



//\* IBM Z DAY  
//\* open | on | secure

15 SEPTEMBER 2021

# Web Server Hands-on Lab

presented with Mom Relaunch & Latinas in Tech



IBM Z



APP MODERNIZATION



OPEN Z



VOICE OF Z



STUDENT Z



//\* IBM Z DAY  
//\* open | on | secure

15 SEPTEMBER 2021

## Web Server: Hands-on lab with Friends of Z

*September 15, 2021 at 2:00-3:00 PM EDT*



Student Z



**Elizabeth Joseph**

Developer Advocate  
IBM



**Jayashree Harsha**

Intern  
Mom Relaunch



**Rocio van Nierop**

Co-Founder & Executive Director  
Latinas in Tech



**Reena Gupta**

CEO & Founder  
Mom Relaunch

# LinuxONE Community Cloud

Get a free LinuxONE Community Cloud Virtual Machine:  
<https://linuxone.cloud.marist.edu/#/register?flag=VM>

And learn more at  
<https://developer.ibm.com/linuxone>

Use the event code:

Follow the Virtual Server Deployment Guide: <https://github.com/linuxone-community-cloud/technical-resources/blob/master/faststart/deploy-virtual-server.md> and launch a RHEL8.3 server.

Tip: If you've never used SSH before, logging into the server may be the trickiest part of this whole tutorial! Let us know if you need help.

# Log in and explore!

```
$ cd ~  
$ mkdir  
my_directory  
$ cd my_directory  
$ touch a_file  
$ touch  
another_file
```

```
$ ls  
a_file another_file  
$ rm a_file  
$ cd /  
$ ls -l
```

bin - where programs (binaries) are kept

etc - System-wide configuration files

home - Where users keep their own files, including you!

lib - Short for “library”. Shared code and kernel libraries

root - Where the system administrator (root) keeps their files

usr - Shared, read-only files, which includes some binaries and documentation

var - Short for “variable” files. Items in here change frequently, including logs, printer spools, and some caches.

# Administrator access & installing software

```
$ ls /root
```

```
ls: cannot open directory '/root':  
permission denied
```

```
$ sudo ls /root
```

```
$ sudo yum install nano
```

```
linux1@mreventtest:~  
File Edit View Search Terminal Help  
[linux1@mreventtest ~]$ sudo yum install nano  
Updating Subscription Management repositories.  
Unable to read consumer identity  
  
This system is not registered to Red Hat Subscription Management. You can use su  
bscription-manager to register.  
  
Last metadata expiration check: 0:36:49 ago on Fri 14 May 2021 08:46:55 AM EDT.  
Dependencies resolved.  
=====
```

Package	Architecture	Version	Repository	Size
Installing: nano	s390x	2.9.8-1.el8	rhel8-base	581 k

```
Transaction Summary  
=====
```

Transaction Summary
Install 1 Package

```
Total download size: 581 k  
Installed size: 2.3 M  
Is this ok [y/N]: █
```

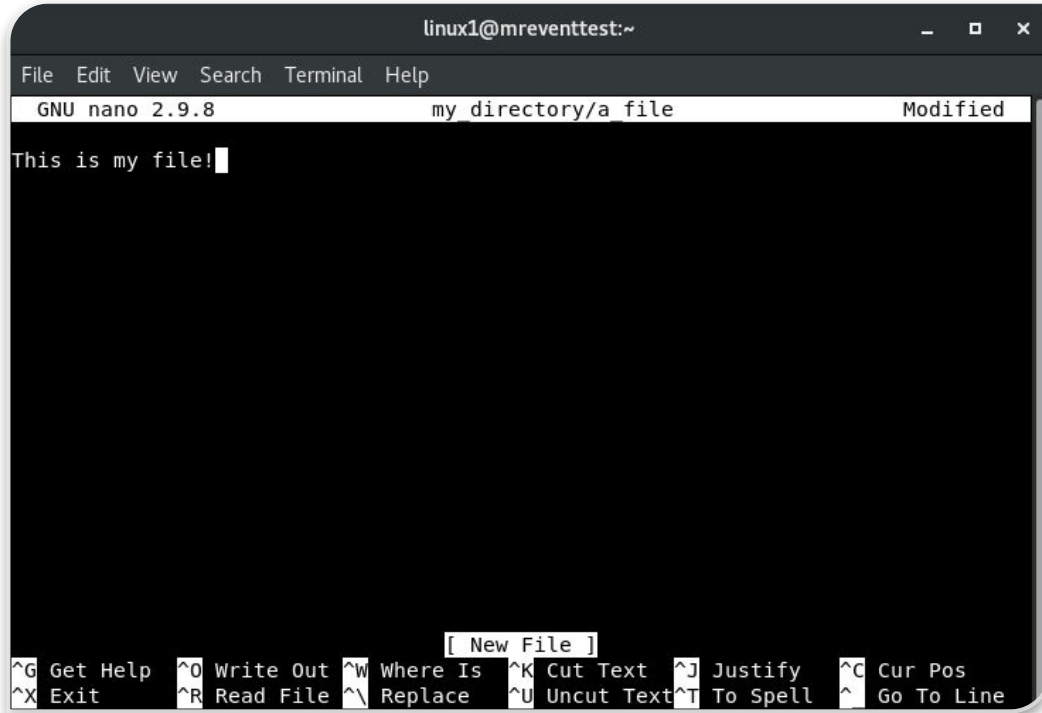
# Is this really IBM Z? Let's check!

```
$ lscpu
```

```
$ cat /proc/cpuinfo
```

```
linux1@mreventtest:~  
File Edit View Search Terminal Help  
[linux1@mreventtest ~]$ lscpu  
Architecture:          s390x  
CPU op-mode(s):       32-bit, 64-bit  
Byte Order:           Big Endian  
CPU(s):               2  
On-line CPU(s) list: 0,1  
Thread(s) per core:   1  
Core(s) per socket:   1  
Socket(s) per book:   1  
Book(s) per drawer:   1  
Drawer(s):            2  
NUMA node(s):         1  
Vendor ID:            IBM/S390  
Machine type:         8561  
CPU dynamic MHz:      5200  
CPU static MHz:       5200  
BogoMIPS:             3241.00  
Hypervisor:           z/VM 7.1.0  
Hypervisor vendor:    IBM  
Virtualization type:  full  
Dispatching mode:     horizontal  
L1d cache:            128K  
L1i cache:            128K  
L2d cache:            4096K
```

# Editing and viewing files



```
linux1@mreventtest:~
File Edit View Search Terminal Help
GNU nano 2.9.8 my_directory/a_file Modified
This is my file!
[ New File ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

```
$ cd
```

```
$ nano
```

```
my_directory/a_file
```

(ctrl x to exit, it will ask to save  
and confirm file name)

```
$ sudo tail -f
```

```
/var/log/messages
```

# Let's launch a web server!

```
$ sudo yum install httpd
```

```
$ sudo systemctl start httpd
```

```
$ sudo systemctl enable httpd
```

```
$ sudo systemctl status httpd
```

```
$ sudo iptables -I INPUT -p tcp --dport 80 -j ACCEPT
```

```
$ sudo iptables -S
```



# Build a website with Jayashree!

```
$ sudo nano /var/www/html/index.html
```

## **Simple HTML code:**

```
<html>
  <body>
    <h1> Launching my Webpage in IBM Z </h1>
  </body>
</html>
```

Ctrl+X => To exit the file, after saving the changes.

# Viewing the Website

Navigate to the IP address of your server in your web browser to see your site.

The screenshot displays the Google Cloud Platform console interface for the 'Infrastructure' section. At the top, it shows the user is logged in as 'jadayan01@gmail.com'. Below this, a summary card indicates '1 Total' instances, with a breakdown of 1 Active, 0 Shutoff, and 0 Error. A 'Quota' bar shows 'Instance' usage at 1/1. Below the summary, there are search and action buttons: 'Create', 'Start', 'Stop', and 'Delete'. A table lists the instances with columns for Name, Status, Type, Linux User, Key Pair, IP Address, Create Date, and Details. One instance, 'myserver', is listed with a status of 'ACTIVE' (highlighted with a red box), type 'General purpose VM', Linux user 'linux1', key pair 'mycloudkey', IP address '148.100.4.39' (highlighted with a red box), and create date 'Thu 10-Aug-2017 at 19:27:45 UTC'. A 'View details' button is present for this instance.

Name	Status	Type	Linux User	Key Pair	IP Address	Create Date	Details
myserver	ACTIVE	General purpose VM	linux1	mycloudkey	148.100.4.39	Thu 10-Aug-2017 at 19:27:45 UTC	<a href="#">View details</a>

# Mom Relaunch & Latinas in Tech



**Reena Gupta**

CEO & Founder  
Mom Relaunch



**Rocio van Nierop**

Co-Founder & Executive Director  
Latinas in Tech



//\* IBM Z DAY  
//\* open | on | secure

15 SEPTEMBER 2021

# THANK YOU!

Join the IBM Z & LinuxONE Community: [ibm.com/community/z/](https://ibm.com/community/z/)