**Lab Exercise 4- Working with Docker Networking**

**Step 1: Understanding Docker Default Networks**

Docker provides three default networks:

* bridge: The default network when a container starts.
* host: Bypasses Docker’s network isolation and attaches the container directly to the host network.
* none: No networking is available for the container.

**1.1. Inspect Default Networks**

Check Docker's default networks using:

docker network ls

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**1.2. Inspect the Bridge Network**

docker network inspect bridge

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This command will show detailed information about the bridge network, including the connected containers and IP address ranges.

**Step 2: Create and Use a Bridge Network**

**2.1. Create a User-Defined Bridge Network**

A user-defined bridge network allows containers to communicate by name instead of IP.

docker network create my\_bridge

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**2.2. Run Containers on the User-Defined Network**

Start two containers on the newly created my\_bridge network:

docker run -dit --name container1 --network my\_bridge busybox

docker run -dit --name container2 --network my\_bridge busybox

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**2.3. Test Container Communication**

Execute a ping command from container1 to container2 using container names:

docker exec -it container1 ping container2

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The containers should be able to communicate since they are on the same network.