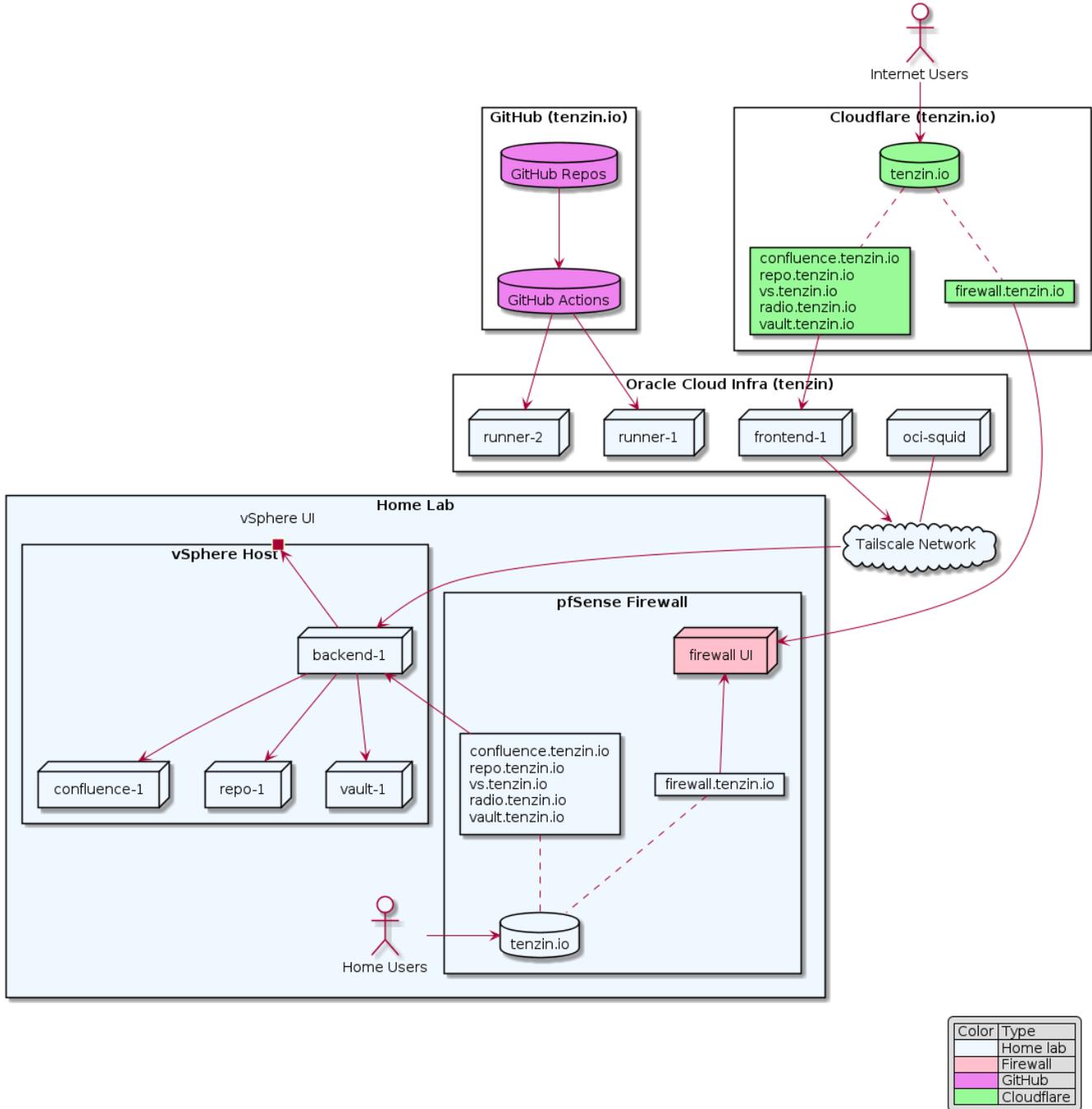


# Welcome !

Welcome to my home lab Confluence server ! I'm using this server to host my home lab experiments , documentation and learning . I initially discovered Confluence via my workplace and thought it was a very nice document writing system. When I found that Atlassian offered a \$10/yr plan , I immediately bought one and setup this server. Note: This is a second *reboot* of this system.

## Infrastructure

This is a home lab diagram that focuses on the general communications path to reach my on-premises resources from the Internet. I've rebuilt the infrastructure in various ways and each time it gets simpler, easier and more robust .



## Notes

- The frontend-1 node has a container that updates the DNS record in Cloudflare for frontend.tenzin.io every 1 hour with its public IP address found via <http://checkip.amazonaws.com> service.
  - The repo.tenzin.io, confluence.tenzin.io, vault.tenzin.io are CNAMEs to the frontend.tenzin.io DNS record.

- The `frontend-1` node sends all request to the `backend-1` node via the Tailscale network. The `backend-1` node process the forwarded `server_name` field and send it to the correct machine.
- The firewall node has a dynamic DNS client that will update the `firewall.tenzin.io` DNS record with my home lab's Internet IP address.
- The squid node in Oracle Cloud is essential in troubleshooting the Internet HTTP request path versus the internal home lab HTTP request path.

## Host Table

Home lab repository	<a href="https://github.com/tenzin-io">https://github.com/tenzin-io</a>
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	Host	Repository	Description
1	frontend-1	<a href="https://github.com/tenzin-io/frontend">https://github.com/tenzin-io/frontend</a>	<ul style="list-style-type: none"> <li>• Internet access to on-premises hosted applications.</li> <li>• An Nginx proxy that sends request to the backend host connected on the Tailscale network.</li> </ul>
2	backend-1	<a href="https://github.com/tenzin-io/backend">https://github.com/tenzin-io/backend</a>	<ul style="list-style-type: none"> <li>• An Nginx proxy will route to the designated upstream server depending on the <code>server_name</code> that was received.</li> </ul>
3	repo-1	<a href="https://github.com/tenzin-io/repo">https://github.com/tenzin-io/repo</a>	<ul style="list-style-type: none"> <li>• A JFrog Artifactory server (JCR version) that stores artifacts generated by home lab build pipelines.</li> <li>• Repository for Docker images, Helm charts and generic blobs.</li> </ul>
4	confluence-1	<a href="https://github.com/tenzin-io/confluence">https://github.com/tenzin-io/confluence</a>	<ul style="list-style-type: none"> <li>• This Confluence server!</li> </ul>
5	vault-1	<a href="https://vault.tenzin.io">https://vault.tenzin.io</a>	<ul style="list-style-type: none"> <li>• A Hashicorp Vault server to store all my home lab secrets .</li> </ul>
6	oci-squid	<a href="https://github.com/tenzin-io/squid">https://github.com/tenzin-io/squid</a>	<ul style="list-style-type: none"> <li>• A Squid proxy server on the Tailscale network.</li> <li>• I can use Oracle Cloud's Internet gateway for web browser traffic.</li> </ul>
7	firewall	<a href="https://www.pfsense.org/download">https://www.pfsense.org/download</a>	<ul style="list-style-type: none"> <li>• pfSense firewall host.</li> <li>• Protects the Home Lab.</li> <li>• Currently the Home Lab's DNS forwarder and DHCP server.</li> </ul>

## Services

	Access URL	Service Description
1	<a href="https://confluence.tenzin.io">https://confluence.tenzin.io</a>	This Confluence server!
2	<a href="https://vault.tenzin.io">https://vault.tenzin.io</a>	My Hashicorp Vault server.
3	<a href="https://firewall.tenzin.io">https://firewall.tenzin.io</a>	<ul style="list-style-type: none"> <li>• pfSense firewall appliance.</li> <li>• Protects the home lab infrastructure.</li> </ul>
4	<a href="https://repo.tenzin.io">https://repo.tenzin.io</a>	JFrog Artifactory server, the JCR version. <ul style="list-style-type: none"> <li>• Repository for Helm charts and Docker images.</li> <li>• Repository for generic blob artifacts.</li> </ul>
5	<a href="https://vs.tenzin.io">https://vs.tenzin.io</a>	VMware vSphere 7 hypervisor to host virtual machines.

## Child Pages

- [HOW-TOs](#)
  - [HOW-TO: Build a virtual machine on VMware ESXi](#)
  - [HOW-TO: Setup a machine after OS installation](#)
  - [HOW-TO: Setup GitHub actions to access Vault secrets](#)
  - [HOW-TO: Setup Vault Artifactory secrets plugin](#)
- [Walkthroughs](#)
  - [Kubernetes studies](#)
    - [Creating a user](#)

- Understanding RBAC
- Setting up a k3s cluster
- Setting up a k8s cluster
- Using Istio
- Using MetalLB
- Working with Helm
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  - Tibetan Buddhism
    - Geshe Lhakdor La's Teachings
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