Installing the GeoMx NGS Pipeline (DND)

Installing on AWS

INSTALLING FOR AWS BATCH RUN ON EC2

Before installing GeoMx NGS Pipeline (DND) on AWS, you must have the following in place.

- You must have configured Compute Environment and Job Queue in your AWS Batch.

- You must have configured EFS storage with "input" folder + files as well as an "out" folder.

- You must have EC2 instance with "aws configure" run.

- This EC2 instance must have permissions to use AWS Batch and EFS.

- EC2 user must have permission to use "sudo" mode.

- You must install "efs-utils" on this EC2 instance (this is covered in step 3, below; for more information see this tutorial https://docs.aws.amazon.com/en_us/efs/latest/ug/wt1-test.html)

1. **Download the DND software as a zipped file** and save it in an accessible location on your computer.

2. **Install docker on your ec2 instance**. To do this, once connected to your instance in PuTTy, use the following command lines. To paste a command into PuTTy, right-click in the command line. *sudo* is the admin permissions command.

```
sudo yum update -y
sudo amazon-linux-extras install docker
```

Verify that Docker Engine is installed correctly:

```
sudo docker info
```

3. **Install binutils** and **efs-utils.** To do this, use command lines:

```
sudo yum -y install binutils

sudo yum install -y amazon-efs-utils
```

4. **Make a folder to be a mount point** for your efs drive. To do this, use command lines:

```
sudo mkdir efs
```

5. **Mount your efs drive**. To do this, use the following command line, replacing the red text with the name of your EFS drive (find this under **File System ID** on your EFS dashboard).

```
sudo mount -t efs YOUR_EFS_ID:/ ./efs
```

6. **Create folders under efs** (optional) such as *dropoff* (for input data - FASTQ files and GeoMx NGS Pipeline (DND) config file), and output (for .dcc files outputted by the Pipeline software). To do this, use the *cd* (change directory) command to get into the efs folder, then use the *mkdir* (make directory) command:

```
cd efs

sudo mkdir dropoff

sudo mkdir output
```

7. Configure AWS credentials. To do this, use these command lines in PuTTy:

```
sudo yum install awscli

aws configure
```

8. **Download WinSCP** (optional) to facilitate the transfer of the GeoMx NGS Pipeline (DND) software from your Windows Explorer to your AWS instance. Follow the **Transferring Files to Your Linux Instance Using WinSCP** instructions here: https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html.

9. **Copy the zipped tar.gz batch installer to the ec2-user folder**. To do this, drag and drop the zipped file from Windows Explorer to the **ec2-user** folder in WinSCP.

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- If you encounter an error when trying to drag and drop the zipped DND software file, you may need to run the following command in PuTTy to change the file permission to **ec2-user**:

```
sudo chown -R ec2-user:ec2-user efs
```

10. **Unzip the batch installer**. To do this, use the following command line in PuTTy, replacing the red text with the name of DND software file.

```
tar -xvzf DND-1.0.0.156-linux-cli-installer.tar.gz
```

11. **Make sure that this script is executable**, using the following command line in PuTTy. Running this without an error afterward means that it is executable.

```
chmod 755 install.sh
```

12. **Install and test run the GeoMx NGS Pipeline (DND) software**. To do this, use this command line in PuTTy from the home (ec2-user) directory:

```
./install.sh
```

13. **Run the front end** of the GeoMx NGS Pipeline (DND) software. To do this, use this command line in PuTTy:

```
./dnd_1_0_0/dnd
```

- The Terms and Conditions will appear. Use the space bar to page down to read the Terms and Conditions. When prompted, enter *y* to accept.

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