
LOCAL GAME SERVER INSTALL

Eulogy-quest
custom EQEmulator
Everquest client



Client on Windows OS

Server on Debian 12 on VirtualBox VM

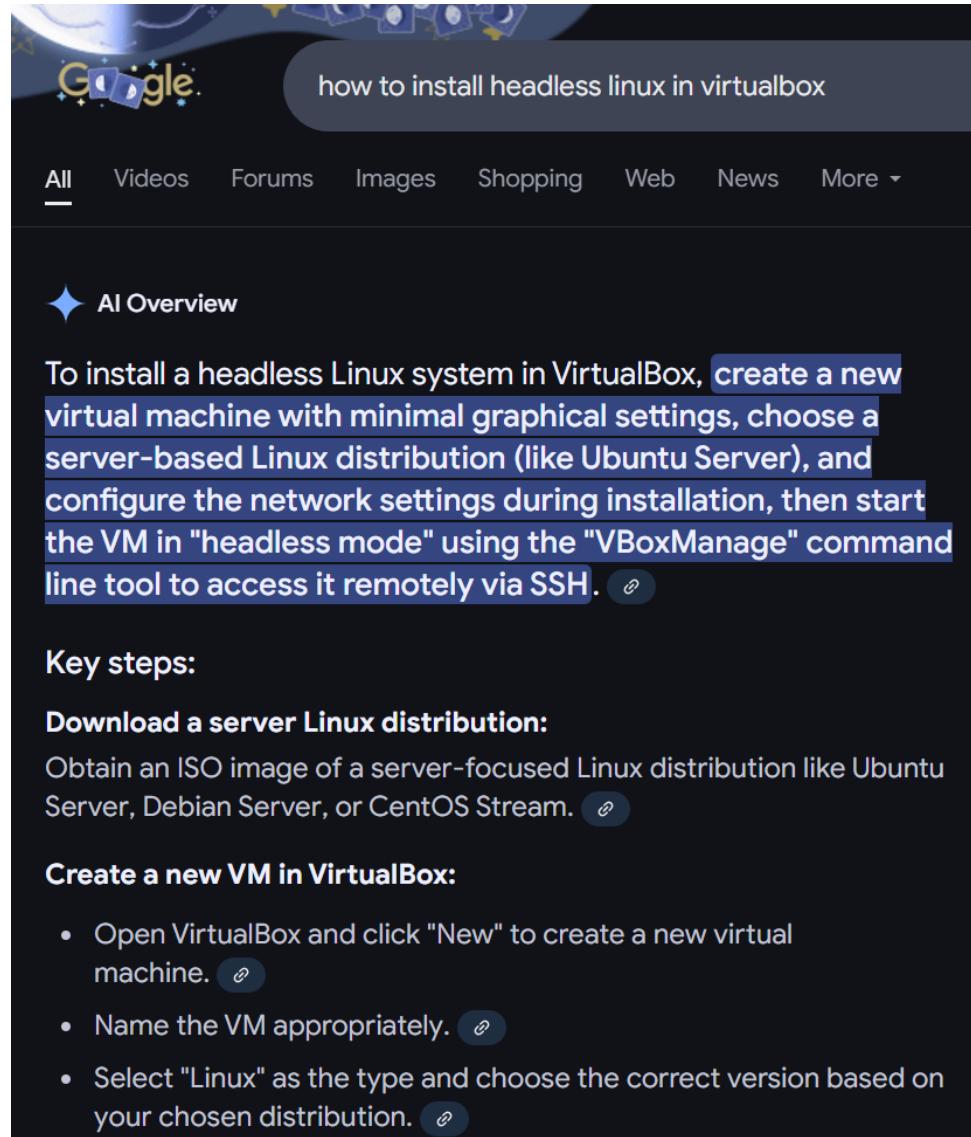
Local Access to the VM using WSL

Local Game Client access to the Local Game Server

WSL

- <https://learn.microsoft.com/en-us/windows/wsl/install>
-

RUN DEBIAN 12 ON WSL, CONFIGURE AS HEADLESS (1)



RUN DEBIAN 12 ON WSL, CONFIGURE AS HEADLESS (2)

Configure VM settings:

- **Memory allocation:** Assign enough RAM for your server needs. [🔗](#)
- **Storage:** Create a virtual hard disk and attach the downloaded Linux ISO image. [🔗](#)
- **Network settings:**
 - Select a network adapter and set it to "Attached to: NAT" for internet access during installation. [🔗](#)
 - Assign a static IP address if required for your network configuration. [🔗](#)

Disable unnecessary graphical components:

- Go to "System" settings in the VM configuration. [🔗](#)
- Under "Display," set the video memory to a minimal amount and deselect any unnecessary graphics acceleration features. [🔗](#)

RUN DEBIAN 12 ON WSL, CONFIGURE AS HEADLESS (3)

Install the Linux distribution:

- Start the VM and boot from the Linux ISO. [🔗](#)
- Follow the on-screen instructions during the installation process, selecting the "Server" or "Minimal" installation option. [🔗](#)
- Configure your hostname, root password, and network settings. [🔗](#)

Access the headless VM:

- **Command line method:**
 - Open a terminal window on your host machine. [🔗](#)
 - Use the command `VBoxManage startvm "VM_Name" --type headless` to start the VM in headless mode. [🔗](#)
- **Remote connection:**
 - Once the VM is running, connect to it using SSH with the configured IP address and credentials. [🔗](#)

RUN DEBIAN 12 ON WSL, CONFIGURE AS HEADLESS (4)

Key points to remember:

No graphical display:

A headless VM does not have a visual interface, so all interaction will be done through the command line. 

Remote access:

You'll need to use SSH or another remote access method to manage the server. 

Minimal installation:

Opt for a server-focused Linux distribution to minimize unnecessary packages. 

DOWNLOAD VIRTUALBOX

The screenshot shows the homepage of the VirtualBox website at virtualbox.org. The page features a large banner with the text "Powerful open source virtualization" and "For personal and enterprise use". Below the banner, a detailed description explains that VirtualBox is a general-purpose full virtualization software for x86_64 hardware, supporting macOS/Arm in addition to x86_64. To the right, a "Get Started" section includes a prominent blue "Download" button. A small note below the button states: "Download VirtualBox binaries and platform packages". The top navigation bar includes links for Home, Download, Documentation, Community, and a search bar.

virtualbox.org

University of Nevad... Eulogy B-Tree Visualization QuickAccess dataScience

Home Download Documentation Community Search:

VirtualBox

Powerful open source virtualization

For personal and enterprise use

VirtualBox is a general-purpose full virtualization software for x86_64 hardware (with version 7.1 additionally for macOS/Arm), targeted at laptop, desktop, server and embedded use.

Get Started

Download

Download VirtualBox binaries and platform packages

VIRTUALBOX INSTALL: ACCEPT AND DOWNLOAD

The screenshot shows the official VirtualBox download page. At the top, there's a navigation bar with links for Home, Download, Documentation, Community, and a search bar. The main heading is "Download VirtualBox". Below it, a sub-section titled "VirtualBox Platform Packages" lists various host operating systems: Windows hosts, macOS / Intel hosts, macOS / Apple Silicon hosts, Linux distributions, Solaris hosts, and Solaris 11 IPS hosts. It also notes that platform packages are released under the terms of the GPL version 3. To the right, another section for the "VirtualBox Extension Pack" is shown, which is a Personal Use and Educational License (PUEL) version. This section includes a "FAQ" link, "PUEL License FAQ" and "PUEL License Text" buttons, and a prominent "Accept and download" button. Below these sections are links for "Change Log", "File Checksums", "User Guide", "VirtualBox SDK", "Source Code", and "Previous Releases".

VirtualBox

Home Download Documentation Community Search:

Download VirtualBox

The VirtualBox Extension Pack is available for personal and educational use on this page under the PUEL license. The VirtualBox Extension Pack is also available under commercial or enterprise terms. By downloading, you agree to the terms and conditions of the respective license.

VirtualBox Platform Packages

VirtualBox 7.1.6 platform packages

- Windows hosts
- macOS / Intel hosts
- macOS / Apple Silicon hosts
- Linux distributions
- Solaris hosts
- Solaris 11 IPS hosts

Platform packages are released under the terms of the [GPL version 3](#)

VirtualBox Extension Pack

VirtualBox 7.1.6 Extension Pack

This VirtualBox Extension Pack Personal Use and Educational License governs your access to and use of the VirtualBox Extension Pack. It does not apply to the VirtualBox base package and/or its source code, which are licensed under version 3 of the GNU General Public License "GPL".

See our [FAQ](#) for answers to common questions.

PUEL License FAQ **PUEL License Text** **Accept and download**

Change Log [List of changes](#)

File Checksums [SHA256 checksums](#) [MD5 checksums](#)

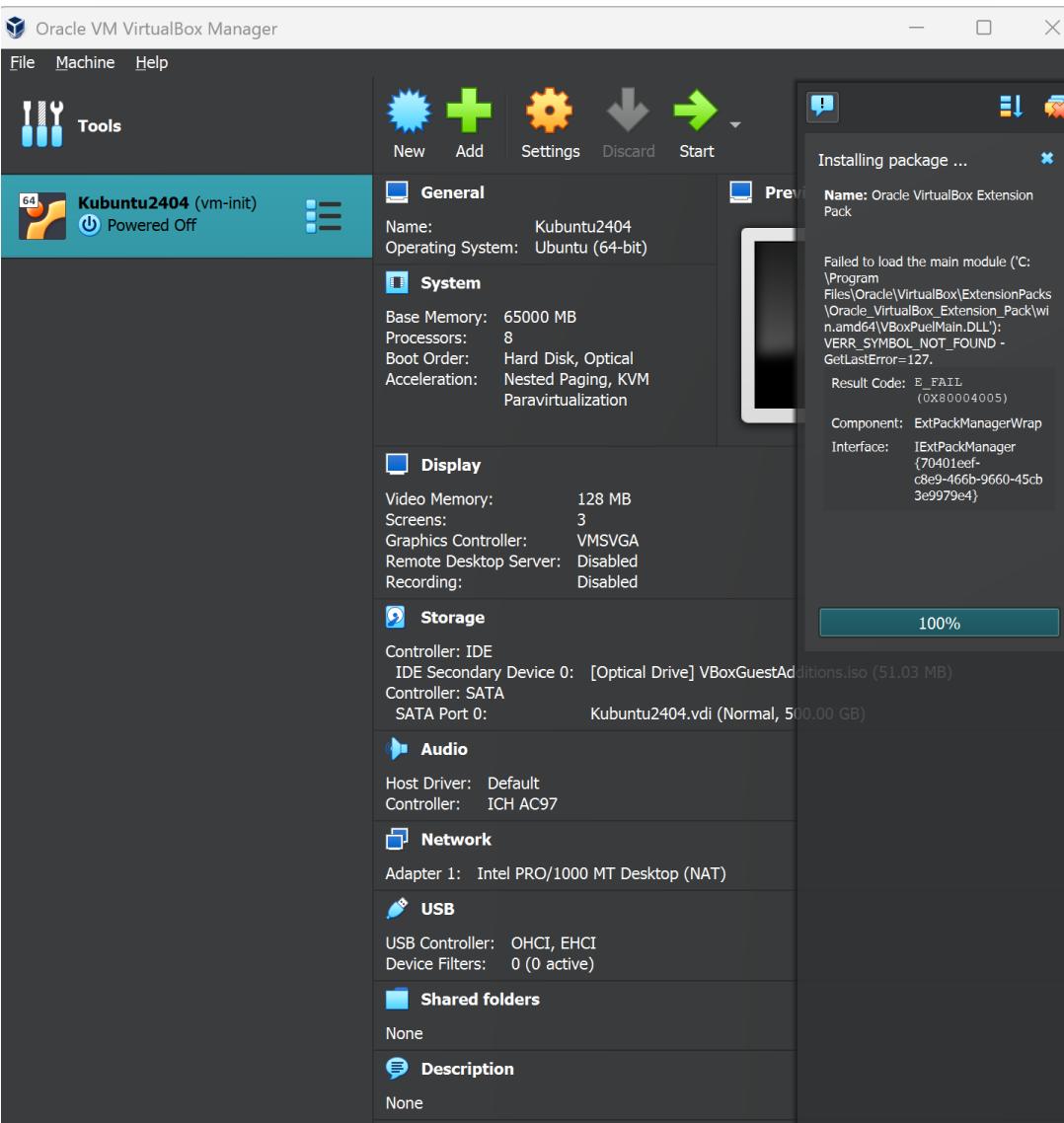
User Guide [User Guide \(PDF\)](#) [User Guide \(HTML\)](#)

VirtualBox SDK [VirtualBox 7.1.6 Software Developer Kit \(SDK\)](#)

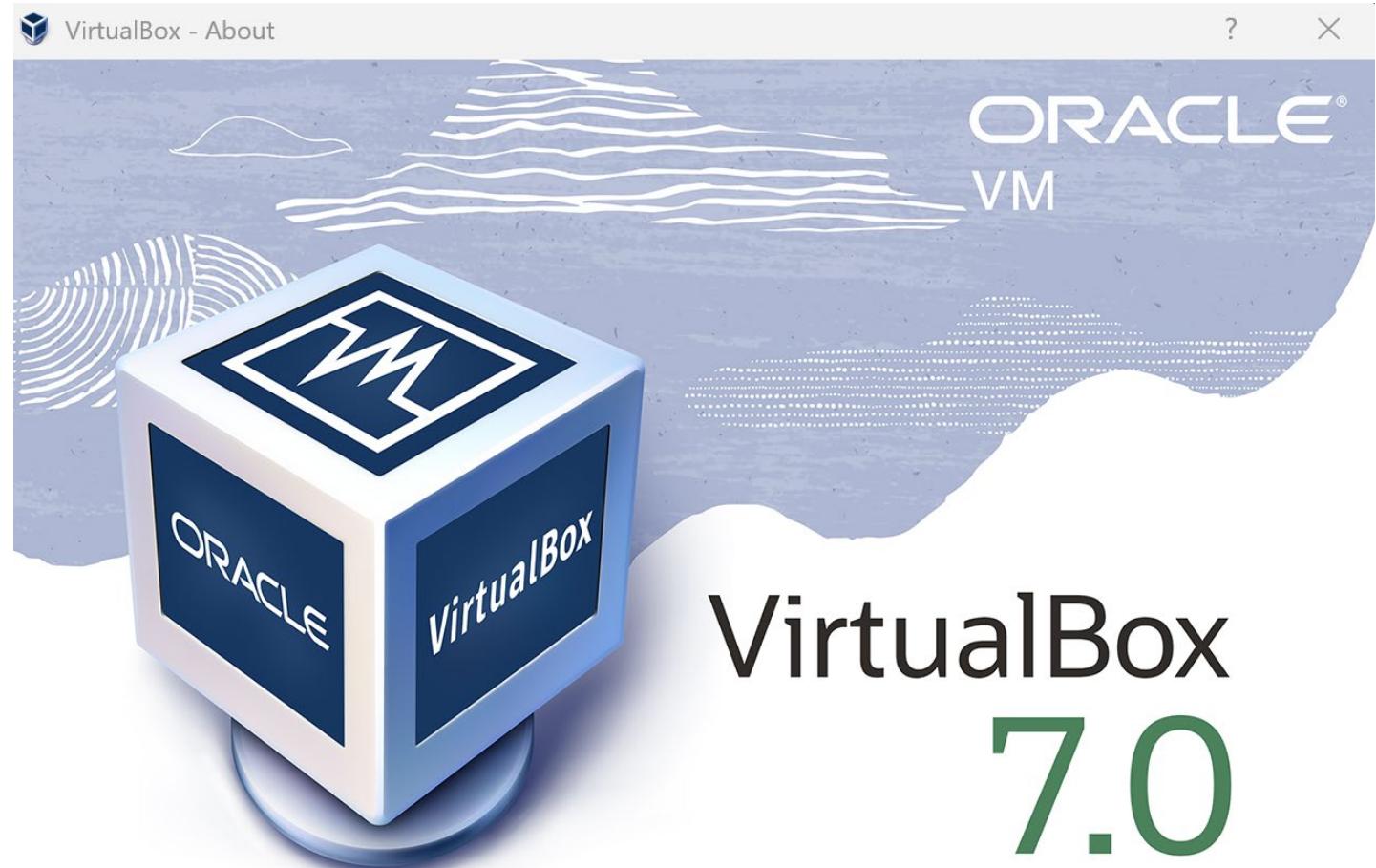
Source Code [VirtualBox 7.1.6 Source Code](#)

Previous Releases [VirtualBox older builds](#)

PROBLEM WITH DOWNLOADING THE EXTENSION PACK.



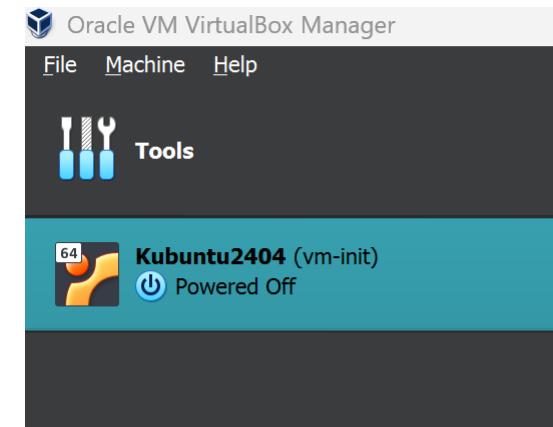
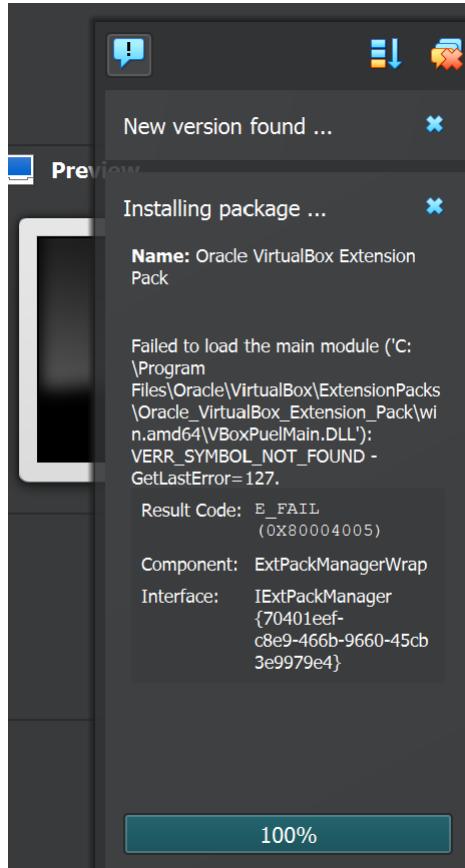
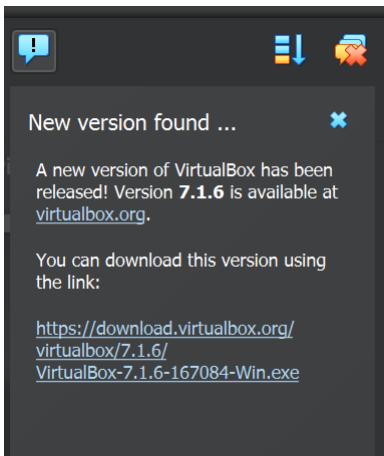
MAKE SURE
YOUR
VIRTUALBOX
IS UP-TO-
DATE FIRST.



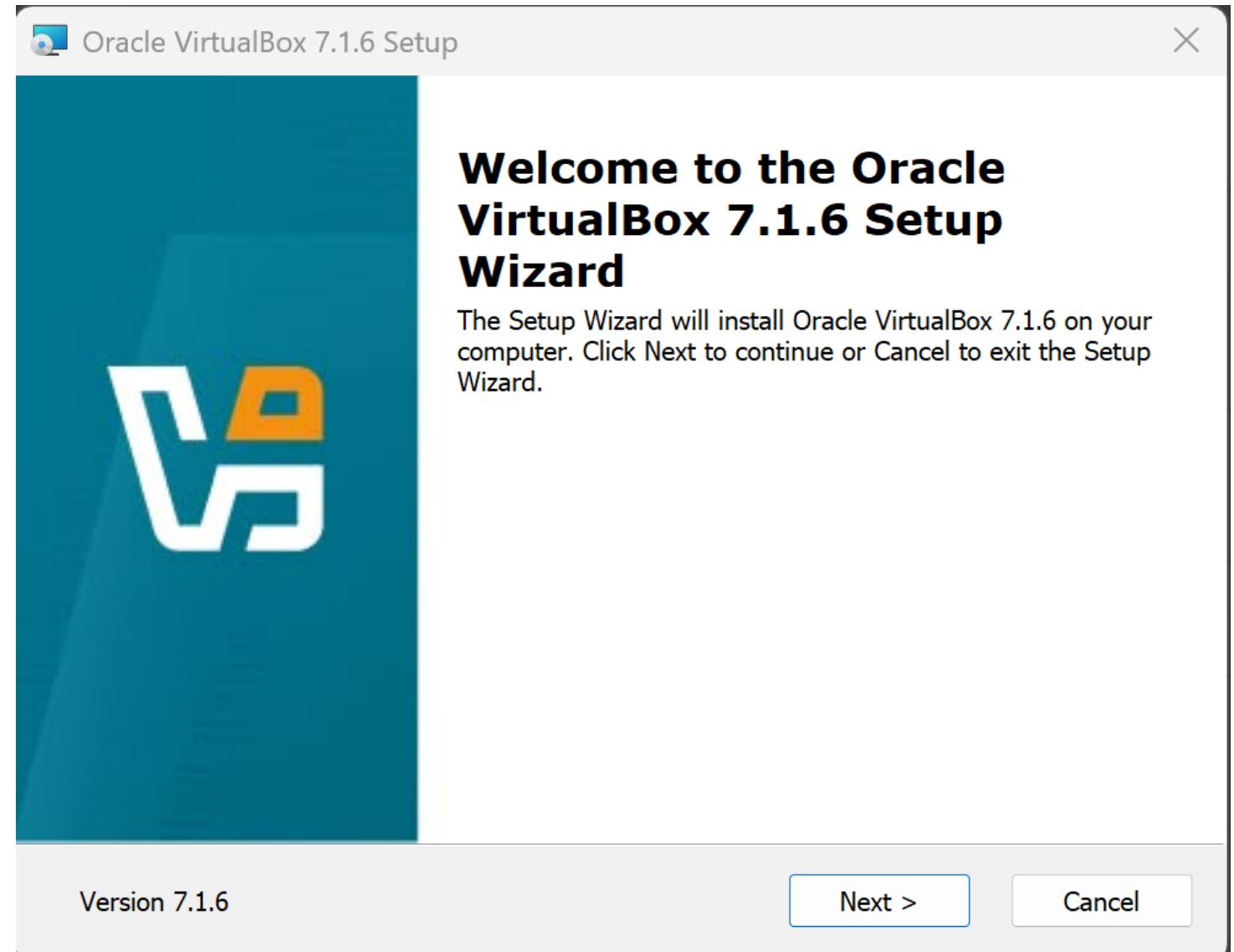
VirtualBox Graphical User Interface
Version 7.0.20 r163906 (Qt5.15.2)
Copyright © 2024 Oracle and/or its affiliates.

Close

FILE>CHECK FOR UPDATES

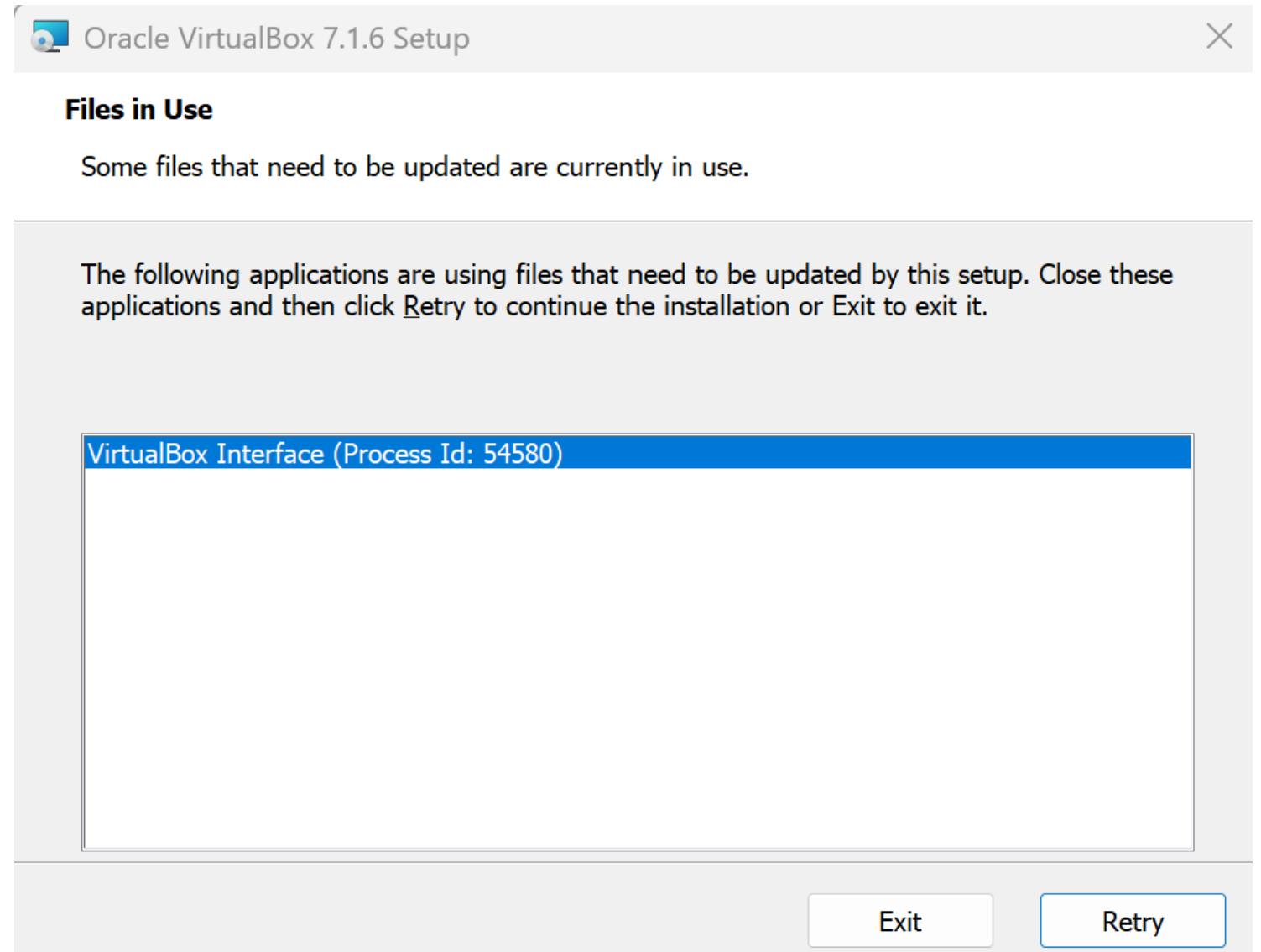


INSTALL THE LATEST VIRTUALBOX

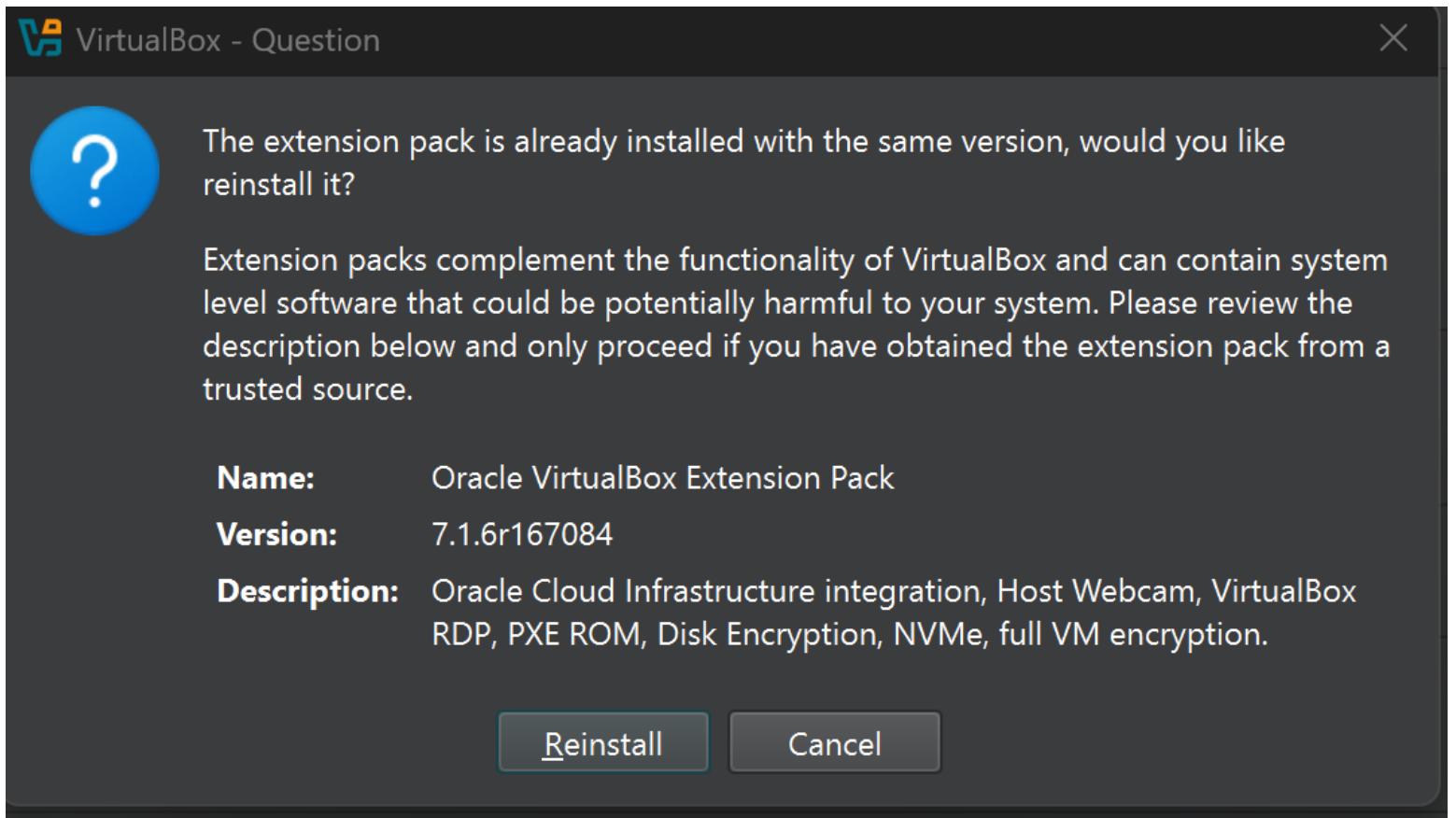


CLOSED VIRTUALBOX BUT THERE IS STILL A RUNNING INSTANCE?

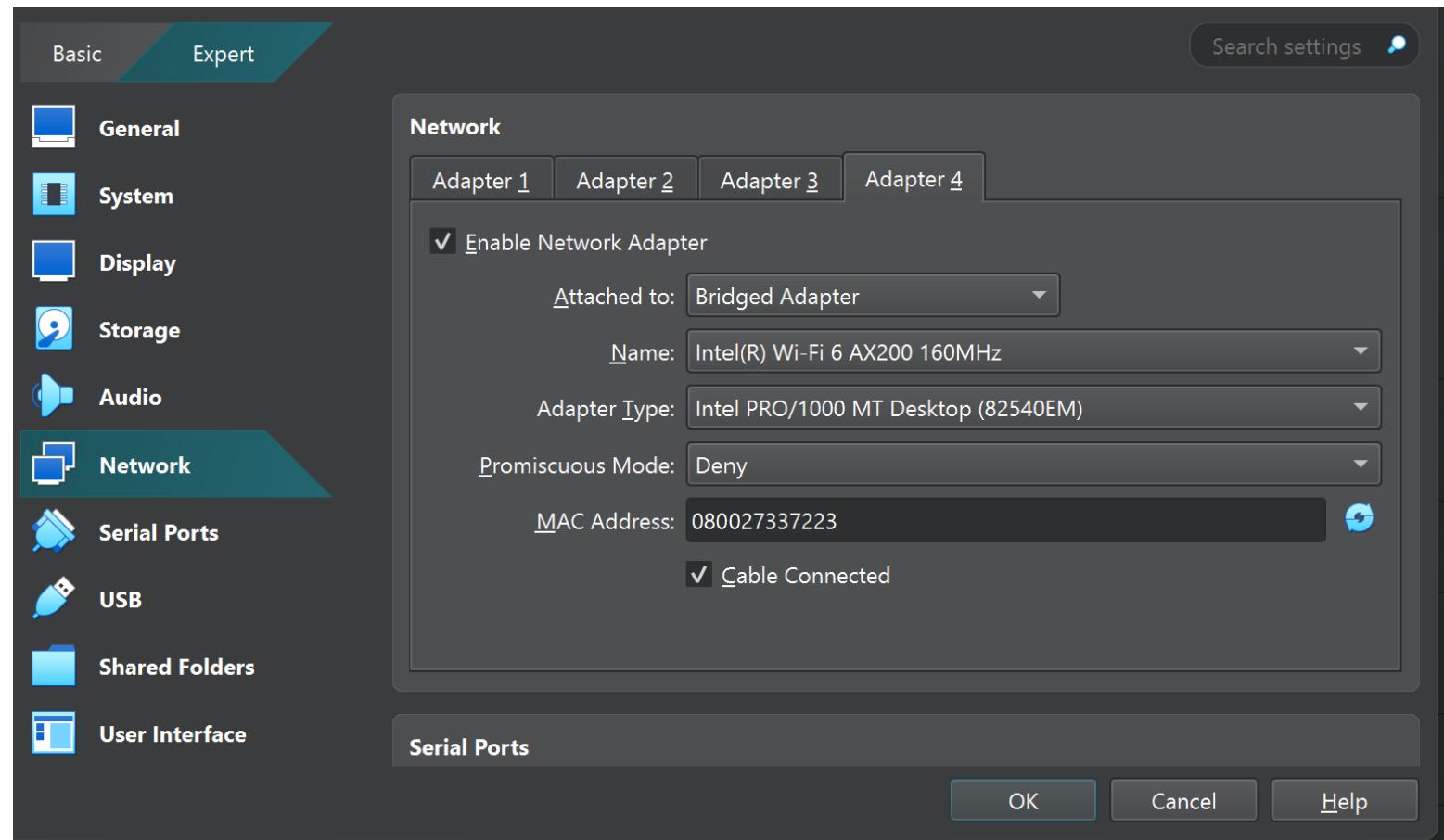
ANSWER:
JUST RESTART
THE COMPUTER
AND TRY THE
DOWNLOADER
AGAIN.



ALREADY
HAVE THE
EXTENSION
PACK? GOOD.
JUST HIT
CANCEL.



USE BRIDGED NETWORKING



WHY BRIDGED?

If I want to run a server from home in a virtual machine, serving a service to the host computer, which type of networking should I use if the guest needs its own internet connection?

If you want your virtual machine (guest) to have its own internet connection while also serving a service to the host computer, the best networking mode to use is "Bridged Networking."

Why Bridged Networking?

- The guest VM gets its own IP address on the same network as the host.
- The VM can access the internet directly, just like a physical machine on the network.
- The host can communicate with the guest using its assigned IP address.
- Other devices on the same network (if needed) can also access the guest.

Alternative Option: NAT with Port Forwarding

If you don't want the guest to be directly exposed on the network but still need internet access, you can use **NAT (Network Address Translation)** and set up **port forwarding** to allow the host to access the service.

- **NAT:** The guest can access the internet, but it's hidden behind the host's IP.
- **Port Forwarding:** You can configure the VM software (e.g., VirtualBox, VMware) to forward specific ports from the host to the guest.

Best Choice for Your Needs

- **Bridged Networking** → Best if the VM needs a fully independent presence on the network.
- **NAT with Port Forwarding** → Better for security but requires manual port configuration.

Let me know if you need help configuring either! 

COX WON'T ALLOW SERVERS FROM HOME

which networking type provides a wan ip for the guest?

To assign a **WAN IP** (a public IP from your ISP) to a virtual machine, the guest would need to be directly exposed to the internet, similar to how your physical router or modem assigns public IPs. However, most ISPs only provide a single public IP per household unless you request additional IPs.

Networking Type for a WAN IP on a Guest VM

1. **Bridged Networking (with ISP Support for Multiple Public IPs)**
 - If your ISP provides multiple public IPs, you can set your VM to use **Bridged Networking** so that it directly obtains a public IP from your ISP's DHCP server.
 - The VM will act like any other device connected directly to your modem.
 - Check with your ISP if they offer additional IPs.

2. Direct Connection to the Modem

- If you connect your VM directly to the modem (bypassing the router) and your ISP issues a public IP dynamically, the VM will receive a WAN IP.
- This is risky because the VM will be **fully exposed to the internet** without router-based firewall protection.

OK, SO NO PUBLIC WAN IP ADDRESS FOR OUR LOCAL SERVER IF HOSTED IN A VM

Why This is Uncommon?

Most ISPs only assign one public IP per household and use NAT to provide private IPs for local devices. If you are behind a **home router**, the router usually gets the WAN IP, and all devices (including VMs) will receive **private LAN IPs**.

Alternative: Use a VPS Instead

If you need a publicly accessible server, instead of trying to get a WAN IP on a home VM, consider:

- Renting a **VPS (Virtual Private Server)** from a cloud provider like AWS, DigitalOcean, or Linode.
- Setting up a **VPN or reverse proxy** from your home VM to expose services securely.

Would you like help setting up port forwarding or a dynamic DNS solution if you're trying to host a service from home? 



Ask anything



Search

Deep research

...



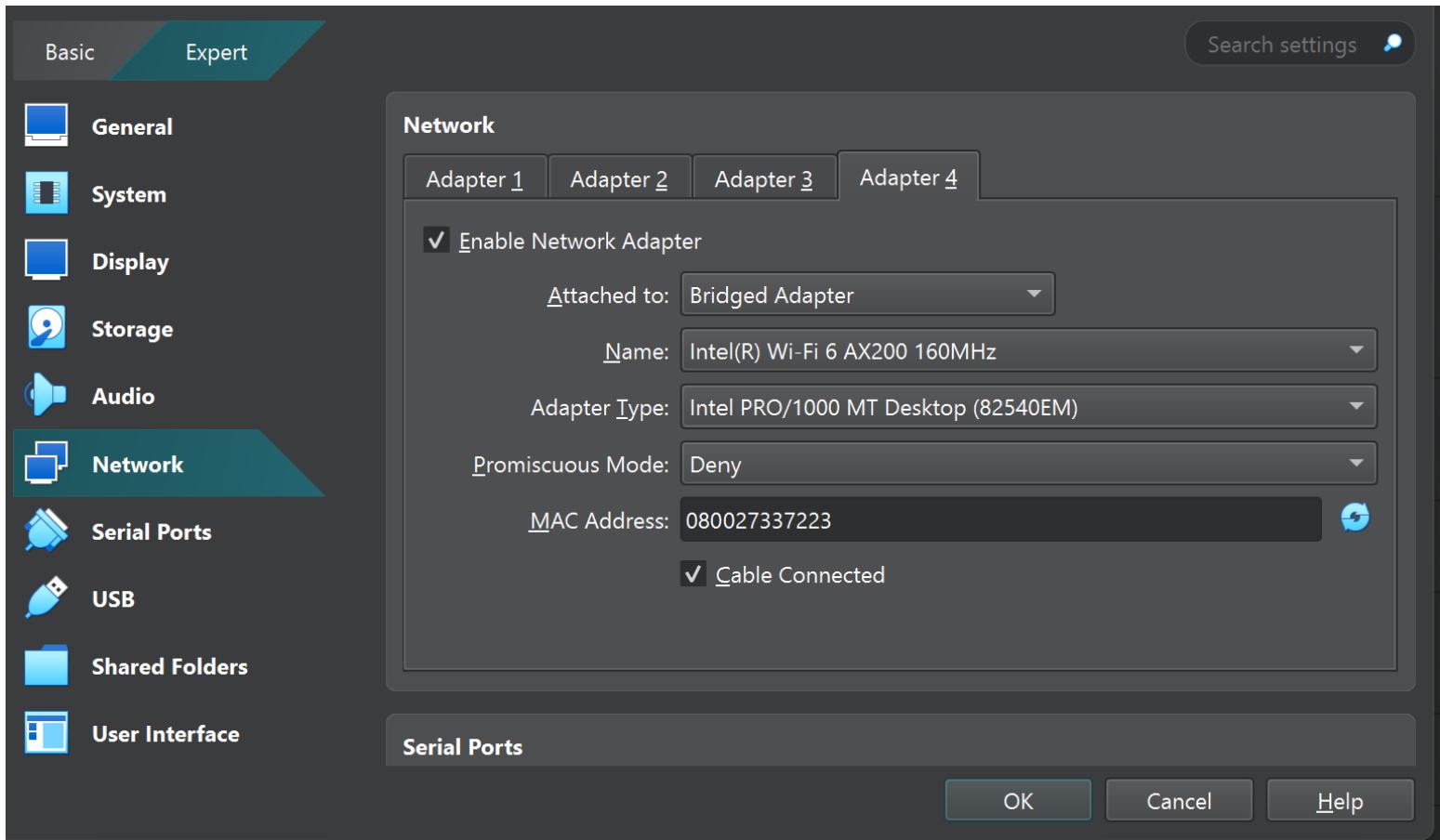
THIS IS WHAT
EDUROAM IS
DOING, BUT IN
AN EXTRA
STRICT
MANNER. COX
BLOCK ON
STEROIDS.

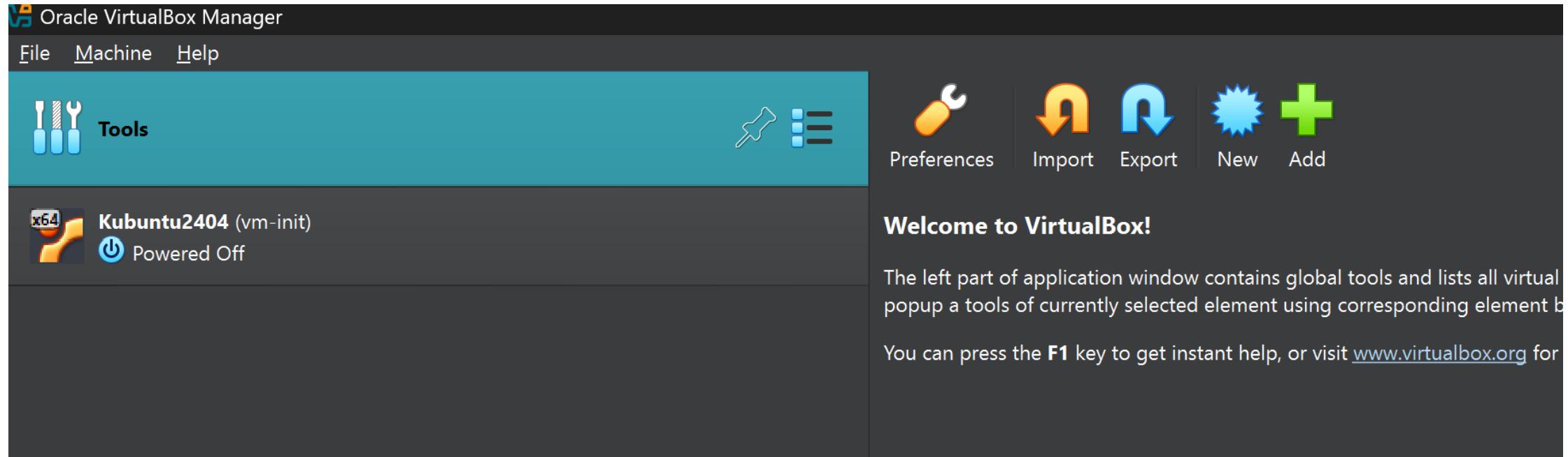
The guest VM itself is even unable to get an ip.

So, the guest VM cannot communicate whatsoever.

I've a ticket submitted to UNLV IT, but we'll see.

SO, WE'RE USING BRIDGED NETWORKING AT HOME (NOT AT UNLV)



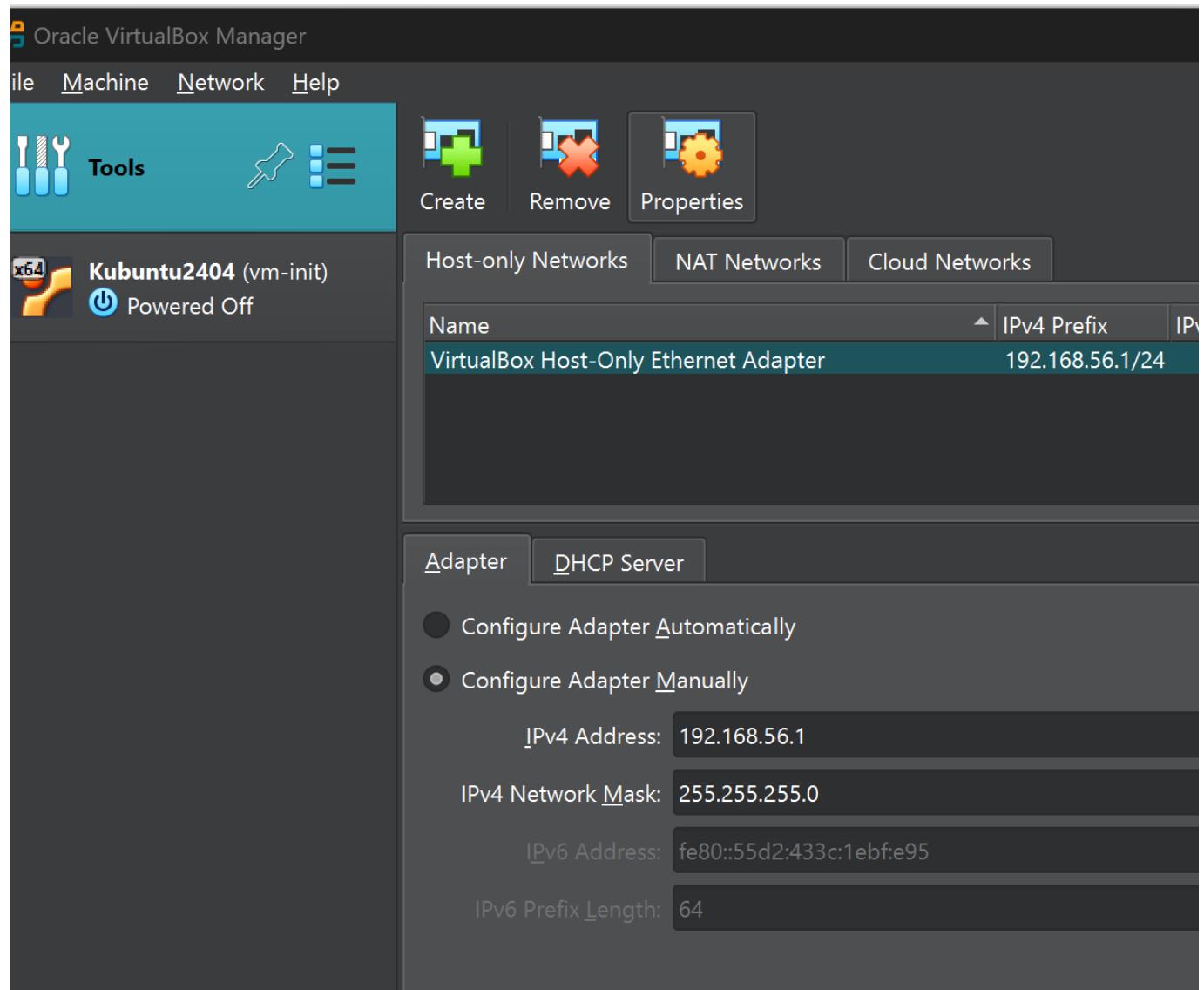


NETWORK PROPERTIES

- Click the ‘hamburger’ next to the pin.
- Then click “Network”.

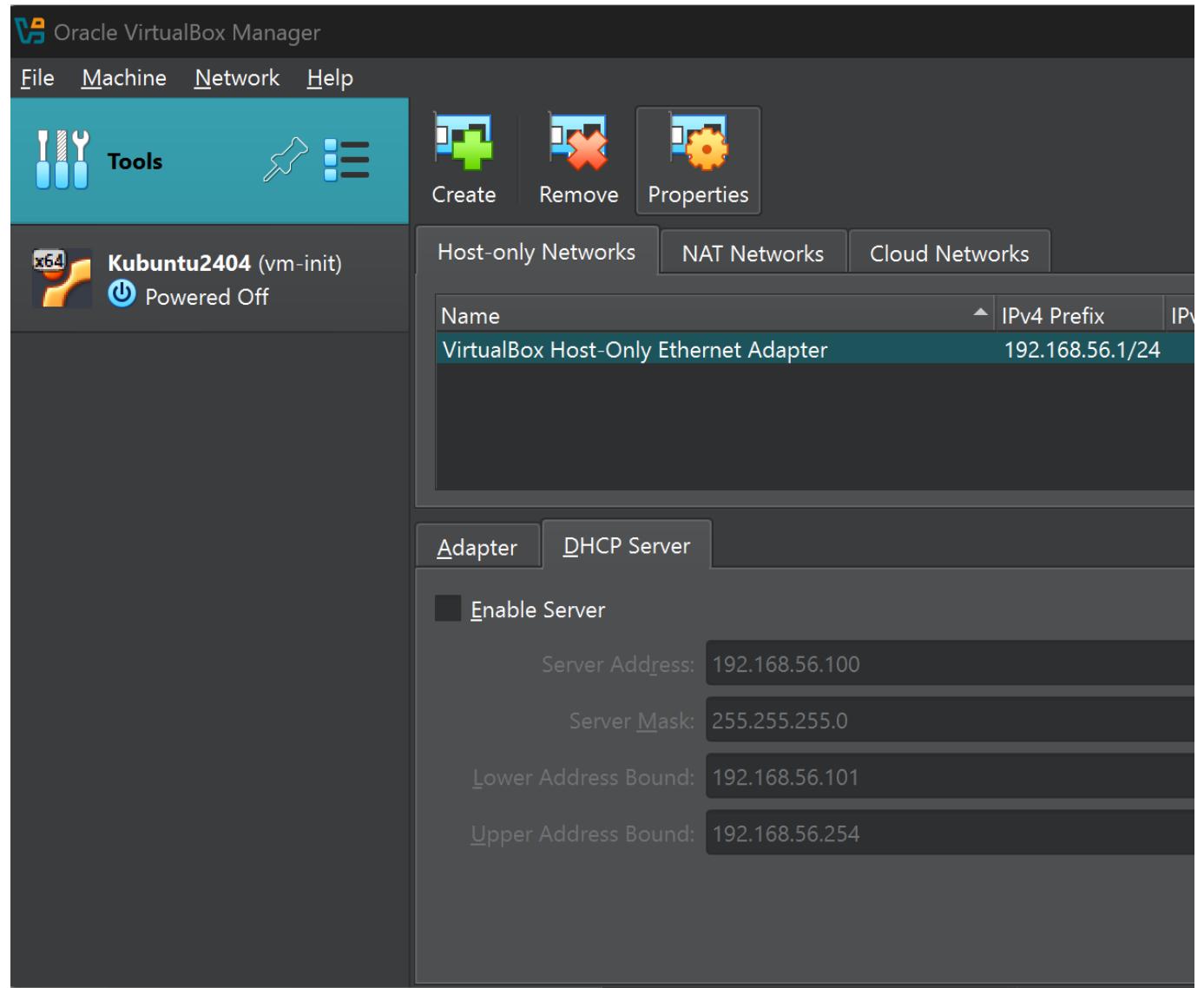
NETWORK PROPERTIES

- Adapter: “Configure Adapter Manually”



NETWORK PROPERTIES

- DHCP Server: Unclick “Enable Server”



ADD YOUR \$USER TO THE SUDOERS FILE

- Debian does not automatically add your \$USER to the sudoers file
- You need to restart for the system to finish adding your user to the sudo group.

```
sov@vbox:~$ sudo groups sov
[sudo] password for sov:
sov : sov sudo users
sov@vbox:~$
```

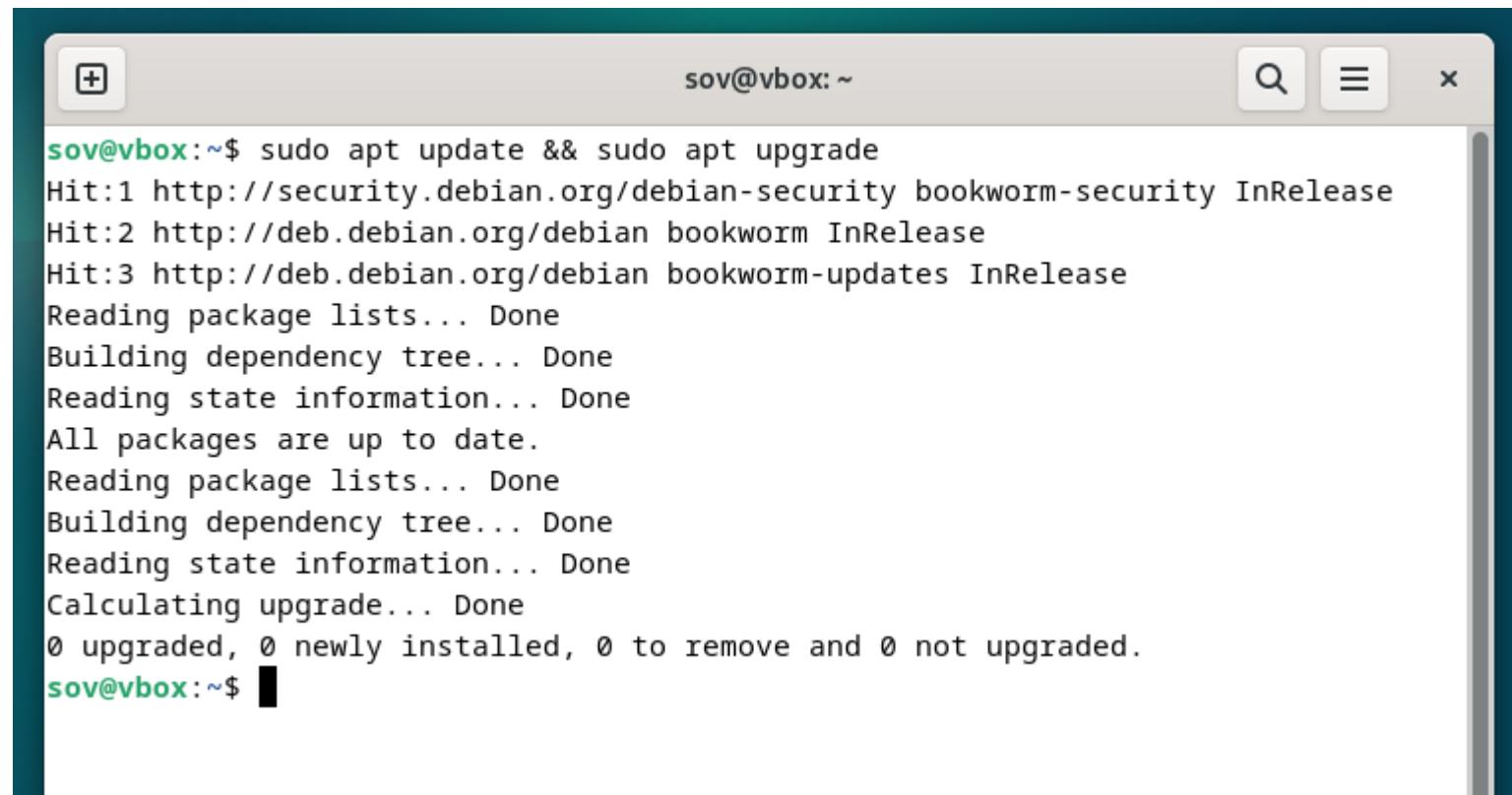
After restart

```
sov@vbox:~$ sudo apt update
[sudo] password for sov:
sov is not in the sudoers file.
sov@vbox:~$
sov@vbox:~$ sudo usermod -aG sudo sov
[sudo] password for sov:
sov is not in the sudoers file.
sov@vbox:~$
sov@vbox:~$ su -
Password:
root@vbox:~# usermod -aG sudo sov
root@vbox:~# groups sov
sov : sov sudo users
root@vbox:~# exit
logout
root@vbox:~#
sov@vbox:~$ sudo groups sov
[sudo] password for sov:
sov is not in the sudoers file.
sov@vbox:~$
```

On Debian, inside
your virtual machine

UPDATE AND UPGRADE

- Need `sudo` for this
- Also, install make now:
`sudo apt install make`



```
sov@vbox:~$ sudo apt update && sudo apt upgrade
Hit:1 http://security.debian.org/debian-security bookworm-security InRelease
Hit:2 http://deb.debian.org/debian bookworm InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
sov@vbox:~$
```

DOWNLOAD SSH SERVER ONTO THE VM

Ask google: “linux how to install ssh server on debian 12”

Copilot Answer



linuxgenie.net
<https://linuxgenie.net>

How to Configure and Enable SSH on Debian...

The purpose of the guide is to enable and configure **SSH** on **Debian 12**. Thus, before proceeding, you must ensure that the SSH is installed on your system. The command to install SSH on Debian 12 is as follows:... [See more](#)



How to Configure and Enable SSH on Deb...

Enabling and configuring SSH on Debian 12 is of utmost importance as it allows for secure remote access and administration of Debian servers. By enabling SSH, administrators gain the ability to manage their system... [See more](#)

Setting Up SSH on Debian [1](#) [2](#)

SSH (Secure Shell) is a network protocol used for secure remote logins and other secure network services over an insecure network. It is commonly used by system administrators to manage servers and other network devices remotely.

Installing OpenSSH Server

To install the OpenSSH server on Debian, follow these steps:

1. Update Package List: `sudo apt-get update`
2. Install OpenSSH Server: `sudo apt-get install openssh-server`
3. Check SSH Service Status: `sudo systemctl status sshd`

Enabling SSH Traffic on Firewall

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INSTALL OPENSSH SERVER

- On Debian terminal in the virtual machine

```
sudo apt install openssh-server  
sudo systemctl status ssh  
sudo systemctl enable ssh
```

VERIFY YOUR SSH ACCESS

- This once we'll access via password
- We'll then change to ssh key authentication
- Here, my virtual machine (my backup vm) is at 192.168.0.185

```
sov@vbox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
    qlen 1000
        link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host noprefixroute
                valid_lft forever preferred_lft forever
2: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_code
oup default qlen 1000
    link/ether 08:00:27:1f:75:c8 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.185/24 brd 192.168.0.255 scope global dynamic n
np0s8
        valid_lft 172034sec preferred_lft 172034sec
        inet6 2600:8801:380f:f900::15a6/128 scope global dynamic nopref
            valid_lft 85666sec preferred_lft 85666sec
            inet6 2600:8801:380f:f900:7adf:fdb1:3aea:55c0/64 scope global t
mic
            valid_lft 300sec preferred_lft 300sec
            inet6 2600:8801:380f:f900:a00:27ff:fe1f:75c8/64 scope global dy
ddr noprefixroute
            valid_lft 300sec preferred_lft 300sec
            inet6 fe80::a00:27ff:fe1f:75c8/64 scope link noprefixroute
                valid_lft forever preferred_lft forever
```

A screenshot of a Windows PowerShell window titled "Windows PowerShell". Inside the window, a terminal session is running under the user "sov@vbox: ~". The session shows the user attempting to SSH into a host at 192.168.0.185. The terminal displays the following text:

```
sov@LAPTOP-03RHV5TN:~$ ssh sov@192.168.0.185
The authenticity of host '192.168.0.185 (192.168.0.185)' can't be established.
ED25519 key fingerprint is SHA256:YoK/bIJC1m7bCJ/aWB8l8T8/1M6abkyruKzcFrDydDs.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.0.185' (ED25519) to the list of known hosts.
sov@192.168.0.185's password:
Linux vbox 6.1.0-32-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.129-1 (2025-03-06) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
sov@vbox:~$
```

SSH INTO YOUR VIRTUAL MACHINE

Using your WSL terminal

GOOD. NOW LOG OUT

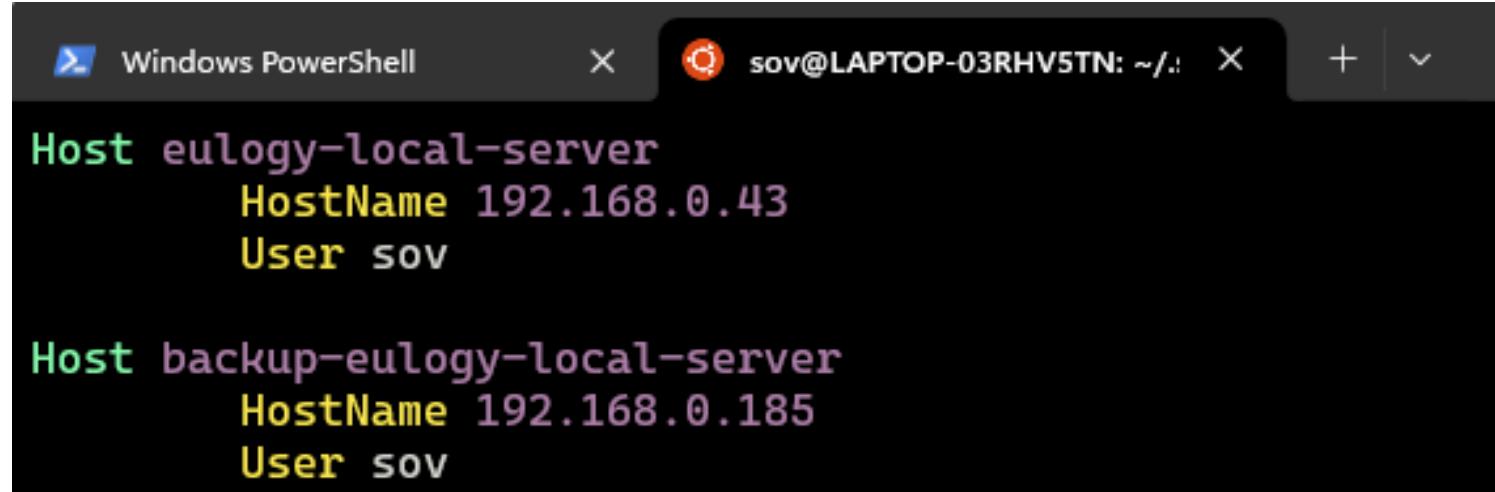
- We're just verifying that we have ssh access and that we've added this 192... to the list of known hosts
- We'll now add the ssh key to the VM from the terminal on the HOST (from the WSL terminal)
 - Run the 'ssh-copy-id user@192.x.x.x' command from the wsl host

The screenshot shows a Windows PowerShell window with two tabs. The left tab is titled 'Windows PowerShell' and the right tab is titled 'sov@LAPTOP-03RHV5TN: ~'. The right tab contains the following terminal session:

```
sov@vbox:~$  
sov@vbox:~$ exit  
logout  
Connection to 192.168.0.185 closed.  
sov@LAPTOP-03RHV5TN:~$  
sov@LAPTOP-03RHV5TN:~$ ssh-copy-id sov@192.168.0.185  
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/sov/.ssh/id_rsa.pub"  
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed  
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys  
sov@192.168.0.185's password:  
  
Number of key(s) added: 1  
  
Now try logging into the machine, with: "ssh 'sov@192.168.0.185'"  
and check to make sure that only the key(s) you wanted were added.  
sov@LAPTOP-03RHV5TN:~$
```

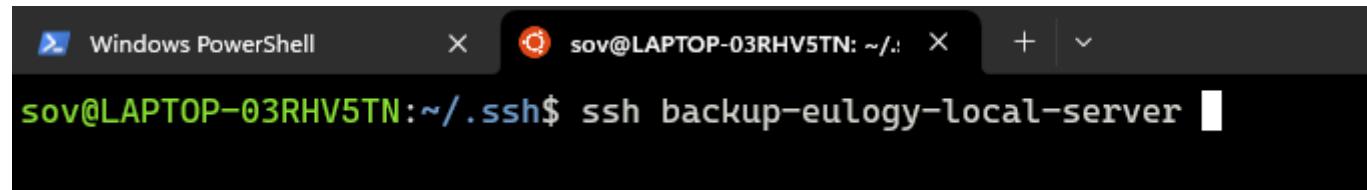
ALIAS YOUR SSH ACCESS

- If you want to make ssh access easier
- Edit `~/.ssh/config` (or create it if it does not exist)
- Here are my aliases for my normal and backup VM



```
Host eulogy-local-server
  HostName 192.168.0.43
  User sov

Host backup-eulogy-local-server
  HostName 192.168.0.185
  User sov
```



```
sov@LAPTOP-03RHV5TN:~/ssh$ ssh backup-eulogy-local-server
```

Tab completion on 'b', Nice
(Now enter the passphrase for
your private ssh key)

AUTOMATE SSH LOGIN TO THE VM

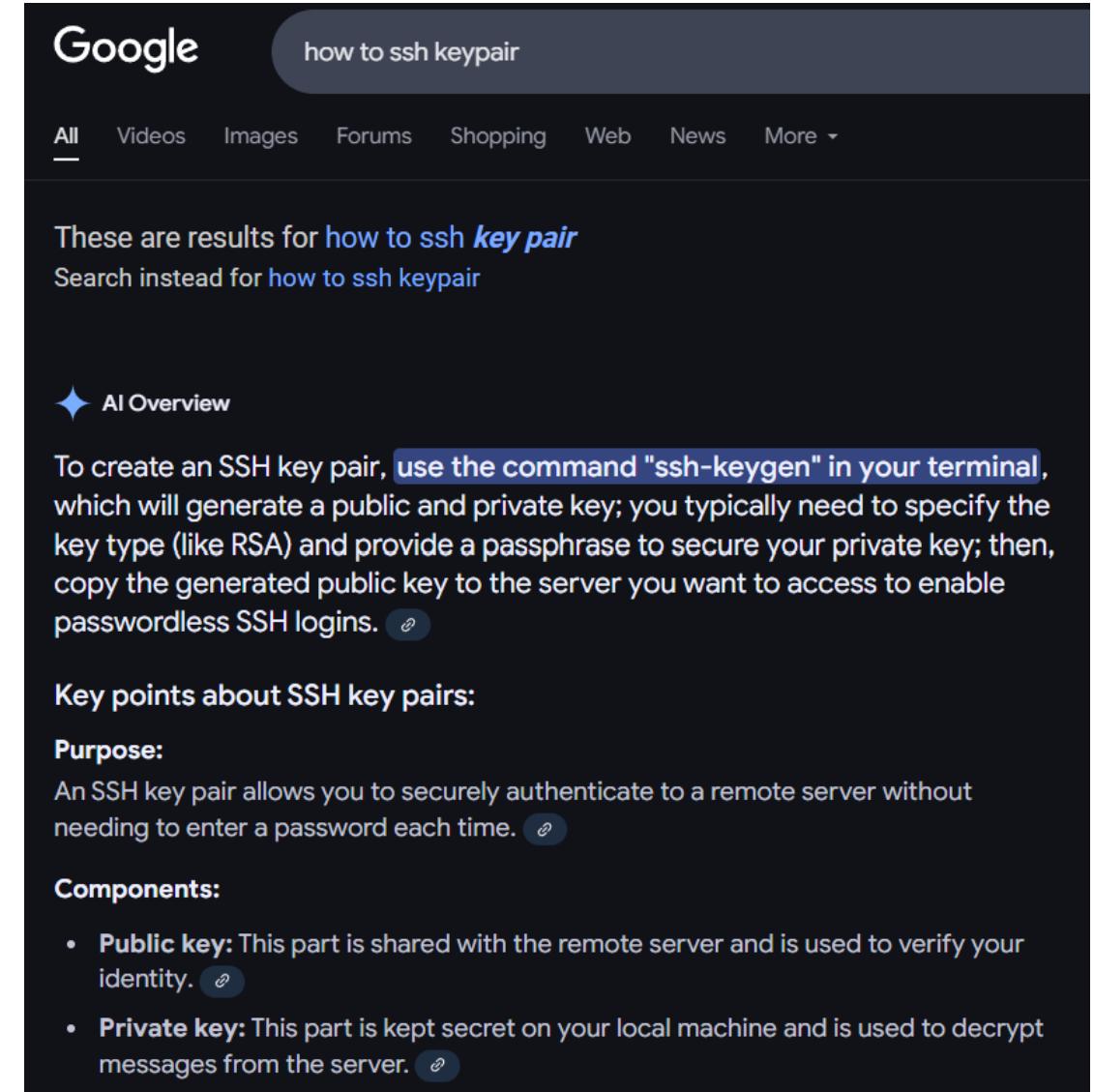
Prefer ssh-copy-id, especially if you want to reuse a previous id_rsa.pub key. This is detailed in the digitalocean link below.

<https://www.digitalocean.com/community/tutorials/how-to-configure-ssh-key-based-authentication-on-a-linux-server>

Otherwise, follow the steps on the next few slides in which AI demonstrates a fresh key-gen approach along with copy/paste of the key. DigitalOcean's walkthrough is better though.

SSH LOGIN AUTOMATION THE HARD WAY

ssh keygen



Google search results for "how to ssh keypair". The results page shows an AI Overview section with a snippet about creating an SSH key pair using the command "ssh-keygen". It also lists Key points about SSH key pairs, Purpose, and Components.

These are results for [how to ssh **key pair**](#)
Search instead for [how to ssh keypair](#)

AI Overview

To create an SSH key pair, [use the command "ssh-keygen" in your terminal](#), which will generate a public and private key; you typically need to specify the key type (like RSA) and provide a passphrase to secure your private key; then, copy the generated public key to the server you want to access to enable passwordless SSH logins. [🔗](#)

Key points about SSH key pairs:

Purpose:
An SSH key pair allows you to securely authenticate to a remote server without needing to enter a password each time. [🔗](#)

Components:

- **Public key:** This part is shared with the remote server and is used to verify your identity. [🔗](#)
- **Private key:** This part is kept secret on your local machine and is used to decrypt messages from the server. [🔗](#)

SSH LOGIN AUTOMATION THE HARD WAY

How to generate an SSH key pair:

1. **Open your terminal:** Access the command line on your computer. [🔗](#)
2. **Run the command:** Type `ssh-keygen -t rsa`. [🔗](#)
 - **Explanation:**
 - `ssh-keygen`: The command to generate SSH keys. [🔗](#)
 - `-t rsa`: Specifies the type of key to generate (RSA is a common choice). [🔗](#)
3. **Provide a passphrase (optional):** When prompted, enter a strong passphrase to protect your private key. [🔗](#)
4. **Save the keys:**
 - You will be asked where to save the key files. [🔗](#)
 - **Important:** Keep the default location unless you have a specific reason to change it. [🔗](#)

Generate the key pair

How to add your public key to a remote server:

Copy the public key:

Open the generated public key file (usually located in `~/.ssh/id_rsa.pub`) and copy its content. 

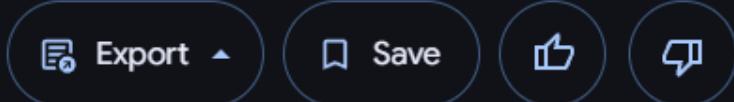
Paste into authorized_keys file:

- Log in to your remote server using your password. 
- Open the `authorized_keys` file in the `~/.ssh` directory. 
- Paste your public key into this file. 

Important considerations:

- **Security:** Never share your private key with anyone. 
- **Key management:** Consider using a key management tool to securely store and manage your SSH key pairs, especially if you have many different servers to access. 

Generative AI is experimental.



SSH LOGIN AUTOMATION THE HARD WAY

Put the public key on the server.

USING THE DIGITAL.OCEAN APPROACH (THE EASY WAY)

- On your local computer host (not inside the vm), run ‘ssh-keygen’
 - On the vm, in the terminal, run ‘ip a’ and find the local ip under the virtualbox adapter. This is usually named something like “enp0s3”, and has a local ip like ‘192.168.x.x’
 - This is the IP of your vm.
 - Test that you can ssh into the vm manually.
 - Run ‘ssh <your user name>@<the vm IP>’ , something like ‘ssh bob@192.168.0.3’
 - Enter your vm password
 - Once logged in, run ‘exit’ to log out. You have ssh vm access. Good.
-

USING THE DIGITAL.OCEAN APPROACH

- Now, on your host computer's wsl terminal, run 'ssh-copy-id <username>@<vm ip address>', something like 'ssh-copy-id bob@192.168.0.3'
 - Enter your vm password
 - Good, now your public key is pasted into your vm (at `~/.ssh/authorized_keys`), and no copy-paste needed. Nice.
 - Consider turning-off password authentication of ssh access to the vm. You don't need the vm password any longer for ssh access (you only need your ssh key's password). It's in the digitalocean link.
-

AKK-STACK EQEMU SERVER INSTALL

- <https://docs.eqemu.io/akk-stack/introduction/>

The screenshot shows a dark-themed website for "EverQuest Emulator Docs". At the top, there's a navigation bar with links for "Play", "Server", "Database Schema", "Quest API", "Changelog", "Akk Stack", "Client", "Contributing", and "Tags". A search bar is also present. On the left, a sidebar lists various documentation sections: "Akk Stack", "Introduction", "Install", "Installation", "Operate", "Backups", "CPU", "File Structure", "Services", "Shell", "Update", "Develop", and "Development". The main content area features three prominent images: a white box for "AkkStack" (Production-Ready & Development-Ready Containerized Environment), a screenshot of a stone-walled room with a "Spire" sign, and a blue box for "docker". Below these images, text describes AkkStack as a simple Docker Compose environment for running EverQuest Emulator servers, emphasizing its speed and stability. The sidebar on the right lists additional topics like Containerized Services, Spire Web Admin, PEQ Editor, and more.

Akk Stack

Introduction

Install

Installation

Operate

Backups

CPU

File Structure

Services

Shell

Update

Develop

Development

EverQuest Emulator Docs

Search

v23.0.2 ⭐ 459 📈 429

Play Server Database Schema Quest API Changelog Akk Stack Client Contributing Tags

Introduction

AkkStack
Production-Ready & Development-Ready
Containerized Environment

Spire

docker

AkkStack is a simple **Docker Compose** environment that is augmented with **developer** and **operator** focused tooling for running **EverQuest Emulator servers**. You can have an entire server running within **minutes**, configured and ready to go for **development** or **production** use! This is what I've used in production, battle-tested, for almost 5+ years. I've worked through a lot of issues to give you the final stable product. It's what I've also used exclusively for development as well as many other developers!

Table of contents

Features

Containerized Services

Spire Web Admin

PEQ Editor

PhpMyAdmin

CLI Menus

Embedded Server Management CLI

In Container Command M

Host-Level Command M

SSH

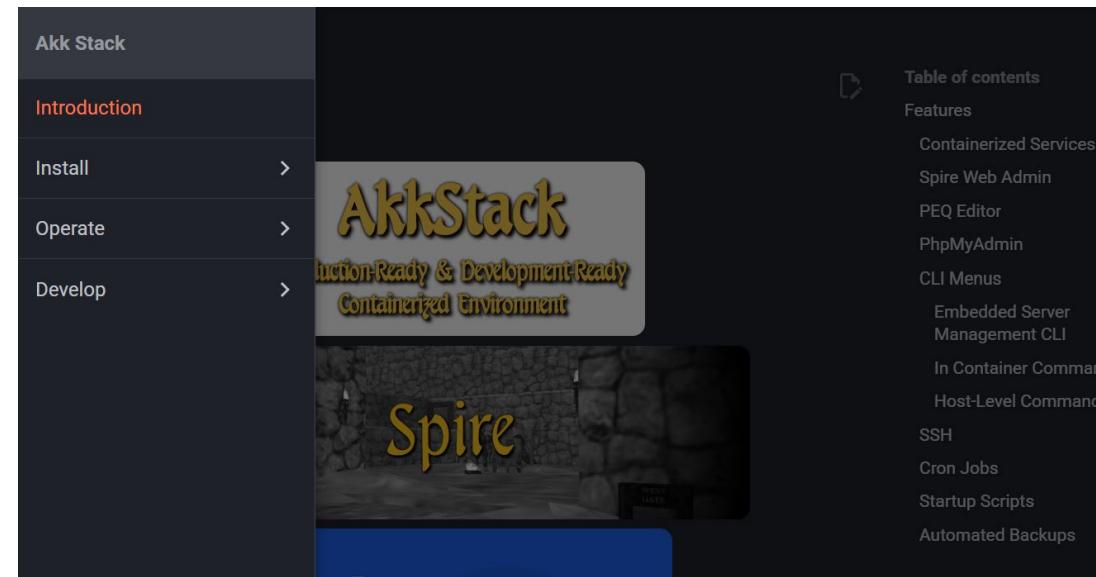
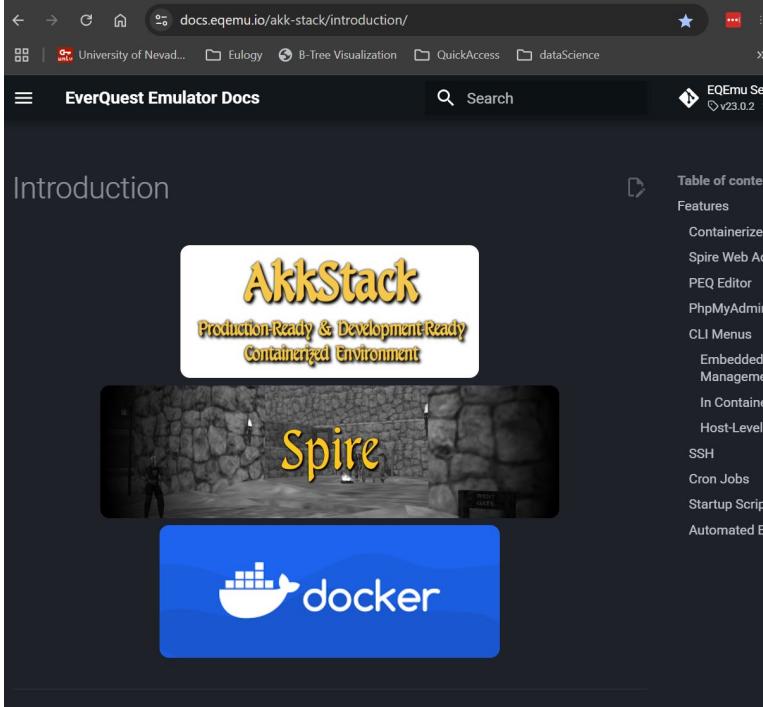
Cron Jobs

Startup Scripts

Automated Backups

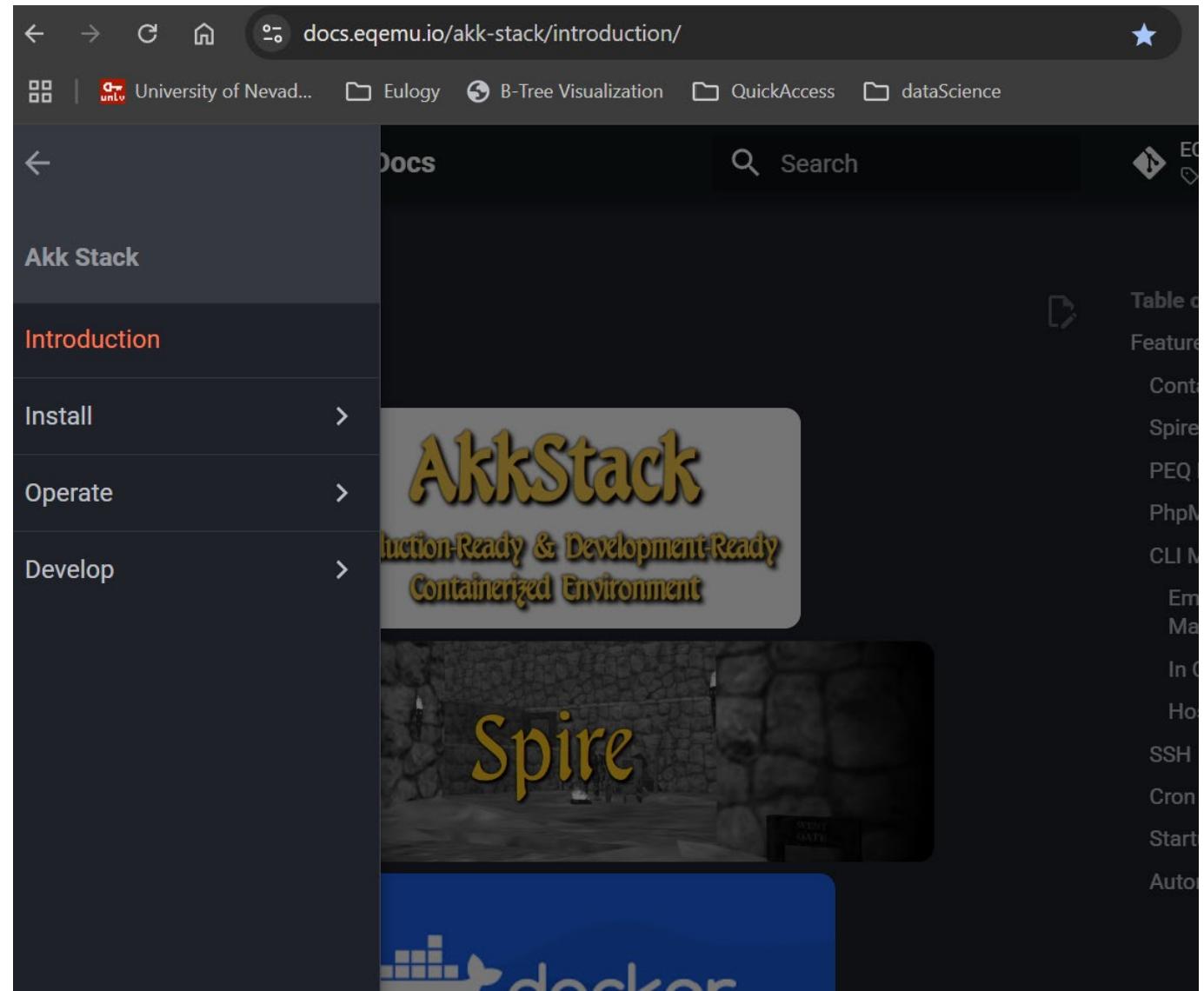
AKK-STACK EQEMU SERVER INSTALL

- Akk-Stack menu can sometimes hide information.
- Look for the ‘hamburger’ icon at the top left



AKK-STACK EQEMU SERVER INSTALL

- Select Install > Installation.



INSTALL DOCKER

<https://docs.docker.com/engine/install/debian/>

The screenshot shows a web browser displaying the Docker documentation at docs.docker.com/engine/install/debian/. The page title is "Install Docker Engine on Debian". The URL in the address bar is "docs.docker.com/engine/install/debian/". The page features a dark blue header with the "dockerdocs" logo, navigation links for "Get started", "Guides", "Manuals" (which is underlined), "Reference", and a search bar. A banner at the top right says "New Introducing our new CEO Don Johnson - Read More →". On the left, a sidebar titled "Manuals" lists "OPEN SOURCE" options: "Docker Engine", "Install", "Ubuntu", "Debian" (which is highlighted with a dark grey background), "RHEL", "Fedora", "Raspberry Pi OS (32-bit)", "CentOS", and "SLES (s390x)". The main content area displays the "Table of contents" for the "Install Docker Engine on Debian" guide, which includes links to "Prerequisites", "Firewall limitations", "OS requirements", "Uninstall old versions", "Installation methods", "Install using the apt repository", and "Install from a package".

The screenshot shows a dark-themed web page from dockerdocs. At the top, there's a navigation bar with links for 'Get started', 'Guides', 'Manuals' (which is underlined), 'Reference', a search bar, and an 'Ask AI' button. On the left, a sidebar titled 'Manuals' lists various operating systems: 'OPEN SOURCE' (Docker Engine, Install, Ubuntu, **Debian**, RHEL, Fedora, Raspberry Pi OS (32-bit), CentOS, SLES (s390x), Binaries). The main content area has a heading 'You have now successfully installed and started Docker Engine.' Below it, a 'Tip' section says 'Receiving errors when trying to run without root?' and provides instructions about the 'docker' user group and 'sudo'. There's also a section titled 'Upgrade Docker Engine' with instructions to follow step 2 of the installation instructions.

MAKE SURE TO ENABLE DOCKER COMMANDS FOR NON-ROOT USER

Click “Linux postinstall”.

INSTALL DOCKER- COMPOSE

≡ EverQuest Emulator Docs

Search

EQEmu Server
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Installation

Pre-requisites

Install Docker

It doesn't matter what Linux OS you use as long as it has **Docker** and **Docker Compose**, my personal recommendation is **Debian**.

- ✓ Install Docker
- ✓ Install docker compose (listed below)
- ✓ Follow the instructions to run Docker as a non-root user

Warning

Do not run Docker as root, run docker as the user you are logged in as and add your user to the `docker` group

Installing Docker Compose

```
sudo curl -SL https://github.com/docker/compose/releases/latest/download/docker-compose-`
```

Confirm that it's working

```
docker-compose -v
Docker Compose version v2.2.3
```

Table of contents

- Pre-requisites
- Install Docker
- Installing Docker Compose
- Installing Akk-Stack
- Initialize the Environment
- Initialize Network Parameters
- Install
- Post-Install
- Start / Stop
- Deploying Bots
- Deploying Mercenaries
- Deployment Info

INSTALL AKK-STACK

- [Installation - EverQuest Emulator Docs](#)
- Note the install location. I personally installed at
~/opt/Eulogy-akk-server-local/

First clone the repository somewhere on your server, in this case I'm going to clone it to an `/opt/eqemu-servers` folder in a Debian Linux host with Docker installed

```
git clone https://github.com/Akkadius/akk-stack.git && cdakk-stack
```

```
$ git clone https://github.com/Akkadius/akk-stack.git
Cloning into 'akk-stack'...
remote: Enumerating objects: 57, done.
remote: Counting objects: 100% (57/57), done.
remote: Compressing objects: 100% (42/42), done.
remote: Total 782 (delta 14), reused 52 (delta 11), pack-reused 725
Receiving objects: 100% (782/782), 101.94 KiB | 7.28 MiB/s, done.
Resolving deltas: 100% (437/437), done.
```

INITIALIZE THE ENVIRONMENT

⚠ Warning

Do not run `make init-reset-env` after the environment has been initialized. Things will no longer work properly.

`make init-reset-env`

Will output the following.

```
make env-transplant
Wrote updated config to [.env]
make env-scramble-secrets
Wrote updated config to [.env]
```

[Installation - EverQuest Emulator Docs](#)

Run `ip a` in a terminal
on your vm.

2: enp0s3:

inet **192.168.0.43**

This is your vm's LAN
address.

Your result will likely be
different than mine.

```
sov@vbox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 100
    link/ether 08:00:27:67:7e:67 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.43/24 brd 192.168.0.255 scope global dynamic noprefixroute enp0s3
        valid_lft 167259sec preferred_lft 167259sec
    inet6 2600:8801:380f:f900::8cd5/128 scope global dynamic noprefixroute
        valid_lft 80862sec preferred_lft 80862sec
    inet6 2600:8801:380f:f900:7fb:7530:3f0c:bb1c/64 scope global temporary dynamic
        valid_lft 301sec preferred_lft 301sec
    inet6 2600:8801:380f:f900:a00:27ff:fe67:7e67/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 301sec preferred_lft 301sec
    inet6 fe80::a00:27ff:fe67:7e67/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 96:c8:e5:b3:e1:7d brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
29: br-3fa710c6d423: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
    link/ether 7a:d4:75:b6:7d:f1 brd ff:ff:ff:ff:ff:ff
    inet 172.18.0.1/16 brd 172.18.255.255 scope global br-3fa710c6d423
        valid_lft forever preferred_lft forever
    inet6 fe80::78d4:75ff:feb6:7df1/64 scope link
        valid_lft forever preferred_lft forever
30: veth1e58faf@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master br-3fa710c6d423
    oqup default
    link/ether 92:19:87:c7:7c:54 brd ff:ff:ff:ff:ff:ff link-netnsid 1
    inet6 fe80::9019:87ff:fec7:7c54/64 scope link
        valid_lft forever preferred_lft forever
31: vethfd9ac8f@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master br-3fa710c6d423
    oqup default
    link/ether 3e:ed:93:e6:0d:60 brd ff:ff:ff:ff:ff:ff link-netnsid 2
    inet6 fe80::3ced:93ff:fee6:d60/64 scope link
        valid_lft forever preferred_lft forever
sov@vbox:~$ █
```

INITIALIZE NETWORK PARAMETERS

- Run `make set-vars ...` as shown here.
- Instead of:
`ip-address=66.70.153.122`, we'll use our own individual vm LAN ip address.
In my case, I used 192.168.0.43

Initialize Network Parameters

The next command is going to initialize two large key things in our setup

- The **ip address** we're going to use
- The **zone port range** we're going to use

Make sure that you only open as many ports as you need on the zone end, because `docker-proxy` will NAT all ports individually in its own docker userland which does take some time when starting and shutting off containers.

The more ports you nail up, the longer it takes to start / stop. Since this is a test server, I'm only going to use 30 ports.

This `make` command also configures the `eqemu_config.json` port and address parameters as well automatically for you

```
make set-vars port-range-high=7030 ip-address=66.70.153.122
```

Yields the following output

```
Wrote [IP_ADDRESS] = [66.70.153.122] to [.env]
Wrote [PORT_RANGE_HIGH] = [7030] to [.env]
```

NOW FINISH

- Run `make install`

Install

From this point you're ready to run the fully automated install with a simple `make install`

An example of what this output looks like below (Sped up)

```
[  7%] Building C object submodules/libuv/CMakeFiles/uv_a.dir/src/unix/linux-inotify.c.o
[  8%] Building C object submodules/libuv/CMakeFiles/uv_a.dir/src/unix/linux-syscalls.c.o
[  8%] Building CXX object common/CMakeFiles/common.dir/crc16.cpp.o
[  9%] Building C object submodules/libuv/CMakeFiles/uv_a.dir/src/unix/procfs-exepath.c.o
[  9%] Building CXX object common/CMakeFiles/common.dir/crc32.cpp.o
[  9%] Building CXX object common/CMakeFiles/common.dir/database_database_dump_service.cpp.o
[  9%] Building CXX object submodules/fmt/CMakeFiles/fmt.dir/src posix.cc.o
[  9%] Building C object submodules/libuv/CMakeFiles/uv_a.dir/src/unix/sysinfo-loadavg.c.o
[  9%] Building C object submodules/libuv/CMakeFiles/uv_a.dir/src/unix/sysinfo-memory.c.o
[  9%] Linking C static library libuv_a.a
[  9%] Built target uv_a
Scanning dependencies of target uv
[  9%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/fs-poll.c.o
[ 10%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/idna.c.o
[ 10%] Linking CXX static library libfmt.a
[ 10%] Built target fmt
Scanning dependencies of target zlibstatic
[ 10%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/adler32.c.o
[ 10%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/inet.c.o
[ 11%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/compress.c.o
[ 11%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/crc32.c.o
[ 11%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/strncpy.c.o
[ 11%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/deflate.c.o
[ 11%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/threadpool.c.o
[ 11%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/timer.c.o
[ 12%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/uv-common.c.o
[ 12%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/deflate_fast.c.o
[ 12%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/deflate_medium.c.o
[ 13%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/deflate_slow.c.o
[ 13%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/uv-data-getter-setters.c.o
[ 13%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/functional.c.o
[ 13%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/version.c.o
[ 13%] Building C object libs/zlibng/CMakeFiles/zlibstatic.dir/inflate.c.o
[ 13%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/unix/async.c.o
[ 13%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/unix/core.c.o
[ 14%] Building CXX object libs/luabind/CMakeFiles/luabind.dir/src/class_registry.cpp.o
[ 15%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/unix/dl.c.o
[ 15%] Building C object submodules/libuv/CMakeFiles/uv.dir/src/unix/fs.c.o
```

Post-Install

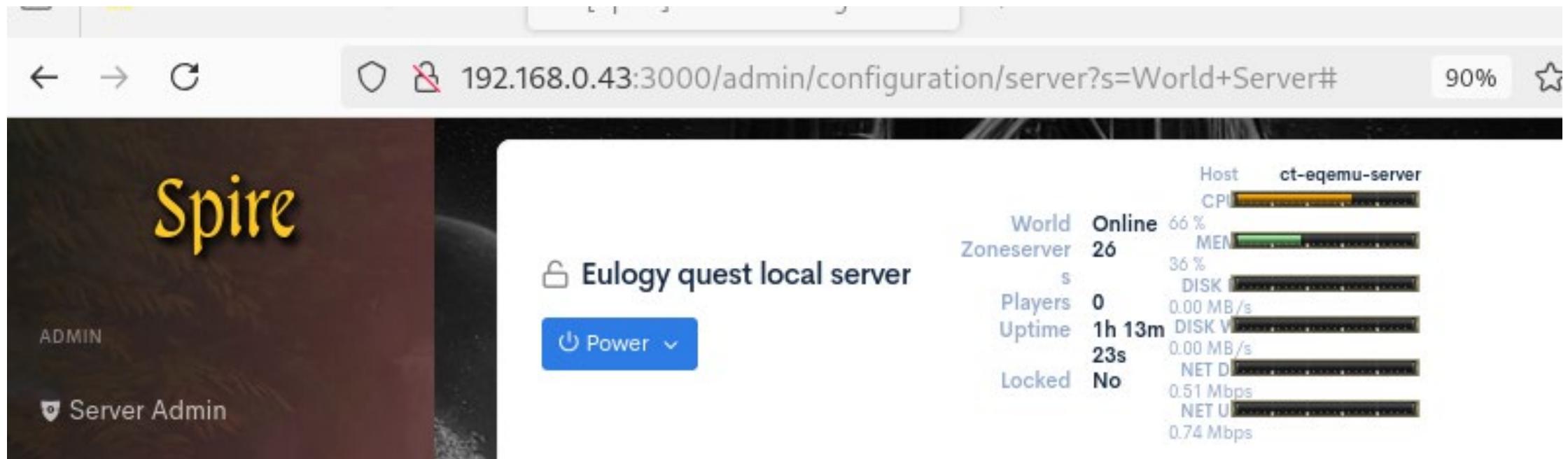
Start / Stop

To start the server, simply use the **make up** command from the root of the **akk-stack** directory.

```
make up
```

TURN THE
SERVER ON

- Run `make up`



LOG INTO THE SPIRE ADMIN PAGE

- On a web browser, go to `192.168.0.43:3000` (substitute your local LAN vm ip instead of my 192..., but keep the :3000)
- Remember this blue “**Power**” button for later.

Eulogy quest local server

Power

World Zoneserver	Online 26
Players	1
Uptime	15m 5s
Locked	No

Host ct-eqemu-server

CPU 57 %

MEM 38 %

DISK 0.00 MB/s

DISK W 0.00 MB/s

NET D 0.55 Mbps

NET U 0.80 Mbps

Server Configuration

World Server Zone Server UCS Database

Server Naming Networking Key Telnet / Websockets TCP Connections Loginserver #1 Loginserver #2 Loginserver #3 Loginserver #4 Loginserver #5

Server Long Name

Eulogy quest local server

Server Short Name

EQQ

Displays on the Loginserver

Used in the client .ini configuration files

Save

SERVER NAMING

- Configuration > Server Config > Server Naming
- Don't go crazy with punctuation, just in case.
- Click "Save"

The screenshot shows the Eulogy quest local server interface. At the top, there's a header with the server name "Eulogy quest local server" and a "Power" button. Below the header is a summary table with the following data:

Zoneservers	26	36 % DISK I
Players	1	0.00 MB/s DISK W
Uptime	15m 55s	0.02 MB/s NET D
Locked	No	0.69 Mbps NET U
		1.04 Mbps

The main area is titled "Server Configuration" and contains tabs for "World Server", "Zone Server", "UCS", and "Database". Under "World Server", the "Networking" tab is selected, showing "Public Address" as "192.168.0.43" and "Local Address" as "192.168.0.43". Below these fields are two explanatory text boxes:

- If your server is on the internet, you will need to specify your public address. When on a LAN behind a NAT you will need both this and **localaddress** set
- If you are on a LAN you will need this address set to the local address of your host so that others on your network can properly be routed to your gameserver. Do not use 127.0.0.1

A yellow "Save" button is located at the bottom left of the configuration panel. The background of the interface features a dark, atmospheric illustration of two armored figures standing in a stone hallway.

NETWORK SETTING

- Configuration > Server Config > Networking
- Use your own vm LAN ip address
- Same ip in “Public” and “Local” Address fields
- Click “Save”

ADMIN

Server Admin

Players Online

Zone Servers

Backups

Client Files

Configuration

Server Config

Crash Webhooks

MOTD

Quest Hot Reload

Server Rules

UCS

World Server

Zone Server

Database

Logs

Reloading (Global)

Server Update

CONTENT TOOLS

Editing Tools Home

VERSION (LOCAL) 4.16.3

Spire Update Check

Eulogy quest local server

Power

World Zoneserver s
Online 26
Players 1
Uptime 16m 38s
Locked No

CPU 69 %
MEM 36 %
DISK 0.00 MB/s
DISK W 0.00 MB/s
NET DL 0.46 Mbps
NET UL 0.62 Mbps

Server Configuration

World Server Zone Server UCS Database

Server Naming Networking Key Telnet / Websockets TCP Connections Loginserver #1 Loginserver #2 Loginserver #3 Loginserver #4 Loginserver #5

Loginserver Host: 192.168.0.43 Loginserver Port: 5999 Legacy Network Connection: 1

Loginserver host your server is connecting to
Loginserver port your server is connecting to (usually 5998)
Used to determine if this is a legacy network connection

Loginserver Account
Used to authenticate your server as a registered server

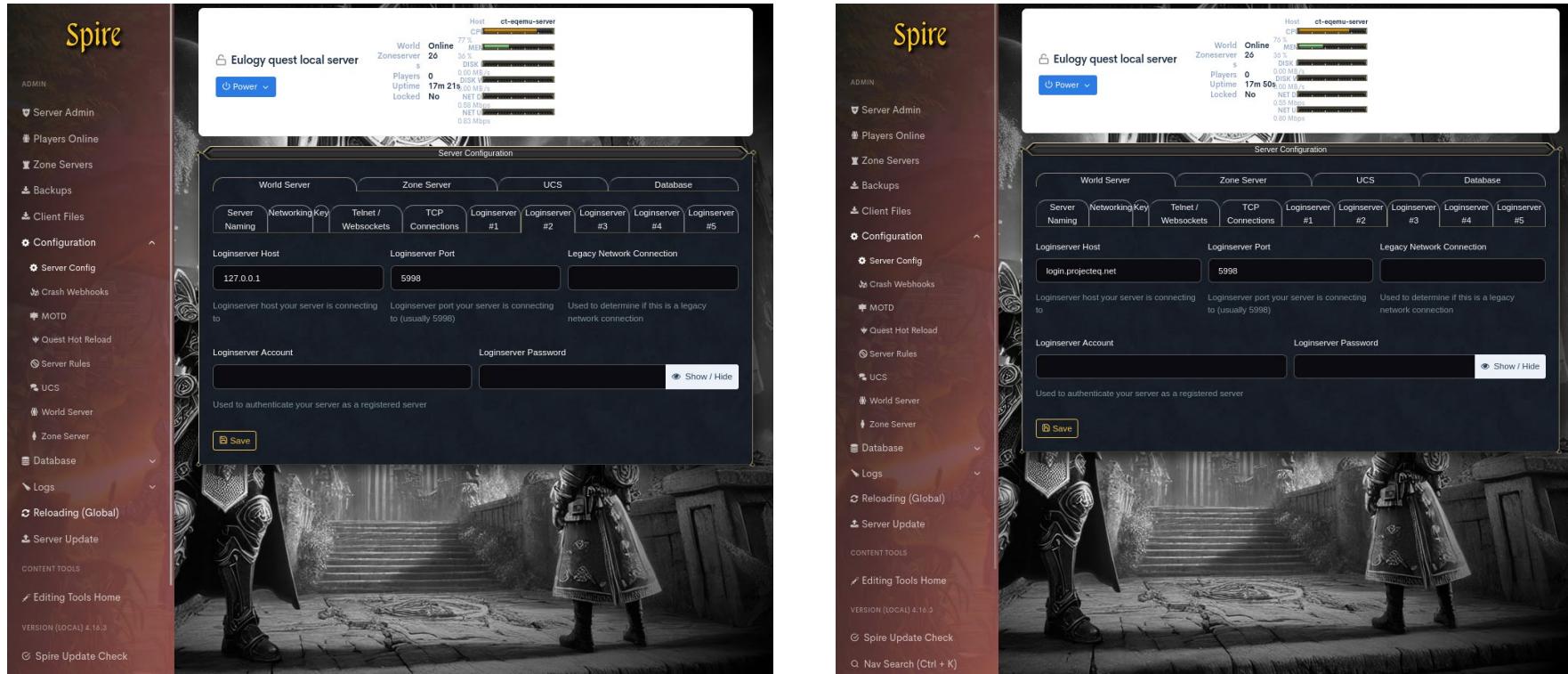
Show / Hide

Save

69 %
36 %
0.00 MB/s
0.00 MB/s
0.46 Mbps
0.62 Mbps

LOGIN SERVER 1

- Use your own ip address
- Change 5998 to **5999**
- Leave the account and password fields blank
- Click “Save”

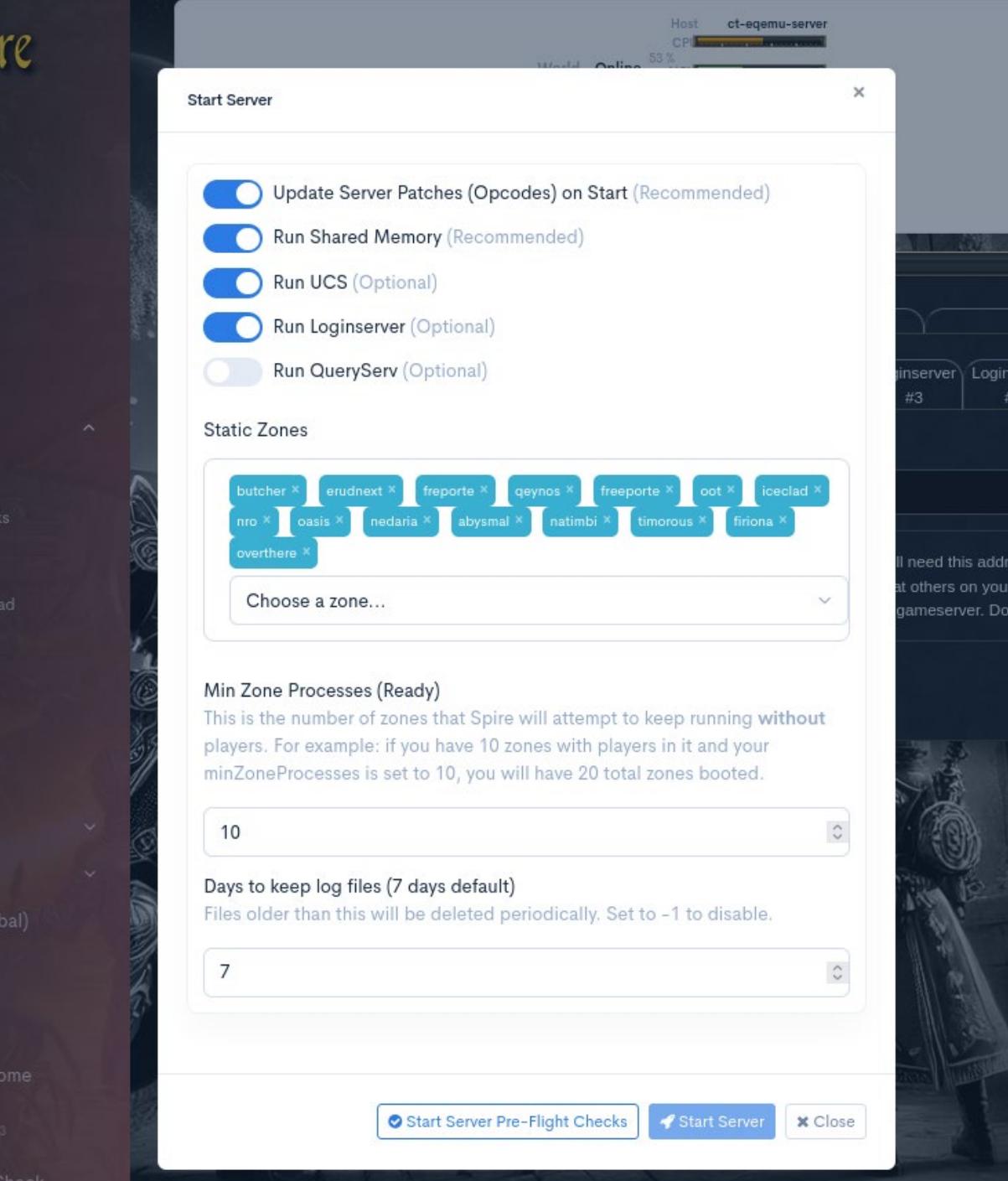


LOGIN SERVER 2 AND 3

Leave them unchanged.

ENABLE THE LOCAL LOGIN SERVER

- Notice the blue “Power” button up top?
- Click “Power” to bring up the “Start Server” page
- Toggle the “Run Loginserver” dial to ON (blue)
- Click “Close”



CYCLE THE SERVER

- Bring the server down and back up via: `make down` then `make up`

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ make down
COMPOSE_HTTP_TIMEOUT=1000 docker-compose down --timeout 3
[+] Running 5/5
✓ Containerakk-stack-mariadb-1           Removed
✓ Containerakk-stack-eqemu-server-1       Removed
✓ Containerakk-stack-fail2ban-mysqld-1   Removed
✓ Containerakk-stack-fail2ban-server-1   Removed
✓ Networkakk-stack_backend               Removed

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ make up
COMPOSE_HTTP_TIMEOUT=1000 docker-compose up -d eqemu-server mariadb
[+] Running 5/5
✓ Networkakk-stack_backend               Created
✓ Containerakk-stack-fail2ban-server-1   Started
✓ Containerakk-stack-fail2ban-mysqld-1   Started
✓ Containerakk-stack-eqemu-server-1     Started
✓ Containerakk-stack-mariadb-1          Started

make up-info
-----
> Web Interfaces
-----
> PEQ Editor | http://192.168.0.43:8081
> PhpMyAdmin | http://192.168.0.43:8082
> EQEmu Admin | http://192.168.0.43:3000
-----
Use 'make info' to see passwords
```

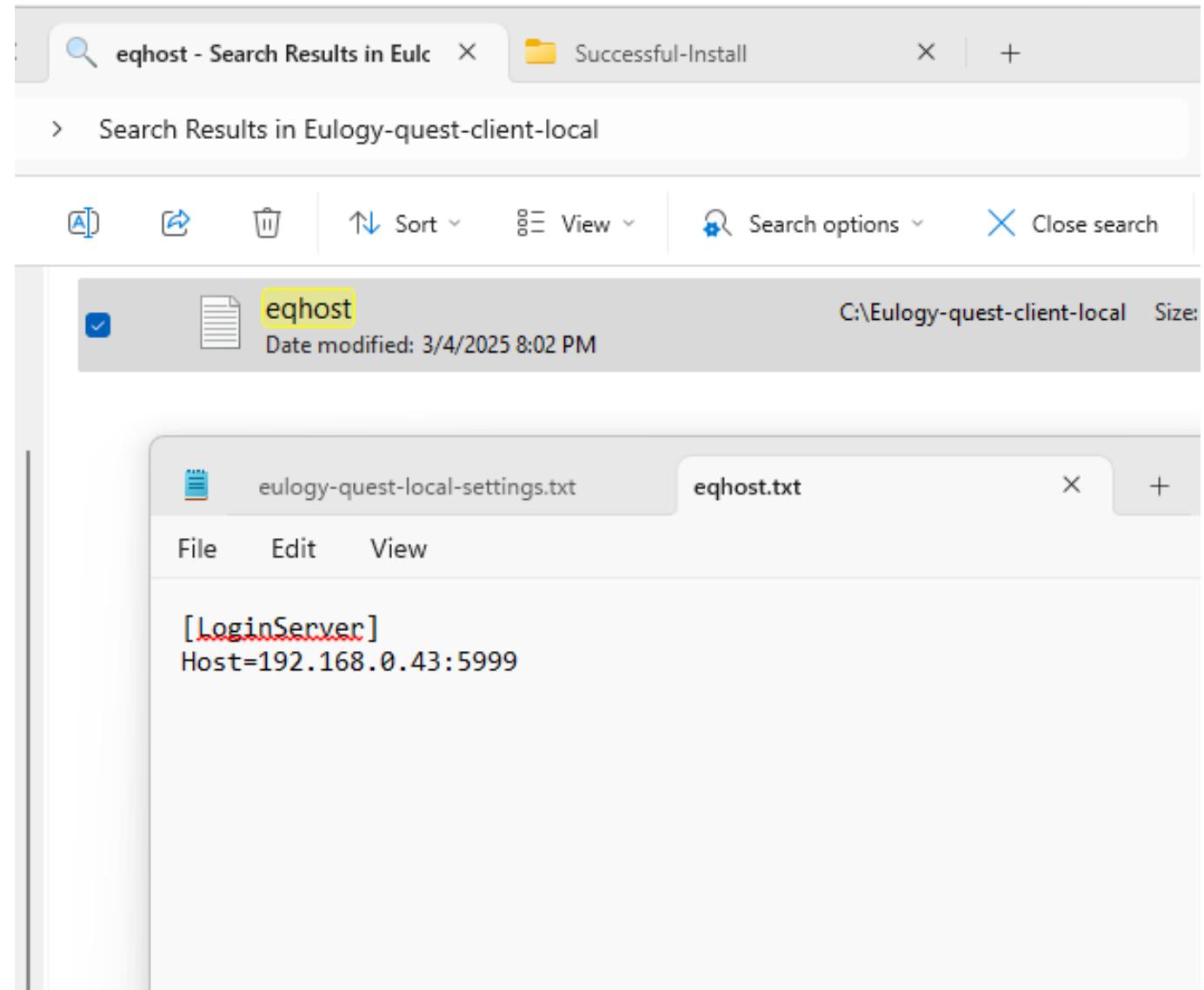
DOUBLE CHECK YOUR LOCAL CLIENT

Do the same download from Steam –into a different directory. Name the directory something like Eulogy-local-client.

You don't need to repeat the eqemu forums/eqemu login server steps

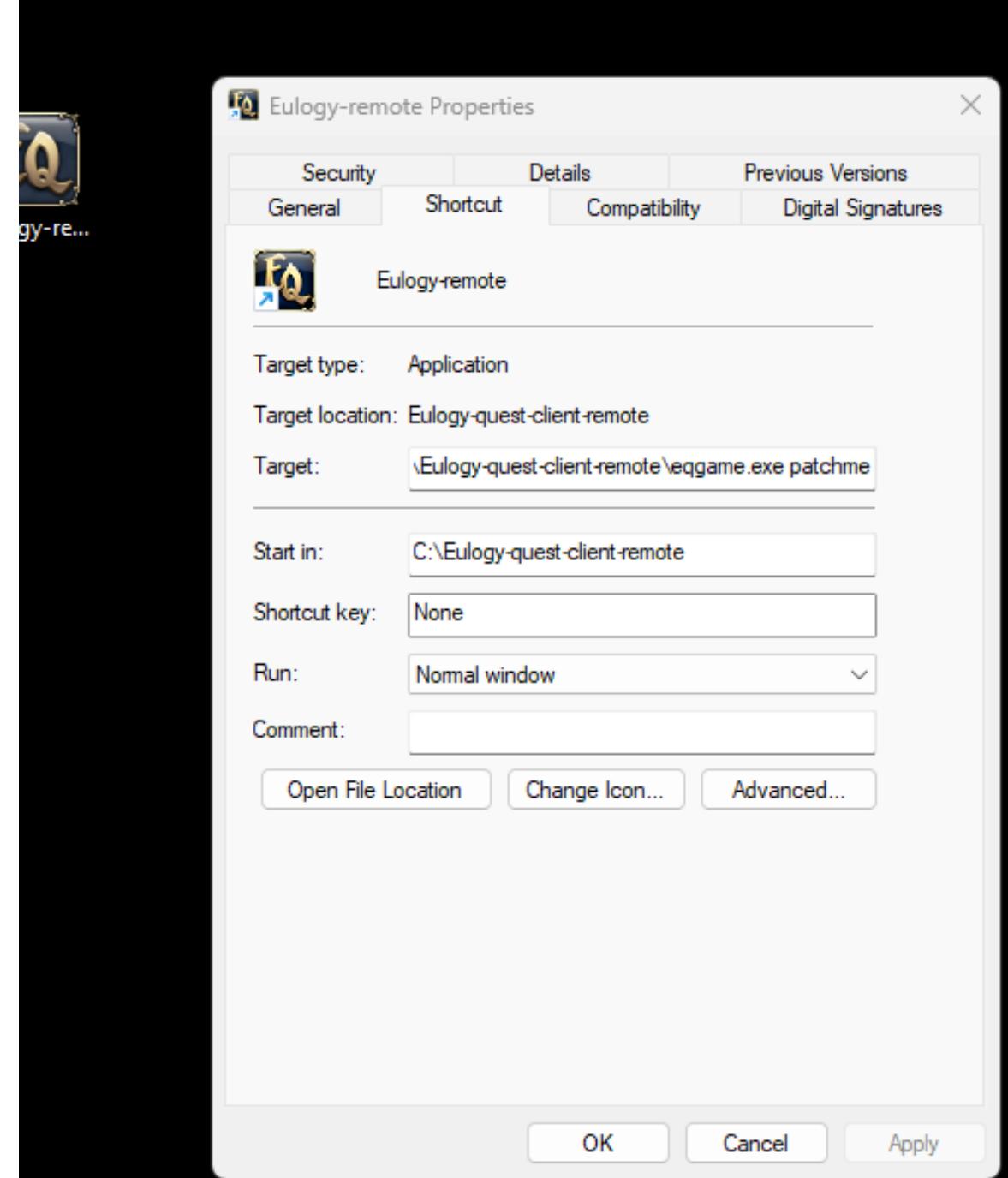
MAKE SURE EQHOST IS CORRECT

- This is in the client directory for the client pointing at your **local** server.
- This **isn't** the eqhost.txt file in the directory of the client you have that connects to the main AWS game server.
- Your ip will be different; use your vm's LAN ip
- Keep the :5999



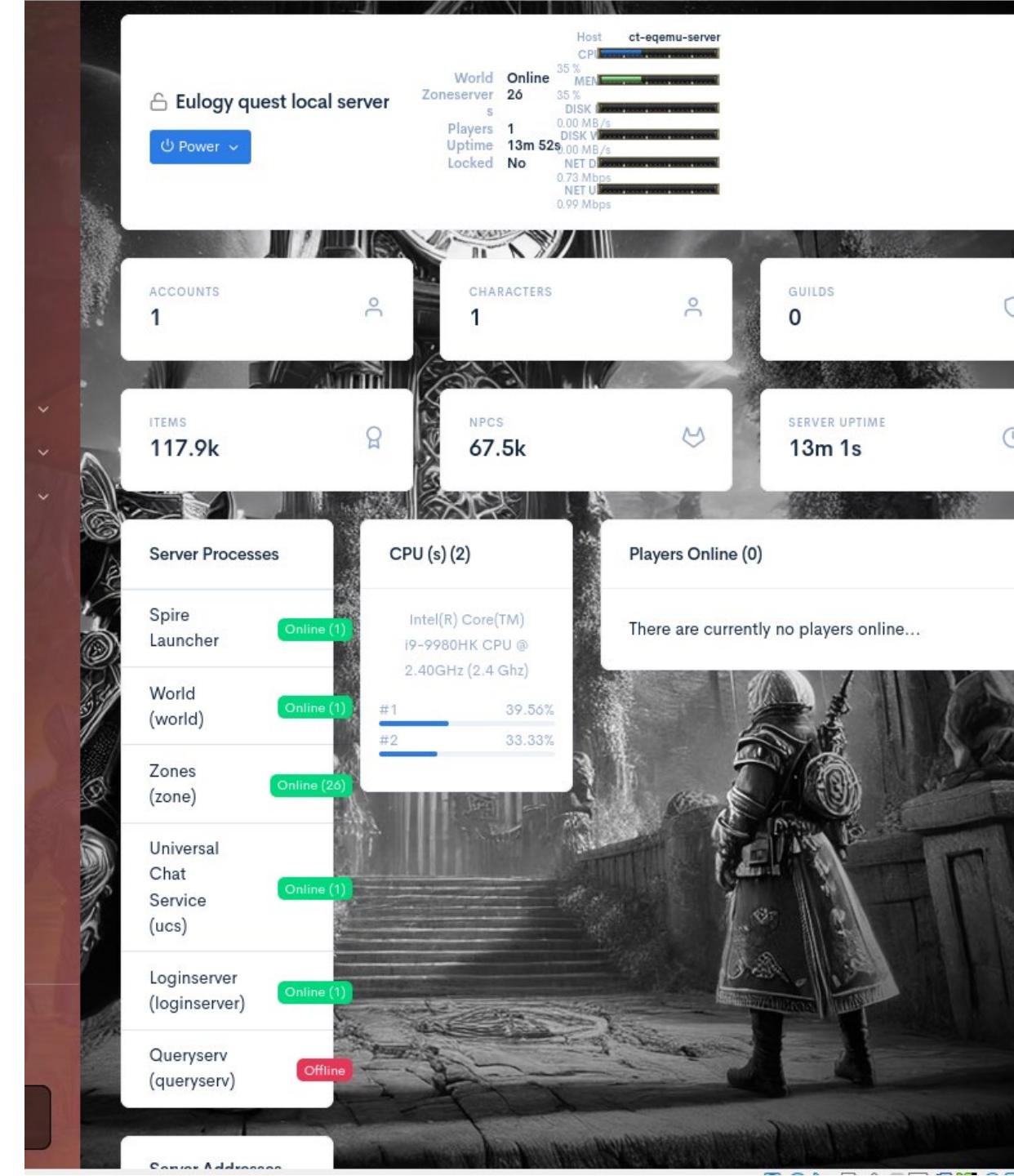
NEW SHORTCUT

- Make sure to set up a new shortcut from your local client's `eqgame.exe`
- Set the shortcut on the desktop as before
- Add 'patchme' as before
- Now you'll have a shortcut connecting to the main Eulogy, and another shortcut to your local Eulogy server



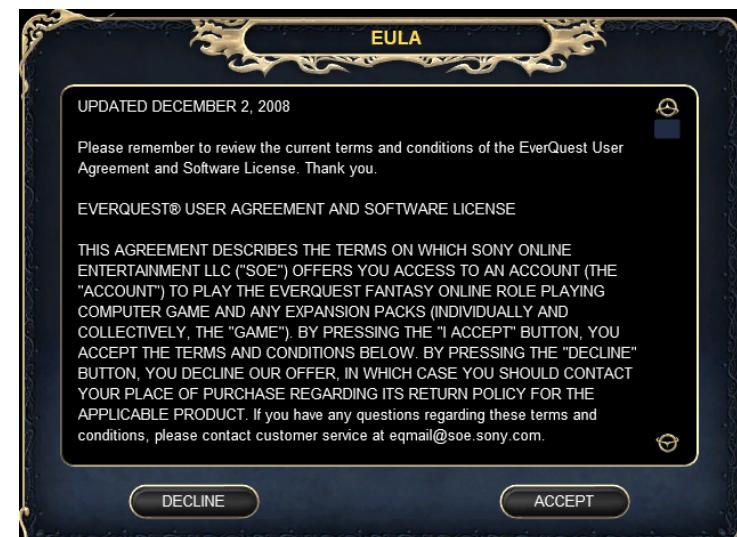
PREPARE TO LOGIN

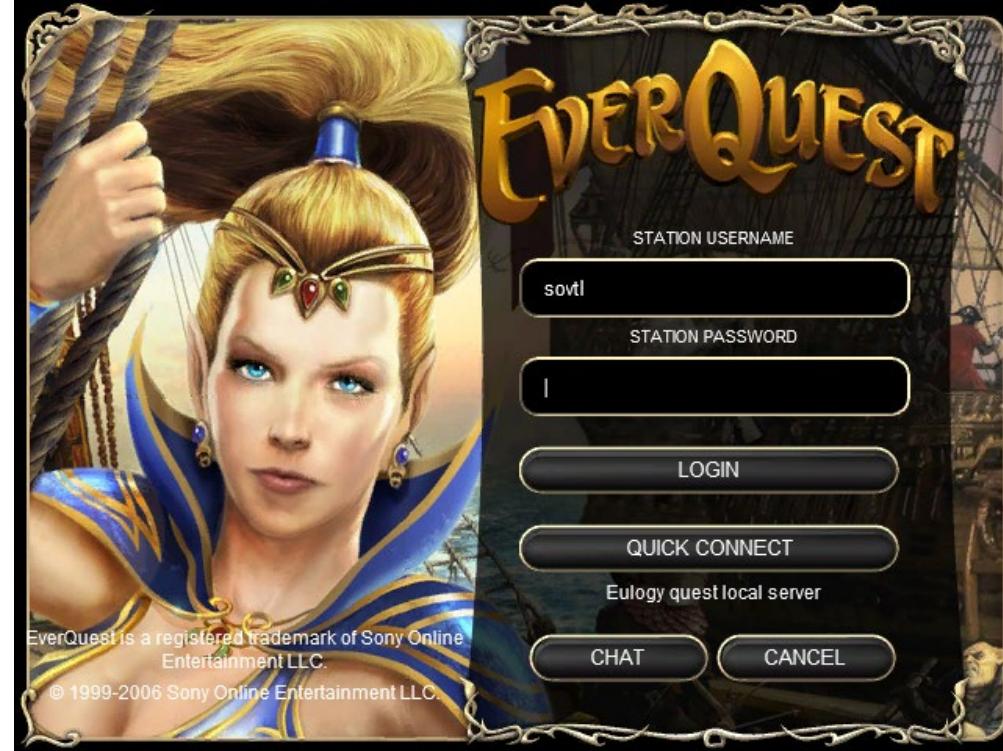
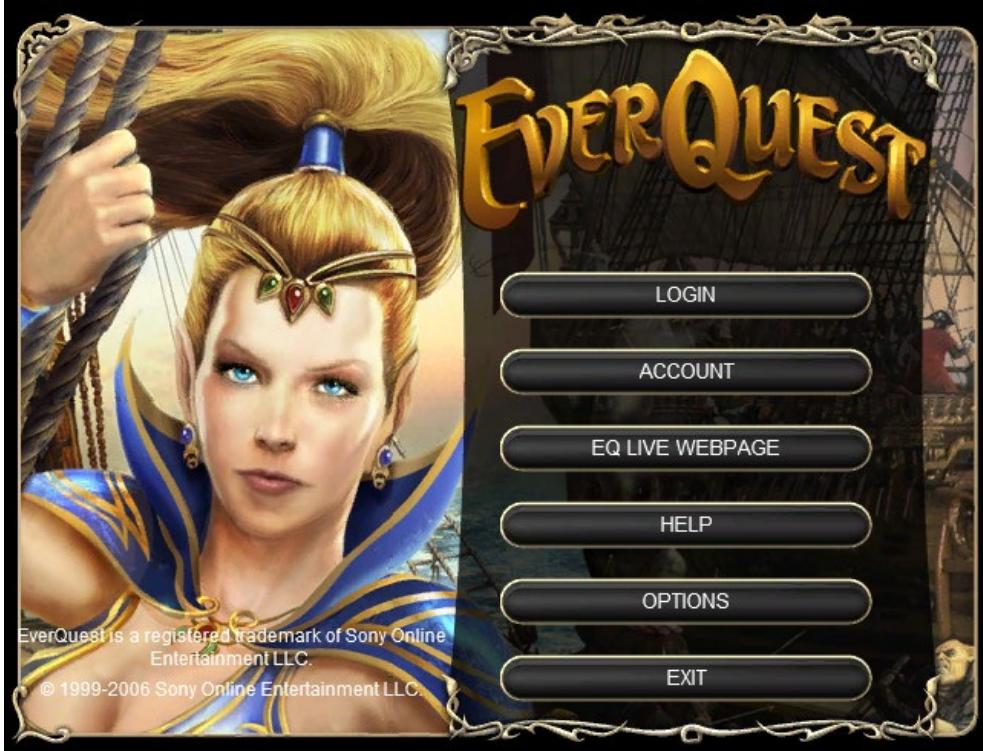
- Check your Spire web admin page
- The ‘make up’ from the console brings everything up;
there’s now no immediate need to use the blue “Power” button.
- Ensure that the required servers are **Online**:
 - Spire Launcher
 - World
 - Zones
 - Loginserver



LOG IN!

- Double click your desktop shortcut for the local install of eqemu
- Click through until you get to the login page for your username and password

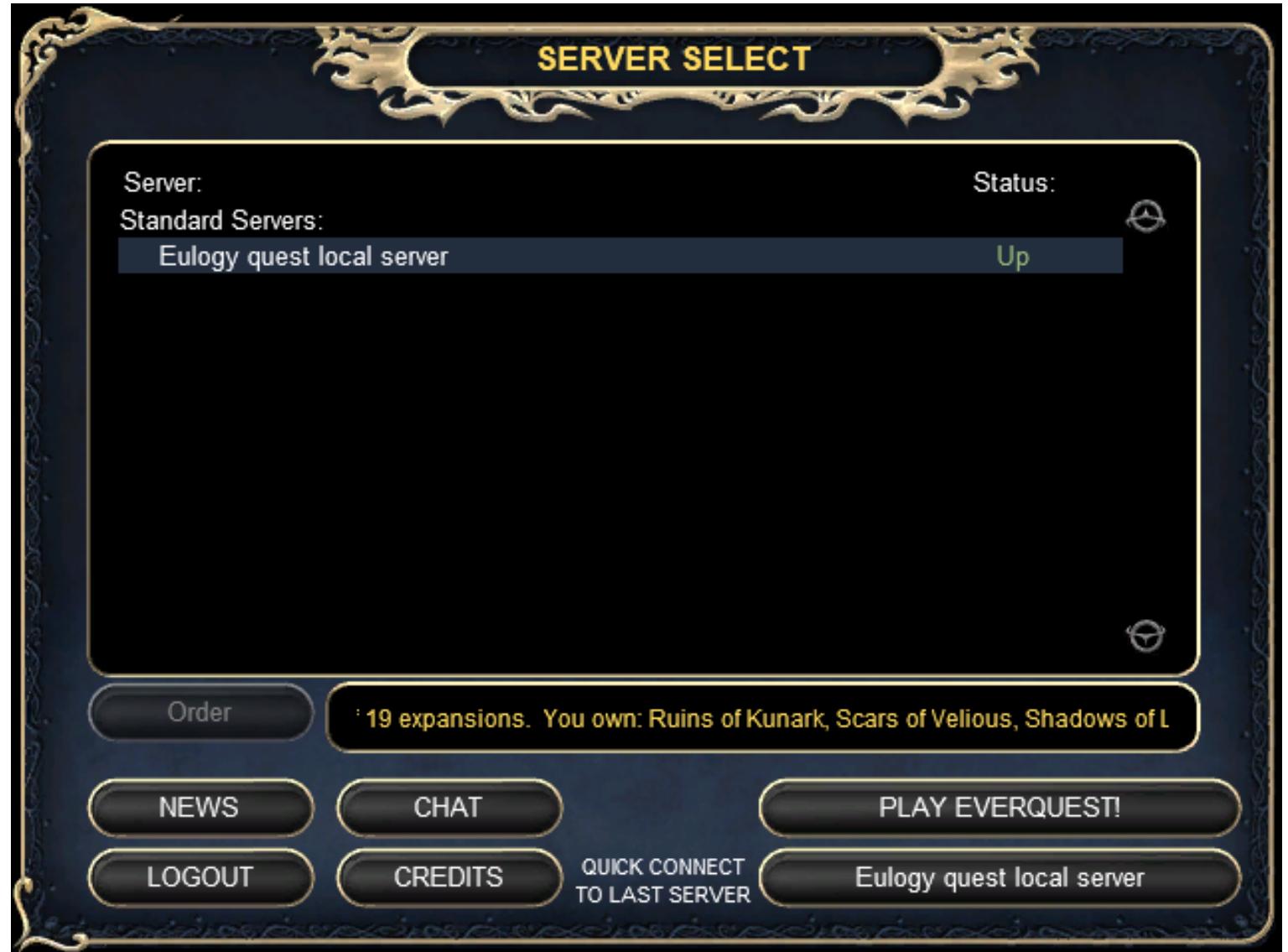




- For the username / password, you can pick anything you like, and the local login server will save this for you.
- Do remember or write this username/password down

HERE'S THE LOCAL GAME SERVER

After the first time you select a server and log in, the next time you get here, you can just press enter. It will remember this to be your favorite (and here, only) server.



CREATE YOUR CHARACTER

- You might prefer your real name or similar
- It might prove useful to have our names or similar, like Kharvey

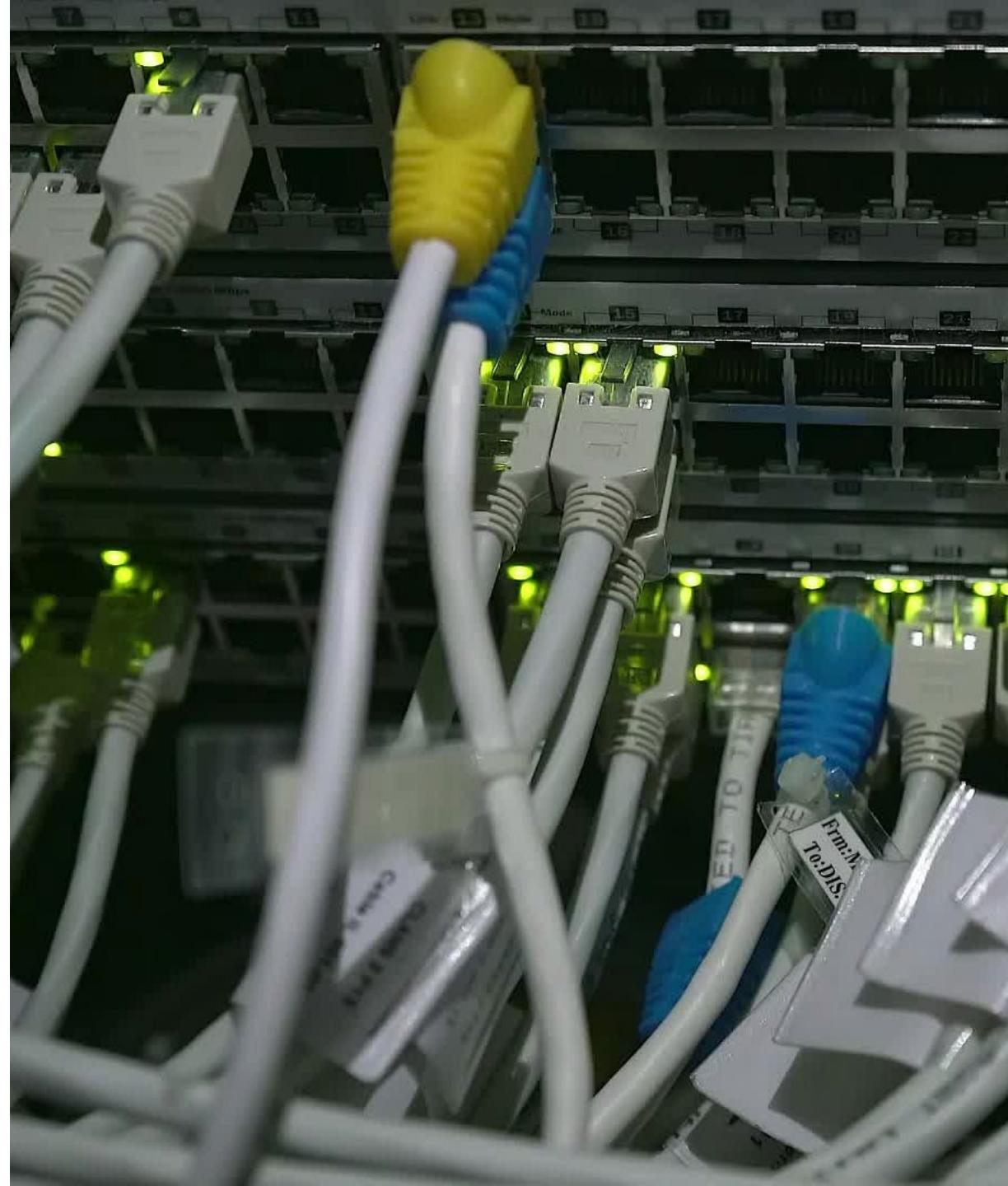




ENJOY! NOW
WE CAN GET
TO WORK

DEVELOPMENT WORKFLOW

- We have our local client/server.
- Now we need to propagate our local changes.
- We do this using Github.



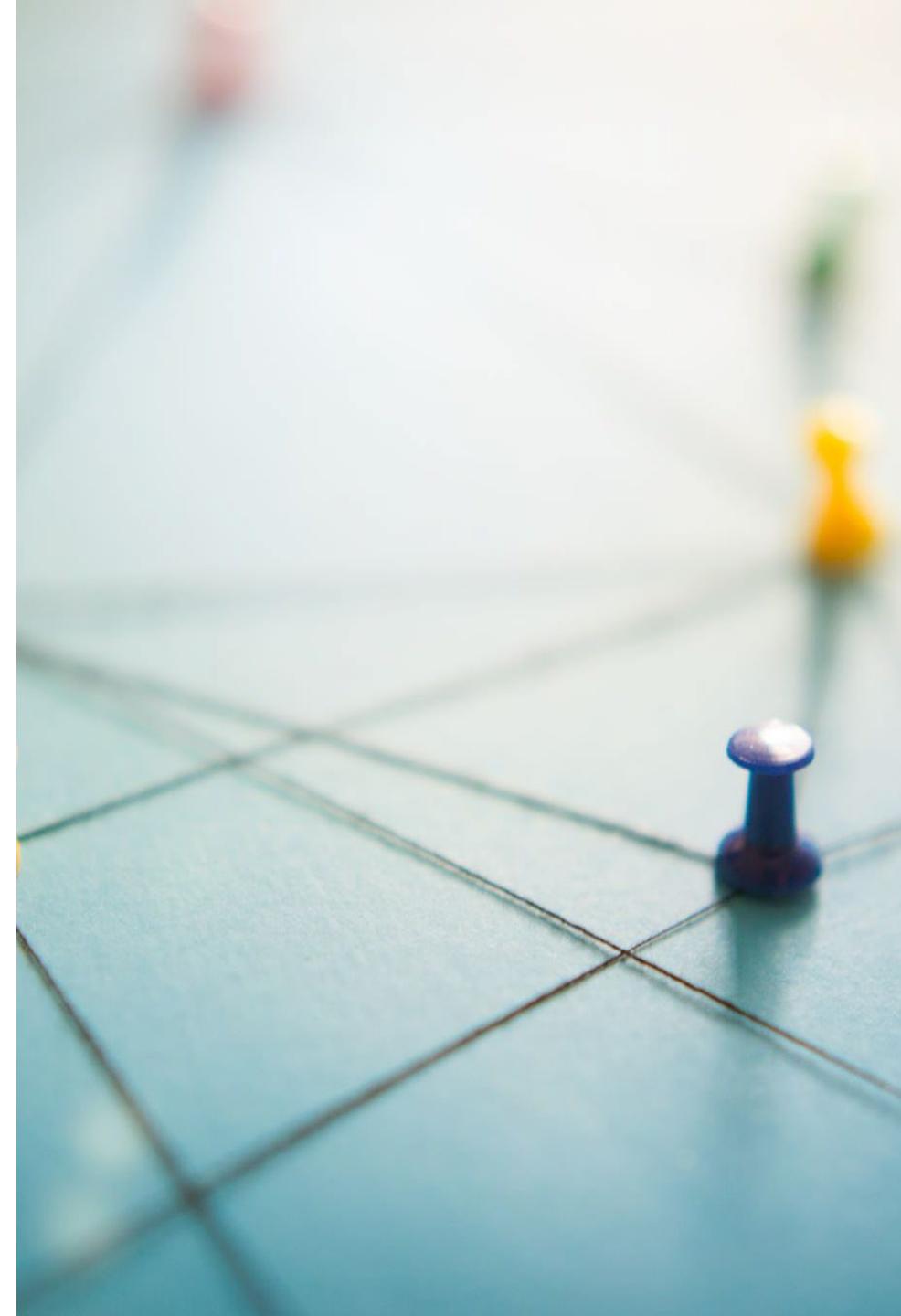


ORIGINAL AKK-STACK REPOSITORY

- <https://github.com/Akkadius/akk-stack.git>

OUR TEAM'S GROUP 4 REPOSITORY

- <https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest>



SET DUAL REMOTES

01

We want the ability
to pull changes
from akk-stack.

02

We also want to
version-control our
own private
changes.

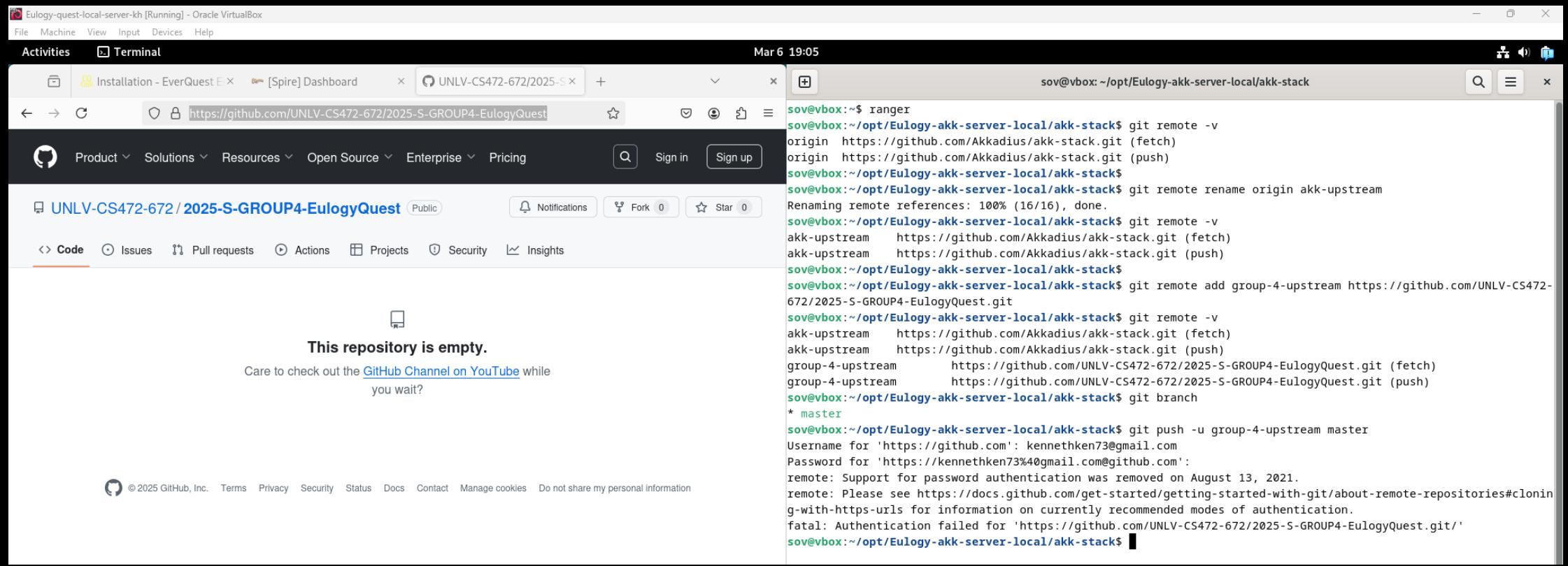
03

So, we need to
change our
'upstream' settings.



INITIAL CONFIGURATION

- Do these:
 - `git remote rename originakk-upstream`
 - `git remote add group-4-upstream <https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git>`
 - `git remote -v`
 - `git branch`
 - `git config --global user.name "your name"`
 - `git config --global user.email you@mail.com`
 - `git config --global credential.helper store`



The screenshot shows a Linux desktop environment with a terminal window open in the foreground. The terminal window has a light gray background and displays a series of command-line operations. The commands include:

```
sov@vbox:~$ ranger
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git remote -v
origin https://github.com/Akkadius/akk-stack.git (fetch)
origin https://github.com/Akkadius/akk-stack.git (push)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git remote rename origin akk-upstream
Renaming remote references: 100% (16/16), done.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git remote -v
akk-upstream https://github.com/Akkadius/akk-stack.git (fetch)
akk-upstream https://github.com/Akkadius/akk-stack.git (push)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ 
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git remote add group-4-upstream https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git remote -v
akk-upstream https://github.com/Akkadius/akk-stack.git (fetch)
akk-upstream https://github.com/Akkadius/akk-stack.git (push)
group-4-upstream https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git (fetch)
group-4-upstream https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git (push)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git push -u group-4-upstream master
Username for 'https://github.com': kennethken73@gmail.com
Password for 'https://kennethken73%40gmail.com@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git'
```

In the background, a web browser window is open to a GitHub repository page for "UNLV-CS472 / 2025-S-GROUP4-EulogyQuest". The page indicates that the repository is empty. A message encourages users to check out the GitHub Channel on YouTube while waiting.

DON'T DO THESE STEPS (AGAIN)

These steps were done to get our repository going.

NO PASSWORDS ALLOWED (FOR GIT)



- Must use other authentication measures, like “Personal Access Tokens”.
- <https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/managing-your-personal-access-tokens>

Security

🛡️ Code security

Integrations

🎛️ Applications

🕒 Scheduled reminders

Archives

📝 Security log

📝 Sponsorship log

<> Developer settings

PERSONAL ACCESS TOKENS (PAT)

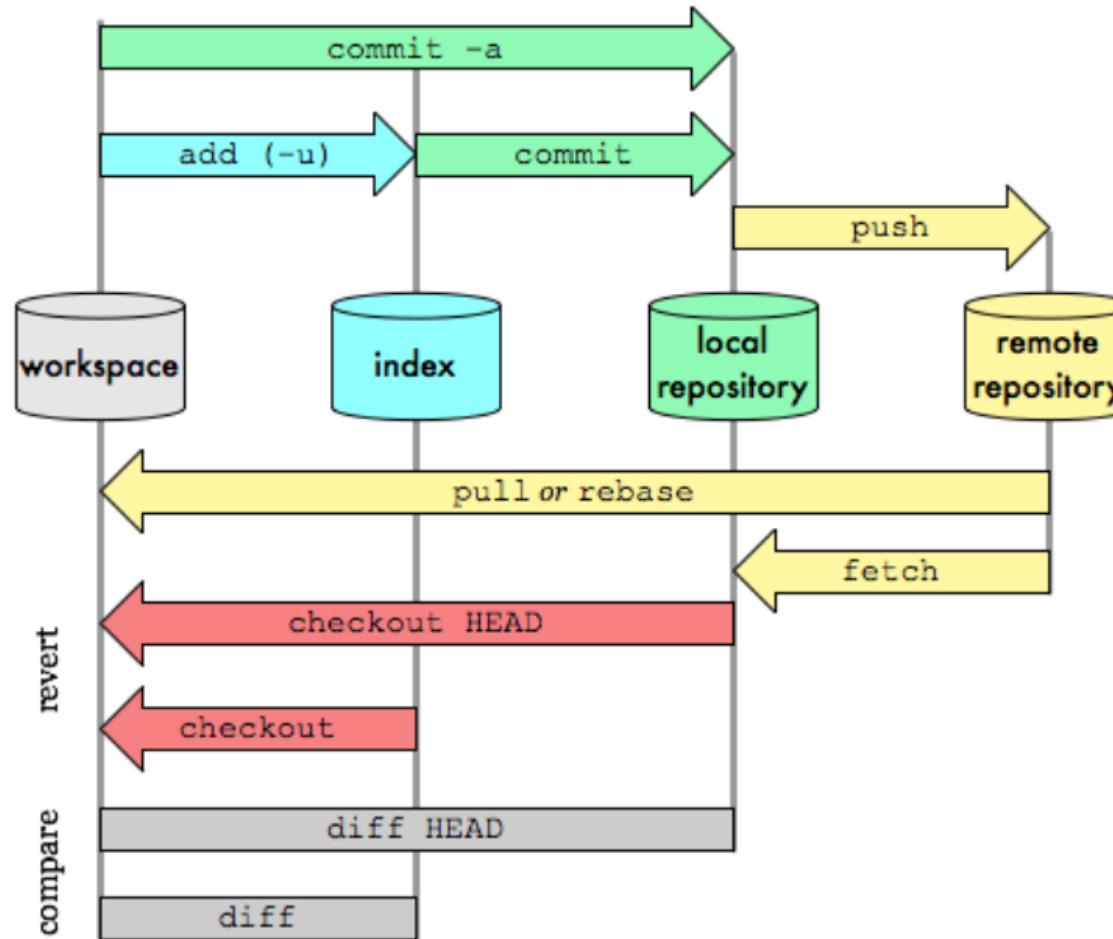
- Click your github profile picture in the upper-right corner.
- Select “Settings”
- Scroll down and click on “Developer settings”
- Create your PAT. Store the PAT number on your password manager. Github will not show it to you again.

PAT CREATION

- <https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/managing-your-personal-access-tokens>
 - Create a classic PAT. There is an option to “uncheck” private repo’s from PAT access during PAT creation.
-

Git Data Transport Commands

<http://osteele.com>



GIT

Our workflow

INITIAL GIT WORKFLOW

- Let's be ice-cold frosty on our PR process.
- To make our first workflow run, we'll add our name to the README.md file.
- We'll do this as our first PR.



THE WRONG WAY TO START

Edit README.md right away. (WRONG)

IDEALLY, WE WANT TO FETCH FIRST

But we might have uncommitted changes, and we need to stash them before fetching/merging



So, first we run `git status`



However, this is insufficient, as we shall see



Because we want to fetch in a safe manner



So, we run status first, knowing that our true intent is to fetch

THE RIGHT WAY TO START

Run: `git status`

For now, just determine what state we're in. Are we behind/ahead?

Don't pull, don't push yet.

If `git status` shows: ✓ "nothing to commit, working tree clean" → Your repo is clean.
✗ "Your branch is behind" → Run `git pull`.
✗ "Your branch is ahead" → Run `git push`.
✗ "Your branch has diverged" → Run `git pull` and resolve conflicts.

Using `git status` frequently ensures you stay updated and avoid conflicts! 

BUT WHY?



We have the chance here to `git stash`.



It's important to `pull` fetch and merge before you push.



It's also generally recommended to stash before fetching if you have uncommitted changes.



THE RIGHT WAY TO START

Do you have uncommitted changes and is your branch ahead?

First run: `git stash`

Then: `git fetch group-4-upstream --prune`

Otherwise, if you don't have uncommitted changes and your branch is ahead:

Run: `git fetch group-4-upstream --prune`

EDIT NOW, RIGHT?

Not yet. We only have *proposed* changes at this point.

VIEW THE PROPOSED CHANGES TO OUR LOCAL REPO THAT WILL OCCUR BASED ON FETCHING FROM UPSTREAM.



We need to stay current, but in a smart way.
`git pull` is a `git fetch` && `git merge` in one command.

If we **split the pull** into fetch/merge, we can **view the changes** before the changes are made to our **local**.

We just did the `git fetch`, so..

Now, run: `git diff HEAD..group-4-upstream/master`

Or: `git diff HEAD..group-4-upstream/<your in-progress branch>`

Or: `git log HEAD..group-4-upstream/<branch> oneline graph` (for a graph representation)

NOW EDIT, RIGHT?

WRONG

NOW MERGE

(NOW THAT YOU'VE HAD A CHANCE TO VIEW THE PROPOSED CHANGES)

- Case 1: You didn't have any uncommitted changes
 - Run: `git merge group-4-upstream/<branch>`

`git merge group-4-upstream/master`
NOT:
`git merge group-4-upstream master`
- Case 2: You DID have uncommitted changes
 - Recall in this case we did a git stash before fetching (like saying “oops, pretend I didn't have uncommitted changes for a second”)
 - Run: `git merge group-4-upstream/<branch>`
 - Run: `git stash pop` (bring back your stashed changes)

● `git merge this-repo master`
✖ This is not valid syntax for `git merge`.
Git will interpret this as trying to merge two things (`this-repo` and `master`) which
doesn't make sense — it will either error out or behave unpredictably depending on your
config.

REMOTE IS UPDATED NOW,
RIGHT?

WRONG

MERGE ONLY UPDATES OUR LOCAL REPOSITORY

(NOW WE NEED TO PUSH)

- Recall in this example we were ahead. Yet, we just finished pulling the long way, via fetch/diff/merge.
- We want to pull changes before we push; we need to push because we're ahead of remote.
- Now that we've stashed uncommitted changes if needed, and we've pulled any remote changes, we're ready to push.
- Run `git push group-4-upstream <your-feature-branch-your_initials>`

WHAT IF WE WERE SIMPLY BEHIND REMOTE?

Do what we just did, but there's no need to push.

THE RIGHT WAY TO START (AFTER FETCHING)

- Run:
 - `git checkout -b addMyNameKH` (add your initials at the end)
 - Unless you already have this branch (if it is one of two feature branches your working on, for example). In that case, run:
 - `git checkout addMyNameKH
 && git fetch group-4-upstream master
 && git fetch group-4-upstream addMyNameKH`
 - View the proposed changes, make sure we've checked-out the feature branch that we're in the receiving branch, then `git merge group-4-upstream/addMyNameKH`
 - This makes sure to update your local branch if it changed upstream.
-

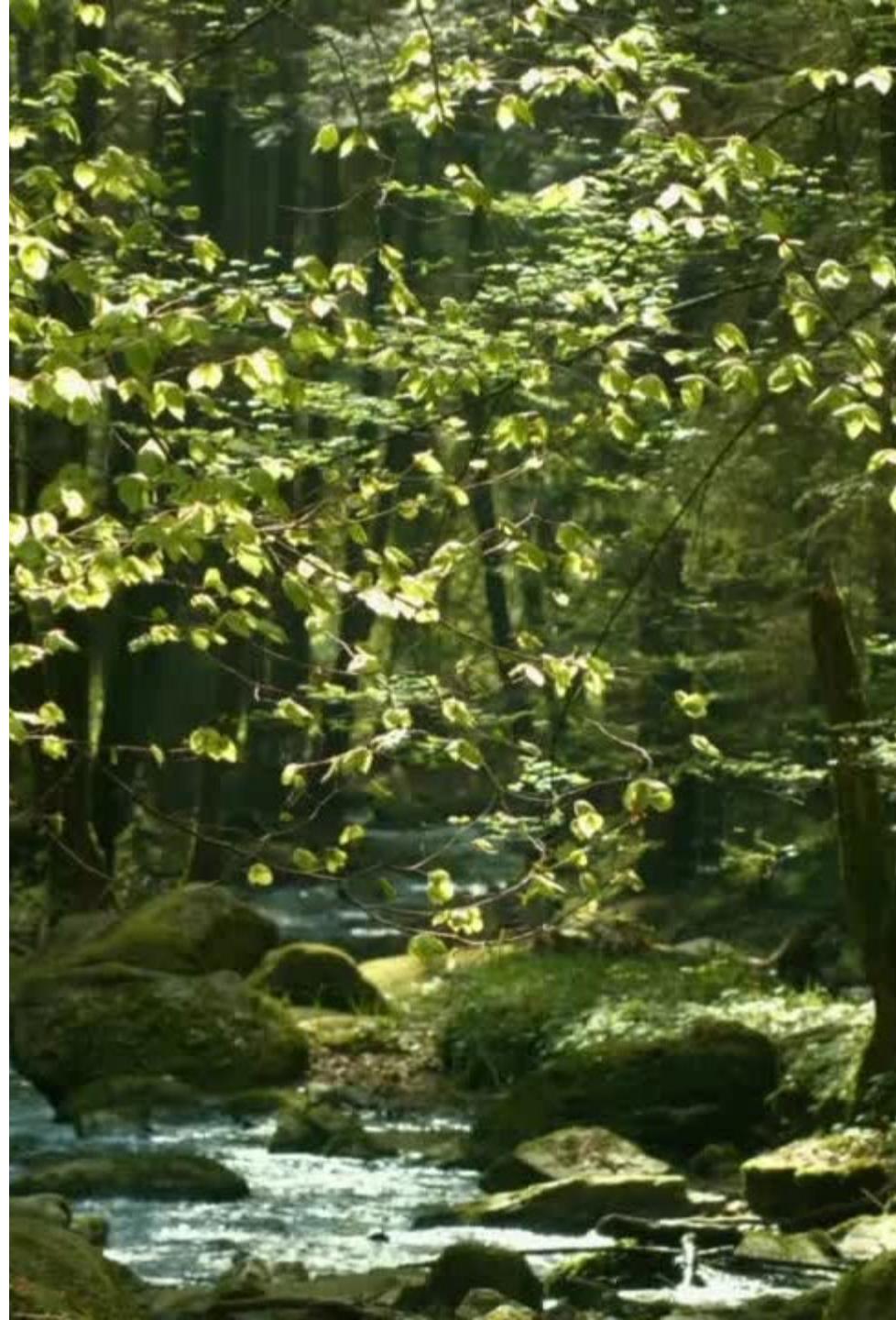
SUMMARY

- Make sure to fetch/diff/merge any changes to upstream/master and upstream/<feature> before doing any editing.
 - If you have uncommitted changes, stash first.
 - Now fetch. Then diff. Then merge.
 - If you stashed, now pop the stash after merging.
 - Only after getting current, will we now push
-

WHY THIS WAY?

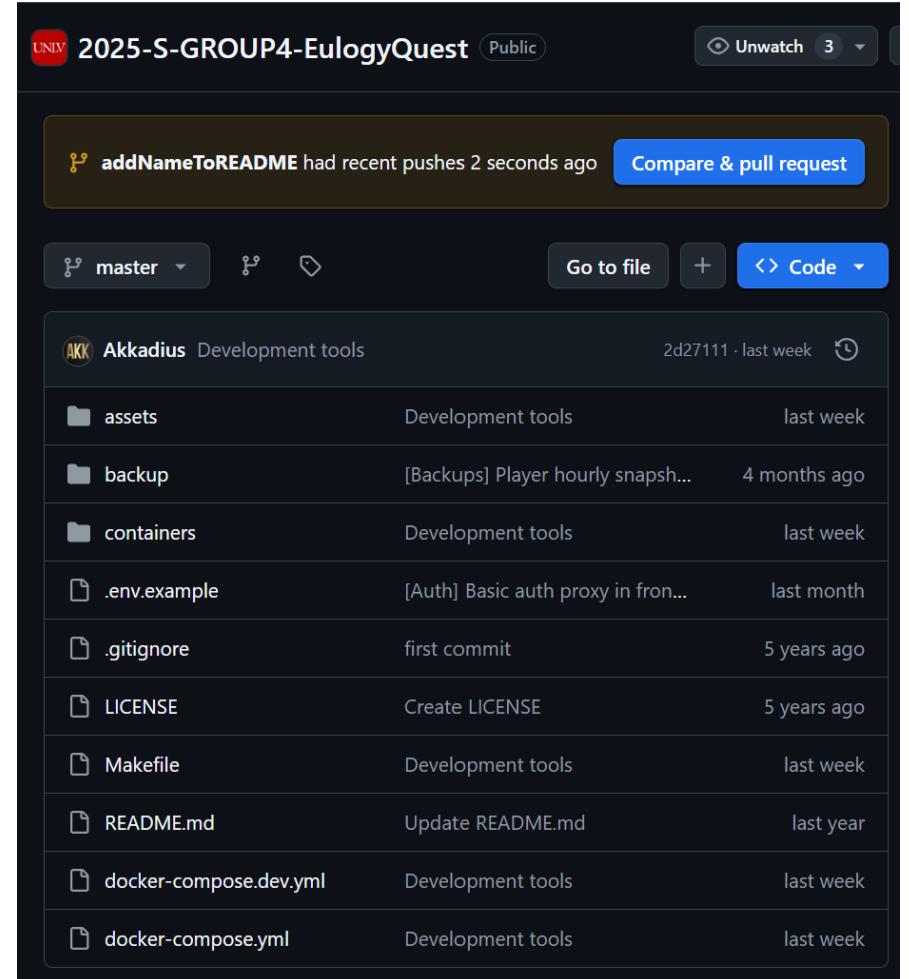
(PUSH SYNTAX)

- `git push group-4-upstream addMyNameKH`
 - This says: “push the change to our group-4-upstream, and to a branch named addMyNameKH, if that branch doesn’t exist, create it at group-4-upstream.”
 - Recall earlier that we set group-4-upstream to our given 2025-S-GROUP4-EulogyQuest repo:
 - When we did this: `git remote add group-4-upstream <https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git>`
 - Automated `git push` syntax exists but are likely not to push to the proper branch; and if it does, might cause other issues. Just push and specify group-4-upstream and the branch. Autocomplete works nicely here.



BEAUTIFUL

- This is what we want to see the moment we push.
- If Github isn't suggesting that you PR, you did something wrong.
- Note: I should have branched to “addNameToREADME-kh”



Make sure the request is to **merge into master from your feature branch.**

TRIPPLE-CHECK

The screenshot shows a GitHub repository interface for the repository "UNLV-CS472-672 / 2025-S-GROUP4-EulogyQuest". The "Code" tab is selected. Below it, the "Open a pull request" section is visible, which includes fields for "base: master" and "compare: addNameToREADME". A green checkmark icon indicates that the branches are able to merge. At the bottom, there is a text input field containing the message "Added my name to README.".

UNLV-CS472-672 / 2025-S-GROUP4-EulogyQuest

<> **Code** Issues Pull requests Actions Projects Wiki Settings

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [diff comparisons here](#).

base: master ▾ compare: addNameToREADME ▾ ✓ Able to merge. These branches can be merged without conflicts.

Add a title

Added my name to README.

NOW DELETE THE BRANCH

- `git branch -d <branch-name>` (little ‘d’. Big ‘D’ is a sledge-hammer, don’t)
- `git push group-4-upstream --delete <branch-name>` (delete your branch from upstream)
- `git fetch --prune` (further cleans things up, deleting branches that no longer exist from git’s local references.)

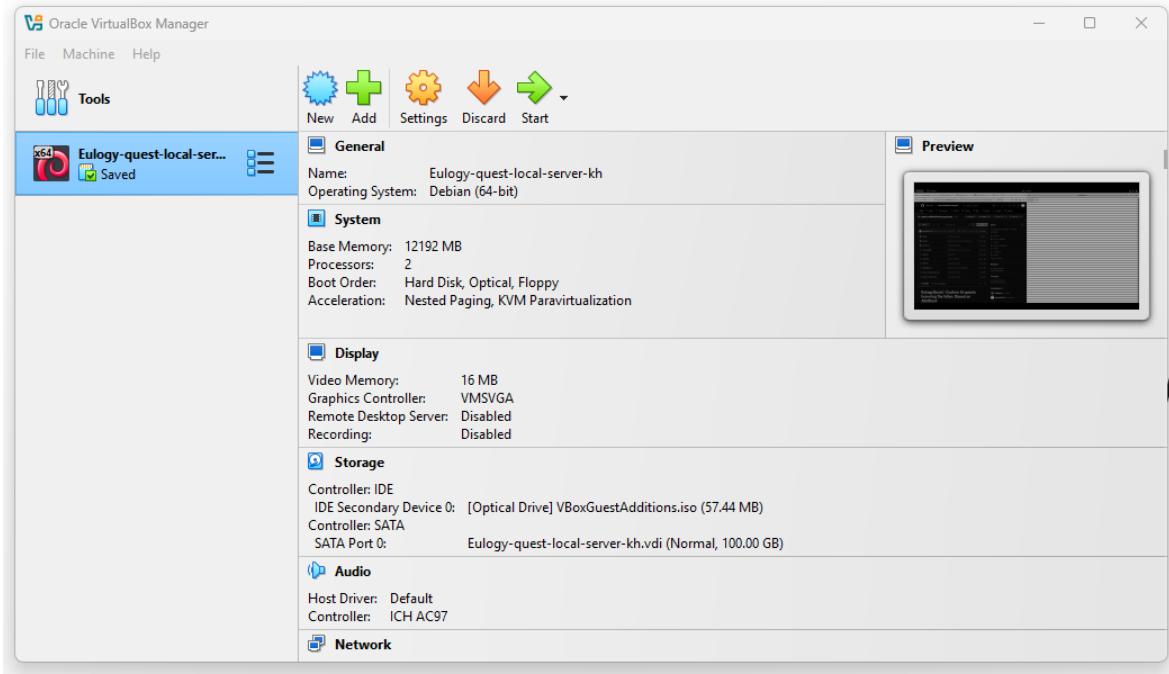
An example of the GitHub workflow would be terrific here...:

A coin-operated binocular viewer is mounted on a pole, looking out over a hilly landscape. The viewer has two eyepieces and a coin slot labeled "QUARTERS ONLY".

Initial Git Workflow

Let's step through a few examples

Start up your virtual machine and ssh in

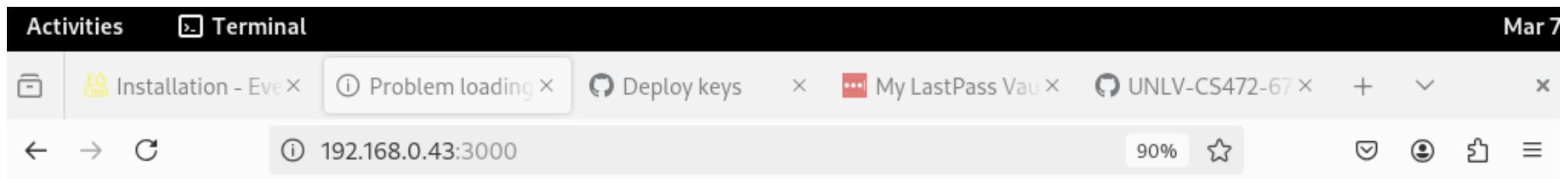


```
Windows PowerShell
sov@vbox:~$ ssh eulogy-quest-local-server
Enter passphrase for key '/home/sov/.ssh/id_rsa':
Linux vbox 6.1.0-31-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.128-1 (2025-02-07) x86_64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Mar  4 23:51:50 2025 from 192.168.0.75
sov@vbox:~$
```

Connect to the admin panel

- For me, the address is at 192.168.0.43:3000
- You will most likely have a different ip
- Still use the postfix :3000 port



If the admin panel server isn't up

The screenshot shows a Linux desktop environment with a terminal window and a Firefox browser window.

Terminal Window:

- Title bar: Eulogy-quest-local-server-kh [Running] - Oracle VirtualBox
- Activities tab is selected.
- Terminal tab is selected.
- Address bar: 192.168.0.43:3000
- Content:

```
sov@vbox:~$  
sov@vbox:~$  
sov@vbox:~$ ip a  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
        inet 127.0.0.1/8 scope host lo  
            valid_lft forever preferred_lft forever  
        inet6 ::1/128 scope host noprefixroute  
            valid_lft forever preferred_lft forever  
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000  
    link/ether 08:00:27:67:7e:67 brd ff:ff:ff:ff:ff:ff  
        inet 192.168.0.43/24 brd 192.168.0.255 scope global dynamic noprefixroute enp0s3  
            valid_lft 172447sec preferred_lft 172447sec  
        inet6 2600:8801:380f:f900:c5be:128 scope global dynamic noprefixroute  
            valid_lft 86049sec preferred_lft 86049sec  
        inet6 2600:8801:380f:f900:c485:23a2:9fc9:594e/64 scope global temporary dynamic  
            valid_lft 301sec preferred_lft 301sec  
        inet6 2600:8801:380f:f900:a00:27ff:fe67:7e67/64 scope global dynamic mngtmpaddr noprefixroute  
            valid_lft 301sec preferred_lft 301sec  
        inet6 fe80::a00:27ff:fe67:7e67/64 scope link noprefixroute  
            valid_lft forever preferred_lft forever  
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default  
    link/ether 76:0b:79:c1:b2:bb brd ff:ff:ff:ff:ff:ff  
        inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0  
            valid_lft forever preferred_lft forever
```

Firefox Browser Window:

- Title bar: Installation - Eve
- Content:

Unable to connect

Firefox can't establish a connection to the server at 192.168.0.43:3000.

 - The site could be temporarily unavailable or too busy. Try again in a few moments.
 - If you are unable to load any pages, check your computer's network connection.
 - If your computer or network is protected by a firewall or proxy, make sure that Firefox is permitted to access the web.

Try Again

Navigate to theakk-stack directory

Run `make up`

The screenshot shows a Linux desktop environment with a dark theme. On the left, a Firefox window displays the Spire changelog, listing various commits from January 14, 2025, to March 7, 2025. On the right, a terminal window shows the command 'make up' being run in the directory '/opt/Eulogy-akk-server-local/akk-stack'. The terminal output includes network configuration details and a table of Docker container status.

```
inet 127.0.0.1/8 scope host lo
    valid_lft forever preferred_lft forever
inet6 ::1/128 scope host noprefixroute
    valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:67:7e:67 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.43/24 brd 192.168.0.255 scope global dynamic noprefixroute enp0s3
        valid_lft 172447sec preferred_lft 172447sec
    inet6 2600:8801:380f:f900:c5be:128 scope global dynamic noprefixroute
        valid_lft 86049sec preferred_lft 86049sec
    inet6 2600:8801:380f:f900:c485:23a2:9fc9:594e/64 scope global temporary dynamic
        valid_lft 301sec preferred_lft 301sec
    inet6 2600:8801:380f:f900:a00:27ff:fe67:7e67/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 301sec preferred_lft 301sec
    inet6 fe80::a00:27ff:fe67:7e67/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 76:0b:79:c1:b2:bb brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
sov@vbox:~$
```

	Created	0.1s
✓ Network akk-stack_backend	Started	0.9s
✓ Container akk-stack-fail2ban-server-1	Started	1.0s
✓ Container akk-stack-fail2ban-mysqld-1	Started	5.8s
✓ Container akk-stack-eqemu-server-1	Started	1.8s
✓ Container akk-stack-mariadb-1	Started	

```
make up-info
-----
> Web Interfaces
-----
> PEQ Editor | http://192.168.0.43:8081
> PhpMyAdmin | http://192.168.0.43:8082
> EQEmu Admin | http://192.168.0.43:3000
-----
Use 'make info' to see passwords
-----
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Not entirely necessary yet



We're seeing what our git workflow looks like



Having the admin panel / server online isn't required here



But now is a good opportunity to verify that we're all caught-up with the local server install



Later we will want the server up as we make changes

Ready to edit?

```
Windows PowerShell          X  sov@vbox: ~          X  +  v
sov@vbox /home/sov/opt/Eulogy-akk-server-local/akk-stack/README.md
akk-stack               assets           4
backups                backup          8
                           code          35
                           containers     7
                           data           2
                           server         11
                           docker-compose.dev.yml 450 B
                           docker-compose.yml   6.36 K
                           LICENSE        34.3 K
                           Makefile       11.4 K
                           README.md      1.44 K
```



Not yet!
Check git status

- Get oriented first
- We want to fetch first, but safely
- Are we ahead or behind remote?
- Do we have uncommitted changes?
- Did we checkout a feature branch?
- Is our master up-to-date with remote/master?



This Photo by Unknown Author is licensed under CC BY-SA

Now, I know that remote had a small change

- I added changes to README.md already.
- So, I know for sure that remote is ahead.
- Yet I run `git status` and everything seems fine.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
nothing to commit, working tree clean
```

Maybe fetch our upstream?

- Still not showing our change.
- We really don't want to start our development until we pull in changes to master and any changes to our feature branch.
- “Unpacking objects... master->group-4-upstream/master”
- This is our hint. We're running `status` on the wrong branch.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (1/1), 912 bytes | 912.00 KiB/s, done.
From https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest
  e1c0606..0b81624  master      -> group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
nothing to commit, working tree clean
```

Aha!

- The group-4-upstream/master branch!
- Instead of “pull” we rather do “fetch/diff/merge”

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout master
Switched to branch 'master'
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log HEAD..group-4-upstream/master --oneline --graph
* 0b81624 (group-4-upstream/master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME
* 68508c7 (group-4-upstream/addNameToREADME, addNameToREADME) Added my name to README. I made the change on
a branch. This way I will see the change, but it won't be merged into master outside of the PR process.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

View the log

There it is

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index fedfb7d..7819016 100644
--- a/README.md
+++ b/README.md
@@ -3,6 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

+Ken Harvey, ■
# AkkStack | Containerized EverQuest Emulator Server Environment
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ ■
```

View the diff

Do I want the proposed changes?

The change: +Ken Harvey,

Looks good.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch  
addNameToREADME  
* master  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Prepare to merge

- The change was on the master branch
- `git merge <branch_name>` will merge <branch_name> **into the branch we're currently on.**
- So, are we on the correct branch?! (we should be of course, but double check anyway)

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git merge group-4-upstream/master
Updating e1c0606..0b81624
Fast-forward
 README.md | 1 +
 1 file changed, 1 insertion(+)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is up to date with 'group-4-upstream/master'.

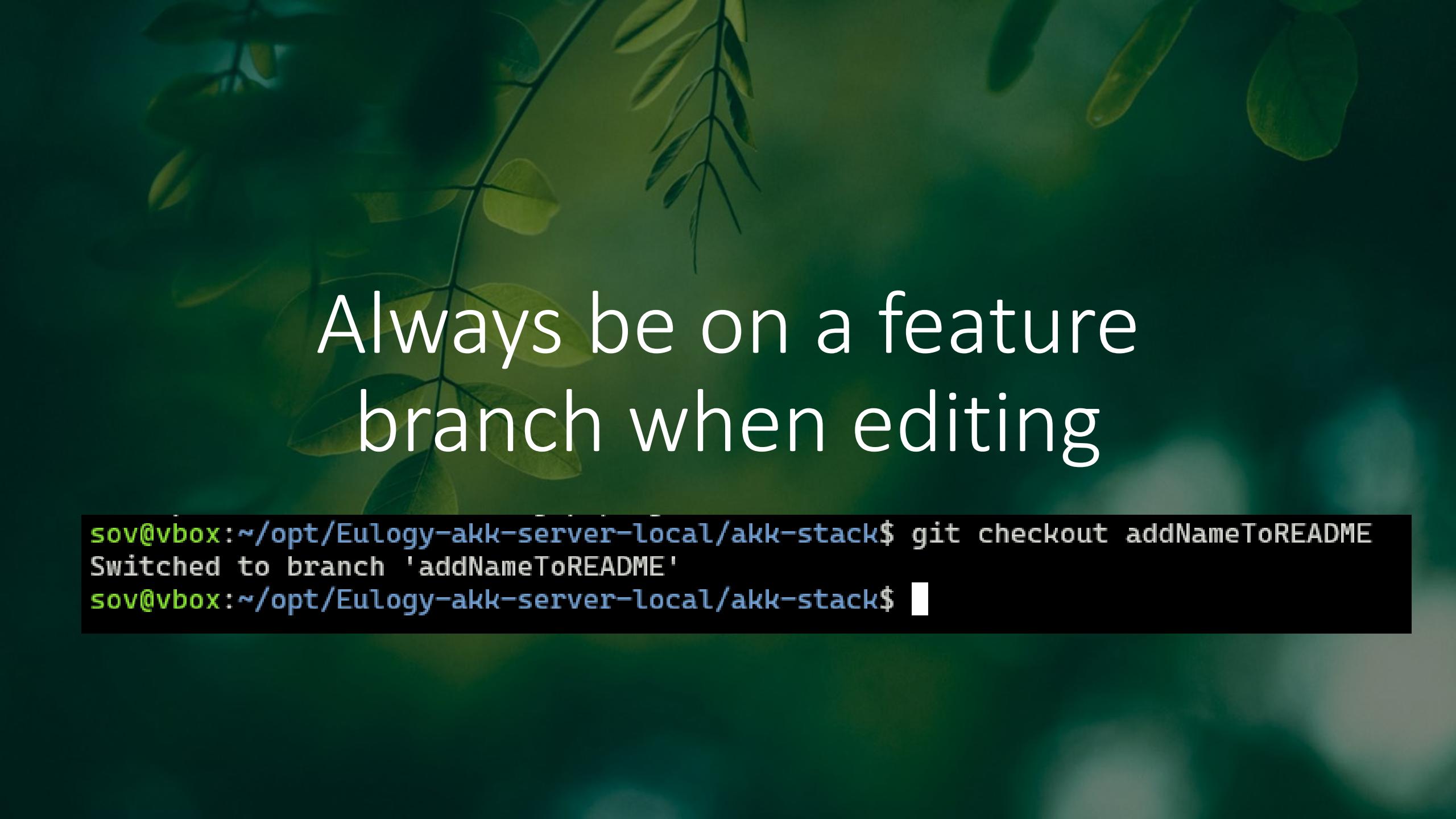
nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Ok, now merge

```
Windows PowerShell      x  Q  sov@vbox: ~      x  + | ▾  
@vbox /home/sov/opt/Eulogy-akk-server-local/akk-stack/README.md  
akk-stack           assets          4  
ckups              backup          8  
code               code          35  
containers        containers       7  
data               data          2  
server             server         11  
docker-compose.dev.yml  docker-compose.dev.yml  450 B  
docker-compose.yml   docker-compose.yml   6.36 K  
LICENSE            LICENSE        34.3 K  
Makefile           Makefile       11.4 K  
README.md          README.md     1.44 K
```

NOW are we ready to edit, right??

--WRONG.



Always be on a feature branch when editing

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ vim README.md
```

Ok .. NOW edit

```
Windows PowerShell          sov@vbox: ~/opt/Eulogy-akk  + | - | X
# EulogyQuest | Custom AI quests honoring the fallen. Based on AkkStack

**New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
Developers on Group 4: Add your names below (comma delimited).

Ken Harvey,■

# AkkStack | Containerized EverQuest Emulator Server Environment

<p align="center">

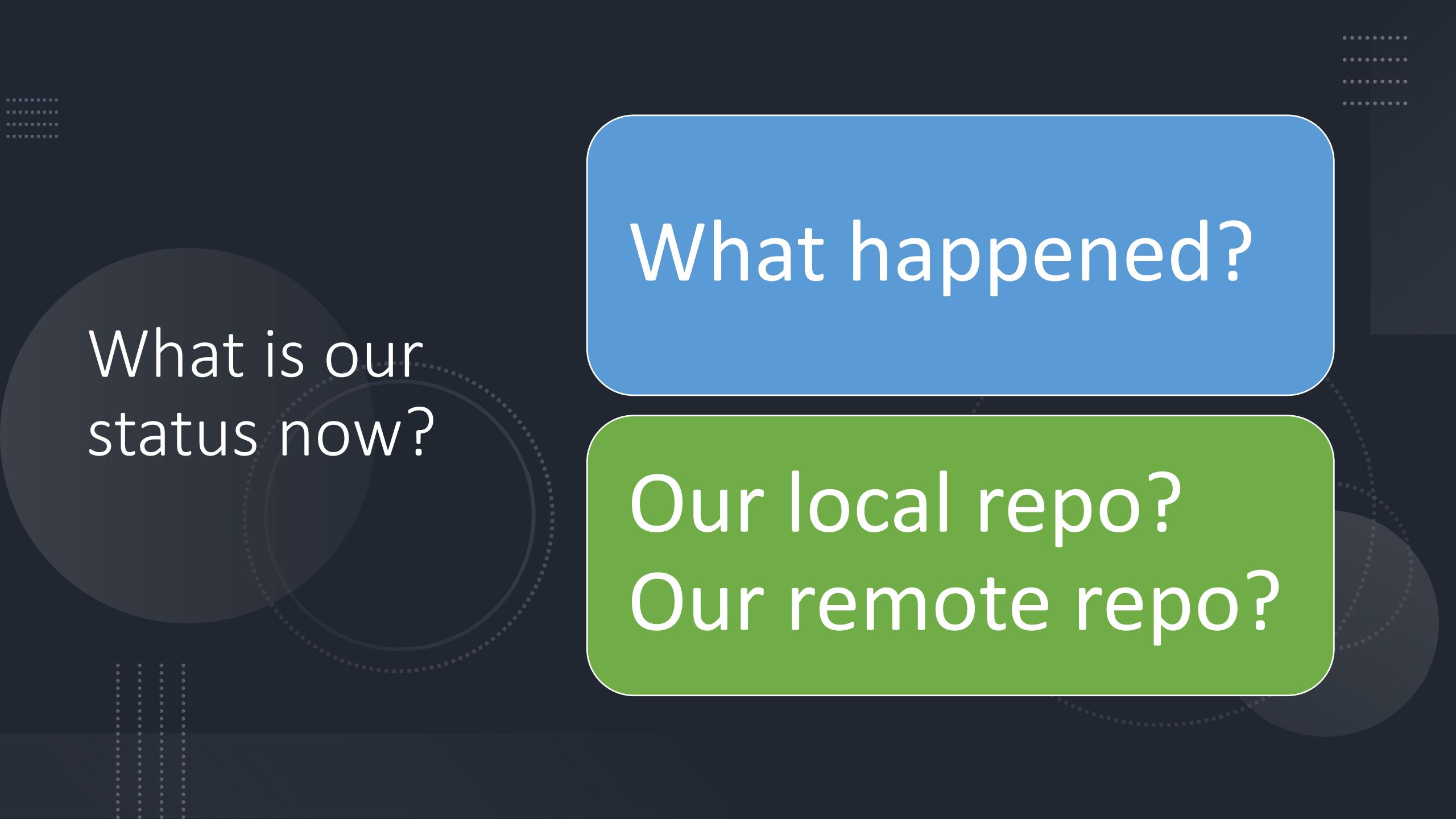


AkkStack is a simple Docker Compose environment that is augmented with developer and operator focused tooling for running EverQuest Emulator servers

You can have an entire server running within minutes, configured and ready to go for development or production use

**The README for this project has gotten far too large, we have moved to a** [dedicated documentation space within the EverQuest Emulator Docs](https://docs.eqemu.io/akk-stack/introduction/)

</p>
# Feature Requests
"README.md" 32L, 1470B
6,12
**New work for the day? Create+checkout
Developers on Group 4: Add your names be
Ken Harvey, yourName,
# AkkStack | Containerized EverQuest Em
<p align="center">
```



What is our
status now?

What happened?

Our local repo?
Our remote repo?

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ vim README.md
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* addNameToREADME
  master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

We have
uncommitted
changes.

- What if, at this point, we wanted to pull an update from our group-4-upstream/master?
- We would first `git stash` this uncommitted change, fetch/diff/merge, then pop the stash.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout master
M      README.md
Switched to branch 'master'
Your branch is up to date with 'group-4-upstream/master'.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is up to date with 'group-4-upstream/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Let's double check

- `git checkout master`
- “branch master .. is up to date with group-4-upstream/master”
- Then there’s all the **red text**.
- Yes, there are uncommitted changes.
- NO, the changes are not in master.

Ok, so change to
the feature branch
and commit

```
no changes added to commit (use "git add" and/or "git commit -a")
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
M       README.md
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* addNameToREADME
  master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git add .
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   README.md

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git commit -m "Adding demo change to README.md"
> ^C
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git commit -m "Adding demo change to README.md.
> The next person to make a change should delete the bracketed yourName and enter their own name
> followed by a comma."
[addNameToREADME cf51b15] Adding demo change to README.md. The next person to make a change should delete th
e bracketed yourName and enter their own name followed by a comma.
1 file changed, 1 insertion(+), 1 deletion(-)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

- We committed, but we haven't yet pushed.
- Let's say we committed and forgot to push.
- How would we know??
- I mean, here it says, "working tree clean", so our local git has been updated by the commit. However, we know that our upstream repo is behind.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -vv
* addNameToREADME cf51b15 Adding demo change to README.md. The next person to make a change should delete the bracketed yourName and enter their own name followed by a comma.
  master          0b81624 [group-4-upstream/master] Merge pull request #1 from UNLV-CS472-672/addNameToREADME
E
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch addNameToREADME
nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Some answers

1. We're not actually tracking the remote branch
2. Fetching doesn't catch this either, in this case.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log --oneline --decorate -n 5
cf51b15 (HEAD -> addNameToREADME) Adding demo change to README.md. The next person to make a change should d
elete the bracketed yourName and enter their own name followed by a comma.
68508c7 (group-4-upstream/addNameToREADME) Added my name to README. I made the change on a branch. This way
I will see the change, but it won't be merged into master outside of the PR process.
e1c0606 Group4 update for README. I need to make a new branch next time, before I make ANY changes. Always a
sk before editing, 'Am I on master? If yes: WHY?'
2d27111 (akk-upstream/master,akk-upstream/HEAD) Development tools
636e0d6 [Auth] Basic auth proxy in front of peq-editor
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Well, there's our
commit

- And now we see some work from Akk-stack as well.

So, let's pause

- I'm actually leaving for work.
- So, I'll need to handle any conflicts which arise if anyone makes updates while I'm gone.
- I'll check when I get back.
- For now, I know that I need to push my feature-branch change to our upstream.



Resume the VM and ssh back in

With the VM's suspend
feature, we can pick right
back up where we left off.

```
System information as of Sat Mar 8 14:41:04 PST 2025
System load: 0.0 Processes: 68
Usage of /: 0.2% of 1006.85GB Users logged in: 0
Memory usage: 3% IPv4 address for eth0: 172.17.240.197
Swap usage: 0% 

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s just raised the bar for easy, resilient and secure K8s cluster deployment.
  https://ubuntu.com/engage/secure-kubernetes-at-the-edge

This message is shown once a day. To disable it please create the
/home/sov/.hushlogin file.

sov@LAPTOP-63RHV5TN:~$ ssh eulogy-local-server
Enter passphrase for key '/home/sov/.ssh/id_rsa':
Linux vbox 6.1.0-31-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.128-1 (2025-02-07) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Mar 7 13:13:44 2025 from 192.168.0.75
sov@vbox:~$ 

[4.15.5] 1/29/2025 #
  • Spire Admin Fix zoneserver list permission mapping.

[4.15.4] 1/15/2025 #
  • Spire Admin Admin header changes to allow showing more than 3 hosts

[4.15.2] 1/14/2025 #
  • Spire Admin Fix issue where server resource statistics would not show up under Windows.
  • Spire Admin Fix EQEmu server API responsiveness under Windows.
  • Spire Admin Fix issue where server disk resource stats were not showing properly on Windows.

[*] Running 5/5
✓ Network akk-stack_backend          Created
✓ Container akk-stack-fail2ban-server-1 Started
✓ Container akk-stack-fail2ban-mysqld-1 Started
✓ Container akk-stack-eqemu-server-1   Started
✓ Container akk-stack-mariadb-1       Started
make up-info
-----> Web Interfaces
> PEQ Editor | http://192.168.0.43:8081
> PhpMyAdmin | http://192.168.0.43:8082
> EQEmu Admin | http://192.168.0.43:3000
-----> Use 'make info' to see passwords
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ 
```

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep log
70  mv Eulogy-server-local/ Eulogy-akk-server-local
72  cd Eulogy-akk-server-local/
179 cd Eulogy-akk-server-local/
197 ssh -T Eulogy-deploy-github
206 cat Eulogy-gitKey.pub
216 git remote add group-4-upstream https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git
231 git log HEAD..group-4-upstream/master --oneline --graph
259 git log --oneline --decorate -n 5
260 cd opt/Eulogy-akk-server-local/akk-stack/
261 history | grep log
```

We committed but didn't push

- Remembering that `git status` isn't sufficient here, we remember that we should `git log...` something.. But what was the exact command again?
- Run `history | grep log`. This will return previous commands we issued which include the string "log" (which also includes Eulogy).

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
231 git log HEAD..group-4-upstream/master --oneline --graph
259 git log --oneline --decorate -n 5
264 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

This is more
concise

- Change to “log “
- Note the space after log,
before the closing quote-mark

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep ^log$  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "  
 231 git log HEAD..group-4-upstream/master --oneline --graph  
 259 git log --oneline --decorate -n 5  
 264 history | grep "log "  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231  
git log HEAD..group-4-upstream/master --oneline --graph  
* 0b81624 (group-4-upstream/master, master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log HEAD..group-4-upstream/addNameToREADME --oneline --graph  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Let's check master and our feature branch

- !231 runs the command listed for history at that number
- Here we have a change, but it only shows up when doing the log from the addNameToREADME feature branch. The log query returns nothing when run from the master branch; this seems correct, as our change was done in the feature branch.

The log returns our first commit (?!)

Now let's diff to see what's happening.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
 231 git log HEAD..group-4-upstream/master --oneline --graph
 259 git log --oneline --decorate -n 5
 267 history | grep "log "
 268 git log HEAD..group-4-upstream/master --oneline --graph
 269 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 277 history | grep "log "
 278 git log HEAD..group-4-upstream/master --oneline --graph
 279 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 282 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231
git log HEAD..group-4-upstream/master --oneline --graph
* 0b81624 (group-4-upstream/master, master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !279
git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "diff "
 232 git diff HEAD..group-4-upstream/master
 285 history | grep "diff "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !232
git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index 7c09d40..7819016 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
**New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey, yourName,
+Ken Harvey, [REDACTED]

# AkkStack | Containerized EverQuest Emulator Server Environment

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ [REDACTED]
```

Our proposed change in in our local HEAD (here, with the minus sign and red text).

Diff to the rescue.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
231 git log HEAD..group-4-upstream/master --oneline --graph
259 git log --oneline --decorate -n 5
267 history | grep "log "
268 git log HEAD..group-4-upstream/master --oneline --graph
269 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
277 history | grep "log "
278 git log HEAD..group-4-upstream/master --oneline --graph
279 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
282 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231
git log HEAD..group-4-upstream/master --oneline --graph
* 0b81624 (group-4-upstream/master, master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !279
git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "diff "
232 git diff HEAD..group-4-upstream/master
285 history | grep "diff "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !232
git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index 7c09d40..7819016 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey, yourName,
+Ken Harvey,
```

AkkStack | Containerized EverQuest Emulator Server Environment

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ 
```

-Ken Harvey,
yourName, is the
change we
committed.

+Ken Harvey, is
what is currently
upstream.

Now we need to push (and
now we know –what–
we're pushing, and why).

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
231 git log HEAD..group-4-upstream/master --oneline --graph
259 git log --oneline --decorate -n 5
267 history | grep "log "
268 git log HEAD..group-4-upstream/master --oneline --graph
269 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
277 history | grep "log "
278 git log HEAD..group-4-upstream/master --oneline --graph
279 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
282 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231
git log HEAD..group-4-upstream/master --oneline --graph
* 0b81624 (group-4-upstream/master, master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !279
git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "diff "
232 git diff HEAD..group-4-upstream/master
285 history | grep "diff "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !232
git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index 7c09d40..7819016 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey, yourName,
+Ken Harvey,
```

AkkStack | Containerized EverQuest Emulator Server Environment

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

This is what's upstream

README.md

The screenshot shows two GitHub repository pages side-by-side.

**EulogyQuest | Custom AI quests honoring the fallen.
Based on AkkStack**

New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch. Developers on Group 4: Add your names below (comma delimited).

Ken Harvey,

AkkStack | Containerized EverQuest Emulator Server Environment

Contributors: 2

- AKK Akkadius Chris Miles
- kennethken73 Ken Harvey

Languages

Language	Percentage
Makefile	38.7%
Perl	23.2%
Shell	23.1%
Dockerfile	15.0%

Logos for AkkStack, Spire, and Docker are displayed at the bottom.

This shows us
that our last
commit created a
local change,
making us ‘ahead’
of upstream.

Informed, we’ll now push.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git checkout addNameToREADME
Switched to branch 'addNameToREADME'
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
231 git log HEAD..group-4-upstream/master --oneline --graph
259 git log --oneline --decorate -n 5
267 history | grep "log "
268 git log HEAD..group-4-upstream/master --oneline --graph
269 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
277 history | grep "log "
278 git log HEAD..group-4-upstream/master --oneline --graph
279 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
282 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231
git log HEAD..group-4-upstream/master --oneline --graph
* 0b81624 (group-4-upstream/master, master) Merge pull request #1 from UNLV-CS472-672/addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !279
git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "diff "
232 git diff HEAD..group-4-upstream/master
285 history | grep "diff "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !232
git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index 7c09d40..7819016 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey, yourName,
+Ken Harvey,
```

AkkStack | Containerized EverQuest Emulator Server Environment

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ 
```

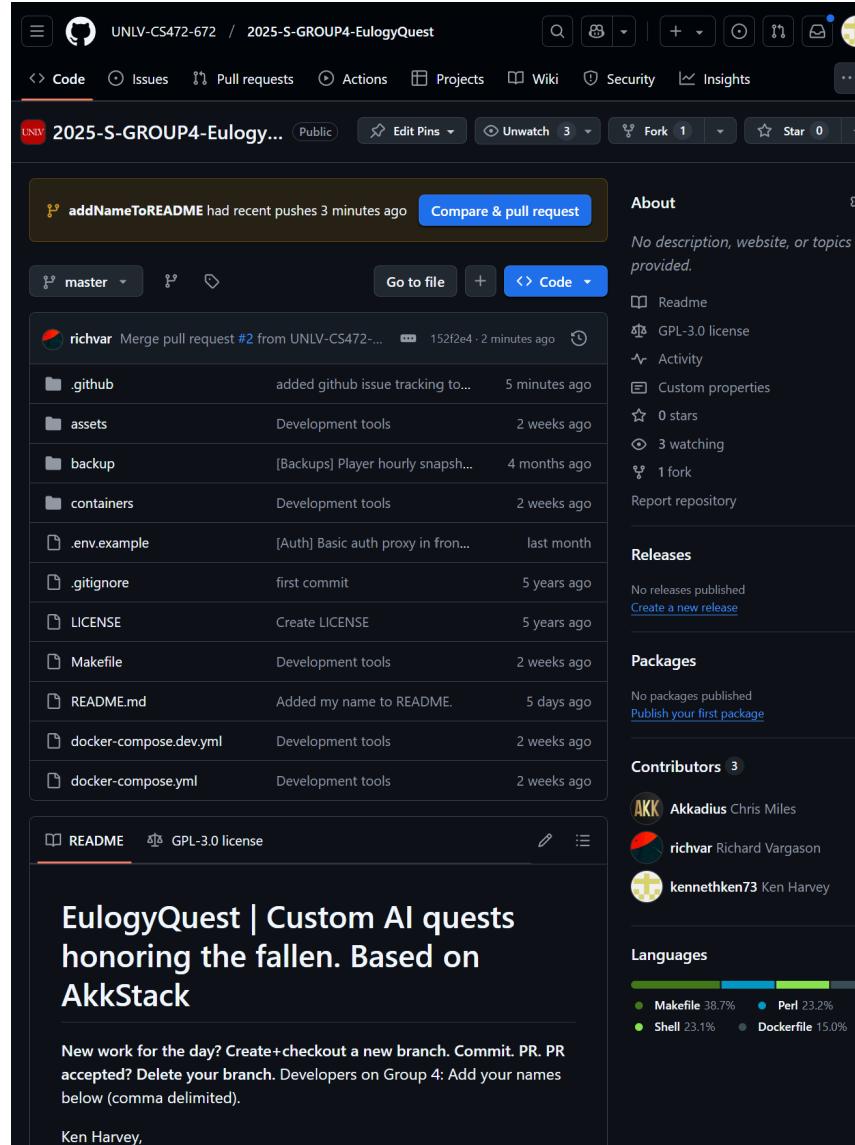
Remember to push to the upstream feature branch!

`git push group-4-upstream addNameToREADME`

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git push group-4-upstream addNameToREADME
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 2 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 397 bytes | 397.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git
 68508c7..cf51b15  addNameToREADME -> addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

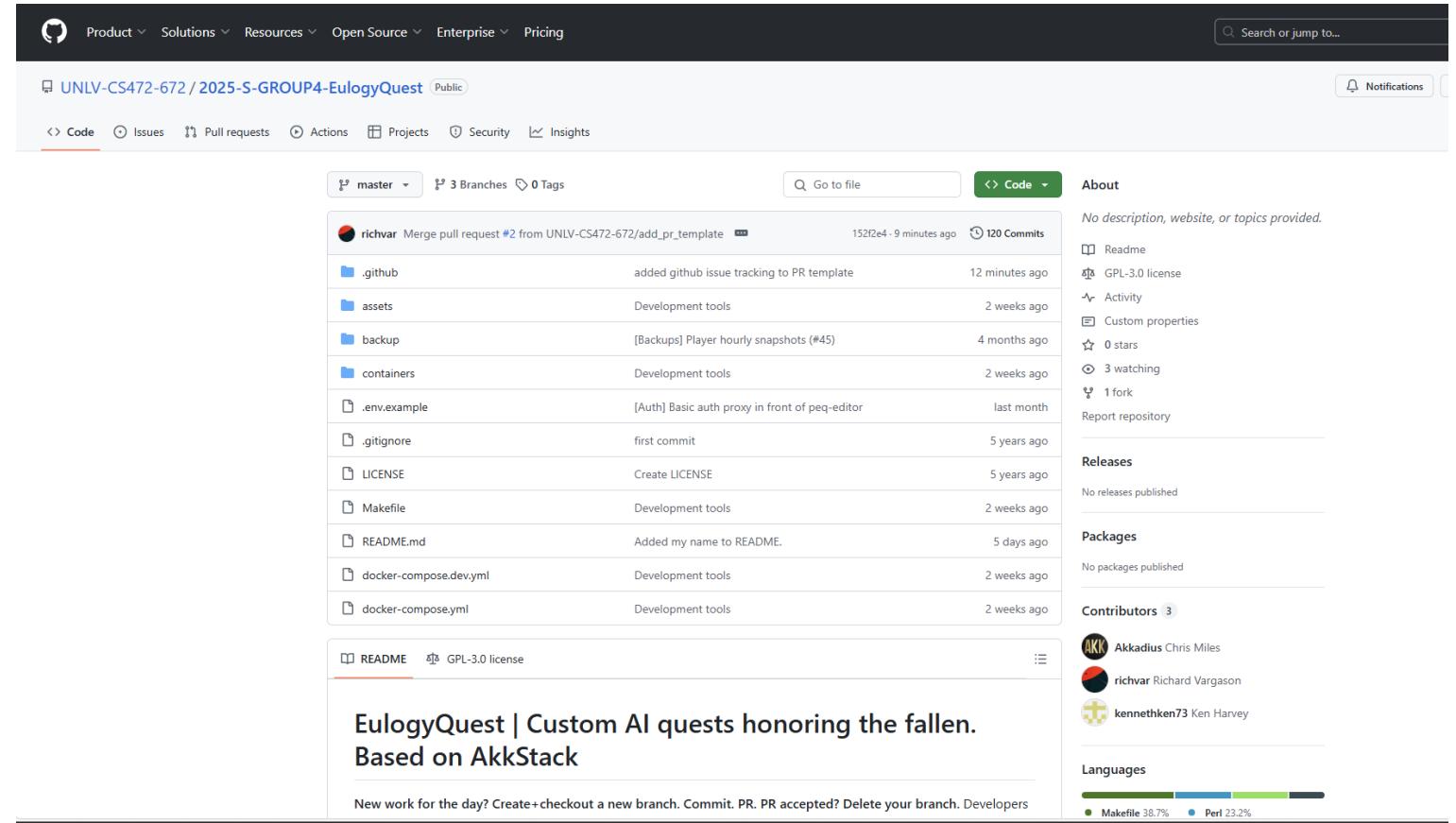
Immediately, Github
(on my main
computer's Opera
browser) suggests
that I create a PR.

Excellent!



Notably, Edge browser on laptop does not show the PR suggestion.

- Why not?
- Answer:
I didn't log into github on this browser yet



Again. Fetch first

- Richvar added a file `.github/pull_request_template.md`
- I know this due to normal communication, not via git.
- I'd miss it if I didn't fetch first.
- Here is our initial search (before fetching).
- Status, log, diff all show nada.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is up to date with 'group-4-upstream/master'.

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
  addNameToREADME
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "log "
 231 git log HEAD..group-4-upstream/master --oneline --graph
 259 git log --oneline --decorate -n 5
 267 history | grep "log "
 268 git log HEAD..group-4-upstream/master --oneline --graph
 269 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 277 history | grep "log "
 278 git log HEAD..group-4-upstream/master --oneline --graph
 279 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 282 history | grep "log "
 283 git log HEAD..group-4-upstream/master --oneline --graph
 284 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 293 history | grep "log "
 294 git log HEAD..group-4-upstream/master --oneline --graph
 295 git log HEAD..group-4-upstream/addNameToREADME --oneline --graph
 299 git log HEAD..group-4-upstream/master --oneline --graph
 305 history | grep "log "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !231
git log HEAD..group-4-upstream/master --oneline --graph
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ history | grep "diff "
 232 git diff HEAD..group-4-upstream/master
 285 history | grep "diff "
 286 git diff HEAD..group-4-upstream/master
 297 git diff HEAD..group-4-upstream/master
 307 history | grep "diff "
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ !232
git diff HEAD..group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Fetch just
our repo

We'll probably only want to
fetch from group-4-upstream

There's Akkadius' upstream
also

`git fetch group-4-upstream
master`

After fetch

`git status` : we're behind

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream master
remote: Enumerating objects: 13, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (10/10), done.
remote: Total 11 (delta 4), reused 6 (delta 1), pack-reused 0 (from 0)
Unpacking objects: 100% (11/11), 2.70 KiB | 2.70 MiB/s, done.
From https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest
 * branch           master      -> FETCH_HEAD
   0b81624..954966b  master      -> group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is behind 'group-4-upstream/master' by 5 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Why not delete our last feature branch?

- Keep things clean!
- Let's delay this cleanup until we're up-to-date synchronized with upstream.



Now might not be the time to delete our feature branch.

We're not up-to-date.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -d addNameToREADME
error: The branch 'addNameToREADME' is not fully merged.
If you are sure you want to delete it, run 'git branch -D addNameToREADME'.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch --merged
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log master..addNameToREADME --oneline
cf51b15 (group-4-upstream/addNameToREADME, addNameToREADME) Adding demo change to README.md. The next person to
make a change should delete the bracketed yourName and enter their own name followed by a comma.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff master..group-4-upstream/master
diff --git a/.github/pull_request_template.md b/.github/pull_request_template.md
new file mode 100644
index 0000000..898d50e
--- /dev/null
+++ b/.github/pull_request_template.md
@@ -0,0 +1,8 @@
+## [Overview](#overview)
+_<What changed? Why?>_
+
+## [YouTrack Ticket](#tickets)
+- https://eulogy-quest.youtrack.cloud/issue/EUL\_ISSUE\_NUMBER
+
+## [Github Issue](#issues)
+- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUE\_NUMBER
\ No newline at end of file
diff --git a/README.md b/README.md
index 7819016..7c09d40 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey,
+Ken Harvey, yourName,

# AkkStack | Containerized EverQuest Emulator Server Environment

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Now might not be the time to delete our feature branch.

`git branch --merged` tells us that only master is fully merged.
(Only ‘master’ is shown)

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -d addNameToREADME
error: The branch 'addNameToREADME' is not fully merged.
If you are sure you want to delete it, run 'git branch -D addNameToREADME'.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch --merged
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log master..addNameToREADME --oneline
cf51b15 (group-4-upstream/addNameToREADME, addNameToREADME) Adding demo change to README.md. The next person to
make a change should delete the bracketed yourName and enter their own name followed by a comma.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff master..group-4-upstream/master
diff --git a/.github/pull_request_template.md b/.github/pull_request_template.md
new file mode 100644
index 0000000..898d50e
--- /dev/null
+++ b/.github/pull_request_template.md
@@ -0,0 +1,8 @@
+## [Overview](#overview)
+_<What changed? Why?>_
+
+## [YouTrack Ticket](#tickets)
+- https://eulogy-quest.yourtrack.cloud/issue/EUL_ISSUE_NUMBER
+
+## [Github Issue](#issues)
+- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUE_NUMBER
\ No newline at end of file
diff --git a/README.md b/README.md
index 7819016..7c09d40 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey,
+Ken Harvey, yourName,

# AkkStack | Containerized EverQuest Emulator Server Environment

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Now might not be the time to delete our feature branch.

- The first part of the diff tells us that a new file was added to upstream/main.
- However, the second part is worrisome. Will it revert our addition of ‘yourName,’ in README.md?

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -d addNameToREADME
error: The branch 'addNameToREADME' is not fully merged.
If you are sure you want to delete it, run 'git branch -D addNameToREADME'.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch --merged
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log master..addNameToREADME --oneline
cf51b15 (group-4-upstream/addNameToREADME, addNameToREADME) Adding demo change to README.md. The next person to make a change should delete the bracketed yourName and enter their own name followed by a comma.
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff master..group-4-upstream/master
diff --git a/.github/pull_request_template.md b/.github/pull_request_template.md
new file mode 100644
index 000000..898d50e
--- /dev/null
+++ b/.github/pull_request_template.md
@@ -0,0 +1,8 @@
+## [Overview](#overview)
+<What changed? Why?>
+
+## [YouTrack Ticket](#tickets)
+- https://eulogy-quest.youtrack.cloud/issue/EUL_ISSUE_NUMBER
+
+## [Github Issue](#issues)
+- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUE_NUMBER
\ No newline at end of file
diff --git a/README.md b/README.md
index 7819016..7c09d40 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
**New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey,
+Ken Harvey, yourName,

# AkkStack | Containerized EverQuest Emulator Server Environment

sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Let's merge upstream/master to our local master branch now.

- Make sure we're in the branch we want to merge into.
- `git checkout master`
- `git merge group-4-upstream/master`

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git  
addNameToREADME  
* master  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git  
Updating 0b81624..954966b  
Fast-forward  
.github/pull_request_template.md | 8 +++++++  
README.md | 2 +-  
2 files changed, 9 insertions(+), 1 deletion(-)  
create mode 100644 .github/pull_request_template.md  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git  
On branch master  
Your branch is up to date with 'group-4-upstream/master'  
  
nothing to commit, working tree clean  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Now that we're up-to-date,
let's try again to delete our
feature-branch.

- We're off the feature-branch
- We delete the local feature-branch
- We delete the remote feature-branch
- We delete any local references to other feature-branches which have been deleted from the upstream repo.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
  addNameToREADME
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -d addNameToREADME
Deleted branch addNameToREADME (was cf51b15).
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git push group-4-upstream --delete addNameToREADME
To https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest.git
  - [deleted]      addNameToREADME
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch --prune
remote: Enumerating objects: 15, done.
remote: Counting objects: 100% (15/15), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 11 (delta 7), reused 9 (delta 5), pack-reused 0 (from 0)
Unpacking objects: 100% (11/11), 924 bytes | 154.00 KiB/s, done.
From https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest
  954966b..4d665af  master                  -> group-4-upstream/master
* [new branch]    EUL-54-AddRichardToReadme -> group-4-upstream/EUL-54-AddRichardToReadme
* [new branch]    add_pr_template          -> group-4-upstream/add_pr_template
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Did we get a README regression?

- “yourName,” still exists after the merge, good.
- At least we were aware of a possible regression.
- With that knowledge, we were able to check that we didn’t lose our change.

The screenshot shows a GitHub repository page for "EulogyQuest | Custom AI quests hosted on AkkStack". The page includes a "README" file and a "GPL-3.0 license" file. The README content discusses creating a new branch, committing changes, and adding names to Group 4. It also mentions "AkkStack | Containerized EverQuest".

README GPL-3.0 license

EulogyQuest | Custom AI quests hosted on AkkStack

New work for the day? Create+checkout a new branch. Commit. PR. PFF on Group 4: Add your names below (comma delimited).

Ken Harvey, yourName,

AkkStack | Containerized EverQuest

All good, right?

- Well, sort of.
- We caught up, but we also have active development ongoing.
- Doing another `git status`, we find that we're behind again.
- Work progressing!

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Quiz

So, what do we do now?



What if 5 people are adding changes in their own feature branches, simultaneously?

- Wouldn't we rather merge one feature at-a-time?
- There are two ways to view new feature-branches without pulling them.
- `git fetch--dry-run`
- `git branch -r` followed by:
`git ls-remote --heads group-4-upstream`
- Then we can decide which branch to synchronize



Let's see what's going on.

Without actually pulling-in
all the changes, let's do
some detective work.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch --dry-run
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -r
akk-upstream/Akkadius-patch-1
akk-upstream/Akkadius-patch-2
akk-upstream/HEAD ->akk-upstream/master
akk-upstream/akkadius/add-spire-admin
akk-upstream/akkadius/config-piping
akk-upstream/akkadius/fail2ban-split-config
akk-upstream/akkadius/player-hourly-snapshots
akk-upstream/akkadius/security-improvements
akk-upstream/akkadius/service-config
akk-upstream/akkadius/set-hostname-server
akk-upstream/akkadius/takp-quarm
akk-upstream/akkadius/ucs-config-block
akk-upstream/akkadius/web-services
akk-upstream/akkadius/zoneserver-ports
akk-upstream/master
group-4-upstream/EUL-54-AddRichardToReadme
group-4-upstream/add_pr_template
group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git ls-remote --heads group-4-upstream
4abef949ba1c75df9815308df66b2a5518e0eeb8      refs/heads/EUL-54-AddRichardToReadme
a050dbc3683307c895705cce8601e850d84cb2bf      refs/heads/add_pr_template
4d665af2cb0bc9fcde68c6ed794ef85eaf337810     refs/heads/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

What's new here:

- Akk-upstream changes (we don't want those normally)
- A well-named feature-branch,
“EUL-54-AddRichardToREADME”
listing the issue and the person, great!
Look forward to the PR!
- A feature branch named “add_pr_template”.
Free-points lost; prefix with an issue-tag like EUL above,
and post-fix with your initials or add your name.
- A feature branch named..”master”??
Someone editing on the master branch?

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fa
(use "git pull" to update your local branch)

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch --dry-run
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch -r
akk-upstream/Akkadius-patch-1
akk-upstream/Akkadius-patch-2
akk-upstream/HEAD ->akk-upstream/master
akk-upstream/akkadius/add-spire-admin
akk-upstream/akkadius/config-piping
akk-upstream/akkadius/fail2ban-split-config
akk-upstream/akkadius/player-hourly-snapshots
akk-upstream/akkadius/security-improvements
akk-upstream/akkadius/service-config
akk-upstream/akkadius/set-hostname-server
akk-upstream/akkadius/takp-quarm
akk-upstream/akkadius/ucs-config-block
akk-upstream/akkadius/web-services
akk-upstream/akkadius/zoneserver-ports
akk-upstream/master
group-4-upstream/EUL-54-AddRichardToReadme
group-4-upstream/add_pr_template
group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git ls-remote --heads gro
4abef949ba1c75df9815308df66b2a5518e0eeb8      refs/heads/EUL-54-AddRichar
a050dbc3683307c895705cce8601e850d84cb2bf      refs/heads/add_pr_template
4d665af2cb0bc9fcde68c6ed794ef85eaf337810      refs/heads/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

If we simply
pull, then
we don't
know what
changes.

Fetch

Diff and log

Then merge

Let's inspect.

- `git diff HEAD..group-4-upstream/master`
- `git log HEAD..group-4-upstream/master --oneline --graph`

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log HEAD..group-4-upstream/master --oneline --graph
* 4d665af (group-4-upstream/master) do same thing for github
* 3bacaaaf update PR template youtrack ticket URL to take just one click to replace issue num
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff HEAD..group-4-upstream/master
diff --git a/.github/pull_request_template.md b/.github/pull_request_template.md
index 898d50e..7774c07 100644
--- a/.github/pull_request_template.md
+++ b/.github/pull_request_template.md
@@ -2,7 +2,7 @@
 _<What changed? Why?>_

## [YouTrack Ticket](#tickets)
-- https://eulogy-quest.youtrack.cloud/issue/EUL_ISSUE_NUMBER
+- https://eulogy-quest.youtrack.cloud/issue/EUL_ISSUENUMBER

## [Github Issue](#issues)
-- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUE_NUMBER
\ No newline at end of file
+- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUENUMBER
\ No newline at end of file
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

Diff (removed the underscore)

- My local .github/pull_request_template.md (“ISSUE_NUMBER”)
- The upstream version (“ISSUENUMBER”)

```
## [YouTrack Ticket](#tickets)
- https://eulogy-quest.youtrack.cloud/issue/EULISSUENUMBER

## [Github Issue](#issues)
- https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUENUMBER
```

```
3
4 ## [YouTrack Ticket](#tickets)
5 - https://eulogy-quest.youtrack.cloud/issue/EULISSUENUMBER
6
7 ## [Github Issue](#issues)
8 - https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest/issues/ISSUENUMBER
```

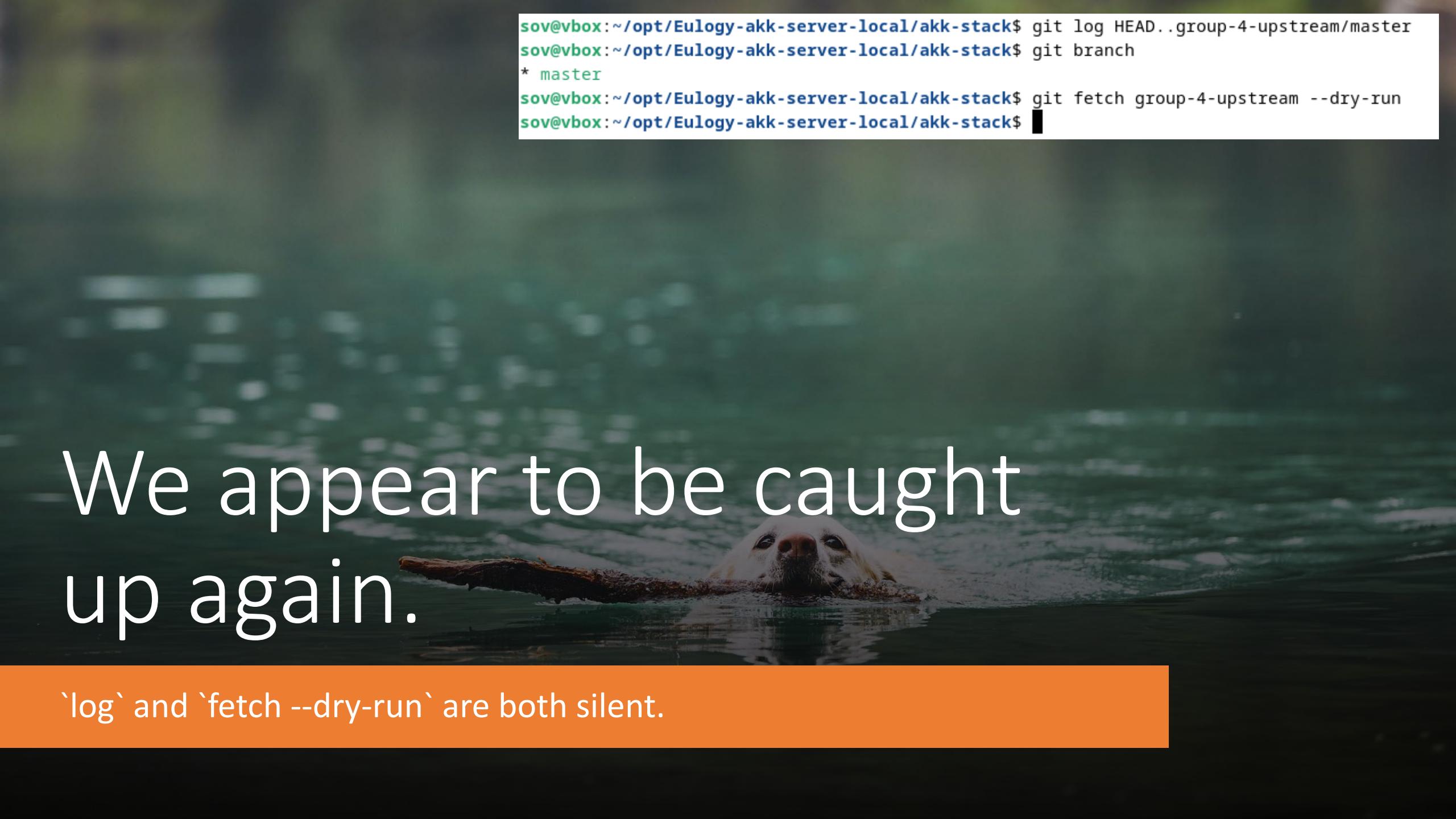
Now let's merge

- The changes to upstream/master are pulled into our local repo using merge.
- Ideally, we want to change upstream master via the PR process.
- We'd still have to pull those upstream changes to local, however.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git merge group-4-upstream/master
Updating 954966b..4d665af
Fast-forward
  .github/pull_request_template.md | 4 +---+
   1 file changed, 2 insertions(+), 2 deletions(-)
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is up to date with 'group-4-upstream/master'.
```

nothing to commit, working tree clean

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

A seal is swimming in a body of water, with its head and upper body visible above the surface. The water has small ripples and reflections.

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log HEAD..group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream --dry-run
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```

We appear to be caught
up again.

`log` and `fetch --dry-run` are both silent.

New PR!

- From a new **feature-branch**
- With team-member **name**
- With **issue number**
- Minimal (preferably **one**) files changed

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Pull requests 1 Actions

1 Open ✓ 3 Closed

[EUL-54]: Update readme with Richard Vargason #4 opened 1 hour ago by richvar

UNLV-CS472-672 / 2025-S-GROUP4-EulogyQuest Public

Code Issues Pull requests 1 Actions Projects Security Insights

[EUL-54]: Update readme with Richard Vargason #4

Open richvar wants to merge 1 commit into master from EUL-54-AddRichardToReadme

Conversation 0 Commits 1 Checks 0 Files changed 1

Quiz

So, what do we do now?



The usual, fetch-view-merge

- But this is the process we have online.
- This is exactly what we're doing visually on github.
- This is how we merge the PR to upstream master.
- Except with a much nicer interface

The screenshot shows a GitHub pull request page for a repository named "UNLV-CS472-672 / 2025-S-GROUP4-EulogyQuest". The pull request is titled "[EUL-54]: Update readme with Richard Vargason #4". It is described as "richvar wants to merge 1 commit into master from EUL-54-AddRichardToReadme". The commit has 0 conversations, 1 commit, 0 checks, and 1 file changed, README.md. The diff shows a single line being added: "- Ken Harvey, yourName," is replaced by "+ Ken Harvey, Richard Varagson, yourName".

```
diff --git a/README.md b/README.md
index 333333..e6e6e6 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 3   3   **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 4   4   Developers on Group 4: Add your names below (comma delimited).
 5   5
 6 - Ken Harvey, yourName,
 6 + Ken Harvey, Richard Varagson, yourName
 7   7
 8   8   # AkkStack | Containerized EverQuest Emulator Server Environment
 9   9
```

Wait, where'd the review option go?

Don't forget to log into github!

The screenshot shows a GitHub pull request page. At the top, there's a navigation bar with links for Product, Solutions, Resources, Open Source, Enterprise, and Pricing. On the right side of the bar are search, sign-in, and sign-up buttons. Below the bar, the repository URL is UNLV-CS472/2025-S-GROUP4-EulogyQuest and it's marked as public. There are buttons for Notifications, Fork (1), and Star (0). The main content area shows a pull request titled "[EUL-54]: Update readme with Richard Vargason #4". The status is "Open" and it says "richvar wants to merge 1 commit into master from EUL-54-AddRichardToReadme". Below the title, there are tabs for Conversation (0), Commits (1), Checks (0), and Files changed (1). A comment from "richvar" is shown, stating "richvar commented 2 hours ago" and "Overview". The comment text is "Adds Richard Vargason to readme file. proves out part of github workflow". To the right of the comment, there are sections for "Reviewers" (listing kennethken73) and "Assignees".

There it is

>Login switched back to my dark-mode; cool!

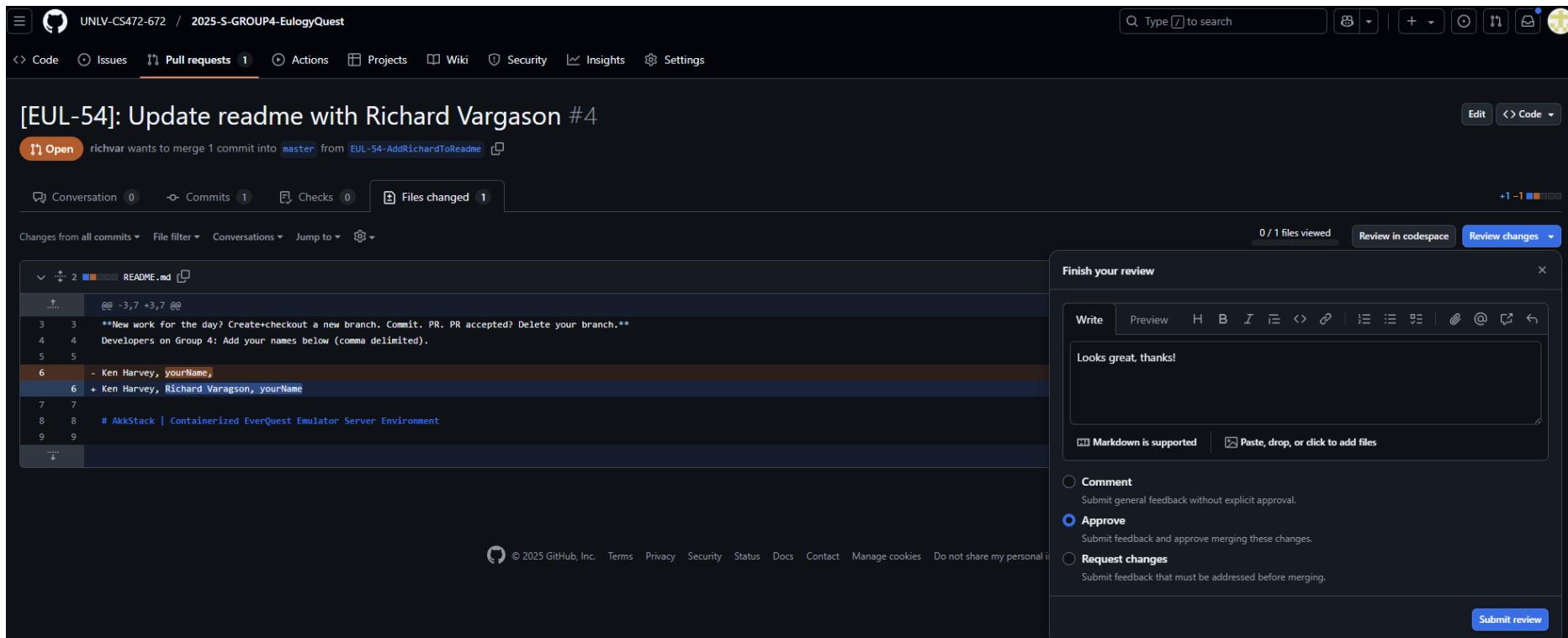
The screenshot shows a GitHub pull request page for a repository named UNLV-CS472-672. The pull request is titled "[EUL-54]: Update readme with Richard Vargason #4". The status is "Open" and it shows a merge from the branch "EUL-54-AddRichardToReadme" into the "master" branch. There is one commit, one check, and one file changed, which is the README.md file. The commit message is "richvar wants to merge 1 commit into master from EUL-54-AddRichardToReadme". The file changes section shows the diff for README.md:

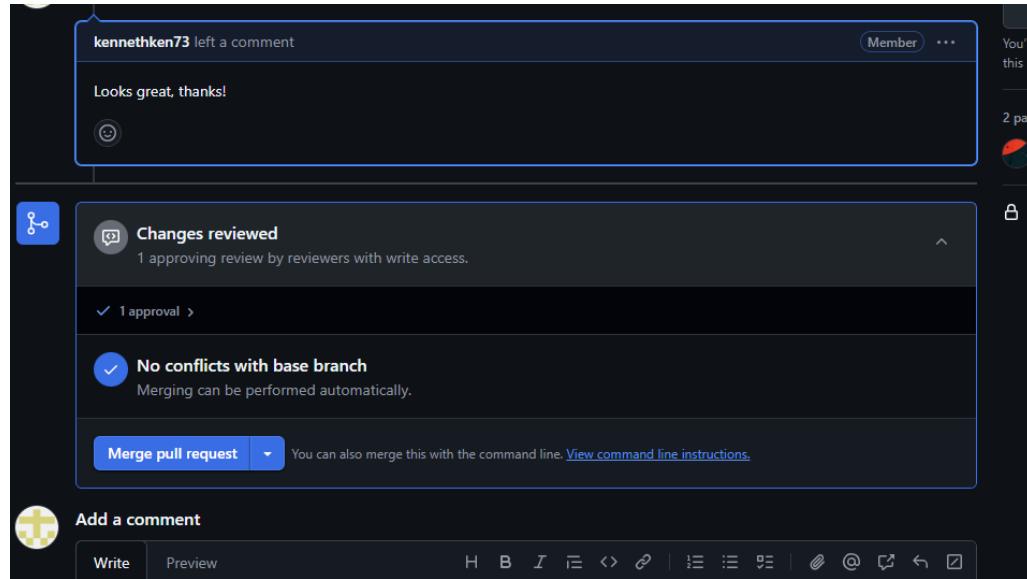
```
diff --git a/README.md b/README.md
index 1234567..8901234 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 3   3   **New work for the day? Create+checkout a new branch. Commit, PR, PR accepted? Delete your branch.**
 4   4   Developers on Group 4: Add your names below (comma delimited).
 5   5
 6 - Ken Harvey, yourName,
 6 + Ken Harvey, Richard Varagson, yourName
 7   7
 8   8   # AkkStack | Containerized EverQuest Emulator Server Environment
 9   9

```

Leave an approval comment

Or request a change





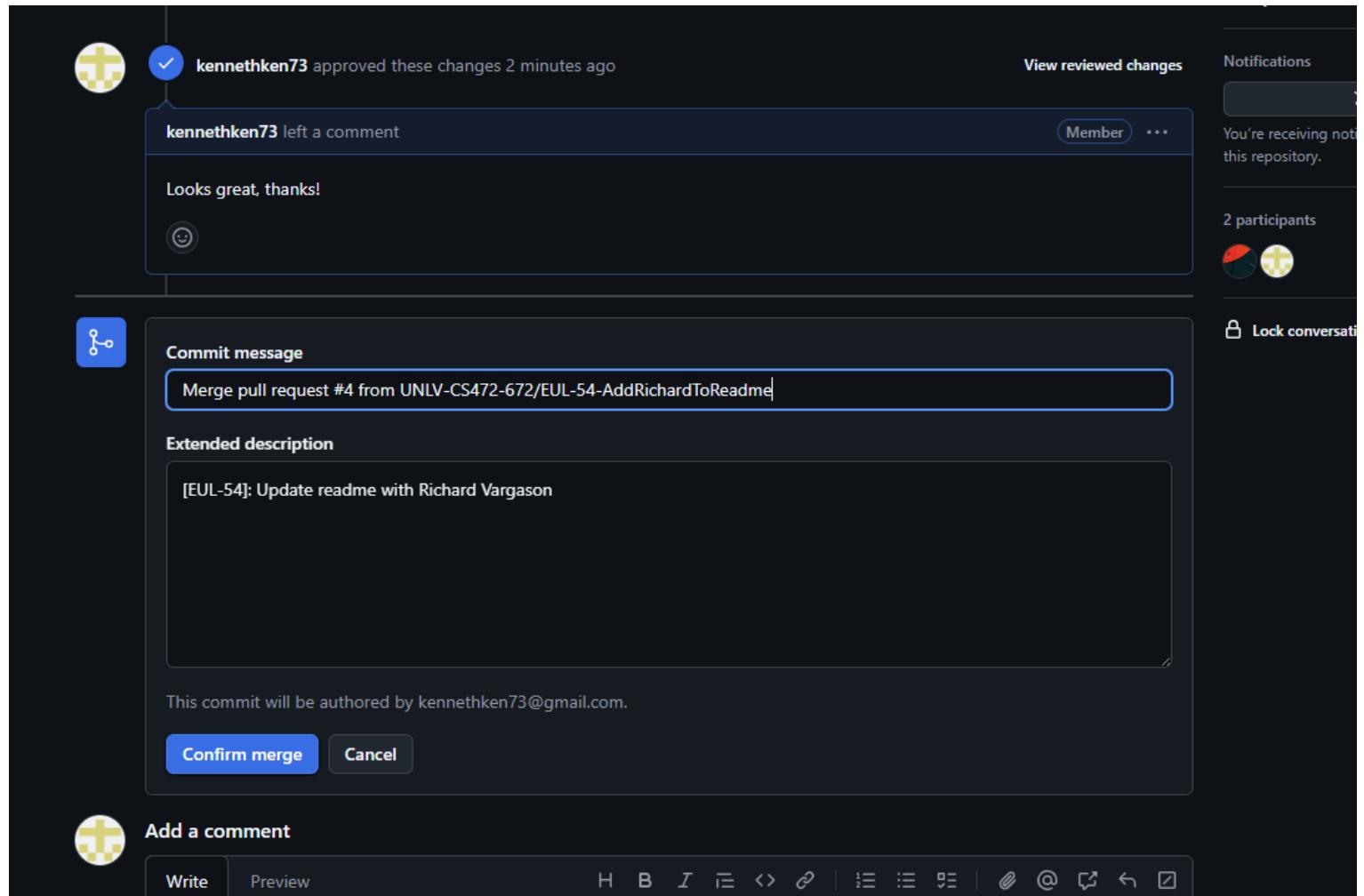
One more click to approve

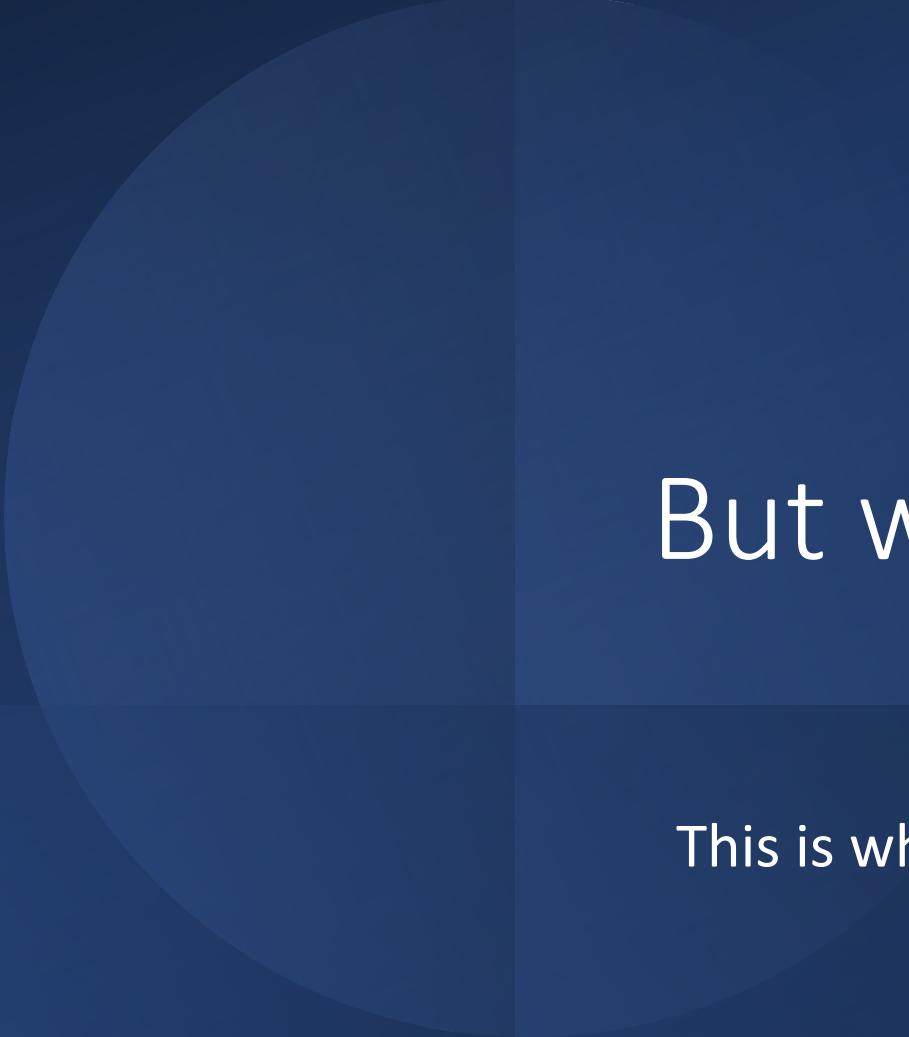
Click “merge pull request”

I lied; one more click!

I promise..

Click “Confirm merge”





But wait! There's more.

This is where we would close the github issue.

2 ways to close github issues during PR merge

- In the PR description, add “Fixes #123” or “Closes #123”
 - Use ‘Fixes’ if this actually fixes something that was broken
 - Use ‘Closes’ if this accomplishes a task
- In the commit message, add “Fixes #123” or “Closes #123” accordingly
- A third way is to do this manually in the issue tab (after a PR is merged). Avoid if possible.
If closed this way, reference the PR number, like “Fixed by PR #456”.

So, we just merge

- But we note that we'll later track this via a manual issue closure.
- Reviewing your own accepted PR's, use that "Delete branch" option!
- Remember also to delete the branch from your local repo.

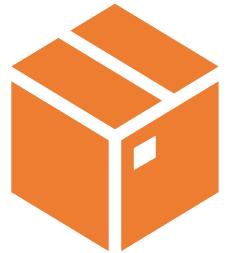


Merged [EUL-54]: Update README with Richard Vargas on now
kennethken73 merged 1 commit into master from EUL-54-AddRichardToReadme now

kennethken73 left a comment
Looks great, thanks!
kennethken73 commented now
Later, let's add a youtrack-ed github issue number to this task and close it in the issues tab by referencing the issue via the PR number. So, this PR will have a number. We create a github issue. We then close that issue, referencing this PR. Example, in the github issue tab we make for this completed task, we close the issue with the words "This was fixed by PR#456".
kennethken73 merged commit f0924b7 into master now Revert
Pull request successfully merged and closed
You're all set — the EUL-54-AddRichardToReadme branch can be safely deleted.
Delete branch Add a comment

A screenshot of a GitHub pull request merge interface. The top bar shows the merge status as "Merged" and the PR title "[EUL-54]: Update README with Richard Vargas". Below the bar, a comment from "kennethken73" says "Looks great, thanks!". Another comment from "kennethken73" follows, explaining a workflow involving YouTrack and GitHub issues. The main message area shows the merge commit "f0924b7" into "master" and a "Revert" button. At the bottom, a summary message states "Pull request successfully merged and closed" and "You're all set — the EUL-54-AddRichardToReadme branch can be safely deleted.", with a "Delete branch" button and an "Add a comment" link.

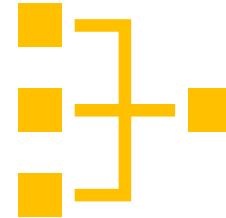
Upstream master is now ahead of us



Fetch



Review



Merge

Workflow

- `git status` isn't **yet** informed by fetch
- `status` first to make sure we don't have uncommitted changes before we fetch
- After fetching, view the log and the diff
- The log tells us that this change originated as a feature-branch edit, and that this feature-branch was pulled into the upstream master branch (we know that this was accomplished via PR).
- So, now we know **where** to merge this when we next merge this into our local repo (our local master branch).

```
* master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is up to date with 'group-4-upstream/master'.

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git fetch group-4-upstream
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 2 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (2/2), 996 bytes | 996.00 KiB/s, done.
From https://github.com/UNLV-CS472-672/2025-S-GROUP4-EulogyQuest
  4d665af..f0924b7 master      -> group-4-upstream/master
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git log HEAD..group-4-upstream/master
commit f0924b7ddf08a32fe335b9b71392c3cce2d2ba79 (group-4-upstream/master)
Merge: 4d665af 4abef94
Author: Ken Harvey <kennethken73@gmail.com>
Date:   Tue Mar 11 22:42:50 2025 -0700

  Merge pull request #4 from UNLV-CS472-672/EUL-54-AddRichardToReadme

  [EUL-54]: Update readme with Richard Vargason

commit 4abef949ba1c75df9815308df66b2a5518e0eeb8 (group-4-upstream/EUL-54-AddRichardToReadme)
Author: Richard Vargason <richvargason@gmail.com>
Date:   Tue Mar 11 20:17:42 2025 -0700

  update readme with my name
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git diff HEAD..group-4-upstream/master
diff --git a/README.md b/README.md
index 7c09d40..49de222 100644
--- a/README.md
+++ b/README.md
@@ -3,7 +3,7 @@
 **New work for the day? Create+checkout a new branch. Commit. PR. PR accepted? Delete your branch.**
 Developers on Group 4: Add your names below (comma delimited).

-Ken Harvey, yourName,
+Ken Harvey, Richard Vargason, yourName

# AkkStack | Containerized EverQuest Emulator Server Environment
```

Git status after fetch

- But we already know this from the log
- And we know more than status is telling us

```
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status
On branch master
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)

nothing to commit, working tree clean
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$
```

Merge

- (into the correct branch)
- Thankfully, we've been deleting our feature branches

```
-Ken Harvey, yourName,  
+Ken Harvey, Richard Varagson, yourName  
  
# AkkStack | Containerized EverQuest Emulator Server Environment  
  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git status  
On branch master  
Your branch is behind 'group-4-upstream/master' by 2 commits, and can be fast-forwarded.  
  (use "git pull" to update your local branch)  
  
nothing to commit, working tree clean  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git branch  
* master  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ git merge group-4-upstream/master  
Updating 4d665af..f0924b7  
Fast-forward  
 README.md | 2 +-  
 1 file changed, 1 insertion(+), 1 deletion(-)  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ cat README.md | grep "Ken"  
Ken Harvey, Richard Varagson, yourName  
sov@vbox:~/opt/Eulogy-akk-server-local/akk-stack$ █
```



This has been a collaborative effort with the assistance of ChatGPT

- ChatGPT (4o) has fielded many of my questions and has been a wonderful tutor.
- Here's a link to the ChatGPT session which summarizes the conversation I had over a week of AI tutoring:
<https://chatgpt.com/canvas/shared/67d1257cf9888191bd14b382009b35cf>
(Best viewed as a markdown file).
- This ends the github workflow section of the “Eulogy-quest development guide”.