

INSTALLATION GUIDE - SISTEM EMR BATAM SEHAT

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1. REQUIREMENTS

Minimum Requirements

- **OS:** Windows 10/11, Ubuntu 20.04+, atau macOS 10.15+
- **RAM:** 2GB (4GB recommended)
- **Storage:** 2GB free space
- **CPU:** 2 cores (4 cores recommended)
- **Internet:** Untuk download dependencies & email

Software Requirements

- Python 3.8 atau lebih baru
- MySQL 8.0+ atau MariaDB 10.6+
- Git (optional, untuk clone repository)
- Text Editor (VS Code, Sublime, Notepad++)

Cek Versi Python

```
python --version  
# atau
```

```
python3 --version
```

```
# Output harus: Python 3.8.x atau lebih tinggi
```

Cek Versi MySQL/MariaDB

```
mysql --version
```

```
# Output contoh:
```

```
# mysql Ver 8.0.35 for Linux
```

2. INSTALASI WINDOWS

Step 1: Install Python

1. Download Python dari <https://www.python.org/downloads/>
2. Jalankan installer
3.  **CENTANG "Add Python to PATH"**
4. Klik "Install Now"
5. Verifikasi:
6. `python --version`

Step 2: Install MySQL/MariaDB

1. Download XAMPP dari <https://www.apachefriends.org/>
2. Install XAMPP (centang MySQL/MariaDB)
3. Buka XAMPP Control Panel
4. Start **MySQL**
5. Verifikasi:
6. `mysql --version`

Step 3: Extract Project

1. Extract file ZIP ke folder, contoh:

2. C:\EMR_Batam_Sehat\
3. Buka Command Prompt (CMD) atau PowerShell
4. Pindah ke folder project:
5. cd C:\EMR_Batam_Sehat

Step 4: Buat Virtual Environment

```
python -m venv venv

# Activate

venv\Scripts\activate

# (venv) akan muncul di awal baris prompt
```

Step 5: Install Dependencies

```
pip install -r requirements.txt

# Tunggu hingga selesai (2-5 menit)
```

Step 6: Setup Database

1. Buka browser → http://localhost/phpmyadmin
2. Klik "**New**" (sidebar kiri)
3. Isi:
 - **Database name:** emr_project_db
 - **Collation:** utf8mb4_unicode_ci
4. Klik "**Create**"
5. Klik tab "**Import**"
6. Klik "**Choose File**" → Pilih file emr_project_db.sql
7. Scroll ke bawah → Klik "**Go**"
8. Tunggu hingga muncul "Import has been successfully finished"

Step 7: Konfigurasi Environment

1. Copy file .env.example menjadi .env:
2. copy .env.example .env
3. Edit file .env dengan Notepad:
4. notepad .env
5. Isi konfigurasi (lihat bagian Konfigurasi Awal)

Step 8: Jalankan Server

```
python app.py
```

Output yang benar:

```
* Serving Flask app 'app'  
* Debug mode: on  
* Running on http://127.0.0.1:5000
```

Press CTRL+C to quit

Step 9: Akses Sistem

1. Buka browser
2. Akses: http://localhost:5000
3. Login dengan:
 - o **Username:** Admin
 - o **Password:** Admin123!!

3. INSTALASI LINUX/UBUNTU

Step 1: Update System

```
sudo apt update  
sudo apt upgrade -y
```

Step 2: Install Python & Dependencies

```
# Install Python 3 & pip
```

```
sudo apt install python3 python3-pip python3-venv -y

# Install MySQL Server
sudo apt install mysql-server -y

# Install Git (optional)
sudo apt install git -y

# Verifikasi
python3 --version
mysql --version
```

Step 3: Secure MySQL Installation

```
sudo mysql_secure_installation

# Ikuti wizard:
# - Set root password: [pilih password kuat]
# - Remove anonymous users: Y
# - Disallow root login remotely: Y
# - Remove test database: Y
# - Reload privilege tables: Y
```

Step 4: Extract/Clone Project

```
# Jika dari ZIP
cd ~
unzip EMR_Batam_Sehat.zip
cd EMR_Batam_Sehat
```

```
# Atau jika dari Git (contoh)

# git clone https://github.com/your-repo/emr-batam-sehat.git

# cd emr-batam-sehat
```

Step 5: Buat Virtual Environment

```
python3 -m venv venv

# Activate

source venv/bin/activate

# (venv) akan muncul di awal prompt
```

Step 6: Install Dependencies

```
pip install -r requirements.txt
```

Step 7: Setup Database

```
# Login ke MySQL

sudo mysql -u root -p

# Masukkan password root yang tadi dibuat

Di MySQL prompt:

-- Buat database

CREATE DATABASE emr_project_db CHARACTER SET utf8mb4 COLLATE utf8mb4_unicode_ci;

-- Buat user khusus (recommended)

CREATE USER 'emr_user'@'localhost' IDENTIFIED BY 'password_kuat_anda';

-- Berikan akses

GRANT ALL PRIVILEGES ON emr_project_db.* TO 'emr_user'@'localhost';
```

```
FLUSH PRIVILEGES;

-- Keluar

EXIT;

Import data:

mysql -u emr_user -p emr_project_db < emr_project_db.sql

# Masukkan password: password_kuat_anda
```

Step 8: Konfigurasi Environment

```
# Copy template

cp .env.example .env

# Edit dengan nano atau vim

nano .env

# Edit konfigurasi (lihat bagian Konfigurasi Awal)

# Save: Ctrl+O → Enter

# Exit: Ctrl+X
```

Step 9: Jalankan Server

```
python3 app.py
```

Step 10: Akses Sistem

- Local: http://localhost:5000
- Dari komputer lain di jaringan: http://[IP-SERVER]:5000

Cek IP server:

```
hostname -I
```

4. KONFIGURASI AWAL

Edit File .env

```
# ===== DATABASE =====

DB_HOST=localhost

DB_USER=root      # Ganti jika pakai user khusus

DB_PASSWORD=password_anda    # WAJIB ISI!

DB_NAME=emr_project_db


# ===== FLASK SECRET KEY =====

SECRET_KEY=hasil_generate_di_bawah


# ===== EMAIL (SMTP) =====

MAIL_SERVER=mail.erkaes.my.id

MAIL_PORT=465

MAIL_USE_SSL=True

MAIL_USERNAME=noreply@erkaes.my.id

MAIL_PASSWORD=password_email_anda  # WAJIB ISI!

MAIL_DEFAULT_SENDER_NAME=Batam Sehat

MAIL_DEFAULT_SENDER_EMAIL=noreply@erkaes.my.id


# ===== UPLOAD =====

MAX_FILE_SIZE_MB=5

UPLOAD_FOLDER=static/uploads


# ===== ENVIRONMENT =====

FLASK_ENV=development  # production untuk deploy
```

```
DEBUG=True      # False untuk production
```

Generate SECRET_KEY

Windows (CMD):

```
python -c "import secrets; print(secrets.token_hex(32))"
```

Linux/Mac:

```
python3 -c "import secrets; print(secrets.token_hex(32))"
```

Output contoh:

```
4f3d9b2a8e7c1f5a6d8b3e9a2c7f5d1a3e6b9c2f7a4d8e1b5f2a9c6d3e7b1f4a
```

Copy hasil ke .env → SECRET_KEY

Konfigurasi Email (SMTP)

Option 1: Gmail

```
MAIL_SERVER=smtp.gmail.com
```

```
MAIL_PORT=587
```

```
MAIL_USE_SSL=False
```

```
MAIL_USE_TLS=True
```

```
MAIL_USERNAME=your-email@gmail.com
```

```
MAIL_PASSWORD=app_password_16_karakter # Bukan password akun!
```

Cara Dapatkan App Password:

1. Login Gmail
2. Akun → Keamanan
3. Verifikasi 2 Langkah → **Aktifkan**
4. App Password → Buat → Pilih "Aplikasi lain"
5. Copy 16 karakter password
6. Paste ke .env

Option 2: SMTP Custom (seperti cPanel Email)

```
MAIL_SERVER=mail.yourdomain.com
```

```
MAIL_PORT=465  
MAIL_USE_SSL=True  
MAIL_USERNAME=noreply@yourdomain.com  
MAIL_PASSWORD=password_email_anda
```

5. TESTING

Test 1: Cek Server Berjalan

```
# Jalankan server  
python app.py # atau python3 app.py  
  
# Buka browser: http://localhost:5000  
# Harus muncul halaman login
```

Test 2: Login Admin

```
Username: Admin  
Password: Admin123!!  
Jika berhasil → Dashboard muncul ✓
```

Test 3: Lengkapi Profil Admin

1. Akan redirect ke halaman "Lengkapi Profil"
2. Isi semua data (NIK, Nama, Email, dll)
3. Klik "Simpan Profil"

Test 4: Upload Foto

1. Menu: Profil Saya
2. Klik "Upload / Ganti Foto"
3. Upload foto profil & KTP
4. Cek apakah preview muncul

Test 5: Test Email (CRITICAL!)

1. Buat user baru (Admin → Manajemen User → Tambah)
2. Coba "Lupa Password" dengan email user tersebut
3. **Cek inbox email** → Harus ada email reset password
4. Jika tidak ada, **CEK KONFIGURASI SMTP** di .env

Test 6: Registrasi Pasien

1. Logout
2. Klik "Daftar di sini"
3. Isi username & password
4. Login Admin → Verifikasi pasien tersebut

Test 7: Test 2FA

1. Login Admin → Profil Saya
2. Keamanan Akun → Aktifkan 2FA
3. Scan QR Code dengan Google Authenticator
4. Masukkan kode verifikasi
5. Logout → Login lagi (harus minta kode 2FA)

6. DEPLOYMENT PRODUCTION

Checklist Sebelum Deploy

- [] Ganti SECRET_KEY dengan yang baru
- [] Ganti password Admin default
- [] Ganti password database
- [] Set DEBUG = False di .env
- [] Set FLASK_ENV = production di .env
- [] Install SSL Certificate (HTTPS)

- [] Setup firewall
- [] Setup backup otomatis
- [] Test email notifikasi

Option 1: Deploy dengan Gunicorn (Linux VPS)

1. Install Gunicorn

```
pip install gunicorn
```

2. Test Gunicorn

```
gunicorn -w 4 -b 0.0.0.0:5000 app:app
```

3. Setup Systemd Service

```
sudo nano /etc/systemd/system/emr.service

Isi:

[Unit]
Description=EMR Batam Sehat Flask App
After=network.target

[Service]
User=your-user
WorkingDirectory=/home/your-user/EMR_Batam_Sehat
Environment="PATH=/home/your-user/EMR_Batam_Sehat/venv/bin"
ExecStart=/home/your-user/EMR_Batam_Sehat/venv/bin/gunicorn -w 4 -b 127.0.0.1:5000
app:app

[Install]
WantedBy=multi-user.target

Enable & Start:
sudo systemctl enable emr
```

```
sudo systemctl start emr  
sudo systemctl status emr
```

4. Setup Nginx Reverse Proxy

```
sudo apt install nginx -y  
  
sudo nano /etc/nginx/sites-available/emr  
  
Isi:  
  
server {  
  
    listen 80;  
  
    server_name your-domain.com www.your-domain.com;  
  
  
    location / {  
  
        proxy_pass http://127.0.0.1:5000;  
  
        proxy_set_header Host $host;  
  
        proxy_set_header X-Real-IP $remote_addr;  
  
        proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
  
        proxy_set_header X-Forwarded-Proto $scheme;  
  
    }  
  
  
    location /static {  
  
        alias /home/your-user/EMR_Batam_Sehat/static;  
  
    }  
  
}  
  
Enable site:  
  
sudo ln -s /etc/nginx/sites-available/emr /etc/nginx/sites-enabled/  
  
sudo nginx -t  
  
sudo systemctl restart nginx
```

5. Setup SSL dengan Let's Encrypt

```
sudo apt install certbot python3-certbot-nginx -y  
sudo certbot --nginx -d your-domain.com -d www.your-domain.com
```

Option 2: Deploy ke Heroku

1. Install Heroku CLI

<https://devcenter.heroku.com/articles/heroku-cli>

2. Buat File Procfile

```
echo "web: gunicorn app:app" > Procfile
```

3. Buat File runtime.txt

```
echo "python-3.10.12" > runtime.txt
```

4. Login & Deploy

```
heroku login
```

```
heroku create nama-app-anda
```

```
# Set environment variables
```

```
heroku config:set SECRET_KEY=your_secret_key
```

```
heroku config:set DB_HOST=your_db_host
```

```
# ... set semua variable dari .env
```

```
# Deploy
```

```
git init
```

```
git add .
```

```
git commit -m "Initial deploy"
```

```
git push heroku main
```

7. TROUBLESHOOTING

 **Error: "ModuleNotFoundError: No module named 'flask'"**

Solusi:

```
# Pastikan virtual environment aktif
```

```
venv\Scripts\activate # Windows
```

```
source venv/bin/activate # Linux
```

```
# Install ulang dependencies
```

```
pip install -r requirements.txt
```

 **Error: "Access denied for user 'root'@'localhost'"**

Solusi:

```
# Cek password di .env
```

```
DB_PASSWORD=password_yang_benar
```

```
# Atau reset password MySQL
```

```
sudo mysql
```

```
ALTER USER 'root'@'localhost' IDENTIFIED BY 'new_password';
```

```
FLUSH PRIVILEGES;
```

```
EXIT;
```

 **Error: "Can't connect to MySQL server"**

Solusi:

```
# Pastikan MySQL berjalan
```

```
# Windows (XAMPP): Buka XAMPP → Start MySQL
```

```
# Linux:
```

```
sudo systemctl start mysql
```

```
sudo systemctl status mysql
```

 **Error: "FileNotFoundError: key.key"**

Solusi:

```
# Generate key.key baru  
python generate_key.py
```

ATAU buat manual:

```
python -c "from cryptography.fernet import Fernet; print(Fernet.generate_key().decode())" >  
key.key
```

 **Error: Email tidak terkirim**

Solusi:

1. Cek konfigurasi SMTP di .env
2. Test SMTP:
3. python -m smtplib
4. Cek firewall (port 587/465 harus terbuka)
5. Gunakan Gmail App Password (bukan password akun)

 **Error: "Port 5000 already in use"**

Solusi:

```
# Windows: Kill process di port 5000  
  
netstat -ano | findstr :5000  
  
taskkill /PID [PID_NUMBER] /F
```

```
# Linux:
```

```
lsof -ti:5000 | xargs kill -9
```

```
# Atau gunakan port lain:
```

```
# Di app.py, baris terakhir ganti:
```

```
app.run(debug=True, port=5001)
```

Error: Foto tidak muncul (404)

Solusi:

```
# Buat folder uploads jika belum ada  
mkdir -p static/uploads/profiles  
mkdir -p static/uploads/ktp  
mkdir -p static/uploads/documents  
  
# Cek permission (Linux)  
chmod -R 755 static/uploads
```

Error: Database connection timeout

Solusi:

```
# Increase timeout di MySQL  
sudo nano /etc/mysql/my.cnf  
  
# Tambahkan:  
[mysqld]  
wait_timeout = 600  
interactive_timeout = 600  
max_connections = 200  
  
# Restart MySQL  
sudo systemctl restart mysql
```

BUTUH BANTUAN?

Jika masih ada masalah:

1. Screenshot error message
 2. Kirim email ke: support@developer.com
 3. Atau hubungi WhatsApp: 0812-XXXX-XXXX
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