

BUILDING-CONTAINERIZED-APACHE-WEB-SERVER

1. What is Docker for Hackers? (Short)

- Docker = lightweight containers
- Isolated environment for attacking/testing
- No risk to host OS
- Quick to spin up lab environments

2. Pulling Debian Image and Running Container

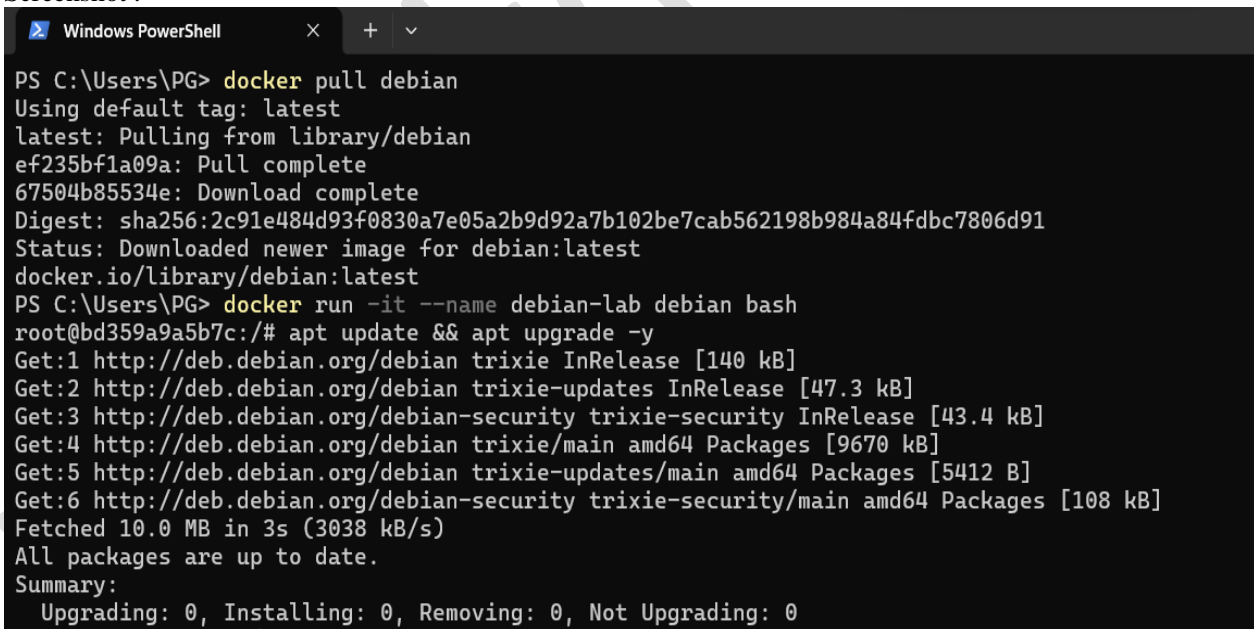
- Command:

```
1. docker pull debian
2. docker run -it --name debian-lab debian bash
```

- Update system:

```
apt update && apt upgrade -y
```

- Screenshot :



```
Windows PowerShell
PS C:\Users\PG> docker pull debian
Using default tag: latest
latest: Pulling from library/debian
ef235bf1a09a: Pull complete
67504b85534e: Download complete
Digest: sha256:2c91e484d93f0830a7e05a2b9d92a7b102be7cab562198b984a84fdbbc7806d91
Status: Downloaded newer image for debian:latest
docker.io/library/debian:latest
PS C:\Users\PG> docker run -it --name debian-lab debian bash
root@bd359a9a5b7c:/# apt update && apt upgrade -y
Get:1 http://deb.debian.org/debian trixie InRelease [140 kB]
Get:2 http://deb.debian.org/debian trixie-updates InRelease [47.3 kB]
Get:3 http://deb.debian.org/debian-security trixie-security InRelease [43.4 kB]
Get:4 http://deb.debian.org/debian trixie/main amd64 Packages [9670 kB]
Get:5 http://deb.debian.org/debian trixie-updates/main amd64 Packages [5412 B]
Get:6 http://deb.debian.org/debian-security trixie-security/main amd64 Packages [108 kB]
Fetched 10.0 MB in 3s (3038 kB/s)
All packages are up to date.
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
```

3. Port Mapping, Installing Apache, Starting Service

- Install Apache:

```
apt install apache2 -y
service apache2 start
```

- Explain -p 8080:80 port mapping
- Screenshot :

```
Windows PowerShell
root@bd359a9a5b7c:/# apt install apache2 -y
Installing:
  apache2

Installing dependencies:
  adduser          libgpm2          librtmp1
  apache2-bin      libgssapi-krb5-2 libsasl2-2
  apache2-data     libidn2-0        libsasl2-modules
  apache2-utils    libjansson4      libsasl2-modules-db
  ca-certificates  libk5crypto3     libssh2-1t64
  krb5-locales     libkeyutils1     libtasn1-6
  libapr1t64       libkrb5-3        libunistring5
  libaprutil1-dbd-sqlite3 libkrb5support0 libxml2
  libaprutil1-ldap libldap-common   linux-sysctl-defaults
  libaprutil1t64  libldap2         media-types
  libbrotli1      liblua5.4-0     netbase
  libcom-err2     libncursesw6    openssl
  libcurl4t64     libnghttp2-14   perl
  libexpat1       libnghttp3-9    perl-modules-5.40
  libffi8         libp11-kit0     procs
  libgdbm-compat4t64 libperl5.40     psmisc
  libgdbm6t64     libproc2-0      publicsuffix
  libgnutls30t64  libpsl5t64      ssl-cert

Suggested packages:
  liblocale-gettext-perl  krb5-user
  cron                   sensible-utils
  quota                  libsasl2-modules-gssapi-mit
  apache2-doc             | libsasl2-modules-gssapi-heimdal
  apache2-suexec-pristine | libsasl2-modules-ldap
  | apache2-suexec-custom libsasl2-modules-otp
  ufw                    libsasl2-modules-sql
  www-browser            perl-doc
  gdbm-l10n              libterm-readline-gnu-perl
  gnutls-bin              | libterm-readline-perl-perl
  gpm                     make
  krb5-doc                libtap-harness-archive-perl

Summary:
  Upgrading: 0, Installing: 55, Removing: 0, Not Upgrading: 0
  Download size: 19.4 MB
  Space needed: 86.1 MB / 1024 GB available
```

```
Windows PowerShell
PS C:\Users\PG> docker run -it -p 8080:80 --name debian-web debian bash
root@a3d4ad461c26:/# apt update
Get:1 http://deb.debian.org/debian trixie InRelease [140 kB]
Get:2 http://deb.debian.org/debian trixie-updates InRelease [47.3 kB]
Get:3 http://deb.debian.org/debian-security trixie-security InRelease [43.4 kB]
Get:4 http://deb.debian.org/debian trixie/main amd64 Packages [9670 kB]
Get:5 http://deb.debian.org/debian trixie-updates/main amd64 Packages [5412 B]
Get:6 http://deb.debian.org/debian-security trixie-security/main amd64 Packages [108 kB]
Fetched 10.0 MB in 4s (2552 kB/s)
All packages are up to date.
Installing:
  apache2

Installing dependencies:
  adduser          libgpm2          librtmp1
  apache2-bin      libgssapi-krb5-2 libsasl2-2
  apache2-data     libidn2-0        libsasl2-modules
  apache2-utils    libjansson4      libsasl2-modules-db
  ca-certificates  libk5crypto3     libssh2-1t64
  krb5-locales     libkeyutils1     libtasn1-6
  libapr1t64       libkrb5-3        libunistring5
  libaprutil1-dbd-sqlite3 libkrb5support0 libxml2
  libaprutil1-ldap libldap-common   linux-sysctl-defaults
  libaprutil1t64  libldap2         media-types
  libbrotli1      liblua5.4-0     netbase
  libcom-err2     libncursesw6    openssl
  libcurl4t64     libnghttp2-14   perl
  libexpat1       libnghttp3-9    perl-modules-5.40
  libffi8         libp11-kit0     procs
  libgdbm-compat4t64 libperl5.40     psmisc
  libgdbm6t64     libproc2-0      publicsuffix
  libgnutls30t64  libpsl5t64      ssl-cert

Suggested packages:
  liblocale-gettext-perl  krb5-user
  cron                   sensible-utils
  quota                  libsasl2-modules-gssapi-mit
  apache2-doc             | libsasl2-modules-gssapi-heimdal
  apache2-suexec-pristine | libsasl2-modules-ldap
  | apache2-suexec-custom libsasl2-modules-otp
  ufw                    libsasl2-modules-sql
  www-browser            perl-doc
```

4. Accessing via Browser & Fixing ServerName Warning

- Open: `http://localhost:8080`
- ServerName warning:

```
echo "ServerName localhost" >> /etc/apache2/apache2.conf  
service apache2 restart
```

- Screenshot :

