# OptiFlow Starter Manual

Welcome to **OptiFlow - AI-OrchestrateX**, a domain-driven orchestration platform built with modular microservices. This starter manual guides you through setting up the core components on your local development environment.

## 🌐 Deployment Overview

| Component | Location | Description |
| --- | --- | --- |
| API Gateway | Windows (Host) | FastAPI-based gateway, handles requests |
| Frontend (UI) | Windows (Host) | Flask web app, interacts with gateway |
| Orchestrator | WSL (Ubuntu VM) | Manages scheduling, control, registry |
| Redis | WSL (Ubuntu VM) | Stores rate limits and traffic data |

## ✅ Prerequisites

### On Windows (Host)

* Python 3.10+
* pip install fastapi uvicorn flask python-dotenv requests
* Enable Inbound traffic on port 8080 (API Gateway)

### On WSL (Ubuntu)

* Python 3.10+
* Redis Server (sudo apt install redis)
* pip install requests

## 🚀 API Gateway Setup (Windows)

### Environment Variables (api\_gateway/server\_config.env)

API\_GATEWAY\_IP=192.168.1.100  
API\_GATEWAY\_PORT=8080  
RATE\_LIMIT=5  
VALID\_API\_KEYS=my-secret-key  
JWT\_SECRET=my-jwt-secret

### Run the Gateway

python api\_gateway/services/apigw\_services.py

Just run the below batch file (on windows machine)

## .\run\_project.bat

### Test Routes

curl -H "X-API-KEY: my-secret-key" http://192.168.1.100:8080/  
curl http://192.168.1.100:8080/health

## 🎨 Frontend Setup (Windows)

### Run Flask App

python frontend/app.py

### Access UI

Open in browser: <http://127.0.0.1:5000>

## 🧠 Orchestrator Setup (WSL Ubuntu)

### Redis

sudo apt update  
sudo apt install redis -y  
sudo systemctl start redis

### Ping Gateway from WSL

ping 192.168.1.100

### CURL Tests

curl -H "X-API-KEY: my-secret-key" http://192.168.1.100:8080/  
curl http://192.168.1.100:8080/api/traffic/routes

## 📊 Traffic Monitoring API

* GET /api/traffic/routes → View traffic stats
* POST /api/traffic/update → Increment hit counter

## 🧪 Health Check

curl http://192.168.1.100:8080/health

Returns:

{  
 "status": "API Gateway is running",  
 "ip": "192.168.1.100"  
}

## ❤️ Final Notes

* Keep Redis running in WSL
* Use correct X-API-KEY in all calls
* Always start API Gateway before Frontend

You’re now ready to build, orchestrate, and scale with **OptiFlow AI-OrchestrateX** 🚀