

# PC-DMIS 2021.2

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Release Notes

Hexagon Manufacturing Intelligence  
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# Release Notes - 2021.2 SP6

## Application Errors

You no longer get application errors:

- When you change the constructed type from the Edit window. See PCD-185705.
- When you use the Backspace key to edit an existing tolerance in the **Extended Sheet Metal Features** dialog box. See PCD-227394.
- When you have a corrupt settings.xml file. See PCD-227403.
- When you click the **Measure All** button in the **LeapFrog / Relocation** dialog box. See PCD-227821.
- When you apply a filter to a constructed circle that uses vision hit data. See PCD-229858.
- When you select a feature and click **Measure** in the **Bundle Alignment** dialog box. See PCD-230512.
- When you load measurement routines from previous versions that contain toolkit features and legacy dimensions. See PCD-230527.
- When you click the **Global Used** button in the **Probe Utilities** dialog box. See PCD-230938.

## Constructed Extracted Features

- The Gaussian filter option now works correctly in the **Construct Filter Feature** dialog box. See PCD-222129.
- PC-DMIS now computes constructed extracted features correctly without CAD when you select a COP in the Construct feature dialog box. See PCD-225667.

## GD&T Dimensions

- You can now see the out-of-tolerance value in the XML statistics output file for legacy profile dimensions. See PCD-214720.
- You can now reference a constructed Cast, Drop, Offset, or Vector Distance Point with the geometric tolerance command either as a tertiary datum or as the considered feature for the position. See PCD-215129.
- PC-DMIS now no longer takes a long time to open a measurement routine with profile surface dimensions. See PCD-221387.
- PC-DMIS now supports laser Round and Square Slots for a geometric tolerance Profile command when you set the ITERATEANDREPIERCE option to YES. See PCD-225171.



- PC-DMIS now correctly re-displays the geometric tolerance feature list after you report conicity with the active **Geometric Tolerance** dialog box. See PCD-227395.
- PC-DMIS can now report the conicity of an Auto Cone (Adaptive Line Strategy) from the **Geometric Tolerance** dialog box. See PCD-227396.
- If you have a geometric tolerance command for a circular runout of a cone, PCDMIS now correctly draws the tolerance band around the feature instead of around the alignment origin. See PCD-229599.
- PC-DMIS no longer removes features from the multi-features DATDEF command in the Edit window when you press F9 and click **OK** in the **Datum Definition** dialog box. See PCD-230085.

## HxGN Metrology Reporting

- PC-DMIS can now send additional geometrical feature data and CAD details to HxGN Metrology Reporting. See PCD-220590, PCD-221158, PCD-225506, and PCD-226061.

## Legacy Dimensions

- You can now see the correct TP bonus value when you perform a partial execution and don't execute that dimension. See PCD-226987.

## Mesh

- You can now use Mesh Reset functionality through automation. See PCD-227726.

## Pointcloud

- PC-DMIS now includes all the CAD surfaces in a surface colormap. See PCD-221424.
- PC-DMIS now calculates the positions for the COP command points correctly when you import a COP file multiple times through the Append function. See PCD-228052.
- You can now select and deselect items in the **Mesh Operator** and **Pointcloud Operator** dialog boxes after you re-open the dialog boxes. See PCD-230687.

## Probes

- You can now access the Fast Probe mode through automation. See PCD-230819.

## Q-DAS Configurator

- PC-DMIS now sends the Q-DAS tracefields to the Blade report (.rpt) file. See PCD-227797.

- PC-DMIS now generates a .dfq file when you execute a measurement routine in Chinese languages. See PCD-229837.
- You can now use the **File | Update from DFQ** file option in Chinese languages. See PCD-231304.
- You can now access the help from the application's **Help** menu option. See PCD-231380.
- PC-DMIS now sends the K8500 and K8501 values to a .dfq file when you set the **Value From** property to **Trace** in the **Setup K-Field Configuration** dialog box. See PCD-231741.

## Reporting

- PC-DMIS now applies the report modifications properly when you use the **AnalysisWindow** object. See PCD-205067.

# Release Notes - 2021.2 SP5

## Application Errors

- You no longer get an application error when you click the **OK** button to close the **Auto Feature** dialog box after you cancel the execution of a Test operation. See PCD-229689.

## Auto Features

- PC-DMIS no longer updates the measured hit values when you edit Auto feature theoretical values and press **No** on the message "Do you want to update measured values also?" box. See PCD-217722.

## CAD

- PC-DMIS now enables the **UniScan** option only when you load a CAD file. See PCD-224083.
- PC-DMIS now calculates the CAD vector correctly for scans that are generated with curved surfaces. See PCD-226912.

## CMM

- The IPP Server now recognizes HPL\_10.10 as a scanner for HexOptPar. See PCD-225313.

## Collision Detection

- PC-DMIS now detects all collisions in a measurement routine. Also, PC-DMIS no longer indicates colored collisions when you perform scans. See PCD-219052.

## GD&T Dimensions

- PC-DMIS no longer removes datums when you change the value of the Size tolerance in the Edit window for common datums. See PCD-226851.
- You can now see the correct `getSizeUpperOutOfTolerance()` and `getSizeLowerOutOfTolerance()` objects for the ISO Tolerance command. See PCD-227806.

## Machine Interface

- PC-DMIS now correctly reads the list of available parameter set names from the controller on UHA machines at startup when you need to home the machine. See PCD-230064.

## Reporting

- You can now see the colormap annotation labels in the report when you set the **GraphicOptions** menu option for CAD images to On to show the labels in reports. See PCD-226848.

# Release Notes - 2021.2 SP4

## Application Errors

You no longer get application errors:

- When you create a new measurement routine and the **Extended Sheet Metal Features** dialog box is open in another measurement routine. See PCD-184843.
- When you add a datum to the lower segment in the **Geometric Tolerance** dialog box for an ISO composite position and there is no datum in the upper segment. See PCD-220836.
- When you perform stop and continue operations multiple times during the execution of an Adaptive Circle Scan. See PCD-225749.
- When you create a Constructed Extracted Surface Point. See PCD-226081.
- When you close PC-DMIS after you delete Mesh or Pointcloud commands. See PCD-227251.

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

## Auto Features

- You can now see that Circular Moves on Auto Cone features work correctly when you insert MOVE/CLEARPLANE commands between hits. See PCD-212679.
- You can now see the correct measured value when you create Edge Point features with actual thickness. See PCD-214068.

## CAD

- You can now see Circle features when you import a Parasolid CAD file. See PCD-221410.

## CNC Machine

- You can now select CNC machines through Automation. See PCD-221020.
- PC-DMIS now re-loads a measurement routine after you switch to the CNC machine type. See PCD-221454.

## Constructed Features

- You no longer see an offset between the feature and CAD model when you report Flatness CAD graphical analysis of an Auto Plane or Constructed Extracted Plane. See PCD-221268.

- You can now see that Constructed Extracted features use the same Math options compared to the Laser Auto equivalent. See PCD-221408.
- PC-DMIS now observes the On Error Laser Error Skip command during the execution of a measurement routine for constructed extracted features. See PCD-222896.
- PC-DMIS now retains the selection of features after you click the **Create** button in the **Construct Feature** dialog box. See PCD-223750.
- PC-DMIS now retains the learned inner and outer state when you edit the feature for extracted Circles, Round Slots, and Square Slots. See PCD-225331.
- PC-DMIS no longer displays two feature ID labels for Constructed Extracted Circle features. See PCD-226082.
- PC-DMIS now creates a Constructed Cylinder based on the method you select. See PCD-226482.

## GD&T Dimensions

- PC-DMIS now displays the correct **Datum** list in the **Datum Definition** dialog box. See PCD-210217.
- PC-DMIS now displays a message to update the ID as a default geometric tolerance ID when you change an **ID** in the **Geometric Tolerance** dialog box. See PCD-210673.
- You can now see the measured lines drawn between the last two hits for various dimension types when you use the geometric tolerance command in the Graphical Analysis window. See PCD-216255.
- PC-DMIS now uses the same calculations for the ISO Size command as well as the ISO Tolerance command for the size output. See PCD-216266.
- PC-DMIS no longer allows you to select the parent cylinder feature of the concentric circle scan in the legacy dimension **Circularity** dialog box. See PCD-221588.
- You can now change the **Arrow Density** option in the **Geometric Tolerance** dialog box to other values than 100% with orientation callouts. See PCD-221611.
- PC-DMIS now reports the correct measured value for the legacy straightness of a child feature from an Adaptive Line Scan (Cylinder). See PCD-223521.
- PC-DMIS now displays all the elements of a common datum in the **Nominals** tab of the **Geometric Tolerance** dialog box. See PCD-225222.
- You can now see that PC-DMIS updates the Status Window when you turn on **Report Datum Size** and change the tolerance of the datum in the **Geometric Tolerance** dialog box. See PCD-225481.
- When you perform stop and continue operations multiple times during the execution of an Adaptive Circle Scan. See PCD-225749.

- PC-DMIS now shows per unit flatness and straightness in the report for the CADONLY and CADONLY\_LANDSCAPE report templates. Also, SEGMENT#\_POS labels now pull data from the correct segment. See PCD-225758.
- PC-DMIS now updates XYZ nominal and deviations with Geometric Tolerance Position callout when you add a simultaneous evaluation command to the measurement routine. See PCD-226313.
- PC-DMIS now displays the maximum and minimum values in the correct units on the DIMINFO labels. See PCD-226567.
- You can now enable or disable Datum Feature output for Geometric Tolerance commands through automation. See PCD-226972.
- You can now see the correct per unit flatness CAD graphics in a non-Z-workplane. See PCD-227168.
- PC-DMIS now correctly migrates geometric tolerance commands when a secondary datum is a pattern of holes in your measurement routine. See PCD-227422.

## Generic Export

- You can now see the correct unit (inch) in the generic export when you create a measurement routine in mm and perform a dimension evaluation in inch. See PCD-162396.

## Graphic Display Window

- PC-DMIS no longer removes the dimension info label from the Graphic Display window when you create Auto Vector Points with dimension info commands turned on and you use the Copy and Paste operations. See PCD-218738.

## Laser

- You can now send laser High Point features to HxGN Robotic Automation for path planning and scanning. See PCD-222412.
- You can now see the MIN\_SEP results for a laser Auto Plane when you select the MIN\_SEP calculation method in the **Auto Feature** dialog box. See PCD-222893.
- You can now see the correct stripe spacing when you use control points to locally change the scan speed on laser scans with the HP-L-10.10 sensor. See PCD-224874.
- PC-DMIS no longer brings back the Quality Filter value to the original value after you change it on embedded control systems. Also, PC-DMIS uses the last set value for the tolerance values. See PCD-226038.
- You can now see that the incidence angle filter for Auto Laser, Constructed Extracted Edge Points, and Flush and Gap affects the segregated points. Also, you can now see the vertices vectors are passed correctly to the COP command when you construct a COP command from a Mesh command. See PCD-226311.

- You can now see the correct results when you mesh all pointcloud data that comes from HxGN Robotic Automation. See PCD-227086.

## Legacy Dimension

- PC-DMIS now calculates the correct bonus value for the legacy position. See PCD-222940.

## Mesh

- PC-DMIS now retains the mesh size you set from the **Mesh Operator** dialog box after you close and reopen the measurement routine. See PCD-226692.
- PC-DMIS no longer displays an error when you open or save a measurement routine in PC-DMIS 2020 R2. See PCD-226955.

## OCR

- PC-DMIS now improved the readability of text objects when you process OCR files. See PCD-203101.

## Paste with Pattern

- PC-DMIS no longer loses input features when you copy a Constructed feature and then you use the **Edit | Pattern** option. See PCD-227893.

## Portable

- PC-DMIS now colors measured point features with the correct dimension color scale. See PCD-221813.

## Probes

- PC-DMIS now allows you to define specific default analog probing parameters/ forces types for most of the analog probe types. This reduces the need to include the OptionProbe command in measurement routines. See PCD-218808.
- PC-DMIS now includes the correct geometry for the Senmation\_HH-AS8-OT2.5-TKJO probe component. See PCD-223574.
- PC-DMIS now includes models for the Senmation horizontally mounted wrists. See PCD-225390.

## Reporting

- PC-DMIS no longer ignores a RECALL/ALIGNMENT if you skip a command before a RECALL command and then you use the same skipped command in another command after the RECALL command. See PCD-216537.



- You can now perform multiple selections of dimensions in the **Dimension Info** dialog box in the Custom Report when you press hold the Shift key down and click the left mouse button. This is only for non-geometric tolerance commands. See PCD-223812.
- PC-DMIS no longer adds the additional text in the report window when you use the EXCELFORMREPORT command. See PCD-225798.

## SFx

- PC-DMIS no longer displays incorrect non-English characters in the SFx solutions. See PCD-175745.

## Summary Mode

- You can now see the correct icon color for all the constructed features in Summary mode. See PCD-214436.
- PC-DMIS now expands or collapses the group command in Summary mode when you select **Yes** or **No** under the **Show Group** area in the **Group** dialog box. See PCD-214938.
- PC-DMIS now updates the correct text and color status of the location dimension in the Summary mode when you edit **Auto Feature** dialog box properties. See PCD-225477.
- PC-DMIS now selects the last created feature during the CAD selection when you disable the measurement strategy. See PCD-226301.

# Release Notes - 2021.2 SP3

## Application Errors

You no longer get an application error:

- When you press F9 on the TTP Free Form Plane Strategy feature, change the **Avoidance move** option in the **Auto Features** dialog box, and then click **OK**. See PCD-219563.
- When you create or edit a geometric tolerance command that references features from another measurement routine. See PCD-221290.
- When you move a measurement routine with vision features to a machine configured with more lamps. See PCD-221501.
- When you use the *Snapshot* command after you import a Solidworks model. See PCD-222127.
- When you switch mesh type from Grid Mesh to 3D Mesh of Mesh command in the Edit window and then re-execute a measurement routine. See PCD-222475.
- When you select the **SELECT** option from the **Operator** list and click the **Close** button in the **Pointcloud Operator** dialog box. See PCD-222885.
- When you select a feature and click the **Cancel** button in the **Alignment Utilities** dialog box. See PCD-224268.

## Auto Features

- You can now see the correct path line from the last sample hit to the cylinder's center. See PCD- 212842.
- You can now see the improved FIXED\_RAD math in the Cylinder **Auto Feature** dialog box. See PCD-214120.
- 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 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.
- PC-DMIS probe no longer moves to the feature center before the probe takes the first hit inside a hole after the last sample hit on a plane when you measure the Auto Circle feature. See PCD-222995.
- You can now use the **ScanDrawPointSize** setting under the **PointSymbol** section in the Settings Editor to control the diameter of the points for Adaptive Freeform Plane scans. See PCD-224346.

- PC-DMIS now applies the correct incidence angle for surface point laser features when you extract a feature from a mesh object. See PCD-225024.

## CAD

- You can now see CAD surfaces trim correctly when you import a .CATPart file. See PCD-217592.
- You can now see the correct point and vector data in the **Auto Feature** dialog box when you click on a CAD label in the Graphic Display window. See PCD-217985.
- 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.
- PC-DMIS now displays a CAD model properly in the Graphic Display window. See PCD-223472.

## CNC Machine

- PC-DMIS now loads a measurement routine properly after you change a CNC machine type. See PCD-221454.

## Constructed Features

- You can now see the **Coplanar with line** check box when you select **Perpendicular** from the **Method** list and then select the two features from the features list in the **Construct Feature** dialog box. See PCD-126759.
- PC-DMIS no longer causes options to disappear nor displays a blank area in the **Construct Feature** dialog box when you press Enter after your modification. See PCD-216463.
- 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.
- You can now see the points around the circumscribed circle on a slot feature and not around its border in the Graphic Display window. See PCD-220772.
- 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.
- You can now see the correct results for Constructed Extracted features when a measurement routine unit is in inch. See PCD-221273.
- 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 can now use the **Diameter** box in the **Symbols** tab of the **CAD and Graphic Setup** dialog box to set the segregation point size for Constructed Extracted Features. See PCD-222655.
- You can now see the **Coplanar with line** check box when you select **Perpendicular** from the **Method** list in the **Construct Plane** dialog box and select features in the Graphic Display window. See PCD-223996.
- You can now see that the Laser Auto Cylinder, Laser Auto Cone, Constructed Extracted Cylinder, and Constructed Extracted Cone uses the correct outer segregation diameter. See PCD-225131.
- You can now see feature ID when you create constructed extracted features in the Graphic Display window. See PCD-226009.

## ESF (VWMP)

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

## External Commands

- PC-DMIS no longer displays an empty Edit window after you execute measurement routines with external report objects. See PCD-208251.
- PC-DMIS no longer inserts a comma at the beginning of a new line in a text file during the execution of a FILE/WRITE command. See PCD-220181.

## GD&T Dimensions

- You can now see a reduced number of false migration errors during Geometric Tolerance migrations. See PCD-218445.
- 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 increased the maximum number of points from 50000 to 200000 for geometric tolerance commands. See PCD-221236.
- You can now change the **Arrow Density** option in the **Geometric Tolerance** dialog box to other values than 100% with orientation callouts. See PCD-221611.
- PC-DMIS now informs you when you need to provide specific size tolerance in the **Geometric Tolerance** dialog box. See PCD-221759.
- You can now see the correct label size of the Dimension Info in a PDF report. See PCD-221790.
- 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.

## Graphical Analysis Window

- You can now see the correct per-unit flatness in the Graphical Analysis window when you create a PATCH scan and construct a plane. See PCD-223930.

## Laser

- PC-DMIS now limits the number of wrist rotations for the Auto Wrist functionality when you create laser perimeter scans. Also, with this fix, you can see an improved

cycle time performance and part accessibility when you scan complex surfaces with a laser probe. See PCD-140742.

- PC-DMIS no longer shows an incorrect spectrum chart for CWS probes. See PCD-224003.
- PC-DMIS now draws the COP/Mesh Select operator in the correct location in the Graphic Display window when you transform a model or modify the PART/MACHINE setup. See PCD-225328.

## Localization

- You can now see the T value in the text report when you mark the **Use Text Mode Dimension Reporting** check box in the **Report** dialog box. See PCD-221571.

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

## Pointcloud

- You can now see that the **Compute** button is available after you click the **Undo** button in the **Pointcloud/CAD Alignment** dialog box. See PCD-173782.
- PC-DMIS now retains the COP/SELECT operator parameters when you click **Reset** in the **Pointcloud Operator** dialog box. See PCD-208116.
- PC-DMIS no longer displays graphical errors when your measurement routine contains pointcloud data and you have both the Graphic Display window and the report window open at the same time. See PCD-208905.
- 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 no longer displays text overlap when you select the first point on the Romer Arm Wrist Display. See PCD-225645.

## 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 replaces your defined Parameter Set name with All-TIPS-WITH-DEFAULTS in an AUTOCALIBRATE command when you migrate your measurement routine into a different version. See PCD-221886.
- PC-DMIS no longer switches automatically to the **Vision** tab in the Graphic Display window for non-vision probes when you click **Results** in the **Probe Utilities** dialog box. See PCD-223790.
- PC-DMIS no longer shows large numbers in the **Add Angles** dialog box when you add angles from CAD. See PCD-223792.
- PC-DMIS no longer displays errors when you execute a measurement routine that contains contact and laser features and it attempts to measure a contact feature with a laser probe. See PCD-225516.
- PC-DMIS can now add tip angles for a probe with the PH1 manual head. See PCD-225741.

## Protected Mode

- PC-DMIS no longer allows you to edit in Protected mode when you set PC-DMIS to Protected Mode and then you close PC-DMIS and re-open it. See PCD-224234.

## Reporting

- 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.

## Summary Mode

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

## Tool Changers

- PC-DMIS probe head no longer crashes in the destination slot of the CW34L rack during a probe change. See PCD-224301.
- PC-DMIS now correctly manages the probe type when you take hits with the probe in the HR-R rack during HR-R calibration. See PCD-225518.

## 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 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.



# Release Notes - 2021.2 SP2

## Application Error

- PCD-220180 - You no longer get an application error when you select the **Iterate and repierce CAD** check box and click the **Compute** button on the **Best Fit Alignment** dialog box.

## Auto Features

- PCD-210235 - You can now define the measurement path properly when you set the **Avoidance move** to **Both** in the outer Polygon **Auto Features** dialog box.
- PCD-213826 - PC-DMIS Probe retract now works properly after a scan (Auto Circle and Basic Scan Circle) on B3CLC controllers.
- PCD-219196 - When you program Vector Point Auto features on PC-DMIS NC, the only Measure Mode allowed is **Nominals**. This prevents changes to approach vectors on execution which avoids the risk of hardware crashes.
- PCD-220406 - PC-DMIS now defines the avoidance move relative to the top of the feature. This avoids the crash of the tip on the part when you set a depth.
- PCD-220614 - PC-DMIS now shows correct deviations in Inches when you perform high point extraction from pointcloud data.
- PCD-221251 - You can now use the **Auto Wrist** dialog box correctly from the laser **Auto Features** dialog box with non-qualified probes.

## CAD

- PCD-219628 - You can now see better tessellation for torus features in a NX (.prt) file.
- PCD-219919 - PC-DMIS now supports CATIA v5 Direct CAD Interface (DCI) R31.
- PCD-220152 - PC-DMIS now draws toroidal surfaces correctly when you import a CAD model.

## Constructed Features

- PCD-217986 - PC-DMIS now updates the variables correctly during the second execution of a measurement routine.
- PCD-219467 - You can now see the correct feature type for constructed extracted planes in the Edit window.
- PCD-220981 - PC-DMIS no longer deletes features when you delete commands from the Edit window.

## Gage

- PCD-218789 - You can now press Ctrl + L to correctly execute a thickness gage block and its commands. PC-DMIS no longer marks the commands automatically.

## GD&T Dimensions

- PCD-219702 - You can now see similar concentricity dimension results when you use the median points method and Axis method of ASME standard.
- PCD-219708 - PC-DMIS now shows the nominal values for position tolerance correctly in the Status window and **Geometric Tolerance** dialog box.
- PCD-219774 - You can now set customized DRF values in the **Geometric Tolerance** dialog box and Edit window.
- PCD-219990 - PC-DMIS now shows the correct units in the report when you report the position of a pierce point from a geometric tolerance command.
- PCD-220122 - You can now see the datum material modifier for ISO concentricity in the report and status window.

## HxGN SFX | Asset Management

- PCD-220075 - PC-DMIS no longer creates duplicate events in HxGN SFX | Asset Management when you have two types of reports (such as PDF and Excel) open at the same time.

## Laser

- PCD-218972 - PC-DMIS now supports HP-L 10.10 sensor variable standoff ability for laser scan control points.
- PCD-219650 - PC-DMIS now shows the correct refractive index value of Distance 2 in the **Probe Readouts** window for thickness measurements when you use an HP-OWT sensor. Also, PC-DMIS no longer displays application errors for thickness scans.
- PCD-221510 - You can now see the latest SDK Scan library version 1.6.2 for the HP-L-10.10 sensor.

## Legacy Dimension

- PCD-220198 - You can now see the correct vectors for laser Cylinder, Cone, Sphere, and Plane Auto features for legacy surface profiles.

## Probes

- PCD-202554 - PC-DMIS no longer creates duplicate tips in the probe file when you use the tip selection toolbar in the execution layout.

- PCD-205369 - PC-DMIS now halts the probe change cycle if the laser sensor fails to get dropped off in the port for the CW43L probe changers and DC4K controllers.
- PCD-218940 - PC-DMIS no longer sends probe-related information for probes that have not yet been loaded in an executed measurement routine when tempcomp commands precede loadprobe commands.
- PCD-219227 - You can now see the correct logo on a CAD model for the HP-S-X1C probes.
- PCD-219413 - PC-DMIS now always starts normally when it is configured for the HP-C-TS5.10 vision probe when the probe is not mounted on the machine.
- PCD-221315 - PC-DMIS now supports the US website to add probe components to the cart from the **Probe Utilities** dialog box.

## Reporting

- PCD-218771 - PC-DMIS now shows the correct labels in Hyper-Reports.

## Rotary Table

- PCD-218248 - PC-DMIS now always sends correct Euler angles to the controller when you align the K component of a rotary table such that the variation is only in the 9th digit after the decimal.

## Scanning

- PCD-221055 - You can now measure the blade with the use of the Blade Scan RT command when you use a tip that faces the minus Y direction.
- PCD-221206 - You can now cancel the execution of the Blade Scan RT command and Roughness Scan command and continue to work in PC-DMIS.

# Release Notes - 2021.2 SP1

## Application Errors

- You no longer get an application error when you delete features that are referenced by the geometric tolerance commands. See PCD-212854.

## Auto Features

- PC-DMIS no longer fails the direct measurement of a Laser Square Slot when scanlines are almost parallel to a feature's axis. See PCD-214789.
- PC-DMIS no longer shows an incorrect message when you use the Find and Replace option to change avoidance move values. See PCD-217988.
- PC-DMIS now allows the avoidance move command to accept different "before" and "after" values when you use Adaptive Free Form Plane and TTP Free Form Plane Strategies. See PCD-218354.
- PC-DMIS now retains the "after" value of the *Avoidance Move* command in a measurement routine when you save a measurement routine to the previous version. See PCD-219117.

## CAD

- PC-DMIS now correctly shows arrow heads in the **Analysis Window** dialog box when you mark the **Show arrow heads** check box in the **Analysis Options** tab of the **Graphical Analysis** dialog box. See PCD-210237.
- PC-DMIS now converts inch to mm correctly for the profile tolerance when you import the DCI CAD files. See PCD-218602.
- PC-DMIS now installs the NX 19\_53.exe file in the installation directory to import the NX DCI CAD model. See PCD-219285.

## CMM

- PC-DMIS now works correctly when you change languages while performing *AUTOCALIBRATE* with ALL-TIPS-WITH-DEFAULT. See PCD-181755.

## Dual Arm

- You can now see the **Missed Probe Hit** option in the **Error type** list of the **On Error** dialog box. So, you can now insert an *ONERROR* command with the **Missed Probe Hit** error type on Arm 2. See PCD-212233.

## ESF (VWMP)

- You can now create ESF (VWMP) features also with the Snap to cut section option in the **Extended Sheet Metal Features** dialog box. See PCD-184649.

## GD&T Dimensions

- PC-DMIS now allows single-point auto circles as a secondary or tertiary datum feature. This happens when:
  - You reference the circle by the geometric tolerance command
  - You report the concentricity (axis method) or position as the considered featureSee PCD-210303.
- PC-DMIS now displays the geometric tolerance command in the report even if one component of the geometric tolerance command is out of tolerance. See PCD-215274.
- You are now able to see the MAX size in the XML stats output for Geometric Tolerance Circularity (ISO). See PCD-216289.
- PC-DMIS now updates the measured values correctly when you toggle the **Iterate and repierce CAD** option on a Geometric Tolerance command. See PCD-219020.

## HxGN Robotic Automation

- You can now send more than 150.000.000 COP points to PC-DMIS without any data loss when you generate the points from HxGN Robotic Automation projects. See PCD-219630.

## Laser

- PC-DMIS now considers the refractive index of the measurement object when you measure a thickness dimension with the HP-OW sensor. See PCD-218763.
- You can now calibrate an HP-L-10.10 probe in Inches. See PCD-218800.
- You can now use the flexible stand-off option in a measurement routine in Inches. See PCD-218941.
- PC-DMIS now considers invalid values correctly when you measure a thickness dimension with the HP-OW sensor. See PCD-218763.
- PC-DMIS no longer performs automatic dark reference when you load the HP-OW sensor. See PCD-219457.

## Pointcloud

- You can now see the effect on CAD surfaces when you change the Refine factor value for a surface colormap in the **Pointcloud Operator** dialog box. See PCD-214593.

- PC-DMIS no longer resets the value in the **Reduced** box after you change the value when you click the Apply button in the **Pointcloud Operator** dialog box. See PCD-216648.

## Probes

- You no longer see a graphical probe offset when animating a rotary table. See PCD-133382.
- PC-DMIS now shows the correct color (blue) for the ring on the HP-TM-EF probe. See PCD-212976.

## Reporting

- PC-DMIS now allows newer versions of the software to correctly read report templates and custom reports created with the 2020 R1 version. Also, PC-DMIS now allows newer versions of the software to correctly save report templates and custom reports to the 2020 R1 version when you perform a Save As operation. See PCD-212475.
- You are now able to view mesh colormaps in a 3D PDF file. See PCD-212705.
- PC-DMIS now reports geometric tolerance profile dimension commands in Excel reports when you select textual analysis. See PCD-218514.

# Release Notes

PC-DMIS 2021.2 is a significant development release of the software. For detailed information and video tutorials about this release, visit [hexagonmi.com/products/software](https://hexagonmi.com/products/software).

## What's New

### Auto Features Laser Creation

You can now create Laser (stripe) scans that rely on selected CAD surfaces to automatically create the stationary CMM path.

See "[UniScan](#)".

### HxGN Metrology Reporting

You can now easily access your metrology reports and trend charts that helps you stay in control. 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.

See "[Renishaw Equator Gauging Systems](#)".

### See "[HxGN Metrology Reporting](#)".

You can now seamlessly connect PC-DMIS as the metrology client to HxGN Robotic Automation.

See "[HP-L-10-10](#)".

### See "[HxGN Robotic Automation](#)".

HxGN Robotic Automation

- Inspect now tracks the probes and tips that the measurement uses and displays them in the **Details** pane. This allows you to more easily know which probes are required before you begin execution.
- You can define the maximum acceptable limit for your probe calibration's standard deviation. If your probe tip's deviation exceeds the limit in this setting, Inspect highlights the calibration date in red and PC-DMIS shows "Invalid Calibration". Execution can only commence when there's a valid calibration.
- Probe calibration can now be scheduled with the new **Scheduler** add-on.

See "[Inspect Probe Management](#)".

### Renishaw Equator Gauging Systems

PC-DMIS and Inspect now support Renishaw Equator Gauging systems.

CMM

## Other Improvements

**You can use macros in Microsoft Excel to automatically perform actions on repetitive tasks such as color coding cells to indicate tolerance. This enables you to easily customize your Excel report template so it's easier to read with additional formatting, remove extraneous information and make new calculations.**

- PC-DMIS now displays a more informative message when the **Find Hole** option in the **Auto Feature** dialog box fails to find a hole during the execution of a part. See PCD-119735.
- You can now type different values for the **Distance Before** and **Distance After** options on the **Contact Auto Move Properties** tab of the **Probe Toolbox** area in the **Auto Features** dialog box. You can do this when you use avoidance moves to program contact Auto features. This simplifies programming and reduces the need of additional moves in-between features. See PCD-120003.
- You can now use the **Auto Wrist** dialog box for Contact and Laser probes. See PCD-139361.
- PC-DMIS can now import an .ebm file that contains all the characteristics of the part to measure in the measurement routine. PC-DMIS creates all the contact Auto features and the related dimensions. See PCD-211702.
- You can now see smooth data when you extract a high point from a pointcloud (internal for direct Laser measurement or external). See PCD-211785.

### **See PCD-219515.**

- PC-DMIS now provides Menu Support when writing SUIT test cases. See PCD-211098.

## **Blade Scan RT**

- PC-DMIS now provides the Blade Scan RT command to scan blade sections in four axis. This command helps to simplify the measurement of blade sections. PC-DMIS automatically calculates the scanning path in four axis based on the nominal points. PC-DMIS scans all sections of the blade in one command. The Blade Scan report command then creates the .RPT file to process the scan data. To analyze the report, use PC-DMIS Blade. This command is available on CMMs that are equipped with a rotary table and a B5 controller. See PCD-203740.



## Dual Arm

- You can now see the multiple arm calibration matrix in the **Multiple Arm Setup** dialog box. See PCD-107660.

## ESF

- You can now see the seven decimal digits for coordinates, tolerances, and vectors of the ESF (VWMP) features. See PCD-190859.
- You can now select an assembly ID or type a new one when you program or edit an ESF (VWMP) feature from the **Extended Sheet Metal Features** dialog box. See PCD-110341.

## Geometric Tolerance Dimensions

- You can now see that Geometric Tolerance commands perform better with large data sets. See PCD-199754.
- You can now see improvements when you migrate from XactMeasure to Geometric Tolerance commands:
  - PC-DMIS now includes all migration errors in the migration report. This includes errors from the Edit window, Report, and commands that are converted to the legacy profile. PC-DMIS now ensures if there is no migration report, there are no migration errors in a measurement routine.
  - PC-DMIS now supports the use of Auto Corner Point, Constructed Circles, Constructed Points, and Patterns of Slots as datums.
    - Constructed Points - Corner, Intersection, Origin, and Pierce 3D
    - Constructed Circles - Projection, Cone, Cylinder, Sphere, Tangent 2 lines, 3 lines and 3 circles, Intersection, and Cast

See PCD-213871.

## HxGN SFx

- PC-DMIS now supports Geometric Tolerance dimensions to send dimension icons to HxGN SFx. See PCD-202288.
- PC-DMIS now supports the ability to transfer your trace information from the file header and trace field commands to HxGN SFx. See PCD-204704.
- PC-DMIS now updates Edge Client data streams to add session trace fields. See PCD-212187.

## Laser

- You can now see the significant reduction in time needed to map a Laser probe. See PCD-67002.

- You can now select multiple surfaces when you program a Laser Auto Plane for extraction from an external pointcloud. See PCD-80602.
- You can now create an Auto High Point feature, that can be directly measured with the use of a Laser scanner or extracted from pointcloud data. See PCD-101091.
- You can now see the calibration results for the Laser Wrist probe mapping. See PCD-110341.
- You can now see an improved and consistent user interface in the **Measure Laser Probe** dialog boxes for the Laser calibration. See PCD-161708.
- PC-DMIS now automatically performs a dark reference when you change a tool to an HP-OW sensor. See PCD-209468.

## Probe

- You can now see the HP-S-X1C/H Stylus Clamping (1x D2) in the probe.dat file. See PCD-202385.

## Q-DAS Configurator

- PC-DMIS now output the Q-DAS results into a version-independent folder:  
C:\Users\Public\Documents\Hexagon\PC-DMIS  
See PCD-204062.

## Settings Editor

- PC-DMIS now stops the execution of a measurement routine when PC-DMIS tries to load the probe and detects any errors. This saves time when you are near the end of a long measurement routine and you receive a probe or tip error. To do this, you need to set the AvoidExecutionWithIllegalTip registry key to True in PC-DMIS Settings Editor. See PCD-206052.
- PC-DMIS now added the ForceCurrentlyLoadedProbeToBeBlank registry entry to see the last used probe when you open PC-DMIS and the registry entry is set to False. See PCD-216265.

## Summary Mode

- Summary Mode now supports dark and light theme. See PCD-173797.
- You can now press F9 in the file header area of the measurement routine to open the **File Header** dialog box. You can then use the dialog box to edit the part name, serial number, revision number, and statistics count.  
The dialog box also provides this information:
  - Informs you if the measurement routine is certified or not.
  - Displays the role of a person who opened the measurement routine to inform you if the Protect license is used or not.

See PCD-197656.

- Peek window now supports Dark and Light themes. See PCD-197659.

## Vision

- You can now see that the IDS Ueye camera configuration file is located in this folder:  
C:\ProgramData\Hexagon\PC-DMIS\<>version>, where <version> is the version of PC-DMIS you have installed  
See PCD-145801.

## What's Fixed

### Application Errors

You no longer get an application error in these instances:

- When you install HASP on the Windows 10 Operating System. See PCD-205504.
- When you switch between different portable interfaces. See PCD-210195.
- When you turn the tracker off and on during the bundle alignment operation. See PCD-210213.
- When you create and edit BA or BH ESF (VWMP) features regardless of whether you set the CAD tessellation multiplier value in your measurement routine. See PCD-210448.
- When you create an illumination quickset or local set in a measurement routine which doesn't exist in PC-DMIS. See PCD-210652.
- When you initiate a drag in Summary mode in certain instances. See PCD-211061.
- When you use a Laser tracker and the target cannot be found on the second attempt after you click the **Move To** button in the **Auto Features** dialog box. See PCD-211076.
- When the Vision box displays error messages. See PCD-211421.
- When you select and deselect an AnalysisWindow object in custom reports. See PCD-215133.
- When you execute COP/OPER, EMPTY commands that don't have a COP reference. See PCD-215378.

### Auto Features

- PC-DMIS now scans directly measured Auto Laser planes completely when you mark the **CAD offset** check box in the **Probe Toolbox** tab of the **Auto Feature** dialog box. See PCD-145714.
- You can now see the legacy Slot size and width tolerance values when you export to a .bas file (**File | Export | BASIC**). See PCD-209995.

- PC-DMIS now projects the ellipse onto the theoretical plane when you perform a contact Auto Ellipse measurement with zero sample hits relative to a feature. See PCD-210306.
- PC-DMIS now no longer resets the number of rows in the **Probe Toolbox** area under the **Contact Path Properties** tab of the **Auto Plane** dialog box. This was an issue when, you select 1 in the **Rows** box as a Radial pattern and use **Default PC-DMIS Measurement Strategy** in the **Auto Plane** dialog box. See PCD-210462.
- PC-DMIS now no longer resets the **Starting/Ending Face** option to the **Use Tip Vector** option automatically in the **ClearanceCube Definition** dialog box. This was an issue when, after you reset the **Starting/Ending Face** option in the **ClearanceCube Definition** dialog box, you open the **Auto Features** dialog box and, without making any changes, you click **Cancel**. See PCD-212190.
- PC-DMIS now correctly updates the 2D distortion data for dual fixed optics after execution of a measurement routine. See PCD-213546.
- PC-DMIS no longer displays a message about the incorrect height and width set in the **Auto Features** dialog box when you create a laser auto plane with a CAD offset. See PCD-214180.

## CAD

- PC-DMIS now displays the graphical analysis when you create a distance dimension and mark the **Graphical** check box in the **Analysis** area of the **Distance** dialog box. See PCD-19389.
- PC-DMIS no longer changes move speed when you re-import previously exported DMIS measurement routines. See PCD-185345.
- PC-DMIS no longer misses surfaces on a CAD model when you use the NX DCI. See PCD-207438.
- PC-DMIS now displays improved icons under the **Layout** area in the **View Setup (Edit | Graphic Display Window | View Setup)** dialog box on high resolution monitors. See PCD-207476.
- PC-DMIS now converts PMI data into appropriate units when you import Invector files. See PCD-208656.
- PC-DMIS can now export the correct theoretical values when you export an internal constructed cylinder to an IGES or STEP file. See PCD-208682.
- Added the **Arrow density** toggle in the Location (Legacy Dimension) dialog boxes to allow better control of graphical analysis. See PCD-208821.
- PC-DMIS now shows feature vectors when you select a CAD element from the **Auto Vector Point** dialog box and then mark the **Display arrows** check box in the **CAD Select** dialog box. See PCD-210371.
- PC-DMIS now displays a more clear message in a message box when you use the ClearanceCube with mini routines. See PCD-211277.

- PC-DMIS now allows you to display cylinder style arrow heads on CAD in the Analysis View and Graphic Display window instead of the line style plots. See PCD-216627.
- PC-DMIS no longer displays the dimension of a feature if you skip that feature during execution of a measurement routine. Also, PC-DMIS now displays the affected dimensions in red in the Edit window to indicate that there is a problem. See PCD-211860.
- PC-DMIS now displays the **Layers to Import** dialog box in the foreground when you import a NX CAD DCI model. See PCD-213125.
- PC-DMIS now imports DXF files without any errors when you select **File | Import | DXF**. See PCD-213187.
- PC-DMIS now correctly tessellates so that all surfaces are visible when you import a SolidWorks DCT model. See PCD-213548.

## CMM

- You can now click the **Reset Limits** button in the **Setup Options** dialog box to read the CMM Limits from the controller (Leitz/FDC). PC-DMIS no longer resets all the values to zero which would make it impossible to perform collision checks during tactile calibration. See PCD-208113.

## Constructed Features

- PC-DMIS no longer projects 3D lines to the reference plane when you select the **Move Feature to Reference Plane** check box in the **Setup Options** dialog box. See PCD-197356.
- PC-DMIS now displays the theoretical values for constructed features correctly when you regenerate a scan. See PCD-209261.

## Dual Arm

- PC-DMIS now shows the probe results file correctly after a successful probe calibration when you use collision check. See PCD-205025.
- PC-DMIS now shows the runtime drawing of Laser stripes for Auto features that are directly measured on Arm 2 of a dual arm machine. See PCD-208357.
- PC-DMIS now works correctly when you execute a dual arm measurement routine with multiple AUTOCALIBRATE commands and breakpoints. See PCD-216584.

## Edit Window

- You can now edit the tolerance of the caliper gage in the Edit window in Command mode. See PCD-203277.
- You can now perform command selections correctly when you create groups and copy/paste commands in Summary mode. See PCD-206160.

- PC-DMIS now selects the correct commands correctly when you switch between the Command mode and Summary mode. See PCD-210493.
- PC-DMIS now displays the pop-up information in the same font as the Edit window font instead of the application font on high resolution monitors. This pop-up information appears when you position your mouse pointer over any command. See PCD-212251.
- PC-DMIS no longer expands groups in the Summary mode when you reposition a group command. See PCD-215411.
- The **Edit Window Layout** dialog box (**Edit | Preferences | Edit Window Layout**) is now not available for the Summary mode. See PCD-216696.

## ESF (VWMP)

- You can now jump to a feature from the **Execution** dialog box for the ESF (VWMP) features. See PCD-94899.
- PC-DMIS now updates the ESF (VWMP) feature ID to the next index in the **Extended Sheet Metal Features** dialog box when you click **Create**. See PCD-184585.
- You can now save and delete the current tolerances in a T-Rule when you program and edit ESF (VWMP) features. The **Save** and **Delete** buttons are now available when you right-click on the T-Rule control in the **Extended Sheet Metal Features** dialog box. See PCD-214227.

## GD&T Dimensions

- PC-DMIS now lists the **Geometric Tolerances** instead of the **Feature Control Frames** in the **Labels for** area under the **ID Setup** tab of the **Setup Options** dialog box. See PCD-210730.
- You are now able to override the default GD&T standard from within the **Geometric Tolerance** dialog box when you use MBD or PMI in GD&T Selection mode. See PCD-211393.
- PC-DMIS no longer displays measured values for Geometric Tolerance commands in red for values that are beyond seven decimal places. PC-DMIS now allows for extremely small errors so they are not tagged as out of tolerance in the Edit window. See PCD-211570.
- PC-DMIS now increments IDs for Geometric Tolerance commands correctly when you apply Paste with Pattern. See PCD-211953.
- PC-DMIS now displays an out of tolerance counter in the footer of the Edit window for each Geometric Tolerance command error displayed in the report. See PCD-211965.
- PC-DMIS no longer changes the existing symmetry evaluations when you change the calculation type by selecting a different feature from the **Considered Features**

list on the **Geometric Tolerances** tab of the **Setup Options** dialog box. See PCD-212154.

- You can now select Constructed features from the OCR widget when you construct features before you open the widget. See PCD-212684.
- PC-DMIS now updates Geometric Tolerance commands when you cut and paste features in the Edit window. See PCD-213012.
- PC-DMIS now updates the XYZ values and leader lines correctly for the Point Info from the Geometric Tolerance command. See PCD-213102.

## Help

- You can now see corrected information regarding Home Page capabilities in the Online Help. See PCD-205628.
- PC-DMIS Help now opens the correct topic when you press F1 on a MESH/OPER,SELECT command or in the **Mesh Operator | Select** dialog box. See PCD-206233.
- PC-DMIS Help now opens the correct topic when you press F1 on a MESH/OPER,COLORMAP command or in the **Mesh Operator** dialog box. See PCD-206235.
- In the Portable Help, in the "Creating Single Point Circle Features" topic, there is now documentation available for "Creating a Single-Point Auto Circle". See PCD-210360.
- Links to our Automation Objects Help now point to the correct help location. See PCD-210715.
- The help now clearly describes the default location of where the PC-DMIS language pack installer installs the PDF versions of the manuals for some languages. The installer installs them into the root of the PC-DMIS Help folder. See PCD-210933.
- The Introductory page of the PC-DMIS web help now handles text wrapping better when you increase the browser's text size. See PCD-211159.
- PC-DMIS now displays the correct topic when you press F1 on the **Curve** tab of the **Pattern Setup** dialog box. See PCD-211394.
- Documentation on Graphical analysis (**Graphical** check box) now more clearly states what PC-DMIS shows for some of the different dimension types. See PCD-211410.
- Information about what folders you can recall alignments from and when to use the **Search Path** dialog box for alignment recall is now more clearly stated. See PCD-211983.
- You can now see the correct help file link for Constructing a Projected Point under the **More** heading from the Constructing a Point Feature topic. See PCD-213736.
- Information about where to modify the probe animation speed is now easier to find in the documentation. See PCD-214594.

- The documentation for "Hard Probe Scanning Minimums Area" topic now includes improved information about what PC-DMIS does if both values in Time Delta and Distance Delta are greater than zero or are set to zero. See PCD-215295.

## Home Page

- PC-DMIS now shows no default values in the **Details** pane when you create a **Blank Template** from the **New** tab. See PCD-205624.

## Laser

- PC-DMIS now sets the **Profile Name** list to **COP - No Filters** in the **Laser Data Collection Settings** dialog box when you open a PC-DMIS version 2020 R1 or earlier measurement routine. See PCD-204758.
- You no longer get Edge point feature calculation errors when you extract a Laser Edge Point from a small part. See PCD-210594.
- PC-DMIS no longer displays colormap annotation points when you select the **Show Only** option for a COP/OPER, CROSS SECTION command. See PCD-211978.
- The AUTOCALIBRATE command with HP-L on Dual Arm Horizontal CMM in the Inch mode no longer fails with the "Move Parameter Out of Tolerance" error. See PCD-214339.
- PC-DMIS now reports the calibration results for Arm 2 correctly when you run the AutoCalibrate map update on both the arms. See PCD-215265.

## Localization

- PC-DMIS now shows the correct translation for the term "Cast" in the **Construct Point** dialog box. See PCD-163726.
- You can now see improved Polish translation in the dialog boxes and menu options. See PCD-192031.

## Pointcloud

- PC-DMIS no longer allows you to create a COP/OPER, EXPORT or COP/OPER, IMPORT without a file name. See PCD-168839.
- You no longer get a feature selection error when a pointcloud covers the targeted CAD surfaces. See PCD-209026.
- PC-DMIS no longer affects the show hit targets when you set the **Scan animate every NPTs collision detection** value in the **Animation** tab of the **Setup Options** dialog box. The **Scan animate every NPTs collision detection** value is now only used for collision detection animation. See PCD-214382.
- PC-DMIS no longer displays a "File already exists" message when you export the data in a COP and provide a new file name. See PCD-214829.



- PC-DMIS now deletes temporary graphic elements from the pointcloud after you close the **Pointcloud Point Information** dialog box. See PCD-215516.

## Portable

- You can now use a Portable Laser probe with the ROY-Laser-O (Offline Laser) license option. See PCD-209657.
- PC-DMIS now displays the **Portable Scanning Widget** toolbar automatically when you switch from scanning to hard probing and then switch back to the scanning. See PCD-211981.
- PC-DMIS now re-executes hard probe scanned Auto features correctly on a portable system. See PCD-212192.

## Q-DAS Configurator

- You can now see the new K-fields in the Q-DAS Data Editor window. See PCD-201838.
- PC-DMIS now supports the output of all Geometric Tolerances when creating the DFQ/DFX+DFD files that are sent to QDAS for statistical analysis. See PCD-212780.
- PC-DMIS now displays the message to update the K-field configuration file if any new K-fields are available for selection. This happens when you open any K-field configuration file from the **Setup K-Field Configuration** dialog box. See PCD-214266.

## Reporting

- PC-DMIS no longer allows you to right-click on locked reports and select **Edit Object** to edit them. See PCD-207410.
- PC-DMIS no longer re-populates all the columns of the Excel Form report with the same results from the first run when you use loops. See PCD-210996.

## Settings Editor

- PC-DMIS now correctly imports measured circles from DMIS files when you perform a DMIS file import and use the DMISMeasuredCircleWorkplane registry entry.

## Temperature Compensation

- You can now perform a part temperature compensation in a rotary table coordinate system. See PCD-202106.

## Vision

- You no longer get an extra move to a vision feature's focus end location when you execute on a FDC or Leitz controller. See PCD-194261.

- PC-DMIS now displays the correct values in the scan dialog box. This means PC-DMIS no longer displays the warning message about the maximum number of characters unless you type the values longer than 20 characters. See PCD-211988.

## Information about this Release

We at Hexagon Manufacturing Intelligence are proud to bring you PC-DMIS 2021.2. 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 2021.2, 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 \[71\]](#)". 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 2021.2 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\<<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 2021.2 operates under 64-bit Windows 11, 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.

## 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

PcdIrn.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\2021.2 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 2021.2. 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 2021.2 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 \[46\]](#)". 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**.

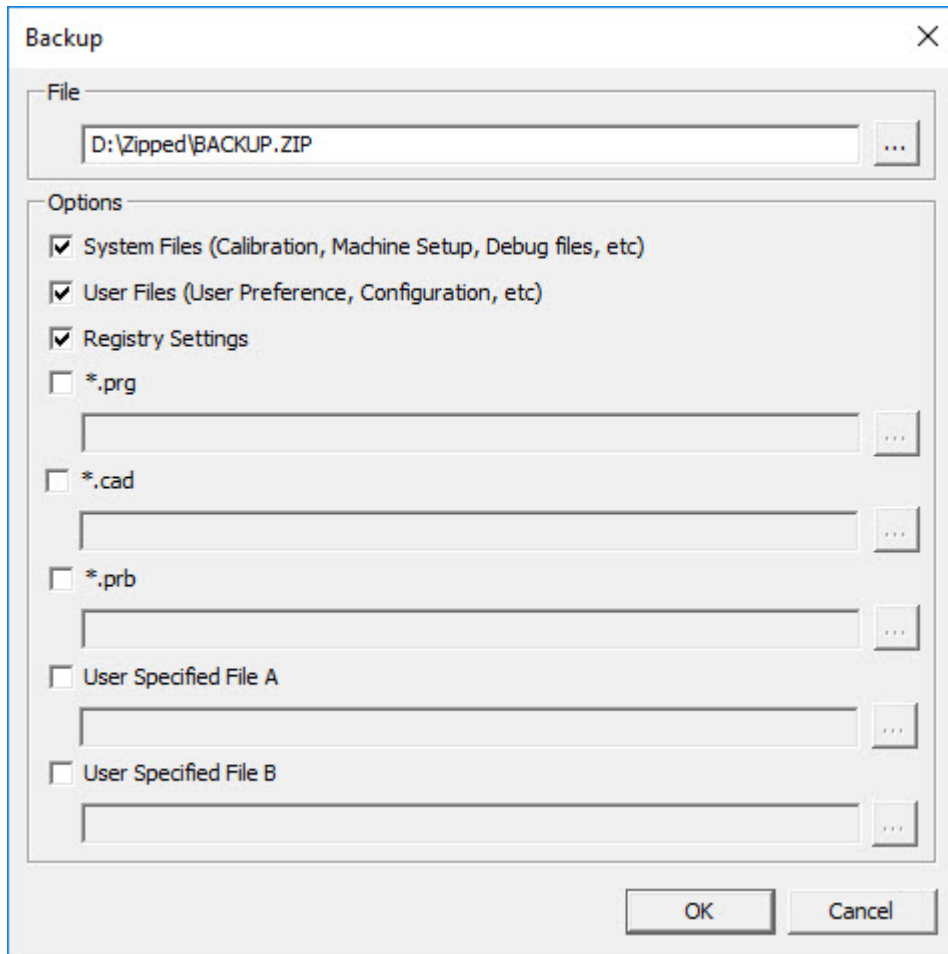
### Step 2: Log on as an Administrator

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 2021.2 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.

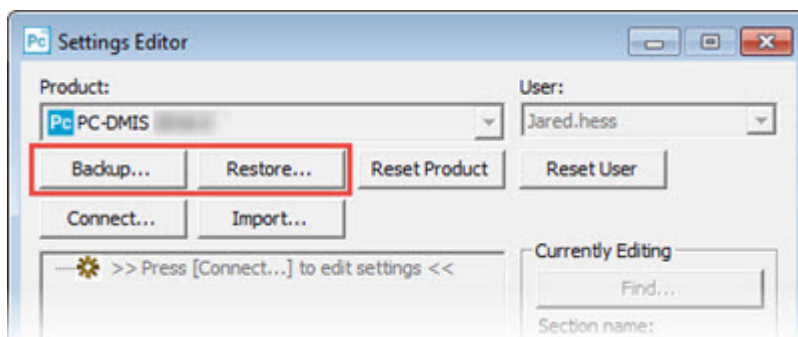
- If your current version uses the pcdlrm.ini file for its settings, back up your pcdlrm.ini file. This file is in the Windows system directory. Save a copy of the file in a safe place.
- If your current version uses the PC-DMIS Settings Editor, back up your PC-DMIS Settings Editor data. To do this, 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 2021.2 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 2021.2 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 2021.2 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: **Pcdmis2021.2\_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 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 2021.2 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 \[55\]](#)".
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 2021.2 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 \[69\]](#)".
  - **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 2021.2 64-bit** - To launch PC-DMIS 2021.2 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 \[58\]](#)".
    - **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 2021.2 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.
  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.

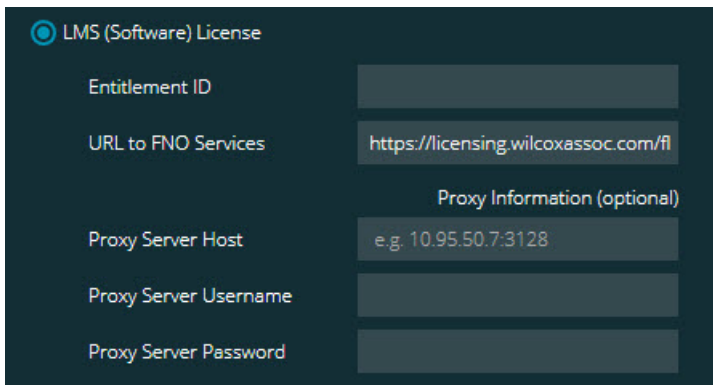
## LMS License Setup

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 \[54\]](#), 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. If you have supplied this value in a previous installation, the installer pulls in that value from the registry.
  - **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.



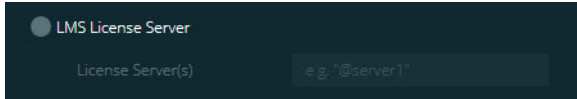
### NOTE

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 2021.2, 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 2021.2 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 2021.2 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 \[72\]](#)" 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 (Pcdmis2021.2\_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 2021.2, you must launch it with administrator privileges. If you mark the [Launch PC-DMIS 2021.2 64-bit check box](#) when the installation finishes, PC-DMIS 2021.2 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](#).

For more information on the file system and registry rights that PC-DMIS 2021.2 requires, see "[Required User Access Rights \[73\]](#)" 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-DMIS2021.2 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 \[53\]](#)".

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

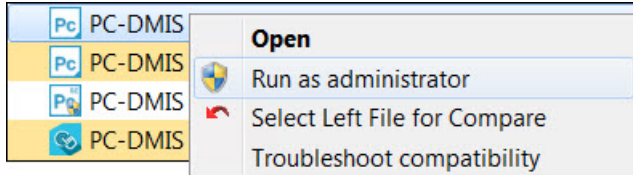
If you are using a DEA CMM with a DEA machine controller, and you installed PC-DMIS 2021.2 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

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 \[53\]](#)".

## Step 6: Launch the Software for the First Time

1. When you run PC-DMIS 2021.2 for the first time, go to **Start** and type **PC-DMIS 2021.2 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 pcdlrm.ini file, PC-DMIS 2021.2 asks if the settings in your PCDLRN.INI file should be used as your registry settings. Click **Yes** at the prompt. Otherwise, PC-DMIS 2021.2 loads in the factory defaults.  
If your previous version used the Settings Editor, follow these steps to use your previous software settings:
  - a. Close PC-DMIS 2021.2.
  - 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 [thStep 3: Back Up Existing Settings \[51\]](#). PC-DMIS 2021.2 imports your settings.
  - d. Close the PC-DMIS Settings Editor.

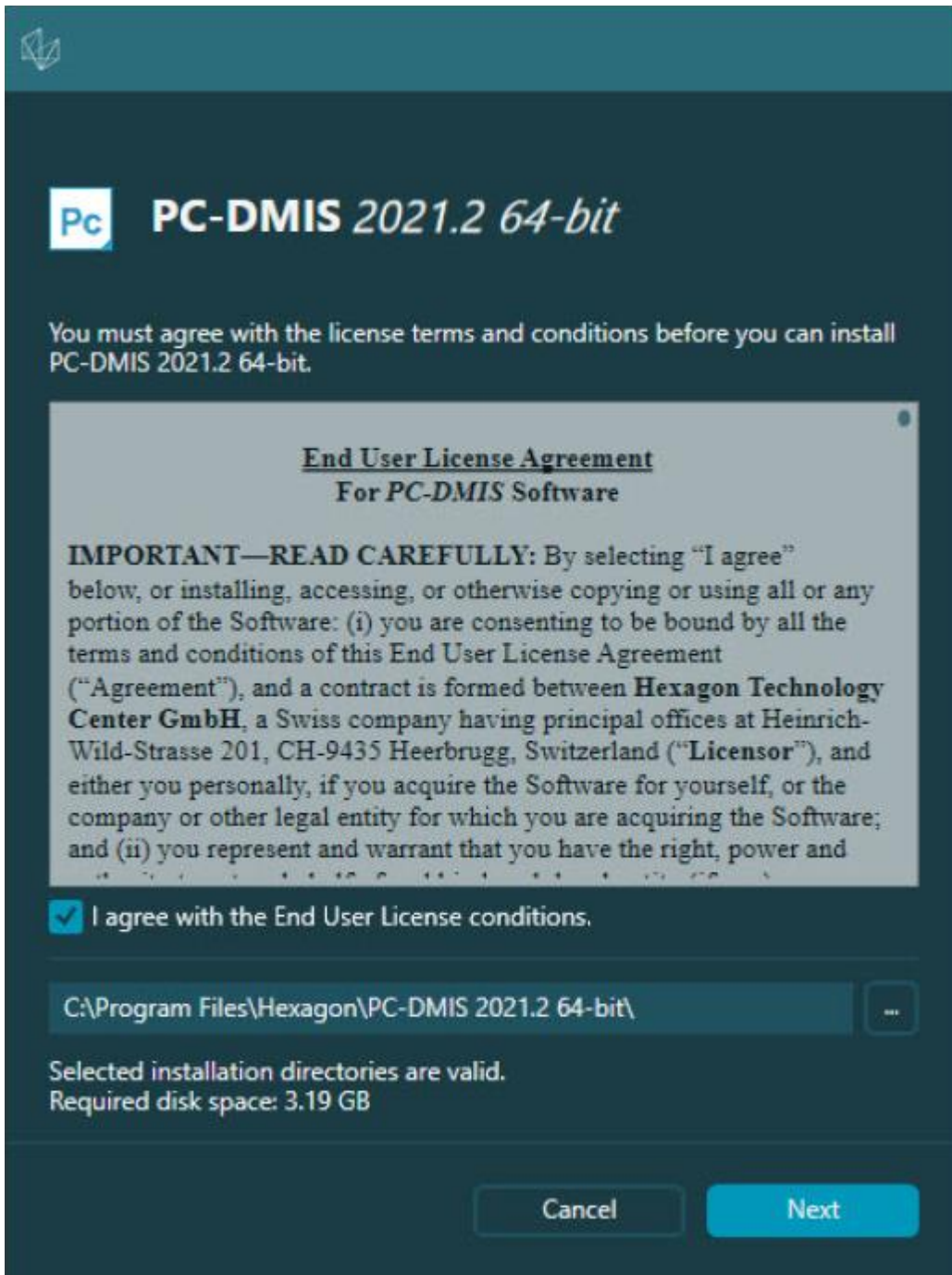
## Subsequent Startups

For subsequent startups, click the usual **Offline** or **Online** shortcut to launch PC-DMIS 2021.2 normally :



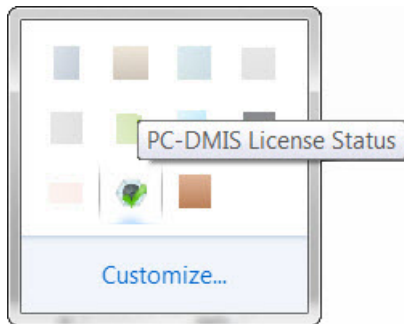
PC-DMIS 2021.2 shortcuts

Once PC-DMIS 2021.2 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:



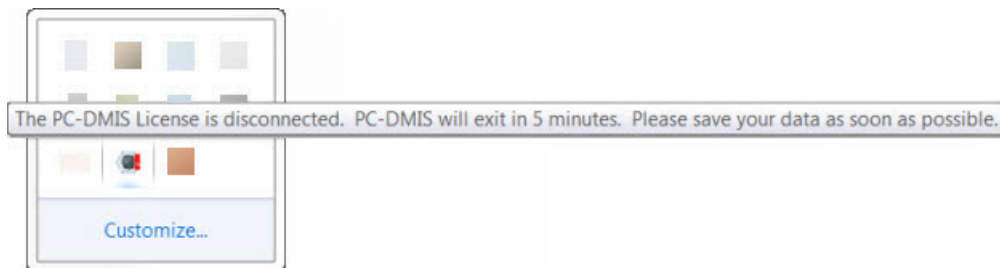
### Software License screen

Once PC-DMIS 2021.2 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 2021.2 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 2021.2 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

Servers - <http://webupdater.hexagonmi.com/v2> (catalogs and configurations) and <http://webupdater.hexagonmi.com/Management> (SignalR)

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 2021.2 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

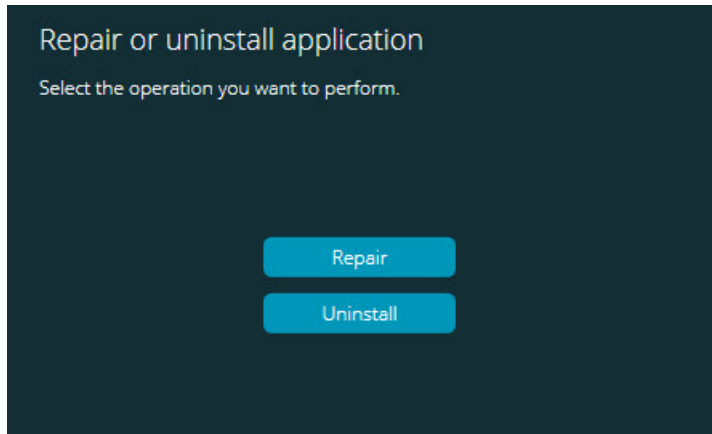
**Inspect** - This software provides a simplified operator interface for operators to execute measurement routines from supported products and then generate reports.

**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 Pcdmis2021.2\_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 2021.2 contains the user-interface files for all of the supported languages. When you install PC-DMIS 2021.2, it installs the language files based on your operating system's language.

To run PC-DMIS 2021.2 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 2021.2 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 \[69\]](#)".

## 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 2021.2 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 2021.2 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/2021.2/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 \[46\]](#)" 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 2021.2 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 \[54\]](#)".

**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 2021.2 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 2021.2.)

**Description:** A firewall on your computer may be blocking the Hexagon Universal Updater application from connecting to the server. If PC-DMIS 2021.2 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](mailto: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 2021.2 without administrator privileges, DPUPDATE.EXE does not work.

**Solution:** Run PC-DMIS 2021.2 with administrator privileges.

## Contact Hexagon Manufacturing Intelligence

If you are participating in the *technical preview* of PC-DMIS 2021.2, please post your feedback in the appropriate technical preview forum located at [www.pcdmisforum.com/forum.php](http://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 2021.2 and would like further information or technical support, please contact [hexagonmi.com/contact-us](http://hexagonmi.com/contact-us) or visit [hexagonmi.com/products/software](http://hexagonmi.com/products/software). You can also reach Hexagon Technical Support at [support.hexagonmi.com](http://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 \[54\]](#).
- 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 2021.2 in silent mode:

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

On a system that already has a license, the following line installs PC-DMIS 2021.2 in silent mode:

**-passive USELMSLICENSING=1**

On a brand-new system using license servers, the following line installs PC-DMIS 2021.2 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

PC-DMIS 2021.2 requires read, write, and create access to the locations defined below in the file system and registry.

### File System

Windows 10, Windows 8, Windows 7, and Windows Vista:

- C:\ProgramData\Hexagon\PC-DMIS\2021.2
- C:\Users\Public\Documents\Hexagon\PC-DMIS\2021.2
- C:\Users\UserName\AppData\Local\Hexagon\PC-DMIS\2021.2
- Any user-specified folder locations for storing measurement routines, probes, subroutines, and so on

### Registry

All of these versions have their own registry settings, which are stored in a version-specific registry key. The items shown below are for version 2021.2.

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Hexagon\PC-DMIS\2021.2  
Key and all sub keys
- HKEY\_CURRENT\_USER\Software\Hexagon\PC-DMIS\2021.2 and all sub keys

- HKEY\_USERS\DEFAULT\Software\Hexagon\PC-DMIS\2021.2 and all sub keys

## 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 registry for the relevant keys.

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 2021.2 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.