

\$Id\$

Database Backup and Restore Procedure

1. Overview & Policy

To guarantee clinical records integrity and high availability, Local Food AI enforces a strict backup schedule.

Scope: Includes MySQL schemas (`food_db`), user profiles (`app_auth`), and configuration states.

Retention Plan: Automated daily backups with a strict 7-day rolling window purge.

Storage Location: Stored securely inside the persistent `/backups` directory on the host server.

2. Automated Daily Backups

The automated backup mechanism runs via a host cron job pointing to `backup_db.sh`.

The script dynamically detects the active MySQL container name (`food-mysql-1` or `food_project-mysql-1`).

It executes `mysqldump` directly inside the container without exposing root passwords to shell logs.

Outputs are compressed via `gzip` and timestamped:

`food_db_YYYYMMDD_HHMM.sql.gz`.

Cron Configuration Example:

To run the backup daily at 02:00 AM, add the following to `/etc/crontab`:

```
0 2 * * * root /bin/bash /c/Users/lanfr144/Documents/DOPR01/Antigravity
```

3. Manual Backup Execution

If a system migration or major upgrade is scheduled, perform a manual dump using the following command:

```
# 1. Navigate to the project directory
cd /c/Users/lanfr144/Documents/DOPR01/Antigravity/Food
```

```
# 2. Run the backup wrapper
bash backup_db.sh
```

Verify the output exists inside the backups folder:

```
ls -lh backups/
```

4. Step-by-Step Restore Procedure

In the event of database corruption or hardware failure, follow these exact steps to restore the database.

Step 4.1: Identify the Target Backup File

List available files and pick the desired timestamp:

```
ls -la backups/  
# Example Target: backups/food_db_20260521_1100.sql.gz
```

Step 4.2: Verify MySQL Container Health

Ensure the MySQL service container is running and healthy:

```
docker ps --filter name=mysql
```

Step 4.3: Execute Restore Stream

Decompress the backup on-the-fly and pipe it directly into the running MySQL container:

```
# Adjust the container name ('food-mysql-1' or 'food_project-mysql-1')  
gunzip < backups/food_db_20260521_1100.sql.gz | docker exec -i food-mys
```

Step 4.4: Verify Restored Tables

Log in to the database and query the core table to confirm the tables are intact and populated:

```
docker exec -it food-mysql-1 mysql -u food_reader -preader_pass food_db
```

Expected result: A count of OpenFoodFacts entries (typically > 10,000 records).

5. Verification & Health Check Loops

Operators must verify the backup archive integrity weekly:

1. Copy the `.gz` backup to a local testing workspace.
2. Run `gzip -t backups/filename.sql.gz` to ensure the archive is not corrupted.
3. Test restoring to a local fallback container instance to verify data accessibility.