DNA Master Installation Guide

Purpose

DNA Master is the primary program used for phage annotation during the bioinformatics portion of the SEA-PHAGES course. It runs only on Windows operating systems. This guide was written for Windows 10, but the procedure is essentially the same for other Windows versions.

Computer Requirements

- **Windows XP, Vista, 7, 8, or 10**

  (DNA Master has been verified to work on all of these versions of Windows, and may work on others as well.)

- **Internet connection**
- **At least 1.8 GHz dual-core processor**
- **At least 2 Gb of RAM**
- **At least 5 Gb of hard drive space**

Important Information

DNA Master writes its internal database files into the directory where it is installed, and updates these files as you use DNA Master. As such, **if you are not using an administrator account, DNA Master will not work properly** <u>if installed into the default location</u> of C:/Program Files (x86)/DNA Master because it will not have write permission into that directory. The easiest way to make sure DNA Master is fully functional without requiring a user to have administrator rights is to **install DNA Master into a location where the user has write access**. The guide below suggests the final user's desktop, though it can be another (non-system) location as needed.

Note that there are a couple of similarly-named files that do very different things. You should be aware of the following distinctions, as common problems include mixing up these two files.

"**dna master.exe**" (may appear as "dna master") is simply an <u>**installer**</u> for the program DNA Master. It should be used just once during installation, and **to avoid confusion should be deleted as soon as you have completed installation of DNA Master**. If you accidentally launch this after a successful installation, you'll be sent back to the installer to Modify, Repair, or Remove DNA Master, which can be confusing if you're trying to launch the actual program.

"**DNAMas.exe**" (may appear as "DNAMas") is the actual program DNA Master, and will appear after installation is complete. This file should **always be in the folder "DNA Master"** where DNA Master was installed. Do not drag it to your desktop or it will no longer work. Instead, create a shortcut as described below.

Procedure

These are the steps you'll take to install a functional copy of DNA Master.

Download DNA Master

1. From your Windows computer or VM, open a Web browser, and go to https://phagesdb.org/static/dna%20master.exe

   (Alternatively, go to phagesdb.org, then the Software → DNA Master page, then click the "here" link at the end of the "What is it?" section.)

2. If prompted, click "Save" to save the "dna master.exe" file for installing DNA Master.

Install DNA Master

3. If prompted, you can click "Run" once the download is complete, or otherwise find the downloaded "dna master.exe" file and double-click it.

4. If prompted, click "Yes" to allow the program to be installed.

5. **IMPORTANT!** When asked where you'd like to install DNA Master, do <u>not</u> use the default directory. Instead, pick a location you have full read and write access.

   NOTE! Do not use folder names or filenames with unusual characters, like * ( ) ; " ' ? % , etc.

   For example, change the default location

   > C:\Program Files (x86)\DNA Master

   To a location such as

   > C:\Users\AccountName\Desktop\DNA Master

6. Continue to follow the installation prompts, selecting the default options from here on.

   One the installer is complete, you may want to delete the **installer** file "dna master.exe" file you originally downloaded to avoid future confusion.

Create a Shortcut

7. Open the folder called "DNA Master" where you installed DNA Master.

8. In that folder, locate a file called "DNAMas.exe" (might appear as just "DNAMas"). Right-click that file and select "Create a shortcut" from the menu.

9. A new shortcut called "DNAMas - Shortcut" will be created. Drag that file to your desktop.

   IMPORTANT! Do not mistakenly drag the original file ("DNAMas") to your desktop or any other location outside of the DNA Master folder. If you do so, DNA Master will not work. Make sure you are moving **only** the new **shortcut** file.

10. You should now have a shortcut on your desktop called "DNAMas - Shortcut".

Launch and Update DNA Master

Note: Launching and updating DNA Master is the quickest way to make sure everything is working as it should. **If you see any small errors or warnings at this stage, it may mean something is not right.** Don't ignore those small errors, even though you may be able to click "OK" and it'll seem like it is working. Take a note of them and ask for help if needed.

11. Double-click the **desktop shortcut icon** to launch DNA Master.

12. If prompted, select "Yes" to allow DNA Master to run.

13. DNA Master should open with a small menu asking what you'd like to do. Click "Begin".

14. From the "Help" menu select "Update DNA Master…"

15. DNA Master should attempt to update. Take note of any errors during this process.

16. Once the update is complete, close DNA Master and reopen it. Try to update again to verify you have the latest version.

17. If you receive an error related to "Helper Files", go to File → Preferences. Choose the "Internet" tab, then the "Home Site" sub-tab. **Uncheck** the box labeled "Use Active FTP protocol". Click "Apply" then "OK" to save the new settings. Close DNA Master, re-open, and it should update without errors.

18. From the "Help" menu, choose "About". You should have at least:

    Version 5.23.6

    Build 2701

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If you have an earlier version, your update has not been successful and something is wrong with either your installation or internet connection. Seek help.

If your version is at least that listed above, congratulations! You've successfully installed DNA Master and are ready to begin using it to annotate phage genomes. It's best to always launch DNA Master from the desktop shortcut, and to leave the contents of the DNA Master folder alone.

Update Visual C++ Libraries (optional but recommended)

Depending on the precise version of Windows you've installed, you may see errors related to "SSL Libraries" later on, particularly using the BLAST function of DNA Master. To avoid these errors up front, complete the following steps.

19. From within Windows, and with DNA Master shut down, download the following file: https://phagesdb.org/static/vcredist_x86.exe

20. Select the option to "Run" or "Open" the file, and complete its installation.

21. Restart Windows, and you're good to go!