DNAMAN
Sequence Analysis Software

Sequence Database

BIOINFORMATICS PLATFORM

Sequence Database

- DNAMAN Database
- Database Engines
- Database Setup
- Database Functions
- Shared Database

DNAMAN Database

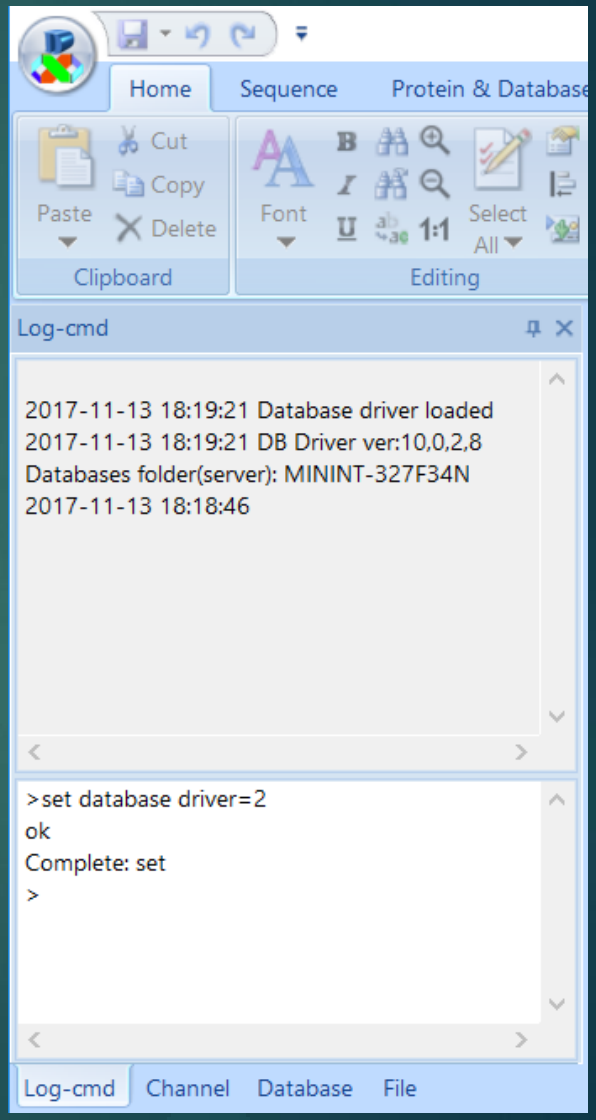
- Designed to manage customer sequence data
- Not to replace large public databases
- Common database management system to provide performance, scalability and reliability
- Database can be administrated by dedicated users
- Built-in user-level security
- Compatible with third party database tools

Database Engines

- SQLite3
  - Available to all DNAMAN user licenses
  - Self-contained, high-reliability, full-featured, and in public-domain
  - Not Server-Client based
- MySQL
  - Available to Institutional user licenses
  - Open-Source, high performance and reliability
- Microsoft SQL Server
  - Available to Institutional user licenses
  - Microsoft proprietary

Database Setup

- SQLite3 is the default database engine in DNAMAN
- Institutional users may opt to MySQL or MS SQL using command line operations
  - MySQL: set database driver=2
  - MS SQL: set database driver=3
- Turn off sequence compression
  - set database compression=0
- Turn on database logs
  - set database enablelog=1

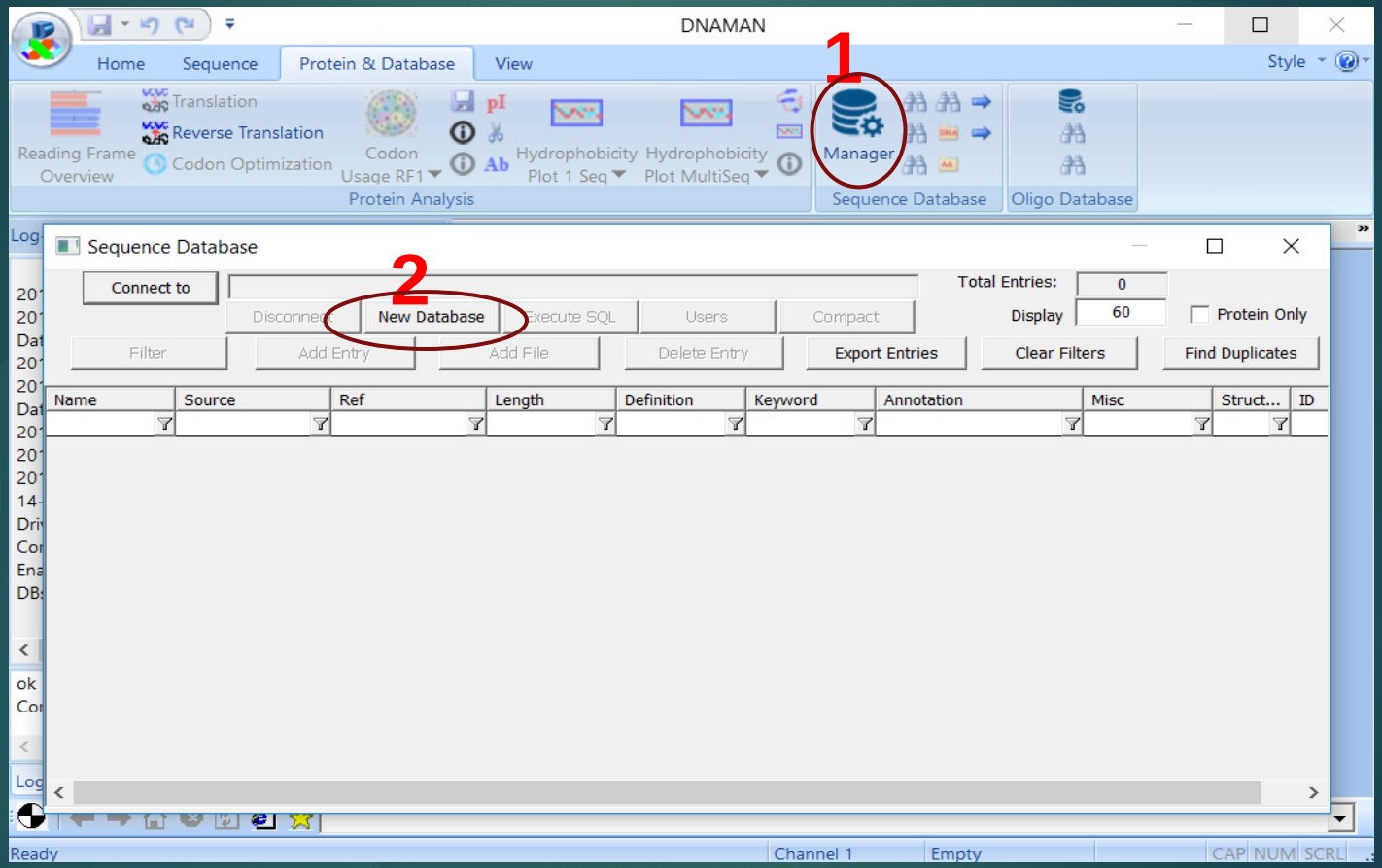


Sequence Database
- SQLite Database Structure

- One data table: DNAMAN Seq DB
- 8 TEXT fields including "Name", "Source", "Ref", "Misc", "Definition", "Keyword", "Annotation", "cds“
- 3 INT fields including "Type", "Length“ and "NumAnnotation"
- 3 LongBinary fields including “Pwd”, “Structure” and “Sequence”

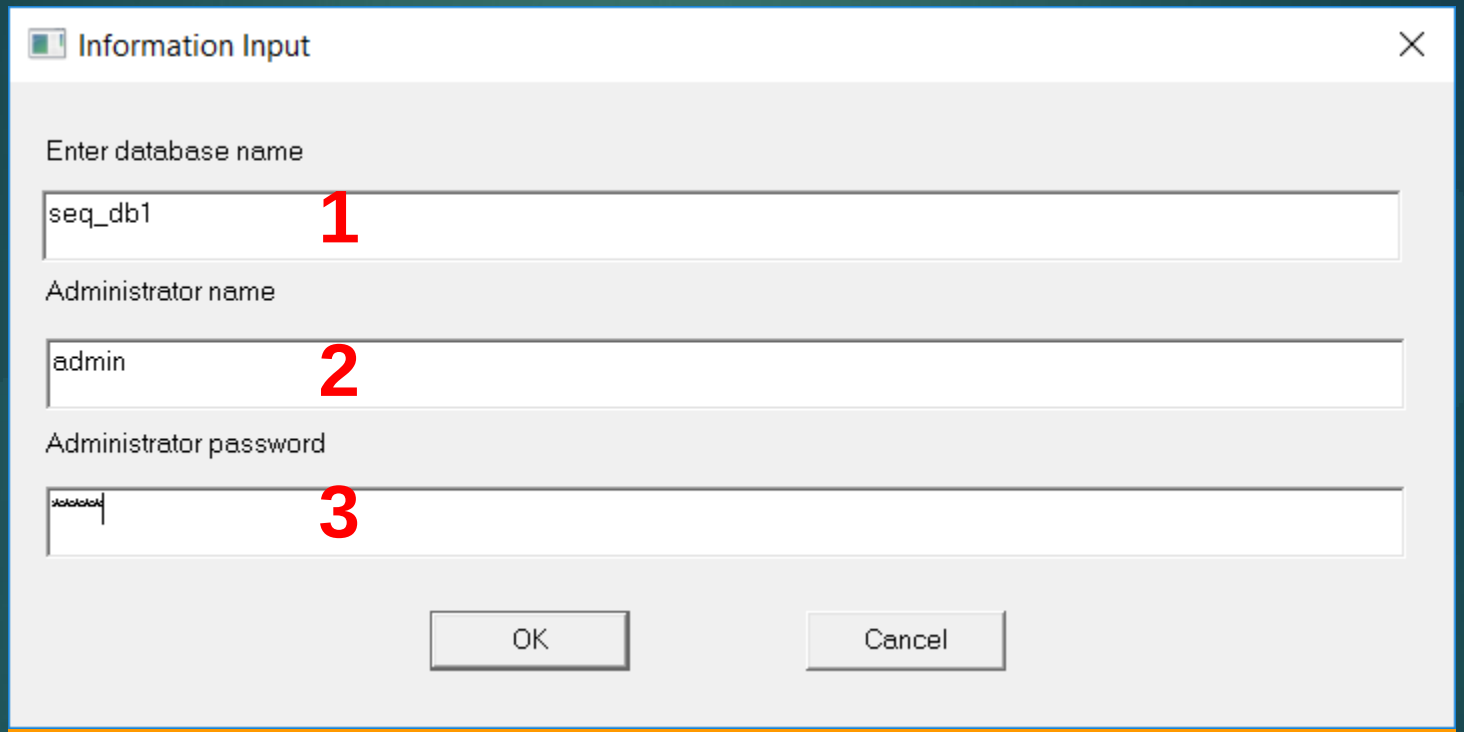
Database Functions

- Create New Database



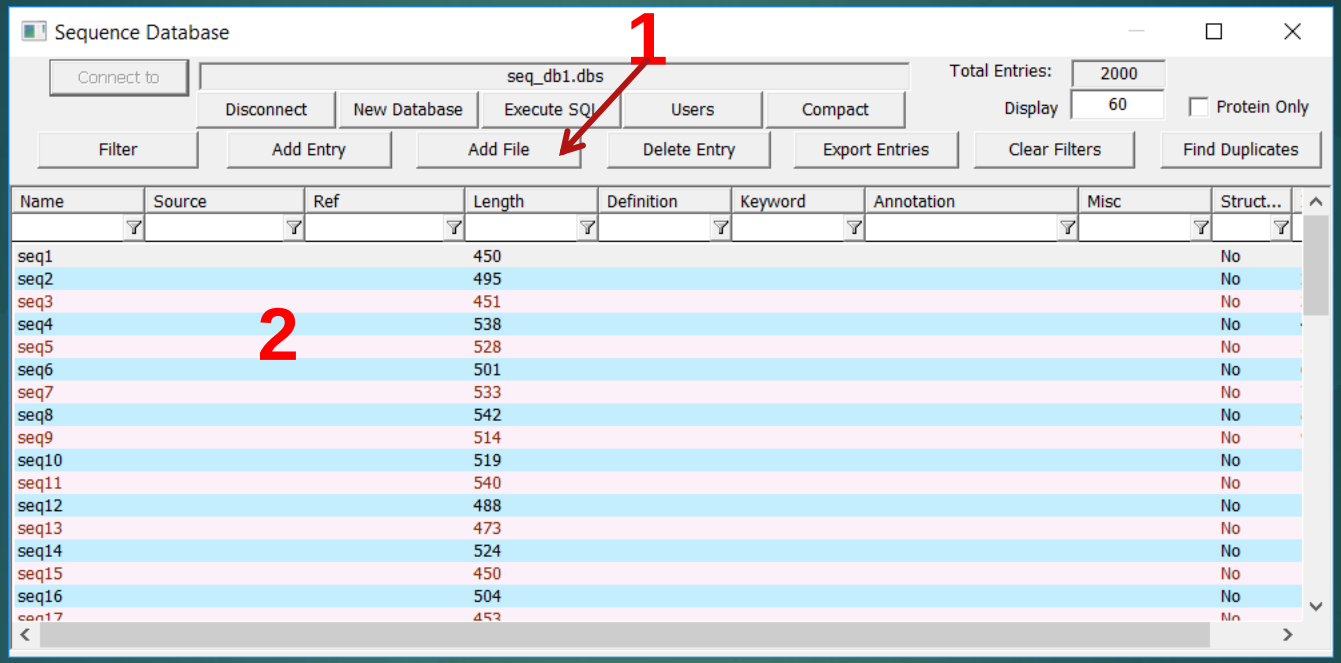
1. Click Database Manager in Sequence Database tab
2. Click New Database button

Create New Database
- SQLite Database



1. Enter database name
2. Enter Administrator name, normally the user name of current computer
3. Enter password. Leave it blank if no user control is needed.

Add Sequence Records
- SQLite Database



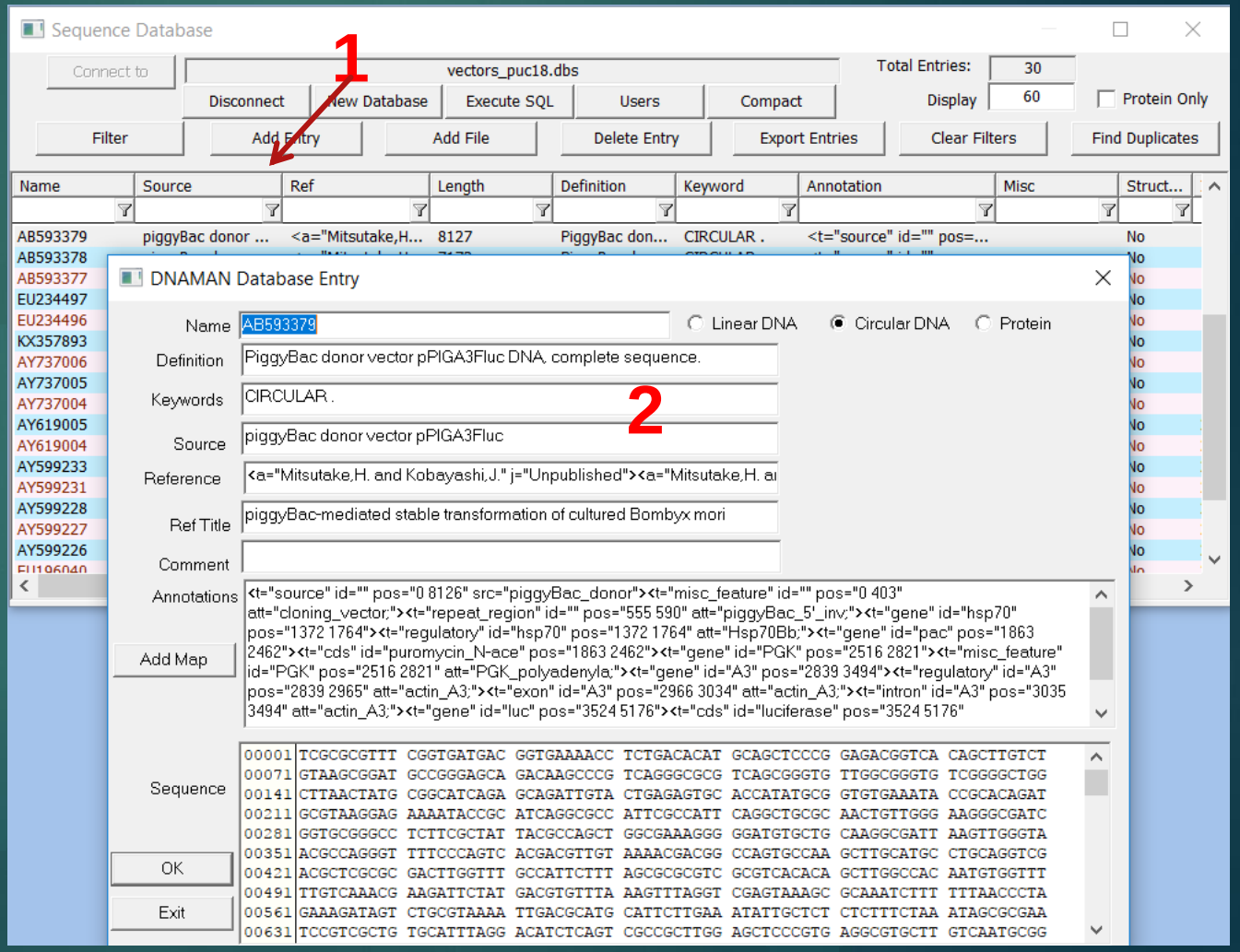
1. Press Add File button
2. Select “AssemblySamples.seq” from DNAMAN folder and wait for all 2000 sequences added to database

Multiple sequences can be retrieved from Genbank and added to database. Genbank is preferred format and annotations/ references can be kept in database

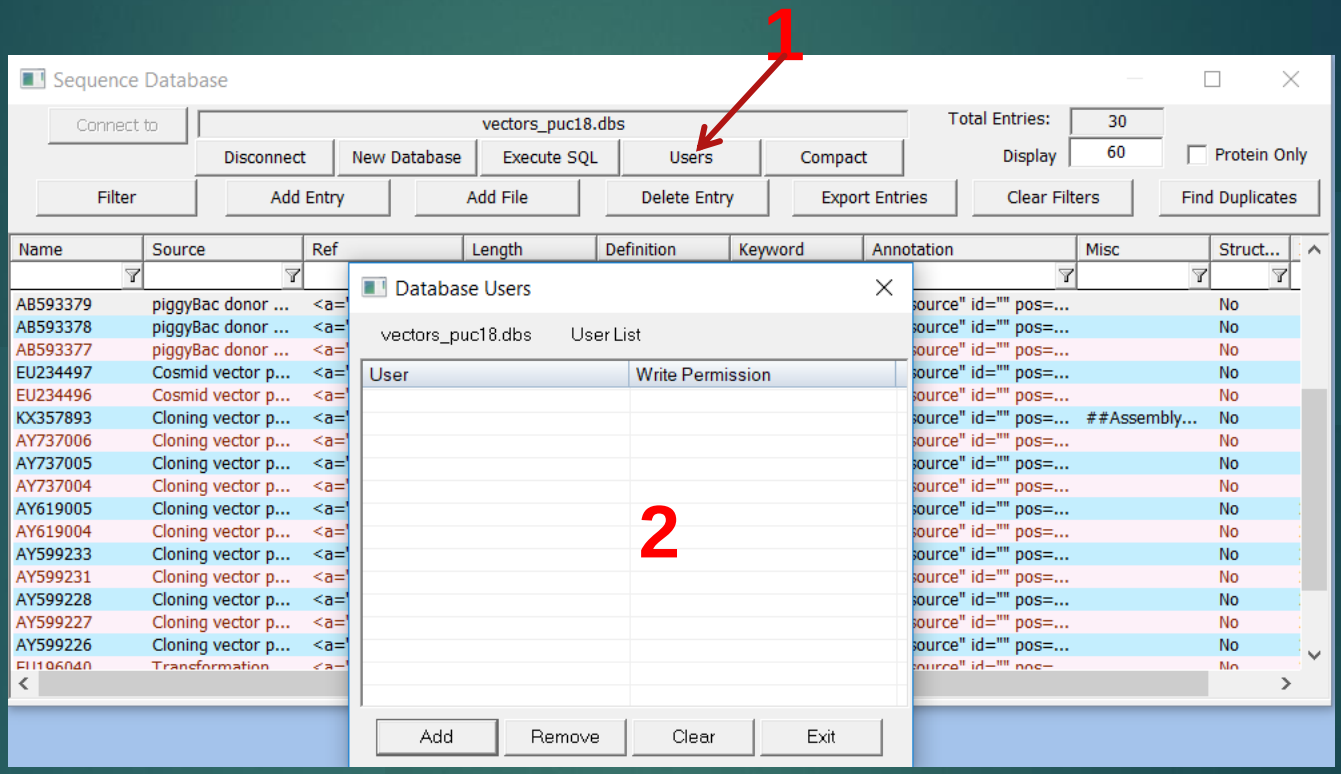
Edit Sequence Records
- SQLite Database

1. Double click a record in sequence list
2. Edit record information

Only users with administrative privileges have the right to edit records if password has been set when creating database



Edit Database User List
- SQLite Database

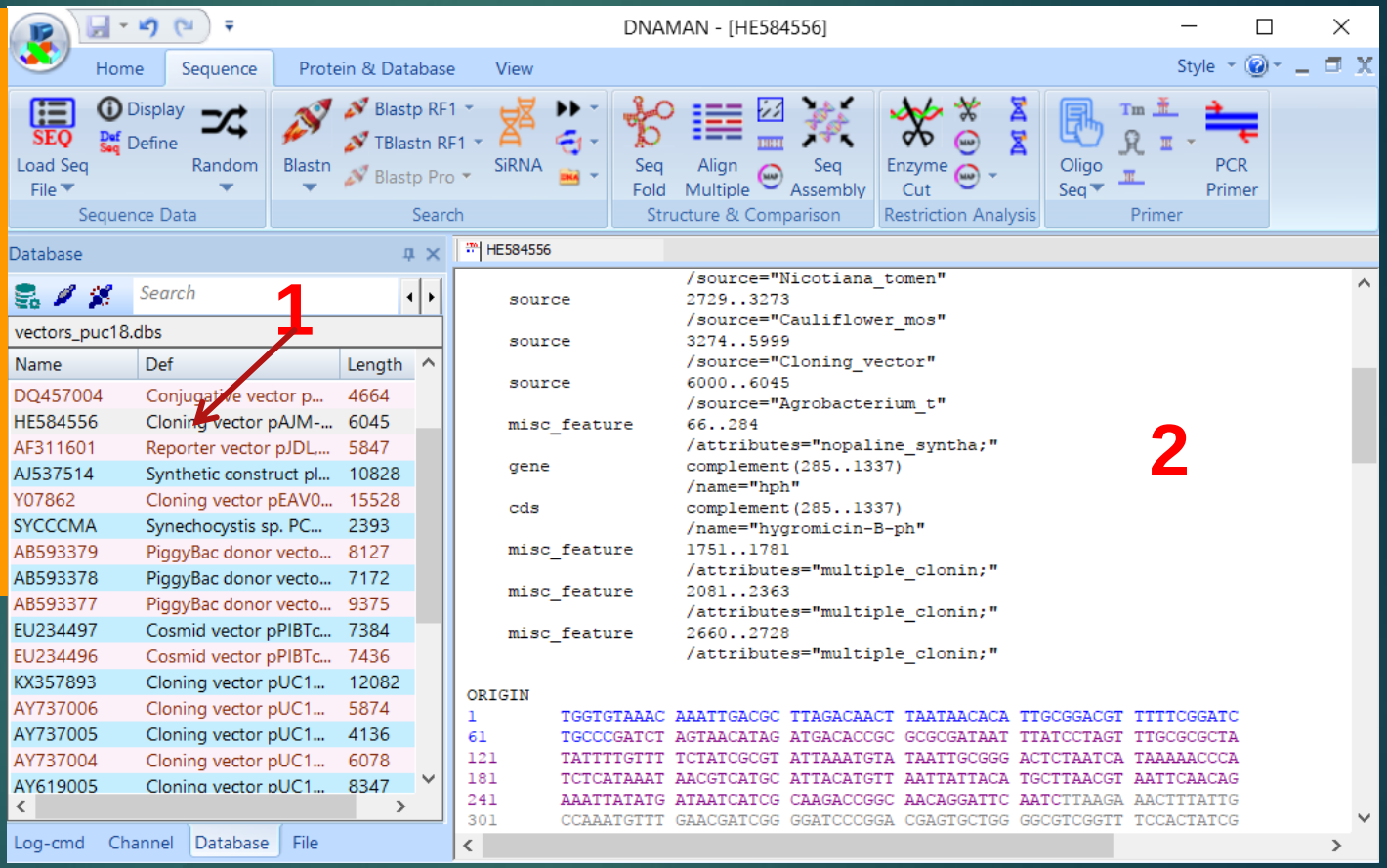


1. Click Users button
2. Edit user list

Only users with write permission have the rights to edit user list if password has been set when creating database

Use Database Sequence

1. Double click a record in Database control
2. Sequence opened and loaded into channel for analysis



Sequence Database
- MYSQL Database Structure

- One data table: DNAMAN_Seq_DB
- 8 TEXT fields including "Name", "Source", "Ref", "Misc", "Definition", "Keyword", "Annotation", "cds“
- 4 INT fields including “ROWID”, "Type", "Length“ and "NumAnnotation"
- 1 BLOB “Structure” and 1 LONGBLOB “Sequence”
- One log table if enabled: DNAMAN_Log_Msg

Sequence Database
- MySQL Database Management

- MySQL databases are managed by local administrator. DNAMAN is not responsible for server side operations.
- MySQL database administrator is responsible to create users and assign read-write rights to users
- Database logs reside on server. DNAMAN may not track all logs

Sequence Database
- Microsoft SQL Database Structure

- One data table: DNAMAN_Seq_DB
- 8 fields of varchar(max) including "Name", "Source", "Ref", "Misc", "Definition", "Keyword", "Annotation", "cds“
- 4 INT fields including “ROWID”, "Type", "Length“ and "NumAnnotation"
- 2 fields of varbinary(max) including “Structure” and “Sequence”
- One log table if enabled: DNAMAN_Log_Msg

Sequence Database
- MS SQL Database Management

- Microsoft SQL databases are managed by local administrator. DNAMAN is not responsible for server side operations.
- Microsoft SQL database administrator is responsible to create users and assign read-write rights to users
- Database logs reside on server. DNAMAN may not track all logs

Shared Database

- MySQL and Microsoft SQL databases are Server-Client based, so databases can be shared natively
- SQLite is not Server-Client based, so database sharing may be restricted and performance may decrease with simultaneous access by a large number of users

Shared Database
- SQLite database

- Create a folder on shared drive: eg T:\shared_database
- Point DNAMAN database folder to the shared folder

1. Press Settings in Information tab
2. Enter database folder on shared drive
3. Click OK to save the change

Make sure shared drive is accessible by users