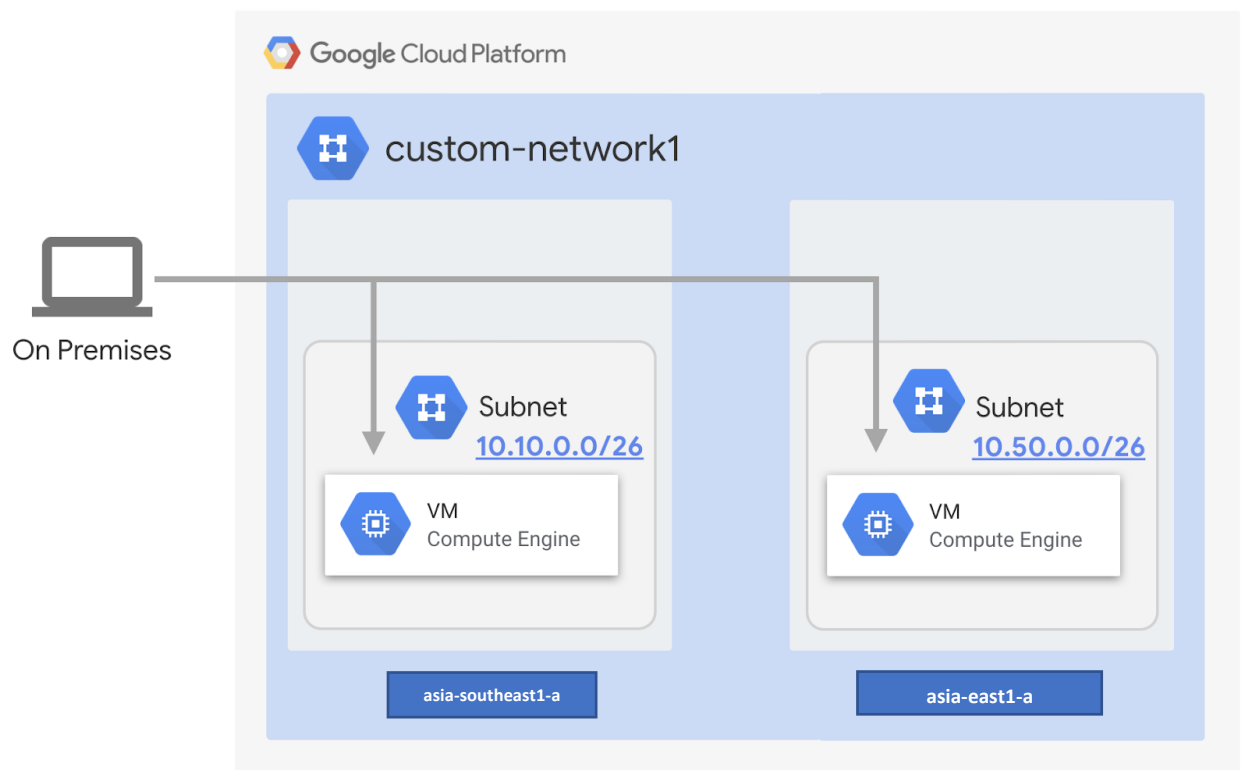# Create custom subnetworks

The diagram illustrates the custom mode VPC network architecture you will be creating. Custom subnetworks allow you to manually define subnetwork IP ranges for each region in your network. There can be zero, one, or several subnetwork IP ranges created per region for a network. In order to create an instance in a zone, you must have previously created at least one subnetwork in that region. At instance creation time, you will need to specify the subnetwork in the region that the instance IP should be allocated from.

Create a new network topology that supports custom subnetworks.

```
gcloud compute networks create custom-network1 --subnet-mode custom
```

Create a custom subnetwork in the asia-southeast1 region.

```
gcloud compute networks subnets create subnet-asia-southeast-123 \
    --network custom-network1 \
```

```
    --region asia-southeast1 \

    --range 192.168.1.0/24
```

gcloud compute networks subnets create subnet-asia-south-123 --network custom-network1 --region asia-southeast1 --range 192.168.1.0/24

Create a custom subnetwork in the asia-east1 region.

```
gcloud compute networks subnets create subnet-asia-east-192 \

    --network custom-network1 \

    --region asia-south1 \

    --range 192.168.5.0/24
```

gcloud compute networks subnets create subnet-asia-east-192 --network custom-network1 --region asia-east1 --range 192.168.5.0/24

List all your subnetworks and their internal IP address ranges.

```
gcloud compute networks subnets list
```

Create instances in the different subnetworks.

```
gcloud compute instances create instance-1 \

    --zone asia-southeast1-a \

    --subnet subnet-asia-south-123
```

gcloud compute instances create instance-1 --zone asia-southeast1-a --subnet subnet-asia-south-123

```
gcloud compute instances create instance-2 \

    --zone asia-south1-b \

    --subnet subnet-asia-east-192
```

gcloud compute instances create instance-2 --zone asia-east1-a --subnet subnet-asia-east-192

You can see that the internal IPs assigned to each Compute Engine instance are from the subnetwork ranges associated with the respective subnetwork in asia-southeast or asia-south.

Clean up

Delete Compute Engine instances with the following commands:

gcloud compute instances delete instance-1 --zone asia-southeast1-a

gcloud compute instances delete instance-2 --zone asia-east1-a

Delete subnetworks with the following commands:

gcloud compute networks subnets delete subnet-asia-south-123 --region asia-southeast1

gcloud compute networks subnets delete **subnet-asia-east-192** --region asia-east1

Delete the custom network with the following command:

gcloud compute networks delete custom-network1