

## Tools, Tips, and Workflows

# Creating a 2D Feature with Elevation Attributes

LP360, versions 2017.1



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2/6/2018

Revision 1.0

With the release of LP360 v2017.1 we began recommending that users create their breaklines using LP360 instead of the previous recommendation of using the LP360 Sketch tool in LP360 for ArcGIS.

One common question that has come up is how does one create a flat 2D feature and put the summarize Z results in the attribute table as many like to do for flat features, such as ponds and lakes. The process is not as intuitive as it is in LP360 for ArcGIS, because the LP360 Feature Edit tools do not currently allow the direct generation of the information into the attribute table. Instead, one compiles the desired breakline features using the Feature Edit tools and then runs a [Conflation](#) Point Cloud Task (PCT).

Using the Feature Edit toolbar, create a new feature layer using a 2D geometry type, and then interactively digitize the shape using the Create Feature tool. The Auto-Z should be disabled as one cannot assign the desired information directly into the attribute table yet while using this tool. Hence, when the attributes of this new shape are observed using LP360's [Feature Analyst](#) or ArcGIS's Attribute Table, no vertical fields or values will be present (Figure 1) since no conflation has been performed yet.

ID	Parts	Vertices	Index	Length (m)
1	1	6	0	???

Figure 1: Feature Analyst view of 2D shape without vertical information

To put the desired information into the attribute table, create a new Point Cloud Task (PCT) of the Conflation type. The best method is to set up the Input as Tool Geometry, so that the PCT is generic and can be used regardless of how you named the feature layer. At execution time, provide the 2D Feature Layer to which the 2D features were digitized using the Feature Edit tools as the source shape when prompted after selecting Execute Active Point Cloud Task using a Feature Layer. Continue setting up the point cloud task to use the desired Source Points from the Active LAS Layer, and select the 'Summarize Z' conflation method (Figure 2).

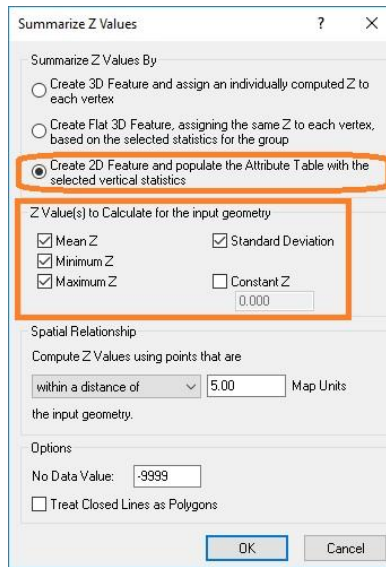


Figure 2: Summarize Z Values

In the “Summarize Z Values” dialog, select the third “Summarize Z Values By” method, “Create 2D Feature and populate the Attribute Table with the selected vertical statistics” (Figure 2). You can choose from the following attributes: Mean Z, Minimum Z, Maximum Z, Standard Deviation, or Constant Z (Figure 2). Specify an output, again using the LP360 Project Path variable can help keep this PCT generic for use across multiple projects.

Executing this Conflation PCT will assign the desired vertical information to the attribute table of the new 2D shape (Figure 3). The Point Cloud Task will automatically create, or use if they already exist, fields called MeanZ, MinZ, MaxZ and StdDev.

ID	MeanZ	MinZ	MaxZ	StdDev	Parts	Vertices	Index	Length (m)		
1	977.7289	973.1000	982.9800	3.2424	1	6	0	???	✓	✓

Figure 3: Feature Analyst view of 2D shape with vertical information

The ability to directly assign these values using the Feature Edit toolset with the AutoZ option will be added in a future version of the product, but this workflow will allow users to accomplish the desired task completely within LP360, without the need to switch to LP360 for ArcGIS for these feature types.