3-Tier Architecture

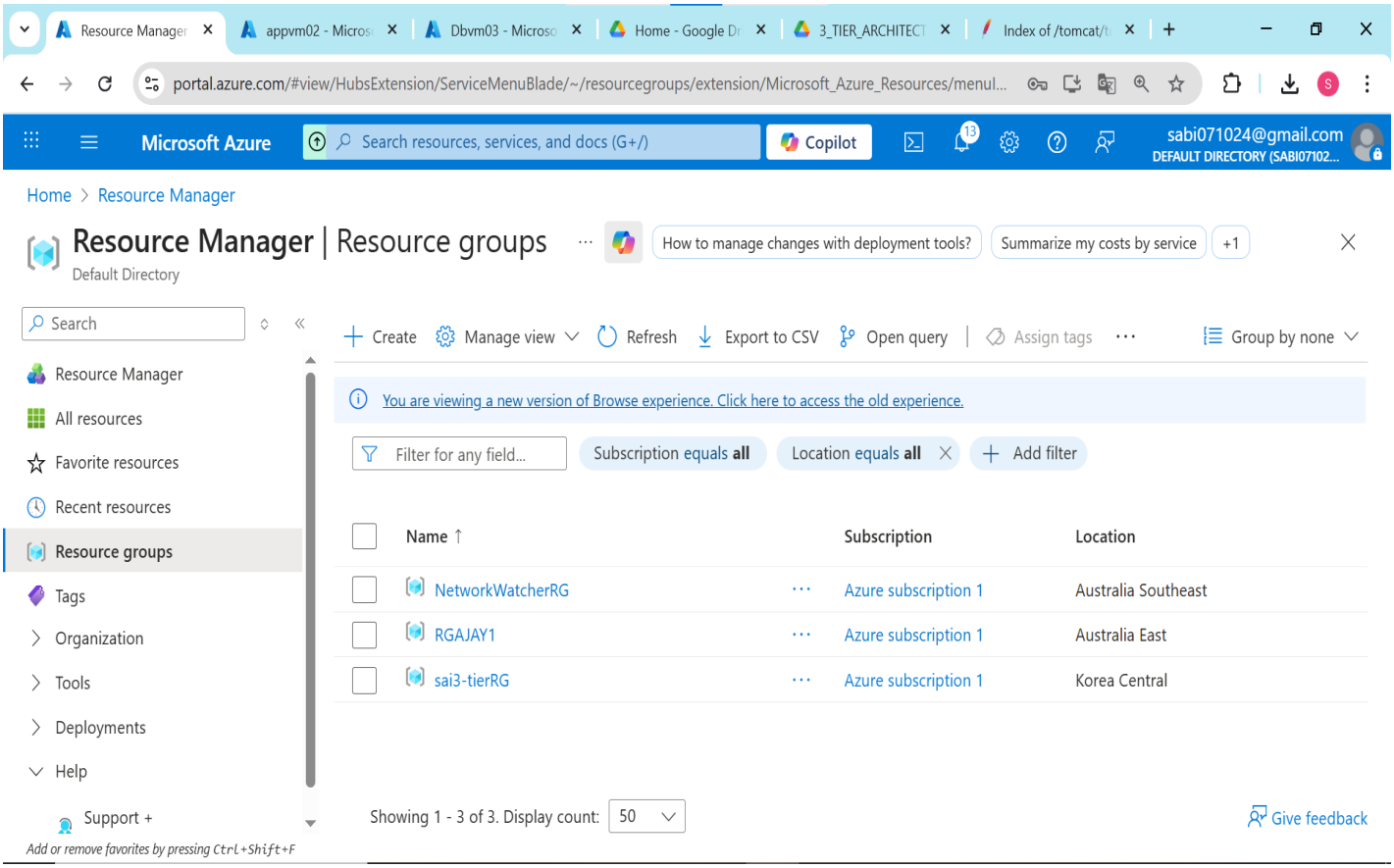
Introduction:

3-Tier Architecture is a widely used cloud application design pattern that separates an application into three logical layers: Presentation Tier, Application Tier, and Data Tier. This architecture improves scalability, security, and maintainability by isolating user interaction, business logic, and data storage into independent layers.

1. Create Resource Groups:

A Resource Group is a logical container in Azure that groups and manages all related resources for an application.

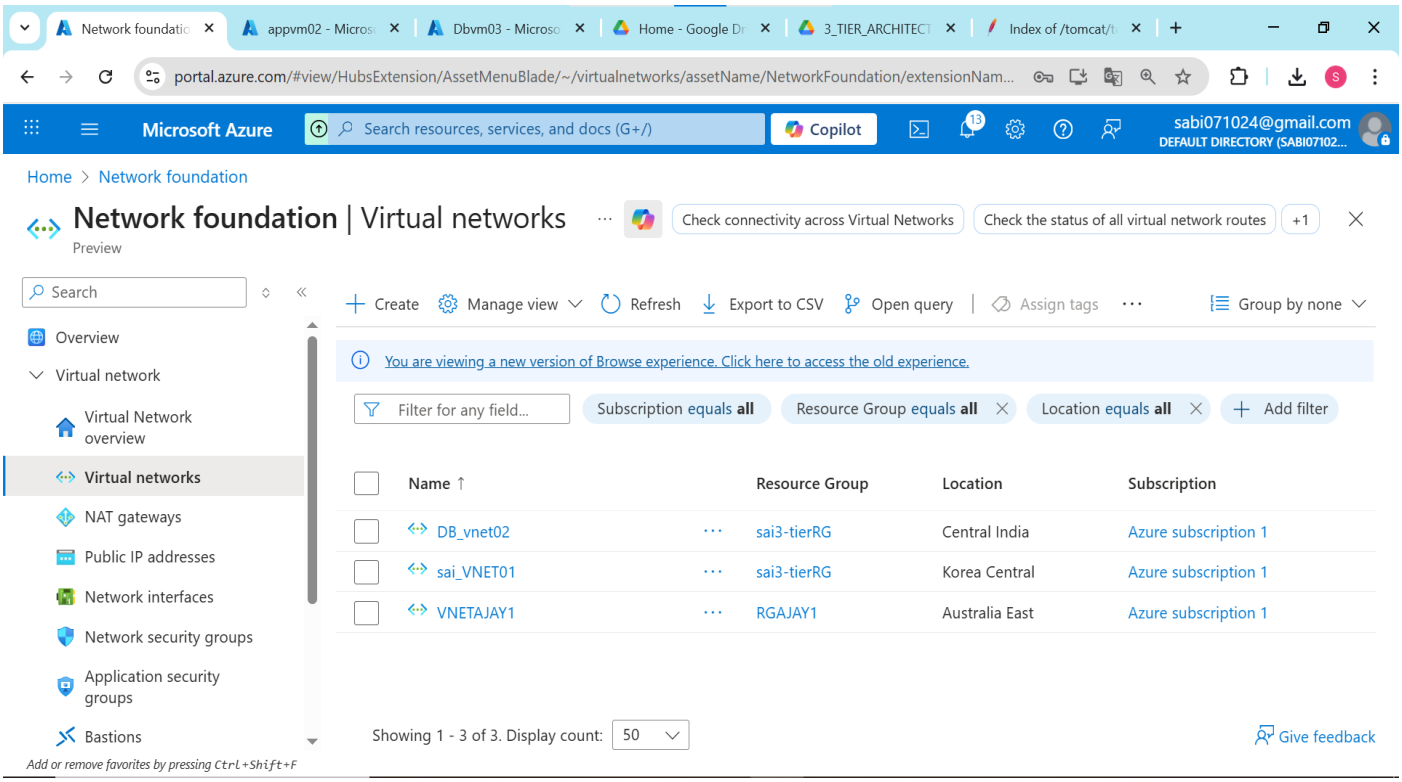
Resource Group: sai3-tierRG



2. Create Virtual Networks and Subnets

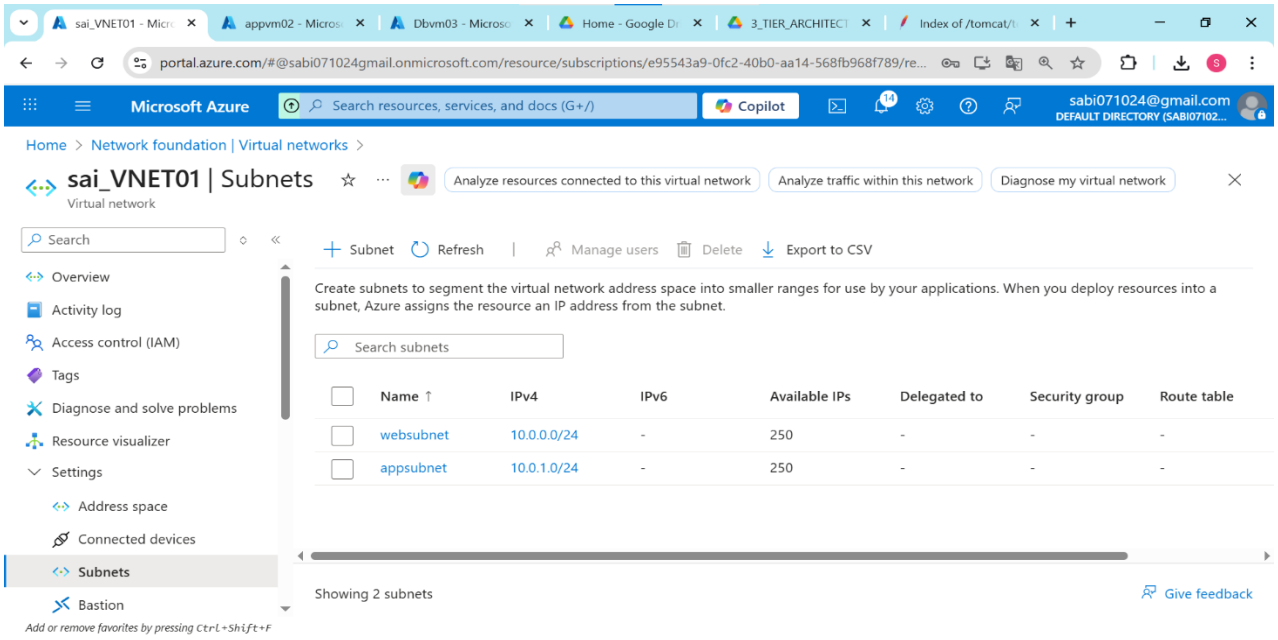
Virtual Networks:

An Azure Virtual Network is a private network that securely connects Azure resources and controls traffic between them.



Subnets:

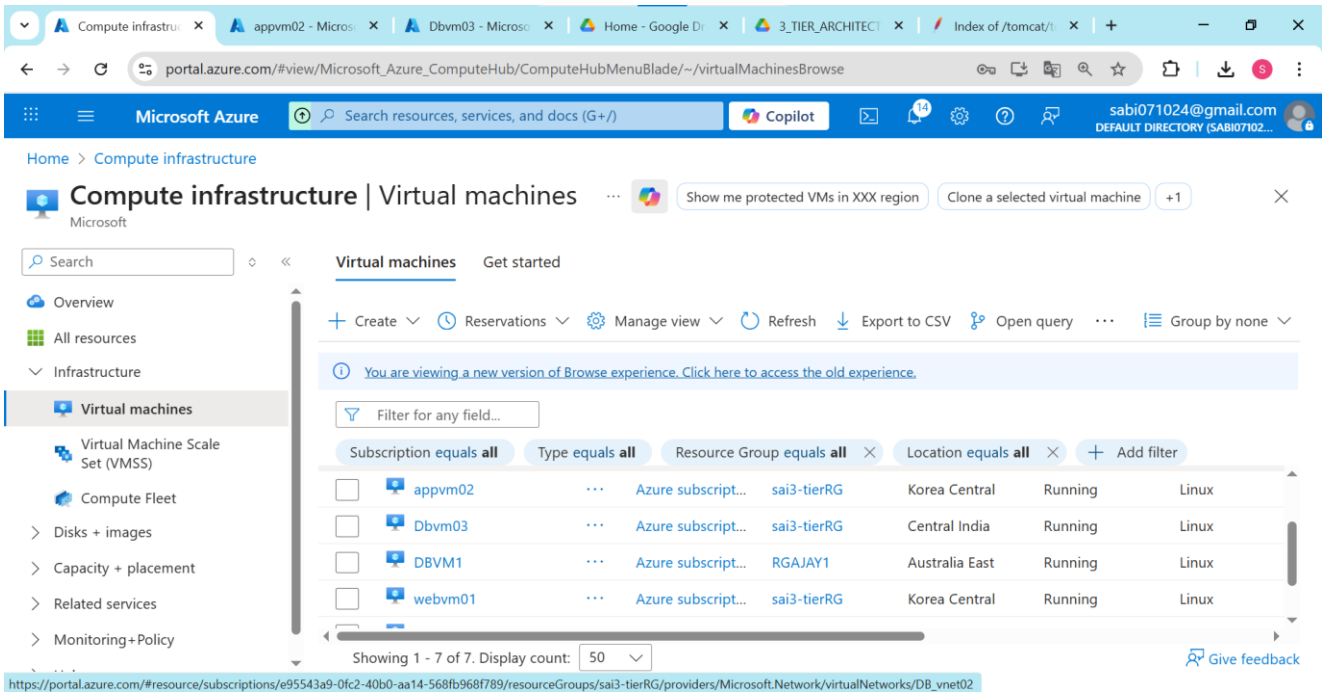
A Subnet divides an Azure Virtual Network into smaller, manageable networks for better security and organization.



3. Create Virtual Machines

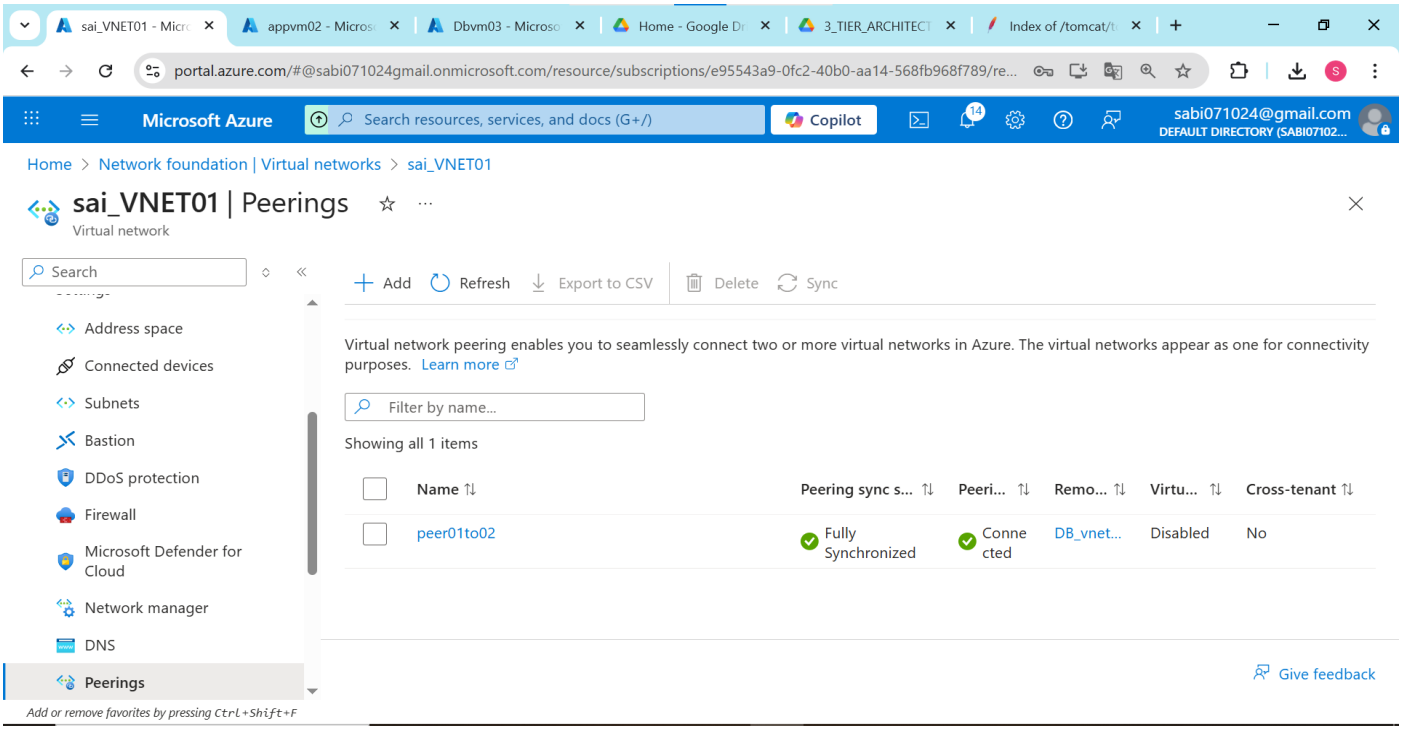
An Azure Virtual Machine is a scalable cloud server used to host applications and services.

- Web Virtual Machine
- App Virtual Machine
- Db Virtual Machine



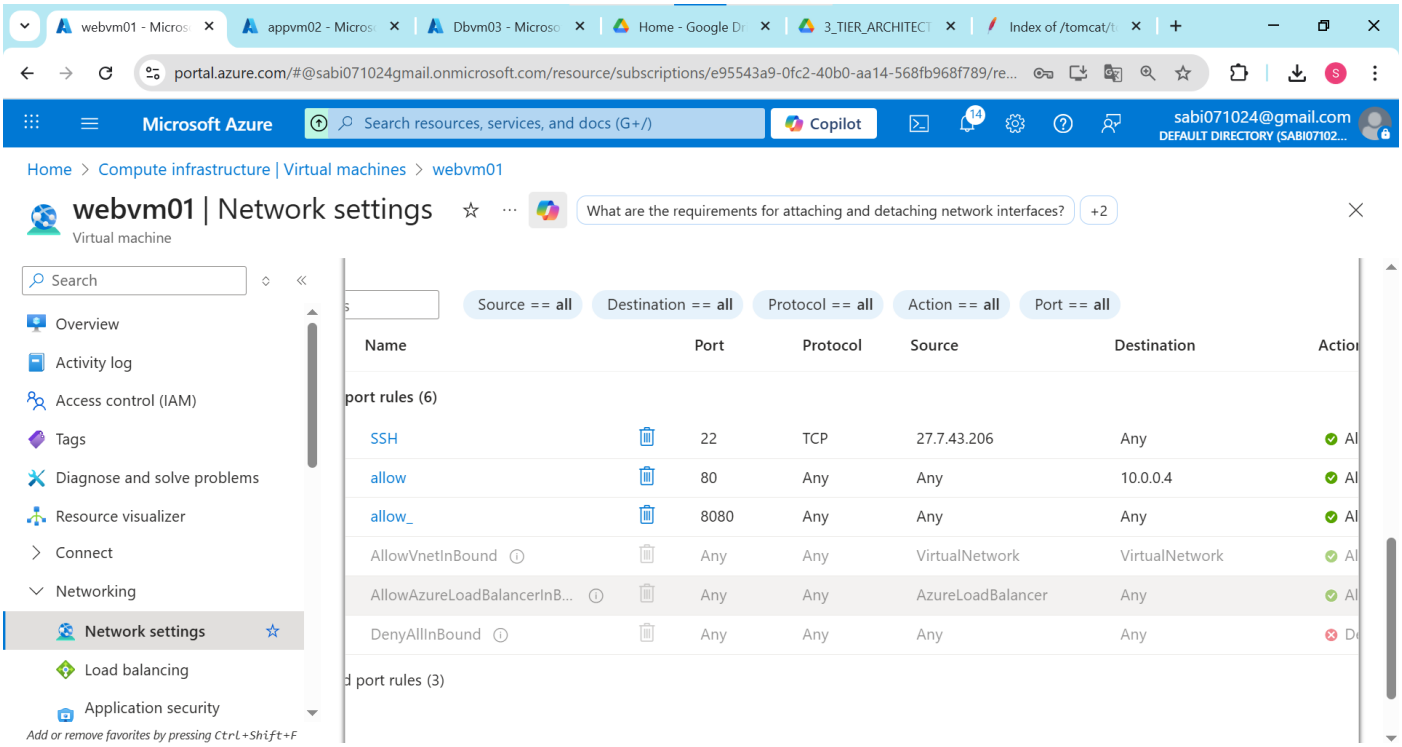
VNet Peering:

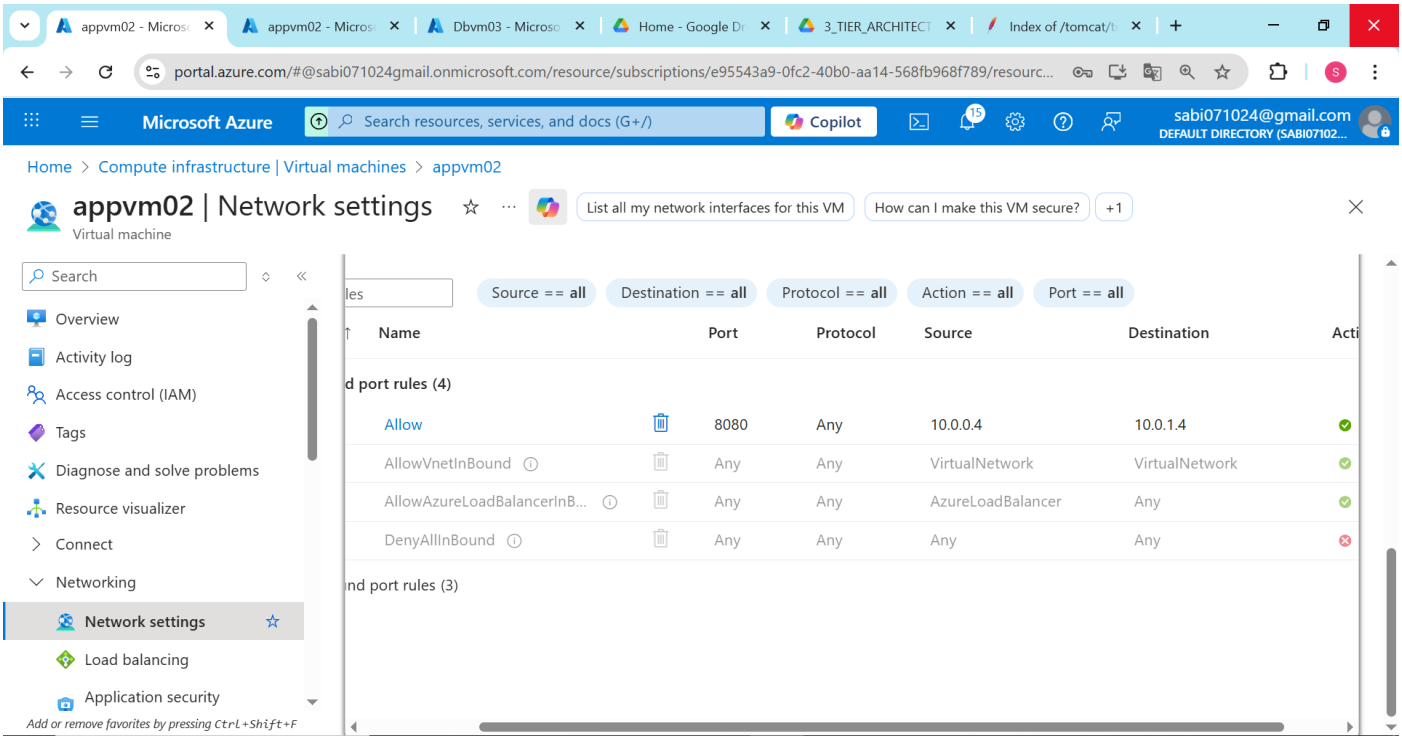
VNet Peering connects Azure virtual networks privately, enabling secure communication between them.

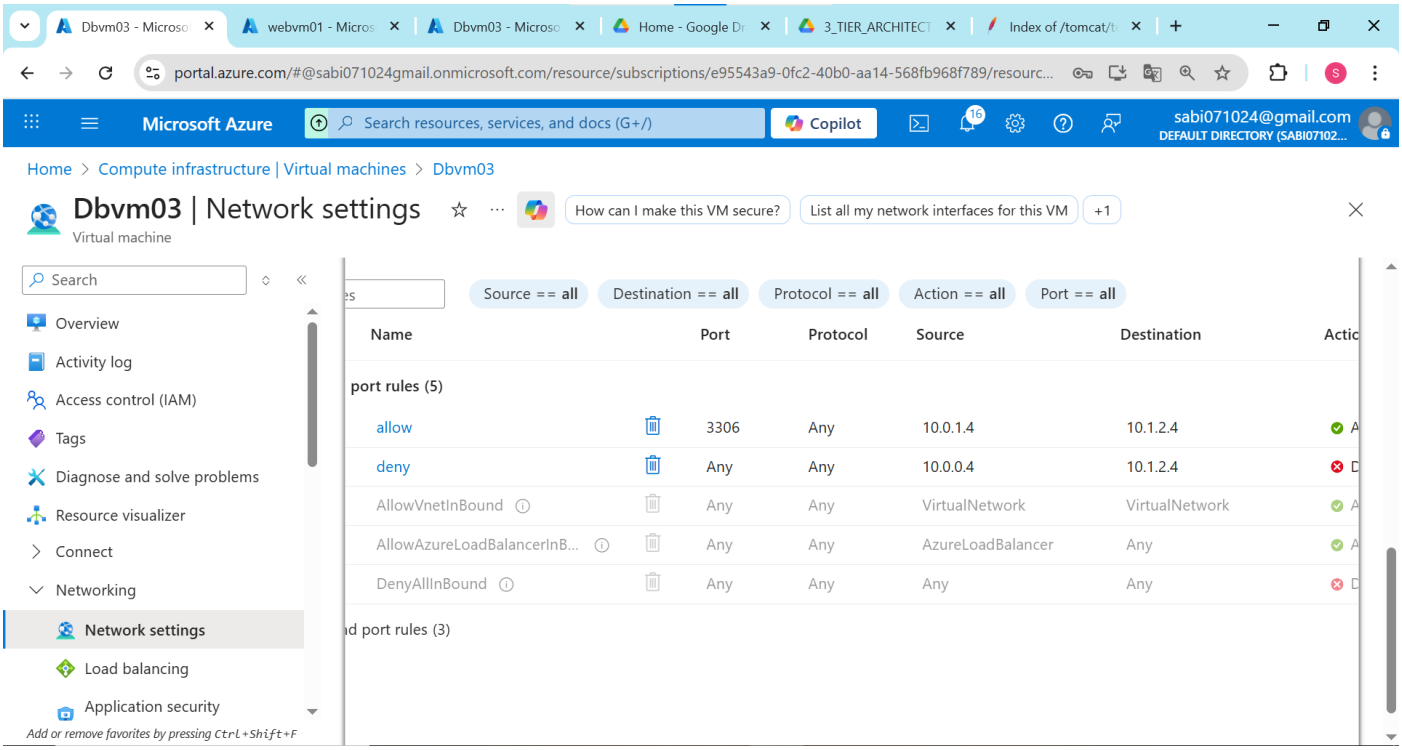


4. Create Network Security Groups (NSGs)

A **Network Security Group (NSG)** is a security feature in Azure that controls inbound and outbound network traffic to Azure resources. It uses rules to allow or deny traffic based on source, destination, port, and protocol, helping protect virtual machines and subnets from unauthorized access.

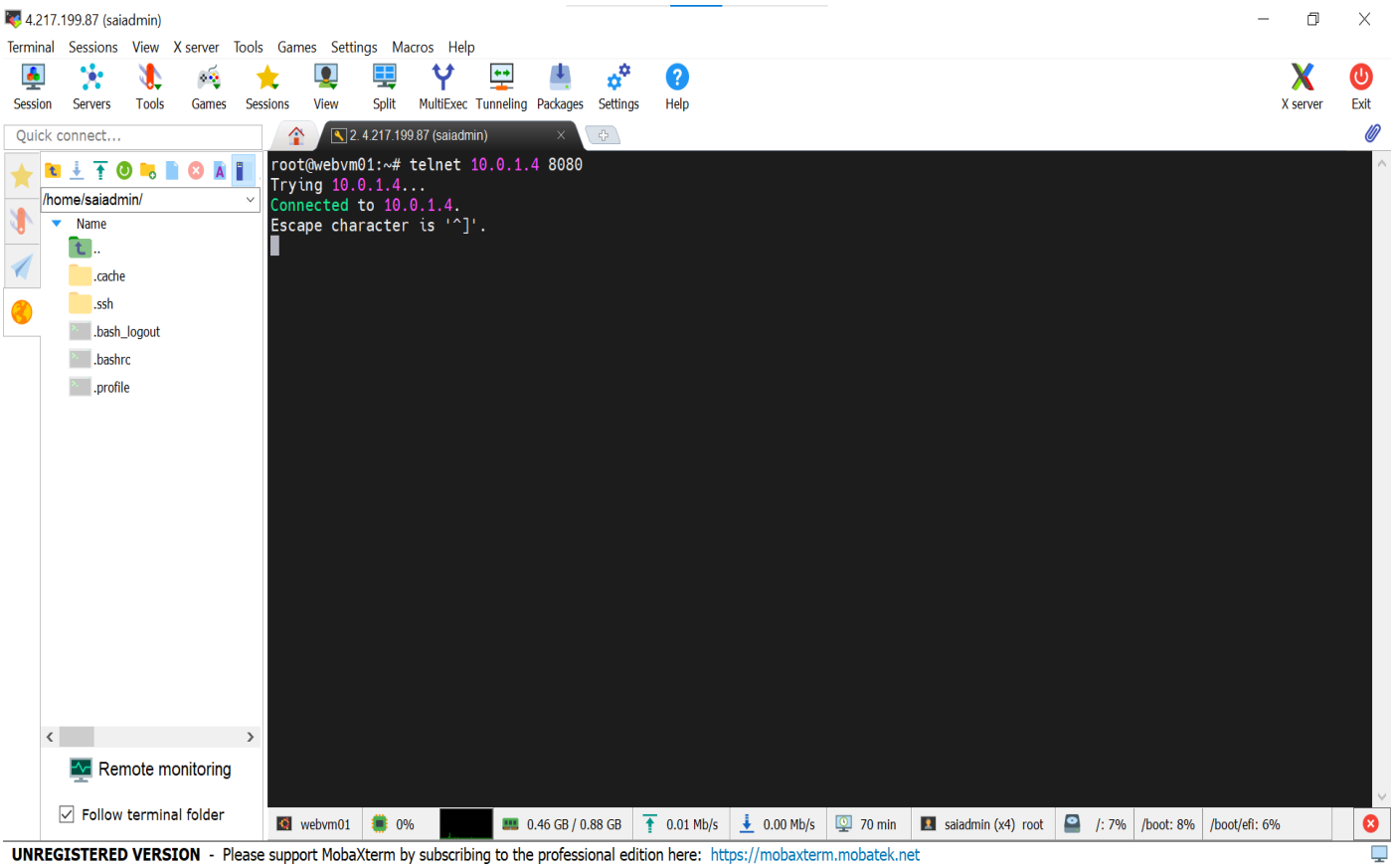






5. Connect Web to App Server:

Using MobaXterm, the web server securely connects to the application server in Linux, enabling seamless request processing in a 3-tier architecture.



6. Connect App to Database Server:

Using MobaXterm, the application server securely connects to the database server in Linux, enabling backend services to access stored data.