Installing the GeoMx NGS Pipeline

Installing Locally on Windows/Mac/Linux

1. **Download the installation file.**

2. Right-click on the installation file and select **Extract Here.**

3. Double-click on the resulting **installer application** .

Figure 1: User agreement

- Follow the instructions in the Wizard to install the GeoMx NGS Pipeline software.

- Read and accept the terms of GeoMx NGS Pipeline and wait until the Pipeline sets up the environment.

- If you plan on running the Pipeline on your local computer, check the box **GeoMxNGSPipeline Local Server**.
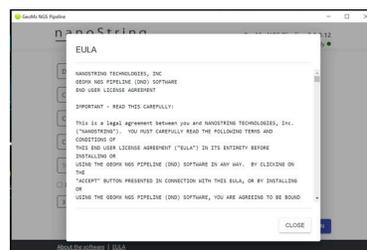
4. Once the GeoMx NGS Pipeline software has been installed, **open the application**.

5. (Optional) If you plan on using a **remote server** for processing, you will first need to **install the GeoMx NGS Pipeline on your server.** See **Installing on Linux or AWS server on page 3**.

Figure 2: Adding a server

- Once installed, add the server in the UI by clicking **new server**, entering the Public IPv4 address of the server (four integers separated by periods followed by **:5000**), then clicking **Add**.

- Enter **API server address**, including port (insert your server name in lieu of the red text): `http:// <remote server address>:5000`

- In the main GeoMx NGS Pipeline menu, ensure the toggle **Run locally** is switched to **Run remotely** , and the server you saved is selected from the adjacent dropdown menu (if not already by default).
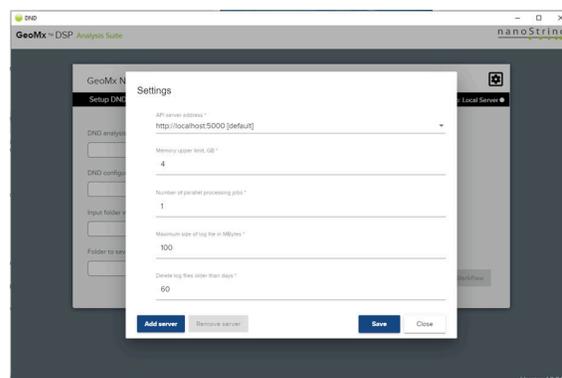
- For all GeoMx NGS Pipeline runs moving forward, you can click the gear icon and select the server from server address drop down, click save, then move slider and run on the server.

Proceed to the **GeoMx-NGS Pipeline User Manual**.

Installing on Linux or AWS server

INSTALLING ON LINUX OR AWS SERVER

Installation comes as zip archive which contains the following files:

- **GeoMxNGSPipeline_Linux_2.0.0.15.sh** (or similar) – this is the installation script

- **GeoMxNGSPipeline.tgz** – this is the installation package file

During the installation you will need to execute the installation script file. It will unpack API server files to the proper location, update configuration, and start the service.

You will first need to have access to a Linux server with **Ubuntu** or **Amazon Linux** (ubuntu) distributive as well as **sudo** user privileges on that server.

1. Use secure copy protocol (SCP) to **copy installation files** on the server. You can use WinSCP or similar software. **Unpack the installation zip archive** and using SCP (WinSCP) to **copy** *GeoMxNGSPipeline_ Linux_ 2.0.0.15.sh* (or similar) and *GeoMxNGSPipeline.tgz* files to the home folder on the target server.

2. Using SSH client (PuTTY) **connect to the server**. Make sure you are connecting with user who has sudo privileges on that server.

3. Sometime during SCP (secure copy) the execute (x) permission may be lost.

    - To check this, navigate to your home folder `(cd /home/{your user name}`) and execute the following command: `ls - l` or `ll` and check that you have **execute** or **x** permissions for the *GeoMxNGSPipeline_Linux_2.0.0.15.sh* file.

    - If the **x** permission is missing, you see something like this: `-rw-rw-r—` (which means no one can execute this script and you will get permission denied error).

    - Run the following command: `sudo chmod +x GeoMxNGSPipeline_ Linux_ 2.0.0.15.sh`. This will add execute **x** permission and the permission set will look like this: `-rwxrwxr-x`.

4. **Run the installation script**: `sudo ./GeoMxNGSPipeline_Linux_2.0.0.15.sh`.

    The installation script will ask you to specify the port. You can either specify the port under which the application will be running or leave the default port – 5000. To keep the default port, click Enter.

    If you already have installed GeoMxNGSPipeline API on this server and want to rerun the installation, the system will ask you whether you would like to override existing settings and whether you want to override folder mappings settings. In both cases type Y or y to confirm or any other character to reject.

5. After installation, you need to check if the service is running and port you have specified during installation is listening. To do this, run the following command: `sudo netstat -tulpn`. In the output, check that port 5000 is listening by GeoMxNGSPipeline service.

> (i) **IMPORTANT:** Depending on which distributive you are using (Ubuntu or Amazon Linux) the output of this command may be slightly different.

6. Configure folder mapping (optional). This step is required only if you plan to use the GUI to connect to a remote server for running the pipeline.

   - Folder mapping enables you to navigate to and view folders and folder contents on the server you connect to.

   - Folder mapping is discretionary, based on what you want to have visible in the GUI, and most likely where the data resides (i.e., if fastq files are in your /home directory, then the /home directory should be mapped).

   - These particular lines provide examples of what the folder mapping could be, but should be modified based on your environment, preference, and organizational habits.

     ◦ <folder path="/home" name="home"/>

     ◦ <!--folder path="/home/ubuntu" name="ubuntu"/-->

   To configure server folder mapping, you need to edit the *runtimesettings.xml* file. By default, this file has mapping for home folder (/*home*). You will need to use one of Ubuntu Linux editing tools like *mcedit* (part of mc), *vi* or *nano*, to edit server mappings.

   In this example, we will be using mcedit. Type `sudo mc` to open Midnight Commander. Navigate to the */var/GeoMxNGSPipeline* folder and open *runtime-settings.xml* file: Under the *server_folders* node, add folder mappings by adding/changing **folder** elements. Every folder element has 2 attributes:

   - **path** – physical path on the server (which can point also to mapped EFS volumes)

   - **name** – the name of this mapping.

   Also remove folder mappings which are incorrect. It is important to keep only valid folder mappings. Otherwise, the GUI will report an error while trying to connect to the server. Hit F2 to save your edits. You don't need to restart API server. The changes in `runtime-settings.xml` will be processed automatically.

7. Finally, you can try to connect to newly installed API instance using GeoMxNGSPipeline GUI.

   Proceed to the **GeoMx-NGS Pipeline User Manual**.

nanoString