ShiftOrganizer - AWS Console Setup Guide

Overview

This guide will walk you through setting up all AWS services using the AWS Management Console (web interface).

Step 1: Sign in to AWS Console

1. Go to https://console.aws.amazon.com/
2. Sign in with your AWS account
3. Select your region - I choose eu-north-1

Step 2: Create S3 Bucket for Frontend

Navigate to S3

1. In the search bar at the top, type **"S3"**
2. Click on **S3** service

Create Bucket

1. Click **"Create bucket"** button (orange)
2. **Bucket name**: shiftorganizer-web-omer
3. **AWS Region**: Keep your selected region
4. **Object Ownership**: Keep default (ACLs disabled)
5. **Block Public Access settings**:
    - **UNCHECK** "Block all public access"
    - Check the acknowledgment box
6. Keep other settings as default
7. Click **"Create bucket"**

Enable Static Website Hosting

1. Click on your newly created bucket
2. Go to **"Properties"** tab
3. Scroll down to **"Static website hosting"**
4. Click **"Edit"**
5. **Static website hosting**: Enable

6. **Hosting type**: Host a static website
7. **Index document**: login.html
8. Click **"Save changes"**
9. Note down the **Bucket website endpoint** URL

Add Bucket Policy for Public Access

1. Go to **"Permissions"** tab
2. In **"Bucket policy"** section, click **"Edit"**
3. Paste this policy (replace YOUR-BUCKET-NAME with your actual bucket name):

```
json
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadGetObject",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3::: shiftorganizer-web-omer/*"
    }
  ]
}
```

4. Click **"Save changes"**

Step 3: Create DynamoDB Tables

Navigate to DynamoDB

1. Search for **"DynamoDB"** in the top search bar
2. Click on **DynamoDB** service

Create Users Table

1. Click **"Create table"**
2. **Table name**: ShiftOrganizer-Users
3. **Partition key**: userId (String)
4. **Table settings**: Default settings
5. Click **"Create table"**

Create Shifts Table

1. Click **"Create table"**
2. **Table name**: ShiftOrganizer-Shifts
3. **Partition key**: shiftId (String)
4. Click **"Create table"**
5. After table is created, go to **"Indexes"** tab
6. Click **"Create index"**
    - **Partition key**: employeeId (String)
    - **Sort key**: date (String)
    - **Index name**: employeeId-date-index
    - Click **"Create index"**

Create Notifications Table

1. Click **"Create table"**
2. **Table name**: ShiftOrganizer-Notifications
3. **Partition key**: notificationId (String)
4. Click **"Create table"**

Step 4: Set up Amazon Cognito

Navigate to Cognito

1. Search for **"Cognito"** in the search bar
2. Click on **Amazon Cognito**

Create User Pool

1. Click **"Create user pool"**

Step 1 - Configure sign-in experience

1. **Cognito user pool sign-in options**: Check **"Email"**
2. **User name requirements**: Leave unchecked
3. Click **"Next"**

Step 2 - Configure security requirements

1. **Password policy**:
    - Minimum length: 8
    - Check all character requirements
2. **Multi-factor authentication**: No MFA
3. **User account recovery**: Enable self-service (Email only)
4. Click **"Next"**

Step 3 - Configure sign-up experience

1. **Self-registration**: Enable
2. **Attribute verification**: Verify email addresses
3. **Required attributes**:
    - email (should be pre-selected)
    - name
    - phone_number
4. Click **"Next"**

Step 4 - Configure message delivery

1. **Email provider**: Cognito default
2. **FROM email address**: Leave default
3. Click **"Next"**

Step 5 - Integrate your app

1. **User pool name**: ShiftOrganizer-UserPool
2. **App type**: Public client
3. **App client name**: ShiftOrganizer-WebClient
4. **Client secret**: Don't generate
5. Click **"Next"**

Step 6 - Review and create

1. Review settings
2. Click **"Create user pool"**
3. **SAVE THESE VALUES**:
    - User pool ID (like: us-east-1_xxxxxxxxx)
    - Client ID (in App integration tab)

Create User Groups

1. In your User Pool, go to **"Groups"** tab
2. Click **"Create group"**
    - **Group name**: Managers
    - **Description**: Managers who can create shifts
    - Click **"Create group"**
3. Create another group:
    - **Group name**: Employees
    - **Description**: Employees who view shifts

Create Manager for controlling the system for the first time

1. In your User Pool, go to **"Users"** tab and press on "**Create user**"
2. After creating user go to "**Groups**" and press on "**Managers**"
3. Add the user you created to the managers group

Allowed callback URLs

1. In your User Pool, go to **"App Clients"** and choose the App client
2. Go to "**Login pages**" and then press "**Edit**"
3. In the URL put "https://shiftorganizer-web-omer.s3.amazonaws.com/post-login.html"
4. Press "Save changes"

Step 5: Create IAM Role for Lambda

Navigate to IAM

1. Search for **"IAM"**
2. Click on **IAM** service

Create Lambda Execution Role

1. Click **"Roles"** in the left sidebar
2. Click **"Create role"**
3. **Trusted entity type**: AWS service
4. **Use case**: Lambda
5. Click **"Next"**
6. Search and select these policies:
    - AWSLambdaBasicExecutionRole
7. Click **"Next"**
8. **Role name**: ShiftOrganizer-Lambda-Role
9. Click **"Create role"**

Add Custom Permissions to Role

1. Click on the role you just created
2. Click **"Add permissions"** → **"Create inline policy"**
3. Click **"JSON"** tab and paste:

```
json
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "dynamodb:PutItem",
        "dynamodb:GetItem",
```

```
        "dynamodb:UpdateItem",
        "dynamodb:DeleteItem",
        "dynamodb:Query",
        "dynamodb:*",
        "dynamodb:Scan"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "cognito-idp:AdminRemoveUserFromGroup",
        "cognito-idp:AdminUpdateUserAttributes",
        "cognito-idp:AdminListGroupsForUser",
        "cognito-idp:AdminCreateUser",
         "cognito-idp:AdminDeleteUser",
         "cognito-idp:AdminGetUser",
         "cognito-idp:AdminAddUserToGroup"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "sns:Publish",
        "ses:SendEmail"
      ],
      "Resource": "*"
```

```
    }
  ]
}
```

4. Click **"Review policy"**
5. **Name**: ShiftOrganizer-Lambda-Permissions
6. Click **"Create policy"**

Step 6: Create Lambda Functions

Navigate to Lambda

1. Search for **"Lambda"**
2. Click on **Lambda** service

Create Your First Function (Create Shift)

1. Click **"Create function"**
2. **Function name**: ShiftOrganizer-CreateShift
3. **Runtime**: Node.js 18.x
4. **Architecture**: x86_64
5. **Execution role**: Use an existing role
6. **Existing role**: Select ShiftOrganizer-Lambda-Role
7. Click **"Create function"**

Configure the Function

1. In the **Code** tab
2. Click "Upload from" and then select ".zip file"
3. Click **"Deploy"** to save
4. Go to **Configuration** tab:
    - **General configuration** → Edit
    - Timeout: 30 seconds
    - Memory: 256 MB
    - Save

Create Other Lambda Functions

Repeat the above process for all the others functions

Step 7: Set up API Gateway

Navigate to API Gateway

1. Search for **"API Gateway"**
2. Click on **API Gateway** service

Create REST API

1. Click **"Create API"**
2. Choose **"REST API"** (not private)
3. Click **"Build"**
4. **API name**: ShiftOrganizer-API
5. **Description**: API for ShiftOrganizer
6. **Endpoint Type**: Regional
7. Click **"Create API"**

Create Resources

1. Click **"Resources"** → **"API actions"** → **"Import API"**
    - Select "ShiftOrganizer-API-prod-swagger-apigateway" (File that I uploaded with the project)

Add Cognito Authorizer

1. Click **"Authorizers"** in left sidebar
2. Click **"Create New Authorizer"**
3. **Name**: ShiftOrganizer-Authorizer
4. **Type**: Cognito
5. **Cognito User Pool**: Select your pool
6. **Token Source**: Authorization
7. Click **"Create"**

Deploy API

1. Click **"Actions"** → **"Deploy API"**
2. **Deployment stage**: [New Stage]

3. **Stage name**: prod
4. Click **"Deploy"**
5. **SAVE the Invoke URL**

Step 8: Set up EventBridge for Scheduled Tasks

Navigate to EventBridge

1. Search for **"EventBridge"**
2. Click on **Amazon EventBridge**

Create Schedule for Daily Notifications

1. Click **"Rules"** in left sidebar
2. Click **"Create rule"**
3. **Name**: ShiftOrganizer-DailyReminder
4. **Rule type**: Schedule
5. Click **"Continue to create rule"**
6. **Schedule pattern**: A schedule that runs at a regular rate
7. **Rate expression**: rate(1 day)
8. **Target**: Lambda function
9. **Function**: ShiftOrganizer-NotificationHandler
10. Click **"Create rule"**

Step 9: Set up SNS for SMS Notifications

Navigate to SNS

1. Search for **"SNS"**
2. Click on **Simple Notification Service**

Create Topic (Optional - for email)

1. Click **"Topics"** → **"Create topic"**
2. **Type**: Standard
3. **Name**: ShiftOrganizer-Notifications
4. Click **"Create topic"**

For SMS, you'll publish directly without a topic in your Lambda function.

Step 10: Configure SES for Email

Navigate to SES

1. Search for **"SES"**
2. Click on **Amazon Simple Email Service**

Verify Email Addresses

1. Click **"Verified identities"**
2. Click **"Create identity"**
3. Select **"Email address"**
4. Enter your email
5. Click **"Create identity"**
6. Check email and click verification link