Ecommerce Database Crash Recovery Documentation

A database's transactions (or units of work) may be abruptly terminated. The database is left in an inconsistent and useless condition if a failure takes place before all of the changes that are a part of the unit of work are finished, committed, and written to disc. The procedure used to restore the database to a consistent and functional condition is known as crash recovery. This is accomplished by undoing transactions that have already been committed and finishing those that were in progress when the crash happened.

The database may be left in an inconsistent state if the database or database manager malfunctions. The database's information may have been altered by transactions that were unfinished when they failed. It's also possible that the database lacks updates made by transactions that succeeded before the failure but were not yet flushed to disc. To undo partially completed transactions and write changes to finished transactions that had previously only been made in memory, a crash recovery operation must be carried out.

Conditions that can necessitate a crash recovery include:

- A machine power outage that causes the database manager and any attached database partitions to crash is one scenario that may call for a crash recovery.
- A hardware issue with the CPU, RAM, storage, or network.
- A major operating system issue that results in an erroneous shutdown of the Db instance

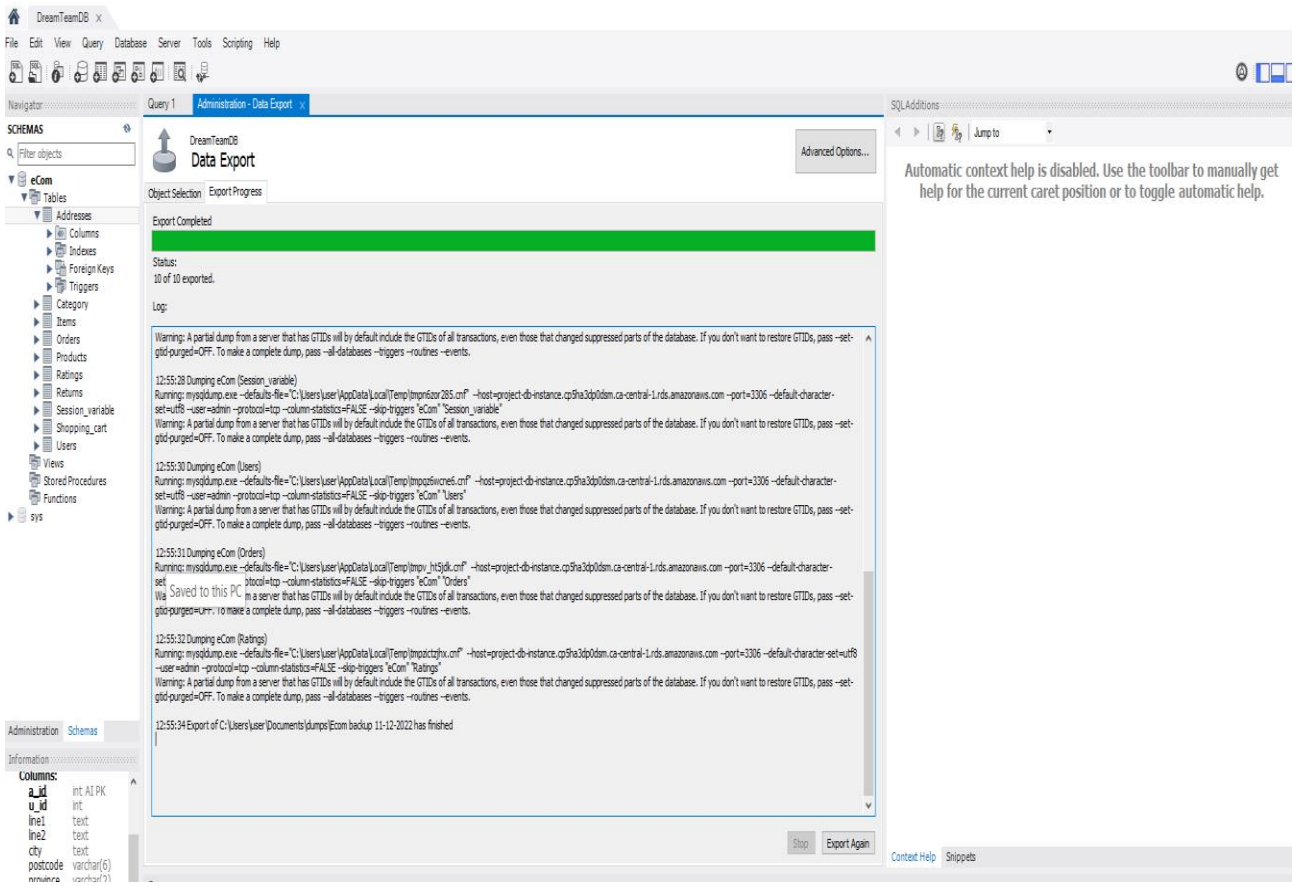
MySQL workbench has the feature to import all instances of a database to a local server at regular intervals. This tool was used to schedule the automatic export of the Ecomm database's current state at the end of each business day. In a scenario where there is data corruption, we have the capacity to roll back the database to a previous state depending on how far the corruption spreads.

This MySQL feature has been implemented on the Ecomm database and here are sample images of one of the timed backups taking place.

Image of a single export of Ecomm DB:

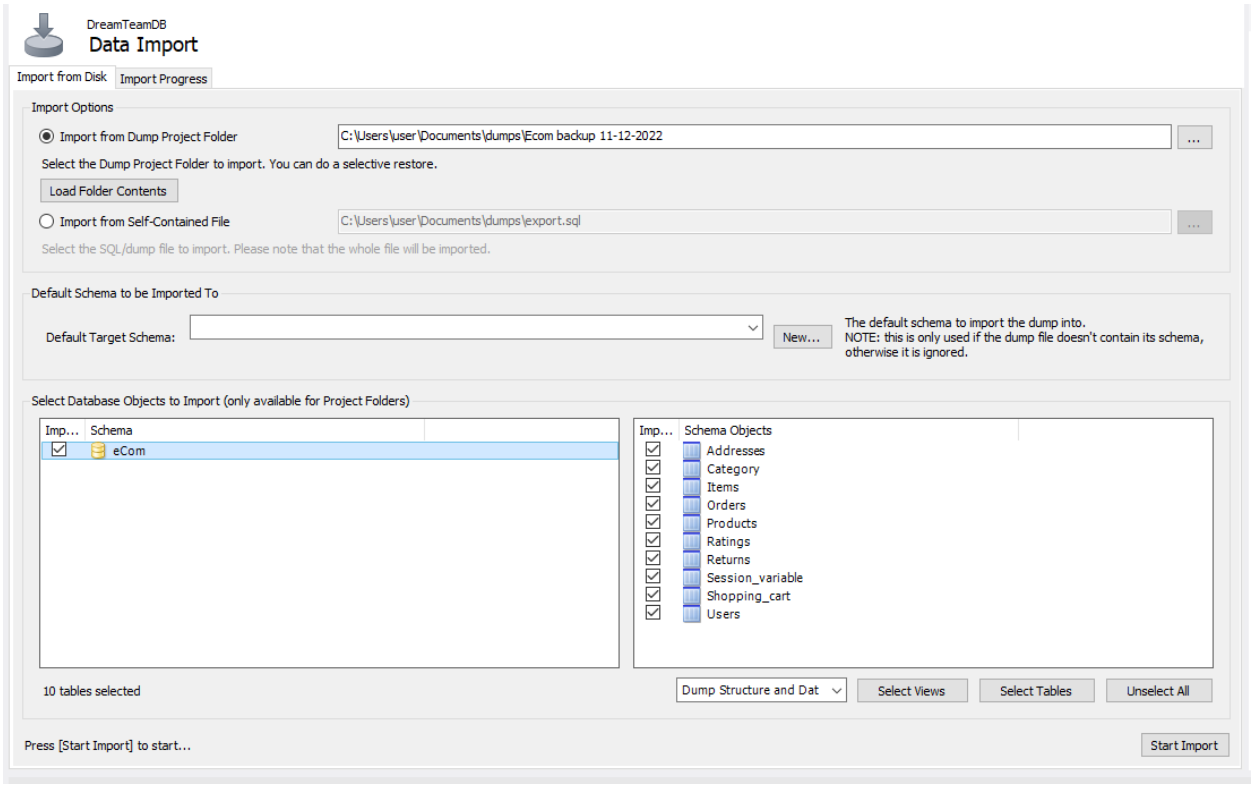
This image simulates a timed export of the Ecomm DB being saved to a local host via the MySQL database management tool. This way there are backups created for each day.

Img 1.1.



This image simulates the process of restoring one of the backup dumps for the previous day. You can see all the tables in the Ecomm website is referenced in this.

Image of backup being imported to server.


DreamTeamDB
Data Import
Import from Disk
Import Progress
Import Options
Import from Dump Project Folder
C:\Users\user\Documents\dumps\Ecom backup 11-12-2022
Select the Dump Project Folder to import. You can do a selective restore.
Load Folder Contents
Import from Self-Contained File
C:\Users\user\Documents\dumps\export.sql
Select the SQL/dump file to import. Please note that the whole file will be imported.
Default Schema to be Imported To
Default Target Schema:
New...
The default schema to import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.
Select Database Objects to Import (only available for Project Folders)
Imp...
Schema
eCom
Imp...
Schema Objects
Addresses
Category
Items
Orders
Products
Ratings
Returns
Session_variable
Shopping_cart
Users
10 tables selected
Dump Structure and Dat
Select Views
Select Tables
Unselect All
Press [Start Import] to start...
Start Import