EWARS: Towards simplified tool installation

Despite being free and popular, using the open-access R package can be associated with sophisticated and complex applications when sought for implementation work. Therefore, in an attempt to simplify and atumoate the installation process of the EWARS, we have now developed what is referred to as the 'docker image', which can accommodate all essential R packages, updates and settings. This docker image can now be used for both, local (data-based) and web-based servers. It can also be equally applied for users with Lynax, Mac and Window applications by downloading the corresponding package, as illustrated here under.

This work is best conducted by skilled IT personal. Please follow the below instructions in order complete the installation of EWARS:

Steps for running the EWARS docker image

1. Download and install docker,see https://docs.docker.com/engine/install/

2. Open a new 'Terminal' in your PC. The 'Terminal' is a command box found in all PCs, e.g. type terminal under your computer search and you will have a terminal box appearing where you can paste the above command.

3. Pull the EWARS plus public docker image, by running the below command on terminal:

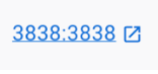
```
docker pull maquins/ewars_v2_docker_2025:plus
```

(this will download the ewars docker image ≈3.51GB)

4. After downloading the new docker image, start the container from the docker using the Run button, and when it prompts you for further settings, insert 3838 under 'port' and then open the browser, which you find under the docker container.

5. If the browser does not open, run the below command through the Terminal under the docker container:

```
docker run -dp 3838:3838 maquins/ewars_v2_docker_2025:plus
```

6. Go to the link http://localhost:3838 or 

on your browser to initiate the EWARS-csd dashboard interface.

7. Under the EWARS-csd interface, you can then start uploading the shapefiles (all four files at once under the first browse) and then the surveillance data under the second browse. Wait a few seconds until the corresponding distrcits codes appear, then click on the "Run Model".

Minor changes to the dashboard:

We have made further minor modifications to the EWARS features to improve its application. After uploading the shapefiles and surveillance data, there is 'run model' button to run the model once the user has selected:

- lag time in weeks
- alarm indicators
- cut off year for model validation

Docker installation under server

To install Docker on Windows, you can use Docker Desktop, which is an application that simplifies the installation and management of Docker on Windows 10 and Windows 11 systems. Follow these steps to install Docker on your system:

Check the system requirements:

Make sure you are using Windows 10 or Windows 11 with a 64-bit version.
Make sure virtualization is enabled in your computer's BIOS, as Docker uses virtualization to run containers:

- To enable virtualization, you could use the following command:

```
Set-VMProcessor-VMName- "Machine Name"-ExposeVirtualizationExtensions $true
```

```
PS C:\Windows\system32> Set-VMProcessor win10-dev -ExposeVirtualizationExtensions $true
```

- If the computer does not support virtualization or hyper-v, you could install WSL (Windows Subsystem for Linux) as an alternative. This has limitations for the configuration and allocation of resources, since it does not allow them to change easily, but it is just as functional https://learn.microsoft.com/es-es/windows/wsl/install

Download Docker Desktop:

Visit the official Docker website at https://www.docker.com/products/docker-desktop and click "Download for Windows".

Run the installer:

1. Once the installer downloads, run it by double-clicking the downloaded file (usually called "Docker Desktop Installer.exe").
2. During the installation, you will be asked to grant administrative permissions. Accept these permissions to allow Docker to install the necessary components.

Select configuration options:

During the installation, you'll be able to select some configuration options, such as whether you want to use Windows Containers or Linux Containers. You can select both options if you want to work with both types of containers in Docker.
Docker Desktop will be automatically installed and configured in your system. Once the installation is complete, you will see the Docker icon in the system tray.

Start Docker:

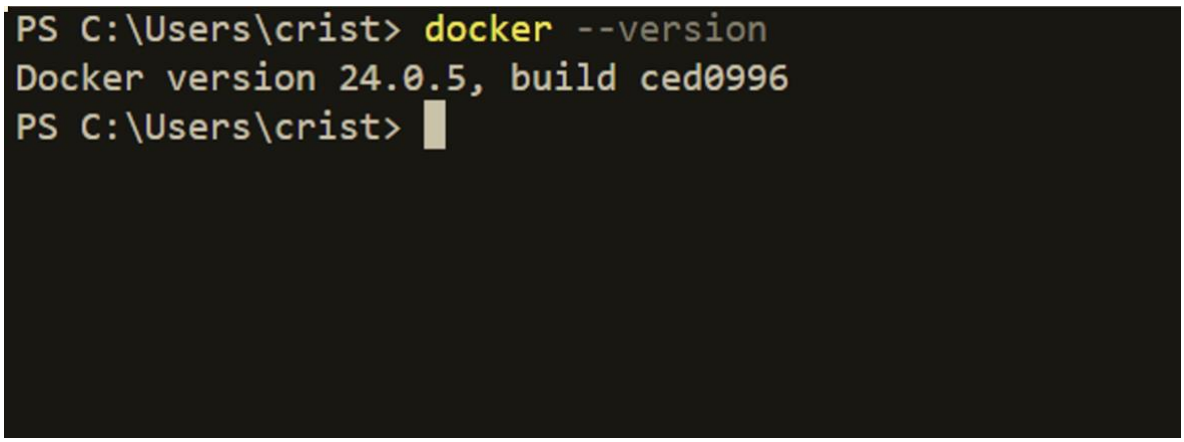
Click the Docker icon in the system tray to launch the application.

Docker Desktop will launch and display an icon in your system tray. You can click this icon to access the Docker Desktop menu and perform various actions, such as starting and stopping Docker, setting preferences, and more.

Verify the installation:

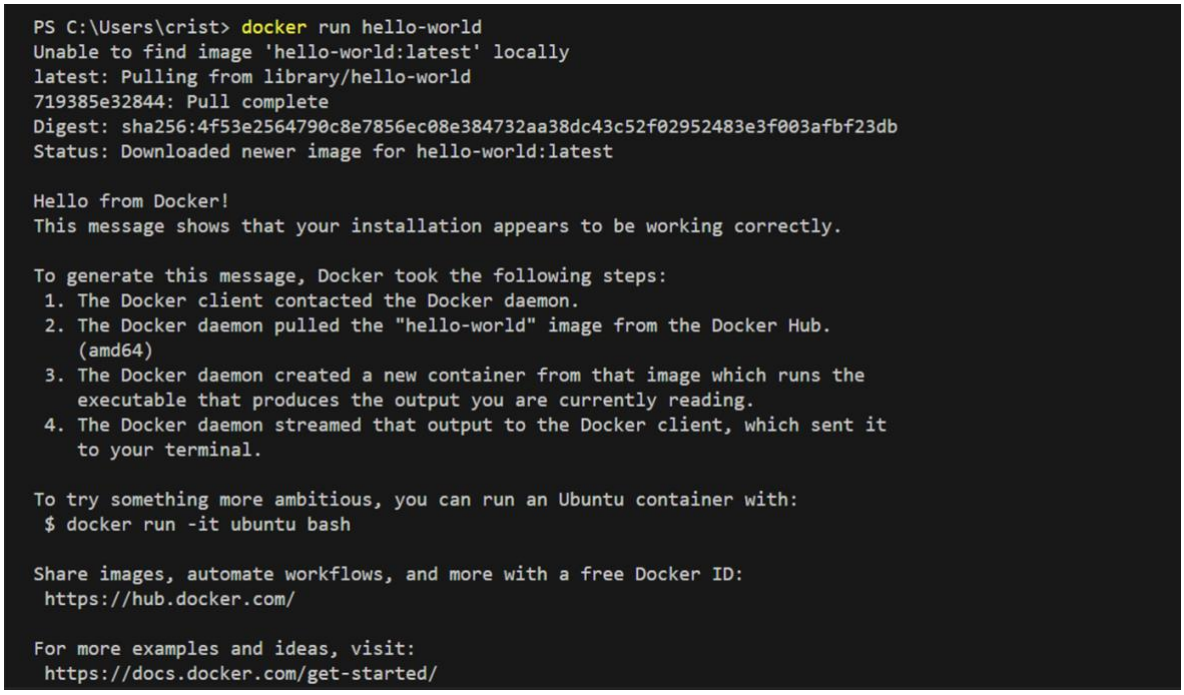
To ensure that Docker is installed correctly, open a PowerShell window or command prompt, and run the following command to check the Docker version:

docker –version



You can also run the following command to verify that Docker is working correctly:

```
docker run hello-world
```



If everything is configured correctly you can proceed to the next step.

EWARS Image:

To obtain the image you must execute the following command in the console:

```
Docker pull maquins/ewars_v2_docker_2025:plus
```

Once the image installation process is complete, the next step will be to run the container, which you can do with the following command:

```
docker run -dp 3838:3838 maquins/ewars_v2_docker_2025:plus
```

Once the process is finished, you will be able to access the application through the address http://localhost:3838 in your browser, which will give you access to the interface.

Considerations

In the installation experience for the Dominican Republic, the following issues were notice:

- For numerical format use ‘points’ instead of ‘commas’ for decimals.
- The number of weeks must be the same for all years. If not, it produces an error.
- Performance and functionality are related to the assigned resources and the amount of data entered, so if you use a machine with a few resources, it could produce errors related to the lack of resources.
- Unless you are certain that the values of some cells are “zero”, as no cases were reported or for zero temperature or rainfall, leave null values blank.
- It would be advisable that in the first run you obtain access to the container log to determine the type of error as appearing on your log, since you do not obtain an output in the browser of the problem.