Virtual Private Cloud

Internet Protocol
IP Addresses
Your house has a certain mailing address, thats what an IP Address relates to.

THere are certain packages that you want to allow in your house and some that you want to block in your house

Every device that you have, there is a private IP address.

Private IP addresses limited to your house. The packets can only be sent from inside the house.

Public IP Address, we're in contact with the general world thst is outside your house

NAT
Network Address Translation
Translate your home address to a public address.

Virtual Pivate Cloud, we are trying to set up a private network or a network of private IPs within AWS.

THe cable company gives you a network and router to set up a small network in side fyoiur house

We will do this within our vpc in order to enable traffic to go from one place to another efficiently

4.3 billion IPV4 Addresses

2^32 to 2^128 for IPV6b addressees

Lookup IPV6 on Wikipeedia
Use cases
Self Driving Cars, 5G, smart appliances
Learn Networking
PAT - Port Address Translation
TRansform your multiple devices to be translate into one global IP Address to talk to the world at large

A bit 0 or 1
Set of 8 bits is an Octet

A collection of 8 bits is called an Octet

IANA - gov organization

Internet Assigned Numbers Authority (IIANA)

All work starts from the VPC. There is no easy way. There are no shortcuts. This will result in termination. We need to be very good. Need to be able to do all my binary calculations i m y head.
FOr instance, we might be trouble shooting on zoom and I'll have to do have to do the binary calcs in my head. You don't want to look stupid.

VPC is the area where if we do not get VPC and subnetting right, your cloud career will not materialize.

/24 /30 are things we really need to know. /30 subnets will be used by MS

Do not use /20 for your default for when you are working in the cloud, it makes you look like a barbarian.
10.0.0.0 DO NOT USE. Theo has gone through a lot of hell over the summer.
If you use a VPN, the VPN's won't work neacuse the VPN's use the same subnet.
Don't ne a rube and a nooby.

Overlapping subnets.

DO NOT USE THE SUBNET 10.0.0.0 – Death knell

We are doing Terraform, Jenkins, Git Hub Actions and ADO

If you are used to hell, easy environments are easy
Deploying from your computer

I guess I need to get started poking around with Terraform.

Networking, Subnetting
Whatever other people would do, don't do that because they were lazy. Think about what would happen if the company went through a merger and IP Addresses have to be reassigned.

We are starting with /16 when we build out. Then use /24 after that
Rob's house of VPC)

10.32.0.0/16 == rob’s house of VPC
10.32.1.0/24 == public room A (Rob’s house of VPC)
10.32.2.0/24 == public room B (Rob’s house of VPC)
10.32.3.0/24 == public room C (Rob’s house of VPC)

1 digit in the 3rd octet, public internet

2 digits is private in the no public server

Jump servers and ssh are coming next week

**Don't forget, we need to start uploading my notes to the cloud