

## **Home Lab**

1. Setup a VM cluster with Proxmox VE on commodity hardware (2x or 3x node cluster)
2. Get a system dedicated to storage and run FreeNAS on it, then export your data via NFS/SMB/iSCSI to your Proxmox VE environment and VMs (NFS for VM Disk storage & backups, SMB/iSCSI for other stuff).
3. Spin up lots of VMs in your Proxmox VE environment, and get them to work together. Make sure to turn on the backup mechanism in Proxmox VE and have it backup the VMs you actually care about.

Bam, you now have the most valuable asset to your IT career.

Now, as for projects, there's a bunch you can do.

### **Windows:**

1. Go get Windows Server 2012 R2 and Windows Server 2016 ISOs. You can run these legitimately in trial configuration to learn. If you run out of time, nuke and rebuild.
2. Spin up some Windows VMs.
3. Learn how to setup Active Directory Domain Controllers, how to manage it (add users/groups, Group Policy Objects (GPOs) etc)
4. Spin up some other Windows VMs, have them join the DM, and get your AD DCs to configure those Windows VMs through GPOs and other AD functionality.
5. Start spinning up other Windows VMs and try out the different roles and features you can install.

### **Linux:**

1. Download Ubuntu Server 18.04 and Ubuntu Desktop 18.04 ISOs
2. Spin up Ubuntu Server VMs, and run LAMP stack projects on it, such as nextCloud, LibreNMS, emby, Invoice Ninja.
3. Spin up an Ubuntu Desktop VM and start figuring out the ways you can join it to an AD domain. This can be Samba and/or SSSD, there's many methods to use here.

### **Other:**

1. Download pfSense ISOs and use it to learn how to do networking stuff via the GUI. (this can tie into the VM environments above)
2. Set it up to do VPN serving.
3. Set it up to do subnet routing/DHCP range assignment.
4. Keep exploring this one, so much here.