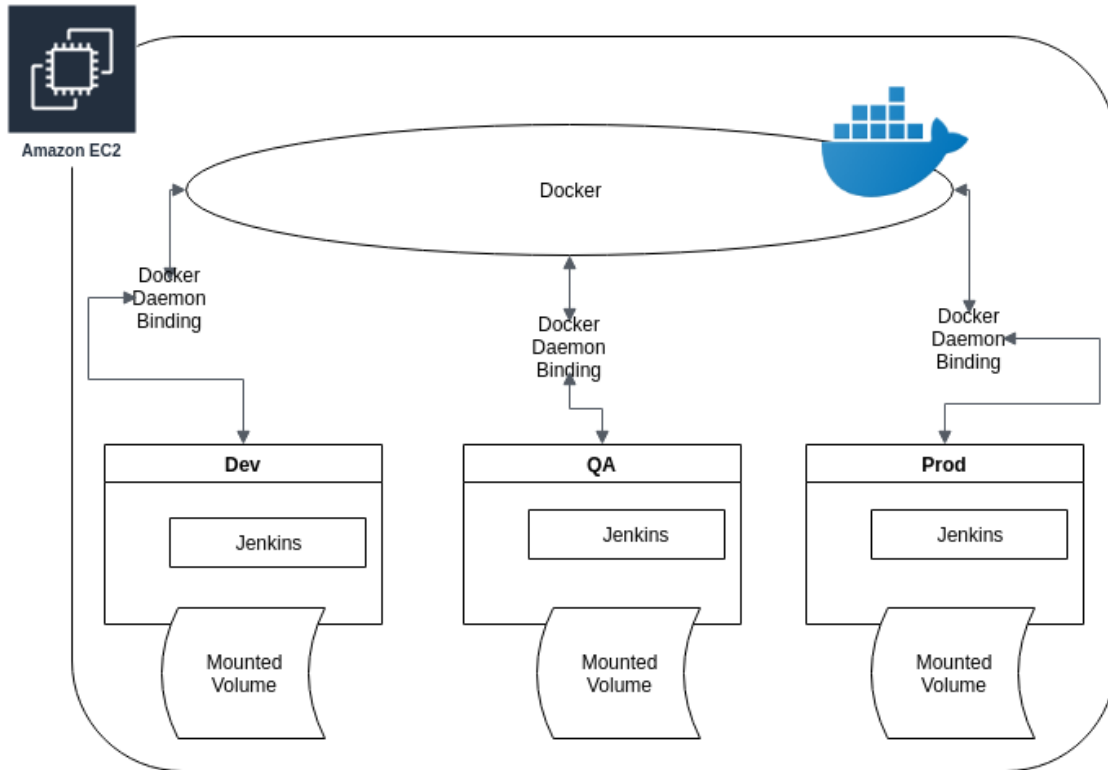# UP Jenkins Setup

Jenkins setup is containerised based.

Description

On a single instance consisting of docker installed on it, three different container are running :

- Jenkins Dev
- Jenkins QA
- Jenkins PROD

```
CONTAINER ID   IMAGE         COMMAND              CREATED       STATUS       PORTS                                    NAMES
c96622083bd2   myjenkins:2   "/setup-docker-and..."  3 weeks ago   Up 3 weeks   50000/tcp, 0.0.0.0:8082->8080/tcp        upjenkins-prod
9aa0da9a043f   myjenkins:2   "/setup-docker-and..."  3 weeks ago   Up 3 weeks   50000/tcp, 0.0.0.0:8081->8080/tcp        upjenkins-qa
5fe0006ac5ad   myjenkins:2   "/setup-docker-and..."  3 weeks ago   Up 3 weeks   0.0.0.0:8080->8080/tcp, 50000/tcp        upjenkins-dev
```

Containers running have jenkins installed on them and all of them are running at different ports :

- 8080 - upjenkins-dev
- 8081 - upjenkins-qa
- 8082 - upjenkins-prod

Setup

- EC2 Instance must have docker installed on it.
- Docker image would be responsible for running jenkins that would be running on port 8080 of the container that would be exposed in the Dockerfile.
- While running the docker image we would be binding the port 8080 of the container with our desired port on which we want our jenkins to run as mentioned above.Please find the command below for reference :
  docker run -d -p 0.0.0.0:8081:8080 -v /var/run/docker.sock:/var/run/docker.sock -v /usr/bin/docker/:/usr/bin/docker --restart always myjenkins:2 upjenkins-qa
  - Understanding the command above :

- -p 0.0.0.0:8081:8080 -
  binding the port 8080 of the container with our desired port on which we want our jenkins to run as mentioned above
- -v /var/run/docker.sock:/var/run/docker.sock
  Mounting the docker daemon of the host machine onto the container so that the docker of the host machine could be used by the container.
- -v /usr/bin/docker/:/usr/bin/docker
  Another mounting so that the docker of the host machine could be used by the container
- myjenkins:2
  Image that is being used to run the container
- upjenkins-qa
  Name that is to be given to the running container.
- In case the setup is new we would consider this as the final step of setup ,however if we want to retrieve the data we would be copying the required data from the directory into the directory that belongs to the running container. Please find the command below for reference. cp -pr /var/lib/docker/volumes/xxx65f91511feaxxxxxxxxxxxc47c4b8xxxxxxxxxxxxc6f0378e61eXxx/_data/ /var/lib/docker/volumes /xxxx322bxxxxxf081xxxxx1baf80d54eeaxxxxx5d80xxxxxxxxxda9c4fxxxx/
  - Understanding the command above
    - The source belongs to the directory of the instance only on which the data exists and the destination also belongs to the instance however it is the directory where the container volume is also mounted .So once we cop all the data ,it would start getting reflected in the jenkins console as the destination directory is the directory on which the jenkins workspace of the container is mounted. Please refer to the docker inspect below and look for the source in the mounts to understand more clearly.

Docker inspect for Jenkins dev for reference

Docker inspect

```
[
    {
        "Id":
"5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34",
        "Created": "2019-01-08T16:27:30.917770364Z",
        "Path": "/setup-docker-and-start-jenkins.sh",
        "Args": [
            "upjenkins-dev"
        ],
        "State": {
            "Status": "running",
            "Running": true,
            "Paused": false,
            "Restarting": false,
            "OOMKilled": false,
            "Dead": false,
            "Pid": 26220,
            "ExitCode": 0,
            "Error": "",
            "StartedAt": "2019-01-08T17:03:07.152568112Z",
            "FinishedAt": "2019-01-08T17:02:54.516822238Z"
        },
        "Image": "sha256:
27a6a914b38a55a65c7ebab4037d836b2799c70c1736bd38631d72f310ebfd9d",
        "ResolvConfPath": "/var/lib/docker/containers
/5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34/resolv.
conf",
        "HostnamePath": "/var/lib/docker/containers
/5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34
/hostname",
        "HostsPath": "/var/lib/docker/containers
/5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34/hosts",
```

```
            "LogPath": "/var/lib/docker/containers
/5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34
/5fe0006ac5ade61aff2568968af4b01547ea5ce006e26c29b137743b82ef5c34-json.
log",
            "Name": "/upjenkins-dev",
            "RestartCount": 0,
            "Driver": "overlay2",
            "MountLabel": "",
            "ProcessLabel": "",
            "AppArmorProfile": "",
            "ExecIDs": null,
            "HostConfig": {
                "Binds": [
                    "/var/run/docker.sock:/var/run/docker.sock",
                    "/usr/bin/docker/:/usr/bin/docker"
                ],
                "ContainerIDFile": "",
                "LogConfig": {
                    "Type": "json-file",
                    "Config": {}
                },
                "NetworkMode": "default",
                "PortBindings": {
                    "8080/tcp": [
                        {
                            "HostIp": "0.0.0.0",
                            "HostPort": "8080"
                        }
                    ]
                },
                "RestartPolicy": {
                    "Name": "always",
                    "MaximumRetryCount": 0
                },
                "AutoRemove": false,
                "VolumeDriver": "",
                "VolumesFrom": null,
                "CapAdd": null,
                "CapDrop": null,
                "Dns": [],
                "DnsOptions": [],
                "DnsSearch": [],
                "ExtraHosts": null,
                "GroupAdd": null,
                "IpcMode": "",
                "Cgroup": "",
                "Links": null,
                "OomScoreAdj": 0,
                "PidMode": "",
                "Privileged": false,
                "PublishAllPorts": false,
                "ReadonlyRootfs": false,
                "SecurityOpt": null,
```

```json
            "UTSMode": "",
            "UsernsMode": "",
            "ShmSize": 67108864,
            "Runtime": "runc",
            "ConsoleSize": [
                0,
                0
            ],
            "Isolation": "",
            "CpuShares": 0,
            "Memory": 0,
            "NanoCpus": 0,
            "CgroupParent": "",
            "BlkioWeight": 0,
            "BlkioWeightDevice": null,
            "BlkioDeviceReadBps": null,
            "BlkioDeviceWriteBps": null,
            "BlkioDeviceReadIOps": null,
            "BlkioDeviceWriteIOps": null,
            "CpuPeriod": 0,
            "CpuQuota": 0,
            "CpuRealtimePeriod": 0,
            "CpuRealtimeRuntime": 0,
            "CpusetCpus": "",
            "CpusetMems": "",
            "Devices": [],
            "DeviceCgroupRules": null,
            "DiskQuota": 0,
            "KernelMemory": 0,
            "MemoryReservation": 0,
            "MemorySwap": 0,
            "MemorySwappiness": -1,
            "OomKillDisable": false,
            "PidsLimit": 0,
            "Ulimits": [
                {
                    "Name": "nofile",
                    "Hard": 4096,
                    "Soft": 1024
                }
            ],
            "CpuCount": 0,
            "CpuPercent": 0,
            "IOMaximumIOps": 0,
            "IOMaximumBandwidth": 0
        },
        "GraphDriver": {
            "Data": {
                "LowerDir": "/var/lib/docker/overlay2
/3d76574ca9e3eaa2c0df3e4ec758a571da4de6ba8e0f8600f38b5d3f83dac20d-init
/diff:/var/lib/docker/overlay2
/c6ddfdcc34b5c49d4d56e7cdac4287581392b70a4c777e54a7b63a0bee579ed0/diff:/var
/lib/docker/overlay2
```

```
/c2b588b1770cc2bd34f49583b65f654b1521750c6f6b7faa95e7b20613782bbb/diff:/var
/lib/docker/overlay2
/93e5954edf9eb0198311a8b187ba0f51f9bb09be40cf65c712b1155047070c52/diff:/var
/lib/docker/overlay2
/603ecfa25a6e774f05e0bc9b56cf85b283a9aff1518e1fa06b15420c3008e69f/diff:/var
/lib/docker/overlay2
/94f6861cfdf562762952436fb86593e914d0429ec9875c7faf544150685ef4e0/diff:/var
/lib/docker/overlay2
/34cf748210df4c35a355b5b44ae3ad9ca38390e562ceb8788a09bcc51c38dd94/diff:/var
/lib/docker/overlay2
/bea4eb92483daa9a87286950b3f3714b69dc00f77d6650097a58cbd80af675c6/diff:/var
/lib/docker/overlay2
/71ea58e19077989f382a67660a1b4945fe5816020ed8a3d996fdfdd3de19bc4a/diff:/var
/lib/docker/overlay2
/8fa404ca0a3a5015649a20b57fb672656ba69674121a82d846211ba918e34654/diff:/var
/lib/docker/overlay2
/147470dd5dca4e9a3195695ecc74753bf0dfe833ba9302bf6b3e724b6ef80a86/diff:/var
/lib/docker/overlay2
/fa7910caf2e16dc69cada1d3b815ba191beecdb02a2320ba70144ca229c07393/diff:/var
/lib/docker/overlay2
/48fce638a4141154c66ac562138449801a225995c4196c6aa0e4602cfbea8197/diff:/var
/lib/docker/overlay2
/831832a93f6d28184e779d77cca37e6610549da58bad226dec3dff9b20b89029/diff:/var
/lib/docker/overlay2
/e60f62d36f75734f7ed7b4774a4e64232309525e12fc870b5c6b19c189c96dae/diff:/var
/lib/docker/overlay2
/f5fbee23407ea04c9400e053a60c90bff4daba9c096b5e1a90e8fa8454a1641b/diff:/var
/lib/docker/overlay2
/fd2b8d2d87cf62b4e6cb7d60151552fe73477c0019ecad8bf69d3b399373a4b6/diff:/var
/lib/docker/overlay2
/7a49559821b616d540db2a8dac79ef2dc09764787084be20e2bcb5ee4eda34ea/diff:/var
/lib/docker/overlay2
/8a47ef30fdde4b876083dd4edea2aeeb15dd1d13a42d2ed732b261fb5328220f/diff:/var
/lib/docker/overlay2
/19be8dbcd22afd3c639efe271fcb52dc29dce55afadfb2244285f80323181cf8/diff:/var
/lib/docker/overlay2
/e809c19caea6c60a3fa54eceb29513d5822f18b1318c5df65038702304b94a6e/diff:/var
/lib/docker/overlay2
/01de4e1b1bd6e4b77ba81566059f686c53d9dc822345d946dfc189471f934566/diff:/var
/lib/docker/overlay2
/3e33b87b6b63e28d813f641c72082b7d03ca1d007ffbe515d00acbae61316e13/diff",
                "MergedDir": "/var/lib/docker/overlay2
/3d76574ca9e3eaa2c0df3e4ec758a571da4de6ba8e0f8600f38b5d3f83dac20d/merged",
                "UpperDir": "/var/lib/docker/overlay2
/3d76574ca9e3eaa2c0df3e4ec758a571da4de6ba8e0f8600f38b5d3f83dac20d/diff",
                "WorkDir": "/var/lib/docker/overlay2
/3d76574ca9e3eaa2c0df3e4ec758a571da4de6ba8e0f8600f38b5d3f83dac20d/work"
            },
            "Name": "overlay2"
        },
        "Mounts": [
            {
                "Type": "bind",
```

```
            "Source": "/var/run/docker.sock",
            "Destination": "/var/run/docker.sock",
            "Mode": "",
            "RW": true,
            "Propagation": "rprivate"
        },
        {
            "Type": "bind",
            "Source": "/usr/bin/docker",
            "Destination": "/usr/bin/docker",
            "Mode": "",
            "RW": true,
            "Propagation": "rprivate"
        },
        {
            "Type": "volume",
            "Name":
"99909dd579019a20d854dcc8d8ab617ec2425f052b35ec06c68e4efd96ade112",
            "Source": "/var/lib/docker/volumes
/99909dd579019a20d854dcc8d8ab617ec2425f052b35ec06c68e4efd96ade112/_data",
            "Destination": "/var/jenkins_home",
            "Driver": "local",
            "Mode": "",
            "RW": true,
            "Propagation": ""
        }
    ],
    "Config": {
        "Hostname": "5fe0006ac5ad",
        "Domainname": "",
        "User": "root",
        "AttachStdin": false,
        "AttachStdout": false,
        "AttachStderr": false,
        "ExposedPorts": {
            "50000/tcp": {},
            "8080/tcp": {}
        },
        "Tty": false,
        "OpenStdin": false,
        "StdinOnce": false,
        "Env": [
            "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:
/sbin:/bin",
            "LANG=C.UTF-8",
            "JAVA_HOME=/docker-java-home",
            "JAVA_VERSION=8u151",
            "JAVA_DEBIAN_VERSION=8u151-b12-1~deb9u1",
            "CA_CERTIFICATES_JAVA_VERSION=20170531+nmu1",
            "JENKINS_HOME=/var/jenkins_home",
            "JENKINS_SLAVE_AGENT_PORT=50000",
            "TINI_VERSION=0.14.0",
```

```
                "TINI_SHA=6c41ec7d33e857d4779f14d9c74924cab0c7973485d2972419a3b7c7620ff5fd"
,
                "JENKINS_VERSION=2.72",
                "JENKINS_UC=https://updates.jenkins.io",
                "JENKINS_UC_EXPERIMENTAL=https://updates.jenkins.io
/experimental",
                "COPY_REFERENCE_FILE_LOG=/var/jenkins_home
/copy_reference_file.log"
            ],
            "Cmd": [
                "upjenkins-dev"
            ],
            "Image": "myjenkins:2",
            "Volumes": {
                "/var/jenkins_home": {}
            },
            "WorkingDir": "",
            "Entrypoint": [
                "/setup-docker-and-start-jenkins.sh"
            ],
            "OnBuild": null,
            "Labels": {}
        },
        "NetworkSettings": {
            "Bridge": "",
            "SandboxID":
"86f4297ce106130225987f84c58d62ccc948a0f95fb495334f2f86063e4d8a11",
            "HairpinMode": false,
            "LinkLocalIPv6Address": "",
            "LinkLocalIPv6PrefixLen": 0,
            "Ports": {
                "50000/tcp": null,
                "8080/tcp": [
                    {
                        "HostIp": "0.0.0.0",
                        "HostPort": "8080"
                    }
                ]
            },
            "SandboxKey": "/var/run/docker/netns/86f4297ce106",
            "SecondaryIPAddresses": null,
            "SecondaryIPv6Addresses": null,
            "EndpointID":
"65408d6da57e9578649dd4ce20650f03cfb2cca41f5c09fcbc0ab77ab3e1c96a",
            "Gateway": "172.17.0.1",
            "GlobalIPv6Address": "",
            "GlobalIPv6PrefixLen": 0,
            "IPAddress": "172.17.0.2",
            "IPPrefixLen": 16,
            "IPv6Gateway": "",
            "MacAddress": "02:42:ac:11:00:02",
            "Networks": {
                "bridge": {
```

```
                "IPAMConfig": null,
                "Links": null,
                "Aliases": null,
                "NetworkID":
"fefdc5913e7c74bc3ecad2cf14dadfd733bf6a6d3dfe468da8e707d6a26cbdea",
                "EndpointID":
"65408d6da57e9578649dd4ce20650f03cfb2cca41f5c09fcbc0ab77ab3e1c96a",
                "Gateway": "172.17.0.1",
                "IPAddress": "172.17.0.2",
                "IPPrefixLen": 16,
                "IPv6Gateway": "",
                "GlobalIPv6Address": "",
                "GlobalIPv6PrefixLen": 0,
                "MacAddress": "02:42:ac:11:00:02",
                "DriverOpts": null
            }
        }
    }
]
```