

# ExpertCAD™ ExpertCAM™

## ExpertCAD 2011 Release Summary May 2011

### Overview

ExpertCAD 2011 is major release that includes enhancements as well as customer requested software modifications and corrections. This release summary describes the software changes.

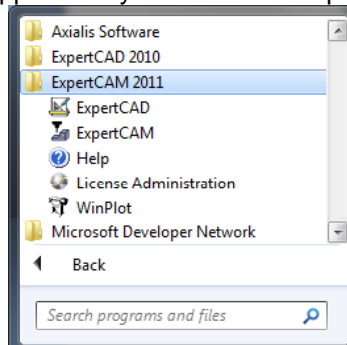
### Installation

Installation has been revised to make it easier to install the software you have licensed. The introductory screen of the install program allows you to choose which application to install and offers an option to install the 32-bit or 64-bit edition if applicable:



It is no longer necessary to choose a Minimal or Custom Setup Type in the installation wizard in order to install just ExpertCAD or ExpertView. Simply choose the product you wish to install and all necessary software components for that application will be installed.

The application you install will be presented in the Windows Programs menu under its own name.



In this example, ExpertCAM has been installed on this computer. This creates the ExpertCAM program group in the Windows start menu. In similar fashion, choosing ExpertCAD or ExpertView will create their own program group.

ExpertCAD 2011 is installed on your system as though it is a new application. It will not overwrite programs from any previous installation of ExpertCAD.

### **Native 64-bit Editions**

ExpertCAD 2011 is the first release to offer a native 64-bit edition for the Windows platform. 64-bit editions are compiled specifically for 64-bit editions of the Windows operating system and available for installation only on the 64-bit operating system.

#### *Why 64-bits?*

A 32-bit architecture theoretically allows a single process to access a maximum of 4 GB of memory. In reality Windows restricts an application to only 2 GB because it reserves 2 GB for its own use (a 3 GB maximum is possible if your computer is configured to be large address aware and your 32-bit application built as a large address aware). This puts an absolute limit on the maximum size of any single process. When a process exceeds the maximum size allowed, a program crash will result.

The 32-bit limitation also impacts performance when there are many processes running concurrently. This is becoming increasingly typical of the Windows operating system as many services are needed just to run the operating system. This is in addition to programs adapted to run multiple threads to take advantage of multi-core processors. All this means that the sum total of the memory requirements of these processes and threads can be far in excess of the physical amount of memory in the computer and the 4 GB limitation of 32-bit architectures. Operating systems deal with this by keeping only those parts of the program and data that are currently in active use held in physical RAM. Other parts and programs are held in a page file on disk. When a program tries to access some address that is not currently in physical RAM, it generates an interrupt, called a Page Fault. This asks the operating system to retrieve the page containing the address from the page file. This paging takes many magnitudes longer than if the program or data was resident in memory instead of paged-out to disk.

With a 64-bit architecture, the theoretical memory limit is 16 exabytes or 17.2 billion gigabytes. In reality the architecture of the current x64 microprocessors currently limit this to less. More importantly, Windows limits the available RAM according to the table below:

<b>Version</b>	<b>32-bit</b>	<b>64-bit</b>
Windows 7 Ultimate, Enterprise and Professional	4 GB	192 GB
Windows 7 Home Premium	4 GB	16 GB
Windows 7 Home Basic	4 GB	8 GB
Windows 7 Starter	2 GB	2 GB
Windows Server 2008 R2 Datacenter & Enterprise	N.A.	2 TB
Windows Server 2008 R2 Foundation	N.A.	8 GB
Windows Server 2008 R2 Standard	N.A.	32 GB
Windows Vista Ultimate, Enterprise and Business	4 GB	128 GB
Windows Vista Home Premium	4 GB	16 GB
Windows Vista Home Basic	4 GB	8 GB
Windows Vista Starter	4 GB	N.A.
Windows XP	4 GB	128 GB
Windows 2000	4 GB	N.A.

This dramatic increase in the available virtual and physical RAM that 64-bit systems offers means that a single process can be many times larger than a 32-bit system will allow. Computers can be configured with far larger amounts physical RAM making it possible for more processes and threads to be resident in memory thus minimizing the page faults and providing a higher level of overall performance.

### *Benefits*

Power-users typically have many applications open at any given time. This scenario can tax the resources of the computer severely in cases where large complex data sets are common. Power-users will find that a 64-bit computer can easily handle the additional memory requirements and, when outfitted with a larger amounts of physical RAM, reduce paging and improve overall performance.

### *Compatibility*

All data files generated by 64-bit editions of the software are 100% compatible with 32-bit editions. There are no compatibility issues in a mixed environment of 32-bit and 64-bit computers with sharing data files.

By default, the 64-bit edition of the software will be installed on a 64-bit operating system. It's not mandatory to install the 64-bit edition though. You can choose to install the 32-bit edition from the installation program. It is not permissible to install both the 32-bit and 64-bit editions. If you wish, you can switch editions by uninstalling and reinstalling the software.

### **Platform Support**

The table below lists the supported operating systems for ExpertCAD 2011:

<b>Operating System</b>	<b>32-bit</b>	<b>64-bit</b>	<b>Revision Level</b>
Windows 7	✓	✓	All
Windows Vista	✓	✓	All
Windows Server 2008	✓	✓	All
Windows XP	✓	✓	All
Sun SPARC Solaris	✓	✓	SunOS 5.5 and higher
HP PA-RISC HP-UX	✓	✓	HP-UX 11

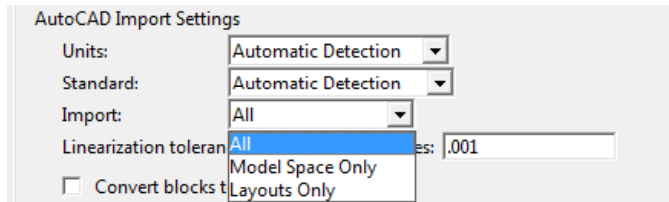
#### Operating System Notes:

- Windows Vista, Windows Server 2008 and Windows 7 do not support parallel port dongles. Only USB dongles are supported for these operating systems.
- ExpertCAD 2011 includes the latest driver for the Aladdin USB dongles. If you are installing on a new computer running Windows 7, the Aladdin USB dongle driver will be installed the first time you plug the key into the USB port of the computer. For all other operating systems, the driver is automatically installed if the installation program detects that it is required.

## Importing & Exporting AutoCAD Data Files

New options have been added for importing AutoCAD data into ExpertCAD.

The *Import:* option has been added to specify what data set(s) to import from AutoCAD data files. This setting is in the Import/Export tab of the Tools/Options property sheet in the AutoCAD Import Settings group of options:



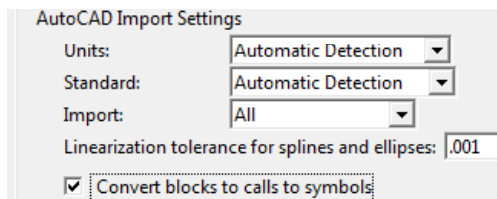
**All** – import all data from the file.

**Model Space Only** – imports only the data in AutoCAD Model Space. Layouts are ignored.

**Layouts Only** – import only the layout(s).

AutoCAD layouts are the 2D drawing(s) created from the Model Space geometry. Usually this is the data set you would be most interested in working with. Not all AutoCAD designers use layouts. It's not required to work this way to produce a fully documented design. Note that choosing Layouts Only may result in no data being imported if the AutoCAD drawing does not have any layout(s) defined. By default, All data is imported into ExpertCAD as was the case in previous versions with layout(s) are arranged individually to the right of the model space data in ExpertCAD.

The *Convert blocks to calls to symbols* switch specifies how block entities are to be converted when imported into ExpertCAD:



**Enabled** – blocks are converted to ExpertCAD symbols and block references are converted to ExpertCAD calls to symbols.

**Disabled** – block references are decomposed (exploded) into their component entities and converted to ExpertCAD. Symbols and calls are not produced.

By default blocks and block references are converted to symbols and calls. If you are not comfortable with working with calls & symbols, disable this switch.

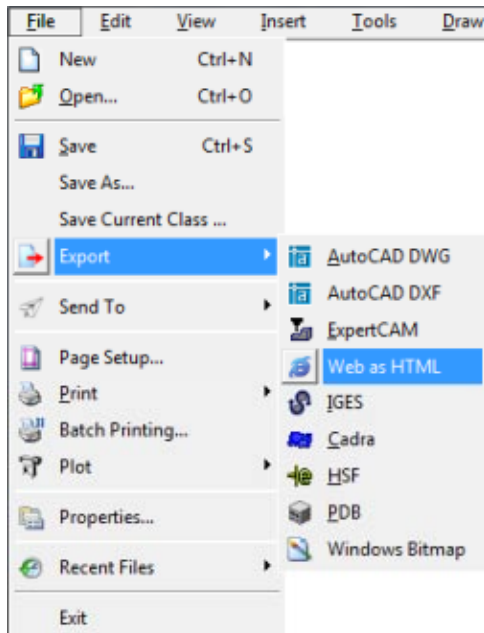
Data files from AutoCAD 2011 can be imported and exported by ExpertCAD 2011.

Exporting data from ExpertCAD to AutoCAD format has been revised to handle customized native font definitions. Previous versions would create a single AutoCAD text style named ExpertCAD which was used for all text notes created using native fonts. ExpertCAD 2011 creates a separate AutoCAD text style for each native font used in a drawing to more accurately match that fonts' characteristics. This ensures that text notes are properly sized regardless of the native font used in ExpertCAD.

Several discrete defects with conversion to and from AutoCAD format have been addressed in this release. Refer to the Closed Track IDs section of this document for a summary of these corrections.

## Exporting Data to the Web

The option to export your drawing in HTML format has been added to the File/Export menu:

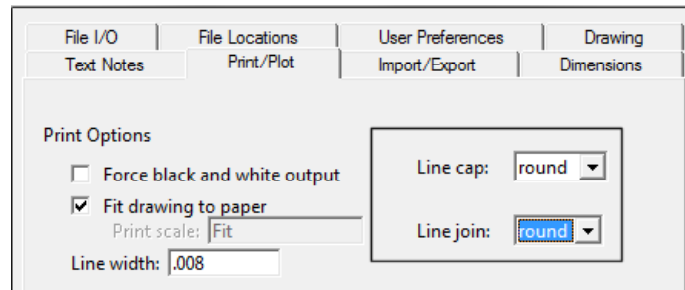


Export to the Web as HTML will output the current drawing in HTML (HyperText Markup Language) format to a file you specify. The resulting file is suitable for viewing in any popular web browser such as Mozilla Firefox, Google Chrome, and Microsoft Internet Explorer 9.




Your browser must be able to support HTML5 format and support JavaScript. Older versions of some browsers may not be able to display the drawing. This is particularly true of Microsoft Internet Explorer where versions prior to IE9 may not work. You will need to allow your browser to run scripts because the document uses JavaScript to draw on the page.

## Printing

Options to control line cap styles and line join styles have been added to the Print/Plot tab of the Tools/Options dialog:



Line cap specifies how the printer should draw the ends of a line:

<b>Appearance</b>	<b>Setting</b>
	<i>Round cap.</i> A semicircular arc with a diameter equal to the line width is drawn around the endpoint and filled in.
	<i>Butt cap.</i> The stroke is squared off at the endpoint of the path. There is no projection beyond the end of the path.
	<i>Square cap.</i> The stroke continues beyond the endpoint of the path for a distance equal to half the line width and is squared off.

By default ExpertCAD defaults to a Round Cap. Any dashed line style is affected by the line cap setting. If you find that the dashing needs to be more pronounced when printing, choose either butt or square to provide a wider gap between dashes.






Round end cap style tends to join together the dashes in this dashed line when printing.



Switching to a butt end-cap style may help the dashing be more apparent when printed.

Similarly the Line Join setting specifies what the printer is to do when line segments connect:

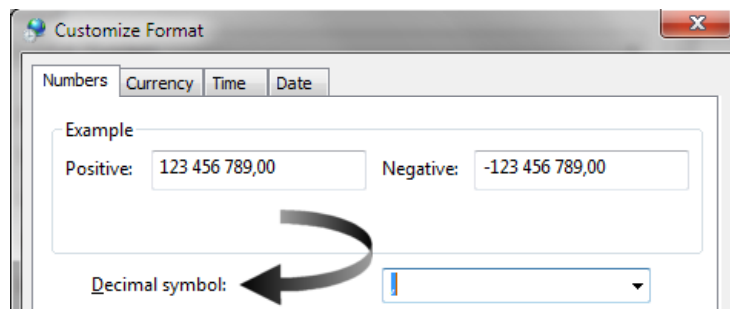
<b>Appearance</b>	<b>Setting</b>
	<i>Miter join.</i> The outer edges of the strokes for the two segments are extended until they meet at an angle, as in a picture frame. If the segments meet at too sharp an angle, a bevel join is used instead.
	<i>Round join.</i> An arc of a circle with a diameter equal to the line width is drawn around the point where the two segments meet, connecting the outer edges of the strokes for the two segments. This pie-slice-shaped figure is filled in, producing a rounded corner.
	<i>Bevel join.</i> The two segments are finished with butt caps and the resulting notch beyond the ends of the segments is filled with a triangle.

Regardless of what settings you choose for end caps and line joins, your printer (printer driver) is ultimately responsible for producing the proper results (i.e. ExpertCAD instructs the printer what is to be done but is not responsible for the actual drawing of the lines).

Construction lines (style 3 lines) are now ignored when computing the scale for printing when the Fit option is chosen. Previously these lines were included in the calculation which would typically result in the drawing be scaled too small.

### **Dimensioning & Locale**

Dimensioning will honor the regional setting for the character to use for a decimal point when creating dimensions. For example, if Sweden is chosen, the default region for your computer, a comma ',' will be used as the decimal point for dimensions.



## ***Maintenance***

### *ExpertCAD*

For security reasons, the Send To Mail Recipient (As Attachment) has been revised to function only in cases where the mail client program is Microsoft Outlook. If you use a mail client other than Outlook, this feature will not be available. ExpertCAD is no longer dependent on the Microsoft provided MAPI (Messaging Application Programming Interface) architecture having been installed on a computer.

Drawings saved from ExpertCAD to the root level of a file system (e.g. C:\) can now be exported in AutoCAD or any other non-native format. Previous versions would not allow export of drawings from the root level.

It is no longer required to define the plotter designation hppl2aC in the plotcap.txt file. Previous versions required this definition in order to allow for a plotter designation to be specified in ExpertCAD.

Nested symbol definitions (a call to a symbol within a symbol definition) has been corrected to function properly. Version 2010 did not allow legal definitions of a nested symbol.

Creating lines tangent to circles/arcs has been corrected to resolve a problem exemplified by 2 discrete cases where a solution could not be determined.

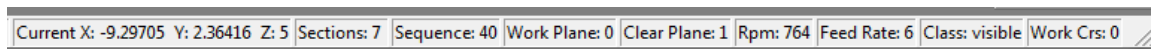
The Set Text Size class operation in ExpertCAD has been corrected to produce the proper results for text notes that use True Type fonts.

The Tools/Purge/Common and Overlapping Lines has been revised to work much more quickly when presented with a very large data set (> 100,000 line segments).

When redrawing the screen, if a keystroke is detected ExpertCAD will cease redrawing and process the key stroke. For example, the 'z' key stroke zooms into the drawing. If a second 'z' keystroke is entered from the keyboard, ExpertCAD will abandon the redraw and process the next zoom command.

### *ExpertCAM*

The current location of the tool has been added to the collections of setting shown in the status bar on the right hand side so it is always visible:



Importing ME-10 data files into ExpertCAM has been corrected to properly recognize this file format as being valid.

The sequence editor feature has been corrected to handle the GOCLR command properly. Previous versions could insert the values into the dialog in the wrong location.

Certain display functions and options in ExpertCAM such as display of the turret have been corrected to work properly regardless of the option chosen by the user.

When displaying sections in ExpertCAD, the sections are labeled to the prefix 'S' in conformance with the display produced by ExpertCAM.

## Customer Closed Track IDs

Track is the electronic database system that records all customer and internally generated requests for corrections and enhancements. When you report a problem or request an enhancement, our customer service representatives will input your request into the Track system and give you a Track ID number. When we complete a release, we set the status on all records in the Track database that have been addressed to closed. In the table below is a listing of all Track items addressed by this release:

ID	Synopsis
2796	Add option to import only model space or layouts when reading an AutoCAD file into ExpertCAD.
2811	ExpertCAD fails to import this AutoCAD file.
2825	ExpertCAD fails to import this AutoCAD file.
2848	ExpertCAD file is failing to translate to AutoCAD format.
2849	ExpertCAD file is failing to translate to AutoCAD format.
2870	The plotter designations setting in ExpertCAD on the Print/Plot property sheet is not being saved to the configuration file.
2871	Disable the Mail as Attachment option if the mail client is not Microsoft Outlook.
2872	System of units for an AutoCAD file generated out of ExpertCAD may be output incorrectly.
2879	Add an option for importing AutoCAD that will convert blocks to lines & text instead of calls to symbols in ExpertCAD.
2883	A drawing saved from ExpertCAD to a file at the root level of a file system (e.g. C:\) can't be exported in AutoCAD or other available formats.
2885	An entry named 'hpgl2aC' in the plotcap.txt file should not be mandatory for ExpertCAD.
2888	ExpertCAD reference documentation for the 'intersect' command contains an incorrect example.
2889	AutoCAD files with mirrored text notes are not mirrored correctly when imported into ExpertCAD.
2890	Text size is too small when a drawing is exported in AutoCAD format from ExpertCAD when the model scale is not full-size.
2891	Add additional options to the ScriptLink date command to allow for a leading zero to be output for the month and/or day.
2892	Exporting drawings from ExpertCAD in AutoCAD format that use custom user-designed fonts don't always size text notes properly.
2893	Support for loading nested symbol definitions in ExpertCAD is not working correctly.
2894	The goSection macro in ExpertCAM is not working correctly if the prompt/no prompt setting is set to no prompt.
2895	The sequence editor feature in ExpertCAM is not inserting the parameters for the GOCLR command in the correct locations in the editor.
2896	The panel-hide ScriptLink function is not working properly when the item to be hidden is an icon.
2897	In this discrete case, ExpertCAD is failing to compute a proper solution for a line tangent to 2 circles.
2900	InfoManager is failing to execute the scripted procedure embedded in this document.
2901	Add the location of the current tool position to the status bar in ExpertCAM.
2902	The Set Text Size class operator in ExpertCAD is not working correctly for text notes that use a True Type font.
2903	In this discrete case, ExpertCAD is failing to compute a proper solution for a line tangent to 2 circles.
2904	When changing the default font size for the message area in ExpertCAD, an error is generated.
2907	Modify product installation for Windows 7 to let the operating system install the driver for the Hasp USB security key.
2912	ExpertCAM is generating a segmentation violation error when replaying this sequence.
2917	The remove duplicate lines feature in ExpertCAD is very slow when a large data set is used.
2918	Data is missing when this ExpertCAD file is exported in AutoCAD format.
2920	Dimensioning in ExpertCAD should honor the Windows locale setting for the character to use for a decimal point when formatting the dimension text.
2921	Add the ability to export a drawing to the web in HTML format.
2922	ExpertCAM is failing to import files in ME-10 format.
2923	The turret selection feature to choose which turret to display in ExpertCAM is not working correctly.



2924	Turret display functions in ExpertCAM are not working correctly.
2925	Add support for different styles of line caps and line joints for printing from ExpertCAD and ExpertView.
2927	This ExpertCAD file is failing to translate correctly to AutoCAD format on the Sun SPARC/Solaris platform.
2929	The dynamic size and place text icon in ExpertCAD is not working properly when the current text note uses a True Type font.
2931	The extent of the construction lines in an ExpertCAD should be ignored when computing the scale for printing if the 'fit' scaling option is used.
2932	When displaying ExpertCAM sections in ExpertCAD, the sections should be labeled with an 'S' prefix instead of a 'K' to be consistent with ExpertCAM.
2933	When an undo operation is performed in ExpertCAD that restores the current text note, all associated parameters such as default text size should be restored as well.
2934	The common line removal feature in ExpertCAD is incorrectly deleting semi-circles in this example.
2935	ExpertCAD is writing incorrect AutoCAD polylines when there is an arc > 180 degrees in an ExpertCAD line.
2936	The menu for plotter choices on the Print/Plot property sheet doesn't update correctly to show changes to the plotcap.txt file.
2938	When using the short Z or z, draw time is slow because of complete redraws between inputs.