

Procedures to Migrate Database Data

We still need to nail down the exact procedures we will follow to migrate data from SDE/Oracle to PostGIS.

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 - 1)For the schemas that needed to be migrated to Postgres:-
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Sub-pages

References

- Migrating from Oracle to PostgreSQL 9.2 - 2013: <https://community.esri.com/thread/83653>

Project steps

- Identify AGS resources and supporting database objects.
 - These range from SDE/Oracle to Geodatabases to PostGIS/Postgres.
 - Some AGS-provided resources (e.g. Geoprocessing) do not map to databases.
- For each item, determine responsible party (EGIS, VT Facilities) to determine disposition and implement that action.
- Determine persons and/or organizations responsible for item's data- these are the sources for the answers to the disposition questions.
- Determine which items must be migrated.
 - Many are obsolete or no longer used and can be either:
 - Archived
 - Ignored (deleted)
 - Only needed SDE/Oracle resources must be migrated.
 - Are there other dispositions besides Migrated, Archived, Ignored?
- Research migration methods.
 - Identify one or more stepwise procedures that can be used to migrate the data.
 - For chosen procedure(s), test and verify (1) we know how to do it, (2) that it works, and (3) performance.
 - If we can safely read production data, that can be used as an input source. It would be desirable to use read-only credentials for the production read, both during testing and when actually performing the migration.
 - Could the test PostGIS instance be used as a target for training, testing, and evaluation purposes?
- Based on researched methods, determine migration method for each item.
 - Very large tables may require different tools from smaller ones.

Migration Process

The process of mapping out all the downstream dependencies in our application stack that have grown organically over the several years that system has been operational is a pain, but it should not break stuff for end users. Following steps were taken to ensure all the database objects were smoothly migrated or backed up.

- A spreadsheet was created to list all the schema dependencies. This is shared at https://docs.google.com/spreadsheets/d/1328g6qwFsUkOXnca-ugPZSMVDNbpkNc_KJ8IReuC-AE/edit#gid=1178684413
- It acted as a single source point to track progress of various schema
- After meetings and email correspondences with various stakeholders schemas that need to be migrated to postgres were identified.

1)For the schemas that needed to be migrated to Postgres:-

- Schemas were first created inside Postgres by running scripts. The passwords for admin access were stored in the wiki confluence
- Connection files were created corresponding to those destination schema in ArcMap with name@pg-gprd-1.db.vt.edu
- Databases connection files were created using ArcMap 10.2. They are accessible at \\storage.vt.edu\gisdata\enterprise\projects\sde-credentials.
These were copied in <User account>\AppData\Roaming\Esi\Desktop.
 - These could be seen in Arc Catalog. If not one needs to refresh the database connections tree.
 - One needs to take into account the compatibility issues by referring- <http://desktop.arcgis.com/en/arcmap/10.3/manage-data/geodatabases/client-geodatabase-compatibility.htm>
 - For the task ArcMap 10.4 was used as installers were readily available on the machine
 - Please note that in order to overcome the network firewalls on the cnsbevdev machine connection to Pulse Secure is a must.
Else it could throw Bad User login error which is misleading.

- Also it was observed that manipulating the service through thin client may not be efficient. It is advisable to use ArcMap.
- Note the account that you use in your connection file will be the account that arcGIS server connects to the database .
- Once connection is established database schema objects could be simply copied and pasted in the corresponding postgres connection files.
- Repair the MXD using new database connection
 - Open Layers ➤Right Click>properties->Set Data Source
 - Make sure that drivers/etc/hosts file doesnot point to the sde.gis.vt.edu(Comment out the mapping)
- Test publish the service.
 - File->Analyze Map then publish
 - Please refer the warnings as they may not be ignored.

2)For schema objects not migrated they were backed up in geodatabase file:-

- These were indicated separately on the spreadsheet.
- Create a gdb file instead of connection file.
 - Please ensure to rename the gdb file while creating a new one itself. If you try to rename later on it throws error.
- Copy objects which share the schema name.
 - Multiple schema objects couple be copied simultaneously by using the lower portion of tree.
<https://community.esri.com/thread/9152>
 - Also note that drag-and-drop will actually move objects rather than copying.