capacity. If you can't see task links, click Change settings.

[Change settings](#)

Storage pool

OK ^

Using 6.50 GB of 118 GB pool capacity

[Create a storage space](#)  
[Add drives](#)  
[Rename pool](#)  
[Optimise drive usage](#)

Storage spaces

RAID 5 (H:)

Parity

74.0 GB

Using 2.25 GB pool capacity

OK

[View files](#)  
[Change](#)  
[Delete](#)

Physical drives

Physical drives

VBOX HARDDISK

SN: VBf3abded8-24766a92

Attached via SATA

7.89% used

Providing 39.7 GB pool capacity

OK

Rename

VBOX HARDDISK

SN: VB50b2a394-94931c4a

Attached via SATA

7.89% used

Providing 39.7 GB pool capacity

OK

Rename

VBOX HARDDISK

SN: VBbd084d07-89850e79

Attached via SATA

3.49% used

Providing 39.7 GB pool capacity

OK

Rename

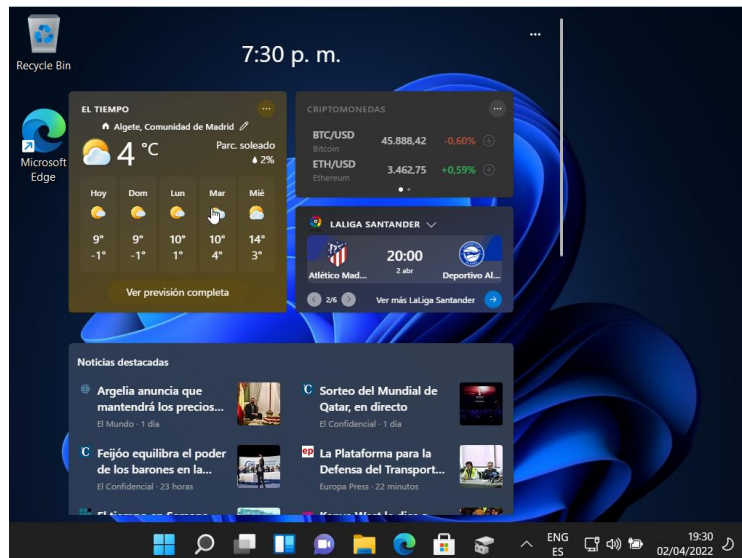
- Search about a new feature of Windows 11. Explain how the tool chosen works as much detailed as possible.

A new Feature reintroduced in Windows 11 are the WIDGETS. These are AI-powered customizable feed that slides out to show you such info as news, weather, a glimpse at your calendar and to-do list or your recent photos. Widgets are like a feature called *news and interests* found in a recent Windows 10 update.

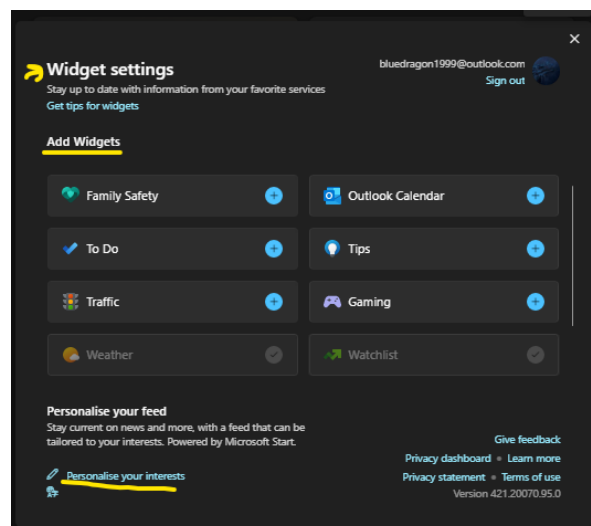
They can be accessed through a button from a taskbar. When I click or tap it, a panel will slide out from the left side of the screen with a series of widgets. They are in this location:



Here's an overview of the "new" Windows 11 widgets (sorry, the information feed is in Spanish due to my email's user configuration). The widgets window occupies a half of the desktop:

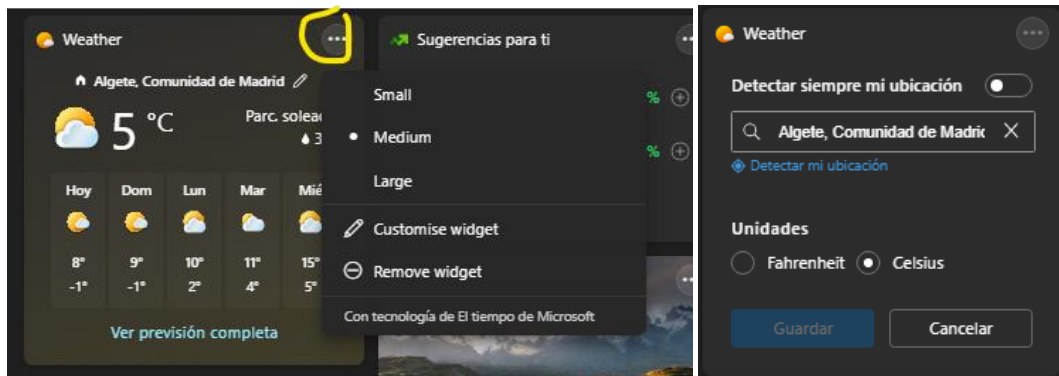


If you click on "Add widgets" box, you can add a widget or customize your personal interests to show on the *News* or *Top Stories* widget:



When a widget is added, It's also possible to:

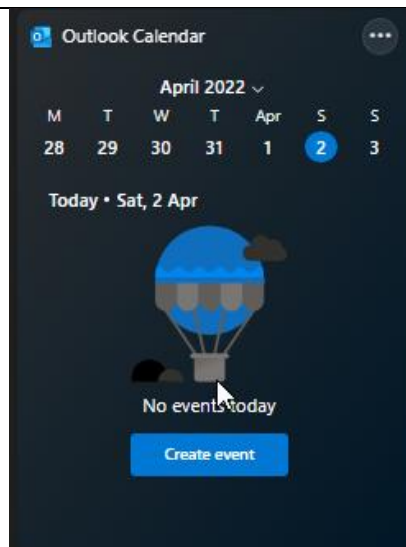
- Customize the size (from small, medium or large).
- Customize the widget's settings, depending on the widget. In the screenshot, I show you the settings available for weather, such as the location or the temperature unit.
- Remove the widget.



List of widgets that can be added:

### 1. Calendar

This widget shows your most recent events, synchronized with your Outlook account →



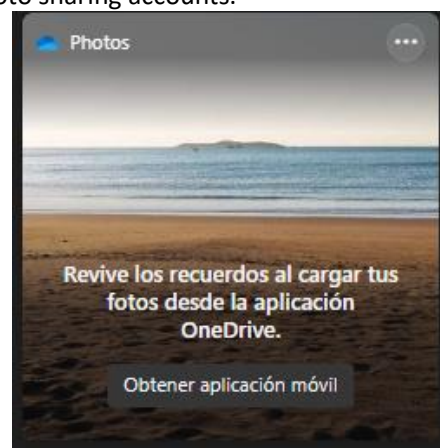
### 2. Esports

The Esports Widget makes it easy for fans, spectators, and Esports newbies to see all recent matches.



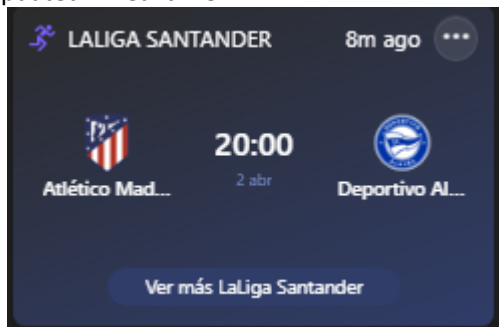
### 3. Photos

The Photos Widget cycles through photos and images you've saved to OneDrive or other photo sharing accounts.

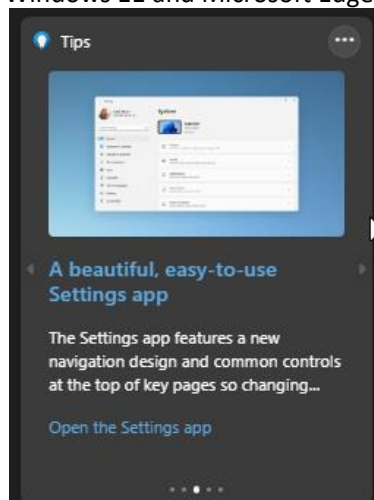


**4. Sports**

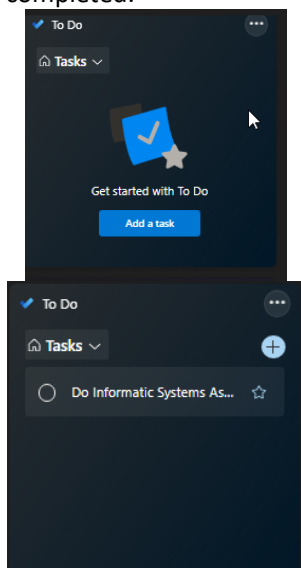
From current scores and recent results to other highlights, the Sports Widget keeps you updated in real time.

**5. Tips**

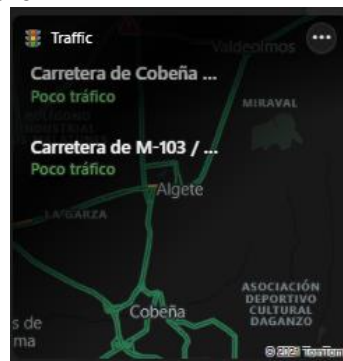
The Tips Widget provides brief advice on all things Windows 11 and Microsoft Edge.

**6. To Do**

Easily create a list of tasks, be reminded of them in an intuitive way, and mark them off your list as they're completed.

**7. Traffic**

This permits you to get a quick look at traffic conditions.

**8. Watchlist**

The Watchlist Widget monitors stock values throughout the day. And, just like the Sports Widget, you can make it yours by customizing which stocks appear.

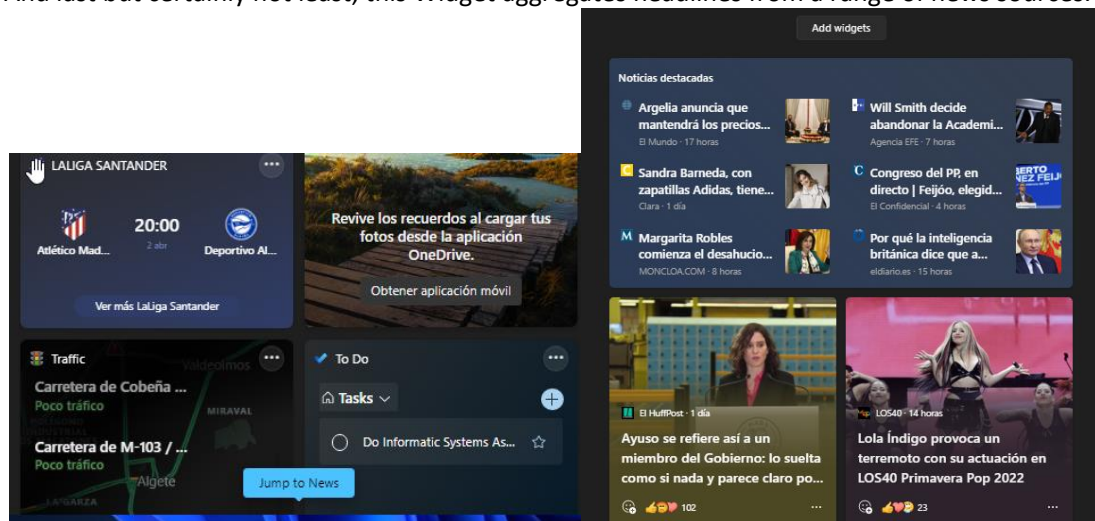
**9. Weather**

The Weather Widget shares real-time weather conditions in your area, as well as the forecast for the following three days.



## 10. Top Stories

And last but certainly not least, this Widget aggregates headlines from a range of news sources.



Webography checked to search for this new feature of Windows 11:

- <https://www.cnet.com/tech/computing/the-best-windows-11-features-android-apps-widgets-and-more/>
- <https://www.microsoft.com/en-us/windows/remote-resource-center/top-windows-Widgets-to-know-about?r=1>