Docker Networking Notes

FOR DEVOPS ENGINEERS

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Docker Networking

Types of Networks in Docker

Default Bridge Network: The default network in Docker. It creates a private network on the host machine. Containers connected to the bridge network can communicate with each other using container names as hostnames. IP addresses can also be used.

docker run --network=bridge my-container

Host Network: With this network mode, containers share the host's network stack, bypassing network isolation. Containers using the host network can access services running on the host directly without any port mapping. This mode can be useful for performance-critical applications or when network isolation is not a concern.

docker run --network=host my-container

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Overlay Network: Overlay networks are used for communication between multiple Docker daemon hosts. This type of network allows containers running on different hosts to communicate seamlessly as if they were on the same network. Overlay networks use VXLAN (Virtual Extensible LAN) encapsulation to achieve network connectivity across multiple hosts.

docker network create --driver=overlay my-overlay-network
docker service create --network=my-overlay-network my-service

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Macvlan Network: Macvlan networks allow containers to have a MAC address assigned directly to them. This allows containers to appear as physical devices on the network, enabling them to be assigned IP addresses from the physical network's subnet. It is particularly useful when containers require direct Layer 2 network access or when you want to connect containers directly to external networks.

```
docker network create -d macvlan --subnet=
<subnet> --gateway=<gateway> -o parent=
<network-interface> my-macvlan-network
docker run --network=my-macvlan-network my-
container
```

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Custon Bridge Network: It creates a private network on the host machine, allowing containers to communicate with each other using container names as hostnames. Containers connected to the same bridge network can reach each other via IP addresses.

docker network create my-bridge-network
docker run --network=my-bridge-network my-container

None Network: The none network mode disables networking for a container. Containers running in this mode have no network interfaces and are completely isolated from the network. This mode can be useful when you want to run a container in a fully isolated environment.

docker run --network=none my-container

Thank You Dosto

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