🚀 Introduction to NGINX with Docker

Learn how to set up and deploy **NGINX** using Docker for web server development and deployment.

🌐 What is NGINX?

- High-performance web server and reverse proxy

- Handles static files, load balancing, and caching

- Commonly used with Docker for containerized web apps

🛠️ Why Use NGINX with Docker?

- Easy to configure and deploy

- Isolate environments

- Automate setup and testing

- Integrate with apps (PHP, Node.js, etc.)

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🐋 Prerequisites

- Install **Docker** and optionally **Docker Compose**

- Basic knowledge of command line

- Create a working project directory

📁 Project Structure

Example project folder:

```
project/
├── index.html
└── Dockerfile
```

index.html is your static website entry point.

📝 Sample index.html

```html
<!DOCTYPE html>
<html>
<head><title>Hello NGINX</title></head>
<body>
  <h1>Welcome to NGINX running in Docker!</h1>
</body>
</html>
```

🐳 Create a Dockerfile

```dockerfile
FROM nginx:alpine
COPY index.html /usr/share/nginx/html/index.html
```

- Uses a lightweight NGINX image

- Replaces default index.html with your own

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🚀 Build and Run

```
docker build -t my-nginx .
docker run -d -p 8080:80 my-nginx
```

- Access at: http://localhost:8080

🔄 Updating Content

Edit `index.html` , then rebuild:

```
docker build -t my-nginx .
docker restart <container_id>
```

> Or use **bind mounts** in `docker run` for live development

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⚙ Custom NGINX Config (Optional)

Add your own `nginx.conf` :

```nginx
server {
  listen 80;
  location / {
    root /usr/share/nginx/html;
    index index.html;
  }
}
```

Update Dockerfile:

```dockerfile
COPY nginx.conf /etc/nginx/conf.d/default.conf
```

🧪 With Docker Compose (Optional)

docker-compose.yml

```
version: '3'
services:
  web:
    image: nginx:alpine
    volumes:
      - ./index.html:/usr/share/nginx/html/index.html
    ports:
      - "8080:80"
```

Run with:

```
docker-compose up -d
```

🛡️ Deployment Tips

- Use a reverse proxy to serve backend APIs (PHP, Node, etc.)

- Enable HTTPS with Let's Encrypt + Certbot

- Log and monitor traffic with NGINX logs

🎯 Summary

- NGINX is fast and easy to deploy with Docker

- Serves static content or reverse-proxies to apps

- Combine with Docker Compose for larger apps

🎉 You're Ready

Deploy your own NGINX server in minutes using Docker!