

## 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!!

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## 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](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  
ls:  
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_Sihat/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