Release Notes

DRAGEN BCL Convert v3.9.3 for NextSeq 1000/2000

INTRODUCTION

These Release Notes detail the key changes to the DRAGEN BCL Convert Pipeline on NextSeq 1000/2000 since the v3.7.4 release. If you are updating from an older version, please see all intermediate release notes. Note that with the v3.8.4 release, GenerateFASTQ has been renamed to DRAGEN BCL Convert.

INSTALLATION INSTRUCTIONS

DRAGEN v3.9.3 is compatible with Control Software 1.2 and 1.3. For information regarding compatibility with other Control Software versions, please reference the NextSeq 1000/2000 Compatible Products page on the Illumina support site. If you would like to update the control software, please follow the steps detailed in 1000000160800 v00.

ONLINE INSTALLATION WITH V1.3 CONTROL SOFTWARE

* **These instructions are intended for online installation of DRAGEN pipelines with v1.3 Control Software and beyond**

Starting with v1.3 Control Software, cloud-based updates for DRAGEN are enabled.
1. Make sure that you have the password to the ilmnadmin account.
2. Log in to the ilmnadmin account: a. If you are already logged in as ilmnuser and in control software, select the control software menu, and then select **Exit Application** to access the desktop.
b. Select the power button icon in the upper right corner and log out of ilmnuser.
c. After you are on the login screen, select ilmnadmin, and then enter the password to log in.
d. The control software automatically launches once you are logged in.

3. Select the **DRAGEN** screen in the control software.
4. Click on **check online** button in the DRAGEN workflows section.
5. A modal will pop up showing which workflows have an update available for installation.
6. Select which pipelines you would like to update. **a. NOTE: For Online Updates, DRAGEN BCL Convert must be installed before or with other workflows of the same DRAGEN Version**

7. Select download and install.
8. You will be prompted to enter the admin password once the download completes and proceeds to install
9. After installation is complete, you will be navigated back to the

OFFLINE INSTALLATION/ INSTALLATION WITH V1.2 CONTROL SOFTWARE

* **These instructions are intended for offline installation of DRAGEN pipelines or installation with v1.2 Control Software (whether online or offline)**

1. Make sure that you have the password to the ilmnadmin account.
2. Log in to the ilmnadmin account: a. If you are already logged in as ilmnuser and in control software, select the control software menu, and then select **Exit Application** to access the desktop.
b. Select the power button icon in the upper right corner and log out of ilmnuser.
c. After you are on the login screen, select ilmnadmin, and then enter the password to log in.

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d. The control software automatically launches once you are logged in.

3. The DRAGEN installation files require up to 8 GB of free space on your desktop. a. To access your desktop, select the control software menu in the control software, and then select **Minimize Application**.
b. Delete or transfer files off the desktop that are not needed.
c. Empty trash to free space from the drive. i. Select **Applications**, and then **Files** from the upper left corner of the desktop to launch the file explorer.
ii. On the left panel of the file explorer, right click the Trash icon and select **Empty Trash**.

4. Launch Chromium to download the software upgrade installers from the Illumina Support Site. a. While in desktop view, open the Applications menu on the upper left corner. Select **Internet**, and then select **Chromium**. **i. Note: After launching Chromium, you may receive a prompt to unlock your login keyring. You can safely ignore and cancel out of the prompt.**

b. Use Chromium to browse to the NextSeq 1000 and 2000 Software Downloads page on the Illumina Support Site.

5. Download the DRAGEN upgrade installers from the Illumina Support Site and save them to the desktop. **Do not extract these files; leave them as .tar.gz a. Note: at minimum, you must download and install the DRAGEN BCL Convert update.**

6. After the files have finished downloading to the desktop, maximize the control software by selecting it from the toolbar.
7. Install DRAGEN workflows a. Select the control software menu, then select **DRAGEN**.
b. In the Version section, select **Browse for New Version**.
c. In the browse window, navigate to the desktop and double-click the DRAGEN BCL Convert workflow *.tar.gz package. **i. Note: DRAGEN BCL Convert must be installed before other workflows**

d. In the control software DRAGEN window, select **Install**.
e. At the login prompt, enter the ilmnadmin password.
f. Confirm that DRAGEN BCL Convert is updated to 3.9.3.

FEATURES

Revised metrics

- Per-read quality stats in new 'Quality_Stats.csv' file
- Added derived statistics to quality, adapter, demultiplex, index-hopping, & top-unknown-barcodes stats files
- Improved format of Adapter and Demux stats files
  o Eliminated "# of >= Q30 bases" and "Mean Quality Score" in the Demultiplex_Stats.csv file
  o Replaced these metrics with "YieldQ30" and "Mean Quality Score" in the Quality_Stats.csv
  o Included "index", "index2", "ReadNumber", and "% Adapter Bases" in the Adapter_Metrics.csv file

- o Eliminated "R1/R2_AdapterBases" and "R1/R2_SampleBases" from the Adapter_Metrics.csv, replaced with SampleID, Lane, index, read specific entries in the "AdapterBases" and "SampleBases" columns
- Top Unknown Barcodes output expanded from 100 to 1000

Allow uppercase TRUE for NoLaneSplitting in sample sheet due to Excel behavior

Performance and robustness improvements

RESOLVED ISSUES

- bcl conversion crashed when run had less than 26 cycles
- fastq-list inputs from a no-lane-splitting run had the wrong sampleID
- Incorrect Top Unknown Barcodes output for two different index lengths
- Top Unknown Barcodes output is empty when # of entries would be < 100
- Catch error with TrimUMI,0 and CreateFastqForIndexReads,1 options that would cause discontiguous read output
- Improved and corrected several error messages and other status output
- Error when UMI specified in the leading bases of OverrideCycles for Read2

KNOWN ISSUES

- If a directory is specified as input to '--sample-sheet', bcl-convert will hang at the beginning of a run while trying to copy that path as a file to <outdir>/Reports/SampleSheet.csv
- BCL Convert does not validate when "Logs" or "Reports" is provided for a Sample_Project, and the software will be unable to create the subdirectories if these string are provided.
- BCL Convert will not provided a warning or error when a corrupt bci lane file is found in strict or robust mode
- BCL Convert does not support the –first-tile-only option being specified for SP flow cells, but the new *–tiles* option can be used as a substitute.