

Genesis Provenance - Vercel Deployment Guide

This comprehensive guide walks you through deploying Genesis Provenance to Vercel with all necessary configurations for production use.

Prerequisites

✓ What You Need:

- Vercel account ([sign up here](https://vercel.com/signup) (<https://vercel.com/signup>))
 - GitHub account (or GitLab/Bitbucket)
 - GoDaddy domain (genesisprovenance.com)
 - PostgreSQL database (Vercel Postgres, Neon, or Supabase)
 - AWS S3 bucket (for file storage)
 - Microsoft 365 email account
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Part 1: Database Setup

Option A: Vercel Postgres (Recommended for Simplicity)

1. **Navigate to Vercel Dashboard** → Your Project → Storage
2. **Create Postgres Database:**
 - Click "Create Database"
 - Select "Postgres"
 - Choose region closest to your users
 - Name: `genesis-provenance-db`
3. **Get Connection String:**
 - Copy the `DATABASE_URL` connection string
 - Format: `postgres://user:password@host:5432/database`

Option B: External PostgreSQL (Neon, Supabase, Railway)

Neon (Recommended for Scalability):

1. Go to neon.tech (<https://neon.tech>)
2. Create new project: `genesis-provenance`
3. Get connection string from dashboard
4. Copy `DATABASE_URL`

Supabase:

1. Create project at supabase.com (<https://supabase.com>)
 2. Go to Settings → Database → Connection string
 3. Use "Transaction" connection mode for Prisma
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Part 2: AWS S3 Storage Setup

1. Create S3 Bucket

```
# Using AWS Console
1. Go to AWS S3 Console
2. Click "Create bucket"
3. Bucket name: genesis-provenance-assets
4. Region: us-east-1 (or your preferred region)
5. Block all public access: OFF (we'll use signed URLs)
6. Enable versioning: ON
7. Enable encryption: AES-256
```

2. Create IAM User for S3 Access

```
# AWS Console → IAM → Users → Add User
1. User name: genesis-provenance-s3-user
2. Access type: Programmatic access
3. Attach policy: AmazonS3FullAccess (or create custom policy below)
4. Download CSV with ACCESS_KEY_ID and SECRET_ACCESS_KEY
```

Custom S3 Policy (More Secure):

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "s3:PutObject",
        "s3:GetObject",
        "s3:DeleteObject",
        "s3:ListBucket"
      ],
      "Resource": [
        "arn:aws:s3:::genesis-provenance-assets",
        "arn:aws:s3:::genesis-provenance-assets/*"
      ]
    }
  ]
}
```

3. Configure S3 CORS

```
[
  {
    "AllowedHeaders": ["*"],
    "AllowedMethods": ["GET", "PUT", "POST", "DELETE"],
    "AllowedOrigins": [
      "https://genesisprovenance.com",
      "https://www.genesisprovenance.com",
      "https://app.genesisprovenance.com"
    ],
    "ExposeHeaders": ["ETag"],
    "MaxAgeSeconds": 3000
  }
]
```

Part 3: Vercel Project Setup

1. Push Code to GitHub

```
# In your project directory
cd /home/ubuntu/genesis_provenance/nextjs_space

# Initialize git (if not already done)
git init
git add .
git commit -m "Initial commit - Genesis Provenance Phase 1+2"

# Create GitHub repo (via GitHub website or CLI)
# Then push:
git remote add origin https://github.com/your-username/genesis-provenance.git
git branch -M main
git push -u origin main
```

2. Import Project to Vercel

1. Go to vercel.com/new (<https://vercel.com/new>)
2. **Import Git Repository:**
 - Select your GitHub repository
 - Click "Import"
3. **Configure Project:**
 - Project Name: `genesis-provenance`
 - Framework Preset: Next.js (auto-detected)
 - Root Directory: `./` (if code is in root) or `./nextjs_space`
 - Build Command: `yarn build` (default)
 - Output Directory: `.next` (default)
4. **Add Environment Variables** (see Part 4 below)
5. **Deploy:**
 - Click "Deploy"
 - Wait 2-3 minutes for initial deployment

Part 4: Environment Variables

Required Environment Variables for Vercel

Go to: Vercel Dashboard → Your Project → Settings → Environment Variables

Database

```
DATABASE_URL="postgresql://user:password@host:5432/database?sslmode=require"
```

Authentication (NextAuth.js)

```
NEXTAUTH_URL="https://app.genesisprovenance.com"  
NEXTAUTH_SECRET="<generate-with: openssl rand -base64 32>"
```

AWS S3 Storage

```
AWS_ACCESS_KEY_ID="<your-aws-access-key>"  
AWS_SECRET_ACCESS_KEY="<your-aws-secret-key>"  
AWS_REGION="us-east-1"  
AWS_BUCKET_NAME="genesis-provenance-assets"  
AWS_FOLDER_PREFIX="uploads/" # Optional
```

Node Environment

```
NODE_ENV="production"
```

Future: Stripe (Phase 4)

```
STRIPE_SECRET_KEY="sk_live..."  
STRIPE_PUBLISHABLE_KEY="pk_live..."  
STRIPE_WEBHOOK_SECRET="whsec..."
```

Future: AI Service (Phase 3)

```
AI_SERVICE_API_KEY="<your-api-key>"  
AI_SERVICE_ENDPOINT="https://api.openai.com/v1" # or your provider
```

Future: n8n Webhooks (Phase 3)

```
N8N_WEBHOOK_URL="https://your-n8n-instance.com/webhook/"  
N8N_API_KEY="<your-n8n-api-key>"
```

Part 5: Domain Configuration

A. Configure Custom Domains in Vercel

1. **Go to:** Vercel Dashboard → Your Project → Settings → Domains

2. Add Domains:

- `genesisprovenance.com` (root)
- `www.genesisprovenance.com` (www)
- `app.genesisprovenance.com` (application)

3. Vercel will provide DNS records for each domain

B. Update GoDaddy DNS Records

Login to GoDaddy:

1. Go to: <https://dcc.godaddy.com/manage/genesisprovenance.com/dns>
2. Click "Manage" → "DNS"

Add/Update DNS Records:

Root Domain (`genesisprovenance.com`)

Type: A
 Name: `@`
 Value: `76.76.21.21` (Vercel's IP - check Vercel **for** current IP)
 TTL: 600 seconds

WWW Subdomain (`www.genesisprovenance.com`)

Type: CNAME
 Name: `www`
 Value: `cname.vercel-dns.com`
 TTL: 600 seconds

App Subdomain (`app.genesisprovenance.com`)

Type: CNAME
 Name: `app`
 Value: `cname.vercel-dns.com`
 TTL: 600 seconds

API Subdomain (`api.genesisprovenance.com`) - Future Use

Type: CNAME
 Name: `api`
 Value: `cname.vercel-dns.com`
 TTL: 600 seconds

Note: Vercel-specific values may differ. Always use the exact records shown in your Vercel dashboard.

Part 6: SSL/TLS Certificates

✓ **Automatic:** Vercel automatically provisions and renews SSL certificates for all domains.

Verify SSL:

1. Wait 10-15 minutes after DNS propagation

2. Visit: <https://genesisprovenance.com>
3. Check for padlock icon in browser

Part 7: Database Migrations on Vercel

After first deployment:

Option A: Via Vercel CLI (Recommended)

```
# Install Vercel CLI
npm i -g vercel

# Login
vercel login

# Link to your project
vercel link

# Run migrations
vercel env pull .env.local
npx prisma migrate deploy
npx prisma generate

# Seed database (if needed)
npx prisma db seed
```

Option B: Via GitHub Actions (Automated)

Create `.github/workflows/deploy.yml`:

```

name: Deploy with Migrations

on:
  push:
    branches: [main]

jobs:
  deploy:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v3
      - uses: actions/setup-node@v3
        with:
          node-version: '18'

      - name: Install dependencies
        run: yarn install

      - name: Run Prisma migrations
        run: npx prisma migrate deploy
        env:
          DATABASE_URL: ${ secrets.DATABASE_URL }

      - name: Deploy to Vercel
        uses: amondnet/vercel-action@v25
        with:
          vercel-token: ${ secrets.VERCEL_TOKEN }
          vercel-org-id: ${ secrets.VERCEL_ORG_ID }
          vercel-project-id: ${ secrets.VERCEL_PROJECT_ID }

```

Part 8: Post-Deployment Checklist

1. Test All Functionality

- [] Visit <https://genesisprovenance.com> (marketing site)
- [] Test signup: <https://app.genesisprovenance.com/auth/signup>
- [] Test login with admin: john@doe.com / johndoe123
- [] Navigate through dashboard
- [] Submit contact form
- [] Check admin console

2. Verify Database Connection

```

# Check database via Vercel CLI
vercel env pull .env.local
npx prisma studio

```

3. Monitor Logs

- Go to: Vercel Dashboard → Your Project → Logs
- Check for errors during first few hours

4. Set Up Monitoring

Vercel Analytics:

1. Go to: Vercel Dashboard → Your Project → Analytics
2. Enable: Web Analytics
3. Enable: Speed Insights

Sentry (Optional for Error Tracking):

```
yarn add @sentry/nextjs  
npx @sentry/wizard -i nextjs
```

Part 9: Microsoft 365 Email Setup

For sending emails from your domain:

DNS Records for Microsoft 365

Add these in GoDaddy DNS:

MX Records:

```
Type: MX  
Name: @  
Value: genesisprovenance-com.mail.protection.outlook.com  
Priority: 0  
TTL: 3600
```

SPF Record:

```
Type: TXT  
Name: @  
Value: v=spf1 include:spf.protection.outlook.com -all  
TTL: 3600
```

DKIM Records (Get from Microsoft 365 Admin):

```
Type: CNAME  
Name: selector1._domainkey  
Value: selector1-genesisprovenance-com._domainkey.genesisprovenance.onmicrosoft.com  
TTL: 3600  
  
Type: CNAME  
Name: selector2._domainkey  
Value: selector2-genesisprovenance-com._domainkey.genesisprovenance.onmicrosoft.com  
TTL: 3600
```

DMARC Record:

```
Type: TXT
Name: _dmarc
Value: v=DMARC1; p=quarantine; rua=mailto:dmarc@genesisprovenance.com
TTL: 3600
```

Get Exact Values:

1. Go to: [Microsoft 365 Admin Center](https://admin.microsoft.com) (https://admin.microsoft.com)
2. Navigate to: Settings → Domains → genesisprovenance.com
3. Copy exact DNS records provided

Part 10: Continuous Deployment

✓ **Automatic:** Vercel automatically deploys when you push to `main` branch.

Workflow:

```
# Make changes locally
git add .
git commit -m "Add feature X"
git push origin main

# Vercel automatically:
# 1. Detects push
# 2. Runs build
# 3. Deploys to production
# 4. Updates DNS
```

Preview Deployments:

- Every branch/PR gets a unique preview URL
- Test before merging to main

Part 11: Troubleshooting

Common Issues:

1. Database Connection Errors

```
Error: P1001: Can't reach database server
```

Solution:

- Check `DATABASE_URL` is correct
- Verify database allows connections from `0.0.0.0/0` (Vercel)
- Add `?sslmode=require` to connection string

2. NextAuth Session Errors

```
Error: [next-auth][error][JWT_SESSION_ERROR]
```

Solution:

- Generate new NEXTAUTH_SECRET : `openssl rand -base64 32`
- Verify NEXTAUTH_URL matches actual domain
- Clear browser cookies

3. S3 Upload Failures

Error: Access Denied

Solution:

- Verify AWS credentials are correct
- Check S3 bucket policy allows uploads
- Verify CORS configuration

4. Build Failures

Error: Module not found

Solution:

- Run `yarn install` locally
- Check `package.json` dependencies
- Clear Vercel build cache: Settings → General → Clear Cache

Part 12: Performance Optimization

1. Enable Vercel Speed Insights

```
yarn add @vercel/speed-insights
```

In `app/layout.tsx` :

```
import { SpeedInsights } from '@vercel/speed-insights/next';

export default function RootLayout({ children }: { children: React.ReactNode }) {
  return (
    <html>
      <body>
        {children}
        <SpeedInsights />
      </body>
    </html>
  );
}
```

2. Configure Next.js for Production

`next.config.js` :

```
module.exports = {
  images: {
    domains: ['genesis-provenance-assets.s3.amazonaws.com'],
    formats: ['image/avif', 'image/webp'],
  },
  compress: true,
  poweredByHeader: false,
};
```

Part 13: Security Best Practices

1. Environment Variables

- ☒ Never commit `.env` files
- ☒ Use Vercel dashboard for secrets
- ☒ Rotate keys every 90 days

2. API Routes

- ☒ Implement rate limiting
- ☒ Validate all inputs
- ☒ Use HTTPS only

3. Database

- ☒ Use connection pooling
- ☒ Enable SSL mode
- ☒ Regular backups

Part 14: Maintenance & Updates

Weekly:

- ☐ Check Vercel logs for errors
- ☐ Review analytics
- ☐ Monitor S3 usage/costs

Monthly:

- ☐ Review and rotate API keys
- ☐ Database performance check
- ☐ Security updates (`yarn upgrade-interactive`)

Quarterly:

- ☐ Full security audit
 - ☐ Cost optimization review
 - ☐ User feedback review
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Support Resources

- **Vercel Docs:** <https://vercel.com/docs>
 - **Next.js Docs:** <https://nextjs.org/docs>
 - **Prisma Docs:** <https://www.prisma.io/docs>
 - **AWS S3 Docs:** <https://docs.aws.amazon.com/s3/>
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Deployment Complete!

Your Genesis Provenance application is now live at:

- <https://genesisprovenance.com>
- <https://www.genesisprovenance.com>
- <https://app.genesisprovenance.com>

Next Steps:

- Continue with Phase 2 features (asset onboarding, file uploads)
 - Set up n8n workflows for AI integration
 - Configure Stripe for subscriptions
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