# 🚀 CYPHER S3 Deployment Instructions

## ✅ **Deployment Package Created Successfully!**

Your CYPHER application has been packaged and uploaded to S3. Here’s how to deploy it:

## 📦 **What’s Been Created:**

* ✅ **Deployment Package**: cypher-deployment.zip (7.8 MB)
* ✅ **S3 Bucket**: cypher-deployment
* ✅ **Uploaded Files**:
  + s3://cypher-deployment/cypher-deployment-latest.zip
  + s3://cypher-deployment/ec2-deploy-from-s3.sh

## 🖥️ **Deploy to EC2 Instance**

### **Option 1: One-Line Deployment (Recommended)**

SSH into your EC2 instance and run this single command:

curl -s https://cypher-deployment.s3.amazonaws.com/ec2-deploy-from-s3.sh | bash

### **Option 2: Manual Download and Execute**

# SSH into your EC2 instance  
ssh -i jaharrison-keypair.pem ec2-user@18.207.177.239  
  
# Download and run deployment script  
wget https://cypher-deployment.s3.amazonaws.com/ec2-deploy-from-s3.sh  
chmod +x ec2-deploy-from-s3.sh  
./ec2-deploy-from-s3.sh

### **Option 3: Using AWS CLI**

# SSH into your EC2 instance  
ssh -i jaharrison-keypair.pem ec2-user@18.207.177.239  
  
# Download using AWS CLI  
aws s3 cp s3://cypher-deployment/ec2-deploy-from-s3.sh ./  
chmod +x ec2-deploy-from-s3.sh  
./ec2-deploy-from-s3.sh

## 🔧 **Prerequisites**

Make sure your EC2 instance has:

1. **AWS CLI configured** or **IAM role with S3 access**
2. **Node.js 18+** installed
3. **Nginx** installed
4. **Basic development tools** (git, curl, unzip)

## 🎯 **What the Deployment Does:**

1. ⬇️ Downloads the latest deployment package from S3
2. 📦 Extracts the application files
3. 🔧 Installs API dependencies (npm ci --production)
4. 🏗️ Builds the client application (npm run build)
5. ⚙️ Configures environment variables
6. 🚀 Starts the application with PM2
7. 🌐 Configures Nginx reverse proxy
8. 🏥 Performs health checks

## 📊 **After Deployment:**

### **Check Application Status:**

# Health check  
curl http://localhost:3001/health  
  
# PM2 status  
pm2 status  
  
# View logs  
pm2 logs cypher-api

### **Access Your Application:**

* **Health Check**: http://18.207.177.239/health
* **API**: http://18.207.177.239/api/v1/
* **Frontend**: http://18.207.177.239/

## 🔄 **Future Deployments:**

To deploy updates:

1. **Update your code locally**
2. **Run the deployment package script again**:

* # Recreate deployment package  
  .\create-deployment-package.ps1  
    
  # Upload to S3  
  aws s3 cp cypher-deployment.zip s3://cypher-deployment/cypher-deployment-latest.zip

1. **Deploy on EC2**:

* curl -s https://cypher-deployment.s3.amazonaws.com/ec2-deploy-from-s3.sh | bash

## 🐛 **Troubleshooting:**

### **If deployment fails:**

# Check AWS credentials  
aws sts get-caller-identity  
  
# Check S3 access  
aws s3 ls s3://cypher-deployment/  
  
# Check logs  
sudo journalctl -u nginx -f  
pm2 logs cypher-api

### **Common Issues:**

* **AWS credentials not configured**: Run aws configure
* **S3 access denied**: Check IAM permissions
* **Port conflicts**: Check if ports 3001/80 are available
* **Node.js not installed**: Install Node.js 18+

## 🎉 **Ready to Deploy!**

Your deployment package is ready! Run the one-liner command on your EC2 instance to get your application up and running.

**Need help?** Check the troubleshooting section or review the deployment logs.