Three-Tier Architecture

We have created split our network into 3 tiers and across 2 availability zones –

1. Public Layer: This layer consists of 2 public subnets. One on each Availability Zone. We can deploy our Bastion Hosts, Web servers and Nat Gateway on these subnets. Can host an internet-facing Elastic Load Balancer (ELB) and a Bastion host.
2. Application Layer: This layer consists of 2 private subnets. one on each Availability Zone. This layer can be used to host our Application Servers,
3. Database Layer: This layer consists of 2 private subnets. one on each Availability Zone. This layer will host our RDS Multi AZ – Enabled Databases.

We have used A CloudFormation template to create the following resources to achieve a Three tier Architecture-

* Virtual Private Cloud – It’s our Isolated Space in Cloud where we will host our resources.
* Subnets – We have created 3 Subnets across each AZ in which one is Public and rest are Private.
* Route Tables -We have created Route tables for each layer and All the private subnets have a route added to the NAT Gateway for One-way Internet access.
* Network ACLs – We have created two NACLS one for Public Subnets and One for our Private subnets. The Public Subnet NACLS will ensure that Only and Only Specific Ports are open to the Internet and rest all our Traffic is Denied =.
* Nat Gateway - It enable instances in a private subnet to connect to the internet or other AWS services, but prevent the internet from initiating a connection with those instances.
* Internet Gateway - An Internet Gateway allows a way out to the internet for the public resources in our VPC.
* Elastic IP – For Nat Gateway

I have also created a quick Lucid Chart Diagram That shows one of the ways to Deploy our Resources in a VPC. Please look for the PDF in the Folder. Challenge-1