

# Assignment 1

I-Hsuan Hu

a.

Instance summary for i-0cb47b9768d7e6225 (CS548 assignment1)

Instance ID: i-0cb47b9768d7e6225 (CS548 assignment1)

Public IPv4 address: 3.142.211.19 [open address]

Instance state: ● running

Private IP DNS name (IPv4 only): ip-172-31-31-147-us-east-2.compute.internal

Instance type: t2.small

VPC ID: vpc-0e67e93abc4dd03af

Subnet ID: subnet-030e17bb302932046

Auto-assigned IP address: 3.142.211.19 [Public IP]

IAM Role: -

IMDSv2: Optional

Root device details:

Root device name: /dev/xvda

Root device type: EBS

EBS optimization: disabled

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on termination
vol-0e505c4b05ab7b09e	/dev/xvda	8	Attached	2023/09/13 16:15 GMT-4	No	-	Yes
vol-06a7baf0fd4509086	/dev/sdb	1	Attached	2023/09/13 16:15 GMT-4	No	-	No

b.

```
ec2-user@ip-172-31-31-147:~$
Last login: Wed Sep 13 20:23:06 2023 from 71.104.22.185

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Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-31-147 ~]$ fdisk -l
fdisk: cannot open /dev/xvda: Permission denied
fdisk: cannot open /dev/xvdb: Permission denied
[ec2-user@ip-172-31-31-147 ~]$ sudo fdisk -l
Disk /dev/xvda: 8 GiB, 8589934592 bytes, 16777216 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 12DB3344-83FA-4BD1-B32F-DF214C0C9A96

Device      Start      End  Sectors Size Type
/dev/xvda1   4096 16777182 16773087  8G Linux filesystem
/dev/xvda128 2048    4095    2048    1M BIOS boot

Partition table entries are not in disk order.

Disk /dev/xvdb: 1 GiB, 1073741824 bytes, 2097152 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
[ec2-user@ip-172-31-31-147 ~]$
```

c.

The output of the application container:

```
[
  {
    "Id": "b70af771281b62e4a4bf4c62ceeb7489bf18a10df96830c37b4951c44a4fc756",
    "Created": "2023-09-13T20:42:18.763976402Z",
    "Path": "/bin/sh",
    "Args": [
      "entrypoint.sh",
      "--contextroot",
      "chat",
      "--deploy",
      "/opt/payara/deployments/chat-webapp.war"
    ],
    "State": {
```

```
    "Status": "running",
    "Running": true,
    "Paused": false,
    "Restarting": false,
    "OOMKilled": false,
    "Dead": false,
    "Pid": 3567,
    "ExitCode": 0,
    "Error": "",
    "StartedAt": "2023-09-15T18:44:37.634055475Z",
    "FinishedAt": "2023-09-15T18:36:58.518513982Z"
  },
  "Image": "sha256:6daec129cb948855b6deb61f87c3e05f8924162c05b73fd9c270910c1c2e2ad",
  "ResolvConfPath":
"/var/lib/docker/containers/b70af771281b62e4a4bf4c62ceeb7489bf18a10df96830c37b4951c44a4fc756/resolv.conf",
  "HostnamePath": "/var/lib/docker/containers/b70af771281b62e4a4bf4c62ceeb7489bf18a10df96830c37b4951c44a4fc756/hostname",
  "HostsPath": "/var/lib/docker/containers/b70af771281b62e4a4bf4c62ceeb7489bf18a10df96830c37b4951c44a4fc756/hosts",
  "LogPath":
"/var/lib/docker/containers/b70af771281b62e4a4bf4c62ceeb7489bf18a10df96830c37b4951c44a4fc756/b70af771281b62e4a4bf4c62ceeb7489 b
f18a10df96830c37b4951c44a4fc756-json.log",
  "Name": "/chat",
  "RestartCount": 0,
  "Driver": "overlay2",
  "Platform": "linux",
  "MountLabel": "",
  "ProcessLabel": "",
  "AppArmorProfile": "",
  "ExecIDs": null,
  "HostConfig": {
    "Binds": null,
    "ContainerIDFile": "",
    "LogConfig": {
      "Type": "json-file",
      "Config": {}
    },
    "NetworkMode": "cs548-network",
    "PortBindings": {
      "8080/tcp": [
        {
          "HostIp": "",
          "HostPort": "8080"
        }
      ],
      "8181/tcp": [
        {
          "HostIp": "",
          "HostPort": "8181"
        }
      ]
    },
    "RestartPolicy": {
      "Name": "no",
      "MaximumRetryCount": 0
    },
    "AutoRemove": false,
    "VolumeDriver": "",
    "VolumesFrom": null,
    "CapAdd": null,
    "CapDrop": null,
    "CgroupnsMode": "host",
    "Dns": [],
    "DnsOptions": [],
    "DnsSearch": [],
    "ExtraHosts": null,
    "GroupAdd": null,
    "IpcMode": "private",
    "Cgroup": "",
    "Links": null,
    "OomScoreAdj": 0,
```

```
"PidMode": "",
"Privileged": false,
"PublishAllPorts": false,
"ReadonlyRootfs": false,
"SecurityOpt": null,
"UTSMode": "",
"UsersMode": "",
"ShmSize": 67108864,
"Runtime": "runc",
"ConsoleSize": [
    0,
    0
],
"Isolation": "",
"CpuShares": 0,
"Memory": 0,
"NanoCpus": 0,
"CgroupParent": "",
"BlkioWeight": 0,
"BlkioWeightDevice": [],
"BlkioDeviceReadBps": null,
"BlkioDeviceWriteBps": null,
"BlkioDeviceReadIOps": null,
"BlkioDeviceWriteIOps": null,
"CpuPeriod": 0,
"CpuQuota": 0,
"CpuRealtimePeriod": 0,
"CpuRealtimeRuntime": 0,
"CpusetCpus": "",
"CpusetMems": "",
"Devices": [],
"DeviceCgroupRules": null,
"DeviceRequests": null,
"KernelMemory": 0,
"KernelMemoryTCP": 0,
"MemoryReservation": 0,
"MemorySwap": 0,
"MemorySwappiness": null,
"OomKillDisable": false,
"PidsLimit": null,
"Ulimits": [
    {
        "Name": "nofile",
        "Hard": 65536,
        "Soft": 32768
    }
],
"CpuCount": 0,
"CpuPercent": 0,
"IOMaximumOps": 0,
"IOMaximumBandwidth": 0,
"MaskedPaths": [
    "/proc/asound",
    "/proc/acpi",
    "/proc/kcore",
    "/proc/keys",
    "/proc/latency_stats",
    "/proc/timer_list",
    "/proc/timer_stats",
    "/proc/sched_debug",
    "/proc/scsi",
    "/sys/firmware"
],
"ReadonlyPaths": [
    "/proc/bus",
    "/proc/fs",
    "/proc/irq",
    "/proc/sys",
    "/proc/sysrq-trigger"
```

```

    ],
    "GraphDriver": {
        "Data": {
            "LowerDir": "/var/lib/docker/overlay2/6af31a93467112da62aa06708591a0a044f4318e6718cec6ed897e34804a5428 -
init/diff:/var/lib/docker/overlay2/ab20700e9ff89bb41bdfec1e877e6ef83b68a91c4f388833c0e19c4e0ff0319/diff:/var/lib/docker/over lay2/59231
db97ffb8625edb8b800406486e11823d165acd45e286cd5cb6385da6e43/diff:/var/lib/docker/overlay2/72537d8adb02e8aded03296bfffbbfb13c547
043c5cc3cd86839e158fb0e60616/diff:/var/lib/docker/overlay2/c46a15a547d4958dd0c2c64b83e0c96bd64b30ede6c6aa4bab57801526d97e19/d i
ff:/var/lib/docker/overlay2/e531153e43b34f5ae4b634f08921666a17f5162269f35472e563a084ea9b353f/diff:/var/lib/docker/overlay2/8bff88ce5
dcaa8666d8cb74506cebe37e8c299148cb8a6fe71dbfef691a0f06b/diff",
            "MergedDir":
"/var/lib/docker/overlay2/6af31a93467112da62aa06708591a0a044f4318e6718cec6ed897e34804a5428/merged",
            "UpperDir": "/var/lib/docker/overlay2/6af31a93467112da62aa06708591a0a044f4318e6718cec6ed897e34804a5428/diff",
            "WorkDir": "/var/lib/docker/overlay2/6af31a93467112da62aa06708591a0a044f4318e6718cec6ed897e34804a5428/work"
        },
        "Name": "overlay2"
    },
    "Mounts": [],
    "Config": {
        "Hostname": "b70af771281b",
        "Domainname": "",
        "User": "payara",
        "AttachStdin": false,
        "AttachStdout": false,
        "AttachStderr": false,
        "ExposedPorts": {
            "6900/tcp": {},
            "8080/tcp": {},
            "8181/tcp": {}
        },
        "Tty": false,
        "OpenStdin": false,
        "StdinOnce": false,
        "Env": [
            "DATABASE_PASSWORD=0000",
            "DATABASE=cs548",
            "DATABASE_HOST=cs548db",
            "DATABASE_USERNAME=cs548user",
            "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin",
            "LANG=en_US.UTF-8",
            "LANGUAGE=en_US:en",
            "LC_ALL=en_US.UTF-8",
            "TZ=Etc/UTC",
            "JAVA_HOME=/usr/lib/jvm/zulu17",
            "PAYARA_HOME=/opt/payara",
            "HOME_DIR=/opt/payara",
            "PAYARA_DIR=/opt/payara",
            "SCRIPT_DIR=/opt/payara",
            "DEPLOY_DIR=/opt/payara/deployments",
            "JVM_ARGS=",
            "MEM_MAX_RAM_PERCENTAGE=70.0",
            "MEM_XSS=512k"
        ],
        "Cmd": [
            "--contextroot",
            "chat",
            "--deploy",
            "/opt/payara/deployments/chat-webapp.war"
        ],
        "Image": "cs548/chat",
        "Volumes": null,
        "WorkingDir": "/opt/payara",
        "Entrypoint": [
            "/bin/sh",
            "entrypoint.sh"
        ],
        "OnBuild": null,
        "Labels": {}
    },
},

```

```

"NetworkSettings": {
  "Bridge": "",
  "SandboxID": "5aa7f5fcc3670efaf945b67b558080a7431e123b6124416a0a4516265cc0773e",
  "HairpinMode": false,
  "LinkLocalPv6Address": "",
  "LinkLocalPv6PrefixLen": 0,
  "Ports": {
    "6900/tcp": null,
    "8080/tcp": [
      {
        "HostIp": "0.0.0.0",
        "HostPort": "8080"
      },
      {
        "HostIp": "::",
        "HostPort": "8080"
      }
    ],
    "8181/tcp": [
      {
        "HostIp": "0.0.0.0",
        "HostPort": "8181"
      },
      {
        "HostIp": "::",
        "HostPort": "8181"
      }
    ]
  },
  "SandboxKey": "/var/run/docker/netns/5aa7f5fcc367",
  "SecondaryIPAddresses": null,
  "SecondaryPv6Addresses": null,
  "EndpointID": "",
  "Gateway": "",
  "GlobalPv6Address": "",
  "GlobalPv6PrefixLen": 0,
  "IPAddress": "",
  "IPPrefixLen": 0,
  "IPv6Gateway": "",
  "MacAddress": "",
  "Networks": {
    "cs548-network": {
      "IPAMConfig": null,
      "Links": null,
      "Aliases": [
        "b70af771281b"
      ],
      "NetworkID": "32c83e0e9194f3115365ddb92c4b1c18cae4f04b296ed18e4a738e2be1757471",
      "EndpointID": "70e19e8fce23b4e111d9920ceb5189032cc00dd6795abc54746c7a84bf24dca1",
      "Gateway": "172.18.0.1",
      "IPAddress": "172.18.0.2",
      "IPPrefixLen": 16,
      "IPv6Gateway": "",
      "GlobalPv6Address": "",
      "GlobalPv6PrefixLen": 0,
      "MacAddress": "02:42:ac:12:00:02",
      "DriverOpts": null
    }
  }
}
}
]

```

The output of the database container:

```

[
  {
    "Id": "2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6",
    "Created": "2023-09-13T20:27:54.385103227Z",

```

```
"Path": "docker-entrypoint.sh",
"Args": [
  "postgres"
],
"State": {
  "Status": "running",
  "Running": true,
  "Paused": false,
  "Restarting": false,
  "OOMKilled": false,
  "Dead": false,
  "Pid": 3578,
  "ExitCode": 0,
  "Error": "",
  "StartedAt": "2023-09-15T18:44:37.652074072Z",
  "FinishedAt": "2023-09-15T18:36:57.796574332Z"
},
"Image": "sha256:69e765e8cdbefcc310a57c0d5344bd0db05b182e9807b473c1deb8f424066084",
"ResolvConfPath":
"/var/lib/docker/containers/2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6/resolv.conf",
"HostnamePath": "/var/lib/docker/containers/2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6/hostname",
"HostsPath": "/var/lib/docker/containers/2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6/hosts",
"LogPath":
"/var/lib/docker/containers/2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6/2a98dbad48c77e8dd694af58f39871e8bc31c63ef56a3889e54f6e5ffaab8de6-json.log",
"Name": "/cs548db",
"RestartCount": 0,
"Driver": "overlay2",
"Platform": "linux",
"MountLabel": "",
"ProcessLabel": "",
"AppArmorProfile": "",
"ExecIDs": null,
"HostConfig": {
  "Binds": [
    "/data:/var/lib/postgresql/data"
  ],
  "ContainerIDFile": "",
  "LogConfig": {
    "Type": "json-file",
    "Config": {}
  },
  "NetworkMode": "cs548-network",
  "PortBindings": {
    "5432/tcp": [
      {
        "HostIp": "",
        "HostPort": "5432"
      }
    ]
  },
  "RestartPolicy": {
    "Name": "no",
    "MaximumRetryCount": 0
  },
  "AutoRemove": false,
  "VolumeDriver": "",
  "VolumesFrom": null,
  "CapAdd": null,
  "CapDrop": null,
  "CgroupnsMode": "host",
  "Dns": [],
  "DnsOptions": [],
  "DnsSearch": [],
  "ExtraHosts": null,
  "GroupAdd": null,
  "IpcMode": "private",
  "Cgroup": "",
  "Links": null,
```

```
"OomScoreAdj": 0,
"PidMode": "",
"Privileged": false,
"PublishAllPorts": false,
"ReadOnlyRootfs": false,
"SecurityOpt": null,
"UTSMode": "",
"UsernsMode": "",
"ShmSize": 67108864,
"Runtime": "runc",
"ConsoleSize": [
    0,
    0
],
"Isolation": "",
"CpuShares": 0,
"Memory": 0,
"NanoCpus": 0,
"CgroupParent": "",
"BlkioWeight": 0,
"BlkioWeightDevice": [],
"BlkioDeviceReadBps": null,
"BlkioDeviceWriteBps": null,
"BlkioDeviceReadIOps": null,
"BlkioDeviceWriteIOps": null,
"CpuPeriod": 0,
"CpuQuota": 0,
"CpuRealtimePeriod": 0,
"CpuRealtimeRuntime": 0,
"CpusetCpus": "",
"CpusetMems": "",
"Devices": [],
"DeviceCgroupRules": null,
"DeviceRequests": null,
"KernelMemory": 0,
"KernelMemoryTCP": 0,
"MemoryReservation": 0,
"MemorySwap": 0,
"MemorySwappiness": null,
"OomKillDisable": false,
"PidsLimit": null,
"Ulimits": [
    {
        "Name": "nofile",
        "Hard": 65536,
        "Soft": 32768
    }
],
"CpuCount": 0,
"CpuPercent": 0,
"IOMaximumIOps": 0,
"IOMaximumBandwidth": 0,
"MaskedPaths": [
    "/proc/asound",
    "/proc/acpi",
    "/proc/kcore",
    "/proc/keys",
    "/proc/latency_stats",
    "/proc/timer_list",
    "/proc/timer_stats",
    "/proc/sched_debug",
    "/proc/scsi",
    "/sys/firmware"
],
"ReadOnlyPaths": [
    "/proc/bus",
    "/proc/fs",
    "/proc/irq",
    "/proc/sys",
```

```

        "/proc/sysrq-trigger"
    ]
},
"GraphDriver": {
    "Data": {
        "LowerDir": "/var/lib/docker/overlay2/d5e82fec9468f614c14f82243010f7ca09fb8d94613d76be23c93a7257c2804-init/diff:/var/lib/docker/overlay2/f4dec6c3701123f857e67ad84c87285985c79aa6020d1c5283ee48a682bb8959/diff:/var/lib/docker/overlay2/a57726ecef1bf99857684ae3d7020381b94182c7cd1f8218d7b18624ca5df15c/diff:/var/lib/docker/overlay2/a4d52d942eb2971d2e239ce3f0aaf0338a3a9e3963625dc57d8439e446da8b8/diff:/var/lib/docker/overlay2/57b993d59fec1006f30f959f04addb2dedfed19332e8198f05c35a76bf6c7dd0/diff:/var/lib/docker/overlay2/483dbfc8b84ad6e97de66ef27b29589bd5d740fb42c0d944efae74dff1c20b7/diff:/var/lib/docker/overlay2/81288099554aca56e2da325eaa3a1d374e4a748da4f091ae286db01df9f2fe90/diff:/var/lib/docker/overlay2/7a8f99d42e04b76a1681913c0d7f0e0d905b84ab182008cbd0cfa3607c2b6fe6/diff:/var/lib/docker/overlay2/aea4819a6eab0fd878a4c94069df231bf1e0d1a7231872ce3d6c2dd95e498969/diff:/var/lib/docker/overlay2/0c56c28089e92b98fc03d78b6111ac05d2e6eaf79c271a9f8514ff111a1fc2a1/diff:/var/lib/docker/overlay2/fb42c8f1408495ae9fb5c354c336ee83ac661f3ad3c960990dc61f1ab3accf4/diff:/var/lib/docker/overlay2/91a43cfb2e30fd55d63c1c6d1fb85a61d4fa39259460b3b2569b62812a397766/diff:/var/lib/docker/overlay2/d673cb899bf64a2a9d7b4d6c514c3c9b94d2dc088b4a3e84f7e0a3cb6477372e/diff:/var/lib/docker/overlay2/e12240eced938e7753e06fdf4e841a33633829acce45238ccb45fde514296490/diff",
        "MergedDir":
"/var/lib/docker/overlay2/d5e82fec9468f614c14f82243010f7ca09fb8d94613d76be23c93a7257c2804/merged",
        "UpperDir": "/var/lib/docker/overlay2/d5e82fec9468f614c14f82243010f7ca09fb8d94613d76be23c93a7257c2804/diff",
        "WorkDir": "/var/lib/docker/overlay2/d5e82fec9468f614c14f82243010f7ca09fb8d94613d76be23c93a7257c2804/work"
    },
    "Name": "overlay2"
},
"Mounts": [
    {
        "Type": "bind",
        "Source": "/data",
        "Destination": "/var/lib/postgresql/data",
        "Mode": "",
        "RW": true,
        "Propagation": "rprivate"
    }
],
"Config": {
    "Hostname": "2a98dbad48c7",
    "Domainname": "",
    "User": "",
    "AttachStdin": false,
    "AttachStdout": false,
    "AttachStderr": false,
    "ExposedPorts": {
        "5432/tcp": {}
    },
    "Tty": false,
    "OpenStdin": false,
    "StdinOnce": false,
    "Env": [
        "POSTGRES_PASSWORD=0000",
        "PGDATA=/var/lib/postgresql/data/pgdata",
        "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/lib/postgresql/15/bin",
        "GOSU_VERSION=1.16",
        "LANG=en_US.utf8",
        "PG_MAJOR=15",
        "PG_VERSION=15.4-1.pgdg120+1"
    ],
    "Cmd": [
        "postgres"
    ],
    "Image": "postgres",
    "Volumes": {
        "/var/lib/postgresql/data": {}
    },
    "WorkingDir": "",
    "Entrypoint": [
        "docker-entrypoint.sh"
    ],
    "OnBuild": null,
    "Labels": {},
    "StopSignal": "SIGINT"
}

```



```

},
"NetworkSettings": {
  "Bridge": "",
  "SandboxID": "fc92e9cdd2e5e6060631faa77e79d7a71564e819d912b3518aceaa1912f511e0",
  "HairpinMode": false,
  "LinkLocalIPv6Address": "",
  "LinkLocalIPv6PrefixLen": 0,
  "Ports": {
    "5432/tcp": [
      {
        "HostIp": "0.0.0.0",
        "HostPort": "5432"
      },
      {
        "HostIp": "::",
        "HostPort": "5432"
      }
    ]
  },
  "SandboxKey": "/var/run/docker/netns/fc92e9cdd2e5",
  "SecondaryIPAddresses": null,
  "SecondaryIPv6Addresses": null,
  "EndpointID": "",
  "Gateway": "",
  "GlobalIPv6Address": "",
  "GlobalIPv6PrefixLen": 0,
  "IPAddress": "",
  "IPPrefixLen": 0,
  "IPv6Gateway": "",
  "MacAddress": "",
  "Networks": {
    "cs548-network": {
      "IPAMConfig": null,
      "Links": null,
      "Aliases": [
        "2a98dbad48c7"
      ],
      "NetworkID": "32c83e0e9194f3115365ddb92c4b1c18cae4f04b296ed18e4a738e2be1757471",
      "EndpointID": "ee5518cbb69f622d00d44e37f8dce374d625aefd436df3c9df122b4bb44c83c2",
      "Gateway": "172.18.0.1",
      "IPAddress": "172.18.0.3",
      "IPPrefixLen": 16,
      "IPv6Gateway": "",
      "GlobalIPv6Address": "",
      "GlobalIPv6PrefixLen": 0,
      "MacAddress": "02:42:ac:12:00:03",
      "DriverOpts": null
    }
  }
}
}
]

```

d.

User name, grader

Password, \*tDS3|5\_

Console sign-in URL, <https://466942225965.signin.aws.amazon.com/console>

Database password: 0000

e.