iontorrent

RELEASE NOTES

Torrent Suite™ Software 5.8 Release Notes
Publication No. MAN0017478 Rev. A.0

Contents

Thermo Fisher
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New Features

Ion GeneStudio S5 Plus and Ion GeneStudio S5 Prime

Two new instruments, the Ion GeneStudio S5 Plus and Ion GeneStudio S5 Prime, are being introduced in Torrent Suite™ Software 5.8. In addition to running existing Ion 5-series chips (Ion 510-540), these instruments are capable of running the Ion 550™ chip for higher throughput per run. In the software, the instruments are referred to as "S5" during run planning but are differentiated as subtypes of the S5 series of instruments where necessary.

The Ion S5™ Sequencer and the Ion S5™ XL Sequencer are no longer available for purchase and are replaced by the Ion GeneStudio S5 Sequencer and Ion GeneStudio S5 Prime Sequencer. Both of the Ion S5™ and Ion S5™ XL Sequencers continue to be supported by Thermo Fisher Scientific."

Ion 550™ chip

The new Ion 550™ chip is natively supported in Torrent Suite™ Software 5.8 to perform runs on research applications such as Ion AmpliSeq™ Exome, Oncomine Pan-Cancer Cell-Free assay, OCAv3 and the Ion AmpliSeq™ Transcriptome panels. The Ion 550™ chip, with the relevant parameters, is available as an auto-selection for these research applications.

Oncomine™ Mutation Load Panel

A Planned Run template to support the previously released Oncomine™ Mutation Load Panel is included in this release of the software, under the "Mutation Load" research application category on the **Plan > Templates** page.

Oncomine™ Pan-Cancer Cell-Free Assay

The new Oncomine™ Pan-Cancer Cell-Free Assay enables interrogation of both DNA and RNA somatic mutations across 52 unique genes and multiple tumor types from one research blood sample in two days. This panel is now available for run planning with two new templates capable of running on the Ion 550™ chip. The new panel is available under the "Oncology – Liquid Biopsy" research application category.

Oncomine™ Myeloid Research Assay

The new Oncomine™ Myeloid assay program is now available for run planning. Six new Planned Run templates are available under a newly created "Oncology – HemeOnc" research application category. These Planned Run templates support runs on the Ion PGM™ and Ion S5™ series of instruments for both DNA, Fusions and combination of DNA and Fusions sample types.

Ion Chef™ flexible workflow

The Ion Chef™ allows more flexible reagent and solution cartridge reuse—up to two times for the Ion 550™ templating kit. This flexible workflow is supported in Torrent

Suite™ Software by an API and the Ion Mesh functions. This capability is only available for the Ion 550™ Kit.

Dashboard (in beta release)

This version of the software presents an all-new dashboard (in beta release). This dashboard provides users with a snapshot of sequencer and analysis activity. To access the dashboard, add "/dashboard/" at the end of your web link, for example "http://server.itw/dashboard/". Please provide feedback on the dashboard to us by using the feedback button.

Show activity within: Last 24 hours ▾

Summary

SOFTWARE	INSTRUMENTS	SERVICES	DATA MANAGEMENT
Torrent Suite	⊘ 3 connected	⊘ All services running	⊘ Disk usage 50%
[Update available]	⚠ 1 offline	❗ 2 services down	⚠ Disk usage 70%
	❗ 2 alerts	⊘ RAID storage normal	❗ Disk usage 90%
		❗ RAID storage failure	❗ Disk management alert
		⊘ Cluster normal	⊘ Data archive in progress
		❗ Cluster failure	❗ Data archive error

Runs

Sample Set name **MySampleSetName**	📋 5 Samples ❶	Library prep started 09/21/17 7:04 AM	**Library Prep** - In progress (5%)	
Plan name **MyPlanName 123**	📋 8 Samples ❶	Template prep started 09/21/17 07:31 AM	**Library Prep** - Complete	
Run name **user COL-5-mtQQQ111 comb-smplTrk-PGM-HiQView-400bp-AB0017357 foreign**	👤 e5272-wfa-l165-sdfsdfsd-sdfsdfsdf-sdfsdf	Sequencing started 09/20/17 06:00 PM	**Sequencing** - In progress (85%)	
Run name **test Brachiosaurus-193-OCAv3 foreign**	📋 3 Samples ❶	Sequencing started 09/20/17 03:37 PM	**Analysis** - Error	**Run report ready** ERROR: alignment pre-conditions not met
Run name **user COL-4-mtQQQ sampleTrack-PGM-HiQView stl-00155608**	👤 7 Samples ❶	Sequencing started 09/20/17 02:58 PM	**Plugins** - Complete	**Run report ready**

Instruments

PROTON_Instrument1 Connected	**PROTON_Instrument2** Connected	**PGM_Instrument1** Connected
Last used 02/22/17 03:37 PM **Last cleaned** 01/06/17 9:07 AM	**Last used** 02/22/17 03:37 PM **Last cleaned** 01/06/17 9:07 AM	**Last used** 02/22/17 03:37 PM **Last cleaned** 01/06/17 9:07 AM

Ability to choose barcodes to run in Ion AmpliSeqRNA Plugin

The Ion AmpliSeqRNA Plugin now comes with the ability to choose barcodes before running the plugin.

Coverage Analysis Plugin reports user-defined coverage

The Coverage Analysis Plugin now comes with the ability to report user-defined coverage at three tiers. These coverage depth tiers can be defined by users based on their requirements.

Link AmpliSeq.com account in Torrent Suite™ Software

Users are now able to link AmpliSeq.com accounts with Torrent Suite™ Software from the accounts page and persist with these credentials for all future imports of panel-related files.

variantCaller PPA tag

variantCaller PPA (Possible Polyploidy Alleles) tag in the INFO FIELD of the vcf lines now contain only alleles not reported by GT (genotoype). variantCaller plugin GUI PPA column and alleles.xls file PPA column are also changed accordingly to reflect Absent alleles with PPA=1.

Using same reference/target/hotspots as in plan for variantCaller plugin

The variantCaller plugin now allows use of reference/targets/hotspots files as specified in the plan when the user manually starts the plugin. This will reduce the manual steps in assigning these files individually.

New plugin filter for Completed Runs and Reports page

The **Completed Runs and Reports** screen includes additional plugin filter for filtering runs/reports that use particular plugin(s).
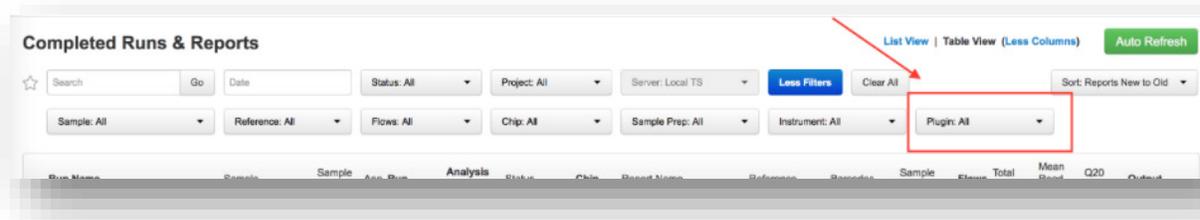
Ion Chef™ Instrument logs are now available in Customer Support Archives

Ion Chef™ Instrument logs are now included in the sequencing report Customer Support Archive (CSA) when the Ion Chef™ Instrument is used with the Ion PGM™, Ion Proton™, and Ion S5™ systems.

IMPORTANT! You cannot roll back to a previous version of Torrent Suite™ Software and Ion Torrent™ instrument software after you perform the upgrade described in this document.

When updating Torrent Suite™ Software, it is critical that you update both the software on the instrument and the software on the Torrent Server. Beginning with Torrent Suite™ Software 4.0, the instrument will not retrieve the proper on-instrument analysis if both systems are not updated.

Bug Fixes

Run plan status update failure for Ion 520™ and Ion 530™ ExT Kits on Ion Chef

A bug in Torrent Suite™ Software 5.6 affected Ion 520™ and Ion 530™ ExT Kit-Ion Chef™ run planning. The run plan status would not update from "pending" to "planned" at Ion Chef™ run completion, which prevented the run from being transferred to the Ion S5/S5XL. This is now fixed in Torrent Suite™ Software 5.8.

Known Issues

Auto Refresh issue on data tab

In the Data tab in the Completed Runs & Reports screen, Ion Mesh information is not updated after you click **Auto Refresh**.

variantCaller Allele table does not display on Internet Explorer®

The variantCaller Allele table does not display correctly in Internet Explorer®. This bug will be fixed in the upcoming release of the software.

Misleading message on Ion AmpliSeq™ Import page

After linking an AmpliSeq.com account to Torrent Suite™ Software, if the AmpliSeq.com account password changes, the import page displays a misleading error message saying "You haven't ordered any AmpliSeq designs". The workaround to prevent this from happening is to unlink the AmpliSeq.com account and link it back again. The bug has been identified and will be fixed in the next release of the software.

Polyclonality percentage issue

Under some circumstances, a fraction of polyclonal reads may be reported as zero or unusually low. Typically, this does not affect the quality of the resulting sequence, as polyclonal reads are also removed during base calling. Therefore, the polyclonal percentage should not be used as a sole metric for assessing the quality of the experiment.

Cannot import a panel without a reference specified

Attempting to import an Ion AmpliSeq™ panel without a reference fails for some panels. This bug will be fixed in the next release of Torrent Suite™ Software.

Ion Chef™ Instrument Connections

The Ion Chef™ Instrument only sees one Torrent Server connection. This change does not affect instruments that are directly connected to one server. That connection remains unchanged. However, if the Ion Chef™ Instrument is configured to see more than one Torrent Server connection, follow the guidelines in the *Ion*

Chef™ - Torrent Suite™ Software Network Setup Guide
(https://www.thermofisher.com/order/catalog/product/4484177) to verify that the configuration meets your needs. From the primary Torrent Server, you can enable Planned Run sharing to bring additional Torrent Server connections online. All Ion Chef™ Instrument logs remain on that primary server.

Ubuntu Security Updates

Please note that Torrent Suite™ Software 5.8 includes all Ubuntu security updates and patches as of December 2017.

Install the Torrent Suite™ Software 5.8 Update

IMPORTANT! During this upgrade, you must use the same user account for both Torrent Server and the Ion instruments (Ion PGM™ Instrument, Ion Chef™ Instrument, Ion Proton™ Sequencer, Ion GeneStudio Plus S5, Ion GeneStudio S5 Prime, Ion S5™ and S5™ XL Sequencers.)

Use these steps to install Torrent Suite™ Software 5.8:

1. Log on to the Torrent Suite™ Software as **ionadmin** user.

2. Click ⚙ (**Settings**) > **Services**. Ensure that there are no active jobs running.

3. Click ⚙ (**Settings**) > **Configure** > **Admin Interface**.

4. Click **Update Server**.

5. Click **Check** to check for updates.

6. When the **Available** message appears, click **Update Server** to start the update process.

7. On the EULA screen, scroll down to read, then accept the EULA to begin update.

8. When finished, ensure that the "**Upgrade completed successfully!**" message appears.

Updates through a command-line user interface

Note: This procedure is typically performed by Thermo Fisher Scientific field service engineers. Most users will instead use the procedure above for updates through the Torrent Browser.

New in this release, for Ubuntu™ 14.04 systems, the command-line interface update procedure has an additional TSconfig step of TSconfig --configure-server. The complete command-line interface update procedure is:

1   sudo apt-get update
2   sudo apt-get install ion-tsconfig
3   When prompted to accept EULA acceptance, press "Tab", then "Return" to proceed with update.
4   sudo TSconfig -s
5   sudo TSconfig --configure-server

Verify the software update on the Torrent Server

To verify that the server is running Torrent Suite™ Software 5.8, click ⚙ (Settings) > About in the Torrent Browser and review the version number.

Update the instrument software

Update the software on any Ion instruments in use:

- Ion Proton™ Sequencer

- Ion S5™ and S5™ XL Sequencer

- Ion Chef™ Instrument

- Ion OneTouch™ 2 Instrument

Appendix: Torrent Suite™ Software 5.8 Release Notes

Release Summary

Release Date	15 January 2018
Release Version	5.8

Software Version

These tables list the versions for each of the latest software packages for Torrent Suite™ Software plugins and Ion Torrent™ instruments.

Package	Version
ion-analysis	5.8.17-1
ion-dbreports	5.8.53-1
ion-gpu	5.8.1-1
ion-pipeline	5.8.7-1
ion-plugins	5.8.31-1
ion-publishers	5.8.1-1
ion-rsmts	5.6.1-1
ion-torrentr	5.8.17-1
ion-torrentpy	5.8.17-1
ion-tsconfig	5.8.4-1
Plugin	Version
ion-plugin-ampliseqrna	5.8.0.3
ion-plugin-assemblerspades	5.8.0.0
ion-plugin-coverageanalysis	5.8.0.8
ion-plugin-dataexport	5.8.0.2
ion-plugin-erccanalysis	5.8.0.1

Package	Version
ion-plugin-fieldsupport	5.8.0.0
ion-plugin-fileexporter	5.8.0.2
ion-plugin-filterduplicates	5.8.0.0
ion-plugin-immuneresponse	5.8.0.1
ion-plugin-ionreporteruploader	5.6.0.41
ion-plugin-pgxanalysis	5.8.0.1
ion-plugin-runtransfer	5.8.0.3
ion-plugin-sampleid	5.8.0.1
ion-plugin-variantcaller	5.8.0.19

Ion Chef™ Instrument Control Software

Package	Version
ion-chefupdates	5.8.2

Package	Version
GUI	090012
IS	706
SC	704
GM	23
OS	61
TsLink	5.0.4

Ion S5™ Instrument Control Software

Update Package	Version
ion-s5updates	5.8.2
Package	Version
Scripts	000131
RsmAgent	32
RfidMgr	29
ReaderFpga	10b
OS	34
OIA	5810
LiveView	2351
Graphics	89
DataCollect	3559

Ion Proton™ Instrument Control Software

Update Package	Version
ion-protonupdates	5.8.1
Package	Version
LiveView	2351
datacollect	3558
Scripts	20142
Graphics	89
rsmagent	32
OS	34
OIA	5810

Ion PGM™ Instrument Control Software

Update Package	Version
ion-pgmupdates	5.6.1
Package	Version
LiveView	654
DataCollect	489
HW8560	134
Scripts	220000
OS	21
Graphics	36
TSLink	1.0.4

Ion OneTouch™ Instrument Control Software

Update Package	Version
Ion-onetouchupdater	5.0.2-1
Package	Version
OneTouch	803
BoardControl	800
UpdateAgent	800
Scripts	802
Psplash	800

Revision	Date	Description
A.0	10 January 2018	New release notes for Torrent Suite™ Software 5.8

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