

# ArcSDE: Top Five Versioning Myths

## Transcript

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Hello, and welcome to our ESRI Instructional Series podcast on the top five versioning myths debunked. I am Nicole Gale from Educational Services at ESRI in Denver, and I specialize in ArcSDE. The audience for this podcast is that of DBAs and SDE Administrators.

Today, I will be exploring the top five versioning myths, which I have discovered as being prevalent in my time as an instructor here at ESRI.

**The first, and perhaps the most common myth out there about versioning is, that you can create a version of a feature class.** When you right-click on a geodatabase object, such as a feature class or a feature dataset, and you choose register as versioned, you are not creating a version of that feature class. What you're doing is enabling that object to be edited in ArcMap by generating delta tables for it in the database. These delta tables, or adds and deletes tables, are used to store edits. Versions are geodatabase-wide. This cannot be stressed enough. Think of a version as a snapshot in time of all the data in the geodatabase. All geodatabase data is accessible through any version, providing the connected user has at least Select access to the data itself. Registering data as Versioned means that it may look different across versions. Data that has not been registered as Versioned cannot possibly be edited, meaning that it will look the same across different versions.

**Myth #2 is that delta tables are created to store edit information for each version.** Delta, or again adds and deletes tables, are created when registering an object as *versioned*. There will be one adds and one deletes table created for each feature class or table that is registered as Versioned. When registering a feature dataset as versioned, there will be the one set of delta tables created for each feature class in the dataset. All edits to a feature class will be recorded in these delta tables. A geodatabase version simply references records in these delta tables for each feature class.

**Myth #3: If you do not plan on creating named versions, but still plan on editing, you are not versioning the geodatabase.** The software does allow editing of the DEFAULT version. That means the permission to the DEFAULT version is set to Public, which enables edits to be made to the DEFAULT version. Edit sessions themselves, however, can be considered implicit versions. Put simply, the same architecture is employed, whether or not there are named versions in the geodatabase. Delta tables are still used to store edits, and SDE system tables are employed to track edits geodatabase-wide. The biggest danger associated with this myth is, that some very

important database administration practices are ignored. Even if you are editing the SDE DEFAULT version, you must still do things like compress, analyze, and rebuild indexes, if you want to maintain a well-performing database.

**Myth #4: I must reconcile and post with DEFAULT, then delete all named versions in order to successfully compress my geodatabase.** Compressing the geodatabase is very important, regardless of workflow. Many believe that if their workflow prevents them from posting changes up to DEFAULT, a compress is completely useless. This is not so. It is recommended to reconcile all versions with SDE DEFAULT, even if you cannot post them. This will make the compress more effective, but does, however, depend on your workflow requirements. The only time it is necessary to reconcile and post all versions to DEFAULT, then delete them is when you must unregister data as versioned. In this case, it would be imperative to move all records from the delta tables so as to not lose edits when the delta tables are deleted by unregistering a version. The requirement to do this is rare and centers mostly around needing to alter topologies and geometric networks.

**Myth #5: My compress was not successful because all rows did not migrate from the delta to the base table.** The compress operation is designed to clean up the geodatabase by removing rows orphaned by typical edit practices. It will also migrate rows from feature class delta tables that are no longer referenced by versions. The only way to remove rows from delta tables is to have all geodatabase versions posted and re-reconciled with DEFAULT. However, this is not the main reason to compress the geodatabase. In fact, depending on your workflow, this may never be possible such as the requirement for maintaining historical versions. If it is a business requirement to access records stored in the delta tables, consider the use of multiversioned views rather than dependence on rows migrating from the delta tables as a result of a compress. You can determine whether or not a compress was truly successful by referencing the SDE compress\_log table in the database.

In conclusion, I will discuss some general recommendations.

- Develop a versioning workflow. It cannot be stressed enough how important it is to have a plan to go about implementing versioning. The architecture is very open to allow you to do what fits best in your organization. It's very important to have an understanding of

versioning and how it works, and to develop a sound workflow prior to going live with making edits to your geodatabase.

- Another recommendation is to protect the DEFAULT version. By setting the DEFAULT version to Protected, you are attempting to eliminate inadvertent updates to the DEFAULT version.
- Analyze the SDE user schema, as well as all edited data before and after every compress. The analyze operation, otherwise known as the computing of database statistics, provides sound information for the database optimizer to make choices and how to access the data. It's very important to keep these statistics up to date. It is suggested to perform an Analyze prior to a compress to make the compress more efficient, and after a compress, because you have changed the physical structure of the tables involved. Most people will forget to analyze the SDE user schema along with the data itself. There are three tables that are very active when editing in the geodatabase that are a part of the SDE user schema. Those tables are: STATES, STATE\_LINEAGES, and MVTABLES\_MODIFIED. Therefore, neglecting to analyze or compute statistics on these tables can result in poor overall geodatabase performance.
- Another recommendation is to often rebuild indexes, again, on the versioning system tables, as part of the SDE user schema, as well as the edited feature classes. If possible, regularly reconcile versions with DEFAULT, even if you don't intend to post them. There is a developer sample known as the BatchReconcile sample, which provides an easy way to do this.

This concludes my podcast discussion on the top five versioning myths debunked. For more information, there are a variety of instructor-led courses to suit your needs. There is a two-day class geared toward the end user, which is called *Introduction to the Multiuser Geodatabase*. For DBAs and GIS Administrators, there are the five-day ArcSDE administration courses for either Oracle or SQL Server, and to greater depth, the *Managing a Versioned Geodatabase* course. There are two white papers available through the support site, *Versioning* and also *Versioning Workflows*. I recommend reading those.

Thank you for tuning in to this session of our ESRI Instructional Series podcast. Stay tuned for future broadcasts.