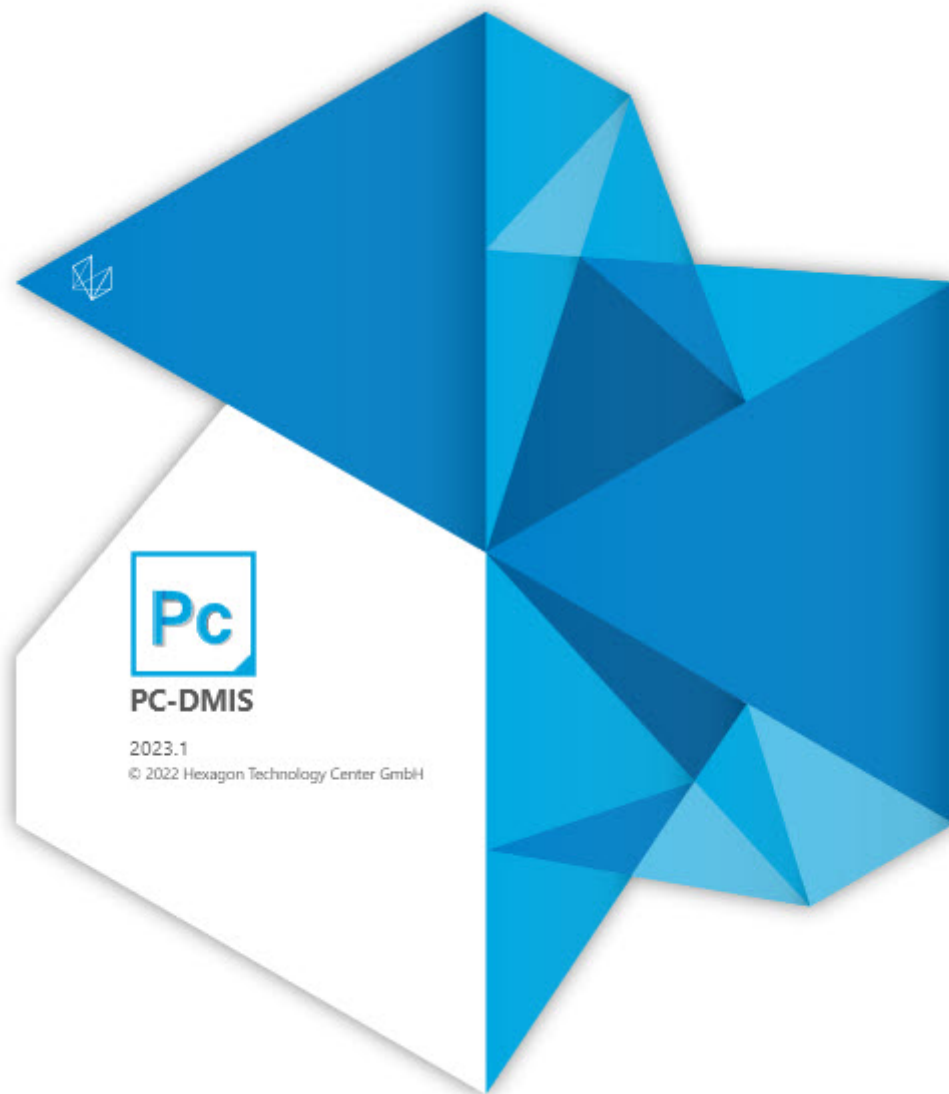


PC-DMIS 2022.2

Release Notes

Hexagon Manufacturing Intelligence
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Release Notes - 2022.2 SP4

Application Errors

You no longer get application errors:

- When you try to open the Construct Feature dialog box with the **Preview Window** dialog box already opened. See PCD-241108.
- When you click **Cancel** in the **Probe Utilities** dialog box. See PCD-241798.

Calibration

- PC-DMIS no longer displays errors when you use collision check on a probe calibration ScanRDV for multiple tips. See PCD-237399.

DMIS

- You can now export DMO files for ISO tolerance commands. See PCD-241276.

ESF (VWMP)

- You can now edit dimension tolerances in the Edit window for ESF (VWMP) features. See PCD-205720.

GD&T Dimensions

- PC-DMIS now correctly draws the tolerance zone when you report the legacy Angularity and Perpendicularity of a 3D line. See PCD-238331.
- PC-DMIS now retains the Workplane setting in the Geometric Tolerance dialog box when you switch between ASME and ISO standards. See PCD-241818.

Laser

- PC-DMIS now correctly extracts all the features when you import a new Mesh or COP into a measurement routine and then execute the measurement routine offline. See PCD-234088.
- You can now run laser offline simulations with HP-L-10.10 in inch units. See PCD-240460.
- PC-DMIS no longer fails scans when HP-L and HP-OW sensors are on the same computer. See PCD-240484.
- PC-DMIS now correctly recognizes spot lasers defined in USRPROBE.DAT files. See PCD-241618.

Legacy Dimensions

- PC-DMIS now applies thickness correctly in dimension commands when you apply actual thickness to auto plane features. See PCD-167531.

Measurement Strategy Editor

- PC-DMIS now correctly converts the **Scan Speed** and **Acceleration** values in the **Measurement Strategy Editor** dialog box when a measurement routine is in inch units. See PCD-235998.
- PC-DMIS now updates feature values after you apply smart parameters in the **Measurement Strategy Editor** dialog box. See PCD-238583.

Pointcloud

- PC-DMIS no longer loses the COP color that you set when you change the **Operator** type in the **Pointcloud Operator** dialog box. See PCD-239202.
- You can now clear the COP surface colormaps created on an STL CAD model when you select **None** from the **Colormaps** list. See PCD-239954.
- PC-DMIS now shows the **Portable Scanning Widget** toolbar when the current probe is a laser probe. See PCD-241723.

Portable

- PC-DMIS now works correctly for the Auto Trigger plane with an auto line feature. See PCD-228148.

Reporting

- PC-DMIS now updates the PDF report correctly when your measurement routine contains the Simultaneous Evaluation command for the Geometric Tolerance label. See PCD-240428.
- PC-DMIS now correctly exports multiple measurements in the Excel Form report when a measurement routine contains a Max value. See PCD-240969.

Temperature Compensation

- You can now use Legacy Temperature Compensation (V1) on dual arm machines. See PCD-239992.
- You can now see the correct part temperature when you use manual temperature compensation V1. See PCD-241294.

Release Notes 2022.2 SP3

Auto Features

- PC-DMIS now updates the actual values in the laser auto feature commands when you click the **Test** button in the **Auto Feature** dialog box. See PCD-238320.
- You can now execute existing measurement routines that use avoidance moves on Auto Features in PC-DMIS versions 2022.2 and later. See PCD-239746.
- The Auto Feature dialog box now shows the correct target type when you edit a feature for the first time after you open a measurement routine. See PCD-239769.
- You can now change a Vision feature's target type in the Edit window. See PCD-240100.

CAD

- PC-DMIS now correctly imports an EDGECAM file (.ip) and displays it in the Graphic Display window when your measurement routine contains a distance command. See PCD-238671.

Constructed Features

- PC-DMIS now correctly creates the construction of a 3D Width feature from the **Construct Width** dialog box. See PCD-226503.
- PC-DMIS now evaluates the Auto Laser Edge Point and the Constructed Extracted Edge Point features correctly when the indent and spacer values are equal. See PCD-226849.
- PC-DMIS now draws constructed extracted features and their IDs in the Graphic Display window when you create those features. See PCD-232064.
- You can now execute a measurement routine that contains the CONSTR/SLOT,SQUARE,CAST commands. See PCD-239055.
- PC-DMIS now displays the correct method in the Construct Feature dialog box when you press F9 on the construct feature command in the Edit window. See PCD-240182.

GD&T Dimensions

- PC-DMIS now shows the correct Geometric Tolerance CAD graphic textual data for extracted cylinder features. See PCD-238290.

- You can now see that XACT Measure migration works correctly when you use internal features, such as Auto feature adaptive measurement strategies, as input features. See PCD-239247.
- You can now see that no change occurs to the legacy profile values for Line, Circle, and Plane features when you select the laser probe type but you do not use a laser probe to measure the features. See PCD-239960.

Laser

- PC-DMIS no longer resets the features in the alignment when you use laser auto features in a measurement routine and you need more than one scan pass to complete the features. See PCD-234398.
- You can now see the correct scan direction for a rotary scan with the HP-OW sensor. See PCD-236468.
- PC-DMIS now creates laser scan commands correctly when you import DMIS files with the HP-L-10.10 sensor. Also, PC-DMIS now correctly translates the acceptance angle filter values. See PCD-239053.

Measurement Strategy Editor

- PC-DMIS can now save smart parameter feature values immediately when you edit the values in the **Measurement Strategy Editor** dialog box. See PCD-238582.

Pointcloud

- PC-DMIS now allows the COP filter to use expressions that update during the execution of a measurement routine. See PCD-226707.
- You can now create multiple COP operator commands without having to re-select the reference COP in the **Pointcloud Operator** dialog box. See PCD-234458.
- PC-DMIS no longer loses the COP color that you set when you change the **Operator** type in the **Pointcloud Operator** dialog box. See PCD-239202.

Reporting

- PC-DMIS now contains the correct ASME rules in the TEXTONLY_Header_Every_Page.RTP, TEXTONLY_TRACKER.RTP, TEXTANDCAD_TRACKER.RTP, and TEXTONLY_ISO8015.RTP report templates. See PCD-221596.
- PC-DMIS now updates the tracefield information in the header of the custom report when you execute a measurement routine in Protected or Operator mode. See PCD-225889.
- You can now see the Dimension Outside Limits for the ASME Size, ISO Size, ASME Tolerance, and ISO Tolerance commands. See PCD-232428.

Release Notes - 2022.2 SP2

Application Errors

You no longer get application errors:

- When you right-click and drag commands in Summary mode. See PCD-237608.

Auto Features

- You can now see improved accuracy of directly measured laser Auto features. This ensures the integrity of the internal pointcloud data on multiple executions of measurement routines. See PCD-229715.
- PC-DMIS now moves the probe to the correct location based on the move points that immediately follow a four-axis scan. See PCD-237186.

CAD

- PC-DMIS no longer shows an error message when you import a STEP file. See PCD-236427.

ESF (VWMP)

- PC-DMIS no longer returns a Math Exception error when you use a tactile probe and click Test on some ESF (VWMP) features. See PCD-231666.

GD&T Dimensions

- PC-DMIS measurement routines that use the CWS sensor no longer hang up when executed on DC machines. See PCD-226191.

Laser

- You can now access the mercury rotation matrix (General parameters in tip data) through automation. See PCD-238249.

Laser Feature Extraction

- PC-DMIS no longer hangs when you execute a measurement routine with the AICON_OFFLINE portable interface set. See PCD-234440.
- PC-DMIS no longer offsets the previous surface that you selected before you mark the **CAD Offset** check box in the **Auto Feature** dialog box. See PCD-235985.

Measurement Strategy Editor

- PC-DMIS now converts the **Prehit** and **Retract** values correctly from mm to inch and vice-versa. Also, PC-DMIS now shows the correct Prehit, Retract, and Check Distance values in the Auto feature dialog box after you create a vector point. See PCD-229815.
- You can now set the before and after avoidance move parameters for auto corner points in the Measurement Strategy Editor. See PCD-229820.
- You can now see the **Avoidance Move - Distance Before** and **Avoidance Move - Distance After** boxes in the **Measurement Strategy Editor** dialog box and the **Measurement Strategy Widget**. See PCD-229872.

Notifications Center

- PC-DMIS now supports the version 3.8 message light firmware that autodetects Bluetooth devices with the name "HexagonLED" along with BT6Out. See PCD-231450.

Pointcloud

- PC-DMIS now has improved execution time when you run measurement routines that execute pointcloud or CAD alignment commands multiple times. See PCD-237471.

Probe Changer

- PC-DMIS can now consistently process any probe selected for probe changer slot assignment when there are more than 200 probes defined on your computer. See PCD-236450.

Probes

- PC-DMIS no longer shows the measurement routine incorrectly in the Edit window after PC-DMIS shows the **Calibration Results** dialog box. See PCD-230746.
- PC-DMIS now correctly performs ring light migration for vision auto features. See PCD-233752.
- PC-DMIS now makes the correct probe and tip selection when you create a new measurement routine and click **Cancel** in the **Temperature Compensation** dialog box. See PCD-234486.

Reporting

- You can now hide all measured features in custom reports. See PCD-230812.

- PC-DMIS now displays the leader line arrows in the correct direction and the angle of leader lines correctly in CAD reports. See PCD-230814.

Settings Editor

- PC-DMIS now added the **CheckCAxisEnabled** setting under the FDC and FDC(CMM2) sections in the Settings Editor with a default value of False. When this entry is set to TRUE, PC-DMIS performs an additional check to verify if the C axis is enabled prior to a command that involves the C axis. See PCD-236355.

Release Notes - 2022.2 SP1

Alignment

- You can now see that the Undo (**Edit | Undo**) works correctly when you work with alignments. See PCD-218034.

Application Errors

You no longer get application errors:

- When NC Server opens PC-DMIS. See PCDNC-6078.
- When you execute a scan multiple times. See PCD-97274.
- When you import a PDF file with GD&T Selection mode turned on. See PCD-224208.
- When you perform an offline calibration of a scanning probe after you deleted the **ProbeNumberOfData** setting under the **USER_ANALOG_PROBING** section in the Setting Editor. See PCD-231315.
- When you revert the changed multiplier value and click **Cancel** in the **CAD and Graphic Setup** dialog box. See PCD-231512.
- When you execute measurement routines to measure vision features. See PCD-231993.
- When you use the MaxIndex or MinIndex expressions in a measurement routine. See PCD-232237.
- When executing dimensions under certain conditions in a measurement routine. See PCD-232792.
- When you open a measurement routine with a vision feature referenced by the Geometric Tolerance command. See PCD-233718.
- When you generate a graphical analysis for Geometric Tolerance commands. See PCD-233923.
- When you work with the Size command. See PCD-236582.

Several changes were made to improve the stability of the application.

Auto Features

- PC-DMIS now executes vision auto features with multiple active targets at a better speed. See PCD-217856.

- You can now see that the **Auto Scale manual feature during execution** option in the **Setup Options** dialog box works correctly for the Auto Vector, Auto Surface, Auto Edge, Auto Angle and Auto Corner points. See PCD-219841.
- PC-DMIS no longer contains missing segments in the polylines offsets when you select a surface for Auto laser Plane extraction. See 233776.
- You can now again see the horizontal clipping in the Edit window for laser Auto feature commands. See PCD-233960.
- You can now see improved CAD section cut results and create a better Auto Profile 2D feature. See PCD-236716.

CAD

- PC-DMIS now draws constructed circle features correctly when you import a .jt file with PMI data to create those features. See PCD-231496.
- You can now see a sample QIF file in this folder:
C:\Users\Public\Documents\Hexagon\PC-DMIS\2022.2\CAD
See PCD-233936.

Constructed Features

- PC-DMIS now restores the constructed feature values correctly when you click the **Undo** button after you delete the selected features. See PCD-213993.
- PC-DMIS no longer creates duplicate features in the Feature list of the Construct dialog box when the features have multiple relationships in the measurement routine. See PCD-231267.
- You can now use the box-select functionality to evaluate constructed extracted features. See PCD-231312.
- PC-DMIS now shows only Patch Scan commands when you select the **Scan Surface** method in the **Construct Surface** dialog box. See PCD-235882.

DMIS

- You can now see the Clearplane definitions (CLEAR/) and MOVE/CLEARPLANE commands after you import DMIS files and you set PC-DMIS to a non-English language. See PCD-231991.

Execution

- You can now see a much better application performance with PC-DMIS. The software now calculates some commands much faster which allows measurement routines to execute much faster as well. See PCD-236563.

GD&T Dimensions

- PC-DMIS now prevents you from selecting scan commands as features for Legacy or Geometric Tolerance dimensions that are only used to drive the laser sensor. See PCD-212896.
- PC-DMIS now shows the correct tolerance condition in the graphical analysis and report window for the legacy circularity dimension. See PCD-221426.
- PC-DMIS now allows you to insert an ISO Size command when you define it as a DATDEF command. This prevents PC-DMIS from displaying a message that wouldn't allow you to insert ISO Size commands. See PCD-223638.
- PC-DMIS now shows the correct deviation value for legacy textual analysis when you report concentricity of a sphere. See PCD-230375.
- PC-DMIS now remembers the state of the **DF** (feature diameter) check box in the **Nominals** tab of the **Geometric Tolerance** dialog box when you create tolerances and keep the dialog box open to create subsequent tolerances. See PCD-231009.
- PC-DMIS now deselects the selected features in the Graphic Display window after you create features from the **Geometric Tolerance** dialog box. See PCD-231497.
- PC-DMIS now applies the maximum available datum shift when you have a secondary datum at MMB and a tertiary datum at RMB (plane or line). See PCD-232180.
- PC-DMIS now shows the correct position of the point info leader lines from the measured points on the CAD in the Graphic Display window. See PCD-233336.
- PC-DMIS no longer multiplies the Size tolerance when you create multiple geometric tolerance commands and you don't close the **Geometric Tolerance** dialog box after you create each command. This was an issue when your measurement routine was in metric units but the report was in standard (inch) units. See PCD-233933.
- PC-DMIS now allows laser scans for a profile or surface when you use a CWS probe for Patch, Freeform, Linear Open, and Perimeter scans. See PCD-237052.

Inspection Plan

- PC-DMIS now sets the correct Angle to Line axis relationship value for an inspection plan. See PCD-233741.

Laser

- PC-DMIS measurement routines that use the CWS sensor no longer hang up when executed on DC machines. See PCD-226191.
- You can now align a part with measured points using reflectors in an automated cell. Also, you can measure with reflector features where accessibility is difficult or impossible with the scanner. See PCD-229659.

- PC-DMIS now provides support for the HH-A-OWST2.5 wrist. See PCD-230302.
- PC-DMIS no longer deletes points from COP commands after you save a measurement routine. See PCD-231898.
- PC-DMIS now closes the Execution dialog box correctly when you paste a Move Point command to an out of volume location in a laser scan command. Also, PC-DMIS no longer displays an error for this. See PCD-232244.

Legacy Dimensions

- PC-DMIS now updates the measured feature nominals with the same values you type in the **Feature Location** dialog box when you mark the **Update Feature Nominals** check box. See PCD-28368.
- PC-DMIS now added the width to the ISO tolerance feature list so that you can select the width feature in the Feature Location dialog box. See PCD-211385.
- PC-DMIS now shows the correct deviation arrows for CAD graphical analysis of legacy orientation dimensions (Perpendicularity, Angularity, and Parallelism) when you report axial features (Lines, Cones, and Cylinders). See PCD-231417.
- PC-DMIS now takes less time to open and fill the dialog boxes that contain the feature list. See PCD-235881.

Measurement Strategy Editor

- PC-DMIS now correctly copies smart parameter grid values in the **Measurement Strategy Editor** dialog box to the feature. See PCD-231487.

Pointcloud

- PC-DMIS now includes surfaces associated with Extended Sheet Metal Features (ESF) when you perform laser simulations. See PCD-227842.
- You can now see that the Laser Surface Point Type selection works correctly even when there is no pointcloud data available. See PCD-231724.
- PC-DMIS now populates the closest COP point coordinates and the deviation values correctly in the **Pointcloud Point Information** dialog box. See PCD-232256.
- PC-DMIS now hides the selection domain in the Graphic Display window when you select the Select operator in the **Pointcloud Operator** dialog box and then you select a different operator. See PCD-233327.

Portable

- PC-DMIS now stores the selected surfaces when you use a multi section scan on a portable arm. See PCD-149867.

- PC-DMIS now restarts and displays a warning message each time when you switch portable interface to store the .dat file configuration for each interface and restore the settings. See PCD-230866.

Probes

- PC-DMIS now supports the IDS 4.96 uEye digital camera interface. See PCD-226911.
- PC-DMIS now includes Senmation probe component definitions to use with the HP-OW sensors. See PCD-234172.

QuickFeature

- PC-DMIS no longer breaks the indexing sequence for a feature ID after you rename any feature ID in a sequence when you use QuickFeatures. See PCD-230748.

Quick Start

- You can now see that the **Parallelism Dimension** option works properly from the Quick Start interface. See PCD-130076.

Reporting

- PC-DMIS now correctly displays the report dimension info labels in the PDF report. See PCD-231785.

Summary Mode

- PC-DMIS no longer duplicates features in the Edit window when you attempt to edit an alignment that is associated with those features and then click **Cancel** in the **Alignment Utilities** dialog box. See PCD-232485.
- PC-DMIS no longer stops scrolling when you move your mouse position left of the scroll bar in the Summary mode. See PCD-232837.
- You can now see that the Copy Parameters and Paste Parameters functions work properly for adaptive scan measurement strategy in Summary mode. See PCD-233952.

Tracker

- PC-DMIS now supports the latest version of Leica LMF (1.9.1.11). See PCD-229764.
- Added initial support for the AT500 Tracker and B-Probe Plus. This new device will be officially supported in PC-DMIS 2023.1.



NOTE

PC-DMIS 2022.2 do not list any specific AT500 device in the **Set Portable Interface** menu. You must select **AT9x0 LeicaLMF Tracker** since both devices use the same LeicaLMF interface.

See PCD-231094.

- You can now see that the T-probe button assignments work correctly during the T-probe operation. See PCD-231109.

Vision

- PC-DMIS no longer stops responding when you measure vision auto features. See PCD-232235.

Release Notes - 2022.2

What's New

Moveset Command

You can now create a moveset command for a set of move points that you can store in a moveset to use with a ClearanceCube. To measure parts with complex geometries, you need move points to reach the measured area before or after you move to the ClearanceCube face. This helps to make Feature Based Measurement with ClearanceCube feasible. See PCD-232794.

See "[One Offline Configuration](#)".

QIF File Import

You can now import a QIF file that includes CAD, embedded GD&T, semantically-defined PMI, and other meta-data into a measurement routine. This option enables the automation of manual processes such as FAI, ballooning, and CMM program generation.

See "[QIF File Import](#)".

Avoidance Moves in Tip Vector Direction

PC-DMIS now extends avoidance moves in the tip vector direction to contact Auto features. This provides more flexibility when complex workpieces restrict movement.

See "[Avoidance Moves](#)".

Copy and Paste Parameter (Adaptive Scanning)

You can now copy and paste parameters from one feature to another for adaptive scanning. This simplifies the programming process to create and update measurement routines.

See "[Copy and Paste Parameter](#)".

Qualification Check for Laser Probes

You can now determine whether a laser probe needs re-calibration and avoid lengthy calibration time with a fast status check on indexable and continuous heads. This saves a lot of time as you no longer need to constantly re-calibrate your laser probes.

See "[Qualification Check](#)".

HP-OW Scan Offset

You can now force the HP-OW to stay in a defined offset to the nominal path during the scanning of a workpiece. This allows more flexibility when you measure different components and improves measurement strategies.

See "[HP-OW Scan Offset](#)".

HP-OW and HP-L-10.10 on a Single CMM

PC-DMIS now supports the use of HP-OW and HP-L-10.10 sensors when both are available on the same CMM (including Optiv). This eliminates the need to swap between sensors and the convenience of fast access to both spot and stripe lasers for a range of scanning strategies.

See "[HP-OW and HP-L-10.10](#)".

Other Improvements

Auto Features

- You can now directly measure laser Auto features easily with the use of the Auto Wrist option. The creation of the scanning paths is now more flexible and the TesaStar wrist now provides better support when you measure cones, cylinders, and spheres.
- You can now define avoidance moves along the tip direction when you use the scanning strategies to program contact Auto features.
- You can now define avoidance moves along the tip direction when you use the default PC-DMIS measurement strategy to program contact Auto features.
- PC-DMIS now automatically populates the camera sensor pixel size when the hardware provides the information. The default camera sensor pixel size updates to match the most commonly used digital camera.
- You can now use the Copy Parameters function for the Point Density, Scan Speed, Acceleration, and Offset Force scanning parameters for Adaptive Scan strategies.

CAD

- PC-DMIS now adds color information to the Wavefront (.OBJ) output file with the integration of the Material (MTL) file.

Documentation

- You can now see that the documentation in the Basic Help and Automation Objects Help includes some notes to make it more clear that both automation clients and PC-DMIS need to run with the same level of privileges to avoid errors.
- You can now see that the PC-DMIS Home screen image in the documentation was updated, and some related descriptions and topics were improved.

- You can now see that the Auto cone documentation provides a clearer description of the cone feature.
- You can now see that the documentation for laser sensors has been updated to clarify log debug files, the calibration of DCC HP-L sensors, HP-L calibration results information, and Probe Toolbox options for laser sensors.
- You can now see that the documentation for ESF (VWMP) has been updated to include Settings information.
- The ToleranceCommand Object documentation in the Automation Objects Help now contains an additional example to show how to reference segments and size information for both considered features and datum features.

ESF (VWMP)

- You can now edit dimension comments for ESF (VWMP) features in the Edit window.
- PC-DMIS now shows the log data information being active in the caption of the **Extended Sheet Metal Features** (ESF) dialog box so that you can turn off the caption when you extract Optical ESF (VWMP) features from pointcloud data.

Laser

- You can now force the HP-OW to stay in a defined offset to the nominal path when you scan a workpiece. You can now type the value for the OFFSET parameter in the Probe Toolbox or in the Edit window when you are in Command mode.
- PC-DMIS now uses a larger default intensity threshold for HP-OW calibration to reduce the level of noise in measurement data.
- You can now see that the same On Error commands for contact probes are available for laser probes.

Pointcloud

- PC-DMIS now includes an additional parameter in the *COP/OPER,IMPORT* and *COP/OPER,EXPORT* commands for the selected alignment when you view the Edit window in Command mode.

Portable

- PC-DMIS now supports the RDS 6.2.1 interface.

Probes

- PC-DMIS now includes models for the Senmation Horizontally mounted wrists.
- PC-DMIS now supports the HP-L series of sensors and the HP-OW sensor on the same machine.

- You can now perform the Qualification Check for laser probes.
- You can now see the M5-M2 converter component in the **Probe Utilities** dialog box.
- PC-DMIS now supports the Precitec controller CHRcodile 2 S HS 10 KHz to increase the measured rate.

Settings Editor

- You can now see the description for the setting entries when you position your mouse pointer under the ActiveX section of the Settings Editor.

Summary Mode

- You can now use the **Rename Feature Ids** dialog box to rename multiple feature IDs at the same time with a Prefix, Suffix, and Index number.

Temperature Compensation

- PC-DMIS now displays only temperature compensation axes that are set to visible in the Metrology Reporting software.

What's Fixed?

Application Errors

You no longer get application errors:

- When you construct a surface from a grid scan. See PCD-83567.
- When you re-measure features referenced in an iterative alignment after you change their theoretical values in the Edit window. See PCD-219576.
- When you press Shift + F5 on the geometric tolerance command. See PCD-222432.
- When you press F1 in the **Surface Profile** legacy dialog box. See PCD-227590.
- When you cancel and then restart a probe calibration. See PCD-229718.
- When you apply a filter to a constructed circle that uses vision hit data. See PCD-229858.
- When you load measurement routines from previous versions that contain toolkit features and legacy dimensions. See PCD-230527.

Several changes were made to improve the stability of the application.

Auto Features

- PC-DMIS no longer changes the orientation and other properties in the **Auto Feature** dialog box when you create an Auto plane with the **Default PC-DMIS Measurement Strategy** and then switch to the **Adaptive Plan Line Scan strategy**. See PCD-202854.

- You can now see that the MultiCapture functionality includes points defined in polar coordinates. See PCD-217993.
- You can now insert *Move/Clearplane* commands after Auto features in the Edit window when you paste them from a different command. See PCD-224982.
- You can now see that the Paste With Pattern functionality works correctly on Auto Laser Plane extracted features that use the **CAD Offset** option in the **Auto Feature** dialog box. See PCD-226382.
- You can now edit and change the pixel size in the Edit window when your measurement routine is in inches. See PCD-229532.
- You can now see improved accuracy of directly measured laser auto features. This ensures the integrity of the internal pointcloud data on multiple executions of measurement routines. See PCD-229715.

CAD

- PC-DMIS can now measure area location for the Auto Blob feature without the Sheet Metal license. See PCD-186435.
- PC-DMIS now draws the path lines for move points correctly if the selection contains an alignment command. See PCD-213227.
- You can now see all CAD Assembly components in the Vision tab of the Graphic Display window. See PCD-226586.
- PC-DMIS can now calculate CAD vectors correctly for scans that are generated from curved surfaces. See PCD-226912.

Constructed Extracted Feature

- PC-DMIS no longer allows you to create constructed features when you provide incorrect information in the Construct feature dialog box. See PCD-151345.
- You can now type the theoretical measured X, Y, and Z values as polar coordinates (RAH) in the **Construct Generic Feature** dialog box. See PCD-154403.
- You can now select **Planar**, **Spherical**, or **Extended** calculation type for a Constructed Extracted Surface Point in the **Auto Feature** dialog box. See PCD-219464.
- You can now see that PC-DMIS no longer skips over every other Constructed Extracted feature in a measurement routine when you create multiple instances of them from the same feature. See PCD-225311.
- PC-DMIS no longer defaults to the Least Squares math type in the **Construct Plane** dialog box when you create Constructed Extracted Plane features. See PCD-228063.

Documentation

- You can now see the improved help file for dimensioning the profile of a colormap to remove a reference to XactMeasure (Feature Control Frame) dimensioning. See PCD-223894.
- You can now see the improved Automation Objects help. The footer now no longer floats over text in topics. Also, when you access the offline Help in the Firefox browser and click on topics from the Table of Contents, the topics now open in that browser. See PCD-226160.
- You can now see that the different buttons on the PC-DMIS Help Center Introduction page look and respond better to different screen sizes. See PCD-226973.
- You can now see that the buttons on the PC-DMIS intro help page display better for mobile layout views. See PCD-227587.
- You can now see that the initial sentence in the CMM help topic "Adaptive Free Form Plane Scan Strategy" references the correct scan strategy type. See PCD-227825.

Dual Arm

- PC-DMIS now displays a message if the DEA wrist setting is different for both Arm 1 and Arm 2 when you open a dual arm measurement routine. See PCD-226381.

GD&T Dimensions

- You can now see the correct textual information when you use the form plot report template for a geometric tolerance command. See PCD-215172.
- You now see a better descriptive geometric tolerance error message when the cylinder contains less than the minimum number of levels. Also, you can now see approximately double the performance improvement for calculations that involve large datasets. See PCD-217248.
- You can now see the correct deviation values in an Excel form report for the size dimensions. See PCD-219788.
- You can now see the **Workplane** area instead of the **Size** area for the **Workplane** list in the **Reporting** tab of the **Geometric Tolerance** dialog box for the Line profile. See PCD-220980.
- PC-DMIS no longer displays tolerance zones on graphical Analysis for circular runout of cylinders on the worst section instead of the nominal shape. See PCD-221756.
- You can now see the tooltip for the **Unequal Tolerance Zone**, **Dynamic Profile Modifier**, **Specified Tolerance Zone Offset**, and **Unspecified Tolerance Zone Offset** modifier symbols in the **Geometric Tolerance** dialog box. See PCD-227805.

- PC-DMIS now updates the Status window when you edit the Datum Size value in the **Geometric Tolerance** dialog box. See PCD-228085.

Graphic Display Window

- You can now see that PC-DMIS displays the Line Profile in the Graphic Display window for geometric tolerance commands that have less than four points. See PCD-227204.

Metrology Reporting

- PC-DMIS now updates the out-of-tolerance value correctly for ASME or ISO Size commands in Metrology Reporting. See PCD-229974.

Laser

- You can now see the correct unit in the results file after you perform the HP-L-10.10 calibration. See PCD-219843.

Portable

- You can now output laser Auto features measured on a portable arm to a DMO file. See PCD-218319.

Probes

- PC-DMIS now shows the correct probe in the **Probe Utilities** dialog box when a measurement routine contains more than one probe. See PCD-222285.
- PC-DMIS no longer allows you to add a tip when tips are not visible in the Edit window when you are in Command mode. This eliminates the possibility of adding a tip before a LOADPROBE command. See PCD-227634.
- PC-DMIS now applies parfocal or parcentric error compensation for vision probes. See PCD-230201.

Protect

- You can now press the Enter key in the **Submit Routine**, **Submit Revision**, and **Reject Routine** dialog boxes to perform operations. See PCD-199338.

Quick Feature

- PC-DMIS no longer duplicates the display of commands when you create To Point features with QuickFeature and not with the measurement strategy widget. See PCD-223928.

Temperature Compensation

- PC-DMIS now shows the *THERMALEXPANSIONORIGIN* command in red when you insert the command below the *TEMPCOMP* command in the Edit window. See PCD-217488.

Vision

- You can now see that the **Auto freeze frame** option in the **Live View Setup** dialog box works correctly with the HP-C-TS5.10 probe. See PCD-227088.

Information about this Release

We at Hexagon Manufacturing Intelligence are proud to bring you PC-DMIS 2022.2. 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 2022.2, 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 \[56\]](#)". 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 2022.2 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\

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

PC-DMIS 2022.2 operates under 64-bit Windows 11 and Windows 10. No other operating systems are supported.



IMPORTANT

PC-DMIS does not currently support RDS drivers under the Windows 11 operating system.



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.

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-DMIS 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.
- 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

Pcdlrm.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\2022.2 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.

Browsers

- Microsoft Edge, Mozilla Firefox, Google Chrome



NOTE

We recommend that you keep your browser up to date by installing its latest version.

Anti-Virus Software

Hexagon Manufacturing Intelligence used the Sophos anti-virus tool to test PC-DMIS 2022.2. 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 2022.2 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 \[31\]](#)". 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**.

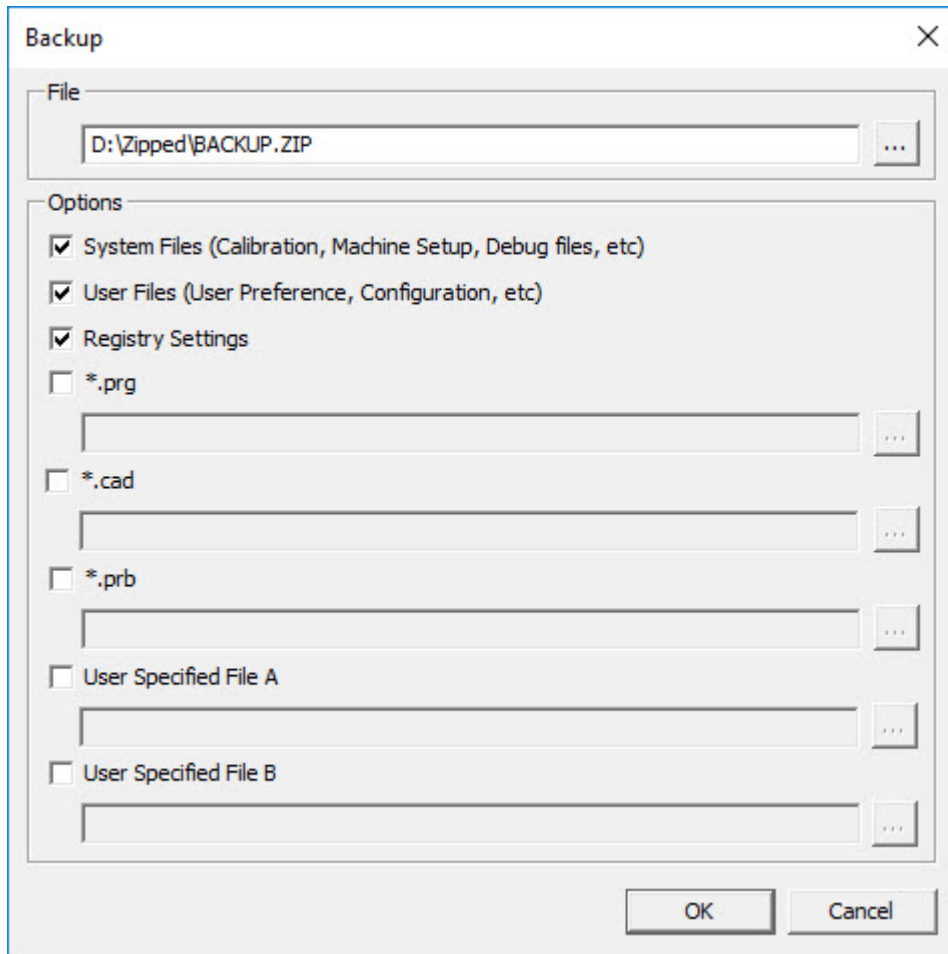
Step 2: Log on as an Administrator

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 2022.2 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 pcdlrm.ini file.

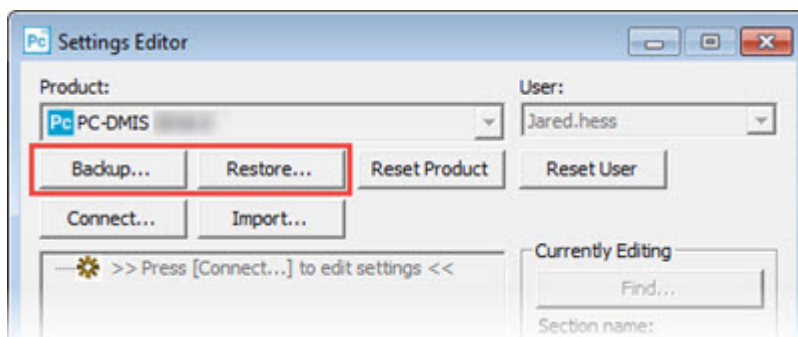
- If your current version uses the pcdlrm.ini file for its settings, back up your pcdlrm.ini file. This file is in the Windows system directory. Save a copy of the file in a safe place.
- If your current version uses the PC-DMIS Settings Editor, back up your PC-DMIS Settings Editor data. To do this, 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 2022.2 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 2022.2 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 2022.2 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: **Pcdmis2022.2_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 End User License 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 2022.2 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 \[41\]](#)".
8. Click **Next**.
9. You can choose to install additional software components. If you selected a custom 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 2022.2 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 \[54\]](#)".

- **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 2022.2 64-bit** - To launch PC-DMIS 2022.2 now, select this check box. If this is your first time installing this version on this computer, you should do this to initialize registry entries. For more information, see "[Administrator Privileges Explained \[43\]](#)".
- **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.




NOTE

If you selected the **Offline English Help** check box in step 9, the English help installer starts up as soon as the PC-DMIS application installation is complete.

13. In the box at the bottom, you can define the installation folder. By default, the file installs to:

C:\Program Files\Hexagon\PC-DMIS 2022.2 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.

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

15. When the installation finishes, a screen shows any warnings or errors. Click **Close** to close the installation program.

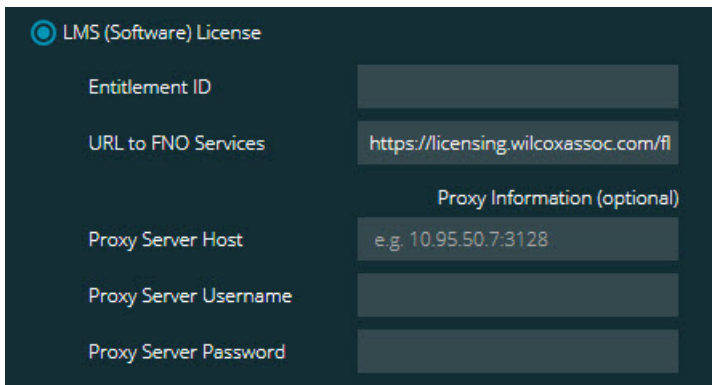
LMS License Setup

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 \[39\]](#), 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:
 - **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.

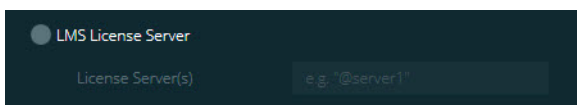


NOTE

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

Updating Your LMS License

Once you finish with the license setup and install PC-DMIS 2022.2, 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 2022.2 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 2022.2 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 \[57\]](#)" 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 (Pcdmis2022.2_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 2022.2, you must launch it with administrator privileges. If you mark the [Launch PC-DMIS 2022.2 64-bit check box](#) when the installation finishes, PC-DMIS 2022.2 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](#).

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-DMIS2022.2 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 \[38\]](#)".

Copying Machine Files for a DEA CMM with a DEA Controller

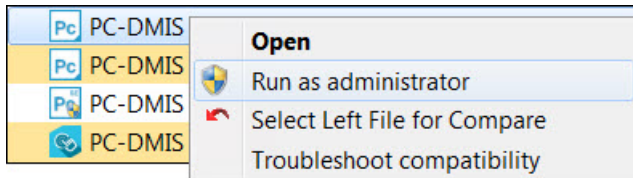
If you are using a DEA CMM with a DEA machine controller, and you installed PC-DMIS 2022.2 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

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 \[38\]](#)".

Step 6: Launch the Software for the First Time

1. When you run PC-DMIS 2022.2 for the first time, go to **Start** and type **PC-DMIS 2022.2 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.
If your previous version used the Settings Editor, follow these steps to use your previous software settings:
 - a. Close PC-DMIS 2022.2.
 - 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 [Step 3: Back Up Existing Settings \[36\]](#). PC-DMIS 2022.2 imports your settings.
 - d. Close the PC-DMIS Settings Editor.

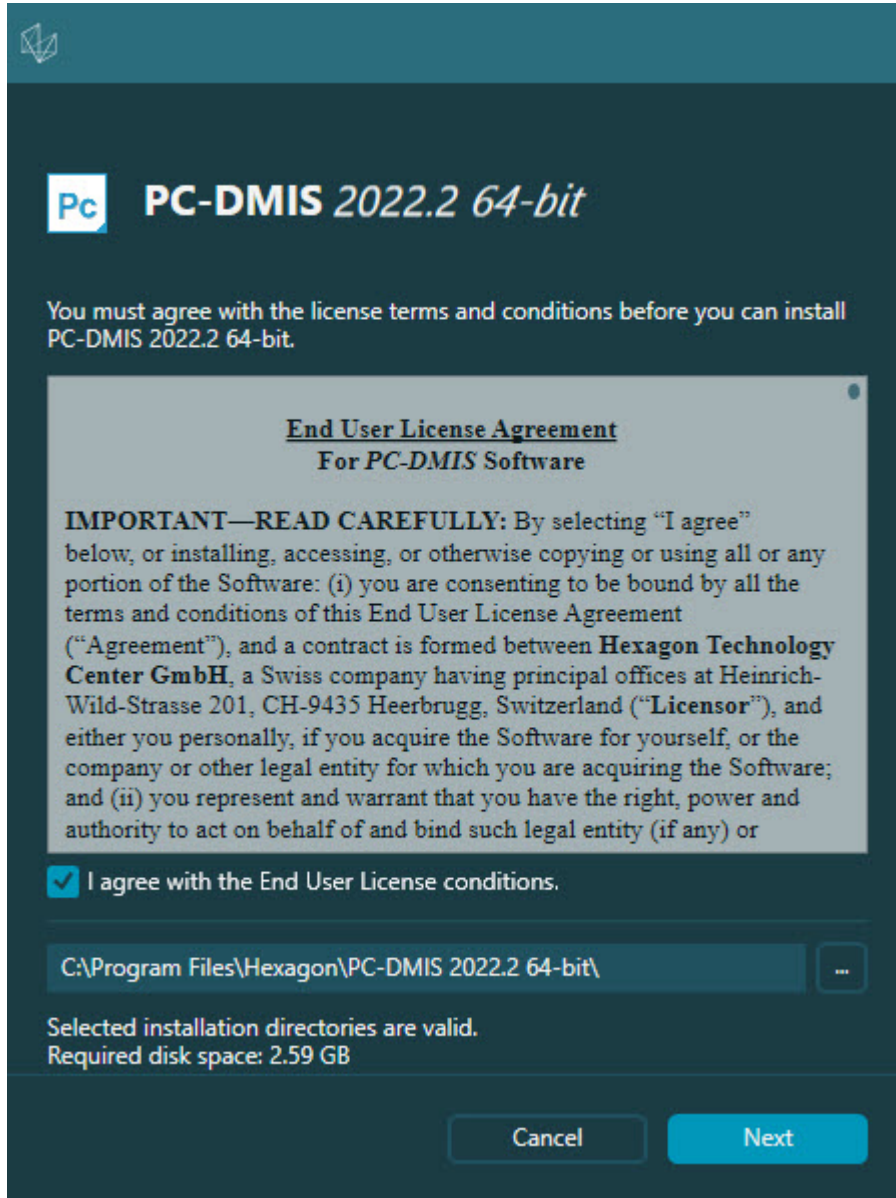
Subsequent Startups

For subsequent startups, click the usual **Offline** or **Online** shortcut to launch PC-DMIS 2022.2 normally :



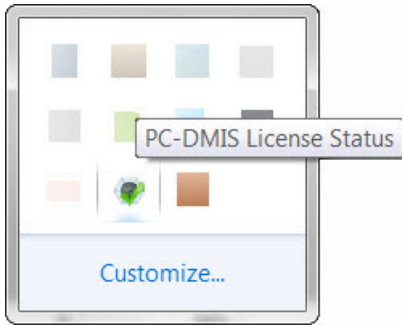
PC-DMIS 2022.2 shortcuts

Once PC-DMIS 2022.2 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:



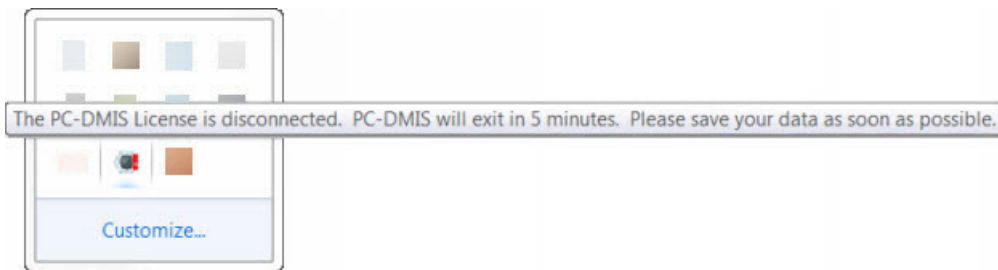
Software License screen

Once PC-DMIS 2022.2 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 2022.2 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 2022.2 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. Imgrd and Imadmin 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 Imgrd / Imadmin 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 2022.2 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 () . 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

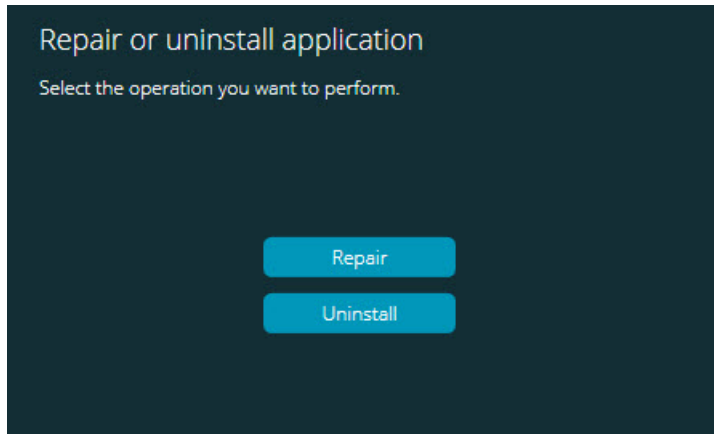
Inspect - This software provides a simplified operator interface for operators to execute measurement routines from supported products and then generate reports.

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 Pcdmis2022.2_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 2022.2 contains the user-interface files for all of the supported languages. When you install PC-DMIS 2022.2, it installs the language files based on your operating system's language.

To run PC-DMIS 2022.2 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 2022.2 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 \[54\]](#)".

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 2022.2 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 2022.2 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/- 2022.2 - PC-DMIS Release Notes/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 \[31\]](#)" 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 2022.2 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 \[39\]](#)".

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 2022.2 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 2022.2.)

Description: A firewall on your computer may be blocking the Hexagon Universal Updater application from connecting to the server. If PC-DMIS 2022.2 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 2022.2 without administrator privileges, DPUPDATE.EXE does not work.

Solution: Run PC-DMIS 2022.2 with administrator privileges.

Contact Hexagon Manufacturing Intelligence

If you are participating in the *technical preview* of PC-DMIS 2022.2, 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 2022.2 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 \[39\]](#).
- 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 2022.2 in silent mode:

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

On a system that already has a license, the following line installs PC-DMIS 2022.2 in silent mode:

-passive USELMSLICENSING=1

On a brand-new system using license servers, the following line installs PC-DMIS 2022.2 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

File System

Windows 11 and Windows 10:

- C:\ProgramData\Hexagon\PC-DMIS\2022.2
- C:\Users\Public\Documents\Hexagon\PC-DMIS\2022.2
- C:\Users\UserName\AppData\Local\Hexagon\PC-DMIS\2022.2
- 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.

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\NCSSENSORSETTINGS

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 2022.2 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.