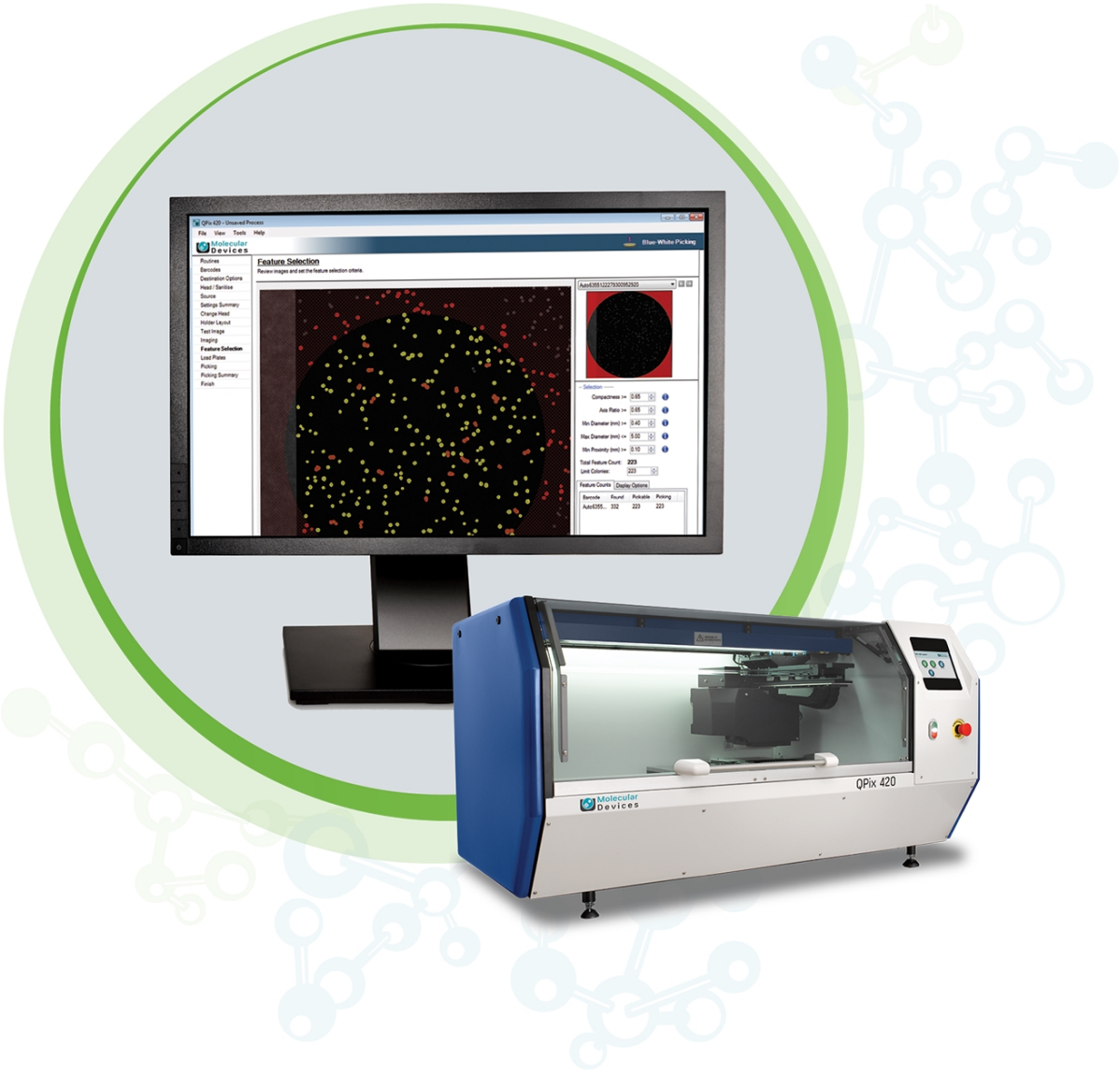

QPix 420

Microbial Colony Picking System

Software Release Notes

v2.6.1
November 2022

MOLECULAR DEVICES

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Chapter 1: QPix 420 Software Version 2.6.1 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.6.1 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.5.79, the last general release of the software.

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.6.1

The following new features are included in QPix 420 software version 2.6.1.

Add Support For New Basler Camera

Tracking ID: 6549

Adding support for Basler Camera acA1300-60gm

Impact of fix:

This fix has no impact on current workflow or data.

Issues Addressed in QPix 420 Software v2.6.1

The following issues were addressed in QPix 420 software version 2.6.1.

Agar Height Error in Custom Plate With Low Well Count

Tracking ID: 6547

Custom regional plate displays agar height error when the well count is low.

Impact of fix:

This fix has no impact on current workflow or data.

Update Issue in Regional Picking Tray Diagram

Tracking ID: 6548

Tray diagram in regional picking does not update when switching to a different tray.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 2: QPix 420 Software Version 2.5.79 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.5.79 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.5.73, the last general release of the software.

The following topics are included in this chapter:

- Issues Addressed in QPix 420 Software v2.5.79

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Issues Addressed in QPix 420 Software v2.5.79

The following issues were addressed in QPix 420 software version 2.5.79.

Regional Picking Reserve Wells for Region Error

Tracking ID: 5340

Fixed the issue in Regional Picking for when the Reserve Wells for Regions option is active, if no colonies are found in some of the regions, there is a software error.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 3: QPix 420 Software Version 2.5.73 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.5.73 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.5.67, the last general release of the software.

The following topics are included in this chapter:

- New in QPix 420 Software v2.5.73
- Issues Addressed in QPix 420 Software v2.5.73

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.5.73

The following new features are included in QPix 420 software version 2.5.73.

SQL Server 2017 Express Edition Support

Tracking ID: 5410

Adds software support for SQL Server 2017 Express Edition.

Issues Addressed in QPix 420 Software v2.5.73

The following issues were addressed in QPix 420 software version 2.5.73.

Agar Picking Problems

Tracking ID: 5415

Agar picking had the following problems:

1. The distance sensor was hitting the edges and gaps instead of the agar for some plate types.
2. After measuring the agar height, only one agar height number displayed on screen, even when switching to the next tray.

Resolution:

The following fixes are implemented:

1. The distance sensor is now positioned safely on the agar for all plate types.
2. The appropriate agar height measurements display on screen when toggling between trays.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 4: QPix 420 Software Version 2.5.67 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.5.67 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.5.66, the last general release of the software.

The following topics are included in this chapter:

- Issues Addressed in QPix 420 Software v2.5.67

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Issues Addressed in QPix 420 Software v2.5.67

The following issues were addressed in QPix 420 software version 2.5.67.

Modifying a Previously Created Routine and Skipping Steps Errors

Tracking ID: 4096

Selected settings from a saved routine protocol are used instead of the default setting when setting up a new routine.

Resolution:

Fixed

Impact of fix:

This fix has no impact on current workflow or data.

QPix 420 Wash and Dry Stations Y Position Error

Tracking ID: 5316

During a Sanitize, there is a Y position error using the wash and dry stations.

Resolution:

Fixed

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 5: QPix 420 Software Version 2.5.66 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.5.66 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.5, the last general release of the software.

The following topics are included in this chapter:

- New in QPix 420 Software v2.5.66 on page 13

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.5.66

The following new features are included in QPix 420 software version 2.5.66.

Windows 10 Operating System Support

Adds software support for the Windows 10 (64-bit) operating system.

Chapter 6: QPix 420 Software Version 2.5 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.5 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.4.52, the last general release of the software.

The following topics are included in this chapter:

- New in QPix 420 Software v2.5 on page 15
- Modifications Made to QPix 420 Software v2.5 on page 15

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.5

The following new features are included in QPix 420 software version 2.5.

Windows 10 Operating System Support

Tracking ID: 5116

Adds software support for the Windows 10 (32-bit) operating system.

Modifications Made to QPix 420 Software v2.5

The following modifications were made to QPix 420 software version 2.5.

Maximum Number for Dipping

Tracking ID: 5112

For all picking applications, for dipping, the maximum number is increased from five to 50.

Maximum Number for Stirs

Tracking ID: 5115

For all picking applications, for stirring, the allowed number is increased to 20.

Chapter 7: QPix 420 Software Version 2.4.52 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.4.52 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.4, the last general release of the software.

The following topics are included in this chapter:

- Issues Addressed in QPix 420 Software v2.4.52 on page 17

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Issues Addressed in QPix 420 Software v2.4.52

The following issues were addressed in QPix 420 software version 2.4.52.

Incorrect Destination Plate Diagram in Picking

Tracking ID: 5039

In **Picking**, when a multiple plate source with **Limit Max. Number Of Features Per Position** and **Reserve Wells For Positions** is selected, and then continuing to pick from another source plate, the number of and location of the partially filled and any additionally required destination plates are displayed in the destination diagram in the wrong positions.

Resolution:

The number of required destination plates and their positions displayed in the destination diagram is now accurate.

Impact of fix:

This fix has no impact on current workflow or data.

Unidentified Valid Picks From 96-Well Custom Plate in Regional Picking

Tracking ID: 5041

In **Regional Picking**, when using a 96-well custom plate with the **Limit Max. Number Of Features Per Region** set to 1 or 2 features per well, results in **Feature Counts** for the **Pickable** counts to display valid colonies, but 0 is displayed in the corresponding **Picking** counts for most of the wells in the **Feature Selection** screen.

Resolution:

The **Picking** counts now match the **Pickable** counts in the **Feature Selection** screen when using a 96-well custom plate with the **Limit Max. Number Of Features Per Region** set to 1 or 2 features per well for **Regional Picking**.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 8: QPix 420 Software Version 2.4 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.4 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.3, the last general release of the software.

The following topics are included in this chapter:

- New in QPix 420 Software v2.4 on page 19
- Modification Made to QPix 420 Software v2.4 on page 20
- Issues Addressed in QPix 420 Software v2.4 on page 20

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.4

The following new major features are included in QPix 420 software version 2.4.

Option to Change the Pin-Firing Speed for Re-Arraying

Tracking ID: 5011

Reducing the pin-firing speed can prevent cross-contamination due to occasional splashing that can occur with normal pin-firing speed. However, this significantly increases the amount of time required for the Re-Arraying process.

To reduce the pin-firing speed in a Re-Arraying process, in the **Source** window, select the **Slow Pin Fire** check box. To use the normal pin-firing speed, clear this check box.

Option to Change the Head Before Starting Camera Alignment

Tracking ID: 5014

After you start the camera alignment process, you can change the head to a standard 96-pin picking head without the need to close the process.

If you do not have a standard 96-pin picking head installed, then click **Move to Load Position**. After you have installed the standard 96-pin picking head, click **Move to Park Position** and then click **Next**.

Offset Settings for Gridding

Tracking ID: 5030

If the pins do not align correctly with a QTray or Omni Tray destination during Gridding, adjusting the offset can help align the pins with the destination.

The Gridding offset is part of the instrument configuration. Contact your Field Service Engineer to change this offset value setting for your system. See Obtaining Support on page 50.

Modification Made to QPix 420 Software v2.4

The following modification was made to QPix 420 software version 2.4.

Modify Regional Tray Definitions

Tracking ID: 5015

In addition to creating and removing regional tray definitions, the software allows modifying and copying the definitions.

To modify a previously created regional tray:

1. From the **Navigation** window under **Picking Processes**, double-click the **Manage Regional Trays** icon.
2. Click the **Manage Previously Created Trays** tab.
3. From the **Defined Trays** list, select the name of the tray that you want to modify.
   - To modify the existing definition, edit the parameter fields on the left side of the window using the manufacturer's specification document and then click **Save Regional Tray**.
   - To make a copy of the existing definition, type a new name for the regional tray in the **Regional Tray Name** field and then click **Save Regional Tray**.
   - To delete the existing definition, click **Remove**.
4. In the confirmation message, click **Yes**.
5. Click **Close** to return to the **Navigation** window.

Issues Addressed in QPix 420 Software v2.4

The following issues were addressed in QPix 420 software version 2.4.

Using Custom Plates in a Saved Regional Picking Routine Causes the Software to Stop

Tracking ID: 5008

An error in Regional Picking when using more than one custom source plate causes the software to stop.

Resolution:

Regional Picking with multiple custom source plates completes successfully.

Impact of fix:

This fix has no impact on current workflow or data.

Picking Fails After Imaging in the Control Plate Creation Process

Tracking ID: 5022

In the Control Plate Creation process, if the number of pickable items is less than the number of assigned wells, then the software stops after imaging.

Resolution:

If the number of pickable items is less than the number of assigned wells, the software picks and deposits the available items in the assigned wells and leaves the remaining wells in the destination empty.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 9: QPix 420 Software Version 2.3 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.3 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.2, the last general release of the software.

The following topics are included in this chapter:

- Modifications Made to QPix 420 Software v2.3 on page 21
- Issues Addressed in QPix 420 Software v2.3 on page 22
- Known Issues in QPix 420 Software v2.3 on page 23

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Modifications Made to QPix 420 Software v2.3

The following modifications were made to QPix 420 software version 2.3.

Selection Menu for Manually Entered Source Plate Barcodes in Rearraying

Tracking ID: 4892

In the **Failed to read barcode screen** in Rearraying, a menu of selectable barcodes replaces the manual barcode entry field.

Option to Specify the Number of Sources per Destination

Tracking ID: 4926

Added an option to specify two to five picking positions per new destination plate in pickings from a multi-position source such as a 4-way Petri dish. Available in the Picking Processes, the Blue-White Picking Processes, and the Zone of Inhibition Detection Processes.

Editable Number of Colonies Picked After Imaging

Tracking ID: 4935

In the Picking Process, the number of colonies picked from each source Petri dish after imaging is editable using the **Edit Picking Counts** button.

Issues Addressed in QPix 420 Software v2.3

The following issues were addressed in QPix 420 software version 2.3.

Wells Contaminated by Fast Pin-Firing During Rearraying

Tracking ID: 4652

Well contamination in the Rearraying Process occurs from fast pin-firing splashing.

Resolution:

The pins now fire before slowly lowering into the wells.

Impact of fix:

This fix has no impact on current workflow or data.

Regional Picking Stuck in Washing and Inoculation Loop

Tracking ID: 4790

In Regional Picking when more than 97 pickable features are detected, selecting the option to limit the number of features per region intermittently causes a loop between the wash and inoculation cycles.

Resolution:

Limiting the number of features per region during Regional Picking now works as expected.

Impact of fix:

This fix has no impact on current workflow or data.

Regional Picking Only Deposits in Columns

Tracking ID: 4943

During Regional Picking, colonies only deposit in columns despite row selection.

Resolution:

Colonies can now deposit in rows during Regional Picking.

Impact of fix:

This fix has no impact on current workflow or data.

Known Issues in QPix 420 Software v2.3

The following known issues exist in QPix 420 software version 2.3.

Error When Cancelling Source Plate Selection in Rearraying

Tracking ID: 4961

In Rearraying, when using multiple source plates, clicking **Cancel** during the selection of source plate barcodes displays an Unhandled Exception error.

Workaround:

None.

Planned Resolution:

This will be corrected in a future release of QPix software.

Chapter 10: QPix 420 Software Version 2.2 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.2 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.1, the last general release of the software.

The following topics are included in this chapter:

- Modifications Made to QPix 420 Software v2.2 on page 25
- Issues Addressed in QPix 420 Software v2.2 on page 26

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Modifications Made to QPix 420 Software v2.2

The following modifications were made to QPix 420 software version 2.2.

Manual Selection of Colonies

Tracking ID: 3758

The addition of the manual colony selection button on the **Feature Selection** screen has been added to all of the picking processes to provide the ability to selectively change the preset items to be picked and discarded. The ability to remove all of the manually selected or deselected colonies is also available. Both of these new icon control buttons are located to the right of the **Delete Polygon** control.

View Pixel Intensity on the Image Map When Hovering

Tracking ID: 4026

The option to display the gray scale pixel intensity values of a targeted point on the image map has been added to the cursor movement during any picking process from the **Test Image** screen. To enable this feature, position your cursor over the image map, right-click and select **Intensity**. As you move your cursor over the image map, pixel intensity values are displayed. You can take note of various intensity values in order to manually determine a detection threshold value.

Auto Generating Barcode

Tracking ID: 4371

Auto Generate assigns a random barcode when there is a barcode reading failure during an automated routine. In the **Barcodes** settings step, **Read Failure Action > Auto Generate** has been added as an option to keep an automated routine from stopping when there is a barcode read error.

Issues Addressed in QPix 420 Software v2.2

The following issues were addressed in QPix 420 software version 2.2.

Inconsistent Interior Light On/Off Status

Tracking ID: 3743

The status bar displays that the interior light is turned on when it has actually been turned off.

Resolution:

The status of the interior light is now synchronized correctly.

Impact of fix:

This fix has no impact on current workflow or data.

Test Image Picking Location is not Shown on map

Tracking ID: 3746

When the first test image during the picking process is taken the position of this image is not marked red on the tray map. The position is only marked red when the position of the camera is changed to take another test image.

Resolution:

When entering the Test Image screen for Picking and Regional Picking, the location of the displayed image is now highlighted in the tray map.

Impact of fix:

This fix has no impact on current workflow or data.

Export Image from Custom Object Creation is Misaligned

Tracking ID: 4574

Alignment and stitching errors with images exported using a custom regional tray.

Resolution:

Alignment and stitching errors with images exported using a custom regional tray are now fixed.

Impact of fix:

This fix has no impact on current workflow or data.

Data Viewer Crashes with Long Barcodes

Tracking ID: 4594

A barcode of more than 25 characters used for a receptacle crashes the software during the Data Viewer process.

Resolution:

A barcode of more than 25 characters can now be used for a receptacle.

Impact of fix:

This fix has no impact on current workflow or data.

Deleting the Only Gridding Pattern Results in an Unhandled Exception

Tracking ID: 4607

When the only saved gridding pattern is deleted, the software displays unhandled exception error.

Resolution:

Fixed

Impact of fix:

This fix has no impact on current workflow or data.

The Back Button Fails in the Sanitization Step for Replication and Rearraying

Tracking ID: 4651

During the Replication and Rearraying Processes, in the Sanitization step, clicking Back results in an unhandled exception error.

Resolution:

Fixed

Impact of fix:

This fix has no impact on current workflow or data.

Agar Picking Depth Setting of 0.75 or Less Fails

Tracking ID: 4712

An error message displays when the agar picking depth is set to 0.75 or less.

Resolution:

Fixed

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 11: QPix 420 Software Version 2.1 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.1 update is a minor release. The following is a summary of the changes incorporated in this revision as compared to version 2.0, the last general release of the software.

The following topics are included in this chapter:

- Modifications Made to QPix 420 Software v2.1 on page 29
- Issues Addressed in QPix 420 Software v2.1 on page 30

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

Modifications Made to QPix 420 Software v2.1

The following modifications were made to QPix 420 software version 2.1.

Picking Head Returns to Park After Picking Cancellation

Tracking ID: 3744

The picking head returns to the park position to make it easier to remove the test bed receptacle after completing a **Test Image** and then clicking **Cancel** during a picking routine.

Change Head Process Step

Tracking ID: 3747

To help you when you may have started a process with an incorrect head installed on the instrument, the **Change Head** window now displays as a process step after the **Settings Summary** window. Without this new optional process step of opportunity, you must quit the active process, go to **Instrument Utilities > Change Head**, change the head, and then restart the aborted process.

Picking Process Feature Selection Window Back Button

Tracking ID: 4201

During a **Picking Process** ,after the **Imaging** step, the **Back** button is now active on the **Feature Selection** window so that you can return to the **Test Image** window to make **Imaging** adjustments.

Automatic Picking Log Export

Tracking ID: 4571

Your system can be configured to automatically export a .csv format log file to a system folder of your specification after running a picking process. The export file contains all features found during imaging, all pickable features, and all features picked. Contact your Molecular Devices Service representative to enable this functionality.

Gridding Process Supports Omni Tray Usage

Tracking ID: 4591

Omni Trays can be used in a Gridding Process.

Corrected Process Flow in Gridding, Replicating, and Rearraying

Tracking ID: 4613

In the QPix 420 software, in the Gridding Process, the Replicating Processes, and the Rearraying Process, some of the routines were being processed in the wrong order.

Issues Addressed in QPix 420 Software v2.1

The following issues were addressed in QPix 420 software version 2.1.

If a Distance Sensor Fails, a Minimum Picking Height Sets

Tracking ID: 3594

In rare situations, when a distance sensor fails, the software uses the minimum picking height setting, causing the potential for pins to crash into the trays or plates.

Resolution:

The new default minimum source tray picking height setting for the system now protects against the potential for pins to crash into the trays or plates if a distance sensor fails.

Impact of fix:

This fix has no impact on current workflow or data.

Long Picking Head Error When Doing Multi-dips in Picking Routines

Tracking ID: 4145

If a long picking head is used with multi-dipping, an unhandled exception error displays.

Resolution:

Multi-dips with a long pin head into a deep well plate during picking no longer cause an error.

Impact of fix:

This fix has no impact on current workflow or data.

No Sanitising Pins After Cancelling Rearraying

Tracking ID: 4323

If the Rearraying Process is canceled while the pins are already contaminated with cells or liquid, the instrument skips the Sanitise process and moves the head directly to the park position.

Resolution:

The **Sanitise** process is now included in the cancellation routine for a **Rearraying** process canceled while the pins are contaminated with cells or liquid.

Impact of fix:

This fix has no impact on current workflow or data.

Skips Head Pins Washing Before Control Plate Creation

Tracking ID: 4475

In the QPix 420 software, washing the head pins is skipped before the Control Plate Creation process begins.

Resolution:

Control Plate Picking now washes the head pins before the first item is picked.

Impact of fix:

This fix has no impact on current workflow or data.

Incorrect Gridding Data in the Data Viewer

Tracking ID: 4595

The Gridding Processes data maps incorrectly in the Data Viewer.

Resolution:

The data for the Gridding Process maps in the Data Viewer as expected.

Impact of fix:

This fix has no impact on current workflow or data.

Unhandled Exception Picking Using Customized Filter Pair

Tracking ID: 4614

Running a white light and fluorescent picking process using a customized filter pair causes an unhandled exception error to display.

Resolution:

The white light and fluorescent picking processes using a customized filter pair functions as expected.

Impact of fix:

This fix has no impact on current workflow or data.

Unhandled Exception Rearraying Multiple 384-Well Source Plates

Tracking ID: 4616

In the QPix 420 software, rearraying with more than one 384-well source plates causes an unhandled exception error to display.

Resolution:

Rearraying with more than one 384-well source plates in the QPix 420 software functions as expected.

Impact of fix:

This fix has no impact on current workflow or data.

Chapter 12: QPix 420 Software Version 2.0 Release Notes

The QPix® 420 Microbial Colony Picking System software version 2.0 update is a major release. The following is a summary of the changes incorporated in this revision as compared to version 1.5, the last general release of the software.

The following topics are included in this chapter:

- New in QPix 420 Software v2.0 on page 33
- Modifications Made to QPix 420 Software v2.0 on page 35
- Issues Addressed in QPix 420 Software v2.0 on page 36
- Known Issues in QPix 420 Software v2.0 on page 38

For computer requirements, software update instructions, and other related details, see:

QPix 420 Software General Information on page 39

New in QPix 420 Software v2.0

The following new major features are included in QPix 420 software version 2.0.

Adjustable Petri Dish and Microplate Holders

Tracking ID: 3478

New Petri dish and microplate holders now accommodate labware with a greater size variation using spring-loaded pins that secure the labware into the holders.

- The one-way Petri dish holder holds Petri dishes with diameters that vary in size between 138 mm and 141 mm.
- The four-way Petri dish holder holds Petri dishes with diameters that vary in size between 97 mm and 100.5 mm.
- The five-way Petri dish holder holds Petri dishes with diameters that vary in size between 87 mm and 90.5 mm.
- The microplate holder accepts any two microplates that meet the ANSI/SLAS 1-2004: Microplates — Footprint Dimensions standard.

In addition, the new holders have a black finish to enhance optical imaging by reducing light scattering and reflections.

The improved fit and finish add flexibility to dish or plate selection while decreasing possible image aberrations. The adjustable holders are compatible with software version 2.0 and higher.

For ordering information, see Ordering Information on page 49.

Manage Petri Dish Holders

Tracking ID: 3478

The **Utility Processes** > **Manage Petri Dish Holders** utility allows you to set either an original source-holder tray or a new spring-loaded adjustable holder tray as the default source-holder tray per source holder tray type, such as OmniTray, 1-way, 4-way, or 5-way petri dish holders. Only one style per holder type can be set as the default, either the original style, or the adjustable style.

Zone of Inhibition Detection Software

Tracking ID: 3434

Zones of Inhibition Detection Software is a useful tool for antibiotic drug resistance screening or adaptive evolution studies. The functionality lets you select and pick colonies producing Zones of Inhibition (ZOI), sometimes referred to as halos, on agar based on the following phenotypic parameters:

- Colony size
- Zones of Inhibition (ZOI) diameter
- Colony diameter
- Axis ratio
- Compactness

Colonies exhibiting zones of inhibition can be detected in white light .

ZOI detection and picking follows the regular picking process, but is available only through the purchase of the optional software license that is compatible with QPix software version 2.0 and higher.

After activating the software license, detection is enabled using the **Picking Processes** > **Zone of Inhibition Detection** function.

To purchase the optional software license, see Ordering Information on page 49.

QPix Chroma Colorimetric Colony Selection

Tracking ID: 3443

Blue/White Colony Selection Software

The accurate and robust screening function enables colorimetric colony detection and selection in white light. The Blue/White Colony Selection Software License enables automated monitoring of plasmid transformation and vector insertion efficiency based on the expression on LacZ gene. Rare expressing white, blue and ‘powder’ blue colonies can now be picked with high confidence in white light.

A QPix® Chroma Filter must be used with the **Blue-White Picking** process module to enable the selection of multiple ranges of bacterial colony color intensities. This enables a wide array of options in the colorimetric type of bacterial selection for picking. This thin-film optimal filter is placed on the imaging bed of the instrument under a source plate receptacle hosting the biology of interest and is approved for up to 10 uses. Petri dishes and microplates should be securely enclosed in a plate holder. Molecular Devices recommends using the Adjustable Petri Dish and Microplate Holders (X9401, X9402, X9403 or X9404).

The **Blue-White Picking** can be used in both the regular picking process and the regional picking process. The functionality is available only through the purchase of the optional software license that is compatible with QPix software version 2.0 and higher.
QPix Chroma Filters and Adjustable Petri Dish and Microplate Holders are required for high quality results.

After activating the software license, detection is enabled using the **Picking Processes** > **Blue-White Picking** > **Blue-White Picking Type: Blue/White** function.

For ordering information, see Ordering Information on page 49.

Add New Plate Definitions

Tracking ID: 4235

For use with the software, the **Add New Consumable** dialog now includes a **Wellplates** option for creating new **Edit Configurations** > **Microplates** > **My New Plate** Consumables types. The instruments currently support plate types with 96-wells or 384-wells. recommends using the manufacturer's data sheet for the creation of all new plate type settings because the data sheet includes exact measurements for the plate. Otherwise, careful measurement with a vernier is required.

CAUTION! Failure to input correct plate dimensions can result in damage to the picking head and pins.

Create New Regional Tray

Tracking ID: 4170

The **Create New Regional Tray** functionality has been added to allow you to define new custom trays to be picked from using the OmniTray holder in **Regional Picking**.

Modifications Made to QPix 420 Software v2.0

The following modifications were made to QPix 420 software version 2.0.

Create Log-Ins in SQL Server for Windows Accounts After SQL Configuration

Tracking ID: 3589

You can now set up additional users to operate the software with different SQL log-ins, and bypass Windows security to run the software as an administrator.

Manually Adjustable Agar Depth Settings

Tracking ID: 4025

Manual adjustment of the **Agar Depth** can now be made using the added **Depth** tab within the **Test Image** screen that shows the detected **Agar Height** and the **Maximum Agar Height**.

When running in **Enhanced Imaging** mode, different picking depths can be set for each receptacle. Otherwise, the specified picking depth is used for all receptacles.

Lid Removal Warning Message

Tracking ID: 4236

To prevent pin damage, a warning message reminds you to select the proper plate, position the plate, and to remove the lids from all loaded QTrays and Petri Holders, as required.

SQL 2012 Support

Tracking ID: 4355

Added SQL 2012 compatibility in anticipation of the SQL 2008 support end date in July 2014.

Uses Any Specified Database Name

Tracking ID: 4372

The previously only worked with databases named ReceptacleVault. In software version 2.0, any specified database name works.

Camera Alignment Refinements

Tracking ID: 4494

Improved camera alignment user interface and process.

Configuration Warning Message

Tracking ID: 4449

To avoid potential damages to the instrument by making configuration changes, a warning message appears after selecting **Tools** > **Configuration**.

Issues Addressed in QPix 420 Software v2.0

The following issues were addressed in QPix 420 software version 2.0.

Missing Gridding Motion Profiles

Tracking ID: 4232

After an instrument upgrade to include gridding, an exception error occurred when the head moved to the bath position.

Resolution:

If the gridding motion files are missing after a software upgrade, software version 2.0 detects and creates the missing profile files.

Impact of fix:

This fix improves current workflow or data.

Colony Recognition Lost Using Manual Threshold

Tracking ID: 4320

Manually adjusting **Threshold** settings causes all colony recognition to be lost post-processing.

Resolution:

Manually adjusting **Threshold** settings work as expected.

Impact of fix:

This fix improves current workflow or data.

Sanitize Skipped During Replicate

Tracking ID: 4417

During a **Library Replication** of 384-well plates using a 96-pin head with **Copy** set to 2, the same stack option selected, and **Sanitise** > **False** between copies set. The first copy of each source plate and the source plate itself both get contaminated because the **Sanitise** wash between each offset of the plates fails.

Resolution:

The **Sanitize** settings during **Library Replication** now work as expected.

Impact of fix:

This fix improves current workflow or data.

Plaques not Being Recognized Nunc Omni Position 3 and 4

Tracking ID: 4436

Using Nunc OmniTrays with plaques, the software fails to recognize any plaques in positions 3 and 4. Only positions 1 and 2 are recognized. Imaging only position 3 and 4, skipping 1 and 2, yields the same result, no plaques are recognized. This does not happen when yeast is used in Nunc OmniTrays; only plaques fail to be recognized.

Resolution:

Plaques used in Nuc OmniTrays are recognized in all positions as expected.

Impact of fix:

This fix improves current workflow or data.

Regional Picking Regions Missing on the 8-Region Omni Tray

Tracking ID: 4444

Using **Picking Processes > Regional Picking**, if the 8-region OmniTray is selected, the regions are missing.

Resolution:

Regions now appear on the illustration for the 8-region OmniTray selection within **Picking Processes > Regional Picking**.

Impact of fix:

This fix improves current workflow or data.

Invalid Value Error When Picking with Fluorescence

Tracking ID: 4460

Using **Picking Process > Picking > Picking Type > White Light And Fluorescent** causes the error **Value of '0.449999988079071' is not valid for 'Value'**.

Resolution:

Using **Picking Process > Picking > Picking Type > White Light And Fluorescent** now works as expected.

Impact of fix:

This fix improves current workflow or data.

Consumable File Corruption

Tracking ID: 4477

After a picking run, if the properties of a consumable plate are changed, the consumable configuration file becomes corrupt. This results in the software failing to load the next time it is started.

Resolution:

The problem is now resolved and the software works as expected.

Impact of fix:

This fix improves current workflow or data.

Known Issues in QPix 420 Software v2.0

The following known issues exist in QPix 420 software version 2.0.

If a Distance Sensor Fails, a Minimum Picking Height Sets

Tracking ID: 3594

In rare situations, when a distance sensor fails, the software uses the minimum picking height setting, causing the potential for pins to crash into the trays or plates.

Workaround:

None. Contact Molecular Devices Technical Support.

Planned Resolution:

This will be corrected in a future release of QPix software.

No Sanitising Pins After Cancelling Rearraying

Tracking ID: 4323

If the Rearraying Process is canceled while the pins are already contaminated with cells or liquid, the instrument skips the Sanitise process and moves the head directly to the park position.

Workaround:

Sanitize the pins using the **Instrument Utilities > Sanitise** process.

Planned Resolution:

This will be corrected in a future release of QPix software.

Chapter 13: QPix 420 Software General Information

The QPix 420 Microbial Colony Picking System software controls the QPix 420 Colony Picking Systems.

The following topics are included in this chapter:

- Computer System Requirements on page 40
- Starting the System and the Software on page 40
- Backing Up the Existing Software Configuration on page 41
- Backing Up the Software Database on page 41
- Uninstalling the Basler Pylon SDK on page 41
- Uninstalling the Previous Version of the Software on page 41
- Installing the Basler Pylon Camera Driver on page 42
- Subsystem Firmware Update on page 42
- Installing the New QPix 420 Software on page 42
- Obtaining a License for the Software on page 43
- Updating the Database on page 47
- Re-Installing the 1.x Software on page 48
- Ordering Information on page 49
- Obtaining Support on page 50

Computer System Requirements

The QPix 420 software version 2.6.1 upgrade requires the following computer specifications:

Minimum Computer System Requirements

Item	Description
Operating system	Windows 10, 64-bit Windows 7, 32-bit
Memory	4 GB RAM
Data Connection	10/100 Ethernet port
Camera Connection	USB 2.0 port

CAUTION! Do not replace the computer operating the system with one of your own. Also do not replace the operating system on the provided computer. The computer supplied with your system includes hardware and driver components specifically configured to control your instrument.

Starting the System and the Software

Before starting the system and the software confirm the following conditions:

- The **Emergency Stop** button on the front panel of the instrument is pulled out. The instrument will not start if this button is pushed in.
- The instrument bed is clear of obstructions and loose items.
- All motor tracks are free of obstruction.
- There are no obstructions to movement of the head.
- The instrument door is fully closed.

Power-On Procedure

To power-on the system:

1. Power on the power supply to the compressor.
2. Push the green **Start** button on the front panel of the instrument.
   The **Power On** light illuminates on the front indicator panel. If the power to the system does not turn on, it is possible that the door is open or the **Emergency Stop** button is pushed in. The instrument cycles through various start-up processes indicated on the front indicator panel.
3. Check that the **Air Pressure OK** icon illuminates on the front indicator panel.
4. Switch on the computer and wait for it to finish initializing.

Note: Every time the instrument is used, the three axes sequentially run through their **Initialize drives** routine. This enables the drives to find their respective home positions. The system must complete this routine without interference to ensure that there is no damage to the instrument or its auxiliary equipment.

Backing Up the Existing Software Configuration

Before upgrading the software, you must back up the existing software configuration in case you need to reinstall it later.

To run **Configuration Backup:**

1. Click **Start** > **All Programs** > **Molecular Devices > QPix 420 software** > **Configuration Backup**.
2. In the **Fusion Configuration Manager** dialog, click **Backup Current Configuration**.
3. Wait until the backup process ends, and the **Config Folder** reference is displayed in the Configuration backup list under **Date Created** > **Type** > **Comment**.
4. Close the dialog.

Backing Up the Software Database

Before upgrading the software, you must back up the existing software database in case you need to restore it later.

To back up the software database:

1. Start the software.
2. From the **New Process** tab of the **Navigation** window, click **Database Management**.
3. From the **Backup and restore** tab, click **Backup**.
4. When the file name you created appears in the **Restore** list field, click **Close** to return to the **Navigation** window.

Uninstalling the Basler Pylon SDK

CAUTION! This procedure only applies if you are upgrading your software from QPix software version 2.5.xx or older.
Do not uninstall the Basler Pylon SDK if QPix software version 2.6.xx is installed on your computer. Skip to Installing the New QPix 420 Software on page 42.

To uninstall the Basler Pylon SDK:

1. Click **Start** > **Control Panel** > **Programs** > **Uninstall a program**.
2. From the list of programs, select **Basler pylon SDK**, and click **Uninstall**.
3. Follow the on-screen instructions to finish uninstalling the software, and accept any warnings or messages that display.
4. If prompted, restart the computer.

Uninstalling the Previous Version of the Software

Before installing the new version of the QPix 420 software, you must uninstall the old version currently installed on your computer.

To uninstall the QPix software:

1. Click **Start** > **Control Panel** > **Programs** > **Uninstall a program**.
2. From the list of programs, select **QPix 420 software**.
3. Click **Uninstall**.
4. Follow the on-screen instructions to finish uninstalling the software, and accept any warnings or messages that display.
5. If prompted, restart the computer.

Installing the New QPix 420 Software

The newest software version is available by download. Contact Technical Support for instructions. See Obtaining Support on page 50.

CAUTION! Backup your configuration and database before installing the new software, because your system will be unrecoverable if an installation error occurs. See Backing Up the Existing Software Configuration on page 41.

To install the new QPix 420 software :

1. Download and unzip the new software installation file to the system computer.
2. If you started with version 2.0 or newer of the software installed on your computer, skip to step 5.
3. Double click the **dotNetFx40_Full_x86_x64.exe** file to begin the **.Net 4.0 Framework** installation.

   Note: If **.Net Framework 4.0** is already installed on your computer, the **Microsoft .NET Framework 4 Maintenance** dialog appears, click **Cancel** to end the process, and continue to the next step.

4. To let the installation complete, accept any warnings or messages that are displayed. If prompted, restart the computer.
5. Double click the **QPix 420 v.2.6.1.msi** file to start the installation.
6. Follow the on-screen instructions for the default **(Typical installation)** settings.
7. To let the installation complete, accept any warnings or messages that are displayed. If prompted, restart the computer.
8. You must now request a license file before the software can be used.

Installing the Basler Pylon Camera Driver

To install the Basler Pylon camera driver:

1. Download and unzip the **Basler Pylon 6.1.1.xxxx.exe** installer file on the system computer.
2. Double-click the installer file to start the installation.
3. If an older version of Basler Pylon is installed on your computer, you will see a warning message. Click **Yes** to continue with the installation.
4. Select the **I agree to the pylon Terms and Conditions** check box.
5. On the Profiles screen, select **Developer**.
6. On the Interfaces screen, select **GigE**.
7. Follow the on-screen instructions to complete the installation.

Subsystem Firmware Update

If the most recent version of the software was modified to work with new firmware for a critical subsystem, then you must first run a firmware update for this subsystem before updating the QPix 420 software.

The firmware update and installer are contained in a file named **FirmwareLoader-5.5.0.zip**. If you did not receive this file along with the software upgrade, contact Technical Support. See Obtaining Support on page 50.

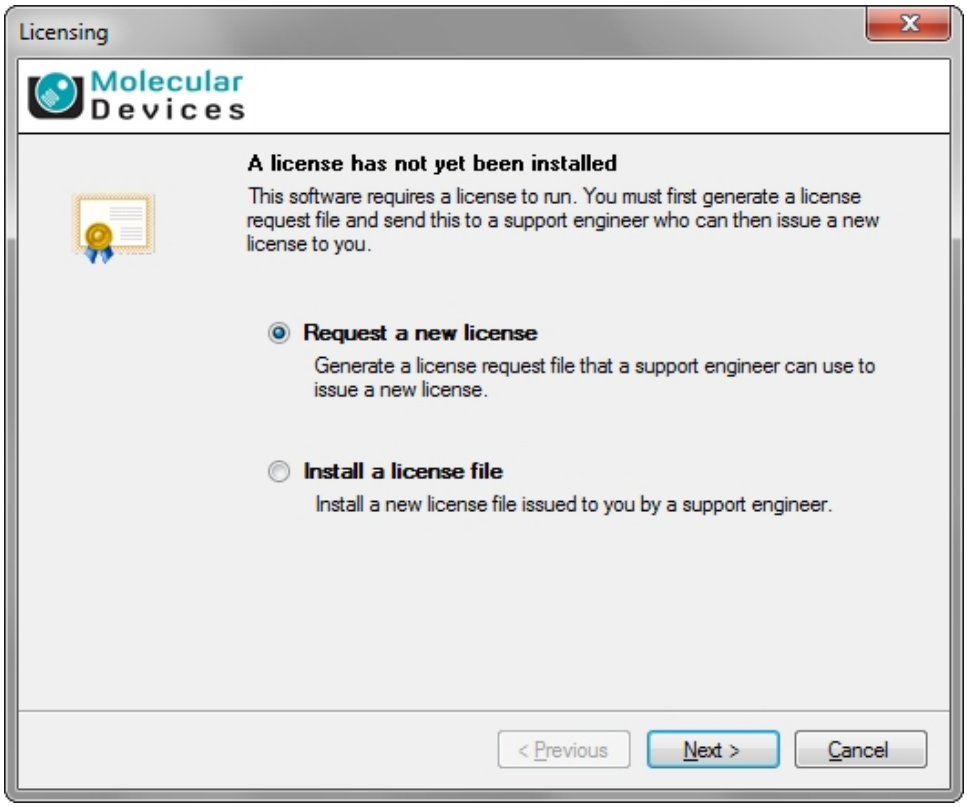
To update the subsystem firmware:

1. Download the **FirmwareLoader-5.5.0.zip** file to the system computer.
2. Power on the QPix instrument and computer.
3. Extract the contents of the **FirmwareLoader-5.5.0.zip** file.
4. Open the folder where you extracted the contents of the **FirmwareLoader-5.5.0.zip** file and then double-click the **MolecularDevicesFirmwareLoader.exe** file.
5. In the **FirmwareLoader-5.5.0** utility, click **Update Firmware**.
   If the firmware is up-to-date, the utility informs you of this and discontinues the firmware update process.

   CAUTION! After starting the firmware update, do not close the utility until after the Status message indicates that the firmware update is complete.
6. Click **Close**.

Obtaining a License for the Software

The first time that you start the software after completing the installation, the software prompts you for a license.



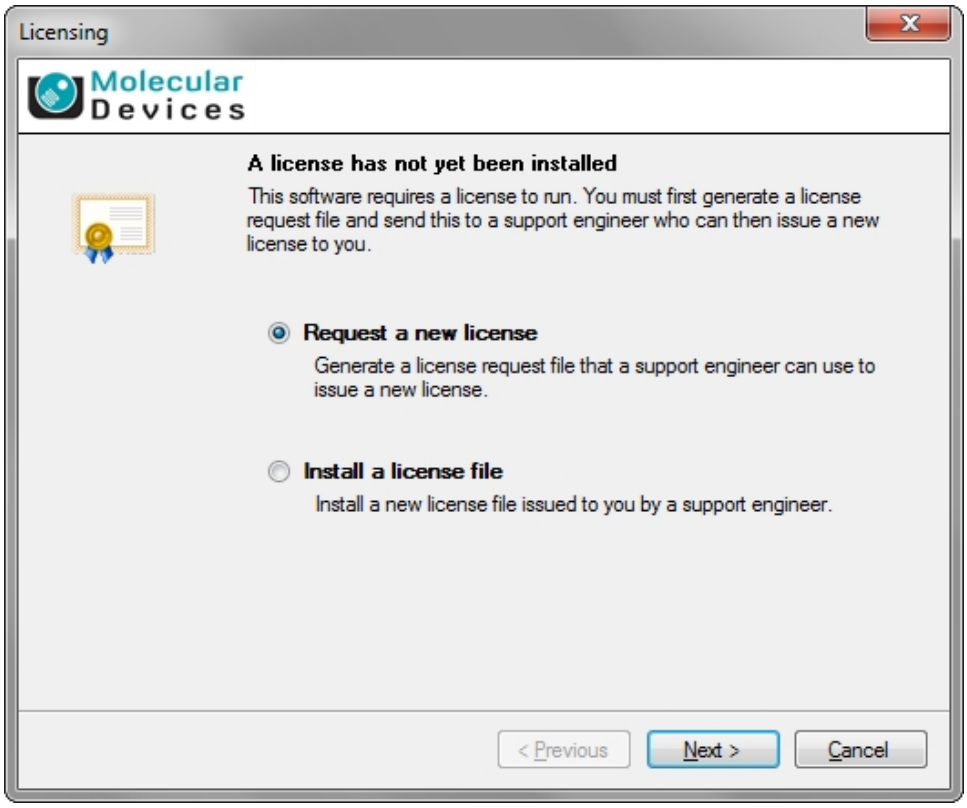
Follow the **Licensing** procedures in order:

1. Request a new license. See Requesting a Software License, see page 44.
2. Install a license file. See Installing the Software License, see page 46.

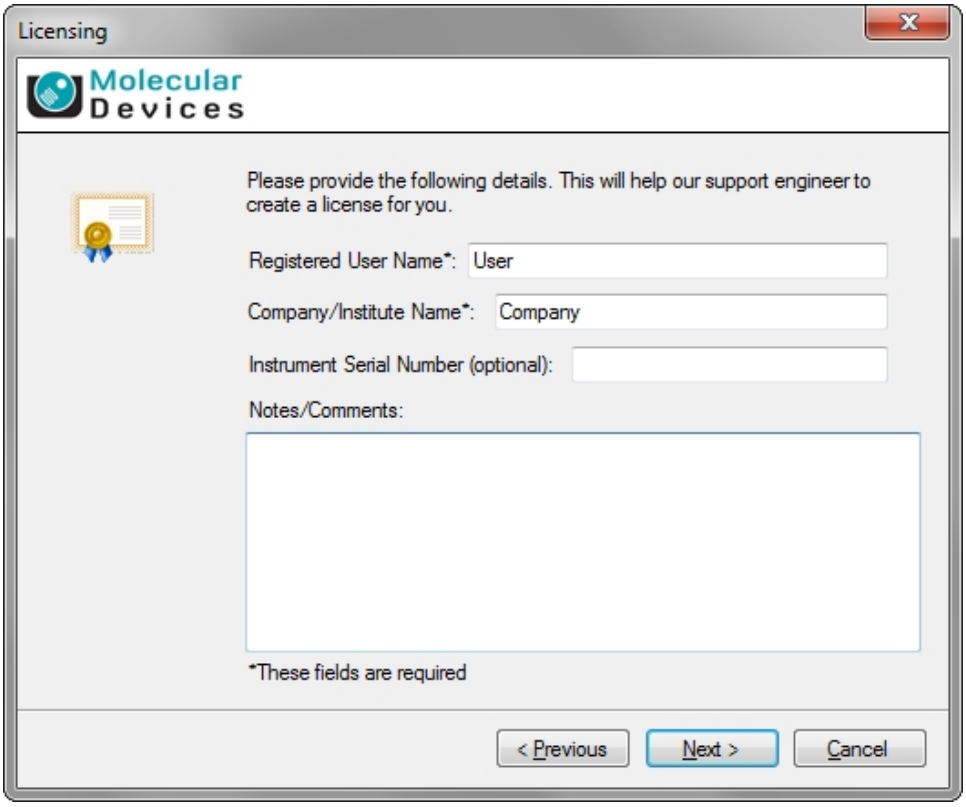
Requesting a Software License

To request a software license:

1. From the desktop, double-click the icon to start the software.



2. In the **Licensing** dialog, click **Request a new license** and then click **Next**.

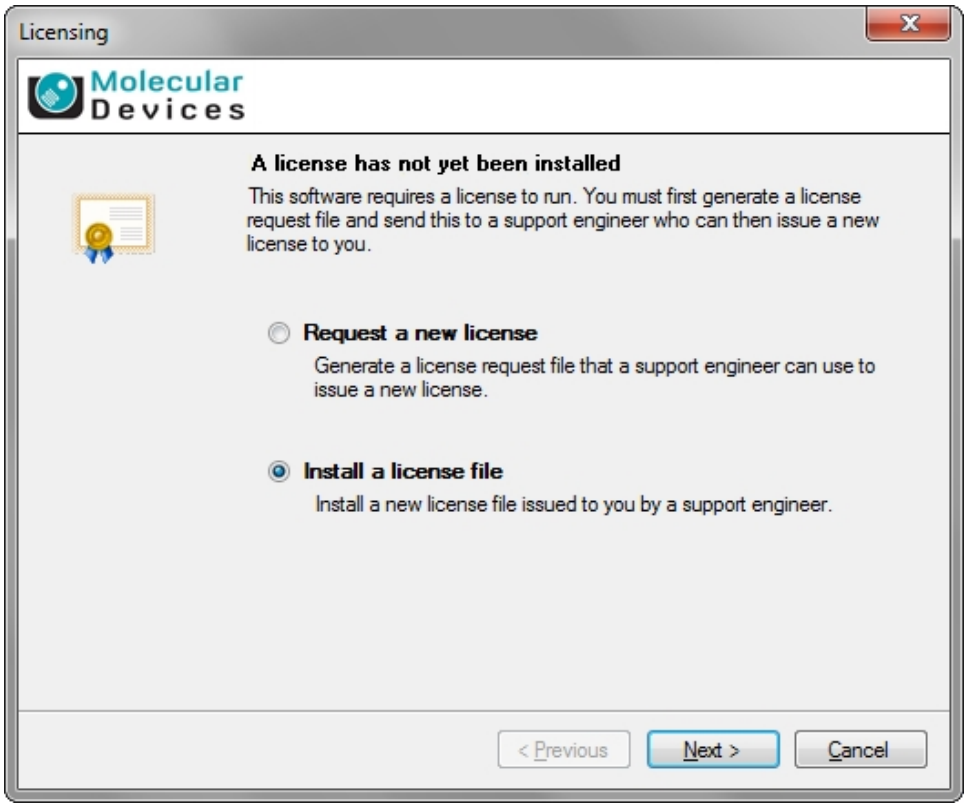


3. Type the requested information in the dialog fields and then click **Next**.
4. Click **Save**.
5. In the **Save the request to a file** dialog, enter a file name and then save the file in a location where it is easy to find again.
6. Contact technical support to get a valid license file. See Obtaining Support on page 50.
7. After you receive the license file, save it on the System computer where it is easy to find.

Installing the Software License

To install the software license:

1. From the desktop, double-click the icon to start the software.



2. In the **Licensing** dialog, click **Install a license file** and then click **Next**.
3. Click **Open**.
4. In the **Select the License File to install** dialog, locate and select the license file you previously saved, and then click **Open**.
   The license file installs automatically
5. Click **Finish** to close the **Licensing** dialog.
6. If you are upgrading your software from QPix version 1.x software, you must now update the database before the software can be used. Continue to Updating the Database on page 47.

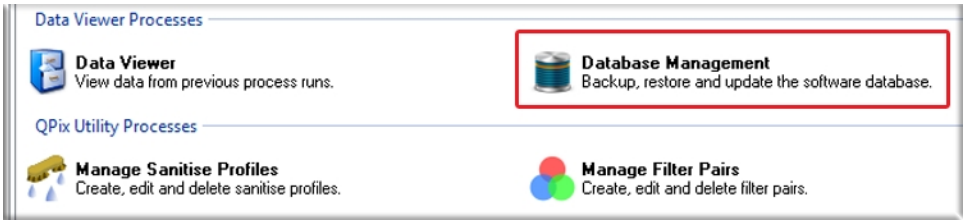
   If you are upgrading your software from QPix version 2.x, QPix 420 software version 2.6.1 is now ready to use.

Updating the Database

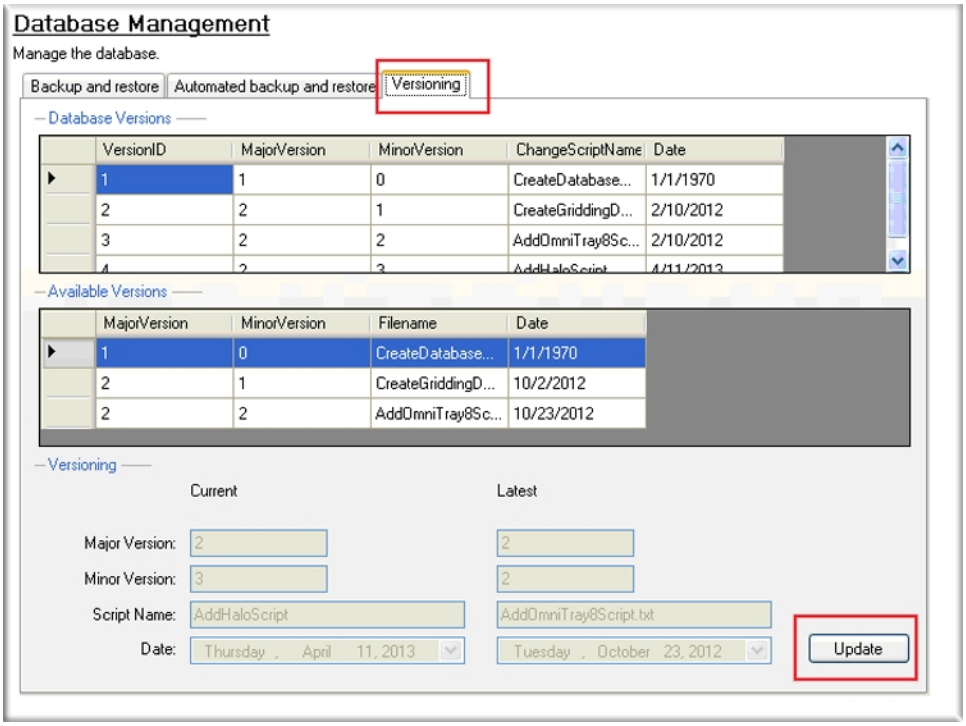
If you are updating from software version 1.x, the database update process must be run before using software version 2.6.1 for the first time.

To update the database:

1. From the desktop, double-click the icon to start the software.
2. Under **Data Viewer Processes**, double-click **Database Management**.



3. Click the **Versioning** tab, and then click **Update**.



4. After the update finishes, click **Close**.

QPix 420 software version is now ready to use.

Re-Installing the 1.x Software

To downgrade software version 2.x. to software version 1.x:

1. Uninstall software version 2.x.

   Note: You do not need to backup the configuration for this version.

   - Click **Start** > **Control Panel** > **Programs** > **Uninstall a program**.
   - From the list of programs, select **QPix 420 software**, and click **Uninstall**.
   - Follow the on-screen instructions to finish uninstalling the software, accept any warnings or messages that are displayed. If prompted, restart the computer.
2. Uninstall **Basler Pylon camera driver**.
   - Click **Start** > **Control Panel** > **Programs** > **Uninstall a program**.
   - From the list of programs, select **Basler Pylon**, and click **Uninstall**.
   - Follow the on-screen instructions to finish uninstalling the software, accept any warnings or messages that are displayed. If prompted, restart the computer.
3. Insert the Recovery DVD or locate the downloaded installation file for software version 1.x .
4. Start the installation program and follow the on-screen instructions to re-install software version 1.x.
5. Install **Basler pylon SDK x86 2.3.5.2633** from whichever software version 1.x installation file source was used in step 3.
6. Click **Start** > **All Programs** > **Molecular Devices > QPix 420 software** > **Configuration Manager**.
7. In the **Fusion Configuration Manager**, click **Restore From File**.
8. Locate and select the backup file that you saved in Backing Up the Existing Software Configuration on page 41.
9. Click **Open**.
10. After the configuration is restored, close the **Fusion Configuration Manager**.
11. If prompted, start and license the software. See Obtaining a License for the Software on page 43.
12. Start software version 1.x.
13. From the **New Process** tab of the **Navigation** window, click **Database Management**.
14. From the **Backup and restore** tab, in the **Restore** list field, select the backup file name you created before installing QPix software version 2.x then click **Restore**. See Backing Up the Software Database on page 41.
15. Click **Close** to return to the **Navigation** window.

Ordering Information

The following software and consumable are recommended to operate the QPix instrument with software version 2.6.1 or newer.

Table 14-1: Available Products

Part Number	Description
Software	
SL9400-A06	QPix® Chroma Colorimetric Colony Selection Software License. Blue/White Colony Selection Software License for QPix 420 system Colony Picking Systems
SL9400-A07	Zone of Inhibition Detection Software License for QPix 420 system Colony Picking Systems.
SL9400-A08	QPix® 420 Software Version 2.0 or Newer Upgrade
Consumables and Kits	
X1101	QPix® Chroma Filter, thin film optical filter for Blue/White colony selection, qty 1
X1102	QPix® Chroma Filter, thin film optical filter for Blue/White colony selection, qty 25
X1103	QPix® Chroma Colorimetric Colony Selection Software Kit. Blue/White Colony Selection Software Kit for QPix 420 system Colony Picking Systems. Includes software license and 2 QPix® Chroma Filters (X1101).
X9401	1 Way Adjustable Petri Dish Holder Plate diameter compatibility: 138 mm to 141 mm
X9402	2 Way Adjustable Microplate Holder Plate diameter compatibility: Any ANSI/SLAS 1-2004 microplates
X9403	4 Way Adjustable Petri Dish Holder Plate diameter compatibility: 97 mm to 100.5 mm
X9404	5 Way Adjustable Petri Dish Holder Plate diameter compatibility: 87 mm to 90.5 mm

Obtaining Support

Molecular Devices is a leading worldwide manufacturer and distributor of analytical instrumentation, software, and reagents. We are committed to the quality of our products and to fully supporting our customers with the highest level of technical service.

Our Support website—https://support.moleculardevices.com/—describes the support options offered by Molecular Devices, including service plans and professional services. It also has a link to the Molecular Devices Knowledge Base, which contains documentation, technical notes, software upgrades, safety data sheets, and other resources. If you still need assistance, you can submit a request to Molecular Devices Technical Support.

Please have your instrument serial number or Work Order number, and your software version number available when you call.

WARNING! BIOHAZARD. It is your responsibility to decontaminate components of the instrument before you return parts to Molecular Devices for repair. Molecular Devices does not accept items that have not been decontaminated where it is applicable to do so. If parts are returned, they must be enclosed in a sealed plastic bag stating that the contents are safe to handle and are not contaminated.

For more information about QPix instruments and accessories visit:
www.moleculardevices.com/qpix-sw2.0

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