Launching GenomeSuite Analyzer on EC2

To launch the GenomeSuite Analyzer AMI (Amazon Machine Image) using EC2, follow these steps:

Step 1: Start at the EC2 Dashboard

1. **Navigate to the EC2 Dashboard:**
   - Once on the EC2 Dashboard, confirm you are in the correct region.

Step 2: Select a Region

```
1. GenomeSuite Analyzer is available in four AWS regions:
   * US East (N. Virginia) us-east-1
   * US East (Ohio) us-east-2
   * US West (Oregon) us-west-2
   * Canada (Central) ca-central-1
2. Choose a Region:
   * In the top-right corner of the EC2 Dashboard, click on the region selector drop-down.
   * Select one of the four regions from the list of regions.
```

Step 3: Find the GenomeSuite Analyzer AMI

1. **Navigate to AMIs:**
   - In the left-hand menu under **"Images"**, click on **"AMIs"**.
2. **Filter for Public Images:**
   - At the top of the AMIs page, find the drop-down list labeled **"Owned by me"**. Click on it and choose **"Public images"**.
3. **Search for the GenomeSuite Analyzer AMI:**
   - In the search bar, type **"Sniffles_v.1.1.0"** and press Enter.
4. **Select the AMI:**
   - Find the AMI named **"Sniffles_v.1.1.0"** in the results.
   - Click the checkbox next to this AMI to highlight the row.
5. **Launch the Instance:**
   - With the AMI row selected, click on the **"Launch instance from image"** button at the top right of the page.

Step 4: Configure the Instance

1. **Name the Instance:**

   - On the **"Launch an Instance"** page, provide a name for your instance in the **"Name"** field.

2. **Select the Instance Type:**

   - Under **"Instance Type"**, select one of the following options:

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For human exome, use these instance types:
```

1. `p3.2xlarge`
2. `p3.8xlarge`
3. `p3.16xlarge`

```
For human whole genome, use this instance type:
```

1. `p4d.24xlarge`

These instance types are optimized for high-performance computing tasks using Nvidia GPU's.

3. **Configure Key Pair:**

   - Under **"Key Pair (login)"**, select the key pair you created earlier (e.g., `"sniffles-keypair"`).

4. **Set Network Settings:**

   - Under **"Network Settings"**, select **"Edit"**.
   - Choose **"Select existing security group"** and select the security group you created earlier (e.g., `"sniffles-sg"`).

5. **Configure Storage:**

   - Under **"Configure Storage"**, set the storage size to **2048 GiB**.
   - Ensure the storage type is set to **gp3** (General Purpose SSD).

Step 5: Launch the Instance

1. **Review the Settings:**
   - Double-check all configurations to ensure everything is set correctly.
2. **Launch the Instance:**
   - Click on the **"Launch Instance"** button at the bottom of the page.

   - If you get an error message "Insufficient Capacity", this means all of the available computing resources are in use.
     At this point, you have two options:
     ```
        1) Wait a few minutes and try to launch the instance again.
        2) Choose a different Region and try to launch the instance again.
     ```
     Typically, there are computing resources available in one of the regions.
3. **Instance Initialization:**
   - Once launched, you will be taken to a page showing the status of your instance. The instance will take a few minutes to initialize.
4. **Verify the Instance:**
   - After the instance is running, you can find it under **"Instances"** in the EC2 Dashboard. Make sure the instance status is "**running**" before attempting to connect.