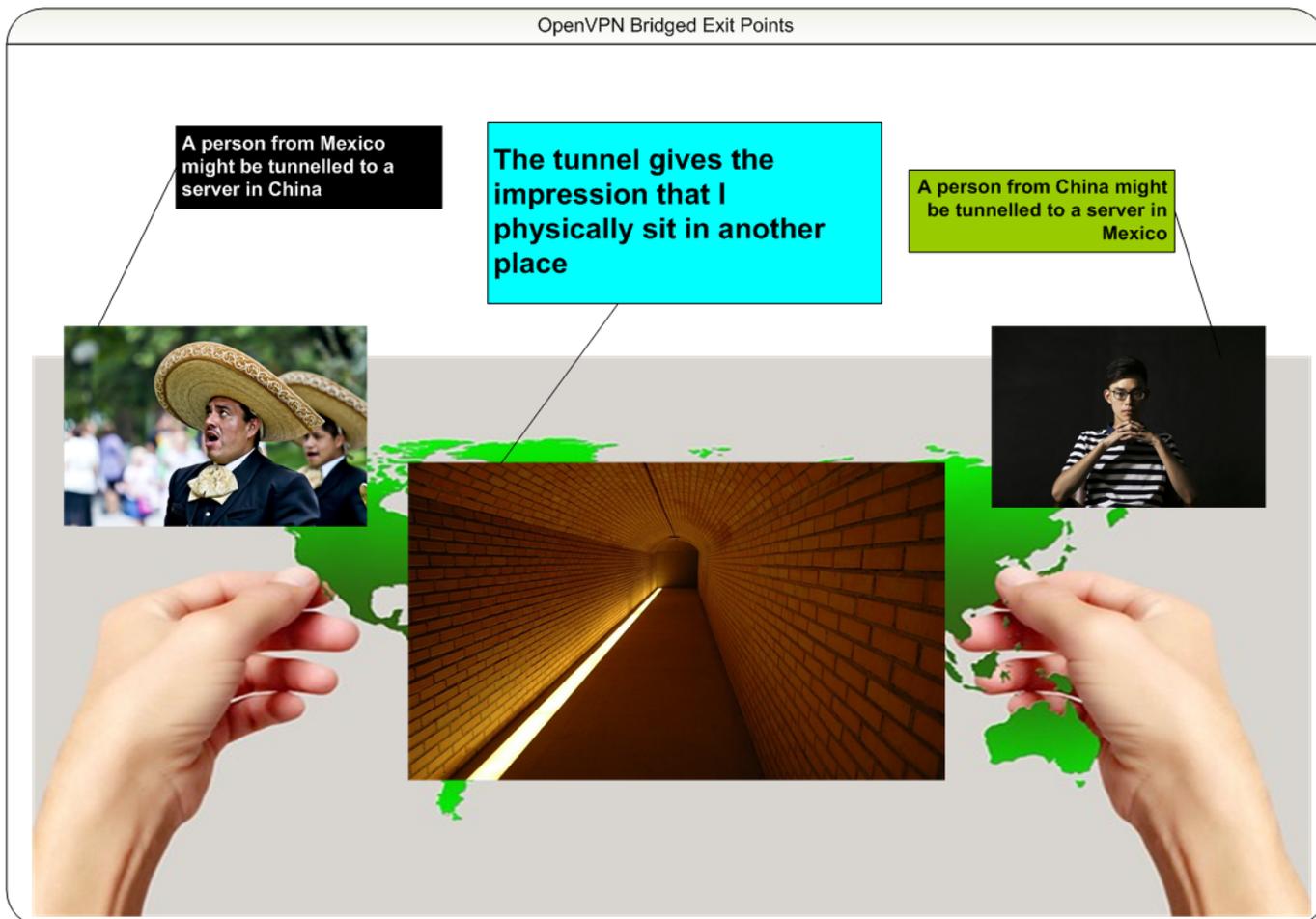


# OpenVPN Bridges



## Introduction

- We are very excited about a new feature (actually old feature as of 2023 but still very handy) which is now part of MESHdesk as well as APdesk.
- With this feature you can bridge one or more of the entry points (or SSIDs) with a OpenVPN tunnel that can sit any place on the Internet.
- I can now for instance connect to a SSID in South Africa while it will appear that I am browsing from an IP Address that is located somewhere in Europe or North America.
- We are sure by now you are in a dire need to check out this feature. Unfortunately the initial setup can be quite involved, but once everything is in place it should run like a Swiss watch.
- We will follow a divide and conquer rule and break the tasks up into categories in order to accomplish our goal.

## Our Setup

For this document we will configure the following setup.

### The Hardware

- One Ubuntu 22.04 server with one Ethernet card and one public IP Address.
  - Eth0 will have the Public IP Address (198.27.111.78)
  - Eth1 is a virtual interface and will be segmented using VLANs.

- We will not need any VLAN capable switches.
- Another server (can be the same) running the latest RADIUSdesk Git code.
- An Access Point with Internet access, running the latest Git of the MESHdesk firmware.

### Only one Ethernet port?



- If your server has only one Ethernet port it is not a train smash!
- We offer an alternative which will use the dummy module to mimick a real Ethernet port.

## Segmenting Using VLANs

- We will use VLANs configured on Eth0 as follows:
  - VLAN 101 will have Address range 10.101.0.0/16.
  - VLAN 102 will have Address range 10.102.0.0/16.
  - VLAN 103 will have Address range 10.103.0.0/16.
- These VLANs will each be bridged on the one side with a VLAN on eth0.
  - br0.101 are bridged with eth1.101.
  - br0.102 are bridged with eth1.102.
  - br0.103 are bridged with eth1.103.

## The VPNs

- The other side of the bridge is a VPN tunnel.
  - We will create three instances of OpenVPN in server mode.
  - Each of these instances will be bound to a common IP Address (198.27.111.78) but it will have a unique port to ensure uniqueness.

## The Captive Portals

- Each of the bridges will have a CoovaChilli captive portal running.
  - The IP Address range of each of these Coova Chilli instances will be such that it can provide enough IP Addresses but also in such a manner that the OpenVPN server will be able to provide up to 100 Clients with IP Addresses and the RADIUSdesk server should provide another 100 Clients with IP Addresses without a conflict.
  - The IP Address range should also reflect that which was assigned to the VLAN.

## Next steps

- Be sure to visit the pages that will help setting up each of the above.

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