



PC-DMIS 2014 Release Enterprise Metrology Solutions

- Release Notes -



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Table of Contents

Recommended System Requirements	1
Installing PC-DMIS	3
Step 1: Check System and Hardware Requirements	3
Step 2: Log on as an Administrator	3
Step 3: Back Up Existing Settings.....	3
Step 4: Install PC-DMIS	5
Administrator Privileges Explained	12
Step 5: Copy Files after Installation.....	12
Step 6: Launch PC-DMIS 2014 for the First Time	13
Updating the Software	15
Modifying, Repairing, or Removing the Installation	16
Running PC-DMIS in Another Language	17
Installing Non-English Help Files from Language Packs.....	17
Troubleshooting.....	18
Using High Quality Transparency Results in a "NVIDIA OpenGL Driver" Error Message	18
PC-DMIS Startup Is Slow.....	18
Updating the Software Results in a "(407) Proxy Authentication Required" Message	19
Installing on Top of an Existing Version Results in Unexpected Behavior	19
Running the Legacy DPUPDATE.EXE Does Not Work.....	19
Information about this Release	20
New Product Information	21
2014 SP2 Release	21
2014 SP1 Release.....	21
2014 Release.....	21
About the PC-DMIS 64-Bit Version.....	21
Note about Calculation of Angle Dimensions.....	21
Release Notes - 2014 SP2	23
Release Notes - 2014 SP1	27
Release Notes - 2014.....	30
Featured Items.....	30
Alignments.....	34
Auto Features	34
Auto Path / Moves	34
CAD.....	34
CMS / CMM	34
Dimensions.....	34
Direct CAD Interfaces / Direct CAD Translators	35
Dual Arm.....	35
Edit Window.....	35
Execution.....	36

Graphics	36
Help / Documentation	37
Installation	37
Laser / Cloud of Points.....	37
License	37
Machine Interface	38
Planner	38
Pointclouds	38
Portable	39
Probes	39
Quick Fixturing.....	39
Reporting	40
Tool Changers	40
Toolkit.....	41
User Interface	41
Vision.....	42
Contact Hexagon Metrology	43
Appendix A.....	44
Providing LMS Licensing Information to the Installer from the Command Line.....	44
Appendix B.....	46
Understanding File Locations.....	46
Public Documents	46
Public Documents (Reporting Directory).....	46
Public Documents	46
Program Data Files [Hidden]	46
User Data Files	46
Required User Access Rights	47
File System	47
Registry.....	47

Recommended System Requirements

- PC-DMIS 2014 operates under 32-bit and 64-bit Vista; 32-bit and 64-bit Windows 7; and 32-bit and 64-bit Windows 8. No other operating systems are supported.

NOTES

PC-DMIS Vision machines do not support 32-bit and 64-bit Windows 8.

The Matrox Framegrabber and CMM-V probe PC-DMIS Vision hardware components do not support a 64-bit operating system.

- 2 GHZ or higher Duo-Core processor.
- 4 GB of RAM or higher. (4 GB is the highest amount of memory capable on a 32-bit OS.)

NOTE: 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.

- 2 GB of free hard drive space plus allocated Virtual Memory of 8 times the largest CAD file used.
- For PC-DMIS CAD and CAD++: Professional 3D graphics processors such as Quadro line from Nvidia or FirePro line from AMD/ATI. Nvidia seems to produce better OpenGL drivers than AMD, so Nvidia is recommended over AMD.

NOTES

The graphics driver must support OpenGL 3.0 or higher. A warning message will be displayed on PC-DMIS startup if the driver does not support OpenGL 3.0.

A graphics driver that supports OpenGL 4.2 is required for high-quality transparency.

For PC-DMIS Pro, a non-professional graphical processor may also be acceptable (Intel HD Graphics, GeForce, or Radeon, for example) as long as it supports OpenGL 3.0 or higher.

- 1 GB of video RAM.
- DVD drive.
- SSD drive, HDD 10K, or two disks in RAID 0 mode (high-performance hard disk drive).
- 2 USB ports.

- HASP key (a physical USB portlock) or a software license.
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 Metrology 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.
- 2 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.)
- Screen resolution of 1280 x 1024 or higher.
- Microsoft .NET 4.0 for Windows 7.
- Microsoft .NET 4.5 for Windows 8.
- Internet Explorer version 9.

IMPORTANT: When using 3rd-party drivers, you should contact your local Hexagon representative to ensure Operating System compatibility.

ANTI-VIRUS SOFTWARE: The Sophos Anti-virus tool was used by Wilcox Associates Inc. while testing PC-DMIS. The performance of any other anti-virus tool will need to be confirmed by the user.

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

WINDOWS XP SUPPORT: Beginning with v2012 MR1, there will be no support for the Windows XP operating system. While this version likely runs fine in XP, it will not be tested under the XP operating system. Also note that some parts of the user interface do not appear optimally in XP.

Installing PC-DMIS

To install the application, follow these steps:

Step 1: Check System and Hardware Requirements

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

- To get your computer's properties, highlight the **My Computer** icon, right-click on it, and select **Properties**.
- To check the display properties for the graphics card, select **Start | Settings | Control Panel**, and then select **Display and Settings**.

Step 2: Log on as an Administrator

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

Step 3: Back Up Existing Settings

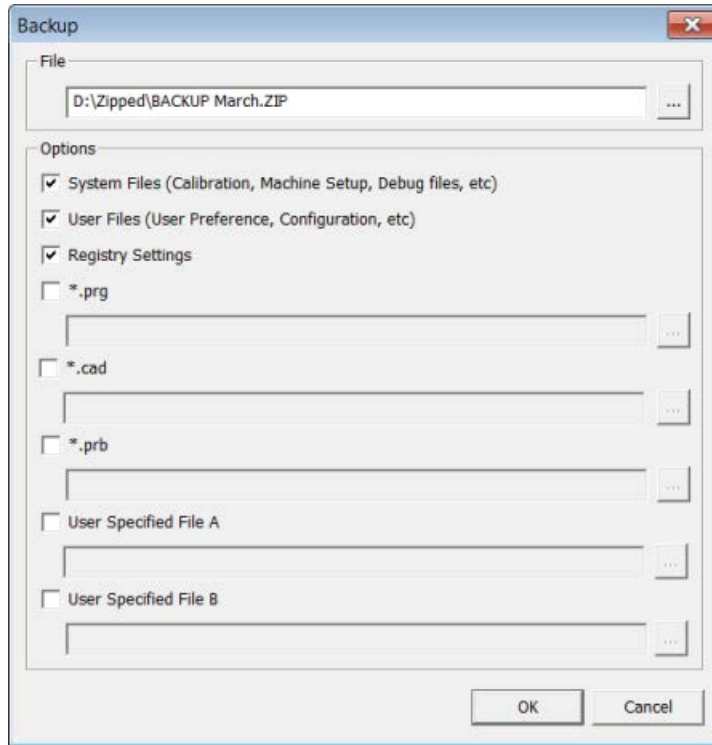
Back up your settings from your previous version.

- If your current version uses the pcdln.ini file for its settings, back up your pcdln.ini file. This file is found 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:

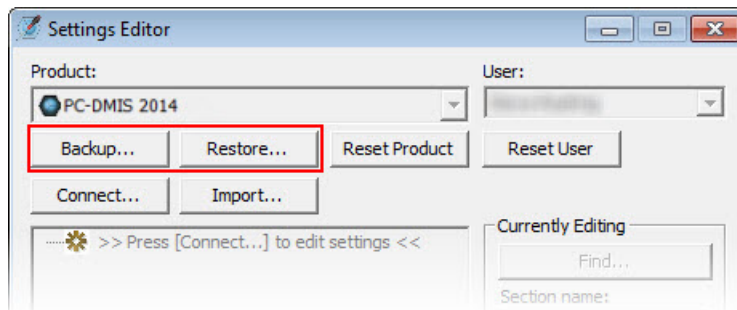
1. Start the Settings Editor.

2. Click the **Backup** button (or **Export**). The **Backup** dialog box appears:



3. In the **File** box, define a safe location to save the backed up files, and give the file a .zip extension.
 4. Mark the first three check boxes, and click **OK**.
- By default, PC-DMIS attempts to migrate existing settings from previous installs on the same computer, even from really old versions of PC-DMIS where settings were stored in the pcdlrn.ini file.

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



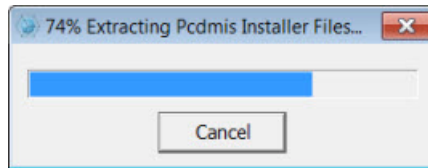
See the help documentation for the Settings Editor if you need more information on the backup and restore functionality.

Step 4: Install PC-DMIS

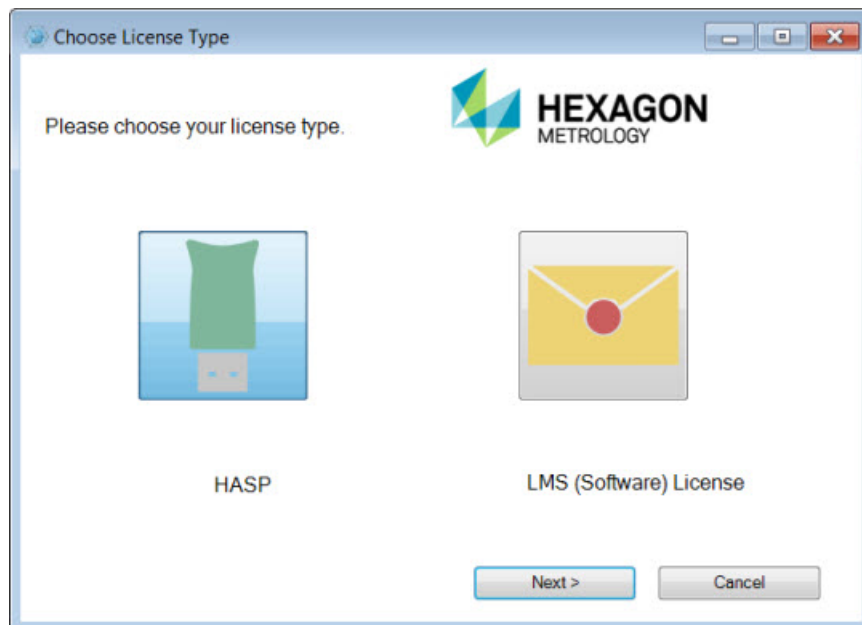
The following steps run you through a typical installation. Your installation screens may differ if you are running a different version of PC-DMIS. In addition, your PC-DMIS license may be configured with different options.

1. Locate the PC-DMIS install file on your installation media; or, if you downloaded it, open the directory containing the downloaded file. The install file looks like this: Pcdmis2014_Release_#.###.#_x##.exe, where the # symbols represent the specific version numbers and the version type (x64 or x86).
2. Double-click this executable to begin the installation process. If presented with a security warning, click **Run**.

The files are extracted to a temporary directory:



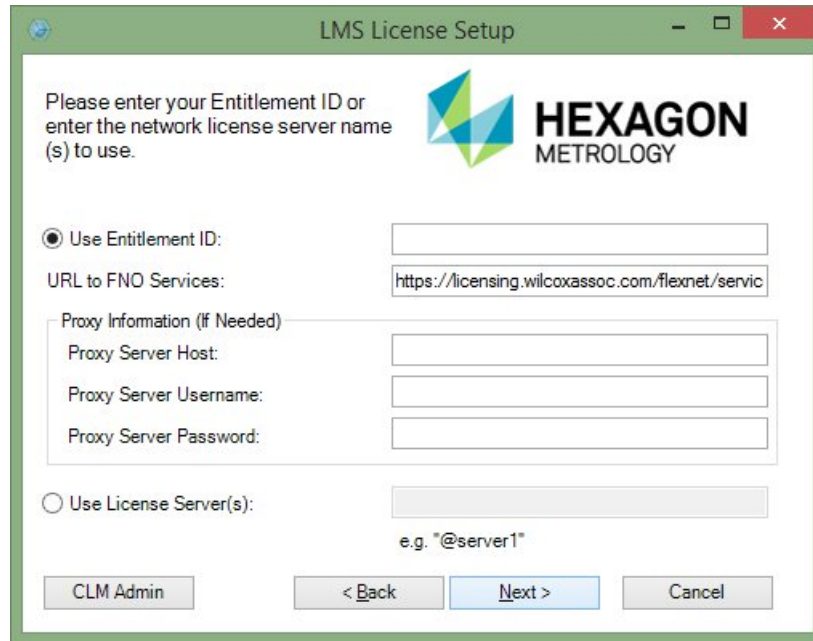
The **Choose License Type** screen appears:



3. Select one of the following license types:
 - **HASP** - If you have a physical USB portlock, ensure that it is connected to your computer, and then select this license type. It is selected by default.
 - **LMS (Software) License** - If you have been issued a software license (called an Entitlement ID), or if you are connecting to a local license server, select this license type.

Click **Next** to proceed.

4. If you chose **HASP**, ignore this step, and proceed to step 6. If you chose **LMS (Software) License**, and it cannot find a valid license on your system, you need to fill out the **LMS License Setup** dialog box:



Fill out the **LMS License Setup** screen as needed:

- **Use Entitlement ID** - If you have an Entitlement ID, select this item, and then type or paste the ID you were issued in the box.
- **URL to FNO Services** - This points to the URL that verifies your license. Ensure that it has this URL:
<https://licensing.wilcoxassoc.com/flexnet/services>
- **Proxy Information** - You only need to fill this out if you are on a network where a proxy server is needed to reach the Internet. Contact your IT specialist to get this information, and then fill in the server host, user name, and password.
- **Use License Server(s)** - If you are using a local license server, select this item, and then type your license server name. The format of this line of text should be <portnumber>@<servername>, where <portnumber> is the TCP port number for the license server and <servername> is the name of the server. The default TCP port number is 27000, and is used automatically if no specific port number is identified. For example, these mean the same thing:

@server1

27000@server1

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

@licenseserver1;@licenseserver2;@licenseserver3

If you do not have an Entitlement ID and need to activate your license offline, click the **CLM Admin** button and follow the instructions.

Note: Please consult the [PC-DMIS CLM Licensing Software documentation](#) ([pcdmisclm.chm](#)) located in the PC-DMIS language subdirectory.

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

Providing LMS Licensing Information to the Installer from the Command Line

LMS licensing information can be sent to the installer through command line parameters. For more information, see "[Providing LMS Licensing Information to the Installer from the Command Line](#)" in Appendix A.

LMS License Update

Once the licensing is completed and PC-DMIS is installed, PC-DMIS checks for license updates on startup and every eight hours of running. If a license update is available, a notification message 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?

Click **Yes** to apply the update. If **No** is clicked, PC-DMIS displays the message every eight hours of running or on the next startup.

- If an option or 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 requesting you to restart PC-DMIS is displayed. A pop-up message also displays in the System Tray to inform you of this.
- If an option or feature is obsolete, it is automatically removed.

Note: To ensure that PC-DMIS functions properly, you must restart PC-DMIS after any update is applied.

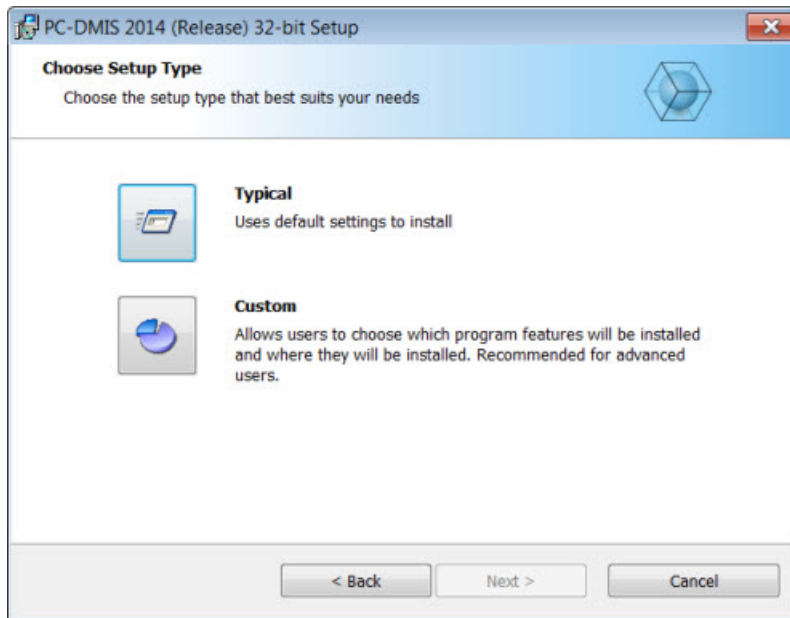
5. The main setup interface then appears. Click **Next** to start the installation:



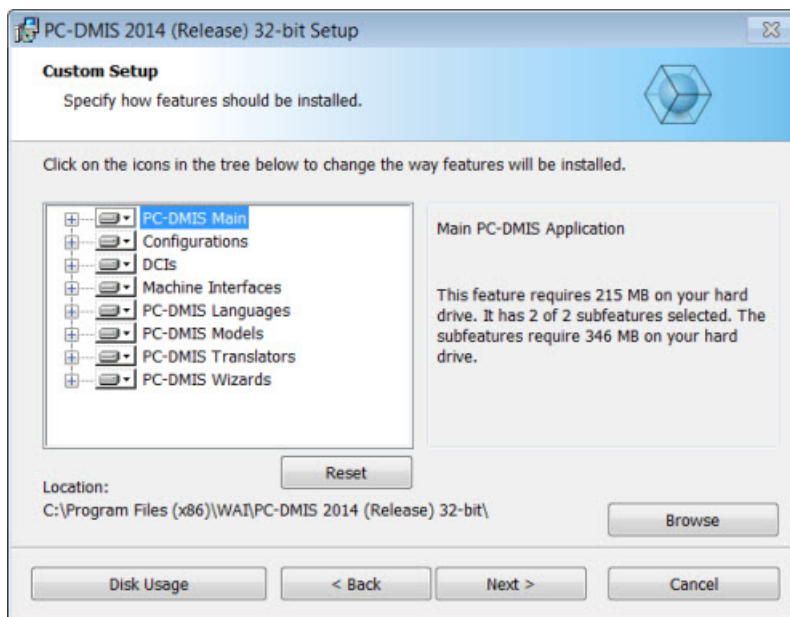
6. The license agreement then appears. Read and accept the license agreement, and then click **Next**:




7. Choose a setup type from the **Choose Setup Type** screen:

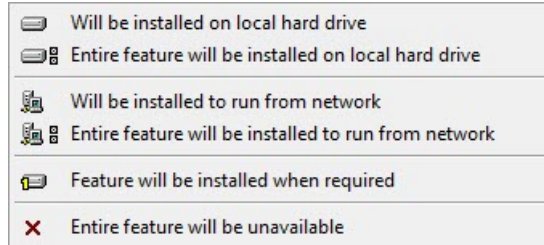


- **Typical** - This option installs the program files to the default installation location: C:\Program Files\WAI\PC-DMIS 2014\
- **Custom** - This option lets you specify what components to install as well as customize the installation location. A screen similar to the following screen opens:



Overview of Customizing Installed Features

By default, all program components are selected to be included in the installation. You can use the tree view to customize when or if these features are installed. To do this, click the small drop-down icon  next to the component to exclude. This list appears:



Choose the desired option:

- **Will be installed on local hard drive** - The selected feature is installed to the hard drive on your computer.
- **Entire feature will be installed on local hard drive** - The entire feature is installed to the hard drive on your computer. This means that sub-features of the selected feature are also installed.
- **Will be installed to run from network** - *This option is currently unsupported.* This option installs the selected feature on a network share.
- **Entire feature will be installed to run from network** - *This option is currently unsupported.* This option installs the entire component to a network share. This means that sub-features of the selected feature are also installed.
- **Feature will be installed when required** - The feature is only installed if required during the installation process. Some files are informational and are not required for the application to run. These may include documentation or other files.
- **Entire feature will be unavailable** - This option excludes the component from installation.

Customizing the Installation Location

By default, the program installs to this location under the "PC-DMIS 2014" directory:

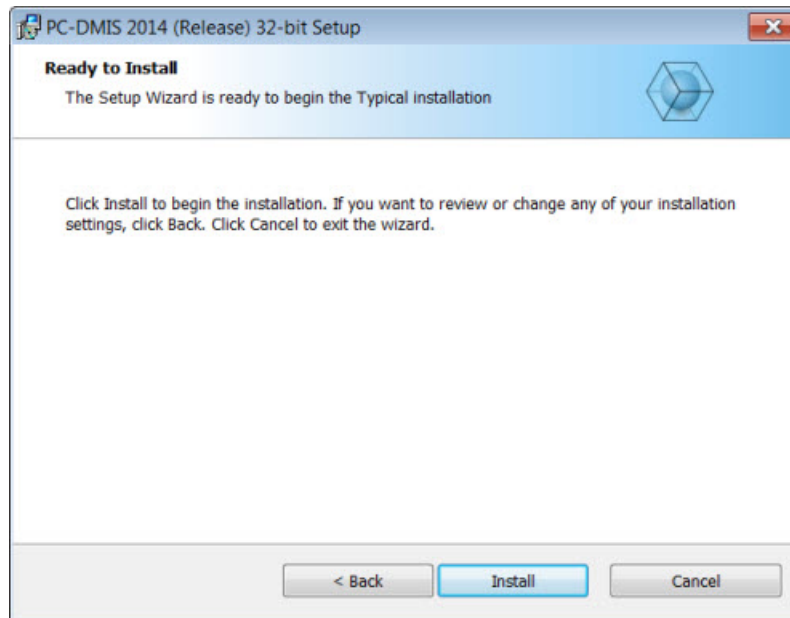
- C:\Program Files (x86)\WAI\ (if you have a 32-bit version)
- C:\Program Files\WAI\ (if you have a 64-bit version)

To change the default location, click the **Browse** button and navigate to the directory on your computer that you want to hold the program files. When you click **OK**, the **Location** box changes to show the selected location.

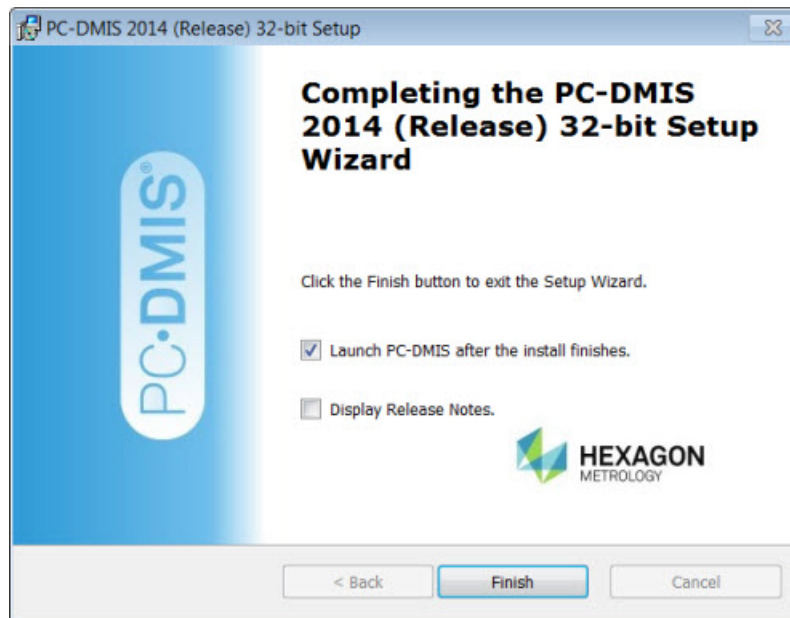
If you ever want to reset the items to the default selection, click **Reset**.

Click **Next** when you have finished customizing the install.

8. Once the installation has all the information it needs, the **Ready to Install** screen opens:



9. Click **Install** to proceed with the main installation.
10. Once the installation finishes, this final screen appears:



- **Launch PC-DMIS after the install finishes.** - Mark this check box to launch the application once you click **Finish**. You should do this so that the needed registry entries are initialized. For more information, see "[Administrator Privileges Explained](#)".

- **Display Release Notes.** - Mark this check box if you want to see a PDF file that shows what's new or changed in this release once you click **Finish**.

11. Click **Finish** to close the installation program. PC-DMIS is now installed.

Administrator Privileges Explained

PC-DMIS versions earlier than version 2012 require that you run PC-DMIS as an administrator because some system settings (for items 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 built into the setup executable (setup.exe) that requires the setup process to run with administrator privileges. If the current user has lesser privileges, the setup 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, you must launch it with administrator privileges. If you mark the [Launch PC-DMIS after the install finishes check box](#) when installation finishes, PC-DMIS does this automatically by passing 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 requires, see "[Required User Access Rights](#)" 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.

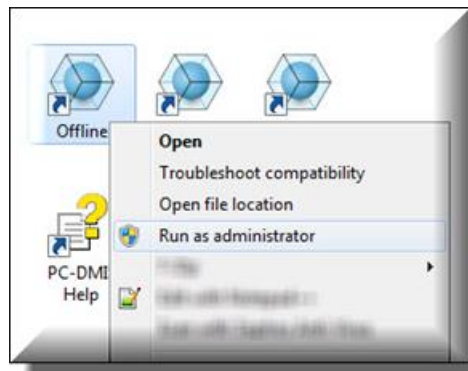
The comp.dat, compgrid.at, comp.enc, and compens.dat volcomp files used with volcomp methods 13 (ASI) and 14 (BNS) must be in the program data files directory. When a newer version of PC-DMIS is installed, these files are automatically copied to the program data files directory for the new version. For the default path location of this directory, see "[Understanding File Locations](#)" in Appendix B.

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

Step 6: Launch PC-DMIS 2014 for the First Time

Important: Running PC-DMIS inside a Virtual Machine (VM) is not supported.

1. When running this version of PC-DMIS for the first time, choose **Start, All Programs,** and then **PC-DMIS 2014.**
2. From the list of shortcuts, right-click on either the **Online** or **Offline** icon, and then select the **Run as administrator** option (required only if the **Launch PC-DMIS after the install finishes** check box wasn't checked at the end of the installation).



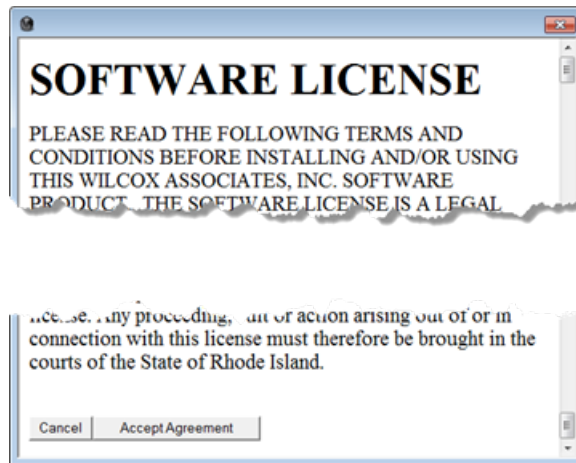
3. This allows the program to write the needed machine-specific settings.
 - If your previous version used the pcdlrm.ini file, PC-DMIS asks if the settings in your PCDLRN.INI file should be used as your registry settings. Click **Yes** at the prompt. Otherwise, PC-DMIS loads in the factory defaults.
 - If your previous version used the Settings Editor, do the following to use your previous PC-DMIS settings:
 - a. Close down PC-DMIS.
 - 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 the "[Step 3: Back Up Existing Settings and Layout Data Files](#)" section of this document. PC-DMIS imports your settings.
 - d. Close down the PC-DMIS Settings Editor.

PC-DMIS 2014 Release Notes

For subsequent startups, you can launch PC-DMIS normally by double-clicking the usual **Offline** or **Online** shortcut.



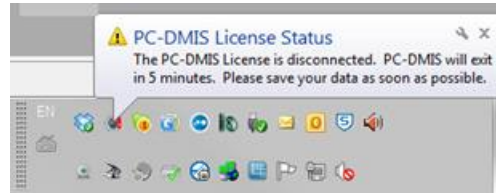
Once PC-DMIS starts, the **Software License** screen displays the current license agreement. Read the agreement carefully and then at the bottom, click **Accept Agreement** to proceed:



Once PC-DMIS runs, an icon displays in your System Tray. If your portlock or license is programmed correctly, the icon displays a green check mark as shown below. A message says that the PC-DMIS license is valid:



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 appears and says that the PC-DMIS license is disconnected:



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

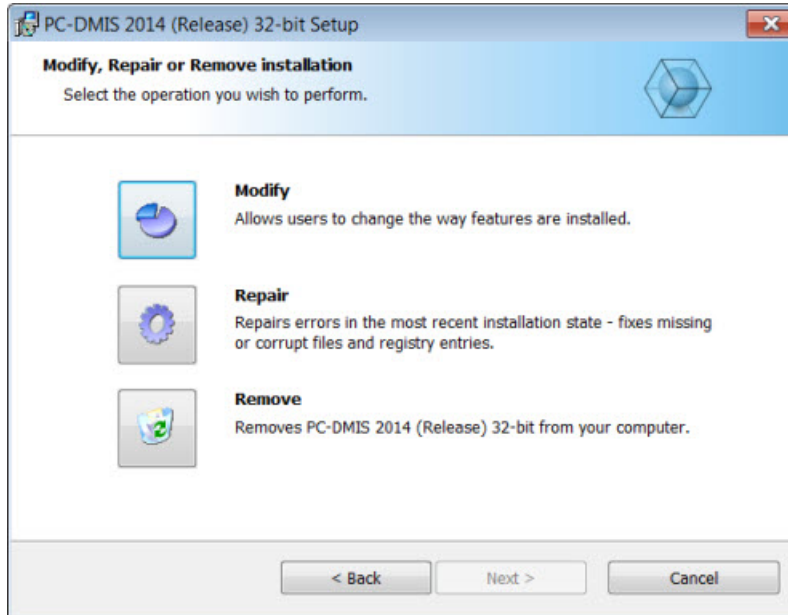
Updating the Software

By default, PC-DMIS automatically checks for updates to the software if you are connected to the Internet. If it detects that an update is available, the **Hexagon software updater** opens to inform you of the software update. You can then download and install these updates as desired. You can also manually check for updates by clicking **Help** and then clicking **Check for updates**.

If you need information on using the software updater, see "Updating the Software" in the PC-DMIS Core documentation.

Modifying, Repairing, or Removing the Installation

You can also modify or repair an installation as needed once it is installed. To do this, double-click on the **Pcdmis2014_Release_#.###.#_x###.exe** file as if you were beginning the installation process. The setup displays the **Modify, Repair or Remove installation** screen with these options:



- **Modify** - This option opens the **Custom Setup** screen as discussed in "[Step 4: Install PC-DMIS](#)". Use this option to change the installed features, either by adding something that was previously not installed or removing a software feature that you no longer need.
- **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.
- **Remove** - This option removes the application from where it was installed. You can also uninstall the application using the Programs and Features control panel item in Control Panel.

Running PC-DMIS in Another Language

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

To run PC-DMIS in a language other than the operating system's language, click the **File** menu, point to **Language**, and then click the desired language.

PC-DMIS restarts and displays the application in the desired language. See the information below on how to get the help content available in a non-English language.

Installing Non-English Help Files from Language Packs

The English help files are the only help files included in the main installation package. They are installed regardless of the installation language. However, non-English help files are not included in the main installation file.

This means that if you install a non-English language or if you switch to a non-English language, in order to see any help content at all, you *must* also install a language pack for that language. Otherwise, if you try to access the help file, PC-DMIS displays an error message indicating that it cannot find the help file.

A language pack contains all of the help content for that language.

To install a language pack, do the following:

1. Locate the desired language pack (and .exe file) on your installation media or download it from the Internet here:
<ftp://ftp.wilcoxassoc.com/PC-DMIS-Versions/Release/2014/Release/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 appropriate two-letter language subdirectory where you have PC-DMIS installed. You can then switch to that language in the software and access the help content.

Troubleshooting

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

Using High Quality Transparency Results in a "NVIDIA OpenGL Driver" Error Message

Problem: When you run PC-DMIS 2014 with the **High quality transparency** option enabled, the following "NVIDIA OpenGL Driver" error message may appear:

"Your hardware configuration does not meet minimum specifications needed to run the application. The application must close."

Description: Some Nvidia graphics cards do not properly work with the **High quality transparency** option in PC-DMIS. Specifically, some Nvidia Quadro 2000 and 1000M accelerators that are running recent graphics drivers (for example, versions 320.49 and 329.92) have this problem. If you are running PC-DMIS on a computer that is using one of these cards, PC-DMIS may sporadically display the error message and close.

Solution: Until Nvidia fixes the problem with the graphics cards, perform one of the following workarounds:

- Clear the **High quality transparency** check box (**Edit | Graphic Display Window | Lighting, Materials | OpenGL** tab). This solution worked on all of the computers that experienced the problem.
- Downgrade to an earlier Nvidia driver. For example, driver version 310.90 has been found to be stable. You can directly download earlier drivers from the Nvidia website. This solution worked on only some of the computers that experienced the problem.

PC-DMIS Startup Is Slow

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

Description: This happens if you try to run PC-DMIS on a Windows 7 computer, but you didn't mark **Run as administrator** 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 PC-DMIS](#)".

Solution: Uninstall PC-DMIS, and then reinstall it by right-clicking on the installation file and choosing **Run as administrator**.

Updating the Software Results in a "(407) Proxy Authentication Required" Message

Problem: You use the **Help | Check for Updates** menu option to update the software, and when the Web Updater opens, it shows: "The remote server returned an error: (407) Proxy Authentication Required."

Description: A firewall on your computer may be blocking the updater from connecting to the server.

Solution: Check your firewall's settings and ensure that the following address is not blocked: <http://www.wilcoxassoc.com/WebUpdater>

Installing on Top of an Existing Version Results in Unexpected Behavior

Problem: You installed on top of an existing version of PC-DMIS, 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 PC-DMIS**, 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 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 PC-DMIS is run without administrator privileges, DPUPDATE.EXE does not work.

Solution: Run PC-DMIS with administrator privileges.

Information about this Release

We at Hexagon Metrology are proud to bring you this new version of PC-DMIS 2014 Release. This Enterprise Metrology Solutions platform brings together new aspects of PC-DMIS for the development of a complete manufacturing process control solution. Available in this release are variations of PC-DMIS designed to assist with every aspect of the fabrication and quality control process. The newly created packages include the established PC-DMIS Laser, PC-DMIS NC, PC-DMIS Pro, PC-DMIS CAD, and PC-DMIS CAD++ platforms.

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 is comprised 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 Metrology would have access to at least one of every piece of hardware that is operating in the field running PC-DMIS. 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 2014 Release, 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. See "[Contact Hexagon Metrology](#)" on how to report any integration problems. Should such a problem materialize on a commercial release, you will be given the highest priority for correcting these problems.

For existing users of PC-DMIS who currently have earlier versions of PC-DMIS installed, it is advised that PC-DMIS 2014 Release be installed into a new directory. In this way, you can be assured of continuous use of the existing version should problems arise with this newer version.

New Product Information

2014 SP2 Release

Release date: October 24, 2014

Version 2014 SP2 is a Service Pack release of the software. For a listing of the enhancements and fixes in this release, refer to "[Release Notes - 2014 SP2](#)".

2014 SP1 Release

Release date: July 11, 2014

Version 2014 SP1 is a Service Pack release of the software. For a listing of the enhancements and fixes in this release, refer to "[Release Notes - 2014 SP1](#)".

2014 Release

Release date: June 16, 2014

The 64-bit version of PC-DMIS is only supported on Windows 8, Windows 7, and Windows Vista. It is not supported on Windows XP.

Version 2014 is a significant development release of the software. For a listing of the enhancements in this release, refer to "[Release Notes - 2014](#)".

About the PC-DMIS 64-Bit Version

The following items are only supported in the 32-bit (x86) version of the software; they are not available in the 64-bit version.

- CAD (3D ACIS data embedded inside of DXF Files)
- Translators (Avail, Datalog, MeasureMax, MMIV, and Tutor)
- NC product line
- Vision (MEI, Metronics, QVI, ROI, TESAI++, and TESAVISIO). Note that the FDC and Leitz controllers are available in the 64-bit version.
- CMM (B & S Backtalk, Embedded Board, Manmiti, Manmora, Metrocom, Mitutoyo GPIB, GeoCom, GOM, LK, ManualCMM, Numerex, Omniman, Tech80, and anything using the parallel port driver)
- Portable (FaroArmUSB and Axila)

Note about Calculation of Angle Dimensions

In version 2014, PC-DMIS changed its method of calculating angle dimensions near 0 and 90 degrees. If you load a part program from version 2013 MR1 or earlier into the current version, PC-DMIS displays a Migration Report that lists the angle dimensions that have been unmarked for execution and should be checked.

For nominal angles within 10 degrees of a quadrant boundary (0, 90, 180, 270, 360, -90, or -180 degrees), the positive/negative sign of the measured angle is enforced. This prevents a measured angle of -1 degrees from being reported as +1 degrees to match the same quadrant as a nominal angle of 2 degrees. This also prevents a measured angle of 92 degrees from being reported as 88 degrees to match the same quadrant as a nominal angle of 89 degrees. To turn off this behavior, set the value for the **EnforcePositiveNegativeAngles** registry entry in the Settings Editor application to False.

To change the sign of a nominal angle near 0 degrees or choose the supplemental angle of a nominal angle near 90 degrees:

1. Flip the direction vector of one of the features.
2. Create a line that represents the X, Y, or Z axis.
3. Reverse the sequence of feature 1 and feature 2.
4. Or, perform a combination of the above steps.

Release Notes - 2014 SP2

- PCD-46422 - Fixed an issue where PC-DMIS stopped working when the sensor mode for a laser patch scan was changed.
- PCD-47486 - Fixed an issue where PC-DMIS stopped working when the **HighQualityTransparency** registry entry was set to TRUE in the Settings Editor application, the **High quality transparency** check box on the **OpenGL** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display Window | Lighting, Materials**) was selected, the Report window (**View | Report**) was opened, and then either the **Text and CAD** or **Text and CAD Out of Tolerance** report template was selected.
- PCD-48227 - Fixed an issue where an Arm 2 COPOPER command was marked as an Arm 1 command in the Edit window after the toggle was changed to Arm 2 and the part program was closed and then reopened.
- PCD-49166 - Fixed an issue where PC-DMIS stopped working when a part program with a laser auto feature with break points was executed in multiple arm mode.
- PCD-49267 - Fixed an issue where the end point of a Vision line auto feature changed to 0,0,0 when the part program was saved in PC-DMIS v2009 MR1 or 2010 MR3.
- PCD-50141 - Fixed an issue where a machine incorrectly moved after a rotary calibration.
- PCD-51423 - Fixed an issue with a DMIS RECALL/DA (WKS) command where a DMIS imported alignment loop ran continuously.
- PCD-52455 - Fixed an issue where negative nominal and actual values appeared when a part program was executed and the **Y** check box on the **Dimension** tab in the **Setup Options** dialog box was selected, and positive reporting was enabled for the Y axis.
- PCD-52584 - Implemented DEA probe changer anti-crash management when probes with long extensions are changed.
- PCD-52718 - Fixed an issue where "Welcome to" text did not appear in the "Welcome" help topic in the Japanese language pack.
- PCD-52837 - Fixed an issue where PC-DMIS deleted an auto feature from the Edit window when a point was deleted from the auto feature.
- PCD-53423 - Fixed an issue where DCC_PLN in a QuickAlign operation used Manual points as input features instead of DCC points.
- PCD-53738 - Fixed an issue where a touch probe that measured a Quick Feature plane auto feature crashed into a cone that was on the surface, and PC-DMIS deleted the moves that were inserted into the Edit window to avoid the cone.
- PCD-53879 - Fixed an issue where the **X Axis** option was incorrectly selected in the **Planar Zone Direction** dialog box (**Insert | Dimension | Feature Control Frame** tab | **Planar Zone** button) instead of using the IJK vector after IJK **Vector** values were entered, and the dialog box was closed and reopened.
- PCD-54088 - Fixed the way that the Feature Extractor library used "orange points" to evaluate a sphere from a point cloud.
- PCD-54134 - Fixed an issue where PC-DMIS incorrectly wrote the knot in a laser wrist map file when an angle failed during calculation.

- PCD-54261 - Fixed an issue where a "Machine parameter out of tolerance" error always appeared in the Execution dialog box for the last MOVE/POINT command during the laser wrist map creation process.
- PCD-54271 - Fixed an issue where warning messages did not appear when a part program with angle dimensions that were not marked for execution did not recalculate correctly.
- PCD-54563 - Fixed snap to grid when a VW reference part was positioned in the volume of a virtual BRAVO machine.
- PCD-54564 - Fixed an issue where laser auto features were calculated with very few points.
- PCD-54596 - Fixed an issue with slow response time when the mouse cursor was moved over graphical objects inside the Graphic Display window and the mouse wheel was scrolled back and forth.
- PCD-54667 - Fixed an issue where the gauge coordinates for Arm2 were not transformed in a dual-arm part program with mapped CMS probes.
- PCD-54732 - Fixed an issue where the amount of time that PC-DMIS used to save a laser part program with pointclouds, auto features, and custom reports was unacceptable.
- PCD-54786 - Fixed an issue where the rotary table did not move when a part program with a MOVE/ROTAB command was executed in DCC mode.
- PCD-54907 - Fixed an issue where dimensions that referenced the VWMP AA feature were incorrect when the pp.dmisout2() method was executed in a part program.
- PCD-55121 - Fixed an issue where the angle tests in an automated dimension test failed.
- PCD-55152 - Fixed an issue where the Y and Z offsets for a wrist were incorrectly applied on a secondary arm in a dual-arm part program after the probes were mapped and the part program was executed.
- PCD-55384 - Fixed an issue where new angles and calibration results did not appear for the second probe file in a part program that contained two probe files with the same name, new angles or a new calibration was added to the first probe file with the same name, and then the first probe file was saved.
- PCD-55781 - Fixed an issue where too many points were generated in the **Auto Feature** dialog box (**Insert | Feature | Auto Feature**) for an auto plane when the **Void Detection** button was toggled.
- PCD-55896 - Enabled SP25 calibration to use the correct maximum scan speed when the percentage method of scan speed is used.
- PCD-55938 - Fixed an issue where the setting for the "CADByRef" boolean option in the "SaveAs2" function was not saved in a part program when **File | Save As** was selected.
- PCD-56213 - Fixed an issue where PC-DMIS stopped working when a CMMVe probe file was removed from a part program, and then the part program was closed.
- PCD-56409 - Fixed an issue where the X axis for a Vision probe was incorrect in an .fvc file.
- PCD-56502 - Fixed an issue where holes were not recognized when the mouse cursor was hovered over CAD elements.

- PCD-56622 - Fixed an issue where PC-DMIS stopped working when a sleep timer that was described in the PC-DMIS BASIC documentation was executed. As a result of this fix, PC-DMIS no longer supports the **Sleep seconds:=(Single)** sleep method and the **Wait** method.
- PCD-56661 - Fixed an issue where the lengths of Vision lines changed when PC-DMIS was upgraded to v2013 MR1 SP4 or v2013 MR1 SP5.
- PCD-56742 - Fixed an issue where all data, including skipped data, was output to an Excel file. As a result of this fix, the **Report skipped items** check box on the **Excel** tab in the **Output Configuration** dialog box (**File | Printing | Report Window Print Setup**) is now cleared by default. If you mark this check box, PC-DMIS processes items that the operator skips during execution and includes them in the report. If you clear this check box, PC-DMIS ignores the skipped items. Note that commands are skipped if the operator manually skips them or if an "ON ERROR" condition tells PC-DMIS to skip them.
- PCD-56656 - Fixed an issue where the part program stopped executing when the DelPnt button (F1) was pressed on the jogbox to delete only a hit.
- PCD-57122 - Fixed an issue where PC-DMIS Laser incorrectly oriented a cone feature upside down when the cone feature was extracted from scanned pointcloud data.
- PCD-57217 - Fixed an issue where PC-DMIS stopped working when a part program with advanced graphics features was executed. As a result of this fix:
 - By default, the **High quality transparency** check box on the **OpenGL** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display Window | OpenGL**) is cleared.
 - High quality transparency is disabled on systems with less than 1 GB memory.
 - The default anti-aliasing value is computed based on the screen resolution and amount of video memory. The higher the screen resolution, the lower the default anti-aliasing value.
 - A message about the video driver appears during the installation of PC-DMIS. This message indicates that the video driver is over a year old and requests that the driver be upgraded to the latest driver.
- PCD-57465 - Fixed an issue where PC-DMIS did not implement the CPartProgramWrapper method as a virtual destructor, which resulted in memory and performance issues.
- PCD-57558 - Fixed an issue where PC-DMIS stopped working when the **High quality transparency** check box on the **OpenGL** tab was selected, the **Antialiasing** value was set to 16x or more, and a CAD model was imported.
- PCD-57860 - Fixed an issue where PC-DMIS stopped working when alignments were created through the **Quick Start** interface (**View | Other Windows | Quick Start**), a hexblock was imported, alignments were created, the Preview window was opened (**View | Other Windows | Preview Window**), another alignment was created in the **Quick Start** interface, Program mode was selected, and then the CAD was clicked.
- PCD-58260 - Fixed an issue where the machine moved in the wrong direction when a part program with an adaptive cylinder concentric circle scan Auto Feature strategy (from version 2013 MR1) was closed and then reopened in version 2014.

- PCD-58266 - Fixed an issue where the machine crashed into the probe changer or machine table when ESTOP was pressed on the jog box while the machine moved to unload a probe, Machine Start was then pressed on the jog box, the controller's error messages were confirmed, and then the **Continue** button was selected in the **Execution** dialog box.
- PCD-58390 - Fixed an issue where a measured circle's basic hits were in machine coordinates instead of alignment coordinates when an alignment was created and then a CAD Equals Part operation was performed (**Operation | Graphic Display window | CAD Equals Part**).
- PCD-58432 - Fixed an issue in PC-DMIS Vision where the Z axis moved during a rotary axis move on a Dual Z Axis machine.
- PCD-59219 - Fixed an issue where PC-DMIS Portable used the vector of the T-Probe direction instead of the vector of the alignment when a T-Probe was used to measure single points, and the **Point Only Mode** check box on the **General** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**) was cleared.
- PCD-59244 - Fixed an issue where the laser tracker executed unnecessary commands and froze when the laser beam was frequently interrupted.
- PCD-60365 - Fixed an issue where the **Construct Curve** dialog box (**Insert | Feature | Constructed | Curve**) was not available for the PC-DMIS Pro configuration.
- PCD-61257 - Fixed an issue where PC-DMIS stopped working when a Feature Control Frame profile dimension (FCFPROF) that used the ISO 1101 standard was copied and pasted at the end of a part program.

Release Notes - 2014 SP1

- PCD-15410 - Fixed an issue where Feature Control Frame (FCF) position tolerance dimensions were incorrect when the **Fit To Datums** check box on the **Advanced** tab in the **Position** dialog box (**Insert | Dimension | Position**) was selected.
- PCD-15791 - Added support for the **BUTTON**, **TEXT**, **TITLE**, and **EDIT** keywords for the **PROMPT** statement during a DMIS import.
- PCD-38247 - Fixed an issue where the diameter symbol appeared in the Report window for an FCF line profile with a circle feature.
- CD-42174 - Fixed an issue where the width and length measured values for a round slot Laser auto feature showed the same value when the Edit window was in Summary mode.
- PCD-44082 - Fixed an issue where the start and end angles for an auto cylinder were incorrect when the theoretical rotation value in an **ALIGNMENT** command was changed.
- PCD-47719 - Fixed an issue where the **Use wrist map if available** check box in the **Probe Utilities** dialog box (**Insert | Hardware Definition | Probe**) was cleared but remained selected when F9 was pressed on the **LOADPROBE** command in the Edit window.
- PCD-49267 - Fixed an issue where, in a PC-DMIS Vision part program, some line features were correctly measured in a part program that was executed in PC-DMIS 2014 and 2013 MR1, but went from the start point to 0,0,0 instead of from the start point to the end point, when the part program was saved back to a format compatible with PC-DMIS 2010 MR3 or 2009 MR1.
- PCD-49331 - Fixed an issue where a patch scan that was created with a laser probe ended up as a single basic scan when the following procedure was followed:
 1. The patch scan was edited by pressing F9.
 2. The **Spline Points** button was pressed in the **Patch Scan** dialog box.
 3. The zoom state in the **Zoom** area on the **Laser Scan Properties** tab in the Probe Toolbox was changed.
 4. The **OK** button was clicked.
- PCD-49373 - Fixed an issue where the probe offsets between the master gauge and update gauge positions were incorrect when a new calibration sphere position was updated.
- PCD-49573 - Fixed an issue where the **Controller Comps Axes Only** option incorrectly appeared in the **Compensation method** list in the **Temperature Compensation Setup** dialog box (**Edit | Preferences | Temperature Compensation Setup**) for the Sheffield UMP360 controller.
- PCD-49923 - Fixed an issue where some movement of the probe tip for a circle Auto Feature was incorrect when the **CW** (clockwise) option in the **Direction** list in the **Auto Feature** dialog box (**Insert | Feature | Auto | Circle**) was selected.

- PCD-50600 - Fixed an issue where deviations did not appear in the **Results** area in the **Leapfrog / Relocation** dialog box (**Insert | Alignment | Leapfrog**) after a part program with three spheres was executed, and was then executed again after the **Measure datums** option and the **Measure All** button were selected in the **Leapfrog / Relocation** dialog box.
- PCD-50937 - Fixed an issue where a large circular surface appeared on an imported IGES model.
- PCD-51031 - Fixed an issue with two Blade Scan commands, where the sections in the second command did not appear in the **Sections List** area in the **Blade Report Command** dialog box after the second command was created through the **Blade Scan** dialog box (**Insert | Modules | Blade Scan**).
- PCD-51149 - Fixed an issue where the **Inner/Outer** option for a circle Auto Feature from a DES file was originally set to **OUT** but then changed to **IN** when F9 was pressed on the command in the Edit window.
- PCD-51393 - Fixed an issue where PC-DMIS repeatedly prompted for the angle to use for a fixed probe when the **Auto Wrist Toggle** icon in the **Auto Feature** dialog box was not selected, and the **Automatically Adjust Probe Head Wrist** option on the **General** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**) was cleared.
- PCD-52847 - Fixed an issue where the browse sequences (the special area between the Toolbar area and Topic Pane) did not appear in the Help viewer in the German and Spanish 32-bit language packs.
- PCD-52873 - Fixed an issue where PC-DMIS stopped working on some systems whenever an ASSIGN command in a part program was edited.
- PCD-53362 - Fixed an issue where a "64 bit loss of Resolution Error" message appeared when **File | Printing | Report Window Print Setup** was selected to open the **Report Print Options** dialog box; a report's file name was entered in the **File** box, and the **Rich Text Format (RTF)** and **Overwrite** options were selected; the Report window was opened; and the PRINT/REPORT command was executed.
- PCD-53688 - Fixed an issue where PC-DMIS used the diameter of the probe instead of the radius to compensate the point in the vector direction when an Auto Vector Point feature was measured.
- PCD-53702 - Fixed an issue where the options on the **Tracker | Tracker Pilot** and **Tracker | Measurement Profile** menus were unavailable for users who had a Pro license for the Leica machine interface.
- PCD-53731 - Fixed an issue where PC-DMIS did not retain the tolerance values that were entered on the **Feature Control Frame** tab in the **XactMeasure GD&T** dialog box for an FCF with dimensions that required diameter tolerances unless the **Advanced** tab in the dialog box was selected before **OK** was selected.
- PCD-53736 - Fixed an issue where a part program became corrupted, and the fonts used on PC-DMIS menus and custom reports changed, after a part program was executed multiple times.
- PCD-53970 - Fixed a calculation error that appeared when a Cloud of Points (COP) plane Auto Feature with a CAD boundary from a previous version of PC-DMIS was extracted.

- PCD-54002 - Fixed an issue where the dimension axis did not appear in the dimension command for an auto circle when the vector for a vector component was 1.
- PCD-54110 - Fixed an issue where a PC-DMIS Laser part program stopped executing when corrupted X, Y, and Z data was passed to the feature extractor.
- PCD-54118 - Fixed an issue where the actual scanning speed did not match the speed that was defined in the part program.

As a result of this fix, the `UseScanSpeedAsBasis` registry entry was added to the Settings Editor application.

- If the registry entry is set to False (the default), and the **Display absolute speeds** check box on the **Part/Machine** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**) is cleared, PC-DMIS uses the setting for the `MaxSpeed` registry entry as the full speed for scanning (100%) when it calculates the scan speed.
- If the registry entry is set to True, PC-DMIS uses the setting for the `scanSpeed` registry entry as the full speed for scanning (100%) when it calculates the scan speed.

The `scanSpeed` registry entry sets the maximum speed of a scan regardless of how the `UseScanSpeedAsBasis` registry entry is set.

- PCD-54258 - Fixed an issue where the results for an Angle dimension did not update when F9 was pressed on the dimension.
- PCD-54265 - Fixed an issue where the Help files were missing in the Italian language pack.
- PCD-54271 - Fixed an issue where the measured and nominal values were incorrect for a 2D angle on the new workplane when the workplanes were changed and "Yes" was selected for the message "Do you want to update dimensions with the new workplane?".

Release Notes - 2014

For detailed information and videos tutorials regarding the enhancements, log on to www.pcdmis.com.

Featured Items

New QuickMeasure Toolbars

Toolbars that you can use to perform common measurement functions were added:

- **CMM QuickMeasure:** This new toolbar provides common functions that model the typical flow of operation on a CMM.
- **Portable QuickMeasure:** This new toolbar provides common functions and windows that model the typical flow of operation on portable devices. This toolbar replaces the **Portable** toolbar.
- **Vision QuickMeasure:** This new toolbar provides common functions and windows that model the typical flow of operation on vision systems. This toolbar replaces the **Vision** toolbar.

In addition, the toolbars' **Auto Feature**, **Constructed Feature**, and **Dimension** buttons provide drop-down functionality. For example, clicking the drop-down arrow on the **Auto Feature** button displays the **Auto Feature** toolbar; its buttons display the **Auto Feature** dialog box that is related to the icon shown on the button.

To use the toolbar for your system's configuration, select **View | Toolbars | QuickMeasure**. For details, refer to "CMM QuickMeasure Toolbar" in the PC-DMIS CMM documentation, "Portable QuickMeasure Toolbar" in the PC-DMIS Portable documentation, and "Vision QuickMeasure Toolbar" in the PC-DMIS Vision documentation.

New Alignment Toolbar

You can use the buttons on the new **Alignment** toolbar to access the options that are available from the **Alignment** submenu (**Insert | Alignment**).

To use the toolbar, select **View | Toolbars | Alignment**. For details, refer to "Alignment Toolbar" in the PC-DMIS Core documentation.

New QuickAlign Feature

The new QuickAlign feature is designed to create an alignment from the Edit window (**View | Edit Window**) with one click of a toolbar button. To use QuickAlign, select one of these options:

- The **Alignment** button on the **CMM QuickMeasure**, **Portable QuickMeasure**, or **Vision QuickMeasure** toolbar
- The **QuickAlign** button on the **Alignment** toolbar (**View | Toolbars | Alignment**)
- The **QuickAlign** item on the **Insert | Alignment** menu

You can select valid combinations of one, two, or three features to create a quick alignment. It will create manual and DCC alignments when used at the beginning of a part program. You can select features in the Edit window by holding Ctrl while clicking the feature.

A quick alignment uses the datum precedence principles as described in GD&T standard ASME Y14.5.1M. The alignment is created based on the types of features you selected, the order in which you selected them, and the positions of the features relative to each other.

The **Auto-align** button in the **Alignment Utilities** dialog box (**Insert | Alignment | New**) has been enhanced to support all valid combinations of one, two, or three feature selection.

Note that the **321Alignment** button on the **Wizards** toolbar (**View | Toolbars | Wizards**) is being removed in a future release of PC-DMIS. Therefore, you should start using the new QuickAlign feature to create alignments.

For details about QuickAlign, refer to "About QuickAlign" in the Core documentation.

New Quick Features Functionality

The ability to create Quick Features by hovering your mouse pointer over the CAD to highlight CAD elements was added. This functionality enables you to create contact auto features from a single click on the CAD model without using any menu options or dialog boxes.

To use Quick Features, once the element is highlighted, press the Shift key, and do a single click. The initial feature and contact parameters that PC-DMIS uses when it creates the feature, such as number of hits, depth, void detection, and strategy types, use the default parameters that are defined in the Inspection Plan Defaults file. Thereafter, it remembers your own modifications made in the **Auto Feature** dialog box (**Insert | Feature | Auto**) for each feature type.

For details, refer to "Creating Quick Features by Highlighting CAD Elements" in the Core documentation.

New Copy Parameters and Paste Parameters Functions

The Copy Parameters and Paste Parameters functions were added. These functions copy parameters from one feature or dimension and paste them to another feature or dimension in the Edit window (or to multiple features or dimensions). For example, you can copy and paste the following:

- Feature parameters, such as NUMHITS and DEPTH
- Dimension parameters, such as OUTPUT, TEXT, and tolerances

You can use the functions for a single parameter; multiple, continuous parameters for a single feature; or a complete feature to copy all of its parameters. For details, refer to "Copying and Pasting Parameters" in the Core documentation.

New Mini Routines Feature

The new Mini Routines feature enables you to measure a selected dimension or group of dimensions from a long part program. Mini routines offer characteristic-based measurement and the ability to measure a part of a complete measurement routine (such as operation-based measurement). Mini Routines are designed to work with ClearanceCube only.

To use mini routines, select **File | Partial Execution | Mini-Routines**. For details, refer to "Mini Routines" in the Core documentation.

Implementation of B-Probe

The B-Probe represents a free movable target device to measure with the AT402 Tracker, similar to the T-Probe device used with the AT901. Unlike the T-Probe, the B-Probe is a passive 6DoF (six degrees of freedom) device. For details, refer to "Using Leica Probes" in the PC-DMIS Portable documentation.

Cancel Button Added to Option for Adding New A,B Tip Combination

The **Cancel** button was added to the **Wrist Angles Matching Requested Vector** dialog box. If you click **Cancel**, PC-DMIS cancels the tip selection and continues to use the current tip.

This dialog box appears when you type a TIP/ command in the Edit window and finish editing the vector. PC-DMIS calculates the best A,B combinations that put the tip shank parallel to that vector and displays these angles in the dialog box.

Pointcloud Shading Effects

Pointclouds are displayed optimally, with shading and inside outside effects. These effects can help you interpret scanned pointclouds. View and camera characteristics are used to only show significant points of the pointcloud.

For more information, including examples and a video, refer to "Pointcloud Scanning Colors" and "Manipulating Pointclouds" in the PC-DMIS Laser documentation.

Enhancements to Pointcloud CROSS SECTION Operator

A drop-down list with two options, Vector and Axis, was added to the **Pointcloud Operator** dialog box for the CROSS SECTION operator (**Insert | Pointcloud | Cross Section**). You can use the new Axis option to create a cross section along the X, Y, or Z axis. To create a cross section, select the desired axis in the dialog box (the default is X), set a start point in the Graphic Display window, and set an end point. The section plane cuts the part at a given step value over the length of the cross section.

If the new **Create Profile Dimension** check box is selected in the dialog box, a Profile dimension is created for each cross section.

You can also create a Profile dimension from the Graphic Display window. When you double-click a cross section label, a new Profile dimension is created that evaluates the selected cross section.

In addition, if cutting planes are visible in the Graphic Display window, you can manipulate them by changing their size, rotation, direction, and position.

For details, refer to "CROSS SECTION" in the PC-DMIS Laser documentation.

New QuickCloud Toolbar

The buttons on the new **QuickCloud** toolbar enable you to perform all of the steps for working with a cloud of points (COP) from beginning to end. In addition, its **Auto Feature** and **Dimension** buttons provide drop-down functionality. For example, clicking the drop-down arrow on the **Auto Feature** button displays the **Auto Feature** toolbar; its buttons display the **Auto Feature** dialog box that is related to the icon shown on the button. From the dialog box, you can select any of the available feature commands to insert into your part program.

The **QuickCloud** toolbar option appears on the **View | Toolbars** menu when PC-DMIS is launched with a portable laser configuration. For details, refer to "QuickCloud Toolbar" in the PC-DMIS Portable documentation.

Support for Inspection Reports in Microsoft Excel

You can now open an inspection report that was previously saved as an .xls, an .xlsx, or a .csv file, even if you do not have a program that supports viewing those file types. The inspection report displays on your screen in the application that you have associated with that file type. If you do not have an application associated with the .xls, .xlsx, or .csv file type, PC-DMIS displays the report in the basic Excel Viewer that is provided with PC-DMIS. This internal viewer has some basic font tools plus open, save, and print operations.

To open an inspection report, select **View | Inspection Report**. For details, refer to "Viewing an Inspection Report" in the Core documentation.

Improved "Report Print Options" Dialog Box

The name of the **Report Print Options** dialog box was changed to **Output Configuration**. The information in the dialog box now appears on three tabs:

- **Report** - Use this tab's options to send the report's output to a Rich Text Format (.rtf) or Portable Document Format (.pdf) file, or to a printer.
- **DMIS** - Use this tab's options to send the report's output to a Dimensional Measuring Interface Standard (.dmo) output file.
- **Excel** - Use this tab's options to send the report's output to an Excel file (.xls, .xlsx, or .csv). This tab also includes the same output format that is configured for the PCD2Excel Wizard.

Note that the **PCD2EXCEL** button on the **Wizards** toolbar (**View | Toolbars | Wizards**) is being removed in a future release of PC-DMIS. Therefore, you should start using the new **Excel** tab to configure Excel options.

To display the **Output Configuration** dialog box, select **File | Printing | Report Window Print Setup**. For details, refer to "Setting Output and Printer Options for the Report Window" in the Core documentation.

New Blob Auto Feature

The Blob Auto Feature was added to PC-DMIS Vision. This new feature is designed to work well on parts that lead to an image with high contrast edges, even illumination, and no significant high-frequency spectral components. For example, it works well on thin back-lit parts or surface-illuminated parts with no significant surface texture. Once you create the target on the **Live View** tab in the Graphic Display window, you can resize the target in the same way you would resize other auto features. The pixels included in the blob calculation are highlighted on the **Live View** tab.

To use the Blob feature, select **Insert | Feature | Auto | Blob**, or click the **Blob** button on the **Auto Features** toolbar (**View | Toolbars | Auto Features**). For details, refer to "Vision Blob" in the PC-DMIS Vision documentation.

Alignments

- PCD-46595 - Added the **Alignment** toolbar. For more information, see "[Featured Items](#)".

Auto Features

- PCD-39831 - Added the **Cancel** button to the **Wrist Angles Matching Requested Vector** dialog box. For more information, see "[Featured Items](#)".
- PCD-34066 - Changed the box-select method for the circle Auto Feature to first check for cylinders and then use the top of the cylinder.
- PCD-39171 - Improved 2D Profile CAD programming for all curves types by using CAD tessellation points.

Auto Path / Moves

- PCD-29173 - Changed path optimization (**Edit | Optimize Path**) to enable it to run quicker than it previously did when measuring features.

CAD

- PCD-29170 - Modified the **Collision List** dialog box (**Operation | Graphic Display Window | Collision Detection**) to display a list of collisions as soon as they are detected in the part program. This enhancement enables you to see the collisions up to the point that you stopped the part program, instead of at the end.
- PCD-24447 - Created a CAD model for the ONE Shop Floor CMM Model #7107. You can use this model to determine if your part, probes, and fixtures will fit on this CMM.
- PCD-32176 - Made the IGES parser more tolerant of large IGES files that are not compliant with the standard when the sequence numbers are too large.
- PCD-41929, PCD-44008 - Implemented collision detection inside the creation of an auto feature so that the path generated to measure the feature is collision-free.
- PCD-42057 - Modified the box-select method for circles and cylinders to enable you to only select an auto feature if its axis vector is within 45 degrees of the view direction vector. Circles and cylinders that are not facing the viewer will not be selected.

CMS / CMM

- PCD-42745, PCD-46595 - Added the **CMM QuickMeasure** toolbar. For more information, see "[Featured Items](#)".

Dimensions

- PCD-22865 - Added the QuickAlign feature. For more information, see "[Featured Items](#)".
- PCD-40042 - Added the DefaultDimensionColors.dat file. PC-DMIS automatically creates and modifies this file whenever you use the **Edit Dimension Color** dialog box (**Edit | Graphic Display Window | Dimension Color**). You cannot edit the file.

This .dat file contains dimension color information that, in versions earlier than 2014, were stored in the Settings Editor application in these registry entries:

- `DimensionColorLimits`
- `DimensionColorNumZones`
- `DimensionColorShowInTwoDirections`
- `DimensionColorTol1..40`
- `DimensionColorTolOutNeg`
- `DimensionColorTolOutPos`
- `DimensionTolerancePercentage`
- PCD-41928 - Enabled the use of unequal tolerance zones with Profile formonly feature control frame (FCF) dimensions.
- PCD-53186 - Changed the method that PC-DMIS uses to calculate angle dimensions near 0 and 90 degrees. For more information, see "[New Product Information](#)".

Direct CAD Interfaces / Direct CAD Translators

- PCD-40756 - Added the Datakit library so that the CATIA v5 Direct CAD Translator (DCT) supports R23.

Dual Arm

- PCD-19147 - Added these buttons to the **Active Arms** toolbar (**Operation | Enter Multiple Arm Mode**):
 - **Move to Arm 1 start point** - Moves the cursor in the Edit window to the top of the Arm 1 program's start point.
 - **Move to Arm 2 start point** - Moves the cursor in the Edit window to the top of the Arm 2 program's start point.
 - **Execute from Startpoints** - Program execution for both arms will start at the currently defined start point.
- PCD-23428 - Added colors to the labels for the arms on the **Live View** tab in the Graphic Display window (**View | Graphic Display Window**) so that you can see which arm you are using on a dual-arm machine. The Arm 1 label is red, and the Arm 2 label is green.

Edit Window

- PCD-38058 - Added the Copy Parameters and Paste Parameters functions, which enable you to copy parameters from one feature or dimension and paste them to another feature(s) or dimension(s) in the Edit window (**View | Edit Window**). For more information, see "[Featured Items](#)".

Execution

- PCD-38065 - Added Mini Routines, which you can use to measure a selected dimension or group of dimensions from a long part program. For more information, see "[Featured Items](#)".
- PCD-19145 - Added the **Start Points Always Track Execution** check box to the **General** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**). This option enables start points to always track the execution of a part program. Specifically, it determines if you created the start point or if PC-DMIS created it because the **Cancel** button in the **Execution** dialog box (**File | Execute**) was selected.

Graphics

- PCD-38052, PCD-40758 - Added the ability to create Quick Features by hovering the mouse pointer over the CAD to highlight CAD elements. Additional changes for this functionality include:
 - PCD-42772 - You can highlight 2D and 3D features on a CAD model by pressing the Shift key and hovering your mouse cursor over the feature.
 - PCD-42058 - You can use the characteristics of a highlighted feature on the CAD model (such as the size and X, Y, and Z values) in Guess Mode.
 - PCD-42060 - You can highlight the two faces of the front of a hex block as a single plane and the two edges on the top front of the hex block as a single line. The faces or edges of the notch will not be highlighted.
 - PCD-45796 - You can have PC-DMIS automatically generate safe clearance moves between Quick Features. To do this, select **Operation | Graphic Display Window | Clearance Moves | With Feature Creation** prior to creating the features. If this menu option is enabled, safe path moves between features and inside the same feature, between sample hits and hits, and among hits in the same list are automatically computed and drawn as path lines.

For more information, see "[Featured Items](#)".

- PCD-31625 - Added the ability for PC-DMIS to display 50 feature labels in the Graphic Display window (**View | Graphic Display Window**) without crossing the labels' leader lines.
- PCD-32865 - Added the ability to set a background image for the Graphic Display window. To set an image, select the desired option in the new **Image** list on the **Colors** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display window | Screen Color**).
- PCD-35755 - The size of the point symbol that you enter in the **Diameter** box on the **Symbols** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display window | Display Symbols**) now appears for the next part program that is created.

Help / Documentation

- PCD-19497 - Included a .zip file with printable versions of the PC-DMIS online help systems with the PC-DMIS installation. This file includes the most current localized printable manuals as PDF files. The .zip file is installed into the appropriate two-letter language subdirectory where you have PC-DMIS installed. For example, for English, the .zip file is named English_pcdmis_manuals.ZIP and is installed into the **en** subdirectory. For more information about the .zip file, refer to the Readme.txt file that is located in the same subdirectory.
- PCD-46558 - Updated the "About the Blade Report Command" topic in the PC-DMIS Core documentation with the parameters that enable the Blade Report command to work with the BladeRunner application.

Installation

- PCD-13253 - Changed the default location in which CAD files are stored from:

C:\Program Files\WAI\PC-DMIS <version>

to:

C:\Users\Public\Public Documents\WAI\PC-DMIS\<version>\CAD

Where <version> is the PC-DMIS version.

In addition, the default settings for the **PostInPath** and **PostOutPath** registry entries in the Settings Editor application changed from None () to C:\Users\Public\Public Documents\WAI\PC-DMIS\<version>\CAD.

- PCD-39056 - Changed the default setting for the **AutoCheckForUpdates** registry entry in the Settings Editor application from False to True. If the setting is True (the default), PC-DMIS automatically checks for software updates when you start PC-DMIS. If an update is available, PC-DMIS displays the **Web Updater** dialog box to prompt you to start the download and install the update. This provides a convenient way to keep your software up to date without downloading and manually installing new versions.

Note that you can only download and install updates when you start PC-DMIS with administrator privileges.

Laser / Cloud of Points

- PCD-40034 - Added support for the CMS 208 sensor (for both DCC and Portable). This sensor supports the NORMAL, HIGH, and XHIGH sensitivity modes.

License

- NGMA-1539 - Added the **CLM Admin** button to the **LMS License Setup** dialog box, which enables an LMS software license (called an "Entitlement ID") to be activated offline during installation. For details, see "[Step 4: Install PC-DMIS](#)".
- PCD-44006 - Enabled Windows 8.1 support in PC-DMIS, starting with version 2013 MR1.

Machine Interface

- PCD-51500 - Added support for the Zeiss manual machine to work with the 64-bit version of PC-DMIS.

Planner

- PCD-45264 - Added the **Angle resolution** box to the **CAD Tolerances** dialog box (**Edit | Graphic Display Window | CAD Tolerances**). This box specifies the angle (in degrees) at which two angles are considered equal. This box also determines if two vectors are considered equal by checking the angle between the two vectors.

Pointclouds

- PCD-42652 - Added the **QuickCloud** toolbar. For more information, see "[Featured Items](#)".
- PCD-30080 - Enhanced pointclouds to display optimally, with shading and inside outside effects. For more information, see "[Featured Items](#)".
- PCD-39353 - Removed the COOPER keyword, which was used prior to a pointcloud operator command. The commands now use a COP prefix, and each COP operator has a specific keyword in the Edit window (**View | Edit Window**) in Command mode. For example, the Filter operator is COPFILTER.
- PCD-31417 - Enhanced the options in the **Pointcloud Operator** dialog box for the CROSS SECTION operator (**Insert | Pointcloud | Cross Section**), and added the ability to create a cross section along the X, Y, or Z axis. For more information, see "[Featured Items](#)".
- PCD-30092 - Revised the function of the **Create** button in the **Pointcloud Operator** dialog box for the CROSS SECTION operator (**Insert | Pointcloud | Cross Section**) to insert a label for each plane into the Graphic Display window (**View | Graphic Display Window**).
- PCD-30116 - Added the ability to select multiple COP commands in the **Pointcloud Operator** dialog box for the EXPORT operator (**Insert | Pointcloud | Export**) so that they can be exported in a single operation.
- PCD-14132 - Improved the logic of setting the default values of the measurement units for the registry entries in the **PointcloudOperator** section in the Settings Editor application.
- PCD-30098 - Added the ability of the Graphic Display window to show pointcloud points based on the zoom and camera characteristics. It does not show points that are not in the camera's field.
- PCD-31407 - Added the ability to reset or move the start point and end point of a cross section so that the cross section can be modified in the Graphic Display window.
- PCD-31506 - Added the ability for PC-DMIS to create a profile command when it creates section cuts. This enables PC-DMIS to automatically provide the complete dimension.
- PCD-37102 - Enabled backward compatibility of SDK binSave so that an SDK object can be serialized in a previous version of PC-DMIS.

- PCD-37592 - Added the **Smooth** check box to the **OpenGL** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display Window | Display Symbols**). If you select this check box, the COP is drawn in the Graphic Display window more smoothly, so that the COP looks more like a surface than as individual points. If you clear the check box, the COP is drawn as distinct points.

You must specify the type of COP operator before you add it to a part program. You cannot modify the type once the operator has been added to a part program.

- PCD-41785 - Added the ability to specify the default ID for COP commands so that it is recognizable in the part program. To specify the default ID, select the **ID Setup** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**). In the **Labels for** list, select **Pointcloud Operators**. In the **Labeling method** list, select **By Type**; a list of IDs appears. Select the desired ID.
- PCD-42135 - Added the ability to create a Profile dimension by double-clicking on a COP/OPER,CROSS SECTION label.
- PCD-44349 - Improved the time that PC-DMIS takes to draw a cloud of points in the Graphic Display window and collect data.
- PCD-46784 - Revised the **Width** and **Height** options in the **Pointcloud Operator** dialog box for the CROSS SECTION operator (**Insert | Pointcloud | Cross Section**) so that if the value is 0, the system will calculate the value as the CAD and COP bounding box value.

Portable

- PCD-46595 - Added the **Portable QuickMeasure** toolbar. For more information, see "[Featured Items](#)".
- PCD-43738 - Implemented the B-Probe. For details, see "[Featured Items](#)".

Probes

- PCD-26077 - Added the **Connection Type** list to the **Assemble** tab in the **Custom Probe Builder Utility** dialog box (**Edit | Preferences | Custom Probe Builder Utility**). Use this option to create a new item based on existing connection types in the probe file that you selected. To do this, select a new connection type in the **Connection Type** list, and then select as many new components to add to the connection as required from the **Component selection** list.
- PCD-43519 - Added the TESASTAR-M_COVER probe component to PROBE.DAT.

Quick Fixturing

- PCD-29058 - Changed Quick Fixture components to load in a better location on a machine instead of at the end of the probe shaft. If an animated machine has been added to the part program, new Quick Fixture components are inserted at the -X, -Y, -Z corner of the machine's work volume. Otherwise, they are added at the origin.

Reporting

- PCD-25765 - Added the ability to open an inspection report (**View | Inspection Report**) that was previously saved as an .xls, an .xlsx, or a .csv file type. For more information, see "[Featured Items](#)".
- PCD-37531, PCD-40072, PCD-43655, PCD-43670 - Changed the name of the **Report Print Options** dialog box (**File | Printing | Report Window Print Setup**) to **Output Configuration**, and redesigned it. For more information, see "[Featured Items](#)".
- PCD-8256 - Added the following reporting parameters:
 - FlipCROView method: Flips the CAD Reporting Object (CRO) either horizontally or vertically.
 - FlipCROViewByAxis method: Flips the CRO view along the axis passed.
 - Offset property: Returns/Sets via point data object the Offset location of the CAD Reporting Control.
 - ScaleFactor property: Returns/Sets via a double the scaling factor of the CAD Reporting Control. A value of 1.00 = 100%.
 - Rotation property: Returns/sets via dmis matrix the transformations/rotation on the CAD Report Control.
- PCD-44071 - Enabled comments for the REPT comment type to be included in an Excel file.
- PCD-45235 - Added the following expressions to the GETPROGRAMINFO string function:
 - PRGVERSION - Returns a string value of the PC-DMIS version number of the part program file. You can save a part program file to be compatible with a specific version.
 - PRGSCHEMA - Returns an integer of the PC-DMIS schema number of the part program file. This is an internal value that is used by PC-DMIS to indicate the commands and options that are serialized.
 - PCDMISVERSION - Returns a string value of the actual installed version of PC-DMIS.

Tool Changers

- PCD-36426 - Implemented CW43 probe changer qualification for a modified CMS station. As part of this change, the following registry entries were added to the Settings Editor application:
 - **CW43LThirdAxisTCSlot** - Tells PC-DMIS how to perform load and unload operations for a CW43 probe changer that has an old three axis slot (a slot capable of storing a three axis probe) where the third axis lies horizontally.
 - **CW43LThirdAxisTCVerticalSlot** - Tells PC-DMIS how to perform load and unload operations for a CW43 probe changer that has a new three axis slot (a slot capable of storing a three axis probe) where the third axis lies vertically.

The default for these registry entries is -1, which means that a three axis slot is not available on the probe changer.

- PCD-36428 - Modified the Leitz interface to support the modified CMS station for the CW43 probe changer.

Toolkit

- Made the following enhancements to the Probe Toolbox for the adaptive free form plane scan strategy (**Insert | Feature | Auto | Plane**):
 - PCD-42906 - Added the **Default Path** check box to the **Path Definition** tab for the strategy's Perimeter Paths type. If you select this check box, the default perimeter scan path is generated for a given plane.
 - PCD-42908 - Added the **Select CAD** check box to the **Path Definition** tab for the strategy's Perimeter Paths type. You can use this check box to select multiple surfaces of a plane.
 - PCD-42909 - Added the **Jump Hole** check box and box to the **Path Definition** tab for the strategy's Free Form Paths and Teach Path types. If you select the check box, a break point is generated in the scan path whenever the scan path is over the holes in the CAD surface. Type the required distance from the edge in the box.
 - PCD-38865 - Added the **Smoothing Corner Radius** box to the **Path Definition** tab for the strategy's Teach Path type. The points within the defined radius with the corner as the center are smoothed to form a curve instead of a sharp corner.
 - PCD-43482 - Added the **Probe Pos** button to the **Insert Point** dialog box, which appears when you right-click in the points list area on the strategy's **Scan Path** tab and select the **Insert Move** option. You can position the probe and then click this button to insert a move point at that location.
 - PCD-43487 - Changed the points list area on the **Path Definition** tab to display the start point, direction point, and end point when you select the << button. This change enables you to modify hits or take more hits.

User Interface

- PCD-36638 - Added the TIGO_5-6-6 virtual machine definition to MACHINE.DAT.
- PCD-40465 - Added the Mora dual arm machine model as a virtual CMM model so that you can view it in the Graphic Display window (**View | Graphic Display Window**).
- PCD-40698 - Changed the default setting for the **UseProgramLayoutForExecution** registry entry in the Settings Editor application from 0 to 1 for all machine types. If the setting is 1 (the default), the PC-DMIS Program Layout is used during execution. If the setting is 0, the Execution Layout is used during execution.
- PCD-42128 - Added the Bravo HP-C 40-16-21 Arm2 machine model (usrmachine.DAT).
- PCD-43722 - Added the Mercury Sheffield R 65.18.30 machine model to MACHINE.DAT.

Vision

- PCD-46595 - Added the **Vision QuickMeasure** toolbar. For more information, see "[Featured Items](#)".
- PCD-36853 - Added the new Blob Auto Feature. For more information, see "[Featured Items](#)".
- PCD-39074 - Added the **.AREA** and **.TAREA** extensions with the Blob's ID. These reference expressions return the measured area and theoretical area values for the Blob auto feature, respectively.

Contact Hexagon Metrology

If you are participating in the *technical preview* of PC-DMIS 2014 Release, please post your feedback in the appropriate technical preview forum located at <http://www.pcdmisforum.com/forum.php>. Please do not contact Technical Support for technical previews.

If you are using the *commercially released version* of PC-DMIS 2014 Release and would like further information or technical support, please feel free to contact <http://hexagonmetrology.us/contact-us> or visit www.pcdmis.com. Hexagon Metrology Technical Support can also be reached 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 (**/qb**), and the correct information is provided, everything runs without user interaction. The command switch **/qb** displays the progress bar and handles installer errors, while the **/q** 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 **Choose License Type** dialog box.

A description of the parameters follows, along with examples:

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).

ENTITLEMENTID="<entitlement id>" - This parameter and value are useful on a new system where no LMS license was previously installed. It indicates that the user wants 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 speak 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="<username>" - 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**.

LMSFNOURL="<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.

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

```
/qb ENTITLEMENTID="99999-88888-77777-66666-55555"
```

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

```
/qb USELMSLICENSING
```

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

```
/qb LMSLICENSESERVERS="123.12.134.42"
```


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

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

Appendix B

Understanding File Locations

The default file locations (path locations) for various user-specific settings and other files have changed in PC-DMIS 2010 MR2 and later in order to comply with newer operating system standards. Previously, much of this information was stored inside of the install directory of PC-DMIS.

The following shows where these files are now stored, based on each file's role:

Public Documents

Types of Files: Part programs, CAD, probe files, and other files.

- Vista/Win7/Win8: C:\Users\Public\Public Documents\WAI\PC-DMIS\<>version>

Where <version> is the PC-DMIS version.

Public Documents (Reporting Directory)

- Vista/Win7/Win8: C:\Users\Public\Public Documents\WAI\PC-DMIS\<>version>\Reporting

Where <version> is the PC-DMIS version.

Public Documents

Types of Files: CAD files

- Vista/Win7/Win8: C:\Users\Public\Public Documents\WAI\PC-DMIS\<>version>\CAD

Where <version> is the PC-DMIS version.

Program Data Files [Hidden]

Types of Files: Calibration files (such as comp.dat and compens.dat), setup files (such as tool.dat, toolc.dat, and usrprobe.dat), and other files.

- Vista/Win7/Win8: C:\ProgramData\WAI\PC-DMIS\<>version>

Where <version> is the PC-DMIS version.

User Data Files

Types of Files: Toolbar and menu layout files, lighting and materials, settings, and other files.

- Vista/Win7/Win8: C:\Users\<>username>\AppData\Local\WAI\PC-DMIS\<>version>

Where <username> is your window's logon user name and <version> is the PC-DMIS version.

Also see "Understanding the .DAT Files" in the PC-DMIS help for more specific information on data files.

NOTE: In addition, functionality was added into the PC-DMIS Settings Editor that allows you to back up, restore, or clear user-specific files and settings. Rather than manually deleting or restoring individual files on your own, we recommend that you use the tools provided in the Settings Editor instead. See the "PC-DMIS Settings Editor" documentation for additional information.

Required User Access Rights

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

File System

Windows XP

- C:\Documents and Settings\All Users\Application Data\WAI\PC-DMIS\2014
- C:\Documents and Settings\All Users\Documents\WAI\PC-DMIS\2014
- C:\Documents and Settings\User Name\Local Settings\Application Data\WAI\PC-DMIS\2014
- Any user-specified folder locations for storing Part Programs, Probes, Subroutines, and so on

Windows Vista/7/8

- C:\ProgramData\WAI\PC-DMIS\2014
- C:\Users\Public\Documents\WAI\PC-DMIS\2014
- C:\Users\User Name\AppData\Local\WAI\PC-DMIS\2014
- Any user-specified folder locations for storing Part Programs, Probes, Subroutines, and so on

Registry

All of these versions have their own registry settings, stored in a version-specific Key. The items shown below are for the 2014 Release.

X86 OS

- HKEY_LOCAL_MACHINE\SOFTWARE\WAI\PC-DMIS\2014 Key and all sub keys
- HKEY_CURRENT_USER\Software\WAI\PC-DMIS\2014 and all sub keys
- HKEY_USERS\.DEFAULT\Software\WAI\PC-DMIS\2014 and all sub keys

X64 OS

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\WAI\PC-DMIS\2014 Key and all sub keys
- HKEY_CURRENT_USER\Software\WAI\PC-DMIS\2014 and all sub keys
- HKEY_USERS\.DEFAULT\Software\WAI\PC-DMIS\2014 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 installed. For this to work, PC-DMIS needs to run with administrator privileges the first time you run it. During the installation, if you mark 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\WAI\FxtServer
 - HKEY_LOCAL_MACHINE\SOFTWARE\WAI\PC-DMIS\NCSENSORSETTINGS
 - It may be easier to just apply create/read/write privileges to the HKEY_LOCAL_MACHINE\SOFTWARE\WAI\ key and all sub keys to cover these also.