CI-CD Architecture:   
  
A diagram of a software security scan

AI-generated content may be incorrect.

Flow:

1. Code Commit → CI Build Trigger
2. Run Tests(npm test) + Security Scans(SonarQube)
3. Build Artifact (Docker)
4. Push to Container Registry
5. Deploy Infra via Terraform to Azure Infra
6. Release to Dev -> QA -> Prod

Scaling Model for chat application with 40000 concurrent users

Resources / Services:

* Application gateway
* AKS or App Service
* Radis Cache
* PostgreSQL

Estimate:

* Each node handles 1000 connections
* 40000 users -> 40 nodes
* Load Balanced by App Gateway
* SKU Suggested :
  + Plan : P1v2 for App Service or AKS Standard\_DS3\_V2
  + Azure PostgreSQL -> 1000 RU/s
  + Cache (C3)

Capacity Planning

**Network:**

* 4KB/msg × 10 msg/min × 40K users = 1600MB/min
* Plan for 100 Mbps with buffer

**Storage:**

* 40000 users × 50 msgs/day × 500B = 1GB/day ,
* Considering 30 days retention = 30GB/month

**Compute:**

* 40 nodes for concurrency - 1K users/node