# Centralized Cruise Database - Technical Documentation

## Overview:

The Centralized Cruise Database is used to track information about each PIFSC research cruise including activities, chief scientists, regions, etc. to remove the need for each division/program to manage this information. This centralized database is available for all PIFSC database users to reference with their various division data sets

## Resources:

Script Setup/Configuration:

* Additional Script Setup:
  + Grant the database schema permissions
    - Execute the sections of the [grant\_privs.sql](../SQL/queries/grant_privs.sql) file using the DSC and CEN\_CRUISE schemas based on the comments to grant the schemas the necessary permissions

Database Setup: [Installing or Upgrading the Database](Installing%20or%20Upgrading%20the%20Database.docx)

Features:

* The Data Validation Module (DVM) is used to perform QC validation on the Centralized Cruise Database data managed in this database. Custom data validation criteria were developed for this operational data set.
  + Version Control Information:
    - URL (Git): [git@pichub.pifsc.gov:centralized-data-tools/data-validation-module.git](mailto:git@pichub.pifsc.gov:centralized-data-tools/data-validation-module.git)
    - Application: 1.2 (Git tag: DVM\_v1.2)
    - Database: 0.3 (Git tag: DVM\_db\_v0.3)
* The Database Version Control Module is used to track the database version installed on a given database schema.
  + Version Control Information:
    - URL (Git): [git@pichub.pifsc.gov:application-development/centralized-tools.git](mailto:git@pichub.pifsc.gov:application-development/centralized-tools.git) in the DB\_version\_control folder
    - Application: 0.11 (Git tag: db\_vers\_ctrl\_v0.11)
    - Database: 0.2 (Git tag: db\_vers\_ctrl\_db\_v0.2)
* The Authorization Application Module was originally designed to manage application access and permissions within the application. This is a flexible method that allows users and permission groups to be defined that will determine if a user has enabled access to the application and what permission(s) they have in the application.
  + Version Control Information:
    - URL (Git): git@pichub.pifsc.gov:application-development/centralized-tools.git in the auth\_app folder
    - Application: 0.1 (Git tag: auth\_app\_v0.1)
    - Database: 0.6 (Git tag: auth\_app\_db\_v0.6)

Usage:

* To manage the cruise data login using your LDAP credentials to the APEX web interface (TBD)

Business Rules:

* Database Views:
  + [Comments for all centralized cruise database Views](centralized_cruise_DB_view_comments.xlsx)
* DVM QC Validation Criteria:
  + Technical documentation for the DVM can be found in the DVM git repository in the docs\Data Validation Module.docx document and instructions for how to define the QC criteria can be found in the How to Define Criteria in Data Validation Module.docx document.
  + The specific QC criteria developed for the Centralized CTD database can be found in the Centralized CTD repository in the docs\QA\_QC Validation Criteria.xlsx which is exported into SQL\queries\load\_DVM\_rules.sql
  + To view a specific cruise's associated QC validation issues connect to the Oracle Enterprise database and query the CTD\_FILE\_CAST\_ERR\_RPT\_V and specify the value of :cruise\_name which is a valid cruise alias for a given research cruise (e.g. SE-15-01):
    - SELECT \* FROM CENTRAL\_CTD.CTD\_FILE\_CAST\_ERR\_RPT\_V WHERE regexp\_like (CRUISE\_ALIASES\_DELIM, '^'||:cruise\_name||',', 'i') OR regexp\_like (CRUISE\_ALIASES\_DELIM, ', '||:cruise\_name||'$', 'i') OR regexp\_like (CRUISE\_ALIASES\_DELIM, ', '||:cruise\_name||', ', 'i');
  + Annotating QC Validation Issues:
    - TBD (An APEX application will be developed for viewing/annotating errors with appropriate security controls and auditing features)
* Cruise Database Reference Data:
  + Cruise Legs and Cruise Leg Aliases:
    - [Cruise Leg Name Alias Documentation](Cruise%20Leg%20Name%20Alias%20Documentation.docx)
      * There is no limit on the number of cruise leg aliases that can be defined for a given cruise leg
      * The information for the defined cruise leg aliases can be viewed by querying the CEN\_CRUISE.CCD\_CRUISE\_LEG\_ALIASES\_V view
    - <Cruise_Leg_DDL_DML_generator.xlsx> contains sheets labeled "Cruises", "Cruise Legs", "Cruise Leg Aliases" that defines the cruises (CCD\_CRUISES), cruise legs (CCD\_CRUISE\_LEGS), and cruise leg aliases (CCD\_LEG\_ALIASES) respectively for each research cruise defined in the Centralized Cruise database. The DML to load this reference data is generated in labeled columns.
      * These DML statements can be exported to a DML file so these values can be easily loaded into a given database schema.
    - An APEX application will be available (TBD) to define the vessels, cruise, cruise legs, and cruise leg alias information