

```
ai-interaction-service:
  path: src/services/ai-interaction-service
appointment-service:
  path: src/services/appointment-service
doctor-service:
  path: src/services/doctor-service
patient-service:
  path: src/services/patient-service
[ec2-user@ip-172-31-244-219 health-hub-backend]$ tree -L 3 src/
src/
└── services
    ├── ai-interaction-service
    │   ├── package.json
    │   ├── serverless.yml
    │   └── src
    │       ├── tsconfig.json
    │       └── webpack.config.js
    ├── appointment-service
    │   ├── package.json
    │   ├── serverless.yml
    │   └── src
    │       ├── tsconfig.json
    │       └── webpack.config.js
    ├── doctor-service
    │   ├── package.json
    │   ├── serverless.yml
    │   └── src
    │       ├── tsconfig.json
    │       └── webpack.config.js
    ├── patient-service
    │   ├── package.json
    │   ├── serverless.yml
    │   └── src
    │       ├── tsconfig.json
    │       └── webpack.config.js
    └── user-service
        ├── package.json
        ├── serverless.yml
        └── src
            ├── tsconfig.json
            └── webpack.config.js

11 directories, 20 files
[ec2-user@ip-172-31-244-219 health-hub-backend]$ npm install
```

i_06227dd0341220150 (tch-hb-wc)

```
1 directories, 20 files
[ec2-user@ip-172-31-244-219 health-hub-backend]$ npm install
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and test
ive and powerful.
npm warn deprecated lodash.get@4.4.2: This package is deprecated. Use the optional chaining (...) operator instead.
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated querystring@0.2.1: The querystring API is considered Legacy. new code should use the URLSearchParams API instead.
npm warn deprecated querystring@0.2.0: The querystring API is considered Legacy. new code should use the URLSearchParams API instead.
npm warn deprecated uuid@3.4.0: Please upgrade to version 7 or higher. Older versions may use Math.random() in certain circumstances, which is k
nown to be non-deterministic
npm warn deprecated node-domexception@1.0.0: Use your platform's native DOMException instead
npm warn deprecated superagent@7.1.6: Please upgrade to superagent v10.2.2+, see release notes at https://github.com/forwaredmail/superagent/releas
e-11.net

added 1025 packages, and audited 1026 packages in 56s

96 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

npm notice New minor version of npm available! 11.6.2 => 11.7.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.7.0
npm notice To update run: npm install -g npm@11.7.0
npm notice

[ec2-user@ip-172-31-244-219 health-hub-backend]$
```

```
[ec2-user@ip-172-31-244-219 health-hub-backend]$ npm run deploy

> hh-backend@1.0.0 deploy
> serverless deploy --stage dev --max-concurrency 1

Deploying to stage dev

  user-service > deploying > 26s
  ai-interaction-service > waiting
  appointment-service > waiting
  doctor-service > waiting
  patient-service > waiting

Press [?] to enable verbose logs
```

i-06227dde341889150 (tcb-hh-ws)

Public IPs: 3.239.164.134 Private IPs: 172.31.244.219

```
[ec2-user@ip-172-31-244-219 health-hub-backend]$ npm run deploy

> hh-backend@1.0.0 deploy
> serverless deploy --stage dev --max-concurrency 1

Deploying to stage dev

✓ user-service > deployed > 101s
✓ ai-interaction-service > deployed > 99s
✓ appointment-service > deployed > 105s
✓ doctor-service > deployed > 98s
✓ patient-service > deployed > 99s
[ec2-user@ip-172-31-244-219 health-hub-backend]$
```

i-06227dde341889150 (tcb-hh-ws)

Public IPs: 3.239.164.134 Private IPs: 172.31.244.219

The screenshot shows the AWS CloudFormation console interface. On the left, there's a navigation sidebar with options like CloudFormation, Stacks, Infrastructure Composer, and Registry. The main area is titled "Stacks (5)" and displays a table of five stacks. Each stack row includes a checkbox, the stack name, status (all are "UPDATE_COMPLETE"), creation time, and a brief description. The filters at the top right are set to "Active".

Stack name	Status	Created time	Description
hh-patient-dev	UPDATE_COMPLETE	2025-12-24 10:26:03 UTC-03:30	The AWS CloudFormation template for this Serverless application
hh-doctor-dev	UPDATE_COMPLETE	2025-12-24 10:24:24 UTC-03:30	The AWS CloudFormation template for this Serverless application
hh-appointment-dev	UPDATE_COMPLETE	2025-12-24 10:22:40 UTC-03:30	The AWS CloudFormation template for this Serverless application
hh-ai-interaction-dev	UPDATE_COMPLETE	2025-12-24 10:21:00 UTC-03:30	The AWS CloudFormation template for this Serverless application
hh-user-dev	UPDATE_COMPLETE	2025-12-24 10:19:11 UTC-03:30	The AWS CloudFormation template for this Serverless application

The screenshot shows the AWS Lambda console interface. On the left, there's a navigation sidebar with options like Lambda, Dashboard, Applications, Functions, Additional resources, and Related AWS resources. The main area is titled "Functions (27)" and displays a table of functions. Each function row includes a checkbox, the function name, description (most are blank), package type (Zip), runtime (Node.js 18.x), type (Standard), and last modified time (all are "24 minutes ago"). A search bar at the top allows filtering by attributes or keyword.

Function name	Description	Package type	Runtime	Type	Last modified
hh-ai-interaction-dev-virtualAssistant	-	Zip	Node.js 18.x	Standard	24 minutes ago
hh-ai-interaction-dev-listInteractions	-	Zip	Node.js 18.x	Standard	24 minutes ago
hh-ai-interaction-dev-textToSpeech	-	Zip	Node.js 18.x	Standard	24 minutes ago
hh-ai-interaction-dev-createInteraction	-	Zip	Node.js 18.x	Standard	24 minutes ago
hh-ai-interaction-dev-getInteraction	-	Zip	Node.js 18.x	Standard	24 minutes ago

Screenshot of the AWS API Gateway console showing the configuration of an API named "dev-hh-user".

API details:

- API ID:** nwaqdtv6k
- Protocol:** HTTP
- Description:** No Description
- IP address type:** IPv4
- Created:** 2025-12-24
- Default endpoint:** Enabled
- ARN:** arn:aws:apigateway:us-east-1::apis/nwaqdtv6k
- https://nwaqdtv6k.execute-api.us-east-1.amazonaws.com**

Stages for dev-hh-user (1):

Stage name	Invoke URL	Attached deployment	Auto deploy	Last updated
default	https://nwaqdtv6k.execute-api.us-east-1.amazonaws.com	bw4l4s	enabled	2025-12-24

Screenshot of a web browser showing a "Sign in to your account" page.

Sign in to your account

Email:

Password:

Sign in

Need an account? [Register](#)

Screenshot of a web application titled "HealthHub".

AI Speech Converter

Logged in as: doctor

Dashboard

AI Speech

Select Language: English (US)

Text to Convert: Patient is allergic to penicillin. Avoid prescribing any medications containing penicillin derivatives

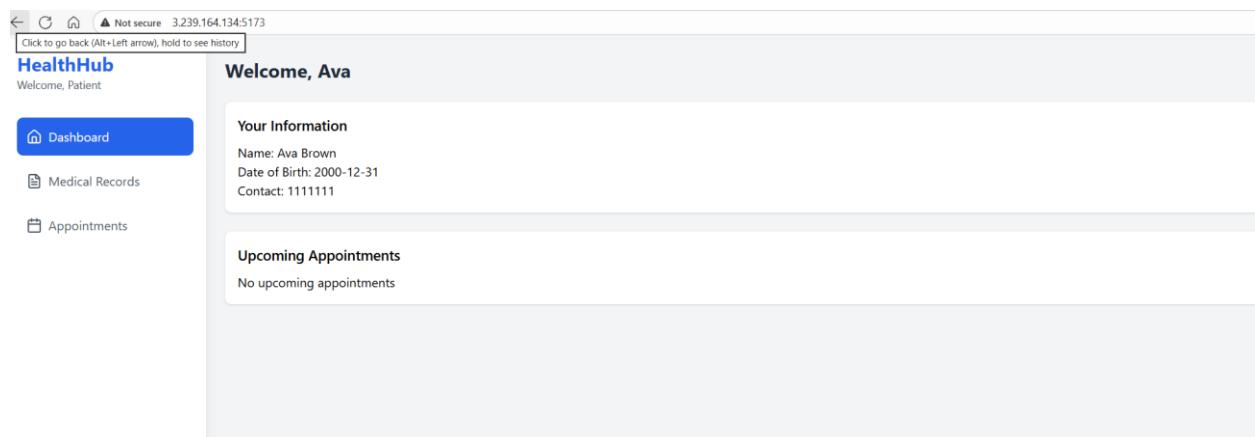
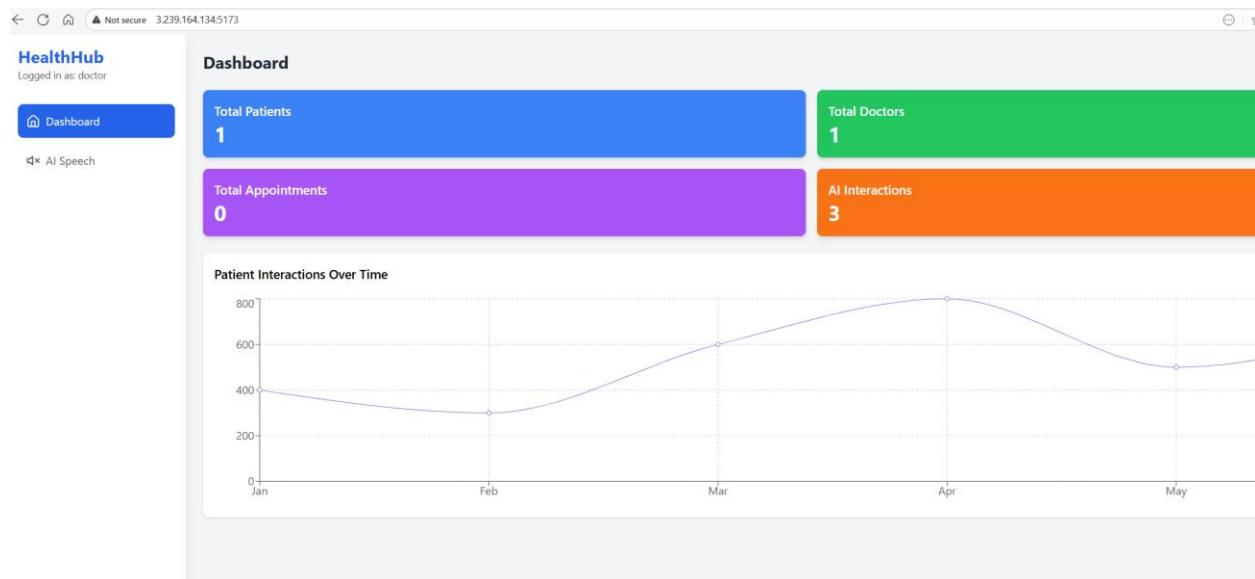
0:00 / 0:06

Convert to Speech

3.239.164.134:5173 says
Speech conversion saved successfully to patient record!

OK

Saving...



Not secure 3.239.164.134:5173

HealthHub

Welcome, Patient

Dashboard

Medical Records

Appointments

Medical Records

AI Speech Interactions

Date: 2025-12-24, 11:58:30 a.m.

Original Text:

Patient is allergic to penicillin. Avoid prescribing any medications containing penicillin derivatives

▶ 0:00 / 0:06

Date: 2025-12-24, 11:59:43 a.m.

Original Text:

Administer pain relief every 6 hours. Keep the wound area clean and dry. Schedule follow-up for stitch removal in 7 days

▶ 0:00 / 0:08

Date: 2025-12-24, 12:00:49 p.m.

Original Text:

Prescrever 10mg de Atorvastatina uma vez ao dia, antes de dormir, para controle dos níveis de colesterol

▶ 0:00 / 0:07

Not secure 3.239.164.134:5173

HealthHub

Welcome, Patient

Dashboard

Medical Records

Appointments

Appointments

No appointments scheduled

Create New Appointment

Doctor

Dr. David Lee

Date and Time

2026-01-14 03:10 PM

Notes

Medical treatment follow up

Cancel Create

Not secure 3.239.164.134:5173

HealthHub

Welcome, Patient

Dashboard

Medical Records

Appointments

Appointments

Date: 2026-01-14, 3:10:00 p.m.
Doctor: Dr. David
Status: scheduled
Notes: Medical treatment follow up