Docker Commands Cheatsheet

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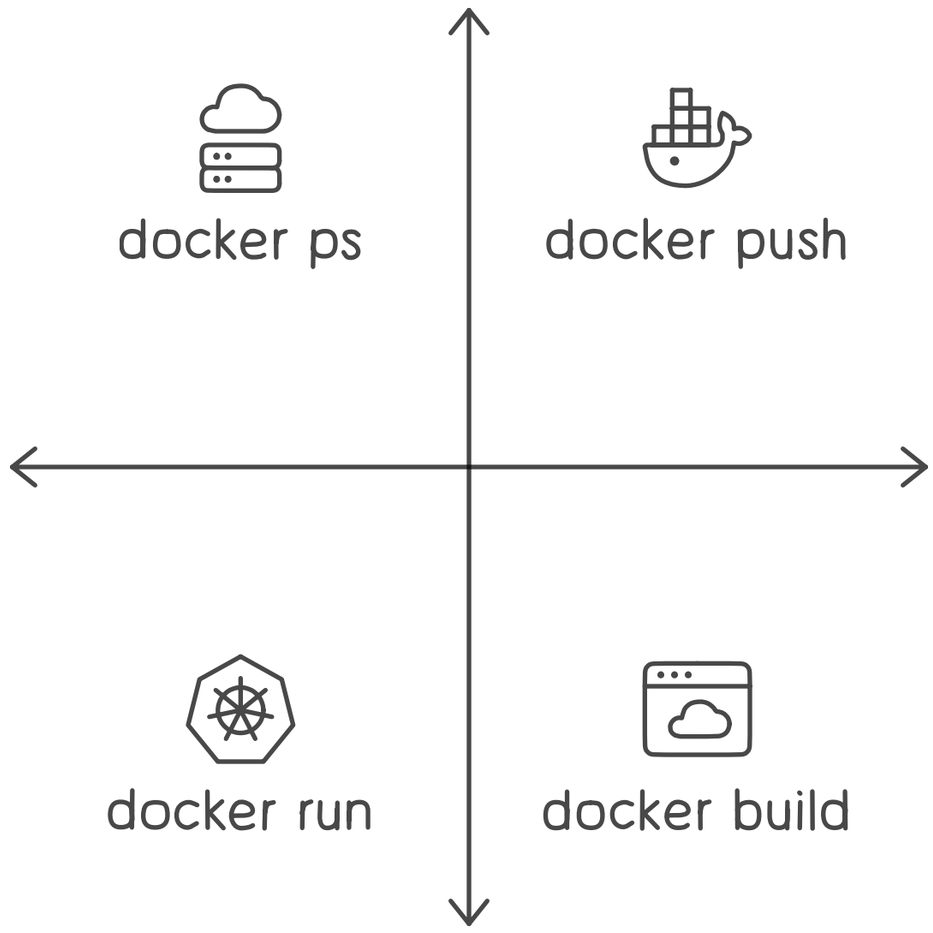
1. Image Management

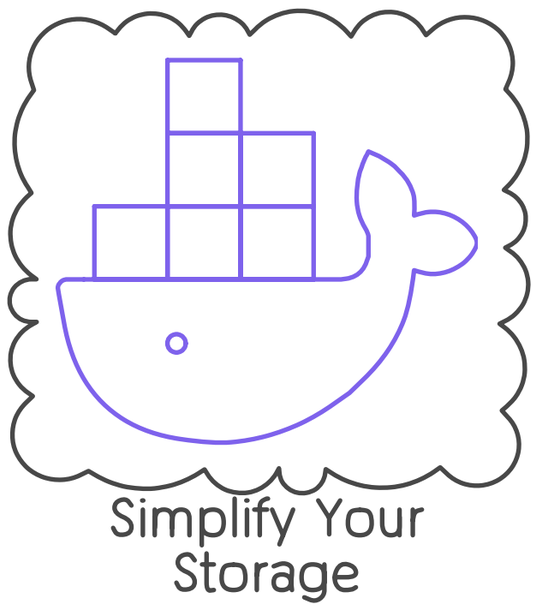
- **docker pull**: Pull an image from a registry.
    - **Example**: docker pull nginx:latest
    - **Explanation**: Pulls the latest NGINX image from Docker Hub.
- **docker images**: List all locally available images.
    - **Example**: docker images
    - **Explanation**: Lists all Docker images on the local machine.
- **docker build**: Build a new image from a Dockerfile.
    - **Example**: docker build -t my_image .
    - **Explanation**: Builds a new image named "my_image" from the Dockerfile in the current directory.
- **docker tag**: Tag an image with a repository name and tag.
    - **Example**: docker tag my_image my_repo:latest
    - **Explanation**: Tags the image "my_image" as "my_repo" with the "latest" tag.
- **docker push**: Push an image to a registry.
    - **Example**: docker push my_repo:latest
    - **Explanation**: Pushes the image "my_repo" with the "latest" tag to a registry.

2. Container Management



- **docker run**: Run a command in a new container.
    - **Example**: docker run -it --name my_container nginx
    - **Explanation**: Runs the NGINX image in a new container named "my_container" and attaches to its terminal.
- **docker start**: Start one or more stopped containers.
    - **Example**: docker start my_container
    - **Explanation**: Starts the container "my_container" that was previously stopped.
- **docker stop**: Stop one or more running containers.
    - **Example**: docker stop my_container
    - **Explanation**: Stops the running container "my_container".
- **docker restart**: Restart a running container.
    - **Example**: docker restart my_container
    - **Explanation**: Restarts the running container "my_container".
- **docker rm**: Remove one or more containers.
    - **Example**: docker rm my_container
    - **Explanation**: Removes the container "my_container".

3. Volume Management



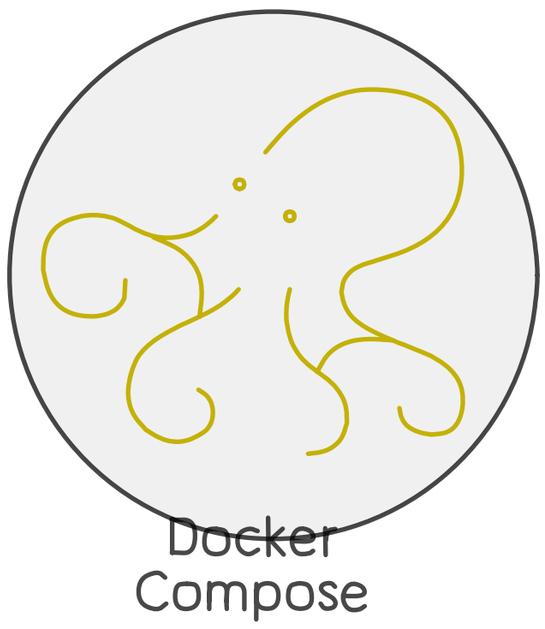
- **docker volume create**: Create a new volume.
    - **Example**: docker volume create my_volume
    - **Explanation**: Creates a new volume named "my_volume".
- **docker volume ls**: List all volumes.
    - **Example**: docker volume ls
    - **Explanation**: Lists all volumes on the local machine.
- **docker volume inspect**: Display detailed information about a volume.
    - **Example**: docker volume inspect my_volume
    - **Explanation**: Displays detailed information about the volume "my_volume".
- **docker volume rm**: Remove one or more volumes.
    - **Example**: docker volume rm my_volume
    - **Explanation**: Removes the volume "my_volume".

4. Network Management

- **docker network create**: Create a new network.
    - **Example**: docker network create my_network
    - **Explanation**: Creates a new network named "my_network".
- **docker network ls**: List all networks.
    - **Example**: docker network ls
    - **Explanation**: Lists all networks on the local machine.

- **docker network inspect**: Display detailed information about a network.
    - **Example**: docker network inspect my_network
    - **Explanation**: Displays detailed information about the network "my_network".
- **docker network connect**: Connect a container to a network.
    - **Example**: docker network connect my_network my_container
    - **Explanation**: Connects the container "my_container" to the network "my_network".
- **docker network disconnect**: Disconnect a container from a network.
    - **Example**: docker network disconnect my_network my_container
    - **Explanation**: Disconnects the container "my_container" from the network "my_network".

5. Docker Compose



- **docker-compose up**: Build and start containers.
    - **Example**: docker-compose up -d
    - **Explanation**: Builds and starts all containers defined in the docker-compose.yml file in detached mode.
- **docker-compose down**: Stop and remove containers.
    - **Example**: docker-compose down
    - **Explanation**: Stops and removes all containers defined in the docker-compose.yml file.
- **docker-compose logs**: View output from containers.
    - **Example**: docker-compose logs my_container
    - **Explanation**: Displays the logs of the container "my_container".
- **docker-compose exec**: Execute a command in a running container.
    - **Example**: docker-compose exec my_container ls -l
    - **Explanation**: Executes the command "ls -l" in the running container "my_container".

6. Docker Swarm

- **docker swarm init**: Initialize a swarm.
    - **Example**: docker swarm init
    - **Explanation**: Initializes a new swarm on the current machine.
- **docker swarm join**: Join a swarm as a worker or manager.
    - **Example**: docker swarm join --token <token> <ip>:<port>
    - **Explanation**: Joins the swarm as a worker or manager using the provided token and IP address.
- **docker node ls**: List all nodes in the swarm.
    - **Example**: docker node ls
    - **Explanation**: Lists all nodes in the swarm, including their status and availability.
- **docker service create**: Create a new service.
    - **Example**: docker service create --name my_service --replicas 3 nginx
    - **Explanation**: Creates a new service named "my_service" with 3 replicas using the NGINX image.
- **docker service scale**: Scale a service to a specific number of replicas.
    - **Example**: docker service scale my_service=5
    - **Explanation**: Scales the service "my_service" to 5 replicas.

7. Debugging

- **docker logs**: Fetch the logs of a container.
    - **Example**: docker logs my_container
    - **Explanation**: Displays the logs of the container "my_container".
- **docker inspect**: Display detailed information about a container.
    - **Example**: docker inspect my_container
    - **Explanation**: Displays detailed information about the container "my_container".
- **docker exec**: Execute a command in a running container.
    - **Example**: docker exec my_container ls -l
    - **Explanation**: Executes the command "ls -l" in the running container "my_container".
- **docker attach**: Attach to a running container's terminal.
    - **Example**: docker attach my_container
    - **Explanation**: Attaches to the terminal of the running container "my_container".

8. Advanced Tools

- **docker scout**: Analyze Docker images for vulnerabilities.
    - **Example**: docker scout my_image
    - **Explanation**: Scans the specified Docker image for security vulnerabilities.

- **docker init**: Automate the creation of Docker assets.
    - **Example**: docker init --name my_app
    - **Explanation**: Initializes necessary Docker assets like Dockerfiles and Compose files for a new application.