

Minimizing Costs on AWS Platform

Another critical aspect is the careful selection of Instance Types and Sizes based on specific workload requirements. This tailored approach ensures that resources are optimized for both performance and cost-effectiveness. By aligning instances with the unique demands of applications and services, ASU Inc. avoids overprovisioning and, consequently, unnecessary costs.

AWS offers a diverse range of storage classes, including Standard, Infrequent Access, and Glacier. This variety allows ASU Inc. to align storage costs with the actual access frequency of data. Frequently accessed data can be stored in Standard storage for quick retrieval, while less frequently accessed data can be transitioned to more cost-efficient storage classes like Infrequent Access or Glacier.

Furthermore, the implementation of auto-scaling mechanisms is crucial for handling dynamic workloads. By automatically adjusting the number of instances based on demand fluctuations, auto-scaling ensures that resources are efficiently utilized. During peak demand periods, additional resources are provisioned to maintain optimal performance, while during off-peak periods, the infrastructure scales down, preventing unnecessary costs.

In essence, ASU Inc. can achieve a well-rounded cost-minimization strategy on the AWS platform by combining Reserved Instances, thoughtful instance sizing, strategic storage class utilization, and the dynamic resource allocation facilitated by auto-scaling. This holistic approach allows the organization to maximize the value of its cloud investment while minimizing unnecessary expenditure.

Process for Migrating to AWS

Migrating from an internal infrastructure to AWS is a complex yet vital undertaking that requires a well-structured and phased approach. The success of this migration relies on careful planning, strategic decision-making, and thorough execution. The following comprehensive guide outlines the key steps involved in the migration process for ASU Inc.

1. Assessment and Planning:

The initial phase involves a detailed analysis of ASU Inc.'s current infrastructure, dependencies, and data. This includes an evaluation of existing applications and services. Leveraging the AWS Migration Hub facilitates centralized tracking, providing a holistic view of the migration progress.

2. Designing the Architecture:

Plan the AWS architecture meticulously to ensure a seamless transition. This involves defining the Virtual Private Cloud (VPC), subnets, security groups, and identity and access management (IAM) roles. Strategies for data migration and backup are essential components of the architectural design.

3. Migration of Servers:

Utilize AWS Server Migration Service (SMS) or AWS Database Migration Service (DMS) for the migration of servers and databases. Creating Amazon Machine Images (AMIs) streamlines server replication, ensuring consistency and efficiency in the migration process.

4. Data Migration:

Execute data migration using AWS Snowball for large-scale transfers and AWS DataSync for continuous data synchronization between on-premises and AWS. These services offer robust solutions for overcoming data transfer challenges, ensuring the integrity and security of the information being migrated.

5. Testing and Validation:

Conduct thorough testing in the AWS environment to validate the functionality, performance, and security of applications and services. This phase is crucial for identifying and resolving any issues that may arise during the migration, ensuring a smooth transition for end-users.

6. Optimization:

Optimize resource allocation by leveraging cost management tools and implementing best practices. AWS Trusted Advisor provides valuable recommendations for cost optimization, ensuring that ASU Inc. maximizes the efficiency of its cloud resources.

7. Training and Documentation:

Train staff on AWS services to ensure a smooth transition and ongoing operational success.

Comprehensive documentation of the new architecture, processes, and best practices is essential for knowledge transfer and maintaining operational continuity.

Security Group configuration:

Inbound rules <small>Info</small>					
Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>	
SSH	TCP	22	Any...	<input type="text" value="0.0.0.0/0"/>	<input type="button" value="Delete"/>
				<input type="button" value="0.0.0.0/0 X"/>	
HTTP	TCP	80	Any...	<input type="text" value="0.0.0.0/0"/>	<input type="button" value="Delete"/>
				<input type="button" value="0.0.0.0/0 X"/>	
RDP	TCP	3389	Any...	<input type="text" value="0.0.0.0/0"/>	<input type="button" value="Delete"/>
				<input type="button" value="0.0.0.0/0 X"/>	
HTTPS	TCP	443	Any...	<input type="text" value="0.0.0.0/0"/>	<input type="button" value="Delete"/>
				<input type="button" value="0.0.0.0/0 X"/>	

Windows Instances and IIS Installation.

Running Instances:

Instances (1/2) <small>Info</small>							
<input type="button" value="Refresh"/> <input type="button" value="Connect"/> <input type="button" value="Instance state"/> <input type="button" value="Actions"/> <input type="button" value="Launch instances"/>							
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>							
<input type="button" value="Instance state = running"/> <input type="button" value="Clear filters"/> < 1 > <input type="button" value="Settings"/>							
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	LastnameFP1	i-01d6f89b71fd35b8a	Running	t2.micro	2/2 checks passed	No alarms +	us-east-1a
<input type="checkbox"/>	LastnameFP2	i-0af6eb123c0e45497	Running	t2.micro	2/2 checks passed	No alarms +	us-east-1a

IIS Installation:

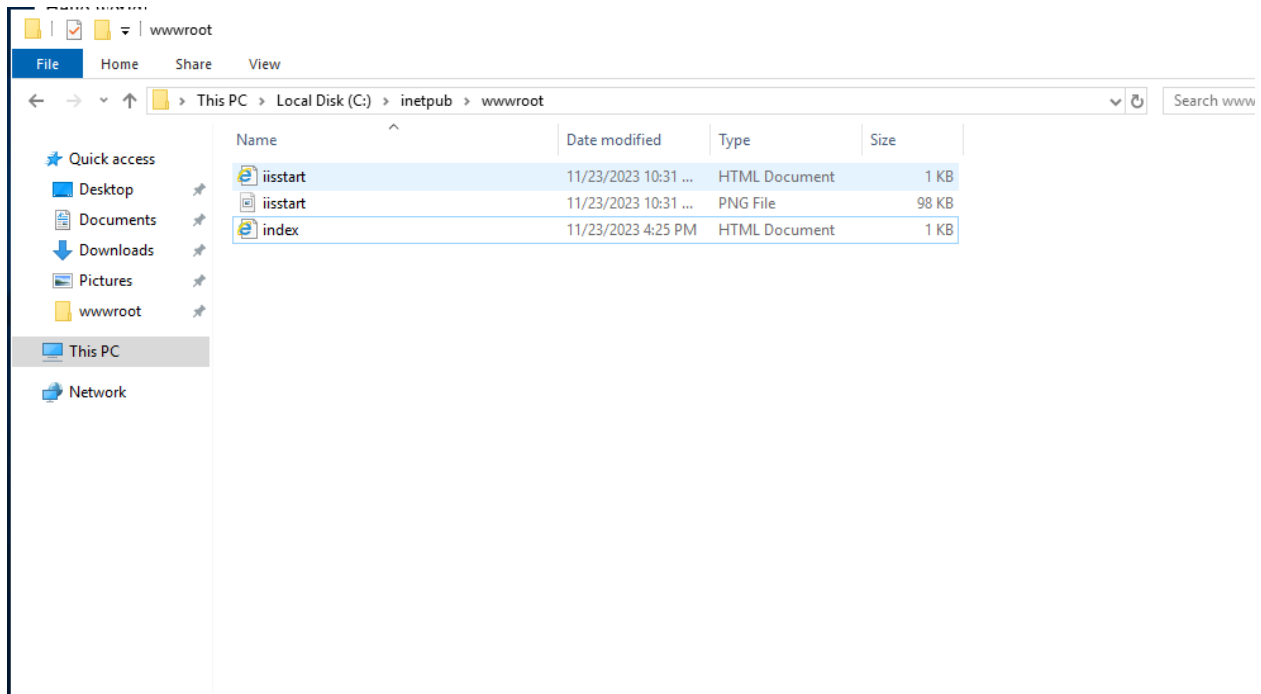
The screenshot shows the Windows Server Management console. The left sidebar contains the following navigation items: Dashboard, Local Server, All Servers, AD DS, DHCP, DNS, File and Storage Services, and IIS. The main area displays six tiles for different server roles: AD DS, DHCP, DNS, File and Storage Services, IIS, and Local Server. Each tile shows a green plus icon, a status bar with the role name and a count of 1, and a list of management options: Manageability, Events, Services, Performance, and BPA results. The IIS tile is highlighted, indicating it is the current focus of the installation process.

The screenshot shows the Windows Server Management console. The left sidebar contains the following navigation items: Dashboard, Local Server, All Servers, AD DS, DHCP, DNS, File and Storage Services, and IIS. The main area displays two sections: SERVERS and EVENTS. The SERVERS section shows a table with one server listed: EC2AMAZ-4S2GSVT, with IP address 172.31.24.255, status Online, and Windows Activation 00430-00000-00000-AA806 (Activated). The EVENTS section shows a table with one event listed: 11/24/2023 8:25:49 AM, with severity Error and source IIS.

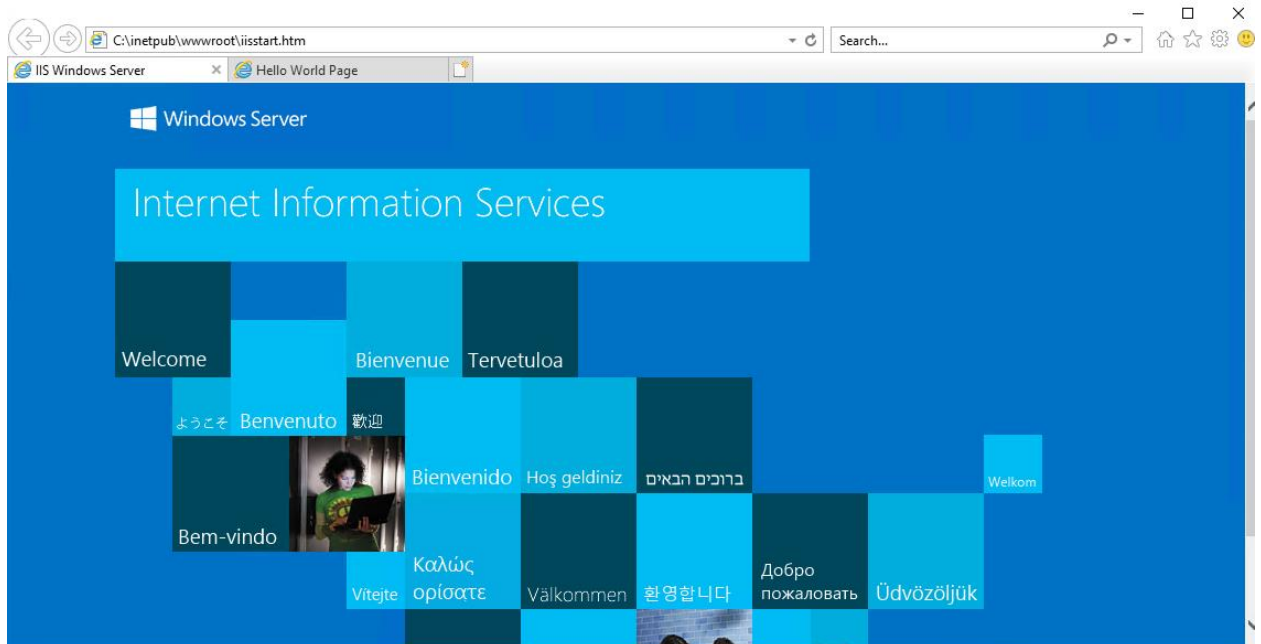
Server Name	IPv4 Address	Manageability	Last Update	Windows Activation
EC2AMAZ-4S2GSVT	172.31.24.255	Online - Performance counters not started	11/24/2023 8:25:49 AM	00430-00000-00000-AA806 (Activated)

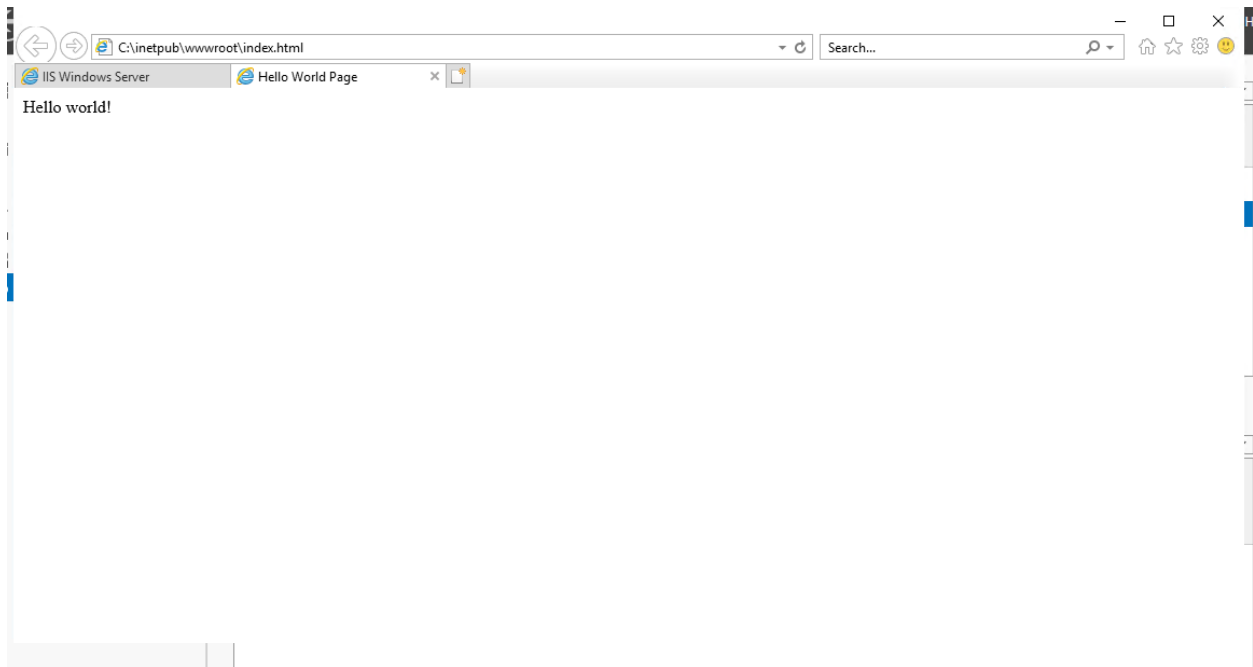
Server Name	ID	Severity	Source	Log	Date and Time
		Error	IIS		11/24/2023 8:25:49 AM

Created an index page:



It works:





Load Balancer:

Load balancers (1/1) ↻ Actions ▾ Create load balancer ▾

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

<input checked="" type="checkbox"/>	Name ▾	DNS name ▾	State ▾	VPC ID ▾	Availability Zones ▾	Type
<input checked="" type="checkbox"/>	lastnameFPLB	lastnameFPLB-105935...	Active	vpc-0a174dd83b5...	2 Availability Zones	applic

Load balancer: lastnameFPLB

[Details](#) | [Listeners and rules](#) | [Network mapping](#) | [Security](#) | [Monitoring](#) | [Integrations](#) | [Attributes](#) | [Tags](#)

Details

Load balancer type	Status	VPC	IP address type
Application	Active	vpc-0a174dd83b525c3ed	IPv4
Scheme	Hosted zone	Availability Zones	Date created
Internet-facing	Z35SXDOTRQ7X7K	subnet-04a8f48fb87fec9b6 us-east-1a (use1-az4)	November 23, 2023, 18:43 (UTC+03:00)

Target Groups:

Target groups (1/1) [Info](#) ↻ Actions ▾ Create target group

<input checked="" type="checkbox"/>	Name ▾	ARN ▾	Port ▾	Protocol ▾	Target type ▾
<input checked="" type="checkbox"/>	LastnnameFP	arn:aws:elasticloadbalanci...	80	HTTP	Instance

Target group: LastnnameFP

[Details](#) | [Targets](#) | [Monitoring](#) | [Health checks](#) | [Attributes](#) | [Tags](#)

Registered targets (2)

<input type="checkbox"/>	Instance ID ▾	Name ▾	Port ▾	Zone ▾	Health st... ▾	Health stat... ▾	Launch ti... ▾
<input type="checkbox"/>	i-0af6eb12...	LastnameFP2	80	us-east-1a	Unhealthy	Request tim...	November ...
<input type="checkbox"/>	i-01d6f89b...	LastnameFP1	80	us-east-1a	Unhealthy	Request tim...	November ...

Route 53 DNS Entry:

Route 53 > Hosted zones

Hosted zones (1/1)

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

[Refresh](#) [View details](#) [Edit](#) [Delete](#)

[Create hosted zone](#)

< 1 > ⚙

	Hosted zone name ▾	Type ▾	Created by ▾
●	ft320spring2021.com	Public	Route 53

Hosted zone name

ft320spring2021.com

Hosted zone ID

Z040961835I3L8GKVPDEY

Description

Final Project

Query log

-

II Type

Public hosted zone

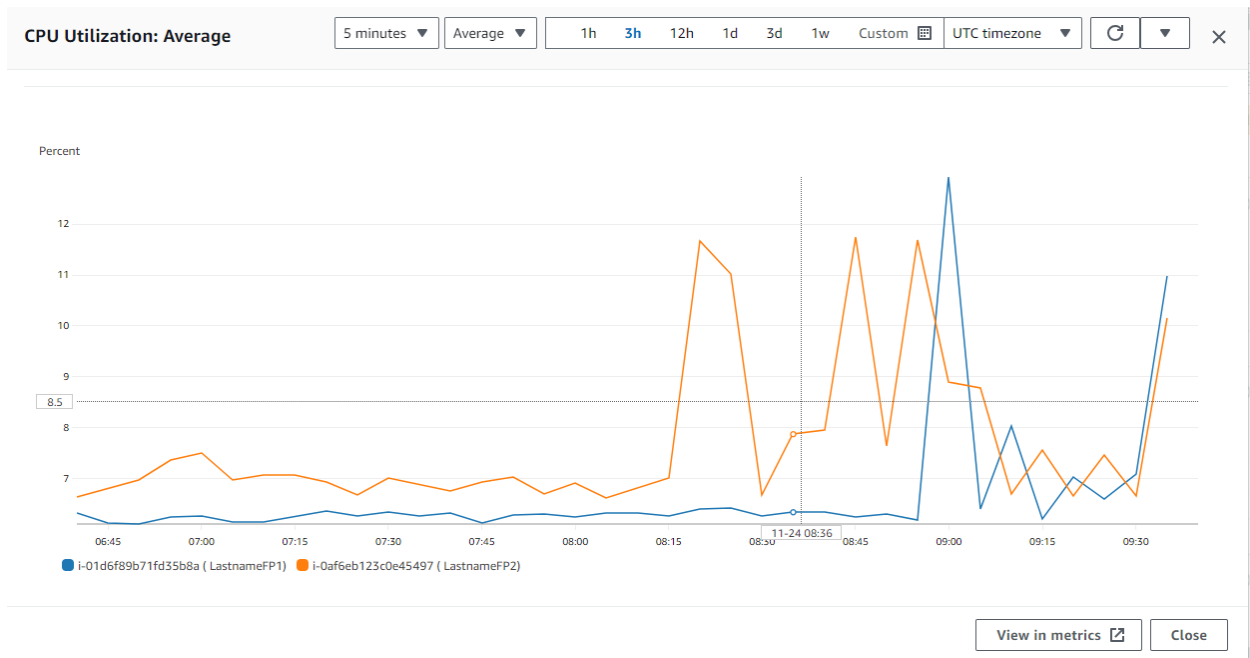
Record count

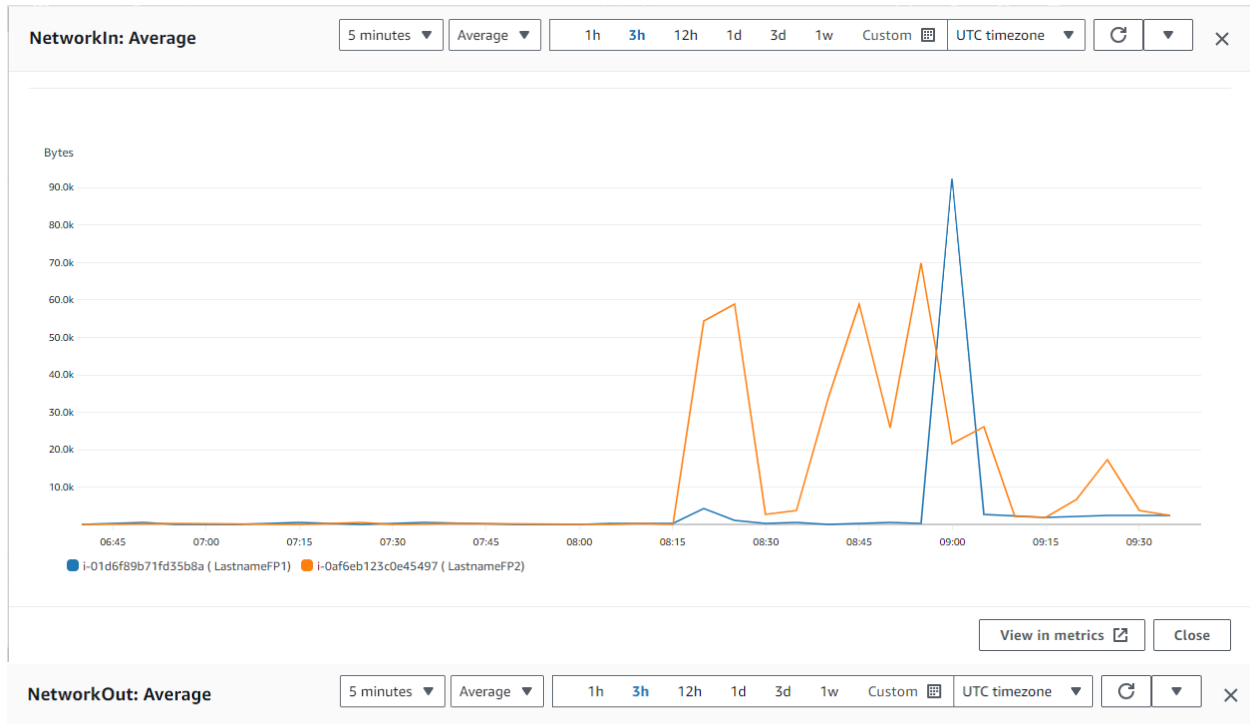
2

Name servers

- ns-2035.awsdns-62.co.uk
- ns-649.awsdns-17.net
- ns-246.awsdns-30.com
- ns-1185.awsdns-20.org

CloudWatch Metrics:





NetworkPacketsIn: Average

5 minutes ▼

Average ▼

1h

3h

12h

1d

3d

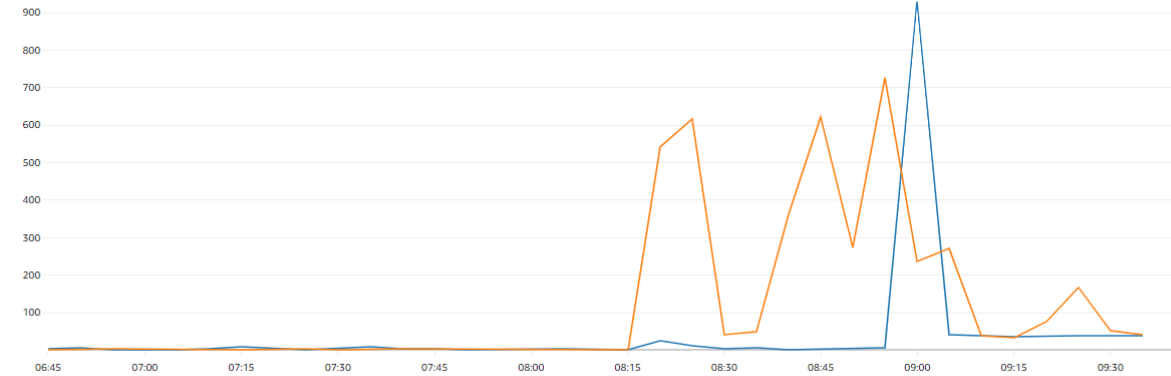
1w

Custom 

UTC timezone ▼



Count



i-01d6f89b71fd35b8a (LastnameFP1) i-0af6eb123c0e45497 (LastnameFP2)

NetworkPacketsOut: Average

5 minutes ▼

Average ▼

1h

3h

12h

1d

3d

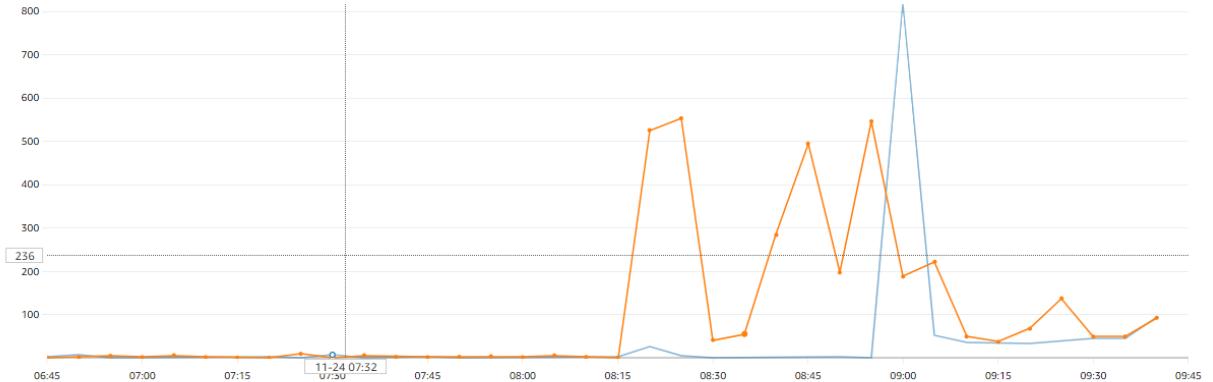
1w

Custom 

UTC timezone ▼



Count



i-01d6f89b71fd35b8a (LastnameFP1) i-0af6eb123c0e45497 (LastnameFP2)