

# Torrent Suite™ Software 5.2 Release Notes

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## Update Overview

Torrent Suite™ Software 5.2 is an update to the previously released Torrent Suite™ Software 5.0.5. This document highlights the main changes and known issues in the software. Please review the *Torrent Suite™ Software User Guide* for more information.

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**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.

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## New Features

### Liquid Biopsy – Oncology application

TSS 5.2 launches its first liquid biopsy research application for Oncology research. (TS-11678)

### Smart Run Planning

Torrent Suite™ Software provides a more user friendly, intuitive and smart run planning user interface (TS-8557)

### Support for Torrent NAS

Isothermal Amplification Templating Kits selection for S5 520 and 530

### User interface improvements

#### Off-Cycle releases

Torrent Suite™ Software allows ion-supported plugins to be released via off-cycle mechanism

#### Run plan creation using CSV file

#### Ion Reporter™ Uploader improvements

#### Ion Reporter™ Uploader validation improvement

#### GRCh38 Support

TSS 5.2 supports GRCh38.p2 genome build

#### Plugins “Autorun” default behavior improvement

This improvement allows users to set plugin auto-run behavior globally or locally.

#### The Ion S5™ instrument graphic user interface (GUI) improvements

S5 run reports only control test fragment TF\_1

## Known Issues

### Run plan transfer to another Torrent Server

Plans created with custom analysis arguments get reset to default arguments after plan is transferred to another Torrent Server. (TS-12892)

### Run plan mix up

Torrent Server run plans mix up when editing multiple run plans from different tabs under the same browser  
(TS-12193)

### Analysis fails to start for archived base calling input

Reanalysis for archived runs fails to start from base-calling input stage. (TS-12805)

### Silent switch to chip with available parameters

When panel and chip are selected for which no parameters have been specified, Torrent Server will create a plan template but the selected instrument and chip will be ignored and silently reset to a chip for which parameters are available. This issue occurs only with AmpliSeq.com panel or AmpliSeq.com zip file imports. (TS-12803)

### Reset of library kit

Library kit gets reset to "Ion Xpress Plus Fragment Library Kit" (TS-12799)

### TorrentNAS configuration issue

An install issue where the device does not pick up the DHCP address until the users go to Nexanta Admin interface -> Settings -> Network. (TS-12789)

### Library key in the plan should not be blanked out in the plan wizard

(TS-12465)

### Samples table filldown does not function

(TS-12790)

### Issue with reading RFID tags of Ion S5™cartridges

### Torrent Server Mesh Avahi Limitation

## **Custom run plans created in 5.0.5 or earlier must be reset after updating to 5.2 or later**

There have been changes to the default beadfind arguments in Torrent Suite Software 5.2 or later. All existing templates or run plans created with Custom Arguments in 5.0.5 or earlier do not automatically update and will be affected. Use the procedure in these release notes to resolve this issue.

## **Bug Fixes**

Resolved issue with signal processing of archived runs. (TS-12098)

Resolved issue with being able to select the latest release of TSS to install on VM (TS-12066)

Resolved issue that causes errors with long plan names (TS-11636)

Resolved issue with mixing up of run plans when editing multiple run plans from different tabs under the same browser (TS-12193)

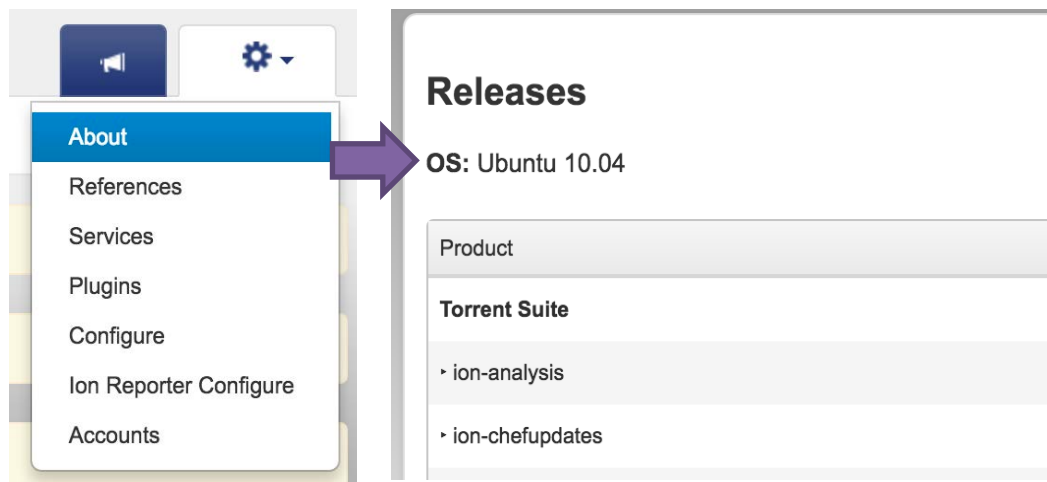
Resolved issue that causes TVC to not work with non-barcoded run with custom parameters (TS-11943)

# System Requirements

## Operating System

This version of Torrent Suite™ Software (TSS 5.2) and all further updates and software releases require Ubuntu™ 14.04 Operating System. Torrent Server(s) running Ubuntu™ 10.04 will only be able to update to Torrent Suite™ Software 5.0.5.

To find out which version of OS is installed on your Torrent Server, navigate to “about” tab on the Torrent Browser interface and refer to the “OS” section.



Please visit: <https://www.thermofisher.com/order/catalog/product/4476610> to learn more about how to upgrade the operating system on your server.

## Torrent Suite™ Software version

Torrent Suite™ Software 3.6.2 or later must currently be installed.

## If you are using the Ion Chef

As of Torrent Suite™ Software 4.4, the Ion Chef™ only sees one Torrent Server connection. This change will not affect instruments that are directly connected to one server; that connection will remain unchanged. However, if your Ion Chef™ is configured to see more than one Torrent Server, follow the guidelines in the Chef-Torrent Server 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 Servers online. All Ion Chef™ instrument logs will remain on that primary server.

## Install the Update

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**IMPORTANT!** During this upgrade, you must use the same user account for both Torrent Server and the instruments (PGM, Proton, S5, and Chef).

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**IMPORTANT!** The URL “iru.ionreporter.thermofisher.com” must be whitelisted in order to upgrade to the latest version of the Ion Reporter™ Uploader.

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Use these steps to install Torrent Suite™ Software 5.2:

1. Log on to the Torrent Browser as **ionadmin** user.
2. Click the Settings gear > **About**. Verify that Torrent Suite™ Software 3.6.2 or later installed.
3. Click the Settings gear > **Services**. Make sure there are no active jobs running.
4. Click the Settings gear > **Configure** > **Admin Interface**.
5. Click **Update Server**.
6. Click the **Check** button to check for updates.
7. When the **Available** message appears, click **Update Server** to start the update process.
8. When finished, ensure that the “**Upgrade completed successfully!**” message appears.
9. After you have upgraded Torrent Suite™ Software to version 5.2, re-enable “ExT kits for Ion S5 system”:
  - a. Click the Settings gear > **Updates** and then click **Update** next to ExT Kits.
  - b. Verify that the Update column in the ExT Kits row is marked “Complete.”

This allows you to run ExT chemistry on your system.

## Updates through the command line

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

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

```
1  sudo apt-get update
2  sudo apt-get install ion-tsconfig
3  sudo TSconfig -s
4  sudo TSconfig --configure-server
```

## Verify the software update on the Torrent Server

Verify that the server is running 5.2 software by clicking the Settings gear > **About**.

## Update the instrument software

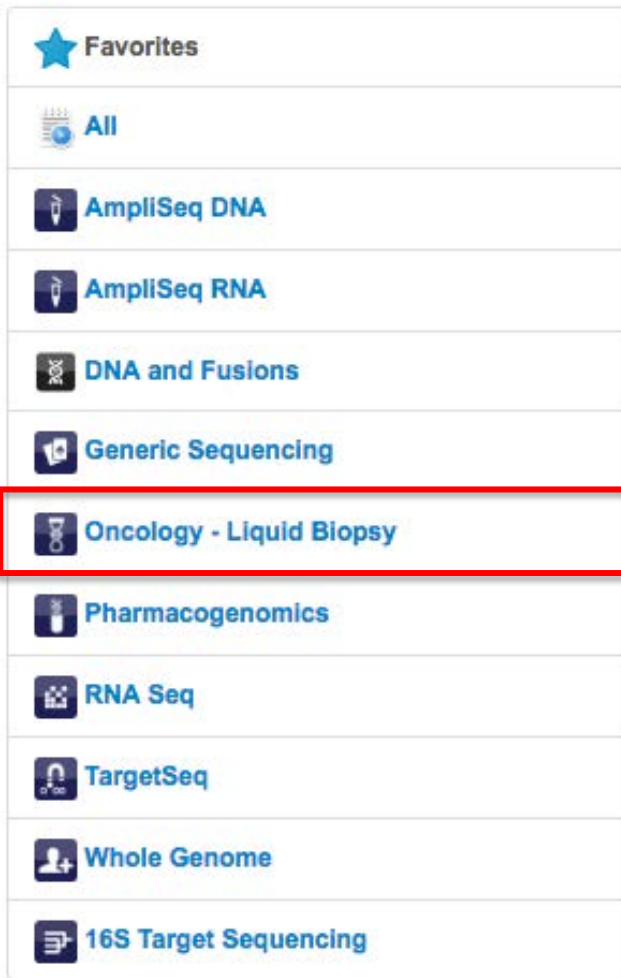
Update the software on any Ion instruments in use:

- Ion Proton™ Sequencer
- Ion S5™ and S5™XL Sequencer
- Ion Chef™ Instrument
- Ion OneTouch™2 Instrument

## New Features

### Liquid Biopsy – Oncology application

Torrent Suite™ Software 5.2 comes equipped with its first liquid biopsy research application for Oncology research. The new application type “Oncology – Liquid Biopsy” has been added to the Favorites menu of the Plan tab > Templates.



Oncomine customers may choose to plan runs using Solid Tumor DNA or Liquid Biopsy DNA system run plan templates for the Oncomine™ Lung cfDNA Assay (<https://www.thermofisher.com/order/catalog/product/A31149?ICID=search-product>).

### Smart Run Planning:

Torrent Suite™ Software now provides a more user friendly, intuitive and smart run planning user interface. In this simplified run planning process, users may see a pre-selected set of kits, chips and barcodes sets for their chosen application, instrument

### Torrent NAS:

Torrent Suite™ Software now supports Torrent NAS (network storage drive) by allowing automatic mounting and enabling basic monitoring and configuration capability for Torrent NAS.

## Isothermal Amplification Templating kits

TSS will allow the selection of Isothermal Amplification templating kits for Ion S5 chips 520 and 530.

Select instrument, chip and kits and then hit next.

**Instrument :**  
Ion S5™ System

**Sample Preparation Kit (optional) :**  
[Empty dropdown]

**Library Kit Type** Details + :  
Ion AmpliSeq 2.0 Library Kit

**Template Kit**  OneTouch  IonChef :  
Ion 520 & Ion 530 Kit - IA

**Sequencing Kit :**  
[Empty dropdown]

**Base Calibration Mode :**  
Default Calibration



## User Interface Improvements

TSS 5.2 includes general UI improvements to the Ion Reporter and plugins chevrons of run planning wizards. It also includes improved user input handling and editing in sample configuration table.

## Off-cycle Release

Torrent Suite™ Software will now allow ion-supported plugins to be released via off-cycle mechanism. You can also rollback to previous versions of plugins that will be available to you from the plugins menu.

**Plugins** Install or Upgrade Plugin

Enabled Disabled Either Clear

Enabled	Name	Selected by Default	Version	Installed Date	Ion Supported	Manage
<input checked="" type="checkbox"/>	IonReporterUploader	<input type="checkbox"/>	5.2.0.66	2016/07/06 04:13 PM	Yes	
<input checked="" type="checkbox"/>	ampliSeqRNA	<input type="checkbox"/>	5.2.1.0	2016/06/17 09:38 AM		
<input checked="" type="checkbox"/>	sampleID	<input checked="" type="checkbox"/>	5.2.1.0	2016/06/17 09:38 AM		
<input checked="" type="checkbox"/>	coverageAnalysis	<input type="checkbox"/>	5.2.1.1	2016/06/17 09:38 AM		
<input checked="" type="checkbox"/>	variantCaller	<input type="checkbox"/>	5.2.1.33	2016/06/01 04:20 PM		
<input checked="" type="checkbox"/>	DataExport	<input type="checkbox"/>	5.2.0.1	2016/04/22 02:35 PM		
<input checked="" type="checkbox"/>	HIDGenotyper	<input type="checkbox"/>	2.0_r11281	2016/03/31 11:12 AM	No	

Usage

Configure

Install 5.2.0.44

Install 5.2.0.46

Install 5.2.0.49

Install 5.2.0.56

Install 5.2.0.65

Uninstall

## Run plan creation using CSV file

Torrent Suite™ Software enables the user to create one or more run plans containing multiple barcodes using CSV file options. (Page 37 in the Torrent Suite™ Software 5.2 User Guide posted on the Thermo Fisher Scientific website ([www.thermofisher.com](http://www.thermofisher.com)) or in Torrent Suite™ Help: Home > Plan an instrument run > Create multiple planned runs via CSV upload).

## Ion Reporter™ Uploader improvements

Configuration for automatic upload of samples to Ion Reporter now includes the option to stop and go. That is, pause for QC check before uploading to Ion Reporter through the Ion Reporter™ Uploader plugin. (Page 305 in the Torrent Suite™ Software 5.2 User Guide posted on the Thermo Fisher Scientific website ([www.thermofisher.com](http://www.thermofisher.com)) or in Torrent Suite™ Help: Home > Integration with Ion Reporter™ Software > Review Torrent Suite™ run results before auto upload to Ion Reporter™ Software).

## Ion Reporter™ Uploader Validation Improvement

TSS displays error codes and descriptions obtained from the Ion Reporter™ Uploader validation in a more intuitive manner.

## GRCh38 Support

Torrent Suite™ Software 5.2 now supports the GRCh38.p2 genome build. (Page 317 in the Torrent Suite™ Software 5.2 User Guide posted on the Thermo Fisher Scientific website ([www.thermofisher.com](http://www.thermofisher.com)) or in Torrent Suite™ Help: Home > Reference Management > GRCh38 human reference).

## Plugins “Autorun” Default Behavior Improvement

This improvement allows users set plugin auto-run behavior globally (for all run plans) or locally (with in a run plan) depending on user preference and mode of operation.

## Plugins

Enabled Disabled Either Clear

Enabled	Name	Selected by Default
<input checked="" type="checkbox"/>	IonReporterUploader	<input type="checkbox"/>
<input checked="" type="checkbox"/>	ampliSeqRNA	<input type="checkbox"/>
<input checked="" type="checkbox"/>	sampleID	<input checked="" type="checkbox"/>

## Ion S5™ GUI improvements

The Ion S5™ instrument GUI has undergone changes and is now consistent with the Ion Chef™ GUI. Following images show the changes that have happened to the initialization and sequencing screens.



## S5 run reports only control test fragment TF\_1

Beginning with the TSS 5.2 release, only TF\_1 will be included in S5 reports. TF\_C will no longer be reported.

## Known Issues

### Run plan transfer to another Torrent Server

Plans created with custom analysis arguments get reset to default arguments after plan is transferred to another Torrent Server. This issue will be resolved in the upcoming version of Torrent Suite™ Software.

### Run plan mix up

The plan wizard caches information on the pages of the wizard and hence you cannot edit multiple run plans from different tabs of the same browser.

The current workaround is to edit multiple run plans in different browsers.

### Analysis fails to start for archived base calling input

Reanalysis of archived runs fail to start from base-calling input stage. This issue will be resolved in the upcoming version of Torrent Suite™ Software.

### Silent switch to chip with available parameters

Background info: During direct import of panels from AmpliSeq.com, Torrent Suite™ Software shows warning messages for panels with no parameters available for the selected instrument and chip.

Issue: When user wants to import a panel and selects a chip for which no parameters has been specified, Torrent Server will create a plan template but the selected instrument and chip will be ignored and silently reset to a chip for which parameters are available. This problem will occur regardless if users import the template directly from ampliseq.com or if users manually import from an AmpliSeq panel zip archive.

Impacts: If user overlooks the “silent resetting” of chip and kit selections in the imported template, user can end up creating plans with wrong chip, kits and unintended Variant Caller configuration.

Suggestion: Always review the template created for the AmpliSeq panel before using it. If incorrect settings have been used, correct the template first before using it for plan creation.

### **Library kit gets reset to “Ion Xpress Plus Fragment Library Kit”**

During the plan setup when a library kit compatible with all instrument platform is chosen, and then followed by selection of PGM causes the library kit to be reset to “Ion Xpress Plus Fragment Library Kit”. This will be fixed in the next version of the Torrent Suite™ Software.



issue

### **TorrentNAS configuration issue**

The device does not pick up the DHCP address until user goes to Nexanta Admin interface -> Settings -> Network. This issue will be rectified in the upcoming release of the software.

### **Library key in the plan should not be blanked out in the plan wizard**

While selecting library key from under the Kits chevron there is an option to choose nothing (blank). This causes issues downstream post plan run. The current workaround is not to leave it blank. This issue is fixed in the next version of the Torrent Suite™ Software.

### **Samples table fill down does not function**

When creating a plan with Ion Reporter™ selected, the filldown function to copy to all rows for the Cellularity % column fails. Workaround is to enter a value into the cell, click outside the table to save, then click back inside cell and use filldown arrow to copy. This issue will be fixed in the next version of the Torrent Suite™ Software.

### **Issue with reading RFID tags of Ion S5™ cartridges**

Please note that there is a problem reading the RFID tags of the Ion S5™ cartridges. This issue will result in a RFID Tag Error. If the user opts to proceed, the RFID get disabled for the remainder of the sequencing run. Workaround: please ensure the appropriate sequencing kit is selected in the Run Plan, the Cleaning Solution level is adequate prior to starting the run, and the Wash Solution and Cartridge are disposed of after the run. To insure there is enough Cleaning Solution (60ml) to perform the post run clean the user will need to visually check the level, see figure for minimum volume required.

## Torrent Server Mesh Avahi Limitation

For the Torrent Server mesh configuration, if a computer is on different subnet, Avahi cannot see it but you can still go ahead and configure it.

## Custom run plans created in 5.0.5 or earlier must be reset after updating to 5.2 or later

There have been changes to the default beadfind arguments in Torrent Suite Software 5.2 or later. All existing templates or run plans created with Custom Arguments in 5.0.5 or earlier do not automatically update and will be affected. If you have any templates or run plans with any custom arguments, you will need to use this procedure to reset the analysis parameters for such run plans and resolve this issue.

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**IMPORTANT!** Default parameters are based on the specific chip type that is selected in the existing run plan or template. When custom parameters are used in a run plan, changes to the chip type do not automatically update the custom parameters. Therefore, before you begin the following procedure, select the correct chip type that will be used for the custom run plan.

---

Use these steps to correct this issue in Torrent Suite™ Software 5.2:

1. Log in to the Torrent Browser.
2. Click the Settings gear > **Edit** menu for the existing template or run plan that contains custom analysis parameters.
3. Select the **Save** chevron in the run plan wizard.
4. Reset the Analysis Parameters:
  - a. Select **Default (Recommended)** Analysis Parameters. This will capture the changes in beadfind arguments for TS 5.2 or later.
  - b. Re-select **Custom** Analysis Parameters and proceed with re-entering custom arguments.
5. Select **Save Template** or **Update Plan** and proceed with using the run plan.

**Note:** The chip type is primarily used to determine the arguments; however some minor differences may occur with selected kits. Before you proceed with changing default analysis parameters, complete the setup of the Plan/Template parameters on the Kits tab.

## Bug Fixes

### **Resolved issue with signal processing of archived runs.**

An issue prevented the archiving of signal processing for some runs. This has been resolved now in the 5.2 version.

### **Resolved issue with being able to select the latest release of TSS to install on VM.**

An issue prevented the ability to select latest release of TSS to install on VM. This has been fixed in the 5.2 version.

### **Resolved issue that causes errors with long plan names**

An issue caused errors when long plan names were used. This has been resolved now in the 5.2 version.

### **Resolved issue with mixing up of run plans**

An issue caused run plans to be mixed up when editing multiple run plans from different tabs under the same browser. This has been resolved now in the 5.2 version.

### **Resolved issue that causes TVC to not work with non-barcoded run**

On non-barcoded run, default parameters work fine but if using custom parameters and changing the parameter values causes TVC to cause problems. This has been resolved now in the 5.2 version.

## Appendix: Torrent Suite™ Software 5.2 Release Notes

### Release Summary

Release Date	01 August 2016
Release Version	5.2

### Software Version

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

### Torrent Suite™ Software

Package	Version
ion-analysis	5.2.16-1
ion-dbreports	5.2.32-1
ion-docs	5.2.10
ion-gpu	5.2.0-1
ion-pipeline	5.2.7-1
ion-plugins	5.2.8-1
ion-publishers	5.2.2-1
ion-rsmts	5.2.3-1
ion-torrentr	5.2.0-1
ion-torrentpy	5.2.1-1
ion-tsconfig	5.2.15-1

Plugin	Version
ion-plugin-ampliseqrna	5.2.0.3
ion-plugin-assemblerspades	5.2.0.0
ion-plugin-coverageanalysis	5.2.0.9
ion-plugin-dataexport	5.2.0.1
ion-plugin-erccanalysis	5.2.0.2
ion-plugin-fileexporter	5.2.0.0
ion-plugin-filterduplicates	5.2.0.0
ion-plugin-ionreporteruploader	5.2.0.66
ion-plugin-pgxanalysis	5.2.0.0
ion-plugin-rnaseqanalysis	5.2.0.5
ion-plugin-runtransfer	5.2.0.0
ion-plugin-sampleid	5.2.0.1
ion-plugin-variantcaller	5.2.0.34

## Chef Instrument Control Software

ion-chefupdates\_5.2.3\_amd64.deb

GUI	050020
IS	319
SC	324
GM	23
OS	52
TsLink	3.1.8

## Proton Instrument Control Software

ion-protonupdates\_5.2.2\_amd64.deb

Datacollect	3369
Graphics	79
LiveView	2162
OIA	5205
OS	31
rsmagent	24
Scripts	2.1.40

## S5/S5XL Instrument Control Software

ion-s5updates\_5.2.2\_amd64.deb

ReaderFpga	3d400109/33400109
OIA	1404:5205
Datacollect	1404:3376
LiveView	1404:2169
Scripts	1404:113
Graphics	1404:80
rsmagent	1404:24
rfidmgr	1404:21
OS	1404:17

## Revision History

Revision	Date	Description
A.0	04 January 2017	Original version  Technical updates to Release Notes for Torrent Suite™ Software 5.2 <ul style="list-style-type: none"><li>Whitelisting the Ion Reporter Updater link for getting the 5.2 version</li><li>Added the Torrent Server Mesh avahi limitation to the Known Issues section</li></ul> Formatting changes throughout
B.0	01 March 2017	Known issue added: <ul style="list-style-type: none"><li>Custom run plans created in 5.0.5 or earlier must be reset after updating to 5.2 or later</li></ul>

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