RockWorks & Cloud-Hosted Databases

Question: Can a RockWorks database be hosted on a Cloud Service?

Short Answer: **NO**

Long Answer: RockWorks can read and write files that *reside* in folders synchronized by SharePoint, OneDrive, Dropbox, Teams, AWS Drive clients, etc.

What RockWorks **cannot** do is reliably use a live, multi-user database file (e.g., SQL) when that file is being synchronized by a cloud-sync service.

The issue is not "the cloud" itself - it's how these services synchronize files.

Specifically, cloud-sync tools are not real database servers. SharePoint, OneDrive, Dropbox, MS Teams, etc. do not provide transactional database services. Instead, they provide synchronization after a process has been completed. In other words, if you wanted to synchronize a database using DropBox you must

(1) disable DropBox,
(2) run RockWorks and add/edit borehole data,
(3) close RockWorks,
(4) re-enable DropBox, and
(5) wait for DropBox to synchronize the database.

If another user is doing the same thing within the same time-span, the database in the cloud will only show the data from the last user and changes made by the other user will be lost. Needless to say, this is a guaranteed **recipe for disaster**.

The Cloud-based file model is fine for documents, images, projects, static data, but it breaks database integrity for software that expects instantaneous, atomic, multi-user operations.

A true database server (e.g., SQL Server, MySQL) handles:

- simultaneous reads/writes,
- row-level locking,
- journaling,
- ACID (Atomicity, Consistency, Isolation, & Durability) transactions, and
- recovery after write conflicts

Cloud-sync tools do **none** of this.

Additional complication arises from linked tables, intermediate files, multi-threading, etc. all of which will absolutely lead to data corruption and catastrophic project failure.

Summary

RockWorks uses SQLite or SQL Server databases that require a stable local file system with strict file-locking and atomic write semantics. Cloud-sync services like OneDrive, SharePoint, Dropbox, and MS-Teams do not provide real-time database locking or transactional integrity. They replicate files asynchronously and may copy only partial changes, create conflicted versions, or delay updates. This makes them unsafe for live RockWorks projects or any other database projects. RockWorks projects must reside on a local disk or a true database server - not in folders managed by sync services.

A RockWorks database on a remote server can be simultaneously accessed and edited by numerous remote users either through a network connection or a VPN (Virtual Private Network).

For optimal results the RockWorks program itself should run on the user's local computer so that only database queries travel over the network - not large 3D graphics Otherwise, the interaction we be very sluggish.

Please note that these caveats apply to ALL multi-user programs that support real-time, interactive data editing that use a remote database – not just RockWorks.