April 2017

GeneRead Databank V 1.1

User Manual

Sample to Insight

QIAGEN

Contents

Introduction

1 Introduction

Thank you for choosing GeneRead Databank software by QIAGEN®. We are confident that this software will become an integral part of your laboratory.

1.1 About This Manual

This user manual is for the operation of GeneRead Databank with the QIAGEN GeneReader™ NGS System workflow. Before using GeneRead Databank software, it is recommended that you read this user manual.

This user manual provides information about the GeneRead Databank software in the following sections:

1.2 General Information

Scope of delivery

The delivery includes the following:

- GeneRead Databank software user manual (available for download at www.qiagen.com)

Note: the GeneRead Databank software is a web application that is installed only by QIAGEN Technical Service, so there is no separate installer for this software available.

Technical assistance

At QIAGEN we pride ourselves on the quality and availability of our technical support. If you have any questions or experience any difficulties regarding GeneRead Databank software or QIAGEN products in general, do not hesitate to contact us.
QIAGEN customers are a valuable source of information regarding our products. We encourage you to contact us if you have any suggestions or feedback concerning our products.
For technical assistance, contact QIAGEN Technical Services (www.support.qiagen.com).

For up-to-date information about GeneRead Databank software, visit www.qiagen.com.

Policy statement

It is the policy of QIAGEN to improve products as new techniques and components become available. QIAGEN reserves the right to change specifications at any time. In an effort to produce useful and appropriate documentation, we appreciate your comments on this user manual. Please contact QIAGEN Technical Services to provide your comments.

Version management

This document is the GeneRead Databank Software User Manual, version 1.1, for use with GeneRead Databank software version 1.1.

1.3 Intended Use of GeneRead Databank

GeneRead Databank is software that is intended to archive run data which have been created by the GeneReader Software.

GeneRead Databank is intended for Research Use Only. Not for use in diagnostic procedures.

1.4 Training for GeneRead Databank Users

Customers are trained by a QIAGEN representative upon installation of the GeneRead Databank software. The training covers general operation of the system including user management.
QIAGEN can also provide further training when necessary, such as after software updates, or for new laboratory personnel. Please contact QIAGEN Technical Services for more information about retraining.

Safety Information

2 Safety Information

The instructions and safety information in this user manual must be followed to ensure safe operation of GeneRead Databank software.

2.1 Proper Use

GeneRead Databank software must be operated by personnel familiar with the use of the associated QIAGEN instrumentation. Personnel must have been trained in its use or have read and demonstrated an understanding of this manual.

GeneRead Databank software can only be installed by QIAGEN Technical Services.

General Description

3 General Description

GeneRead Databank manages the run data which the GeneReader Software creates when executing a run on the GeneReader™ instrument. Run data need to be managed for two reasons:

1. Since a typical GeneReader run can generate up to 400 GB of data (for three flow cells with 157 cycles), the hard disk on the GeneReader™ workstation is limited and capable of storing up to a maximum of five runs. GeneRead Databank automatically moves all data from the GeneReader workstation to other storage media for mid-term and long-term storage.

2. Some of the data created during a run are only temporarily used for primary analysis to create FASTQ files. Once the primary analysis of the run data is complete, these data are no longer needed. GeneRead Databank automatically cleans up this temporary data to save disk space and to reduce costs for the mid-term and long-term storage of data.

GeneRead Databank automatically first moves GeneReader Software data to be archived to the central file storage on the QCI Powerstation for mid-term storage, then later moves the data to a file archive for long-term storage. A user can move this data back to the central file storage on the QCI Powerstation in the event he or she needs access to this data.

A user with "Administrator" rights can configure and activate the policies which control when and which files shall be deleted or moved from the GeneReader workstation to the central file storage or from the central file storage to the archive.

The following types of file archives are supported:

- a Network Attached Storage (NAS) device,
- the BLOB storage protocol of Microsoft® Azure® (for more details see https://azure.microsoft.com/en-us/services/storage/blobs/).

Any of the listed archive solutions must be provided by the customer. QIAGEN Technical Service is happy to provide support for configuration and integration of GeneRead Databank with the archive solution.

3.1 System Requirements

GeneRead Databank supports management of data generated by the GeneReader for Advanced Process Flow (APF) instrument configuration. Previous versions of the GeneReader are not supported.

GeneRead Databank is based on a client-server architecture. The core application runs on a server. The software is accessed and used with a browser.

Recommended browsers are:

Microsoft Windows

- Microsoft® Internet Explorer® 10 or later

- Firefox® 41.0 or later
- Google Chrome™ 45.0 or later

Screen resolution

The recommended screen resolution is:

- Minimum: 1280*720
- Maximum: 1920*unlimited

Archive

GeneRead Databank stores data in an archive, which must be configured during installation of the GeneRead Databank. Supported archive types are:

- a Network Attached Storage (NAS) device,
- the BLOB storage protocol of Microsoft Azure® (for more details see https://azure.microsoft.com/en-us/services/storage/blobs/).

Preliminary Tasks

4 Preliminary Tasks

Important: Before GeneRead Databank is installed on a GeneRead workstation on which GeneRead run data are stored, those data must be cleaned up or copied with the "Manage Files" functionality of GeneReader Software. The QIAGEN Technical Service representative will do this for you or will request that you execute the "Manage Files" clean-up when he/she installs and enables the GeneRead Databank software component on the GeneRead workstation.

Before users can start using GeneRead Databank, you must log in as administrator and create user accounts for those persons who shall have access to GeneRead Databank.

There is one administrator account created when the software is installed: its user name is "admin" (the quotation marks are not part of the user name), its initial password is "admin" (the quotation marks are not part of the password).

The first time you log in as "admin" you should immediately change the password of this user account to a secret one. The admin account is the only user with the ability to generate further user accounts. To find out how please see User Management for more details.

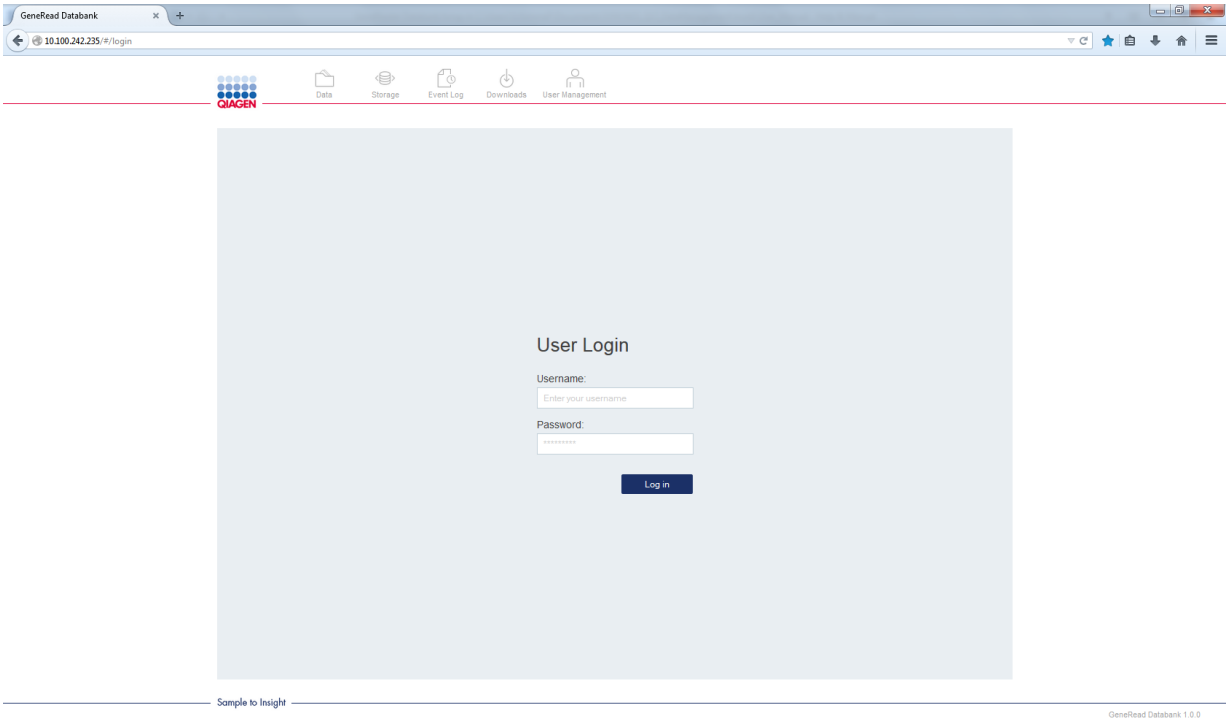
Logging In

5 Logging In

Every user must complete an authentication step before using GeneRead Databank.

Logging in to GeneRead Databank

1. Open your browser and open the login page URL (ask your local administrator for the URL and your login credentials)
2. The GeneRead Databank login page opens with user ID and password fields:



3. Enter your login credentials to the corresponding fields Username and Password
4. Click on Log in
5. The Data environment of GeneRead Databank is displayed.

You can log out either by clicking on the small door in the status bar or by closing the browser window.

Note: Contact your local administrator in case you cannot log in.

See chapter User Management for more details.

General Software Usage

6 General Software Usage

The following chapter describes the general software usage concept of GeneRead Databank.

6.1 Use of Color

GeneRead Databank has incorporated a specific color scheme in order to optimize you user experience. The following table provides an overview of the different colors used in the software and their dedicated meaning:

Color	Description
White field	The field is editable.
White field with red frame	The field requires a mandatory user input.
Dark blue button	The button can be clicked and has a significant function on this page.
Light blue button	The button can be clicked, but does not have a significant function.
Gray button	The button is inactive, e.g. because a mandatory field is empty.

6.2 Displaying Errors and Warnings

Errors and warnings are essential information for the user. These messages point to a problem or an erroneous situation. GeneRead Databank shows errors and warnings in two ways:

- If the user makes an incorrect entry in the UI, GeneRead Databank displays an error message near to the incorrect field or button which causes the error.
- System events that are not related to interaction with the UI, but to the activity of an underlying software component, are displayed in the Event Log.

6.3 General Elements

The following sections describe the general elements of the GeneRead Databank user interface.

6.3.1 Main Toolbar

The main toolbar on top of the screen displays the five environment icons:

A click on an environment icon shows the respective screen of the selected environment. The currently active environment is highlighted.

6.3.2 Tables

Tables are used in GeneRead Databank to display data:

Run	Flow Cells	Start date/time	GeneReader	Storagestatus	Action
FC_APF_25v1_IB_100um	1	2016/07/15 05:29 PM	1508008	Move to central storage scheduled for 2016/10/14 03:51 PM	
FC_Plasma_APF_2	1	2016/06/17 02:57 PM	1508008	Archiving scheduled for 2016/10/27 11:02 AM	

Show 10 entries Previous 1 Next

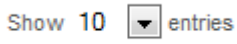
You can see if sorting by column is possible when you move the mouse over the column header. If the sort indicator icon ( ) appears, the table is sortable by this column. Two different icons exist to visualize an ascending or descending sorting order:

Ascending sorting:
The table is sorted by the selected column in ascending order

Descending sorting:
The table is sorted by the selected column in descending order

To toggle the sorting order from ascending to descending or vice versa, click the column header with the sort indicator icon. To sort the data in the table according to a different column, click the column header of the respective column.

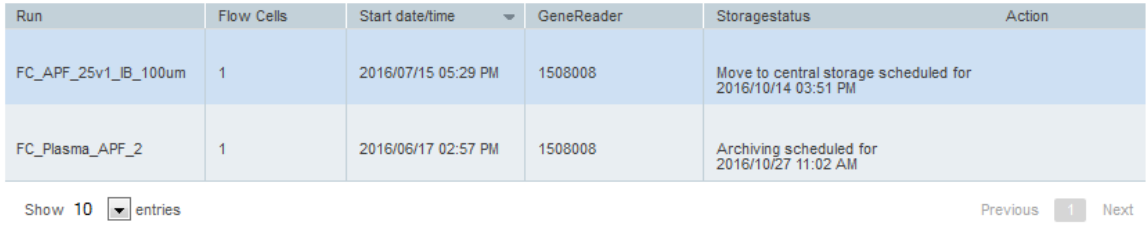
You can define the maximum number of entries in the drop-down box "Show ... entries":

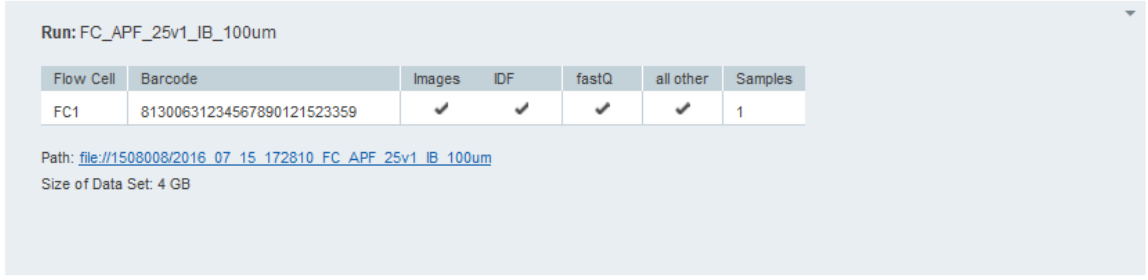


If there are more data entries than are possible to display on one page, the data are shown on multiple pages. You can navigate between the pages by clicking on the navigation symbols and/or page numbers:

Inactive symbols are grayed out. Active symbols are displayed in blue.

Further detailed information, if available, may be viewed by clicking on a table entry. Further information will then be displayed underneath the table:





Click on a table row to show or hide the detailed information for the selected row. The selected row appears in a light blue color, the other rows are displayed in an alternating gray and white color pattern.

6.3.3 Status Bar

The status bar is always visible at the bottom of the screen and displays the current user´s name (in the example: Tom Miller) and the log out button (door icon). If the current user has "Administrator" rights, then this is displayed with the suffix "(admin)" after the user's name.

GeneRead Databank Overview

7 GeneRead Databank Overview

Tasks

GeneRead Databank software performs the following tasks:

- GeneRead Databank automatically moves run data generated by the GeneReader Software to a central file storage on the QCI Powerstation as soon as the GeneReader Software notifies GeneRead Databank that a run has been completed and all data have been analyzed and processed.
- GeneRead Databank automatically deletes redundant run data, such as temporarily used images, in folders on the GeneReader workstation before archiving the relevant run data.
- GeneRead Databank automatically moves run data from the central file storage to an archive four weeks after they have arrived on the central file storage.
- GeneRead Databank allows the user to configure policies which control when and which data shall be automatically deleted or moved to the central file storage or to the archive.
- GeneRead Databank moves data back from the archive to the central file storage at the user's request.
- GeneRead Databank provides an overview of the disk space utilization for all involved file storage media, i.e. the GeneReader workstation, the central file storage on the QCI Powerstation, and the used archive.
- GeneRead Databank provides basic user management functions to grant access to users, rights for administration and to pull back data from the archive.

Technical information

The GeneRead Databank server is installed on a virtual machine which can run on the QCI Powerstation or an existing virtual host infrastructure. The virtual machine hosts the operating system, the GeneRead Databank software, the GeneRead Databank database and the central file storage for the GeneReader run data.

GeneRead Databank provides a web interface. The UI runs in a web browser and can be accessed from any device in the laboratory running standard browser software.

GeneRead Databank connects to GeneReader for automated data transfer: when a run on the GeneReader is finished, the GeneReader Software notifies the GeneRead Databank about this new run data. GeneRead Databank starts the data transfer and continues this until a new run on the GeneReader instrument is started. GeneRead Databank pauses a data transfer during a run on GeneReader and resumes the operation when the run is finished.

7.1 How GeneRead Databank Manages GeneReader Run Data

GeneRead Databank helps to manage the run data generated by the GeneReader. Most of the steps described below are automatically executed by the GeneRead Databank software, so user interaction with the system is very limited.

1. GeneRead Databank cleans up and archives data which are on a GeneReader workstation:

- The GeneReader Software generates different types of data when it processes a flow cell on the GeneReader instrument and subsequently analyzes the data. For each run, all processing and analysis data are stored in one folder on the GeneReader workstation.
- Once the GeneReader Software has completed processing and analysis, GeneReader Software transfers certain data to the software components QCI-A and/or GeneRead Link, if one of these software components is used by the customer.
- After this optional data transfer, GeneReader Software notifies GeneRead Databank about the new run data.
- If the GeneReader Software is not processing a run or analyzing run data, GeneRead Databank will start to move the run data to the central storage on the QCI Powerstation or delete the run data as it is configured in a policy for the GeneReader workstation.
- As soon as the GeneReader Software is starting the next run, GeneRead Databank will pause the clean-up and archiving activities.
- As soon as GeneReader Software has finished a run, GeneRead Databank will resume a previously paused clean-up and archiving job and start the next job.

2. GeneRead Databank stores run data on the central file storage on the QCI Powerstation:

- GeneRead Databank will store the run data on the central file storage on the QCI Powerstation for a time period that an administrator can configure in a policy for the central file storage; by default this time period is configured to four weeks. This storage on the central file storage is called "mid-term storage".
- During this time, users can access this data, e.g. for review purposes or when they are interested in details of the run data and/or generated reports. This is particularly relevant for those customers who do not use GeneRead Link.

3. GeneRead Databank archives run data on an archive medium:

- After a set time period, which is configured in a policy, NGS Data Management will move this data to an archive for long-term storage. Supported media-types are:
- a Network Attached Storage (NAS) device,
- the BLOB storage protocol of Microsoft Azure (for more details see https://azure.microsoft.com/en-us/services/storage/blobs/).

4. The user can unarchive (a term that refers to the instruction of moving the data from the archive back to the local computing system) run data for data inspection and other purposes:

- If a user needs access to run data which are stored in the archive, he or she must move the data from the archive back to the central storage on the QCI Powerstation. Users cannot access data directly from the archive, because the archive is optimized for secure and long-term storage, but not for random access.

5. GeneRead Databank re-archives manually unarchived data:

- GeneRead Databank will automatically move run data back to the archive after a set time period which is configured in the policy for the central file storage.

7.2 Working with GeneRead Databank

Use cases with instructions for use of GeneRead Databank are listed below:

Use Case	How to Use GeneRead Databank
As a user, I want to find data for a specific run.	Select the "Data" Environment: applying filter criteria to reduce the number results returned is optional. Run details, including the storage location and a path to access the data will appear in the details box.
As a user, I want to access data for a specific run.	The run data can be stored on one of three different storage devices: the GeneReader workstation, the central storage on the QCI Powerstation, or the archive. 1. If the run data is stored on the GeneReader workstation, you can access this data on the GeneReader workstation. 2. If the run data is stored on the central storage on the QCI Powerstation, you must use a PC which has access to the central storage. Ask your local IT admin if you do not know which PC to use. 3. If the run data is stored in the archive, you should use the "unarchive" button in the "Data" Environment to move the data to the central storage. Then you should use a PC with access to the central storage (see 2). Note that you must have the right to unarchive data.
As an administrator, I want to have information about the current disk utilization on the GeneReader workstation, central storage or archive.	Use the "Storage" environment to view the current disk utilization.
As an administrator, I want to create, edit, activate or deactivate a policy.	Use the "Policy Management" environment to manage policies.
As an administrator, I want to see if there are any errors reported for GeneRead Databank.	Use the "Event Log" environment to see potential warnings or error messages.
As an administrator, I want to create or edit a user account.	Use the "User Management" environment to create or edit user accounts.

Use Case	How to Use GeneRead Databank
As a user, I want to change my user account or password.	Use the "User Management" environment to edit your account.

Environments

8 Environments

GeneRead Databank is divided into five environments which are accessed from the main toolbar. The following table gives an overview of each environment and their respective functions.

Environment	Function
 Data	In the Data environment, you can view the run data managed by GeneRead Databank. If you have the respective right, you can unarchive a run from the archive to the central storage.
 Storage	In the Storage environment, you can view the disk space utilization of the managed storage devices.
 Policy Management	In the Policy Management environment, you can create, edit, activate and deactivate policies.
 Event Log	In the Event Log environment, you can view system event messages.
 Downloads	In the Downloads environment, the QIAGEN Technical Service representative can download the installation package for a software component that will be installed on the GeneReader workstation. Additionally, you can download a text file with license information.
 User Management	In the User Management environment, a user with the rights of "Administrator" can add and edit user accounts, including password changes. Also, any user can change his/her user account and password here.

8.1 Data

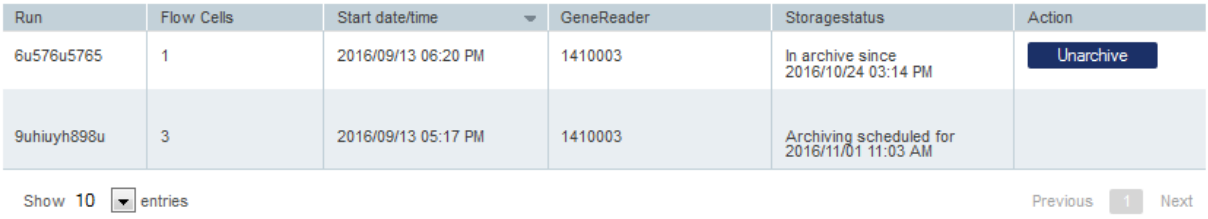
The Data environment shows all runs in which data are managed by GeneRead Databank, where the data are currently stored and if these data are currently planned to be moved to another storage device.

You can filter by different criteria and view detailed information about the data of a run. Users with the appropriate rights can unarchive the data of a run by using the "unarchive" button. This environment consists of:

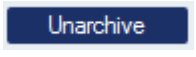
- a table with all runs managed by GeneRead Databank,

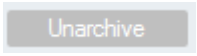
- a details box with information for a selected run,
- a filter in which you can define filter criteria to limit the number of runs to be displayed on one page.

Table with runs



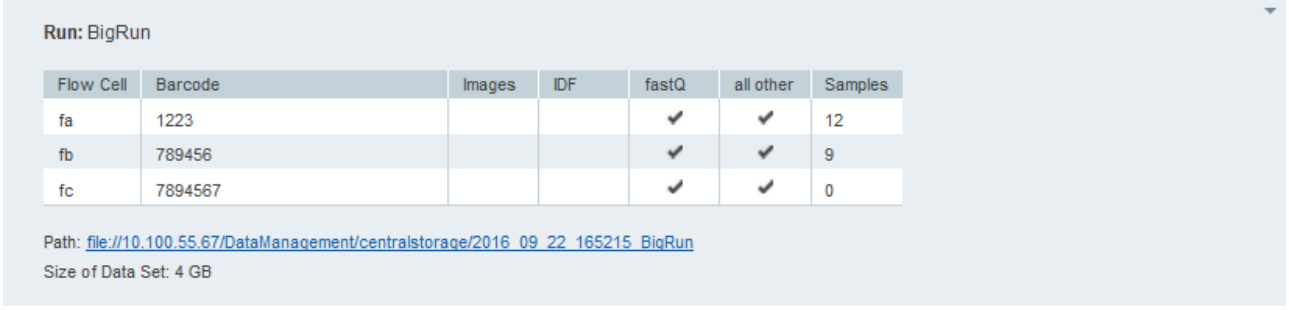
The table with runs displays information for all runs managed by GeneRead Databank. The columns in the table are:

Column Header	Description
Run	The name of the run as defined in GeneReader Software.
Flow Cells	The number of flow cells which have been processed in the run.
Start date/time	The start date and time of the run.
GeneReader	The ID of the GeneReader on which the run was processed.
Storage status	The storage status of the run. The following status are possible: • "Move to central storage scheduled for (date/time)": The data of this run are currently stored on the GeneReader workstation and will be moved to the central storage at the specified date and time. • "Moving to central storage since (date/time)": The data are currently in the process of being transferred from the GeneReader workstation to the central storage. • "Archiving scheduled for (date/time)": The data of this run are currently stored on the central storage and will be archived at the specified date and time. • "Archiving since (date/time)": The data are currently in the process of being transferred from the central storage to the archive. • "In Archive since (date/time)": The data of this run are stored in the archive since the specified date and time. • "Unarchiving since (date/time): The data are currently in the process of being transferred from the archive to the central storage.
Action	If the run data is currently stored in the archive, a button labeled "Unarchive" is displayed in either dark blue or gray:  The button is active: The storage status is "In Archive since ..." and the current user has the right to unarchive.

Column Header	Description
	The button is inactive: The run data is currently being unarchived, or the current user does not have the right to unarchive.

Details box

The details box provides more information about the currently selected run:



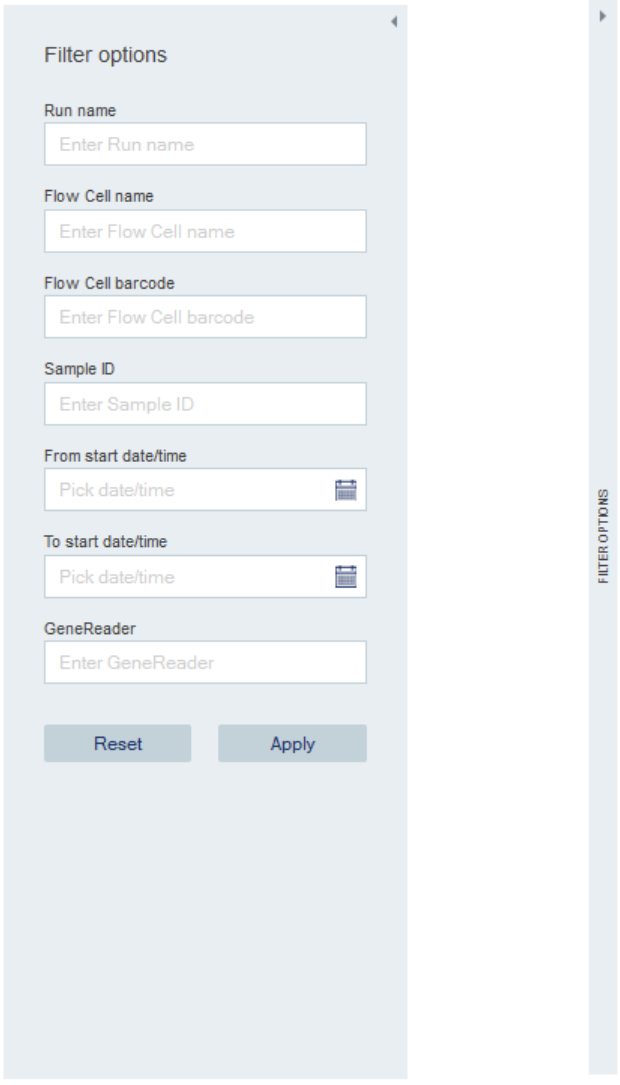
You can hide or show the details box by clicking on the small triangle in the upper right corner:

Column Header/Element	Description
Run	The name of the run as defined in GeneReader Software.
Flow Cell	The names of the flow cells.
Barcode	The barcodes of the flow cells.
Images	A check mark indicates if image files are stored for the flow cell, otherwise the field is empty.
IDF	A check mark indicates if intensity definition files (IDF) are stored for the flow cell, otherwise the field is empty.
fastq	A check mark indicates if FASTQ files are stored for the flow cell, otherwise the field is empty.
all other	A check mark indicates if all other files generated during a GeneReader run are stored for the flow cell, such as reports, log files and other files in the sub-folder "Analysis". Otherwise the field is empty.
Samples	The number of samples processed in the respective flow cell.

Column Header/Element	Description
Path	The path where the run data is currently stored. The user can copy this path into the clipboard and paste it into the address bar of Windows Explorer to access this folder if it points to a GeneReader workstation or the central storage on the QCI Powerstation. If the path points to a folder on the QCI Powerstation, the user must have the right to access the file share which is granted by the QIAGEN Technical Service representative or your I.T. Support Desk.
Size of Data Set	The size of the run data set in gigabytes (GB).

Filter options

The filter options allow you to reduce the number of runs to be displayed on one page and to search for specific runs with search criteria.



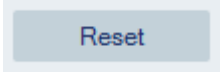
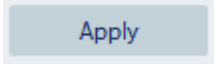
You can hide or show the filter options by clicking on the small triangle in the upper right corner.

There are two types of fields that you can filter:

- Text fields allow you to filter by a string containing alphanumeric characters. The Results List will contain all runs which match this string: this is also true if you use a sub-string, e.g. one or multiple characters or digits.
- Date/time fields allow you to filter by a date or date range.

The results will contain only those runs which match **all** specified filter criteria.

Field/Button	Type	Description

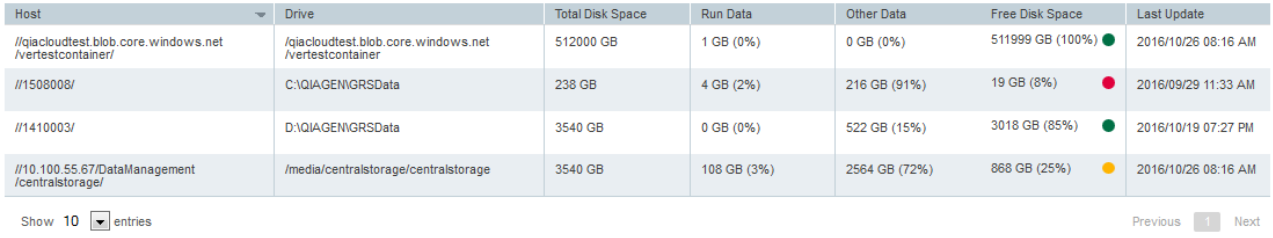
Run name	Text field	The name of a run, or a sub-string of it. The results will return all runs in which the run name matches the given (sub-) string.
Flow Cell name	Text field	The name of a flow cell, or a sub-string of it. The results will return all runs in which the flow cell name matches the given (sub-) string.
Flow Cell barcode	Text field	The barcode of a flow cell, or a sub-string of it. The results will return all runs in which the flow cell barcode matches the given (sub-) string.
Sample ID	Text field	The ID of a specific sample, or a sub-string of it. The results will return all runs in which the processed samples match the given (sub-) string.
From start date/time	Date/time field	The date and time on or after which a run was started. You can enter date and time information or use the date and time picker. The results will return all runs started on or after the given date and time.
To start date/time	Date/time field	The date and time until when a run was started. You can enter date and time information or use the date and time picker. The results will return all runs started on or before the given date and time.
GeneReader	Text field	The name of the GeneReader, or a sub-string of it, on which the run was processed. The result list will return all runs in which the GeneReader name matches the given (sub-) string.
Reset	Button	The button  clears all fields in the filter options. Note that you have to press the "Apply" button to apply this new filter to the result list.
Apply	Button	The button  applies the filter options to the result table and lets the table update.

8.2 Storage

The Storage environment displays the current utilization of the disks on which run data are stored.

The most important information in this table is how much free disk space is available on a certain drive. If the free disk space runs below a critical level, the user or administrator should take actions to free the drive from run or other data.

If the free disk space on a GeneReader workstation is below a critical level, it is very likely that the GeneRead Databank has not been running and did not clean up and move GeneReader run data from the GeneReader workstation to the central storage. In this event, the GeneRead Databank should be allowed to handle runs which are in storage status "Move to central storage scheduled for (date/time)". See the Data environment for more details. Also the administrator might have a look into the Event Log environment to see if there are any errors reported.



Host	Drive	Total Disk Space	Run Data	Other Data	Free Disk Space	Last Update
//qiacloudtest.blob.core.windows.net /vertestcontainer/	/qiacloudtest.blob.core.windows.net /vertestcontainer	512000 GB	1 GB (0%)	0 GB (0%)	511999 GB (100%)	2016/10/26 08:16 AM
//1508008/	C:\QIAGEN\GRSData	238 GB	4 GB (2%)	216 GB (91%)	19 GB (8%)	2016/09/29 11:33 AM
//1410003/	D:\QIAGEN\GRSData	3540 GB	0 GB (0%)	522 GB (15%)	3018 GB (85%)	2016/10/19 07:27 PM
//10.100.55.67/DataManagement /centralstorage/	/media/centralstorage/centralstorage	3540 GB	108 GB (3%)	2564 GB (72%)	868 GB (25%)	2016/10/26 08:16 AM

Show 10 entries Previous 1 Next

This information is shown in the table:

Column Header	Description
Host	The name of the host, i.e. computer or archive, on which the data are stored.
Drive	The name of the drive or folder, in which the data are stored.
Total Disk Space	The total disk space, i.e. capacity, of the drive, in gigabytes (GB).
Run Data	The size of GeneReader run data on the drive in gigabytes (GB), and the percentage of the total disk space used for the run data.
Other Data	The size of data other than GeneReader run data on the drive in gigabytes (GB), and the percentage of the total disk space used for this other data.
Free Disk Space	The size of free disk space on the drive in gigabytes (GB), the percentage of total disk space. A traffic light color indicates if the free disk space is sufficient or below a critical level: ● The free disk space is above 25% of the total disk space. ● The free disk space is below 25% of the total disk space. ● The free disk space is below 10% of the total disk space.
Last Update	The date and time when the information in this row was updated.

8.3 Policy Management

The Policy Management environment allows you as an administrator to create, edit, delete, activate and deactivate so-called policies that control how GeneRead Databank handles data on the GeneReader workstation and the central file storage.

A policy is a rule-set which controls:
- which device, i.e. GeneReader workstation or central file storage,
- which GeneReader data, e.g. image files or FASTQ files,
- which data are deleted or moved to another storage device,
- and how long the data shall reside on the device before they are deleted or moved to another storage device.

Important: It is strongly recommended that there is always one active policy for the GeneReader workstation and one for the central file storage so that run data are automatically moved or deleted on the GeneRead workstation and the central file storage. This is required to enable GeneRead Databank for continuous management of your GeneReader data and to prevent the GeneReader workstation from running out of free disk space.

Table with policies

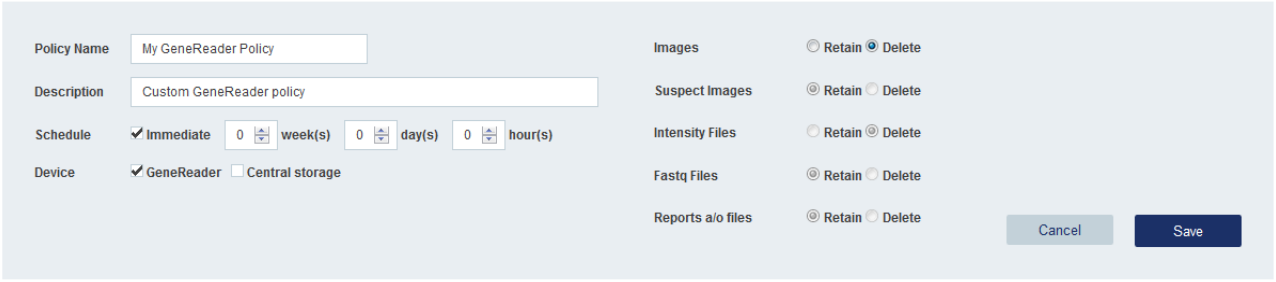
After installation of the GeneRead Databank, you see two active default policies that you cannot modify:

Active	Policy Name	Description	Schedule	GR	CS	Action
✔	GeneReader	Default policy for GR workstation	Immediately	✔		Deactivate
✔	Central Storage	Default policy for Central Storage	4 week(s)		✔	Deactivate

Column Header	Description
Active	A check mark indicates that the policy is active.
Policy Name	The name of the policy.
Description	A description of the policy.
Schedule	Values are either "Immediately" if data are moved and/or deleted as soon as possible after arriving on the respective device, or a schedule in weeks, days and/or hours after which data are moved or deleted.
GR	A check mark indicates that the policy applies to the GeneReader workstation.
CS	A check mark indicates that the policy applies to the central file storage.
Action	Depending on if the policy is currently active or inactive and if the policy is a default or a custom policy, different actions are possible: Deactivate If the policy is currently active, you deactivate it. Activate If the policy is currently inactivate, you activate it. Delete If the policy is currently inactive and a custom policy, you can delete it.

If you want to create a new policy, click on the button New. If you want to edit a policy that you have created, select the respective row of the table.

Please note that you cannot modify default policies. Those policies will be shown as read-only. In both cases you will see a details box where you can see or change the policy's properties:



Field	Description
Policy Name	The name of the policy.
Description	A description of the policy.
Schedule	You can check the "Immediate" check-box, or you can define a schedule in week(s), day(s) and/or hour(s). The schedule will define after which period data will be deleted or moved after they have arrived on the respective device(s) that you define in the "Device" settings.
Device	The policy will be applied to the selected device(s): you can check one or both devices.
Images Suspect Images Intensity Files Fastq files Reports a/o files	For images, you can decide if the files should be retained or deleted. All other file types have been pre-defined as "read-only" and marked as "deleted" or be visible as "retained files" so that QIAGEN Technical Service or your Administrator can analyze your system for suspect images
Cancel	The Cancel button is to revoke any changes.
Save	The Save button is to store your changes. The button remains inactive as long as mandatory data are missing.

Depending on a policy's current activity status (indicated in the table column "Active"), you can deactivate or activate the policy, as well as delete an inactive custom policy:

- Policy is active:
  - You can deactivate it by clicking the "Deactivate" button.
  - When you deactivate the policy, GeneRead Databank will finish existing jobs for deleting and moving of data, but GeneRead Databank will not create new jobs for data that have arrived on the selected device.

- Policy is not active:
  - You can activate it by clicking on the "Activate" button. By doing so, the previous policy that was active for that device will now be deactivated.
  - If you activate a policy that applies to both the GeneReader workstation and the central file storage, previous policies for both will now be deactivated.
  - When you activate a policy, GeneRead Databank will create new jobs for deleting and moving the data according to the settings of the now activated policy. GeneRead Databank will not change the properties of already existing jobs; those will remain according to the settings of the policy which was active when the jobs were created.
  - If a custom policy is not active, you also can delete the policy. Deleting default policies is not possible.

Important: If there is no active policy for the GeneReader workstation or the central file storage, data on these devices will not automatically be deleted or moved to another storage device. This can result in no data being stored due to a full disk. You should not run GeneRead Databank without active policies. You should also regularly monitor the disk space utilization in the Storage environment to ensure optimal use.

8.4 Event Log

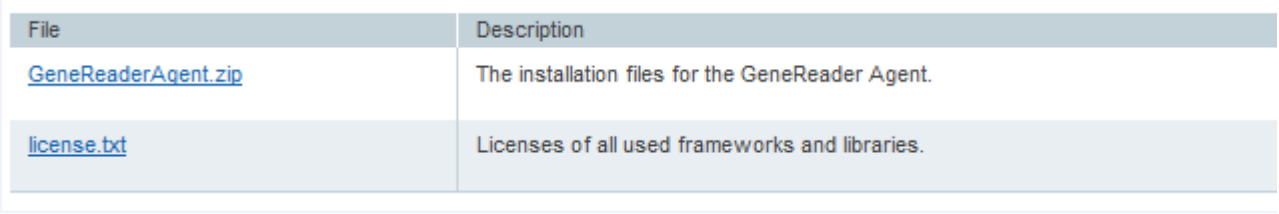
The Event Log environment shows event messages that might be relevant to understand the current status of the GeneRead Databank system. There should be no messages shown if the system is in good condition. Messages displayed here have different levels of severity:

Severity	Description
Info	An event message with this level of severity is for your information only.
Warning	An event message with this level of severity shows that the system is behaving differently from expected in a non-critical function. The system might have applied a self-recovering action. The user should inspect the root cause and fix the problem when time allows, but there is no need for immediate action.
Error	An event message with this level shows that the system is not behaving as specified in a critical function, but it continues working and no data are lost. However, the user should immediately take the appropriate corrective action which is described in the error message.
Fatal	An event message with this level of severity shows that the system is not behaving as specified in a critical function, and it has stopped working and/or data are lost. The user must take immediately the corrective action as described in the message.

Important: In case you see event messages with the severity level "Error" or "Fatal", you should immediately contact QIAGEN Technical Services.

8.5 Downloads

The **Download** environment provides access to files which can be downloaded. This environment is not relevant for daily use of GeneRead Databank in the lab, but only for installation (which is done by your QIAGEN Technical Service representative) and for information about licenses of third-party software included in the GeneRead Databank software, where the license holder requires QIAGEN to publish the license conditions.



Column header	Description
File	The name of the file which can be downloaded per click on the hyperlink.
Description	The description of the content of the file.

8.6 User Management

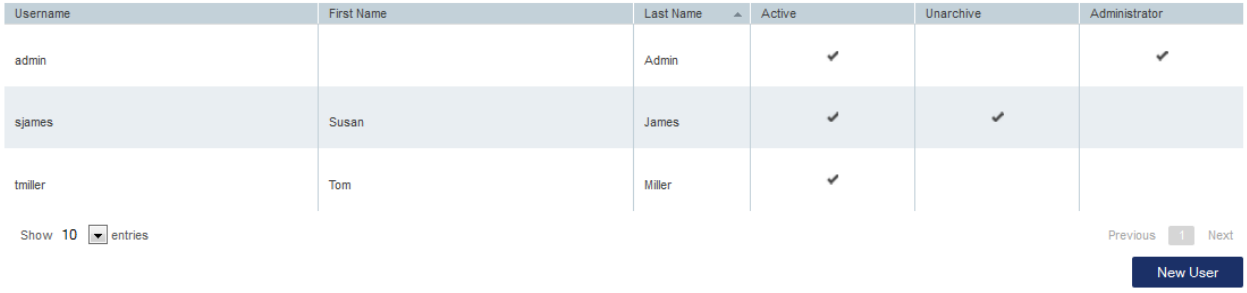
User accounts are managed in the User Management environment.

The functionality is different if the user is logged in with or without the rights of an "Administrator":

- When you are logged in as a user with the rights of an "Administrator", you can create and edit user accounts and assign rights to every user (including your own).
- When you are logged in as a user without rights of an "Administrator", you can only modify your own credentials and cannot make changes to other users' profiles.

User with "Administrator" rights is logged in

When you are logged in with a user account that has the rights of an "Administrator", you will see this table of existing user accounts, where you can create a new user account or select an existing account for editing:



This table is only visible for users who have the rights of an "Administrator".

In addition to the user name, the first and the last name, permissions will also be displayed in the table. There are three permissions available:

Right	Description
Active	Controls if this user has the right to log in.
Unarchive	Controls if this user has the right to unarchive a run from the archive to the central storage.
Administrator	Controls if this user has right to create and edit user accounts. You can create user accounts on your own which have the role "Administrator".

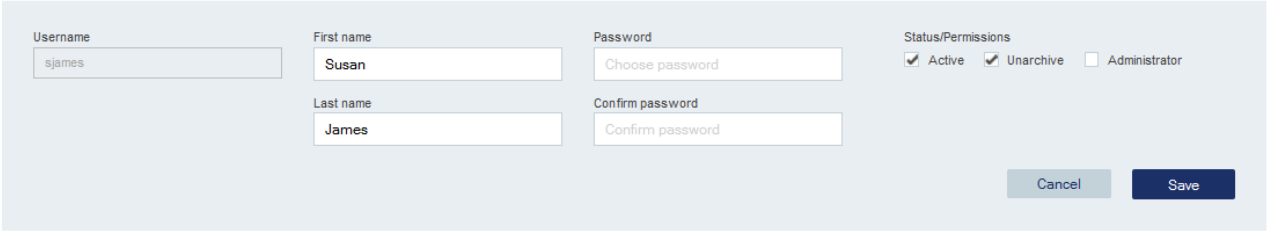
Note: The user account "admin" is automatically available after the software has been initially installed with the initial password set as "admin" (the quotation marks are not part of the account or password). You should change the password of the account "admin" to a secret one immediately after your first log in.

Note: You must not revoke the right "Active" from the user "admin" unless you have another user account with role "Administrator" as you will no longer be able to create new, or edit current user accounts. In the event that you do this in error, please contact your QIAGEN Technical Service representative.

If you want to edit an existing user account, please select the appropriate row in the table. If you want to create a new user account, click on the button 

.

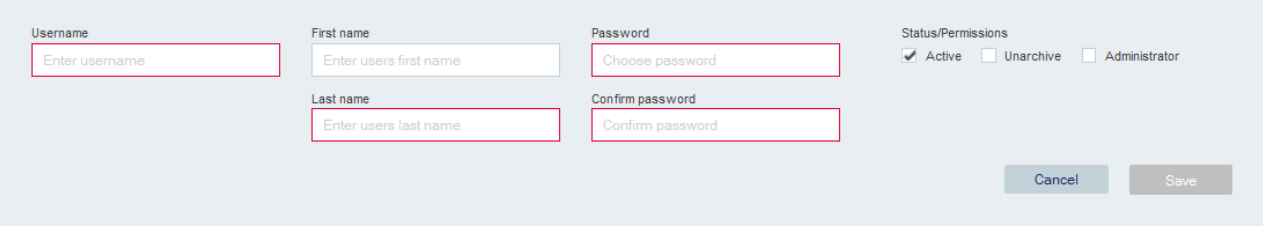
In both cases, you will see the user details box, either with filled (existing user) or with empty (new user) fields:



Field	Description
Username	The user name by which the user can log in.
First name	The first name of the user.
Last name	The last name of the user.
Password	The password of the user. You can use any password, there is no password policy checked.
Confirm password	The repeated password. It must match the "Password" entry, otherwise you cannot save the data.
Status/Permissions	The three permissions as described above. You can set a check mark to grant the permission to the respective user account. Please note: Although technically possible, do not revoke the permission "Active" from your "admin" account!
Cancel	The Cancel button is to revoke any changes.
Save	The Save button is to store your changes. The button remains inactive as long as mandatory data are missing or if the entries in the two password fields do not match.

Note: For username and password, you can use all ASCII 7-bit characters, i.e. upper case (A - Z), lower case (a - z), digits (0 - 9) and the special characters !"#$%&'()*+-./=?. You must **not** use the extended ASCII code characters, such as ISO-Latin 1 with German "Umlaute", special Scandinavian, Eastern Europe, Arabic or other language specific characters.

Mandatory fields are shown with a red frame until they are filled. As long as at least one mandatory field is empty or in case the entries in field "Password" and "Confirm password" do not match, the "Save" button is disabled.



You can set and revoke permissions by checking or un-checking the fields "Active", "Unarchive" and "Administrator". A check mark indicates that the respective permission is granted to the user account.

User without "Administrator" rights is logged in:

As a user without the permission rights of an "Administrator", you will see the details box with your credentials as described in the section above. You can change your first name, your last name and your password. You cannot change your username nor your permissions, which are displayed as read-only.

Troubleshooting

9 Troubleshooting

The following issues describe some of the most frequent error situations you might experience when using GeneRead Databank. These issues are grouped thematically.

Log in

Problem	Approach/Solution
No login screen	Contact your IT administrator to restart the GeneRead Link virtual appliance. In case the problem persists contact QIAGEN Technical Service.
A certain user cannot log in (password forgotten/account locked)	A user with the rights of an "Administrator" has to reset the password and/or grant the permission "Active". Refer to chapter "User Management" for more details.
A user with permission "Administrator" cannot log in	Another user with "Administrator" permissions has to grant the "Avtive" permission. If another user account with permission "Administrator" does not exist, please contact QIAGEN Technical Service.

Presentation of GeneRead Databank in browser

Problem	Approach/Solution
Colors and icons do not match colors shown in the user manual	Use one of following browsers: Microsoft Windows • Microsoft Internet Explorer 10 or 11 • Firefox 41.0 or later • Google Chrome 45.0 or later Additionally, delete the cache in your browser and restart the browser (see your browser help for further details).

Management of runs

Problem	Approach/Solution
A run remains on the GeneReader workstation although it has the storage status "Move to central	The GeneReader might be in continuous use, so that GeneRead Databank did not get a time slot to start or continue the job to move / clean-up data. As long as

Problem	Approach/Solution
storage scheduled for (date/time)" and the date/time has been reached.	the free disk space is sufficient (see "Storage" environment), there is no action to be taken. However, if the free disk space runs under 25% or even 10%, you should wait with the next GeneReader run until the free disk space has reached an uncritical level, i.e. above 25%.
A run remains in status "Archiving since" or "Unarchive since" for a very long time, e.g. more than a day.	The network connection between the GeneReader workstation and the QCI Powerstation or the QCI Powerstation and the archive might be interrupted. Contact your local IT admin to investigate. GeneRead Databank will resume to move data as soon as the network connection is re-established.
Run data remain on the GeneReader workstation although GeneRead Databank is installed.	Possible root cause #1: GeneRead Databank is not enabled in the GeneReader Software. It is configurable in the GeneReader Software if GeneRead Databank shall be used or not to manage run data; please refer to the GeneReader Software user manual for how to enable GeneRead Databank. In the event that GeneRead Databank is disabled in the GeneReader Software, GeneRead Databank will not manage those run data which have been generated. If GeneRead Databank has been temporarily disabled in the GeneReader Software and enabled again, GeneRead Databank will ignore those run data which have been created while GeneRead Databank was disabled. It is strongly recommended **not** to switch the GeneRead Databank configuration setting in GeneReader Software once GeneRead Databank has been enabled and started to manage the run data. Possible root cause #2: No active policy There might not be an active policy for the GeneReader workstation. Please check in the "Policy Management" environment if there is no active policy. In this case, please activate the "GeneReader Default Policy" or create and activate your custom policy.

Messages shown in the Event Log

Message ID	Message Text	Approach/Solution
010002	The agent handling storage "<global path of the storage unit>" has not sent updates on the storage's status for more than "<maximal allowed number of hours between updates from agent>" hours. The agent might be down. Please check, if the agent is still running on the storage's machine.	Contact QIAGEN Technical Service and provide the message ID and the complete message text.
020004	File or directory "<file or directory name to be copied>" cannot be found at "<locally mapped path to file or directory to be copied>". Copy task for file or directory was skipped. For details check log files.	This message is a warning that a file or directory which was initially found by GeneRead Databank is no longer available, most likely because a user has deleted or moved this file or directory. There is no action required.
020006	File or directory at "<locally mapped path to file or directory to be deleted>" could not be deleted due to an unknown error. File or directory will not be managed by the system from now on. To free disk space, please delete manually. A valid copy of the data, that is handled by the system, has been made. For more details check log files.	Contact QIAGEN Technical Service and provide the message ID and the complete message text.
030004	File or directory "<file or directory name to be copied>" cannot be found at "<locally mapped path to file or directory to be copied>". Copy task for file or directory was skipped. For details check log files.	This message is a warning that a file or directory which was initially found by GeneRead Databank is no longer available, most likely because a user has deleted or moved this file or directory. There is no action required.
030006	File or directory at "<locally mapped path to file or directory to be deleted>" could not be deleted due to an unknown error. File or directory will not be managed by the system from now on. To free disk space, please delete manually. A valid copy of the data, that is handled by the system, has been made. For more details check log files.	Contact QIAGEN Technical Service and provide the message ID and the complete message text.

Glossary

10 Glossary

A	
Archive	A long term storage device for data.
Archiving	The process when data are moved from the central storage to an archive.
C	
Central storage	The file share on the QCI Powerstation on which run data are stored.
D	
Data set	A collection of data, usually a folder with run data containing sub-folders and data.
F	
FASTQ file	A text-based file format for storing both a biological sequence (usually nucleotide sequence) and its corresponding Phred quality scores. Both the sequence letter and quality score are encoded with a single ASCII character for brevity. It was originally developed at the Wellcome Trust Sanger Institute to bundle a FASTA sequence with its quality data, but has recently become the de facto standard for storing the output of high throughput sequencing instruments such as the Illumina Genome Analyzer.
File share	An area on a storage medium (e.g. a hard disk) which can be accessed from another computer. Access to this area requires an authentication.
Flow cell	A disposable device in which sequencing reactions take place. The flow cell comprises a microchannel

	with inlet and outlet ports covered by a highly transparent lid forming the top surface on which sample objects are immobilized inside the flow cell. Liquid reagents can be pumped through the flow cell by machines to automate sequencing reaction steps. Immobilized sample objects can be interrogated by light through the transparent top surface to monitor progress of sequencing reactions.
G	
GeneReader workstation	The computer on which the GeneReader software is running.
N	
Network Attached Storage (NAS)	A hardware device that is integrated into the customer's IT network and serves as storage medium for a large amount of data.
Q	
QCI Powerstation	The computer server on which the GeneRead Databank is running and on which the central storage is located.
R	
Run	An automated process beginning with setting up the instrument and input material to receiving the result for the respective process.
S	
Sample	A sample is a portion of a biological material to be tested. For describing automated processes, "sample" includes generally also calibrators and controls. To avoid ambiguity, the terms "patient

	samples", "clinical samples" or "routine samples" should be used to exclude calibrators and controls for this definition.
U	
Unarchiving	The process when data are moved from the archive to the central storage.
User	All persons who are directly interacting with the system during routine use, service, maintenance, production and development.

License Terms

11 License Terms

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1106785 04/2017 HB-2314-002