Accessing Containerized Network Services

Objectives

- Expose ports to access containerized services.

Port Forwarding

A container's network namespace is isolated, which means that a networked application is only accessible within the container or from other containers in a podman network.
Port forwarding maps a port from the host machine where the container runs to a port inside of a container.

The `-p` option of the `podman run` command forwards a port. The option accepts the form *`HOST_PORT:CONTAINER_PORT`*.

For example, the following command maps port `8075` on the host machine to port `80` inside the container.

```
[user@host ~]$ podman run -p 8075:80 my-app
```

Without a host specified, the container is assigned the broadcast address (`0.0.0.0`). This means that the container is accessible from all networks on the host machine.

To publish a container to a specific host and to limit the networks it is accessible from, use the following form.

```
[user@host ~]$ podman run -p 127.0.0.1:8075:80 my-app
```

Port `80` in the `my-app` container is available from port `8075` only from the host machine, which is accessible via the localhost `127.0.0.1` IP address.

List Port Mappings

To list port mappings for a container, use the `podman port` command. For example, the following command reveals that port `8010` of the host machine is mapped to port `8008` within the container.

```
[user@host ~]$ podman port my-app
8008/tcp -> 0.0.0.0:8010
```

The `--all` option lists port mappings for all containers.

```
[user@host ~]$ podman port --all
1aacd9cf1c76    8008/tcp -> 0.0.0.0:8010
```

NOTE

In the preceding example output, `1aacd9cf1c76` refers to the ID of the container.

Networking in Containers

Containers attached to Podman networks are assigned private IP addresses for each network. Other containers can make requests to this IP address.

For example, a container called `my-app` is attached to the `apps` network. The following command retrieves the private IP address of the container within the `apps` network.

```
[user@host ~]$ podman inspect my-app \
  -f '{{.NetworkSettings.Networks.apps.IPAddress}}'
10.89.0.2
```

REFERENCES

Basic Networking Guide for Podman

podman-port(1) man page