✅ Kali Linux 2025 — GPU Passthrough (RTX 2070 SUPER on ESXi)

🖥️ 1. ESXi Host: Enable GPU Passthrough

1. Go to **https://<ESXi-IP>/ui**
2. Navigate to **Host > Manage > Hardware > PCI Devices**
3. Enable passthrough for:
   - `0000:03:00.0` NVIDIA GeForce RTX 2070 SUPER
   - `0000:03:00.1` HD Audio Controller (optional)
   - `0000:03:00.2` USB 3.1 Controller (optional)
   - `0000:03:00.3` Type-C UCSI (optional)
4. **Reboot the ESXi host**

🧱 2. Edit VM Settings in ESXi

Under VM → Edit Settings:

1. **Add PCI Device(s)**:
   - Select all relevant passthrough devices (GPU core at minimum)
2. Under **VM Options > Advanced > Edit Configuration**, add:

Key	Value
`pciHole.start`	`"2048"`
`hypervisor.cpuid.v0`	`"FALSE"`
`svga.present`	`"FALSE"`
`firmware` (optional)	`"efi"`

3. Disable **Secure Boot** in **VM Options → Boot Options**

🧰 3. Prepare Kali Linux

Inside Kali:

```
bash
```

```
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sudo apt update && sudo apt upgrade -y
sudo apt install build-essential dkms linux-headers-$(uname -r) -y
```

Disable Nouveau:

```
bash
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echo -e "blacklist nouveau\noptions nouveau modeset=0" | sudo tee
/etc/modprobe.d/blacklist-nouveau.conf
sudo update-initramfs -u
sudo reboot
```

📥 4. Download and Install the NVIDIA Driver

From: https://www.nvidia.com/Download

1. Download `.run` file (e.g., `NVIDIA-Linux-x86_64-575.64.03.run`)
2. Make executable:

   ```
   bash
   CopyEdit
   chmod +x NVIDIA-Linux-*.run
   ```

3. Boot into **text mode** (or switch with):

   ```
   bash
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   sudo systemctl isolate multi-user.target
   ```

4. Run the installer:

   ```
   bash
   CopyEdit
   sudo ./NVIDIA-Linux-*.run
   ```

During Installation:

- ✅ Choose **NVIDIA Proprietary** driver
- ❌ Skip 32-bit compatibility (select **No**)
- ✅ Enable DKMS support (select **Yes**)
- ✅ Rebuild initramfs (select **Yes**)
- ✅ Run `nvidia-xconfig` when prompted (select **Yes**)

🔁 5. Reboot and Verify

```
bash
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sudo reboot
nvidia-smi
```

You should see:

```
scss
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NVIDIA-SMI 575.64.03 ...
GeForce RTX 2070 SUPER ...
```

🧪 Optional Post-Install Tools

- `sudo apt install hashcat`
- `sudo apt install nvidia-cuda-toolkit`
- Build `llama.cpp` with `LLAMA_CUDA=1`