DEVX360

Sipho Sehlapelo
Kesley Hamann
Sibusiso Mngomezulu
Lwando Msindo
David Musa-Aisien

DevX360 Backend Installation Manual

![DevX360]

Backend Version: Node.js 18+
Database: MongoDB 5.0+
AI Provider: OpenAI GPT-4o-mini

Table of Contents

System Requirements

Minimum Requirements

- **CPU:** 2+ vCPUs
- **RAM:** 2GB
- **Storage:** 20GB SSD
- **OS:** Linux Ubuntu 20.04+, macOS 10.15+, or Windows 10+

Recommended Production Specifications

- **CPU:** 4+ vCPUs
- **RAM:** 4GB
- **Storage:** 50GB SSD
- **Network:** 100Mbps+ bandwidth

Prerequisites

Software Dependencies

```
# Ubuntu/Debian
sudo apt update
sudo apt install -y nodejs npm mongodb git python3 python3-pip
```

```
# macOS
brew install node mongodb/brew/mongodb-community git

# Windows
# Download and install from:
# - Node.js: https://nodejs.org/
# - MongoDB: https://www.mongodb.com/try/download/community
# - Git: https://git-scm.com/
```

Version Requirements

- **Node.js:** 18.x or higher
- **MongoDB:** 5.0 or higher
- **npm:** 8.x or higher
- **Git:** 2.20 or higher

Installation Steps

1. Clone the Repository

```
git clone https://github.com/COS301-SE-2025/DevX360.git
cd DevX360/
```

2. Install Dependencies

```
npm install
```

3. Environment Configuration

Create a `.env` file in the root directory:

```
# Server Configuration
NODE_ENV=production
PORT=5000
HOST=0.0.0.0

# Database Configuration
MONGODB_URI=mongodb://localhost:27017/devx360

# Security Configuration
JWT_SECRET=your-super-secure-jwt-secret-minimum-32-characters

# GitHub Integration (Minimum 2 tokens required)
GITHUB_TOKEN_1=ghp_your_first_github_token_here
GITHUB_TOKEN_2=ghp_your_second_github_token_here
GITHUB_CLIENT_ID=your_github_oauth_client_id
GITHUB_CLIENT_SECRET=your_github_oauth_client_secret

# OpenAI Configuration
OPENAI_API_KEY=sk-your-openai-api-key-here
```

Configuration

Environment Variables Details

Variable	Description	Required	Default
MONGODB_URI	MongoDB connection string	Yes	-
JWT_SECRET	Secret for JWT token signing	Yes	-
GITHUB_TOKEN_1	First GitHub personal access token	Yes	-
GITHUB_TOKEN_2	Second GitHub personal access token	Yes	-
OPENAI_API_KEY	OpenAI API key for GPT-4o-mini	Yes	-
NODE_ENV	Environment mode	No	development
PORT	Server port	No	5000

GitHub Token Setup
1. Visit: [GitHub Tokens](https://github.com/settings/tokens)
2. Generate tokens with permissions:
   - `repo (all)`
   - `read:org`
   - `read:user`
   - `user:email`

OpenAI API Key Setup
1. Visit: [OpenAI API Keys](https://platform.openai.com/api-keys)
2. Create new API key
3. Ensure sufficient credits for **GPT-4o-mini** usage

Initial User Creation
```
# Using the API after startup
curl -X POST http://localhost:5000/api/register   -H "Content-Type: application/json"   -d '{
    "name": "User",
    "email": "admin@devx360.com",
    "password": "SecurePass123!",
  }'
```

Running the Application

Development Mode

```
npm api/server.js
```