**Bio-Rad
Laboratories, Inc.**

Release Notes for the BR.io Cloud Platform

Version 1.0

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Contents

Introduction

Using the BR.io Cloud Platform with CFX Opus instruments you can set up, run, monitor, and analyze your real-time PCR experiments on connected CFX Opus instruments. This document summarizes the main features, and also provides a short list of known issues.

Supported Operating Systems and Browsers

BR.io is supported on

- Windows 7 OS or later

- Mac OS 10.12 or later

- Chrome browser v63 or later

- Safari browser v11 or later

Summary of Main Features

Individual User Accounts

- You can create an individual BR.io user account, remain logged in for up to 30 days, change a password, and reset a forgotten password.

Online Assistance and Accessibility

- BR.io features a Help Center that provides searchable software documentation and context-sensitive Help that is coordinated with primary BR.io pages.

- The BR.io interface is designed for ease-of-use by all users.

- Users can contact Bio-Rad Customer Support directly from BR.io.

Storing and Managing Data

- BR.io displays the full list of a user's files on the Files page, and the most recently used files on the Home page.

- Users can upload .zpcr and .pcrd file types to the Files page, and rename and delete files.

Integration with CFX Opus Instruments

- Using the BR.io Cloud Platform you can

  o Connect CFX Opus instruments to your BR.io account

  o Create a run in BR.io, and then execute the run on the CFX Opus instrument

  o Create a run on the CFX Opus instrument using a locally stored protocol, and save it to your storage area in BR.io

- For runs created or saved in BR.io, CFX Opus run data is automatically uploaded to BR.io from connected instruments.

Managing and Monitoring CFX Opus Instruments

- In BR.io, you can view

  o A list of all CFX Opus instruments connected to your BR.io account

  o The model, name, and serial number of a connected CFX Opus instrument

  o The current status, time remaining, and current step/cycle for an experiment running on a connected CFX Opus instrument

Creating and Managing CFX Protocols

- BR.io provides a dedicated repository for your protocols.

- You can create, edit, and delete protocols in BR.io.

- CFX protocols in BR.io appear in both a graphical step format and a list of protocol steps.

- In BR.io, you can create temperature, gradient, melt curve, and goto steps in your protocols.

- BR.io validates your protocol parameters and displays an error message if applicable.

Creating and Editing a CFX Opus Run in BR.io

- BR.io provides a

  o Streamlined workflow to set up an experiment to run on the CFX Opus 96 or CFX Opus 384

  o Plate editor that is optimized for usability, where you can see well content, select and edit multiple wells at once, and see plate validation and error messages, if applicable

    Note: BR.io only supports the following scan modes:

    SYBR/FAM only
    All channels

- You can edit the plate and run details while the run is in progress, or after it has completed on the instrument.

- You can set up a CFX Opus run using a default (quick) plate. Default plates consist of pre-defined fluorophores and unknowns in every well, so you can skip or defer plate setup.

BR.io Analysis Features

- BR.io uses the same algorithms as CFX Maestro.

- BR.io enables the user to analyze real-time PCR (amplification) data, including the ability to

  o Toggle baseline subtraction on or off

  o Set automatic or user defined single thresholds

  o View and download the amplification chart and apply linear or logarithmic scaling of the RFU data

  o View amplification data in a sortable table format

  o Export amplification data table and RFU data per cycle in .csv format

  o Analyze data by fluorophore or target

  o Show or hide data from individual wells in the plate

  o Filter out targets or fluorophores from analysis

- Analyze melt curve data from CFX runs (Opus and legacy), including

  o A melt peak (negative derivative) chart that you can download and print

  o A sortable, exportable data table, which displays melting temperature, peak height, begin temperature, and end temperature

Interoperability with CFX Maestro or CFX Manager

- You can

  o Upload and import .zpcr files and .pcrd files created in CFX Manager v1.0 and later, or CFX Maestro v1.0 and later

  o Upload and import .pcrd files from CFX Maestro for Mac

  o Download .zpcr file from a CFX Opus run

    Note: The plate layout and run details are omitted.

  o Download the original .zpcr or .pcrd file from a manually uploaded (imported) CFX run

Known Issues

- Users who mistype their email address during signup can experience issues with signing in or resetting their password.

- You must close the "Run successfully uploaded to your BR.io account" dialog box soon after the run is completed, or BR.io incorrectly displays the CFX Opus status as Offline.

- If you navigate from the CFX run workflow while uploading a file, BR.io does not warn you about unsaved changes to your CFX run.

- After you exit the Target Name field, BR.io assigns a color to a new target on the Plate Setup for a CFX run.

- Plate headers (row and column) do not remain in view on Plate Setup while scrolling.

- BR.io does not currently support

  o Analysis of .pcrd or .zpcr files that contain legacy or user-calibrated fluorophores

    Note: You can upload the files, but working with them in the Analysis module can produce errors.

  o Viewing or analyzing completed CFX runs with melt curve data, but no amplification step

  o Viewing the gradient (temperature per row) when adding a Gradient step to a CFX protocol

  o Viewing details and metadata for a completed CFX run, including the date and time of the run, and the name, model and serial number of the instrument

  o Downloading CFX runs created or modified in BR.io as CFX Maestro-compatible PCRD files

  o Baseline adjustment and fluorescence drift correction analysis settings

  o Application-based analysis, such as standard curve/absolute quantification, gene expression/relative quantification, and allelic discrimination

Documentation

Click the following URL, and then click the icon to access the online Help Center.

https://br.io

You can also click the down arrow above EXPLORE BR.io to access videos that describe BR.io processes.
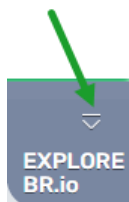
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Contacting Technical Support

The Bio-Rad Technical Support department in the U.S. is open Monday through Friday, 5:00 AM to 5:00 PM, Pacific time.

Phone: 1-800-424-6723, option 2
Email: Support@bio-rad.com (U.S./Canada Only)

For technical assistance outside the U.S. and Canada, contact your local technical support office or click the Contact Us link at www.bio-rad.com.