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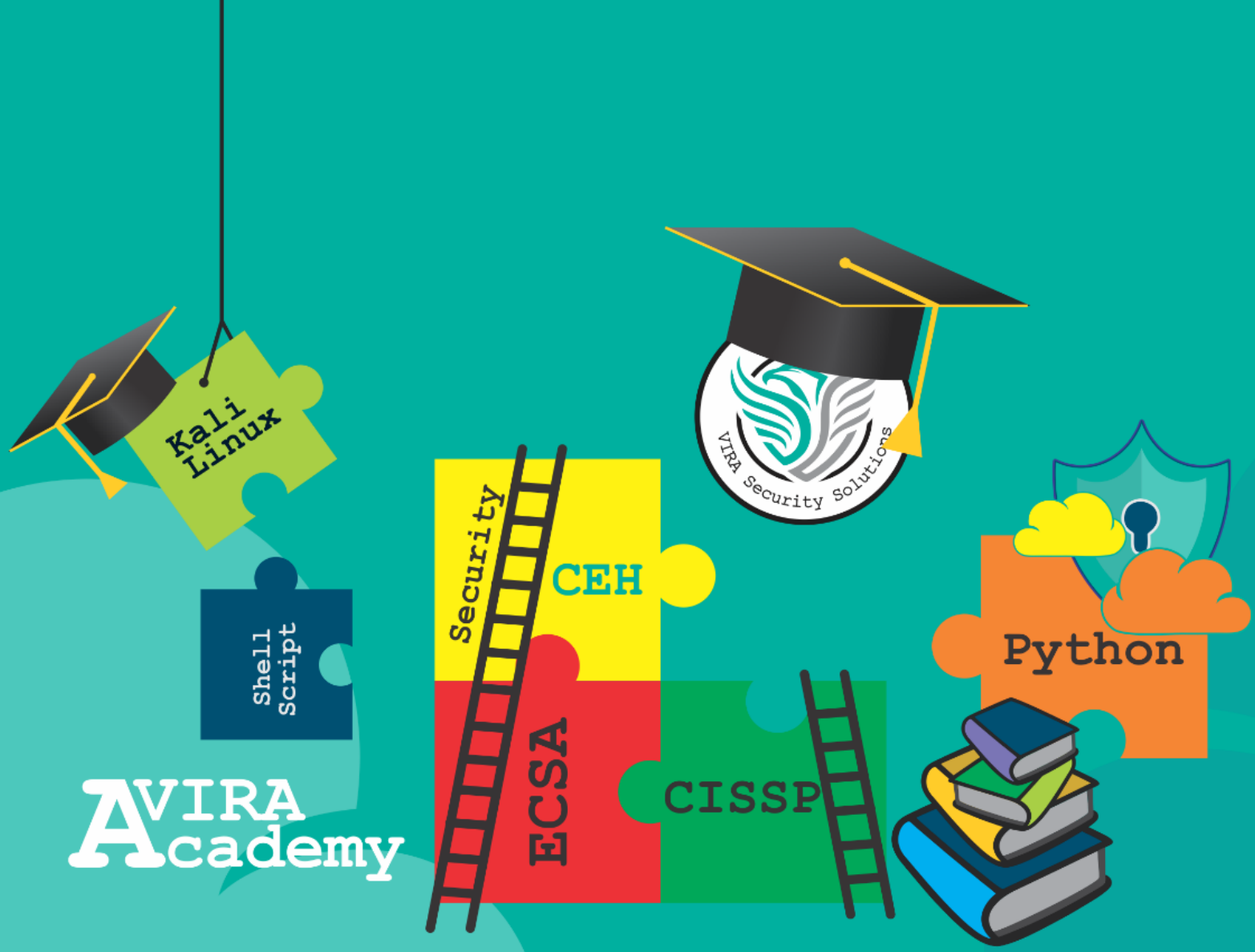
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April 17 2020

VNC-Server installation on CentOS 7

VNC-Server

Introduction

This tutorial is based on CentOS 7.0 server, so you should set up a basic CentOS 7.0 server installation before you continue with this tutorial. The system should have a static IP address. I use 192.168.0.100 as my IP address in this tutorial and server1.virasec.ir as the hostname.

VNC-Server

VNC-server benefits

- ✓ Remote GUI administration makes work easy & convenient.
- ✓ Clipboard sharing between host CentOS server & VNC-client machine.
- ✓ GUI tools can be installed on the host CentOS server to make the administration more powerful
- ✓ Host CentOS server can be administered through any OS having the VNC-client installed.
- ✓ More reliable over SSH graphics.
- ✓ More reliable over RDP connections.

VNC-Server

IP Static

vi /etc/sysconfig/network-scripts/ifcfg-ens33

```
HWADDR=00:02:B2:2A:CB:B4
TYPE=Ethernet
BOOTPROTO=none
# Server IP #
IPADDR=192.168.1.58
# Subnet #
PREFIX=24
# Set default gateway IP #
GATEWAY=192.168.1.1
# Set dns servers #
DNS1=192.168.1.55
DNS2=8.8.8.8
DNS3=8.8.4.4
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
# Disable ipv6 #
IPV6INIT=no
NAME=eth0
DEVICE=eth0
ONBOOT=yes
```

VNC-Server

Install Tigervnc and other dependency Package

You must be root user, and remember if you have graphical user interface you do not need to install Gnome Desktop.

```
yum groupinstall "GNOME Desktop"
yum install tigervnc-server xorg-x11-fonts-Type1
```

VNC-Server

Setup VNC Server Configuration File

Copy the VNC config file “/lib/systemd/system/vncserver@.service” to the “/etc/systemd/system/vncserver@:<Port_Number>.service”.

While Copying the VNC config file we can mention the port number on which we want VNC service to be listen.
In my case I am using port 1 , it means VNC will listen on “5901”. So while Connecting to the VNC server We can specify port number as <IP_Address_VNC_Server:1> or <IP_Address_VNC_Server:5901>

VNC-Server

Setup VNC Server Configuration File

cp /lib/systemd/system/vncserver@.service /etc/systemd/system/vncserver@:1.service

VNC-Server

Update the User's Information in the Config File

vi /etc/systemd/system/vncserver@:1.service

```
[Unit]
Description=Remote desktop service (VNC)
After=syslog.target network.target

[Service]
Type=forking
ExecStartPre=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'
ExecStart=/sbin/runuser -l $USER -c "/usr/bin/vncserver %i -geometry 1280x1024"
PIDFile=/home/ $USER /.vnc/%H%i.pid
ExecStop=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'

[Install]
WantedBy=multi-user.target
```

VNC-Server

Firewall Rule

You must create a firewall rule and open your port you use, just run following commands:

```
firewall-cmd --permanent --zone=public --add-port=5901/tcp
firewall-cmd --reload
```

```
systemctl daemon-reload
systemctl start vncserver@:1
systemctl status vncserver@:1
systemctl enable vncserver@:1
```

VNC-Server

Check status

You can check the status of your process with one of the following commands:

```
ss -tulpn|  grep vnc
or
netstat -tulpn|  grep vnc
```

VNC-Server VNC user management

Create a user:

```
#useradd vira1
#passwd vira1    #set a new password for your user vira1

#su vira1
$vncserver
```

You will require a password to access your desktops.

Password:<--yourvncpassword
Verify:<--yourvncpassword
xauth: file /home/vira1/.Xauthority does not exist

New 'server1.virasec.ir:1 (vira1)' desktop is server1.virasec.ir:1
Creating default startup script /home/vira1/.vnc/xstartup
Starting applications specified in /home/vira1/.vnc/xstartup
Log file is /home/vira1/.vnc/server1.virasec.ir:1.log

VNC-Server

Installing the Desktop Environment and VNC Server

By default, an Ubuntu 18.04 server does not come with a graphical desktop environment or a VNC server installed, so we'll begin by installing those. Specifically, we will install packages for the latest Xfce desktop environment and the TightVNC package available in the official Ubuntu repository.

On your server, update your list of packages:

```
sudo apt update
```

Now install the Xfce desktop environment on your server:

```
sudo apt install xfce4 xfce4-goodies
```

Once that installation completes, install the TightVNC server:

```
sudo apt install tightvncserver
```

VNC-Server

Installing the Desktop Environment and VNC Server

To complete the VNC server's initial configuration after installation, use the vncserver command to set up a secure password and create the initial configuration files:

```
vncserver
```

You'll be prompted to enter and verify a password to access your machine remotely:

```
You will require a password to access your desktops.

Password:
Verify:
```

VNC-Server

Installing the Desktop Environment and VNC Server

The password must be between six and eight characters long. Passwords more than 8 characters will be truncated automatically.
Once you verify the password, you'll have the option to create a a view-only password. Users who log in with the view-only password will not be able to control the VNC instance with their mouse or keyboard. This is a helpful option if you want to demonstrate something to other people using your VNC server, but this isn't required.
The process then creates the necessary default configuration files and connection information for the server:

VNC-Server

Installing the Desktop Environment and VNC Server


```
Would you like to enter a view-only password (y/n)? n
xauth:  file /home/vira1/.Xauthority does not exist

New 'X' desktop is your_hostname:1

Creating default startup script
/home/vira1/.vnc/xstartup
Starting applications specified in
/home/vira1/.vnc/xstartup
Log file is /home/vira1/.vnc/your_hostname:1.log
```

VNC-Server

Configuring the VNC Server

The VNC server needs to know which commands to execute when it starts up. Specifically, VNC needs to know which graphical desktop it should connect to.

These commands are located in a configuration file called xstartup in the .vnc folder under your home directory. The startup script was created when you ran the vncserver in the previous step, but we'll create our own to launch the Xfce desktop.

When VNC is first set up, it launches a default server instance on port 5901. This port is called a display port, and is referred to by VNC as :1. VNC can launch multiple instances on other display ports, like :2, :3, and so on.

Because we are going to be changing how the VNC server is configured, first stop the VNC server instance that is running on port 5901 with the following command:

```
vncserver -kill :1
```

VNC-Server

Configuring the VNC Server

Before you modify the xstartup file, back up the original:

```
mv ~/.vnc/xstartup ~/.vnc/xstartup.bak
```

Now create a new xstartup file and open it in your text editor:

```
nano ~/.vnc/xstartup
```

Commands in this file are executed automatically whenever you start or restart the VNC server. We need VNC to start our desktop environment if it's not already started. Add these commands to the file:

~/.vnc/xstartup

```
#!/bin/bash
xrdb $HOME/.Xresources
startxfce4 &
```

VNC-Server

Configuring the VNC Server

The first command in the file, xrdb $HOME/.Xresources, tells VNC's GUI framework to read the server user's .Xresources file. .Xresources is where a user can make changes to certain settings of the graphical desktop, like terminal colors, cursor themes, and font rendering. The second command tells the server to launch Xfce, which is where you will find all of the graphical software that you need to comfortably manage your server.

To ensure that the VNC server will be able to use this new startup file properly, we'll need to make it executable.

sudo chmod +x ~/.vnc/xstartup

Now, restart the VNC server.

vncserver

VNC-Server

Connecting the VNC Desktop Securely

VNC itself doesn't use secure protocols when connecting. We'll use an SSH tunnel to connect securely to our server, and then tell our VNC client to use that tunnel rather than making a direct connection.

Create an SSH connection on your local computer that securely forwards to the localhost connection for VNC. You can do this via the terminal on Linux or macOS with the following command:

```
ssh -L 5901:127.0.0.1:5901 -C -N -l vira1 your_server_ip
```

```
ssh -L 5901:127.0.0.1:5901 -C -N -l vira1 192.168.1.59
```

The -L switch specifies the port bindings. In this case we're binding port 5901 of the remote connection to port 5901 on your local machine. The -C switch enables compression, while the -N switch tells ssh that we don't want to execute a remote command. The -l switch specifies the remote login name.

VNC-Server

Running VNC as a System Service

Next, we'll set up the VNC server as a systemd service so we can start, stop, and restart it as needed, like any other service. This will also ensure that VNC starts up when your server reboots.

First, create a new unit file called /etc/systemd/system/vncserver@.service using your favorite text editor:

```
sudo nano /etc/systemd/system/vncserver@.service
```

VNC-Server

Running VNC as a System Service

```
[Unit]
Description=Start TightVNC server at startup
After=syslog.target network.target

[Service]
Type=forking
User=vira1
Group=vira1
WorkingDirectory=/home/vira1

PIDFile=/home/vira1/.vnc/%H:%i.pid
ExecStartPre=-/usr/bin/vncserver -kill :%i > /dev/null 2>&1
ExecStart=/usr/bin/vncserver -depth 24 -geometry 1280x800 :%i
ExecStop=/usr/bin/vncserver -kill :%i

[Install]
WantedBy=multi-user.target
```

VNC-Server

Running VNC as a System Service

The ExecStartPre command stops VNC if it's already running. The ExecStart command starts VNC and sets the color depth to 24-bit color with a resolution of 1280x800. You can modify these startup options as well to meet your needs.

Save and close the file.

Next, make the system aware of the new unit file.

```
sudo systemctl daemon-reload
```

Enable the unit file

```
sudo systemctl enable vncserver@1.service
```

VNC-Server

Running VNC as a System Service

Then start it as you would start any other systemd service.

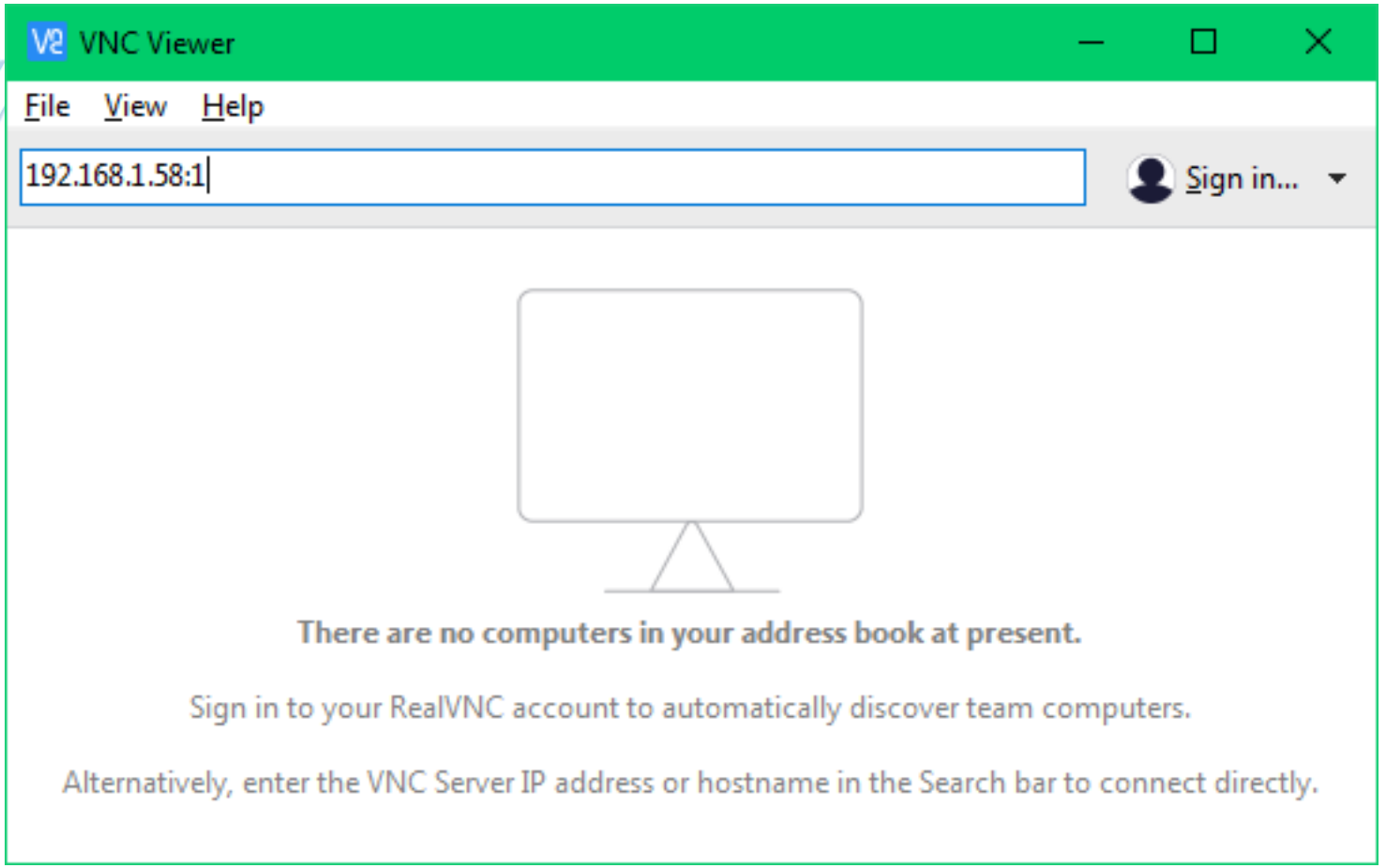
```
sudo systemctl start vncserver@1
```

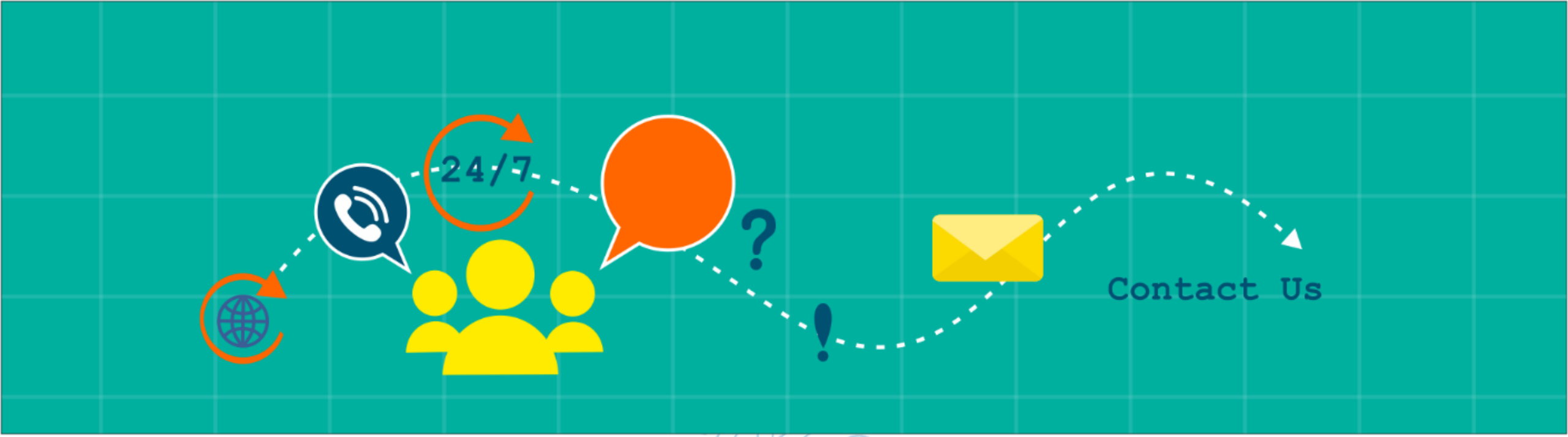
You can verify that it started with this command:

```
sudo systemctl status vncserver@1
```

VNC-Server

Connect to vnc server with vnc viewer





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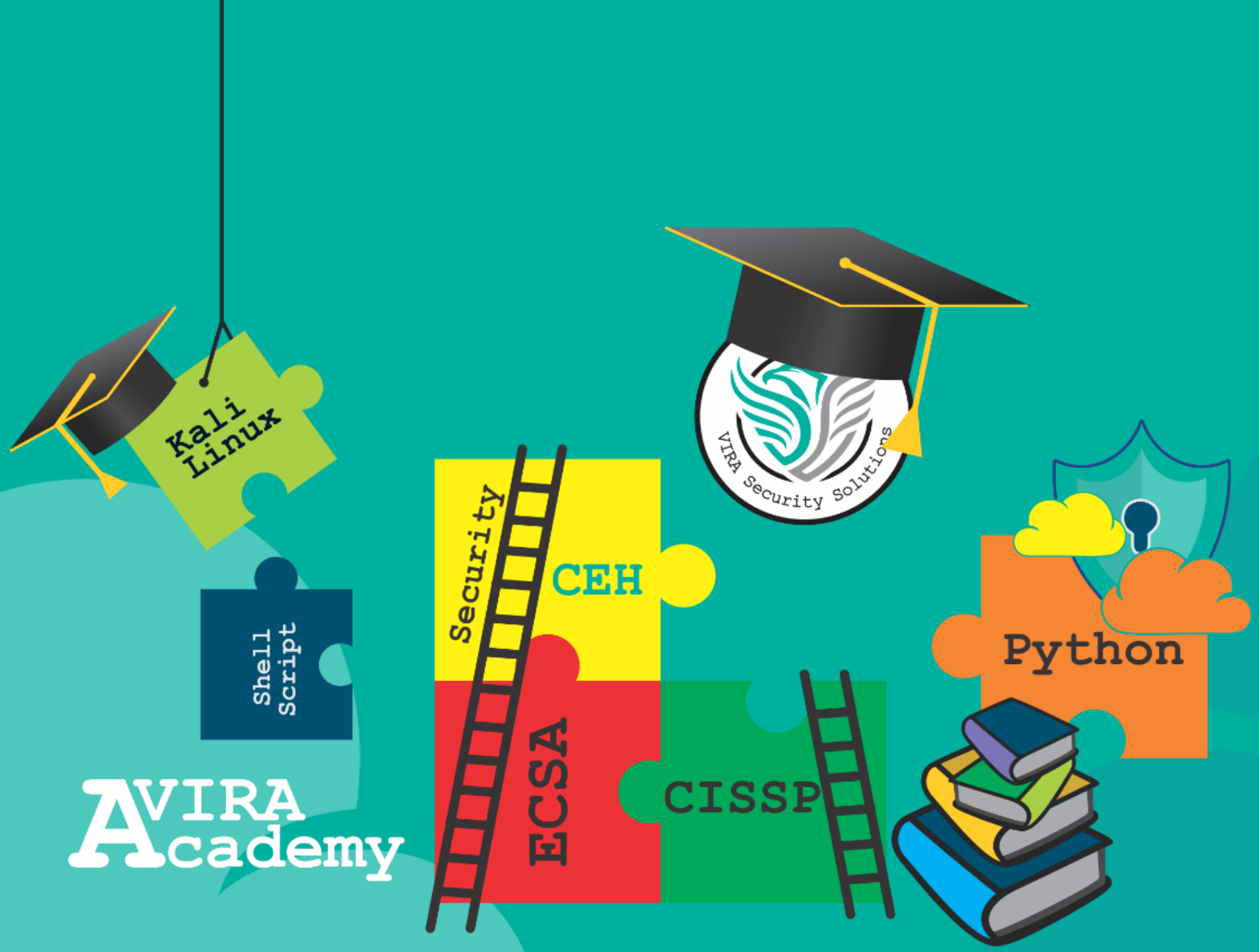
کد پستی: ۱۶۶۸۸۳۸۸۰۳

شماره تماس: ۰۹۱۲۵۷۹۲۶۴۱-۰۲۱۲۲۹۸۱۰۲۷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