



Title: DRAGEN BCL Convert v4.2.7 for NextSeq 1000/2000  
Customer Release Notes  
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*Page 1 of 6*

**Customer Release Notes**

**DRAGEN BCL Convert v4.2.7**

**for NextSeq 1000/2000**



## Table of Contents

INTRODUCTION .....	3
CHANGES.....	3
INSTALLATION INSTRUCTIONS .....	4
<b>ONLINE INSTALLATION OF WORKFLOWS</b> .....	4
<b>OFFLINE INSTALLATION OF WORKFLOWS</b> .....	5
RELEASE HISTORY .....	6

## INTRODUCTION

These Release Notes detail the key changes to the DRAGEN BCL Convert Workflow onboard the NextSeq 1000/2000 instrument, since the v3.10.12 release. If you are updating from an older version, please see all intermediate release notes.

## CHANGES

- BCL conversion now requires each index in a dual setup to individually meet the hamming distance requirements for BarcodeMismatchesIndex#
- Support both 1 / 0 and True / False for command-line options and sample-sheet settings, for the TrimUMI and CreateFastqForIndexReads settings to improve backwards compatibility with bcl2fastq2.
- Make the combined index collision checking default to enabled for all lanes. Implement a new IndependentIndexCollisionCheck option to replace CombinedIndexCollisionCheck.
  - This important change reverts a strict check on dual index collisions added to BCL based on customer feedback. With this change, the default behavior matches bcl2fastq2 and adds an option to change the behavior.

DRAGEN™ version	Index collision check behavior
3.9.x	Relaxed by default. No option to change. Matches bcl2fastq2
3.10.x and 4.0.x	Strict by default. No option to change.
4.1.5	Strict by default. New option CombinedIndexCollisionCheck introduced to optionally relax the strictness
4.1.7 and 4.2.x	Relaxed by default. Remove CombinedIndexCollisionCheck option, add new IndependentIndexCollisionCheck option to allow optional strict checking. Default matches bcl2fastq2

- Various BCL issue fixes
  - Fix for BCL behavior being different than bcl2fastq2 with respect to "Sample\_Name" and "Sample\_Project". In the special case of "Sample\_Name" == "Sample\_ID", bcl2fastq2 does not create a "Sample\_ID" subdirectory. This change makes bcl-convert behavior the same.
  - Fix for false barcode collision reports when one sample's index is entirely trimmed out and another sample's index exists.
  - Fix for BCL not aborting when single-index datasets have barcode collisions.
  - Fix for incorrect yieldQ30/qscoresum stats when there is UMI in the first part of a read and TrimUMI is enabled (true by default).
  - Fix for a false error when using global BarcodeMismatchesIndex2 and a sample does not use index BarcodeMismatchesIndex1, when the sample sheet contains both single & dual-index samples.
  - Fix for BCL failing with a "vector::reserve" message for mixed index strategies.

- Fix for BCL outputting many duplicate error messages for missing CBCL files.
- Fix for BCL convert abort with an empty [BCLConvert\_Settings] section in v2 sample sheets.
- Fix an issue where Undetermined FASTQ files are still created even after setting `--bcl-only-matched-reads` to true.
- Fix for failing validation check "No more than 27 total bases can be used as index bases".
- Fix a segfault in BCL conversion seen on v3.9.3

## INSTALLATION INSTRUCTIONS

DRAGEN v4.2.7 workflows are compatible with Control Software 1.7.x. 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 the NextSeq 1000/2000 Control Software Suite v1.7.x Release Notes on the Illumina Support Site.

### Online Installation of Workflows

If the instrument is connected to the internet, you can install DRAGEN workflows directly from the Control Software. Online installation of workflows is available since Control Software v1.3 or later.

Steps:

1. Make sure that you have the password to the *ilmnadmin* account.
2. Log in to the *ilmnadmin* account:
  - a. If you are 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. Make sure that there are no sequencing runs or on-instrument secondary analysis in progress.
4. On the control software menu, select **DRAGEN**. Under Version, the Available Workflows section lists the workflows currently installed on the system.
5. Select **Check Online**. Not all DRAGEN versions and workflows are compatible with online installation. Use offline installation for additional workflows.
6. Select the checkbox for the workflows that you would like to install. **NOTE: For Online Updates, DRAGEN BCL Convert must be installed before or with other workflows of the same DRAGEN Version.** You can view information about the latest version of a workflow in the release notes.
7. Select Install to start installation.
8. Enter *ilmnadmin* for the system password, and then select Authenticate.

9. After installation is complete, you will be navigated back to the DRAGEN screen and can view the updated list of installed DRAGEN workflows.

### Offline Installation of Workflows

#### Steps:

1. When a DRAGEN workflow update is available, download the installer (\*.tar.gz) from the NextSeq 1000/2000 Sequencing System support page. Save the installer to a local or portable drive.
2. If you saved the installer to a portable drive, plug the drive into a USB 3.0 port, located on both the side and back of the instrument. Gently move the instrument as needed to access the back.
3. Follow steps 1-3 above to log in to *ilmnadmin*.
4. Select the control software menu, and then select **DRAGEN**.
5. Under Version, select **Browse for New Version** to navigate to the installer.
6. Select Install to start installation.
7. Enter *ilmnadmin* for the system password, and then select Authenticate.
8. After installation is complete, you will be navigated back to the DRAGEN screen and can view the updated list of installed DRAGEN workflows.

Note that starting with control software v1.5, it is possible to uninstall previous versions of DRAGEN workflows.

## RELEASE HISTORY

Revision	Release Reference	Originator	Description of Change
00	CN 1103441	Yi Lian	Initial release