Maxat Akbanov's blog

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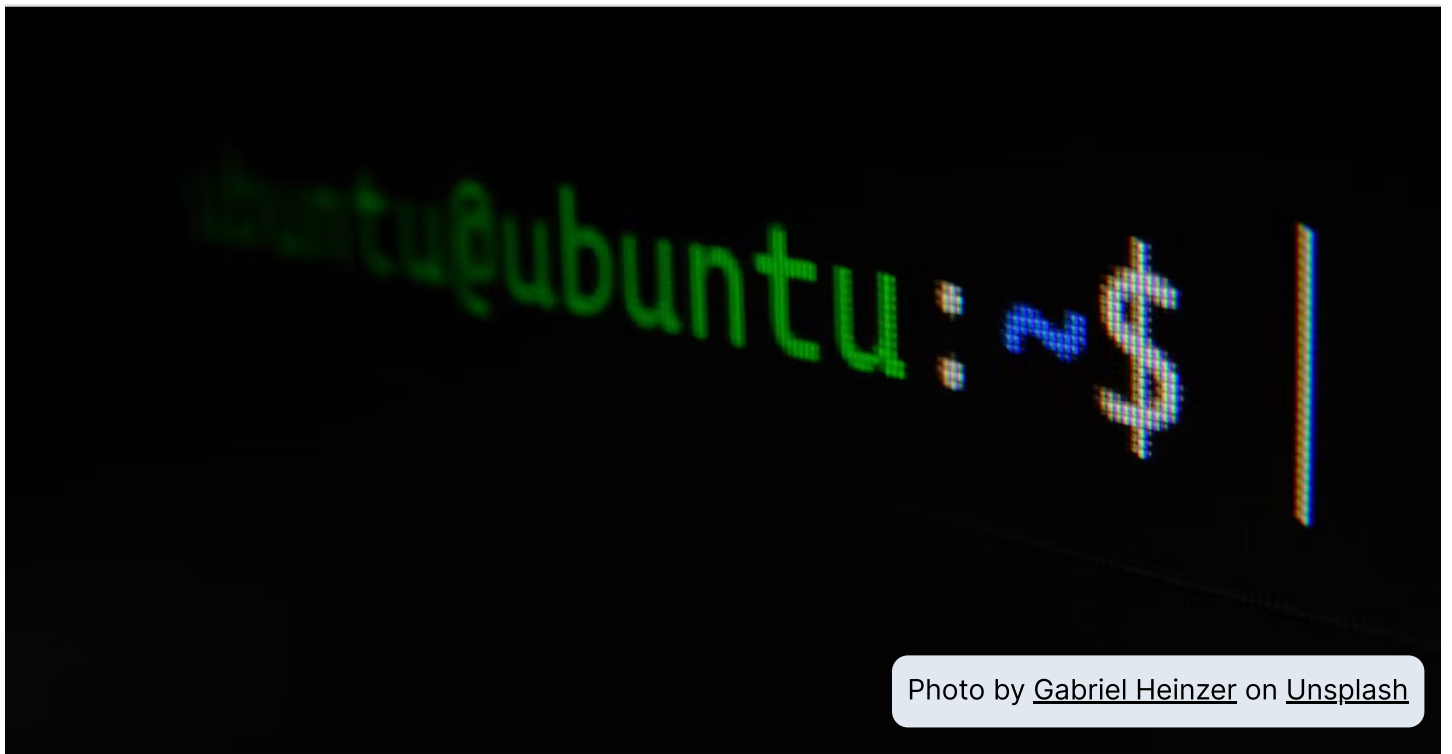

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How to create a custom Linux service via systemd

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What is systemd and systemctl?

`systemd` is a Linux **initialization system** and **service manager**. `systemd` provides a logging daemon and other tools and utilities to help with common system administration tasks.

Its primary component is a "system and service manager" — an <u>init</u> system used to <u>bootstrap</u> <u>user space</u> and manage <u>user processes</u>.

`systemctl` - is a **controlling interface and inspection tool** for the systemd. You use this tool to perform administrative tasks and interact with systemd.

Prerequisites:

For demo purposes use the following Vagrantfile to create an Ubuntu-based machine:

```
COPY

Vagrant.configure("2") do |config|

  # VM machine configuration
  config.vm.provider :virtualbox do |v|
    v.customize ["modifyvm", :id, "--memory", 2048]
    # v.customize ["modifyvm", :id, "--cpus", 2]
  end


  # Ubuntu worker node
  config.vm.define "ubuntu" do |ubuntu|
    ubuntu.vm.box = "ubuntu/bionic64"
    ubuntu.vm.hostname = "ubuntu"
  end

end
```

Basic Vagrant commands:

1. To start the machine:

```
vagrant up
```

2. To reload (halt and up):

```
vagrant reload
```

3. To check VM deployment use:

```
vagrant global-status --prune
```

4. To ssh into the machine use:

```
vagrant ssh ubuntu
```

Create custom Linux service:

1. As a demo use the following script `custom_service.sh` Bash script file:

```
DATE=`date '+%Y-%m-%d %H:%M:%S'`
echo "Custom servi                    " | systemd-cat -p info

while :
```

```
do
    echo "Looping...";
    sleep 30;
done
```

The script logs the time and runs every 30 seconds

2. Move the script to `/usr/bin/` and make it executable:

```
COPY

sudo mv custom_service.sh /usr/bin/custom_service.sh
sudo chmod +x /usr/bin/custom_service.sh
```

3. Create a **Unit file** to define a systemd service:

```
COPY

[Unit]
Description=Custom systemd service.

[Service]
Type=simple
ExecStart=/bin/bash /usr/bin/custom_service.sh

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

4. Move the unit file to `/etc/systemd/system` and give it permissions:

```
COPY

sudo mv <service_name>.service /etc/systemd/system/<service_name
sudo chmod 644 /et                              vice_name>.service
```

5. Start the service:

```
COPY
sudo systemctl start <service_name>
```

6. Check the status of the service:

```
COPY
sudo systemctl status <service_name>
```

7. To enable service on machine startup when the system boots use:

```
COPY
sudo systemctl enable <service_name>
```

8. To stop and restart service use:

```
COPY
sudo systemctl stop <service_name>
sudo systemctl restart <service_name>
```

References:

1. What is systemd?

2. systemctl Commands: Restart, Reload, and Stop Service

3. Vagrant templates

4. Systemd service option