DOCKER CONCEPTS AND COMMANDS SUMMARY

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Docker Concepts and Commands Summary

1. Docker Concepts

- Docker Images: A Docker image is a lightweight, standalone, and executable software packagethat includes everything needed to run a piece of software, including the code, runtime, libraries, and dependencies.
- Docker Containers: Containers are runtime instances of Docker images. They are isolatedenvironments where the application code runs.
- Docker Volumes: Volumes are used to persist data generated by and used by Docker containers.
- Docker Networks: Docker creates a default bridge network to allow containers to communicate.

You can also create custom networks for better container interaction.

2. Docker Commands

- docker build: Used to build a Docker image from a Dockerfile.

  Example: docker build -t springboot-app .

- docker run: Runs a container from a Docker image.

  Example: docker run -p 8080:8080 springboot-app

- docker-compose up: Builds and starts the multi-container application.

  Example: docker-compose up --build

- docker-compose down: Stops the running multi-container application.

  Example: docker-compose down

3. Benefits of Containerization

- Consistent Environments: Containers provide consistent environments across development,testing, and production, reducing deployment errors.
- Isolation: Each container runs independently, providing application isolation.
- Scalability: Containers are lightweight and can be scaled easily in a microservices architecture.- Portability: Containers can run on any system with Docker installed, ensuring portability across environments.