DRAGEN™ ORA Decompression v2.6.1 Software Release Notes

January 27, 2023

Introduction

These release notes detail the key changes for the DRAGEN™ ORA Decompression software v.2.6.1 which decompresses *.fastq.ora files that have been compressed using DRAGEN ORA Compression software.

Changes are relative to DRAGEN ORA Decompression software v.2.5.5. The DRAGEN ORA Decompression software v.2.5.5 is replaced with new version.

DRAGEN ORA Decompression software Installers, and User Guide are available here:
https://support.illumina.com/sequencing/sequencing_software/DRAGENDecompression.html

Installation Requirements

Component	Minimum Requirements
System Memory	8 GB RAM
Free Disk Space	2 GB
Compatible Linux Distribution	• Ubuntu 14.06 or later • CentOS 7 or late • Debian 8 or later • Fedora 26 or later
Compatible Mac Distribution	MacOS >=10.15 (ARM and Intel CPU processors)
Compatible Windows Distribution	Windows 10

SW Installation Procedure

Installation on Linux and Mac OS

Use the following steps to install the DRAGEN ORA Decompression Software on Linux or Mac OS once the DRAGEN ORA Decompression Software archive for Linux or for Mac has been downloaded.

1. Extract the archive as follows:
`tar -xzvf orad.2.6.1.linux.tar.gz` on Linux OS
`tar -xzvf orad.2.6.1.mac.tar.gz` on mac OS

2. Navigate to the Orad directory as follows:

```
cd orad_2_6_1
```

3. Move the executable to your preferred location as follows:

```
mv orad your_preferred_location/
```

4. Add `orad` to your path as follows:

```
echo 'PATH=$PATH: your_preferred_location/'» ~/.bashrc
source ~/.bashrc
```

5. Move the oradata folder and its content into the home repository as follows:

```
mv oradata ~
```

You can store the folder in a different location using the ORA_REF_PATH environment variable as follows:

```
mv oradata ~/otherlocation/ export ORA_REF_PATH=~/otherlocation/oradata/
```

Installation on Windows OS

Use the following steps to install the DRAGEN ORA Decompression Software once the DRAGEN ORA decompression Software archive for Windows OS has been downloaded.

1. Extract the archive with a software that can handle gzipped tarballs, such as 7-Zip (https://www.7-zip.org). Right-click on the archive and select extract with. Two files are extracted from the archive: `orad.exe` and the `refbin` file.
   In the following steps the archive has been extracted to the location C:\Users\user1 as an example. Change C:\Users\user1 to any location where the archive has been extracted.

2. Navigate to the Run command window

3. Open Command Prompt by typing "cmd"

4. Set the environment variables to use the `orad` executable and the `refbin` file either with the `set` command or the `setx` command. The `set` command will configure the variables temporarily (for the current console window) while the `setx` command will configure the variables permanently.

   a. set the path to the orad executable to the PATH environment variable

   ```
   set PATH=%PATH%; C:\Users\user1
   ```

   or

   ```
   setx PATH=%PATH%; C:\Users\user1
   ```

   b. set the path to the refbin file to an ORA_REF_PATH environment variable as follows.

   ```
   set ORA_REF_PATH= C:\Users\user1
   ```

   or

   ```
   setx  ORA_REF_PATH "C:\Users\user1"
   ```

5. Verify the good installation by entering the following command in a directory other than the one you chose to extract the archive.

   ```
   orad.exe -D
   ```

   (if the setx command was used for installation the command should be entered from a new console window)
   A good installation will return the location of the `refbin` file

The Windows Graphical User Interface (GUI) can also be used to set the environmental variables after step 1 above has been completed:

2. Press the Windows key, search for "environment" and click Edit the system environment variables from the Control Panel.

3. Once in the System Properties panel, click the "Environment Variables..." button.

4. In the Environment Variables window:

   a. edit the PATH variable with path where you extracted the archive and

   b. add the new ORA_REF_PATH with path where you extracted the archive

   This can be done for one specific user in the "User variables", or for the whole system, all users in the "System variables"

5. Restart your applications for the new environment variables to be used.

New Features and command

- Default format FASTQ.GZ. By default, FASTQ.ORA files are decompressed to FASTQ.GZ.
- Decompression can occur in a streaming mode with FASTQ.ORA files located in AWS s3 or Azure Blob storage
- Added `--ora-reference` to specify your chosen path to the ora reference file if not default one. The ora reference file comes packaged in the DRAGEN ORA Decompression software, and the default location can be changed in the `ORA_REF_PATH` environment variable.
- Added `--check-ora-reference-path` to check the accessibility of the ora reference file and print its path.
- Added `-N or --name` to re-store original FASTQ name if it has been stored in FASTQ.ORA file
- Added `--empty-third-line` to force empty third line (line with "+" in FASTQ format)
- Added the option `-` to read FASTQ.ORA files from Standard Input
- Added the option `--quiet` for quiet mode where nothing is written to Standard Input or Standard Output
- Added information field for the option `--info` such as:
  - Whether or not the FASTQ.ORA is a paired-read interleaved file
  - Original name of the file if the info has been saved in the FASTQ.ORA file

Issue resolved

Fix for the command `orad filename.fastq.ora` that would previously work only with the option `-o` specified.

Known limitations

Streaming mode with input located in AWS s3 and Azure Blob storage is not supported for Mac and Windows OS.

Known issues

The ora file format supports concatenation of files, e.g. with :
`cat file1.fastq.ora file2.fastq.ora > concatenated_files.fastq.ora`
The "`concatenated_files.fastq.ora`" is a valid ora file whose decompression will yield the concatenated contents of file1 and file2.
However, printing the file's statistics with option -i on the concatenated file (`orad -i concatenated_files.fastq.ora`) will print erroneous information.

Orad for Windows OS does not read from the default standard input stdin. The option "-" generates an unrelated error message.

Release History

Revision	Release Reference	Originator	Description of Change
00	CN 1073910	Guillaume Rizk	Initial Release
01	CN 1081823	Guillaume Rizk	Updated with installation details for Windows OS and Mac OS distribution Included new known limitations/issues for Windows OS