

Challenges encountered & solutions

1. Self-hosted runner setup stuck

- **Issue:** Runner was stuck “Listening for Jobs” after update, and couldn’t return to terminal.
- **How I fixed it:** Used `sudo ./svc.sh start` to run the runner as a system service. This freed the terminal while keeping the runner active.

2. Git / repository issues

- **Issue:** Tried to add and push files in the wrong folder (actions-runner) and confusion about GitHub credentials.
- **How I fixed it:**
 - Navigated to the correct project folder (nodejs-ci-cd-app) before running `git add` and `git push`.
 - Used **GitHub Personal Access Token** for authentication instead of account password.

3. Invalid package.json

- **Issue:** npm test failed with `EJSONPARSE` due to invalid JSON syntax.
- **How I fixed it:** Rewrote `package.json` with valid JSON, ensured proper braces, double quotes, no trailing commas, and included necessary dependencies and scripts.

4. Test module errors

- **Issue 1:** Cannot find module `'../app'` → test file had wrong path.
- **Issue 2:** Cannot find module `'chai'` → missing dependencies.

- **How I fixed it:**
 - Updated test file paths to correctly point to ../src/server.js.
 - Removed unnecessary server.test.js that required Chai.
 - Installed missing packages if needed: `npm install --save-dev chai chai-http`.

5. Server not running

- **Issue:** `curl http://localhost:3000` failed; `node index.js` failed because `index.js` didn't exist.
- **How I fixed it:**
 - Created `src/server.js` with Express app and export for tests.
 - Started the server manually using `node src/server.js` or in the background using PM2.

6. PM2 permission error

- **Issue:** `npm install -g pm2` gave `EACCES: permission denied`.
- **How I fixed it:**
 - Installed globally with `sudo npm install -g pm2`.
 - Alternatively, installed locally with `npm install pm2 --save-dev` and ran with `npx pm2`.

7. Workflow verification

- **Issue:** GitHub Actions test job was passing but deploy job wasn't visible.
- **How I fixed it:** Planned to create a `.github/workflows/ci-cd.yml` that:
 - Has deploy job dependent on test (needs: test)

- Deploys the Node.js app to PM2-managed EC2 runner