

The current version is #ident
"@(#)\$Format:LocalFoodAI_lanfr144:Backup_Procedure.md:Francois
Lange:lanfr144@school.lu:2026/06/16 09:25:09:Francois
Lange:lanfr144@school.lu:2026/06/16
09:25:09:1e316d1030d64b01b8cbc5cdb3a3a272a963caff:: \$"

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/Food/backup_db.sh >> /var/log/backup_db.log 2>&1
```

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') based on active deployment  
gunzip < backups/food_db_20260521_1100.sql.gz | docker exec -i  
food-mysql-1 mysql -u root -proot_pass food_db
```

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 -e "SELECT COUNT(*) FROM products_core;"
```

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

5. Verification & Health Check Loops

Operators must verify the backup archive integrity weekly:

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