

The screenshot shows three terminal windows side-by-side. The leftmost window is titled 'Activities Terminal' and has a root prompt at 'root@83a3ca2899a7:/'. It displays the output of the 'apt update' command, showing progress from 0% to 59% over 690 kB/s. The middle window is titled 'Terminal' and has a root prompt at 'root@0d8b0fbf17ab:/'. It also shows the 'apt update' command output, with progress at 59%. The rightmost window is titled 'Activities Terminal' and has a root prompt at 'root@ifti-Blade:/home/ifti#'. It shows the output of the 'docker ps' command, listing four containers: 'CONTAINER ID', 'IMAGE', 'COMMAND', 'CREATED', 'STATUS', and 'PORTS'. The containers are:

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
0d8b0fbf17ab	ubuntu	"/bin/bash"	23 seconds ago	Up 16 seconds	
d3e8bf11d8e7	ubuntu	"/bin/bash"	50 seconds ago	Up 48 seconds	
83a3ca2899a7	customer	"/bin/bash"	About a minute ago	Up	About a minute

The screenshot shows two terminal windows side-by-side. The left terminal window is running on a host system (Ubuntu 20.04) and displays the output of the `ifconfig` command. It shows interfaces `eth0` and `lo`. The `eth0` interface has an IP of `172.18.255.255` and is connected to a broadcast. The `lo` interface is a loopback interface. The right terminal window is running on a container (Ubuntu 20.04) and also displays the output of `ifconfig`, showing similar interfaces and configurations. Both terminals then run the `root@# docker ps` command, which lists three containers:

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
<code>d0d8b0fbf17ab</code>	<code>ubuntu</code>	<code>"/bin/bash"</code>	<code>23 seconds ago</code>	<code>Up 16 seconds</code>	
<code>d3e8bf11d8e7</code>	<code>production</code>	<code>"/bin/bash"</code>	<code>50 seconds ago</code>	<code>Up 48 seconds</code>	
<code>b3a3ca2899a7</code>	<code>cutomer</code>	<code>"/bin/bash"</code>	<code>About a minute ago</code>	<code>Up About a minute</code>	

The screenshot shows a Linux desktop environment with two terminal windows and a file manager.

Terminal 1 (Left):

```
root@83a3ca82899a7:/ 
File Edit View Search Terminal Help
Preparing to unpack .../python3.8+python2.7_2.7.17-4_all.deb ...
Unpacking python3.8+python2.7 (2.7.17-4) ...
Setting up libpython2.7-stdlib:amd64 (2.7.18-rc1-2) ...
Setting up python2.7 (2.7.18-rc1-2) ...
Setting up libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up python (2.7.18-2ubuntu4) ...
Setting up libpython2.7 (2.7.18-2ubuntu4) ...
Setting up python3.8+python2.7 (2.7.17-4) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Hit1: http://security.ubuntu.com/ubuntu focal-security InRelease
Hit2: http://archive.ubuntu.com/ubuntu focal InRelease
Hit3: http://archive.ubuntu.com/ubuntu focal-updates InRelease
Hit4: http://archive.ubuntu.com/ubuntu focal-backports InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
root@83a3ca82899a7:/# apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@83a3ca82899a7:# 
```

Terminal 2 (Right):

```
root@83a3ca82899a7:/
File Edit View Search Terminal Help
Preparing to unpack .../python2.7_2.7.18-rc1-2 ...
Unpacking python2.7 (2.7.18-rc1-2) ...
Selecting previously unselected package libpython2.7-stdlib:amd64.
preparing to unpack .../libpython2.7-stdlib:amd64_2.7.17-2ubuntu4_amd64.deb ...
Unpacking libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up libpython2.7-minimal:amd64 (2.7.18-rc1-2) ...
Setting up python2.7 (2.7.18-rc1-2) ...
Setting up libpython2.7-minimal:amd64 (2.7.17-2ubuntu4) ...
Setting up libpython2.7 (2.7.18-rc1-2) ...
Linking and byte-compiling packages for runtime python2.7...
Setting up python2.7-minimal (2.7.18-rc1-2) ...
Selecting previously unselected package python2.
(Reading database ... 893 files and directories currently installed.)
Prepared to unpack .../python2_2.7.17-2ubuntu4_amd64.deb ...
Unpacking python2 (2.7.17-2ubuntu4) ...
Selecting previously unselected package python3.8+python2.7.
Preparing to unpack .../python3.8+python2.7_2.7.17-4_all.deb ...
Unpacking python3.8+python2.7 (2.7.17-4) ...
Setting up python2.7 (2.7.18-rc1-2) ...
Setting up libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up python2 (2.7.17-2ubuntu4) ...
Setting up libpython2.7 (2.7.17-2ubuntu4) ...
Setting up python3.8+python2.7 (2.7.17-4) ...
Processing triggers for mime-support (3.64ubuntu1) ...
root@83a3ca82899a7:# 
```

File Manager:

```
root@83a3ca82899a7:/
File Edit View Search Terminal Help
Preparing to unpack .../python3.8+python2.7_2.7.17-4_all.deb ...
Unpacking python3.8+python2.7 (2.7.17-4) ...
Selecting previously unselected package libpython2.7-stdlib:amd64.
preparing to unpack .../libpython2.7-stdlib:amd64_2.7.17-2ubuntu4_amd64.deb ...
Unpacking libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up libpython2.7-minimal:amd64 (2.7.18-rc1-2) ...
Setting up python2.7 (2.7.18-rc1-2) ...
Setting up libpython2.7-minimal:amd64 (2.7.17-2ubuntu4) ...
Setting up libpython2.7 (2.7.18-rc1-2) ...
Linking and byte-compiling packages for runtime python2.7...
Setting up python2.7-minimal (2.7.18-rc1-2) ...
Selecting previously unselected package python2.
(Reading database ... 893 files and directories currently installed.)
Prepared to unpack .../python2_2.7.17-2ubuntu4_amd64.deb ...
Unpacking python2 (2.7.17-2ubuntu4) ...
Selecting previously unselected package python3.8+python2.7.
Preparing to unpack .../python3.8+python2.7_2.7.17-4_all.deb ...
Unpacking python3.8+python2.7 (2.7.17-4) ...
Setting up python2.7 (2.7.18-rc1-2) ...
Setting up libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up python2 (2.7.17-2ubuntu4) ...
Setting up libpython2.7 (2.7.17-2ubuntu4) ...
Setting up python3.8+python2.7 (2.7.17-4) ...
Processing triggers for mime-support (3.64ubuntu1) ...
root@83a3ca82899a7:# 
```

Docker Terminal:

```
root@ifti-Blade:/home/ifti#
File Edit View Search Terminal Help
root@ifti-Blade:/home/ifti# docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS
 NAMES
9d8bbefbf17ab      ubuntu              "/bin/bash"         23 seconds ago    Up 16 seconds
account             ubuntu              "/bin/bash"         50 seconds ago    Up 48 seconds
d1e88f11d8e7        ubuntu              "/bin/bash"         About a minute ago Up About a minute
83a3ca82899a7       customer           "/bin/bash"         About a minute ago Up About a minute
root@ifti-Blade:/home/ifti# 
```

```

Activities Terminal نده سمندر 08:55,30
root@ifti-Blade:/home/ifti
File Edit View Search Terminal Help
"Config": [
    {
        "Subnet": "172.19.0.0/16",
        "Gateway": "172.19.0.1"
    }
],
"Internal": false,
"Attachable": false,
"Ingress": false,
"ConfigFrom": {},
"Network": "",
"ConfigOnly": false,
"ContainerID": "",
"59f7c0e002f0413c0812f4bbba2c83afab22991e23be9f0a29d629c26dd0a521d": {
    "Name": "production-containler-03",
    "EndpointID": "2117e58e77d6a7cec7a81b0211b3e74a28e78c929d740b9167623f01365385ca",
    "MacAddress": "02:42:ac:13:00:04",
    "IPv4Address": "172.19.0.4/16",
    "IPv6Address": ""
},
"94852831b0d0ff719bb413a23d3f231007ba9ff71d3cf3ed842040861c7bab": {
    "Name": "production-containler-03",
    "EndpointID": "90c71f7253fc4bd8753bdf5cfe0e7c71f4963e828b4804c032cabac938299ff",
    "MacAddress": "02:42:ac:13:00:02",
    "IPv4Address": "172.19.0.2/16",
    "IPv6Address": ""
},
"ace3c34a4989f9d018b70e75b63474d4f30a5f0a2927ec8bdbf16fb9230dc9666": {
    "Name": "production-containler-02",
    "EndpointID": "beab3dec76819e747zf02b02a8f8d472da5e0ed567c97f48bf2d206453b9b",
    "MacAddress": "02:42:ac:13:00:03",
    "IPv4Address": "172.19.0.3/16",
    "IPv6Address": ""
},
"Options": {},
"Labels": []
]
root@ifti-Blade:/home/ifti# docker network inspect account customer production | grep Name
    "Name": "account",
    "Name": "account-containler-02",
    "Name": "account-containler-01",
    "Name": "account-contalner-03",
    "Name": "customer",
    "Name": "customer-contanler-02",
    "Name": "customer-contanler-01",
    "Name": "customer-contanler-03",
    "Name": "production",
    "Name": "production-containler-03",
    "Name": "production-containler-01",
    "Name": "production-containler-02",
root@ifti-Blade:/home/ifti# 

```

```

Activities Terminal نده سمندر 16:23,30
root@ifti-Blade:/home/ifti
File Edit View Search Terminal Help
Setting up vim (2:8.1.2269-1ubuntu5) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdiff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim(vim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim(vim) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/da/man1/vim.1.gz because associated file /usr/share/man/da/man1/vim.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/de/man1/vi.1.gz because associated file /usr/share/man/de/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/fr/man1/vi.1.gz because associated file /usr/share/man/fr/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/it/man1/vi.1.gz because associated file /usr/share/man/it/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ja/man1/vi.1.gz because associated file /usr/share/man/ja/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/pl/man1/vi.1.gz because associated file /usr/share/man/pl/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ru/man1/vi.1.gz because associated file /usr/share/man/ru/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/zh/man1/vi.1.gz because associated file /usr/share/man/zh/man1/vi.1.gz (of link group vi) doesn't exist
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/view (view) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/da/man1/vi.1.gz because associated file /usr/share/man/da/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/de/man1/vi.1.gz because associated file /usr/share/man/de/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/fr/man1/vi.1.gz because associated file /usr/share/man/fr/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/it/man1/vi.1.gz because associated file /usr/share/man/it/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ja/man1/vi.1.gz because associated file /usr/share/man/ja/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/pl/man1/vi.1.gz because associated file /usr/share/man/pl/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ru/man1/vi.1.gz because associated file /usr/share/man/ru/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/zh/man1/vi.1.gz because associated file /usr/share/man/zh/man1/vi.1.gz (of link group view) doesn't exist
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/ex (ex) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/da/man1/ex.1.gz because associated file /usr/share/man/da/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/de/man1/ex.1.gz because associated file /usr/share/man/de/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/fr/man1/ex.1.gz because associated file /usr/share/man/fr/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/it/man1/ex.1.gz because associated file /usr/share/man/it/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ja/man1/ex.1.gz because associated file /usr/share/man/ja/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/pl/man1/ex.1.gz because associated file /usr/share/man/pl/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ru/man1/ex.1.gz because associated file /usr/share/man/ru/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/zh/man1/ex.1.gz because associated file /usr/share/man/zh/man1/ex.1.gz (of link group ex) doesn't exist
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/editor (editor) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/da/man1/vim.1.gz because associated file /usr/share/man/da/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/de/man1/vim.1.gz because associated file /usr/share/man/de/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/fr/man1/vim.1.gz because associated file /usr/share/man/fr/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/it/man1/vim.1.gz because associated file /usr/share/man/it/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ja/man1/vim.1.gz because associated file /usr/share/man/ja/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/pl/man1/vim.1.gz because associated file /usr/share/man/pl/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ru/man1/vim.1.gz because associated file /usr/share/man/ru/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/zh/man1/vim.1.gz because associated file /usr/share/man/zh/man1/vim.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/da/man1/editor.1.gz because associated file /usr/share/man/da/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/de/man1/editor.1.gz because associated file /usr/share/man/de/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/fr/man1/editor.1.gz because associated file /usr/share/man/fr/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/it/man1/editor.1.gz because associated file /usr/share/man/it/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ja/man1/editor.1.gz because associated file /usr/share/man/ja/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/pl/man1/editor.1.gz because associated file /usr/share/man/pl/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/ru/man1/editor.1.gz because associated file /usr/share/man/ru/man1/editor.1.gz (of link group editor) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/zh/man1/editor.1.gz because associated file /usr/share/man/zh/man1/editor.1.gz (of link group editor) doesn't exist
Processing triggers for liblc-bin (2.31-0ubuntu9.1) ...
root@ifti-Blade:/home/ifti# exit
root@ifti-Blade:/home/ifti# docker run --name customer-containler-02 -lt ubuntu
root@958271560246:#
exit
root@ifti-Blade:/home/ifti# docker run --name customer-containler-03 -lt ubuntu
root@958271560246:#
exit
root@ifti-Blade:/home/ifti# docker container ls
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS   NAMES
root@ifti-Blade:/home/ifti# docker container ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS   NAMES
root@ifti-Blade:/home/ifti# 

```

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```

root@6d6e2bb00203:/ File Edit View Search Terminal Help
import socket
s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind(("172.18.0.2",1024))
s.listen(5)
while True:
    clt, adr=s.accept()
    stradr=str(adr)
    print("connection to"+stradr+" established")
    string = "Socket programming in python"
    arr = string.encode("utf-8")
    print(arr)
    clt.send(arr)
clt.close()
customer.py" 12L, 322C 9:44 All
root@9842d936eb49:/ File Edit View Search Terminal Help
lo: flags=73,LOOPBACK,RUNNING mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        loop txqueuelen 1000 (Local Loopback)
    RX packets 4 bytes 371 (371.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 371 (371.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@9842d936eb49:# ping 172.24.0.1
PING 172.24.0.1 (172.24.0.1): 56 data bytes
64 bytes from 172.24.0.1: icmp_seq=0 ttl=64 time=0.173 ms
64 bytes from 172.24.0.1: icmp_seq=1 ttl=64 time=0.119 ms
64 bytes from 172.24.0.1: icmp_seq=2 ttl=64 time=0.121 ms
64 bytes from 172.24.0.1: icmp_seq=3 ttl=64 time=0.123 ms
64 bytes from 172.24.0.1: icmp_seq=4 ttl=64 time=0.121 ms
^C-- 172.24.0.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max/stddev = 0.119/0.131/0.173/0.000 ms
root@9842d936eb49:# Direct messages + 9:44 17:24,30

```

```

root@c133efb17450:/ File Edit View Search Terminal Help
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73,LOOPBACK,RUNNING mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        loop txqueuelen 1000 (Local Loopback)
    RX packets 18 bytes 1588 (1.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 18 bytes 1588 (1.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@c133efb17450:# ping 172.24.0.1
PING 172.24.0.1 (172.24.0.1): 56 data bytes
64 bytes from 172.24.0.1: icmp_seq=0 ttl=64 time=0.162 ms
64 bytes from 172.24.0.1: icmp_seq=1 ttl=64 time=0.128 ms
64 bytes from 172.24.0.1: icmp_seq=2 ttl=64 time=0.127 ms
^C-- 172.24.0.1 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max/stddev = 0.127/0.139/0.162/0.000 ms
root@c133efb17450:# Direct messages + 9:44 17:24,30

```

```

root@ifti-Blade:/home/ifti File Edit View Search Terminal Help
Unpacking python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python2.7.
Preparing to unpack .../python2.7_2.7.15-rc1-1~18.04ubuntu1.1_amd64.deb ...
Unpacking python2.7 (2.7.15-rc1-1~18.04ubuntu1.1) ...
Selecting previously unselected package libpython-stdlib:amd64.
Preparing to unpack .../libpython-stdlib_2.7.15-rc1-1_amd64.deb ...
Unpacking libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python2.7-minimal (2.7.15-rc1-1) ...
Linking and byte-compiling package for runtime python2.7...
Selecting previously unselected package python.
(Reading database ... 172239 files and directories currently installed.)
Preparing to unpack .../python_2.7.15-rc1-1_amd64.deb ...
Unpacking python (2.7.15-rc1-1) ...
Setting up python2.7 (2.7.15-rc1-1~18.04ubuntu1.1) ...
Setting up libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python (2.7.15-rc1-1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1)
Processing triggers for gnome-menus (3.13.3-11ubuntu1.1) ...
Processing triggers for mime-support (3.6@ubuntu1) ...
root@ifti-Blade:/home/ifti# python host.py
Socket programming in python.
root@ifti-Blade:/home/ifti# Direct messages + 9:44 17:24,30

```

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```

root@6d6e2bb00203:/ File Edit View Search Terminal Help
root@6d6e2bb00203:# vi customer.py
connection to('172.18.0.1', 36969) established
Socket programming in python.
^C[Traceback (most recent call last):
  File "customer.py", line 6, in <module>
    clt, adr=s.accept()
  File "/usr/lib/python2.7/socket.py", line 206, in accept
    sock, addr = self._sock.accept()
KeyboardInterrupt
root@6d6e2bb00203:# vi customer.py
root@6d6e2bb00203:# python customer.py
connection to('172.18.0.1', 36710) established
There is a order for you Dear Host
connection to('172.18.0.1', 36714) established
There is a order for you Dear Host
connection to('172.18.0.1', 36716) established
There is a order for you Dear Host
root@9842d936eb49:/ File Edit View Search Terminal Help
lo: flags=73,LOOPBACK,RUNNING mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        loop txqueuelen 1000 (Local Loopback)
    RX packets 4 bytes 371 (371.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 371 (371.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@c133efb17450:/ File Edit View Search Terminal Help
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73,LOOPBACK,RUNNING mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        loop txqueuelen 1000 (Local Loopback)
    RX packets 18 bytes 1588 (1.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 18 bytes 1588 (1.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@c133efb17450:# ping 172.24.0.1
PING 172.24.0.1 (172.24.0.1): 56 data bytes
64 bytes from 172.24.0.1: icmp_seq=0 ttl=64 time=0.162 ms
64 bytes from 172.24.0.1: icmp_seq=1 ttl=64 time=0.128 ms
64 bytes from 172.24.0.1: icmp_seq=2 ttl=64 time=0.127 ms
^C-- 172.24.0.1 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max/stddev = 0.127/0.139/0.162/0.000 ms
root@c133efb17450:# Direct messages + 9:44 17:25,30

```

```

root@ifti-Blade:/home/ifti File Edit View Search Terminal Help
Linking and byte-compiling packages for runtime python2.7...
Setting up python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python.
(Reading database ... 172239 files and directories currently installed.)
Preparing to unpack .../python_2.7.15-rc1-1_amd64.deb ...
Unpacking python (2.7.15-rc1-1) ...
Setting up python2.7 (2.7.15-rc1-1~18.04ubuntu1.1) ...
Setting up libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python (2.7.15-rc1-1) ...
Processing triggers for desktop-file-utils (0.23-ubuntu3.18.04.2) ...
Processing triggers for gnome-menus (3.13.3-11ubuntu1.1) ...
Processing triggers for mime-support (3.6@ubuntu1) ...
root@ifti-Blade:/home/ifti# python host.py
Socket programming in python.
There is a order for you Dear Host
root@ifti-Blade:/home/ifti# python host.py
There is a order for you Dear Host
root@ifti-Blade:/home/ifti# python host.py
There is a order for you Dear Host
root@ifti-Blade:/home/ifti# Direct messages + 9:44 17:25,30

```

The screenshot shows a Linux desktop environment with several open windows:

- Terminal 1 (Top Left):** A root shell on a host with IP 172.18.0.1. It runs a Python socket server on port 1024. The server has accepted a connection from 172.24.0.1. The user is interacting with the server via a Python script named customer.py.
- Terminal 2 (Top Right):** A root shell on a host with IP 172.24.0.1. It shows network statistics for the interface lo, indicating traffic between the two hosts.
- Terminal 3 (Bottom Left):** A root shell on a host with IP 172.24.0.1. It runs a Python script OrderComeHost.py which connects to the server at 172.23.0.1:1024.
- File Browser (Bottom Center):** A file browser window showing the directory /home/ifti-Blade. It lists files such as production.py, 13L, and 439C.

The screenshot shows a Linux desktop environment with several open windows:

- Activities**: A dock containing icons for various applications like a file manager, terminal, browser, and system settings.
- Terminal**: An application window titled "root@dd6e2bb00203:/". It contains the command "root@dd6e2bb00203:/#".
- Terminal**: Another application window titled "root@c133efb17450:/". It contains the command "root@c133efb17450:/#".
- Slack**: A window titled "Slack | cs307-lab | NU-PWR-CS118". It displays a message from "node-smrtr" at 17:33:30: "Dear Production department please there is an order in customer department and accomodate this order and tell the account department for the bill".
- File Manager**: A window titled "root@9842d936eb49:/". It shows the contents of the "/home/ifti" directory, including files like "examples.desktop", "host.py", "production.py", "razercommander", "snap", and "templates". It also contains a message from "root@9842d936eb49:".
- File Manager**: Another window titled "root@9842d936eb49:/". It shows the same directory listing and message as the previous file manager window.

A screenshot of a Linux desktop environment, likely Ubuntu, showing four terminal windows and a Slack notification window. The desktop has a dark theme with icons on the left. The top bar shows the time as 17:40:30 and the date as Wednesday, 2023-06-28. The Slack window in the top right corner displays a message from 'NU-PWR-CS118' with a timestamp of 17:40:30. The four terminal windows are: 1) A root terminal on a host with IP 98.42.93.6 (root@9842d936eb49) showing network interface statistics for 'lo'. 2) A root terminal on a host with IP 133.174.50 (root@c133efb17450) running the command 'vi ComeFromproduction.py'. 3) A root terminal on a host with IP 6.6.6.6 (root@6.6.6.6) running the command 'vi ComeFromproduction.py'. 4) A root terminal on a host with IP 133.174.50 (root@c133efb17450) running the command 'ComeFromproduction.py'. The bottom of the screen shows a dock with various application icons.

Activities Terminal 1742,30

Slack | cs307-lab | NU-PWR-CS118

```
File Edit View Search Terminal Help
root@6d6e2bb00203:/# [ ]
```

```
File Edit View Search Terminal Help
root@c133efb17450:/# [ ]
```

```
File Edit View Search Terminal Help
root@ifti-Blade:/home/ifti# [ ]
```

```
File Edit View Search Terminal Help
root@9842d936eb49:/#
^Traceback (most recent call last):
  File "account.py", line 6, in <module>
    clt, adr=s.accept()
  File "/usr/lib/python2.7/socket.py", line 206, in accept
    sock, addr = self._sock.accept()
KeyboardInterrupt
root@9842d936eb49:/# vim account.py
root@9842d936eb49:/# python account.py
^Traceback (most recent call last):
  File "account.py", line 6, in <module>
    clt, adr=s.accept()
  File "/usr/lib/python2.7/socket.py", line 206, in accept
    sock, addr = self._sock.accept()
KeyboardInterrupt
root@9842d936eb49:/# python account.py
connection to ('172.23.0.1', 51470) established
Hello am from productulon department:please prepare the billl for the order an
d tell admin
[ ]
```

```
File Edit View Search Terminal Help
root@9842d936eb49:/#
^Traceback (most recent call last):
  File "comefromproduction.py", line 3, in <module>
    s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
  File "/usr/lib/python2.7/socket.py", line 226, in meth
    return getattr(self, sock_name)(*args)
socket.error: [Errno 111] Connection refused
root@ifti-Blade:/home/ifti# python comefromproduction.py
Hello am from productulon department:please prepare the billl for the order and tell admin
root@ifti-Blade:/home/ifti# [ ]
```

Activities Terminal 1746,30

Slack | cs307-lab | NU-PWR-CS118

```
File Edit View Search Terminal Help
root@6d6e2bb00203:/# [ ]
```

```
File Edit View Search Terminal Help
root@c133efb17450:/# vi Comefromproduction.py
root@c133efb17450:/# [ ]
```

```
File Edit View Search Terminal Help
root@ifti-Blade:/home/ifti# [ ]
```

```
File Edit View Search Terminal Help
root@9842d936eb49:/#
^Traceback (most recent call last):
  File "account.py", line 6, in <module>
    clt, adr=s.accept()
  File "/usr/lib/python2.7/socket.py", line 206, in accept
    sock, addr = self._sock.accept()
KeyboardInterrupt
root@9842d936eb49:/# python account.py
connection to ('172.23.0.1', 51470) established
Hello am from productulon department:please prepare the billl for the order an
d tell admin
^Traceback (most recent call last):
  File "account.py", line 6, in <module>
    clt, adr=s.accept()
  File "/usr/lib/python2.7/socket.py", line 206, in accept
    sock, addr = self._sock.accept()
KeyboardInterrupt
root@9842d936eb49:/# vim account.py
root@9842d936eb49:/# [ ]
```

```
File Edit View Search Terminal Help
import socket
s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind(("172.23.0.1",1024))
s.listen(5)
while True:
    clt, adr=s.accept()
    stradr=str(adr)
    print("connection to "+stradr+" established")
    string = "Hello an admin department: \ please prepare bill for the customer department"
    arr = string.encode('utf-8')
    print(arr)
    clt.send(arr)
```

```
File Edit View Search Terminal Help
root@9842d936eb49:/# [ ]
```

The screenshot shows a Linux desktop environment with several windows open:

- Activities**: A dock containing icons for various applications like a file manager, terminal, browser, and file viewer.
- Terminal**: An application window showing a root shell on a host with IP 6d6e2bb00203. The user runs `python account.py`, which connects to port 51470 and prints a message about preparing a bill.
- File Manager**: An application window showing a root shell on a host with IP c133efb17450. The user runs `vi Comefromproduction.py`, then `python Comefromproduction.py`, and prints a message about preparing a bill.
- Slack**: A window titled "Slack | cs307-lab | NU-PWR-CS118" showing a direct message from "root@c133efb17450:" to "root@6d6e2bb00203:". The message reads: "Hellow am admin department: \ please prepare bill for the customer department".

Sudo su

```
docker run -name customer-container-01 -it ubuntu  
docker run -name customer-container-02 -it ubuntu  
docker run -name customer-container-03 -it ubuntu  
docker run -name production-container-01 -it ubuntu  
docker run -name production-container-02 -it ubuntu  
docker run -name production-container-03 -it ubuntu  
docker run -name account-container-01 -it ubuntu  
docker run -name account-container-02 -it ubuntu  
docker run -name account-container-01 -it ubuntu
```

```
docker exec -it production-container-01 bash  
docker exec -it production-container-02 bash  
docker exec -it production-container-03 bash  
docker exec -it customer-container-01 bash  
docker exec -it customer-container-02 bash  
docker exec -it customer-container-03 bash  
docker exec -it account-container-01 bash  
docker exec -it account-container-02 bash  
docker exec -it account-container-03 bash
```

```
for create host network container  
docker run -name admin -network host -it ubuntu
```