



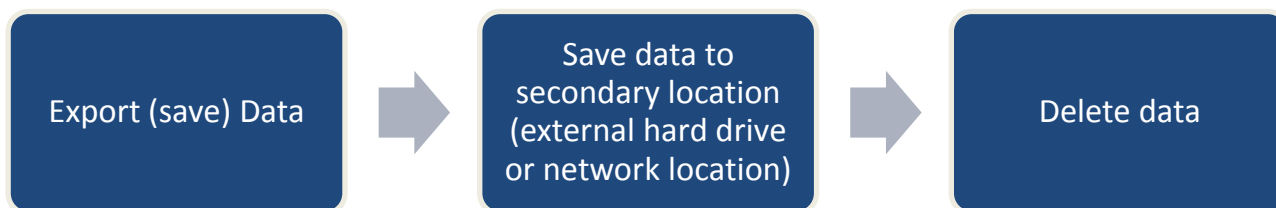
Data Management in the Attune NxT™ Software

Thermo Fisher Scientific

Attune™ NxT Software v2.7 or higher

Instructions for Saving and Deleting Data

This document describes options for managing (saving and/or deleting) data in the Attune NxT™ software. Please note that it is critical for you (the customer) to review all instructions completely prior to executing steps outlined in this document. We recommend archiving data prior to deletion.



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Data included in the Attune NxT™ Software

There are many types of data associated with the Attune NxT™ Cytometer and software (Figure 1). End users create “data” each time a tube or plate experiment is created and FCS files are recorded during sample acquisition. Data also refers to other inputs into the software, such as instrument management information that allow the cytometer to collect samples, retain performance data and log information.

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User management data is retained by the software and provides instructions to manage user accounts, security, and user preferences. Data saved from analysis of results includes information stored in the heat map, results table, and overlay settings.

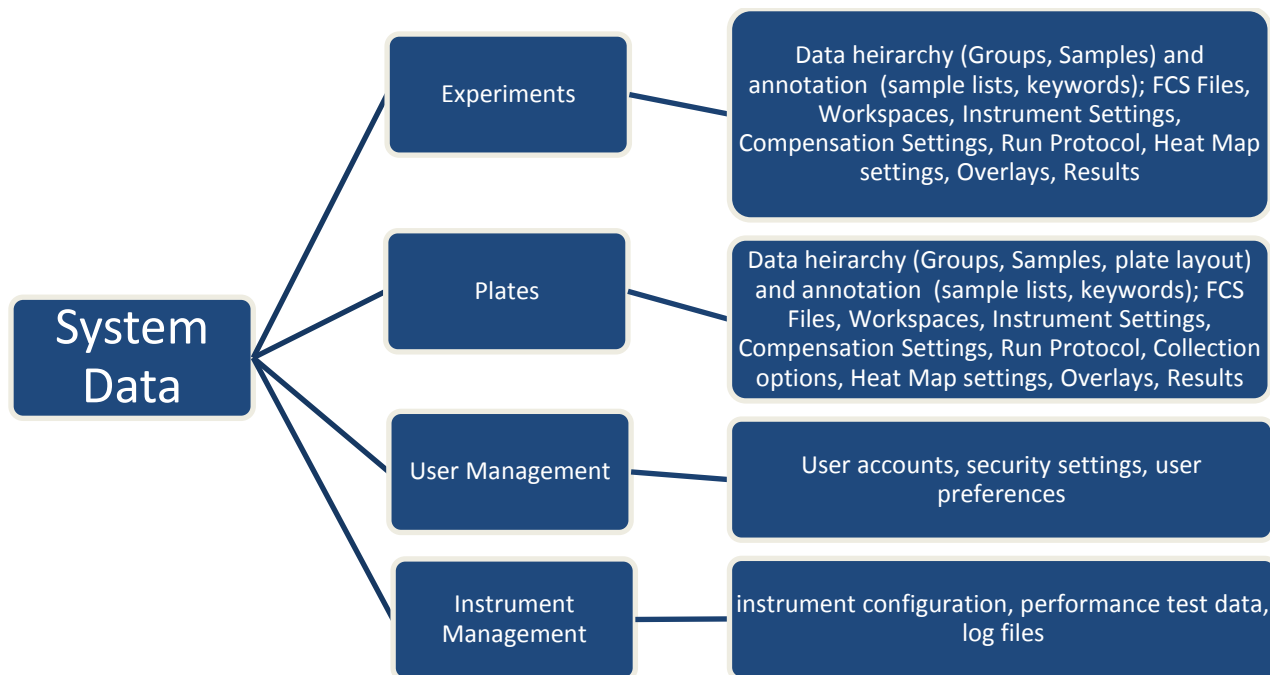
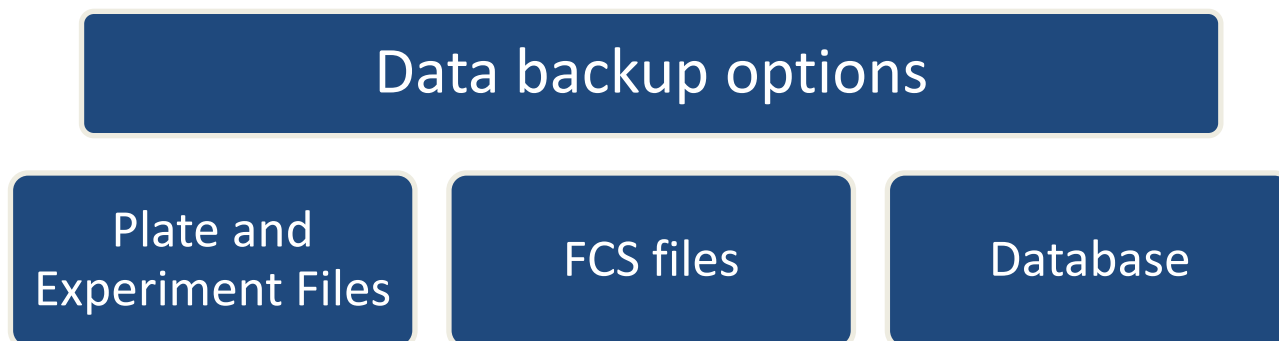


Figure 1. Data within the Attune NxT Software

Saving User data

There are many options for saving user data from the Attune NxT™ software. Tube and plate experiment files (.apx and .atx) or individual FCS files (.fcs) may be exported from the software and stored in a secondary location. Alternatively, the Attune NxT™ Database Utility program can be used to create a copy of all the experiments and associated data files in the software at the time the backup is created.



Choosing one or more data archiving methods

When a tube experiment file is exported as an .atx file the information saved includes all data associated with the experiment: groups and samples, recorded FCS files, run protocol settings, instrument settings, workspace settings, compensation files and settings, heat map settings, sample lists, overlays, print settings, and the results table settings.

When a plate experiment is exported as an .apx file the information that is saved includes the same information as an experiment file and also includes plate layout information and the plate collection settings.

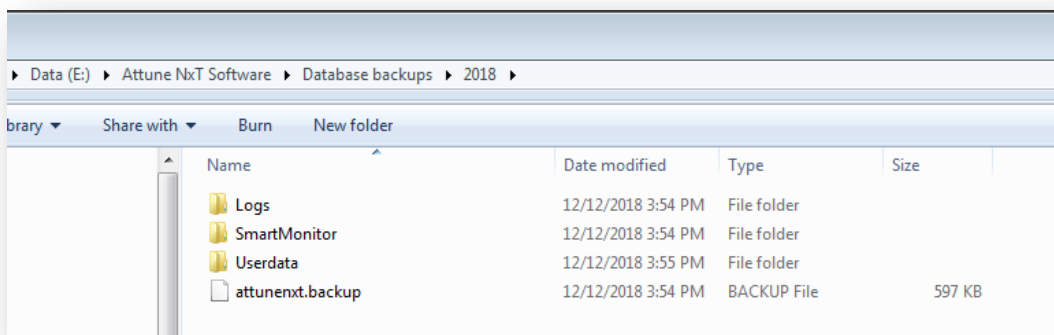
When FCS files are exported a user may save the file as a FCS 3.0 or FCS 3.1 file data standard. The information that is saved includes the raw data acquired for the sample and associated sample information that is annotated using FCS file keywords. Some keywords provide annotation and standardization about the sample (such as cytometer used for acquisition, time of acquisition, number of events, etc.), while others are Attune NxT™ custom keywords (including flow rate, etc.) or user defined custom keywords as created by the end user (examples: dilution factor, patient ID, etc.). FCS files may be re-imported individually into the Attune NxT™ software or analyzed using other flow cytometry analysis software.

When the Attune NxT™ Database Utility program is used as a file backup system the information that is saved includes all data files used in the software as described above and also includes user management settings (profiles, user settings, security settings), instrument configuration settings, baseline and performance test data, and instrument data logs.

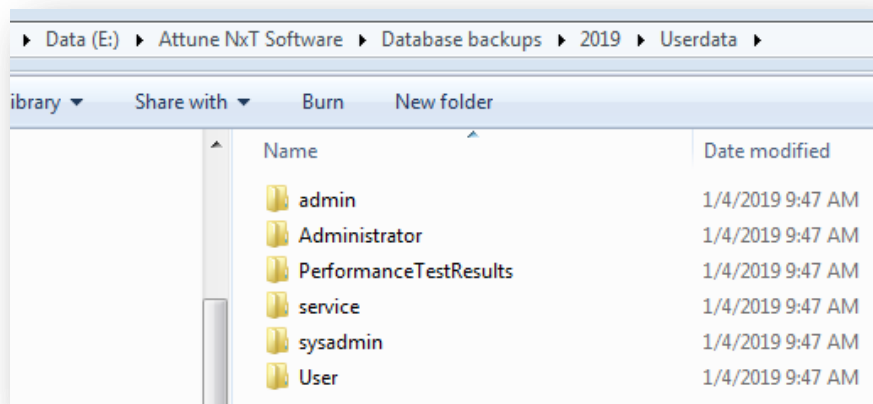
Database Backup

The Attune NxT™ Database Utility is a data backup program that is provided with the Attune NxT™ software. This utility program allows the user to backup user data to a custom location, either on-demand or at a specified, scheduled frequency. The database utility copies all user data located in the “Users\Public\Public Documents\Thermo Fisher\AttuneNxt\Userdata” and exports the database to the specified location defined by the user.

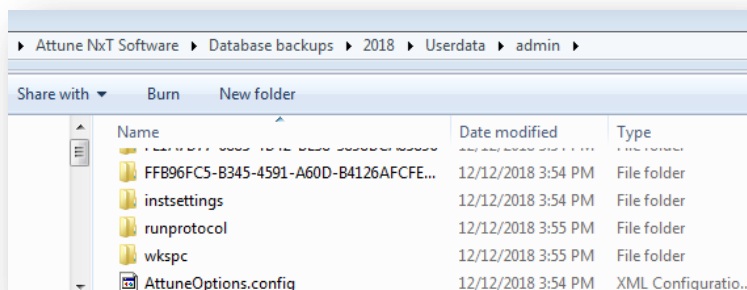
The database backup file that is created is called “attunenxt.backup” and includes information regarding the data structure. The data that is copied during the backup are located in the other folders in the backup location; these include copies of the Log files, Smart Monitor Data, and Userdata folders.



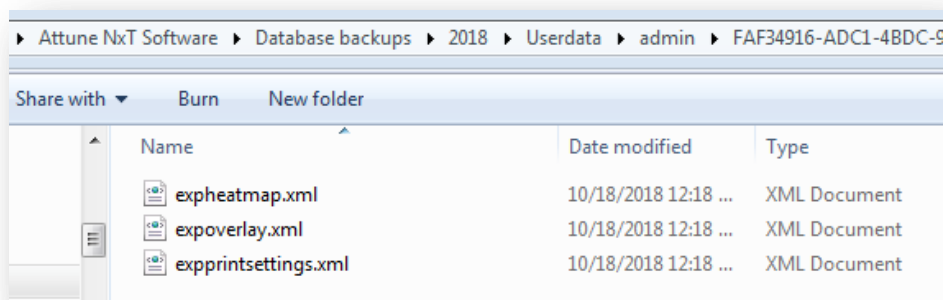
Within the Userdata folder are folders for each account created in the software, including the default accounts of service, sysadmin and admin, as well as custom, user created accounts.



Within the folder for each user profile is data for each user account, including saved FCS files and data associated with experiment and plate files, including: instrument settings, workspaces, compensation settings, run protocols, heat map settings, print settings, overlay settings, sample list settings and results table settings. The data is grouped into folders with an easily identifiable name (instrument settings, run protocol settings, and workspace settings) or saved in a folder with a Globally Unique Identifier label (GUID) that corresponds to the ID of the sample or experiment.

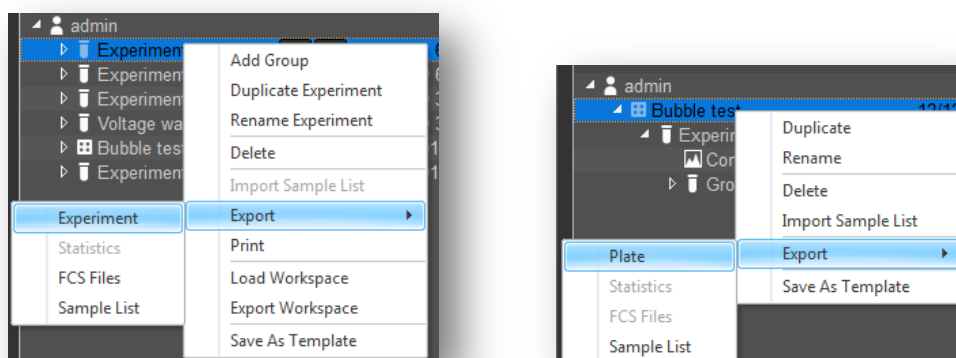


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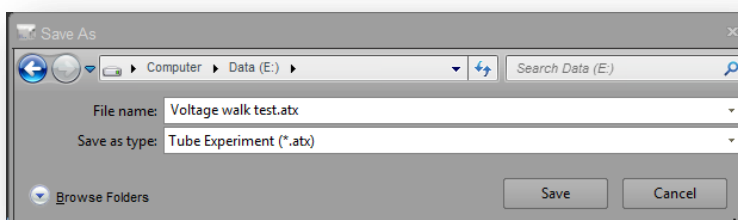


How to Save and Export Plate and Tube Experiment Files

Step 1 In the Experiment Explorer, right click on the Experiment or Plate name. In the right-click context menu, select Export→Experiment (or Plate)

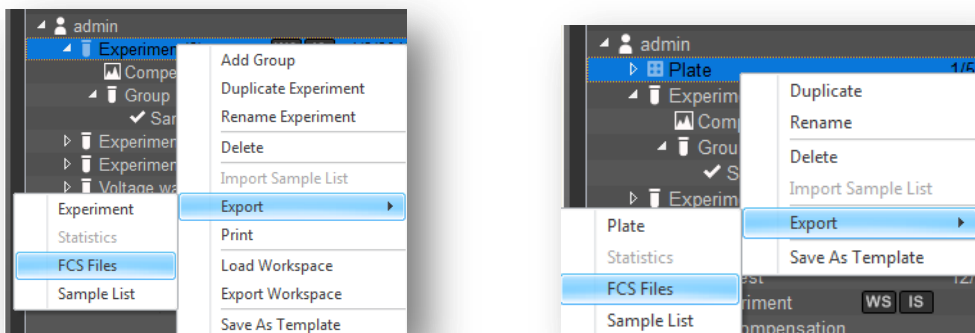


Step 2 In the Save As dialogue box, select the location to save the file and press Save.

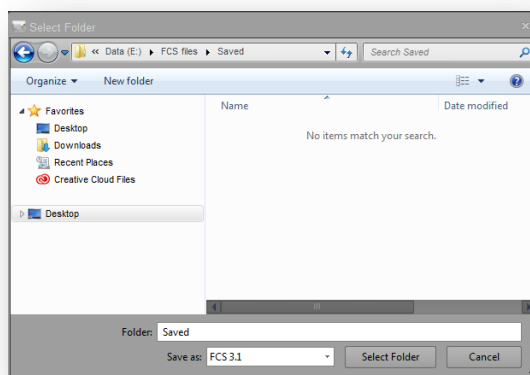


How to Save and Export FCS Files

Step 1 Right click on the Experiment or Plate name. In the right-click context menu, select Export→FCS files



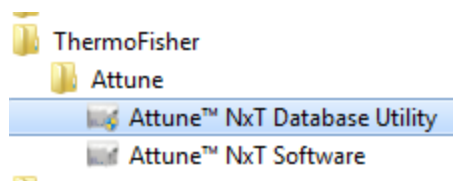
Step 2 In the Select Folder dialogue box, select the location to save all FCS files associated with the experiment or plate.



How to Use the Attune NxT™ Database Utility Program

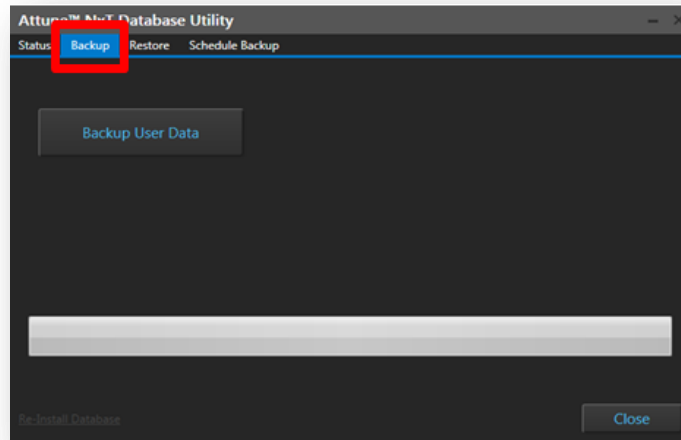
Step 1 Close the Attune NxT™ Software.

Step 2 Open Attune NxT™ Database Utility program from Start Menu and login as an administrator.

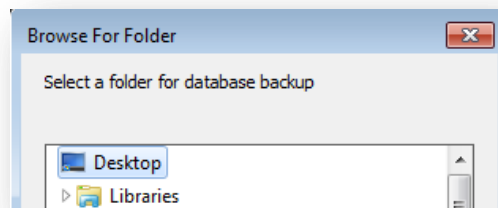


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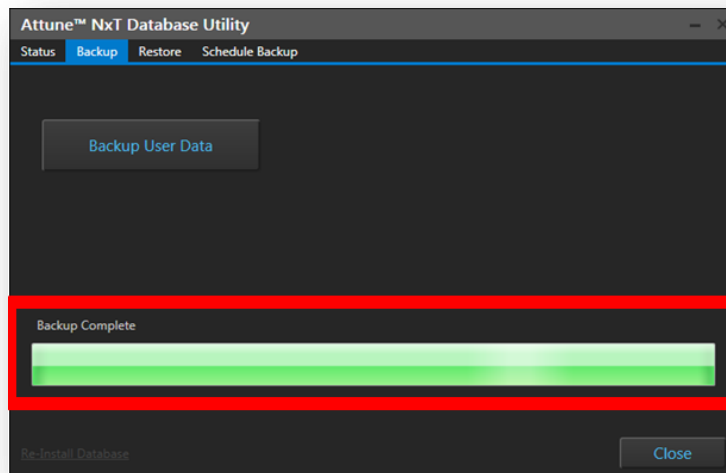
Step 3 From the 'Backup' tab, select the 'Backup User Data' button



Step 4 Select the desired location to save the database.



Step 5 As the backup continues the progress bar will indicate that files are copied. When complete, the dialogue will state "Backup Complete".



Step 6 Press the close button to exit the Utility. A complete copy of all data associated with your Attune NxT™ system has now been created.

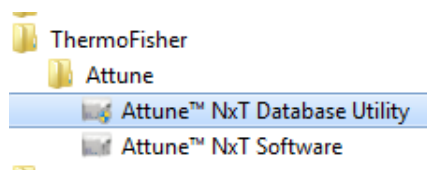
How to Restore Data using a Saved Database

The Attune NxT™ Database Utility may be used to restore the software from a previously saved database. When user data is restored using a saved database, all data that is currently saved within the Attune NxT™ software is replaced with data that was saved at the time the database backup was created. The database does not need to be created using the same version of software currently in use.

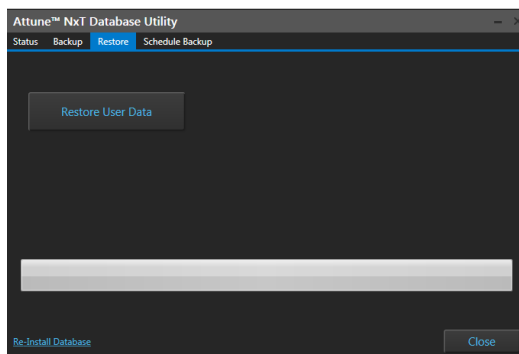
CAUTION: RESTORATION OF USER DATA FROM A SAVED DATABASE WILL OVERWRITE ALL DATA IN THE ACTIVE, CURRENT INSTANCE OF ATTUNE SOFTWARE. DO NOT RESTORE FROM A SAVED DATABASE WITHOUT ARCHIVING DATA IN THE ACTIVE INSTANCE OF ATTUNE SOFTWARE

Step 1 Close the Attune NxT™ Software.

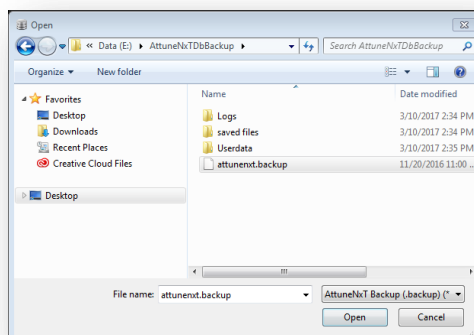
Step 2 Open the Attune NxT™ Database Utility program from Start Menu and login as an administrator.



Step 3 Click on the Restore tab and click “Restore User Data”.

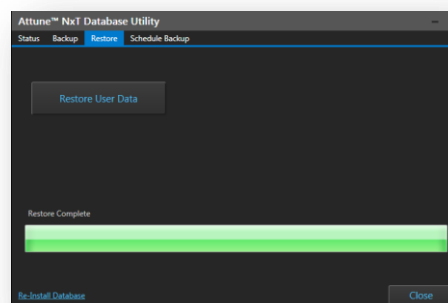
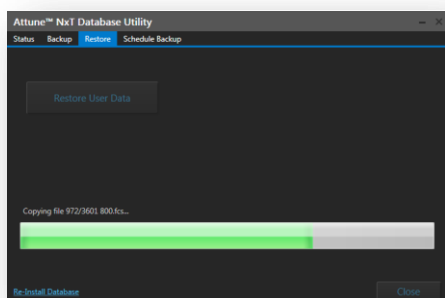


Step 4 In the Open dialogue box, select the correct database backup (attunenxt.backup)



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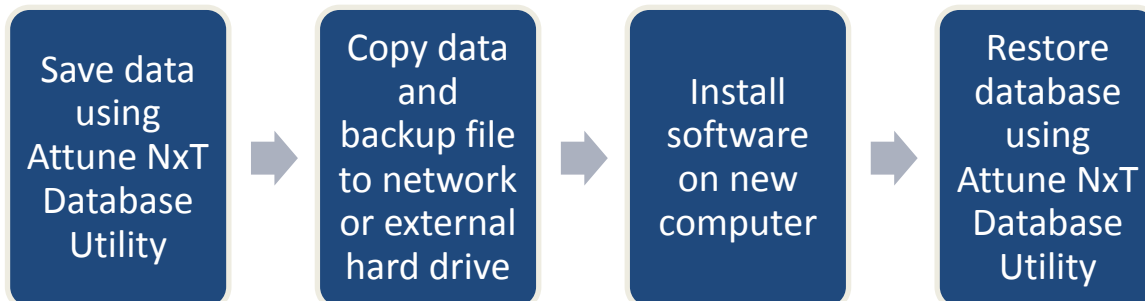
Step 5 The database restoration will begin immediately. During data restoration the progress to completion will be indicated. At the end of database restoration, “Restore Complete” will be displayed above the progress bar.



Step 6 The Attune NxT™ Software now contains data, including Experiments, FCS files, user profiles, etc., from the database used for restoration.

How to Copy a Database to a Different Computer

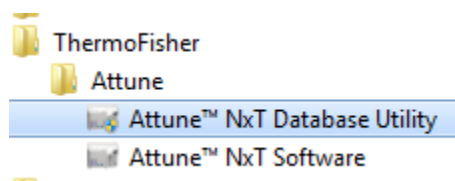
Copying an instance of the Attune NxT™ software to a new computer is a 4-phase process that includes backing up data using the Attune NxT™ Database Utility, copying all files to a new computer using an external hard drive or network location, installing the Attune NxT™ software on the new computer and re-installation of the saved database.



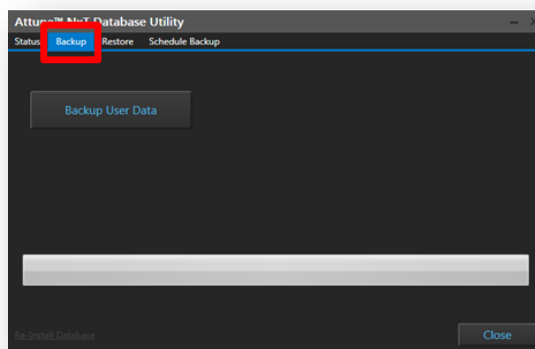
Phase I: Save data using the Attune NxT™ Database Utility Program

Step 1 Close the Attune NxT™ Software.

Step 2 Open Attune NxT™ Database Utility program from Start Menu and login as an administrator.

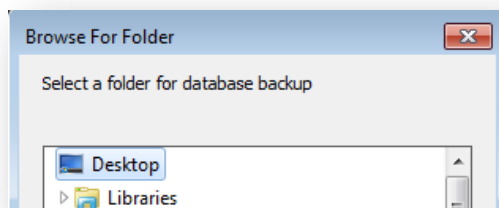


Step 3 From the 'Backup' tab, select the 'Backup User Data' button

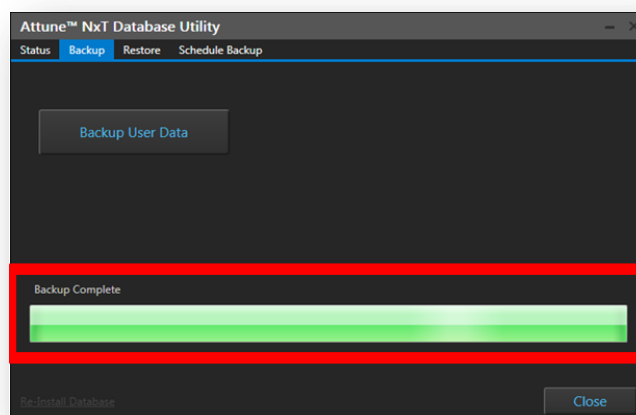


Step 4 Select the desired location to save the database.

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- Step 5** As the backup continues the progress bar will indicate that files are copied. When complete, the dialogue will state “Backup Complete”.

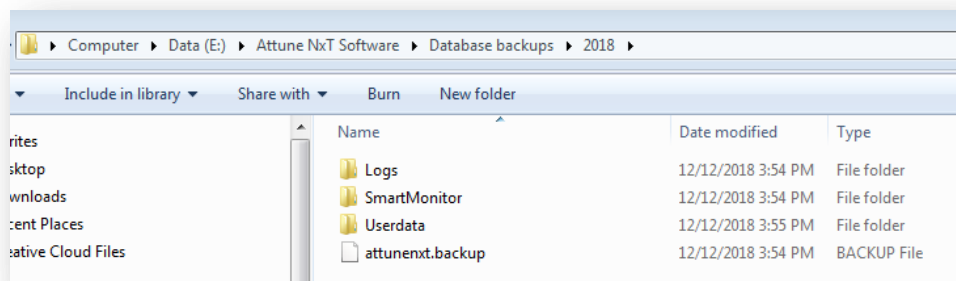


- Step 6** Press the close button to exit the Utility. A complete copy of all data associated with your Attune NxT™ system has now been created.

Phase 2: Copy data and backup file to network or external hard drive

- Step 7** Navigate to the location on the computer where the database file and associated data were saved. **Copy all of the data (folders and attunenxt.backup file)** to another location (network location or external hard drive).

IMPORTANT! FAILURE TO COPY ALL DATA FOLDERS WILL CAUSE DATABASE RESORATION STEPS BELOW TO FAIL.

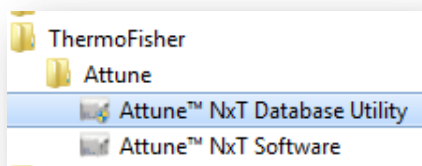


Phase 3: Install software on new computer

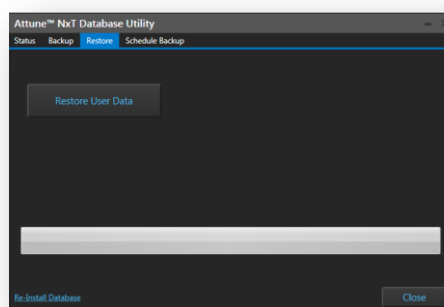
- Step 8** Install the Attune NxT™ Software on the secondary computer. *(Complete instructions are included in the software release notes).*
- Step 9** Close the Attune NxT™ Software (if open).

Phase 4: Restore database using Attune NxT™ Database Utility

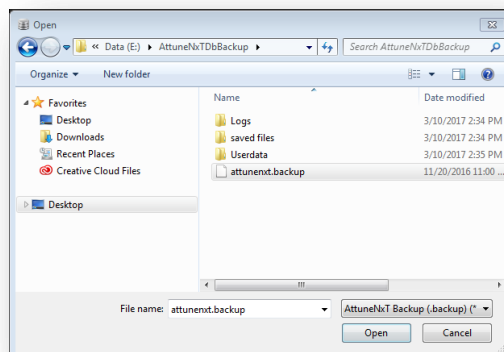
- Step 10** Copy all data folders and attunenxt.backup file to the new computer.
- Step 11** Open the Attune NxT™ Database Utility program from Start Menu and login as an administrator.



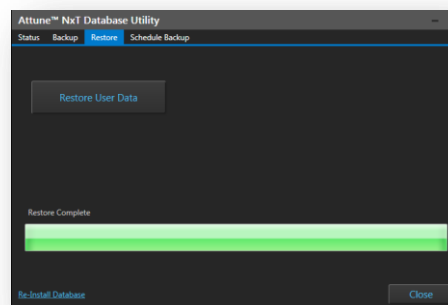
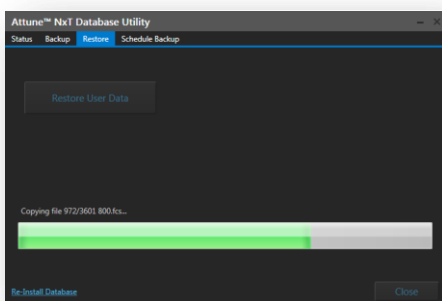
- Step 12** Click on the Restore tab and click “Restore User Data”.



- Step 13** In the Open dialogue box, select the database backup (attunenxt.backup) file that was saved on the computer.



- Step 14** The database restoration will begin immediately. During data restoration the progress to completion will be indicated. At the end of database restoration, “Restore Complete” will be displayed above the progress bar.



- Step 15** Close the Attune NxT™ Database Utility program. The Attune NxT™ Software now contains data, including Experiments, FCS files, user profiles, etc., from the database used for restoration.

How to Permanently Remove Saved Data from the Attune NxT™ Computer

The recommended method for deletion of data from the Attune NxT™ software is to delete tube or plate experiments from the Experiment Explorer within each user profile. Other options are provided below in the instance that deleting files from individual user accounts is not possible.

Data deletion options

Plate and
Experiment
Files

FCS files

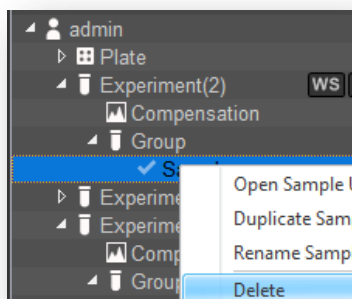
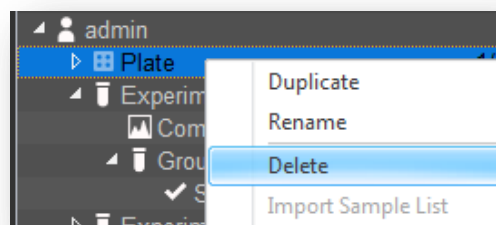
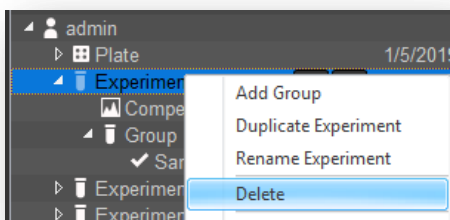
Re-install
Database

Delete a User
Account and
Associated
Data

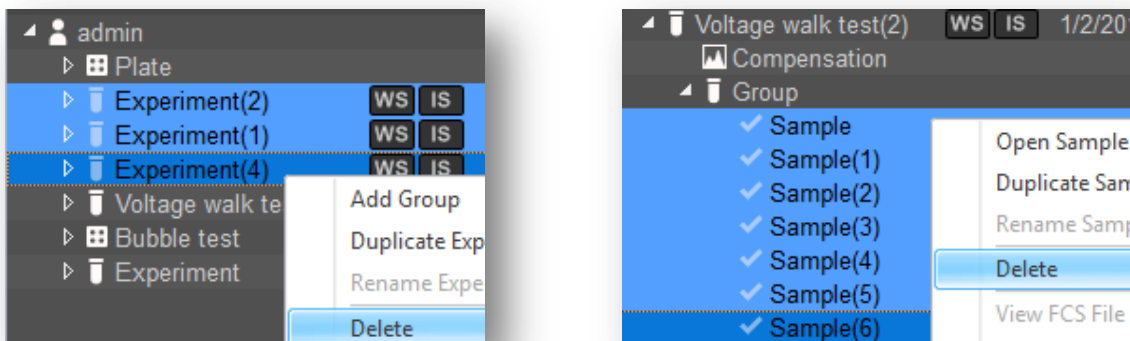
Delete Select
files

Deletion of Experiment and Plate Files

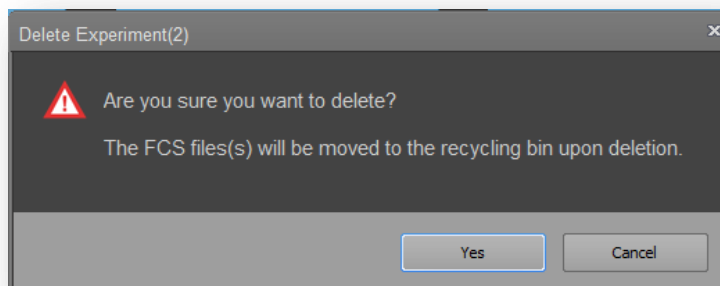
- Step 1** Login to the user account that includes data for deletion.
- Step 2** Right click on the Experiment, Plate or sample name. In the right-click context menu, select Delete.



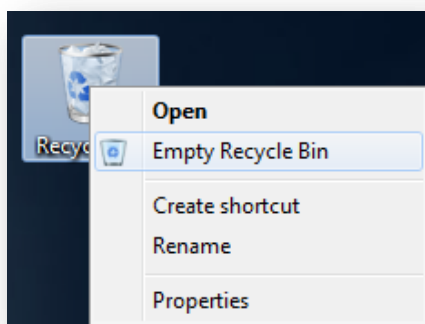
Optional: Multiple tube experiments, plate experiments, or FCS files may be selected at once for bulk deletion by selecting each file individually while holding the Ctrl key on the keyboard



Step 3 In the Delete dialogue box, confirm the file deletion by selecting Yes or Cancel. Once files are deleted from the software they are sent to the Recycle bin of the computer.



Step 4 Remove deleted files permanently from the computer by emptying the Recycle Bin of the computer. Right click on the Recycle Bin icon and select Empty Recycle Bin. Alternatively, open Recycle Bin and select files to permanently delete.



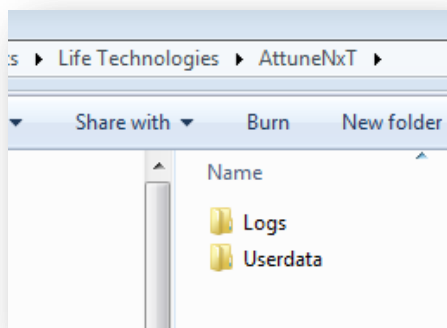
Other Options for Permanent Data Removal

Re-installation of a New Database

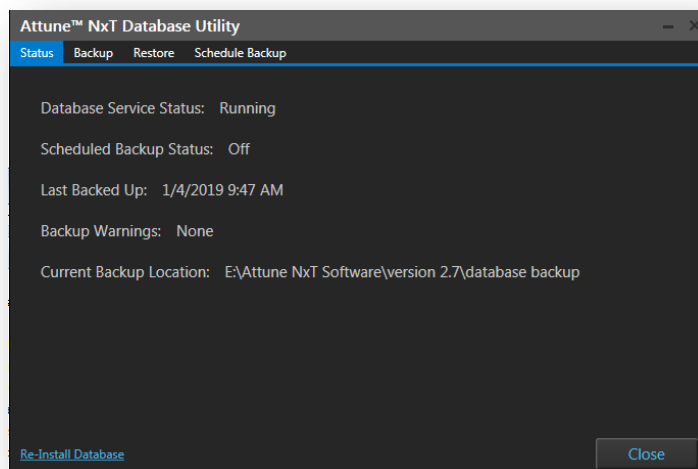
The Attune NxT™ Database Utility may be used to re-install a new, empty database. Installation of a new database will completely erase all existing data and user accounts in the current, active instance of Attune NxT™ software.

CAUTION: DO NOT RE-INSTALL A NEW DATABASE WITHOUT SAVE AND EXPORT OF EXPERIMENTS AND FILES FROM THE ATTUNE SOFTWARE.

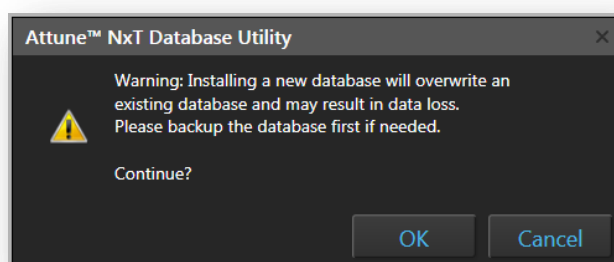
- Step 1** Close the Attune NxT™ Software.
- Step 2** Navigate to C:\Users\Public\Documents\Life Technologies\AttuneNxT. Right click on the “Userdata” folder and select “Delete” from the dropdown menu.



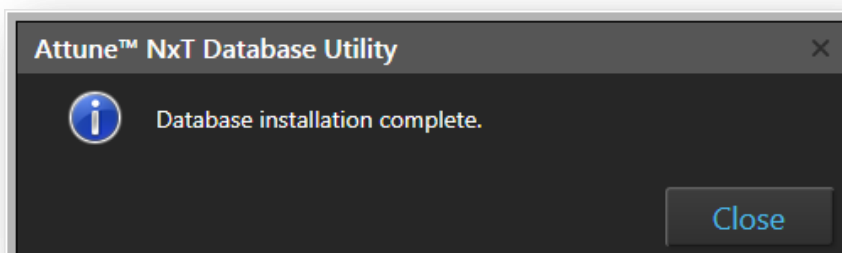
- Step 3** Open the Attune NxT™ Database Utility program and login as an administrator.
- Step 4** In the status menu, select “Re-install Database” from the bottom left corner.



Step 5 Confirm intent to install a new database by clicking OK or Cancel.



Step 6 A new database will be created as soon as OK is pressed. Press Close when finished.



Step 7 Open the Attune NxT™ Software. Remember, the new database does not include any data for previously created accounts.

NOTE: Login to the software using one of the default account settings (sysadmin or admin). The default user name for the administrator account is admin; the default password is

admin. The default user name for the system administrator account is sysadmin; the default password is sysadmin.

Deleting a User Account to Remove Data

The recommended method for deletion of data from the Attune NxT™ software is to delete tube or plate experiments from the Experiment Explorer within each user profile. In instances where this cannot be completed, instructions are provided below.

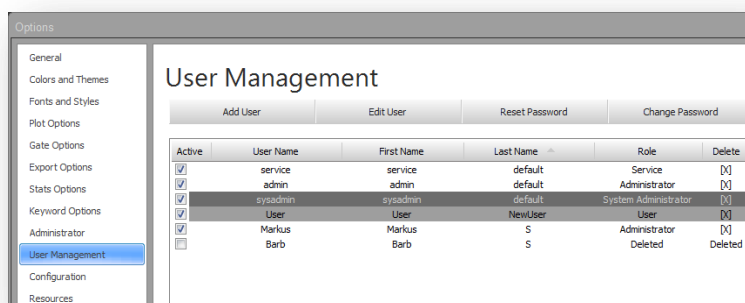
If a user account is no longer needed it may be deleted.

CAUTION: THE PROCEDURE BELOW WILL PERMANENTLY DELETE THE USER ACCOUNT AND ALL ASSOCIATED FILES. WE DO NOT RECOMMEND DELETION OF A USER ACCOUNT WITHOUT BACKUP OF USER DATA TO ANOTHER EXTERNAL LOCATION.

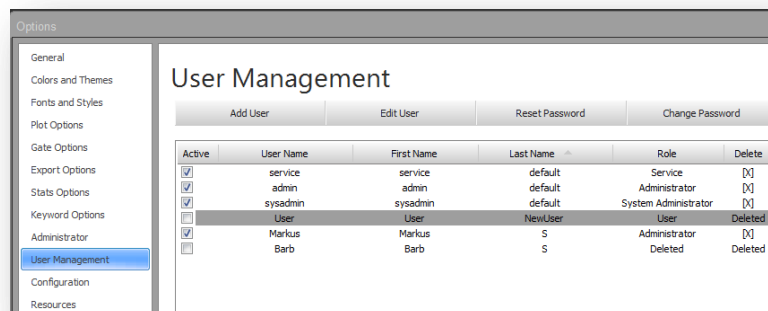
Step 1 Login as the System Administrator.

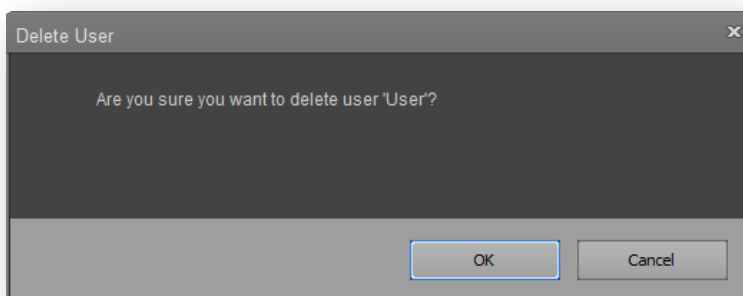
NOTE: The default username is **sysadmin** and the default password is **sysadmin**.

Step 2 In the options menu, navigate to the User Management page.

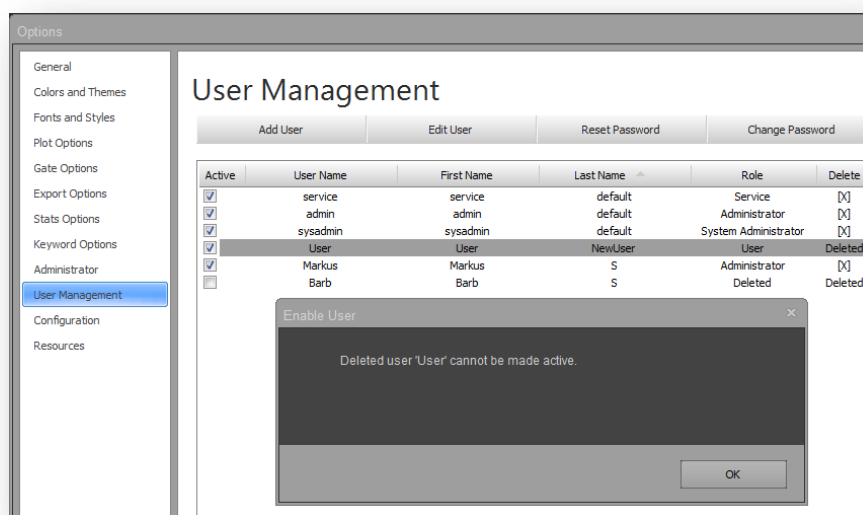


Step 3 Select the user to delete, and press the X in the Delete column. In the Delete User Dialogue box, confirm account deletion by selecting OK or Cancel.

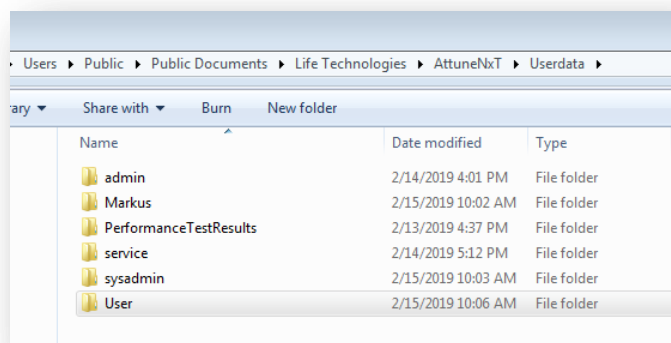




Step 4 Once the account has been deleted, the user status box will be unchecked and may not be re-enabled by selecting the Active box.

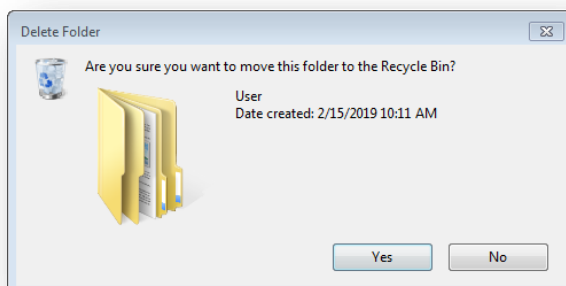


Step 5 Although the user account has been deleted, all associated user data remains in the Attune NxT™ database until the data is manually deleted. Navigate to C:\Users\Public\Documents\Life Technologies\AttuneNxT\Userdata\X where X is the user account name.

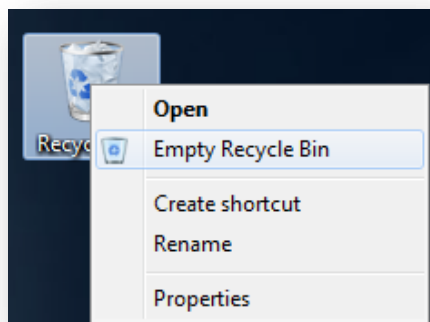


Step 6 Right-click on the user account data folder and select 'delete' from the drop down menu.

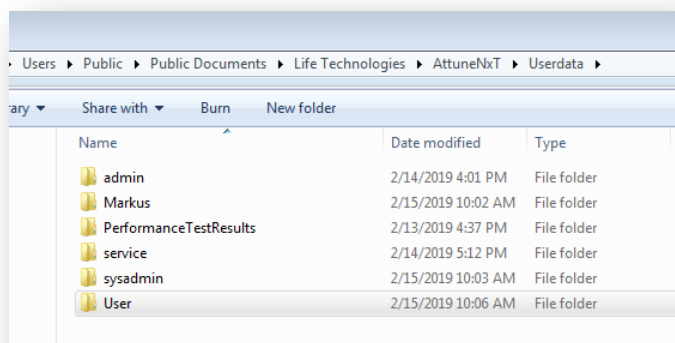
Step 7 Confirm deletion in the Delete Multiple Items dialogue box by selecting Yes or No.



Step 8 Remove deleted files permanently from the computer by emptying the Recycle Bin of the computer. Right click on the Recycle Bin icon and select Empty Recycle Bin. Alternatively, open Recycle Bin and select files to permanently delete.



Step 9 **NOTE:** The folder corresponding to the deleted account will still be visible in C:\Users\Public\Documents\Life Technologies\AttuneNxT\Userdata\X where X is the user account name. The folder may be opened and will include empty subfolders and no actual data.



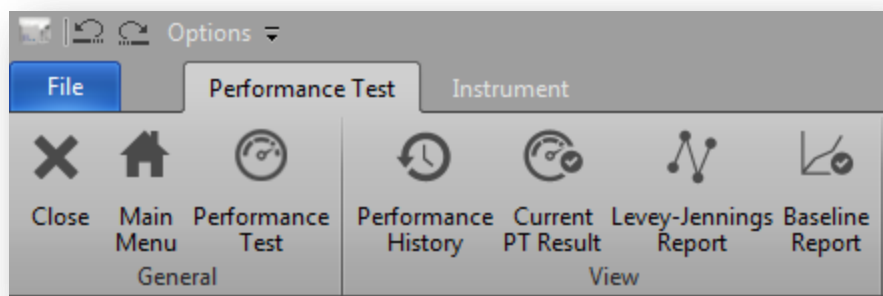
Permanent Removal of old Baseline and Performance Test Data

Baseline and Performance test generate many data files including xml files associated with laser delay and test results, FCS files, FCS files, .CSV files, and , log files annotating steps that occur during baseline and performance test.

BL-2019-02-13T16.19.18.000	2/13/2019 4:22 PM	File folder
BL-2019-02-13T16.33.44.000	2/13/2019 4:37 PM	File folder
PT-2019-02-13T15.53.01.000	2/13/2019 3:54 PM	File folder
PT-2019-02-13T15.55.00.000	2/13/2019 3:56 PM	File folder
PT-2019-02-13T16.03.13.000	2/13/2019 4:04 PM	File folder
BL-2019-02-13T14.55.43.000LaserDelay.xml	2/13/2019 3:51 PM	XML File
BL-2019-02-13T14.55.43.000Results.xml	2/13/2019 3:51 PM	XML File
BL-2019-02-13T16.19.18.000Results.xml	2/13/2019 4:22 PM	XML File

Baseline and Performance test data are stored in two locations in the Attune NxT™ software: directly in the database and in the Public Documents folder. Within the Attune NxT™ software, data is pulled directly from the database to view Baseline or Performance Test Results, Levey-Jennings data, Performance History and the Baseline Report.

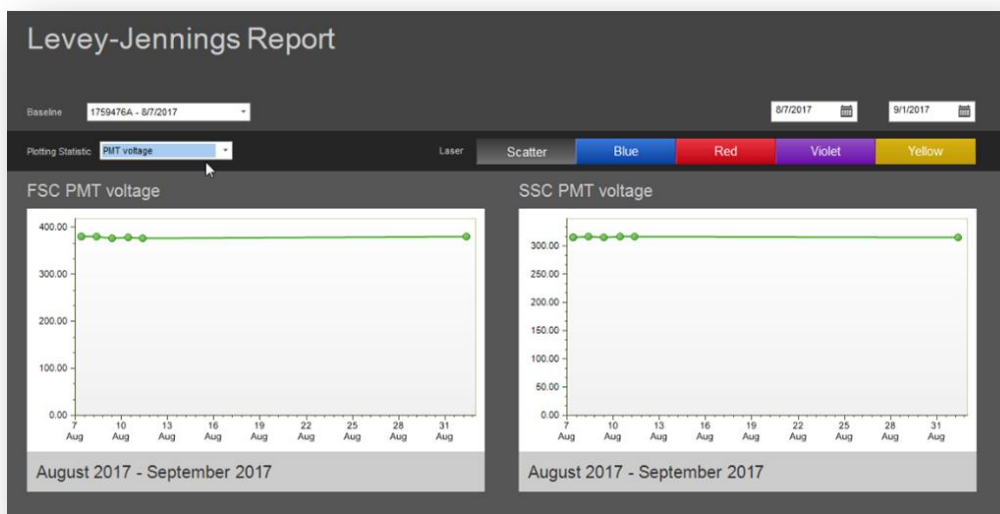
Attune NxT Data Management version 1.0
For Research Use Only. Not for use in diagnostic procedures.



The screenshot shows the 'Baseline Test Results' window. A green checkmark indicates 'Baseline test successful'. The baseline is identified as '756080D - 2/13/2019' and the time is '2/13/2019 2:55:43 PM'. The table below contains the test results for various channels.

Channel	PMTV	Target MFI	MFI	Robust %CV	Qr	Background	Linearity	ASF	Laser Delay	Result
FSC	487	300,000	298,796	1.68 %	0.000	0	0.000	1.11	1100	✓
SSC	285	300,000	294,170	3.21 %	0.000	0	0.000	1.11	1100	✓
BL1	378	300,000	295,691	1.24 %	0.047	127	1.000	1.11	1100	✓
BL2	311	300,000	295,495	1.17 %	0.065	169	0.966	1.11	1100	✓
BL3	349	300,000	299,207	1.82 %	0.049	39	1.000	1.11	1100	✓
RL1	333	300,000	295,093	3.84 %	0.066	100	0.997	1.04	1497	✓
RL2	353	300,000	296,932	3.60 %	0.010	306	1.000	1.04	1497	✓
RL3	423	300,000	297,819	4.01 %	0.047	141	0.998	1.04	1497	✓
VL1	297	300,000	300,000	2.80 %	0.010	2738	1.000	1.14	702	✓
VL2	325	300,000	294,262	2.64 %	0.010	1001	0.997	1.14	702	✓
VL3	324	300,000	296,212	2.78 %	0.016	182	0.996	1.14	702	✓
VL4	397	300,000	297,477	3.42 %	0.003	298	0.987	1.14	702	✓
YL1	381	300,000	294,021	1.33 %	0.081	37	0.999	1.12	305	✓
YL2	348	300,000	297,493	1.27 %	0.046	68	0.972	1.12	305	✓
YL3	392	300,000	299,462	2.07 %	0.035	134	0.999	1.12	305	✓
YL4	400	300,000	296,013	2.58 %	0.006	160	1.000	1.12	305	✓

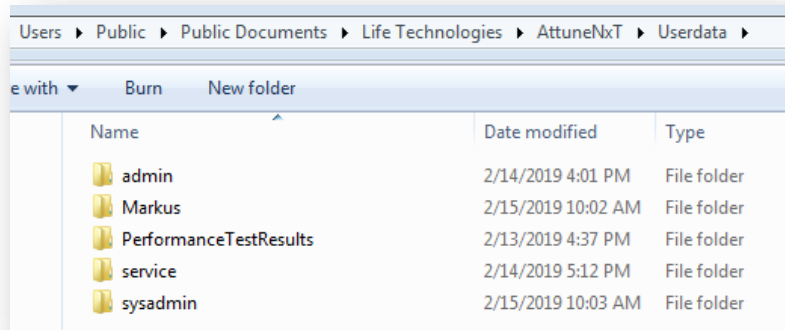
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Over time, the PerformanceTestResults folder (X:\Users\Public\Documents\Life Technologies\AttuneNxT\Userdata) may become very large. Files contained within the folder may be removed following the steps described below.

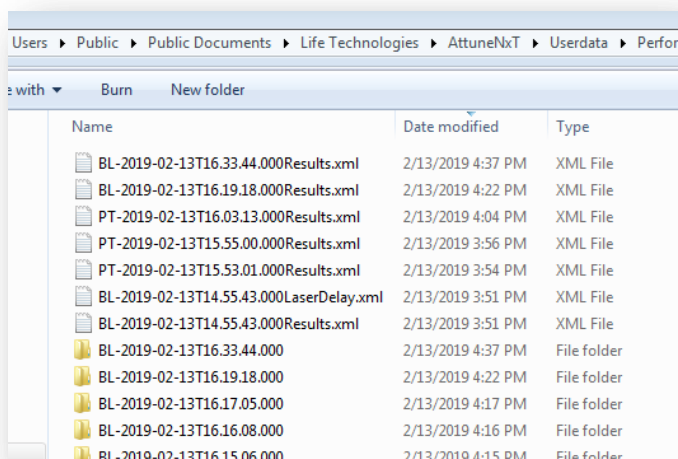
To Remove Baseline and Performance Test Data in Attune NxT™ Software version 2.7 or earlier:

Step 1 Navigate to the PerformanceTestResults folder (X:\Users\Public\Documents\Life Technologies\AttuneNxT\Userdata)

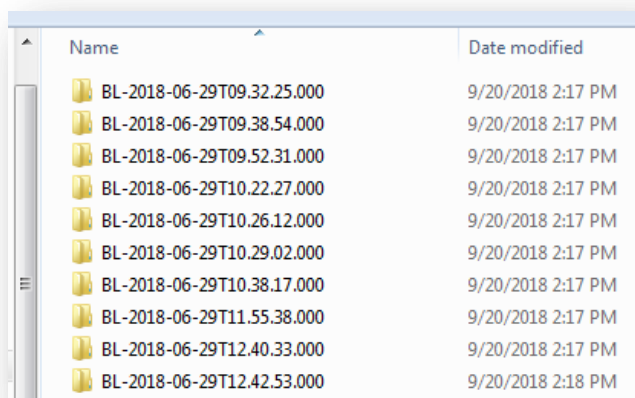


Step 2 Within the folder, organize data based on the “Date Modified column” by clicking on the Date Modified column header.

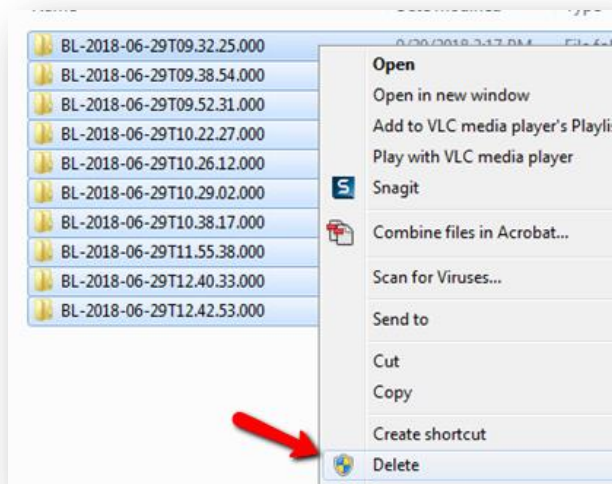
Attune NxT Data Management version 1.0
For Research Use Only. Not for use in diagnostic procedures.



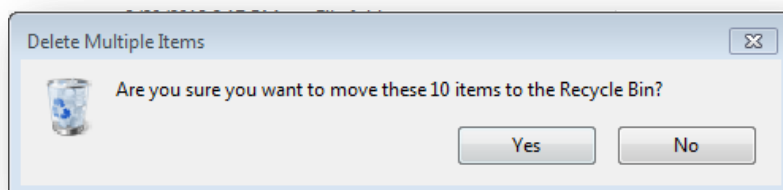
Step 3 Select data to delete based on the date the data was created. It is our recommendation to keep the last 3 months of data in the folder in case these files are needed for troubleshooting. In the example shown, select files created prior to November 13 2018.



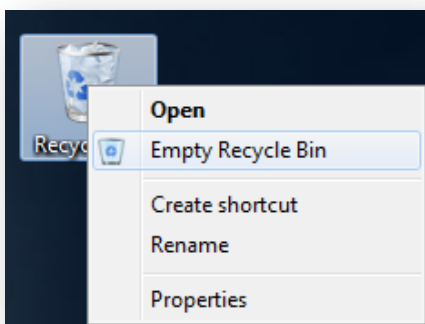
Step 4 Multi-select the appropriate files to delete, right click, and select “delete” from the drop down menu to delete the files.



Step 5 Confirm the deletion by clicking yes.



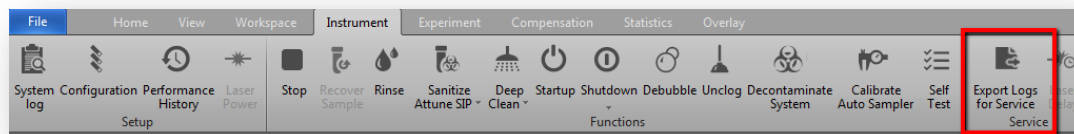
Step 6 Remove deleted files permanently from the computer by emptying the Recycle Bin of the computer. Right click on the Recycle Bin icon and select Empty Recycle Bin. Alternatively, open Recycle Bin and select files to permanently delete.



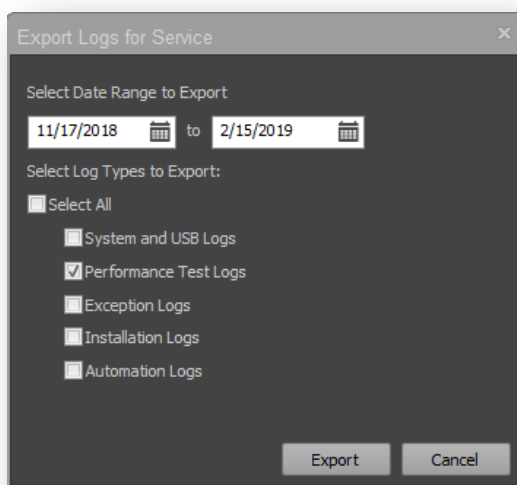
To Remove Baseline and Performance Test Data in Attune NxT™ Software version 3.1:

Step 1 Open the Attune NxT™ Software and login to an administrator account.

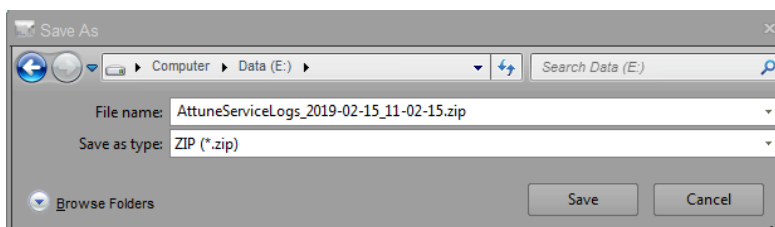
Step 2 Archive at least 3 months of Baseline and Performance Test Data prior to deletion using the “Export Logs for Service” function. Within the Instrument tab of the ribbon bar, click “Export Logs for Service” button.

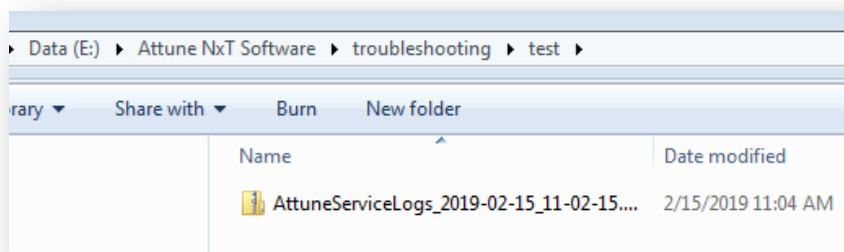


Step 3 In the Export Logs for Service dialogue box, select the Date Range to Export and check the “Performance Test Logs” option and click “Export”.

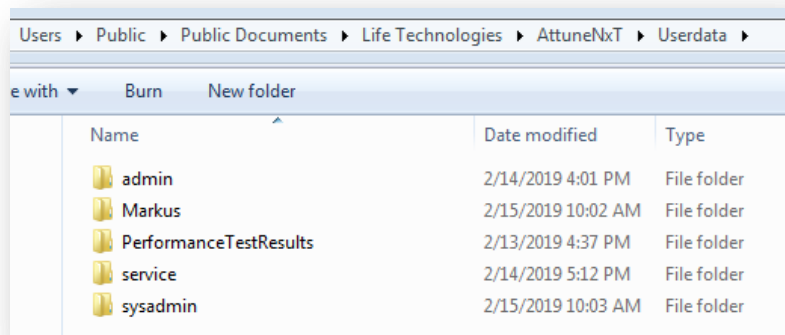


Step 4 In the Save as dialogue box, select the file to save the data and press “Save”. All files required for troubleshooting will be exported to the save location as a zip folder.

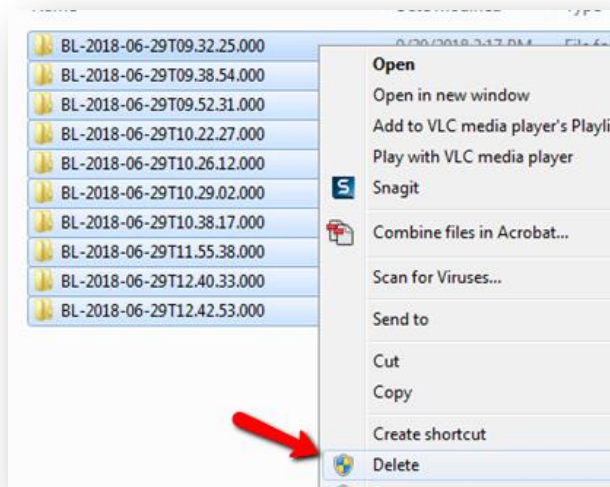




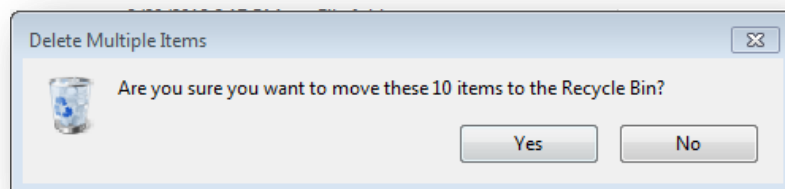
Step 7 Navigate to the PerformanceTestResults folder (X:\Users\Public\Documents\Life Technologies\AttuneNxT\Userdata)



Step 8 Open the folder. Multi-select all files within the folder, right click, and select “delete” from the drop down menu to delete the files.



Step 9 Confirm the deletion by clicking yes.



Step 10 Remove deleted files permanently from the computer by emptying the Recycle Bin of the computer. Right click on the Recycle Bin icon and select Empty Recycle Bin. Alternatively, open Recycle Bin and select files to permanently delete.

