Azure Load Balancing Web Servers Cloud Network

by Allen Phapornchai

Azure

red-resgrp
Resource group

admin can ssh (Port 22) into
jumpbox-provisioner
to manager docker container and run
ANSIBLE playbook (pentest.yml) to load on
the three load balance web servers
web-1, web-2, and web-3
as well as the elk server.

ssh

Inbound Port Rules

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
100	Port_80	80	TCP	Internet	VirtualNetwork	✅ Allow
110	⚠ SSH	22	TCP	Internet	10.0.0.6	✅ Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✅ Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	✅ Allow
65500	DenyAllInBound	Any	Any	Any	Any	❌ Deny

red-secinst
Network security group

red-network
Virtual network

jumpbox inbound Port Rules Allow SSH from outside to jumpbox on Port 22

Priority	Name	Port	Protocol	Source	Destination	Action
310	SSH_TO_JUMPBOX	22	TCP	47.39.77.13	VirtualNetwork	✅ Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✅ Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	✅ Allow
65500	DenyAllInBound	Any	Any	Any	Any	❌ Deny

jumpbox-provisioner
Virtual machine

docker

ANSIBLE

docker container
cyberxsecurity/ansible

ssh (Port 22)

Public IP
52.234.218.240

Private IP
10.0.0.6

ANSIBLE PLAYBOOK
pentest.yml

ANSIBLE PLAYBOOK
install-elk.yml

Internet

users can visit the website
by going to http://20.94.200.161
on port 80
All other port are blocked by the red-secinst
network-security group inbound Port Rule

HTTP

Health Probe

red-lb
Load balancer

HTTP

Public IP
20.94.200.161

Backend pools

Load balancing rules

Frontend IP configuration

web-1
IP 10.0.0.4

web-2
IP 10.0.0.5

web-3
IP 10.0.0.7

Virtual Network:
10.0.0.0/16
Subnet: 10.0.0.0/24

West US2 Region

elk server
monitors file system
activites, metric
activites on
web -1, web-2,
web-3
and capture
for analysis on
http://20.96.17.240:5601/apps/kibana

elk
Internal IP 10.1.0.4
External IP 20.96.17.240
Allowed port: 5601

Virtual Network: 10.1.0.0/16
Subnet: 10.1.0.0/24

East US2 Region

Virtual Machines

Private IP

Load Balance Rule : Allow HTTP port 80 through from the internet

Name ↑↓	Load balancing rule ↑↓	Backend pool ↑↓	Health probe ↑↓
red-web-lb-portfwd80	red-web-lb-portfwd80 (TCP/80)	red-backpool	red-probe