

AWS Solutions Architect Certification Training

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Module 4 - Assignment VPC COMPLETED by Nagesha. K.S. **Please check the following screenshots for each question.**

Problem Statement:

You work for XYZ Corporation, and based on the expansion requirements of your company, you have been asked to create and setup distinct Amazon VPCs for production and development teams.

You are expected to perform the following tasks for the respective VPCs:

For the production network:

1. Design and build a four-tier architecture
2. Create five subnets. Among them, four should be private with names app1, app2, dbcache, and db, and the fifth one should be public with the name web
3. Launch instances in all subnets, and name them as per the subnet as they are launched in
4. Allow the dbcache instance and the app1 subnet to send Internet requests
5. Manage security groups and NACLs
6. Create a VPC Endpoint for the S3 service, and access the objects in any bucket from within the VPC

For the development network:

1. Design and build a two-tier architecture with two subnets named web and db, and launch instances in both subnets, naming them as per the subnet names
2. Make sure that only web subnet can send Internet requests
3. Create a peering connection between the production network and the development network
4. Setup a connection between the db subnets of both the production network and the development network, respectively

Instances | EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:sort=desc:tag:Name

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Console-to-Code

Instances

Instances

Instance Types

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Spot Requests

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Reserved Instances

Dedicated Hosts

Capacity Reservations

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AMIs

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Instances (8)

Info

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

< 1 >

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	Mod-4-web	i-018fb4ec5c0f0c7b4	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input type="checkbox"/>	Mod-4-dbcache	i-0ceba08409e1590c2	Running	t2.micro	Initializing	View alarms	us-east-1a
<input type="checkbox"/>	Mod-4-db	i-097accaa2b964e26b	Running	t2.micro	Initializing	View alarms	us-east-1a
<input type="checkbox"/>	Mod-4-app2	i-0e0885bd762edf049	Running	t2.micro	Initializing	View alarms	us-east-1a
<input type="checkbox"/>	Mod-4-app1	i-04f1c4a92877d6e78	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a

Select an instance

Activate Windows
Go to Settings to activate Windows.

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Your VPCs (1/3)

Info

Last updated less than a minute ago

Actions

Create VPC

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Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
Mod-4-vpc	vpc-0ac20e1891df13028	Available	10.0.0.0/16	-
AWSCloudExampleVPC	vpc-0340334501E06FEEF	Available	10.0.0.0/16	-

vpc-0ac20e1891df13028 / Mod-4-vpc

Details

Resource map

CIDRs

Flow logs

Tags

Integrations

Details

VPC ID

vpc-0ac20e1891df13028

Tenancy

Default

Default VPC

No

Network Address Usage metrics

State

Available

DHCP option set

dopt-08e021c762653fd1f

IPv4 CIDR

10.0.0.0/16

Route 53 Resolver DNS Firewall

DNS hostnames

Enabled

Main route table

rtb-0b86cd8116e7a79e2

IPv6 pool

-

Owner ID

DNS resolution

Enabled

Main network ACL

acl-0928c086fcefae6a1

IPv6 CIDR (Network border group)

-

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subnets | VPC Console

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#subnets:sort=tag:Name

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Subnets (5/11)

Info

Last updated 1 minute ago

Actions

Create subnet

Find resources by attribute or tag

	Name	Subnet ID	State	VPC	IP
<input checked="" type="checkbox"/>	app1	subnet-0cd0b599585b6d3c4	Available	vpc-0ac20e1891df13028 Mod...	10
<input checked="" type="checkbox"/>	app2	subnet-022474922f17dd0a7	Available	vpc-0ac20e1891df13028 Mod...	10
<input type="checkbox"/>	AWS prod example-subnet-private1-us-east-1a	subnet-04c0c533e2f5822f9	Available	vpc-02f0aa4a01606f55f AWS ...	10
<input type="checkbox"/>	AWS prod example-subnet-private2-us-east-1b	subnet-090e197107fff986	Available	vpc-02f0aa4a01606f55f AWS ...	10
<input type="checkbox"/>	AWS prod example-subnet-public1-us-east-1a	subnet-0063ea8d24c425c37	Available	vpc-02f0aa4a01606f55f AWS ...	10
<input type="checkbox"/>	AWS prod example-subnet-public2-us-east-1b	subnet-02ac2931e77725376	Available	vpc-02f0aa4a01606f55f AWS ...	10
<input checked="" type="checkbox"/>	db	subnet-0f1cf20872ea6f7e2	Available	vpc-0ac20e1891df13028 Mod...	10
<input checked="" type="checkbox"/>	dbcache	subnet-027aba196d44233b2	Available	vpc-0ac20e1891df13028 Mod...	10
<input type="checkbox"/>	Mod-4-subnet-public1-us-east-1a	subnet-062fd8edb9281e744	Available	vpc-0ac20e1891df13028 Mod...	10
<input type="checkbox"/>	Mod-4-subnet-public2-us-east-1b	subnet-04256486891aa18c1	Available	vpc-0ac20e1891df13028 Mod...	10
<input checked="" type="checkbox"/>	web	subnet-0820d1cda3305c41d	Available	vpc-0ac20e1891df13028 Mod...	10

Subnets: subnet-0cd0b599585b6d3c4, subnet-022474922f17dd0a7, subnet-0f1cf20872ea6f7e2, subnet-027aba196d44233b2, subnet-0820d1cda3305c41d

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RouteTables | VPC Console

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTables;

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Route tables (1/10)

Last updated 2 minutes ago

Actions

Create route table

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input checked="" type="checkbox"/>	Mod-4	rtb-0915e77ed4d0959ea	4 subnets	-	No
<input type="checkbox"/>		rtb-027417adb939377b5			Yes

rtb-0915e77ed4d0959ea / Mod-4

Details

Routes

Subnet associations

Edge associations

Route propagation

Tags

Details

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-0915e77ed4d0959ea	No	4 subnets	-
VPC	Owner ID		
vpc-0ac20e1891df13028 Mod-4-vpc	289436155303		

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igws | VPC Console

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#igws:sort=desc:tag:Name

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Internet gateways (1/3)

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Create internet gateway

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	Name	Internet gateway ID	State	VPC ID
<input checked="" type="checkbox"/>	Mod-4-igw	igw-0ba20f370918422cb	Attached	vpc-0ac20e1891df13028 Mod-4-vpc
<input type="checkbox"/>	AWS prod example-igw	igw-0278db92ffh7d3b89	Attached	vpc-02f0aa4a01606f55f AWS prod ex

igw-0ba20f370918422cb / Mod-4-igw

Details

Tags

Details

Internet gateway ID	State	VPC ID	Owner
igw-0ba20f370918422cb	Attached	vpc-0ac20e1891df13028 Mod-4-vpc	289436155303

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Endpoints | VPC Console

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#Endpoints:

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Endpoints (1/1) Info

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Create endpoint

Actions

	Name	VPC endpoint ID	VPC ID	Service name
<input checked="" type="checkbox"/>	Mod-4-vpce-s3	vpce-0d068112471c4aaf4	vpc-0ac20e1891df13028 Mod-4-vpc	com.amazonaws.us-east-1.s3

vpce-0d068112471c4aaf4 / Mod-4-vpce-s3

Details

Route tables

Policy

Tags

Details

Endpoint ID

vpce-0d068112471c4aaf4

VPC ID

[vpc-0ac20e1891df13028](#) (Mod-4-vpc)

Status

Available

Status message

-

Creation time

Thursday, August 1, 2024 at 00:01:16 GMT+5:30

Service name

com.amazonaws.us-east-1.s3

Endpoint type

Gateway

Private DNS names enabled

No

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Security

Network ACLs

Security groups

DNS firewall

Network ACLs (1/3)

Find resources by attribute or tag

	Name	Network ACL ID	Associated with	Default	VPC ID
<input checked="" type="checkbox"/>	-	acl-0928c086fcef6a1	7 Subnets	Yes	vpc-0ac20e1891df13028
<input type="checkbox"/>	-	acl-05418c47550121104	-	Yes	vpc-0bf0d5db870ff0f7

acl-0928c086fcef6a1

Details

Inbound rules

Outbound rules

Subnet associations

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Network ACL ID	Associated with	Default	VPC ID
acl-0928c086fcef6a1	7 Subnets	Yes	vpc-0ac20e1891df13028 / Mod-4-vpc
Owner			
289436155303			

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Thanks sir for the feedback. I have added few more screenshots

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CIDR.xyz

us-east-1.console.aws.amazon.com/vpccconsole/home?region=us-east-1#vpccs:sort=desc:tag:Name

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Your VPCs (1/4)

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Last updated less than a minute ago

Actions

Create VPC

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	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/>	Mod-4-PROD-vpc	vpc-0ac20e1891df13028	Available	10.0.0.0/16	-
<input type="checkbox"/>	Mod-4-DEV-vpc	vpc-0acae2c258abe97d5	Available	10.2.0.0/16	-

vpc-0ac20e1891df13028 / Mod-4-PROD-vpc

DetailsResource mapCIDRsFlow logsTagsIntegrations

Details

VPC ID	State	DNS hostnames	DNS resolution
vpc-0ac20e1891df13028	Available	Enabled	Enabled
Tenancy	DHCP option set	Main route table	Main network ACL
Default	dopt-08e021c762653fd1f	rtb-0b86cd8116e7a79e2	acl-0928c086cfefae6a1
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)
No	10.0.0.0/16	-	-

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Your VPCs (1/4)

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Last updated 1 minute ago

Actions

Create VPC

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< 1 >

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	Mod-4-PROD-vpc	vpc-0ac20e1891df13028	Available	10.0.0.0/16	-
<input checked="" type="checkbox"/>	Mod-4-DEV-vpc	vpc-0acae2c258abe97d5	Available	10.2.0.0/16	-

vpc-0acae2c258abe97d5 / Mod-4-DEV-vpc

Details

Resource map

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Details

VPC ID	State	DNS hostnames	DNS resolution
vpc-0acae2c258abe97d5	Available	Disabled	Enabled
Tenancy	DHCP option set	Main route table	Main network ACL
Default	dopt-08e021c762653fd1f	rtb-0303aaad25fc11deb	acl-0f0071046aff88f97
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)
No	10.2.0.0/16	-	-

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subnets | VPC Console

CIDR.xyz

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#subnets:sort=desc:tag:Name

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Subnets (1/13) Info

Last updated 3 minutes ago

Actions

Create subnet

Find resources by attribute or tag

	Name	Subnet ID	State	VPC
<input type="checkbox"/>	DEV-subnet2	subnet-0070e73327f09d7fe	Available	vpc-0acae2c258abe97d5 Mod...
<input checked="" type="checkbox"/>	DEV-subnet1	subnet-0be70e65d7494c872	Available	vpc-0acae2c258abe97d5 Mod...

subnet-0be70e65d7494c872 / DEV-subnet1

DetailsFlow logsRoute tableNetwork ACLCIDR reservationsSharingTags

Details

Subnet ID	Subnet ARN	State	IPv4 CIDR
subnet-0be70e65d7494c872	arn:aws:ec2:us-east-1:289436155303:subnet/subnet-0be70e65d7494c872	Available	10.2.1.0/24
Available IPv4 addresses	IPv6 CIDR	Availability Zone	Availability Zone ID
251	-	us-east-1c	use1-az6
Network border group	VPC	Route table	Network ACL
us-east-1		rtb-0303aaad25fc11deb	acl-0f0071046aff88f97

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PeeringConnections | VPC Cons

CIDR.xyz

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#PeeringConnections:

awsServicesSearch[Alt+S]

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Peering connections (1/1) Info

Find resources by attribute or tag

Name	Peering connection ID	Status	Requester VPC	Accepter VPC
Mod-4-peeringconnection	pcx-0fcfe04113f2095bb	Pending acceptance	vpc-0ac20e1891df13028 / Mod...	vpc-0ac...

pcx-0fcfe04113f2095bb / Mod-4-peeringconnection

Pending acceptance

You can accept or reject this peering connection request using the 'Actions' menu. You have until Friday, August 9, 2024 at 23:23:03 GMT+5:30 to accept or reject the request, otherwise it expires.

Details

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Requester owner ID	289436155303	Accepter owner ID	289436155303	VPC Peering connection ARN	arn:aws:ec2:us-east-1:289436155303:vpc-peering-connection/pcx-0fcfe04113f2095bb
Peering connection ID	pcx-0fcfe04113f2095bb	Requester VPC	vpc-0ac20e1891df13028 / Mod-4-PROD-vpc	Accepter VPC	

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