

Panduan Deployment Lengkap untuk Pemula

Panduan ini akan membantu Anda men-deploy aplikasi NFT Raffle dari awal sampai akhir, bahkan jika Anda tidak familiar dengan programming.

Checklist Persiapan

Sebelum mulai, pastikan Anda sudah:

- ☐ Install Node.js dari <https://nodejs.org> (versi 20 atau lebih baru)
 - ☐ Install Git dari <https://git-scm.com>
 - ☐ Punya wallet MetaMask (install dari <https://metamask.io>)
 - ☐ Punya Base Sepolia ETH (gratis dari faucet)
 - ☐ Punya text editor (VSCode recommended: <https://code.visualstudio.com>)
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LANGKAH 1: Setup Awal

1.1 Download & Extract Project

```
bash

# Buka Terminal/Command Prompt
# Di Windows: tekan Win+R, ketik "cmd", enter
# Di Mac: tekan Cmd+Space, ketik "terminal", enter

# Navigasi ke folder project
cd path/to/nft-raffle-app

# List files untuk confirm
ls
```

1.2 Install Dependencies

```
bash
```

```
# Install dependencies untuk smart contract
```

```
cd contracts
```

```
npm install
```

```
# Tunggu sampai selesai (bisa 2-5 menit)
```

```
# Kalau ada warning, ignore saja (yang penting no errors)
```

```
# Install dependencies untuk frontend
```

```
cd ../frontend
```

```
npm install
```

```
# Tunggu sampai selesai
```

LANGKAH 2: Setup Wallet & Get Testnet Funds

2.1 Export Private Key dari MetaMask

 **PENTING: JANGAN SHARE PRIVATE KEY KE SIAPAPUN!**

1. Buka MetaMask
2. Klik icon 3 titik (:) di pojok kanan atas
3. Klik "Account details"
4. Klik "Show private key"
5. Masukkan password MetaMask Anda
6. Klik "Confirm"
7. **Copy private key** (simpan di tempat aman)

2.2 Get Base Sepolia ETH (Gratis)

1. Kunjungi: <https://faucet.quicknode.com/base/sepolia>
2. Connect wallet MetaMask Anda
3. Klik "Get Base Sepolia ETH"
4. Tunggu 1-2 menit
5. Check balance di MetaMask (pastikan ada ETH)

2.3 Get LINK Tokens (Gratis)

1. Kunjungi: <https://faucets.chain.link/base-sepolia>

2. Connect wallet MetaMask Anda
 3. Klik "Request 10 LINK"
 4. Tunggu 1-2 menit
 5. Check balance (pastikan dapat LINK)
-

LANGKAH 3: Setup Chainlink VRF

3.1 Create VRF Subscription

1. Kunjungi: <https://vrf.chain.link/>
2. Klik "Connect Wallet" → Connect MetaMask
3. Switch network ke "Base Sepolia"
4. Klik "Create Subscription"
5. Approve transaksi di MetaMask
6. Tunggu konfirmasi (~10 detik)

3.2 Fund Subscription

1. Setelah subscription created, klik "Fund Subscription"
 2. Masukkan amount: **2 LINK** (minimum)
 3. Klik "Fund Subscription"
 4. Approve transaksi di MetaMask
 5. **Copy Subscription ID** (contoh: 1234) - SIMPAN INI!
-

LANGKAH 4: Setup Environment Variables

4.1 Create .env File

```
bash
```

Kembali ke root folder project

`cd ..`

Copy .env.example ke .env

`cp .env.example .env`

Buka .env dengan text editor

Di Windows: notepad .env

Di Mac: nano .env

4.2 Fill in .env File

Edit file `.env` dan isi dengan data Anda:

env

Paste private key yang Anda copy dari MetaMask

`PRIVATE_KEY=0x1234567890abcdef...`

Basescan API Key (optional untuk verify)

Dapatkan gratis di: <https://basescan.org/myapikey>

`BASESCAN_API_KEY=ABC123...`

VRF Subscription ID yang Anda copy tadi

`VRF_SUBSCRIPTION_ID=1234`

Frontend config (akan diisi setelah deploy contract)

`VITE_CONTRACT_ADDRESS=`

`VITE_CHAIN_ID=84532`

`VITE_WALLETCONNECT_PROJECT_ID=`

4.3 Get WalletConnect Project ID (Gratis)

1. Kunjungi: <https://cloud.walletconnect.com>
2. Sign up / Login
3. Klik "Create New Project"
4. Beri nama: "NFT Raffle"
5. Copy Project ID
6. Paste ke `.env` di field `VITE_WALLETCONNECT_PROJECT_ID`

Save file .env!

LANGKAH 5: Deploy Smart Contract

5.1 Compile Contract

```
bash

cd contracts

# Compile smart contract
npm run compile

# Output harus success, no errors
```

5.2 Deploy to Base Sepolia

```
bash

# Deploy contract
npm run deploy:base-sepolia

# Tunggu proses deploy (30-60 detik)
# Output akan menampilkan contract address
# Contoh: NFTRaffle deployed to: 0x1234567890...

# COPY CONTRACT ADDRESS - SIMPAN INI!
```

5.3 Add Consumer to VRF Subscription

SANGAT PENTING! Tanpa langkah ini, raffle tidak bisa draw winner!

1. Kembali ke: <https://vrf.chain.link/>
2. Klik subscription Anda
3. Klik "Add Consumer"
4. Paste contract address yang baru Anda deploy
5. Klik "Add Consumer"
6. Approve transaksi di MetaMask
7. Tunggu konfirmasi

 **Done!** Contract sudah ready!

LANGKAH 6: Setup & Run Frontend

6.1 Update Frontend .env

```
bash

cd ../frontend

# Edit .env file
# Di Windows: notepad .env
# Di Mac: nano .env
```

Update dengan contract address Anda:

```
env

VITE_CONTRACT_ADDRESS=0x1234567890abcdef... # paste contract address Anda
VITE_CHAIN_ID=84532
VITE_WALLETCONNECT_PROJECT_ID=your_project_id # dari step 4.3
```

6.2 Run Development Server

```
bash

# Start development server
npm run dev

# Output:
# → Local: http://localhost:3000/
# → Network: http://192.168.x.x:3000/
```

6.3 Test Aplikasi

1. Buka browser
2. Kunjungi: <http://localhost:3000>
3. Klik "Connect Wallet"
4. Approve connection di MetaMask
5. Test claim free ticket
6. Test buy tickets

 Aplikasi sudah berjalan lokal!

LANGKAH 7: Deploy to Production (Vercel)

7.1 Push Code ke GitHub

```
bash

# Initialize git (kalau belum)
git init

# Add all files
git add .

# Commit
git commit -m "Initial commit"

# Create repo di GitHub
# 1. Kunjungi: https://github.com/new
# 2. Beri nama: nft-raffle-app
# 3. Klik "Create repository"
# 4. Copy URL repo (contoh: https://github.com/yourusername/nft-raffle-app.git)

# Add remote
git remote add origin https://github.com/yourusername/nft-raffle-app.git

# Push
git push -u origin main
```

7.2 Deploy ke Vercel

1. Kunjungi: <https://vercel.com>
2. Sign up / Login dengan GitHub
3. Klik "Add New Project"
4. Import repository "nft-raffle-app"
5. Configure project:
 - Framework: Vite
 - Root Directory: `frontend`
 - Build Command: `npm run build`
 - Output Directory: `dist`
6. Add Environment Variables:
 - `VITE_CONTRACT_ADDRESS`: your_contract_address

- `VITE_CHAIN_ID`: 84532
- `VITE_WALLETCONNECT_PROJECT_ID`: your_project_id

7. Klik "Deploy"
8. Tunggu 2-3 menit

✅ Aplikasi live di internet!

URL akan seperti: `https://nft-raffle-app.vercel.app`

LANGKAH 8: Test Production App

1. Buka URL Vercel Anda
 2. Connect wallet
 3. Pastikan network Base Sepolia
 4. Test semua fitur:
 - ✅ Connect wallet
 - ✅ Claim free ticket
 - ✅ Buy tickets
 - ✅ View raffles
 - ✅ View profile
 - ✅ View leaderboard
-

LANGKAH 9: Deploy ke Base Mainnet (Production)

⚠️ Hanya lakukan ini jika Anda sudah test semuanya di testnet!

9.1 Get Base Mainnet ETH

1. Bridge ETH dari Ethereum mainnet ke Base
2. Kunjungi: <https://bridge.base.org>
3. Bridge minimal 0.1 ETH

9.2 Get LINK on Base Mainnet

1. Bridge LINK atau buy di DEX
2. Need minimal 5 LINK

9.3 Create VRF Subscription (Mainnet)

1. Kunjungi: <https://vrf.chain.link/>
2. Switch to Base Mainnet
3. Create subscription
4. Fund dengan 5 LINK

9.4 Deploy Contract (Mainnet)





```
bash  
  
cd contracts  
  
# Update .env  
# Change VITE_CHAIN_ID to 8453  
  
# Deploy  
npm run deploy:base  
  
# Copy contract address  
# Add as VRF consumer
```

9.5 Update Frontend & Redeploy

1. Update `.env` dengan contract address mainnet
2. Change `VITE_CHAIN_ID` to `8453`
3. Push to GitHub
4. Vercel akan auto-deploy

 **SELESAI!**

Aplikasi Anda sekarang:

-  Live di internet
 -  Berjalan di Base Network
 -  Terhubung dengan Chainlink VRF
 -  Ready untuk users
-

Tips Tambahan

Monetization

- 5% fee dari setiap ticket = passive income
- Estimasi: 1000 tickets/day = \$7.50 profit/day
- Monthly: ~\$225

Marketing

- Share di Twitter/X dengan hashtag #Base #NFT
- Post di Reddit r/BaseNetwork
- Join Base Discord dan promote
- Partner dengan NFT projects

Maintenance


- Monitor VRF LINK balance (top up jika < 2 LINK)
 - Check contract balance untuk withdraw fees
 - Update frontend kalau ada bug
 - Add new features
-

Troubleshooting Common Issues

"Insufficient funds" Error

 **Solution:** Get more ETH dari faucet atau bridge

"Transaction failed"

 **Solution:** Increase gas limit atau try again

"VRF fulfillment failed"

 **Solution:** Check VRF subscription has LINK

"Cannot connect wallet"

 **Solution:** Check MetaMask installed dan unlocked

"Wrong network"

 **Solution:** Switch to Base Sepolia in MetaMask

Butuh Bantuan?

Kalau stuck di step manapun:

1. Read error message carefully
2. Google the error
3. Check documentation lagi
4. Ask in Base Discord: <https://discord.gg/base>
5. Open GitHub issue

Semangat! Anda pasti bisa! 

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