

AUTOCAD PERFORMANCE ISSUES

Software Versions: All

Historically, any applications that use compressed file formats haven't worked optimally with the Steelhead. This is due to the fact that compression generally scrambles the data in such way that makes Data Streamlining ineffective during operations such as saving files after partial changes. Image processing systems that save data in compressed formats such as JPEG are an example of such applications.

Autodesk first introduced compression in the 2004 DWG format (used by AutoCAD 2004-2006 and associated products). Around this time, a handful of customers reported performance issues with AutoCAD 2004-2006 and Riverbed made the assumption that the problem was related to the introduction of compression in the 2004 DWG format. This was a reasonable assumption, but based on the lack of additional complaints from the field in the months following, we now believe the compression algorithm found in 2004 DWG format may not pose a significant issue as we first thought. This is good news for the Steelhead, as it means Data Streamlining is operating effectively in numerous customer environments. However, since we are not AutoCAD experts, we stress that there may be corner cases whereby the 2004 DWG format may cause worse performance with the Steelhead when compared with uncompressed formats such as the 2000 DWG format.

With the launch of AutoCAD 2007, Autodesk also introduced the new 2007 DWG format (used by AutoCAD 2007-2008 and associated products). With its release, major enhancements were made to the 2007 DWG format to make it more robust. Unfortunately, these enhancements also caused negative impact on the Steelhead as they often scramble files during save operations in such a way that measurably reduces the effectiveness of Data Streamlining.

It should be noted that even for use cases where Data Streamlining is ineffective (such as some save use cases involving the 2007 DWG format), optimizations from Transport Streamlining and Application Streamlining still provide performance improvements for these operations. Furthermore, AutoCAD 2007 and 2008 don't necessarily scramble the DWG file every single time it performs a save.

Whether or not a user would experience performance degradation from file scrambling issue depends largely on the type of changes being made. The larger the change, the higher the chance the user would encounter a performance issue. Also, there is a setting within AutoCAD known as Incremental Save Percentage (ISP) that affects this scrambling behavior. Many customers may have previously changed the ISP value to 0 (zero) in their AutoCAD preferences for various reasons. If that were the case, then AutoCAD

2007/2008 will perform a full save and re-scramble every time and performance will be impacted due to reduced benefit from Data Streamlining. However, by default, AutoCAD 2007/2008 ships with the ISP value set to 50. For any customers currently using an ISP value of 0 who are seeking optimal Steelhead performance benefits, we recommend resetting the ISP value back to its default value of 50 and performing tests to determine if they are comfortable with this change. Note that even with the ISP value set to 50, some operations will still result in a full save and resulting significant scrambling of the DWG file. Unfortunately, neither Riverbed nor Autodesk have a list of operations that will trigger a full save. (For more information regarding the ISP setting, refer to the AutoCAD documentation.)

Based on what we know, this problem only affects AutoCAD and other applications that are based on AutoCAD (such as Civil 3D). Other Autodesk applications, such as Revit, are not affected.

Autodesk has taken a keen interest in this matter and Riverbed has provided them with a pair of Steelhead 5010 units for their internal testing. They're investigating whether or not there may be possible workarounds to the issue and we'll keep you posted on the progress. Once Autodesk has completed their testing, we are planning to issue a joint statement with Autodesk explaining the issue and workaround (if any).

The bottom line: do your own testing with AutoCAD 2007/2008 and see what the impact is in your environment.

If you are experiencing this problem, we encourage you to open a ticket with Autodesk and reference ticket number 990168. If you would like to open a ticket with Riverbed as well, refer to ticket number 32520.