GUIDE #1: A Simple Test Scenario and Setup of Ezstackr Cloud

Introduction:
The public cloud is a range of computing services that are offered by platforms such as AWS, Azure, and GCP and making them available over the internet. They are readily accessible to all that want to use and/or purchase them. There are three major players in the public cloud platforms arena - Amazon Web Services (AWS), Microsoft's Azure, and Google Cloud Platform. The top cloud computing companies are addressing a large and growing market. In turn, they provide a wide array of cloud-related products and services, including infrastructure-as-a-service (IaaS), platform as a service (PaaS) and software-as-a-service solutions (SaaS).
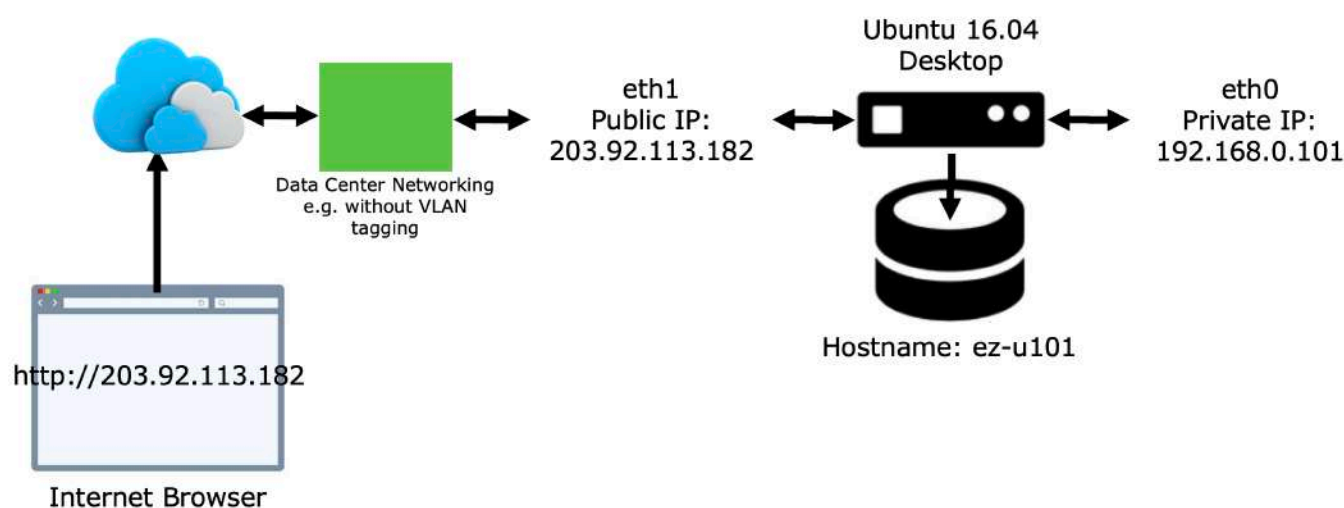
Introduction to Ezstackr:
Ezstackr is:
- Cloud service providing secure, resizable compute capacity
- Cost effective and easy to deploy for enterprises, SMEs, app developers, system admins
- Easy to use web service: drag & drop, point & click interface allows you to configure, provision, scale & build highly available compute
- On-demand: increase or decrease capacity within minutes, not hours
- Complete control of your computing resources

Test Scenario Summary:
Here is a simple test scenario envisioned for a basic first step Ezstackr proof of concept
1. Navigating Cloud Admin User Menus
2. Adding & Configuring User Accounts / Adding Resources for Users
3. Activating User for Cloud Operations
4. Getting Users to test their User Login / Setting User Access Control
5. Adding Public IP
6. Navigating Cloud User Menus
7. Creating DVD ISO Disks / Creating VMs / Launching VMs
8. Connecting VMs to Network and Changing Default Network to Another Network
9. Adding Public IP into VMs
10. Installing Web Server / Connecting to Web Server from Internet

A Simple Test Scenario for Ezstackr

LGA

eth1
Public IP:
203.92.113.182

Ubuntu 16.04
Desktop

eth0
Private IP:
192.168.0.101

Data Center Networking
e.g. without VLAN
tagging

Hostname: ez-u101

http://203.92.113.182

Internet Browser

Supermicro Server setup:
For this test, we used a typical Supermicro server. Depending on how the server is configured, it might come with several ethernet ports.

Supermicro Server Setup:

LGA

In a typical scenario:
Port (2) is for data IP and console IP
Port (3) is for public IP

Network Setup
Make a network and some public IPs available. This test used the network as follows:

```
Network:    203.92.113.176/29
Broadcast:  203.92.113.183
Gateway:    203.92.113.177
Subnet:     255.255.225.248
```

Configured resources:
```
Data:       203.92.113.180 [used for data]
Console:    203.92.113.181 [used for console]
Public IP:  203.92.113.178
Public IP:  203.92.113.179
Public IP:  203.92.113.182 [used for Linux public IP]
```

Setting Up Ezstackr for the first time:
When you are setting up the ezStackr for the first time. Connect a VGA display monitor to the VGA port and a USB keyboard to the USB port. These details are found in the document: "Quick Start Guide" or "ezStackr Quick Guide.pdf".

URL for Ezstackr Cloud Admin configuration:
After successful setup of Ezstackr, it is time to perform cloud administration duties by logging into the following URL:
http://203.92.113.180

LOGGING IN:
As Admin: Log in
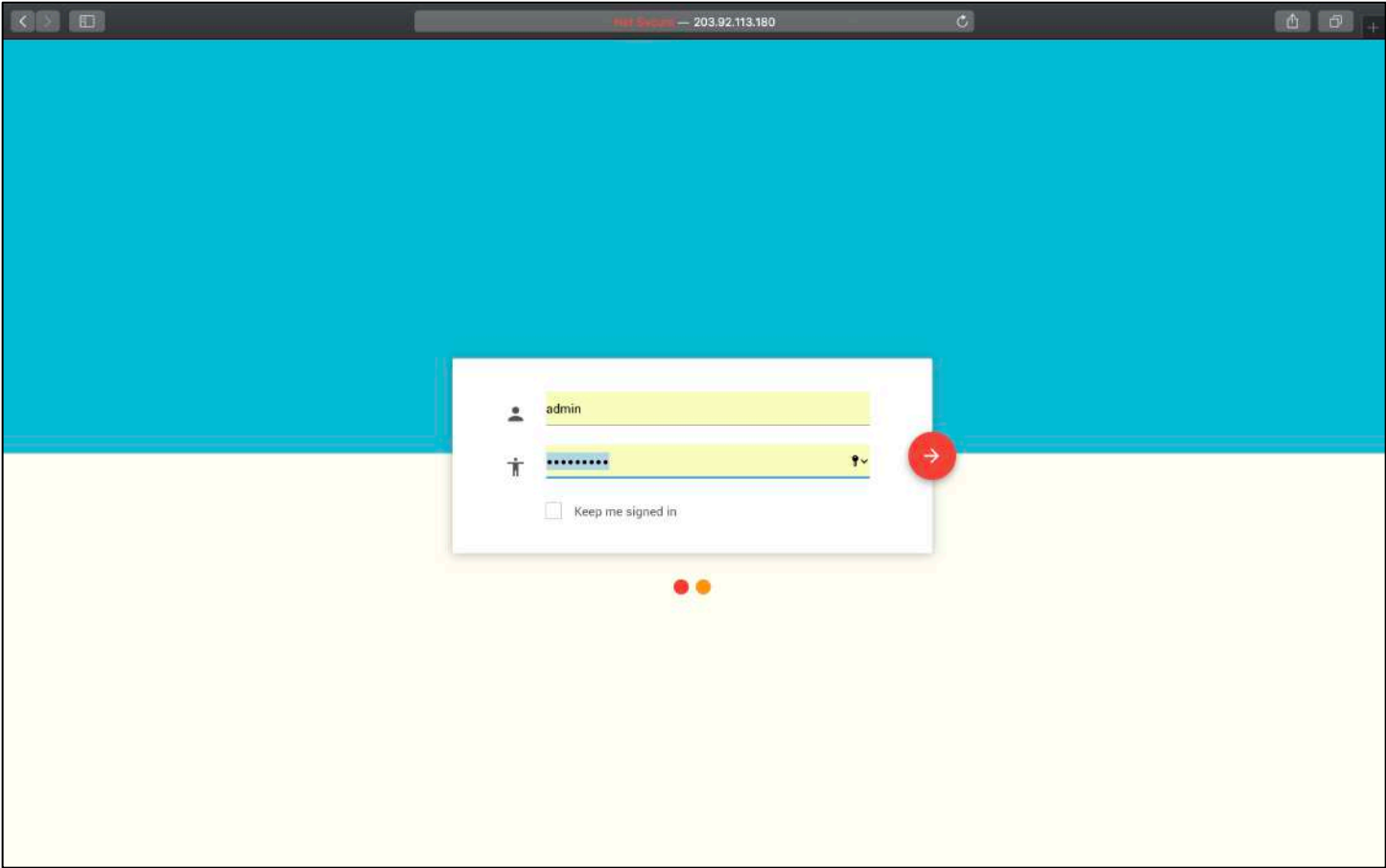
NAVIGATING CLOUD ADMIN USER MENUS
Admin user home screen below
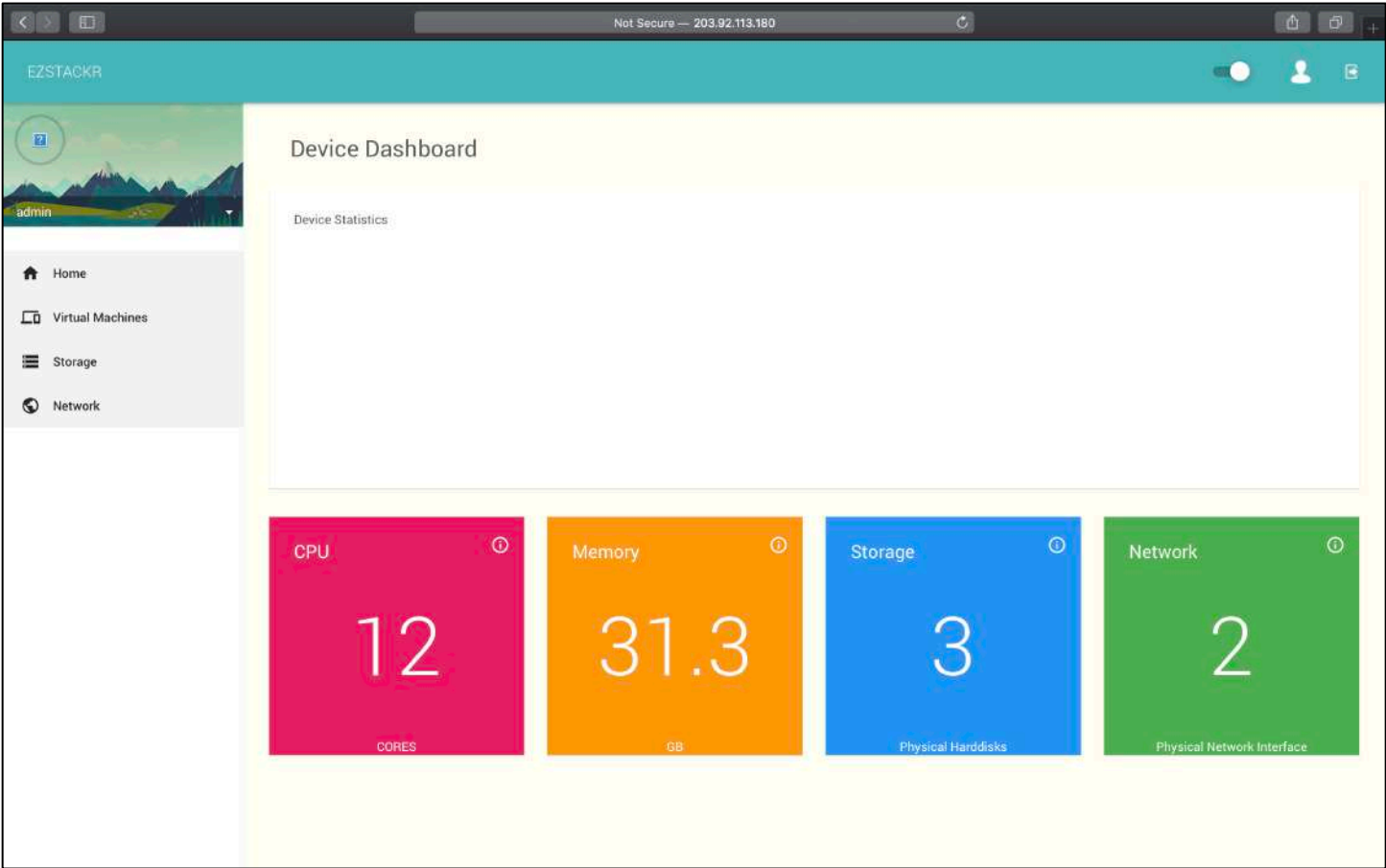
As Admin: Navigating the Home page. Select "CPU"
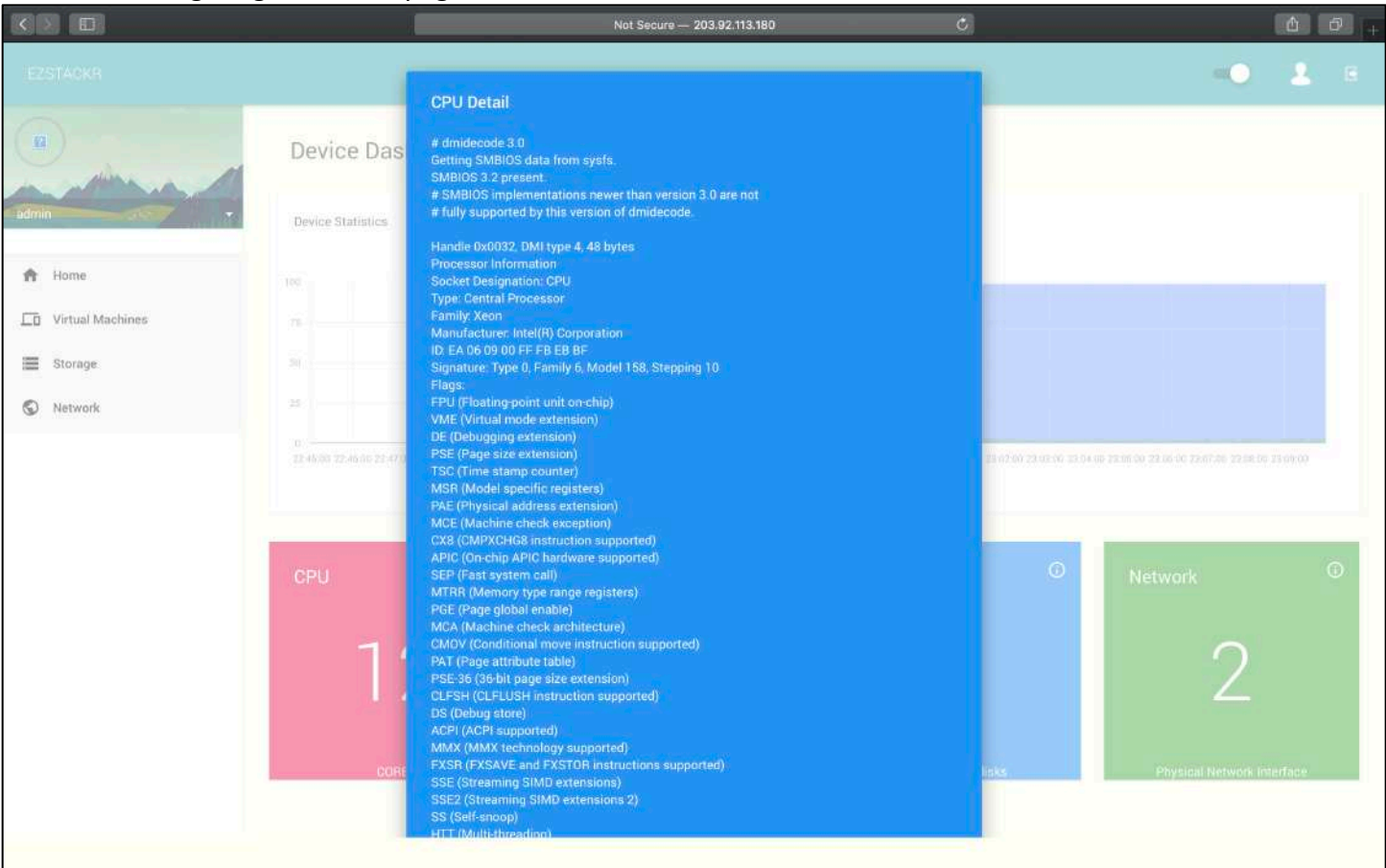
As Admin: Move around the Home screen. Select "Memory"
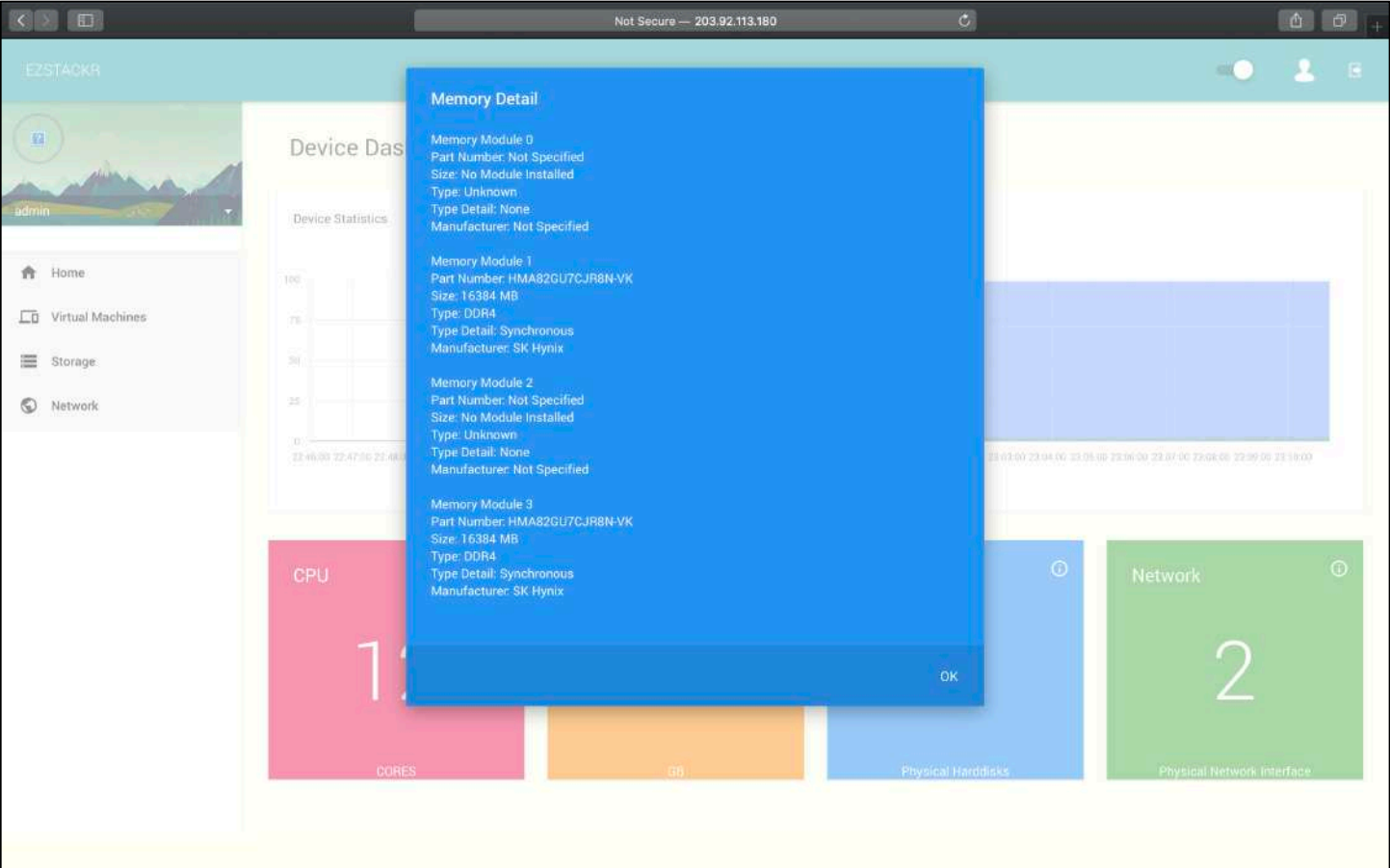
As Admin: Move around the Home screen. Select "Network"
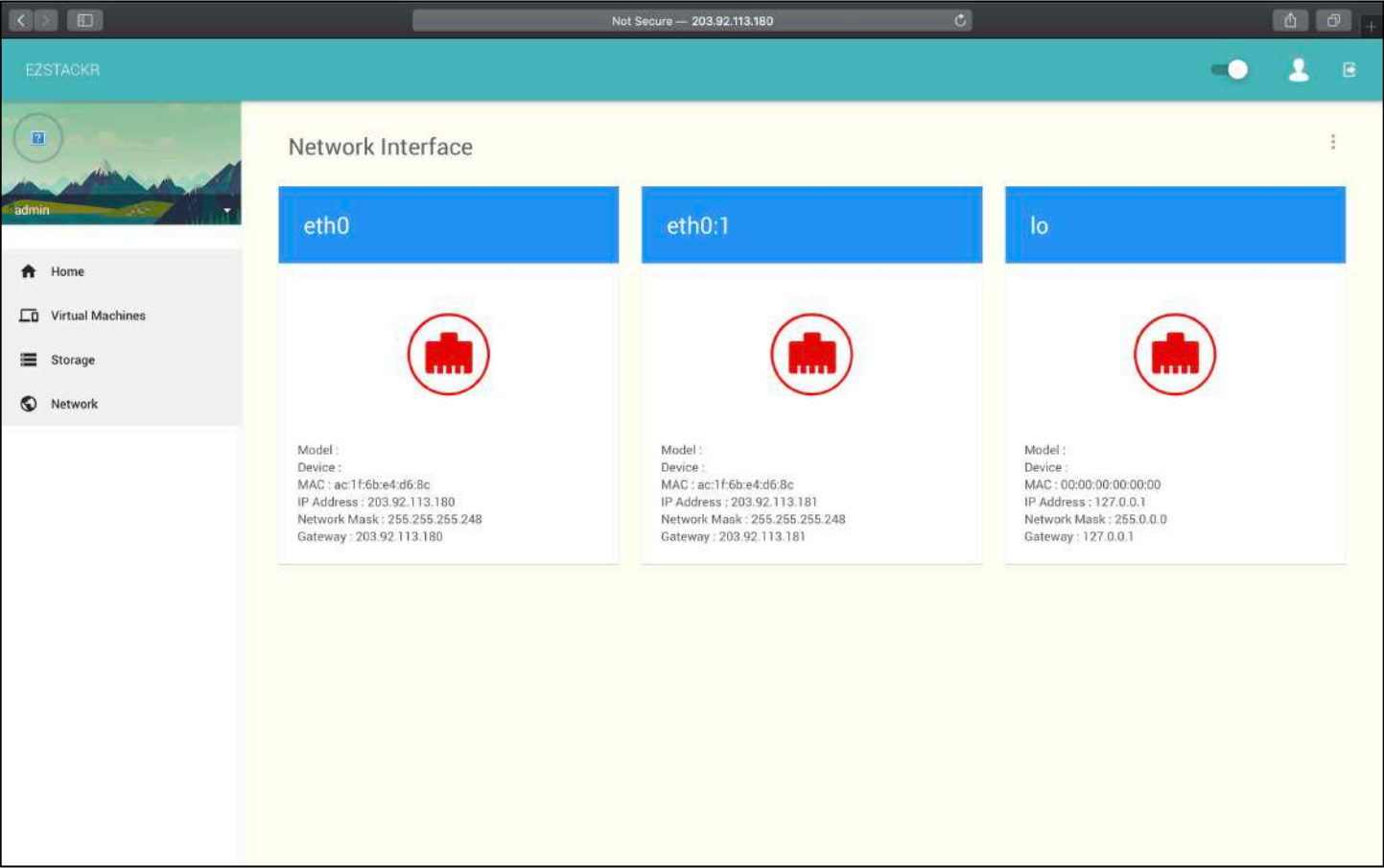
As Admin: Select dropdown ▼ on "admin". An additional menu comprising "View Profile", "Updates" and "Site Admin" appears.
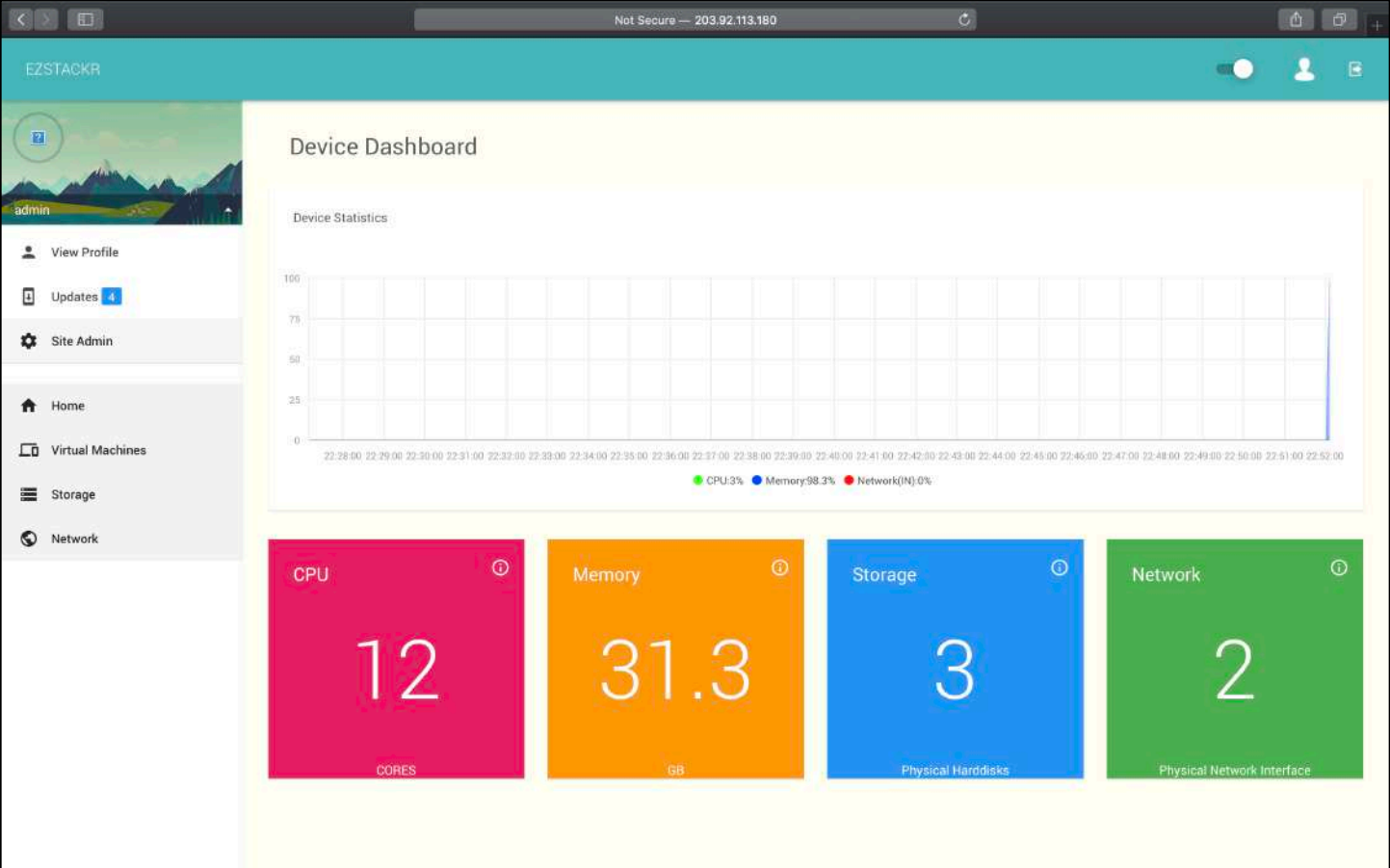
ADDING & CONFIGURING USER ACCOUNTS
As Admin: Select "Site Admin"
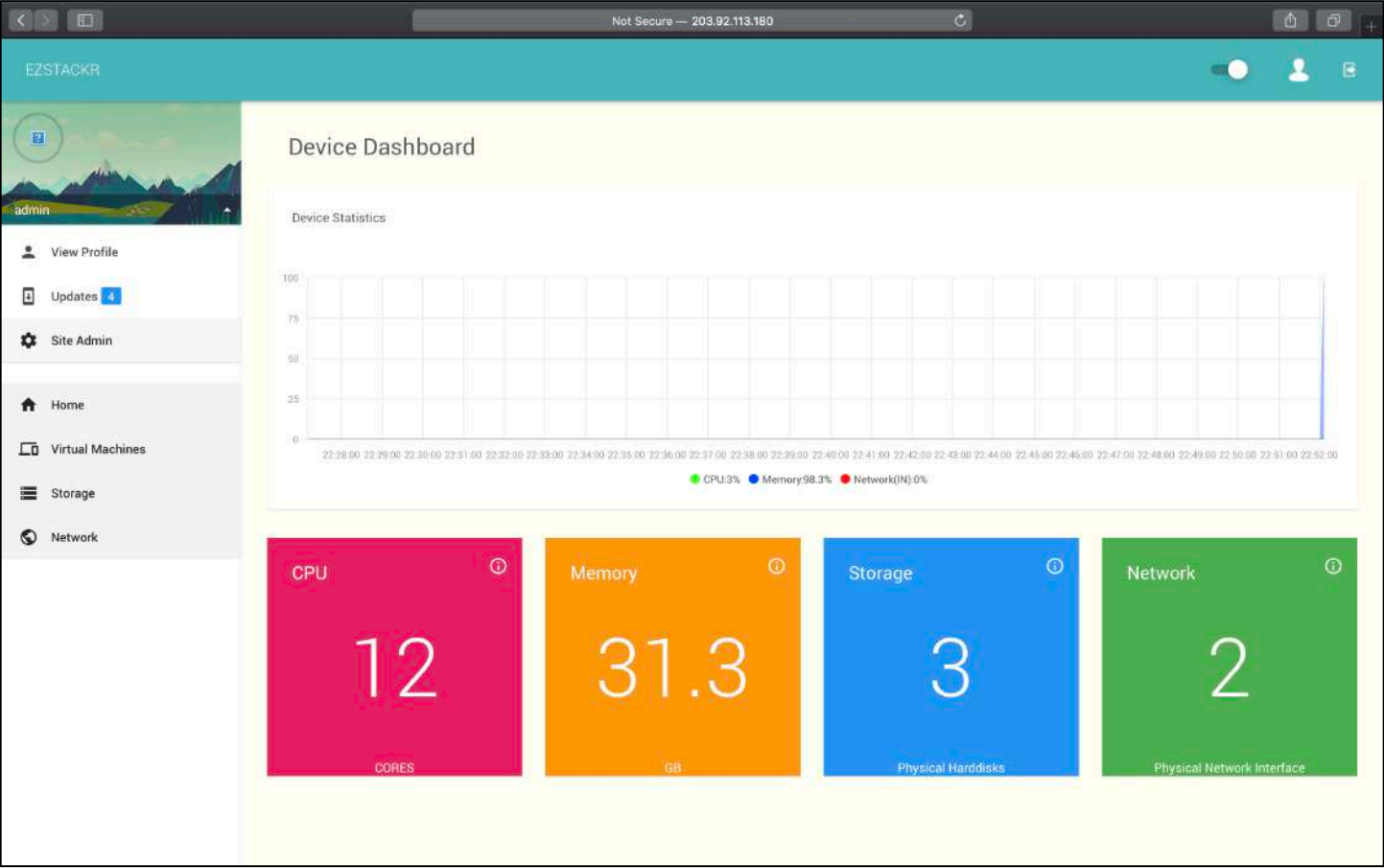
The "Site Admin" menu appears
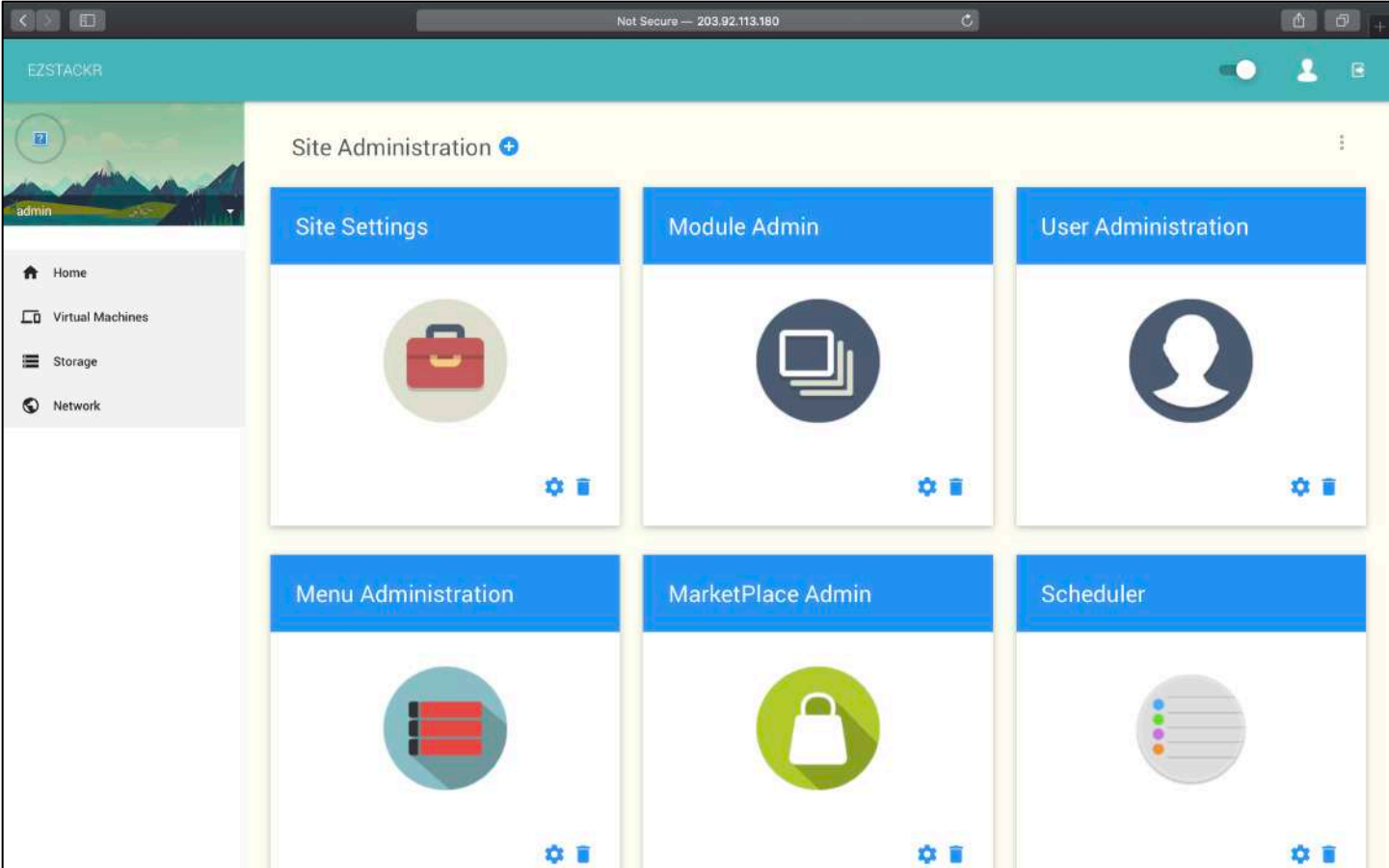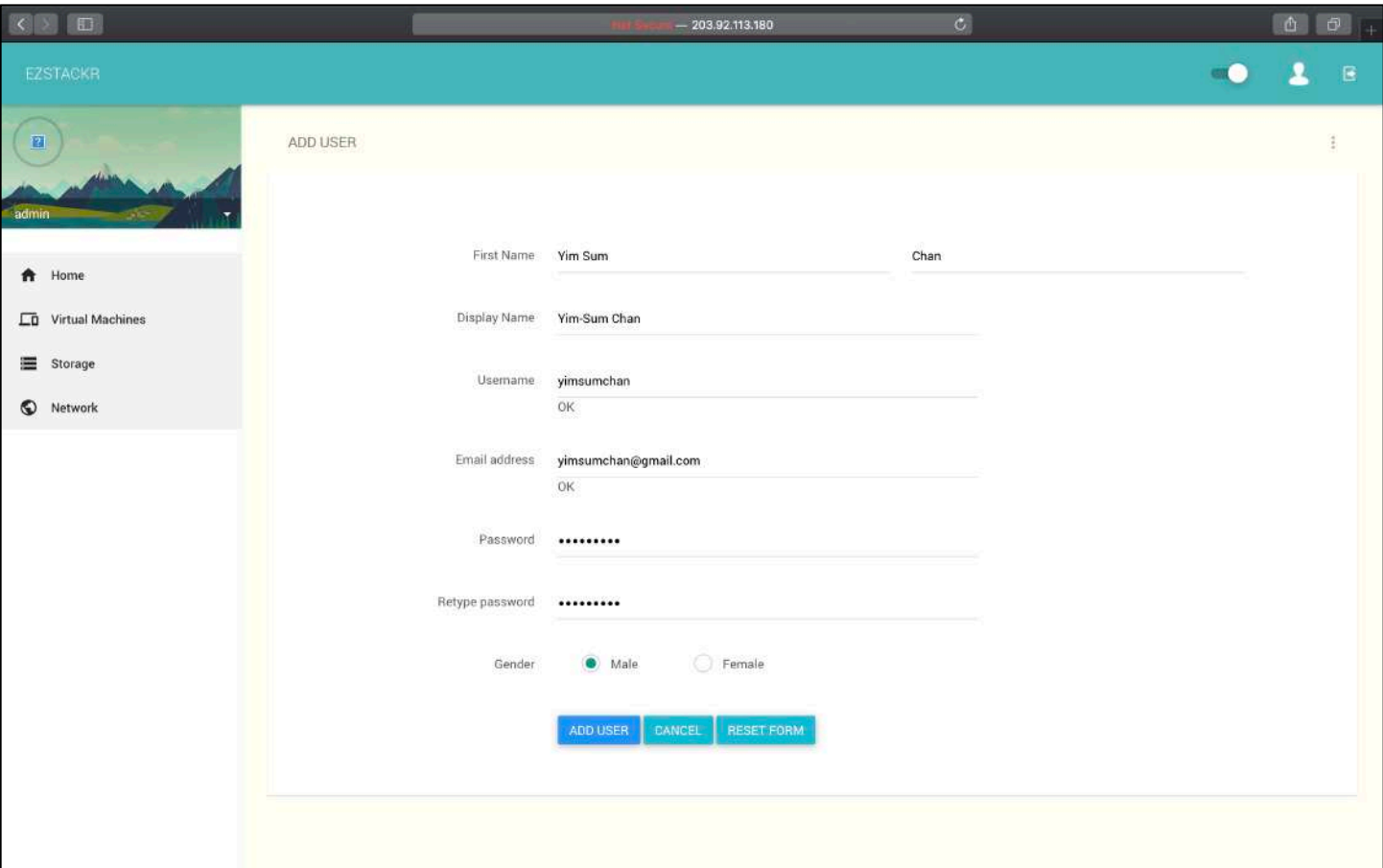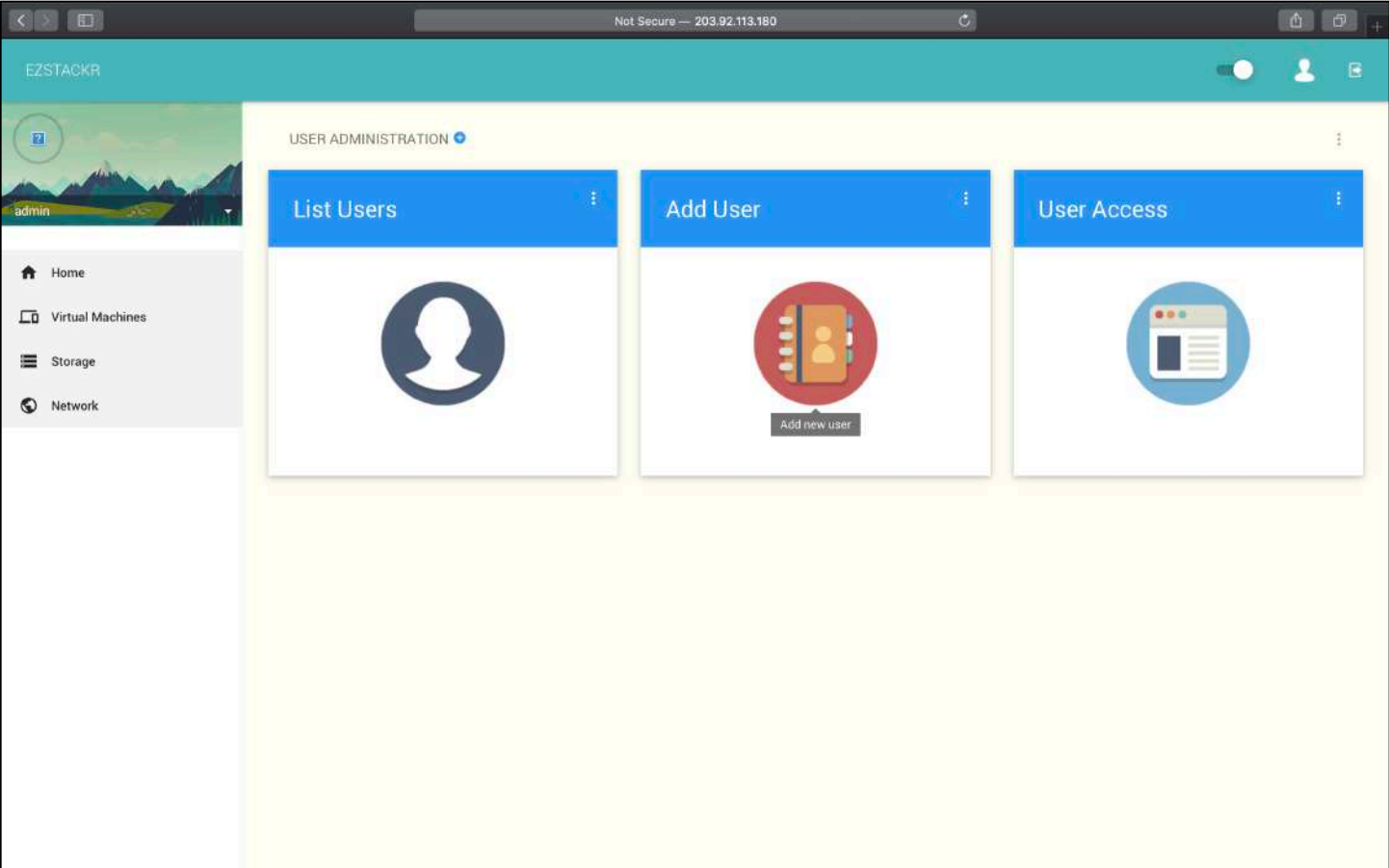
As Admin: Select "User Administration"
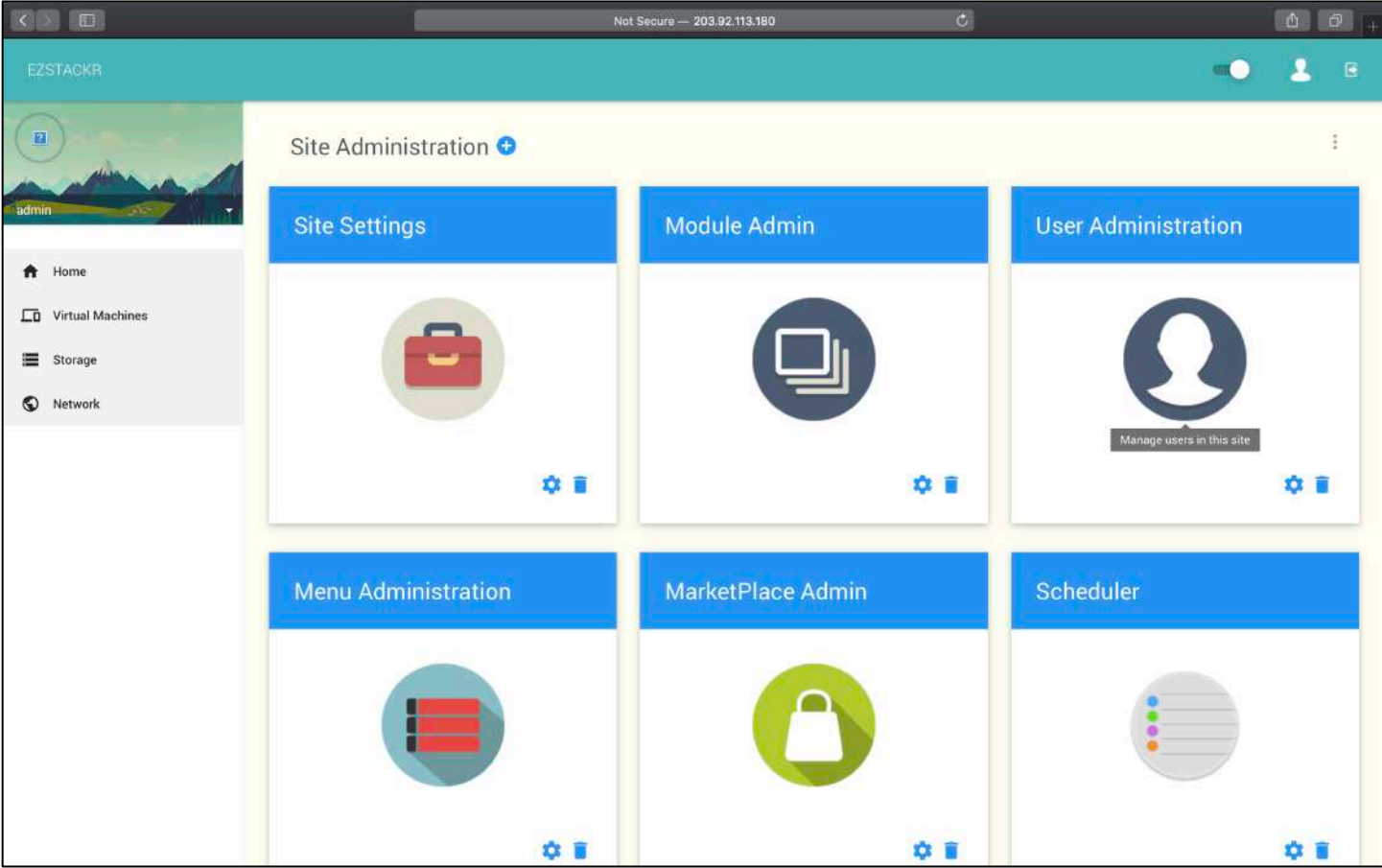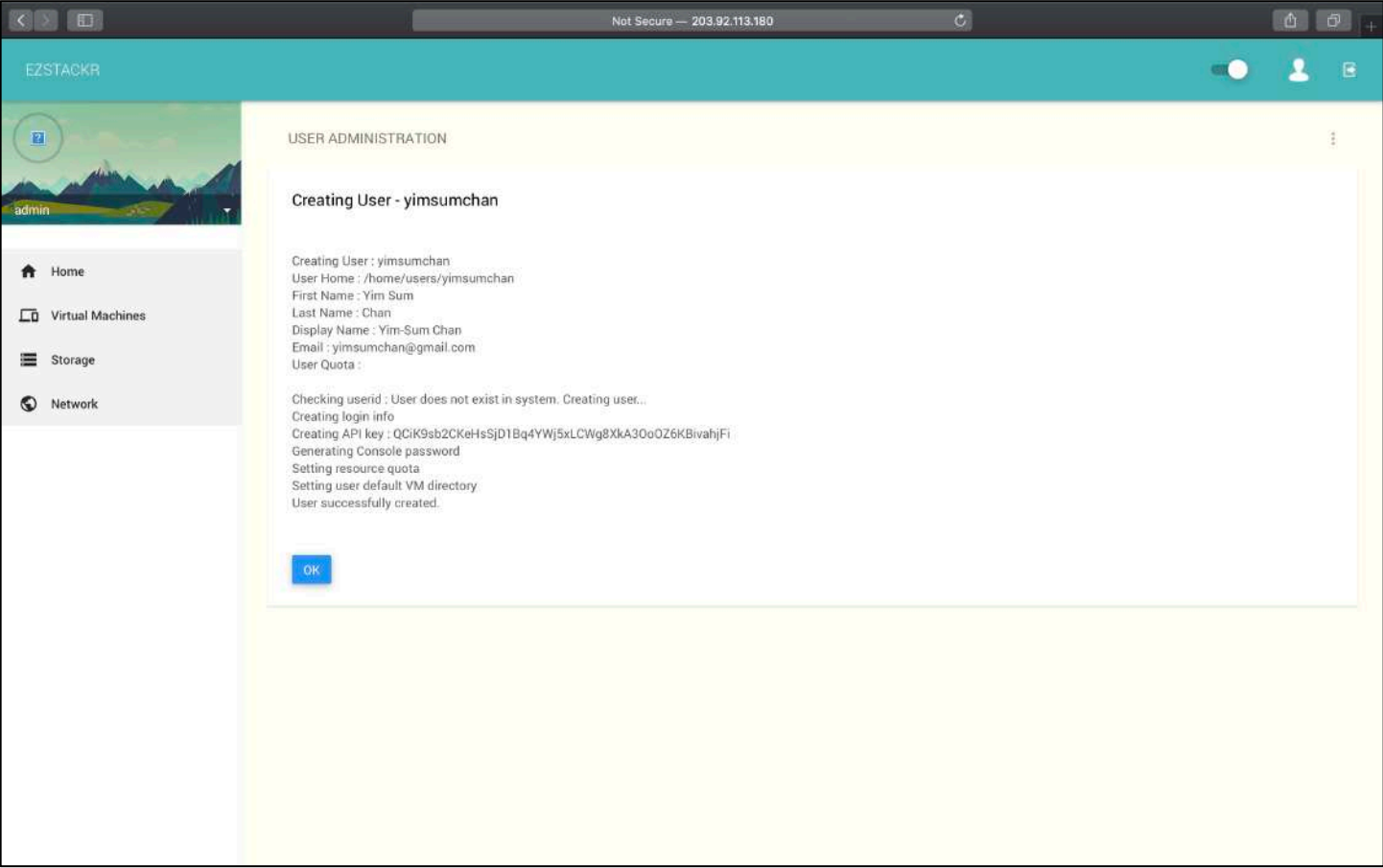

As Admin: Select "List Users"
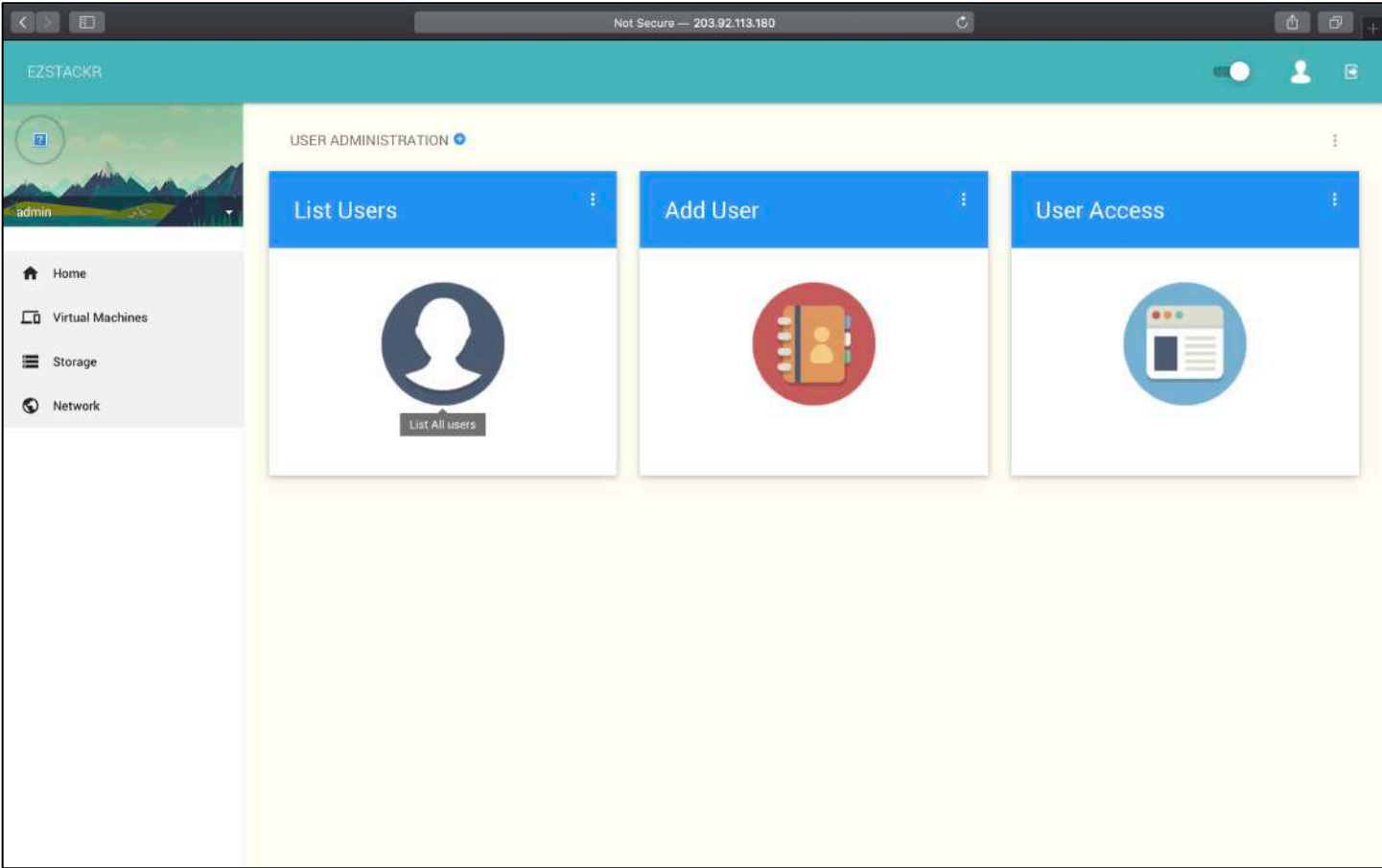
A list of users in this system is displayed
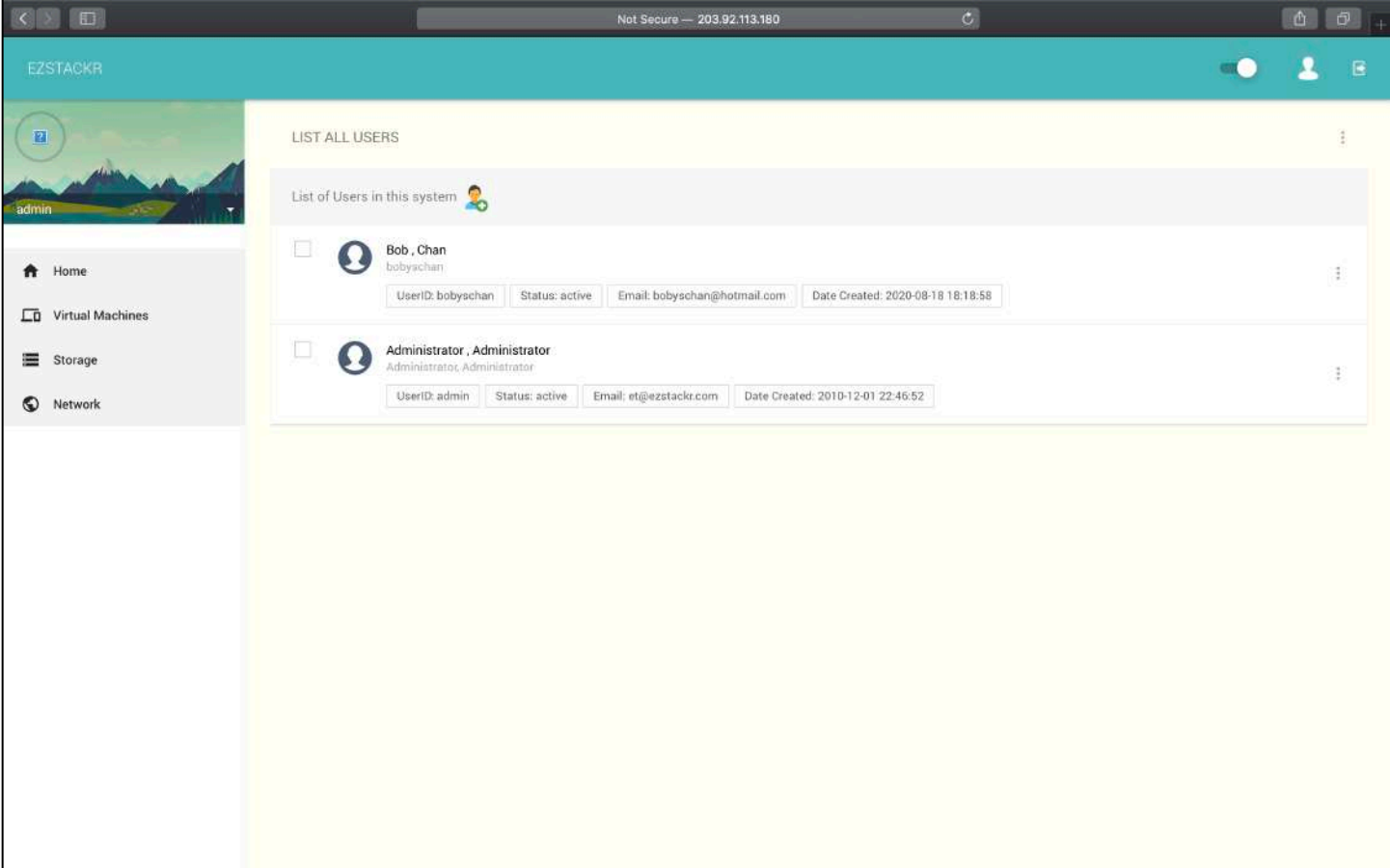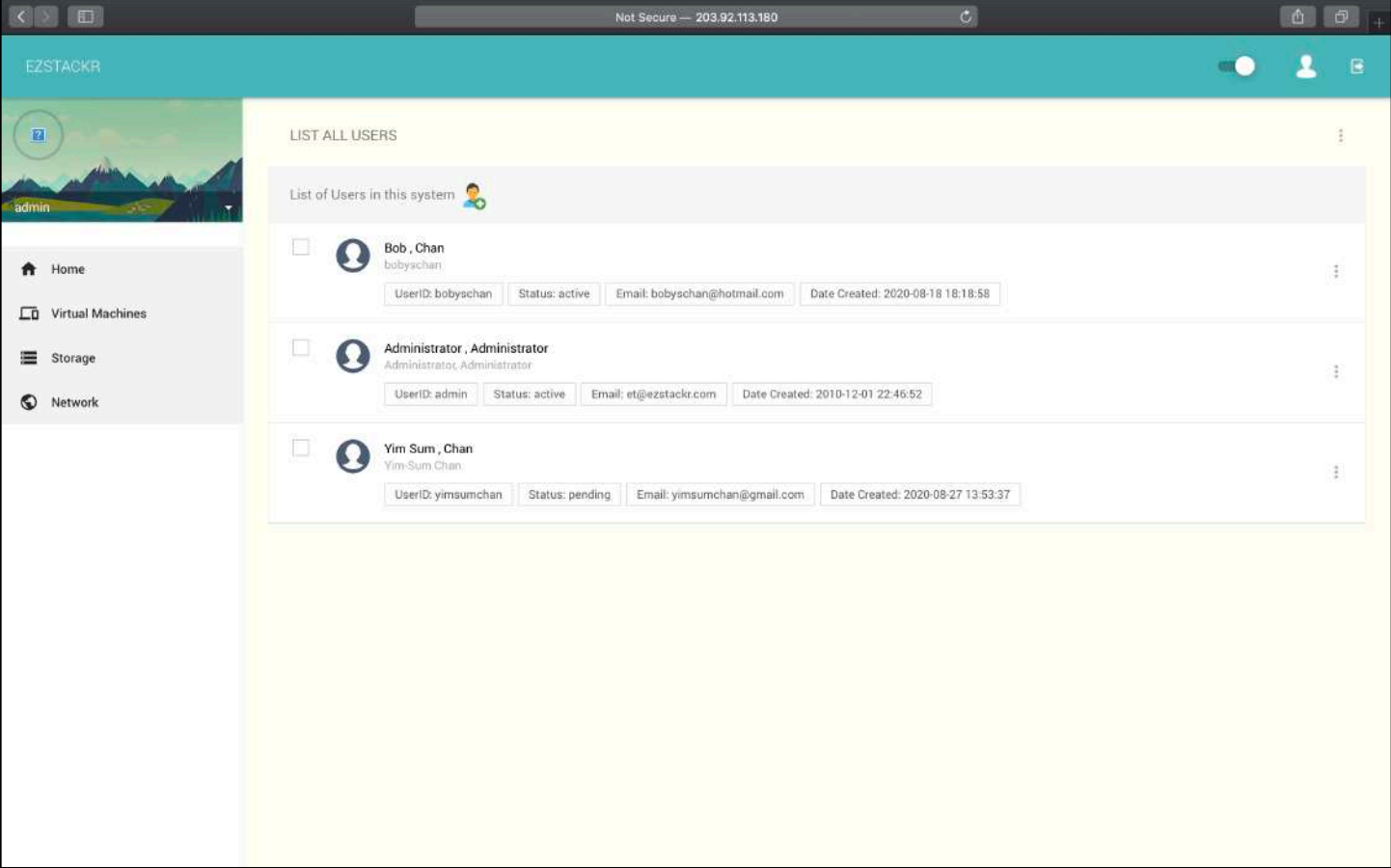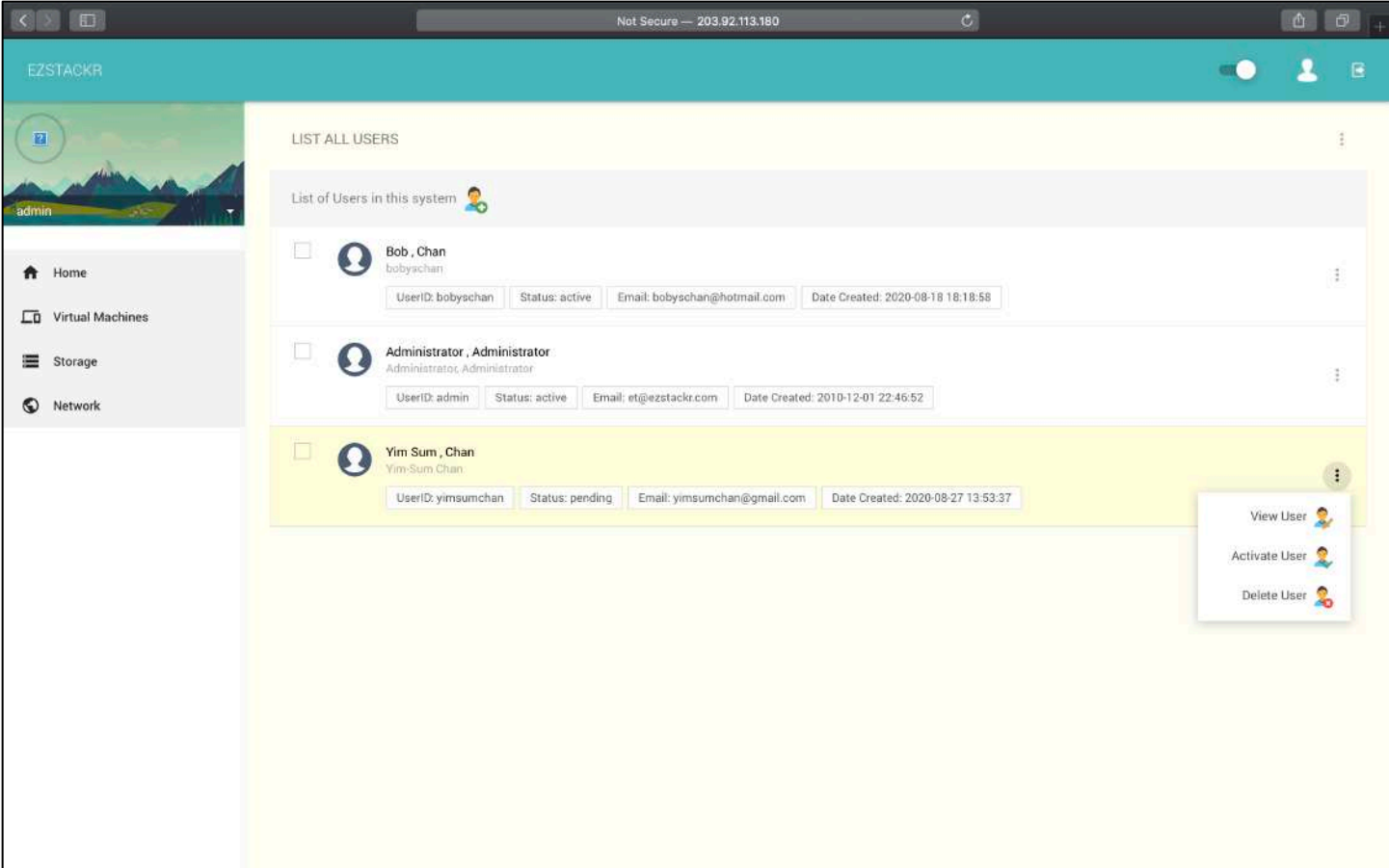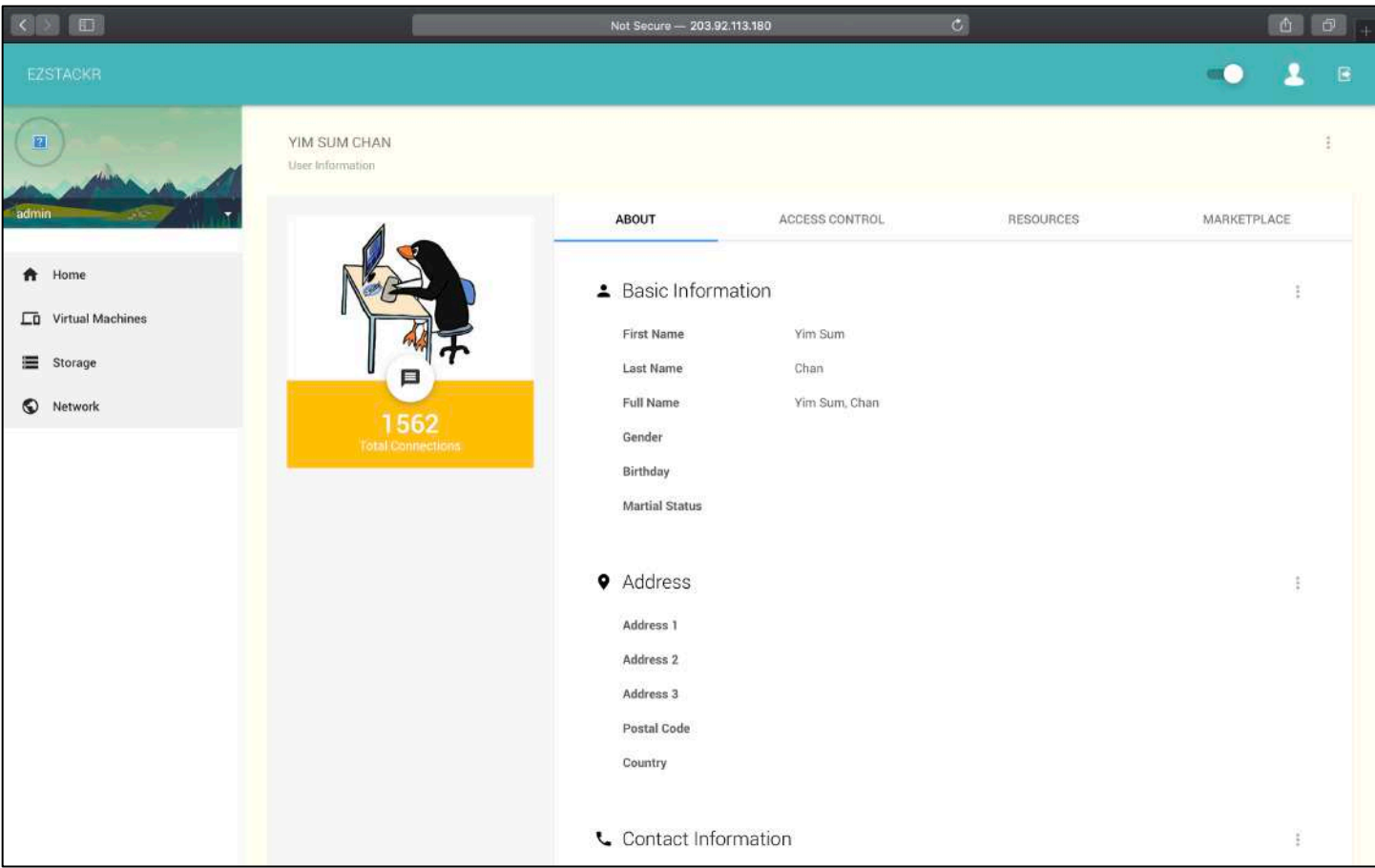

As Admin: Select "Add User"
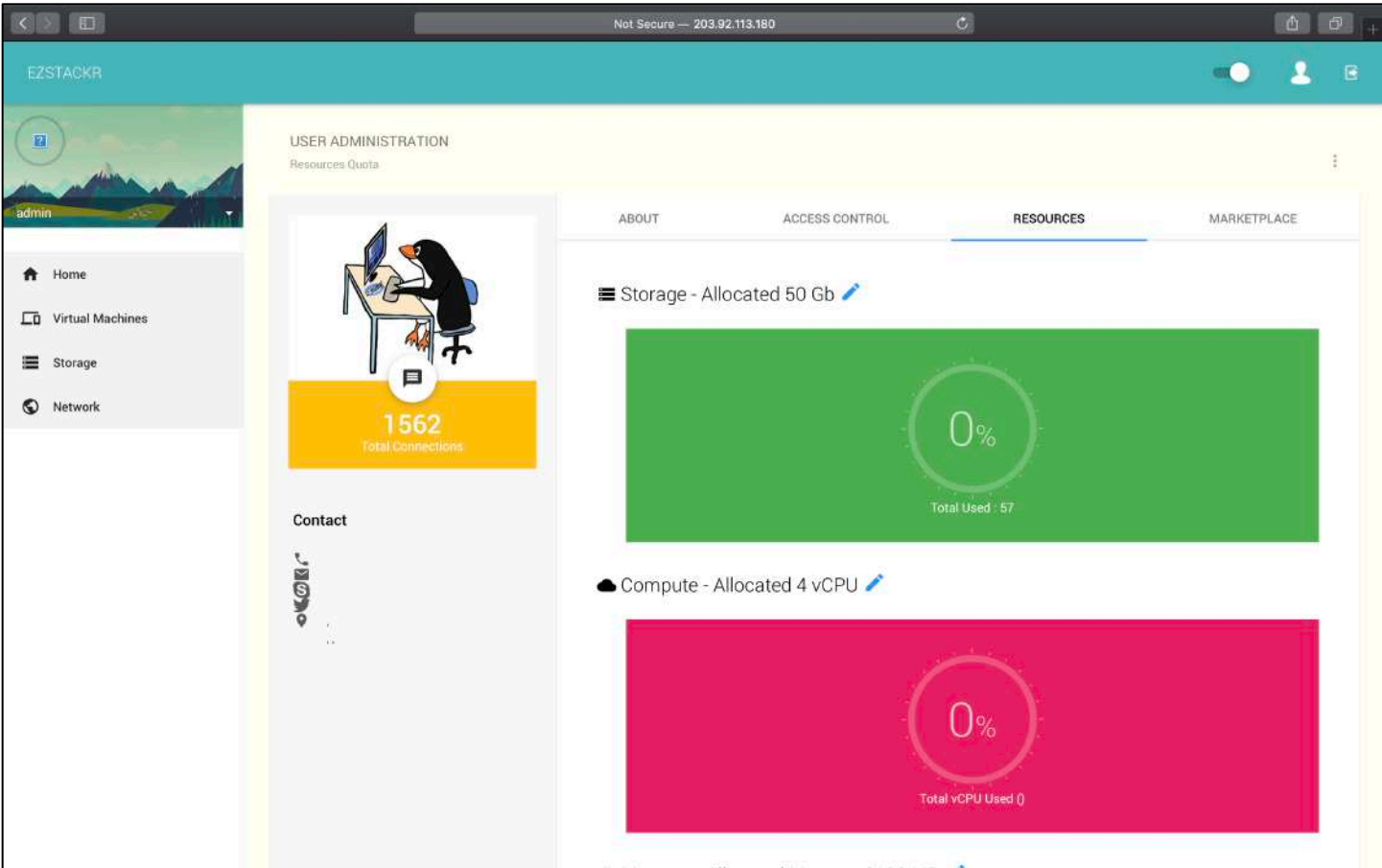
User is created

As Admin: Select "List Users"

As Admin: Select ☐

As Admin: Select "View User"

As Admin: Select "Resources" to view "Storage", "Compute", "Memory", "Networks".

As Admin: Change Resources e.g. "Storage", "Compute", "Memory"
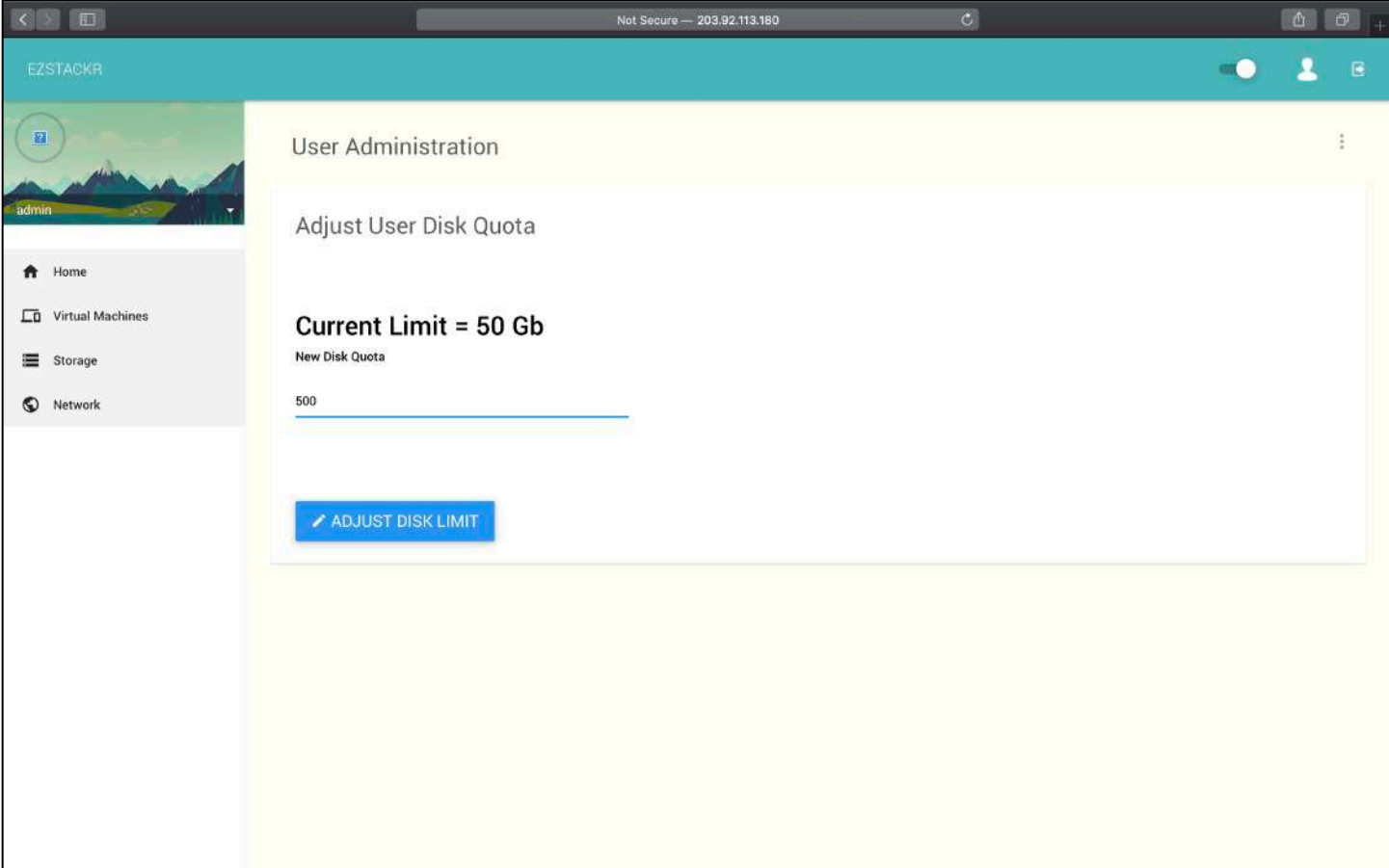
EZSTACKR

- ⌂ Home
- Virtual Machines
- Storage
- Network

UPDATED

✓ New Disk limit successfully applied.

Click here to return

Welcome back

EZSTACKR

- ⌂ Home
- Virtual Machines
- Storage
- Network

User Administration

Adjust User CPU Quota

Current Limit = 4 vCPU
New vCPU Quota

16

✏ ADJUST VCPU LIMIT

EZSTACKR

- ⌂ Home
- Virtual Machines
- Storage
- Network

UPDATED

✓ New vCPU limit successfully applied.

Click here to return

Welcome back

EZSTACKR

- ⌂ Home
- Virtual Machines
- Storage
- Network

User Administration

Adjust User Memory Quota

Current Limit = 8192 Mb
New Memory Quota

16384

16384 (1024MB=1GB)

✏ ADJUST MEMORY LIMIT

UPDATED

✓ New memory limit successfully applied.

Click here to return
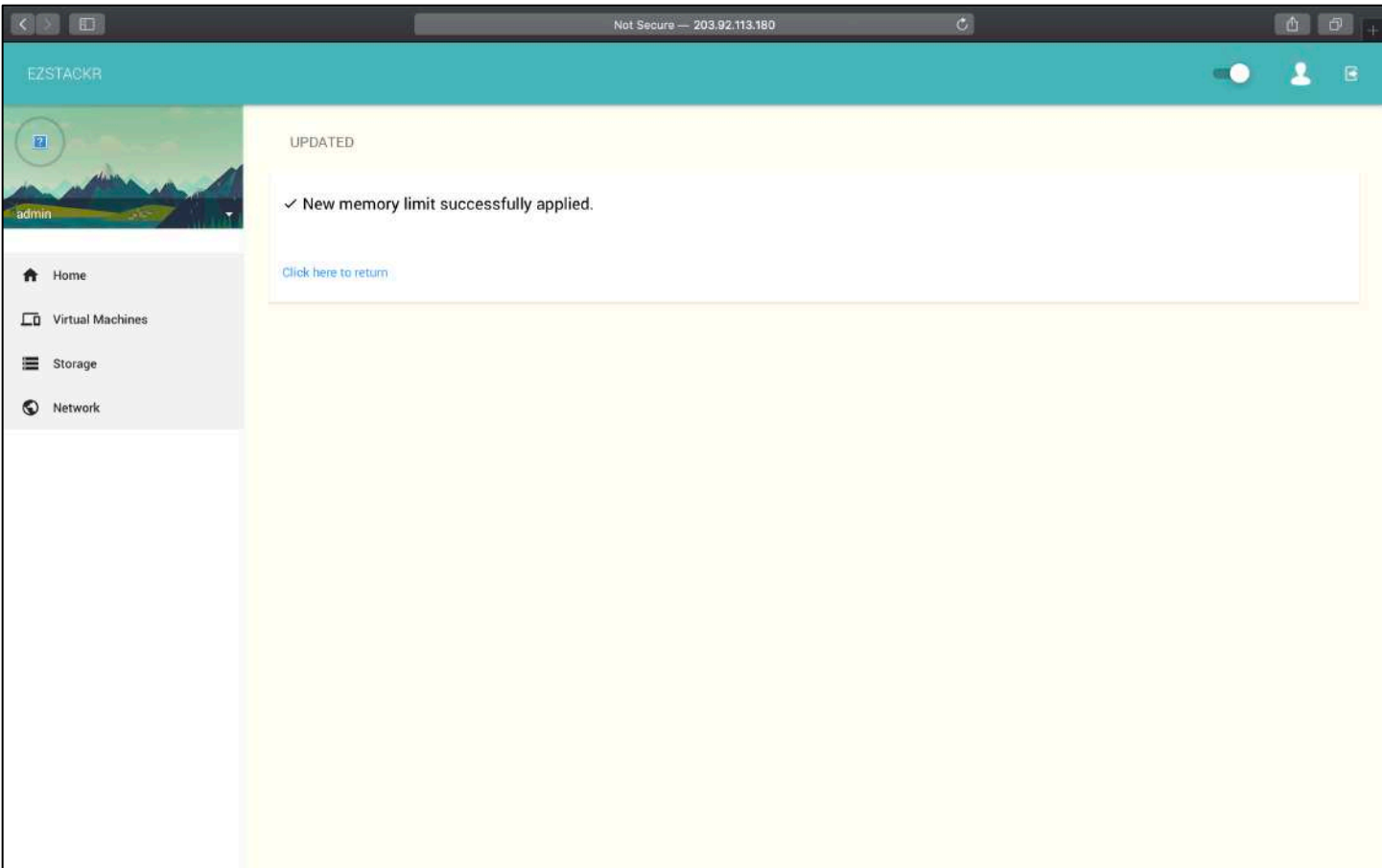
As Admin: Change Network resources. Select "Admin" and "Site Admin"

Site Administration

Site Settings

Module Admin

User Administration

Menu Administration

MarketPlace Admin

Scheduler
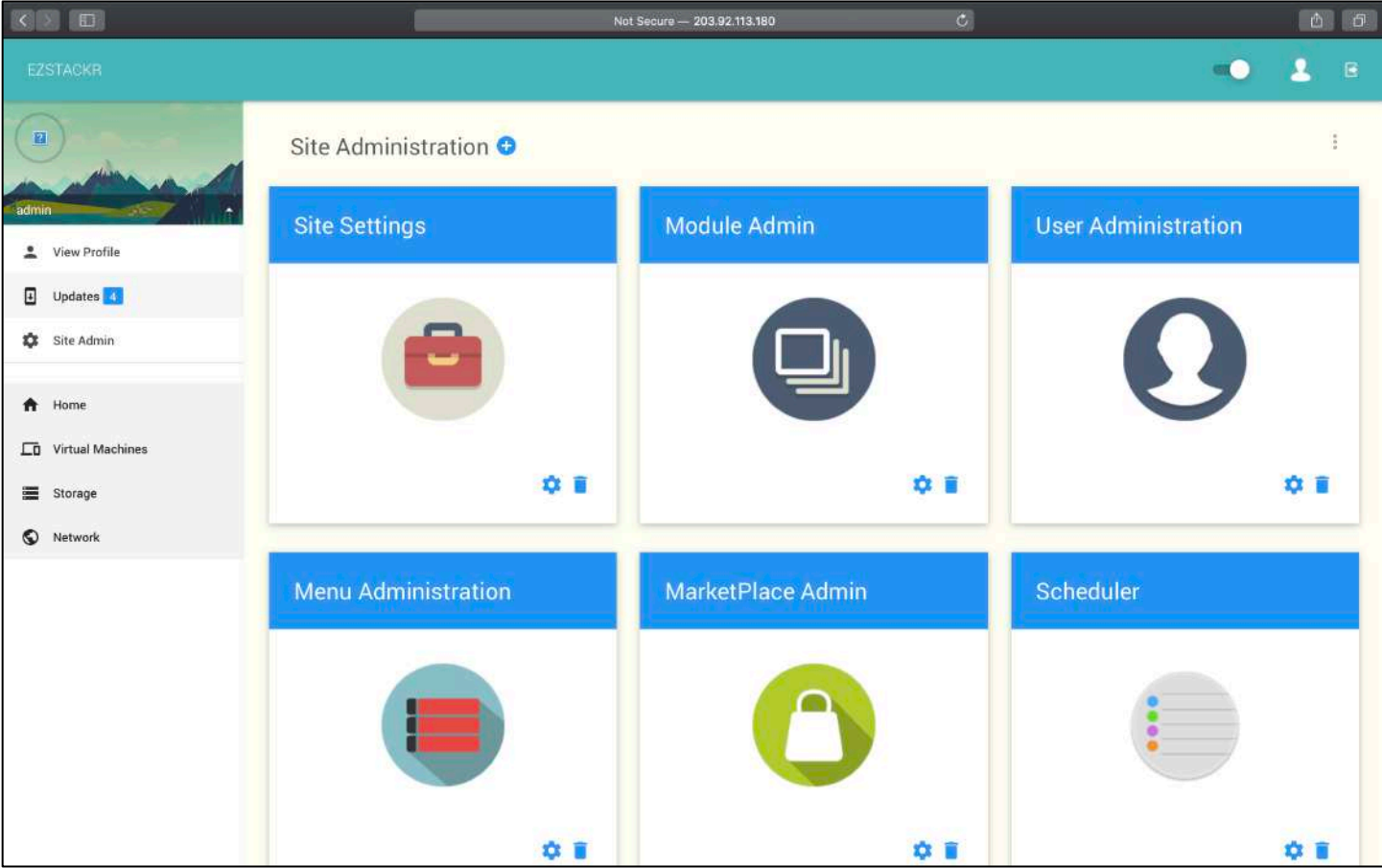
As Admin: Scroll down to the end and select "IAAS-E Admin"

Menu Administration

MarketPlace Admin

Scheduler

IAAS-E Admin

As Admin: Select "Host Network Interface"

Cloud Administration

IAAS Setting

Host Network Interface

Management Network
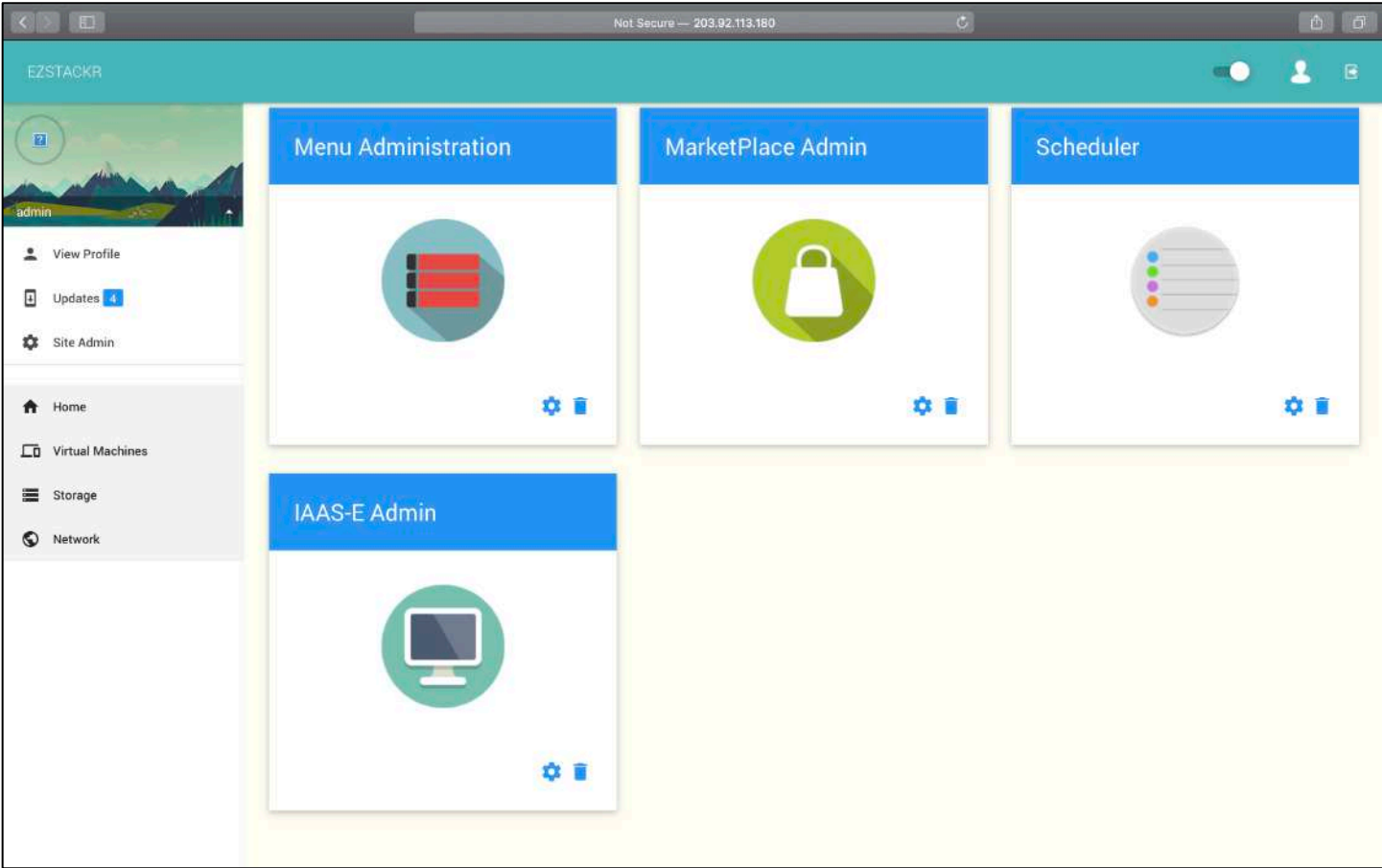
Manage Host network interface
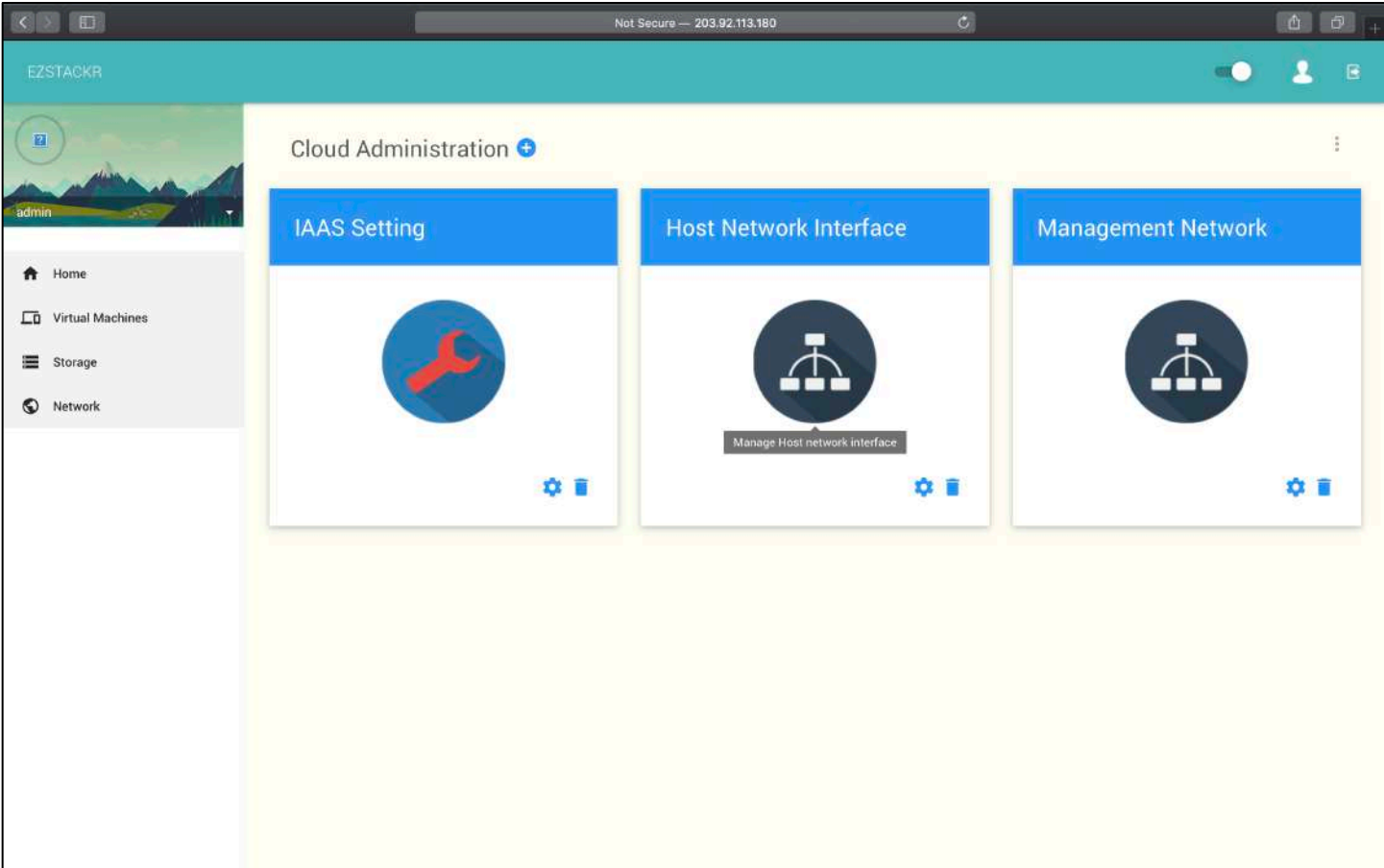
As Admin: To assign the eth0 port to user, select ⊡ for eth0.
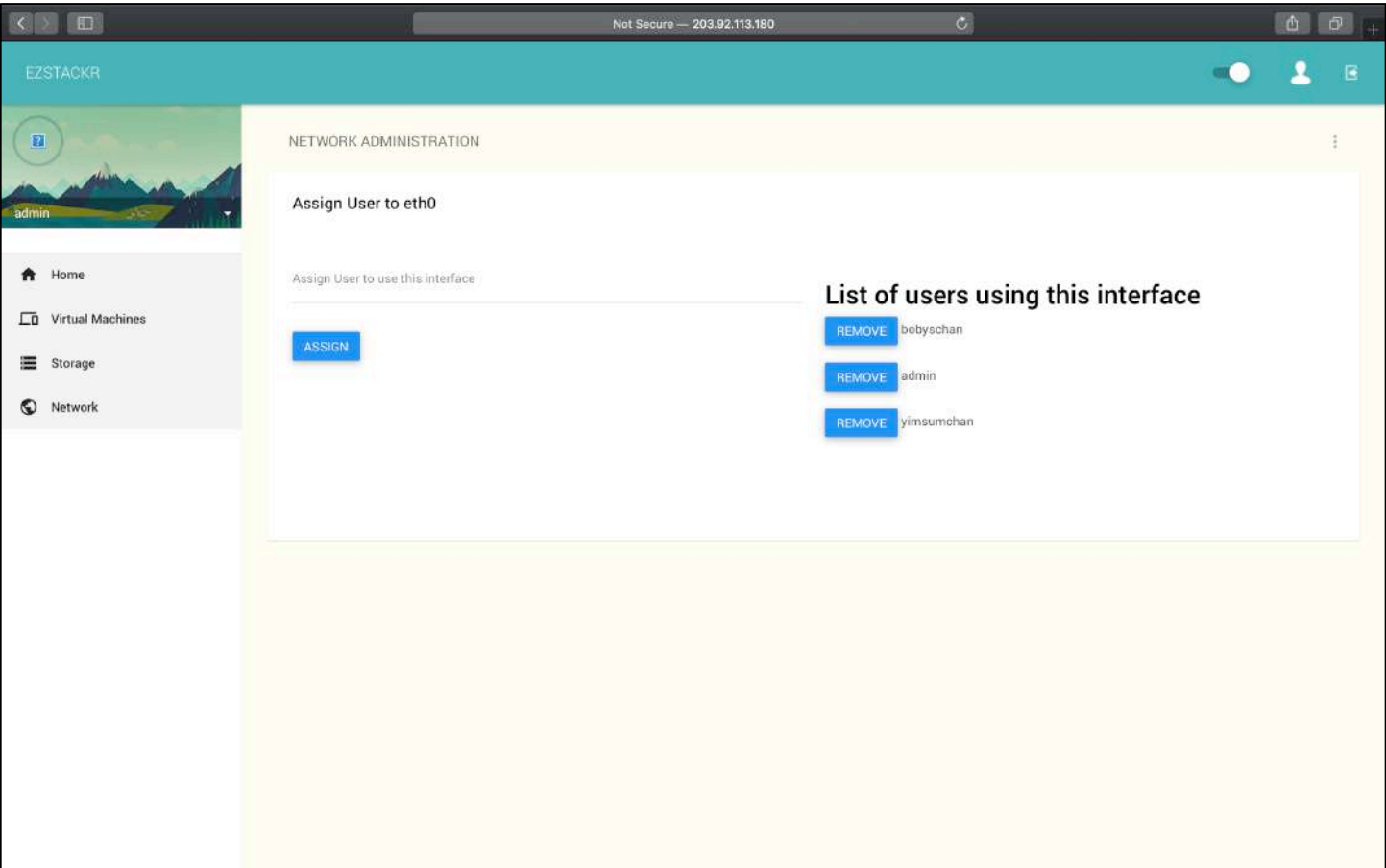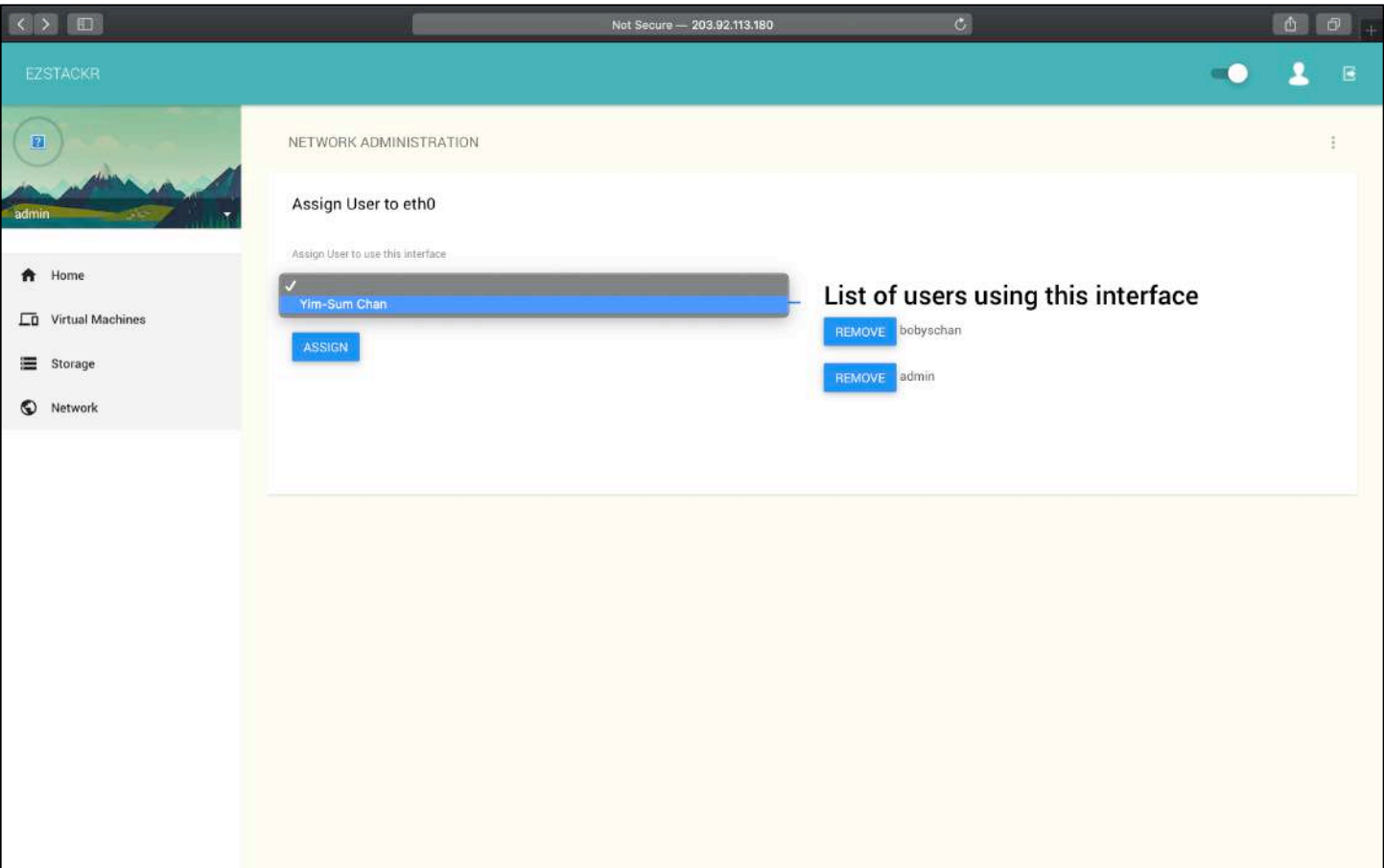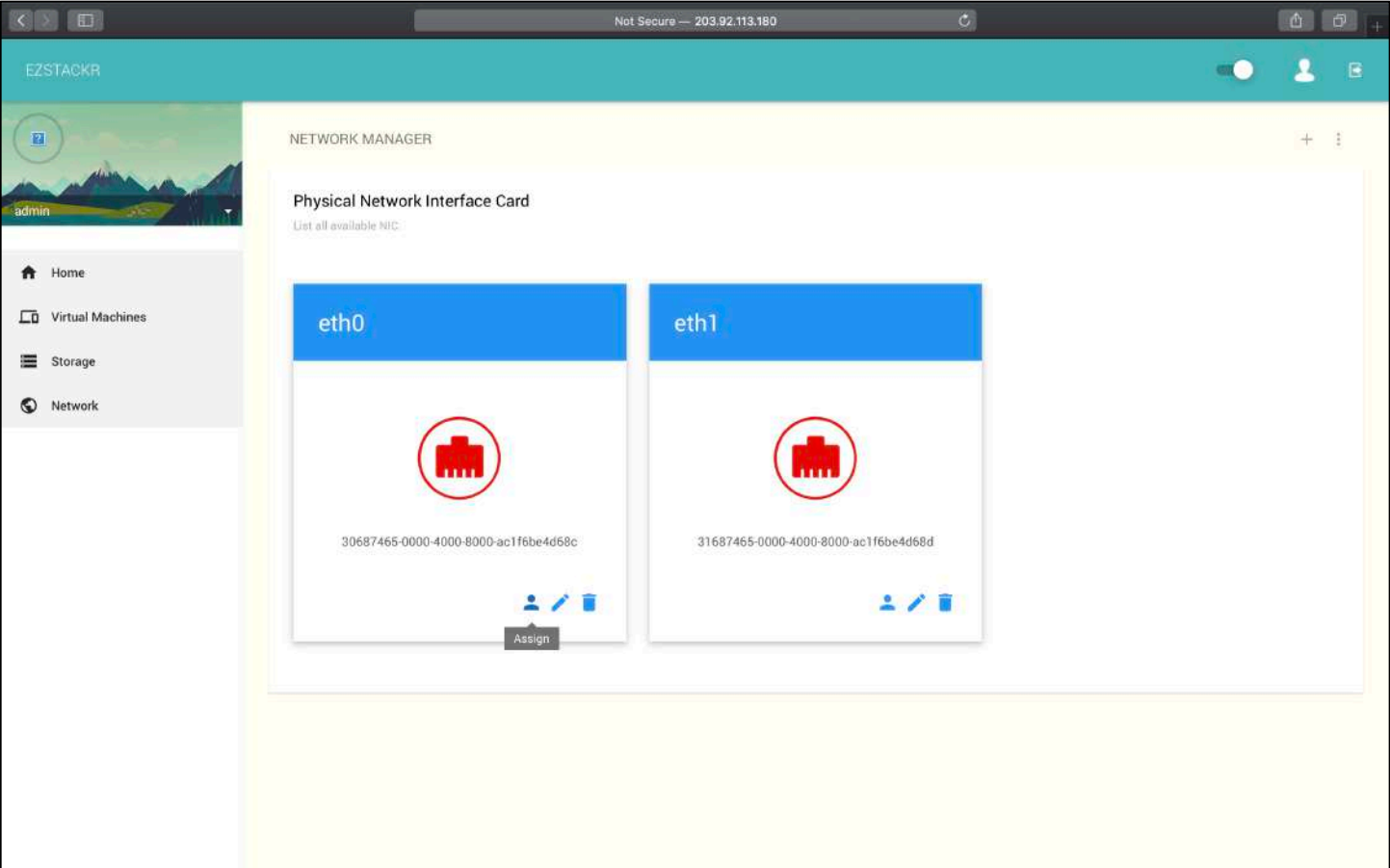
As Admin: List resources for this user:
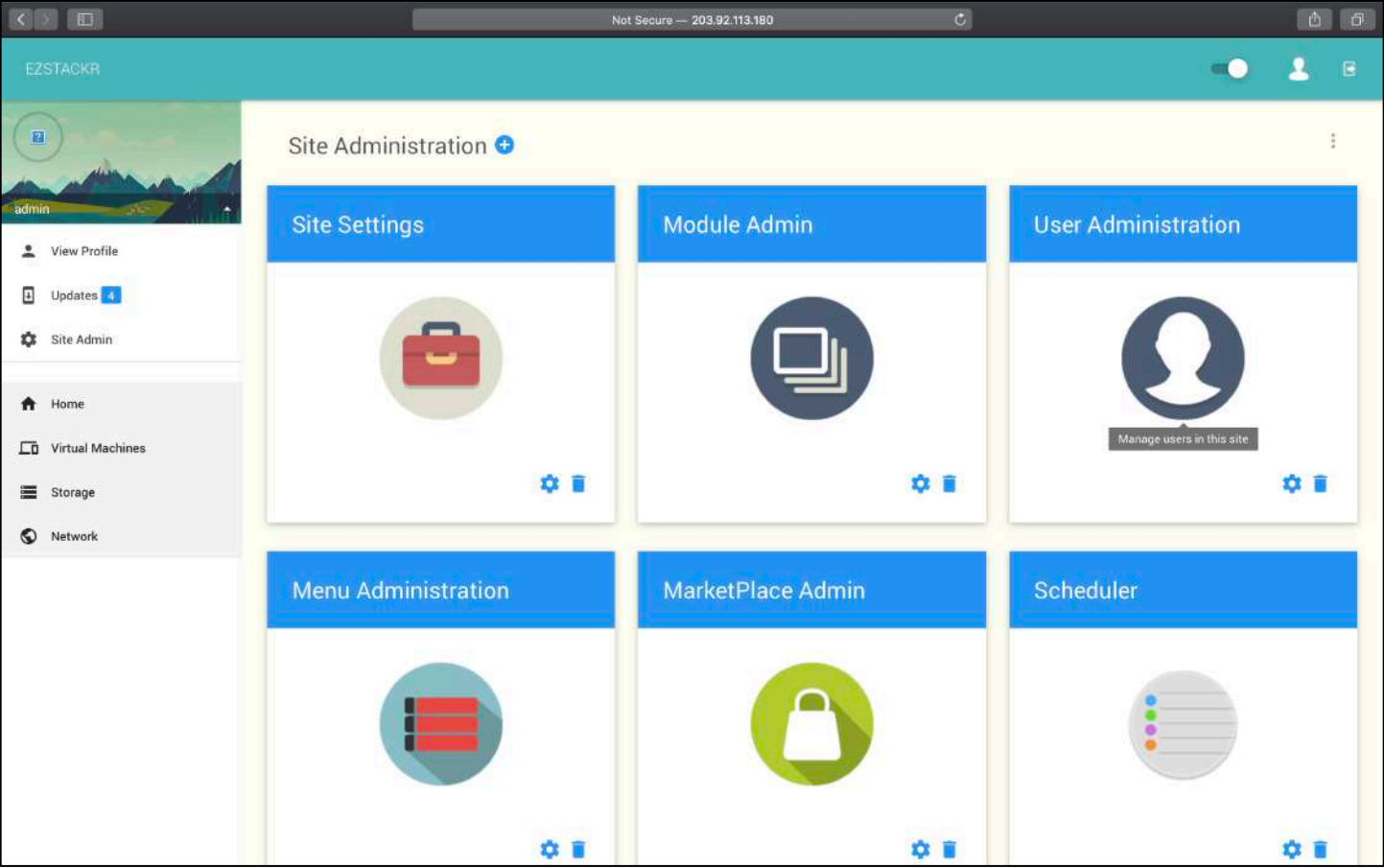
As Admin: Select "List Users"

As Admin: Select ☐ and "View User"

As Admin: Select "Resources" to view "Storage", "Compute", "Memory", "Networks".

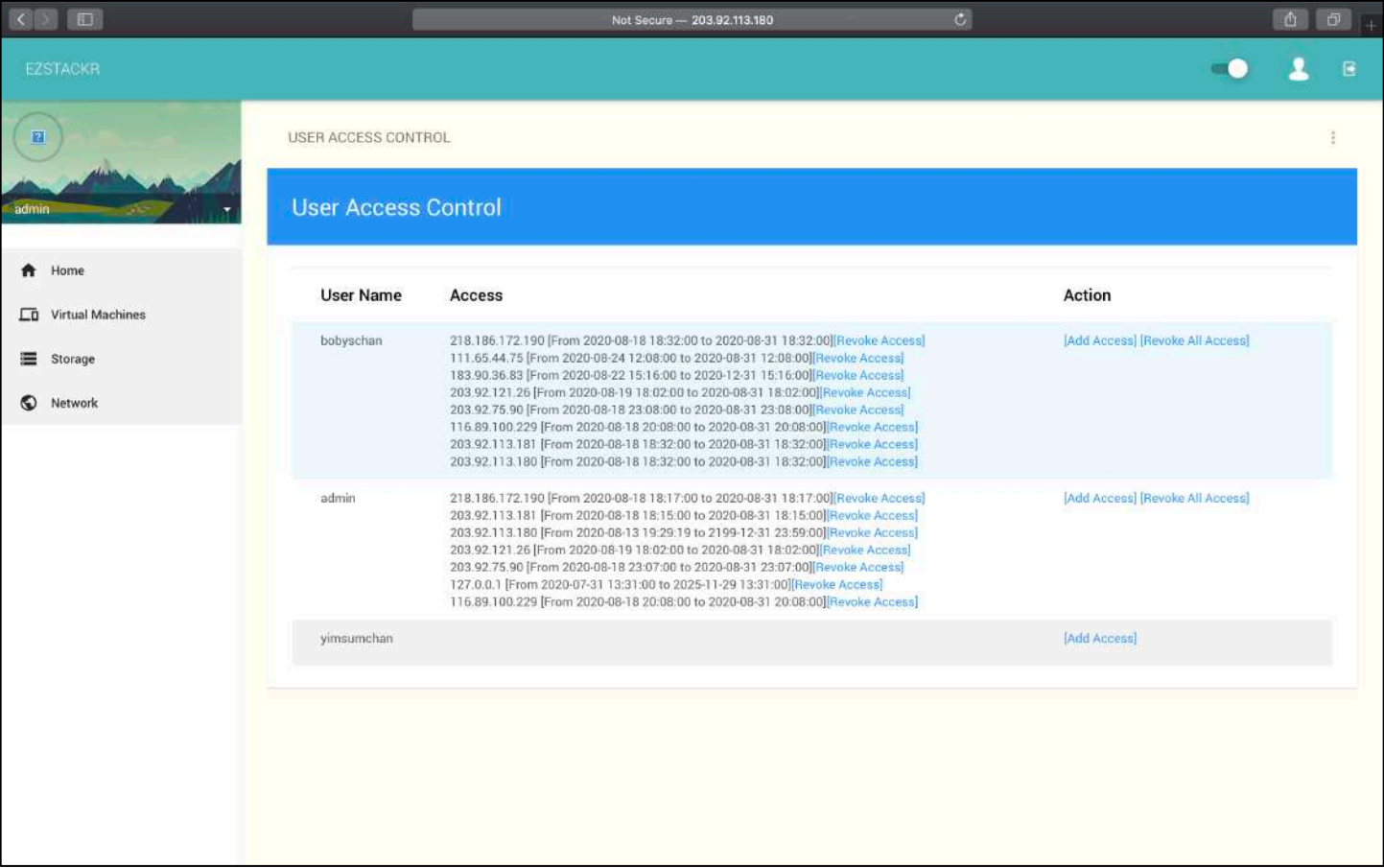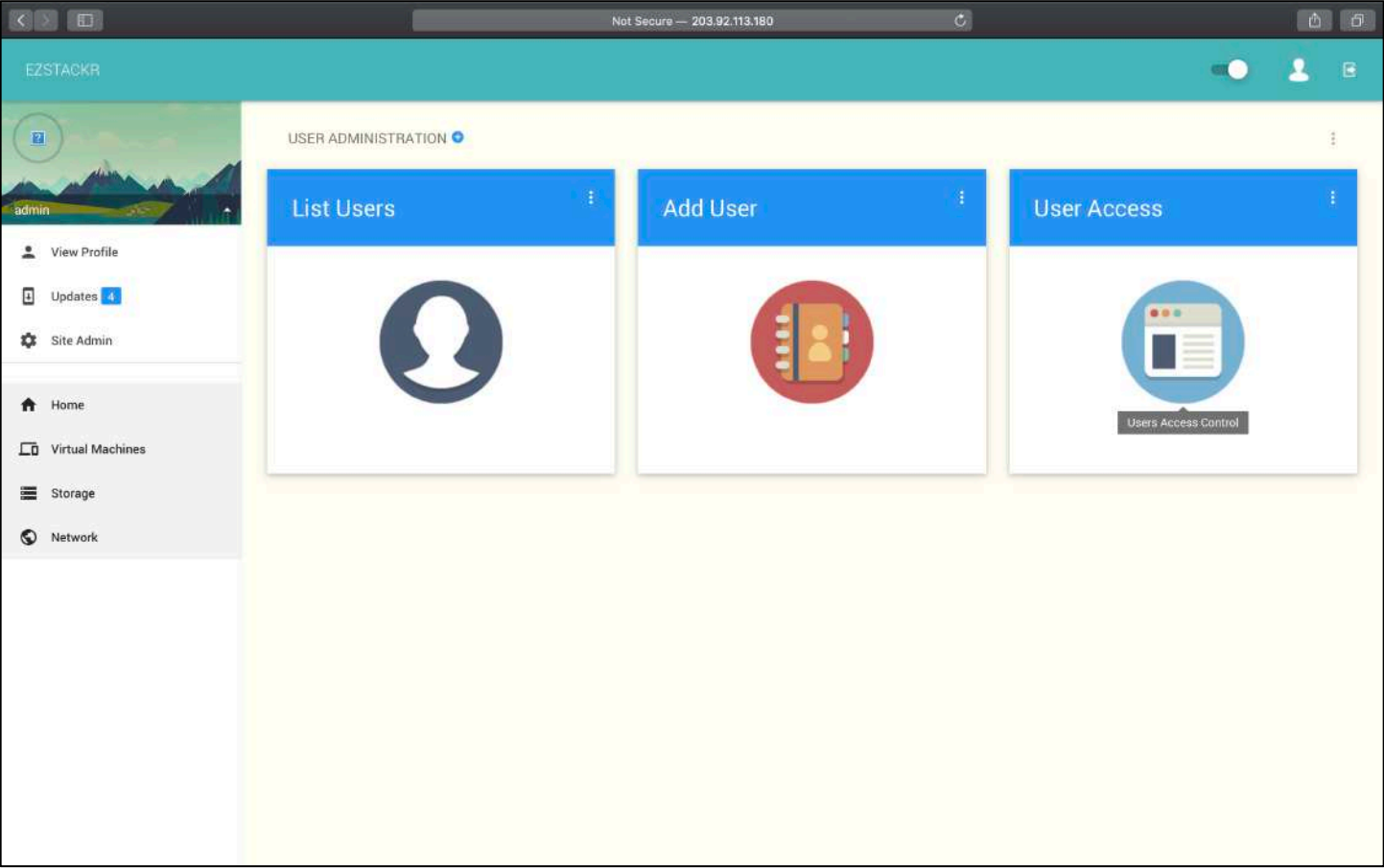As Admin: Scroll down to the bottom to see the Network port resources assigned

ACTIVATING USER FOR CLOUD OPERATIONS
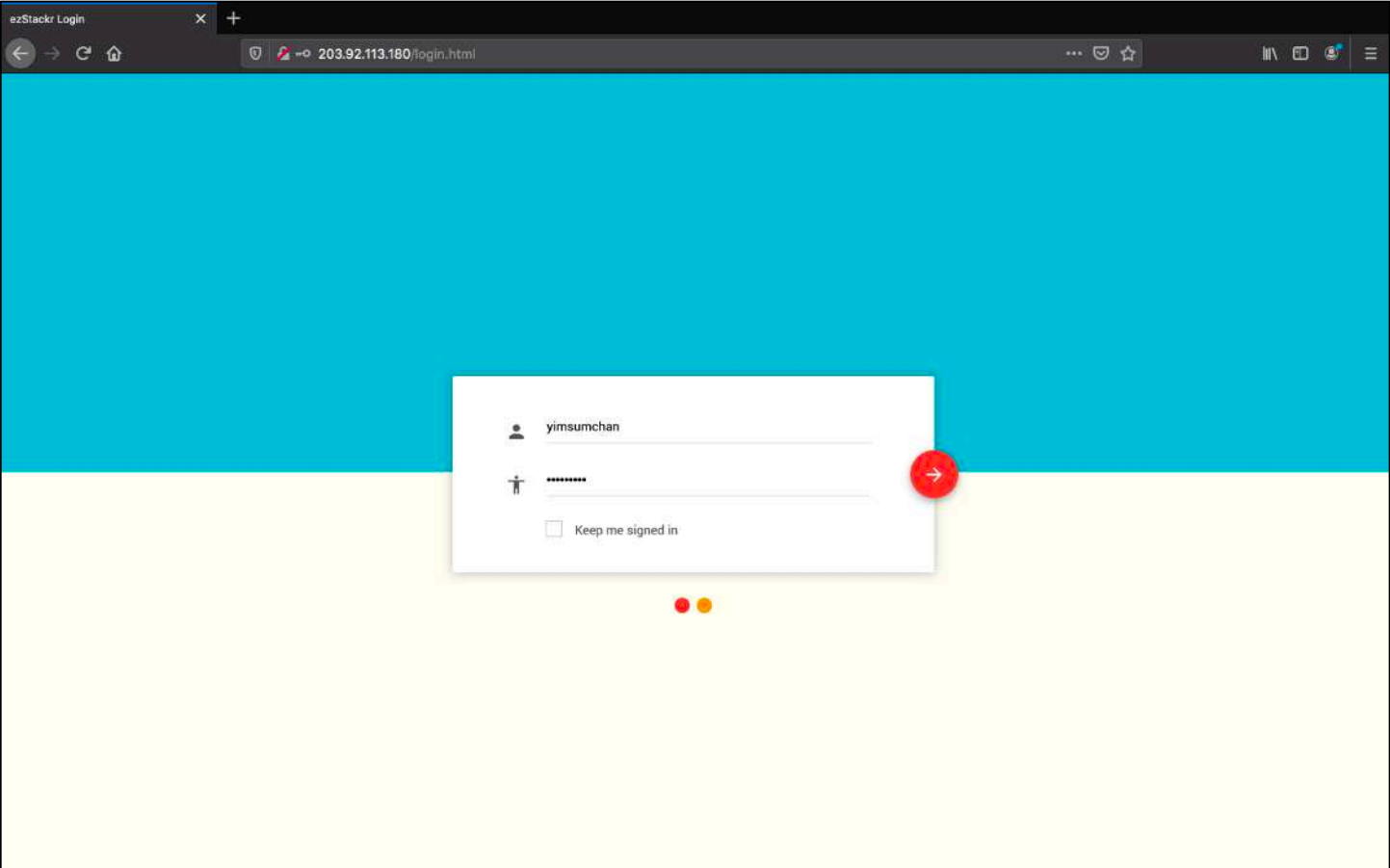**As Admin: Select "Activate User"**

LIST ALL USERS

List of Users in this system

Bob , Chan
bobyschan
UserID: bobyschan Status: active Email: bobyschan@hotmail.com Date Created: 2020-08-18 18:18:58

Administrator , Administrator
Administrator, Administrator
UserID: admin Status: active Email: etj@ezstackr.com Date Created: 2010-12-01 22:46:52

Yim Sum , Chan
Yim-Sum Chan
UserID: yimsumchan Status: pending Email: yimsumchan@gmail.com Date Created: 2020-08-27 13:53:37

View User
Activate User
Delete User

USER ADMINISTRATION

Welcome back

✓ User successfully activated.

Click here to return

As Admin: Select "User Access"

USER ADMINISTRATION

List Users

Add User

User Access

View Profile
Updates 4
Site Admin

Users Access Control

USER ACCESS CONTROL

User Access Control

User Name	Access	Action
bobyschan	218.186.172.190 [From 2020-08-18 18:32:00 to 2020-08-31 18:32:00][Revoke Access] 111.65.44.75 [From 2020-08-24 12:08:00 to 2020-08-31 12:08:00][Revoke Access] 183.90.36.83 [From 2020-08-22 15:16:00 to 2020-12-31 15:16:00][Revoke Access] 203.92.121.26 [From 2020-08-19 18:02:00 to 2020-08-31 18:02:00][Revoke Access] 203.92.75.90 [From 2020-08-18 23:08:00 to 2020-08-31 23:08:00][Revoke Access] 116.89.100.229 [From 2020-08-18 20:08:00 to 2020-08-31 20:08:00][Revoke Access] 203.92.113.181 [From 2020-08-18 18:32:00 to 2020-08-31 18:32:00][Revoke Access] 203.92.113.180 [From 2020-08-18 18:32:00 to 2020-08-31 18:32:00][Revoke Access]	[Add Access] [Revoke All Access]
admin	218.186.172.190 [From 2020-08-18 18:17:00 to 2020-08-31 18:17:00][Revoke Access] 203.92.113.181 [From 2020-08-18 18:15:00 to 2020-08-31 18:15:00][Revoke Access] 203.92.113.180 [From 2020-08-13 19:29:19 to 2199-12-31 23:59:00][Revoke Access] 203.92.121.26 [From 2020-08-19 18:02:00 to 2020-08-31 18:02:00][Revoke Access] 203.92.75.90 [From 2020-08-18 23:07:00 to 2020-08-31 23:07:00][Revoke Access] 127.0.0.1 [From 2020-07-31 13:31:00 to 2025-11-29 13:31:00][Revoke Access] 116.89.100.229 [From 2020-08-18 20:08:00 to 2020-08-31 20:08:00][Revoke Access]	[Add Access] [Revoke All Access]
yimsumchan		[Add Access]

GETTING USERS TO TEST THEIR USER LOGIN
As User: Log in

Notice the error message. Ezstackr requires to register the user's source IP in Ezstackr user access control

User yimsumchan access from 203.92.121.26 is denied. You do not have access to this site from this IP address, please contact your administrator.

Click here to return to previous menu

SETTING USER ACCESS CONTROL
As Admin: Select "User Access"

As Admin: Add user access by registering server IP and client IP. Select "Add Access"
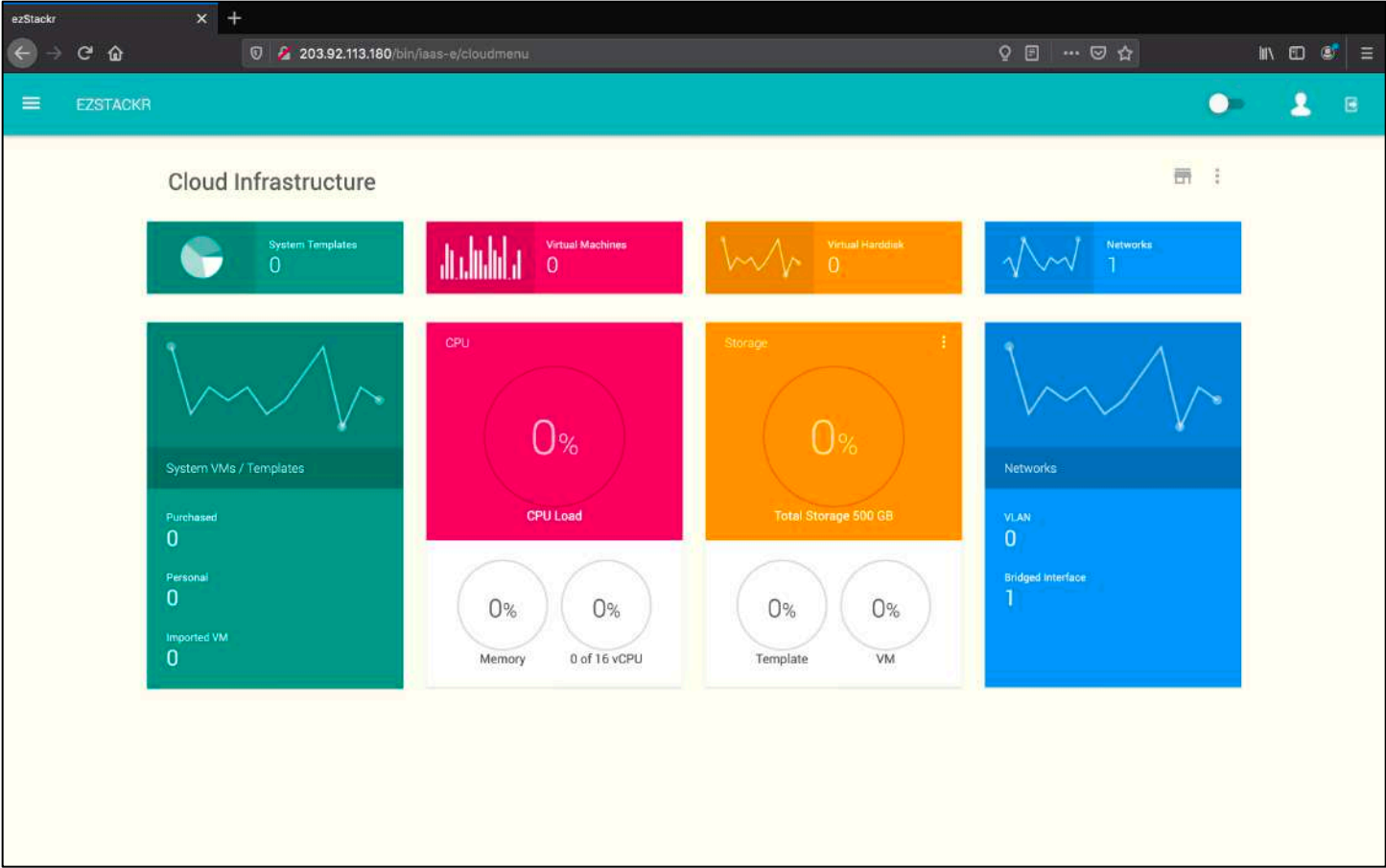

As Admin: Add server IP to allow access:
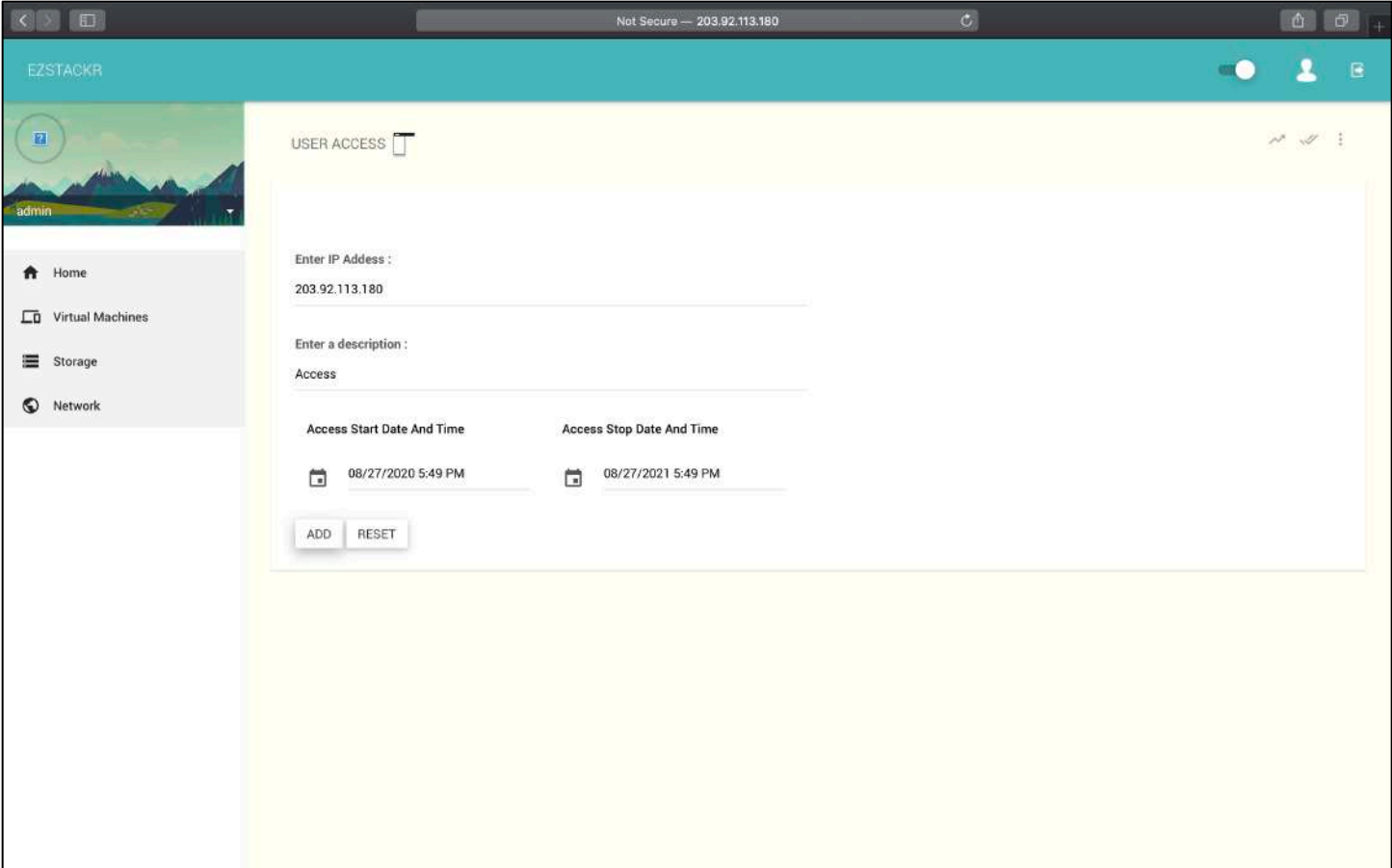
As Admin: Add client IP to allow access:
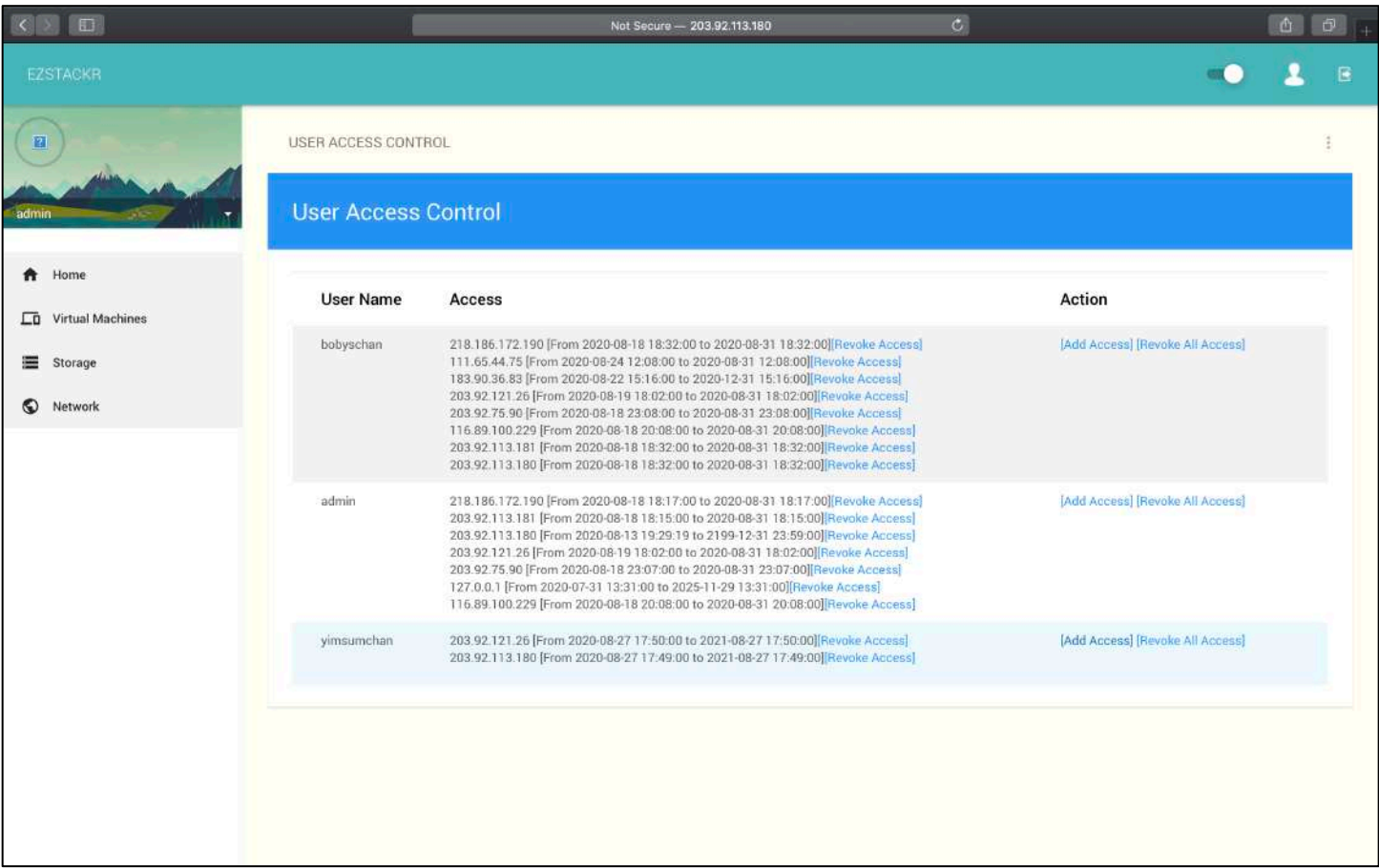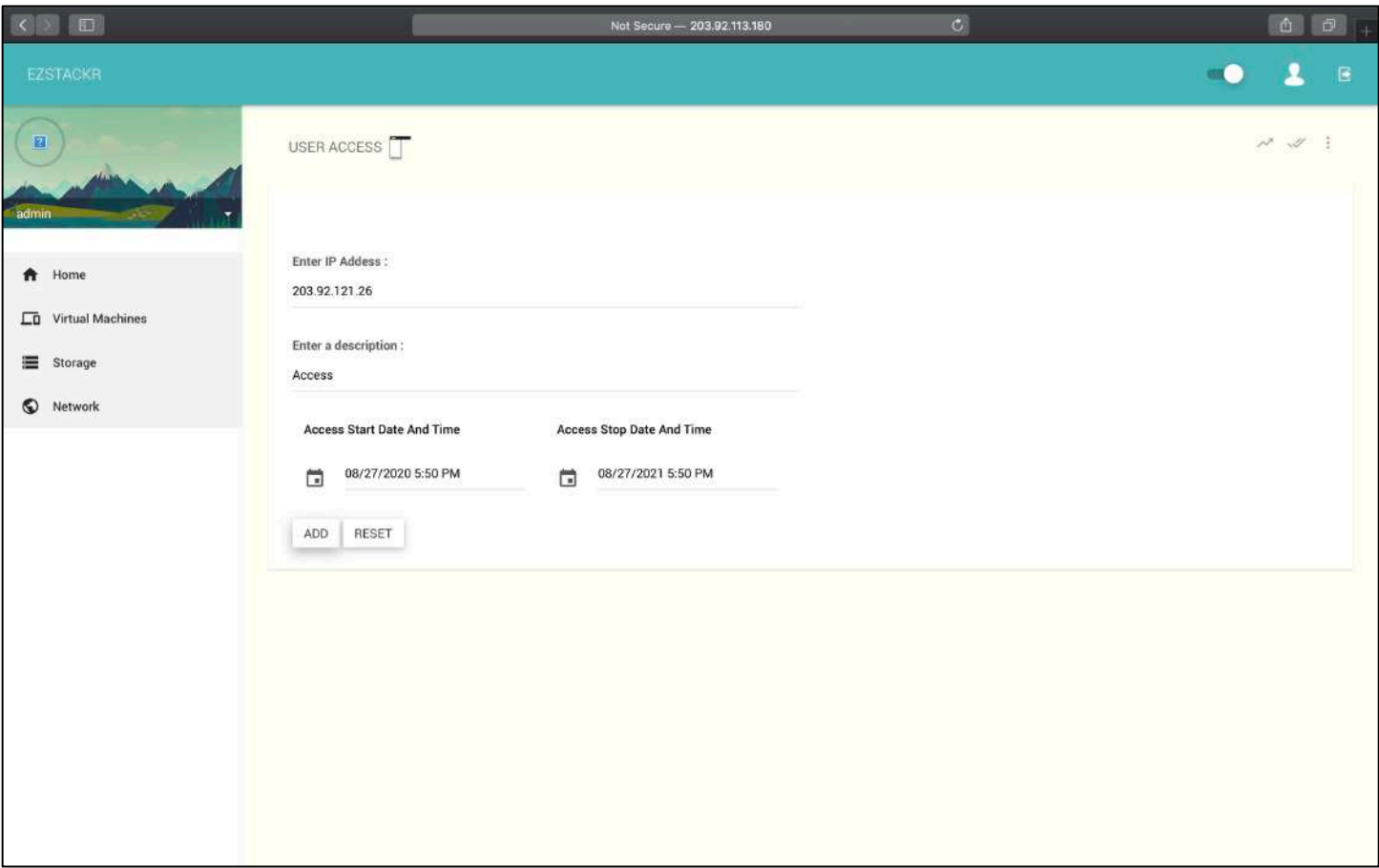
As User: Log in
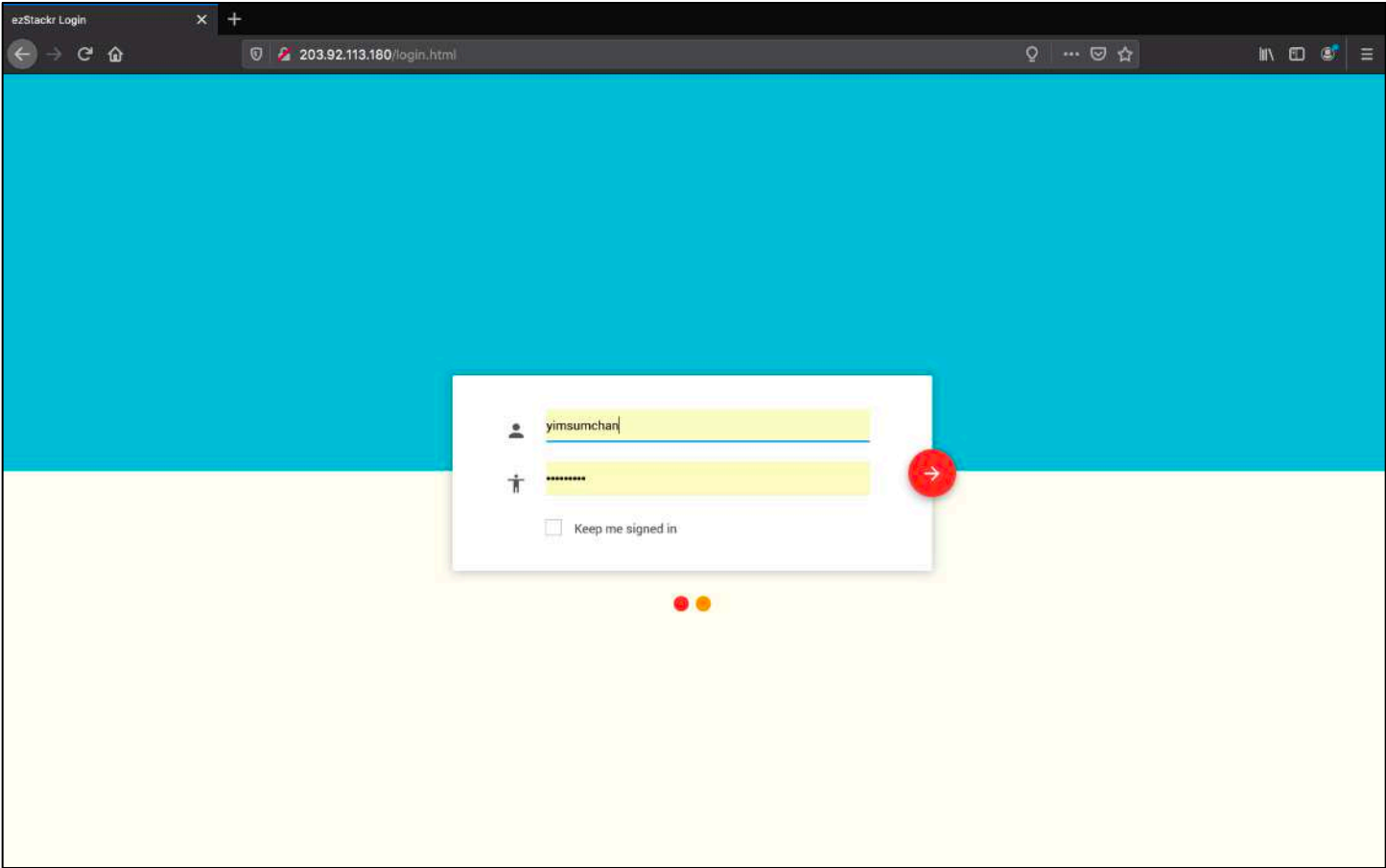
Login is successful. User has 16 vCPU, 500GB storage, 1 network port assigned.

ADDING PUBLIC IP
[if VLAN tagging is required, do the following steps, if not, you may skip this section]
As Admin: Add Public IP. Select "Admin", "Site Admin"
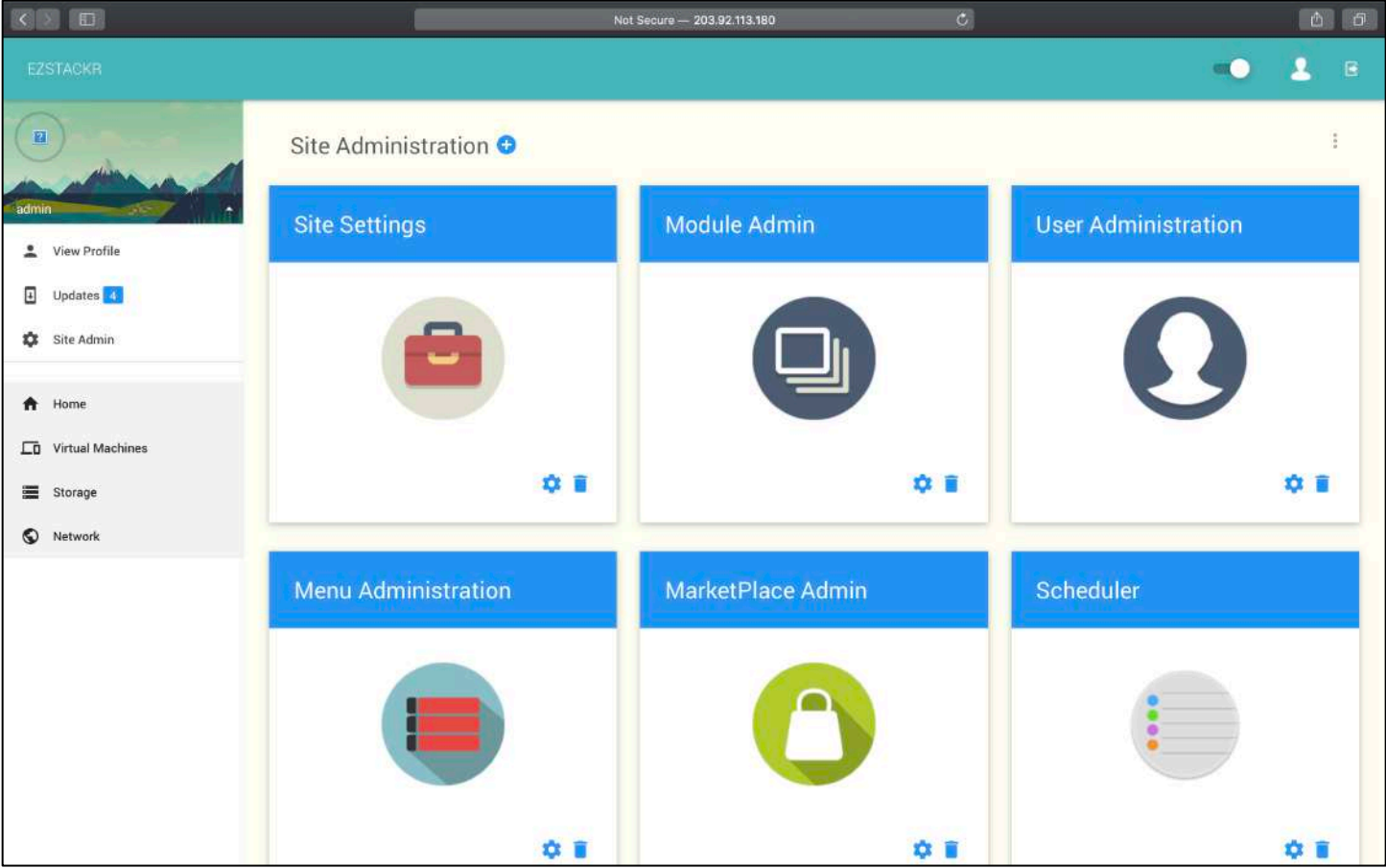
As Admin: Scroll down to bottom of page
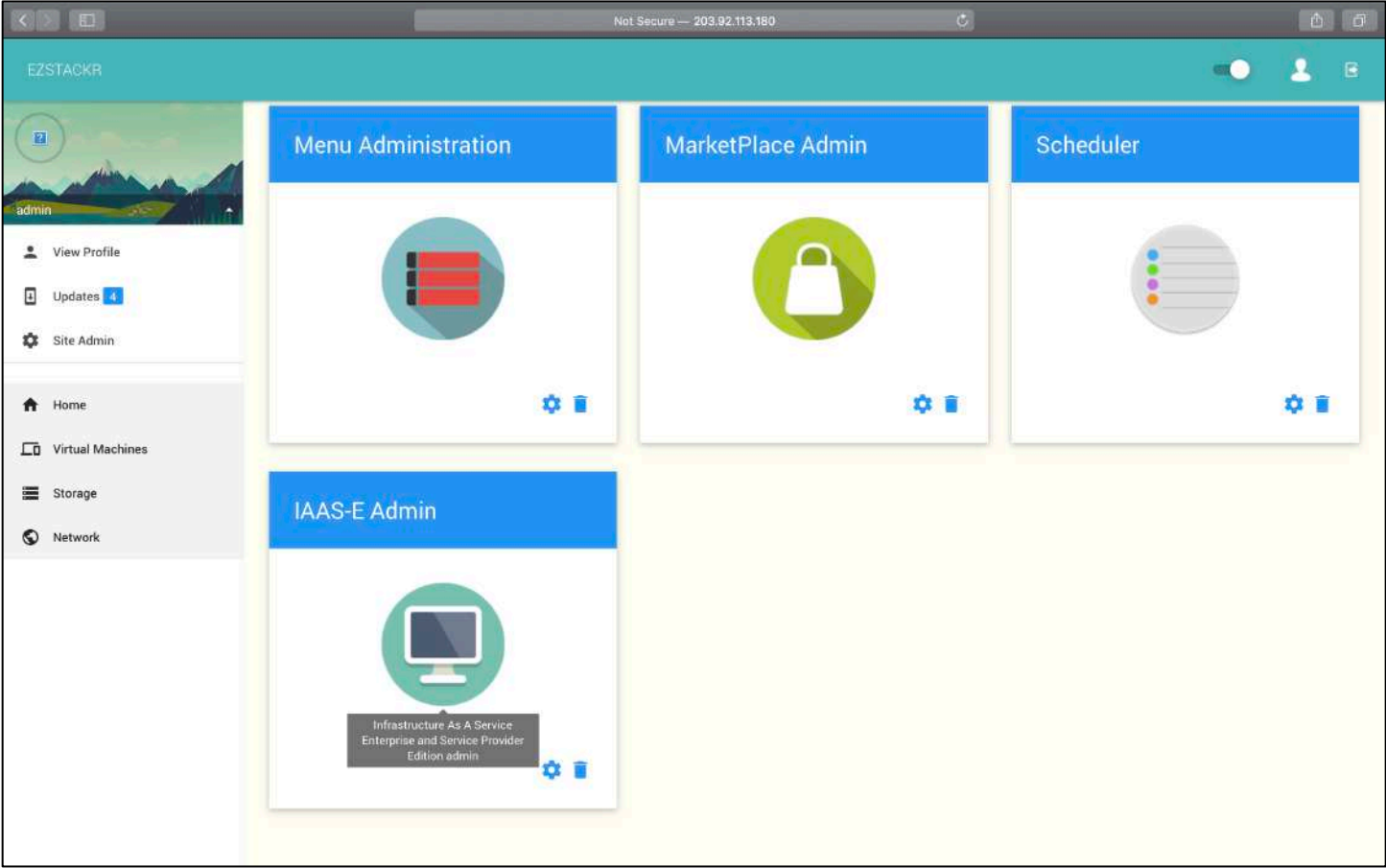
As Admin: Select IAAS-E Admin
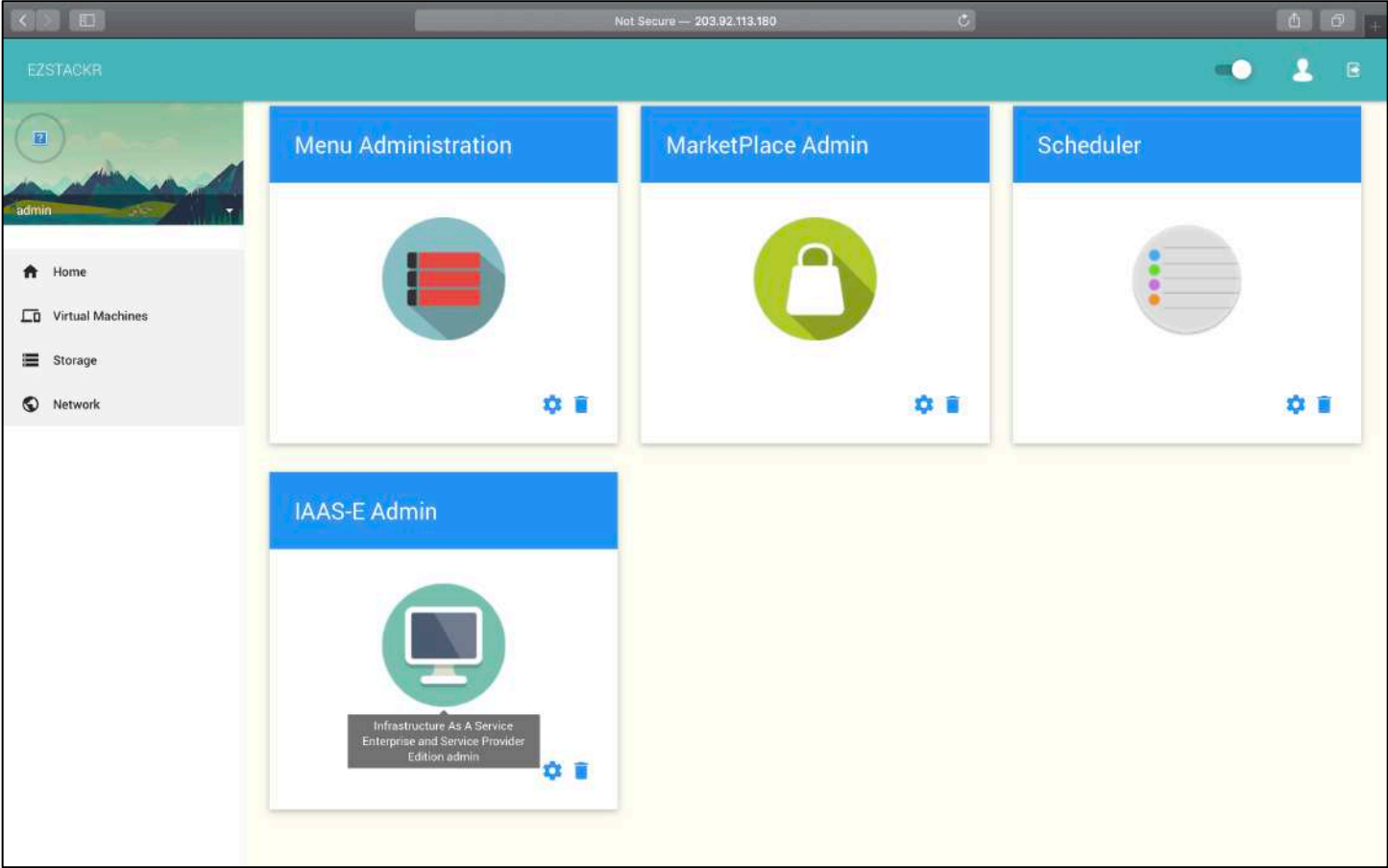
As Admin: Select Host Network Interface
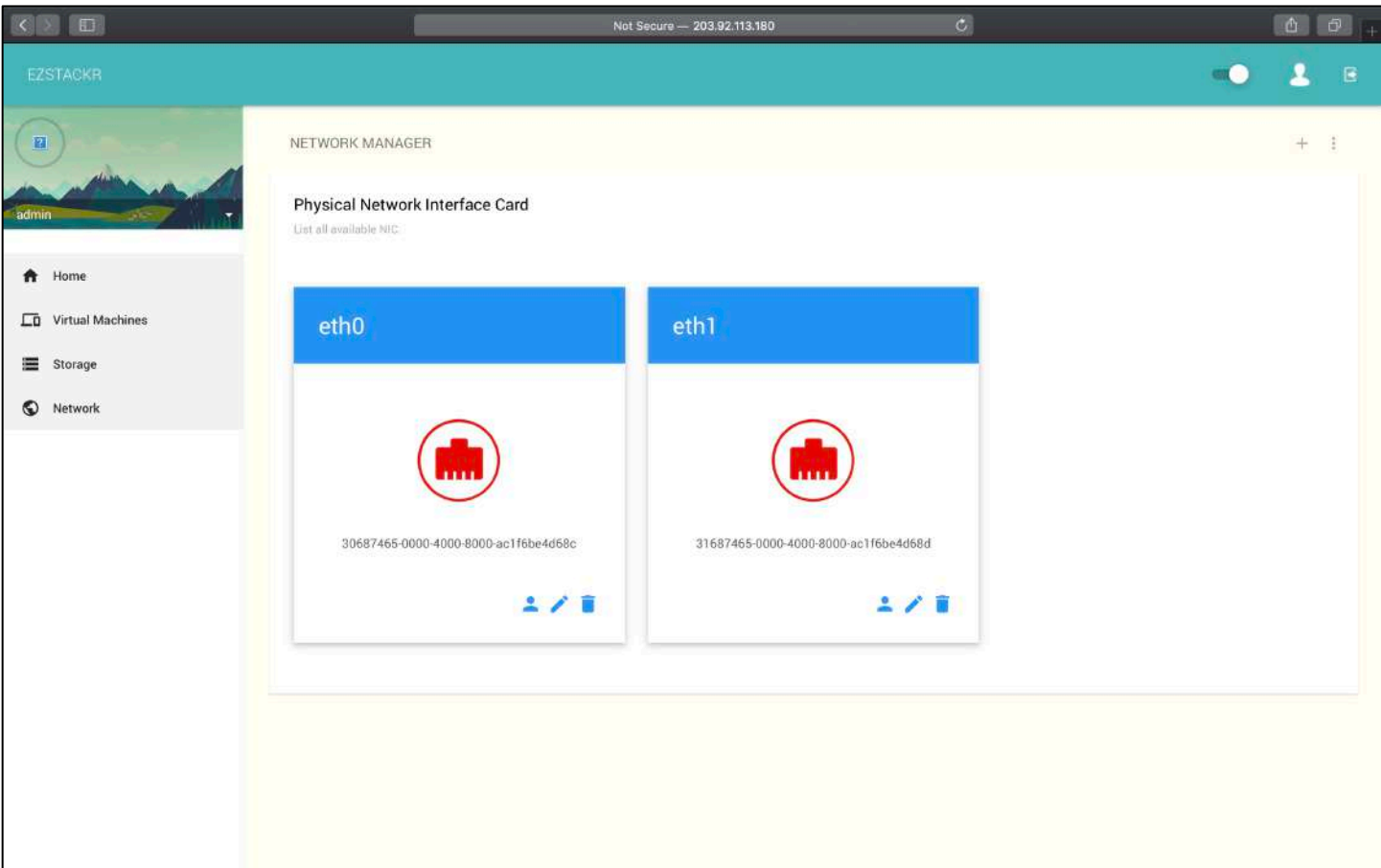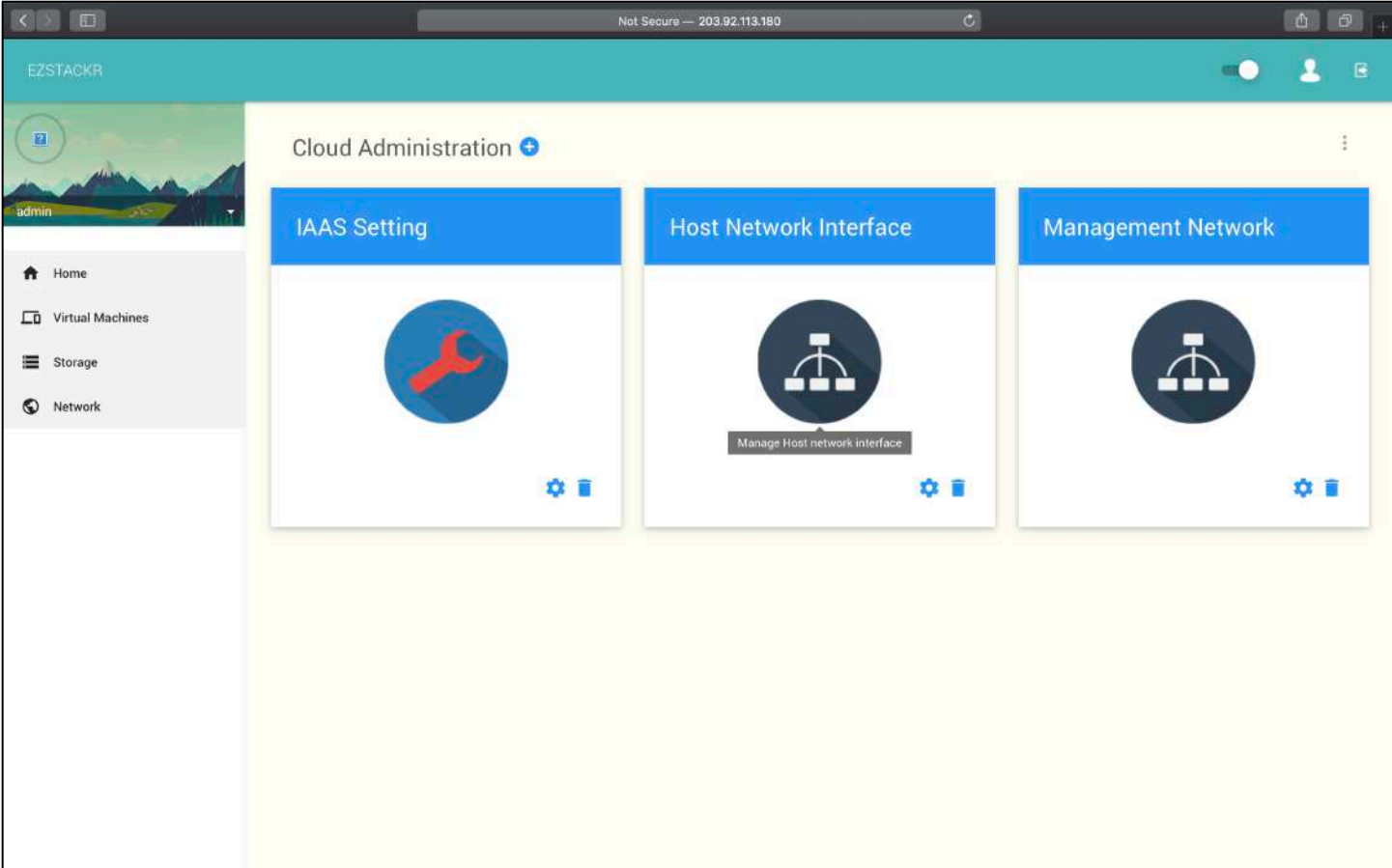
As Admin: Select + to add new network interface

NETWORK ADMINISTRATION

Add Host Network Interface Card

Adding new VLAN using eth1 -> eth1.1
Activating eth1.1 with IP address
Creating config file

Config file generated.
Adding record to database
Success

OK

NETWORK MANAGER

Physical Network Interface Card
List all available NIC

eth0	eth1	pub-IP-203.92.113.178
30687465-0000-4000-8000-ac1f6be4d68c	31687465-0000-4000-8000-ac1f6be4d68d	31687465-312e-4000-8000-ac1f6be4d68d

As Admin: Assign network to user

NETWORK MANAGER

Physical Network Interface Card
List all available NIC

eth0	eth1	pub-IP-203.92.113.178
30687465-0000-4000-8000-ac1f6be4d68c	31687465-0000-4000-8000-ac1f6be4d68d	31687465-312e-4000-8000-ac1f6be4d68d

Assign

NETWORK ADMINISTRATION

Assign User to eth1.1

bobyschan
Administrator, Administrator
✓ Yim-Sum Chan

List of users using this interface

ASSIGN

[if no VLAN tagging is required, the network administration is straight forward]
No further changes need to be made to this section
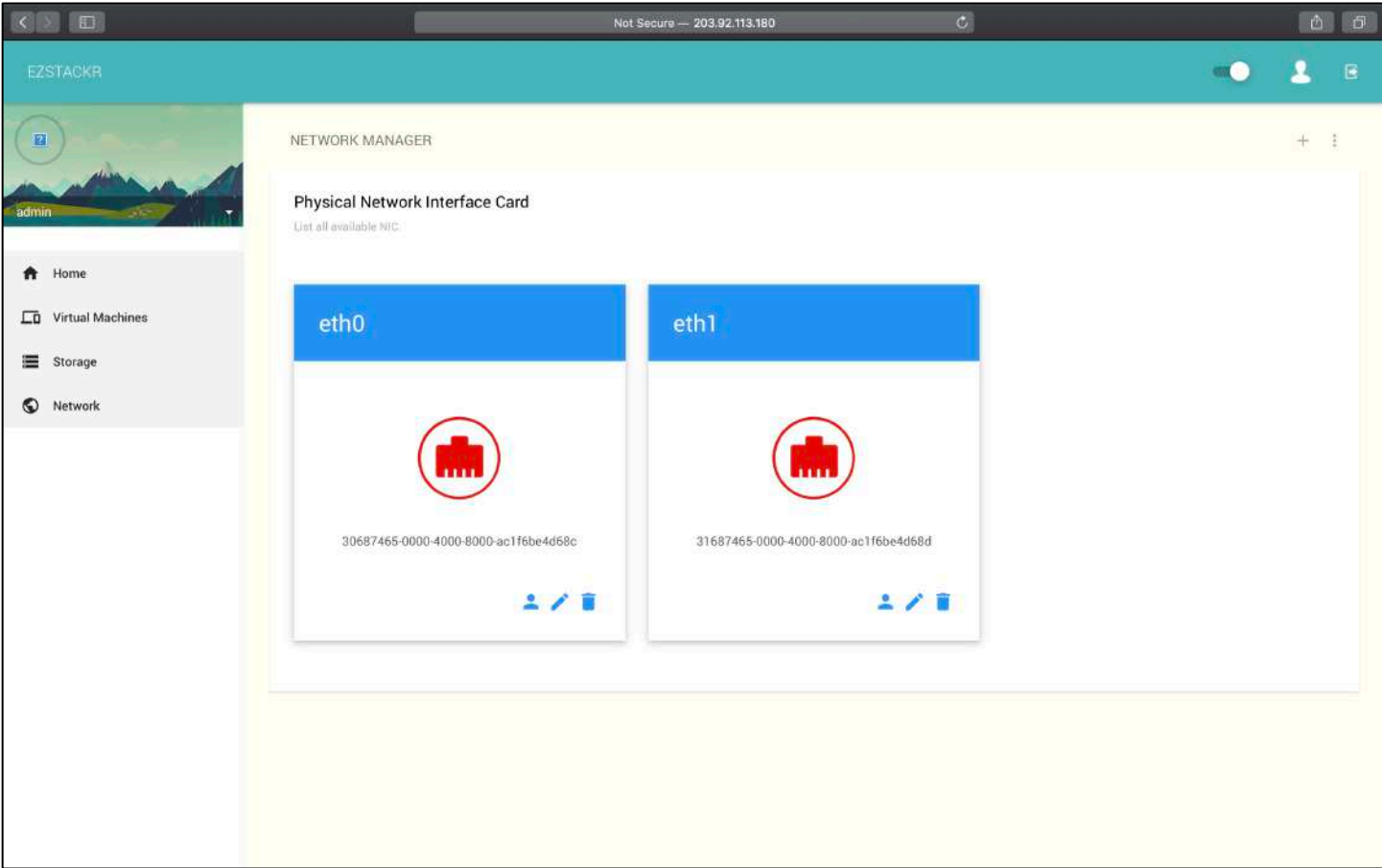
NAVIGATING CLOUD USER MENUS
As User: Log in
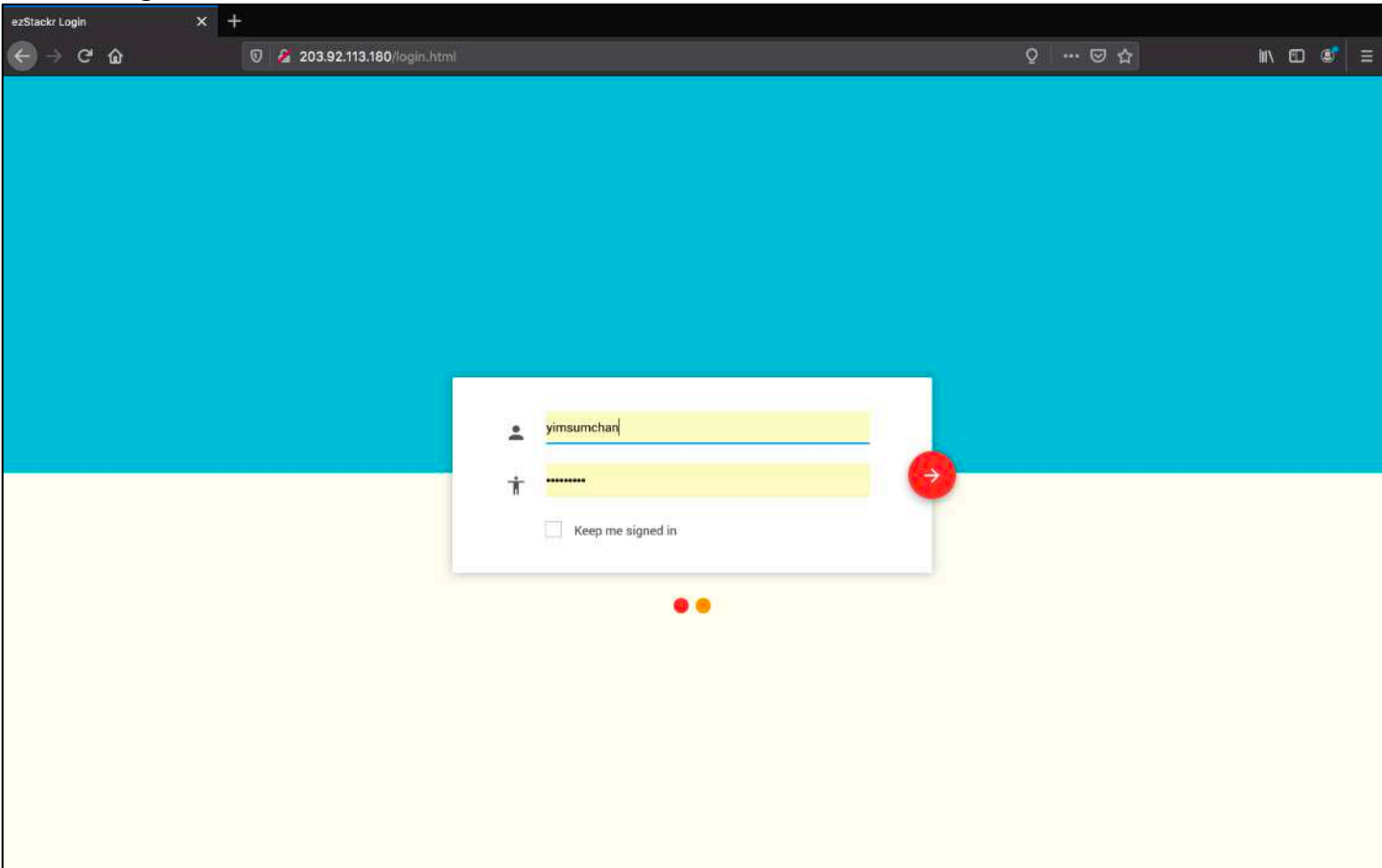
Login is successful. User has 16 vCPU, 500GB storage, 2 network ports assigned
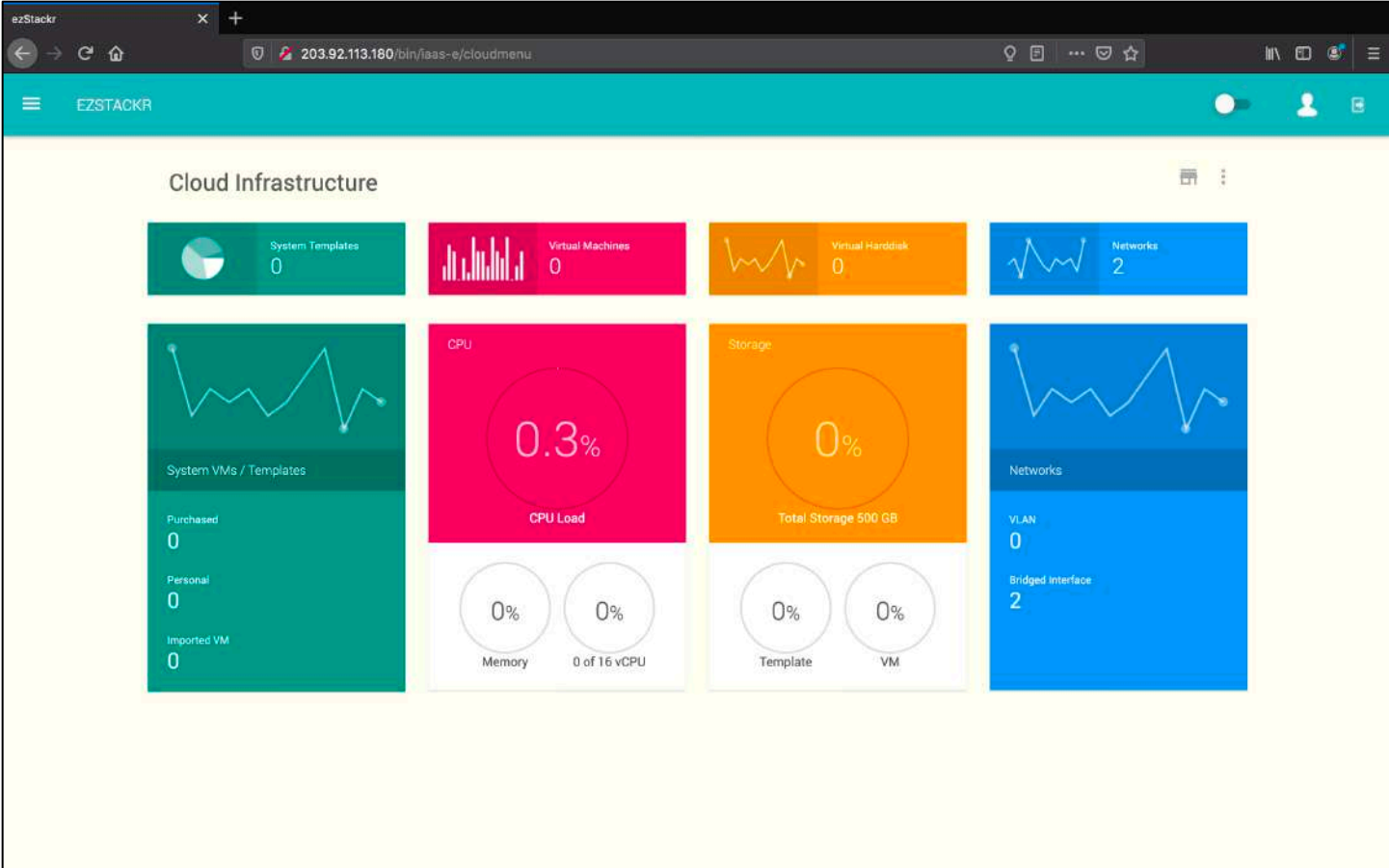
As User: Navigating the Home page. Select "System Templates", "Virtual Machines", "Virtual Harddisk", "Networks"
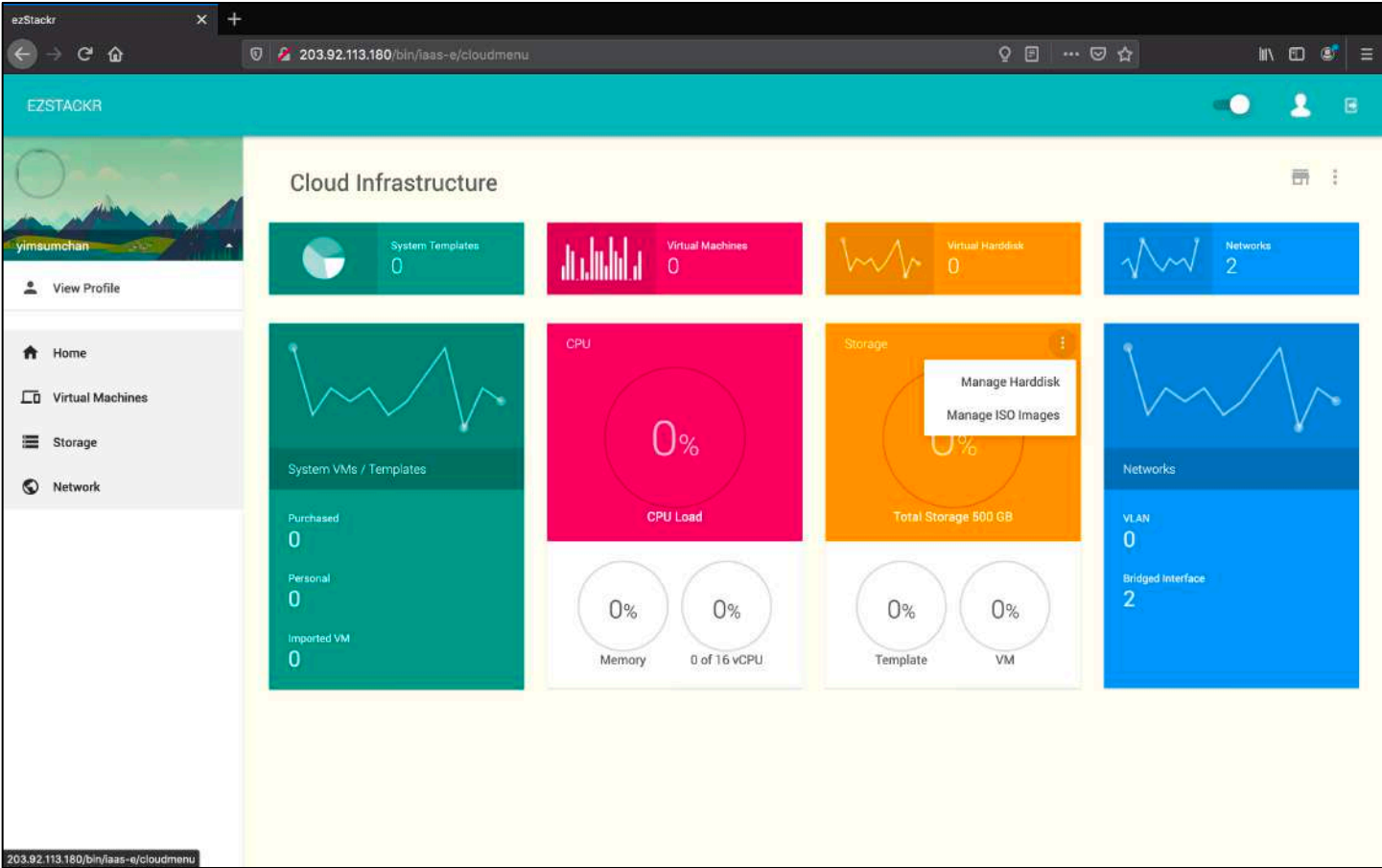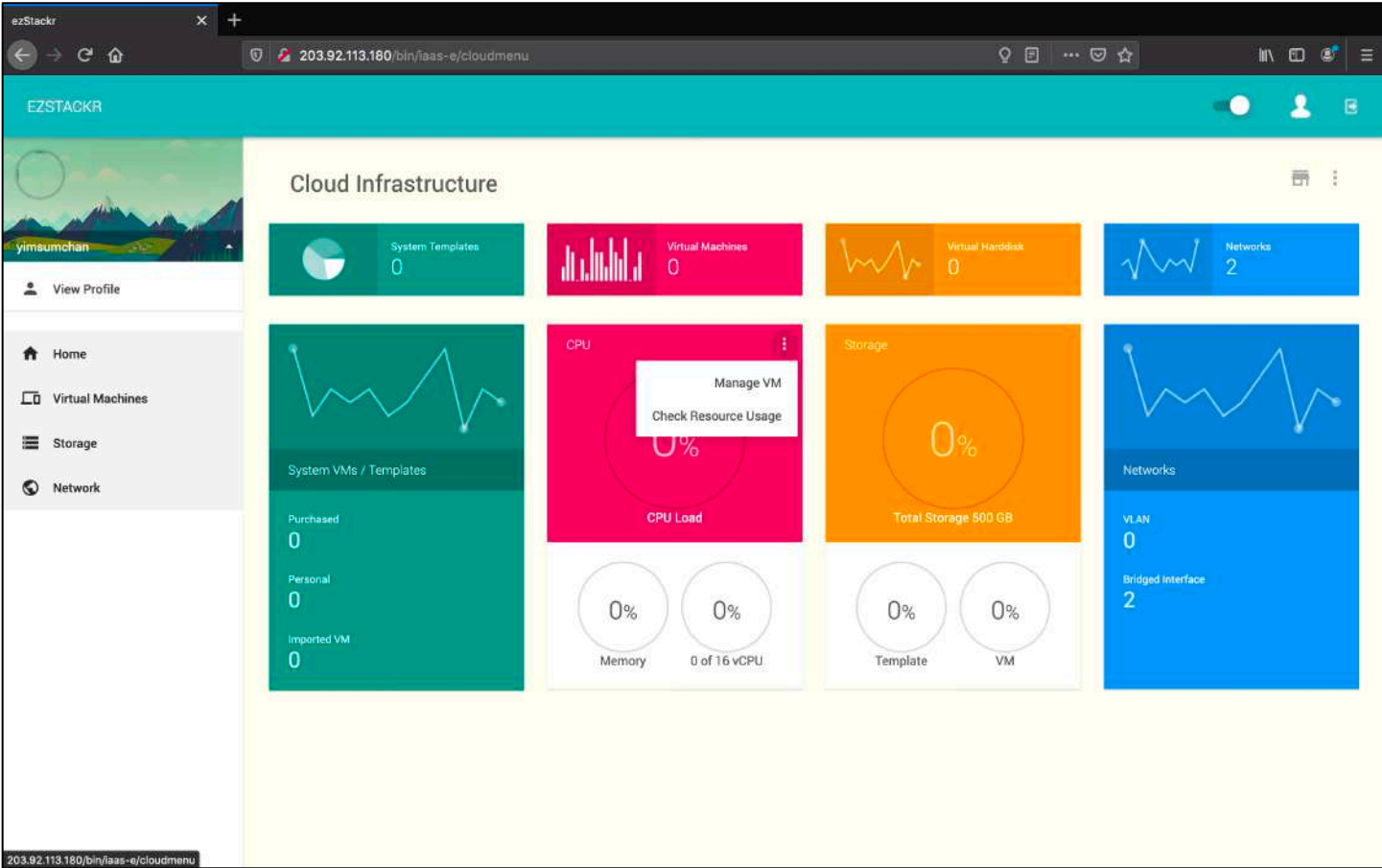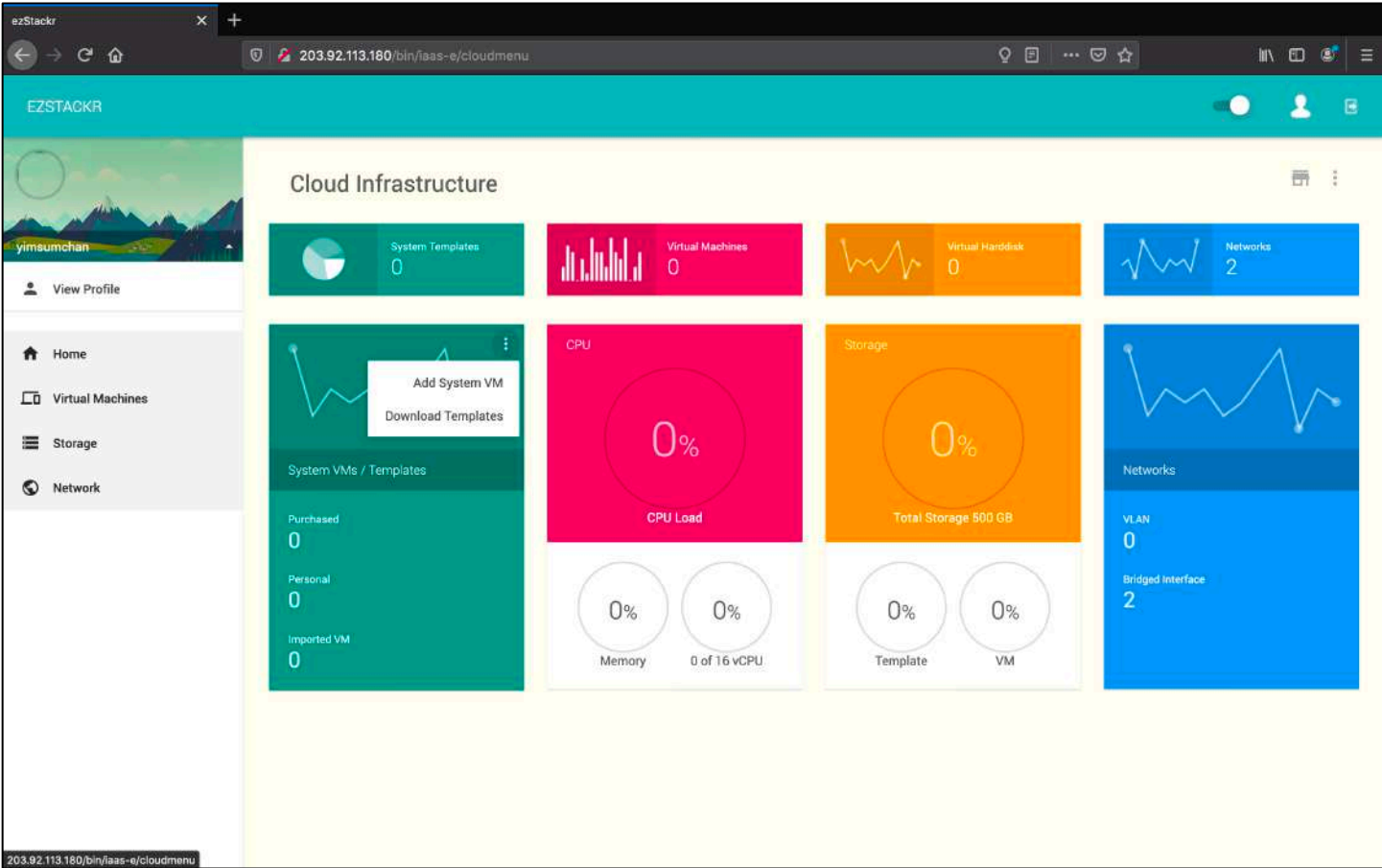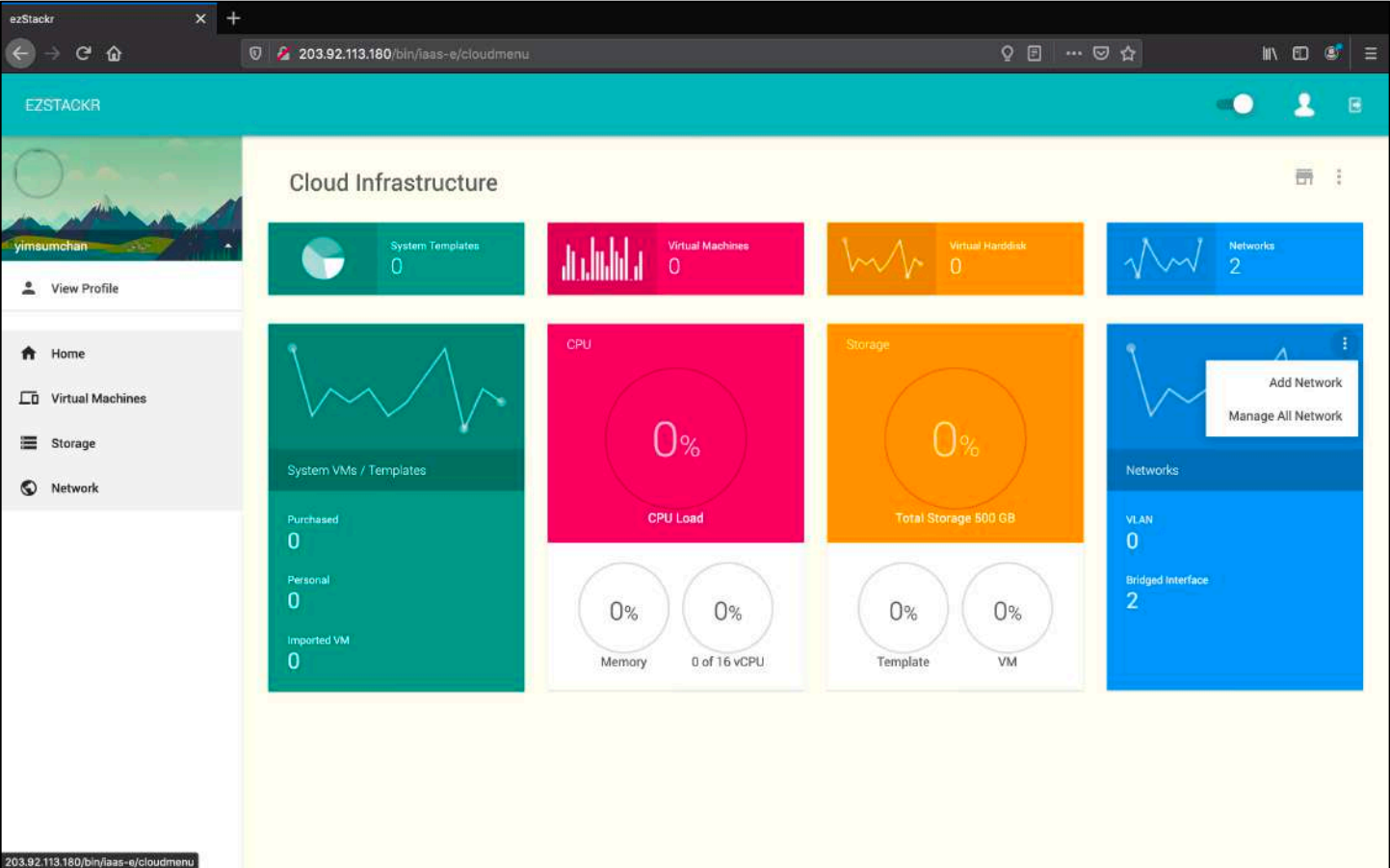
As User: Navigating the Home page. Select "Virtual Machines", "Storage", "Networks"
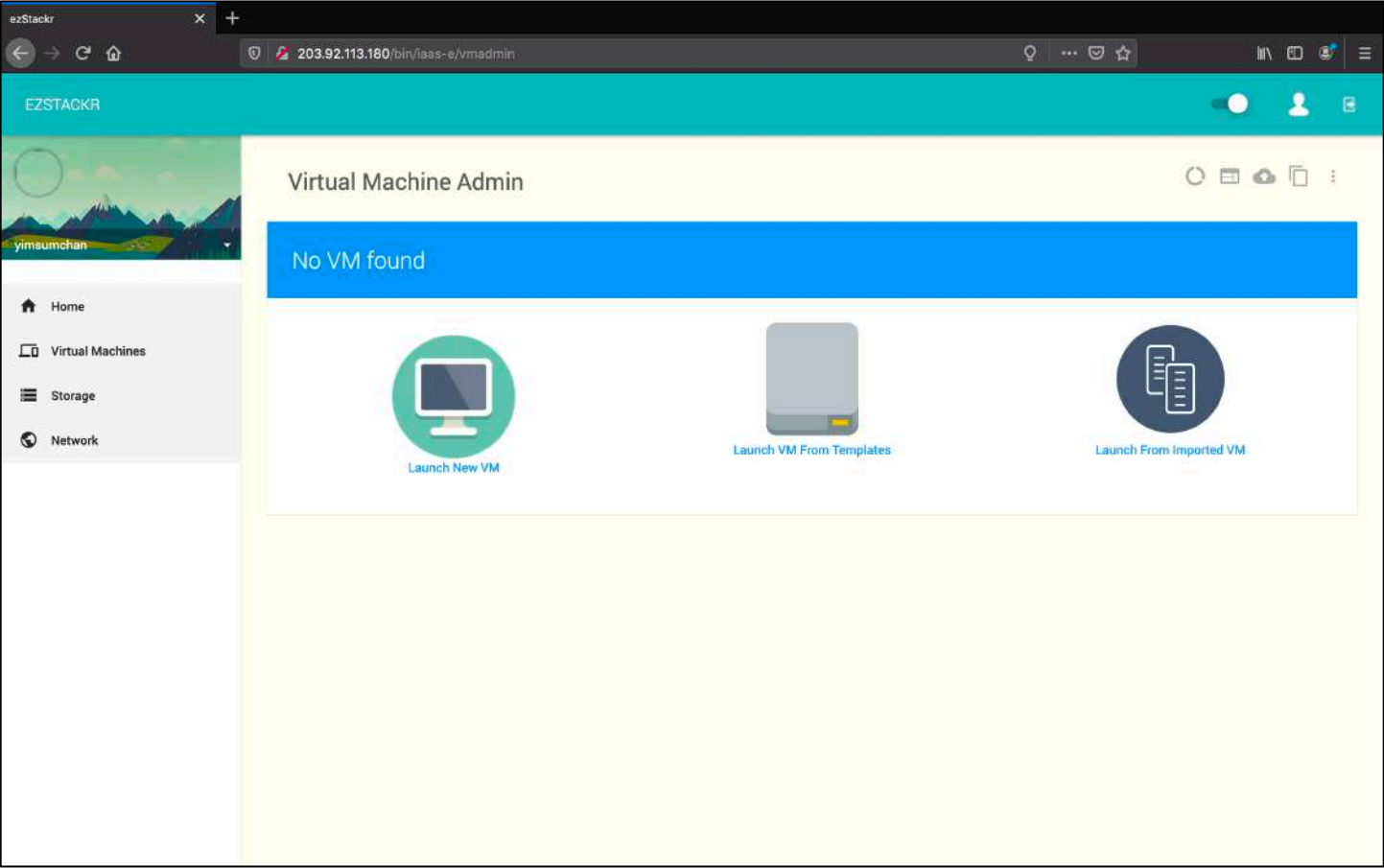
No storage has been configured
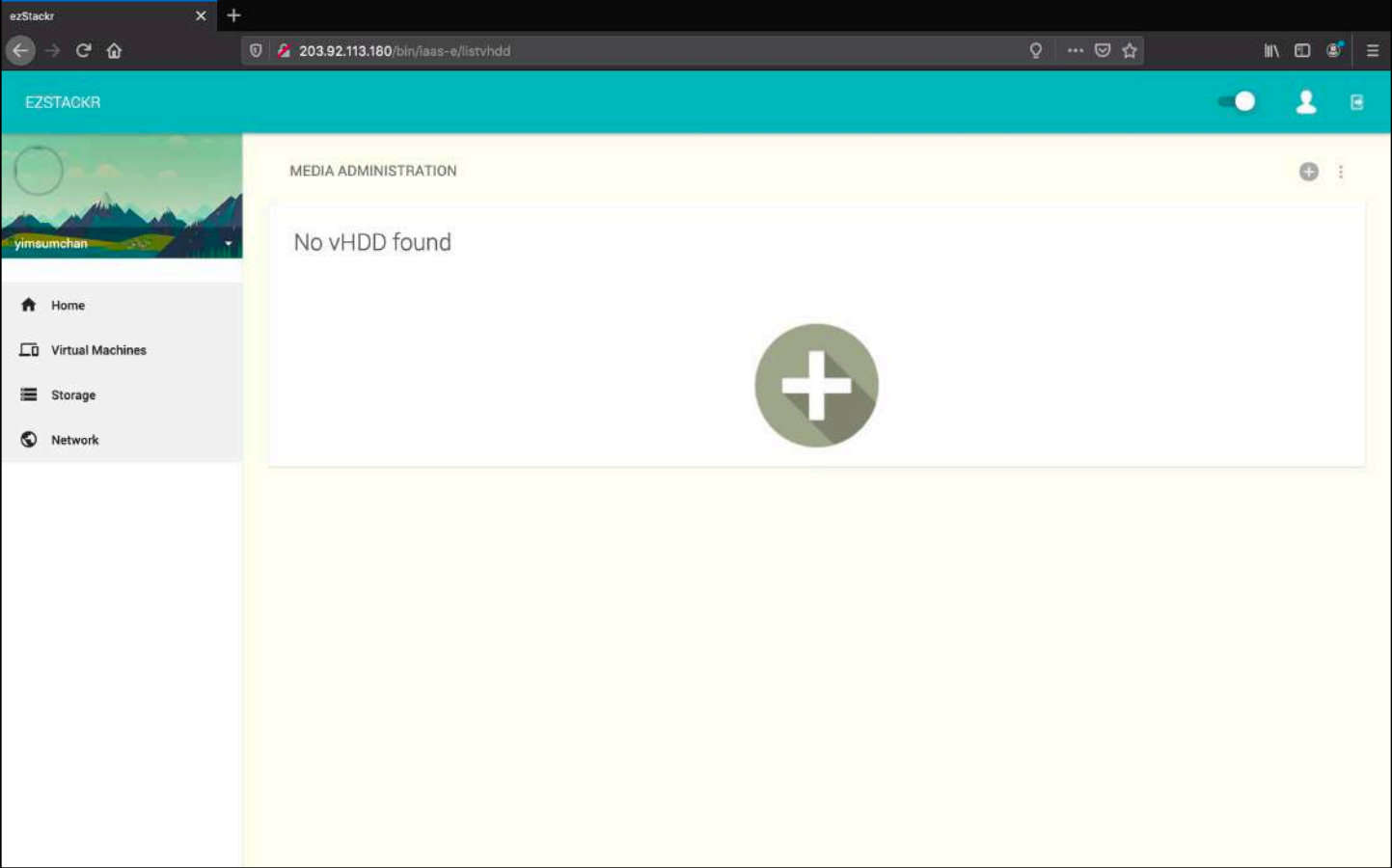
Cloud Admin has provisioned a network port for user
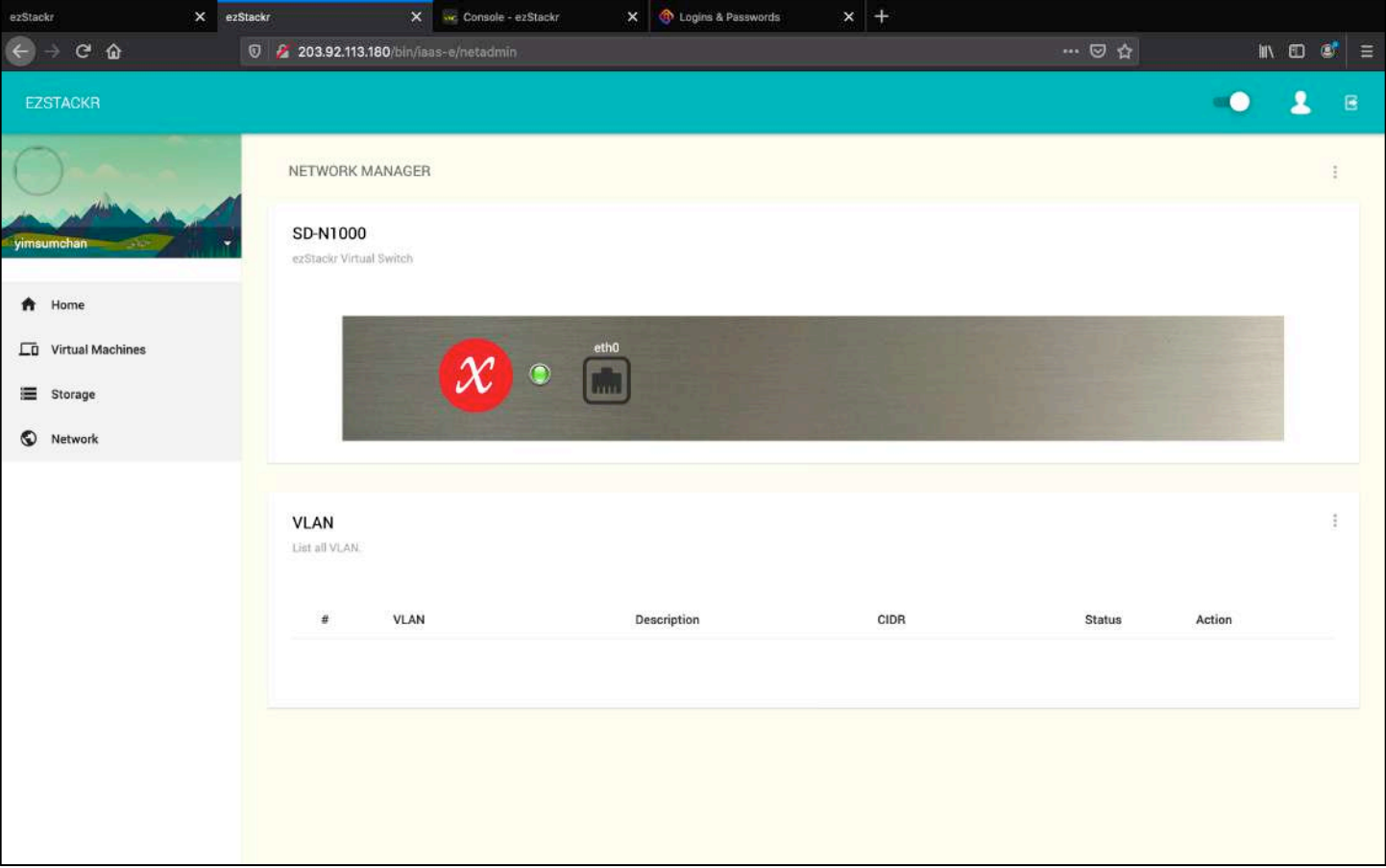
CREATING DVD ISO DISKS
As User: Select "Virtual Harddisk"
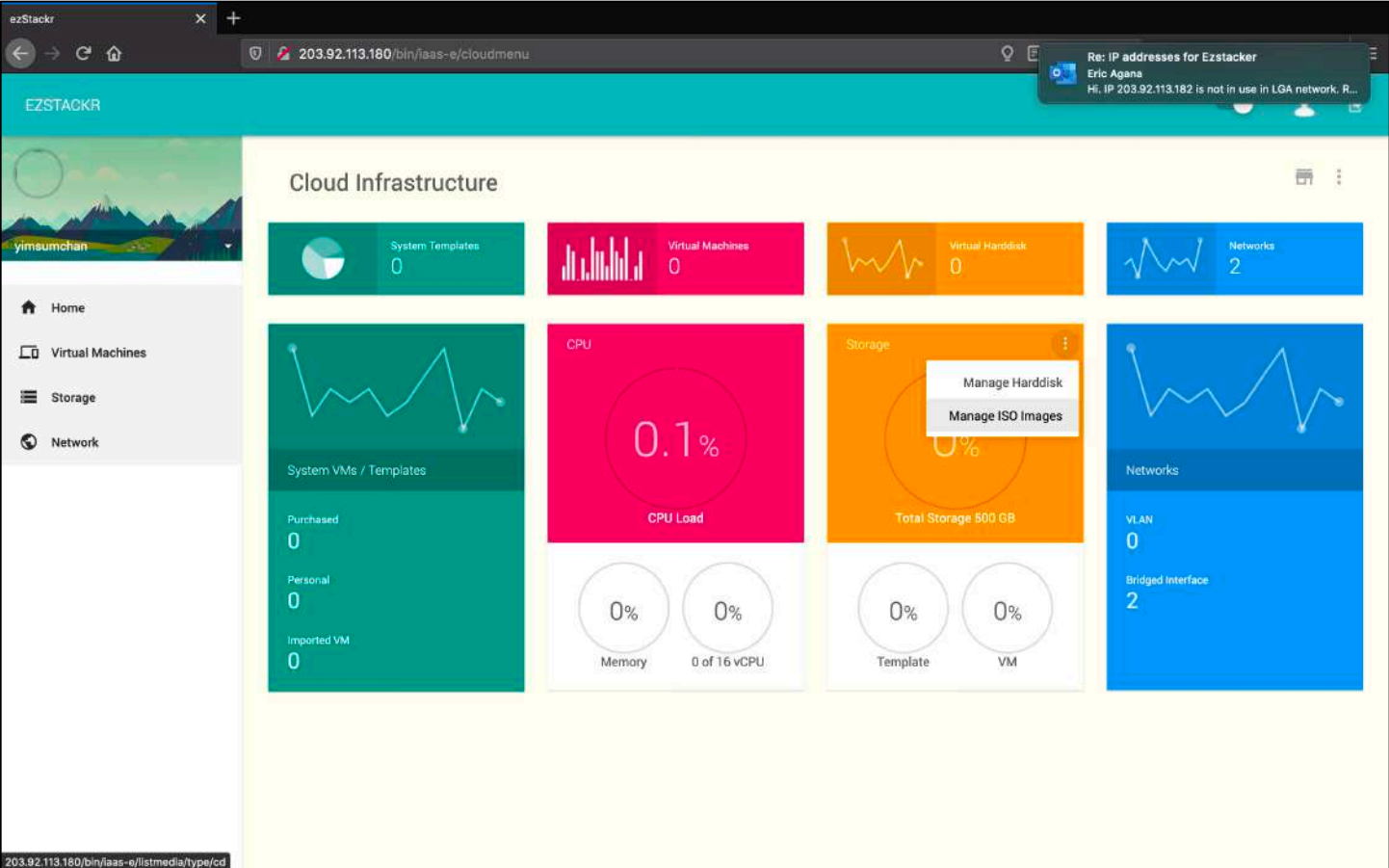
As User: Select + to add new media
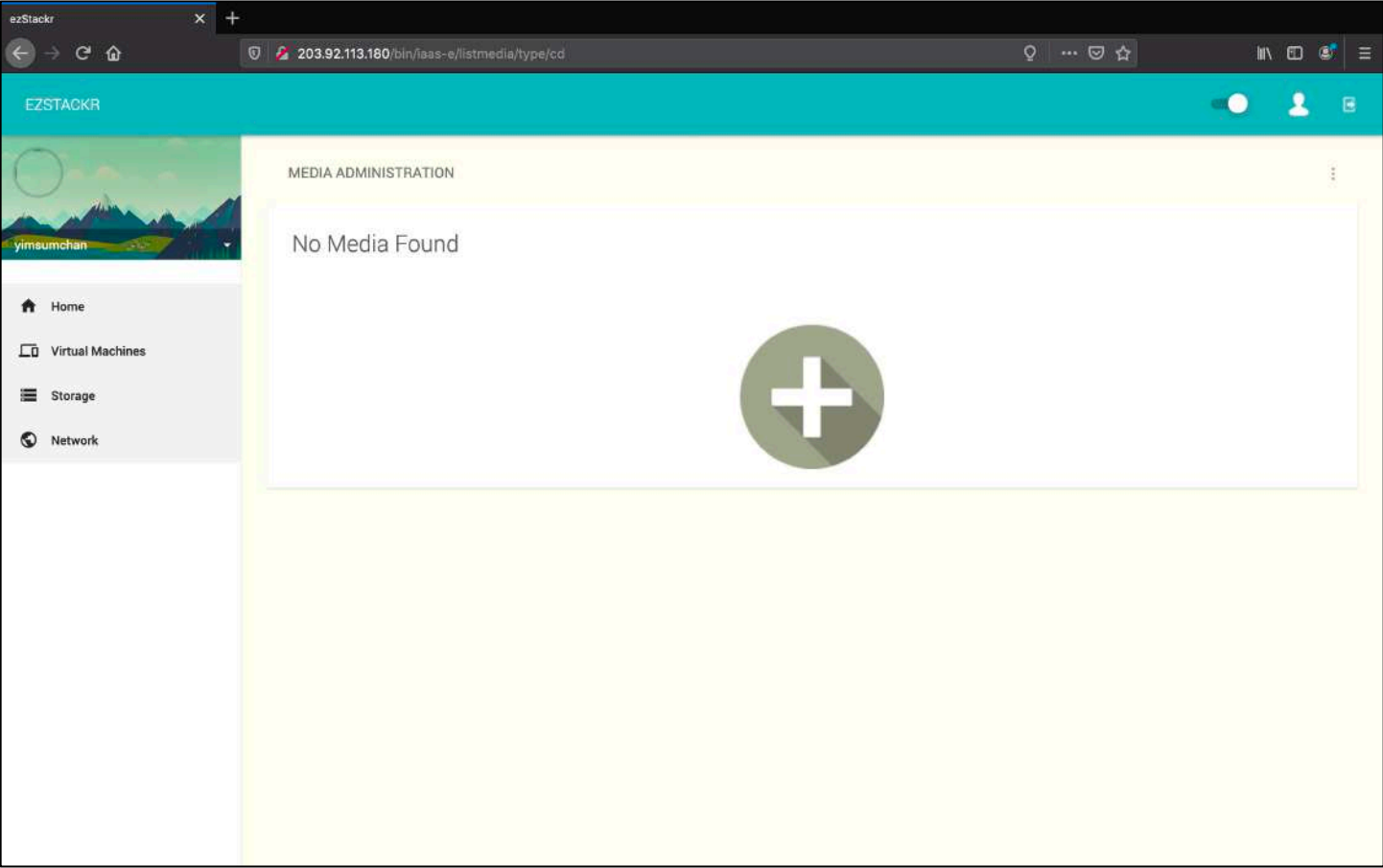
As User: Enter media details
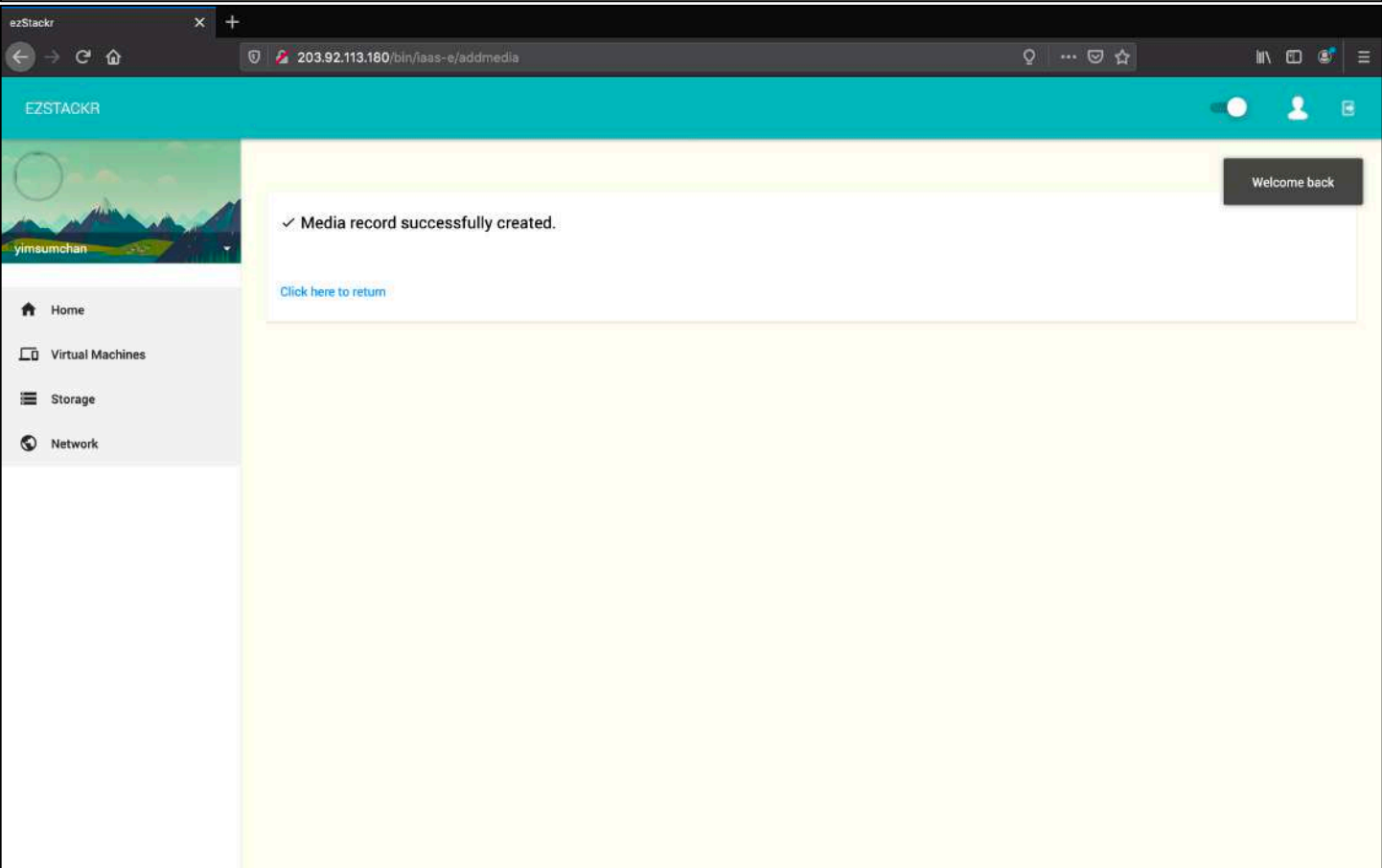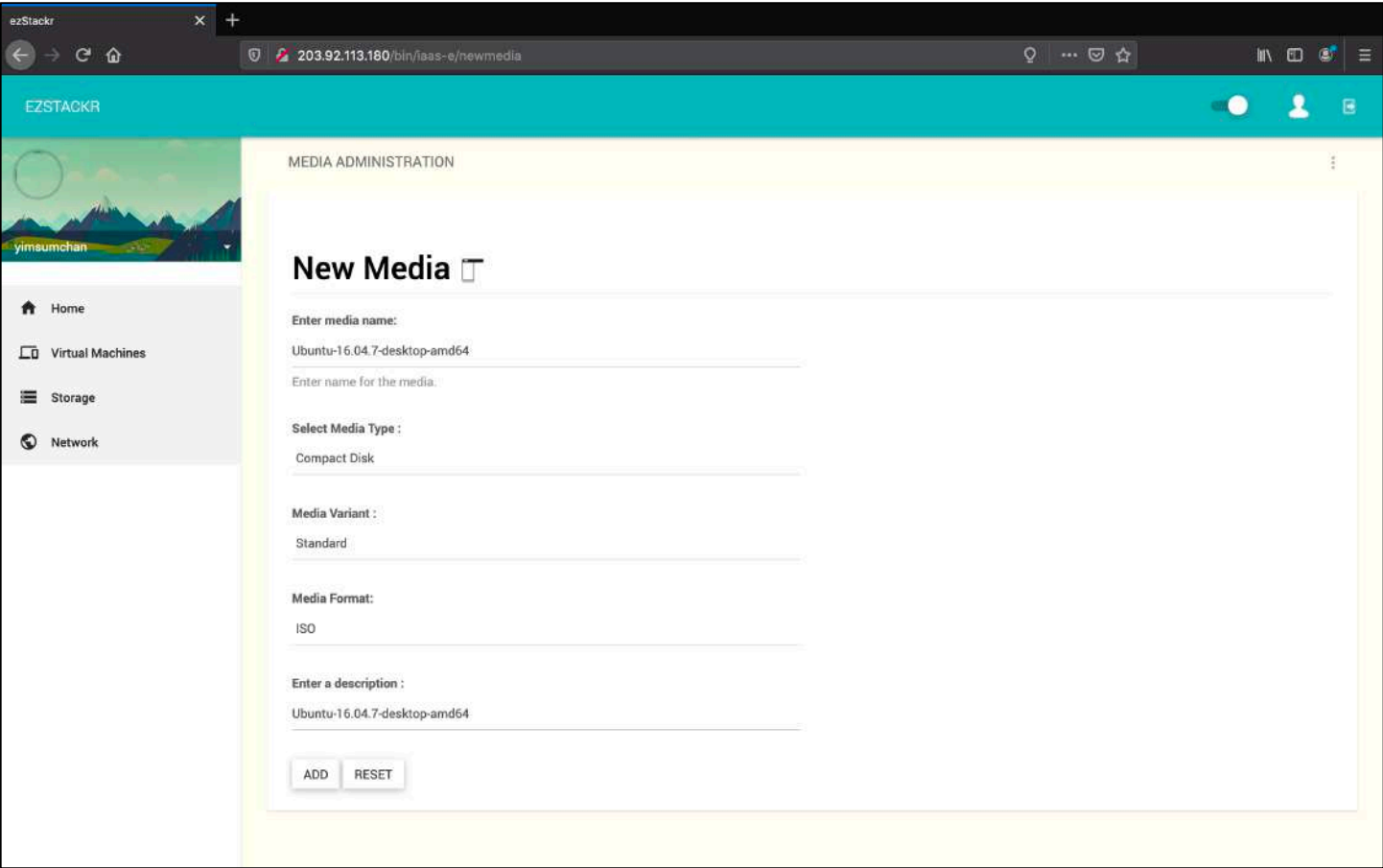
As User: Upload new media file
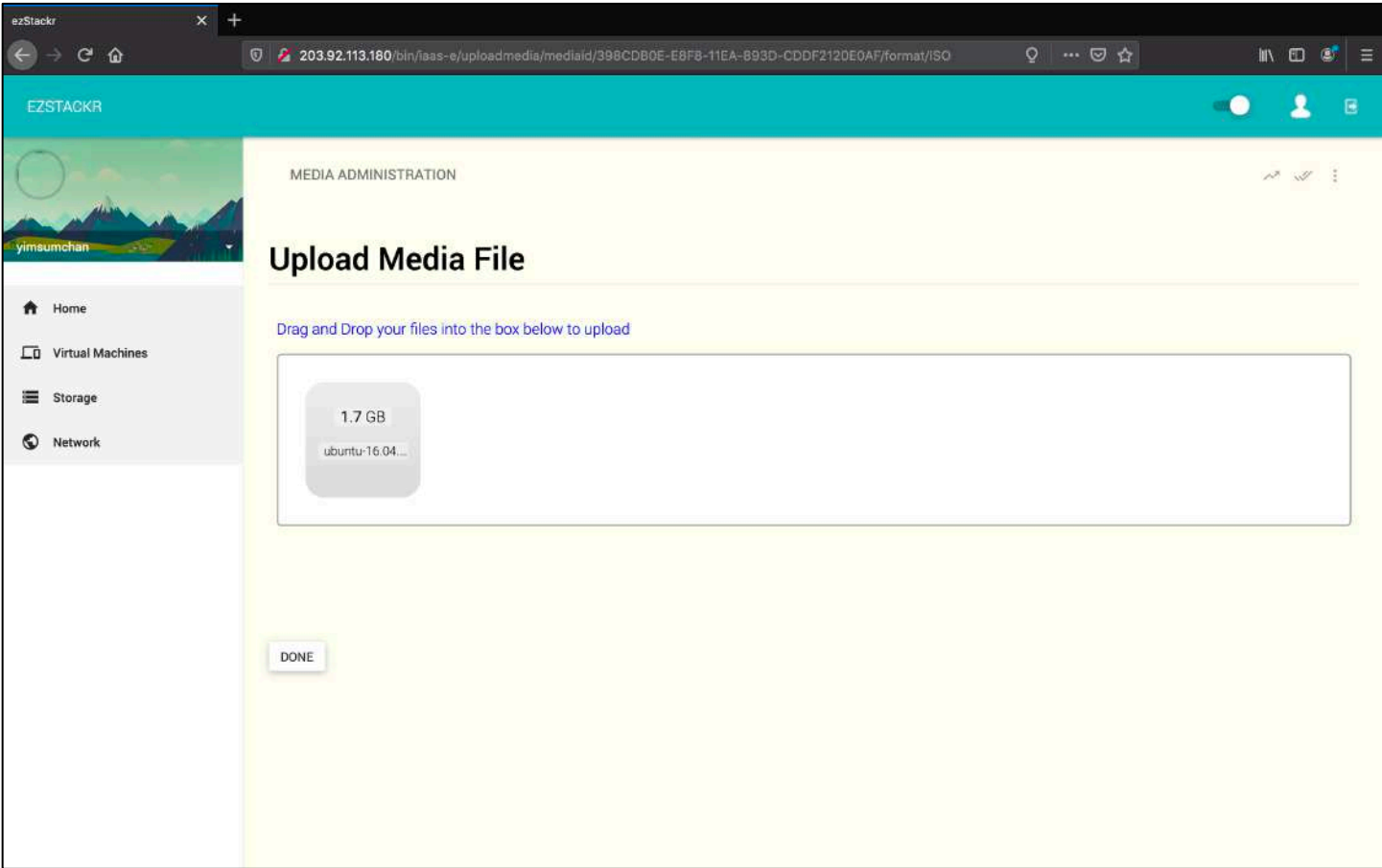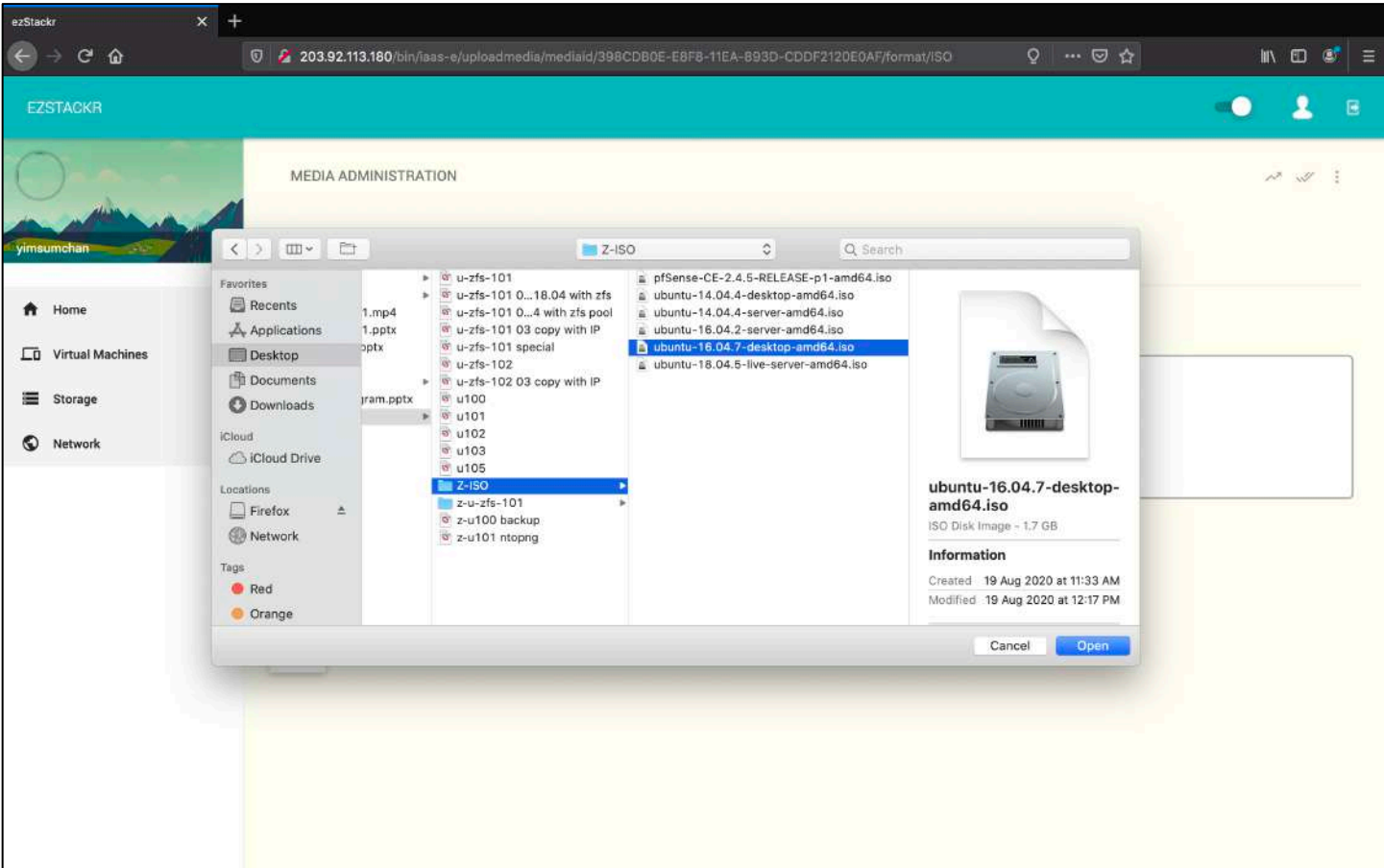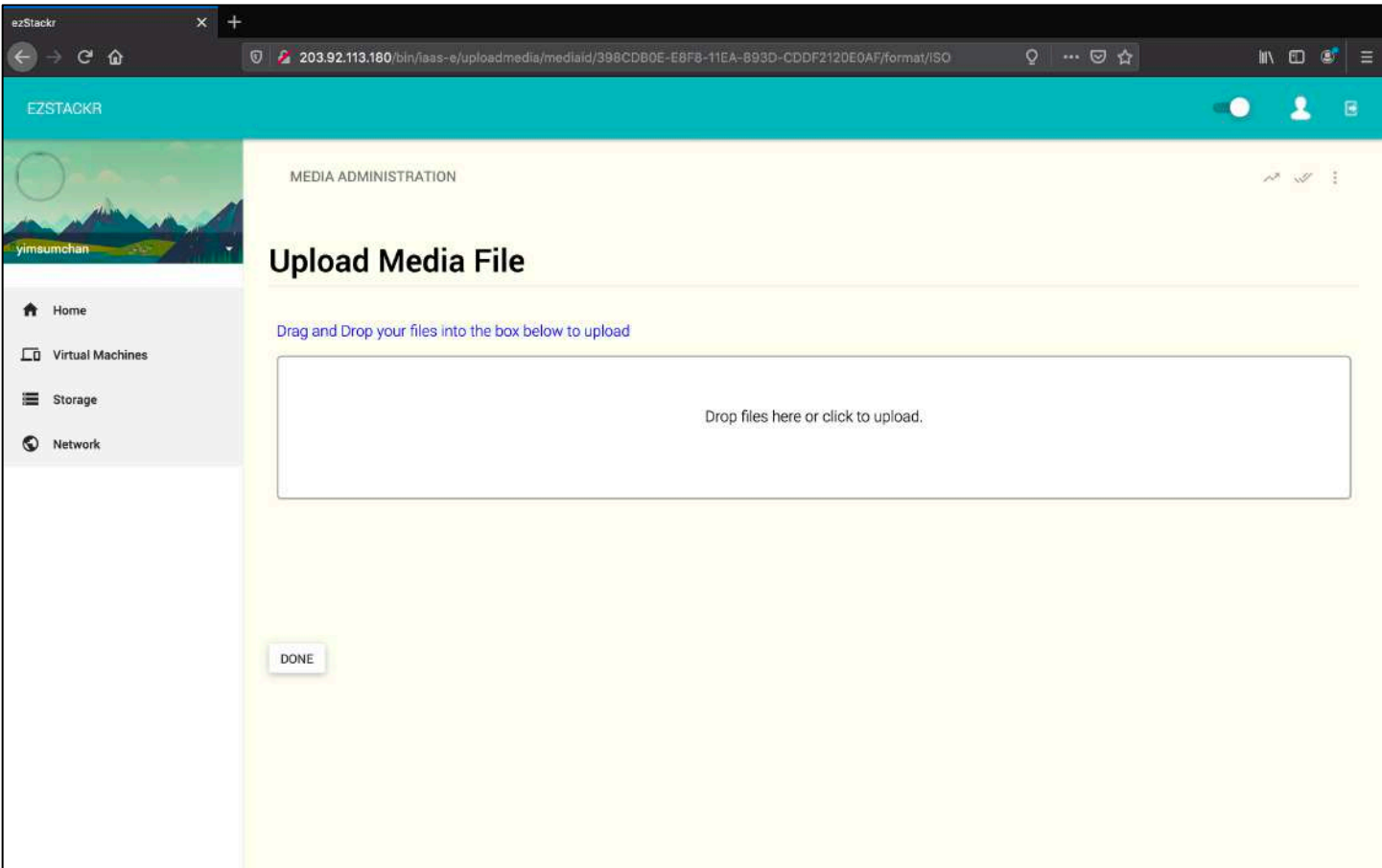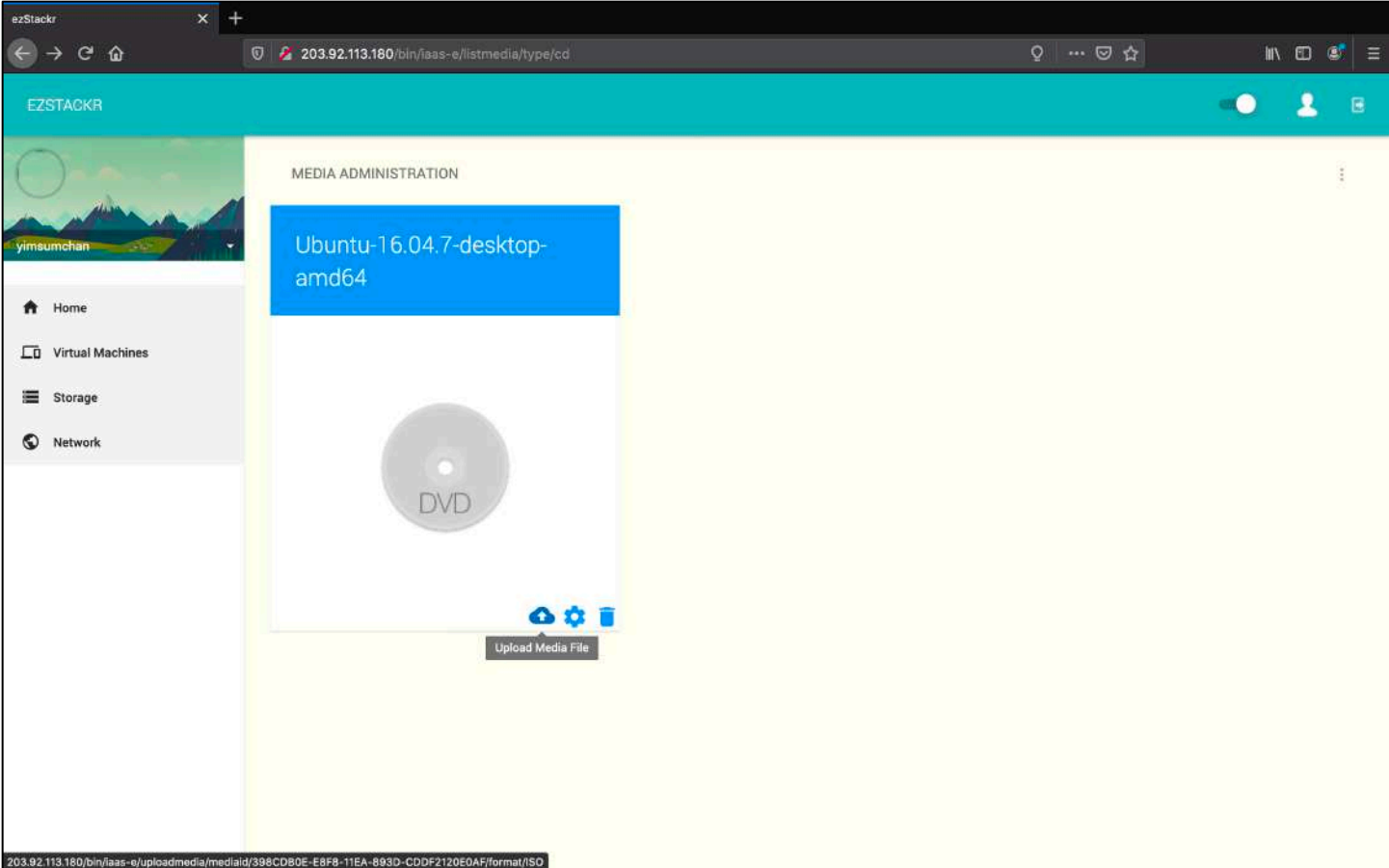
As User: After uploading, select "Edit" to check that the ISO has been uploaded. Media file has an upload timestamp
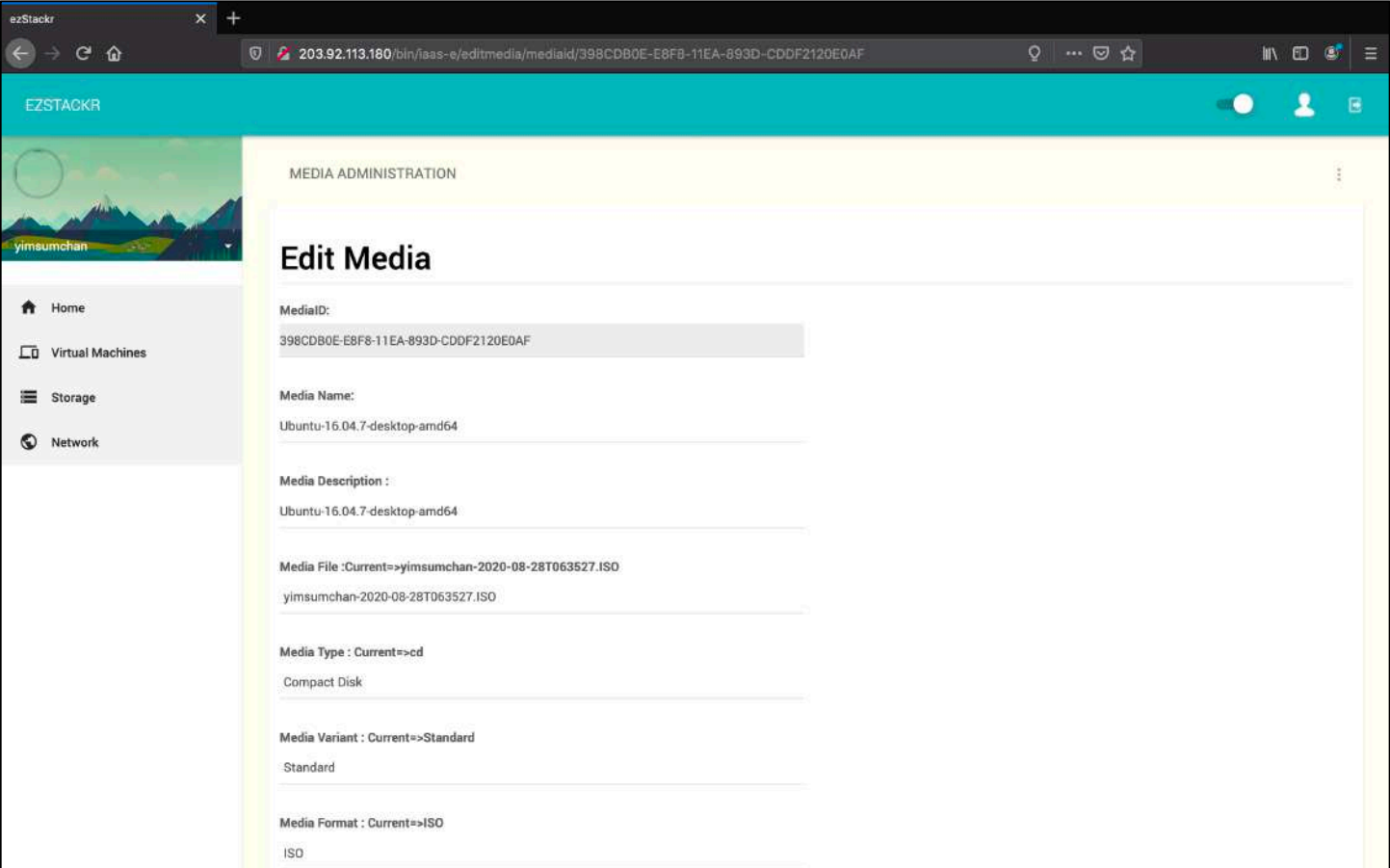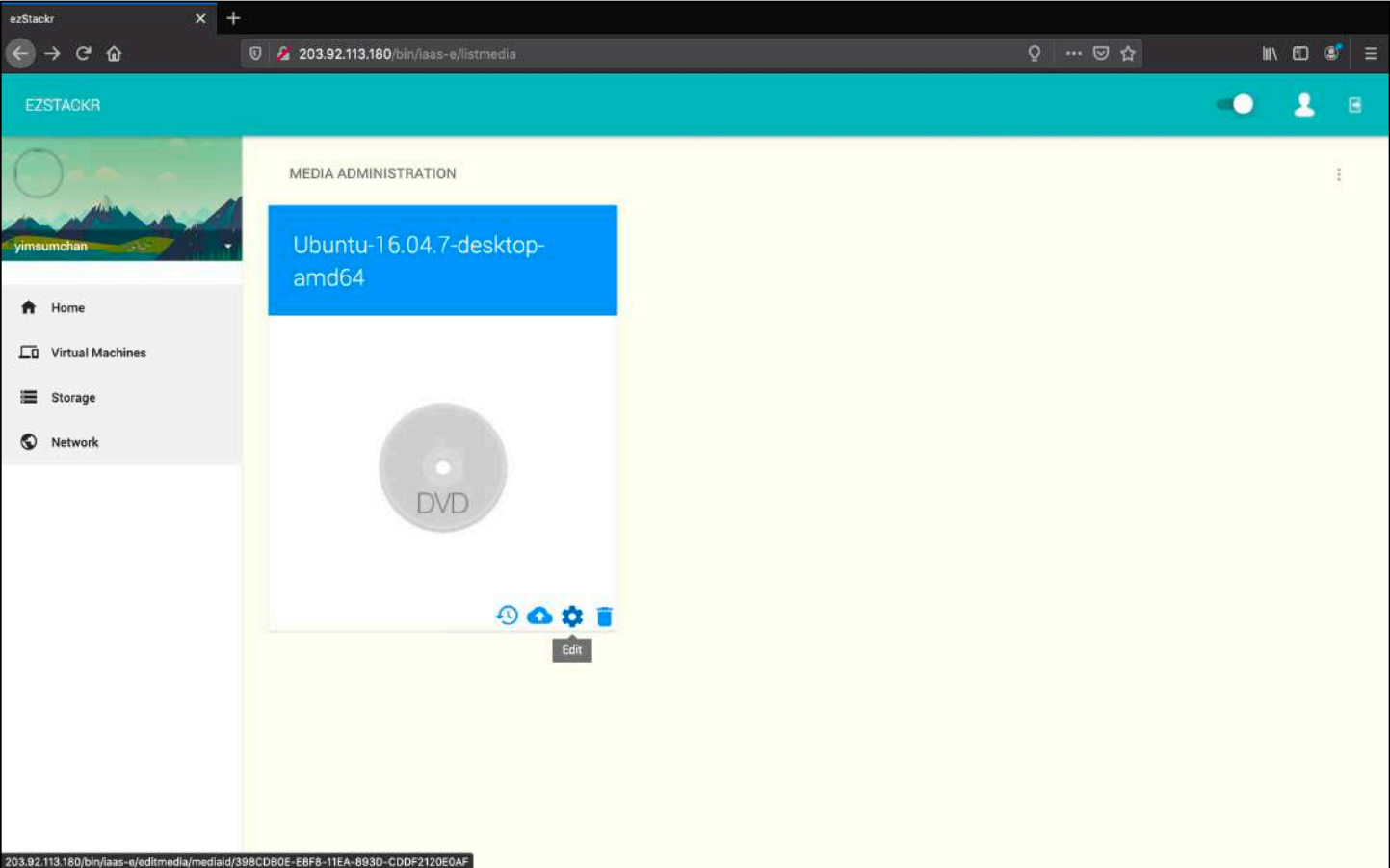
CREATING VMs

As User: Select "Manage VM"
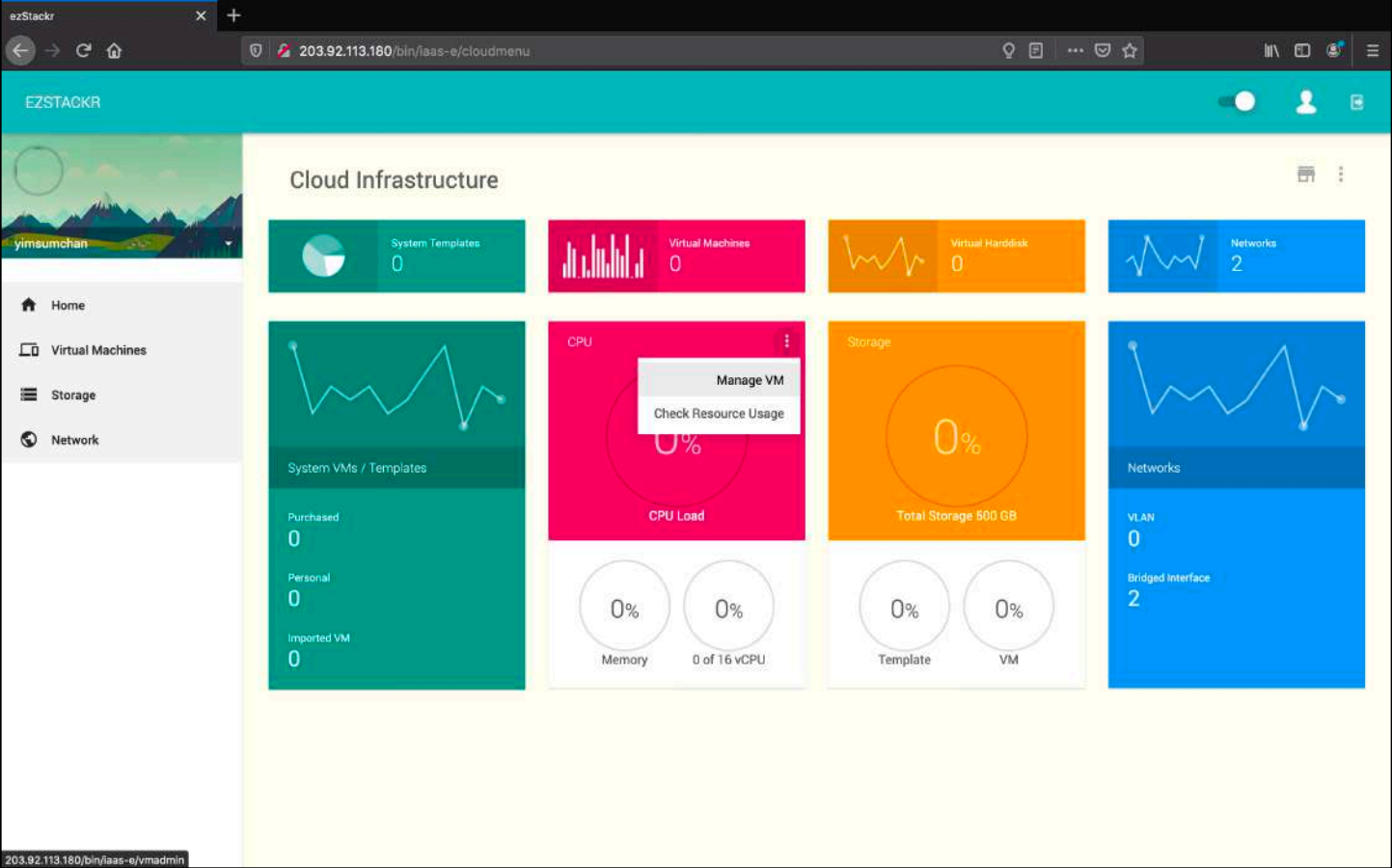
As User: Select "Launch New VM"
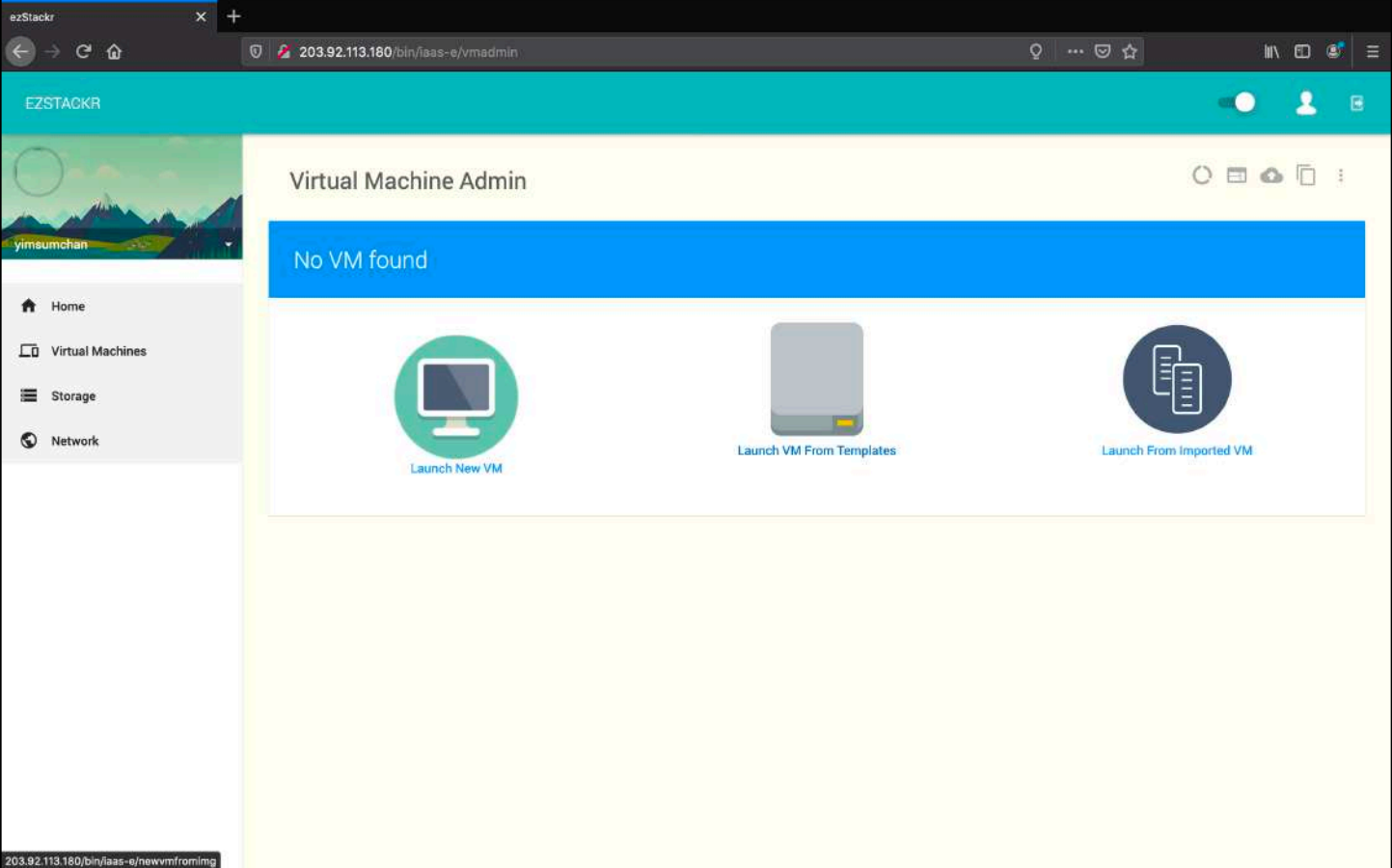
As User: Enter VM details in Step 1, Step 2 and Step 3
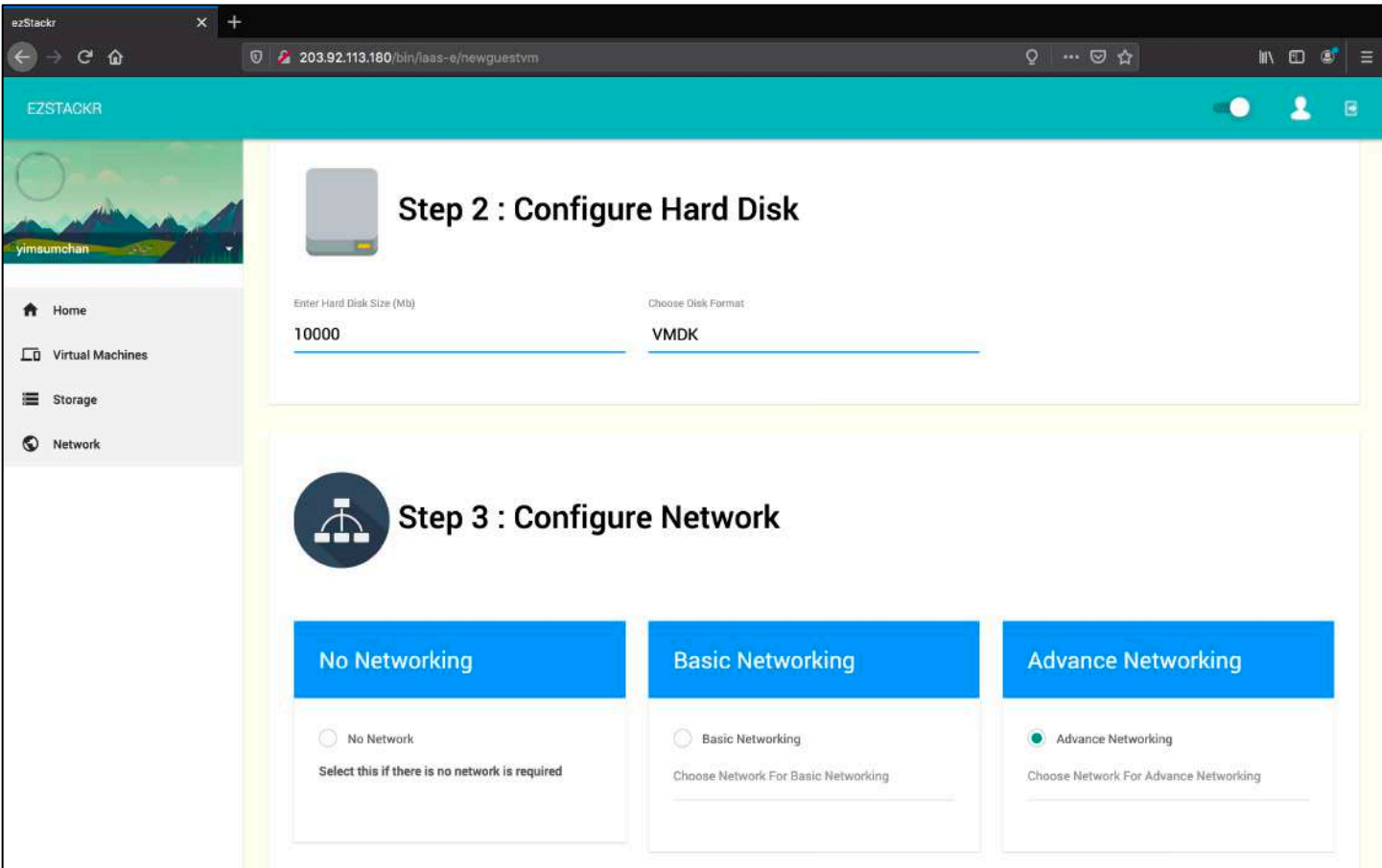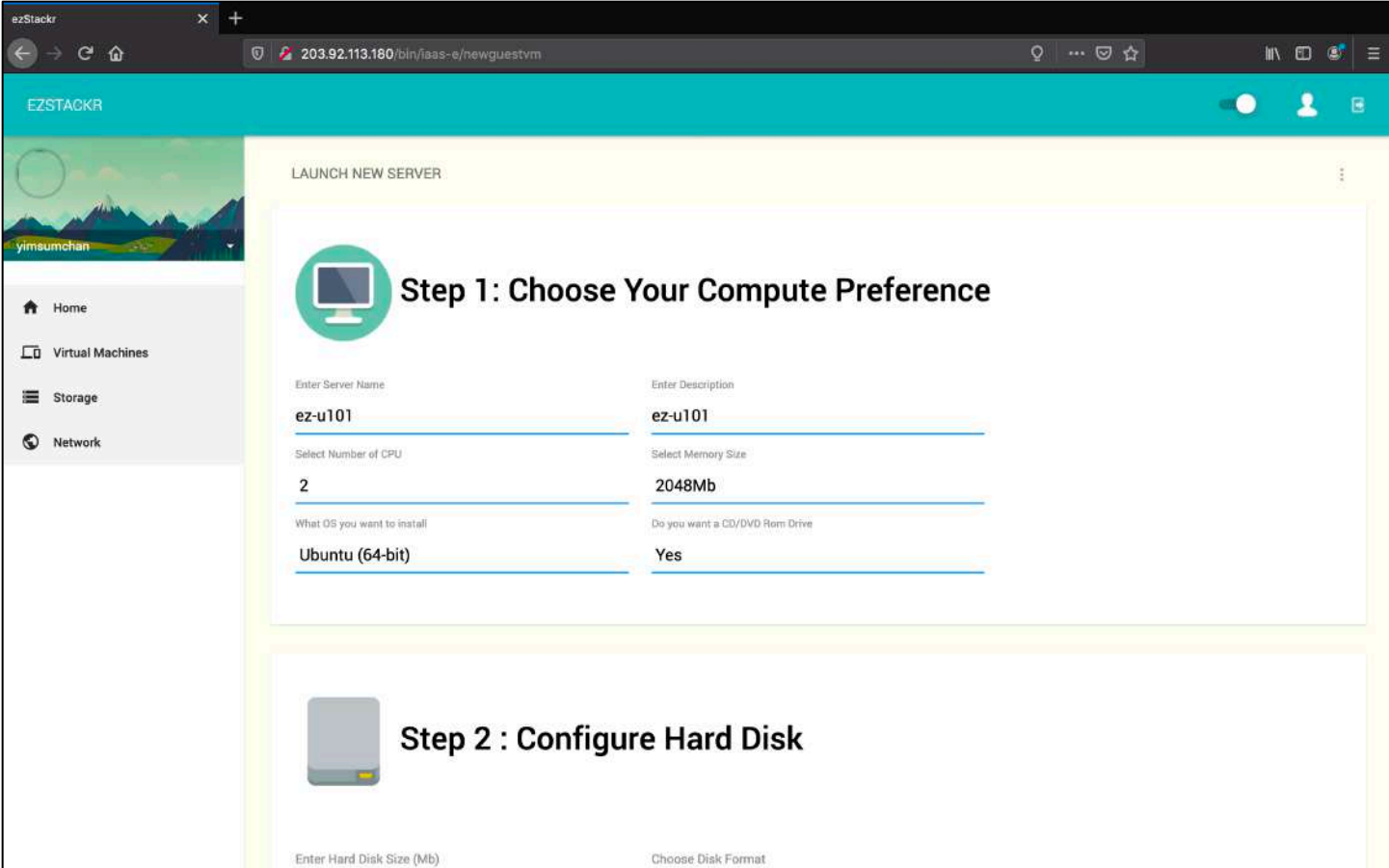
As User: Select "Advanced Networking". This allows the OS to auto configure its network as DHCP assigns a network and IP to the OS
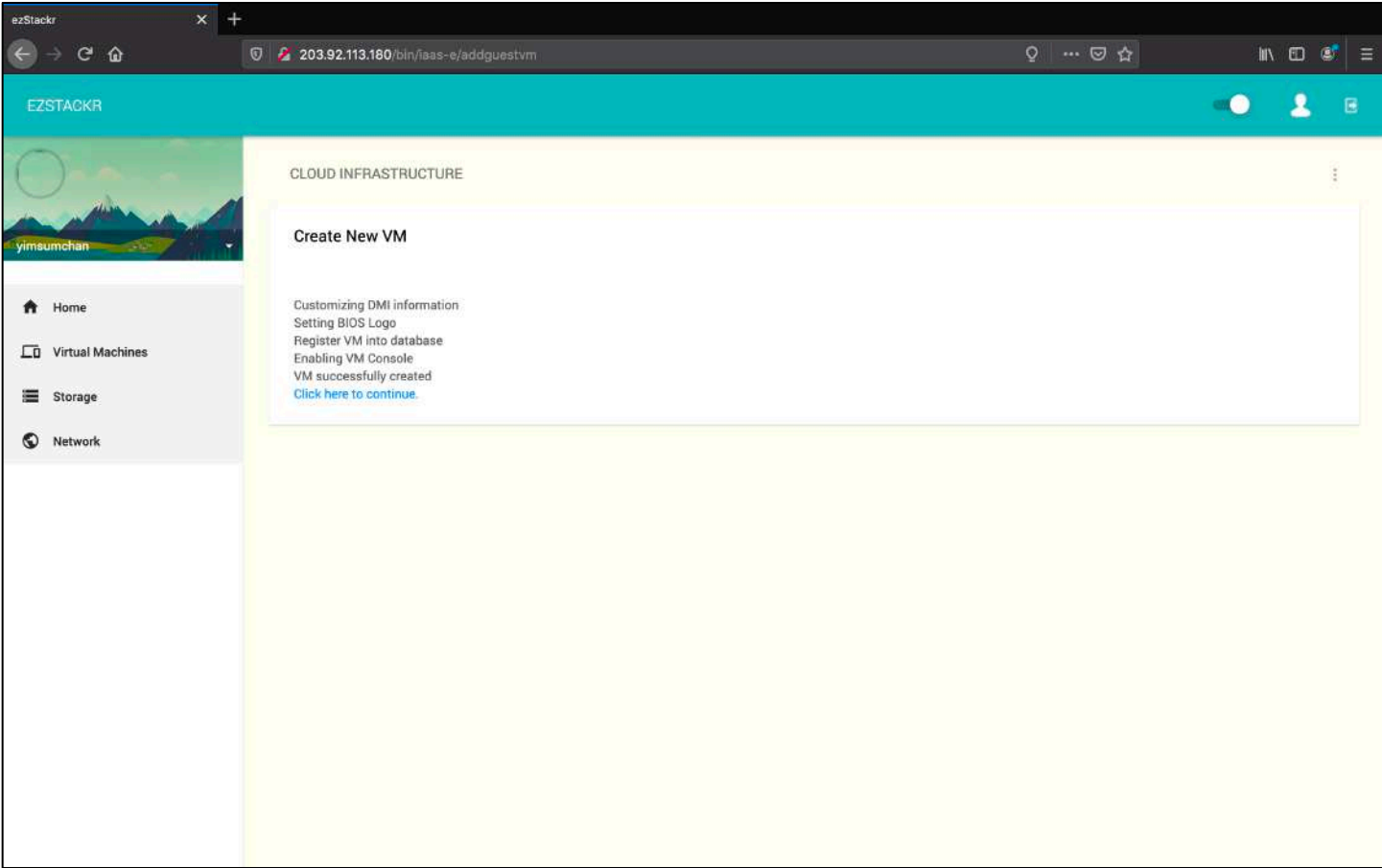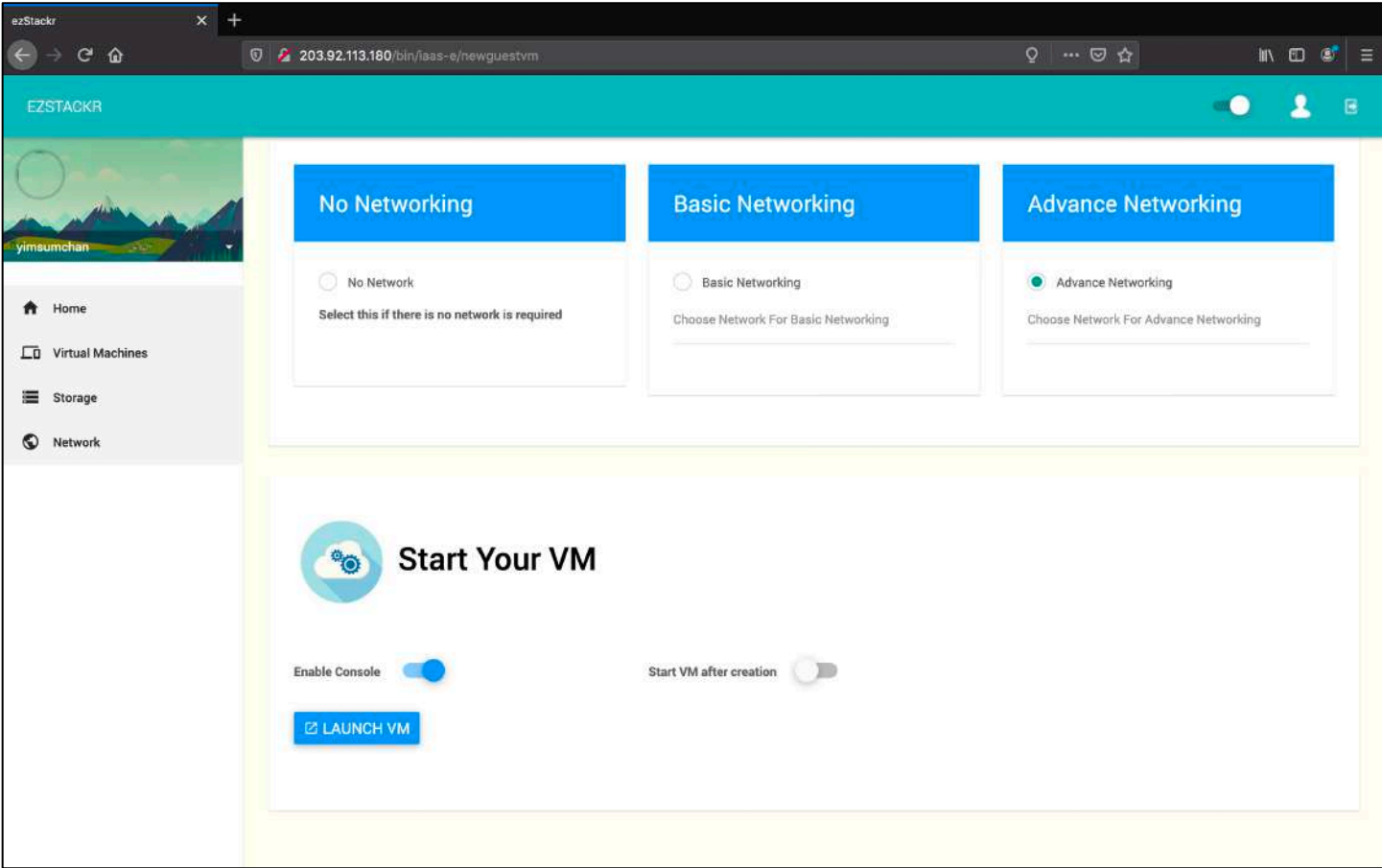
LAUNCHING VMs
As User: Select "Manage VM"
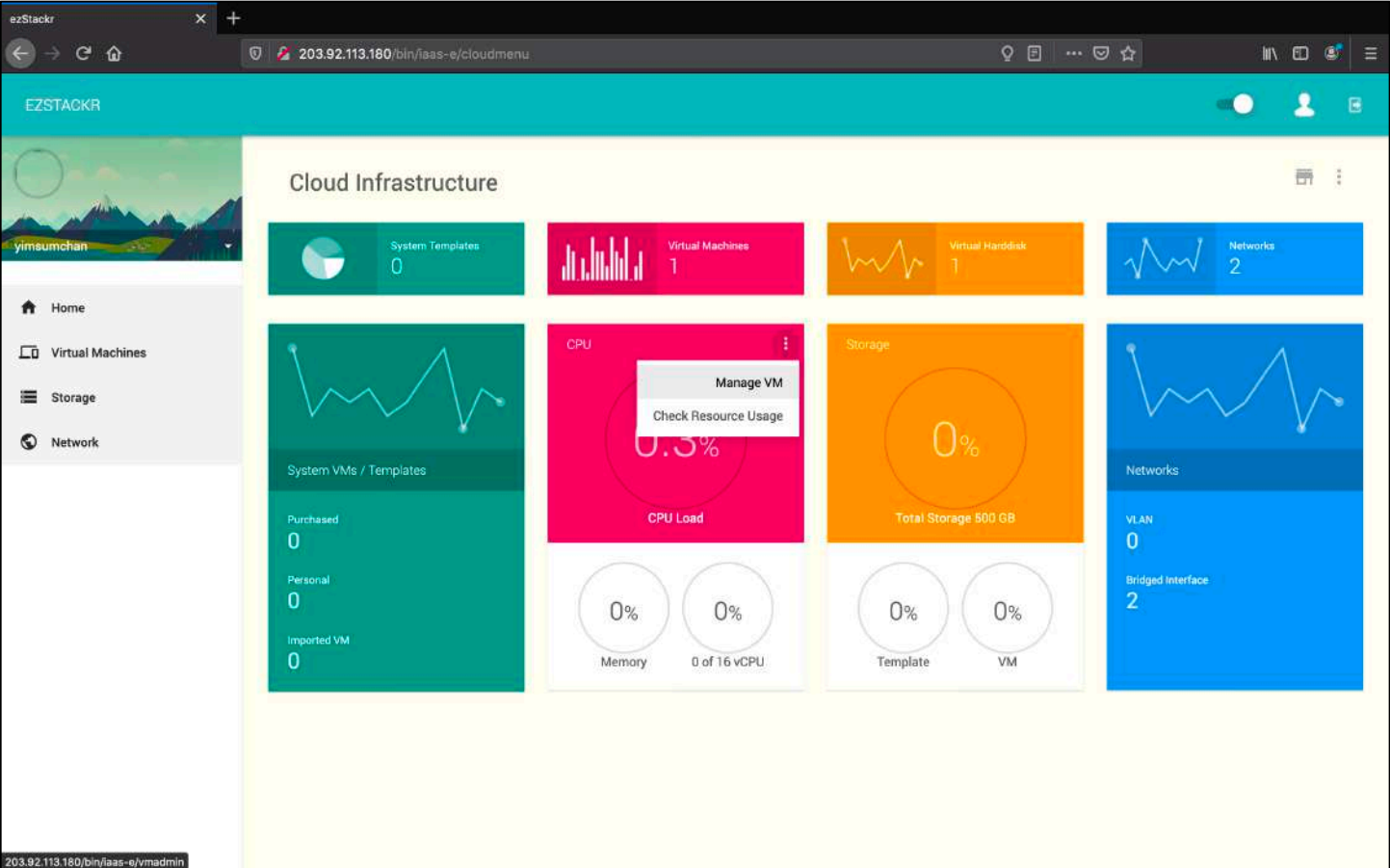
As User: Select this VM
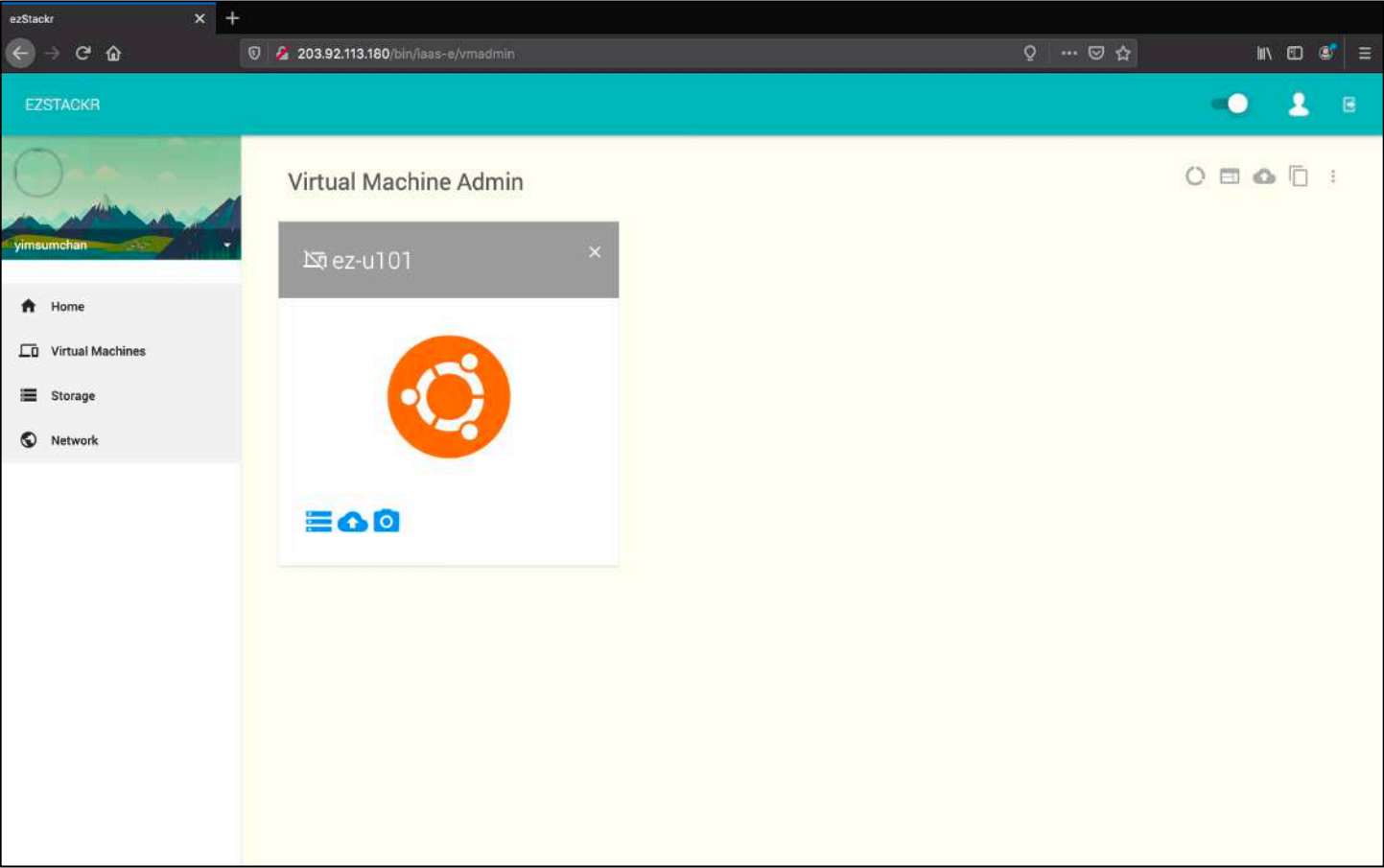
As User: Select ⦿ DVD-ROM icon
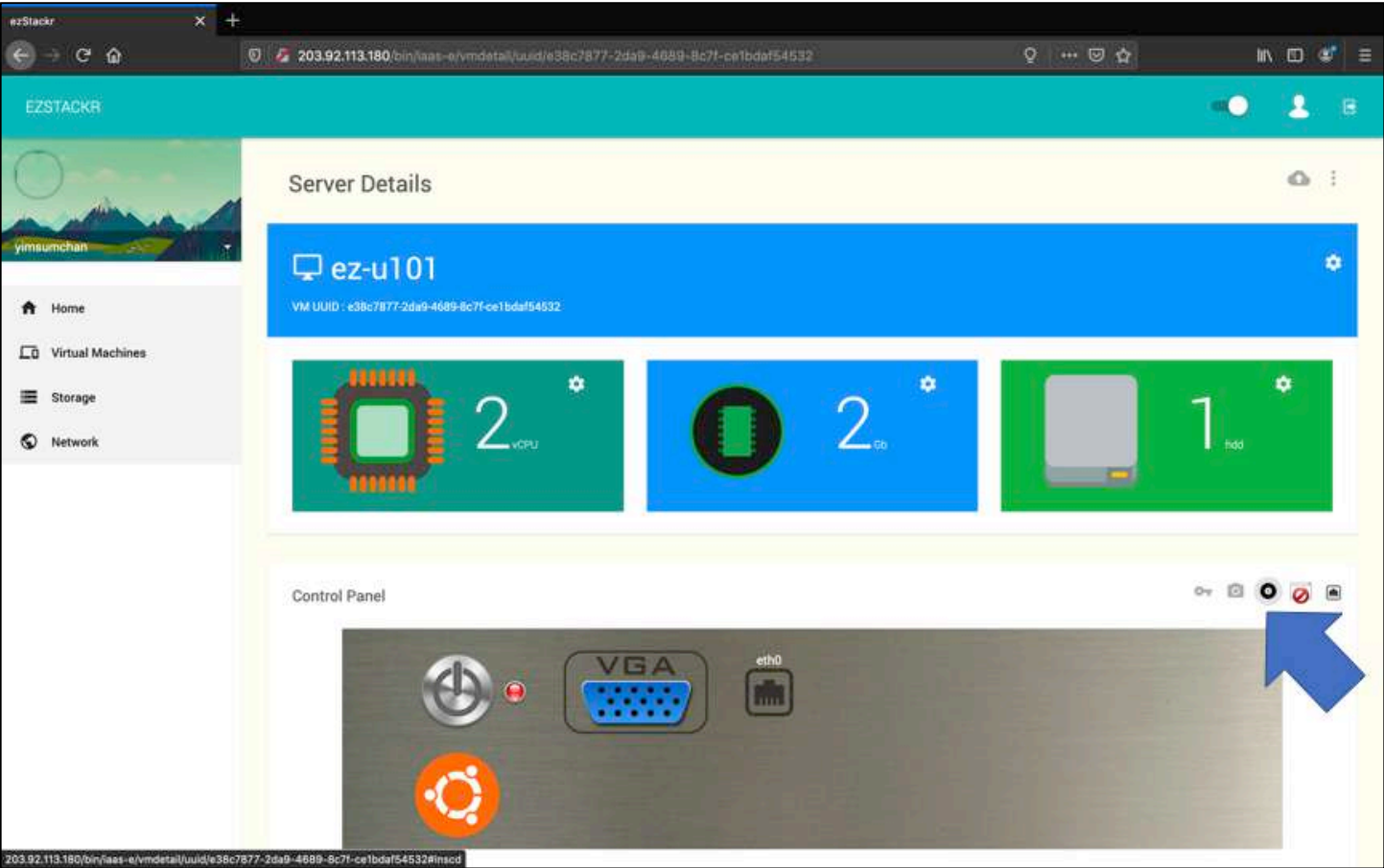
As User: Select the media
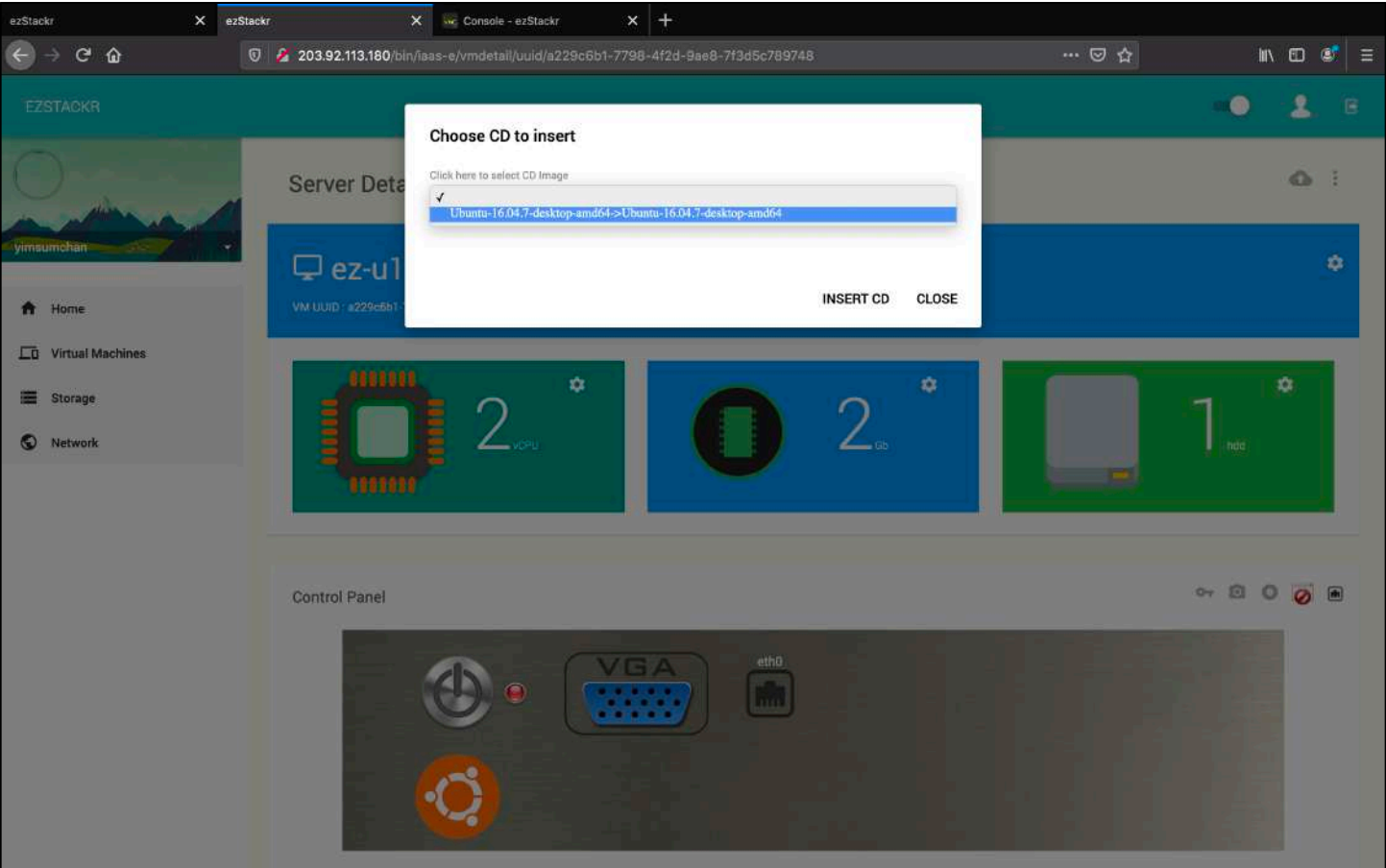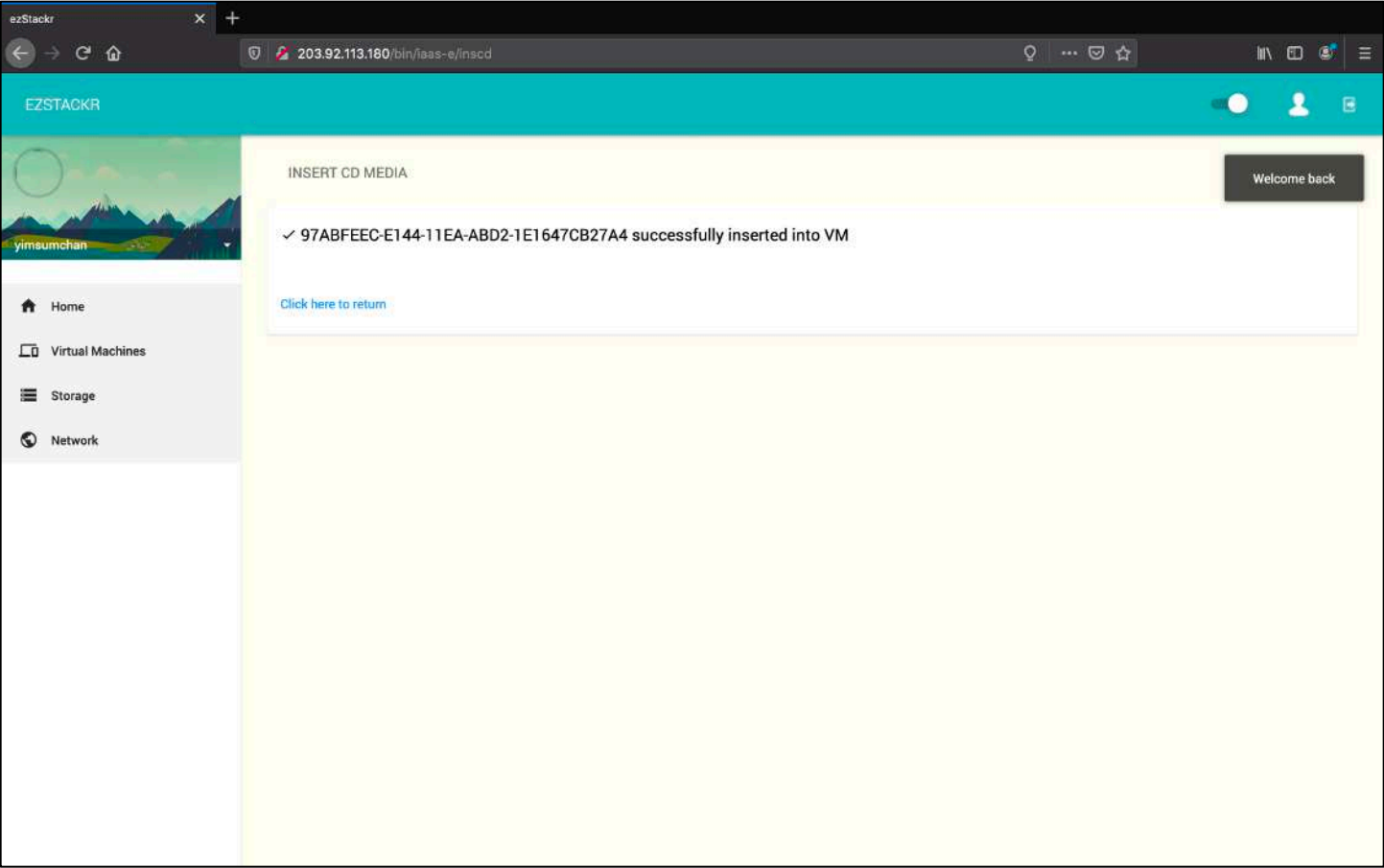
As User: Select "Power" to launch VM
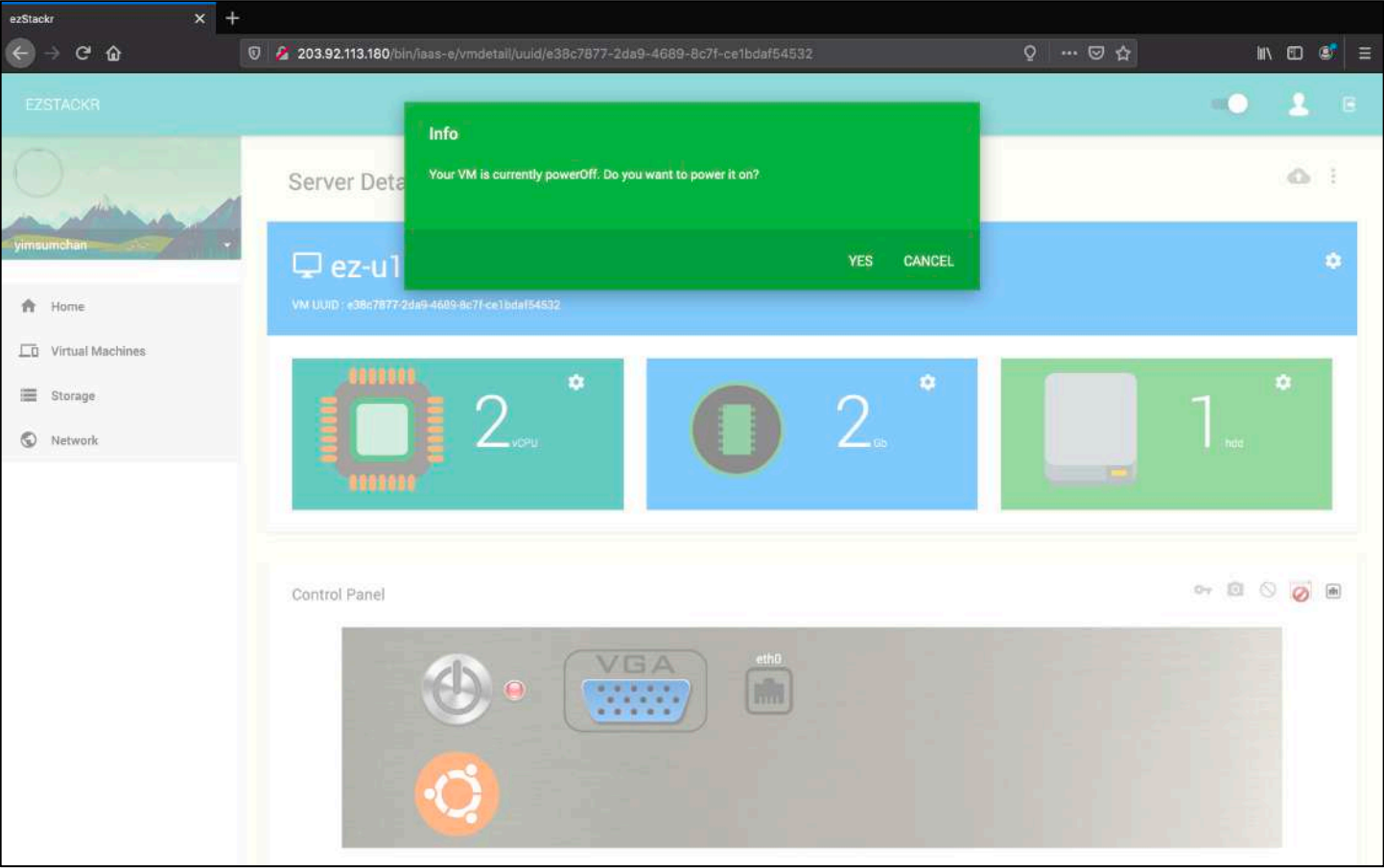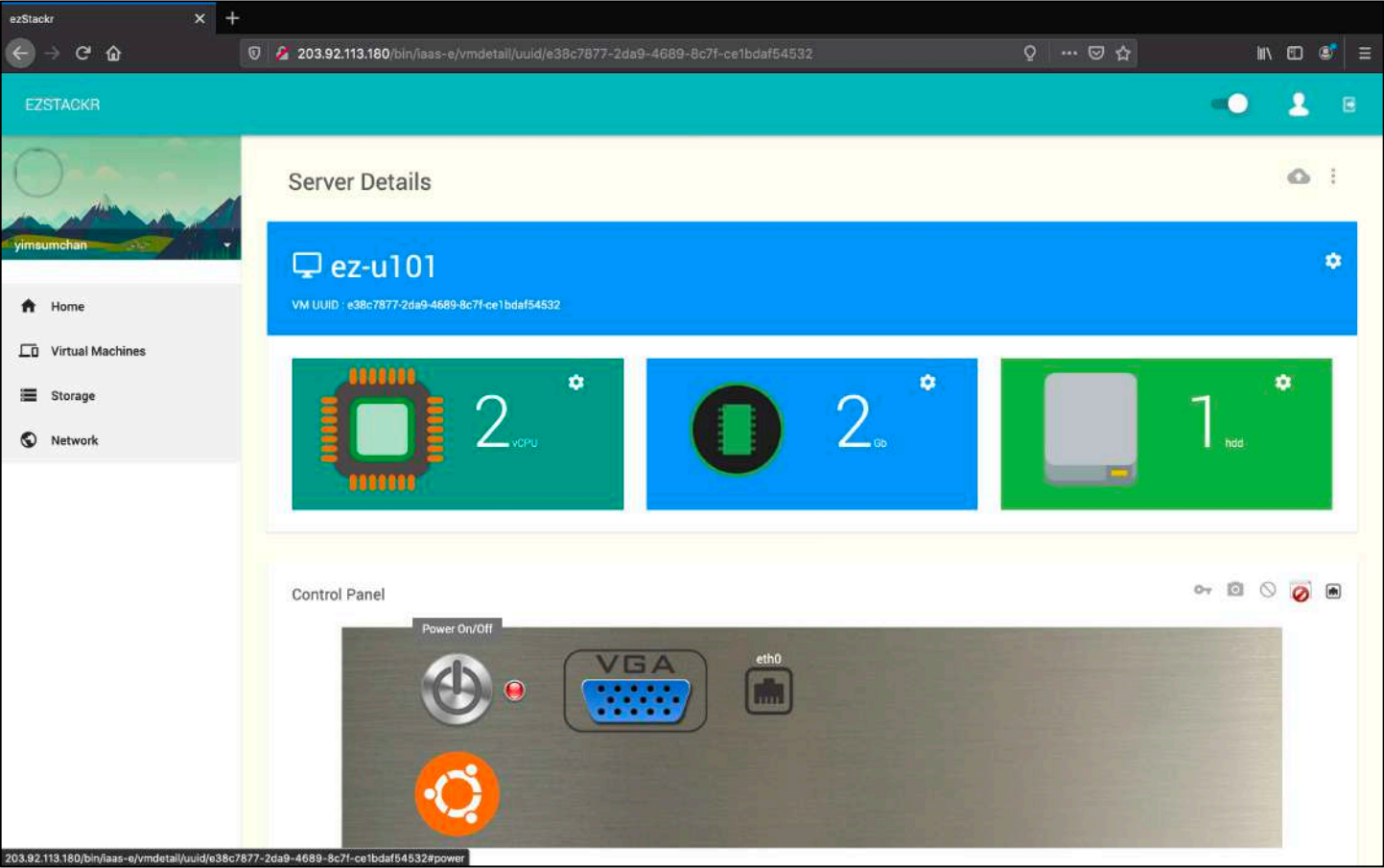
As User: Select the icon
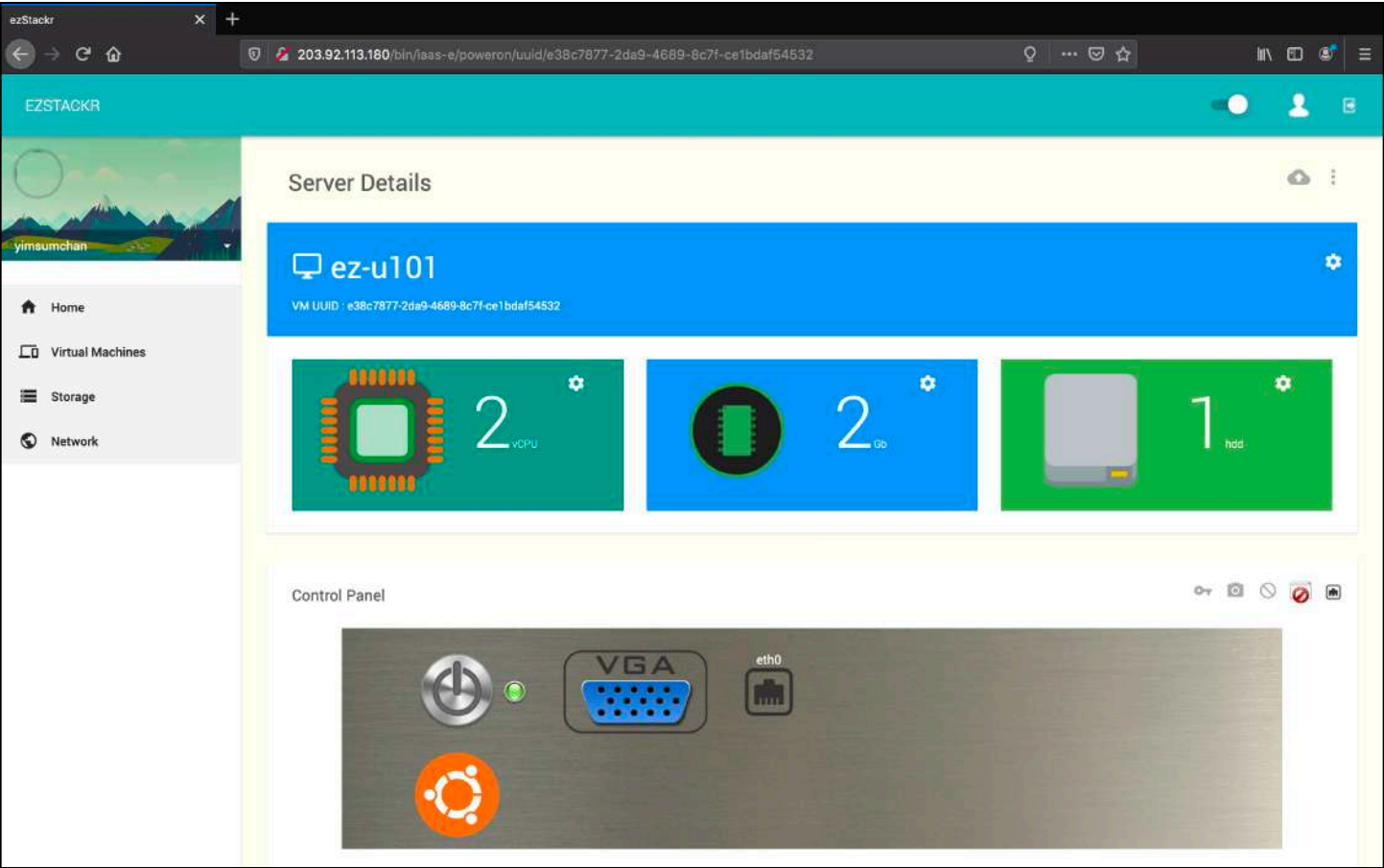
As User: Select "Connect"
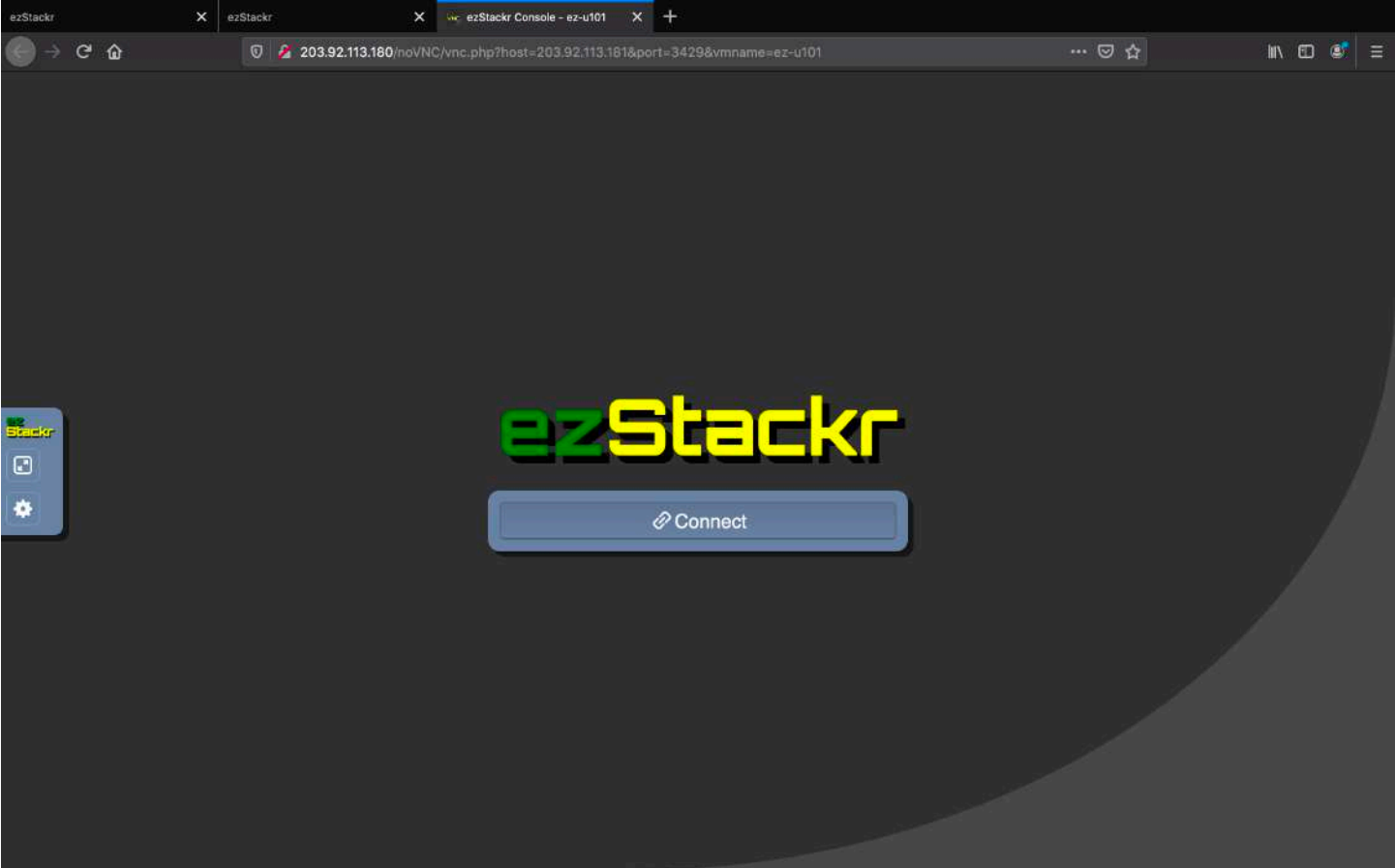
As User: Enter password as "password"
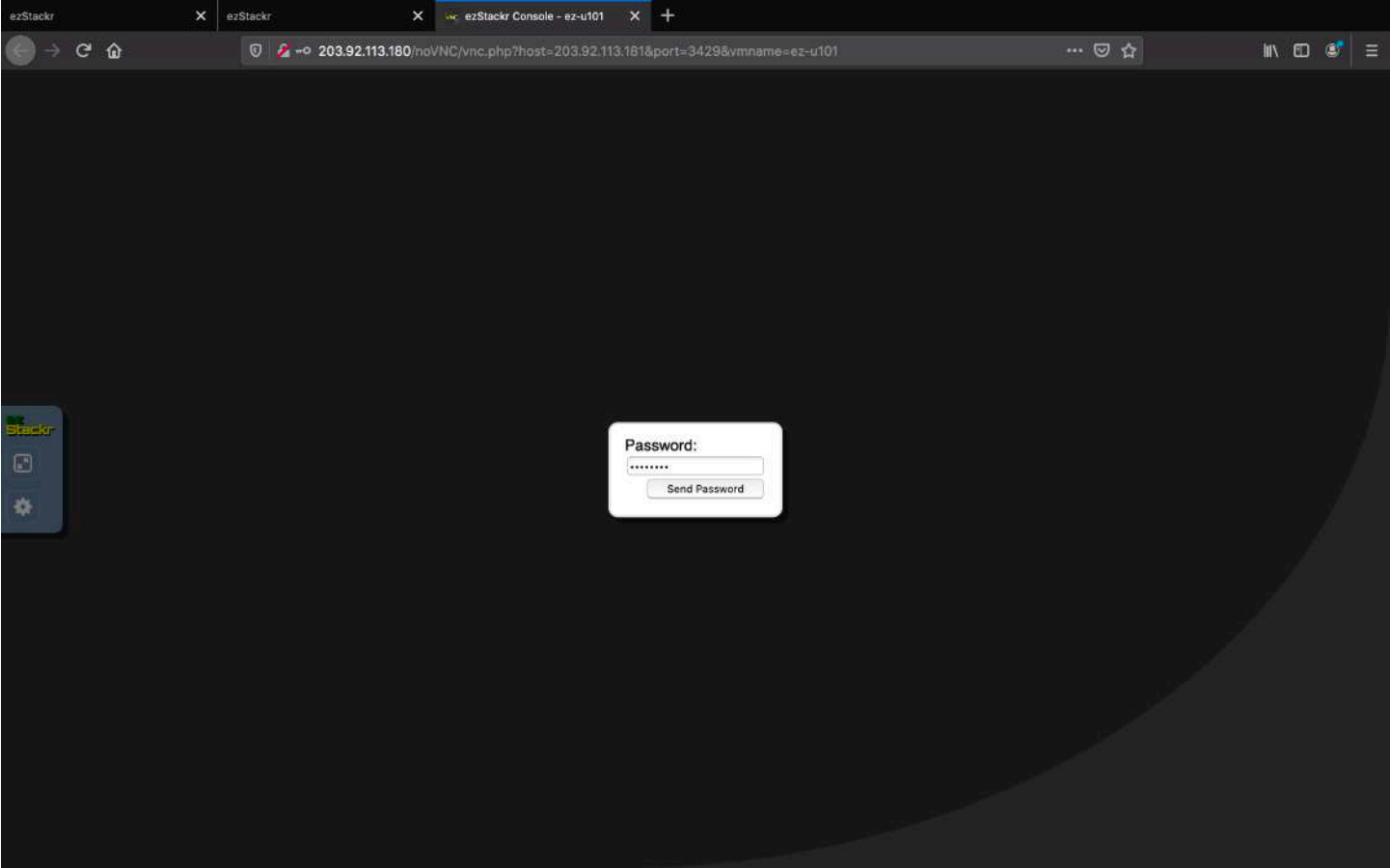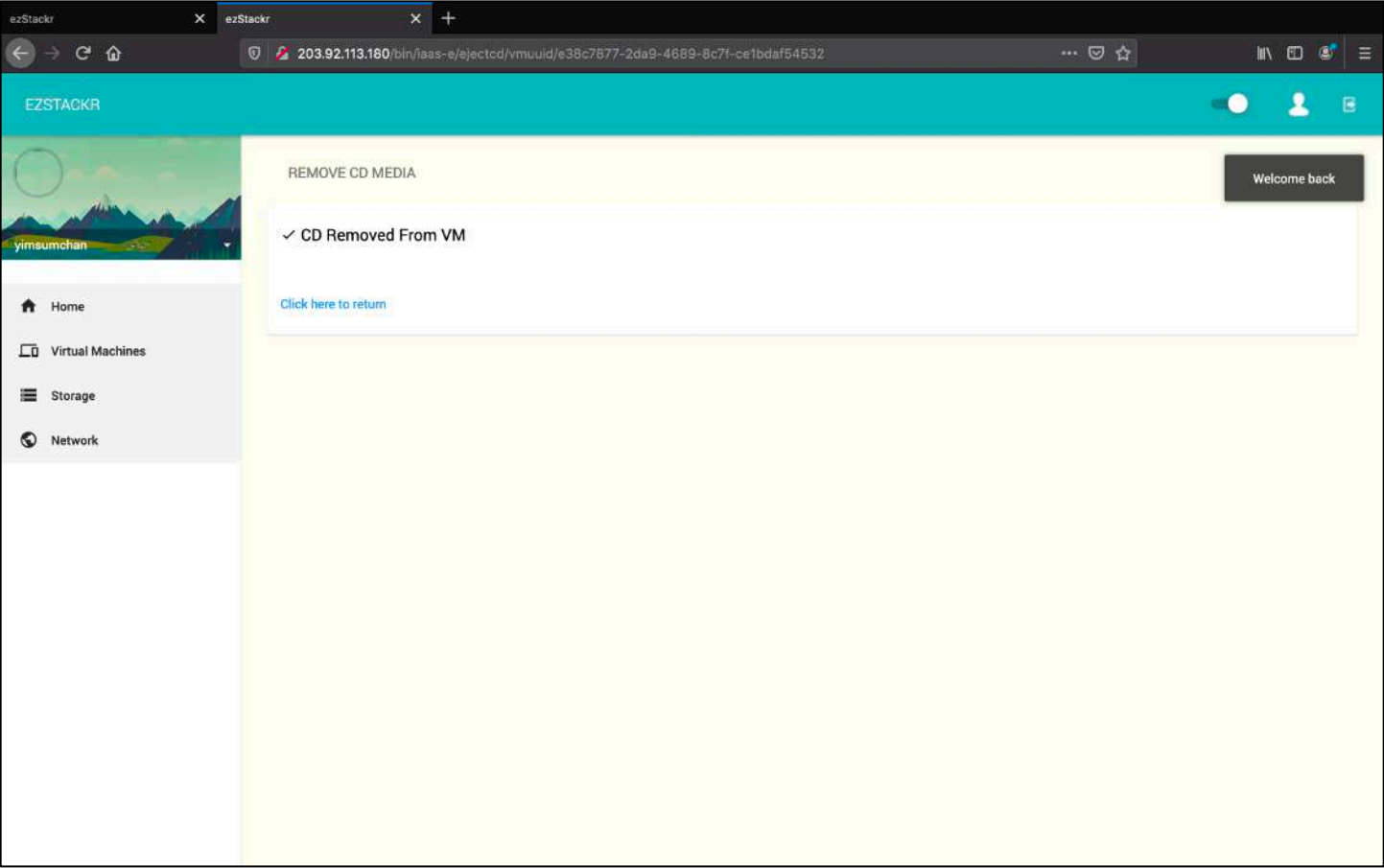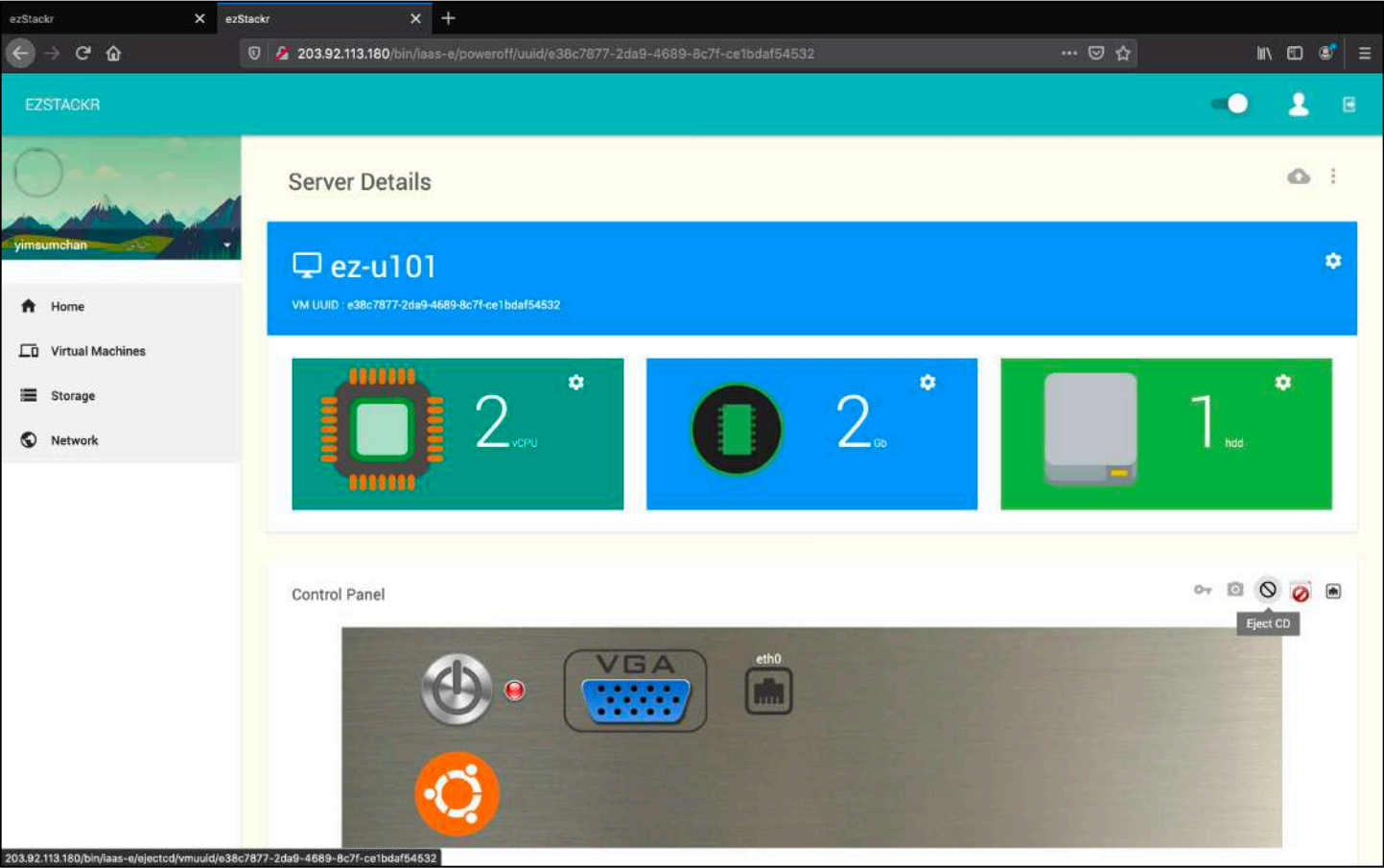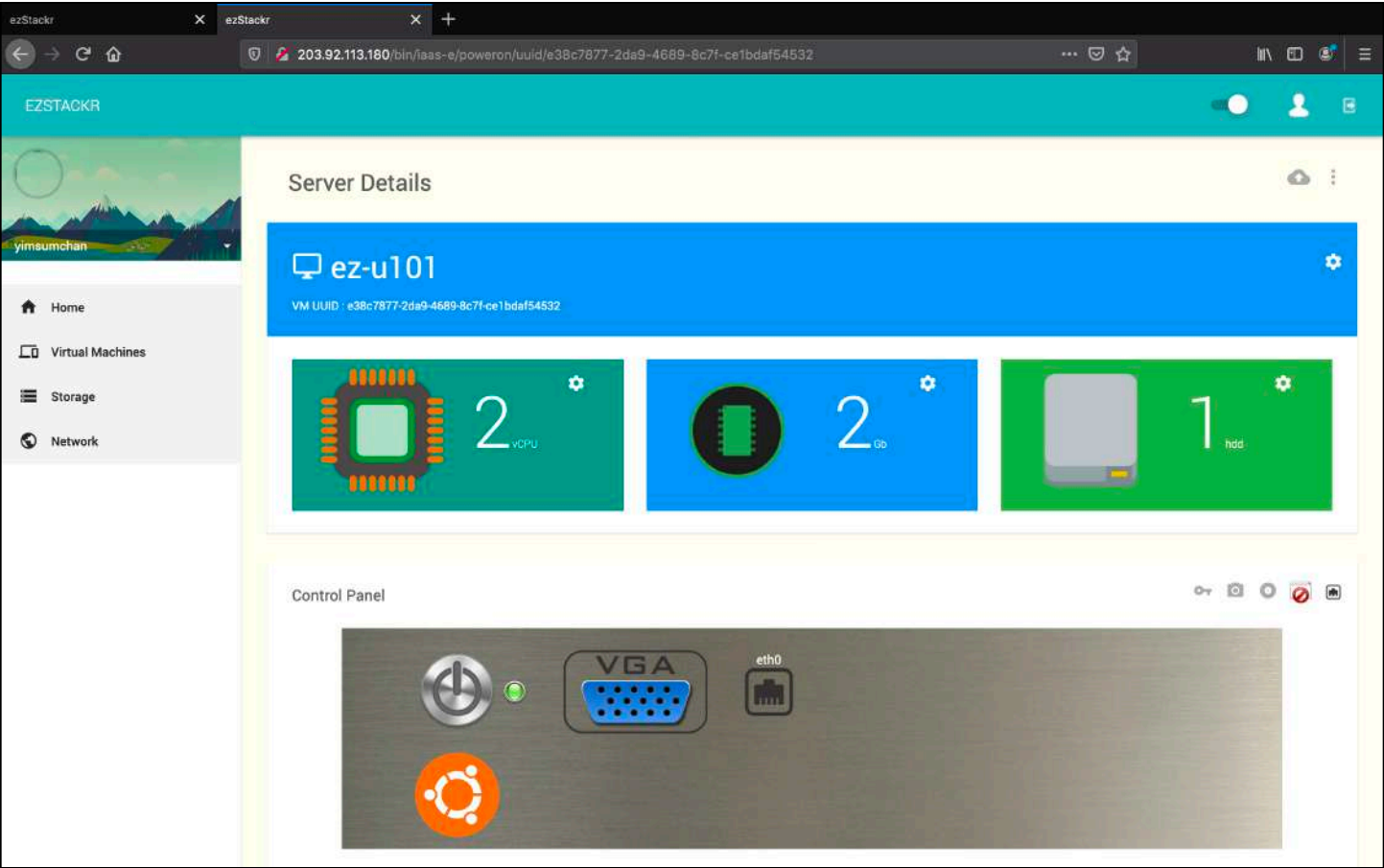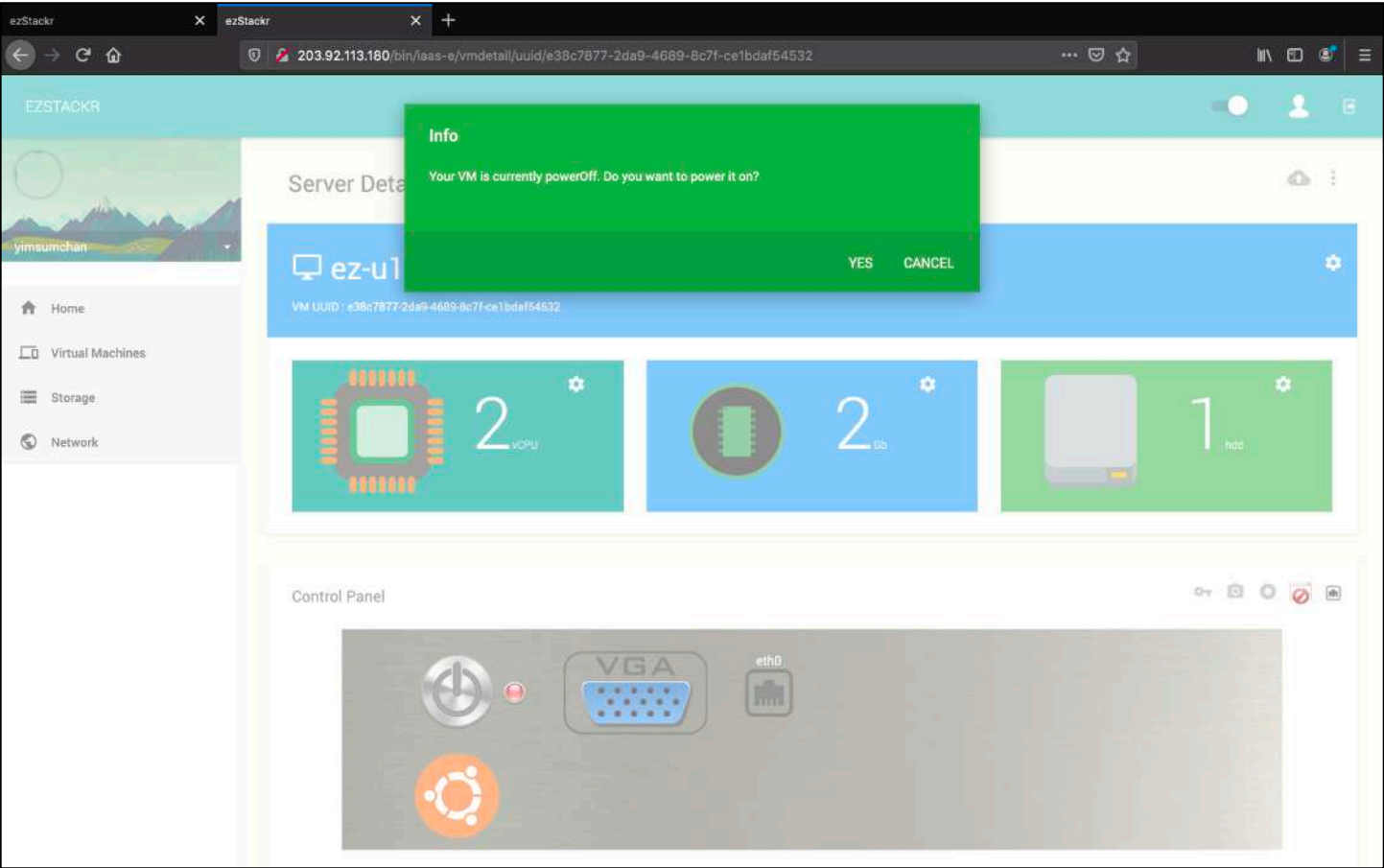

As User: Install the operating system
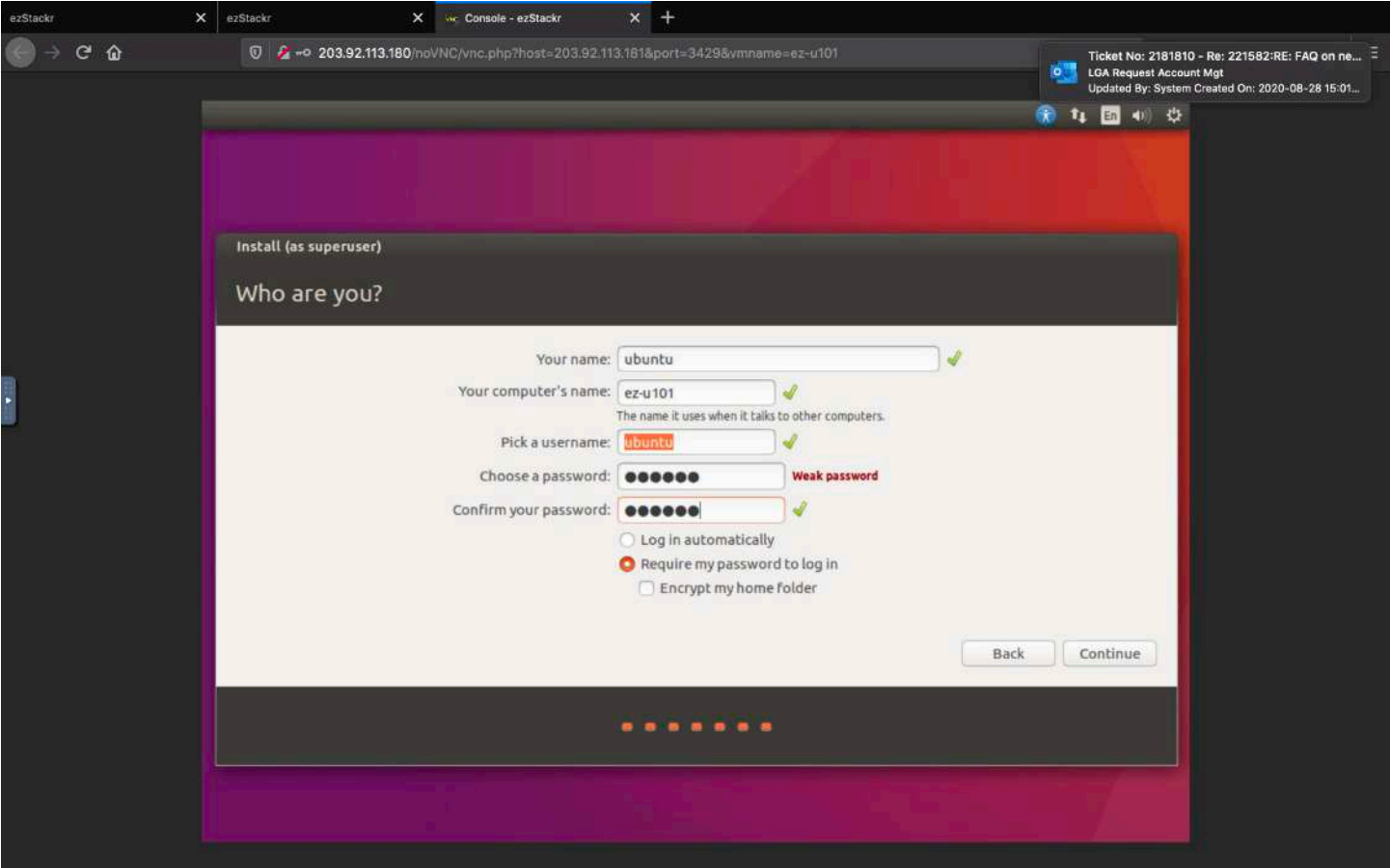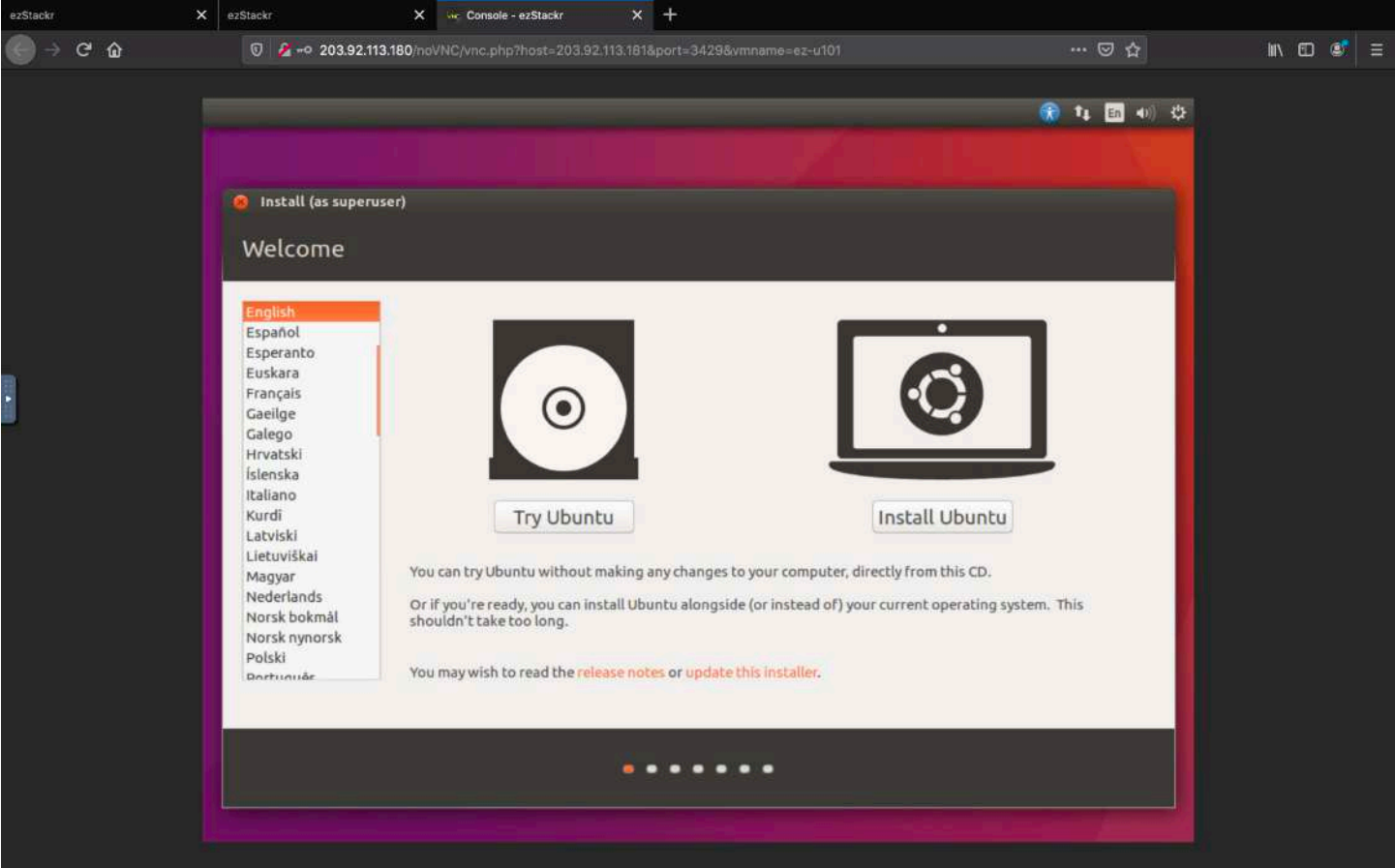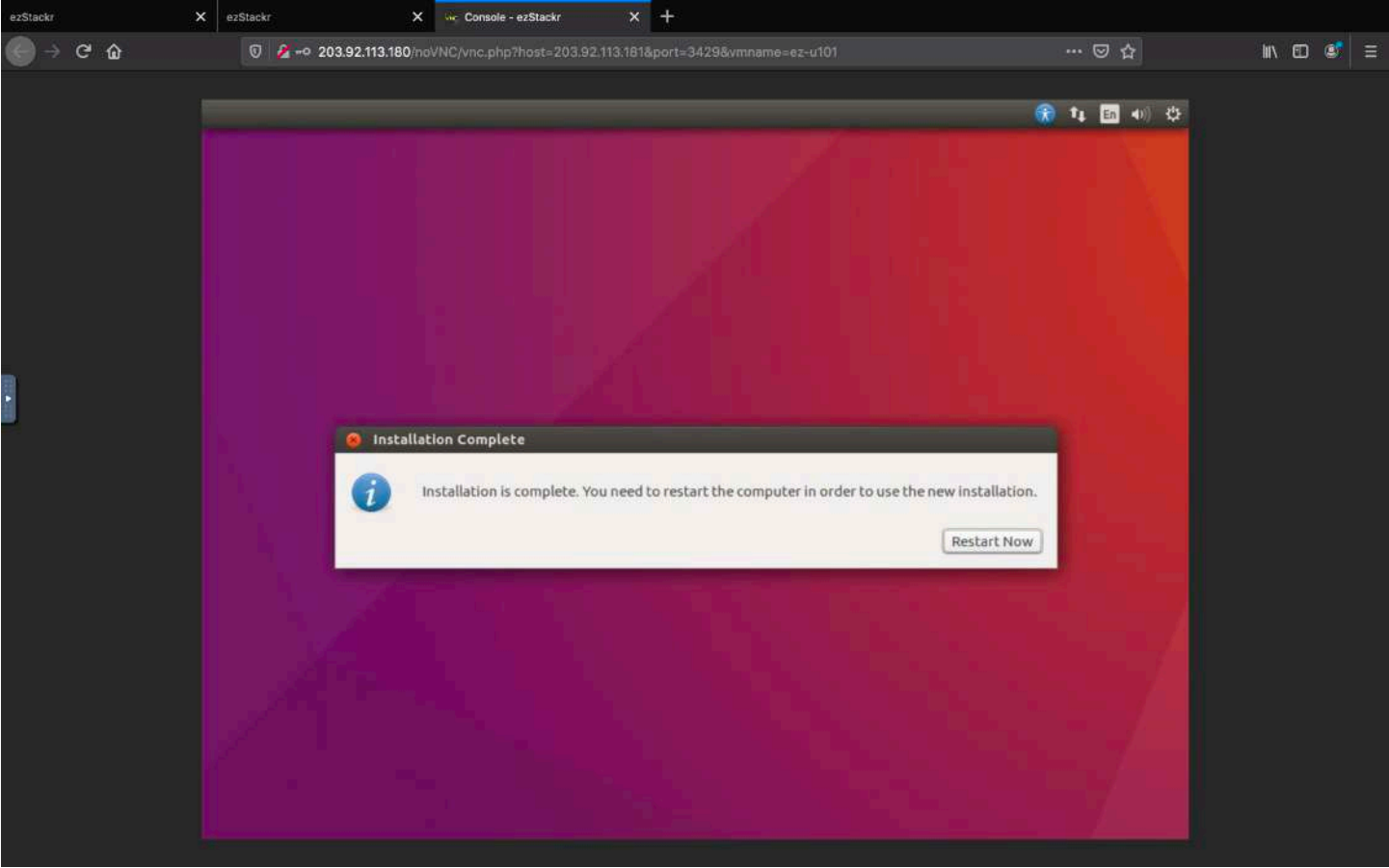
As User: Select "Power" to shutdown
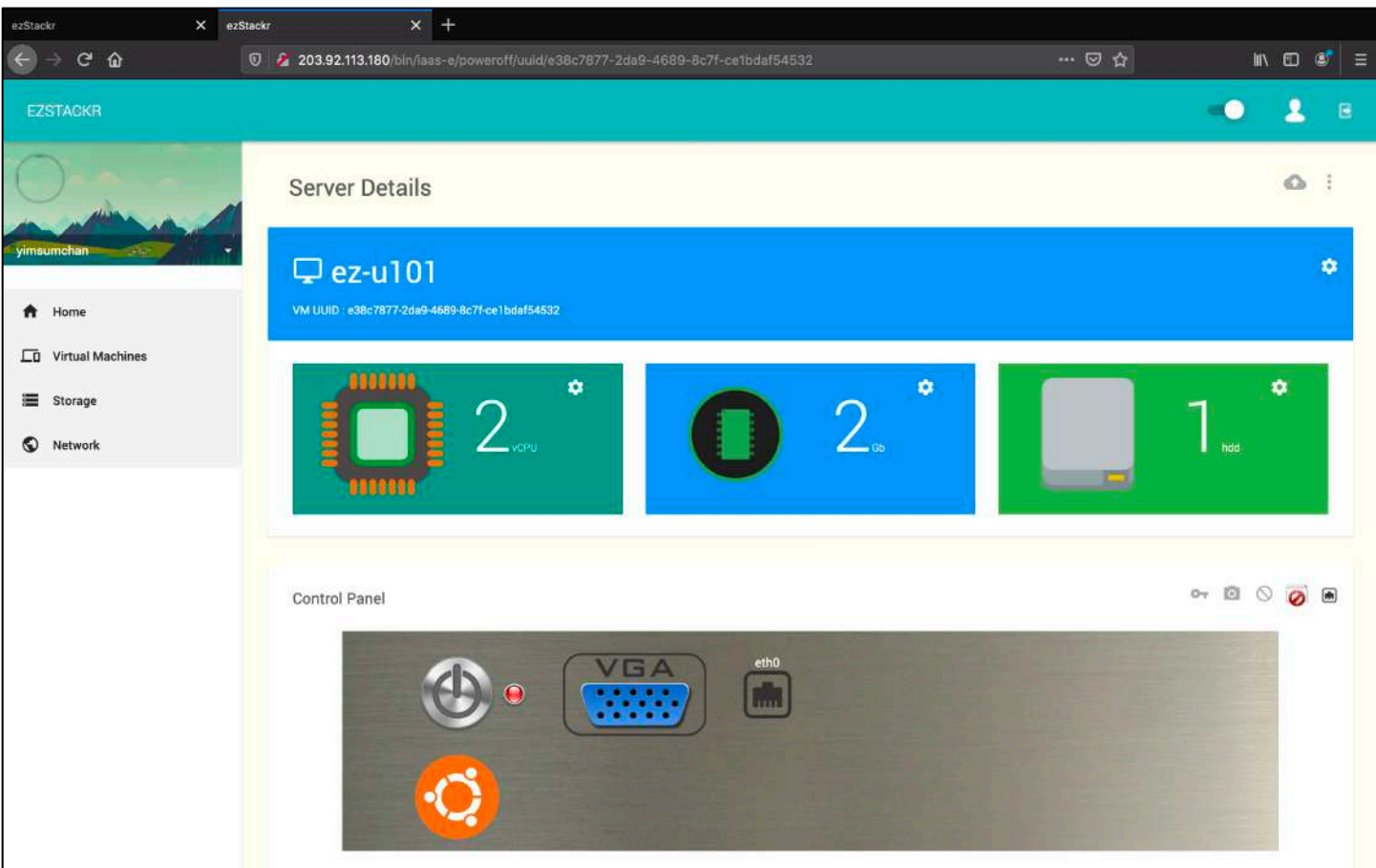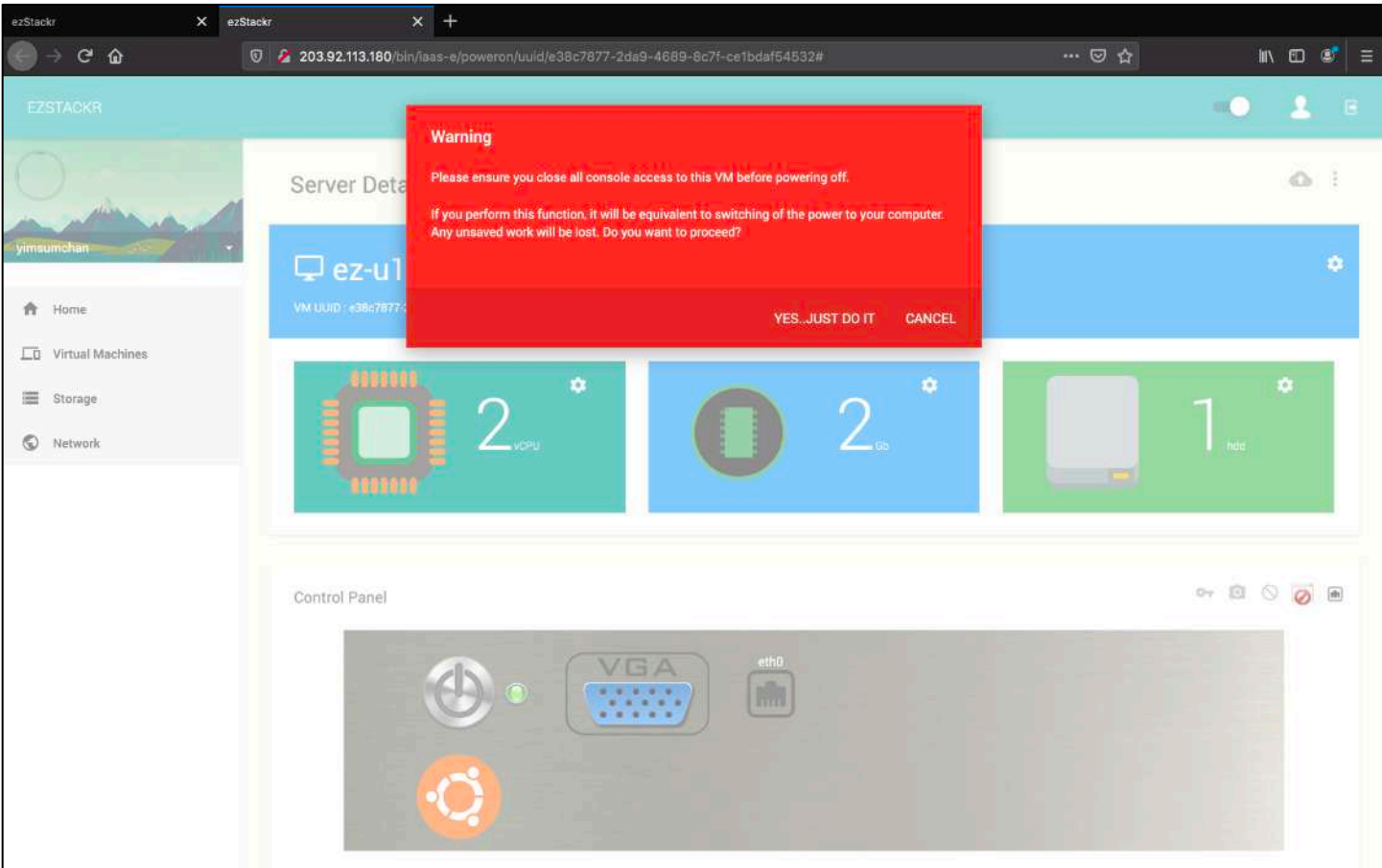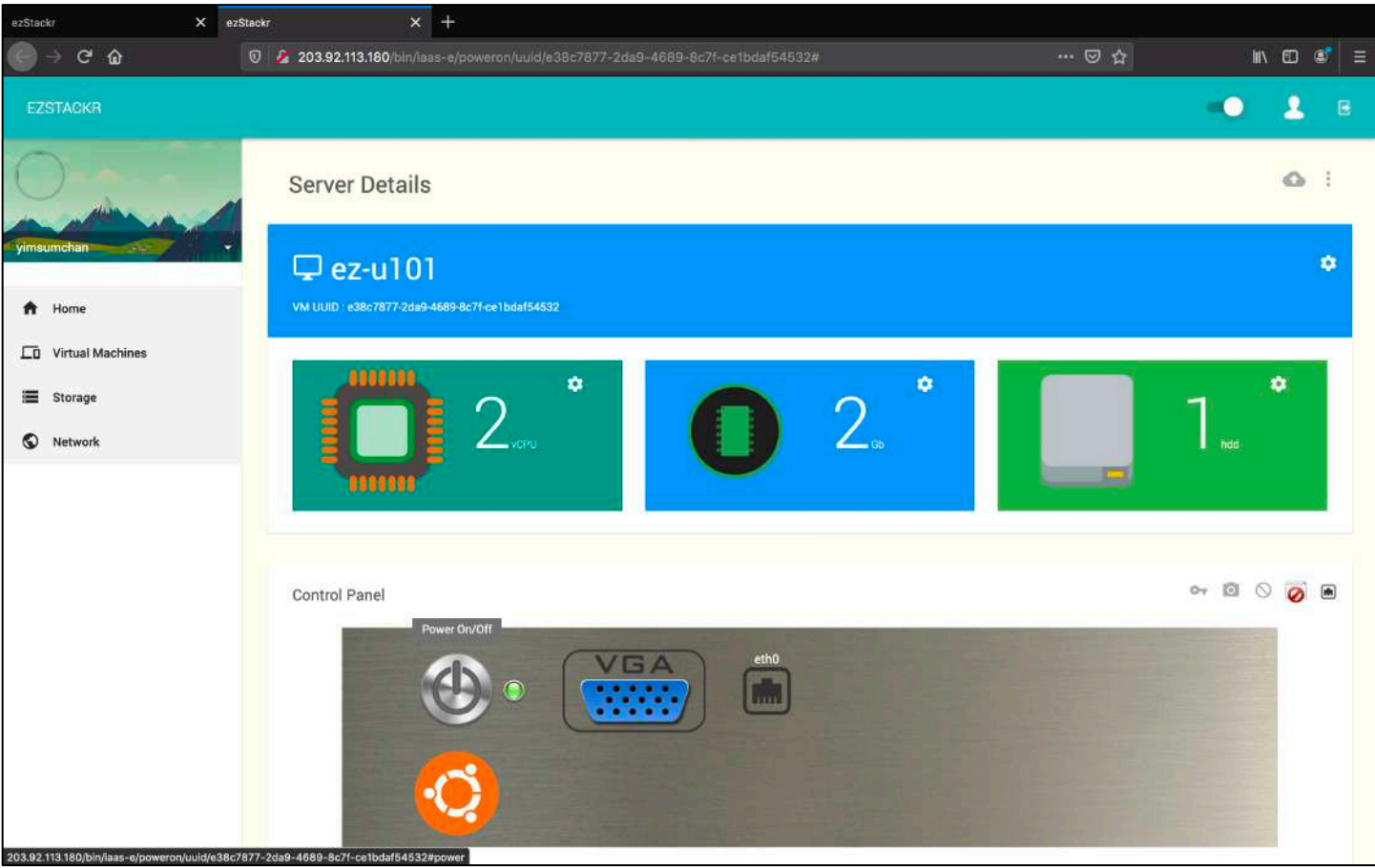
As User: Select "Eject DVD-ROM"

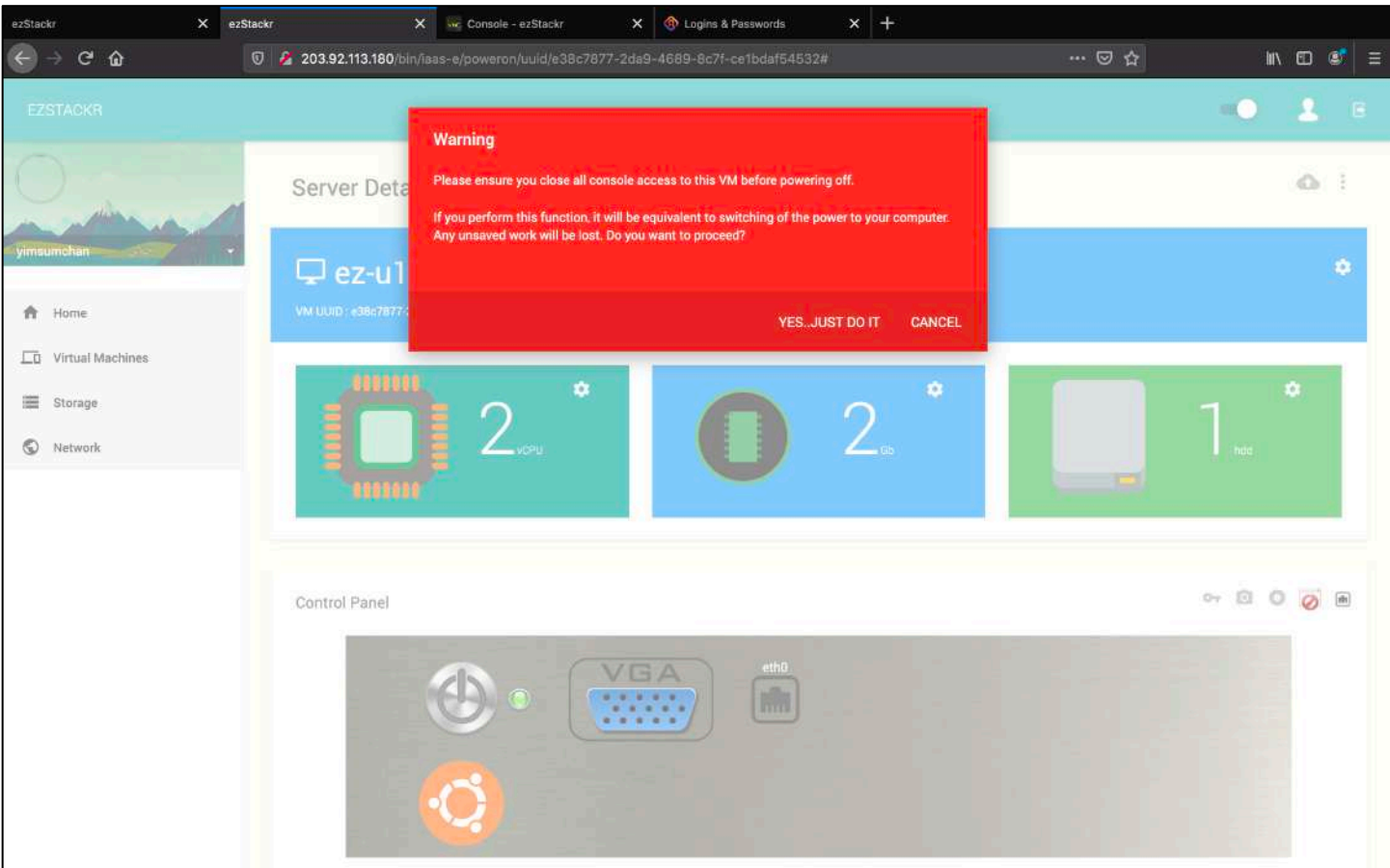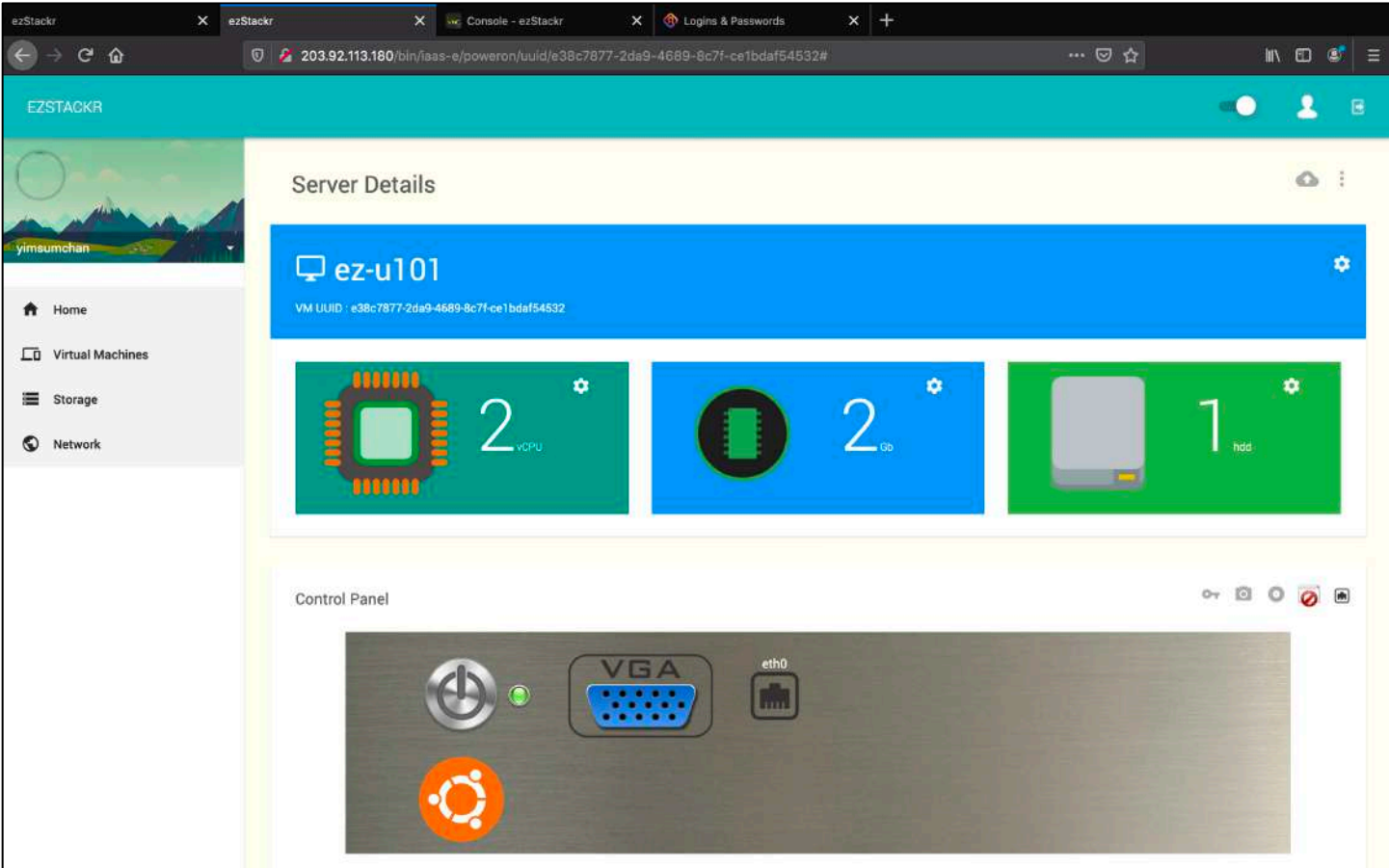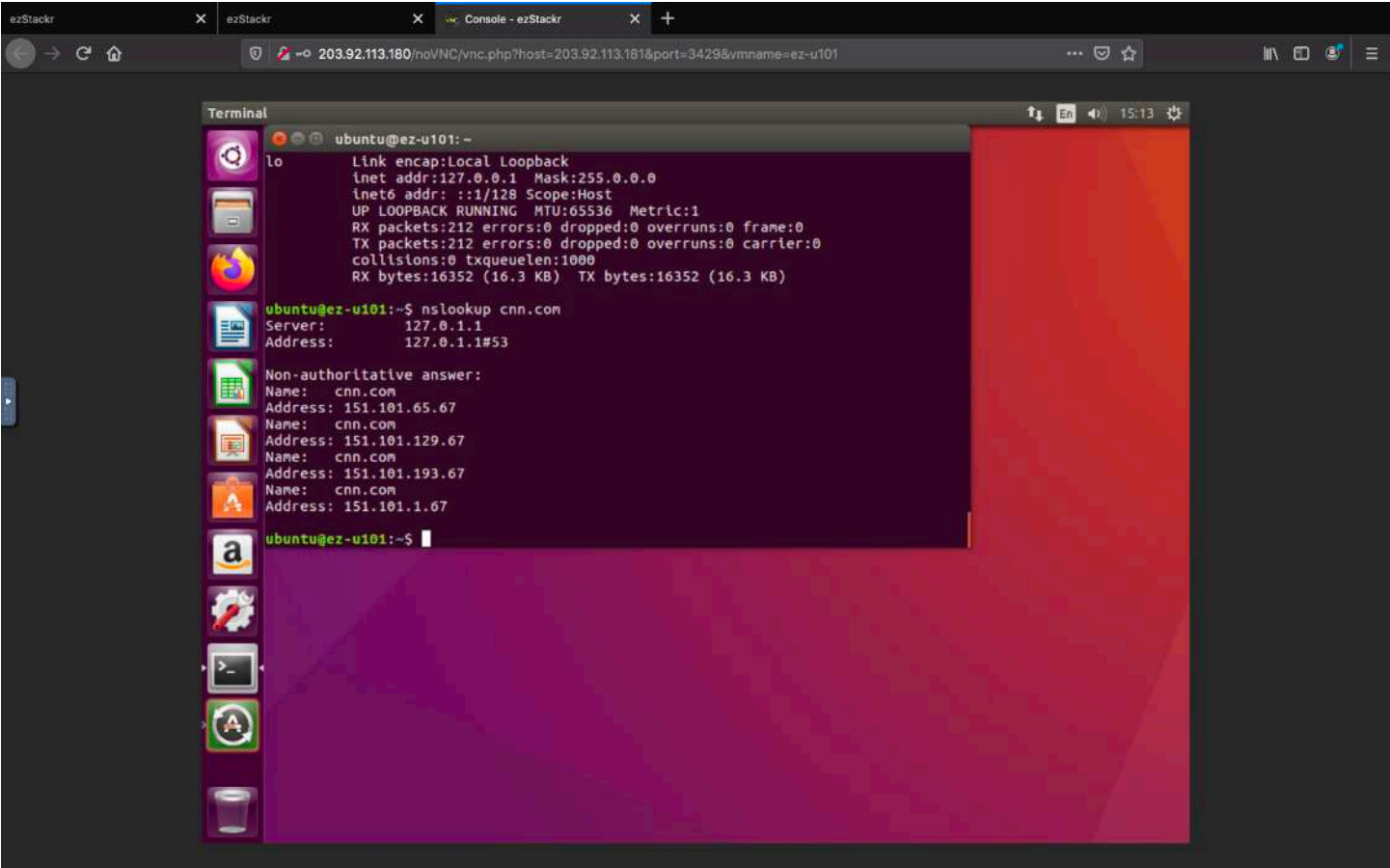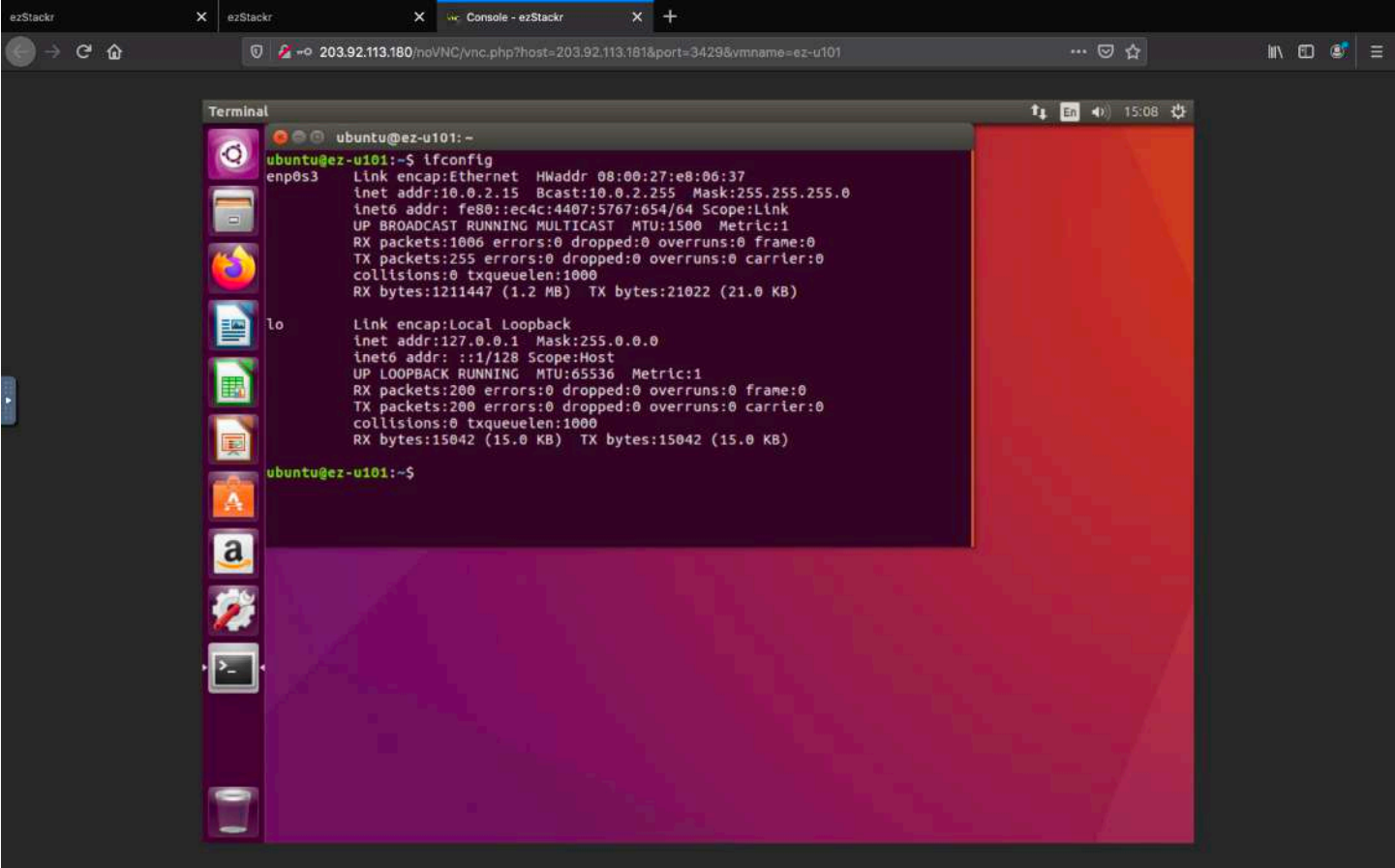**CONNECTING VMs TO NETWORK**
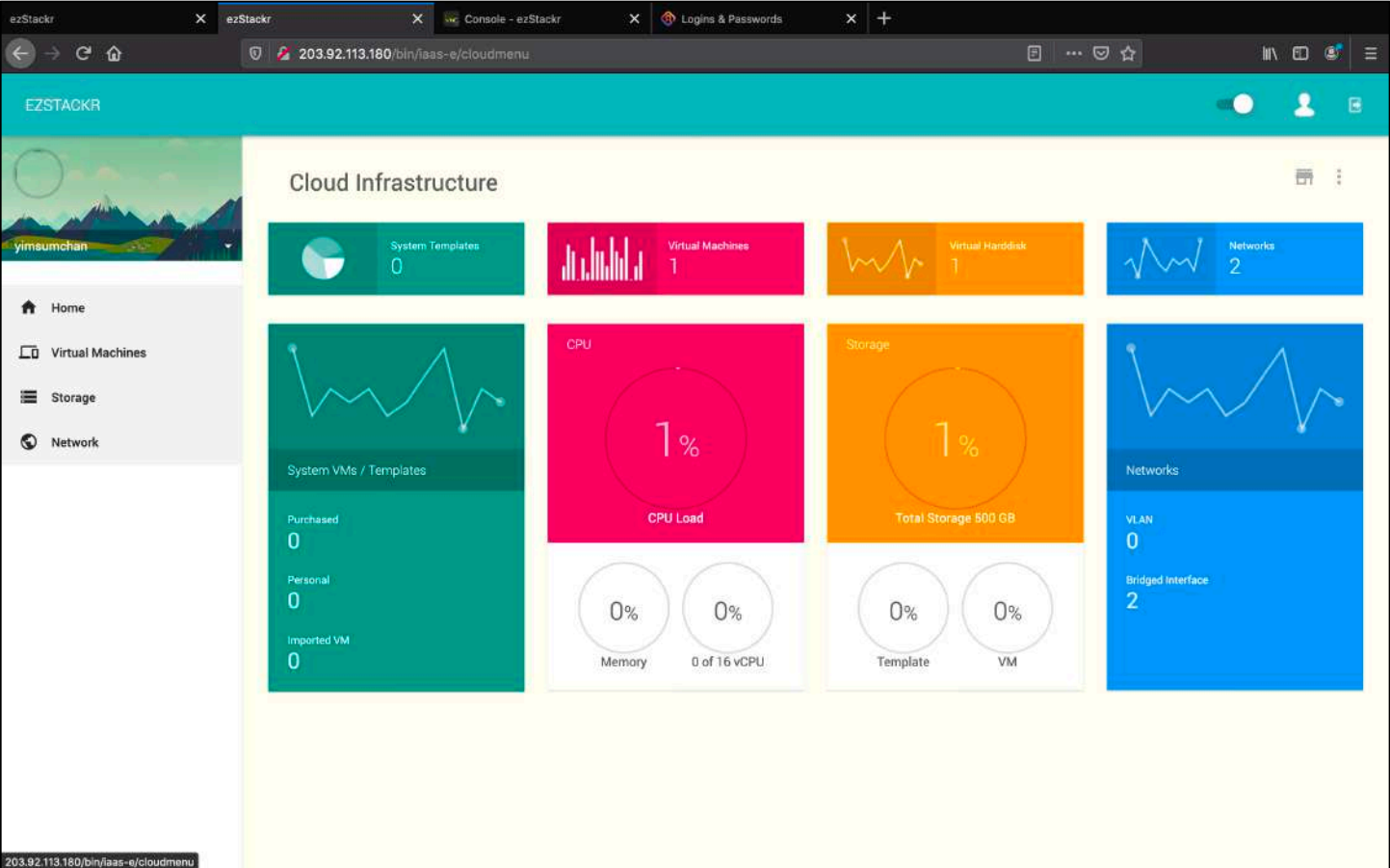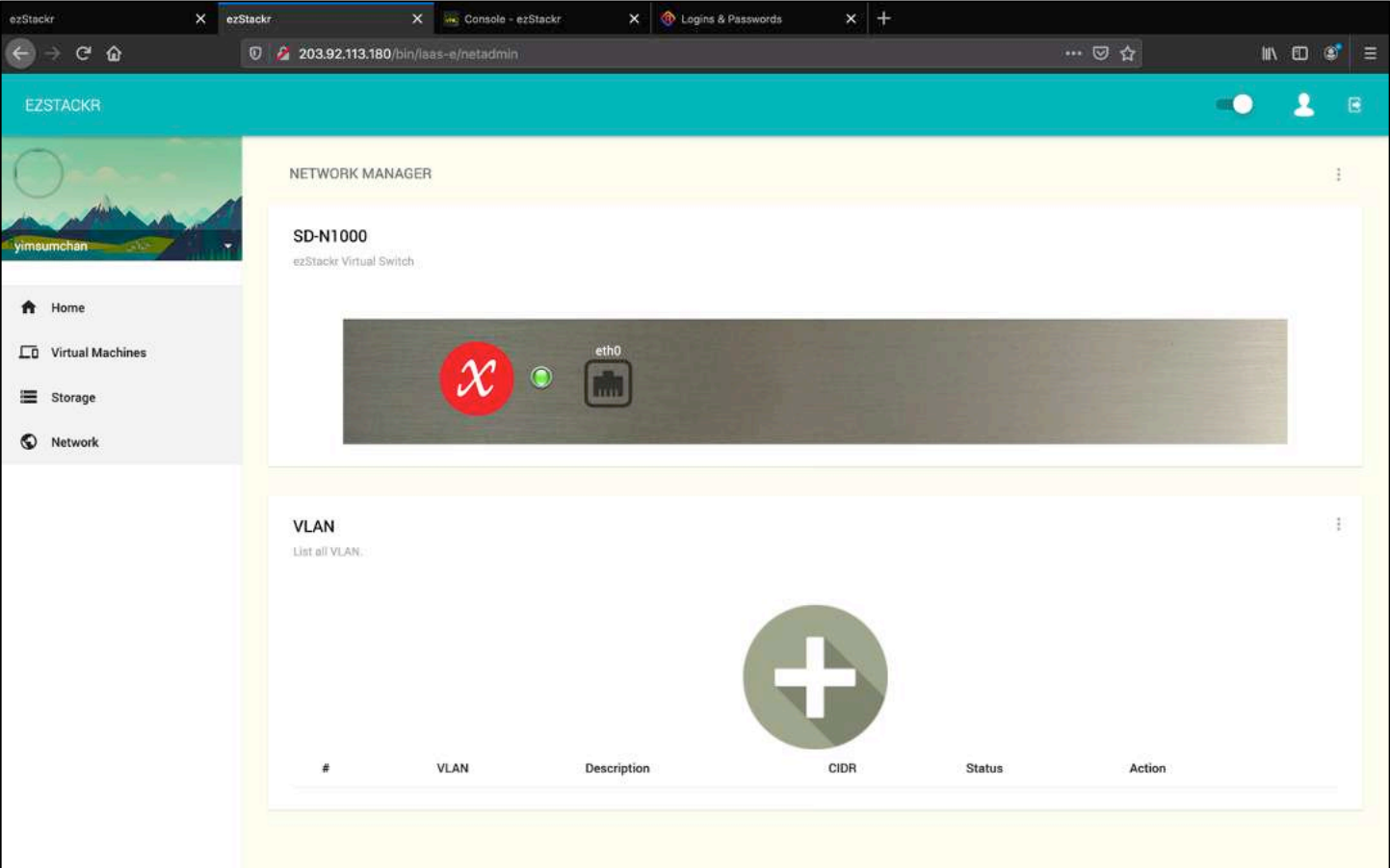As User: Select "Power" to launch VM
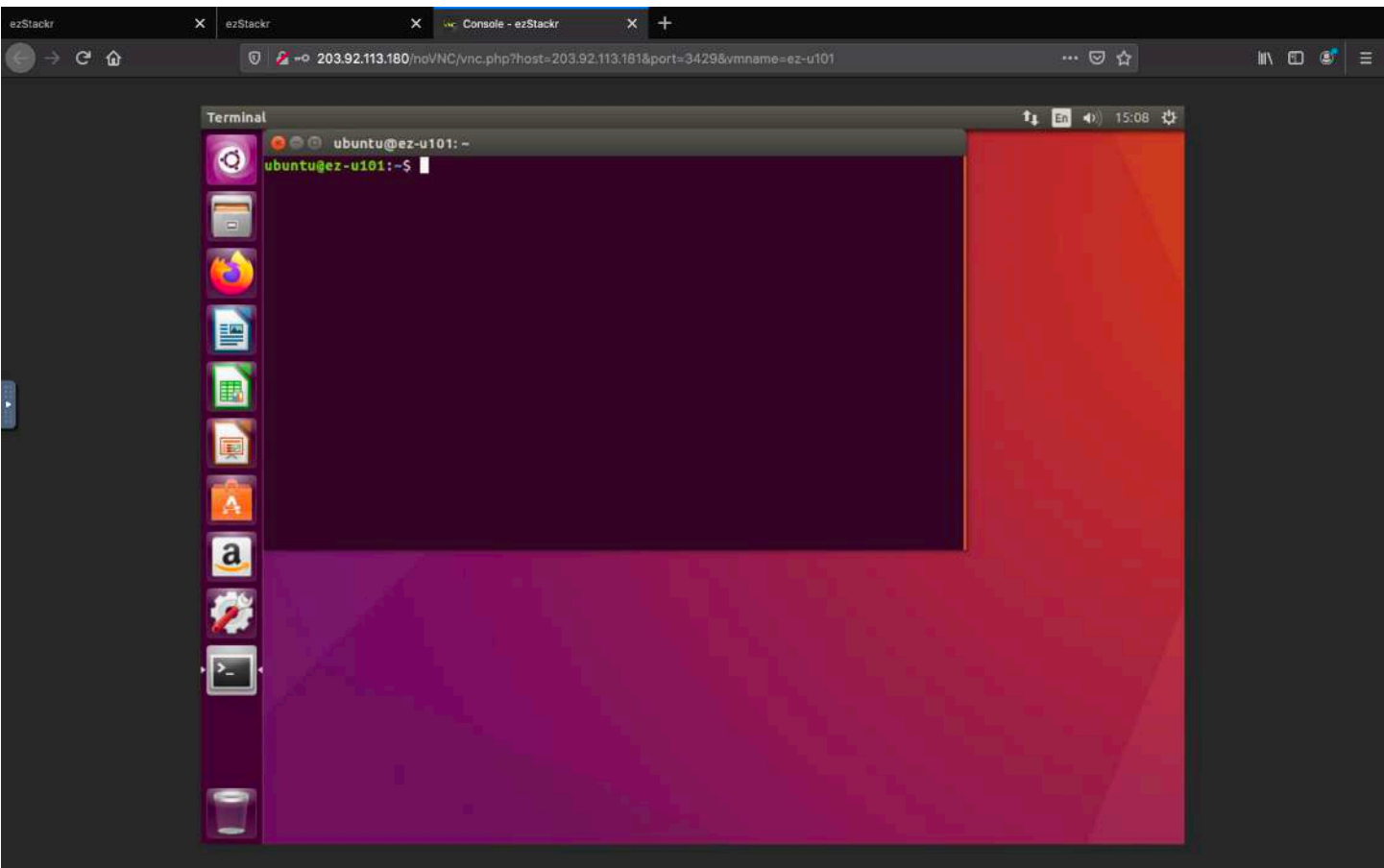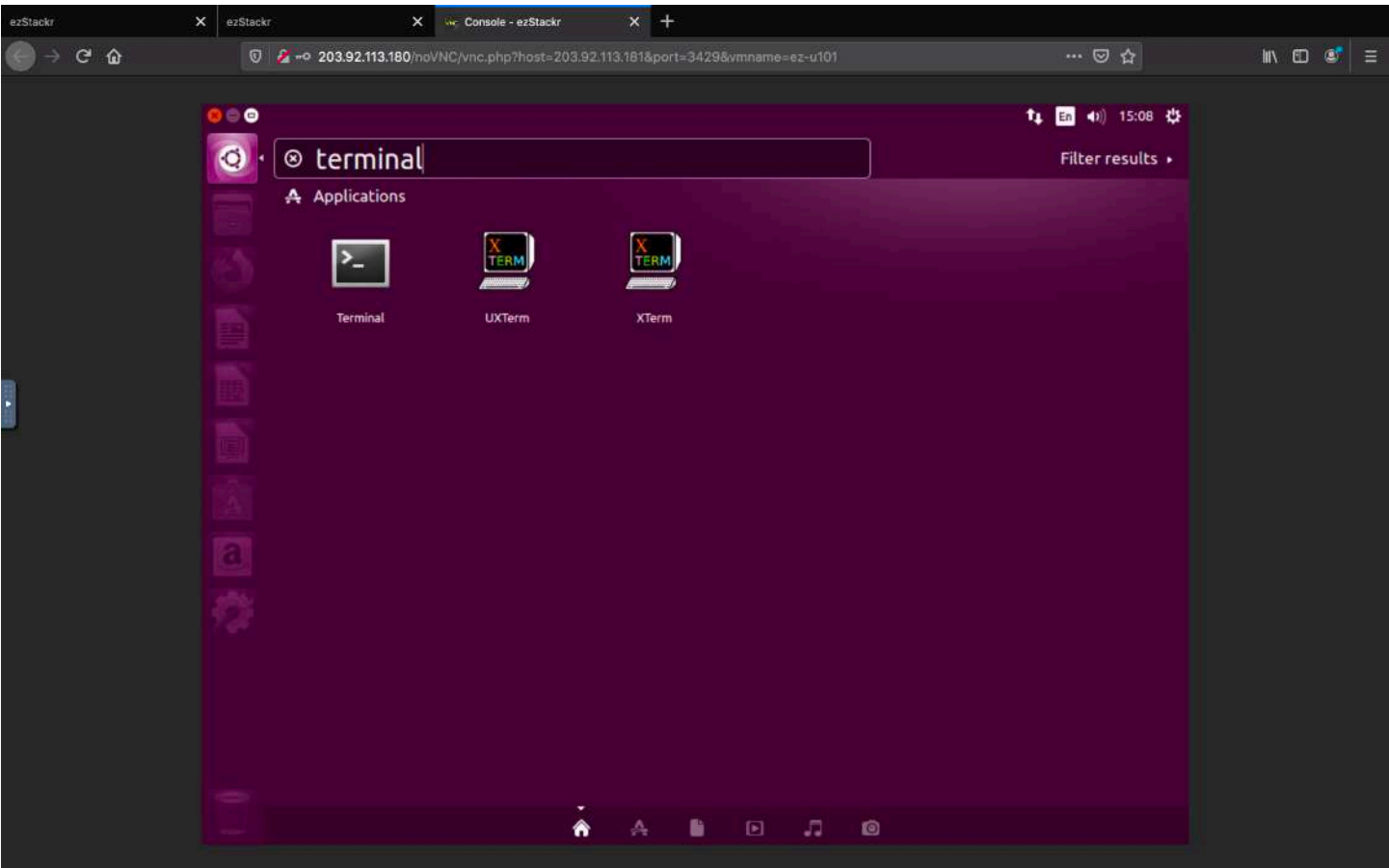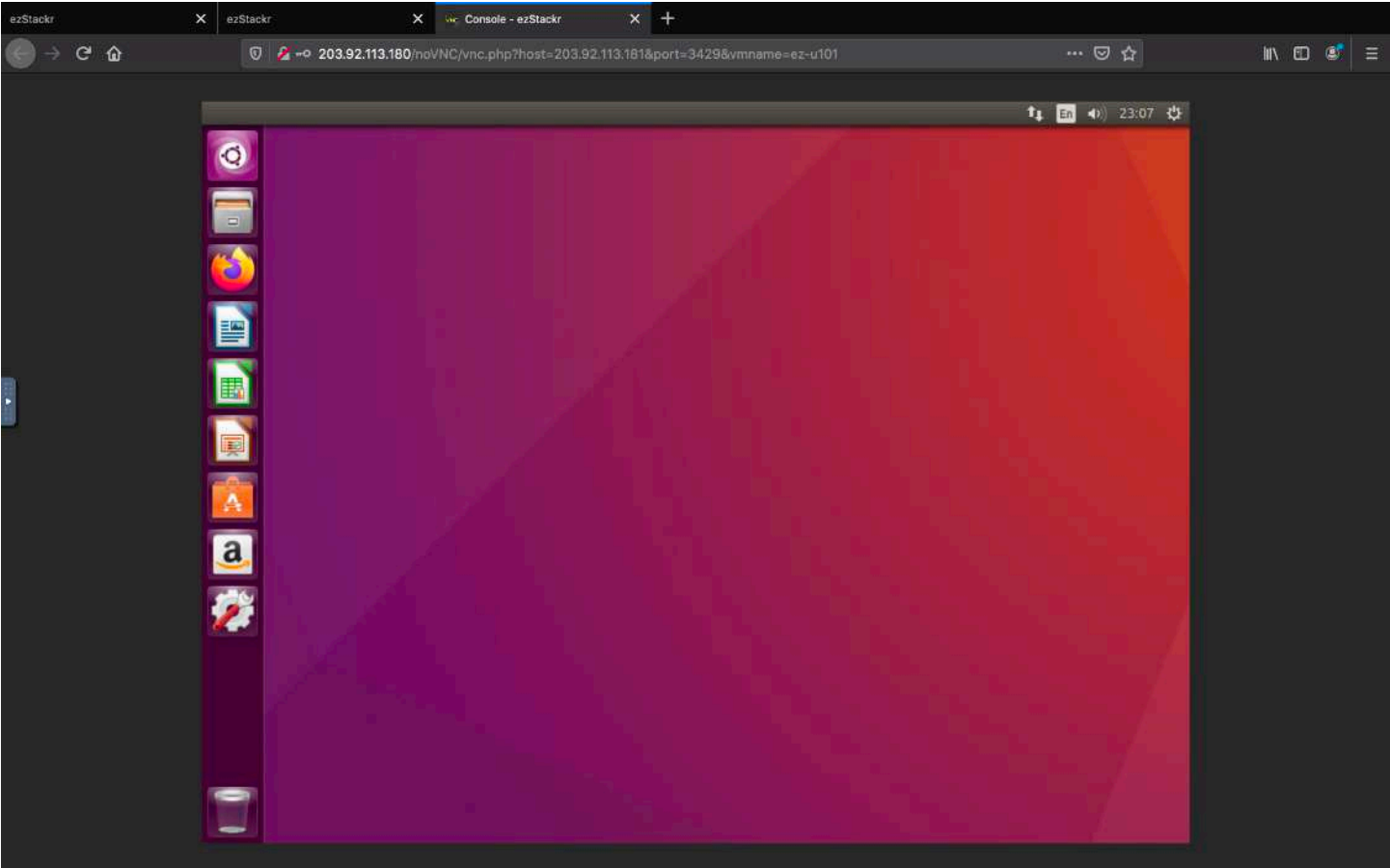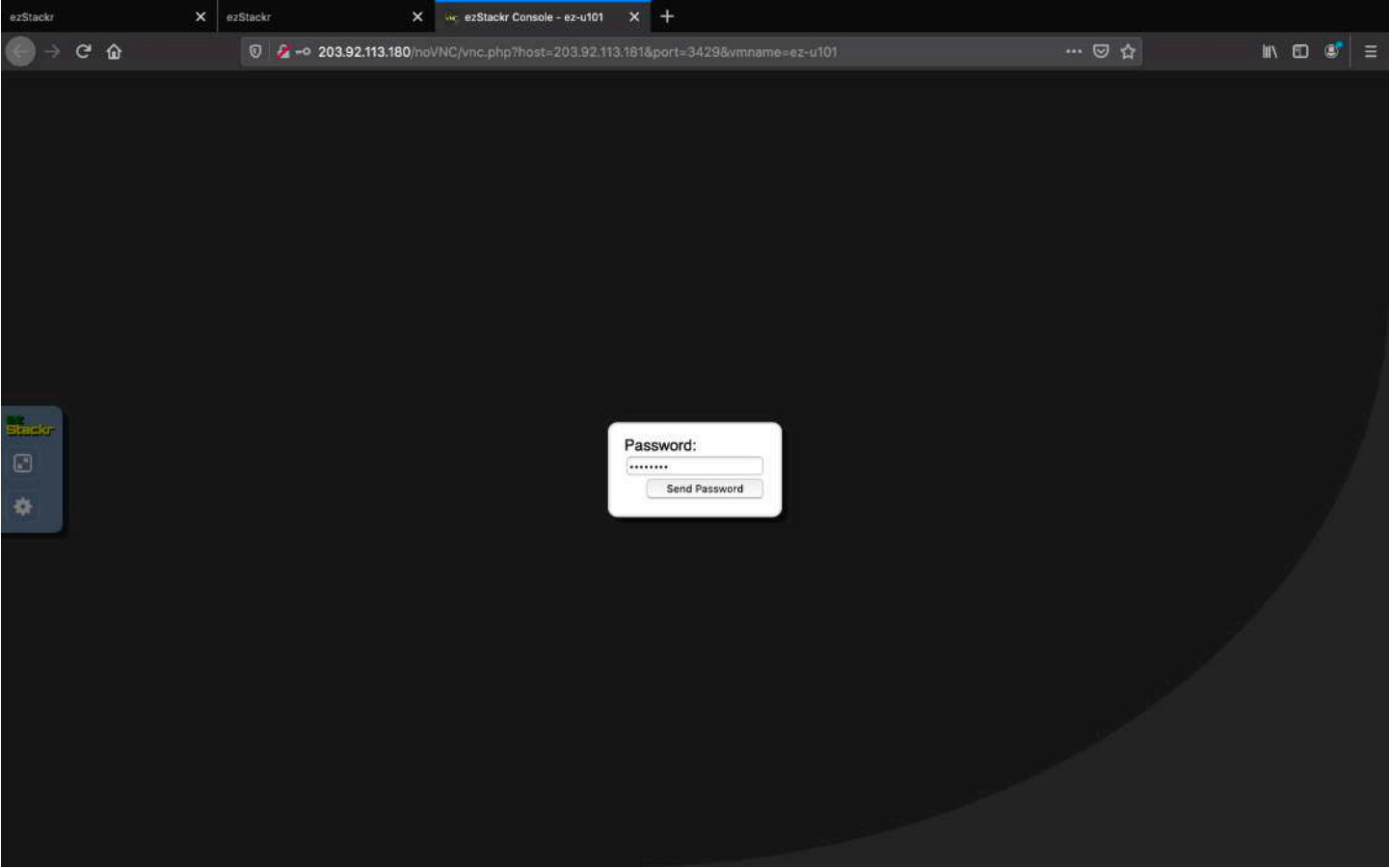
By default, an IP is assigned from Ezstackr default subnet and internet access is available

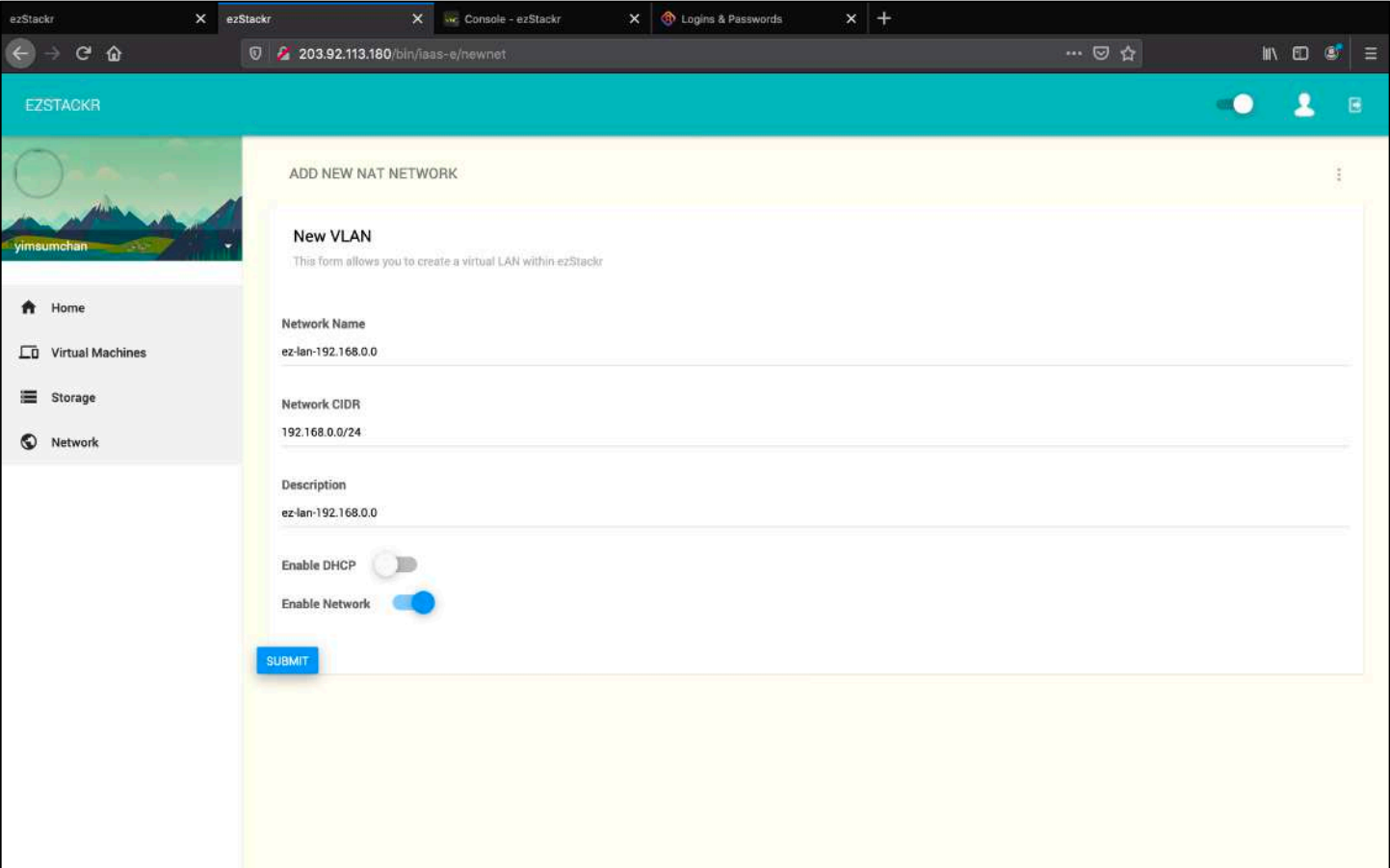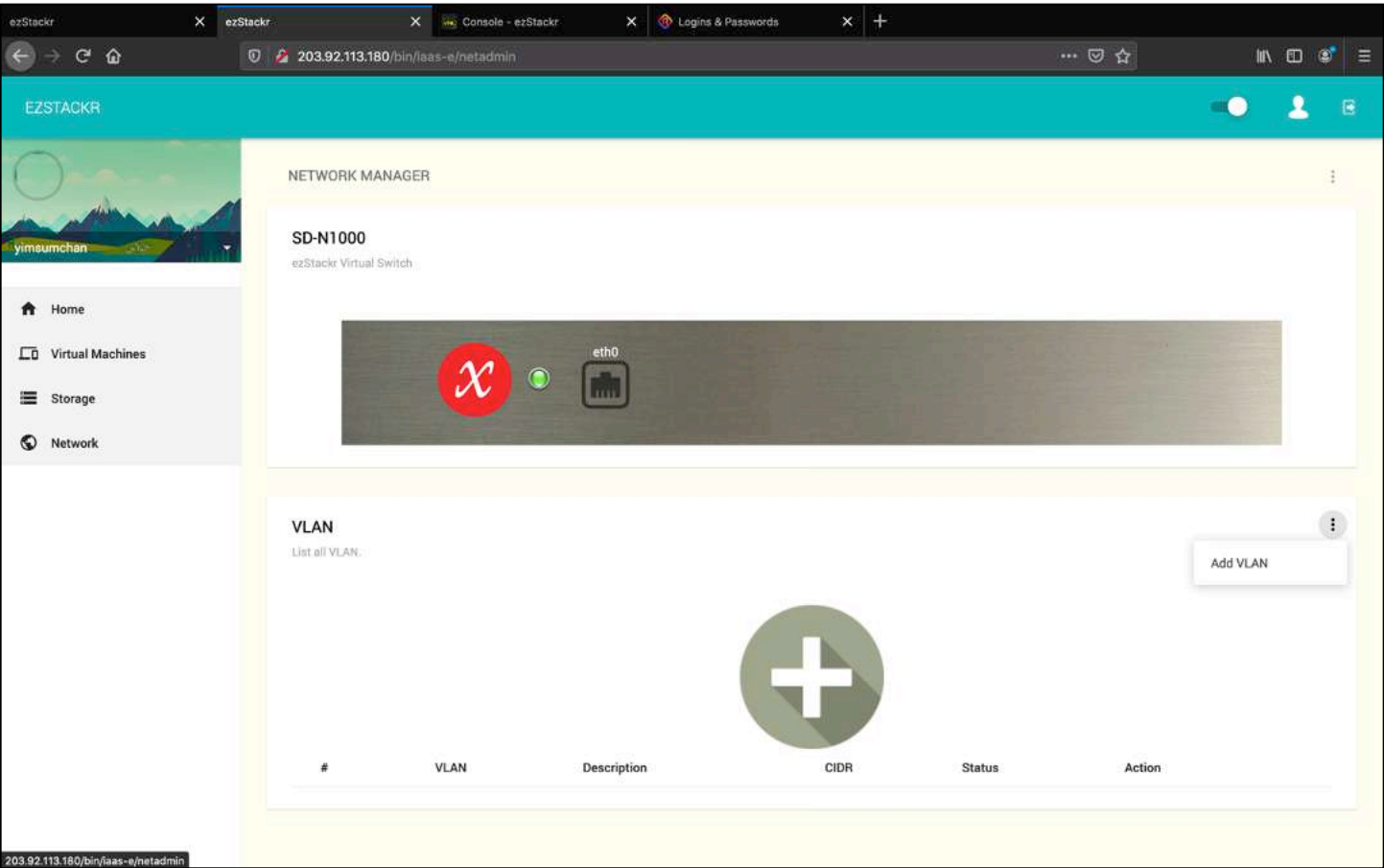**CHANGING DEFAULT NETWORK TO ANOTHER NETWORK**
As User: Select "Network"

As User: Select "Network"

As User: Select "+" to add new VLAN
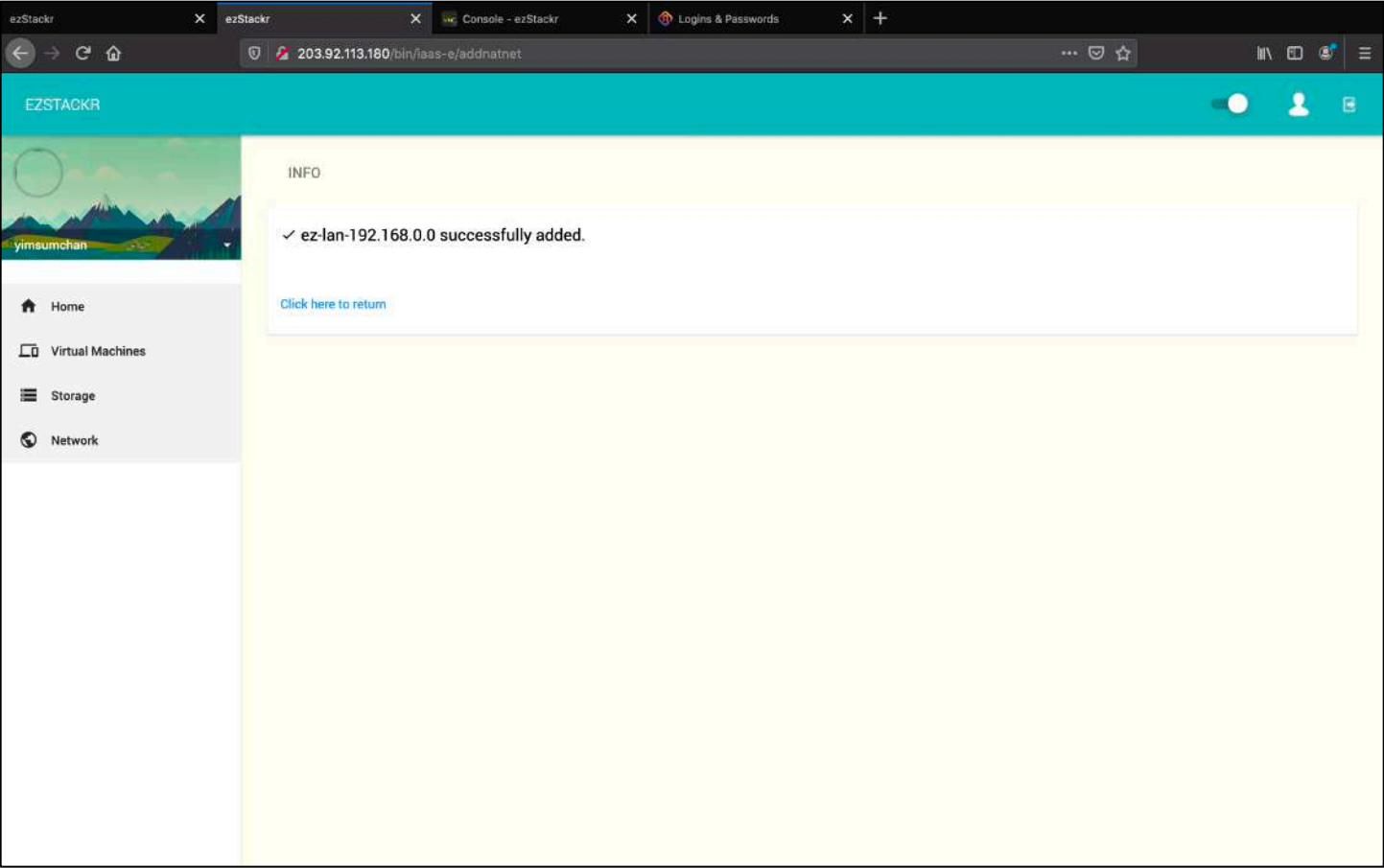
New VLAN is displayed
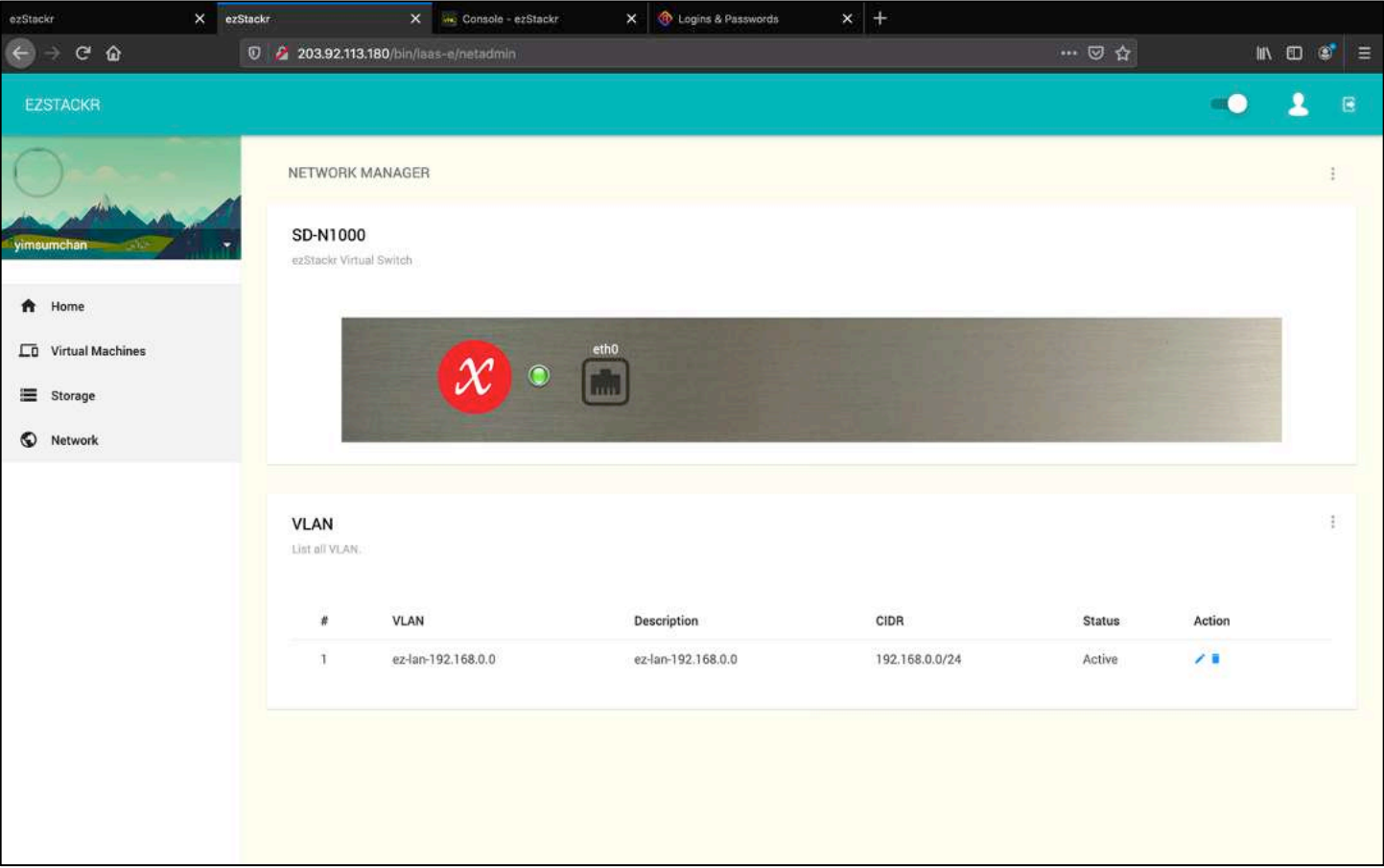
As User: Select "Virtual Machines"
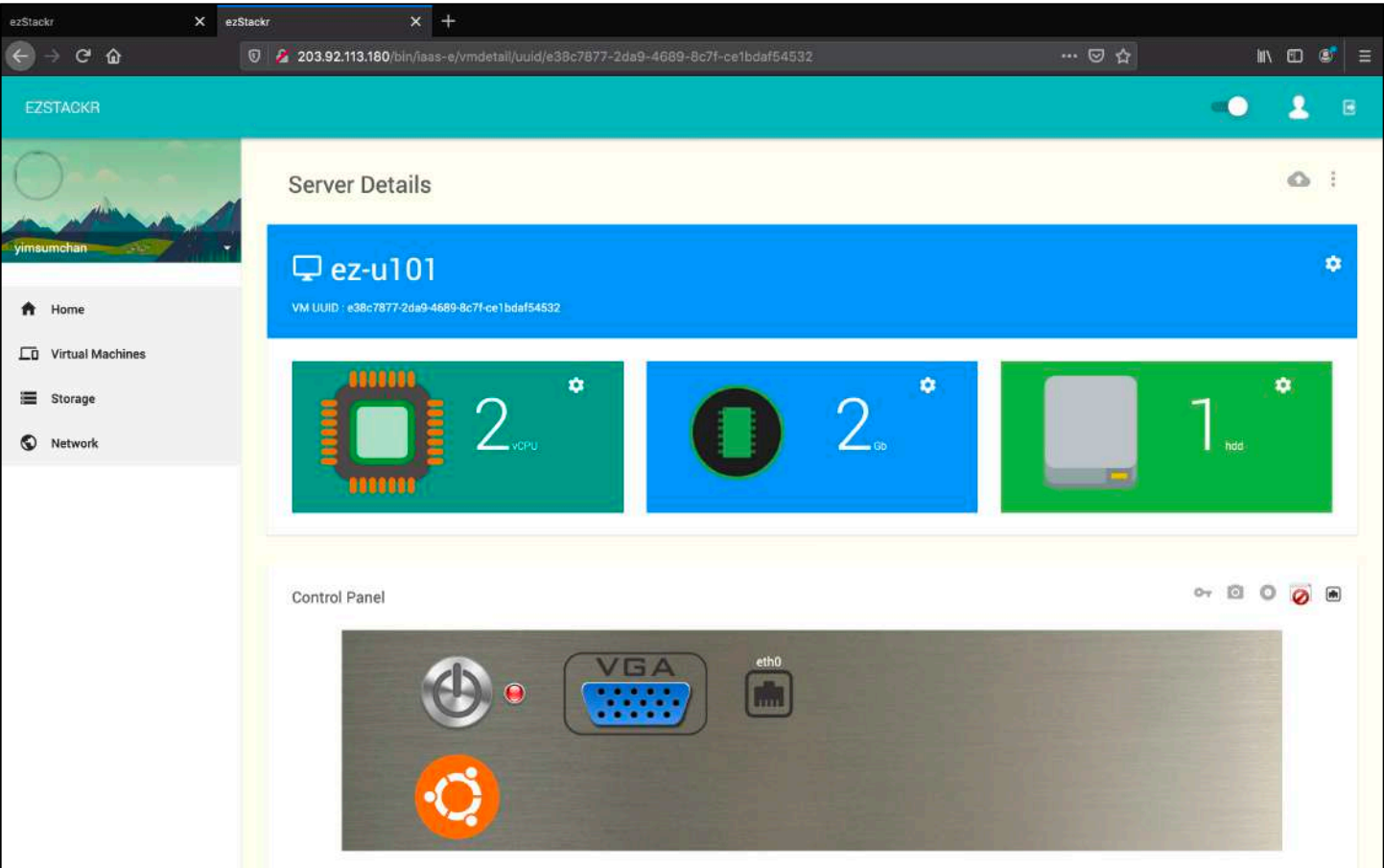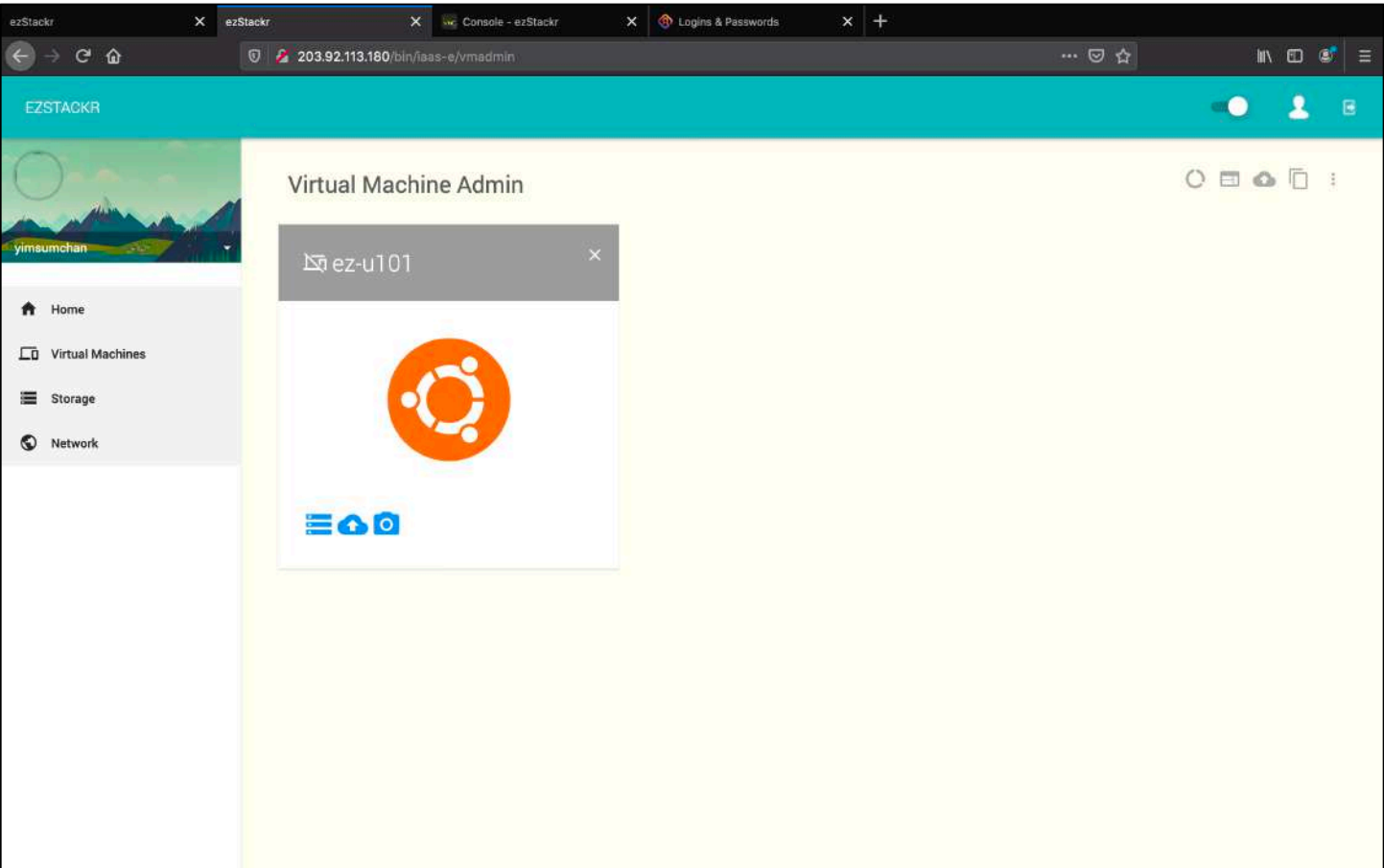
As User: Select "eth0"
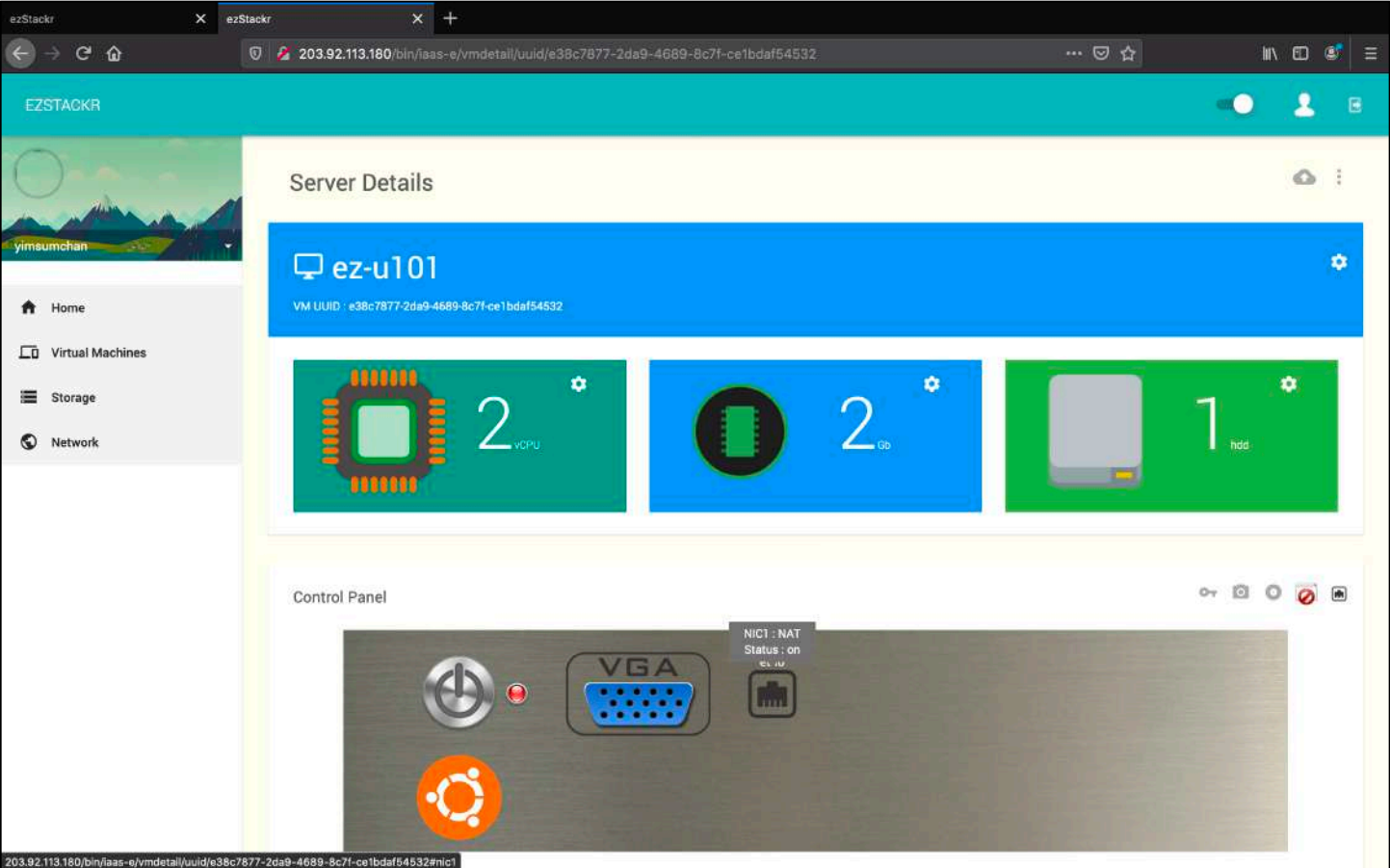
As User: Select "Remove this NIC"
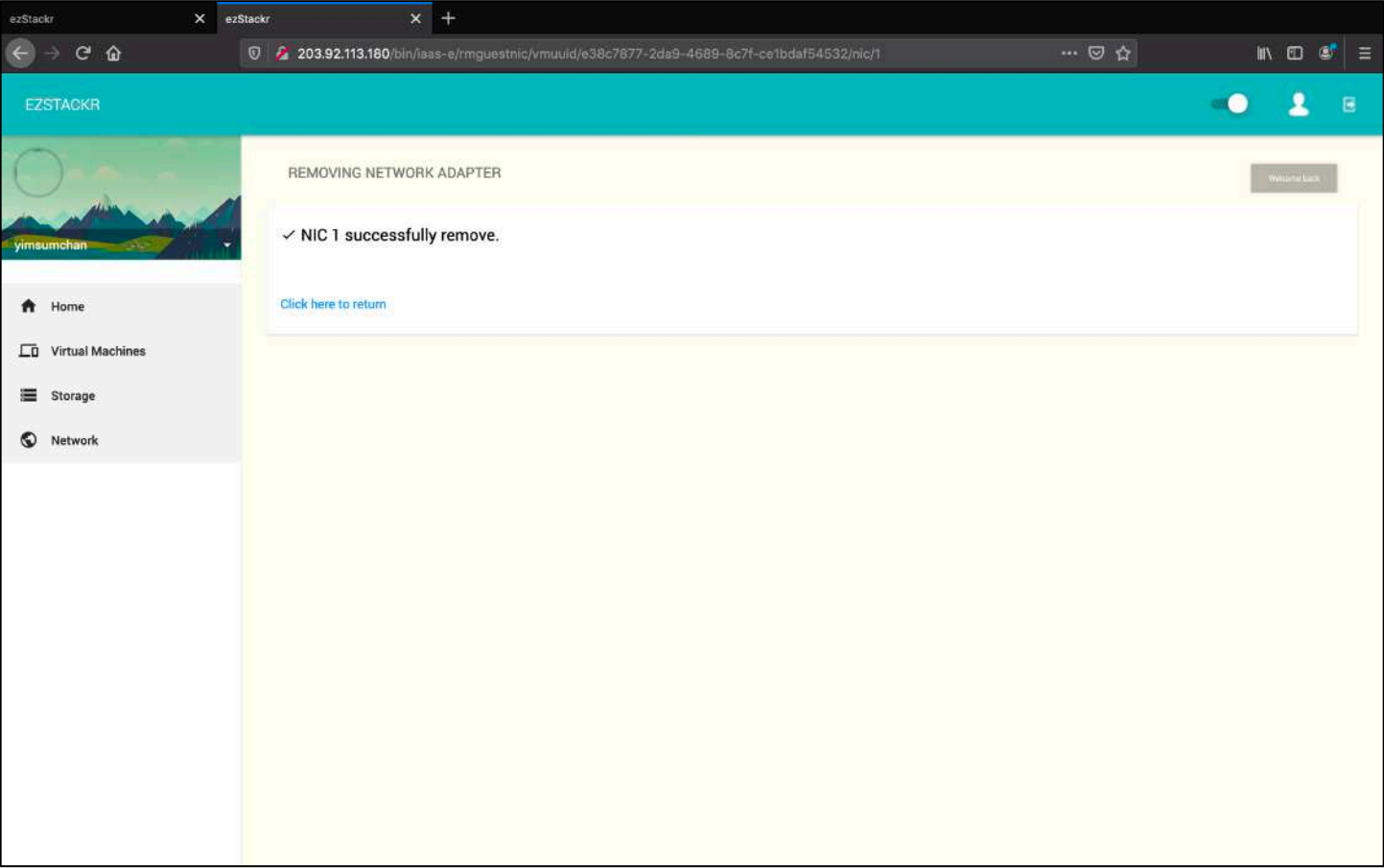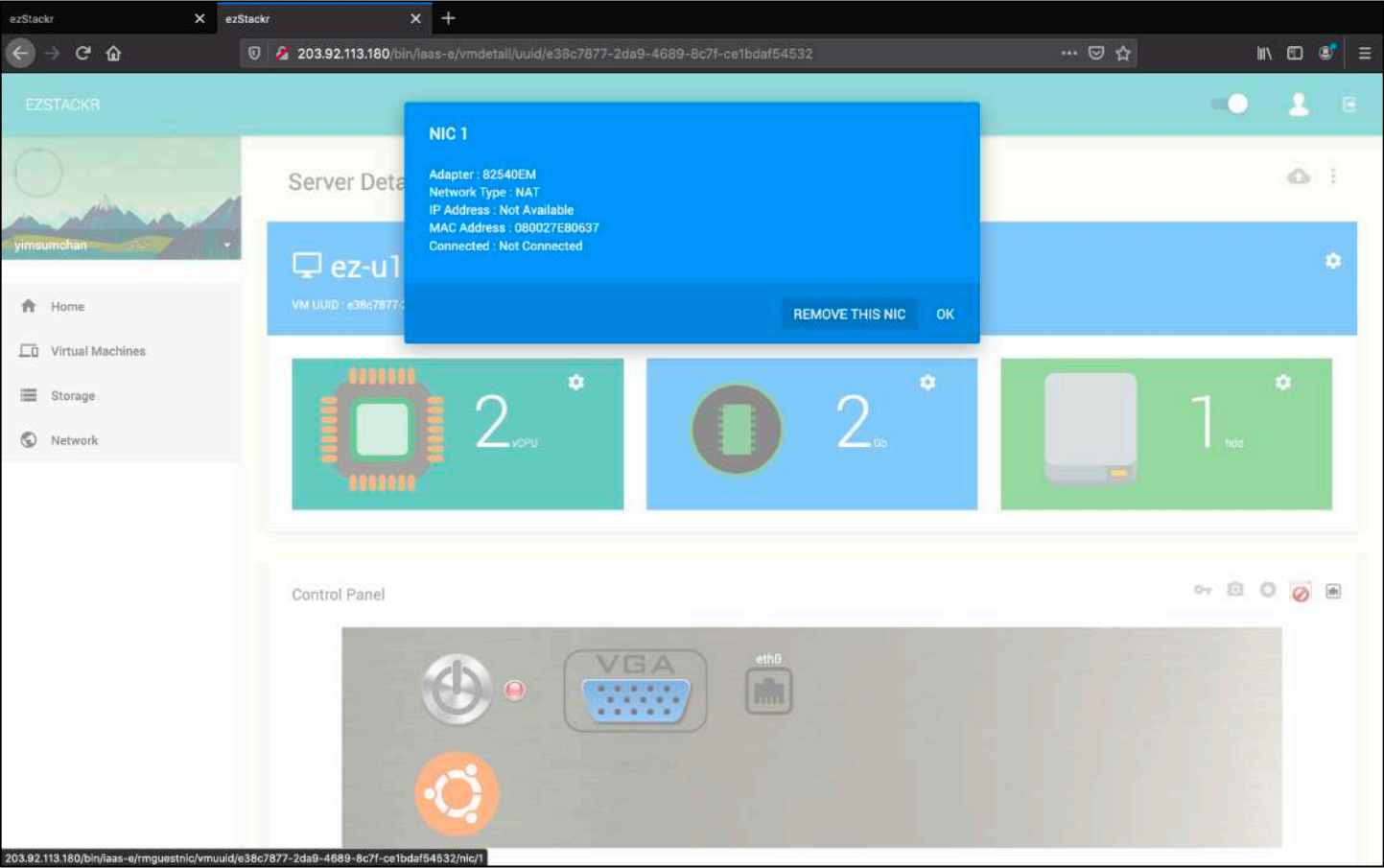
As User: Select ▣ to add network
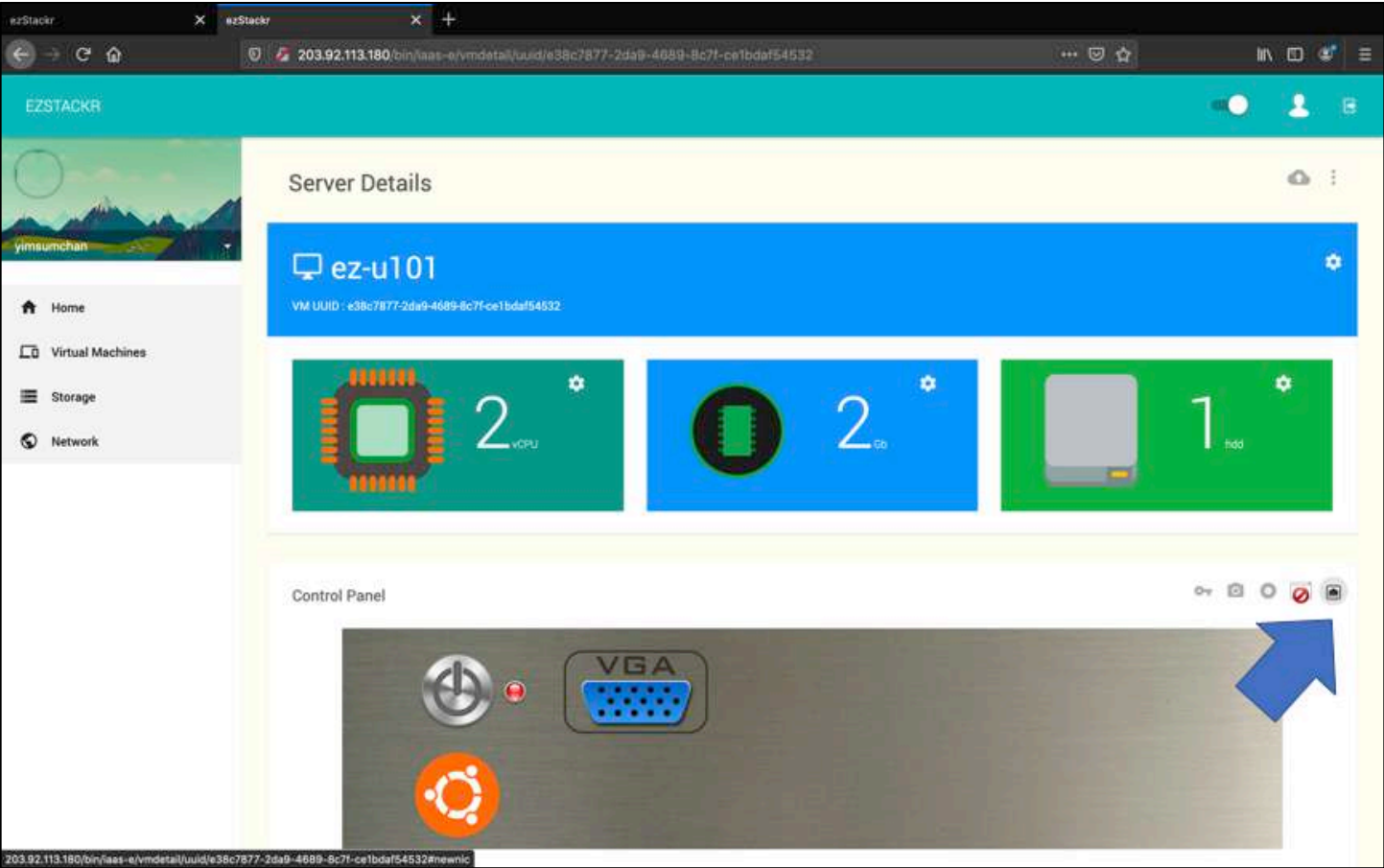
As User: Select new VLAN
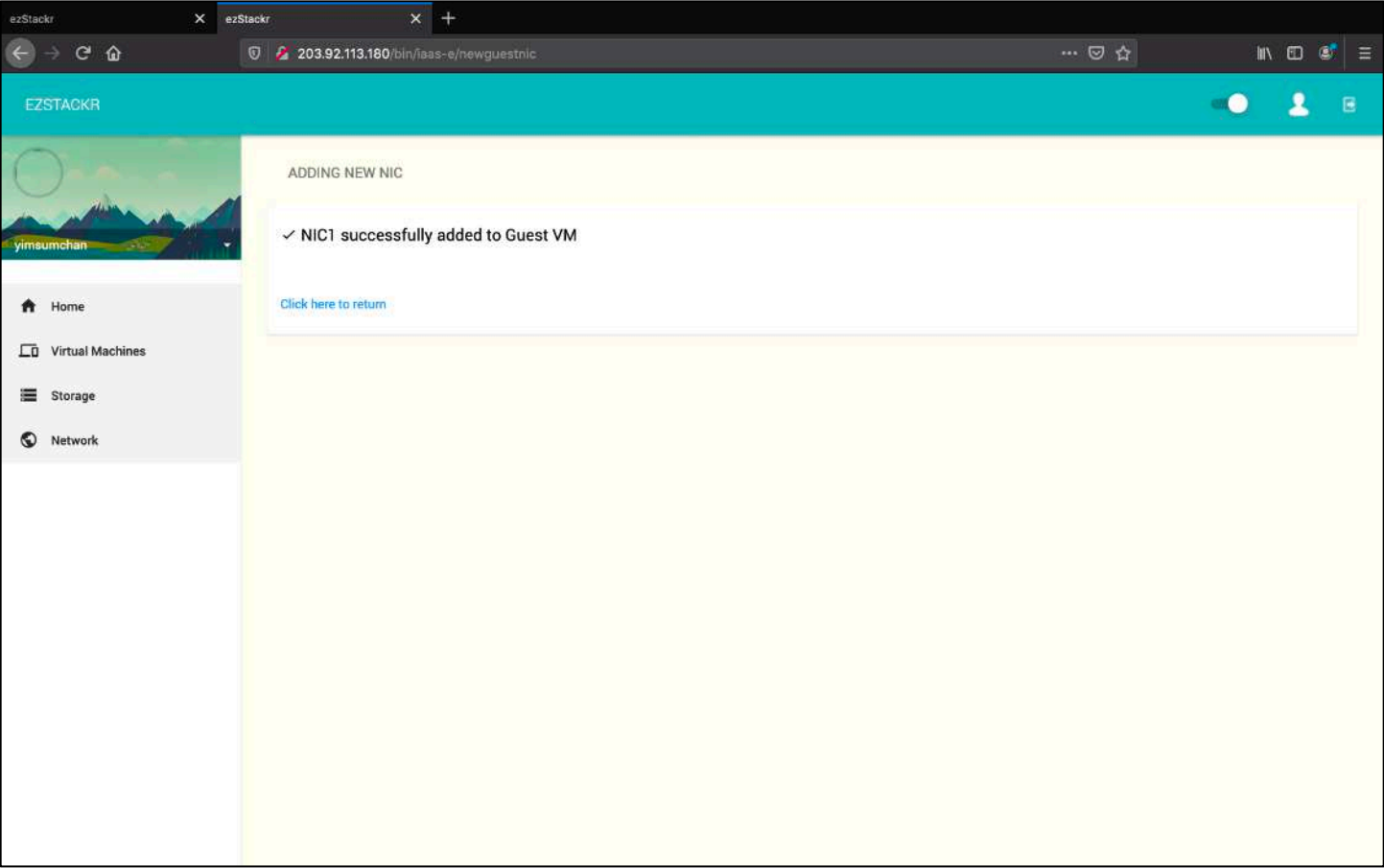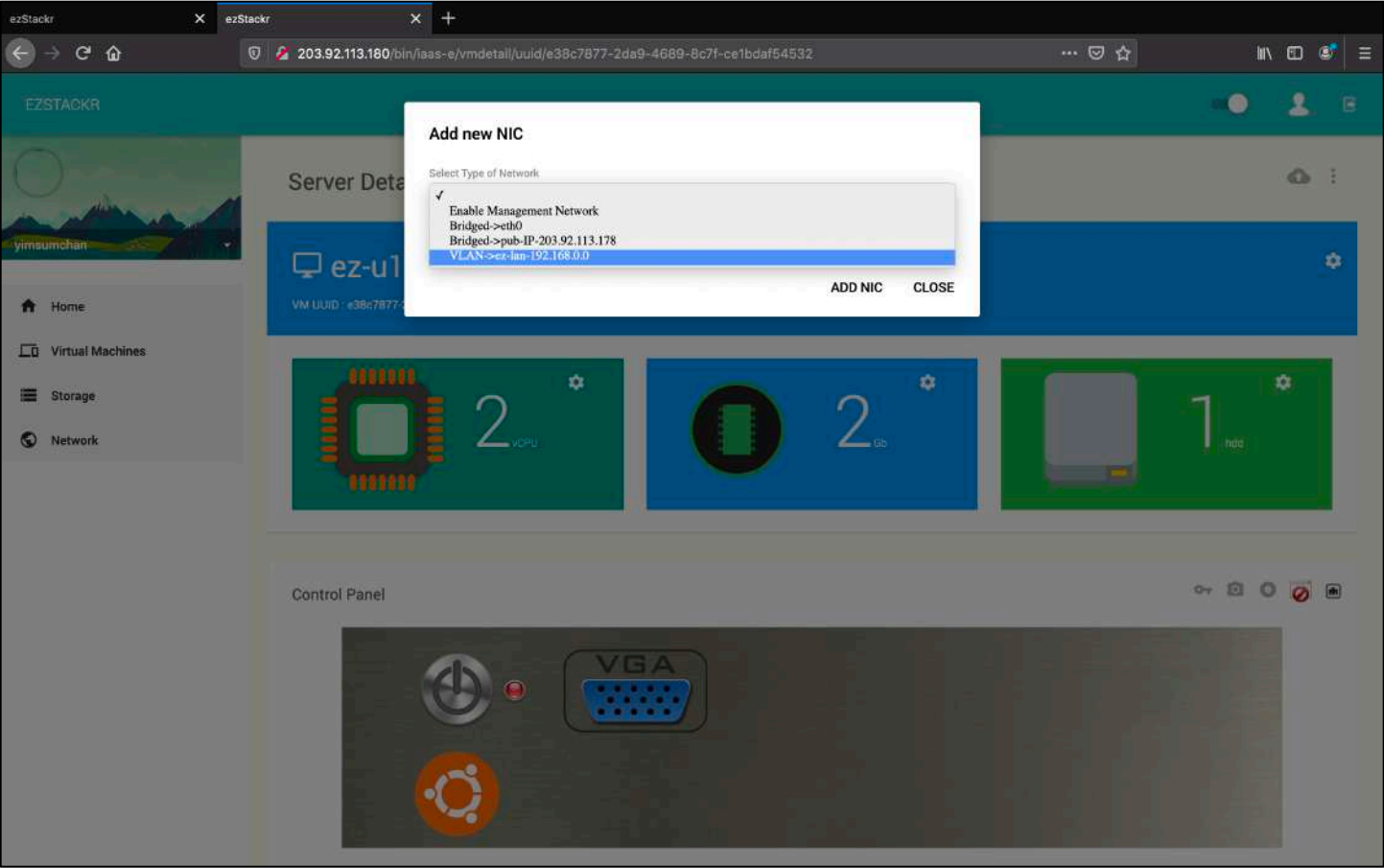
As User: Select "Power" to launch VM
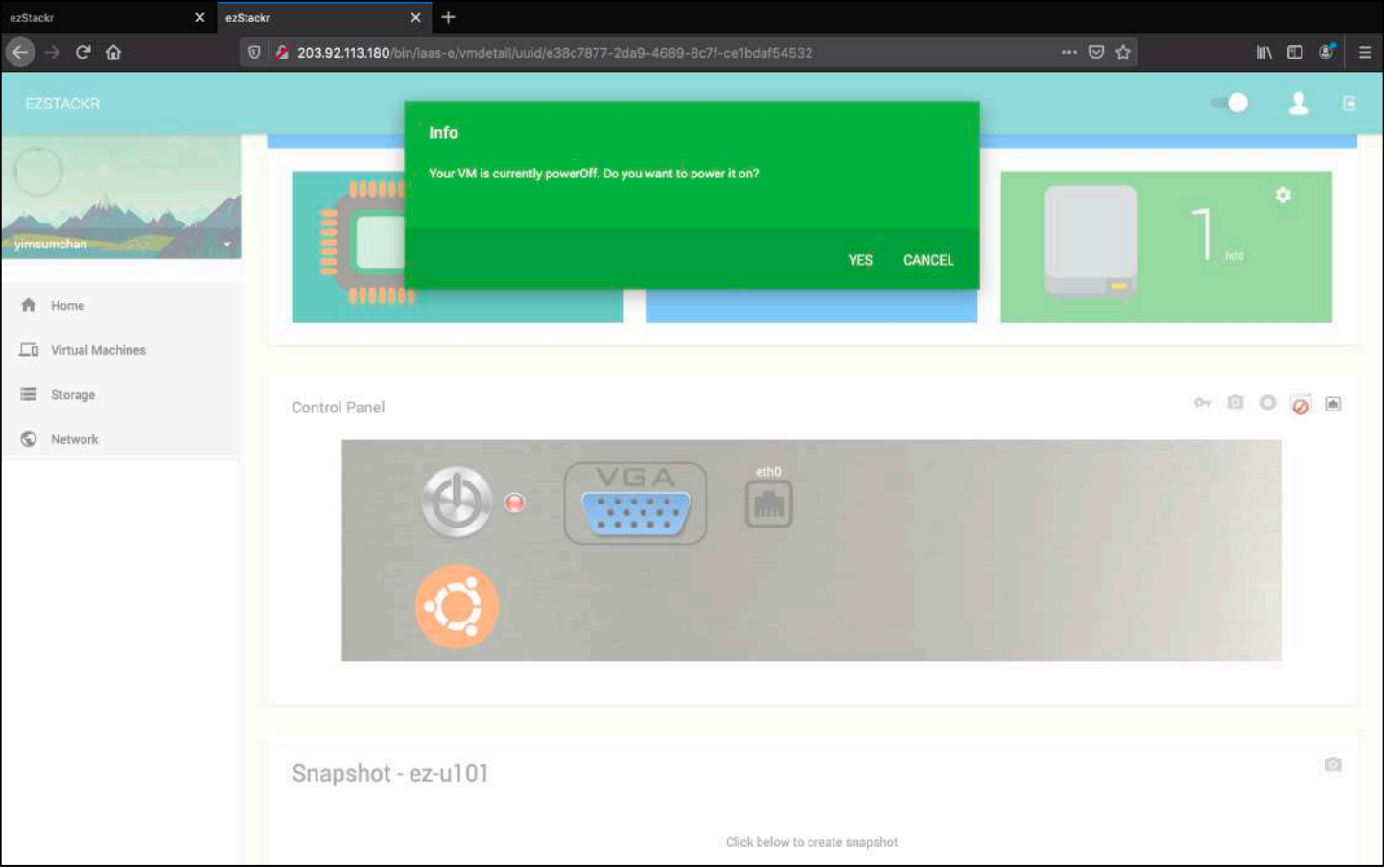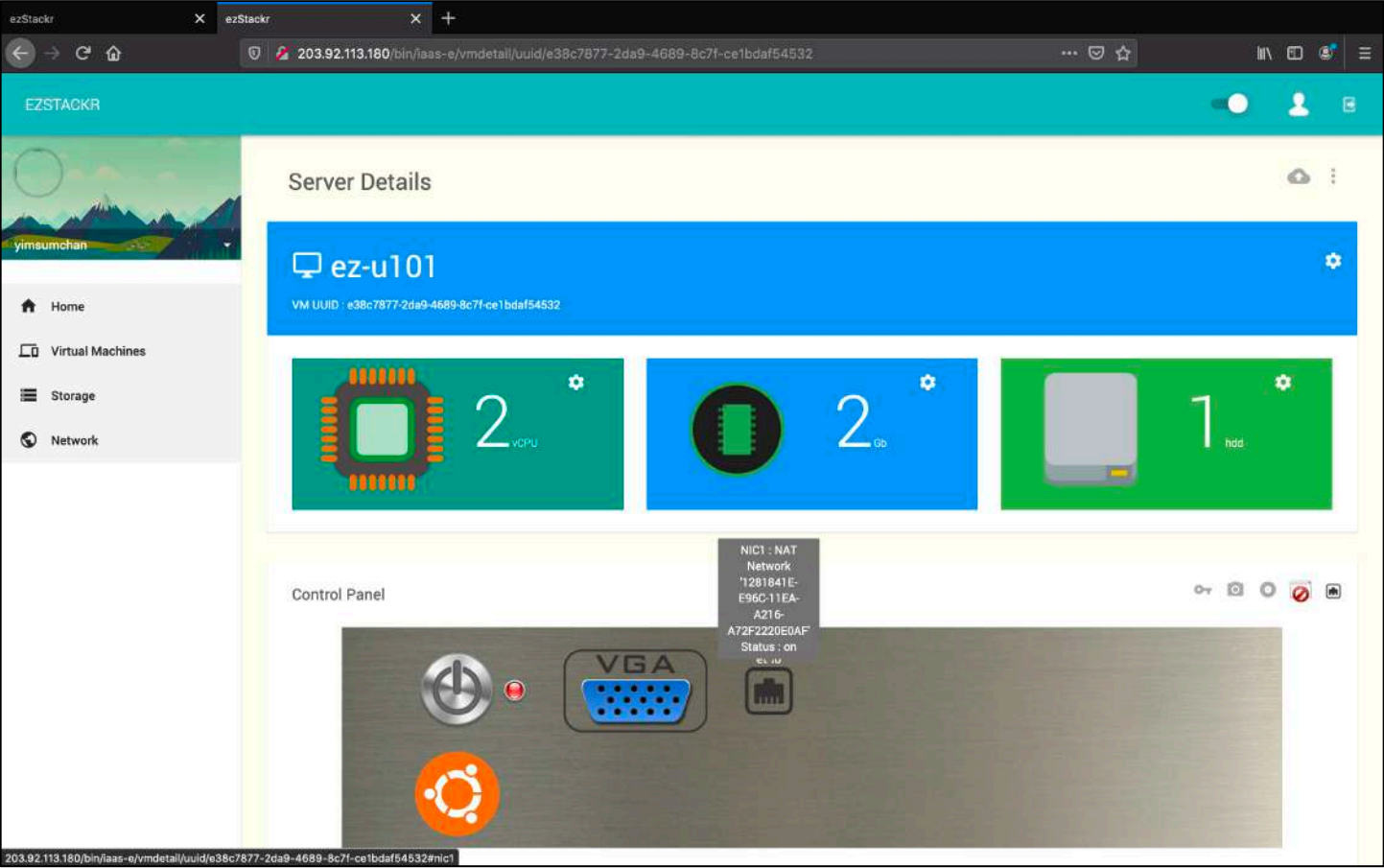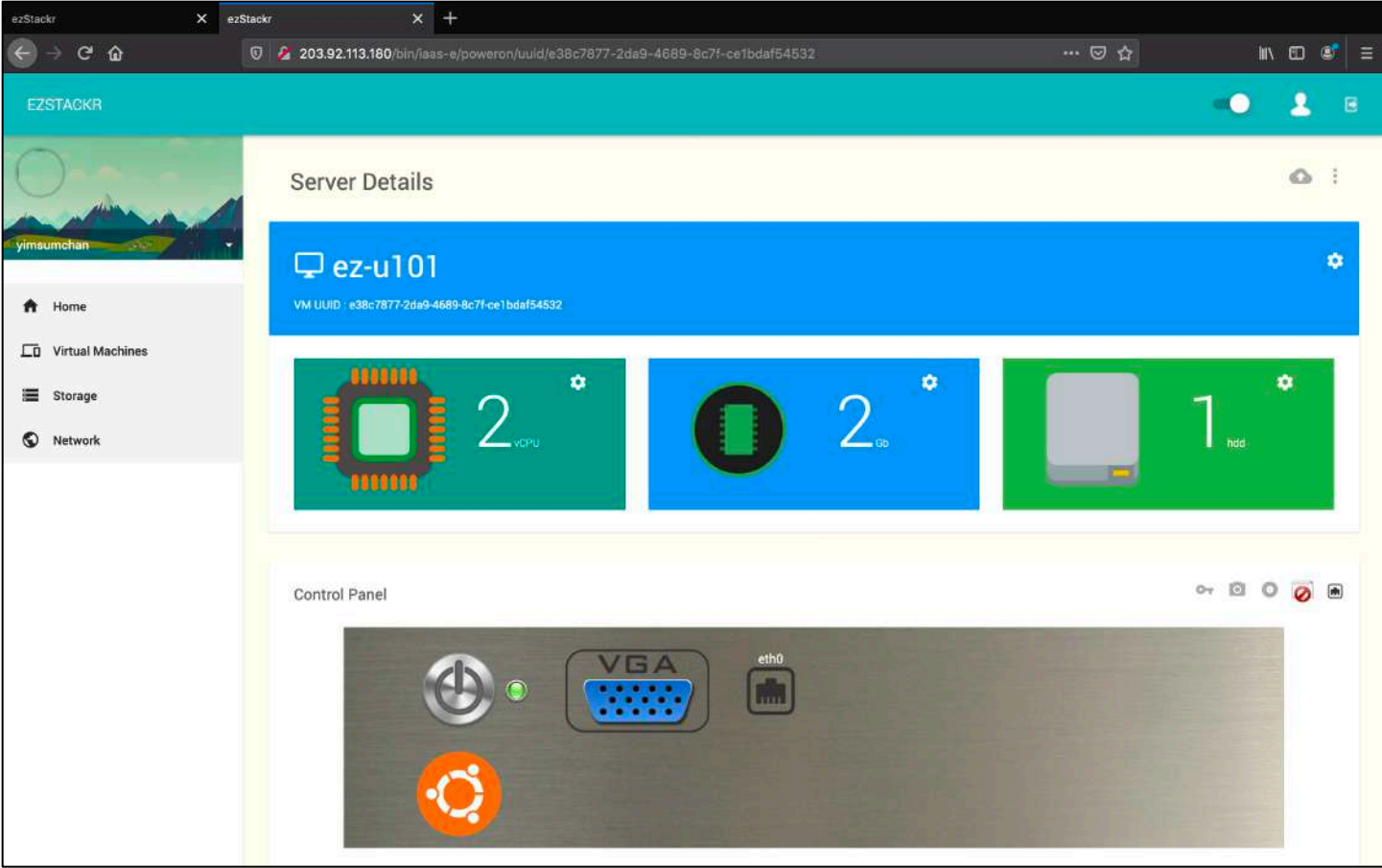
As User: Change default network to desired network
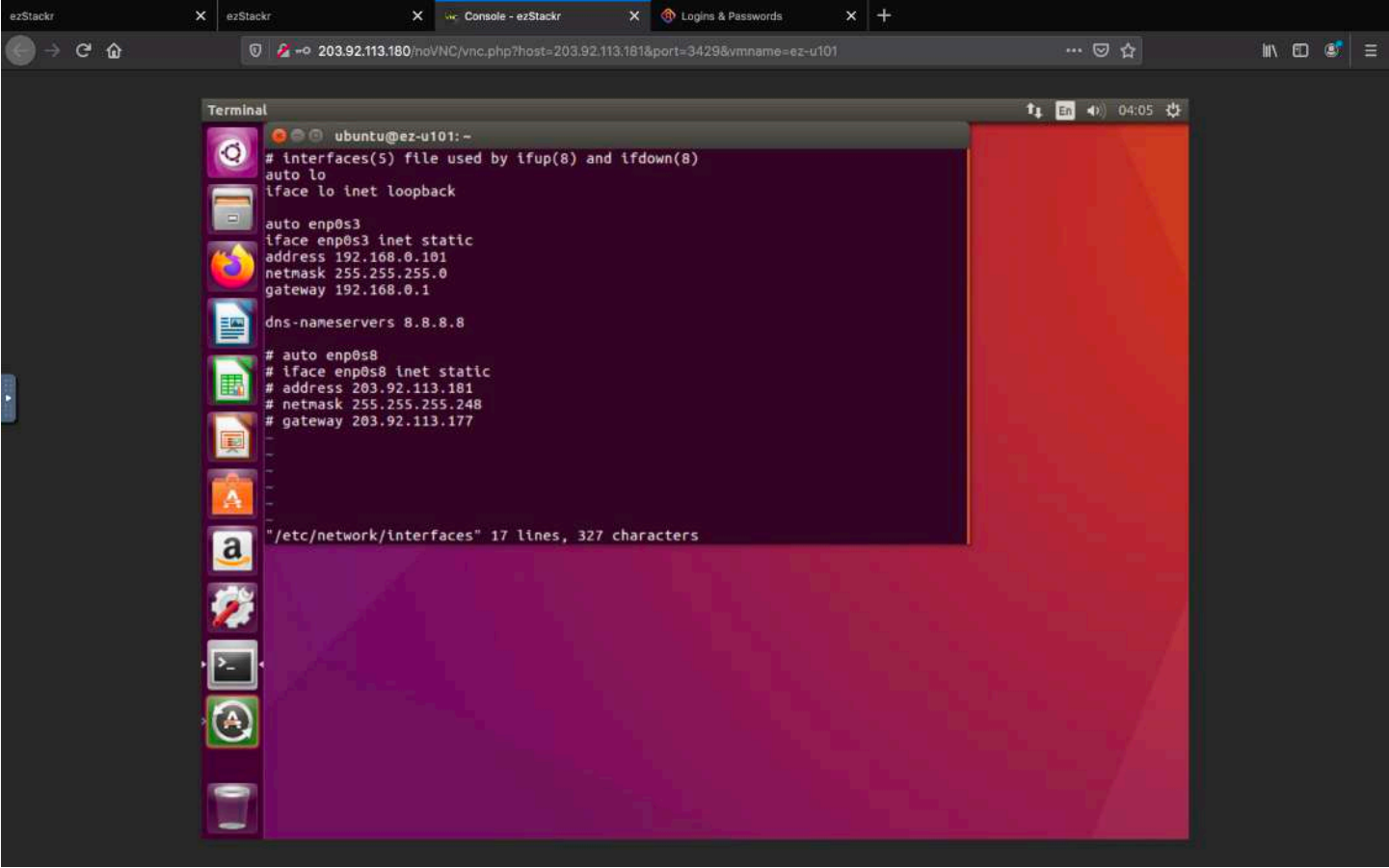
As User: sudo ifdown enp0s3
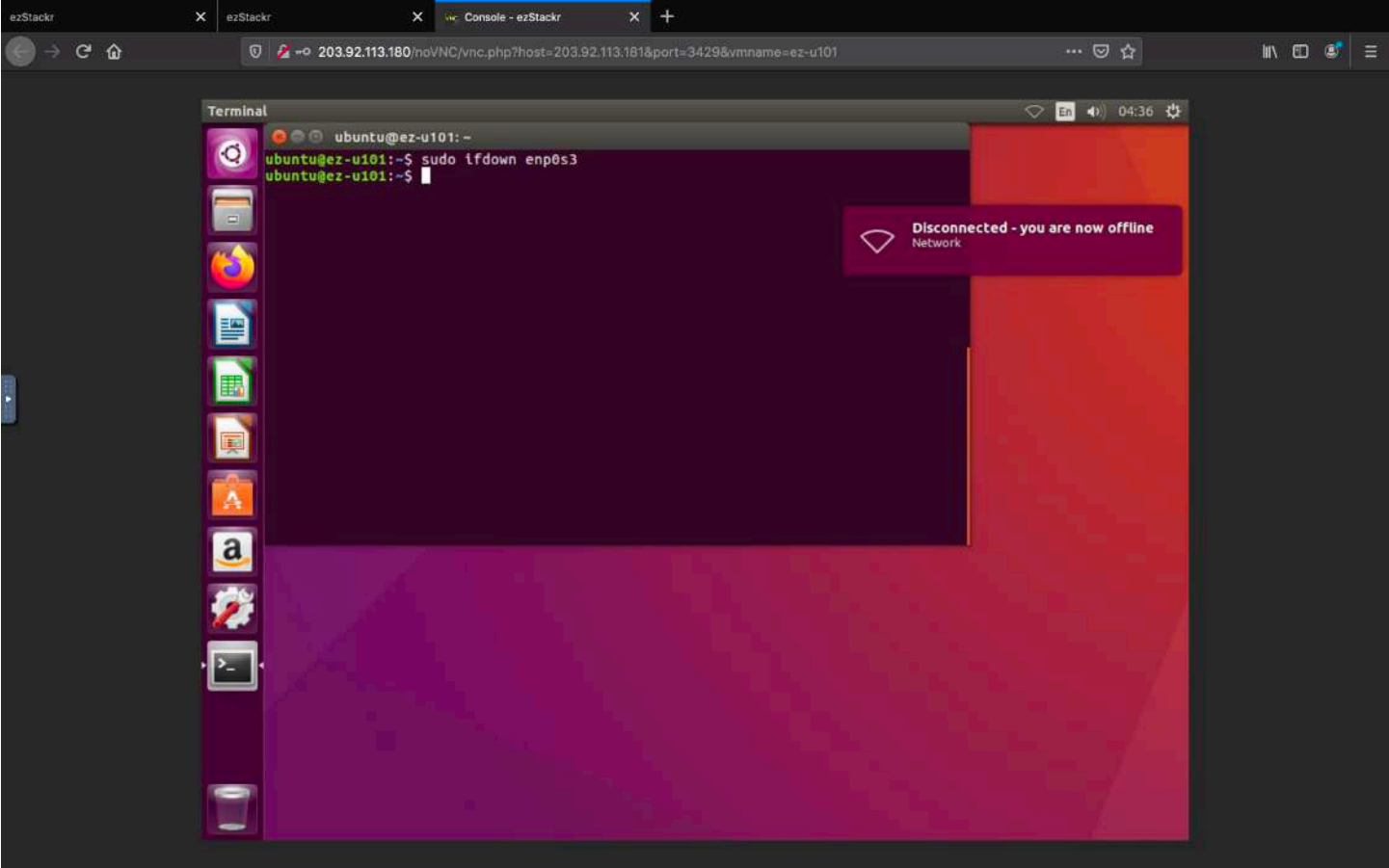
As User: sudo ifup enp0s3
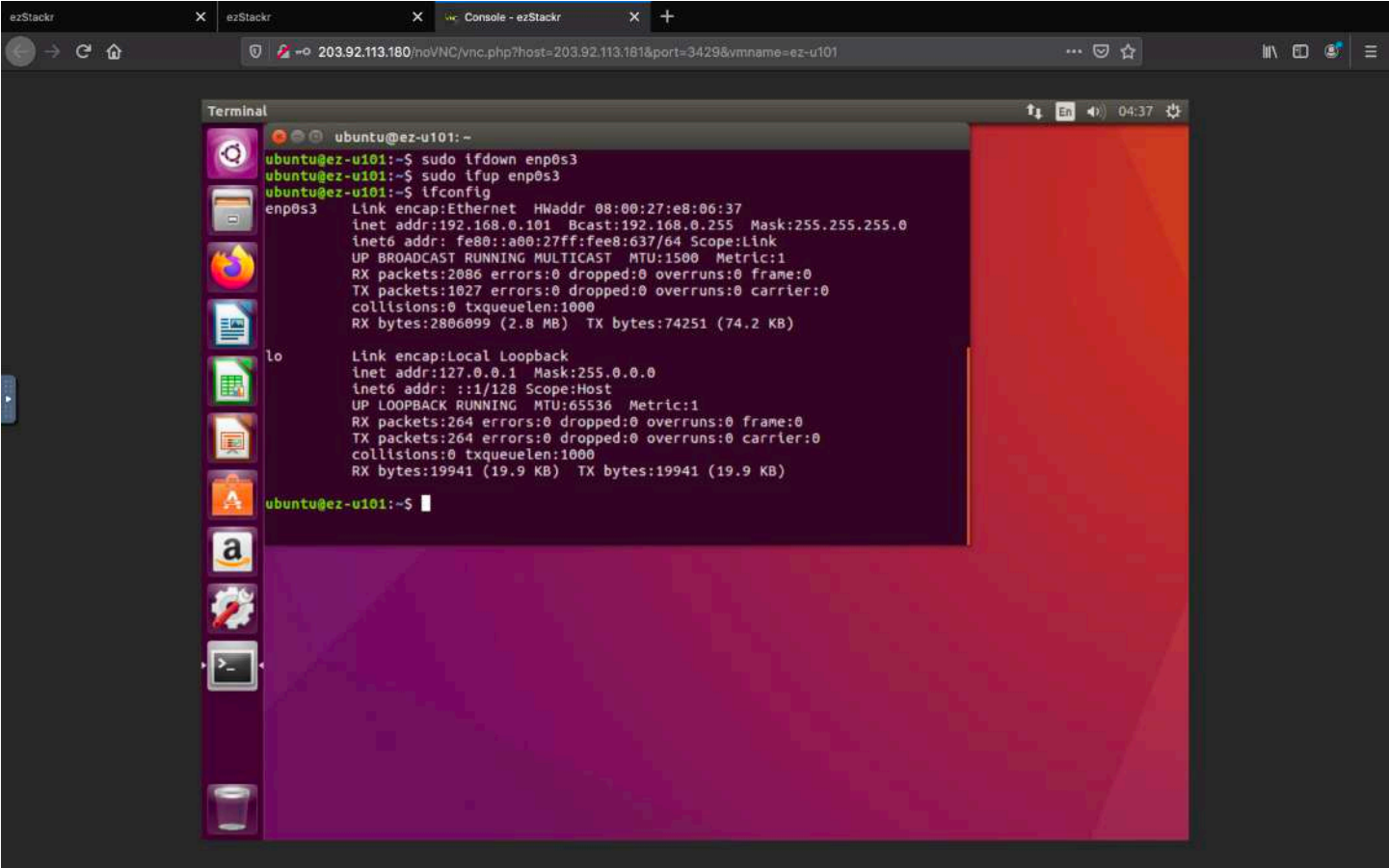
As User: Ping out to the Internet
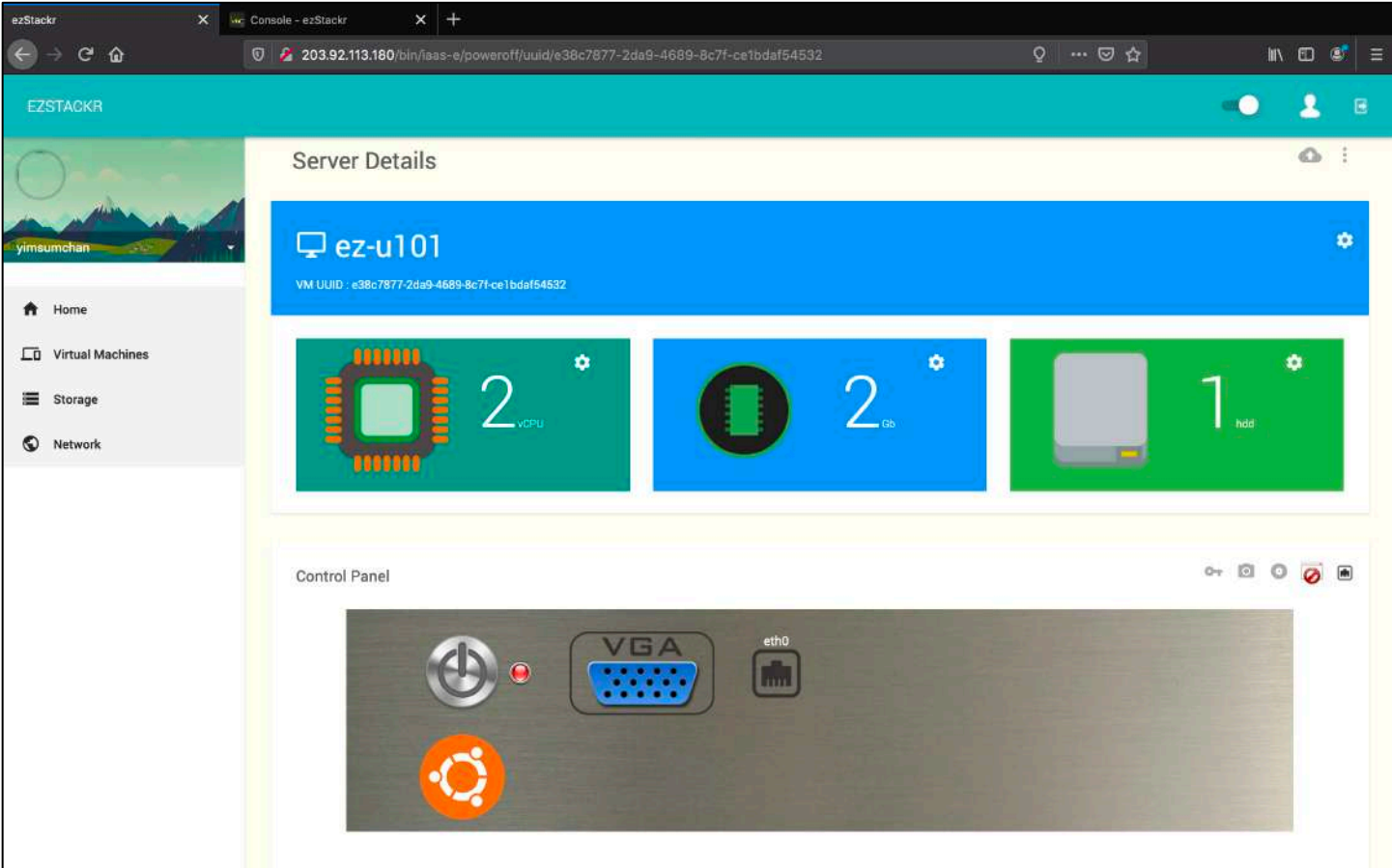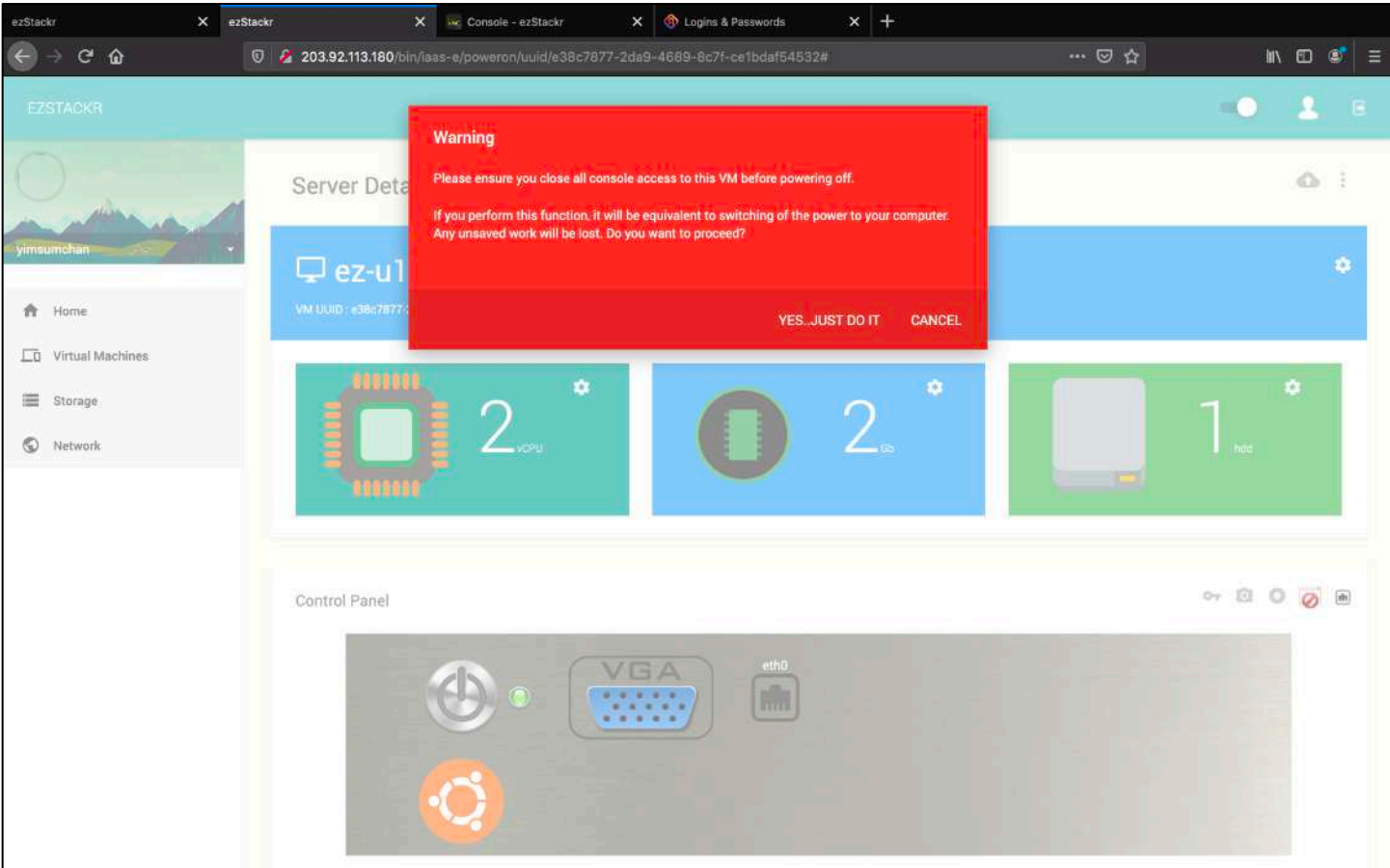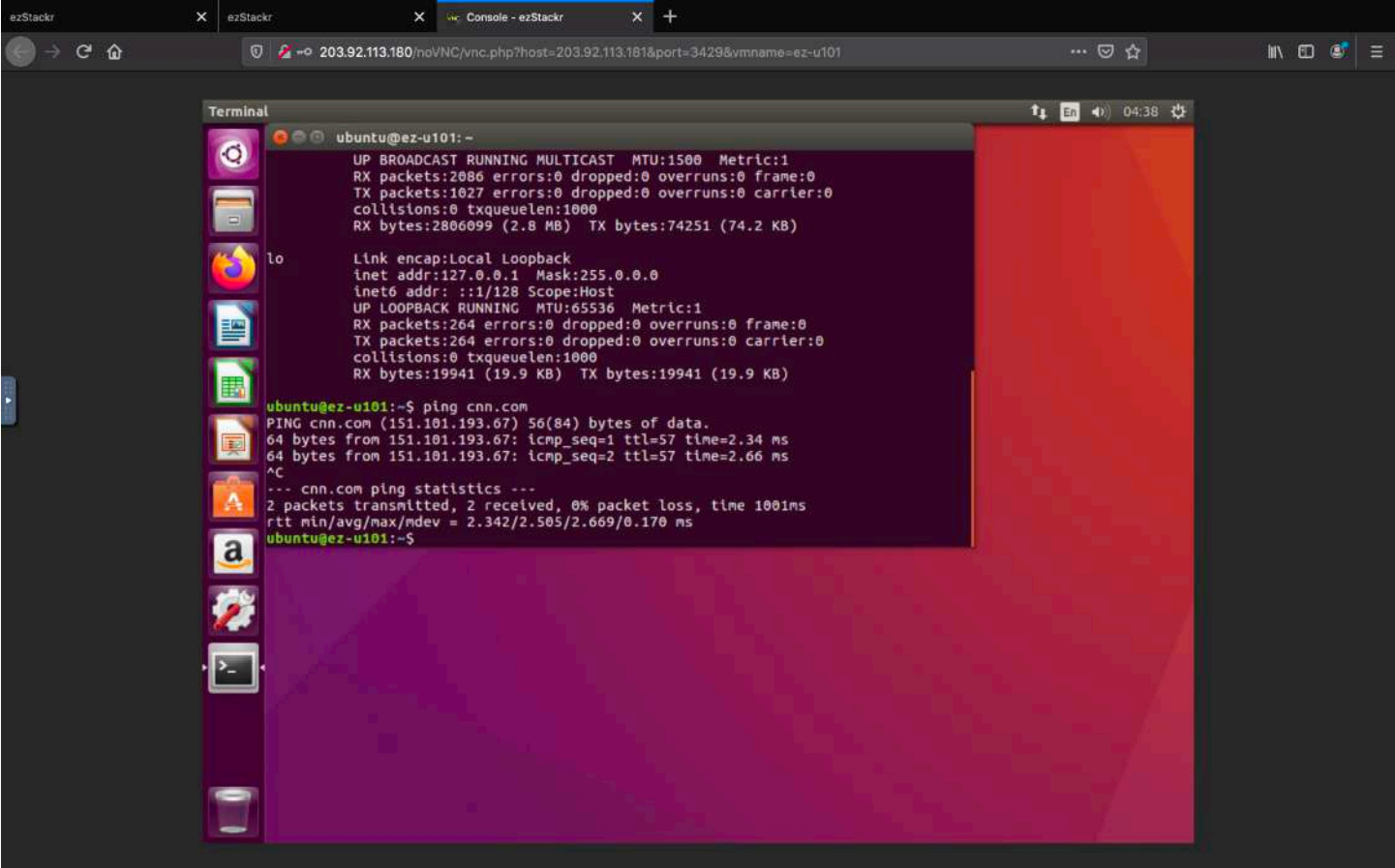
ADDING PUBLIC IP INTO VMs
As User: Select ▣ to add network
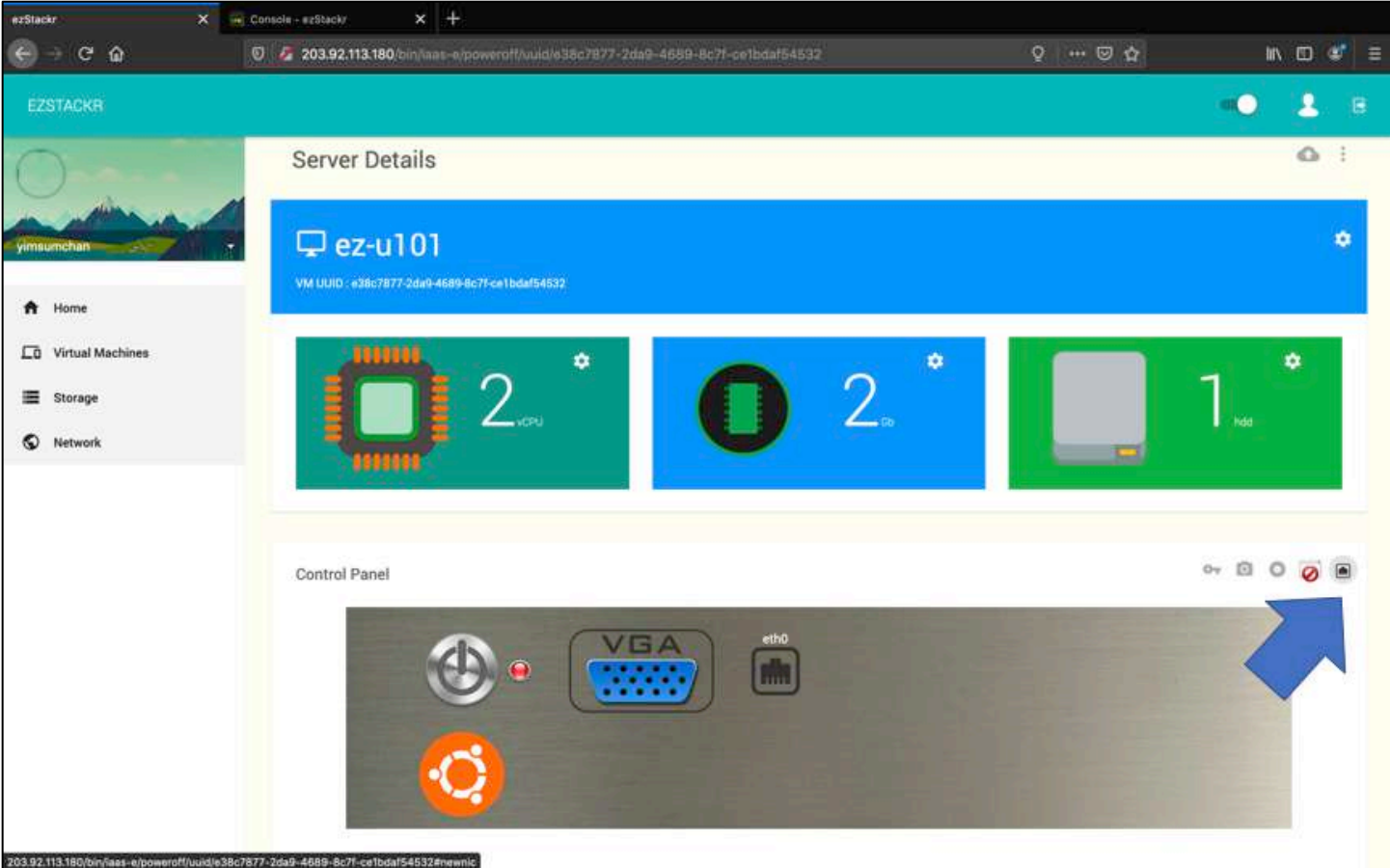
As User: Select "Bridged->eth0"

Add new NIC

Select Type of Network

✓ Enable Management Network
Bridged->eth0
VLAN->ez-lan-192.168.0.0

ADD NIC   CLOSE

Server Details

ez-u1

VM UUID : e38c7877-2da9...

2 vCPU   2 Gb   1 hdd

Control Panel

VGA   eth0

EZSTACKR
yimsumchan
Home
Virtual Machines
Storage
Network

ADDING NEW NIC

Welcome back

✓ NIC2 successfully added to Guest VM

Click here to return

EZSTACKR
yimsumchan
Home
Virtual Machines
Storage
Network



Server Details

ez-u101

VM UUID : e38c7877-2da9-4689-8c7f-ce1bdaf54532

2 vCPU   2 Gb   1 hdd

Control Panel

VGA   eth0   eth1

EZSTACKR
yimsumchan
Home
Virtual Machines
Storage
Network

Info

Your VM is currently powerOff. Do you want to power it on?

YES   CANCEL

Server Details

ez-u1

VM UUID : e38c7877-2da9-4689-8c7f-ce1bdaf54532

2 vCPU   2 Gb   1 hdd

Control Panel

VGA   eth0   eth1

EZSTACKR
yimsumchan
Home
Virtual Machines
Storage
Network

As User: Run "ifconfig". Notice there is a new network interface enps0s8
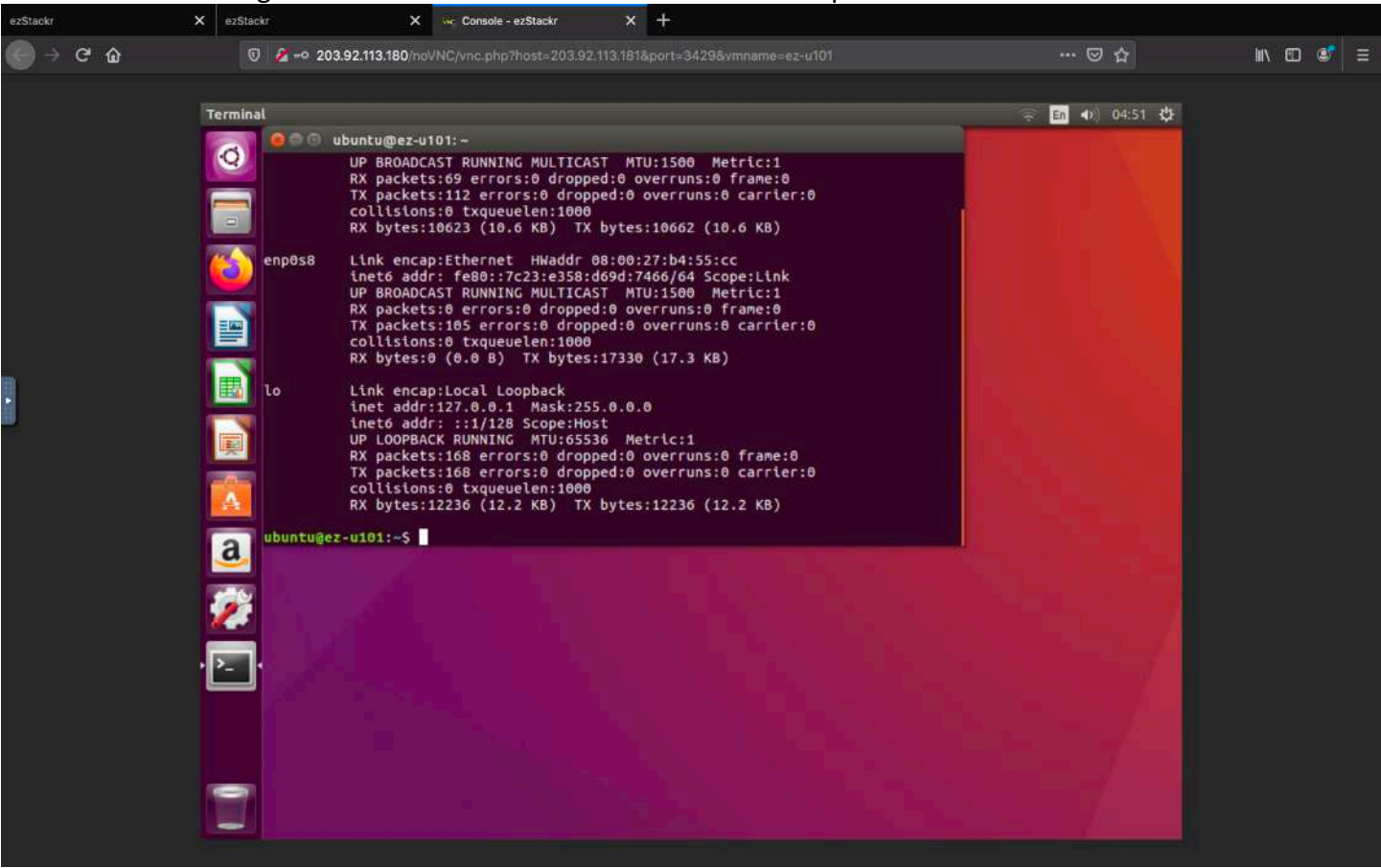
As User: Configure this network interface
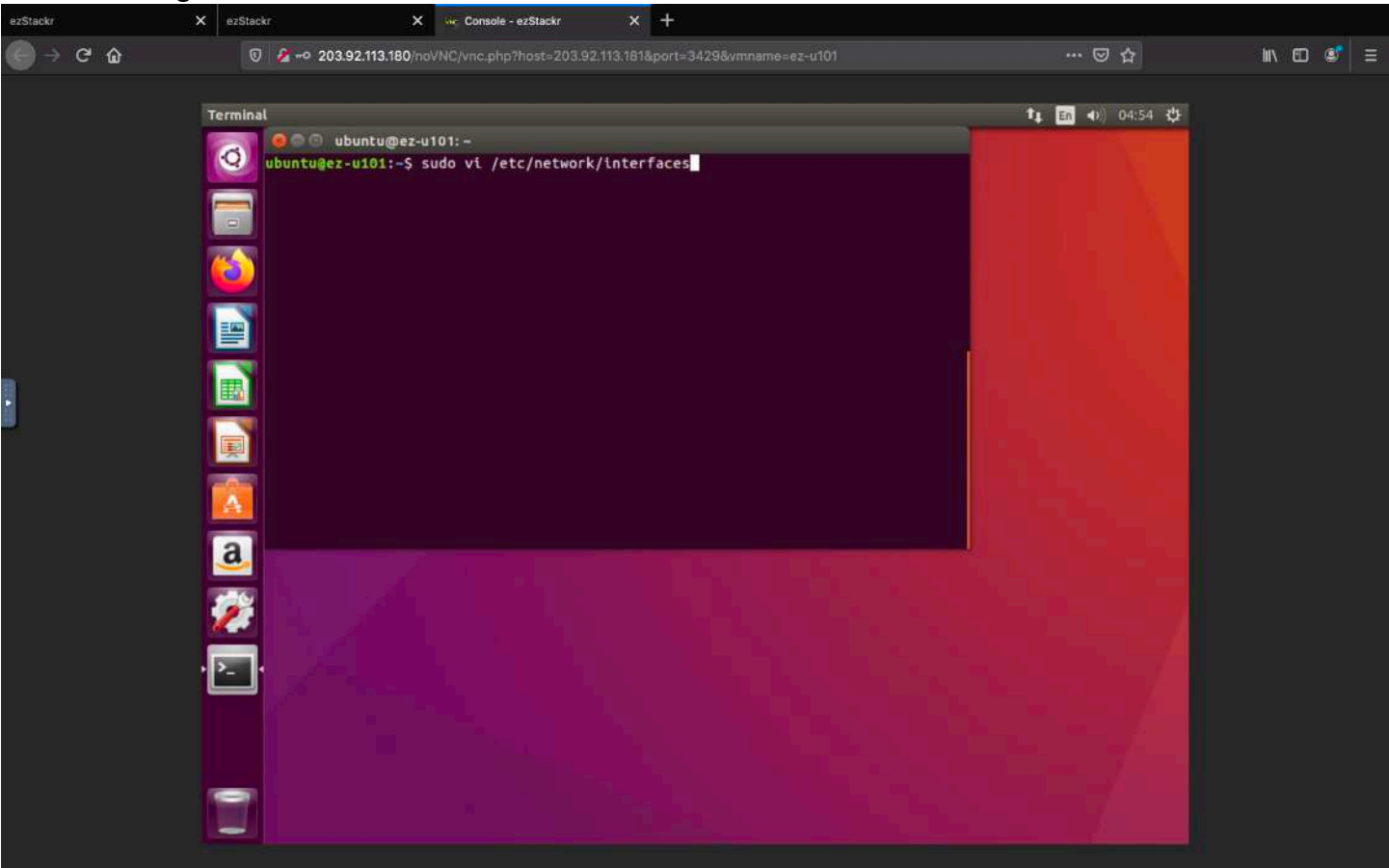
As User: Configure the assigned public IP e.g. 203.92.113.182 and comment out the previous gateway 192.168.0.1
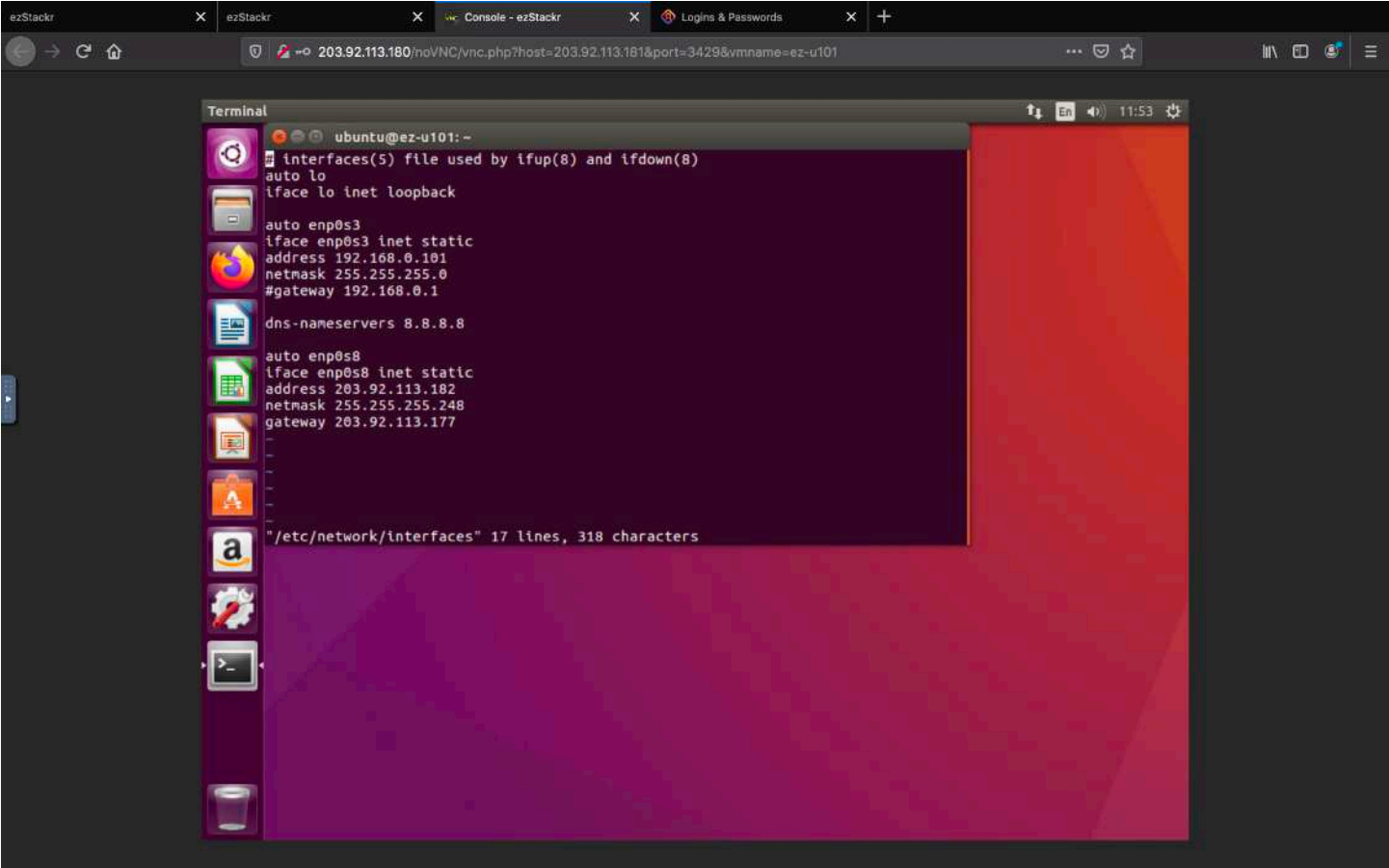
As User: Shutdown and startup the VM again. Run commands such as "ifconfig", "netstat -rn" to review the new settings and ping the Internet.
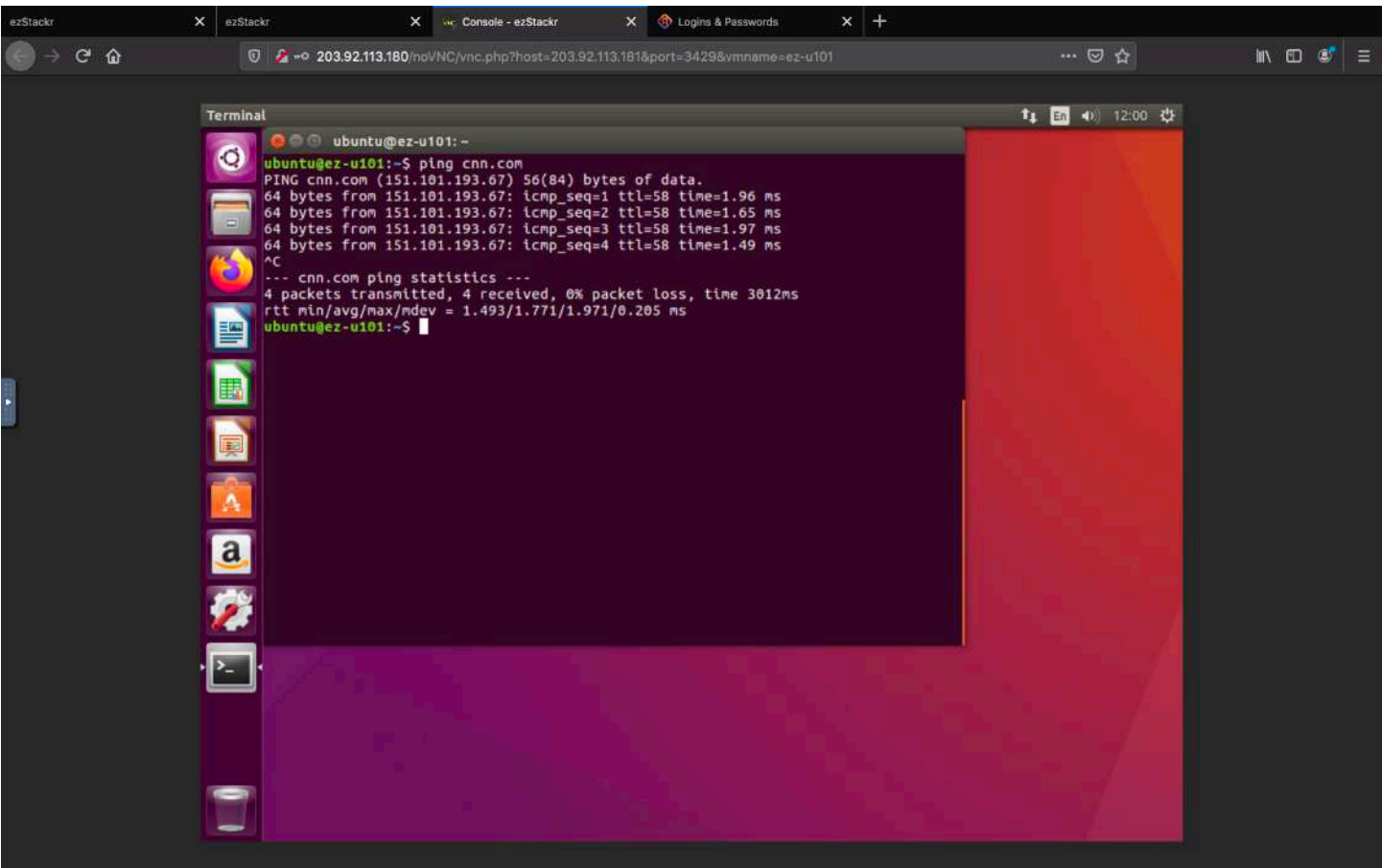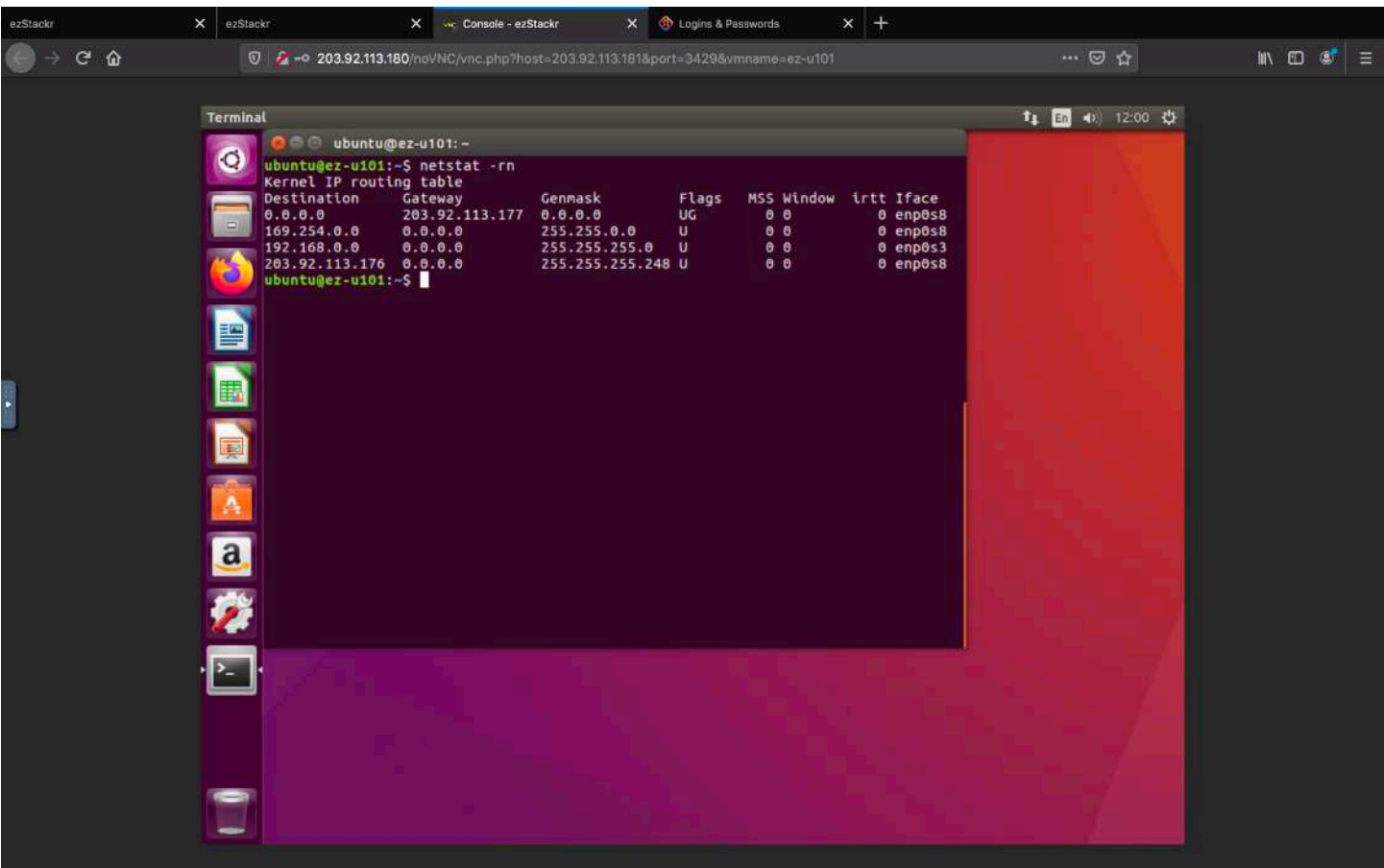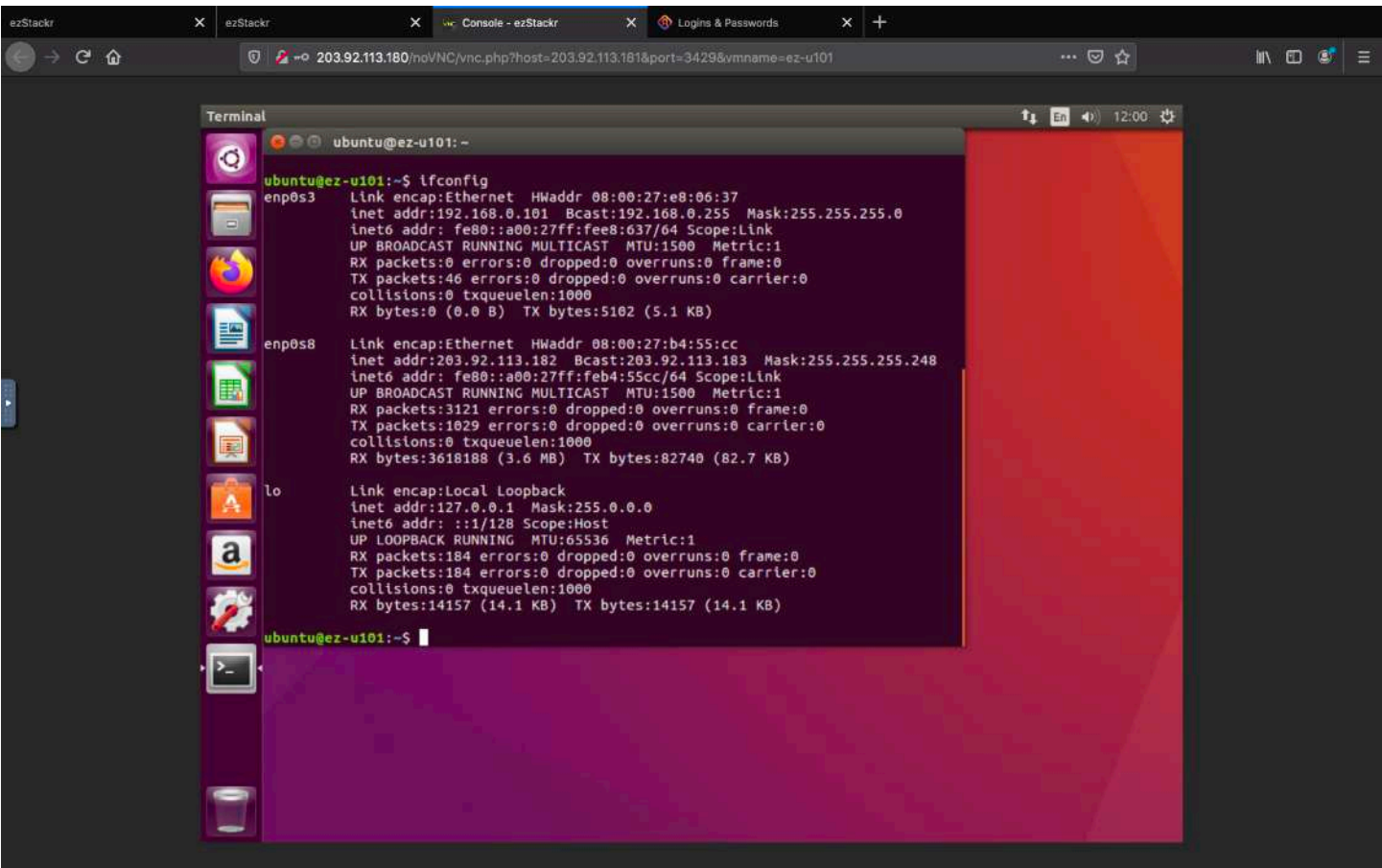
As User: Open up a terminal window on laptop (e.g. on another network) and ping to 203.92.113.182 to show that the server can be accessed from Internet


```
[bobyschan@Bobs-MBP ~ % ping 203.92.113.182
PING 203.92.113.182 (203.92.113.182): 56 data bytes
64 bytes from 203.92.113.182: icmp_seq=0 ttl=52 time=5.657 ms
64 bytes from 203.92.113.182: icmp_seq=1 ttl=52 time=11.274 ms
^C
--- 203.92.113.182 ping statistics ---
3 packets transmitted, 2 packets received, 33.3% packet loss
round-trip min/avg/max/stddev = 5.657/8.465/11.274/2.809 ms
bobyschan@Bobs-MBP ~ %
```
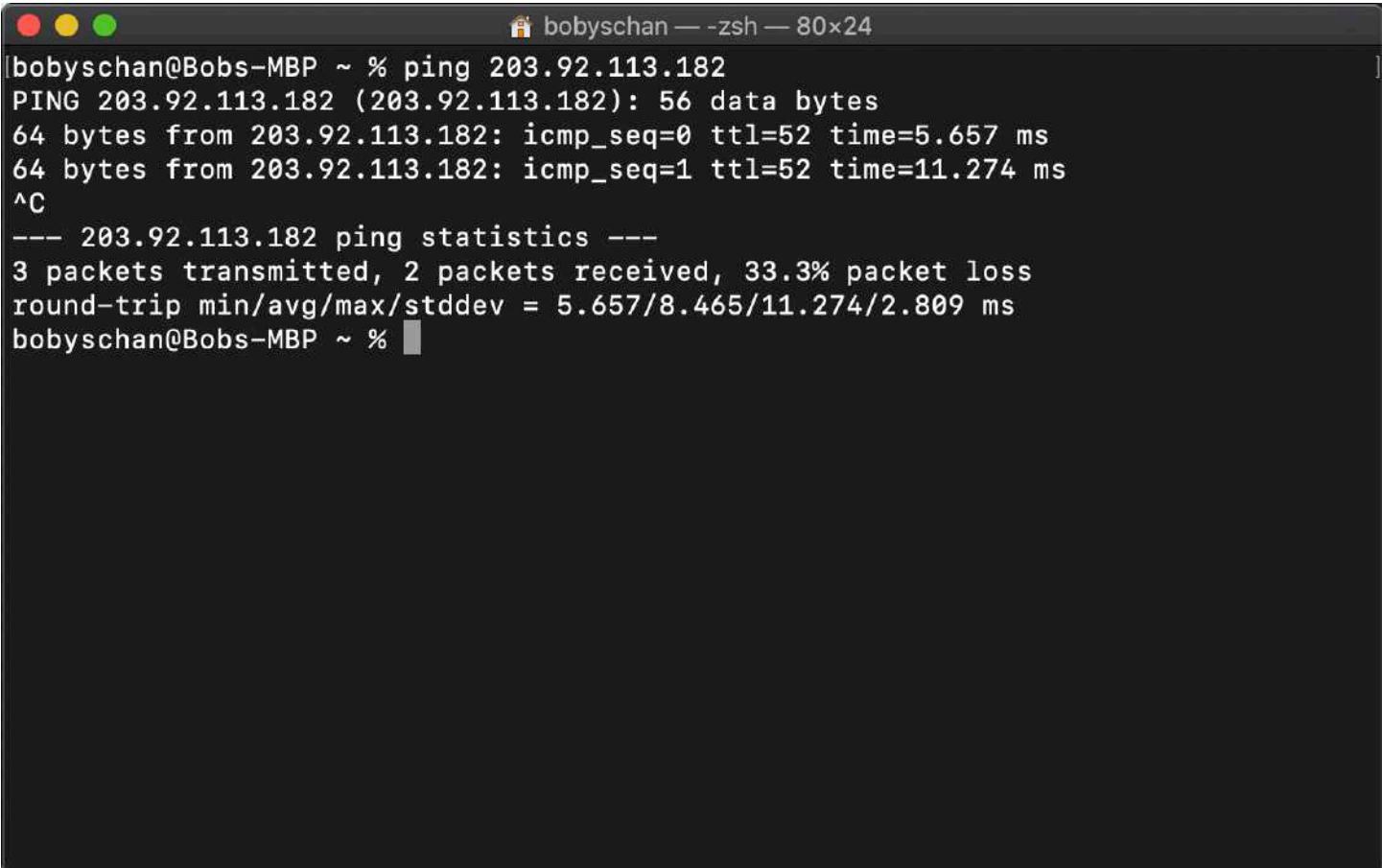
INSTALLING WEB SERVER AND CONNECTING TO WEB SERVER FROM INTERNET
As User: Install Apache2 web server
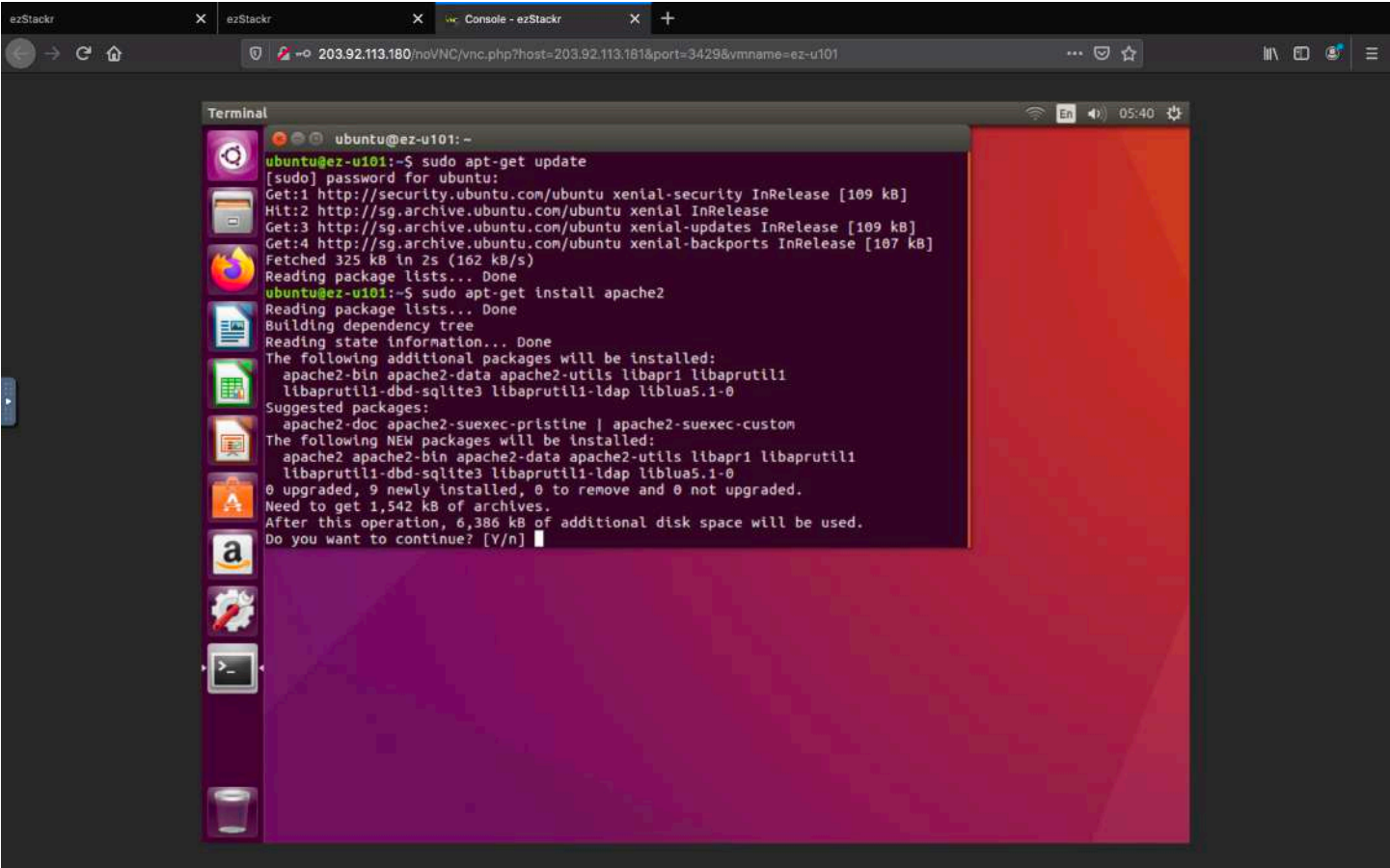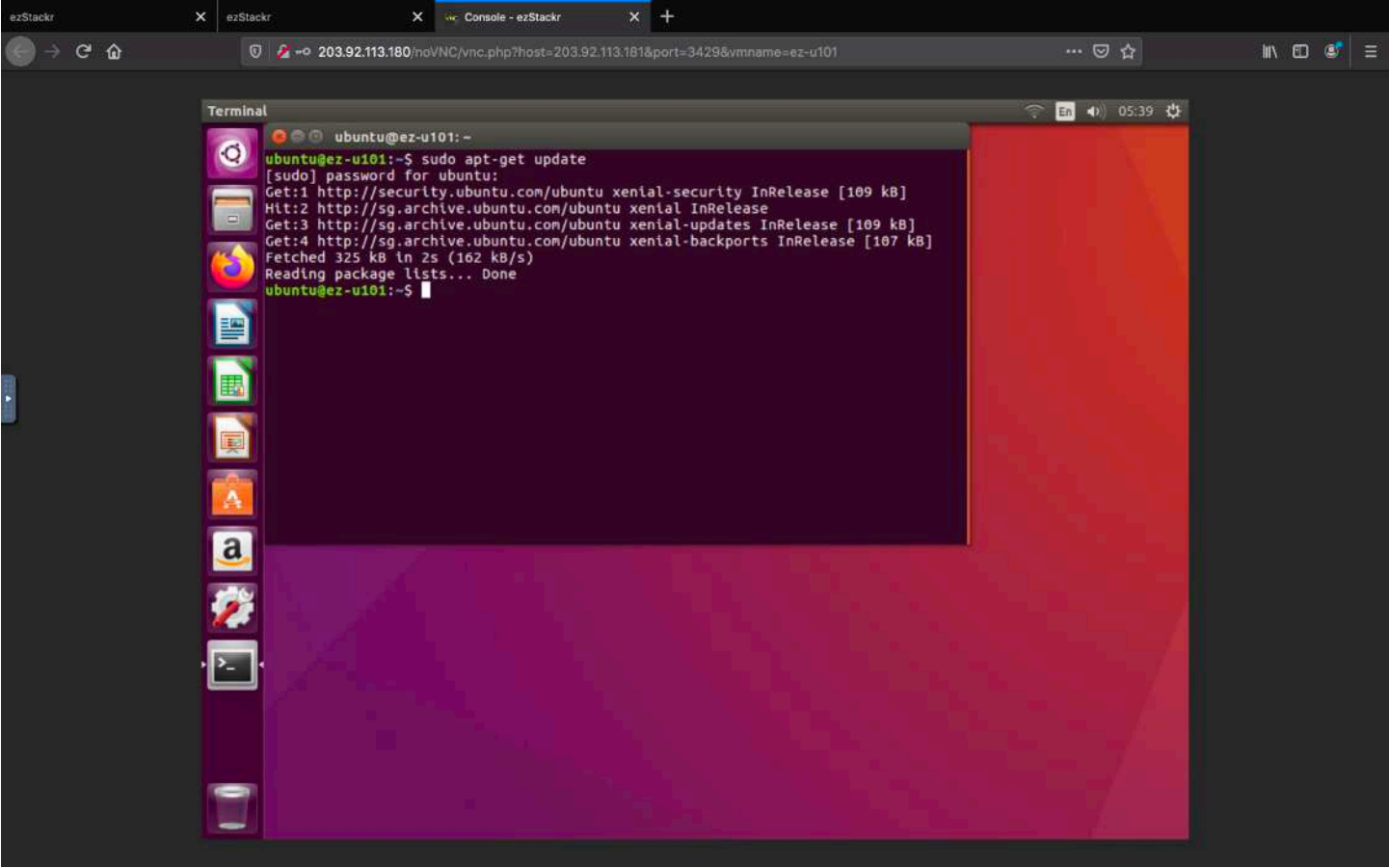
By default, Apache2 listens on both 192.168.0.101 and 203.92.113.182
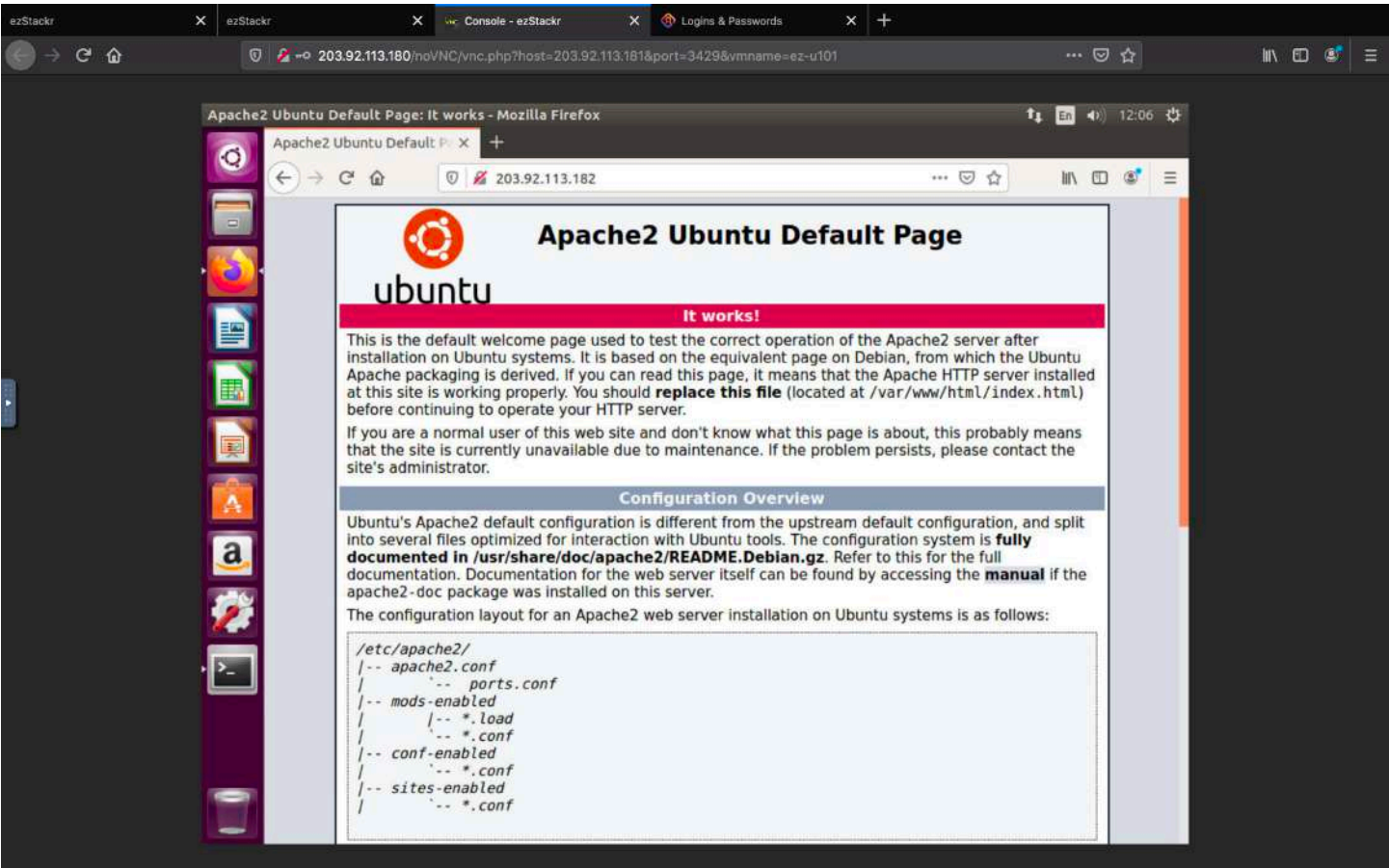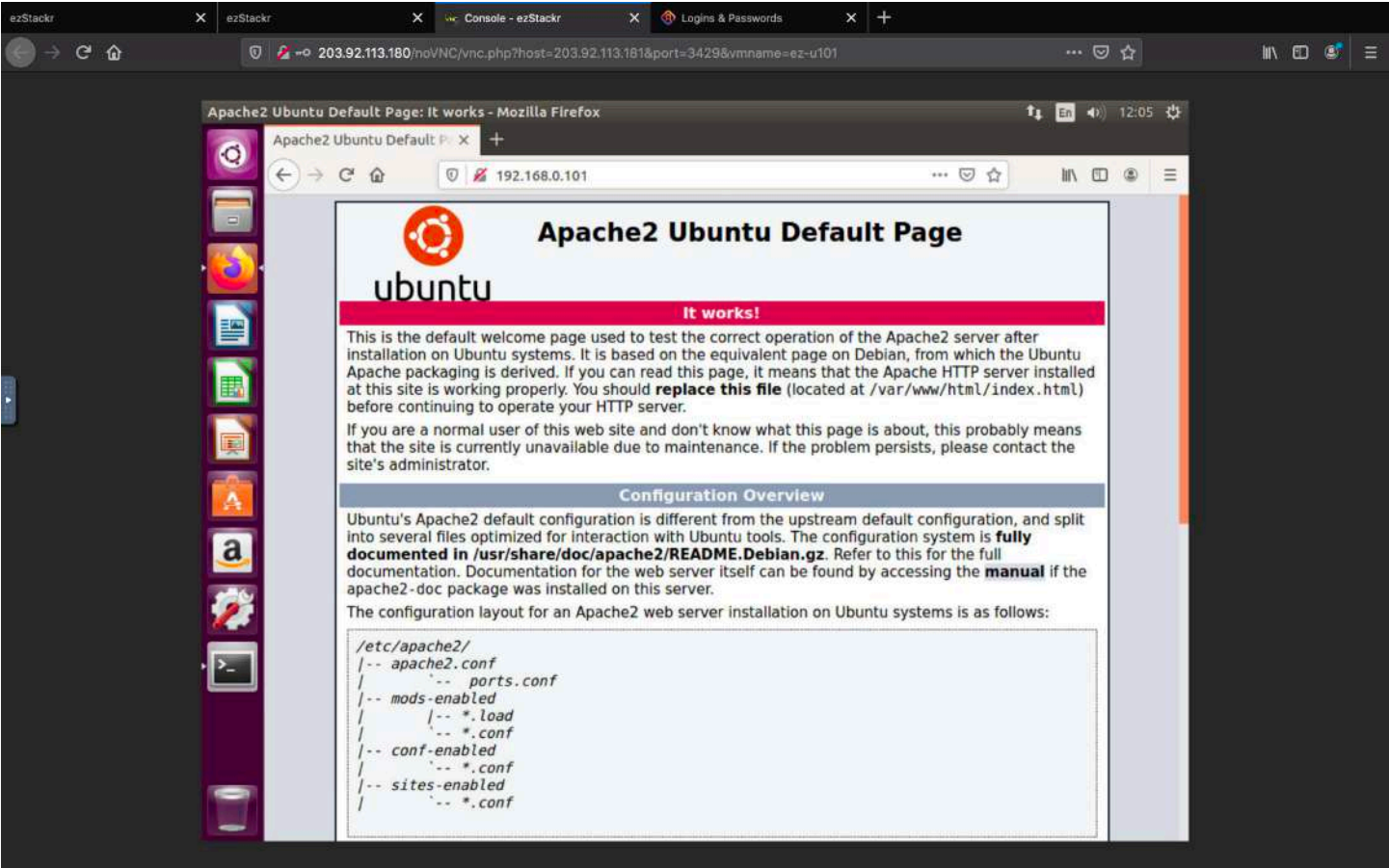
As User: Open up a browser window on laptop (e.g. on another network) and ping to 203.92.113.182 to show that the web server can be accessed from Internet

Apache2 Ubuntu Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at /var/www/html/index.html) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the apache2-doc package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `-- ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

- apache2.conf is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- ports.conf is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the mods-enabled/, conf-enabled/ and sites-enabled/ directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.

END OF TEST
This concludes a successful basic test of Ezstackr

Contact Us

LGA Telecom Pte Ltd
33 Ubi Avenue 3
#08-53 Vertex (Tower A)
Singapore 408868

Tel (65) 6892 2308
Email: sales@lgatelecom.net
Website: www.lgatelecom.net

© 2020 LGA Telecom Pte Ltd. All rights reserved.