PC-DMIS 2022.1

Release Notes

Hexagon Manufacturing Intelligence
February 18, 2022

PC-DMIS

2022.1

Initializing...
© 2021 Hexagon Technology Center GmbH

Copyright © 2022 Hexagon Manufacturing Intelligence

Table of Contents

Release Notes

PC-DMIS 2022.1 is a significant development release of the software. For detailed information and video tutorials about this release, visit hexagonmi.com/products/software.

What's New

Cloud Construction

You can now construct features directly from your Pointcloud Mesh data. You can now create Round Slot, Square Slot, Cone, Cylinder, and Sphere from Pointcloud or Mesh data. This allows you to import pointclouds from other systems or measurement routines to use in PC-DMIS.

See "Cloud Construction".

HxGN Metrology Reporting

HxGN Metrology Reporting is a cloud-based and subscribed Smart Factory solution designed to remotely access, consume, and present real-time dimensional and reporting data. With HxGN Metrology Reporting, you can readily access your metrology reports to see data and trends that can help your process remain in control.

See "HxGN Metrology Reporting".

HxGN Robotic Automation

You can now seamlessly connect PC-DMIS as the metrology client to HxGN Robotic Automation. HxGN Robotic Automation scans the part and streams data to PC-DMIS for metrology analysis and reporting. This significantly reduces the time required for offline programming of robotic measurement and debugging of measurement programs.

See "HxGN Robotic Automation".

Renishaw Equator Gauging Systems

PC-DMIS and Inspect now support Renishaw Equator Gauging systems. You can now create a PC-DMIS measurement routine on the CMM and then execute the same measurement routine directly on the Equator. This eliminates the need for any translations between one programming language to another.

See "Renishaw Equator Gauging Systems".

Other Improvements and Changes

Application

- On PC-DMIS toolbars, with drop-down list items you select, PC-DMIS now remembers the last selected state when you switch between multiple open measurement routines. See PCD-114391.

- You can now see the **CAD Transform** icon in the **CAD Setup** and **QuickMeasure** toolbars. See PCD-214118.

CMM

- The **Intensity** option in the **Pointcloud Filter Operator** dialog box is now available for the HP-L-10.10 and ATS600 sensors. These sensors store the intensity values associated with pointcloud data. See PCD-169484.

- PC-DMIS now supports the CSI box (Tech80) in the manual CMM interface so that it's now treated as another third-party manual counter device. This simplifies the support of the Tech80 interface. See PCD-183315.

- You can now make the incremental moves for rotary tables. You can use absolute values that range from 0 to 360 degrees. You can now type an incremental value to an existing rotary table position in the **Parameter Settings** dialog box. See PCD-217770.

Excel Form Report

- You can use macros in Microsoft Excel to automatically perform actions on repetitive tasks such as color-coding cells to indicate tolerance. This allows you to customize your Excel report template and make it easier to read using macros that format your spreadsheet to remove extraneous information and perform calculations as needed. See PCD-220265.

GD&T Dimensions

- With the geometric tolerance command, you can now reference a constructed extracted feature as either a considered feature or a datum. See PCD-219515.

ESF (VWMP)

- PC-DMIS now supports all ESF (VWMP) Flush and Gap feature in HxGN Robotic Automation. See PCD-216761.

- You can now define the specific extraction parameters in the **Optical Parameters** area of the **Extended Sheet Metal Features** dialog box. You can do this when you program ESF (VWMP) Optical Flush and Gap features (MA, MB, MC, MD, NA). See PCD-219760.

- You can now dimension MA Gap features according to cases A, B, and C per the specifications. See PCD-220582.

- You can now program MA, MB, MC, MD Gap features, and NA flush features. See PCD-216739, PCD-216740, PCD-216741, PCD-216742, PCD-216743, PCD-216744, PCD-216745, PCD-216746, and PCD-216747.

HxGN NC Server

- HxGN NC Server 2021.2 is the first major release of the completely reworked NC Server product for use with PC-DMIS. The NC Server allows you to use PC-DMIS with CNC Machines. This brings the power of PC-DMIS as an inspection programming language to Machine Tools. The application of PC-DMIS on Machine Tools opens a wide range of validation, inspection, and automation tasks that would otherwise be very challenging, if not impossible. For more information, see the HxGN NC Server documentation. See PCD-219203.

Online Help

- PC-DMIS Help Center on docs.hexagonmi.com now uses Google Analytics to improve our understanding of how you interact with our documentation on that site in addition to Application Insights. See PCD-202625.

- You can now see how to create ESF (VWMP) Flush and Gap feature documentation in the PC-DMIS Help. See PCD-220482.

Probes

- PC-DMIS is now compatible with the HP-C-TS5.10 sensor which provides high speed capture and measurement from digital images. See PCD-197435.

- PC-DMIS now supports the Manual Application Changer (MAC) sensor to easily switch between indexable motorized heads and high precision fixed heads. This helps to swap probe heads faster for increased system flexibility, speed of measurement routines, and reduces CMM downtime. See PCD-202083.

- PC-DMIS now creates an XML file when you build a new probe in the **Probe Utilities** dialog box. You can then import an XML file into the Technology Server. See PCD-218318.

- PC-DMIS now allows you to define specific default analog-probing parameters/forces for many of the analog probe types. This reduces the need to include OptionProbe commands in a measurement routine. This sends the relevant probe parameters to the controller without your intervention and saves time. See PCD-218808.

> **NOTE**
> Starting with PC-DMIS 2019 R2, PC-DMIS no longer supports the Perceptron laser sensor. While you may still be able to install PC-DMIS 2019 R2 and later, PC-DMIS displays an error if you attempt to run measurement routines that use the Perceptron scanner. For additional information, please contact Technical Support.

Settings Editor

• PC-DMIS now stores PC-DMIS and related interface settings in JSON files. PC-DMIS no longer stores its settings inside the Windows registry. This helps to resolve Windows registry access permission problems. You can now access JSON files without the need for administrator rights. These JSON files are independent of the operating system. See PCD-208310.

• A RoboticAutomation section in the Settings Editor application is now available. See PCD-219252.

What's Fixed

Application Errors

You no longer get application errors:

• When you try to execute a DCC scan on a portable device. See PCD-216012.

• When you perform a measurement of Adaptive cylinder concentric circle scan in a 4-axis scan after you measure the first circle. See PCD-217934.

• When you close PC-DMIS in certain instances. See PCD-221434.

• When you move a measurement routine with vision features to a machine configured with more lamps. See PCD-221501.

• When you open a measurement routine that contains an invalid tip command. See PCD-221513.

• When you edit a constructed point at origin. See PCD-223444.

Auto Features

• PC-DMIS now generates a scan without vectors for the 4-axis scan with the HP-O sensor. This is a special scanning mode to measure the curve with gaps. PC-DMIS doesn't adjust the trajectory of the scan to the holes. See PCD-206053.

• PC-DMIS now retains the selection of the **CAD Offset** check box in the laser Auto Plane dialog box when you close and reopen a measurement routine. See PCD-208982.

- You can now see the correct path line from the last sample hit to the cylinder's center. See PCD-212842.

- PC-DMIS now takes less time to read a large number of points. This enhancement improves the performance of Adaptive scanning strategies. See PCD-218491.

- PC-DMIS allows only Nominals measure mode when you program Vector Auto Point features on PC-DMIS NC. This avoids possible changes to approach vectors on execution which may cause hardware crashes. See PCD-219196.

- PC-DMIS no longer increases the size of the file when you save measurement routines that contain laser Edge Points that use the **Max incidence angle** filter. See PCD-219704.

- You can now use the **Max incidence angle** filter to create extracted laser Auto features from the **Auto Feature** dialog box even with an empty pointcloud object. You can no longer use the **Max incidence angle** filter when you create directly measured Auto features. See PCD-220311.

- You can now type values less than 1 in the **Width** and **Length** boxes of the **Auto Features** dialog box when you create laser High Point Auto features. See PCD-221600.

- PC-DMIS no longer converts CAD offset values into inch units in the Edit window for laser Auto Plane, Cone, Cylinder, and Sphere when a measurement routine is in inch units. See PCD-222760.

CAD

- You can now see CAD surfaces trim correctly when you import a .CATPart file. See PCD-217592.

- You can now see the surface edges when you import an NX DCI CAD model. See PCD-218533.

- You can now turn on or off the "ERROR - unable to initialize NX!" error message with the setting **AllowToRunWithoutCADFile** in the Settings Editor. See PCD-219225.

- You can now correctly import IGES CAD files into PC-DMIS measurement routines. See PCD-222308.

CMM

- PC-DMIS no longer treats all tips as if they are the first tip after you disable and re-enable the use of mapping with infinite wrists. See PCD-221903.

Constructed Features

- You can now successfully toggle the constructed slot type from round to square or from square to round. See PCD-14773.

- You can now type the THEO / MEAS X, Y, Z values as polar co-ordinates (RAH) in the **Construct Generic Feature** dialog box. See PCD-154403.

- PC-DMIS now shows the correct CAD nominals for Constructed Extreme Points when you construct from a point colormap or surface colormap. See PCD-214758.

- You can now see the COP selection box and segregated points for constructed extracted circles and planes when you work in the **Construct Feature** dialog box. See PCD-216220.

- You can now see the same sequence of parameters in the Constructed Extracted Feature dialog box and laser Auto Feature dialog box as well as in the Edit window. You can now see the **Remove outliers** check box above the **Remove points with normals outside** check box in the Constructed Extracted Surface Point, Plane, and Circle dialog boxes.
  Also, you can now see the **Measurement properties** area right below the **Feature properties** area in the Constructed Extracted Edge Point dialog box.
  Also, you can now see the RINGBAND parameter below the clipping parameters for Constructed Extracted Circle feature in the Edit window. See PCD-217974.

- You can now see the same size value when you construct two circles from a cone. See PCD-219021.

- You can now see the correct summary mode icons for each of the constructed extracted features. See PCD-219468.

- You can now construct a BF or BFRE cylinder from two auto circles. PC-DMIS calculates the resultant cylinder from all of the hits of the selected circles. See PCD-219684.

- PC-DMIS now displays a "No laser stripes found" error message when you create or execute a constructed extracted feature and there is no pointcloud data within the defined search area. See PCD-219955.

- PC-DMIS now populates the correct surface and edge vectors for Constructed Extracted Edge Point when you select a CAD surface. See PCD-219956.

- PC-DMIS now always sets the default method to **Auto** in the**Construct Feature** dialog box. If you select a different method type and then close the dialog box, PC-DMIS resets the method type back to **Auto** when you reopen the dialog box. See PCD-219971.

- PC-DMIS now retains the associated hit data when you extract a plane or sphere from a COP or mesh data. See PCD-219972.

- PC-DMIS now offsets constructed extracted features when you modify the theoretical thickness value in the **Construct Circle** dialog box. See PCD-220095.

- PC-DMIS now provides a better indication of which text boxes relate to the inner and outer horizontal clipping zones in the **Feature Based Clipping** area of the **Constructed Circle** (Extracted Circle) dialog box. See PCD-220096.

- PC-DMIS now updates the Graphic Display window when you change the ring band value for constructed extracted features. See PCD-220100.

- PC-DMIS now updates candidate points in the Graphic Display window when you mark the **Remove points with normals outside** check box in the **Constructed Extracted Feature** dialog box. See PCD-220116.

- PC-DMIS now draws the Constructed Extracted Feature clipping zones in the correct place when you use the current alignment. See PCD-220401.

- PC-DMIS now shows the correct CAD offset values for constructed extracted features in the Edit window when a measurement routine is in inch units. See PCD-220971.

- PC-DMIS now correctly stores the angle vector and places it by the feature when you select a plane CAD surface to create a Constructed Extracted Plane. See PCD-221706.

- You are now able to see the CAD offset boundaries for laser-auto and constructed-extracted cones, cylinders, planes, and spheres in the Graphic Display window. When you mark the **CAD offset** check box in the **Construct Feature** dialog box, PC-DMIS graphically updates the orange segregated points so that those points are only drawn within the CAD offset boundary. See PCD-221707.

- PC-DMIS now doesn't return a feature calculation error for Auto laser and extracted laser features when you mark the **Ring Band** check box in the **Auto Feature** dialog box. See PCD-221726.

ESF (VWMP)

- PC-DMIS no longer hides the pointcloud in the Graphic Display window when you delete the extract ESF (VWMP) feature from the same pointcloud in the Edit window. See PCD-163217.

- You can now program the ESF (VWMP) features when a CAD model shows empty areas between contiguous surfaces. See PCD-219756.

- PC-DMIS now works properly for the Avoidance Move after each measurement when you measure BH ESF (VWMP) features. See PCD-221205.

GD&T Dimensions

- You can now reference a constructed offset line as a primary, secondary, or tertiary datum with the geometric tolerance command. PC-DMIS treats this line as a pre-resolved line on a surface. See PCD-208745.

- PC-DMIS now allows single point auto-circles as a secondary or tertiary datum feature when you reference it by the geometric tolerance command, or as the considered feature when you report concentricity (axis method) or position. See PCD-210303.

- You can now reference datums at MMB or LMB for ISO concentricity tolerances when you use the geometric tolerance command. See PCD-217553.

- PC-DMIS now performs better when you open measurement routines that contain geometric tolerance commands. See PCD-217597.

- You can now see the results for all circles associated with the pattern when you output the results for a position geometric tolerance of a pattern of circles to an XML statistics file. See PCD-217759.

- PC-DMIS no longer changes a measured value when you scan a curve and then evaluate the dynamic profile with very small tolerances. See PCD-219031.

- PC-DMIS now displays a better warning message when hits are not in cross-section and the local size is turned on for Position, Orientation, and Runout tolerances. See PCD-220986.

- PC-DMIS now increased the maximum number of points from 50000 to 200000 for geometric tolerance commands. See PCD-221236.

- PC-DMIS now informs you when you need to provide specific size tolerance in the **Geometric Tolerance** dialog box. See PCD-221759.

- You can no longer select line profile tolerances without datums when you create simultaneous tolerance commands. PC-DMIS now removes simultaneous line profile tolerances without any datums in current measurement routines from the simultaneous tolerance during migration and evaluates individually. See PCD-221860.

- PC-DMIS now supports constructed mid-points as a tertiary datum for ISO or ASME and 1D width features as a tertiary datum for ISO. Also, you can now see the Distance Fixed (DF) modifier for ISO. See PCD-222277.

- PC-DMIS doesn't display the size values in the report when you didn't select **Report Datum Size** in the **Reporting** tab of the **Geometric Tolerance** dialog box. See PCD-222543.

Help / Documentation

- PC-DMIS Help now indicates that you need the Microsoft Video 1 codec for .avi files used in Operator comments. This also covers some possible solutions to create a .avi file with that codec. See PCD-162664.

- You can now see better text and images for the Graphical check box in the Dimension dialog box for graphical analysis. See PCD-214598.

- You can now see the correct support contact information in the "Contacting Hexagon Technical Support" topic for the Italian language. See PCD-219251.

- You can now see some updated examples in the "Profile of a Line" and "Profile of a Surface" topics of the Geometric Tolerances chapter. See PCD-219600.

- The PC-DMIS help for the HR-X3-P probe changer now provides a better description of where to take the first hit on the collet. See PCD-219605.

- PC-DMIS Help no longer shows information about the old XactMeasure **Create Feature Control Frame** option in the Graphic Display window's shortcut menu. This option was removed in PC-DMIS 2020 R2. See PCD-220106.

- PC-DMIS Help now includes information about the length of the probe tip offsets in the "Building a 5-Way Customizable Star Probe" topic. See PCD-220118.

- PC-DMIS Help now indicates that valid input features for ASME and ISO are the same: 1D widths, 2D widths, 3D widths, circles, cylinders, and spheres. See PCD-221848.

- PC-DMIS Help now provides detailed information about the Distance Fixed (DF) ISO modifier. This modifier changes the behavior of the Plane Cylinder Slot type datum reference frames so that they can more closely simulate the function of the part. See PCD-222277.

- PC-DMIS Help now provides better instructions about how to install and access a printable manual for supported languages. See PCD-222336.

HxGN Robotic Automation

- PC-DMIS now sends the pass or fail information based on out-of-tolerance dimensions to the Robotic Automation Execution manager after the execution of a measurement routine. This information helps the Execution Manager to adapt the playlist. See PCD-220166.

- You no longer get an application error when you export measurement routines with specific CAD models to HxGN Robotic Automation. See PCD-221918.

Laser

- PC-DMIS no longer increases the size of the laser Scan dialog box when you switch between scan types from the **Scan type** list. See PCD-216715.

Legacy Dimensions

- You can now see correct measured values in Excel Form Report when you mark the **Display as radius** check box in the **Position** dialog box. See PCD-219033.

Measured Features

- You can now program new measured features to select on the CAD model through the graphics of an existing point or other measured feature. See PCD-222567.

Mesh

- You can now create a constructed BF or BFRE circle from a *MESHSELECTION* mesh operator. See PCD-210643.

- You are now able to select the units (mm/inch) for a mesh import command. See PCD-212531.

- PC-DMIS now hides the mesh ID in the Graphic Display window with mesh colormaps. See PCD-216119.

Paste with Pattern

- PC-DMIS now includes the default prefix ID for feature names when you mark the **Use default prefix** check box in the **Pattern Setup** dialog box and apply Paste with Pattern along a curve. See PCD-210555.

- PC-DMIS now applies Paste with Pattern correctly even if the part alignment differs from the CAD alignment. See PCD-211998.

- You can now apply a pattern along a curve to the ESF (VWMP) features when you use Paste with Pattern. See PCD-211999.

- You can now see the Paste with Pattern using the center of rotation works correctly with different workplanes. See PCD-215958.

- You can now see that the Paste with Pattern along a curve works correctly when you perform an operation immediately after a Paste with Pattern mirror operation. See PCD-218453.

- You can now type any value in the **Step** box of the **Pattern Setup** dialog box when applied to the Paste with Pattern along a curve. Also, PC-DMIS now displays the number of defined paste cycles to help you decide the appropriateness of the defined step value. See PCD-218680.

- You can now type more decimal places in the **Step** box on the **Curve** tab of the **Pattern Setup** dialog box. See PCD-220764.

Pointcloud

- PC-DMIS now hides the color gradient bar when you perform laser scanning to maximize performance. See PCD-160262.

- PC-DMIS no longer automatically populates the list of hits when you open the **Edit Point Info** dialog box. This avoids performance problems for features that contain a large number of hits in COP/MESH commands or COP/MESH operators. When you select from the feature list, you can now abort the operation if the hits from your selected feature take a long time to populate. See PCD-187690.

- You can now see the **LaserScanningGraphicsRefreshIntervalMilliseconds** entry under the **Pointcloud** section in the Settings Editor application. This entry helps to change the refresh rate of the Graphic Display window when you perform a laser scan. See PCD-216108.

- You can now see the gradient scale in the Graphic Display window immediately after you create a point, surface, or thickness colormap command. See PCD-216295.

- You are now able to see point colormaps in 3D PDF reports. See PCD-218762.

- You can now see reduced file size when you save a measurement routine after a partial execution of laser features. See PCD-219624.

Portable

- PC-DMIS now displays the Portable Scanning Widget toolbar correctly on high resolution monitors. See PCD-215515.

- PC-DMIS now shows the Portable Scanning Widget toolbar when you work with an AS1 sensor that is connected to an RA8 portable arm. See PCD-216520.

- You can now see long feature names properly on the wrist display. See PCD-221180.

Probes

- PC-DMIS now sends the correct HP-THD probe-related geometry information to the controller before you take the calibration hits. This happens when you edit the probe with the same name and perform calibration before you close the **Probe Utilities** dialog box. See PCD-158192.

- PC-DMIS no longer performs an intermittent incorrect inch-to-mm conversion of probe data that is already in mm. See PCD-218568.

- PC-DMIS no longer sets the default value of the ProbeQualVisionParCalibrationEnable entry to 0 for the vision zoom optics ParFocal/Central calibration compensation after a clean or new installation. See PCD-220183.

Protect

- PC-DMIS no longer allows you to save a certified measurement routine to previous versions. See PCD-216664.

Q-DAS Configurator

- You can now see the correct date and time format for K0004 in a DFQ file of the german language. See PCD-191754.

Reporting

- You can now see measured features on a CAD surface in CAD report templates. See PCD-218311.

- PC-DMIS now outputs the tracefield values to the CSV file when you select the **Delete Empty** and the **Report Tracefield** check boxes in the **Output Configuration** dialog box. See PCD-219817.

- You can now see the view of the COP cross-section correctly when you open your custom report in the Report window. See PCD-222213.

Roughness Scan

• PC-DMIS now changes the name of the roughness command name or displays the command in red of the associated evaluation command when you delete or rename the roughness scan command. See PCD-217416.

Summary Mode

• You can now show and hide all the ESF (VWMP) features in Summary mode. See PCD-213472.

• PC-DMIS no longer creates two COP commands when you drag a COP command to a new location in the Summary mode. See PCD-217481.

• You can now see the surface edges when you import an NX DCI CAD model. See PCD-218533.

• PC-DMIS no longer allows the cut operation when you select non-continuous commands in Summary mode. See PCD-218797.

• You can now perform an Undo operation in PC-DMIS to undo all dependent dimension commands. See PCD-219231.

• PC-DMIS no longer changes the toggle state from Manual to DCC mode when in Summary mode and you switch between docking and undocking view. See PCD-222197.

Tool Changer

• PC-DMIS now verifies an HR-R rack that has at least two regular (non-HD) ports before you begin a calibration. See PCD-169964.

Vision

• PC-DMIS vision probe optical calibration now performs execution more quickly and has a shorter black screen period during the focus calibration portion. See PCD-207735.

• PC-DMIS now mirrors correctly when you type a fraction number even without zero before the decimal in the Edit window. See PCD-211925.

• PC-DMIS now shows the correct raw data instead of the nominal point data when the scan fails to collect data or the thickness curve calculation fails. See PCD-219713.

• PC-DMIS now creates polylines correctly when you click on a CAD model for Thickness Scan. See PCD-220164.

Information about this Release

We at Hexagon Manufacturing Intelligence are proud to bring you PC-DMIS 2022.1. PC-DMIS brings together aspects of the software for the development of a complete manufacturing process control solution. With PC-DMIS, dimensional measurement data can flow through your organization, as it is collected from coordinate measuring machines (CMMs), portable measuring arms, and laser trackers.

The testing of this version has been significant. We'd like to take a moment to discuss this process and also make you aware of the various components of testing.

Testing consists of two parts. These can be described as functional testing and integration testing.

- The vast majority of testing effort goes on in the functional area. This is the testing that determines that specific functions that are core to the software, regardless of what type of machine is used, are working correctly.

- The integration testing is essentially a testing of the interface with a particular type of machine.

In the ideal scenario, Hexagon Manufacturing Intelligence would have access to at least one of every piece of hardware running the software that is operating in the field. However, in practical terms, this is impossible. This integration test plan is then performed on as many types of machines as we have available.

Should you experience problems with your system after you install PC-DMIS 2022.1, it could possibly be an integration problem. If it is a problem of this nature, it will probably be evident immediately upon first use of the possibly untested configuration. To report any integration problems, see "Contact Hexagon Manufacturing Intelligence [46]". Should such a problem materialize on a commercial release, you will be given the highest priority for correcting these problems.

For existing users of the software who currently have earlier versions of the software installed, it is advised that you install PC-DMIS 2022.1 into a new directory. This lets you continue to use your current version if you have problems with the new version.

Important Information about the Geometric Tolerance Command

The release of PC-DMIS 2020 R2 introduced the Geometric Tolerance command which completely replaces XactMeasure (Feature Control Frames). The Geometric Tolerance command offers numerous improvements over XactMeasure and provides these benefits:

- Support for the latest revisions of GD&T standards. The standards governing dimensional analysis have or will soon be updated to define datums in a precise

and consistent way and to provide a new, single value definition for profile (ASME Y14.5 – 2009, ASME Y14.5 – 2018, ASME Y14.5.1 - 2019, ISO 1101: 2017, ISO 5459: 2011).

- Robust and intelligent validity checking of feature control frames and measurement strategies of associated features.

With the replacement of the XactMeasure command with the new Geometric Tolerance command, when you open measurement routines in this latest version, PC-DMIS now does an automatic review and migration.

The reason for this automatic review is that in some cases there may be invalid GD&T or measurement strategies in the original routine.

With this latest version, PC-DMIS now automatically checks for and only allows the creation of correct GD&T commands. In previous versions, this was less stringently enforced. Now, in this latest version, when you open a measurement routine, PC-DMIS performs the validity checks, and then one of these cases occurs:

- All the XactMeasure GD&T commands in the original measurement routine are valid or these routines contain no XactMeasure commands (Legacy dimensions remain unaffected). In this case, PC-DMIS doesn't generate any migration report which indicates that the migration is successful and needs no further action.

- The original measurement routine contains invalid XactMeasure GD&T commands or measurement strategies. In this case, PC-DMIS generates a detailed migration report to notify you of any changes that PC-DMIS made and any other items that require further attention.

> **⊗ IMPORTANT**
>
> In all cases, to maintain compatibility with your previous versions, PC-DMIS retains the original unchanged measurement routine and sets it aside in this folder:
>
> C:\Users\Public\Documents\Hexagon\PC-DMIS\<version>\MigrationBackup, where <version> is the PC-DMIS version.
>
> Whenever PC-DMIS performs a migration, the probe hits, and probe paths of those measurement routines remain untouched.

We recommend that you can perform the migration process as a separate offline activity before you update your production machines. To help you with this, Hexagon has created a utility that sorts measurement routines based on the presence of a migration report.

- Routines that generate a migration report require review by a programmer.

- Routines without a migration report do not require a review, and you may release them to production.

To help with this offline migration, if needed, Hexagon can provide free access to an offline subscription to PC-DMIS for a limited time period.

For more details, please contact your local Hexagon representative.

Recommended System Requirements

Operating System

> **IMPORTANT**
>
> **Attention Windows 7 users!** PC-DMIS 2021.2 is the final PC-DMIS version to support Windows 7. Please update your computer's operating system to either Windows 8 or Windows 10.

PC-DMIS 2022.1 operates under 64-bit Windows 10, Windows 8.1, and Windows 8. No other operating systems are supported.

> **NOTE**
>
> For HP-L systems and systems that use RS-SQUARED sensors that run PC-DMIS in DCC mode, you need to use a 64-bit Windows 10 Pro Computer with up to 4 Cores.

You can find a list of supported operating systems for most versions of PC-DMIS here:

https://support.hexagonmi.com/s/article/Windows-OS-Compatibility-Listing-for-PC-DMIS

> **IMPORTANT**
>
> When you use third-party drivers, be sure to contact your local Hexagon Manufacturing Intelligence representative to ensure operating system compatibility.
>
> Running PC-DMIS inside a Virtual Machine (VM) is supported only if the VM supports OpenGL 3 or higher.

> **NOTE**
> The Matrox Framegrabber PC-DMIS Vision hardware component does not support a 64-bit operating system.

Microsoft .NET Framework

Microsoft .NET Framework 4.6.1 for Windows. If you do not have Microsoft .NET Framework 4.6.1, the PC-DMIS installer will install it for you.

RAM

- 4 GB of RAM or higher

The size of the CAD data file and the tessellation multiplier value used affect the amount of memory needed. These both affect the amount of tessellated facets needed to display the model. The smaller the tessellation multiplier value used, the more memory needed for the facets. For large CAD models, this could cause an "Out Of Memory" error. If this occurs, the current PC-DMIS session will be left in an unstable state and should be terminated.

The default tessellation multiplier value is 1.0. Setting a tessellation multiplier of 0.1 will result in a 10 to 20 percent increase in the memory required over the default value of 1.0. Decreasing the tessellation multiplier further to 0.01 will result in an additional 50 to 65 percent increase of memory required.

- 1 GB of video RAM
- 64 GB of RAM Dual-Channel @1063 MHz DDR4-2666 MHz ECC RDIMM memory (for HP-L systems and systems using RS-SQUARED sensors)

CPU

- 2 GHZ or higher quad core processor
- Intel Xeon W-2223 Processor (3.6GHz, 3.9GHz) for HP-L systems
- Intel Xeon Processor E3-1505M (3.00 GHz) for systems using RS-SQUARED sensors
- Intel Core i7 9th Generation or higher (for example, i7-9xxxHx) 6 Cores hyper-threading enabled (for HP-L systems and systems using RS-SQUARED sensors)

Graphics

Any popular graphics card that meets or exceeds the following suggested minimums:

- GPU Memory 2 GB DDR3*

- 6 GB Memory Bandwidth 29.0 GB/s (for HP-L systems)

- CUDA Cores 384

- Open GL 3.0

- NVIDIA Quadro P5000 (4 GB) (for HP-L systems and systems using RS-SQUARED sensors)

- AC or AX type Wi-Fi card for systems using RS-SQUARED sensors

* For an RS4 laser sensor or later model, you need to have a GPU with at least 4 GB DDR3.

The graphics driver must support OpenGL 3.0 or higher. A warning message appears on PC-DMIS startup if the driver does not support OpenGL 3.0 or if your graphics driver is more than three years old.

Hard Drive

- 2 GB of free hard drive space plus allocated virtual memory of eight times the largest CAD file used

- SSD drive, HDD 10K, or two disks in RAID 0 mode (high-performance hard disk drive)

- 128 SSD, 128 SSD RAID, 1 TB HDD

Display

Screen resolution of 1920 x 1080 or higher

> **NOTE**
>
> If you use a high resolution monitor under low-light conditions, some PC-DMSI UI elements may be difficult to see. If so, you can try these options:
>
> - From the PC-DMIS Home screen, select the theme (**Light** or **Dark**) that provides the best UI visibility. For details on how to change the PC-DMIS theme, see "Changing the Theme" in the online Help.
>
> - From the PC-DMIS Home screen, select the theme (**Light** or **Dark**) that provides the best UI visibility. For details on how to change the PC-DMIS theme, see "Changing the Theme" in the online Help.
>
> - Increase the ambient lighting.

Connectivity

- One Serial port

- Three Ethernet ports. This may be required for specific installations in consideration of local needs, including but not limited to CMM systems where one port is required for controller communications and another for intranet/Internet communications.

- Two USB ports

- A properly-configured LMS license or a HASP key (a physical USB portlock)

- LAN port with Intel Chipset (for example, I219) (for HP-L systems)

> **NOTE**
> A HASP key does not act as general-purpose data storage; therefore, you cannot use a HASP key to store (download) arbitrary data from a computer. Similarly, you cannot use a HASP key to put (upload) arbitrary data on a computer. Also, only Hexagon Manufacturing Intelligence applications can read or write to a HASP key; other applications do not have this capability. As a result, you cannot use a HASP key to load and unload data to and from a computer.

Firmware Distributed Controller (FDC) Connection

PC-DMIS establish connection with FDC through the following parameters:

- Controller address - 100.0.0.1

- PC-DMIS computer address - 100.0.0.2

- Subnet mask - 255.255.255.0

- Port - 1234

Pcdlrn.exe and PC-DMIS process listens on port 1294.

Some other ports used are 138 and 1900. The port 1900 was listed as a UDP port.

LMS Licensing

The License verification server and ClmAdmin utility for node locked licenses:

https://licensing.wilcoxassoc.com/flexnet/services

The Floating License servers with Flexnet LmAdmin64.exe uses port 27000-27009 on the server. The LocalHost server on port 8090 and older versions defaults to port 8080. You can define these ports when you install license server or through the server interface. These are only Offline licenses when you are not connected to a machine.

Hexagon Universal Updater

WebSocket URL - ws://webupdater.hexagonmi.com

Server - http://webupdater.hexagonmi.com/v2/db.live

Username - Null

Password - Null

Port - 80

File - updates_v4.20190702090658181.db

If you select to install Offline Help when you update the software, it opens the second remote address on port 443. This port verifies the license.

CrashSender1403.exe

This executable is of PC-DMIS Crash Report Utility tool. You can turn off this option because of Windows Event management.

C:\Program Files\Hexagon\PC-DMIS 2019 R1 64-bit\Launcher\HexagonLauncher.exe

LauncherPC-DMIS.config/nocrashdump

A few Hexagon products need to establish remote connections such as Pulse, Notification Center/Message Lights and Smart Factory.

Anti-Virus Software

Hexagon Manufacturing Intelligence used the Sophos anti-virus tool to test PC-DMIS 2022.1. You will need to confirm the performance of any other anti-virus tool.

http://sophos.com/products/enterprise/endpoint/security-and-control/

Solutions for CMMs Using RS-232 Communications

If you are installing PC-DMIS 2022.1 on a new or existing computer, but you have an older CMM model that uses RS-232 communications, then you will need to install one of these solutions on your computer:

• An external RS-232 serial-to-USB adapter cable plus the serial-to-USB adapter cable driver

• An internal serial adapter card with serial ports

Installing the Software

To install the software, follow these steps:

Step 1: Check System and Hardware Requirements

Before you attempt to install a new version, ensure that you meet the system and hardware requirements discussed in "Recommended System Requirements [21]". You must also have a USB portlock or valid LMS license for the installation to work. Your IT specialist can help you with this information.

- To get your computer's properties, highlight the **This PC** icon, right-click on it, and select **Properties**.

- To check the display properties for the graphics card, go to **Start** and type **Control Panel**, and then select **Display and Settings**.

Step 2: Log on as an Administrator

To install and run your new version for the first time, you must be logged on as a user with administrator privileges.

Step 3: Back Up Existing Settings

Back up your settings from your previous version. By default, PC-DMIS 2022.1 attempts to migrate existing settings from previous installs on the same computer, even from very old versions of the software where settings were stored in the pcdlrn.ini file.

- If your current version uses the pcdlrn.ini file for its settings, back up your pcdlrn.ini file. This file is in the Windows system directory. Save a copy of the file in a safe place.

- If your current version uses the PC-DMIS Settings Editor, back up your PC-DMIS Settings Editor data. To do this, follow these steps:
  1. Start the Settings Editor.
  2. Click the **Backup** button (or **Export**) to open the **Backup** dialog box.
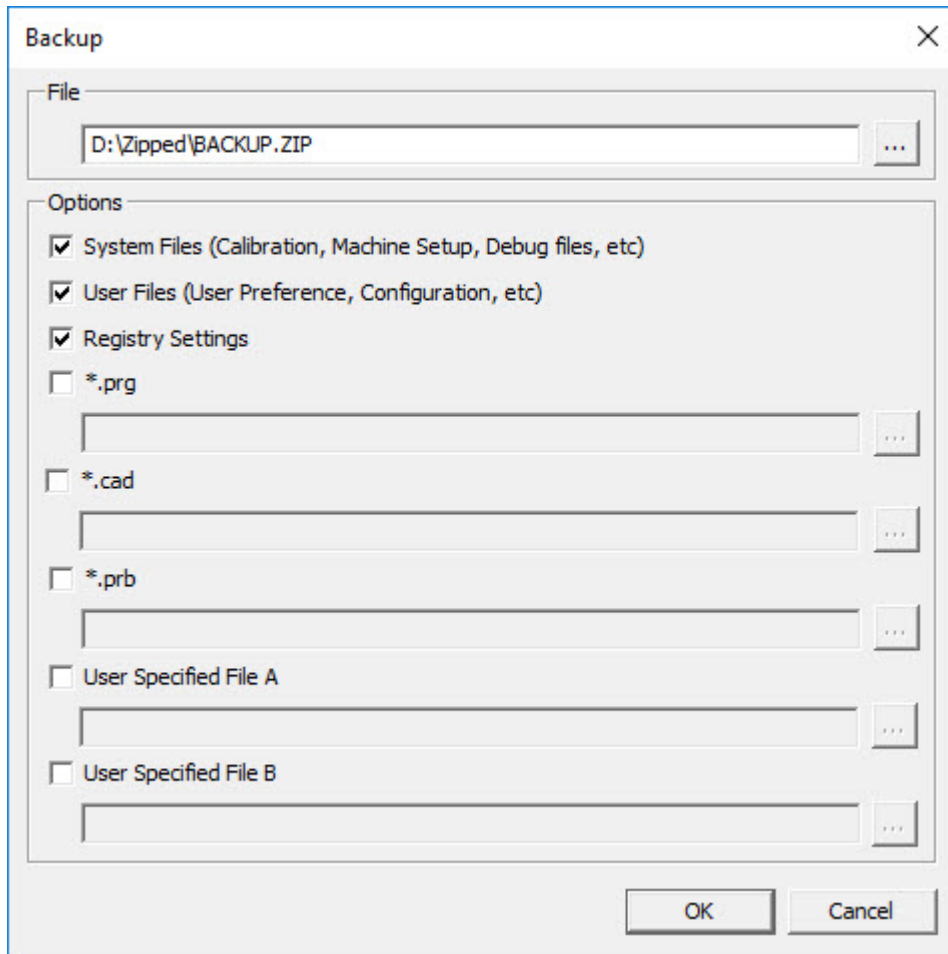
Backup dialog box

3. In the **File** box, define a safe location to save the backed-up files, and give the file a .zip extension.

4. Under the **Options** area, select the first three check boxes, and click **OK**.

If you replace your computer or transfer settings that reside on another computer, you can use the Settings Editor's **Backup** and **Restore** buttons:
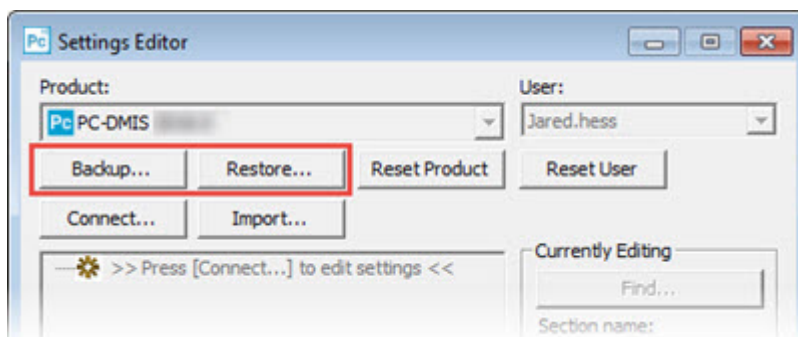
Backup and Restore buttons

For more information on the backup and restore functionality, refer to the Settings Editor documentation.

Backing Up Machine Files for an Xcel CMM or a Sharpe Controller

If you are using a Brown and Sharpe Xcel CMM or a CMM that uses a Sharpe controller, and you are going to install PC-DMIS 2022.1 on a new computer, save copies of the following CMM machine files from your previous version to a safe place:

- comp.dat
  Starting with PC-DMIS 2013 MR1, the comp.dat file moved to:
  C:\ProgramData\WAI\PC-DMIS*version*

- downl.oad

The files are located in the installation (root) directory for all software versions prior to 2013 MR1, regardless of the operating system.

The location of the installation (root) directory is:

C:\Program Files\WAI\PC-DMIS *version*

For versions of PC-DMIS up to and including 3.7 MR3, the location of the installation (root) directory is:

C:\PCDMISW

Backing Up Machine Files for a CMM with a DEA Controller

If you are using a DEA or other CMM with a DEA machine controller, and you are going to install PC-DMIS 2022.1 on a new computer, save copies of the following CMM machine files from your previous version to a safe place (the files vary according to the type of CMM):

- cosdat1.bin
- compens.dat
  Starting with PC-DMIS 2013 MR1, the compens.dat file moved to:
  C:\ProgramData\WAI\PC-DMIS*version*

- Fzyfile.txt
- Rcxfile.txt
- Rmxfile.txt
- Any file with your machine's serial number in its name

The files are located in the installation (root) directory for all software versions prior to PC-DMIS 2013 MR1, regardless of the operating system.

The location of the installation (root) directory is:

C:\Program Files\WAI\PC-DMIS *version*

For software versions up to and including 3.7 MR3, the location of the installation (root) directory is:

C:\PCDMISW

Step 4: Install the Software

The following steps run you through a typical installation. Your installation screens may differ if you are running a different version of PC-DMIS 2022.1 or if you are installing a custom build with additional options. In addition, your license may be configured with different options.

1. Locate the installation file on your installation media; or, if you downloaded it, open the directory that contains the downloaded file. The name of the installation file is: **Pcdmis2022.1_release_##.#.###.#_x64.exe**
   The # symbols represent the version and build numbers.

2. Right-click on this executable file and click **Run as administrator** to open the installation program.

3. If a security warning appears, click **Run**.

4. From the initial license screen, read the license agreement, and select the **I agree with the License terms and conditions** check box.

5. In the box at the bottom, you can define the installation folder. By default, the file installs to:
   C:\Program Files\Hexagon\PC-DMIS 2022.1 64-bit

   To change the folder, either click the browse button (⋯) and choose a folder, or in the box, type a new path.

6. Once you accept the license agreement and choose the installation folder, click **Next** to open the licensing screen.

7. From the licensing screen, choose your license type:
   - **LMS (Software) License** - If you have a software license (called an Entitlement ID), select this option. Complete the boxes beneath this option.

   - **LMS License Server** - If you have a license server to connect to, select this option and then type the server address.

   - **HASP** - If you have a portlock (a physical USB device with the licensed options), ensure that it is connected to your computer, and then select this option.

   For help on how to set up an LMS license, see "LMS License Setup [30]".

8. Click **Next**.

9. Choose to install additional software components. If you chose a custom installation path, the additional software still installs to your default measurement routine directory (usually C:\Program Files\Hexagon\).
   - **PDF Converter 5.0** - This third-party tool converts PC-DMIS 2022.1 reports to PDF outputs.

If you are a Portable user and you have the appropriate license, you can select a Portable interface as your default. For details, see "Switchable Portable Interface" in the PC-DMIS Portable documentation.

- **Offline English Help** - This option installs the English HTML5 Help into an installation folder that you define in step 14. When you access the Help, PC-DMIS tries to use the Internet-based Help, but if it cannot detect an Internet connection, it then attempts to access this offline fallback Help. If you mark the **Use Offline Help** option from the **Help** menu, then it also accesses this offline fallback Help even if you are connected to the Internet. This option appears if you have not installed the offline Help yet. Once you install the offline Help, and you later install an update to PC-DMIS, any updates to the Help occur automatically without presenting a prompt.
  If you need a non-English offline Help, see "Installing Non-English Offline Help Files from Language Packs [44]".

- **Join the Hexagon Customer Experience Improvement Program** - To help improve the product and send usage data to Hexagon Manufacturing Intelligence, select this check box. To opt out of sending usage data, clear the check box. For more information about this program, visit the Hexagon Customer Experience Improvement Program website.

10. Click **Install** to start the installation. A progress bar shows the overall progress.

11. When the installation finishes, a screen shows any warnings or errors. It also contains these options:
    - **Launch PC-DMIS 2022.1 64-bit** - To launch PC-DMIS 2022.1 now, select this check box. If this is your first time installing this version on this computer, you should do this to initialize settings entries. For more information, see "Administrator Privileges Explained [33]".

    - **Show Release Notes** - To display a Readme.pdf file that shows what is new or has changed in this release once you click **Close**, select this check box.

12. Click **Close** to close the installation program.

13. If you have marked the **Offline English Help** check box in step 9, the Help installer program opens to install the offline Help.

14. In the box at the bottom, you can define the installation folder. By default, the file installs to:
    C:\Program Files\Hexagon\PC-DMIS 2022.1 64-bit English Help

    To change the folder, either click the browse button ( ) and choose a folder, or in the box, type a new path.

15. Click **Install** to start the installation. A progress bar shows the overall progress.

16. When the installation finishes, a screen shows any warnings or errors. Click **Close** to close the installation program.
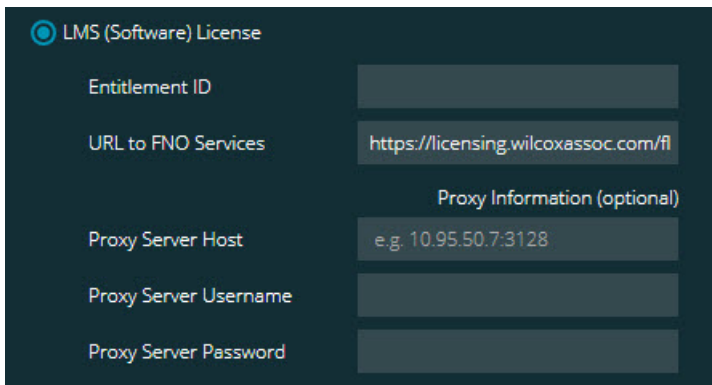
LMS License Setup

This topic provides information if you need to:

- Set up your LMS (software) license

- Connect to an LMS license server

- Update your LMS license

- Provide licensing information to the installer from the command line

LMS (Software) License

If you chose **LMS (Software) License** on the licensing screen [29], and the installation cannot find a valid license on your system, you need to complete these options:

LMS (Software) License option

1. Complete the options:
   - **Entitlement ID** - If you have an Entitlement ID, type or paste the ID you were issued in the box.

   - **URL to FNO Services** - This points to the URL that verifies your license. Ensure that it has this URL:
     https://licensing.wilcoxassoc.com/flexnet/services

   - Proxy information - If your computer is on a network where you need a proxy server to reach the Internet, contact your IT specialist to get this information. Enter the server host, user name, and password.

2. If you do not have an Entitlement ID and you need to activate your license offline, use the CLM Admin application. From the CLM Admin application, choose **Activate new licenses**, and follow the on-screen instructions.

> **NOTE**
>
> For information on how to use the CLM Admin application, consult the Hexagon Client License Manager (CLM) Software documentation. You can find this in the subfolder for your language (such as the **en** directory for English).

3. Click **Next**. The installation software connects to the Internet and activates your license. It then installs the FLEXnet Licensing Service required to use LMS licenses.

LMS License Server

LMS License Server option

If you use a license server, select this item, and then type your license server name in the **License Server(s)** box. The format of this line of text is *port number@server name*, where *port number* is the TCP port number for the license server, and *server name* is the name of the server.

The default TCP port number is 27000. If you don't identify a specific port, the license server uses the default. For example, these mean the same thing:

@server1

27000@server1

> ❗ **IMPORTANT**
>
> If you use this option, place the "@" symbol in front of the server address. If the "@" symbol is left off, the installation process attempts to look locally for the license. This may result in an error.

You can also specify multiple license servers. You can separate them with semicolons. For example, suppose that you have three license servers called licenseserver1, licenseserver2, and licenseserver3, and all of them use the default TCP port. You can specify all of them in a single line of text, like this:

@licenseserver1;@licenseserver2;@licenseserver3

Test link

Updating Your LMS License

Once you finish with the license setup and install PC-DMIS 2022.1, it checks for license updates when it starts and after every eight hours of running. If a license update is available, this notification appears:

PC-DMIS

Updates are available for your PC-DMIS license. Applying them now will require PC-DMIS to restart. Would you like to apply the updates now?

To apply the update, click **Yes**. If you click **No**, PC-DMIS 2022.1 displays the message every eight hours of running or the next time it runs.

- If an option or a feature is added, you are given the choice to apply the changes. A pop-up message displays in the system tray if you apply the changes.

- If an option or feature is removed, a message that requests you to restart PC-DMIS 2022.1 appears. A pop-up message also appears in the system tray to inform you of this.

- If an option or feature is obsolete, it is automatically removed.

NOTE
After you apply an update, restart PC-DMIS to ensure that it functions properly.

Providing LMS Licensing Information to the Installer from the Command Line

You can send LMS licensing information to the installer through command line parameters. For more information, see "Providing LMS Licensing Information to the Installer from the Command Line [47]" in Appendix A.

Administrator Privileges Explained

Software versions earlier than version 2012 require that you run the software as an administrator because some system settings (such as the last probe used, wrist angles, and other items) were shared among all users on that computer. This required that these settings were placed in the LOCAL_MACHINE section of the Windows registry instead of in the CURRENT_USER section (for user-specific settings). Making changes to settings in the LOCAL_MACHINE section requires administrator privileges.

In PC-DMIS version 2012 and later, the settings mechanism used by PC-DMIS changed to only require administrator access the very first time it runs at the end of the installation. From that point forward, standard user access is sufficient.

The PC-DMIS installer has a flag that is built into the setup executable file (Pcdmis2022.1_release_##.#.###.#_x64.exe) that requires the setup process to run with administrator privileges. If the current user has lesser privileges, the setup program displays a prompt to provide a user name and password of an account with administrator privileges.

Once the installation finishes, the first time you run PC-DMIS 2022.1, you must launch it with administrator privileges. If you mark the **Launch PC-DMIS 2022.1 64-bit** check box when the installation finishes, PC-DMIS 2022.1 does this automatically, bypassing the original privilege level of the installer onto PC-DMIS.

Note, however, that if you do not mark this check box, you will need to explicitly right-click on the shortcut and select **Run as administrator** as described in step 6.

For more information on the file system rights that PC-DMIS 2022.1 requires, see "Required User Access Rights [48]" in Appendix B.

Step 5: Copy Files after Installation

If these files are available, copy them from your old PC-DMIS installation directory to the directory where you installed the newer version:

- Sysparam.dat

- Downl.oad

- Fzyfile.txt

- Rcxfile.txt

- Rmxfile.txt

Starting with PC-DMIS 2010 MR2, PC-DMIS automatically copies common system files to the program data files directory when you install a newer version of PC-DMIS.

The comp.dat, compgrid.at, comp.enc, and compens.dat volcomp files used with volcomp methods 13 (ASI) and 14 (BNS) must be in the program data files directory. When you install a newer version of PC-DMIS, these files automatically copy to the program data files directory for the new version. For the default path location of this directory, see "Understanding File Locations" in the PC-DMIS Core documentation.

For additional information on volumetric compensation files and setup, see the Machine Interface Installation Manual (MIIM).

Copying Machine Files for an Xcel CMM or a Sharpe Controller

If you are using a Brown and Sharpe Xcel CMM or a CMM that uses a Sharpe controller, and you installed PC-DMIS2022.1 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

C:\Program Files\Hexagon\PC-DMIS *version*

For more information about these files, see "Backing Up Machine Files for an Xcel CMM or a Sharpe Controller [28]".

## Copying Machine Files for a DEA CMM with a DEA Controller

If you are using a DEA CMM with a DEA machine controller, and you installed PC-DMIS 2022.1 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

C:\Program Files\Hexagon\PC-DMIS *version*

For more information about these files, see "Backing Up Machine Files for a DEA CMM with a DEA Controller [28]".

Step 6: Launch the Software for the First Time

1. When you run PC-DMIS 2022.1 for the first time, go to **Start** and type **PC-DMIS 2022.1 64-bit**.

2. From the list of shortcuts in the **Start** menu, right-click on either the **Online** or **Offline** icon, and then select the **Run as administrator** option (required only if the **Launch PC-DMIS** check box wasn't checked at the end of the installation).
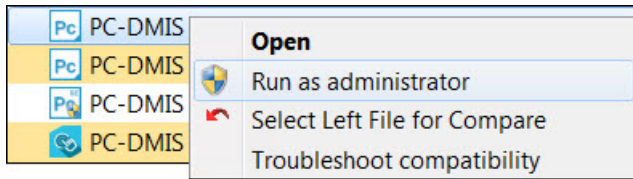
Run as administrator option
The **Run as administrator** option allows the program to write the needed machine-specific settings.

3. You can import settings from a previous version.
    When you install PC-DMIS 2022.1 and your previous version of PC-DMIS used the pcdlrn.ini file, the installer asks if you want to use the settings in the pcdlrn.ini file as your new settings.
    If your previous version used the Settings Editor, follow these steps to use your previous software settings:
    a. Close PC-DMIS 2022.1.

    b. Launch the PC-DMIS Settings Editor from the **Start** menu.

    c. Once it opens, click **Import**, and open the PCDRegFile.dat file you backed up in thStep 3: Back Up Existing Settings [26]. PC-DMIS 2022.1 imports your settings.

   d. Close the PC-DMIS Settings Editor.

Subsequent Startups

For subsequent startups, click the usual **Offline** or **Online** shortcut to launch PC-DMIS 2022.1 normally :

PC-DMIS 2022.1 shortcuts

Once PC-DMIS 2022.1 starts, the **Software License** screen displays the current license agreement. Read the agreement carefully and then at the bottom, click **I agree with the License terms and conditions** to proceed:
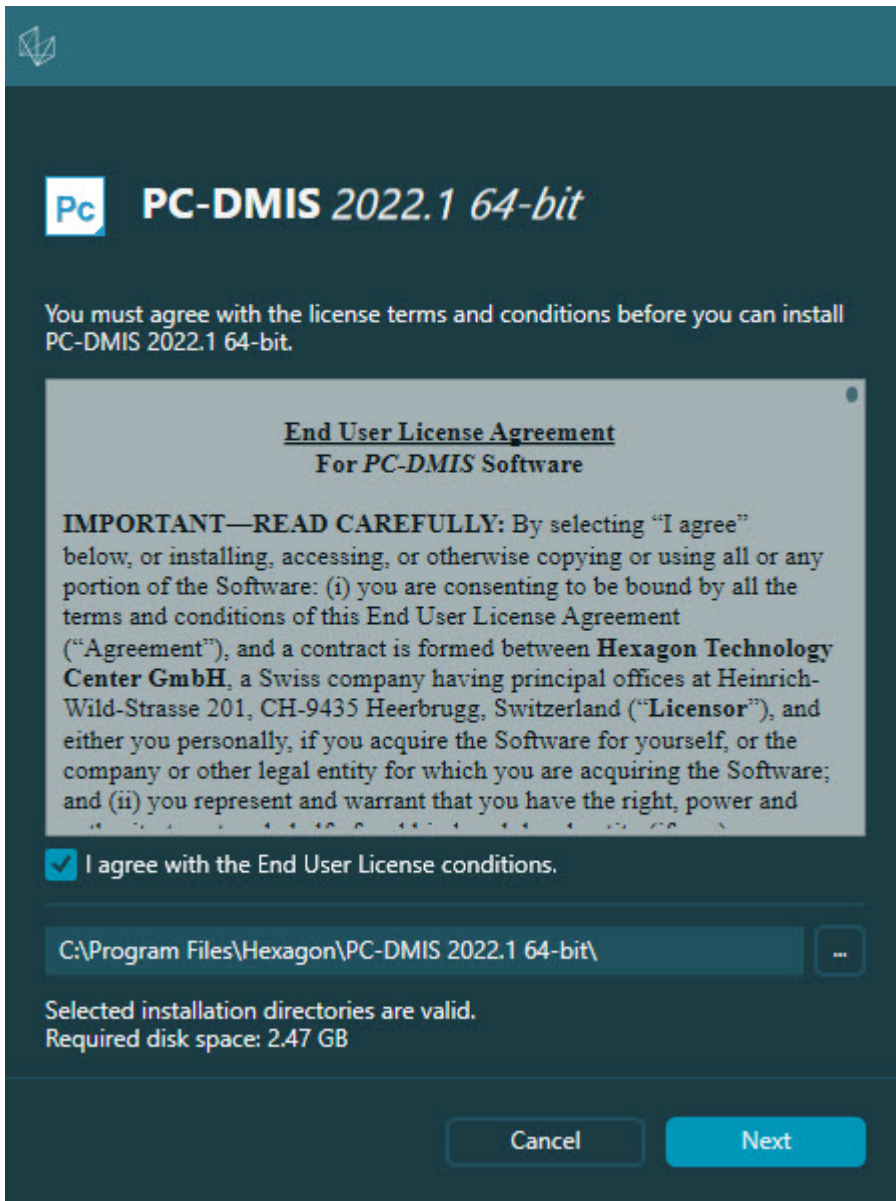

Software License screen

Once PC-DMIS 2022.1 runs, an icon displays in your system tray. If your portlock or LMS license is programmed correctly, the icon displays a green check mark as shown below:
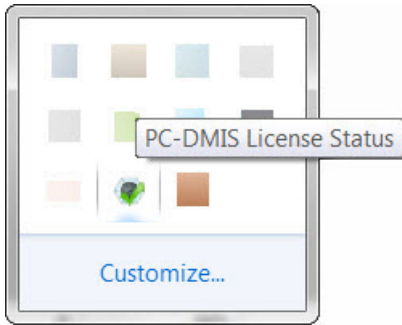
Message for valid PC-DMIS license

If your portlock is not connected or is not programmed correctly, or if you are using an LMS license and your software has not been properly licensed, the icon appears with a red exclamation point overlay. A pop-up message says that the license is disconnected:
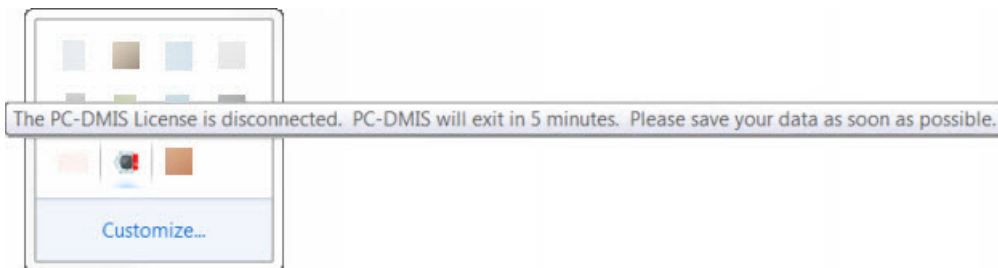
Message for disconnected PC-DMIS license

If the license is disconnected, PC-DMIS 2022.1 functions normally, but after 5 minutes, it automatically closes. Be sure to save your data immediately before this occurs.

Note About CMMs Using RS-232 Communications

By default, PC-DMIS 2022.1 communicates through the COM1 communications port. You need to change this port number to the number that Windows automatically created if a serial-to-USB adapter cable or serial adapter card was installed for communicating with an older RS-232 CMM.

To change the COM port number, follow these steps:

1. In Windows Device Manager, note the number that Windows assigned to the communications port on your computer. For help, refer to Windows Help.

2. Open PC-DMIS in Online mode, and then open or create a measurement routine.

3. Select **Edit | Preferences | Machine Interface Setup**.

4. In the **Comm port** box, enter the port number from Windows Device Manager.

Command Line Installation

You can install PC-DMIS from the command line instead of double-clicking on the PC-DMIS installation executable. In addition, you can turn various command line arguments on or off to speed up the installation process.

This topic lists the supported command line arguments.

> **NOTE**
> Command line arguments are case sensitive.

User Interface Parameters

-q, **-quiet**, **-s**, **-silent** - Installs without any user interaction

-passive - Does a progress-bar-only install

Installation Commands

-uninstall - Removes the application from the computer

-repair - Repairs (or installs if not installed) the application

-package, **-update** - Install (default)

-layout - Creates a local/admin image

HEIP - This parameter sets the Opt-in option for the Hexagon Customer Experience Improvement Program. This provides analytics for PC-DMIS to help us improve the application. By default, this option is on (**HEIP=1**). Set this parameter to 0 (zero) to turn this option off.

USELMSLICENSING - When this parameter is turned on (**USELMSLICENSING=1**), PC-DMIS checks for an LMS license. Set this parameter to 0 (zero) to turn this option off.

INSTALLPDFCONVERTER - When this parameter is turned on (**INSTALLPDFCONVERTER=1**), the PC-DMIS installation installs the PDF Converter. By default, this option is turned on. Set this parameter to 0 (zero) to turn this option off.

INSTALLOFFLINEHELP - When this parameter is turned on (**INSTALLOFFLINEHELP=1**), the PC-DMIS installation installs the offline English help system. By default, this option is turned on. Set this parameter to 0 (zero) to turn this option off.

Restart Handling

-norestart - Suppresses any restarts

-promptrestart - Prompts if a restart is required (default)

Logging

-l, **-log** - Creates an installation log to a specific file (default TempFolder)

-logtoconsole - Logs installation information to the console, if started from the console

Help

-? - Shows the **Supported command line arguments** information screen

Additional Parameters

INSTALLDIR - Specifies the installation folder for the PC-DMIS application. The default location is "C:\Program Files\Hexagon\PC-DMIS <version>", where <version> is the PC-DMIS install version.

SQLCONNECTIONSTRING - Defines the connection string if required by the application

LICENSESTRING - Defines the license string if required by the application

LMSENTITLEMENTID=<EID> - This parameter specifies the LMS Entitlement ID (EID) for your LMS license. Replace "<EID>" with your actual Entitlement ID. For example: ***LMSENTITLEMENTID=99999-12345-67890-12345-67890***

LMSURLTOFNOSERVICES=<FNO server address> - This parameter defines the URL address to the LMS FNO server. Replace "<FNO server address>" with the actual URL to the LMS server. For example: ***LMSURLTOFNOSERVICES=https://licensing.wilcoxassoc.com/flexnet/services***

LMSPROXYHOST=<\{proxyhostname}> - This parameter defines the name of the proxy host server. Replace <\{ProxyHostName}> with the name of the proxy host server. For example: ***LMSPROXYHOST={\fnoserver}***

LMSPROXYUSERNAME=<\{proxyhostusername}> - This parameter defines the user name of the proxy server. Replace <\{proxyhostusername}> with the user name of the proxy server. For example: ***LMSPROXYUSERNAME={\jrjones}***

LMSPROXYPASSWORD=<\{proxyhostpassword}> - This parameter defines the password for the proxy server. Replace <\{proxyhostpassword}> with the password for the proxy server. For example: ***LMSPROXYPASSWORD={\AS4BGxpZyu}***

LMSLICENSESERVERS (@\{ipaddress}) – This parameter defines a comma-separated list of the LMS license servers.

LICENSETYPE - This parameter specifies the license type. The options are HASP, LMSEntitlement, or LMSServer. For example: ***LICENSETYPE=LMSEntitlement*** .

The correct usage for the additional parameters is:

PARAMETER=*value*

Unattended Installation Example

To perform a fully-unattended installation into a directory named **C:\PCDMISW**, use the following command line argument:

Pcdmis*<installer information>*.exe -q INSTALLDIR="C:\PCDMISW"

Where *<installer information>* is the PC-DMIS version and build numbers of the .exe file that you are installing.

Network Connections

This section describes network access details for some Hexagon products.

Firmware Distributed Controller (FDC) Connection

PC-DMIS uses these parameters to establish its connection with FDC:

• Controller address - 100.0.0.1

• PC-DMIS computer address - 100.0.0.2

• Subnet mask - 255.255.255.0

• Port - 1234

LMS Licensing

You can find the license verification server and the ClmAdmin utility for node-locked licenses here:

https://licensing.wilcoxassoc.com/flexnet/services

The Floating License server with Flexnet LmAdmin64 uses ports 27000-27009 on the server. lmgrd and lmadmin listen on TCP port 27000 by default. Communication must be allowed from the client computer to the network license server on this port (or another port if the network license administrator has changed the default). Communication is transitioned from lmgrd / lmadmin to the vendor daemon after the initial connection is made. By default, this is done on a random TCP port. Unless your firewall has built-in support to recognize the randomly chosen port, you need to manually specify a port for the vendor daemon.

The LocalHost server on port 8090 and older versions defaults to port 8080. You can define these ports when you install license server or through the server interface. These are only Offline licenses when you are not connected to a machine.

Offline Help

If you select to install Offline Help when you update the software, it opens the second remote address on port 443. This port verifies the license.

Hexagon Universal Updater

Port - 80 and 8089 (SignalR)

CrashSender1403.exe

This executable is for the PC-DMIS Crash Report Utility tool. If you run this executable with the /nocrashdump switch, the Event Viewer screen takes over the crash report functionality.

C:\Program Files\Hexagon\PC-DMIS 2022.1 64-bit\Launcher\HexagonLauncher.exe

LauncherPC-DMIS.config /nocrashdump

Other Products

A few Hexagon products need to establish remote connections which enables them to send emails and text alerts. These products include Pulse, Notification Center/ Message Lights, and SMART Factory.

Updating the Software

The Hexagon Universal Updater application automatically checks for software updates if your computer is connected to the Internet. This application is installed with PC-DMIS and Inspect. If the updater detects that an update is available, the updater uses the Windows notification area to the right of your clock on your taskbar to inform you of the update. You can then click on a notification to open the updater to download and install that update.

If the updater is running, a small icon for the updater appears in your taskbar's Notifications area (Up). You can click this icon to open the updater.

If the updater is not running, you can manually run the updater to check for updates. You can also use the updater to launch software or install new software applications. To run the updater, from the **Start** menu, type **Universal Updater**, and select the shortcut for the updater.

If you need additional help with the updater, you can access the help content available from within the updater itself.

> **❗ IMPORTANT**
>
> During the download and installation processes, your firewall must allow the http://www.wilcoxassoc.com/WebUpdater Internet address. In addition, you must have Administrator privileges to install the software update.

For information on the installation process, follow the installation steps described in the topics above. Once the installation process finishes, you can use the latest version.

When you update PC-DMIS from the Universal Updater, the software opens the **Associated Products** dialog box. The software displays a list of the required and recommended products.

Required

HxGN SFx | Connector - This software connects your assets to your SFx account. It also monitors your assets and sends data to your SFx account.

Recommended

Inspect - This software provides a simplified operator interface for operators to execute measurement routines from supported products and then generate reports.

Notification Center - This software sends notifications from a client application (such as PC-DMIS) to a measurement device (such as a CMM) during certain events (such as when the machine has an error).

For information on evaluation versions and changing HASP to LMS, see "Updating the Software" in the PC-DMIS Core documentation.

Repairing or Removing an Installation

You can also repair or remove an installation once you install it. To do this, double-click the Pcdmis2022.1_release_##.#.###.#_x64.exe file as if you were beginning the installation process. The setup displays a screen with these options:
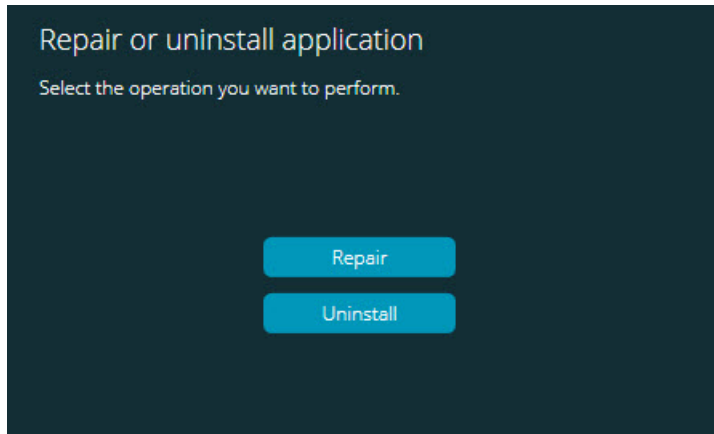
"Repair or uninstall application" dialog box

- **Repair** - This option reinstalls all of the product files as they were originally installed. This option may help resolve issues where an installation didn't properly install all of the files.

- **Uninstall** - This option removes the application from where you installed it. You can also use the **Apps and features** screen or the **Programs and Features** control panel item in Control Panel to uninstall the application.

Running the Software in Another Language

The initial installation setup file for PC-DMIS 2022.1 contains the user-interface files for all of the supported languages. When you install PC-DMIS 2022.1, it installs the language files based on your operating system's language.

To run PC-DMIS 2022.1 in a language other than the operating system's language, select **File | Language**, and then click the desired language. PC-DMIS shows a message that says the application will be shut down and restarted. Click **Yes** to continue. PC-DMIS 2022.1 immediately closes and then reopens in the selected language.

To get the help content available in a non-English language, see "Installing Non-English Offline Help Files from Language Packs [44]".

Installing Non-English Offline Help Files from Language Packs

This topic only applies to users who don't have Internet access.

- With Internet access, the online Help for PC-DMIS 2022.1 is already available from a public web server in all supported languages. The Help opens in your browser whenever you access it.

- Without Internet access, PC-DMIS 2022.1 uses the Help where you installed the offline Help for your version.

With the main installation file, you can install the offline Help in English. However, non-English offline Help files are not included in the main installation file. This means if you intent to use a non-English language, and you don't have Internet access, in order to see any Help content, you *must* also install a language pack for that language.

A language pack contains all of the offline Help content for that language.

To install a language pack, follow these steps:

1. Locate the desired language pack (and .exe file) on your installation media or download it from the Internet here:
   https://downloads.ms.hexagonmi.com/PC-DMIS-Versions/Release/2022.1/Release/x64/Lang

2. Run the .exe file and follow the setup instructions. You do not need to have administrator access to do this step.

This procedure installs the Help content into the folder where you installed the offline Help for your version.

You can then switch to that language in the software and access the Help content as expected.

Troubleshooting

This topic provides information for you to troubleshoot installation, startup, and software update problems.

Startup is Slow

Problem: You use a computer with at least the recommended system requirements as detailed in the "Recommended System Requirements [21]" topic, and it takes longer than 30 seconds to launch the software.

Description: This happens if you try to run PC-DMIS, but you didn't mark the **Launch PC-DMIS 2022.1 64-bit** check box on the installation wizard. This results in a problem loading the HASP driver. Note that this problem only occurs when you install with a HASP license type, as discussed in "Step 4: Install the Software [29]".

Solution: Uninstall PC-DMIS and then reinstall it. To reinstall it, right-click on the installation file and choose **Run as administrator**.

Setting Up the Network to Send Crash Reports

Problem: PC-DMIS 2022.1 cannot automatically send crash reports to Hexagon Manufacturing Intelligence even when your software configuration does not use the **/ nocrashdump** switch. (This switch disables crash reports in PC-DMIS 2022.1.)

Description: A firewall on your computer may be blocking the Hexagon Universal Updater application from connecting to the server. If PC-DMIS 2022.1 crashes, it uses a PHP script over HTTP to send the crash report. If this fails, it then tries to send the report to crashreport@wilcoxassoc.com. It tries using the standard SMTP email protocol. If that fails, it tries to send the email through MAPI.

Solution: The crash report system needs to be able to use port 80 to get out to the server, **http://www.wilcoxassoc.com**/.

Installing on top of an Existing Version Results in Unexpected Behavior

Problem: You installed on top of an existing version of the software, and now the software does not behave normally. Potential symptoms include:

- After you start up the software, you get a "Procedure Entry Point" error.
- When you select **Help | About**, it does not show the new build number.
- Reported bug fixes do not seem to be fixed, and PCDLRN.EXE does not have a newer date and time than the original release.

Description: Something did not install properly on top of the existing version.

Solution: Use **Apps & Features** or Control Panel to completely uninstall the existing version and then reinstall the version you're trying to install.

Running the Legacy DPUPDATE.EXE Does Not Work

Problem: The legacy DPUPDATE.EXE does not run.

Description: If you run PC-DMIS 2022.1 without administrator privileges, DPUPDATE.EXE does not work.

Solution: Run PC-DMIS 2022.1 with administrator privileges.

Contact Hexagon Manufacturing Intelligence

If you are participating in the *technical preview* of PC-DMIS 2022.1, please post your feedback in the appropriate technical preview forum located at www.pcdmisforum.com/forum.php. Please do not contact Hexagon Technical Support for technical previews.

If you are using the *commercially-released version* of PC-DMIS 2022.1 and would like further information or technical support, please contact hexagonmi.com/contact-us or visit hexagonmi.com/products/software. You can also reach Hexagon Technical Support at support.hexagonmi.com or by calling (1) (800) 343-7933.

Appendix A

Providing LMS Licensing Information to the Installer from the Command Line

You can send LMS licensing information to the installer by using the command line:

- If the installer is running in silent mode (**-q**) or basic silent mode (**-passive**), and the correct information is provided, everything runs without user interaction. The command switch **-q** displays the progress bar and handles installer errors. The **-passive** switch hides the user interface.

- If the installer is not running in silent mode, the information provided is used to populate the LMS activation form and skip the license screen [29].

- You can provide the **-?** to review additional command line arguments.

Descriptions of the parameters follow, along with examples.

Descriptions

USELMSLICENSING=1 - This flag is useful only if the system already has an LMS license that the user is using. It allows silent mode to work without having to prompt the user for a license choice. If the installer is not running in silent mode, it still allows the install process to skip the license type selection dialog (thus saving some time).

LMSENTITLEMENTID=*entitlement id* - This parameter and value are useful on a new system where no LMS license was previously installed. It indicates that you want LMS licensing and provides an Entitlement ID to try and activate. When this value is specified, there is no need to specify **USELMSLICENSING**.

LMSLICENSESERVERS="*server1,server2…*" - This parameter is used on systems that communicate with a license server. It also allows the license type selection dialog box to be skipped and the installation to be done silently.

LMSPROXYHOST="*proxyhostaddress*" - This optional parameter gives the address of a proxy host. In silent mode, it is used directly in activation. In non-silent mode, it populates the activation form with this value.

LMSPROXYUSERNAME="*user name*" - This parameter is another optional parameter for the proxy user name. It behaves in the same manner as **LMSPROXYHOST**.

LMSPROXYPASSWORD="*unencrypted password*" - This parameter is another optional parameter for the proxy password. It behaves in the same manner as **LMSPROXYHOST**.

LMSURLTOFNOSERVICES=*URL to FNO server* - This parameter is mostly for internal development. The default URL is to the production server. The new value can be used to override the default value and point to the development server.

Examples

On a brand-new system with a node-locked Entitlement ID, the following line installs PC-DMIS 2022.1 in silent mode:

-q LMSENTITLEMENTID=99999-88888-77777-66666-55555

On a system that already has a license, the following line installs PC-DMIS 2022.1 in silent mode:

-passive USELMSLICENSING=1

On a brand-new system using license servers, the following line installs PC-DMIS 2022.1 in silent mode:

-passive LMSLICENSESERVERS="123.12.134.42"

On a brand-new system with no license, the following line skips the license type selection dialog box and populates the activation form:

LMSENTITLEMENTID=99999-88888-77777-66666-55555 LMSPROXYHOST="123.123.123.123" LMSPROXYUSERNAME="bob" LMSPROXYPASSWORD="marley"

Appendix B

Required User Access Rights

PC-DMIS 2022.1 requires read, write, and create access to the locations defined below in the file system.

File System

Windows 10, Windows 8.1, and Windows 8:

- C:\ProgramData\Hexagon\PC-DMIS\2022.1

- C:\Users\Public\Documents\Hexagon\PC-DMIS\2022.1

- C:\Users\UserName\AppData\Local\Hexagon\PC-DMIS\2022.1

- Any user-specified folder locations for storing measurement routines, probes, subroutines, and so on

Notes

The first time you run a new version, PC-DMIS automatically copies the settings from the most recent version of PC-DMIS that is installed. For this to work, PC-DMIS needs to run with administrator privileges the first time you run it. During the installation, if you select the **Launch PC-DMIS** check box in the setup wizard, it runs PC-DMIS as an administrator and completes this first step.

This initial migration automatically sets read, write, and create permissions on the JSON files for any migrated settings.

If you are using fixturing or laser sensors, the following registry keys are stored back one level:

- HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\FxtServer

- HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\PC-DMIS\NCSENSORSETTINGS

It may be easier to just apply create/read/write privileges to the HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\ key and all sub keys to cover these also.

Appendix C

First-Time Installation with Flexible Fixturing

To be compliant with the permission rules for PC-DMIS products, files associated with fixturing are now located in this folder:

C:\Program Files\Hexagon\PC-DMIS 2022.1 64-bit\Models\QuickFix

This allows access to the files without needing administrator privileges on the computer running PC-DMIS. To accomplish this, the following steps are required when you install PC-DMIS for the first time:

1. The first time you install PC-DMIS and FxtServerInterface, run the FxtServerInterface installation program for the first time with administrator privileges (as is required for the PC-DMIS installation).

2. When you run FxtServerInterface, a message states that the system will migrate all of your data files to the "FIVEUNIQUE" Documents folder described above.
   - If you choose **Yes**, the files are moved, and the original folder is deleted.
   - If you choose **No**, the files are copied, but the original folder is kept.

   Once this is done, the files are moved (or copied), and you are able to run FxtServerInterface.exe without administrator privileges.