

DEPARTMENT RESOURCE BOOKING SYSTEM

AWS ARCHITECTURE DESIGN and IMPLEMENTATION

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AWS account setup:

The screenshot displays the AWS Academy Learner Lab interface for the course 'AWS Academy Learner Lab [141571]'. The interface includes a sidebar with navigation options like Home, Modules, Discussions, Grades, and Lucid (Whiteboard). The main content area features a banner image with the AWS Academy logo and a detailed description of the Learner Lab environment. It explains that the lab provides a long-running sandbox environment for exploring AWS services, with a budget of \$500 USD. The interface also includes a 'Get Started' button and a 'To Do' section with links to View Course Stream, View Course Calendar, and View Course Notifications.

Get Started

Modules

- Course Welcome and Overview
 - Pre-Course Survey
 - AWS Academy Learner Lab Student Guide
- AWS Academy Learner Lab Compliance and Security
 - Learn how to effectively use the AWS Academy Learner Lab
 - Module Knowledge Check (100 pts, Score at least 70%)
- AWS Academy Learner Lab
 - Launch AWS Academy Learner Lab

IAM roles & policies:

LabRole

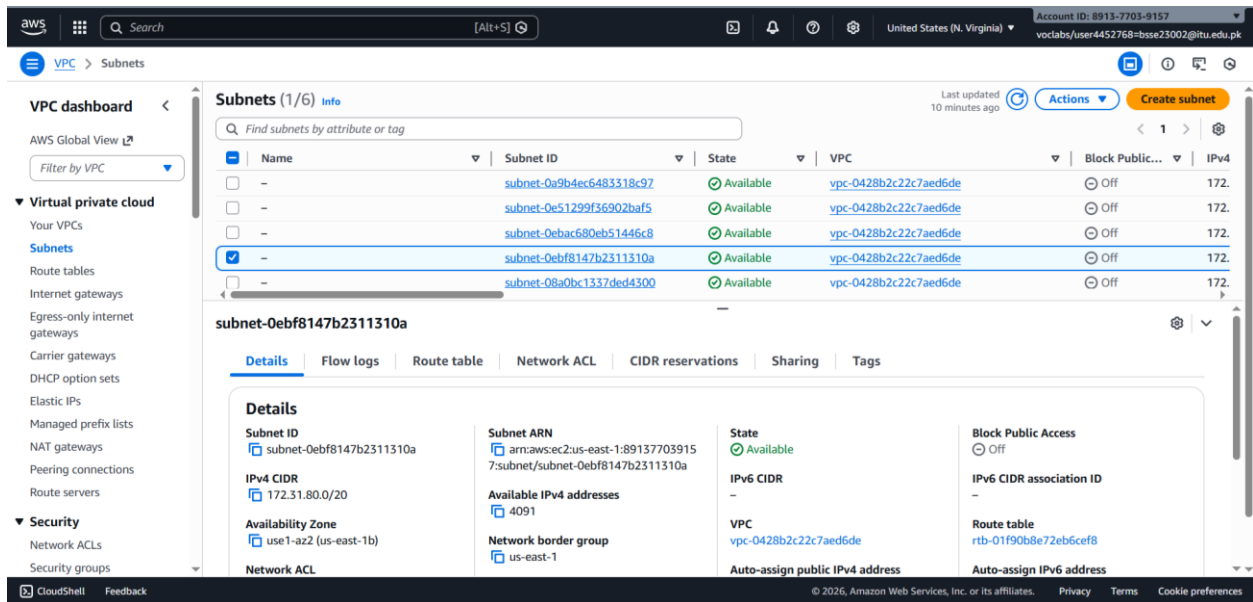
The screenshot shows the AWS IAM console interface. On the left is a navigation sidebar with sections like 'Identity and Access Management (IAM)', 'Access management', and 'Access reports'. The main content area is titled 'LabRole' and includes a 'Summary' section with details like 'Creation date' (December 24, 2025), 'ARN' (arn:aws:iam:891377039157:role/LabRole), and 'Maximum session duration' (1 hour). Below the summary are tabs for 'Permissions', 'Trust relationships', 'Tags', 'Last Accessed', and 'Revoke sessions'. The 'Permissions' tab is active, showing a list of 'Permissions policies (7)'. The list includes several AWS managed policies like 'AmazonEC2ContainerRegistryReadOnly', 'AmazonEKSClusterPolicy', and 'AmazonEKSWorkerNodePolicy', as well as customer-managed policies with ARNs starting with 'c184191a47750551131497021w891377039157-...'. Each policy entry shows its name, type (AWS managed or Customer managed), and the number of attached entities.

VPC/subnets/security groups

VPC (default)

The screenshot shows the AWS VPC console interface. On the left is a navigation sidebar with sections like 'VPC dashboard', 'Virtual private cloud', and 'Security'. The main content area is titled 'Your VPCs' and shows a table of VPCs. One VPC is listed: 'vpc-0428b2c22c7aed6de' with a state of 'Available'. Below the table, the 'Details' tab is selected for the chosen VPC. The details section is divided into four columns: 'VPC ID' (vpc-0428b2c22c7aed6de), 'State' (Available), 'Block Public Access' (Off), and 'DNS hostnames' (Enabled). Other details include 'DNS resolution' (Enabled), 'Main network ACL' (acl-03e24302eba6df5c3), 'Default VPC' (Yes), 'DHCP option set' (dopt-01ab203e9ead0429a), 'IPv4 CIDR' (172.31.0.0/16), 'Main route table' (rtb-01f90b8e72eb6cef8), and 'IPv6 pool' (None).

Subnet (default)



Subnets (1/6) Info

Find subnets by attribute or tag

Name	Subnet ID	State	VPC	Block Public...	IPv4
-	subnet-0a9b4ec6483318c97	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-0e51299f36902baf5	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-0ebac680eb51446c8	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-0ebf8147b2311310a	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-08a0bc1337ded4300	Available	vpc-0428b2c22c7aed6de	Off	172.

subnet-0ebf8147b2311310a

Details | Flow logs | Route table | Network ACL | CIDR reservations | Sharing | Tags

Details

Subnet ID: subnet-0ebf8147b2311310a

Subnet ARN: arn:aws:ec2:us-east-1:891377039157:subnet/subnet-0ebf8147b2311310a

State: Available

IPv4 CIDR: 172.31.80.0/20

Available IPv4 addresses: 4091

VPC: vpc-0428b2c22c7aed6de

Block Public Access: Off

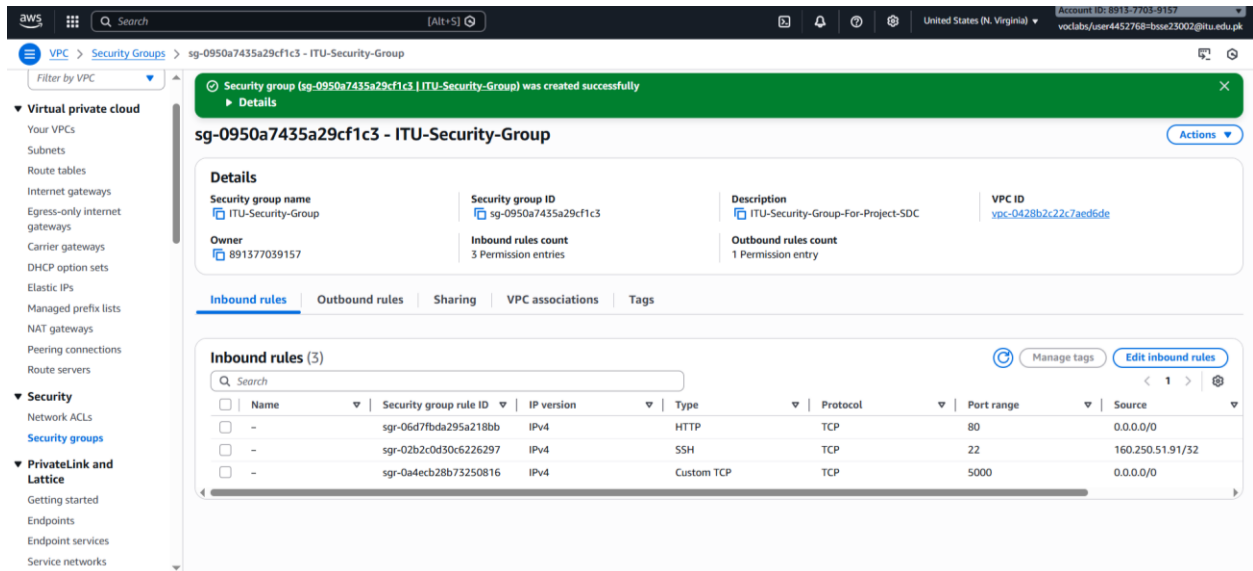
IPv6 CIDR association ID: -

Route table: rtb-01f90b8e72eb6cef8

Auto-assign public IPv4 address: -

Auto-assign IPv6 address: -

Security group



Security group (sg-0950a7435a29cf1c3 | ITU-Security-Group) was created successfully

sg-0950a7435a29cf1c3 - ITU-Security-Group

Details | Inbound rules | Outbound rules | Sharing | VPC associations | Tags

Details

Security group name: ITU-Security-Group

Security group ID: sg-0950a7435a29cf1c3

Description: ITU-Security-Group-For-Project-SDC

VPC ID: vpc-0428b2c22c7aed6de

Owner: 891377039157

Inbound rules count: 3 Permission entries

Outbound rules count: 1 Permission entry

Inbound rules (3)

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source
-	sg-06d7fbd295a218bb	IPv4	HTTP	TCP	80	0.0.0.0/0
-	sg-02b2c0d30c6226297	IPv4	SSH	TCP	22	160.250.51.91/32
-	sg-0a4ecb28b73250816	IPv4	Custom TCP	TCP	5000	0.0.0.0/0

Account ID: 8913-7703-9157
voclabs/user4453768@itu.edu.pk

VPC > Security Groups > Create security group

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

Inbound rules [Info](#)

Type	Protocol	Port range	Source	Description - optional	
SSH	TCP	22	Custom	<input type="text" value="Q"/>	Delete
HTTP	TCP	80	Custom	<input type="text" value="Q"/>	Delete
Custom TCP	TCP	5000	Custom	<input type="text" value="Q"/>	Delete

[Add rule](#)

Outbound rules [Info](#)

Type	Protocol	Port range	Destination	Description - optional	
All traffic	All	All	Custom	<input type="text" value="Q"/>	Delete

[Add rule](#)

EC2, S3, Lambda, DynamoDB, RDS, API Gateway, or any used service

EC2 Instance

Account ID: 8913-7703-9157
voclabs/user4453768@itu.edu.pk

EC2 > Instances

Instances (1/1) [Info](#)

Last updated less than a minute ago

[Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

Find instance by attribute or tag (case-sensitive)	All states
<input checked="" type="checkbox"/> Name Instance ID Instance state Instance type Status check Alarm status Availability Zone Public IPv4 DNS	
<input checked="" type="checkbox"/> ITU-Linux-Server i-083d3fbbe372bdc97 Running t2.micro Initializing View alarms us-east-1c ec2-54-172-127-74.co...	

i-083d3fbbe372bdc97 (ITU-Linux-Server)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#) [Storage](#) [Tags](#)

Instance summary [Info](#)

Instance ID i-083d3fbbe372bdc97	Public IPv4 address 54.172.127.74 open address	Private IPv4 addresses 172.31.22.167
IPv6 address -	Instance state Running	Public DNS ec2-54-172-127-74.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-22-167.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-22-167.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address 54.172.127.74 [Public IP]	VPC ID vpc-0428b2c2c7aed6de	

Route Table (default)

Account ID: 8915-7703-9157

vociabn/user4452768-bse23002@itu.edu.pk

United States (N. Virginia)

Search

[Alt+S]

CloudShell

Feedback

VPC > Route tables

VPC dashboard

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

NAT gateways

Peering connections

Route servers

Security

Network ACLs

Security groups

Route tables (1/1) Info

Last updated 11 minutes ago

Actions

Create route table

Find route tables by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-01f90b8e72eb6cef8	-	-	Yes	vpc-0428b2c22c7aed6de

rtb-01f90b8e72eb6cef8

Details Routes Subnet associations Edge associations Route propagation Tags

Details

Route table ID

rtb-01f90b8e72eb6cef8

VPC

vpc-0428b2c22c7aed6de

Main

Yes

Owner ID

891377039157

Explicit subnet associations

-

Edge associations

-

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Privacy

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Cookie preferences

Internet gateway (default)

Account ID: 8915-7703-9157

vociabn/user4452768-bse23002@itu.edu.pk

United States (N. Virginia)

Search

[Alt+S]

CloudShell

Feedback

VPC > Internet gateways

VPC dashboard

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

NAT gateways

Peering connections

Route servers

Security

Network ACLs

Security groups

Internet gateways (1/1) Info

Actions

Create internet gateway

Find internet gateways by attribute or tag

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-098b21d9ec04ad7d2	Attached	vpc-0428b2c22c7aed6de	891377039157

igw-098b21d9ec04ad7d2

Details Tags

Details

Internet gateway ID

igw-098b21d9ec04ad7d2

State

Attached

VPC ID

vpc-0428b2c22c7aed6de

Owner

891377039157

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DynamoDB

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

Tables (3)

Info

December 24, 2025, 14:30 (UTC+5:00)

Last updated

Actions

Delete

Create table

Find tables

Filter by tag

Any tag key

Filter by tag value

Any tag value

	Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode	Tr
<input type="checkbox"/>	Bookings	Active	id (S)	-	0	0	Off	☆	On-demand	On-demand	0
<input type="checkbox"/>	Resources	Active	id (S)	-	0	0	Off	☆	On-demand	On-demand	0
<input type="checkbox"/>	Users	Active	email (S)	-	0	0	Off	☆	On-demand	On-demand	0

Data on DynamoDB Tables:

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

Users

Filter by tag

Any tag value

Find tables

Bookings

Resources

Users

Scan

Query

Select a table or index

Table - Users

Select attribute projection

All attributes

Filters - optional

Run

Reset

Completed - Items returned: 6 - Items scanned: 6 - Efficiency: 100% - RCUs consumed: 2

Table: Users - Items returned (6)

Scan started on December 24, 2025, 18:20:34

	email (String)	createdAt	id	isActive	name	password	role
<input type="checkbox"/>	bsse23085@itu.edu.pk	2025-12-2...	user-17665...	true	Laiba Ahmad	123456	USER
<input type="checkbox"/>	bsse23099@itu.edu.pk	2025-12-2...	user-17665...	true	Manal Rana	0987654321	ADMIN
<input type="checkbox"/>	bsse23002@itu.edu.pk	2025-12-2...	user-17665...	true	Turab Hashmi	123_456	USER
<input type="checkbox"/>	bsse23031@itu.edu.pk	2025-12-2...	user-17665...	true	Ayesha Us...	098765	USER
<input type="checkbox"/>	bsse23051@itu.edu.pk	2025-12-2...	user-17665...	true	Asma Haider	123456	USER
<input type="checkbox"/>	bsse23061@itu.edu.pk	2025-12-2...	user-17665...	true	Laiba Alam	098765	USER

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

Resources

Filter by tag

Any tag key

Filter by tag value

Any tag value

Find tables

Bookings

Resources

Users

Scan

Query

Select a table or index

Table - Resources

Select attribute projection

All attributes

Filters - optional

Run

Reset

Completed - Items returned: 15 - Items scanned: 15 - Efficiency: 100% - RCUs consumed: 2

Table: Resources - Items returned (15)

Scan started on December 24, 2025, 18:21:11

	id (String)	availabilityHours	capacity	description	iconName	location	name	type
<input type="checkbox"/>	res-4	09:00 - 17:00	12	Executive me...	Building	Floor 5, Ad...	Board Meet...	MEETING_ROOM
<input type="checkbox"/>	res-14	09:00 - 15:00	8	Advanced ele...	Microscope	Basement L...	Microscopy ...	LAB
<input type="checkbox"/>	res-1	09:00 - 18:00	20	Specialized la...	Cpu	Floor 3, Blo...	AI & Roboti...	LAB
<input type="checkbox"/>	res-13	08:00 - 18:00	60	Ideal for work...	Video	Floor 1, Blo...	Seminar Ha...	CLASSROOM

Amazon Web Services (AWS) console interface showing the DynamoDB console. The left sidebar displays the navigation menu with options like Dashboard, Tables, Explore Items, PartiQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, and Settings. The main area shows the 'Bookings' table selected under the 'Explore Items' tab. The 'Scan' button is active, and the 'Select attribute projection' dropdown is set to 'All attributes'. A status bar at the top indicates 'Completed - Items returned: 6 - Items scanned: 6 - Efficiency: 100% - RCUs consumed: 2'.

The table 'Bookings' displays 6 items returned. The columns are: id (String), createdAt, date, resourceid, resourceName, slot, status, userid, and userName. The items are as follows:

id (String)	createdAt	date	resourceid	resourceName	slot	status	userid	userName
book-1766...	2025-12-2...	2026-01-01	res-1	AI & Robotics Lab	02:15 PM - ...	PENDING	user-17665...	Asma Haider
book-1766...	2025-12-2...	2025-12-25	res-14	Microscopy Suite	12:30 PM - ...	PENDING	user-17665...	Turab Hashmi
book-1766...	2025-12-2...	2025-12-25	res-4	Board Meeting ...	12:30 PM - ...	REJECTED	user-17665...	Laiba Ahmad
book-1766...	2025-12-2...	2025-12-29	res-13	Seminar Hall 2	09:00 AM - ...	PENDING	user-17665...	Ayesha Us...
book-1766...	2025-12-2...	2025-12-25	res-13	Seminar Hall 2	12:30 PM - ...	APPROVED	user-17665...	Laiba Ahmad
book-1766...	2025-12-2...	2025-12-26	res-12	VR / AR Testin...	02:15 PM - ...	PENDING	user-17665...	Laiba Alam

Deployment process

Node.js and Git installation on server

```

ec2-user@ip-172-31-22-167:~$
Preparing : 1/14
Installing : nodejs-docs-1:18.20.8-1.amzn2023.0.2.x86_64 1/14
Installing : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 2/14
Installing : git-core-2.50.1-1.amzn2023.0.1.x86_64 3/14
Installing : nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64 4/14
Installing : nodejs-full-i18n-1:18.20.8-1.amzn2023.0.2.x86_64 5/14
Installing : nodejs-npm-1:10.8.2-1.18.20.8-1.amzn2023.0.2.x86_64 6/14
Installing : nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 7/14
Running scriptlet: nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 8/14
INFO: registered node-18 in the alternatives

Installing : perl-lib-0.65-477.amzn2023.0.7.x86_64 9/14
Installing : perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 10/14
Installing : perl-File-Find-1.37-477.amzn2023.0.7.noarch 11/14
Installing : perl-Error-1:0.17029-5.amzn2023.0.2.noarch 12/14
Installing : perl-Git-2.50.1-1.amzn2023.0.1.noarch 13/14
Installing : git-2.50.1-1.amzn2023.0.1.x86_64 14/14
Running scriptlet: git-2.50.1-1.amzn2023.0.1.x86_64 14/14
Verifying : git-2.50.1-1.amzn2023.0.1.x86_64 1/14
Verifying : git-core-2.50.1-1.amzn2023.0.1.x86_64 2/14
Verifying : git-core-doc-2.50.1-1.amzn2023.0.1.noarch 3/14
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 4/14
Verifying : nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 5/14
Verifying : nodejs-docs-1:18.20.8-1.amzn2023.0.2.noarch 6/14
Verifying : nodejs-full-i18n-1:18.20.8-1.amzn2023.0.2.x86_64 7/14
Verifying : nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64 8/14
Verifying : nodejs-npm-1:10.8.2-1.18.20.8-1.amzn2023.0.2.x86_64 9/14
Verifying : perl-Error-1:0.17029-5.amzn2023.0.2.noarch 10/14
Verifying : perl-File-Find-1.37-477.amzn2023.0.7.noarch 11/14
Verifying : perl-Git-2.50.1-1.amzn2023.0.1.noarch 12/14
Verifying : perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 13/14
Verifying : perl-lib-0.65-477.amzn2023.0.7.x86_64 14/14

Installed:
git-2.50.1-1.amzn2023.0.1.x86_64
git-core-doc-2.50.1-1.amzn2023.0.1.noarch
nodejs-1:18.20.8-1.amzn2023.0.2.x86_64
nodejs-docs-1:18.20.8-1.amzn2023.0.2.noarch
nodejs-full-i18n-1:18.20.8-1.amzn2023.0.2.x86_64
nodejs-npm-1:10.8.2-1.18.20.8-1.amzn2023.0.2.x86_64
perl-File-Find-1.37-477.amzn2023.0.7.noarch
perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64
perl-lib-0.65-477.amzn2023.0.7.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
nodejs-docs-1:18.20.8-1.amzn2023.0.2.noarch
nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64
perl-Error-1:0.17029-5.amzn2023.0.2.noarch
perl-Git-2.50.1-1.amzn2023.0.1.noarch
perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64

Complete!
[ec2-user@ip-172-31-22-167 ~]$ node -v
v18.20.8
[ec2-user@ip-172-31-22-167 ~]$ npm -v
10.8.2
[ec2-user@ip-172-31-22-167 ~]$

```

Backend running

```
[ec2-user@ip-172-31-22-167 FE_BE-Complete_APP]$ npm run server  
  
> itu-department-resource-booking-system@0.0.0 server  
> tsx backend/server.ts  
  
[SERVER] ITU Resource Booking API running on port 5000  
[SERVER] Environment: development
```

Frontend running

```
VITE v6.4.1 ready in 254 ms  
  
📄 Local:   http://localhost:3000/  
📄 Network: http://172.31.22.167:3000/  
📄 press h + enter to show help
```


Making server live using pm2

```
[PM2] Applying action deleteProcessId on app [backend](ids: [ 0 ])
[PM2] [backend](0) ▯
```

id	name	namespace	version	mode	pid	uptime	▯	status	cpu	mem	user	watching
0	backend	default	N/A	fork	35727	0s	0	online	0%	21.1mb	ec2-user	disabled

```
[ec2-user@ip-172-31-22-167 backend]$ pm2 start npm --name "backend" -- run server
[PM2] Starting /usr/bin/npm in fork_mode (1 instance)
[PM2] Done.
```

id	name	namespace	version	mode	pid	uptime	▯	status	cpu	mem	user	watching
0	backend	default	N/A	fork	35727	0s	0	online	0%	21.1mb	ec2-user	disabled

```
[ec2-user@ip-172-31-22-167 backend]$ cd ..
[ec2-user@ip-172-31-22-167 FE_BE-Complete_APP]$ cd frontend
[ec2-user@ip-172-31-22-167 frontend]$ pm2 start npm --name "frontend" -- run dev
[PM2] Starting /usr/bin/npm in fork_mode (1 instance)
[PM2] Done.
```

id	name	namespace	version	mode	pid	uptime	▯	status	cpu	mem	user	watching
0	backend	default	N/A	fork	35727	58s	0	online	0%	52.1mb	ec2-user	disabled
1	frontend	default	N/A	fork	35824	0s	0	online	0%	14.3mb	ec2-user	disabled

```
[ec2-user@ip-172-31-22-167 frontend]$ pm2 list
```

id	name	namespace	version	mode	pid	uptime	▯	status	cpu	mem	user	watching
0	backend	default	N/A	fork	35727	78s	0	online	0%	52.1mb	ec2-user	disabled
1	frontend	default	N/A	fork	35824	20s	0	online	0%	52.1mb	ec2-user	disabled

```
[ec2-user@ip-172-31-22-167 frontend]$ pm2 save
[PM2] Saving current process list...
[PM2] Successfully saved in /home/ec2-user/.pm2/dump.pm2
[ec2-user@ip-172-31-22-167 frontend]$
```

Testing workflow

```
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC> npm audit
# npm audit report

qs <6.14.1
Severity: high
qs's arrayLimit bypass in its bracket notation allows DoS via memory exhaustion - https://github.com/advisories/GHSA-6rwr-7-vpxm-498p
fix available via `npm audit fix`
node_modules/qs

1 high severity vulnerability

To address all issues, run:
  npm audit fix
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC> npm audit fix

changed 1 package, and audited 242 packages in 4s

38 packages are looking for funding
  run `npm fund` for details

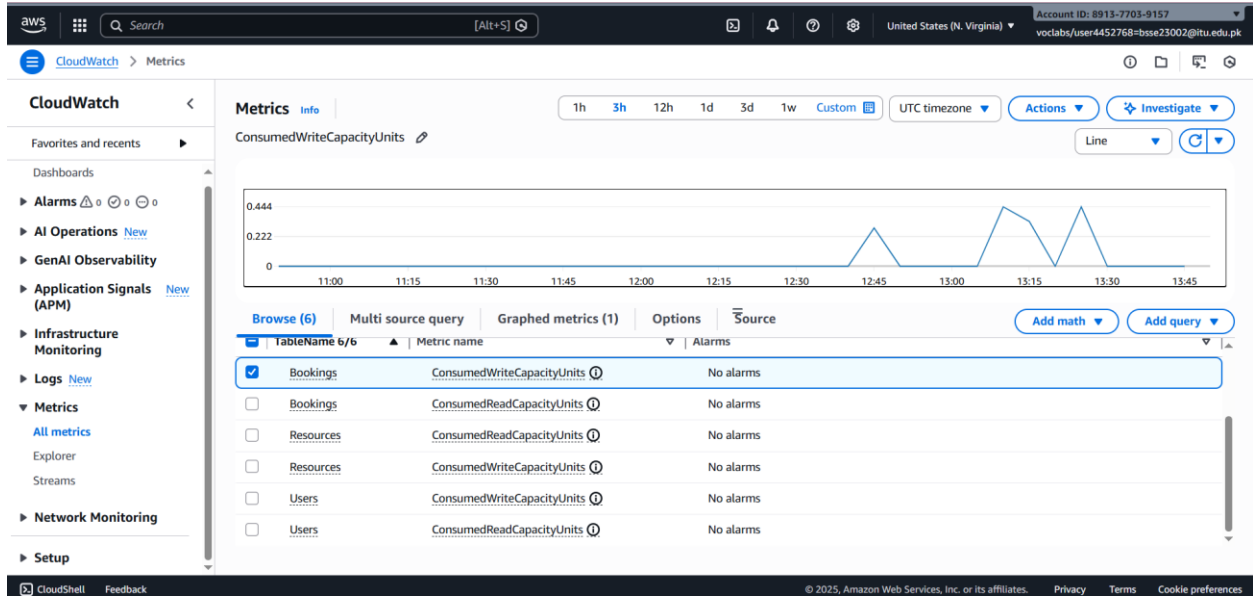
found 0 vulnerabilities
```

```
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC\backend> npm run server

> itu-department-resource-booking-system@0.0.0 server
> tsx backend/server.ts

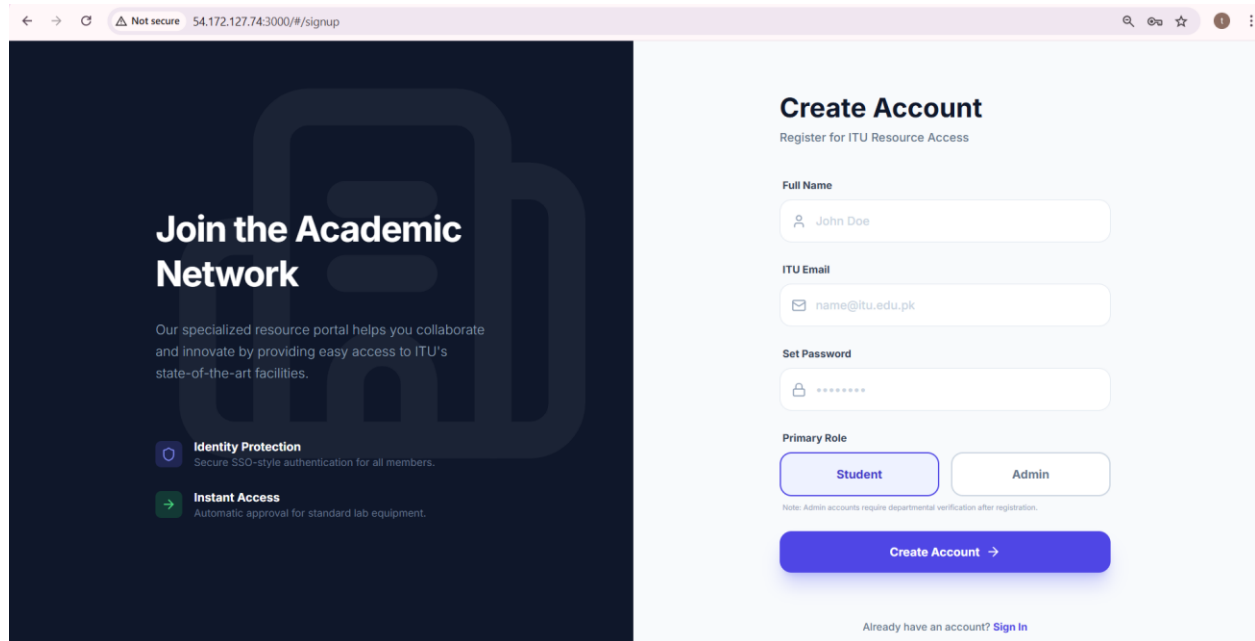
[SERVER] ITU Resource Booking API running on port 5000
[SERVER] Environment: development
```

Monitoring / logging (CloudWatch)



Final output

Landing page:



The landing page features a dark blue sidebar on the left with the text "Join the Academic Network" and a description: "Our specialized resource portal helps you collaborate and innovate by providing easy access to ITU's state-of-the-art facilities." Below this, two features are highlighted: "Identity Protection" (Secure SSO-style authentication for all members) and "Instant Access" (Automatic approval for standard lab equipment). The main content area is white and contains a "Create Account" form. The form has fields for "Full Name" (John Doe), "ITU Email" (name@itu.edu.pk), and "Set Password" (masked with dots). Below the password field are two buttons for "Primary Role": "Student" and "Admin". A "Create Account" button is at the bottom of the form. A link "Already have an account? Sign In" is at the bottom right.

Join the Academic Network

Our specialized resource portal helps you collaborate and innovate by providing easy access to ITU's state-of-the-art facilities.

- Identity Protection**
Secure SSO-style authentication for all members.
- Instant Access**
Automatic approval for standard lab equipment.

Create Account
Register for ITU Resource Access

Full Name
John Doe

ITU Email
name@itu.edu.pk

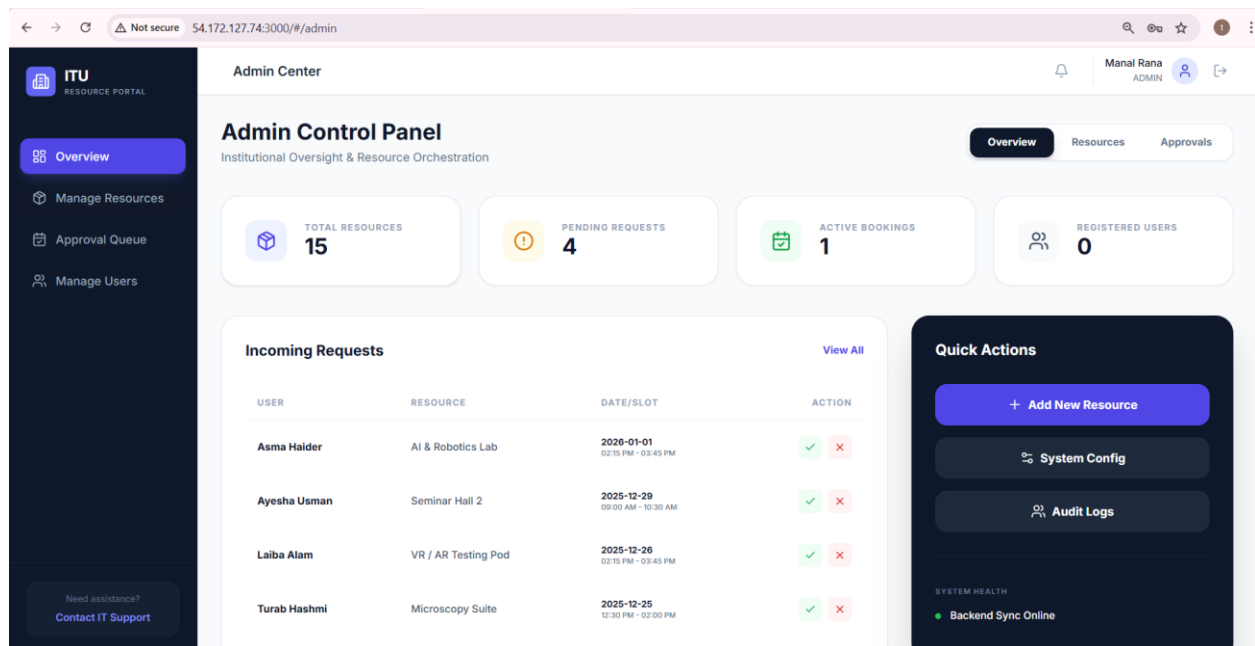
Set Password

Primary Role
Student Admin

Create Account →

Already have an account? [Sign In](#)

Admin dashboard



The admin dashboard is titled "Admin Center" and "Admin Control Panel". It features a sidebar with navigation links: "Overview", "Manage Resources", "Approval Queue", and "Manage Users". The main content area has a top navigation bar with "Overview", "Resources", and "Approvals". Below this are four summary cards: "TOTAL RESOURCES" (15), "PENDING REQUESTS" (4), "ACTIVE BOOKINGS" (1), and "REGISTERED USERS" (0). The "Incoming Requests" section contains a table with columns: USER, RESOURCE, DATE/SLOT, and ACTION. The table lists five requests. A "Quick Actions" sidebar on the right contains buttons for "Add New Resource", "System Config", and "Audit Logs". At the bottom right, a "SYSTEM HEALTH" section shows "Backend Sync Online".

Admin Center

Admin Control Panel
Institutional Oversight & Resource Orchestration

Overview Resources Approvals

TOTAL RESOURCES 15

PENDING REQUESTS 4

ACTIVE BOOKINGS 1

REGISTERED USERS 0

Incoming Requests [View All](#)

USER	RESOURCE	DATE/SLOT	ACTION
Asma Haider	AI & Robotics Lab	2026-01-01 02:15 PM - 03:45 PM	✓ ✗
Ayesha Usman	Seminar Hall 2	2025-12-29 09:00 AM - 10:30 AM	✓ ✗
Laiba Alam	VR / AR Testing Pod	2025-12-26 02:15 PM - 03:45 PM	✓ ✗
Turab Hashmi	Microscopy Suite	2025-12-25 12:30 PM - 02:00 PM	✓ ✗

Quick Actions

- + Add New Resource
- System Config
- Audit Logs

SYSTEM HEALTH
Backend Sync Online

Manage booking approvals

ITU
RESOURCE PORTAL

Overview

Manage Resources

Approval Queue

Manage Users

Need assistance?
Contact IT Support

Admin Center

Manal Rana
ADMIN

Admin Control Panel

Institutional Oversight & Resource Orchestration

OverviewResourcesApprovals

All Booking Requests

Full history of department resource usage

USER	RESOURCE	SCHEDULE	STATUS	ACTIONS
Asma Haider UID: 1766582353824	AI & Robotics Lab	2026-01-01 02:15 PM - 03:45 PM	APPROVED	
Ayesha Usman UID: 1766582353225	Seminar Hall 2	2025-12-29 09:00 AM - 10:30 AM	PENDING	ApproveReject
Laiba Alam UID: 1766582050883	VR / AR Testing Pod	2025-12-26 02:15 PM - 03:45 PM	APPROVED	
Turab Hashmi UID: 1766577881762	Microscopy Suite	2025-12-25 12:30 PM - 02:00 PM	REJECTED	
Laiba Ahmad UID: 1766577881267	Seminar Hall 2	2025-12-25 12:30 PM - 02:00 PM	APPROVED	

Student Dashboard

ITU
RESOURCE PORTAL

Dashboard

Browse Resources

My Bookings

Need assistance?
Contact IT Support

Resource Portal

Turab Hashmi
USER

Welcome back, Turab!

Manage your resource requests and discover available labs for your research projects.

Book a New ResourceView My History

Popular Labs

Recommended for your department

Explore All >

Recent Activity

Your booking updates

Manage All Bookings

MEETING_ROOM

Board Meeting Room

Floor 5, Admin Block

Executive meeting room with video conferencing.

INSTANT BOOK

Cap: 12

LAB

Microscopy Suite

Basement Lab Area

Advanced electron and fluorescent microscopes.

INSTANT BOOK

Cap: 8

REJECTED

12/24/2025

Microscopy Suite

2025-12-25

12:30 PM - 02:00 PM

Explore resources and filter to select category

The screenshot shows the ITU Resource Portal interface. The left sidebar contains navigation links: Dashboard, Browse Resources, and My Bookings. The main content area is titled "Resource Explorer" and includes a search bar and a category filter dropdown. The dropdown menu is open, showing options: All Categories, Labs, Classrooms, Meeting Rooms (selected), and Equipment. Below the filter, there are six resource cards arranged in a 2x3 grid. Each card displays an icon, a title, location, capacity, description, and a "Book Now" button.

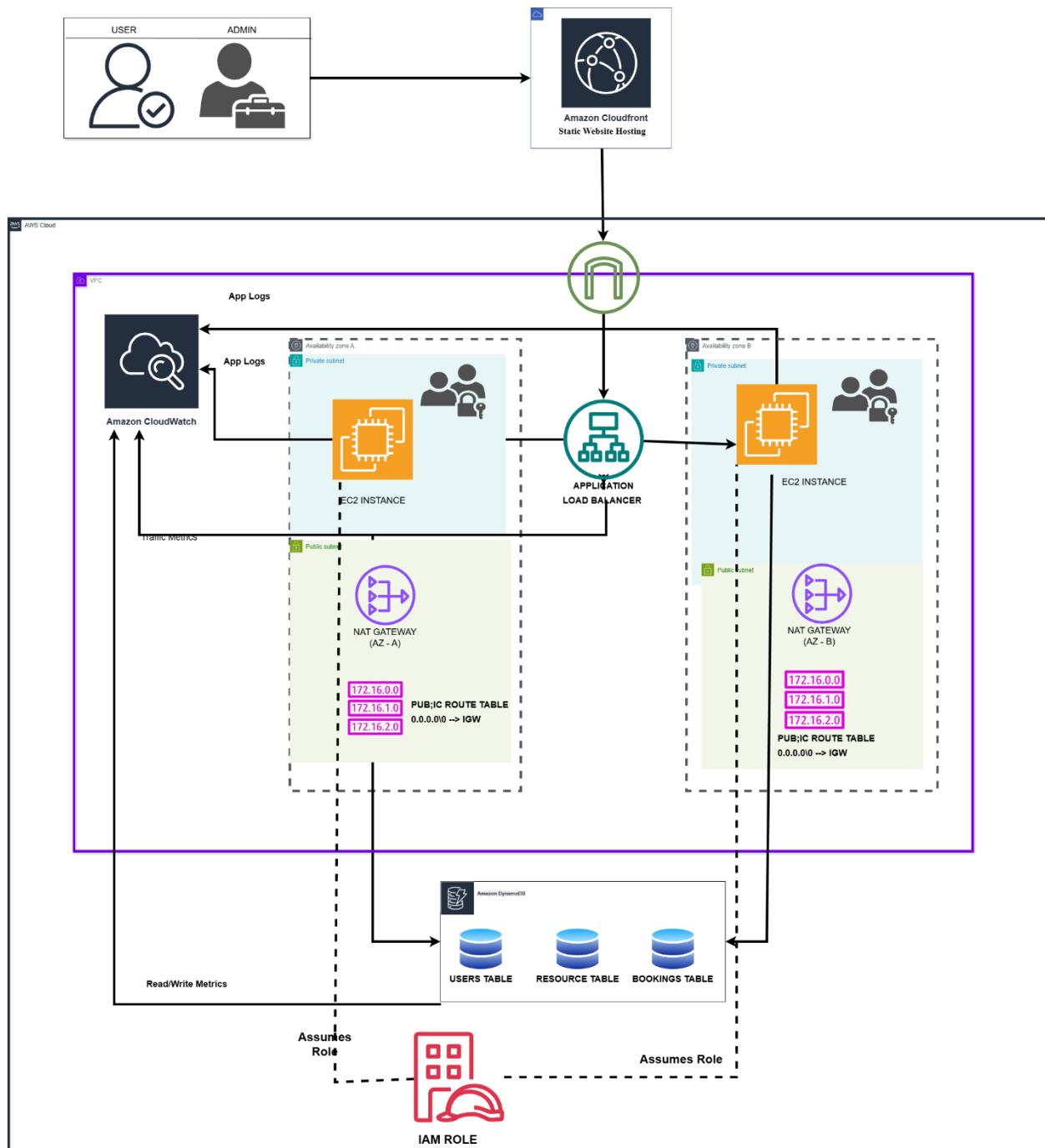
Resource	Category	Location	Capacity	Description
Board Meeting Room	MEETING_ROOM	Floor 5, Admin Block	12	Executive meeting room with video conferencing.
Microscopy Suite	LAB	Basement Lab Area	8	Advanced electron and fluorescent microscopes.
AI & Robotics Lab	LAB	Floor 3, Block A	20	Specialized lab for neural networks and hardware prototyping.
Seminar Hall 2	CLASSROOM	Floor 1, Block C	60	Ideal for workshops and medium-sized presentations.
Multimedia Design Studio	LAB	Floor 3, Block B	20	Equipped with drawing tablets and creative software suites.
IoT Innovation Hub	LAB	Floor 2, Block B	18	Workbench space for Arduino, Raspberry Pi, and sensors.

Booking History

The screenshot shows the ITU Resource Portal interface, specifically the "My Bookings" section. The left sidebar is the same as the previous page. The main content area is titled "My Bookings" and includes a "New Booking" button. Below the title, there is a table showing the booking history. The table has columns for the resource name, date, time, status, and applied on date.

Resource	Date	Time	Status	Applied On
Microscopy Suite	2025-12-25	12:30 PM - 02:00 PM	REJECTED	12/24/2025

AWS Architecture Diagram



GITHUB LINK:

[AWS_project_SDC](#)