



PART II: PiVAT[®] User Manual

for oncoReveal[™] Dx Lung and Colon Cancer Assay

Software Version 1.1.0

For In Vitro Diagnostic Use.

Caution: Federal law restricts this device to sale by or on the order of a physician

Contents

INTRODUCTION..... 3

SYMBOLS USED IN THIS USER MANUAL..... 3

INITIAL SETUP 3

HARDWARE REQUIREMENTS 3

CONNECT TO PIVAT 3

ACCEPT TERMS AND CONDITIONS..... 4

CONFIGURING PIVAT USERS 5

USING THE PIVAT SOFTWARE 6

NAVIGATION MENU 6

SETUP AN ANALYSIS 7

RUN NAME 8

EXPORTING DATA 10

HELP PAGE..... 13

CHANGE USER PASSWORD 13

MONITORING THE TASK STATUS..... 14

ABORTING AN ANALYSIS TASK..... 14

ADMINISTERING PIVAT..... 15

NAVIGATION MENU 15

PIVAT ADMINISTRATION 16

AUDIT LOG..... 17

SYSTEM SETTINGS 18

USER PROFILES..... 19

ADDING A USER 19

MODIFYING A USER..... 20

DATA MANAGEMENT 21

TROUBLESHOOTING 22

OTHER INFORMATION..... 23

CYBERSECURITY 23

LEGAL NOTICES 23

COMPANY INFORMATION 23

APPENDICES..... 24

APPENDIX A: FASTQ FILE NAME FORMAT 24

APPENDIX B: SAMPLE BATCHING 25

INTRODUCTION

The PiVAT software is for use with oncoReveal Dx Lung and Colon Cancer Assay. PiVAT performs secondary analysis and report generation from sequencing runs that use the oncoReveal Dx Lung and Colon Cancer Assay. See the oncoReveal Dx Lung and Colon Cancer Assay User Manual (UM-0043).

PiVAT is installed on a stand-alone computer system configured with an Ubuntu operating system and a Chromium browser. The system is configured with no network connectivity.

This user manual describes how to use Pillar Bioscience’s (Pillar) PiVAT software for oncoReveal Dx Lung and Colon Cancer Assay. PiVAT is Pillar’s genome sequence data software. This manual provides instructions on setting up user configurations and starting variant analysis.

Symbols Used in this User Manual

Symbol	Explanation
	ATTENTION: This symbol is a reminder to pay attention to details that could affect either proper installation or performance.
	CAUTION or WARNING This symbol is an indication of a critical detail not to be overlooked

INITIAL SETUP

Hardware Requirements



Caution: The PiVAT software is installed on a preconfigured system that does not require additional software or a network connection. It does require a USB storage device for data transfer. Supported formats include FAT32, ExFAT, and NTFS.

Pillar recommends using an uninterruptable power supply (UPS) with the PiVAT system to maintain data integrity.

Connect to PiVAT

Start the **PiVAT system** and login using the default account:

Username: pillaruser

Password: pivat



If required by your organization’s IT policies, change the account password.

Make sure to record the new password in accordance with your organization’s IT policies.

The default browser will automatically launch and display the **PiVAT software Login page** (Figure 1). Login with the default administration login:

Username: admin

Password: Install9*

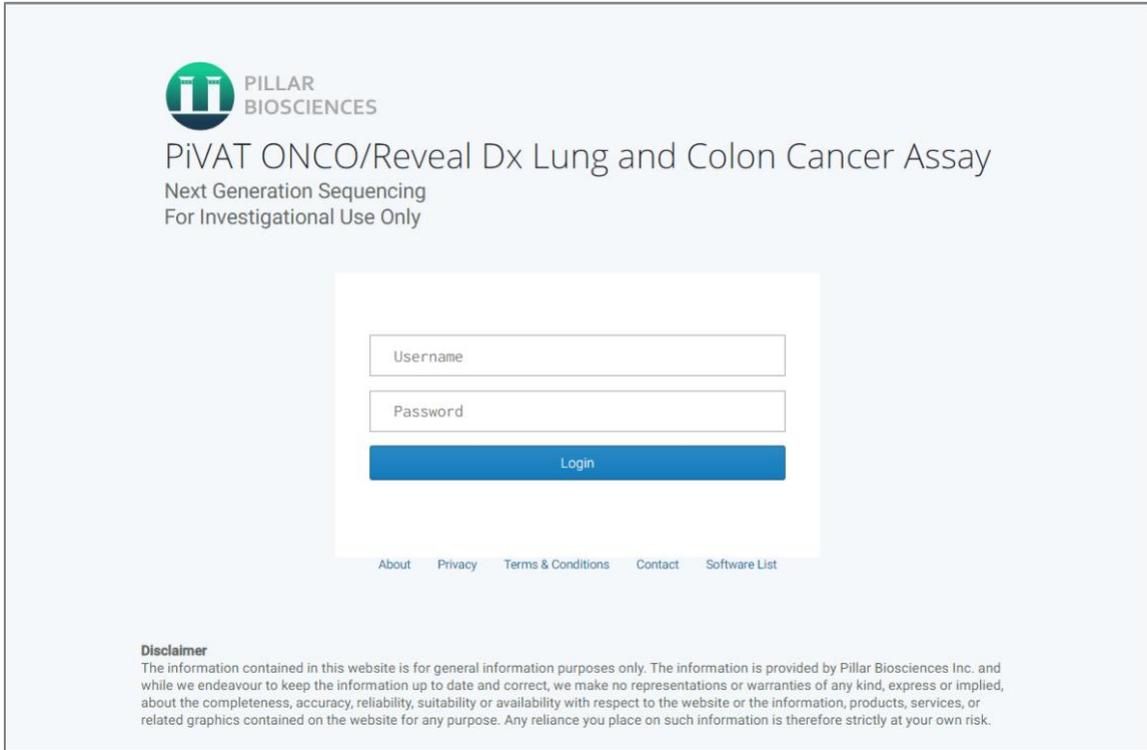


Figure 1 Login page

Accept Terms and Conditions

Upon successful admin login, the **License Agreement page** (Figure 2) displayed. Read the terms and conditions and click the **Agree** button to continue.

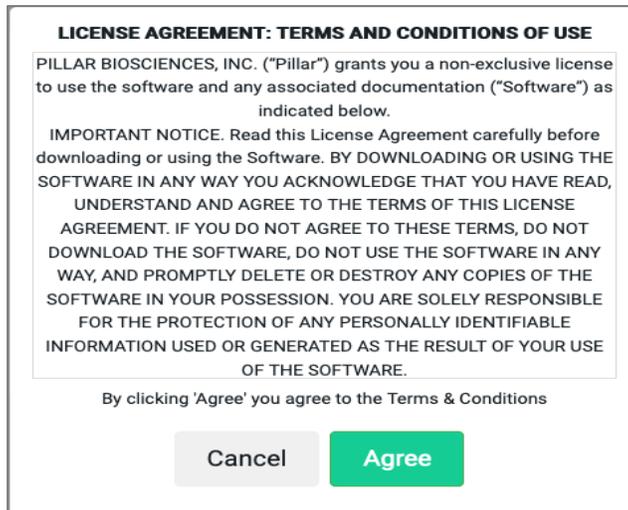


Figure 2 License Agreement page

Configuring PiVAT Users

Create a user account:

From the navigation menu, click the **Admin** button.

Login with the default administration login when prompted.

Under User Management/User profiles, select Add.

Fill in the Username, Password, and Password confirmation fields.

- Usernames can only contain lower case letters, numbers, underscores, and dashes.
- Password rules: 8 to 32 characters, at least one uppercase letter, at least one lowercase letter, at least one number, at least one special character.
- Allowed special characters: ~ ! @ # \$ % ^ * () _ - + = { } [] | ; : " ?
- To add another user, click the **Save and add another** button.
- To exit the page, click the **SAVE** button.

When done adding users, log out of the administrator account.



Record the new account names and passwords in accordance to your organization's IT policies.

USING THE PIVAT SOFTWARE

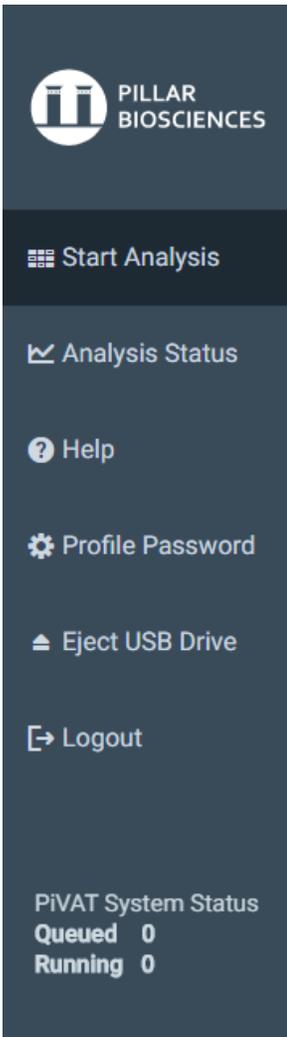
Connect to the PiVAT software via a web browser, as described in the section Connect to PiVAT. Login using a user account set up in the **Configuring PiVAT Users** section.



Pillar recommends only a single instance of the PiVAT software should be running at any time.

Navigation menu

You can navigate through the software using the **Navigation Menu** (Figure 3) located on the left side of the screen.



The [Start Analysis](#) option is not available for users with administrator rights.

Note: The [Eject USB Drive](#) option is only available when a USB drive is attached.

The [PiVAT System Status](#) section displays the number of running and queued tasks for all users. An Analysis task that is entered while there are tasks in the system running and/or queued will be placed at the end of the queue.

Figure 3 Navigation Menu

Setup an Analysis

From the navigation bar at the left of the screen, select [Start Analysis](#). The **Panel Analysis** page (Figure 4) is displayed.

To configure batch applications, see Appendix B.

Before proceeding, insert your USB drive with your data.

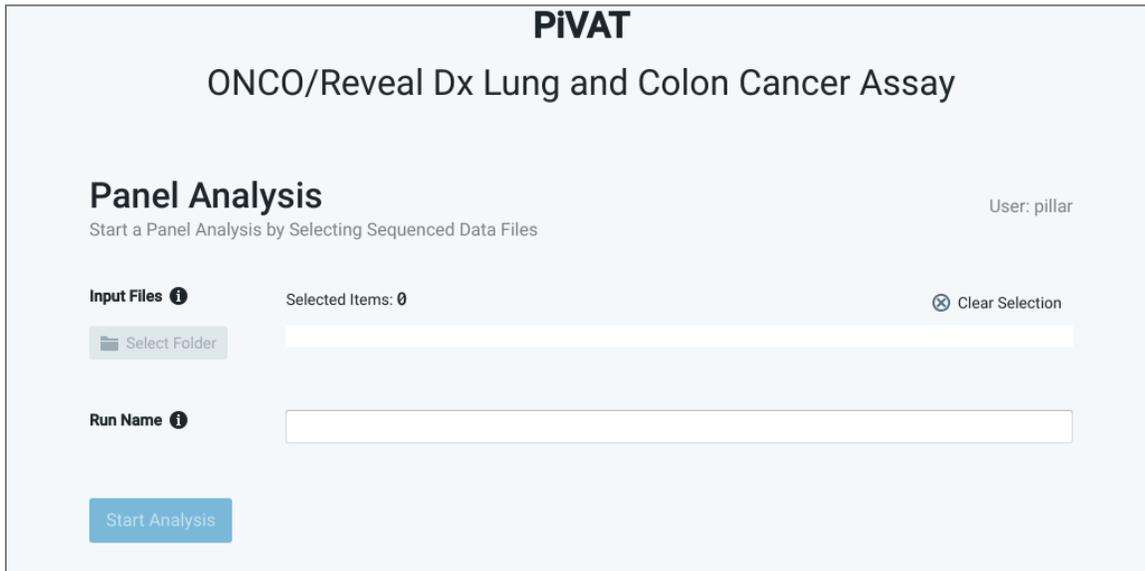


Figure 4 Panel Analysis page

Click on [Select Folder](#) to navigate to the input data. The **Select Input** screen (Figure 5) is displayed.

Navigate to the directory containing your analysis run data and select the directory. Only directories can be selected.

The directory must have all the required files, including FASTQ, SampleSheet.csv, and PBScomplete.ini.

Note: The contents of your USB drive may vary from what is displayed.

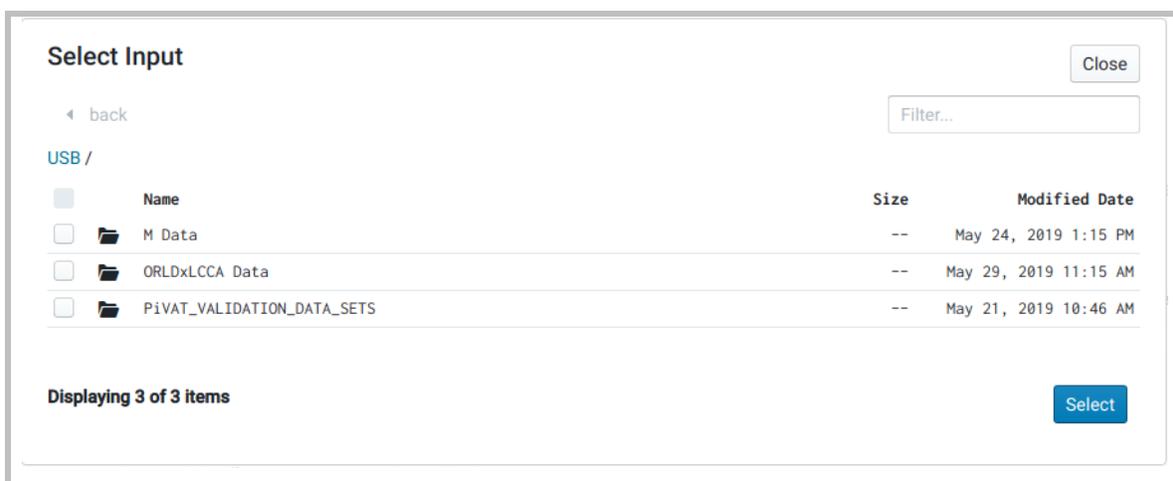


Figure 5 Select Input screen

Run Name

A run name is created based on the directory you selected in the last step. You may modify the run name after the field is automatically filled. All run names will be checked for illegal characters. Only alphabetic, numeric, dash and underscore characters are allowed in run names. The user is prevented from starting a run if there are any illegal characters.

The PiVAT software will add identifiable fields to the task name. The task name will display as: <samplename><your-run-name><taskid><PiVAT-version><UTC-timestamp>

Start Analysis

Click the [Start Analysis](#) button to start the data analysis. A task list is displayed. The software checks the contents of the directory for required files. The analysis will not start if an error is found, or if a required file is missing.

When the analysis starts, the **Analysis Status page** (Figure 6) is displayed, and the following popup message appears:

Your files have been copied from your device. Please remember to safely eject the USB drive before removing it from the workstation. ✕

Use the [Eject USB Drive](#) button on the **Navigation Menu** to safely eject the USB drive.



Caution: Do not remove the USB drive prior the message stating that your files have been copied. Do not remove the USB storage device without using the [Eject USB Drive](#) button.

Analysis Status

Check the Status of Panel Analyses User: pillar

Task Name

Date

Status

completed ✕
running ✕
queued ✕
aborted ✕
failed ✕
deleted ✕

Apply Filter
Reset Filter

ID	Task	Date	Status
3029	80-181213_M70466_0009_00000000-BYKY7	Oct 3, 2019 6:03 PM	queued
3028	Fridge-181213_M70466_0009_00000000-BYKY7_3028_1.0.0rc3.UTC20191003220229	Oct 3, 2019 6:03 PM	queued
3027	FT2x-181213_M70466_0009_00000000-BYKY7_3027_1.0.0rc3.UTC20191003220229	Oct 3, 2019 6:03 PM	running
3026	error_in_log_failure_test_3026_1.0.0rc3.UTC20191003204435	Oct 3, 2019 4:44 PM	failed
3025	alt_QC_fail_q30_3025_1.0.0rc3.UTC20191003204413	Oct 3, 2019 4:44 PM	completed
3024	HotSpot1-error_code_failure_test_3024_1.0.0rc3.UTC20191003204359	Oct 3, 2019 4:43 PM	failed
3023	HotSpot1-exception_failure_test_3023_1.0.0rc3.UTC20191003204352	Oct 3, 2019 4:43 PM	failed
3022	alt_qc_baseline_3022_1.0.0rc3.UTC20191003204330	Oct 3, 2019 4:43 PM	completed
3021	HotSpot1-string_error_code_failure_test_3021_1.0.0rc3.UTC20191003204313	Oct 3, 2019 4:43 PM	failed
3020	basic_run_3020_1.0.0rc3.UTC20191003204300	Oct 3, 2019 4:43 PM	completed
3019	HotSpot1-SRS-106-test_3019_1.0.0rc3.UTC20191003203823	Oct 3, 2019 4:38 PM	aborted
3018	HotSpot1-HSControl_test_selenium_5_3018_1.0.0rc3.UTC20191003203658	Oct 3, 2019 4:36 PM	aborted

Figure 6 Analysis Status page

Analysis Details

The **Analysis Details** page (Figure 7) provides summary information including:

- **Task status** as described in Monitoring the Task Status below.
- **Task ID** is a unique identifier assigned to every analysis task initiated.
- The Username of the **User** who initiated the analysis task.
- Date and time the analysis task was **Created**, **Started** and **Completed**.
- **Duration** of the analysis task.

Notes section of the page displays error and summary information

- **Inputs** displays the input files that were processed by this task.

Analysis Details

190703_M70769_0006_000000000-BYL4J User: pillar

← Back

📄 Logfile
📊 Results
⚠️ Abort

Status	ID	User	
completed	18	pillar	

Created	Started	Completed	Duration
Sep 24, 2019 3:23 PM	Sep 24, 2019 8:36 PM	Sep 24, 2019 9:48 PM	1:11:56

Notes

N/A

Inputs

```

20190703-InterStab-GSPCR-t30-NTC_S22_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-NTC_S22_L001_R2_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000QL_S1_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000QL_S1_L001_R2_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000SX_S13_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000SX_S13_L001_R2_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000TQ_S17_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000TQ_S17_L001_R2_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000TV_S6_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000TV_S6_L001_R2_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000U6_S2_L001_R1_001.fastq.gz
20190703-InterStab-GSPCR-t30-PB0000U6_S2_L001_R2_001.fastq.gz
                
```

Figure 7 Analysis Details page

Clicking on the **Logfile** button displays logging information for every stage of this task. The logging info is unavailable if the task is in the **queued** or **deleted** state. Click the **Back** button to return to the **Analysis Details** page.

Clicking on the **Results** button displays the **Analysis Results** page (Figure 8) if the task is in the complete status state.

Analysis Results

Click the [Download Report to System](#) button to obtain a PDF formatted report of the completed analysis run. This page provides information on:

- **Run Summary** including Run ID, date and run validation results.
 - PASS: Run is valid. A run is valid where both PosCtrl and NTC meet Quality Control metrics. A valid run may include both valid and invalid sample results.
 - FAIL: Run is invalid where it did not meet one or more Quality Control metrics. Sample results will not be available.
- **Run Control Result**
 - NTC must be valid to ensure absence of inadvertent contamination.
 - PosCtrl must be valid to ensure that target mutations can be detected by the assay.

Sample Result is the summary of variants detected in the samples of a valid run.

Note: All run and sample validation is performed by PiVAT software.

Exporting Data

All the individually downloadable files on this page can be downloaded. Confirm that a USB drive is properly plugged in to the system before proceeding.

Click the [Select USB Destination](#) button and choose where the file is to be downloaded to.

Click the [Export data to USB](#) button.

Sample Result

The **Sample Result** table (Figure 8) can be sorted by clicking on the column headings. More detailed analysis reports are available wherever you see this icon



Analysis Results

View Sample Results and Positive Mutations User: pillartest

[← Back](#)

Output Download ⓘ

Selected directory: **None**

Select USB Destination
Export data to USB
Download Report to System

Run Summary

Run ID	Variant_Detect_047-EGFR-45-1d1pct
Run Date	2020-07-09
PosCtrl PASS/FAIL*	PASS
NTC PASS/FAIL*	PASS
Run PASS/FAIL	PASS

* In the case of multiple control samples all numeric results will be shown, separated by '|' characters.

Summary of Sample Results

Sample ID ⌵	Sample QC ⌵	Result* ⌵	Gene ⌵	Exon ⌵	Nucleotide Change ⌵
047-EGFR-45-DELETION-D-55242462-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2232_2249c
047-EGFR-45-DELETION-D-55242463-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2233_2247c
047-EGFR-45-DELETION-D-55242464-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2234_2248c
047-EGFR-45-DELETION-D-55242465-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2235_2237c
047-EGFR-45-DELETION-D-55242465-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2235_2246c
047-EGFR-45-DELETION-D-55242465-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2235_2249c
047-EGFR-45-DELETION-D-55242465-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2235_2252c
047-EGFR-45-DELETION-D-55242466-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2236_2250c
047-EGFR-45-DELETION-D-55242466-55242	Valid	Mutation detected	EGFR	19	NM_005228.4:c.2236_2253c

Figure 8 Analysis Results page

Clicking the icon loads a **Sample Results page** (Figure 9).

A PDF formatted copy of the report can be downloaded by pressing the [Download Sample Report](#) button. Your report can be edited using a third-party PDF reader once downloaded from the PiVAT system to add patient and medical facility data.

To return to the **Analysis Results page**, click the [Back](#) button.

Sample Results

RDvSMpLC103-629-20ng User: pillartest

← Back
↓ Download Sample Report

VARIANTS DETECTED FOR THERAPEUTIC USE

Indication	Gene	Exon	Nucleotide Ch...	Amino Acid C...	Variant Freque...	FDA-Approved Therapeutic ...
N/A	N/A	N/A	N/A	N/A	N/A	N/A

OTHER ALTERATIONS AND BIOMARKERS IDENTIFIED

Gene	Exon	Nucleotide Change	Amino Acid Change	Variant Frequency (%)
N/A	N/A	N/A	N/A	N/A

Figure 9 Sample Results page

Help Page

Click the [Help](#) link in the **Navigation Menu** to access the **Help Page** which contains:

[Contact Information](#) of Pillar Biosciences Inc.

[User Guide](#) with links to:

- PiVAT Software User Manual
- oncoReveal Dx Lung and Colon Cancer Assay User Manual
- PiVAT Software Release Notes
- Pillar Sample Sheet Tool (requires Windows OS and MS-Excel)
- FASTQ Naming Formatting

[Software Versions](#)

To exit this page, select another option from the **Navigation Menu**.

Change User Password

You can change your password by selecting the [Profile Password](#) option on the **Navigation Menu**. The **Profile Password** page (Figure 10) is displayed:

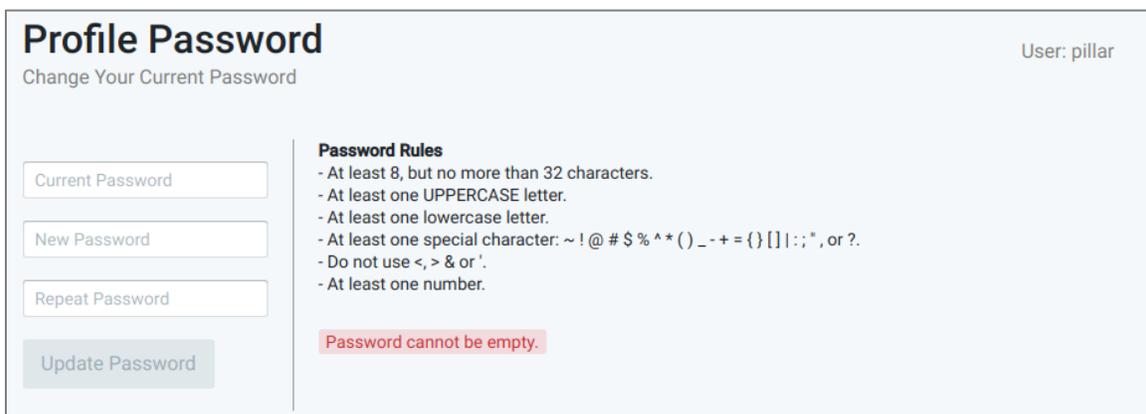


Figure 10 Profile Password page



To exit without changing your password, select another option from the **Navigation Menu**.

Record the new password in accordance to your organization’s IT policies.

Monitoring the Task Status

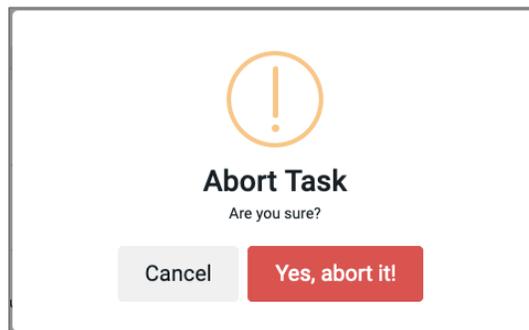
The first entry at the top of the list is the task that was started in the previous step and is displayed with its current status in the Status column at the right. Status states include:

- **queued**: There is another task running. Your present task is queued until preceding tasks are finished.
- **running**: This task is currently running.
- **completed**: The task has completed successfully.
- **failed**: An error occurred, and the analysis did not complete.
- **aborted**: This task is aborted by a user.
- **deleted**: The task data has been deleted by an administrator.

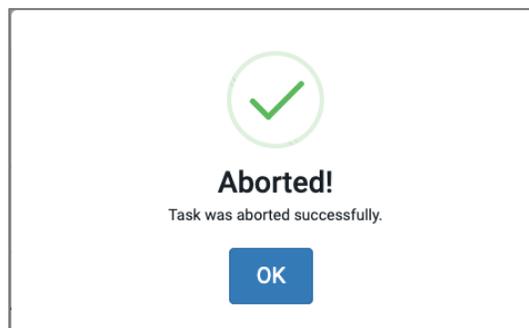
The Administrator account can see tasks from all users. A non-administrator account can only see their tasks. If your task is in the **queued** state, a task from another user is currently **running**. The **Older** and **Newer** options can be clicked to navigate through all the tasks if there are more tasks than are displayed on the page.

Aborting an Analysis Task

A task can only be aborted when its status is **running** or **queued**. To abort a task, click on the task, which takes you to the **Analysis Details page**. Click the **Abort** button. The following popup is displayed:



Clicking **Cancel** returns you to the **Analysis Details page**. Clicking **Yes, abort it!** displays the following popup:



Clicking **OK** clears the popup. You are returned to the **Analysis Details page**. The task now displays a status of **aborted**.

ADMINISTERING PIVAT

Administering PiVAT requires login with administrative privileges. Use default administrator account provided at installation:

username: admin

password: Install9*



Pillar Biosciences strongly recommends changing the default administrator account password. **Record the new password in accordance to your organization’s IT policies.**

Navigation menu

The **Administrator Navigation Menu** (Figure 11) for the administration account is different than that for a non-administrator account.

 <p>PILLAR BIOSCIENCES</p>	<p>An administrator account cannot start an analysis run and therefore the Start Analysis option is removed.</p>
<p>☰ Admin</p>	<p>To perform system administration functions, click the Admin option.</p>
<p>☑ Analysis Status</p>	<p>An administrator account can see all analysis runs by all users by selecting the Analysis Status option.</p>
<p>🔍 Help</p>	<p>Administrators can generate reports as needed. An administrator account has the additional filter field of “user”.</p>
<p>⚙ Profile Password</p>	
<p>➔ Logout</p>	

Figure 11 Administrator Navigation Menu

PiVAT Administration

Login with the same username/password to launch the **PiVAT Administration page** (Figure 12).

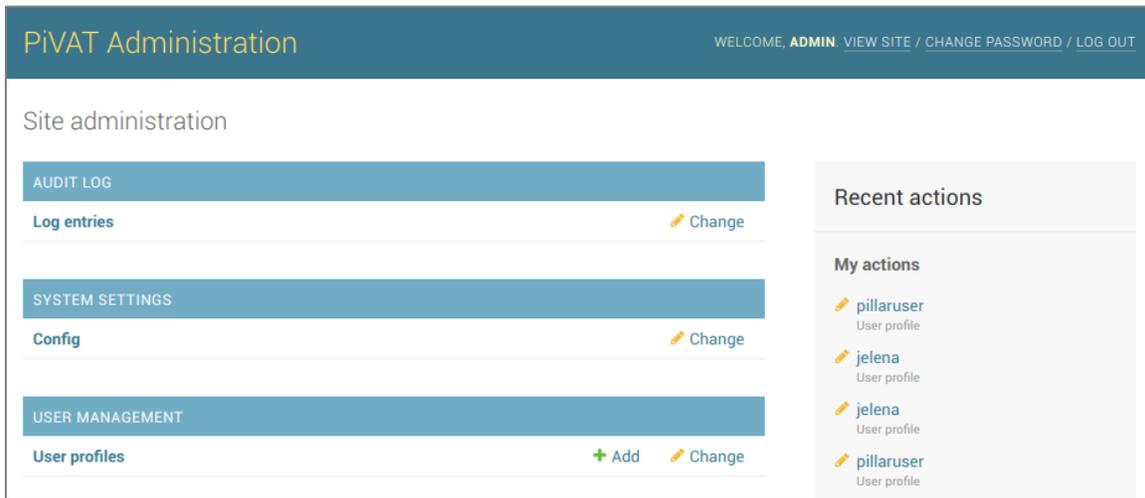


Figure 12 PiVAT Administration page

The password can be changed by the [CHANGE PASSWORD](#) link at the top right of the page.



Pillar Biosciences strongly recommends changing the default administrator account password. **Record the new password in accordance to your organization’s IT policies.**

Click the [LOG OUT](#) link at the top right of the page to log out at any time.

Audit Log

To view the audit log, click [Log entries](#) under the **AUDIT LOG** heading on the **PiVAT administration page** (Figure 12).

Entries in the **Log entries page** (Figure 13) can be viewed, but not modified. The log can be filtered using the filter menu on the right-hand side of the screen.

The screenshot shows the 'PiVAT Administration' interface. At the top right, it says 'WELCOME, ADMIN. VIEW SITE / CHANGE PASSWORD / LOG OUT'. Below the header, there's a breadcrumb trail: 'Home > Audit log > Log entries'. The main content area has a heading 'Select log entry to change' and a search bar. Below the search bar is a table of log entries. To the right of the table is a 'FILTER' menu with two sections: 'By action' and 'By Resource Type'.

CREATED	RESOURCE	RESOURCE TYPE	ACTION	CHANGES	USER
2019-10-04 14:47:10	admin	Userprofile	Update	1 change: last_login	system
2019-10-04 14:47:03	admin	Userprofile	Login success	0 changes:	admin
2019-10-04 14:37:11	pillartest	Userprofile	Login success	0 changes:	pillartest
2019-10-04 14:36:58	pillar	Userprofile	Login fail	0 changes:	pillar
2019-10-04 14:35:12	admin	Userprofile	Login success	0 changes:	admin
2019-10-04 14:30:05	admin	Userprofile	Update	1 change: last_login	system
2019-10-04 14:29:43	admin	Userprofile	Login success	1 change: failed_login_attempts	admin
2019-10-04 14:29:33	admin	Userprofile	Login fail	1 change: failed_login_attempts	admin
2019-10-04 14:29:29	admin	Userprofile	Login fail	1 change: failed_login_attempts	admin
2019-10-03 20:34:03	System Settings	Config	Update system	1 change: PIVAT_LOCKOUT_ATTEMPTS	admin

FILTER

By action

- All
- Create
- Update
- Delete
- Analysis abort
- Analysis start
- Analysis fail
- Analysis finish
- Delete task output
- Login fail
- Login lockout
- Login success
- Update system settings
- Disable user
- Enable user

By Resource Type

- All
- config
- pivattask
- userprofile

Figure 13 Log entries page

To return to the admin home, click [Home](#) > [Audit log](#) > [Log entries](#) on the navigation menu.

System Settings

To change the site configuration, click [Change](#) in the line labeled [Config](#) under the [SYSTEM SETTINGS](#) heading on the [PiVAT administration page](#) (Figure 12).

The [System Settings page](#) (Figure 14) will be displayed. Fields can be configured to user defined file paths or left at their default values.

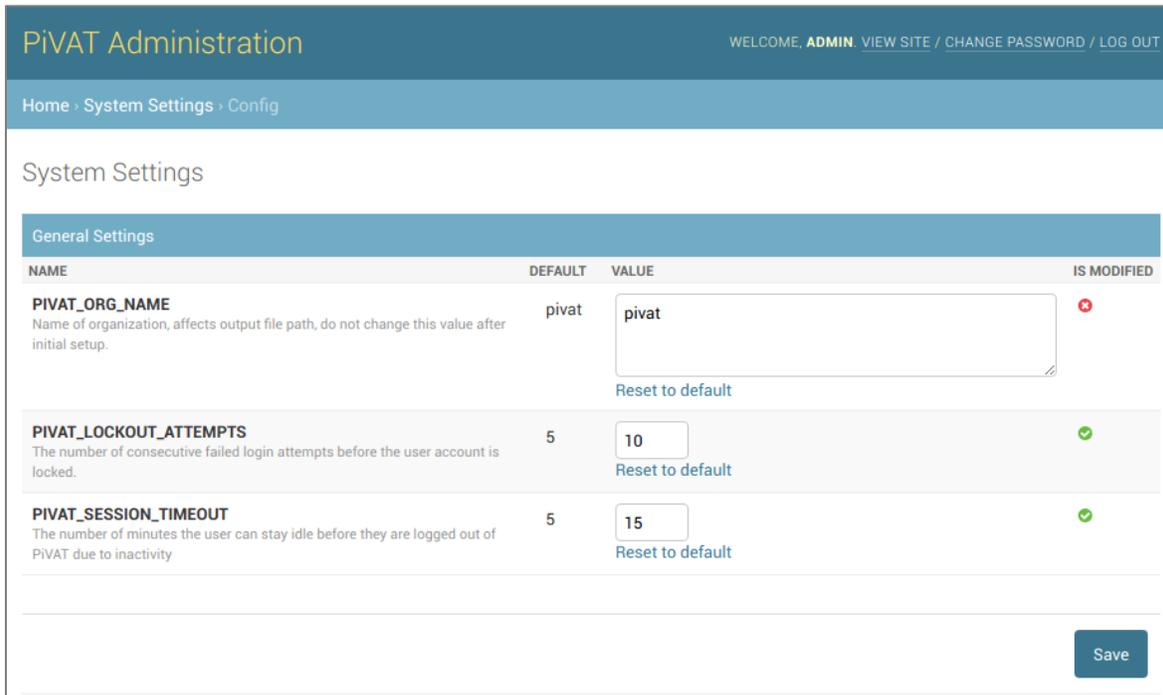


Figure 14 System Settings page

General Settings:

- **PIVAT_ORG_NAME:** Once this is set, do not change this value, as it affects the output file path. The default value is “pivat”.
- **PIVAT_LOCKOUT_ATTEMPTS:** The number of consecutive failed login attempts before the user account is locked. The default is 5. The minimum value is 1 and the maximum value is 10.
- **PIVAT_SESSION_TIMEOUT:** This is the number of minutes the user can remain idle before they are logged out of PiVAT. The default is 5. The minimum value is 1 and maximum value is 15.

Click [Save](#) to keep any changes made.

To return to the admin home, click [Home](#) > [System Settings](#) > [config](#) on the navigation menu.

User Profiles

To view the User Management screen, click [User Profiles](#) under the **USER MANAGEMENT** heading on the **PiVAT administration page** (Figure 12).

The **User Profiles page** (Figure 15) displays all the user profiles. Admin status is indicated, and there are options to filter which profiles are displayed.

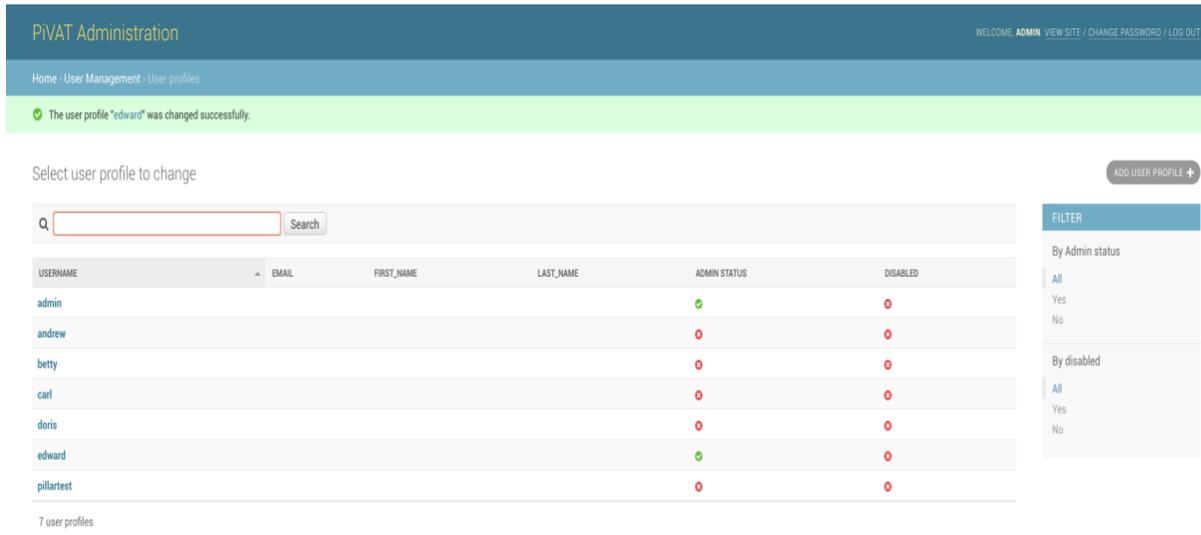


Figure 15 User Profiles page

To return to the admin home, click [Home](#) > [System Settings](#) > [config](#) on the navigation menu.

Adding a User

Click [ADD USER PROFILE](#). The **Add user profile page** (Figure 16) will appear. Fill out the new username, password, and the password confirmation fields. Usernames must be unique. When done select one of the save options.

Selecting [SAVE](#) brings you to the **Change user profile page** (Figure 17). The following fields can be modified on this page:

- First Name
- Last Name
- Email Address
- Staff Status
- Account Locked
- Disable user

There is an account change history that can be accessed by clicking the [History](#) button.

Figure 16 Add user profile page

Modifying a User

To change user profile, click [User Profiles](#) under the **USER MANAGEMENT** heading on the **PiVAT administration page** (Figure 12). Click to select one of the existing users.

This will display the **Change User Profile page** (Figure 17) described above.

Figure 17 Change user profile page

To exit the screen without making any changes, click a previous section in the site path [Home > User Management > User profiles >](#) on the navigation menu.

Granting Admin Access

If the new user requires admin access to the PiVAT application, check the [Admin Status](#) checkbox.

Disabling a User

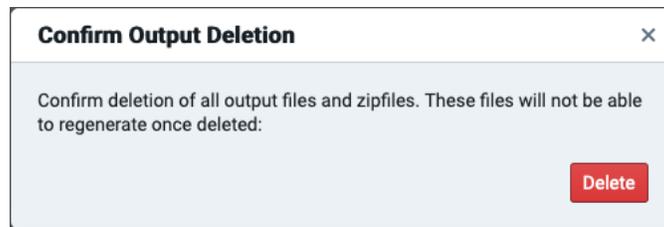
To disable a user, click on [User profiles](#), under the [USER MANAGEMENT](#) heading on the **PiVAT administration page** (Figure 12). A user can be disabled by either selecting the user name and the disable button or in bulk by selecting the user name(s) by the checkbox(es) to the left of the name(s) and selecting "Disable Selected user profiles" from the "Action" dropdown.

Data Management

Users are responsible for downloading analysis results and storing the data according to their data storage process.

Administrators can delete analysis run output directories in order to assure that there is sufficient storage space for future analysis tasks.

On the **Analysis Details Page** (Figure 7) there is a [Delete Output](#) button that is only available to Administrator accounts. Clicking this button displays the following popup:



To cancel the deletion, click the "x" close icon in the top right of the popup. Clicking the "Delete" button will delete the directory. A confirmation popup will appear.

On the **Analysis Details page** (Figure 7) the [Status](#) will change to [deleted](#). The "[Delete Output](#)" and [Abort](#) buttons will be disabled.

On the **Analysis Status page** (Figure 6) the [Status](#) of the task will be displayed as [deleted](#).



Verify that analysis data has been downloaded and stored in accordance to your organization's IT policies *before* deleting data from the PiVAT system.

TROUBLESHOOTING



If the system requires a restart, the user should check that all running and queued analysis tasks have completed before restarting the system. If not, the task running at the time of the restart will be aborted when the system restarts. That task will have to be restarted using the instructions in the *Setup an Analysis* section of this manual.



If a task fails due to insufficient disk space, an administrator user can free up space on the system by following the instructions in the *Data Management* section of this manual. Once sufficient space is recovered, the failed tasks will have to be restarted using the instructions in the *Setup an Analysis* section of this manual. There must be at least 100 GB of free space on the system for a task to start.



If an inserted USB drive is not detected by the PiVAT system, check that the drive is properly formatted. Supported formats include: FAT32, exFAT, and NTFS.



If PiVAT application is not running, click the PiVAT icon on the left side of the screen to relaunch it.



To avoid performance issues, do not run other applications on the workstation while PiVAT is running.



If the error message: “An error occurred during data transfer from the input location to PiVAT temporary directories. [errno: 5] Input/output error”, there has been a problem reading data from your USB drive. Use a different USB drive to transfer the data from the sequencer.



If the error message: “Error: Input disk files failed checksum verification” there has been a problem reading data from your USB drive. Use a different USB drive to transfer the data from the sequencer.



A PiVAT task should complete in eight hours or less from the time it started analysis, not the time it was queued. If a task takes more than eight hours to complete, contact Pillar Biosciences at (800) 514-9307 or techsupport@pillar-biosciences.com.



If the system will not start or the PiVAT application will not load, contact Pillar Biosciences at (800) 514-9307 or techsupport@pillar-biosciences.com.

OTHER INFORMATION

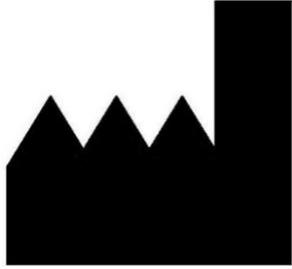
Cybersecurity

- The auto boot feature on the USB drives have been disabled.
- The USB ports on the rear of the system have been disabled.
- The Ethernet port is disabled and not intended for use.
- The PiVAT workstation is a stand-alone device, and not intended to be connected to a network.
- The PiVAT software will not allow users to save login information.
- Software allowing editing of PDF files have been removed.
- Changes to the PiVAT application configuration are recorded in the application audit log.
- Login attempts, including failed attempts are recorded in the application audit log.

LEGAL NOTICES

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Illumina™ is a registered trademark of Illumina, Inc., Ubuntu is a registered trademark of Canonical Ltd.
Chromium is a registered trademark of Google

COMPANY INFORMATION

	<p>Pillar Biosciences, Inc. 9 Strathmore Rd Natick, MA 01760 (800) 514-9307 techsupport@pillar-biosciences.com https://pillar-biosciences.com/</p>
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Appendices

Appendix A: FASTQ File Name Format



The naming of FASTQ files MUST follow the Illumina naming convention example sample name:
RDvUDpL82d170101iM1-My-first-sample-name_S1_L001_R1_001.fastq.gz

Name	Description
Sample Number	Any positive integer.
Read Direction	1 (forward) or 2 (reverse)
Lane number	0001 for Miseq, 0004 for Nextseq, 0008 or 0016 for Hiseq
File Splitting	If a FASTQ file is too big and needs to be split into multiple files, this number can be used to reassemble them

A full description of the Illumina FASTQ Name Format can be found under the "Naming" section here:
https://support.illumina.com/content/dam/illumina-support/help/BaseSpaceHelp_v2/Content/Vault/Informatics/Sequencing_Analysis/BS/swSEQ_mBS_FASTQFiles.htm



The following terms should be avoided as sample names: common and logs. Sample names should not vary by case only. **Do not use any patient identifiable information in any file names.**

Appendix B: Sample Batching

Batch is defined as a group of samples processed and tested together rather than individually. Batched samples must include a PosCtrl and an NTC. Sequencing on a single MiSeqDx flowcell may contain up to 6 batches of samples.

PiVAT enables independent analyses of the batches if defined in the “Description” column of SampleSheet.csv.

Pillar Biosciences provides a “Sample Sheet Tool” Excel spreadsheet. This tool is recommended for use to define batch analysis runs. It is loaded on the PiVAT system. It can be downloaded from the Help page. It can also be downloaded from the Pillar Biosciences website at:

<https://www.pillar-biosciences.com/resources/>



The Sample Sheet Tool must be run on a Windows system with Microsoft Excel installed.

If the Sample Sheet Tool is not used, the SampleSheet.csv can be edited to support batch analysis.

- Each sample in a batch must be assigned the same batch descriptor in the “Description” column.
- Each batch must have at least one PosCtrl and NTC assigned in the “Control” column.
- A maximum of 6 batches can run from a single flow cell.
- Batch names must consist of upper-case and lower-case letters, numbers, and underscores.

If there are any missing control elements, a warning will be displayed. Analysis tasks without all control elements will not run.

All of the PosCtrl and NTC entries in each batch must pass for a patient result report to be generated.



Patient identifiable information is not required for PiVAT analysis. Do not use any patient identifiable information in SampleSheet.csv or any of the control files.