ICT & Infra S3 SNO-Week13: Multivalued answers records

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Introduction

This week we gave a lecture on proxy managers. This tool plays as a forwarder of requests from the public network to the private network.

Basically, this service picks up the request from the domain or subdomain that is made and returns the response associated with the request.

Assignment 1: Create a multivalued answers record
Solution:

First, we will create the list of records.

Record list

Type		Host	Value
A	☐	@	3.74.73.9
	☐	www	3.74.73.9

Type		Host	Value
CNAME	☐	api	firepass.eus.
	☐	grafana	firepass.eus.
	☐	nagios	firepass.eus.

Type		Host	Value
TXT	☐	SOA	Main domain=firepass.eus

Export ▲   Import ▲

Next we will create an instance with a static ip in aws.

Instance summary for i-0941ddcdb7fbb18fd (load_balancer) Info
Updated less than a minute ago

[⟳] [Connect] [Instance state ▼] [Actions ▼]

Instance ID	Public IPv4 address	Private IPv4 addresses
🗗 i-0941ddcdb7fbb18fd (load_balancer)	🗗 3.74.73.9 | open address ⬈	🗗 192.168.0.40

IPv6 address	Instance state	Public IPv4 DNS
–	⊘ Running	🗗 ec2-3-74-73-9.eu-central-1.compute.amazonaws.com | open address ⬈

Hostname type	Private IP DNS name (IPv4 only)	
IP name: ip-192-168-0-40.eu-central-1.compute.internal	🗗 ip-192-168-0-40.eu-central-1.compute.internal	

Answer private resource DNS name	Instance type	Elastic IP addresses
IPv4 (A)	t2.micro	🗗 3.74.73.9 [Public IP]

Auto-assigned IP address	VPC ID	AWS Compute Optimizer finding
–	🗗 vpc-08ed2bb7fdca49b9f (firepass-vpc) ⬈	ⓘ Opt-in to AWS Compute Optimizer for recommendations. | Learn more ⬈

IAM Role	Subnet ID	Auto Scaling Group name
–	🗗 subnet-0161e10e80db60267 (firepass-subnet-public1-eu-central-1a) ⬈	–

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

▼ Instance details Info

Platform	AMI ID	Monitoring
🗗 Ubuntu (Inferred)	🗗 ami-06148e0e81e5187c8	disabled

Platform details	AMI name	Termination protection
🗗 Linux/UNIX	🗗 ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20220914	Disabled

Stop protection	Launch time	AMI location
Disabled	🗗 Tue Oct 04 2022 10:32:42 GMT+0200 (hora de verano de Europa central) (3 months)	amazon/ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20220914

Instance auto-recovery	Lifecycle	Stop-hibernate behavior
Default	normal	disabled

AMI Launch index	Key pair name	State transition reason
0	🗗 heiko_ubuntu_key	–

Credit specification	Kernel ID	State transition message
standard	–	–

Usage operation	RAM disk ID	Owner
🗗 RunInstances	–	🗗 807013657668

Later, we will install Docker compose and deploy a container with the nginx proxy manager image. As we can see, we will map ports 80, 81 and 443. Also, we will save the volumes in the system so that in case of a crash it will be restored.

```
ubuntu@ip-192-168-0-40:~/dockercompose$ cat docker-compose.yml
version: '3'
services:

  nginx:
    image: 'jc21/nginx-proxy-manager:latest'
    container_name: app
    restart: always
    ports:
      - '81:81'
      - '80:80'
      - '443:443'
    volumes:
      - ./nginx_proxy_manager_data:/data
      - ./nginx_proxy_manager_letsencrypt:/etc/letsencrypt
```

Once the ports have been mapped, we will create a security group in which we will open the ports. One port is port 81, this is the administration port and that is why it does not open to the public but opens to a single ip.

▼ Inbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
–	sgr-00f279fa4997c9a9c	80	TCP	0.0.0.0/0	launch-wizard-4 ↗	HTTP
–	sgr-069ac42b8b52b6ae0	22	TCP	0.0.0.0/0	launch-wizard-4 ↗	SSH
–	sgr-0831069415d4e8410	81	TCP	213.34.189.163/32	launch-wizard-4 ↗	nginx
–	sgr-009e36eb81cba42bb	443	TCP	0.0.0.0/0	launch-wizard-4 ↗	HTTPS

Once finished, we enter the administration console and enter the proxy hosts section.

Nginx Proxy Manager   Jariko
   Administrator

🏠 Dashboard   🖥 Hosts   🔒 Access Lists   🛡 SSL Certificates   👥 Users   📖 Audit Log   ⚙ Settings

Hi Jariko

| ⚡ 0 Proxy Hosts | ⤫ 0 Redirection Hosts | ((•)) 0 Streams | ⚡ 0 404 Hosts |

In this section we add all the services we have to expose them publicly and associate them to the subdomain previously created.

Another important point is to associate the proxy host. This is done through the SSL tab where we enable the wildcard certificate.

Once created, all records should be online and available to everyone.

As we can see in the case of searching for nagios.firepass.eus we see that we are redirected to the nagios server instead of the web page.

Finally, we see that using the nslookup command we can see that although the subdomains share public ip we are redirected to different sites by the previously created subdomain.

```
C:\Users\heiko>nslookup
Servidor predeterminado:   dns.google
Address:  8.8.8.8

> nagios.firepass.eus
Servidor:  dns.google
Address:  8.8.8.8

Respuesta no autoritativa:
Nombre:  firepass.eus
Address:  3.74.73.9
Aliases:  nagios.firepass.eus

> grafana.firepass.eus
Servidor:  dns.google
Address:  8.8.8.8

Respuesta no autoritativa:
Nombre:  firepass.eus
Address:  3.74.73.9
Aliases:  grafana.firepass.eus
```