

How to Troubleshoot the API Buffer Overflow Error

Introduction

The API buffer overflow error occurs on both Helios™ and Hyperion™ Imaging System acquisition computers running CyTOF Software v7.0. It typically occurs when there are insufficient computer resources, and it causes data acquisition interruption.

Typical causes of the API buffer overflow error:

- Running automatically scheduled Windows® application tasks during data acquisition, reducing the computer resources available for acquisition
- Acquiring data to a network drive
- Experiencing interference from encryption software, such as bitlocker drive encryption

During typical use, the API buffer overflow error may be observed once every two weeks on Helios instruments and once a week on Hyperion Imaging System instruments. The error is observed more often in imaging mode because continuous acquisition occurs for longer periods of time in that mode than in cell suspension mode. The frequency of these errors may be increased by limited space on the C: drive and nonstandard software installed on the acquisition computer.

We are actively investigating the root cause of API buffer overflow errors. While the investigation continues, the following workflow and computer management guidance can minimize the impact and the frequency of disruptions to your acquisition.

General Recommendations

- Preserve as much free space on the C: drive as possible. Do not install software that is not required for the instrument.
- Do not acquire data to a network drive. To prevent the effect of network latency on performance, save data to the E: drive.
- Preserve system resources for data acquisition. Do not run additional software or process data during acquisition. These actions reduce the system resources available for acquisition.
- Disable or reschedule automatic processes. Windows Automatic Update, disk defragmentation, and virus scanning require computer resources. If a process is scheduled to run during acquisition, acquisition may fail due to insufficient computer resources.
- To ensure adequate disk space and prevent data loss and acquisition interruption, do not copy files to the hard drive while data is being acquired.
- The Y-axis on the Masses Per Reading (MPR) plot is automatically scaled based on the channel with the highest signal. To zoom on lower-intensity channels, uncheck channels with high signal.

Recommendations for Hyperion Imaging Systems

- Restart the computer and Hyperion Tissue Imager weekly and after acquisition times of ≥ 8 consecutive hours.
- Close and reopen the software between runs when possible.
- Reduce the resolution of imported slide images if you will not use the image for mapping or registration (for example, if you will create local panoramas instead).
- Reduce the number of live ion images displayed to the regions of interest being concurrently evaluated.
- Whenever possible, limit panorama size to $5,000 \times 5,000 \mu\text{m}$. If a larger panorama ($10,000 \times 10,000 \mu\text{m}$) is required, limit the number of panoramas to 2 per MCD file.
- During acquisition, close MCD files that are already acquired.

Recommendations for Helios Systems

- Restart the computer weekly and after acquisition times of ≥ 8 consecutive hours.
- Close and reopen software between runs when possible.
- Save a copy of the default template on the E: drive. Before you load your template in Experiment Manager, click **Open**. Locate the default template on the E: drive and click **OK** to open it. Then repeat these steps to open your template.

Hyperion Imaging System customers can also configure email notifications to receive an email when acquisition stops. For more information, see the Configure Email Notifications topic in the CyTOF® Software 7.0 help and user guide (FLDM-00075) or contact your local Field Applications Specialist.

Send questions, concerns, and feedback to the Technical Support team at techsupport.fluidigm.com.

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