

Rendu TP05

Rendu de TP05 a été effectué par Thomas PEUGNET.

Nous créons un VPC.

Nous créons nos 3 subnets.

The screenshot shows the AWS VPC dashboard. A success message at the top states: "You have successfully created 1 subnet: subnet-0bfd75cf87c13cd1f". The main table displays seven subnets, each with its Name, Subnet ID, State, VPC, Block Public setting, IPv4 CIDR, and IPv6 CIDR. The subnets are categorized into three groups: Public-1A (3 subnets), Public-1B (2 subnets), and Private-1A (2 subnets). The table includes columns for Name, Subnet ID, State, VPC, Block Public..., IPv4 CIDR, and IPv6 CIDR. The VPC column lists the associated VPC IDs (e.g., vpc-024ad8fd0fd5c3446, vpc-024ad8fd0fd5c3446, vpc-024ad8fd0fd5c3446). The Block Public... column has radio buttons for Off (selected) and On. The IPv4 CIDR and IPv6 CIDR columns show ranges like 172.31.0.0/20, 172.31.16.0/20, 172.31.32.0/20, etc. The IPv6 CIDR column is mostly blank or shows '-'.

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR
-	subnet-074699f9e3951ce2b	Available	vpc-024ad8fd0fd5c3446	Off	172.31.0.0/20	-
-	subnet-08b59e2e4ce3b3fed	Available	vpc-024ad8fd0fd5c3446	Off	172.31.16.0/20	-
-	subnet-05ba9dbb9df51e1c5	Available	vpc-024ad8fd0fd5c3446	Off	172.31.32.0/20	-
Public-1A	subnet-08f09034964c87332	Available	vpc-032621a2eb5611170 VPC...	Off	10.150.0.0/24	-
Public-1B	subnet-0c3d9cd06ff5080	Available	vpc-032621a2eb5611170 VPC...	Off	10.150.1.0/24	-
Private-1A	subnet-0b9063aced18f7e2f	Available	vpc-032621a2eb5611170 VPC...	Off	10.150.2.0/24	-
Private-1B	subnet-0bfd75cf87c13cd1f	Available	vpc-032621a2eb5611170 VPC...	Off	10.150.3.0/24	-

Nous créons notre table de routage.

The screenshot shows the AWS VPC dashboard with a success message: "Route table rtb-094bd96b94c7773a3 | Public-RT was created successfully." The main pane displays the details of the newly created route table, "rtb-094bd96b94c7773a3 / Public-RT". The "Routes" tab is selected, showing one route entry: Destination 10.150.0.0/16, Target local, Status Active, and Propagated No. The sidebar on the left provides navigation links for various VPC components like EC2 Global View, Subnets, Route tables, and Security.

Nous associons les subnets suivant à cette table de routage.

The screenshot shows the AWS VPC dashboard with a success message: "You have successfully updated subnet associations for rtb-094bd96b94c7773a3 / Public-RT." The main pane displays the details of the route table and the "Subnet associations" tab is selected. It shows two explicit subnet associations: Public-1A (subnet-08f09034964c87332, 10.150.0.0/24) and Public-1B (subnet-0c32d9cd06ff53080, 10.150.1.0/24). Below this, there is a section for "Subnets without explicit associations" which lists Private-1A (subnet-0b9063aced18f7e2f, 10.150.2.0/24) and Private-1B (subnet-0bfd75cf87c13cd1f, 10.150.3.0/24). The sidebar on the left is identical to the previous screenshot.

De même avec notre **Private RT** routing table.

The screenshot shows the AWS VPC dashboard with the 'Route tables' section selected. A green banner at the top indicates a successful update of subnet associations. The main pane displays the details of a route table named 'rtb-0701017229aea55e4 / Private-RT'. The 'Details' tab is active, showing the following information:

Route table ID rtb-0701017229aea55e4	Main No	Explicit subnet associations 2 subnets	Edge associations -
VPC vpc-032621a2eb5611170 VPC-thomas	Owner ID 794038237731		

Below the details, there are tabs for 'Routes', 'Subnet associations', 'Edge associations', 'Route propagation', and 'Tags'. The 'Routes' tab is selected, showing one route entry:

Destination	Target	Status	Propagated
10.150.0.0/16	local	Active	No

At the bottom right of the main pane, there are buttons for 'Both', 'Edit routes', and navigation arrows. The footer of the page includes links for 'CloudShell', 'Feedback', and copyright information.

Nous créons notre Internet Gateway.

The screenshot shows the AWS VPC dashboard with the 'Internet gateways' section selected. A green banner at the top indicates the creation of an internet gateway named 'igw-0bb0d308cb28c9415 - IGW-thomas'. The main pane displays the details of this internet gateway:

Internet gateway ID igw-0bb0d308cb28c9415	State Detached	VPC ID -	Owner 794038237731
----------------------------------------------	-------------------	-------------	-----------------------

Below the details, there is a 'Tags' section with a search bar and a 'Manage tags' button. The table shows one tag entry:

Key	Value
Name	IGW-thomas

At the bottom right of the main pane, there are buttons for 'Attach to a VPC' and navigation arrows. The footer of the page includes links for 'CloudShell', 'Feedback', and copyright information.

Nous l'attachons à notre VPC.

The screenshot shows the AWS VPC dashboard with the Internet gateway configuration for `igw-0bb0d308cb28c9415`. The gateway is successfully attached to the VPC `vpc-032621a2eb5611170` and is owned by `794038237731`. It has one tag named `IGW-thomas`.

Nous ajoutons une nouvelle route pour `0.0.0.0/0`.

The screenshot shows the AWS VPC dashboard with the route table configuration for `rtb-094bd96b94c7773a3`. The table has two explicit subnet associations: `2 subnets`. It contains two routes: one to the internet gateway `igw-0bb0d308cb28c9415` and another to the local subnet.

Destination	Target	Status	Propagated
<code>0.0.0.0/0</code>	<code>igw-0bb0d308cb28c9415</code>	<code>Active</code>	<code>No</code>
<code>10.150.0.0/16</code>	<code>local</code>	<code>Active</code>	<code>No</code>

Nous activons les hostnames DNS.

The screenshot shows the 'Edit VPC settings' page in the AWS Management Console. The VPC ID is `vpc-032621a2eb5611170`, which is associated with the VPC name 'VPC-thomas'. Under 'DHCP settings', the DHCP option set is set to 'dopt-03e49c88ff2e64521'. Under 'DNS settings', both 'Enable DNS resolution' and 'Enable DNS hostnames' are checked. Under 'Network Address Usage metrics settings', the 'Enable Network Address Usage metrics' checkbox is unchecked. At the bottom, there are 'Cancel' and 'Save' buttons.

Nous lançons notre instance EC2.

The screenshot shows the 'Launch an instance' wizard in the AWS Management Console. The selected VPC is `vpc-032621a2eb5611170 (VPC-thomas)`. The subnet chosen is 'Public-1A' (subnet-08f09034964c87332). The 'Auto-assign public IP' option is set to 'Enable'. Under 'Firewall (security groups)', the 'Create security group' option is selected. The security group name is 'launch-wizard-8'. The description is 'launch-wizard-8 created 2024-12-02T13:28:38.409Z'. In the 'Inbound Security Group Rules' section, a rule for port 22 (TCP) from anywhere is defined. A note states that rules with source of 0.0.0.0/0 allow all IP addresses to access the instance. A callout box provides information about the free tier for t2.micro instances. On the right, there is a summary section and a 'Launch instance' button.

The screenshot shows the AWS EC2 Instances page after launching an instance. A green success message at the top states "Successfully initiated launch of instance (i-0966e85de06fbda56)". Below this, a "Launch log" section shows several steps with status "Succeeded": "Initializing requests", "Creating security groups", "Creating security group rules", and "Launch initiation". A "Next Steps" section provides links to various AWS services: "Create billing and free tier usage alerts", "Connect to your instance", "Connect an RDS database", "Create EBS snapshot policy", "Manage detailed monitoring", "Create Load Balancer", "Create AWS budget", and "Manage CloudWatch alarms".

Nous avons donc l'instance suivante.

The screenshot shows the AWS EC2 Instances list page. It displays one instance: "thomas i-0966e85de06fbda56" (Running, t2.micro, Initializing). The instance has a Public IPv4 DNS of "ec2-15-237-128-171.eu..." and a Public IPv4 IP of "15.237.128.171". The "Actions" dropdown menu is open, showing options like "Launch instances", "Stop", "Terminate", "Reboot", "Detach volume", "Change instance type", "Change subnet", "Change security group", and "Edit tags".

La machine ne répond pas aux ping depuis son IP publique.

```
● ● ●  ↵ 2      ping ec2-15-237-128-171.eu-west-3.compute.amazonaws.com
Last login: Mon Dec  2 13:56:30 on ttys004
↳ thomas@MacBook-Pro-de-Thomas ~
↳ ping ec2-15-237-128-171.eu-west-3.compute.amazonaws.com
PING ec2-15-237-128-171.eu-west-3.compute.amazonaws.com (15.237.128.171): 56 dat
a bytes
Request timeout for icmp_seq 0
Request timeout for icmp_seq 1
Request timeout for icmp_seq 2
Request timeout for icmp_seq 3
Request timeout for icmp_seq 4
Request timeout for icmp_seq 5
Request timeout for icmp_seq 6
Request timeout for icmp_seq 7
Request timeout for icmp_seq 8
```

Nous pouvons nous connecter à notre instance via SSH.

```

● ● ● ✘ 2 ec2-user@ip-172-31-42-95:~ 
└ thomas@MacBook-Pro-de-Thomas ~/Downloads
  └─ chmod 400 thomas-key-macos.pem
└ thomas@MacBook-Pro-de-Thomas ~/Downloads
  └─ ssh -i "thomas-key-macos.pem" ec2-user@ec2-15-237-128-171.eu-west-3.compute.amazonaws.com
The authenticity of host 'ec2-15-237-128-171.eu-west-3.compute.amazonaws.com (15.237.128.171)' can't be established.
ED25519 key fingerprint is SHA256:ruEWyVbhjsLIpuQNiYQsqswbjV4UFLE7D0cA3yJW28Y.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-15-237-128-171.eu-west-3.compute.amazonaws.com' (ED25519) to the list of known hosts.

,      #
~\_ ##### Amazon Linux 2023
~~ \_#####\
~~ \###|
~~ \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023
~~   \~' '-->
~~~   /
~~.. ./
~/ _/
~/m/' [ec2-user@ip-172-31-42-95 ~]$
```

Nous avons en effet la bonne adresse IP.

```

● ● ● ✘ 2 ec2-user@ip-10-150-0-187:~ 
~~.. . _/
~/ _/
~/m/' [ec2-user@ip-10-150-0-187 ~]$ ifconfig
enX0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 9001
  inet 10.150.0.187 netmask 255.255.255.0 broadcast 10.150.0.255
    inet6 fe80::413:5fff:fe1d:fdab prefixlen 64 scopeid 0x20<link>
      ether 06:13:5f:1d:fd:ab txqueuelen 1000 (Ethernet)
        RX packets 4507 bytes 31307413 (29.8 MiB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 1639 bytes 153572 (149.9 KiB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
  inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
      loop txqueuelen 1000 (Local Loopback)
        RX packets 12 bytes 1020 (1020.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 12 bytes 1020 (1020.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[ec2-user@ip-10-150-0-187 ~]$
```

Nous lançons une nouvelle instance.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links for Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, Load Balancers, Target Groups, Trust Stores, Auto Scaling, and Auto Scaling Groups. The main content area is titled "Instances (3) Info". It displays three instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv
Peugnet-thomas	i-0966e85de06fbda56	Terminated	t2.micro	-	View alarms	eu-west-3c	-	-
thomas-peugnet	i-00807e369d0cbaf9f	Running	t2.micro	Initializing	View alarms	eu-west-3a	ec2-35-180-79-238.eu...	35.180.79
PrivateVM	i-0d4890a8fa8e7712c	Running	t2.micro	Initializing	View alarms	eu-west-3a	-	-

At the bottom of the main area, it says "Select an instance". The status bar at the bottom right shows "© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences".

Depuis la première instance, nous nous connectons sur la nouvelle avec les commandes suivantes.

- Envoi de la clé privée envoyée par AWS sur l'instance de rebond
- Utilisation de cette clé depuis l'instance de rebond pour se connecter à la nouvelle instance dans le réseau privé.

● ● ●

ec2-user@ip-10-150-2-66:~

```
TX packets 12 bytes 1020 (1020.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[ec2-user@ip-10-150-0-187 ~]$ touch aws-ec2-instance.key
[ec2-user@ip-10-150-0-187 ~]$ vim aws-ec2-instance.key
[ec2-user@ip-10-150-0-187 ~]$ chmod 400 aws-ec2-instance.key
[ec2-user@ip-10-150-0-187 ~]$ ssh -i "aws-ec2-instance.key" ec2-user@10.150.2.66
6The authenticity of host '10.150.2.66 (10.150.2.66)' can't be established.
ED25519 key fingerprint is SHA256:QaqJotKNuFEnGVpKj/otmmqDZqzqaJosr01WF9sByA.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.150.2.66' (ED25519) to the list of known hosts.

,      #
~\_ ##### Amazon Linux 2023
~~ \_#####\
~~   \###|
~~     \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023
~~       V~' '->
~~~      /
~~.._.  _/
~/m/'
```

[ec2-user@ip-10-150-2-66 ~]\$ █

Nous avons en effet la bonne adresse IP : 10.150.2.66

● ● ● ec2-user@ip-10-150-2-66:~

```
~~._. _/
_/_/
_/m/'

[ec2-user@ip-10-150-2-66 ~]$ ifconfig
enX0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 9001
    inet 10.150.2.66 netmask 255.255.255.0 broadcast 10.150.2.255
        inet6 fe80::44b:cff:fee0:20a9 prefixlen 64 scopeid 0x20<link>
            ether 06:4b:0c:e0:20:a9 txqueuelen 1000 (Ethernet)
            RX packets 806 bytes 96750 (94.4 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 926 bytes 102467 (100.0 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1000 (Local Loopback)
        RX packets 12 bytes 1020 (1020.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 12 bytes 1020 (1020.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

[ec2-user@ip-10-150-2-66 ~]\$ █

AWS Search [Option+S] Paris thomaspeu@thomas-peugnet.fr

EC2 Instances i-0d4890a8fa8e7712c

Dashboard EC2 Global View Events

Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations

Images AMIs AMI Catalog

Elastic Block Store Volumes Snapshots Lifecycle Manager

Network & Security Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

Load Balancing Load Balancers Target Groups Trust Stores New

Auto Scaling Auto Scaling Groups

CloudShell Feedback

Instance summary for i-0d4890a8fa8e7712c (PrivateVM) Info

Updated less than a minute ago

Instance ID i-0d4890a8fa8e7712c

IPv6 address -

Hostname type IP name: ip-10-150-2-66.eu-west-3.compute.internal

Answer private resource DNS name -

Auto-assigned IP address -

IAM Role -

IMDSv2 Required

Operator -

Public IPv4 address -

Instance state Running

Private IP DNS name (IPv4 only) ip-10-150-2-66.eu-west-3.compute.internal

Instance type t2.micro

VPC ID vpc-032621a2eb5611170 (VPC-thomas)

Subnet ID subnet-0b9063aced18f7e2f (Private-1A)

Instance ARN arnaws:ec2:eu-west-3:794058237731:instance/i-0d4890a8fa8e7712c

Private IPv4 addresses 10.150.2.66

Public IPv4 DNS -

Elastic IP addresses -

AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name -

Managed false

Details Status and alarms Monitoring Security Networking Storage Tags

Instance details Info

AMI ID ami-03216a20ecc5d7ee

AMI name al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64

Launch time Mon Dec 02 2024 14:33:52 GMT+0100 (heure normale d'Europe centrale) (6 minutes)

Lifecycle general

Monitoring disabled

Termination protection Disabled

AMI location amazon/al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64

Stop-hibernate behavior Disabled

Platform details Linux/UNIX

Stop protection Disabled

Instance auto-recovery Default

AMI Launch index 0

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La VM privée n'a effectivement pas accès à Internet.

```

inet6 fe80::44b:cff:fee0:20a9  prefixlen 64  scopeid 0x20<link>
ether 06:4b:0c:e0:20:a9  txqueuelen 1000  (Ethernet)
RX packets 806  bytes 96750 (94.4 KiB)
RX errors 0  dropped 0  overruns 0  frame 0
TX packets 926  bytes 102467 (100.0 KiB)
TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 12  bytes 1020 (1020.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 12  bytes 1020 (1020.0 B)
        TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

[ec2-user@ip-10-150-2-66 ~]$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
^C
--- 8.8.8.8 ping statistics ---
5 packets transmitted, 0 received, 100% packet loss, time 4156ms

[ec2-user@ip-10-150-2-66 ~]$

```

Nous supprimons les VMs.

The screenshot shows the AWS CloudWatch Metrics Insights interface. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, Load Balancers, Target Groups, Trust Stores, Auto Scaling (selected), and Auto Scaling Groups. The main area displays monitoring data for three instances. At the top, a green banner says "Successfully initiated termination (deletion) of i-0d4890a8fa8e7712c, i-0966e85de06fbd56, i-00807e369d0cb4f9f". Below it, the "Instances (3/3) Info" section shows a table with columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, and Public IPv6. The instances listed are PrivateVM, Peugnet-thomas, and thomas-peugnet, all in the terminated state. Below this, a section titled "3 instances selected" shows monitoring metrics: CPU utilization (%), Network in (bytes), Network out (bytes), Network packets in (count), Network packets out (count), Metadata no token (count), CPU credit usage (count), and CPU credit balance (count). Each metric has a corresponding line chart showing data over time.

Nous supprimons le VPC.

AWS Services ec2 Paris thomaspeu @ thomas-peugnet

You successfully deleted **vpc-032621a2eb5611170 / VPC-thomas** and 9 other resources.

Details

Your VPCs (1) Info

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option
-	vpc-024ad8fd0fd5c3446	Available	Off	172.31.0.0/16	-	dopt-03e49c88ff2e64521

vpc-032621a2eb5611170 / VPC-thomas

Details Resource map CIDs Flow logs Tags Integrations

Details

VPC ID vpc-032621a2eb5611170	State Available	Block Public Access Off	DNS hostnames Enabled
DNS resolution Enabled	Tenancy Default	DHCP option set dopt-03e49c88ff2e64521	Main route table rtb-0904b66826972fd3d
Main network ACL acl-0263417dbfa78f461	Default VPC No	IPv4 CIDR 10.150.0.0/16	IPv6 pool -
IPv6 CIDR -	Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 794038237731

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