

How Panzura Solves the Problem of Using Civil 3D Over a WAN

Working with remote or dispersed teams can be difficult. When users in multiple locations need to open and work with the same files, there will often be difficulties, including file transfer speed and file locking. Opening Civil 3D files over a WAN can be very slow. This issue is also true for many CAD files but is somewhat accentuated by the complexity of Civil 3D files.

A Brief History of WAN and Civil 3D

In the past, general wisdom told us that there was not enough bandwidth to support transfers of large files. As ISPs increased bandwidth and WAN accelerators also became popular, there was an expectation that large file transfers would be possible. Unfortunately, WAN accelerators had minimal impact on open times and, while IT administrators could see they were no longer saturating bandwidth, the same problems persisted.

When analyzing the communication from a client machine running Windows and Civil 3D, it is clear that there is a large number of requests required to open a single file. While this can be surprising, it is important to note that the program was written with the intent of being opened over a LAN with much higher latency.

As the world's workforce continues to become more global, users began attempting to open these files across long distances. While the number of calls being made over the network to open a file stayed the same, the time to make each call suddenly went from 1 ms over a LAN to upwards of 80 ms over a WAN. However, by this time, the Windows and SMB protocol had been ingrained in many applications.

Why Doesn't a WAN Accelerator Help?

A WAN accelerator can cache data locally, but most of the calls made by Civil 3D are not to read data. The calls are checking information such as does the file exist, does this user have permission to see the file, does this user have permission to open this file, does this user have permission to edit this file, how big is the file, etc.

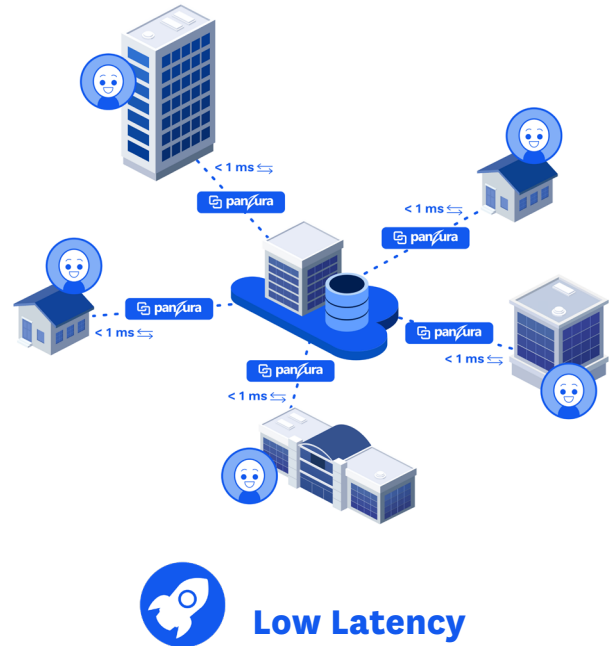
A WAN accelerator could not answer those questions. WAN accelerators simply accelerate the transfer of data, but not the tens of thousands of calls made by the program and file open process.

What Does This Look Like?

Without Panzura many minutes



With Panzura few seconds



Why Does Panzura Make This So Much Better?

Because Panzura has a local server at each office location to handle those thousands of SMB calls locally, the time of each call is < 1 ms—just like when everything was on a LAN.

Even with Panzura, there are some calls across the WAN, but those calls are communication between controllers, which have been built from the ground up to support WAN activity. One of the primary requirements was to also maintain an exclusive lock for applications that lock files.

In the Panzura Solution, no matter how high the latency gets:

- Two users cannot modify the same file at the same time.
- A user cannot modify a file that is not the latest version of the file.

This ensures data consistency across the whole global file system and eliminates data corruption from applications that quickly lock and unlock files, such as the Sheet Set Manager in Civil 3D.

Benefits

- Consistent multi-site global access
- Guaranteed data integrity with real-time global locking
- Continuous, and automated, data protection and versioning
- Single source of truth
- Increased productivity