

Cloud and Big Data Architecture

Capstone Project

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Capstone Project –Requirements

Example Social Research Organization is a (fictitious) nonprofit organization that provides a website for social science researchers to obtain global development statistics. For example, visitors to the site can look up various data, such as the life expectancy for any country in the world over the past 10 years.

Shirley Rodriguez, a researcher at the organization, developed the website. She thought it would be valuable to share the data that she had gathered with other researchers. Shirley stores the data in a MySQL database, and the data is available through a PHP website that she built. She initially published the site through a commercial hosting company that provides limited support for technical issues and security.

Over the past year, Shirley's website has grown in popularity. As a result of increased traffic, she started receiving complaints that the site is not as responsive as it used to be. She also experienced an attempted ransomware security breach. The security breach was unsuccessful, but her supervisor, Mateo Jackson, suggested that Shirley investigate new ways to host the website.

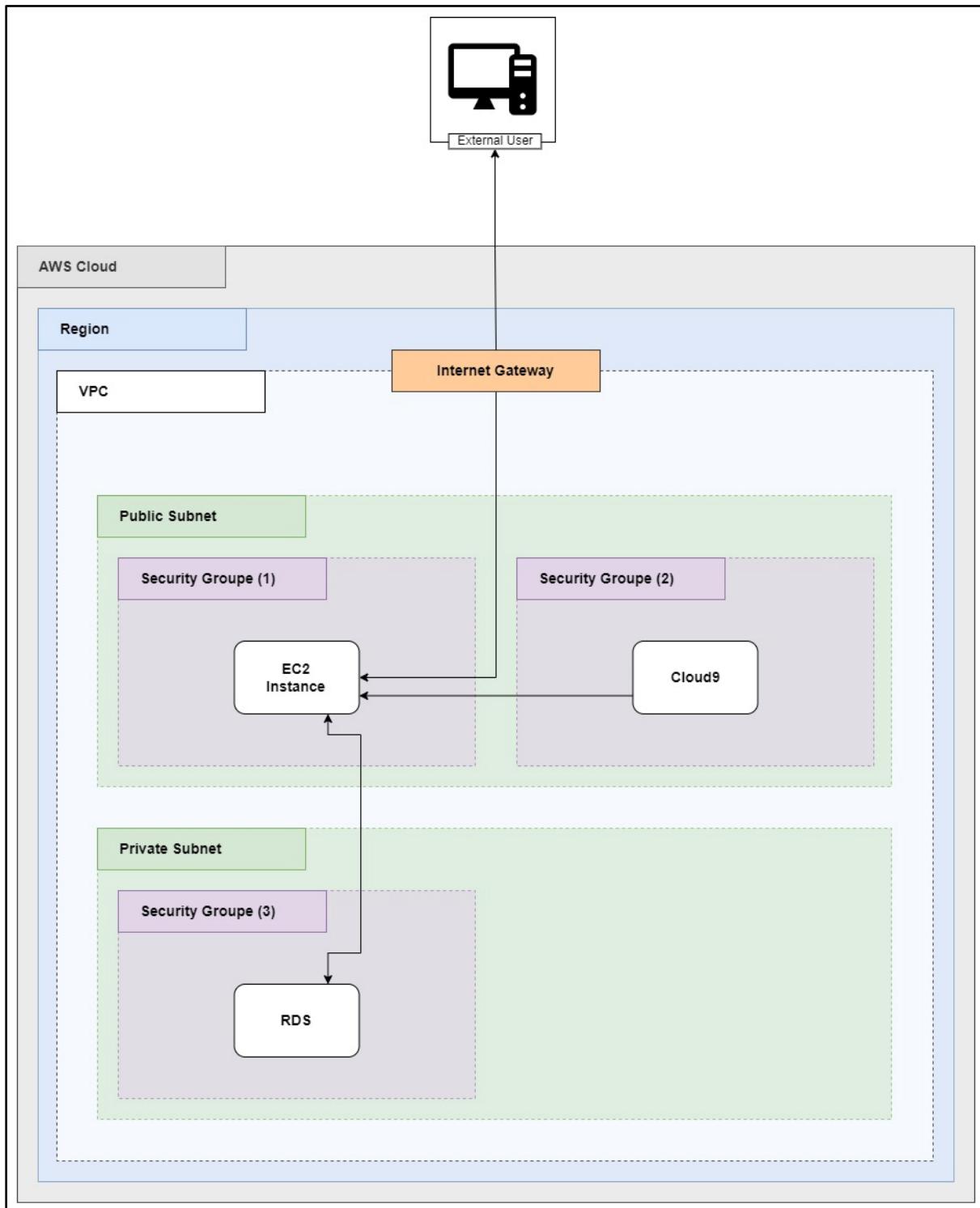
Shirley heard about Amazon Web Services (AWS), and initially moved her website and database to an EC2 instance that runs in a public subnet. She also runs an instance of MySQL on the same EC2 instance.

Shirley approached your team to make sure that her current design follows best practices. She wants to make sure that she has a robust and secure website. One of your colleagues started the process of migrating to the site to a more secure implementation, but they were reassigned to another project. Your tasks are to complete the implementation, make sure that the website is secure, and confirm that the website returns data from the query page.

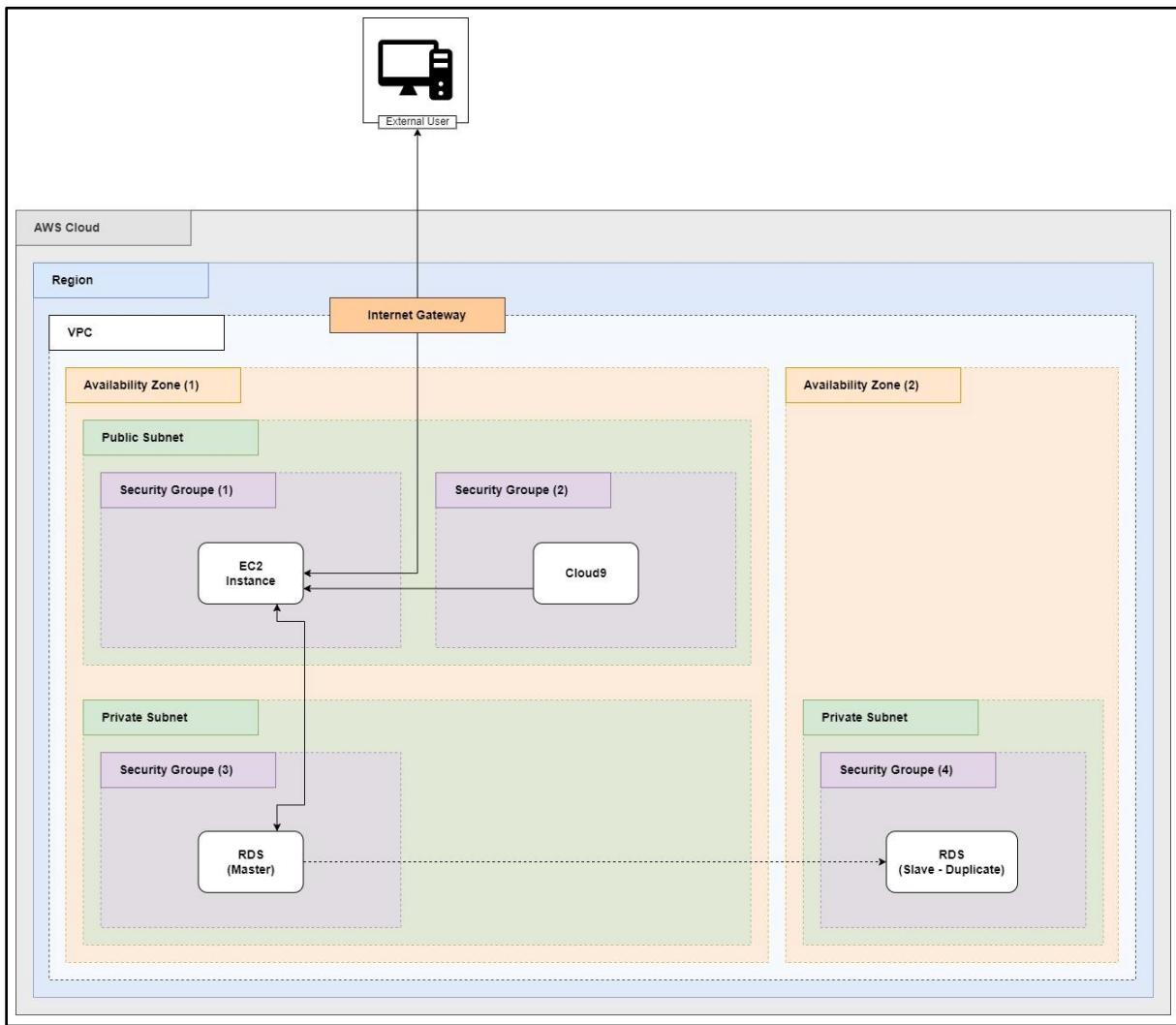
Capstone Project – Theoretical Solution

Architecture

We established the following architecture plan before starting to create the instances and components:



After completing the project, we realized that the RDS created backup of the database in multiple AZ, therefor we could represent the architecture like the following:



We still value the first schema more than the second one, since the second one is generated automatically by AWS for a highly available database principle.

Capstone Project – AWS Solution

VPC

The screenshot shows the AWS VPC console interface. The left sidebar navigation includes 'VPC dashboard', 'EC2 Global View', 'Filter by VPC', 'Virtual private cloud' (with 'Your VPCs' selected), 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only internet gateways', 'Carrier gateways', 'DHCP option sets', 'Elastic IPs', 'Managed prefix lists', 'Endpoints', 'Endpoint services', 'NAT gateways', 'Peering connections', and 'Security'. The main content area displays 'Your VPCs (1/2) Info' with a table showing two VPC entries:

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP o
project-vpc	vpc-00f000be44a6072f3	Available	10.0.0.0/16	-	dopt-03
-	vpc-0424100043b5aaa42	Available	172.31.0.0/16	-	dopt-03

Below the table, the details for 'vpc-00f000be44a6072f3 / project-vpc' are shown in a tabular format under the 'Details' tab:

VPC ID	State	DNS hostnames	DNS resolution
vpc-00f000be44a6072f3	Available	Enabled	Enabled
Tenancy	DHCP option set	Main route table	Main network ACL
Default	dopt-03596d64df70dd3ab	rtb-0cd80ea0c00656520	acl-0fb3f54b7901ce943
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)
No	10.0.0.0/16	-	-
Network Address Usage metrics	Route 53 Resolver DNS Firewall rule	Owner ID	

At the bottom of the page, there are links for 'CloudShell', 'Feedback', 'Language', and copyright information: '© 2023, Amazon Web Services, Inc. or its affiliates.' and links to 'Privacy', 'Terms', and 'Cookie preferences'.

Subnets

Screenshot of the AWS VPC Subnets page showing a list of 15 subnets.

Name	Subnet ID	State	VPC	IPv4 CIDR
RDS-Pvt-subnet-5	subnet-080e8bf3070b2af5d	Available	vpc-00f000be44a6072f3 proj...	10.0.18.0/25
RDS-Pvt-subnet-4	subnet-0ca5918c295ca1929	Available	vpc-00f000be44a6072f3 proj...	10.0.17.128/25
RDS-Pvt-subnet-3	subnet-0ecde4c5ecf4d3eea	Available	vpc-00f000be44a6072f3 proj...	10.0.17.0/25
RDS-Pvt-subnet-2	subnet-0010dd9521717a10	Available	vpc-00f000be44a6072f3 proj...	10.0.16.128/25
RDS-Pvt-subnet-1	subnet-080fb26f256d531af	Available	vpc-00f000be44a6072f3 proj...	10.0.16.0/25
project-subnet-public1-us-east-1a	subnet-0b5655fe2798b6fbe	Available	vpc-00f000be44a6072f3 proj...	10.0.0.0/20
project-subnet-private1-us-east-1a	subnet-03cfb21cb713973b1	Available	vpc-00f000be44a6072f3 proj...	10.0.128.0/20
-	subnet-061e5ab6286c680f7	Available	vpc-0424100043b5aaa42	172.31.0.0/20
-	subnet-06c207e595619cff	Available	vpc-0424100043b5aaa42	172.31.64.0/20
-	subnet-048fdbba81e499880	Available	vpc-0424100043b5aaa42	172.31.16.0/20
-	subnet-04fd41446f5889ffa	Available	vpc-0424100043b5aaa42	172.31.48.0/20
-	subnet-0cc242423fc82e344	Available	vpc-0424100043b5aaa42	172.31.32.0/20
-	subnet-0ee0df40d123d252d	Available	vpc-0424100043b5aaa42	172.31.80.0/20

Screenshot of the AWS VPC Subnets page showing a list of 13 subnets, with one subnet selected for detailed view.

Name	Subnet ID	State	VPC	IPv4 CIDR
RDS-Pvt-subnet-5	subnet-080e8bf3070b2af5d	Available	vpc-00f000be44a6072f3 proj...	10.0.18.0/25
RDS-Pvt-subnet-4	subnet-0ca5918c295ca1929	Available	vpc-00f000be44a6072f3 proj...	10.0.17.128/25

Selected Subnet Details:

Details		Flow logs		Route table		Network ACL		CIDR reservations		Sharing		Tags	
Subnet ID	subnet-0b5655fe2798b6fbe	Subnet ARN	arn:aws:ec2:us-east-1:538795172629:subnet/subnet-0b5655fe2798b6fbe	State	Available	IPv4 CIDR	10.0.0.0/20						
Available IPv4 addresses	4090	Availability Zone	us-east-1a	Availability Zone ID	use1-az6								
Network border group	us-east-1	IPv6 CIDR	-	Network ACL	acl-0fb3f54b7901ce943								
VPC	vpc-00f000be44a6072f3 project-vpc	Route table	rtb-012ab948d29923250 project-rtb-public	Auto-assign customer-owned IPv4 address									
Default subnet	No												

Screenshot of the AWS VPC Subnets page in the us-east-1 region.

The left sidebar shows the VPC dashboard and various VPC-related services like EC2, VPC, and IAM.

The main content displays a table of Subnets:

Name	Subnet ID	State	VPC	IPv4 CIDR
RDS-Pvt-subnet-5	subnet-080e8bf3070b2af5d	Available	vpc-00f000be44a6072f3 project-vpc	10.0.18.0/25
RDS-Pvt-subnet-4	subnet-0ca5918c295ca1929	Available	vpc-00f000be44a6072f3 project-vpc	10.0.17.128/25

The selected subnet is **subnet-03cfb21cb713973b1 / project-subnet-private1-us-east-1a**. The Details tab is active, showing the following configuration:

Subnet ID subnet-03cfb21cb713973b1	Subnet ARN arn:aws:ec2:us-east-1:538795172629:subnet/subnet-03cfb21cb713973b1	State Available	IPv4 CIDR 10.0.128.0/20
Available IPv4 addresses 4091	Availability Zone us-east-1a	Route table rtb-069962209402e7bd project-rtb-private1-us-east-1a	Availability Zone ID use1-az6
Network border group us-east-1	IPv6 CIDR -	VPC vpc-00f000be44a6072f3 project-vpc	Network ACL acl-0fb3f54b7901ce943
Default subnet No	Auto-assign public IPv4 address No	Auto-assign IPv6 address No	Auto-assign customer-owned IPv4 address No

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Route Tables

Screenshot of the AWS VPC Route Tables page (us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#RouteTables). The page shows a list of route tables:

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
RDS-Pvt-rt	rtb-01a0178bd7a04c095	5 subnets	-	No	vpc-00f000be44a6072f3
project-rtb-public	rtb-012ab948d29923250	subnet-0b5655fe2798b6...	-	No	vpc-00f000be44a6072f3
project-rtb-private1-us-east-1a	rtb-0699622209402e7bd	subnet-03cfb21cb71397...	-	No	vpc-00f000be44a6072f3

The selected route table is "rtb-012ab948d29923250 / project-rtb-public". The "Routes" tab is active, showing two routes:

Destination	Target	Status	Propagated
0.0.0.0/0	igw-07c2742f8c63e0c9e	Active	No
10.0.0.0/16	local	Active	No

Screenshot of the AWS VPC Route Tables page (us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#RouteTables). The page shows a list of route tables:

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
RDS-Pvt-rt	rtb-01a0178bd7a04c095	5 subnets	-	No	vpc-00f000be44a6072f3
project-rtb-public	rtb-012ab948d29923250	subnet-0b5655fe2798b6...	-	No	vpc-00f000be44a6072f3
project-rtb-private1-us-east-1a	rtb-0699622209402e7bd	subnet-03cfb21cb71397...	-	No	vpc-00f000be44a6072f3

The selected route table is "rtb-012ab948d29923250 / project-rtb-public". The "Subnet associations" tab is active, showing explicit subnet associations:

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
project-subnet-public1-us-east-1a	subnet-0b5655fe2798b6fb	10.0.0.0/20	-

Below, the "Subnets without explicit associations" section shows no results.

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

Services Search [Alt+S]

EC2 VPC IAM

VPC dashboard EC2 Global View New

Filter by VPC: Select a VPC

Virtual private cloud Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security CloudShell Feedback Language

Route tables (1/5) Info

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
RDS-Pvt-rt	rtb-01a0178bd7a04c095	5 subnets	-	No	vpc-00f000be44a6072f3
project-rtb-public	rtb-01ab948d29923250	subnet-0b5655fe2798b6...	-	No	vpc-00f000be44a6072f3
project-rtb-private1-us-east-1a	rtb-0699622209402e7bd	subnet-03cfb21cb71397...	-	No	vpc-00f000be44a6072f3

rtb-0699622209402e7bd / project-rtb-private1-us-east-1a

Details Routes Subnet associations Edge associations Route propagation Tags

Routes (1)

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

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

Services Search [Alt+S]

EC2 VPC IAM

VPC dashboard EC2 Global View New

Filter by VPC: Select a VPC

Virtual private cloud Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security CloudShell Feedback Language

Route tables (1/5) Info

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
RDS-Pvt-rt	rtb-01a0178bd7a04c095	5 subnets	-	No	vpc-00f000be44a6072f3
project-rtb-public	rtb-01ab948d29923250	subnet-0b5655fe2798b6...	-	No	vpc-00f000be44a6072f3
project-rtb-private1-us-east-1a	rtb-0699622209402e7bd	subnet-03cfb21cb71397...	-	No	vpc-00f000be44a6072f3

rtb-0699622209402e7bd / project-rtb-private1-us-east-1a

Details Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (1)

Find subnet association

Name	Subnet ID	IPv4 CIDR
project-subnet-private1-us-east-1a	subnet-03cfb21cb713973b1	10.0.128.0/20

Subnets without explicit associations (0)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

Find subnet association

Name	Subnet ID	IPv4 CIDR
------	-----------	-----------

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Outil Capture d'écran

Capture d'écran copiée dans le Presse-papiers et enregistrée

Sélectionner ici pour annoter et partager l'image

Internet Gateway

The screenshot shows the AWS VPC Internet Gateways page. On the left, there's a sidebar with navigation links for VPC dashboard, EC2 Global View, Filter by VPC, Virtual private cloud (Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, Peering connections), Security, CloudShell, Feedback, and Language. The main content area has a header "Internet gateways (1/2) Info" with a search bar and an "Actions" dropdown. A prominent orange button says "Create internet gateway". Below this is a table with columns: Name, Internet gateway ID, State, VPC ID, and Owner. Two rows are listed: one with a checkbox and a minus sign, and another for "project-igw" which is checked. The "Details" tab is selected in the bottom-left, showing the Internet gateway ID (igw-07c2742f8c63e0c9e), State (Attached), VPC ID (vpc-00f000be44a6072f5 | project-vpc), and Owner (538795172629). The footer includes links for CloudShell, Feedback, Language, and a copyright notice: © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-04e51e16067e8a56c	Attached	vpc-0424100043b5aaa42	538795172629
<input checked="" type="checkbox"/> project-igw	igw-07c2742f8c63e0c9e	Attached	vpc-00f000be44a6072f5 project-vpc	538795172629

Security Groups

The screenshot shows the AWS VPC Security Groups page. On the left, there's a navigation sidebar with links like Route tables, Internet gateways, Egress-only internet gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, Peering connections, Security (Network ACLs, Security groups), DNS firewall (Rule groups, Domain lists), and Network Firewall (Firewalls). The main content area has a title "Security Groups (1/6) Info" and a search bar. It displays a table with columns: Name, Security group ID, Security group name, VPC ID, Description, and Owner. One row is selected, showing "aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b-InstanceSecurityGroup-P9NE68OALU5P" with "sg-0bf9f262c77f10bf2" as the ID, "aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b-InstanceSecurityGroup-P9NE68OALU5P" as the name, "vpc-00f000be44a6072f3" as the VPC ID, and "Security group for AWS Cloud9 environment aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b" as the description. The owner is listed as "538795172629". Below the table, there's a detailed view of the selected security group with fields for Security group name, Security group ID, Description, VPC ID, Owner, Inbound rules count, and Outbound rules count.

Name	Security group ID	Security group name	VPC ID	Description	Owner
aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b-InstanceSecurityGroup-P9NE68OALU5P	sg-0bf9f262c77f10bf2	aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b-InstanceSecurityGroup-P9NE68OALU5P	vpc-00f000be44a6072f3	Security group for AWS Cloud9 environment aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b	538795172629
-	sg-0eaaa0d40705a484999	ec2-rds-1	vpc-00f000be44a6072f3	Security group attached to rds-ec2-1	538795172629
-	sg-070c0844e5b4ccf71	default	vpc-00f000be44a6072f3	default VPC security group	538795172629
-	sg-0986be8f2436c3635	RDS-security-group	vpc-00f000be44a6072f3	Created by RDS manager	538795172629
-	sg-0538dab93d2be99a5	default	vpc-0424100043b5aa42	default VPC security group	538795172629
-	sg-0165bafe09baa140e	rds-ec2-1	vpc-00f000be44a6072f3	Security group attached to rds-ec2-1	538795172629

Security group name: aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b-InstanceSecurityGroup-P9NE68OALU5P
Security group ID: sg-0bf9f262c77f10bf2
Description: Security group for AWS Cloud9 environment aws-cloud9-ProjectCloud-ef4e47514a0427cba5c5559c8c4726b
VPC ID: vpc-00f000be44a6072f3
Owner: 538795172629
Inbound rules count: 1 Permission entry
Outbound rules count: 1 Permission entry

EC2 Instances

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like EC2 Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images (selected), AMIs, AMI Catalog, and Elastic Block Store (selected). The main content area displays a table of instances. One instance is selected: "aws-cloud9-Pr...", which is running, t2.micro, and has 2/2 checks passed. Below the table, a detailed view for the selected instance is shown. The "Security" tab is selected in the navigation bar. Under "Security details", it shows the IAM Role "project_role" and the Owner ID "538795172629". It also lists security groups: "sg-0bf9f262c77f10bf2" and "sg-0ea40d705a484999". The launch time is listed as "Fri Jul 21 2023 11:01:09 GMT+0200 (heure d'été d'Europe centrale)".

This screenshot is identical to the one above, but the "Security" tab is explicitly highlighted in blue at the top of the instance details panel. All other elements, including the instance list and the detailed view for "aws-cloud9-Pr...", remain the same.

IAM – Roles

The screenshot shows the AWS IAM Roles page for a role named 'project_role'. The role allows EC2 instances to call AWS services on behalf of the user. It was created on July 21, 2023, at 12:02 (UTC+02:00). The ARN is arn:aws:iam::538795172629:role/project_role. The maximum session duration is 1 hour. The instance profile ARN is arn:aws:iam::538795172629:instance-profile/project_role.

Summary

Creation date	ARN
July 21, 2023, 12:02 (UTC+02:00)	arn:aws:iam::538795172629:role/project_role

Last activity	Maximum session duration
None	1 hour

Permissions **Trust relationships** **Tags** **Access Advisor** **Revoke sessions**

Permissions policies (1) Info
You can attach up to 10 managed policies.

Policy name	Type	Description
AmazonSSMReadOnlyAccess	AWS managed	Provides read only access to Amaz

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Databases (RDS)

The screenshot shows the Amazon RDS Databases page. On the left, a sidebar lists various RDS features: Dashboard, Databases (selected), Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations (Preview), Events, and Event subscriptions. The main content area displays a table titled "Databases (1)". The table has columns: DB identifier, Status, Role, Engine, Region & AZ, Size, Actions, CPU, and Current activity. A single row is shown for "database-1", which is "Available", an "Instance", using "MySQL Community" engine, located in "us-east-1a", with "db.t3.micro" size, 2 Actions, 3.29% CPU usage, and 1 Co. At the top right of the table are buttons for "Group resources", "Modify", "Actions", "Restore from S3", and "Create database". A modal window at the top provides information about Aurora I/O-Optimized.

The screenshot shows the Amazon RDS Connectivity & security page. The left sidebar is identical to the previous screenshot. The main content area is titled "Connectivity & security" and contains three sections: "Endpoint & port", "Networking", and "Security". Under "Endpoint & port", it shows an endpoint "database-1.cpu6x23uobdy.us-east-1.rds.amazonaws.com" and a port "3306". Under "Networking", it shows an availability zone "us-east-1a", a VPC "project-vpc (vpc-00f000be44a6072f3)", and a subnet group "rds-ec2-db-subnet-group-1". Under "Security", it shows security groups "RDS-security-group (sg-0986be8f2436c3635)" (Active) and "rds-ec2-1 (sg-0165bafe09baa140e)" (Active), and a public accessibility setting "Publicly accessible No". At the bottom, there is a section titled "Security group rules (3)".

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database-id=database-1;is-cluster=false

Amazon RDS X

Services Search [Alt+S]

EC2 VPC IAM

Amazon RDS

Dashboard Databases

Query Editor Performance insights Snapshots Exports in Amazon S3 Automated backups Reserved instances Proxies

Subnet groups Parameter groups Option groups Custom engine versions Zero-ETL integrations Preview

Events Event subscriptions CloudShell Feedback Language

subnet-080fb26f256d531af
subnet-0010dd9521717a10
subnet-080e8bf3070b2af5d
subnet-0ca5918c295ca1929
subnet-0ecdde4c5ecf4d5eea

Certificate authority Info rds-ca-2019

Certificate authority date August 22, 2024, 19:08 (UTC+02:00)

Network type IPv4 DB instance certificate expiration date August 22, 2024, 19:08 (UTC+02:00)

Security group rules (3)

Filter by Security group rules

Security group	Type	Rule
rds-ec2-1 (sg-0165bafe09baa140e)	EC2 Security Group - Inbound	sg-0eaa40d705a484999
RDS-security-group (sg-0986be8f2436c3635)	CIDR/IP - Inbound	217.26.204.244/32
RDS-security-group (sg-0986be8f2436c3635)	CIDR/IP - Outbound	0.0.0.0/0

Replication (1)

Filter by Replication

DB identifier	Role	Region & AZ	Replication source	Replication state	Last error	Privacy	Terms	Cookie preferences
database-1	Instance	us-east-1a	-	-	-	-	-	-

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us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database-id=database-1;is-cluster=false

Amazon RDS X

Services Search [Alt+S]

EC2 VPC IAM

Amazon RDS

Dashboard Databases

Query Editor Performance insights Snapshots Exports in Amazon S3 Automated backups Reserved instances Proxies

Subnet groups Parameter groups Option groups Custom engine versions Zero-ETL integrations Preview

Events Event subscriptions CloudShell Feedback Language

database-1 Instance us-east-1a

Proxies (0)

Filter by proxies

Proxy identifier	Status	Engine family
No proxies	-	-

You don't have any proxies.

Create proxy

Connected compute resources (1) [Info](#)

Connections to compute resources that were created automatically by RDS are shown here. Connections to compute resources that were created manually aren't shown.

Filter by compute resources

Resource identifier	Resource type	Availability zone	RDS security group	Compute resource security group
i-03308bc817c5391a4	EC2 instance	us-east-1a	rds-ec2-1	ec2-rds-1

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System Manager – Store parameters

The screenshot shows the AWS Systems Manager Parameter Store interface. At the top, there's a search bar and navigation links for EC2, VPC, and IAM. Below that, the AWS Systems Manager logo and 'Parameter Store' are visible. A breadcrumb trail shows 'My parameters'. On the right, there are buttons for 'View details', 'Edit', 'Delete', and 'Create parameter'. A table lists four parameters:

Name	Tier	Type	Last modified
/example/database	Standard	String	Fri, 21 Jul 2023 10:00:37 GMT
/example/endpoint	Standard	String	Fri, 21 Jul 2023 09:59:48 GMT
/example/password	Standard	String	Fri, 21 Jul 2023 10:00:20 GMT
/example/username	Standard	String	Fri, 21 Jul 2023 10:00:06 GMT

This screenshot shows the detailed view for the '/example/database' parameter. The left sidebar has 'Overview', 'History', and 'Tags' tabs, with 'Overview' selected. The main area displays the following details:

Name	/example/database	Description	-
Tier	Standard	Data type	text
Type	String	Last modified user	arn:aws:iam::538795172629:root
Last modified date	Fri, 21 Jul 2023 10:00:37 GMT	Version	1
Value	project		

The screenshot shows the AWS Systems Manager Parameter Store interface. The URL is us-east-1.console.aws.amazon.com/systems-manager/parameters/example/endpoint?region=us-east-1&tab=Table. The parameter name is `/example/endpoint`. The details are as follows:

Name	Description
<code>/example/endpoint</code>	-
Tier	Standard
Type	String
Last modified date	Fri, 21 Jul 2023 09:59:48 GMT
Value	database-1.cpu6x23uobdy.us-east-1.rds.amazonaws.com
Data type	text
Last modified user	arn:aws:iam::538795172629:root
Version	1

The screenshot shows the AWS Systems Manager Parameter Store interface. The URL is us-east-1.console.aws.amazon.com/systems-manager/parameters/example/password?region=us-east-1&tab=Table. The parameter name is `/example/password`. The details are as follows:

Name	Description
<code>/example/password</code>	-
Tier	Standard
Type	String
Last modified date	Fri, 21 Jul 2023 10:00:20 GMT
Value	admin1234
Data type	text
Last modified user	arn:aws:iam::538795172629:root
Version	1

us-east-1.console.aws.amazon.com/systems-manager/parameters/example/username?region=us-east-1&tab=Table

AWS Services Search [Alt+S] N. Virginia MaxenceRobichon

EC2 VPC IAM

AWS Systems Manager > Parameter Store > /example/username > Overview

/example/username

Edit Delete

Overview History Tags

Name	Description
/example/username	-
Tier	Data type
Standard	text
Type	Last modified user
String	arn:awsiam:538795172629:root
Last modified date	Version
Fri, 21 Jul 2023 10:00:06 GMT	1
Value	
admin	

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Cloud IDE – AWS Cloud9

The screenshot shows the AWS Cloud9 control panel. On the left, a sidebar titled "AWS Cloud9" lists "Environments" and "Documentation". The main content area is titled "Environments (1)" and shows a table with one row. The table columns are "Name", "Cloud9 IDE", "Environment type", "Connection", "Permission", and "Owner ARN". The single row contains the following data:

Name	Cloud9 IDE	Environment type	Connection	Permission	Owner ARN
ProjectCloud	Open	EC2 instance	AWS Systems Manager (SSM)	Owner	arn:aws:iam::538795172629:root

At the top right of the main content area, there are buttons for "Delete", "View details", "Open in Cloud9", and "Create environment". The "Create environment" button is highlighted with a yellow background. The bottom right corner of the page includes copyright information: "© 2023, Amazon Web Services, Inc. or its affiliates." followed by links for "Privacy", "Terms", and "Cookie preferences".

EC2 Console from Cloud9

The screenshot shows the AWS Cloud9 IDE interface with the URL <https://us-east-1.console.aws.amazon.com/cloud9/ide/eff4e47514a0427cba5c5559c8c4726b>. The code editor displays a MySQL query:

```
MySQL [project]> select * from countrydata_final
```

The resulting table contains data for various countries across several columns, including name, mobilephones, mortalityunder5, healthexpenditurepercapita, healthexpenditurepercentGDP, population, populationurban, birthrate, and lifeexpectancy.

	name	mobilephones	mortalityunder5	healthexpenditurepercapita	healthexpenditurepercentGDP	population	populationurban	birthrate	lifeexpectancy
1	Afghanistan	0	158	11	9	26697430	5771984	50	46
2	Albania	29791	29	75	6	3071856	1280964	17	74
3	Algeria	3686640387	49	63	3	30533827	18259229	21	70
4	American Samoa	1992	0	0	0	57625	51171	0	0
5	Andorra	1136464295	5	1289	8	64634	59722	11	0
6	Angola	25806	200	15	2	13926373	6823923	50	46
7	Antigua and Barbuda	22000	15	411	5	77656	24928	21	0
8	Argentina	6487950	20	689	9	36938709	33274569	19	74
9	Armenia	17486	33	41	7	3076898	2802548	13	71
10	Aruba	1911563665	0	0	0	96271	42157	14	74
11	Australia	8562000	6	1728	8	19153000	16701416	13	88
12	Austria	6117000	6	2361	10	8011566	5271610	10	78
13	Azerbaijan	420400	67	30	5	8048600	4120883	15	67
14	Bahamas, The	31524	17	1072	6	297651	244074	18	72
15	Bahrain	205727	12	488	4	638193	564163	22	74
16	Bangladesh	279000	86	9	3	129592275	30583777	27	65

The screenshot shows the AWS Cloud9 IDE interface with the same URL as the previous screenshot. The code editor displays a MySQL query:

```
MySQL [project]> select * from countrydata_final
```

The resulting table contains data for various countries across several columns, including name, mobilephones, mortalityunder5, healthexpenditurepercapita, healthexpenditurepercentGDP, population, populationurban, birthrate, and lifeexpectancy.

	name	mobilephones	mortalityunder5	healthexpenditurepercapita	healthexpenditurepercentGDP	population	populationurban	birthrate	lifeexpectancy	
1	United States	109478031	9	4763	13	282162411	223198467			
2	Uruguay	77	9898800000000	410787	17	773	11	3300847	3813674	
3	Uzbekistan	16	22823255806	53128	63	32	6	24650400	9194599	
4	Vanuatu	21	13760374488	365	23	48	4	185074	40161	
5	Venezuela, RB	33	68	272014693	5447172	25	273	6	24311088	
6	Vietnam	23	1171480000000	788559	35	22	5	77630900	18864309	
7	Virgin Islands (U.S.)	17	72	31172517272	35000	0	0	8	188639	100600
8	West Bank and Gaza	14	78	0	7076	31	0	8	3004150	2147967
9	Yemen, Rep.	41	71	4113261233	32842	100	25	4	17723186	4661198
10	Zambia	41	60	9636342275	98853	157	18	6	10281562	3550144
11	Zimbabwe	45	42	3237716325	266441	115	59	8	12589477	4228203

Below the table, the code editor shows the results of a `show tables` command:

```
MySQL [project]> show tables;
```

```
+-----+  
| Tables_in_project |  
+-----+  
| countrydata_final |  
+-----+
```

Finally, the code editor shows the results of a `Tables_in_project` command:

```
MySQL [project]> Tables_in_project;
```

There is one row in the set (0.01 sec).

Website

Non sécurisé 18.206.241.236/query2.php	
Pick another query	
This is a Country Name	Number of mobile phone providers
Afghanistan	0
Albania	29791
Algeria	86000
American Samoa	1992
Andorra	23543
Angola	25806
Antigua and Barbuda	22000
Argentina	6487950
Armenia	17486
Aruba	15000
Australia	8562000
Austria	6117000
Azerbaijan	420400
Bahamas, The	31524
Bahrain	205727
Bangladesh	279000
Barbados	28467
Belarus	49353
Belgium	5629000
Belize	16812
Benin	55476
Bermuda	13000
Bhutan	0
Bolivia	582620
Bosnia and Herzegovina	93386
Botswana	222190
Brazil	23188171
Brunei Darussalam	95000
Bulgaria	738000
Burkina Faso	25245
Burundi	16320
Cambodia	130847

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Example Social Research Organization

[About Us](#) [Contact Us](#) [Query](#)

Welcome to our data query site. You can get data from countries all over the world to use in your research.

We provide data for a variety of areas including basic demographics and development statistics.

About Us



Shirley Rodriguez

Our site got started when Shirley Rodriguez found that she was frequently looking up data from a variety of databases. Shirley decided to start sharing some of this data with other social researchers.

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Shirley Rodriguez

Our site got started when Shirley Rodriguez found that she was frequently looking up data from a variety of databases. Shirley decided to start sharing some of this data with other social researchers.

Contact Us



123 Any Street
Any Town, USA

Hours

Weekdays: 6:00am - 6:00pm
Saturday: 7:00am - 7:00pm
Closed on Sundays

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Capture d'écran copiée dans le Presse-papiers et enregistrée

Sélectionner ici pour annoter et partager l'image

← → C Non sécurisé | 18.206.241.236/query2.php

Pick another query.

This is a Country Name

	Gross Domestic Product
Afghanistan	2461666315
Albania	3686649387
Algeria	54790058957
American Samoa	0
Andorra	1133644295
Angola	9129180361
Antigua and Barbuda	802526701
Argentina	284204000000
Armenia	1911563665
Aruba	1858659293
Australia	416888000000
Austria	192071000000
Azerbaijan	5272617196
Bahamas, The	6327552000
Bahrain	7970690894
Bangladesh	47124925462
Barbados	2558850048
Belarus	12736856485
Belgium	232673000000
Belize	832072465
Benin	2254838685
Bermuda	3480219000
Bhutan	427808817
Bolivia	8397858206
Bosnia and Herzegovina	5505984456
Botswana	5632391130
Brazil	644702000000
Brunei Darussalam	6001153318
Bulgaria	12903546576
Burkina Faso	2610945549
Burundi	835334807
Cambodia	3654031716

[Pick another query](#)

Country Name	Population	Urban Population
Afghanistan	26697430	5771984
Albania	3071856	1280964
Algeria	30533827	18259229
American Samoa	57625	51171
Andorra	64634	59722
Angola	13926373	6823923
Antigua and Barbuda	77656	24928
Argentina	36930709	33274569
Armenia	3076098	2002540
Aruba	90271	42157
Australia	19153000	16701416
Austria	8011566	5271610
Azerbaijan	8048600	4120883
Bahamas, The	297651	244074
Bahrain	638193	564163
Bangladesh	129592275	30583777
Barbados	267511	97106
Belarus	10005000	6993495
Belgium	10251250	9953964
Belize	249800	119404
Benin	6517810	2496321
Bermuda	62100	62100
Bhutan	571262	145101
Bolivia	8307248	5133879
Bosnia and Herzegovina	3693698	1595678
Botswana	1757925	935216
Brazil	174425387	141633414
Brunei Darussalam	327036	232523
Bulgaria	8170172	5629349
Burkina Faso	12294012	2040806
Burundi	6374347	529071
Cambodia	12446949	2103534

[Pick another query](#)

Country Name	Birth Rate	Life Expectancy
Afghanistan	50	46
Albania	17	74
Algeria	21	70
American Samoa	0	0
Andorra	11	0
Angola	50	46
Antigua and Barbuda	21	0
Argentina	19	74
Armenia	13	71
Aruba	14	74
Australia	13	80
Austria	10	78
Azerbaijan	15	67
Bahamas, The	18	72
Bahrain	22	74
Bangladesh	27	65
Barbados	12	76
Belarus	9	69
Belgium	11	78
Belize	30	74
Benin	43	53
Bermuda	14	78
Bhutan	27	62
Bolivia	31	63
Bosnia and Herzegovina	11	75
Botswana	27	51
Brazil	21	70
Brunei Darussalam	23	77
Bulgaria	9	72
Burkina Faso	45	50
Burundi	38	46
Cambodia	27	58

← → C Non sécurisé | 18.206.241.236/query2.php

Pick another query

Country Name	Childhood Mortality
Afghanistan	150
Albania	29
Algeria	49
American Samoa	0
Andorra	5
Angola	200
Antigua and Barbuda	15
Argentina	20
Armenia	33
Aruba	0
Australia	6
Austria	6
Azerbaijan	67
Bahamas, The	17
Bahrain	12
Bangladesh	86
Barbados	17
Belarus	14
Belgium	6
Belize	27
Benin	143
Bermuda	0
Bhutan	89
Bolivia	82
Bosnia and Herzegovina	10
Botswana	96
Brazil	36
Brunei Darussalam	9
Bulgaria	21
Burkina Faso	191
Burundi	164
Cambodia	103

Conclusion

The project is now functional and running.

We closed the instances and shut down our website.