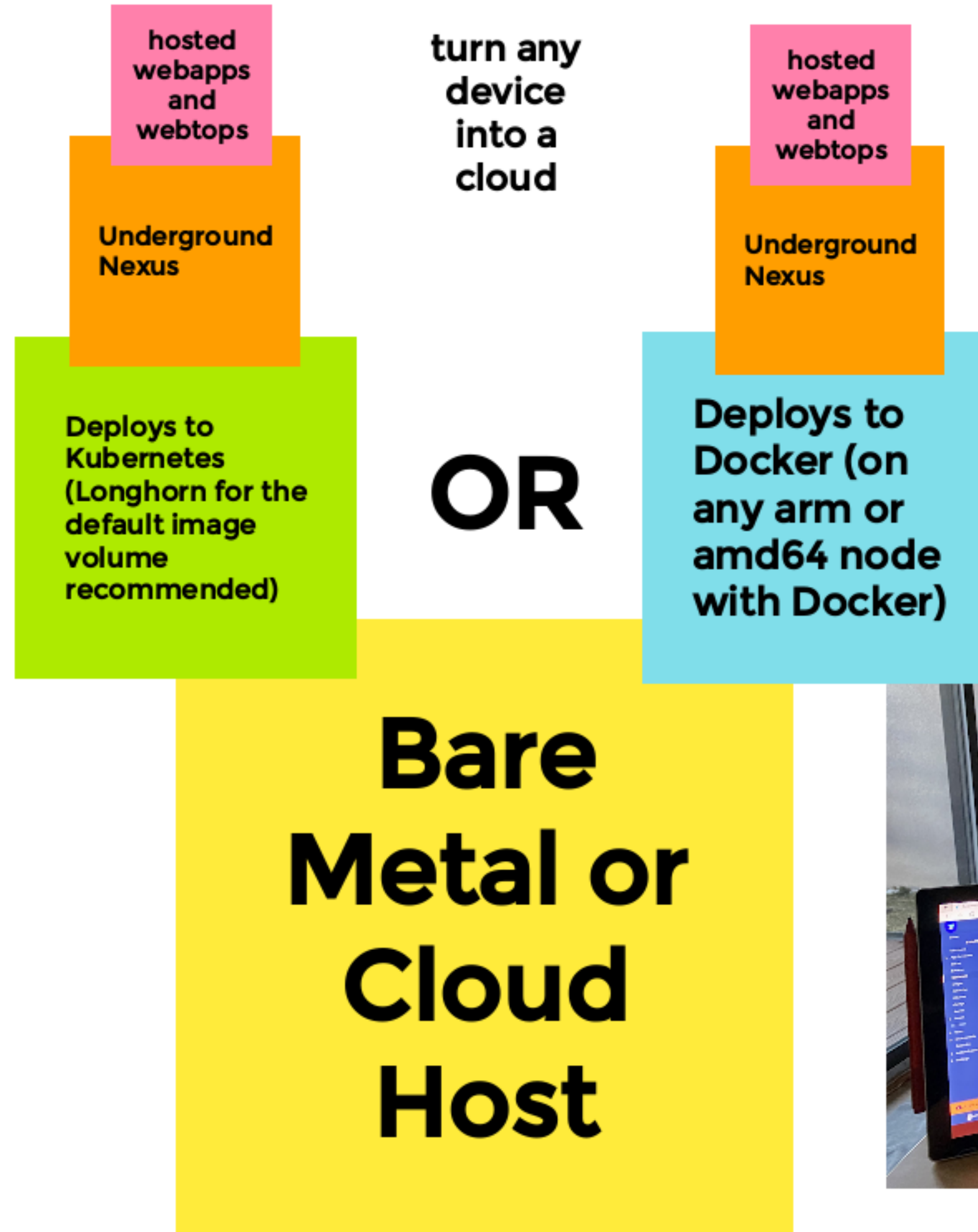


Underground Nexus Architecture

Underground Nexus is an edge-based alternative to solutions like AWS, Azure, Google Cloud Platform, Linode, etc. (though it can be hosted in any of these platforms for hosting)

The Underground Nexus is an agnostic cloud engineering Operating System that deploys from a container image.

NOTE that the Nexus can turn just about any device into a webserver, for cloud hosted web applications.



In the image below, the tablet on the left is hosting the Underground Nexus node. The TV and the two web browsers on the laptop screen are all displaying Nexus deployed webapps.



**What is
deployed by
default in the
Underground
Nexus stack?**

**Underground Nexus
Container Runs
Docker Inside - the
following
applications are
deployed to the
stack**

Nexus

**numbers
shown are the
application
ports**

**Pi Hole
- 80**

**Portainer
- 9443**

**Ubuntu Mate
Admin
Webtop - 1000**

**Admin Webtop
contains Visual
Studio Code, GitHub
Desktop, GitKraken,
Synaptic and QEMU
Virtual Machine
Manager**

**Cyber Life
Torpedo -
9001**

**Kali Linux
with
Radare2 -
22**

**Ubuntu KDE
Security
Operation
Center - 2000**

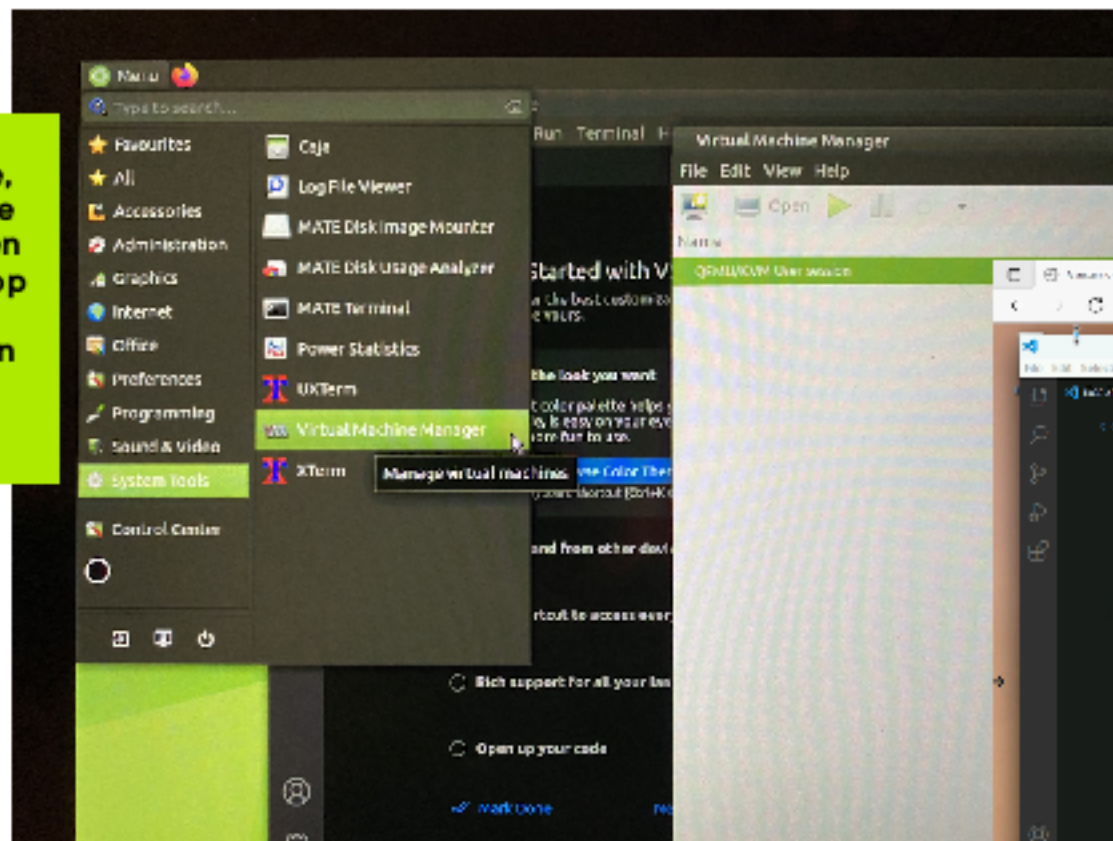
**Security Operation
Center is a least
privileged desktop
that only has web
browser access for
displaying security
dashboards and
managing security
tooling**

How to develop with the stack?

The Underground Nexus is a Cloud Native Server Operating System

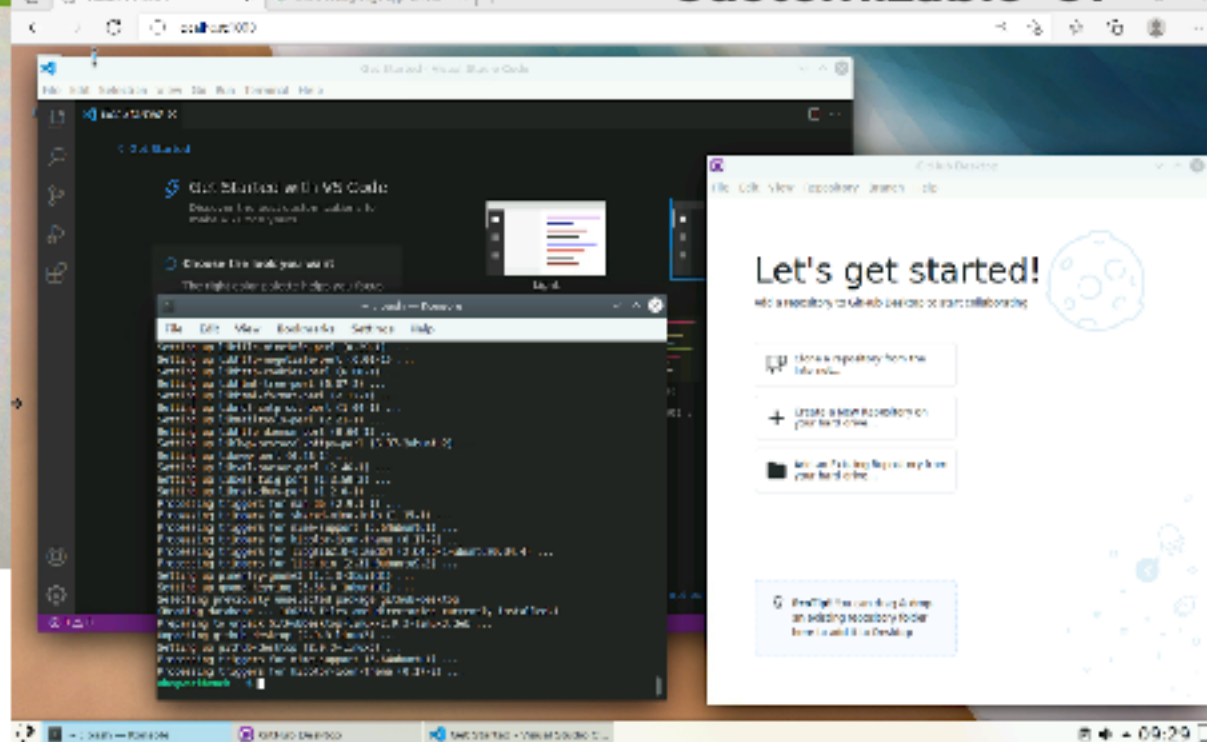
Install "Docker Desktop" (not standard Docker)

Visual Studio Code, the Virtual Machine Manager, GitKraken and GitHub Desktop can all be found in the start menu (can deploy Windows Virtual Machines)



URL once Dockerfile Image is built with the guild - <http://localhost:1000>

Customizable-UI



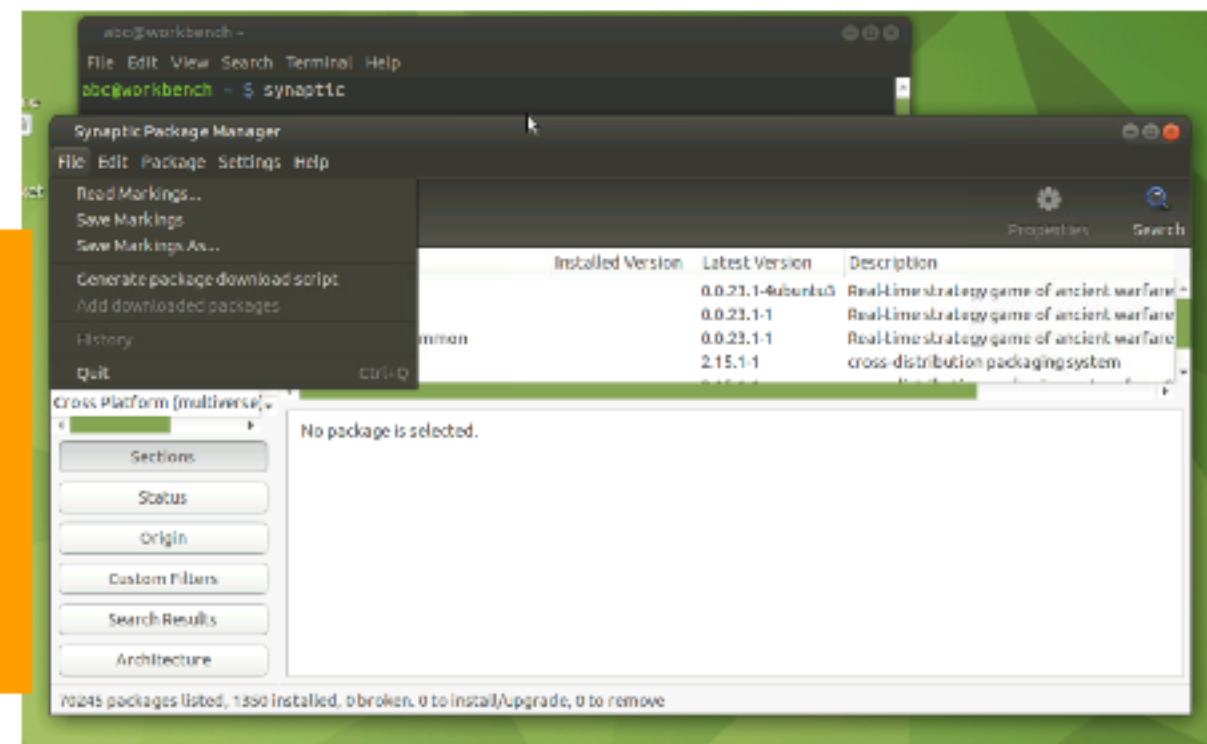
Copy paste Dockerfile into Portainer's image builder

Code a Dockerfile to copy paste to a designated production server, OR end user Docker Desktop's can be secure pull down hosting as well (copy paste data centers)

Deploy Portainer in Docker

Follow deploy guide and log into the Nexus at the designated port in the guide

Rapidly build deployment code to automate production package construction (type "synaptic" in terminal to launch package builder - "Generate package download script")



How to host with the stack?

Can scale to up to 5000 server nodes per deployment cluster - much greater scale than a hardware virtualization based hypervisor (this virtualization kit uses emulation to virtualize)

Does not need to use "Docker Desktop" for hosting, only for development - any Docker or Kubernetes instance should work

Copy paste Dockerfile into Portainer's image builder

Deploy Portainer (Portainer works with Kubernetes or Docker)

Deploy Nexus from the Dockerfile's image with port 1000 configured to desired hosting port (1000 can be remapped to port 80 to work with certain load balancers better)

Docker or Kubernetes Server
(can be bare metal, AWS, Azure, GCP, hybrid, etc.)

Can be hosted almost any way desired, including options like these

Can deploy Virtual Machine or Container based webapps

Different ways to host!

DDNS Router

VPN Router (OpenVPN is a great option that can even be installed inside the server stack directly inside the "Inner-Athena" overlay network)

Public Cloud

End user accesses the app from any web browser (works with tablets, laptops, desktops, phones and even has a touch keyboard interface)