



# ZWCAD 2020 SP2

PRODUCT RELEASE NOTES

ZWSOFT PRODUCT TEAM

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## **Thank you for downloading ZWCAD 2020 SP2!**

Dear friends,

We are glad to tell you that the long-awaited ZWCAD 2020 SP2 is available now! After a long time of devoted preparation and development, and thanks to your valuable feedback on the Beta version, ZWCAD 2020 SP2 is now open to you! In this version, some important new features are available, such as DGN Export and ExportLayout. What's more, a number of features have also been noticeably optimized. Now, let's take a further look at this official version.

This Release Note mainly introduces the performance of efficiency and stability, new features and improvements, APIs, new commands and system variables, bugs fixed, and limitations and notes in ZWCAD 2020 SP2.

Yours sincerely,

The ZWSOFT Product Team

January 2020

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# ZWCAD 2020 SP2 Release Notes

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VERNUM= 2020.01.07(53615)

## Overview

ZWCAD 2020 SP2 has the following new features and improvements:

New Features	Description
<a href="#">DGN Export</a>	You can export files in the DGN format.
<a href="#">STL Out</a>	You can export files in the STL format.
<a href="#">Shaded Area</a>	The selected area to be calculated by the AREA command will be shaded.
<a href="#">File Compare V2.0</a>	Differences between two drawings are coloured and highlighted with revision cloud in one drawing.
<a href="#">ExportLayout</a>	Entities in layouts can be exported to the model space.

Improvements	Description
<a href="#">New PDF Plotters</a>	You can plot PDF files in more kinds of resolution.
<a href="#">Selection Preview Filter</a>	This filter controls whether to highlight a specific kind of objects when the cursor hovers over it.
<a href="#">OLE Text Size Settings</a>	You can set the font, point size and text height of OLE objects.

# Efficiency

The following section describes the efficiency tests in this release.

The efficiency comparison is done based on the typical drawings collected from you, ZWCAD users. In the bar chart below, we can see that invoking commonly-used commands like copy in ZWCAD2020 SP2 takes less time than its previous versions do. This means that choosing our latest version can free you from waiting for simple operations to be done.

Although layout switch is slightly less efficient, other simple operations perform as fast as before or even faster than before.

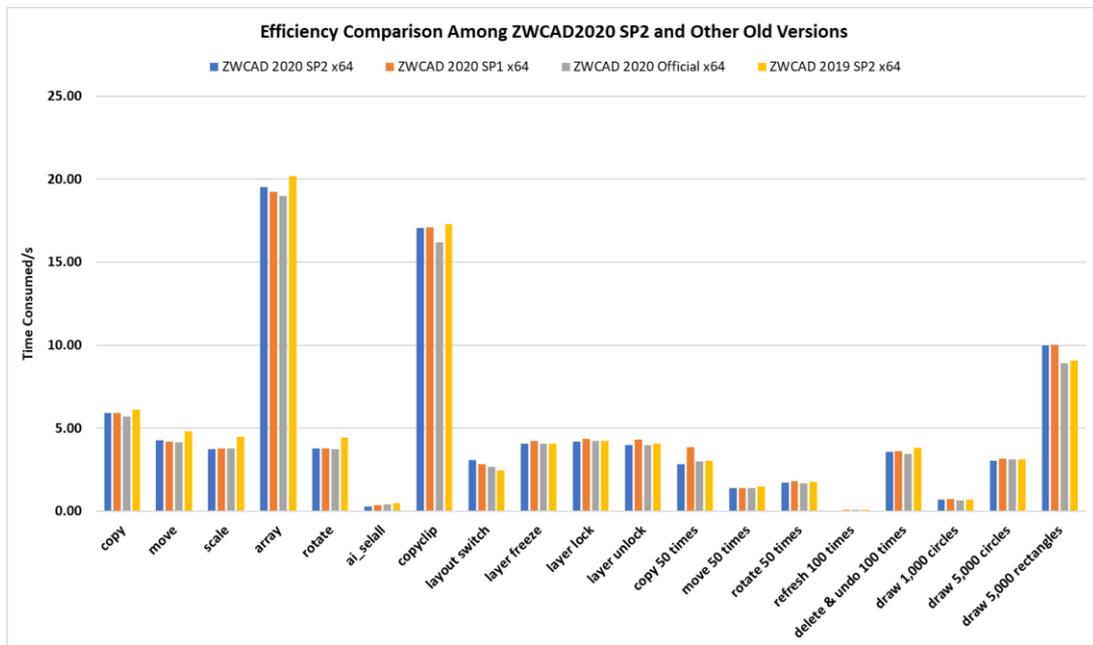


Figure 1. Efficiency comparison with old versions

# Stability

The following section describes the stability tests in this release.

The line chart below indicates that almost 100% of 1,270 comprehensive drawings selected for testing can be opened and saved successfully in old ZWCAD versions as well as ZWCAD 2020 SP2. It proves that ZWCAD is stable and reliable as always.

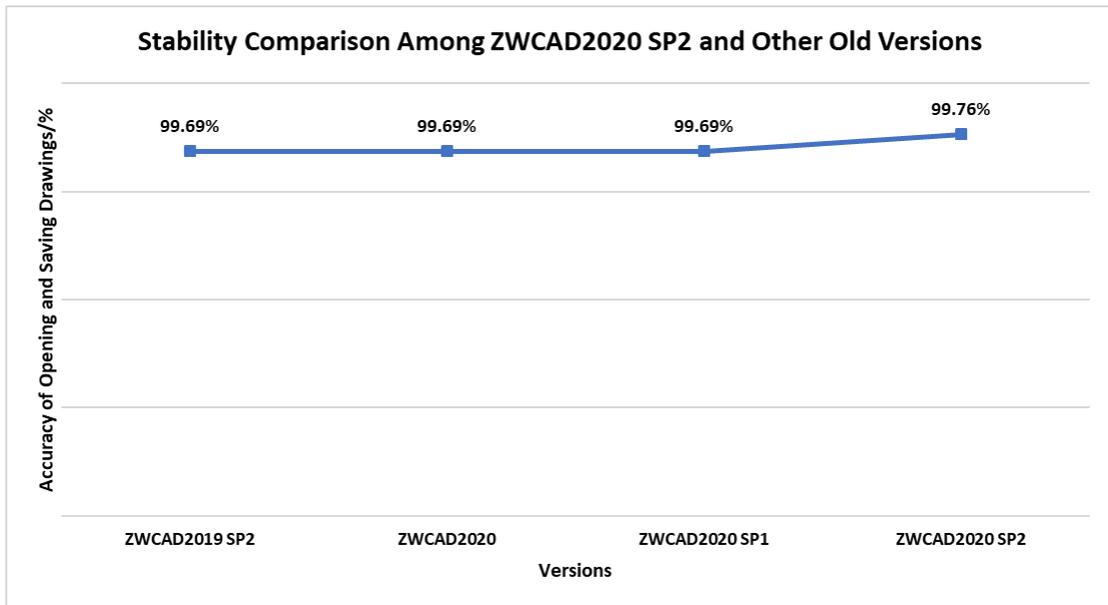


Figure 2. Stability comparison with old versions

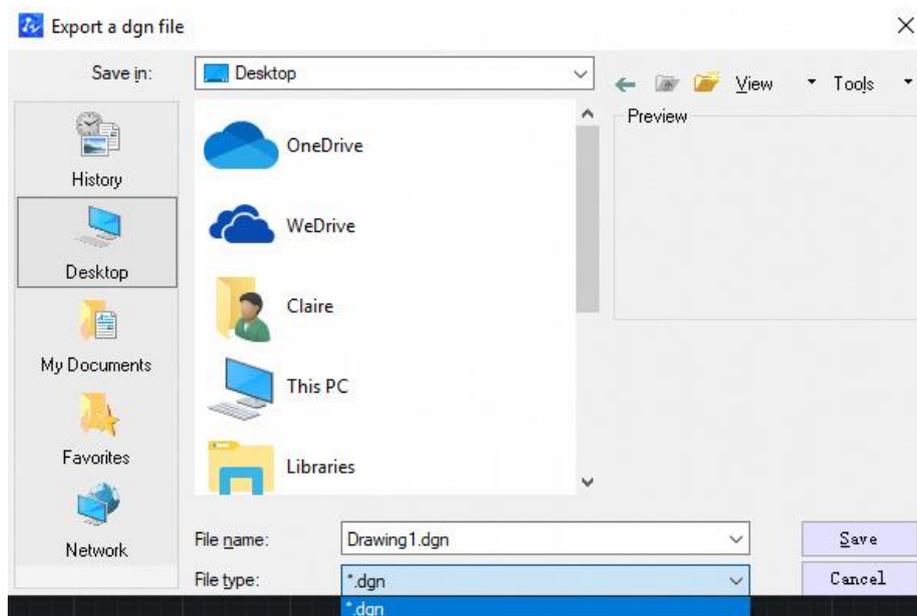
## New Features

This section expounds the new features in this release.

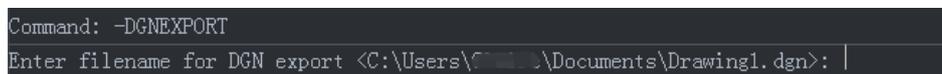
### DGN Export

DGN file is commonly used in major construction design, like expressway, bridge and ship design. With DGN Export, DWG files can be exported in the DGN format, which ensures correct data exchange between ZWCAD and other design solutions with the special “.dgn” format, like MicroStation.

To export files in the DGN format (only V8 DGN for now), you can invoke the DGNEXPORT, -DGNEXPORT, or EXPORT commands.



*Figure 3. Invoking DGNEXPORT*



*Figure 4. Invoking -DGNEXPORT*

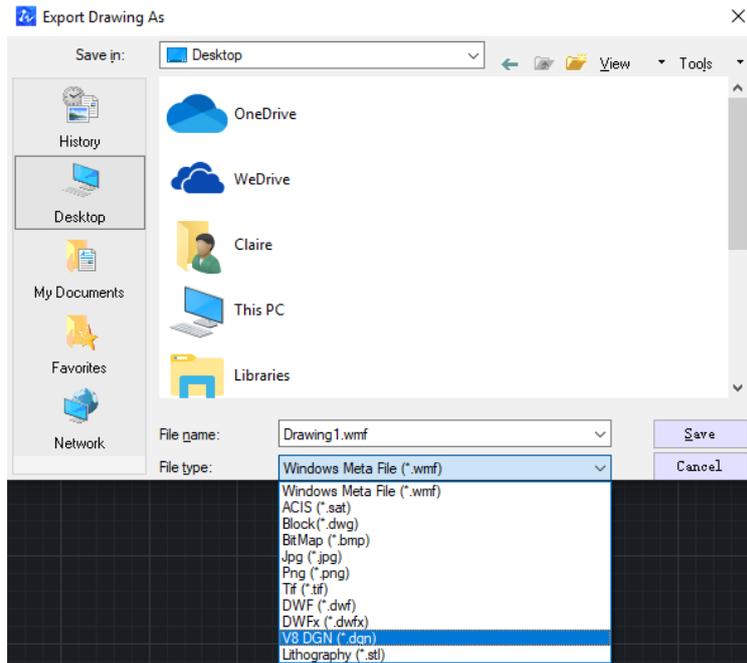


Figure 5. Invoking EXPORT

## STL Out

This version supports exporting 3D solids and watertight meshes in the STL format. Those STL files generated can be binary or non-binary. STL Out enables you to connect ZWCAD with CAD/CAM solutions or 3D printers.

To export files in the STL format, you can invoke the STLOUT or EXPORT commands. Nevertheless, ZWCAD STD doesn't support this function.

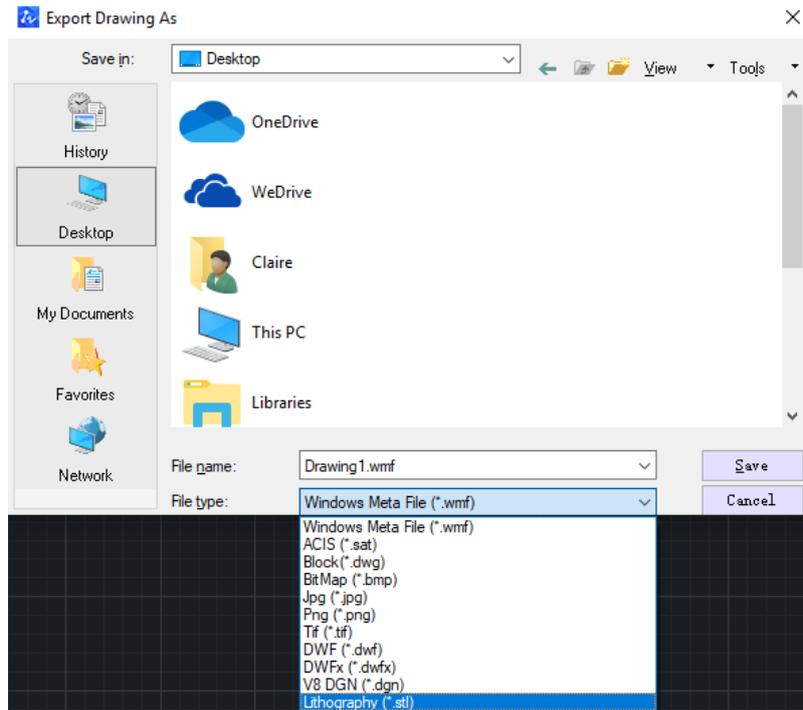


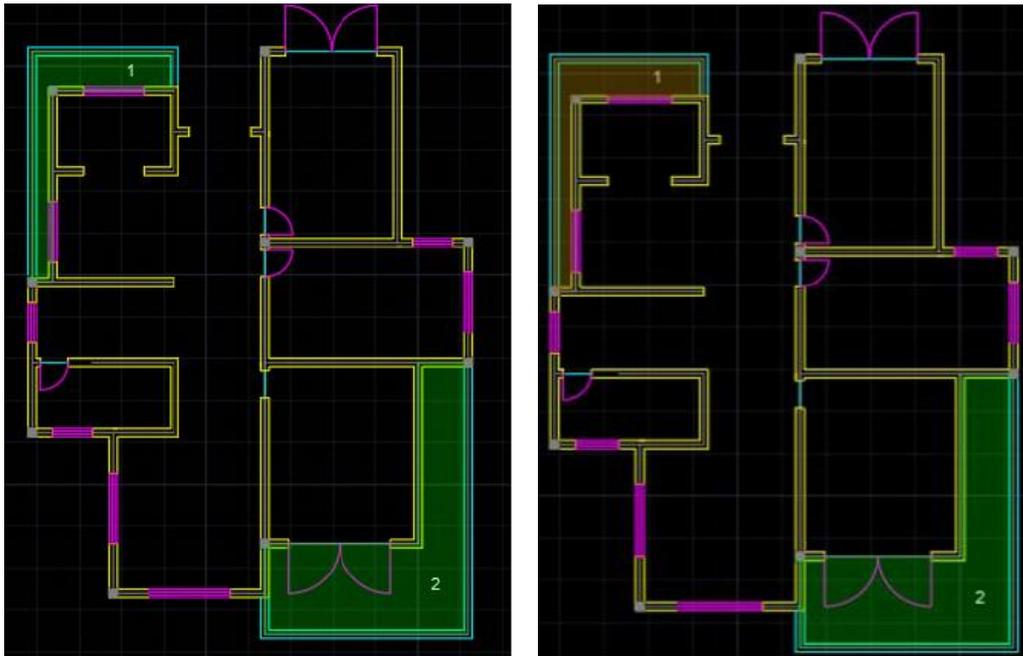
Figure 6. Invoking EXPORT

## Shaded Area for Calculation

Before, the area to be calculated was marked by dotted lines, which might give you a hard time recognizing it or telling whether it would be added or subtracted.

In this version, the area that is to be calculated will be shaded. The to-be-added area will appear green, while the to-be-subtracted one will appear brown. Hence, you can easily identify the area that has been selected and judge whether it is the one to be added or subtracted. In this way, you won't leave anything behind, nor have to select objects repeatedly.

Plus, not only lines, but also arcs can be used as the contour of the area.



*Figure 7. Area 1 + Area 2 (Left) and Area 2 - Area 1 (Right)*

## **File Compare V2.0**

ZWCAD has been supporting File Compare (FCMP) for a long time. With FCMP V1.0, you can get the comparison results in the two source drawings respectively.

Now, in FCMP V2.0, all the results can be shown in one drawing. When two drawings are compared, they will be overlaid with their differences highlighted in color and with revision cloud. Also, a contextual tab is added for more FCMP settings. For example, you can decide on the colors for different drawings.

With FCMP V2.0, you can easily spot the differences between two drawings, especially the complicated ones. This will greatly reduce your workload.

Please note that FCMP V1.0 is set as the default. If you would like to try FCMP V2.0, you can change the value of FCMPSTATE the system variable from 0 to 1.



Figure 8. How File Compare V2.0 works

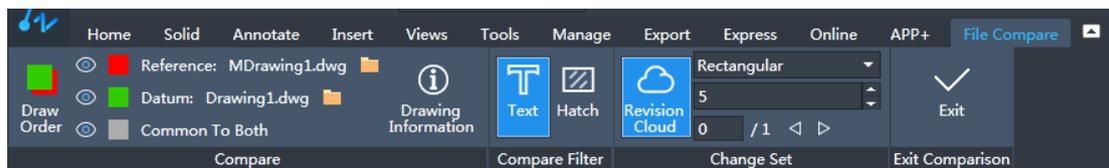
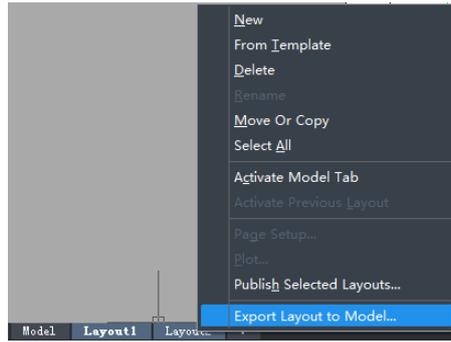


Figure 9. The newly added FCMP contextual tab

## ExportLayout

If you are used to exporting entities from the Layout to the model space, you can continue doing so with ExportLayout.

ExportLayout can only be used in the Layout. To use it, you can invoke the EXPORTLAYOUT command or right-click on the Layout tab and select “Export Layout to Model...”. Plus, you can export multiple layouts to the model space at once by multi-selecting the layout tabs before right-clicking on the Layout tab and then selecting “Export Layout to Model...” in the menu.



*Figure 10. Export layouts to the model space in batches*

## Improvements

This section shows the improvements in this release.

### New PDF Plotters in the Default Plotter List

PDF plotters with 4 different DPI pixel resolutions are added in the default plotter list. You could use these plotters to plot PDF files in different qualities.

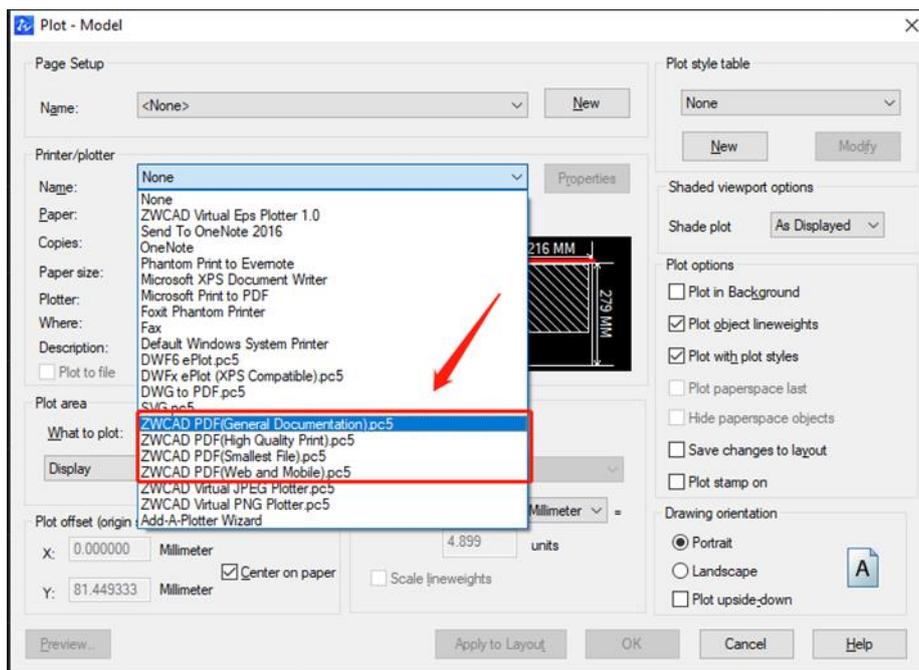


Figure 11. 4 new PDF plotters for different resolutions are added to the default plotter list

### Selection Preview Filter

A new option called Selection Preview Filter is added. You can invoke the OPTIONS command and find it in the "Area Effect Setting" section under the "Selection" tab of the Options dialogue box. With this filter, you can control whether to highlight a specific kind of objects when the cursor hovers over it.

Selection Preview Filter can prevent objects that appear frequently or cover large areas in drawings, such as hatches and Xrefs from frequently flashing when the cursor moves over them. It will provide a better viewing experience for you.

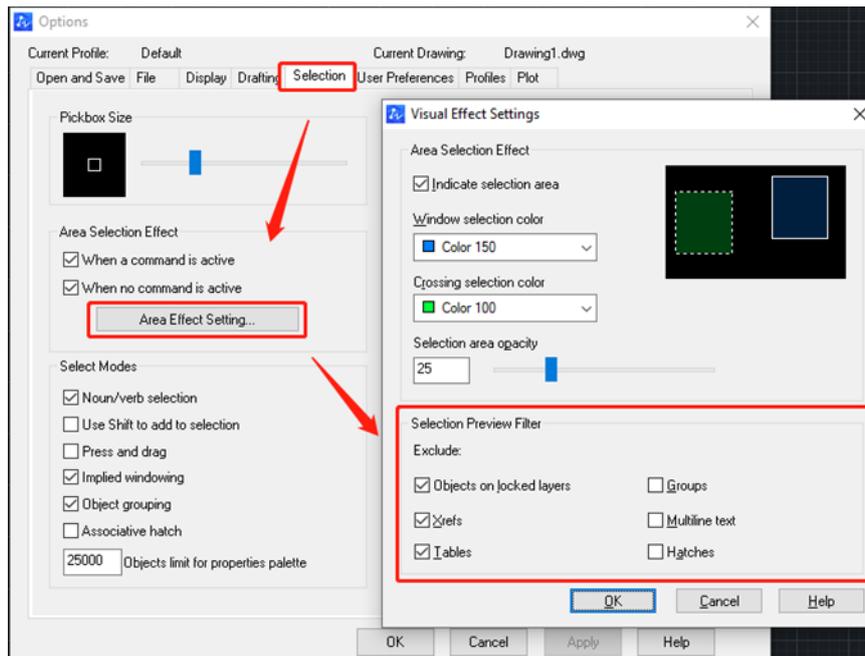


Figure 12. Selection Preview Filter

## OLE Text Size Settings

Now, when creating a new OLE (Object Linking and Embedding) object, you can set its font, point size and text height in the OLE Text Size dialog box.

To invoke this dialog box, select the OLE object and choose “Text Size...” in the right-click menu. Then, in the dialog box, you can define datum text by specifying the OLE font and point size. After defining the datum text, you can specify a height value and the whole OLE object will be scaled according to the change of this datum text.

OLE tables are commonly used in ZWCAD for further explanation on the design. You can scale the text in the OLE table that is generated from a Microsoft® Excel worksheet to a standard size based on the values specified in the OLE Text Size dialog box.

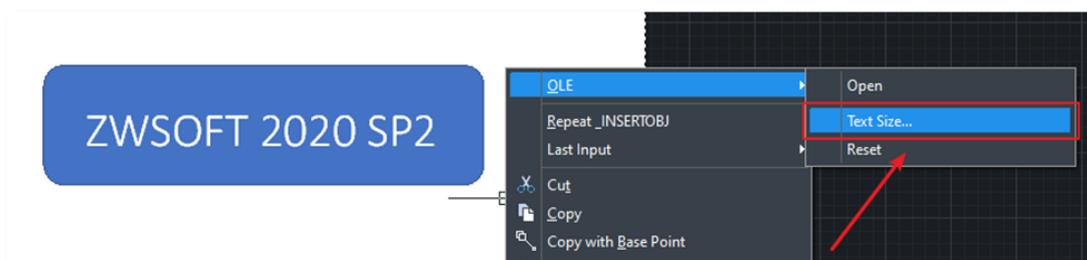


Figure 13. Invoke the OLE Text Size dialog box

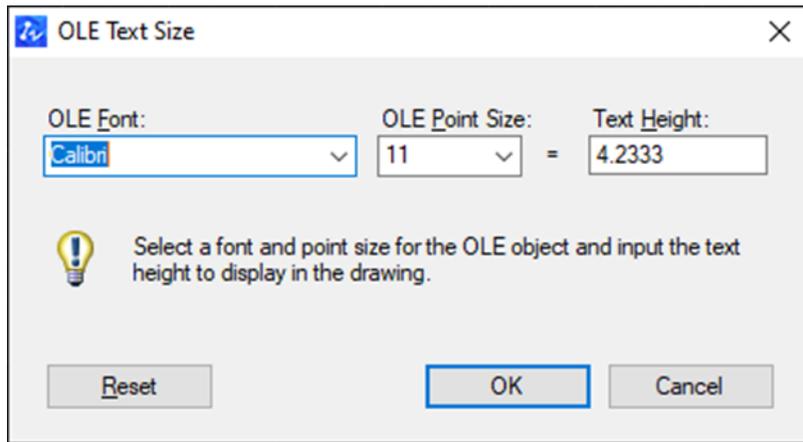


Figure 14. Set the OLE font, point size and text height in the dialog box

## New Commands & System Variables

The following section describes the new commands and system variables in this release.

New Commands	Description
OLESCALE	OLE objects can be automatically scaled to be in line with the text size.
OLERESET	Restore the selected OLE object to its original size and shape.
EXPORTLAYOUT	Export all visible entities from a single Layout to the model space in a new drawing, or multiple Layouts to the model space in multiple drawings.
DGNEXPORT	Export current entities in the DGN format.
-DGNEXPORT	Export current entities in the DGN format via the command line.
STLOUT	Export 3D entities and watertight meshes in the STL format.
FCMPINFO	A dialog box containing the information about the 2 drawings compared will pop up.
FCMPSETTINGS	The panel of File Compare Settings will appear in the classic interface.
FCMPCLOSE	Quit comparing files.
FCMPTOGLEREFERENCE	Show or hide the comparison results.
FCMPDIFFPREV	Enlarge the previous change in the comparison results.
FCMPDIFFNEXT	Enlarge the next change in the comparison results.
New System Variables	Description
ZWSWITCHLANGUAGE	It controls whether the system input method is switched to English when you are using the Chinese version of ZWCAD.
FCMPCOLOR1	Set the color of the objects which only exist in one of the two drawings being compared.

FCMPCOLOR2	Set the color of the objects which only exist in the other of the two drawings being compared.
FCMPCOLORCOMMON	Set the color of the same objects that exist in both the two drawings being compared.
FCMPFRONT	Control the default sequence of displaying the objects overlaid when comparing files.
FCMPHATCH	Control whether to include hatches when comparing files.
FCMPPROPS	It decides what kind of property changes will be pointed out when comparing files.
FCMPRCMARGIN	It specifies the distance between the contour of the object and the revision cloud.
FCMPPRCSHAPE	It controls whether to mark the differences in the file comparison results with rectangular or polygonal revision clouds.
FCMPSHOW1	It controls whether to display objects that only exist in the datum drawing.
FCMPSHOW2	It controls whether to display objects that only exist in the reference drawing.
FCMPSHOWCOMMON	It controls whether to display objects that are the same in both drawings.
FCMPSHOWRC	It controls whether to show revision clouds in the file comparison results.
FCMPTEXT	It controls whether the text objects will be included in file comparison.
FCMPTOLERANCE	It sets a difference tolerance of File Compare. If the difference value of compared entities isn't more than the tolerance, they will be considered as the same.
FCMPSTATE	It switches File Compare versions, V1.0 and V2.0.
FCMPMODE	It shows whether FCMP is invoked.
FCMPFIRSTPATH	It modifies the saving path of the datum drawing.
FCMPFIRSTSAVETIME	It modifies the save date of the datum drawing.
FCMPFIRSTEDITBY	It modifies the information about the editor of

	the datum drawing.
FCMPSECONDEDITBY	It modifies the information about the editor of the reference drawing.
FCMPSECONDPATH	It modifies the saving path of the reference drawing.
FCMPSECONDSAVETIME	It modifies the save date of the reference drawing.
FCMPDIFFTOTAL	It shows all differences in the file comparison results.
FCMPDIFFINDEX	It helps quickly locate a specific difference in the file comparison results.
FCMPSHOWREFFERCEN	It controls whether to show or hide the file comparison results.

## APIs

The following section describes the condition of APIs in this release.

### ZRX

ZRX programs that run correctly on ZWCAD 2018 Official/SP1/SP2, ZWCAD 2019 Official/SP1/SP2, 2020 Official/SP1 can be loaded on ZWCAD 2020 SP2 directly. 1 were added (highlighted in blue) and 39 were fixed as below:

Interface	Modification
<b>virtual HRESULT STDMETHODCALLTYPE SetPrompts(BSTR prompt1, BSTR prompt2) = 0;</b>	Added
virtual HRESULT STDMETHODCALLTYPE GetCustomPropertyCtrl(VARIANT Id, LCID lcid, BSTR * pProgId) = 0;	Fixed
int acedGetReal(const ACHAR * prompt, ads_real * result);	Fixed
Acad::ErrorStatus acedSetCurrentView(AcDbViewTableRecord * pVwRec, AcDbViewport * pVP);	Fixed

virtual ACAD_PORT Acad::ErrorStatus monitorInputPoint(const AcEdInputPoint& input, AcEdInputPointMonitorResult& output);	Fixed
void CAdUiDockControlBar::DockControlBar(UINT nOrientation, RECT * pRect);	Fixed
virtual CSize CAdUiDockControlBar::CalcFixedLayout(BOOL bStretch, BOOL bHorz);	Fixed
void AsdkHlrCollector::addEntity (AcDbEntity *pEnt)	Fixed
bool CMyPaletteSet::OnClosing()	Fixed
Void CMyPaletteSet::OnWindowPosChanged(WINDOWPOS *pwndpos)	Fixed
virtual void zoomExtents(const AcGePoint3d& minPoint, const AcGePoint3d& maxPoint) = 0;	Fixed
virtual Acad::ErrorStatus AcDbEntity:: setColorIndex(Adesk::UInt16 color, Adesk::Boolean doSubents = true);	Fixed
void acplPublishExecute(AcPIDSDData dsdDataObj, AcPIPlotConfig* pConfig, bool bShowPlotProgress);	Fixed
virtual int AcUiColorComboBox::GetColorIndex(COLORREF color);	Fixed
virtual Acad::ErrorStatus AcDbCurve::getParamAtPoint(const AcGePoint3d&, double&) const;	Fixed
Adesk::Boolean AcGeCircArc2d::intersectWith(const AcGeCircArc2d& arc, int& intn, AcGePoint2d& p1, AcGePoint2d& p2,const AcGeTol& tol = AcGeContext::gTol) const;	Fixed
AcDbPlotSettings::PlotType plotType() const;	Fixed
int AcGeCurveCurveInt2d::overlapCount() const;	Fixed
int acedRedraw(const ads_name ent, int mode);	Fixed
virtual Acad::ErrorStatus getClosestPointTo(const AcGePoint3d& givenPoint, const AcGeVector3d& normal, AcGePoint3d& pointOnCurve,	Fixed

Adesk::Boolean extend = Adesk::kFalse ) const;	
ACDBCORE2D_PORT ADESK_SEALED_VIRTUAL Acad::ErrorStatus getOsnapPoints(AcDb::OsnapMode osnapMode, Adesk::GsMarker gsSelectionMark, const AcGePoint3d& pickPoint, const AcGePoint3d& lastPoint, const AcGeMatrix3d& viewXform, AcGePoint3dArray& snapPoints, AcDbIntArray & geomIds) const;	Fixed
AcDbSectionSettings::AcDbSectionSettings();	Fixed
static Acad::ErrorStatus AcDbRasterImageDef:: suggestName(AcDbDictionary* pImageDictionary, const ACHAR* pNewImagePathName, ACHAR* newImageName, size_t nSize);	Fixed
virtual Acad::ErrorStatus copyFrom( const AcRxObject* pSrc ) override;	Fixed
Adesk::Boolean overlap( const AcGeLinearEnt3d& line, AcGeLinearEnt3d*& overlap, const AcGeTol& tol = AcGeContext::gTol ) const;	Fixed
AcBr::ErrorStatus getSurfaceAsTrimmedNurbs( Adesk::UInt32& numNurbs, AcGeExternalBoundedSurface**& ppNurbs ) const;	Fixed
virtual void viewChanged();	Fixed
virtual Acad::ErrorStatus setXData( const resbuf* xdata );	Fixed
virtual Acad::ErrorStatus seek( Adesk::Int64 nOffset, int nMethod ) = 0;	Fixed
virtual ACDBCORE2D_PORT Acad::ErrorStatus setFromAcGeCurve( const AcGeCurve3d& geCurve, AcGeVector3d * normal = NULL, const AcGeTol& tol = AcGeContext::gTol );	Fixed

ACDBCORE2D_PORT Acad::ErrorStatus wblockCloneObjects( const AcDbObjectIdArray& objectIds, const AcDbObjectId& owner, AcDbIdMapping& idMap, AcDb::DuplicateRecordCloning drc,bool deferXlation = false);	Fixed
virtual void objectModified( const AcDbDatabase* dwg, const AcDbObject* dbObj );	Fixed
void AcEdJig::setUserInputControls(AcEdJig::User InputControls);	Fixed
int acedSSGet(const char * str, const void * pt1, const void * pt2, const struct resbuf * filter, ads_name ss);	Fixed
void AcGeCompositeCurve2d:: getCurveList (AcGeVoidPointerArray& curveList) const	Fixed
void AcEdJig::setSpecialCursorType(CursorType unnamed);	Fixed
virtual Acad::ErrorStatus addCommand(const ACHAR * cmdGroupName, const ACHAR * cmdGlobalName, const ACHAR * cmdLocalName, Adesk::Int32 commandFlags, AcRxFnPtr FunctionAddr, AcEdUIContext *UIContext=NULL, int fcode=-1, HINSTANCE hResourceHandle=NULL, AcEdCommand** cmdPtrRet=NULL)	Fixed
inline Acad::ErrorStatus saveAs(const ACHAR* fileName, const SecurityParams* pSecParams = 0)	Fixed

## .NET

4 were added (highlighted in blue) and 16 were fixed as below:

Interface	Modification
<a href="#">Editor.GetCurrentView Method</a>	Added
<a href="#">Editor.PointFilter Event</a>	Added
<a href="#">Application.DisplayTextScreen Property</a>	Added

<a href="#">Application.BeginDoubleClick Method</a>	Added
Editor.GetNestedEntity Method (string)	Fixed
DynamicLinker.LoadModule Method	Fixed
Editor.GetInteger Method (PromptIntegerOptions)	Fixed
PlotSettingsValidator.GetLocaleMediaName Method (PlotSettings, int)	Fixed
Application.SetSystemVariable Method	Fixed
DBObjectCollection.CopyTo Method	Fixed
Database.WblockCloneObjects Method	Fixed
PlotSettingsValidator.SetPlotConfigurationName Method	Fixed
LoftOptions.LoftOptions Constructor (LoftOptions)	Fixed
TransactionManager.AddNewlyCreatedDBObject Method	Fixed
Autodesk.AutoCAD.DatabaseServices.CellRange	Fixed
Dimension.Dimtxt Property	Fixed
Curve.GetParameterAtPoint Method	Fixed
Curve3d.GetSplitCurves Method	Fixed
Curve.GetFirstDerivative Method (Point3d)	Fixed
View.ZoomWindow Method	Fixed

## VBA

11 were fixed as below:

Interface	Modification
Toolbar.AddToolbarButton Method	Fixed
Utility.GetAngle Method	Fixed
Utility.GetCorner Method	Fixed
Utility.GetInteger Method	Fixed
Utility.GetKeyword Method	Fixed
Utility.GetOrientation Method	Fixed
Utility.GetReal Method	Fixed
Utility.GetString Method	Fixed
Utility.GetSubEntity Method	Fixed
Utility.GetEntity Method	Fixed
Utility.GetDistance Method	Fixed

## LISP

1 was added (highlighted in blue) and 10 were fixed as below:

Interface	Modification
vl-doc-import	Added
slide_image	Fixed
textbox	Fixed
initget	Fixed
vl-cmdf	Fixed
rtos	Fixed
command	Fixed
nentsel	Fixed
vla-save	Fixed
vlr-sysvar-reactor	Fixed
vlax-invoke\vlax-invoke-method	Fixed

## Bugs Fixed

Bug ID	Description
ZWCADSUP-3303	Plot: PDF plotters with different DPI pixel resolutions were expected to be added to the default plotter list.
ZWCADSUP-8250	Publish: Dataextraction didn't support extracting information from the form object.
ZWCADSUP-8283	OLE: When the solid objects created in ZWCAD were copied to Word and printed in the PDF format, they would not display in the PDF file.
ZWCADSUP-1406	Publish: The file name was incorrect when the file was published with the "DocuWorks" plotter.
ZWCADSUP-8752 ZWCADSUP-8919	Plot/text: The font changed when a specific drawing was plotted in the PDF format.
ZWCADSUP-9177	Plot/SmartPlot: The preview and the actual results of printing were different.
ZWCADSUP-9039	Publish/plot: The Xrefs from a specific file was incorrectly printed using Plot/Publish.

For the complete list of Bugs Fixed, please refer to:

<https://zwcad.freshdesk.com/support/solutions/articles/24000049165-what-s-fixed-in-zwcad-2020-sp2>

## Limitations and Notes

Bug ID	Description
ZWCADSUP- 8170	FCMP: Nested blocks cannot be identified when using File Compare.
ZWCADSUP- 9342	FCMP: The revision cloud does not display in some specific drawings when using File Compare.
ZWCADSUP- 9404	Exportlayout: Linetype scale is incorrect when exporting from the Layout to the model space.
ZWCADSUP-9611	FCMP: Some blocks that haven't been modified are recognized to be modified.
ZWCADSUP-9344	FCMP: The comparison results of certain sets of drawings are incorrect.
ZWCADSUP-9341	FCMP: The color of some text doesn't change when the files are compared.
ZWCADSUP-9568	FCMP: When the visibility of some objects is changed, other unrelated objects change as well.
ZWCADSUP-9559	FCMP: The annotations of attached drawings have not been changed but are recognized to be modified.
ZWCADSUP-9555	FCMP: When turning on the "Hatch" icon for the first time, the hatch comparison results still don't show.
ZWCADSUP-9475	FCMP: There are still "differences" showing although the file is compared with itself.

ZWCADSUP-9474	FCMP: The revision cloud still exists even when the "Revision Cloud" button in the Ribbon menu is inactivated.
ZWCADSUP-9538	FCMP: Different entities in different layers cannot be pointed out.