AWS SQS-SNS

Thursday, 19 August 2021 17.39

Amazon Simple Queue Service (SQS), dağıtılmış sistemleri ve sunucusuz uygulamaları birbirinden ayırmanıza ve ölçeklendirmenize imkan tanıyan, tam olarak yönetilen bir iletileri kuyruğa alma hizmetidir.

SQS, mesajlaşmaya yönelik ara yazılımları yönetmenin ve işletmenin getirdiği karmaşıklık ile ek iş yükünü ortadan kaldırarak geliştiricilerin farklı işlere odaklanmasına imkan tanır. **SQS ile ileti kaybı yaşamadan veya diğer hizmetlerin erişilebilir olmasına gereksinim duymadan yazılım bileşenleri arasında dilediğiniz hacimde ileti gönderebilir, depolayabilir ve alabilirsiniz. AWS konsolunu, tercih ettiğiniz Komut Satırı Arabirimini veya SDK'yı ve üç basit komutu kullanarak SQS'yi dakikalar içinde kullanmaya başlayabilirsiniz. SQS iki tür ileti kuyruğu sunar. Standart kuyruklar tarafından en yüksek aktarım hızı, en iyi çaba ilkesine göre sıralama ve en az bir kez teslim olanakları sunulur. SQS FIFO kuyrukları, iletilerin tam olarak bir kez ve tam olarak gönderildikleri sırada işlenmesi konusunda güvence sağlayacak şekilde tasarlanmıştır.==>** https://aws.amazon.com/tr/sqs/ **SQS servisi Elastic Load Balancer' a bir alternatif servis diyebiliriz**

Amazon Simple Notification Service Fully managed pub/sub messaging, SMS, email, and mobile push notifications From Amazon Simple Notification Service (Amazon SNS) is a fully managed messaging service for both application-to-application (A2A) and application-to- person (A2P) communication.

TURKISH

Amazon Simple Notification Service (Amazon SNS), hem uygulamadan uygulamaya (A2A) hem de uygulamadan kişiye (A2P) iletişim için tam olarak yönetilen bir mesajlaşma hizmetidir. From

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A2A pub/sub işlevi; dağıtılmış sistemler, mikro hizmetler ve olay tabanlı sunucusuz uygulamalar arasında yüksek aktarım hızlı, gönderme tabanlı, çoka çok mesajlaşmaya yönelik konular sunar. Yayımcı sistemleriniz, Amazon SNS konularını kullanarak mesajları paralel işleme için Amazon SQS kuyrukları, AWS Lambda işlevleri, HTTPS uç noktaları ve Amazon Kinesis Data Firehose gibi çok sayıda abone sistemine dağıtabilir. A2P işlevi kullanıcılara SMS, mobil anlık bildirimler ve e-posta yoluyla uygun ölçekte mesajlar göndermenizi sağlar.

From < https://aws.amazon.com/tr/sns/?whats-new-cards.sort-by=item.additionalFields.postDateTime&whats-new-cards.sort-&whats-new-cards.sort-order=desc**>**

The A2A pub/sub functionality provides topics for high-throughput, push-based, many-to-many messaging between distributed systems, microservices, and event-driven serverless applications.

A2A yayın/alt işlevi, dağıtılmış sistemler, mikro hizmetler ve olaya dayalı sunucusuz uygulamalar arasında yüksek verimli, anında iletme tabanlı, çoktan çoğa mesajlaşma için konular sağlar

From Using Amazon SNS topics, your publisher systems can fanout messages to a large number of subscriber systems including Amazon SQS queues, AWS Lambda functions and HTTPS endpoints, for parallel processing, and Amazon Kinesis Data Firehose. The A2P functionality enables you to send messages to users at scale via SMS, mobile push, and email.

From 1 million requests free

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FCBarcelona web platformu 6000'den fazla sayfaya ve 12.000'den fazla dijital fotoğrafa ev sahipliği yapmaktadır. Altı dilde sunulan bu sayfa beş elit profesyonel takımla ilgili güncel bilgileri sunmaktadır. Çözüm birden fazla platform bildirimi için Amazon SNS hizmetini kullanmaktadır.

From < https://aws.amazon.com/tr/sns/?whats-new-cards.sort-by=item.additionalFields.postDateTime&whats-new-cards.sort-&whats-new-cards.sort-order=desc>

Benefits

Modernize and decouple your applications

Amazon SNS enables you to modernize your applications and decouple them into smaller, independent components that are easier to develop, deploy, and maintain. Leveraging a pub/sub event-driven architecture for your application improves performance, reliability, and allows each component to scale independently.

Send messages directly to millions of users

Amazon SNS enables you to send messages or notifications directly to users with SMS text messages to over 200 countries, mobile push on Apple, Android, and other platforms or email (SMTP). Amazon SNS provides redundancy across multiple SMS providers and allows you to push mobile notifications using a single endpoint for all platforms.

Reliably deliver messages

Amazon SNS uses a number of strategies that work together to provide message durability. To start, published messages are stored across multiple, geographically-separated servers and data centers. If a subscribed endpoint isn't available, Amazon SNS executes a message delivery retry policy. To preserve any messages that aren't delivered before the delivery retry policy ends, you can create a dead-letter queue. You can also subscribe Amazon Kinesis Data Firehose delivery streams to SNS topics, which allows messages to be sent to durable endpoints such as Amazon S3 buckets or Amazon Redshift tables.

Automatically scale your workload

AMAZON SNS (SIMPLE NOTIFICATION SERVICE) Wednesday, 18 August 2021 18.48 AWS Page 1 Automatically scale your workload Amazon SNS leverages the proven AWS cloud to dynamically scale with your application. Amazon SNS is a fully managed service, taking care of the heavy lifting related to capacity planning, provisioning, monitoring, and patching. The service is designed to handle high-throughput, bursty traffic patterns and enables you to send millions of messages per second.

Ensure accuracy with message ordering and deduplication

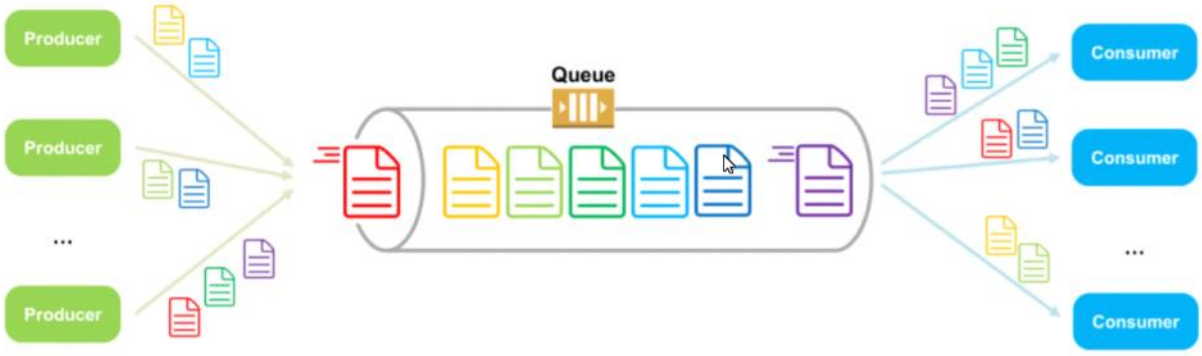
Amazon SNS FIFO topics work with Amazon SQS FIFO queues to ensure messages are delivered in a strictly ordered manner and are only processed once (deduplicated). This enables you to maintain consistency when processing transactions across a single or multiple independent services where it's critical that messages are in the correct order. It also allows you to offload the effort of writing custom code for ordering and message deduplication. Simplify your architecture with Message Filtering Amazon SNS helps you simplify your pub/sub messaging architecture by offloading the message filtering logic from your subscriber systems, and message routing logic from your publisher systems. With Amazon SNS message filtering, subscribing endpoints receive only the messages of interest, instead of all messages published to the topic. Amazon CloudWatch gives visibility into your filtering activity, and AWS CloudFormation allows you to deploy subscription filter policies in an automated and secure manner. From

How it works From

Producer	Client, application, mesaj gonderen
Consumer	Mesaji isleyen taraf

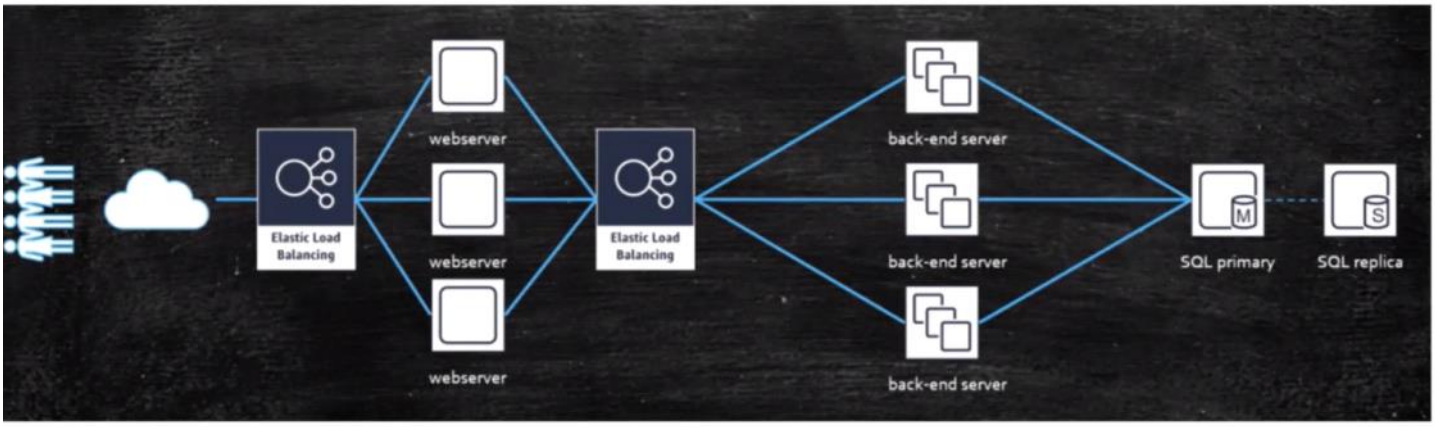
SQS

What is SQS?



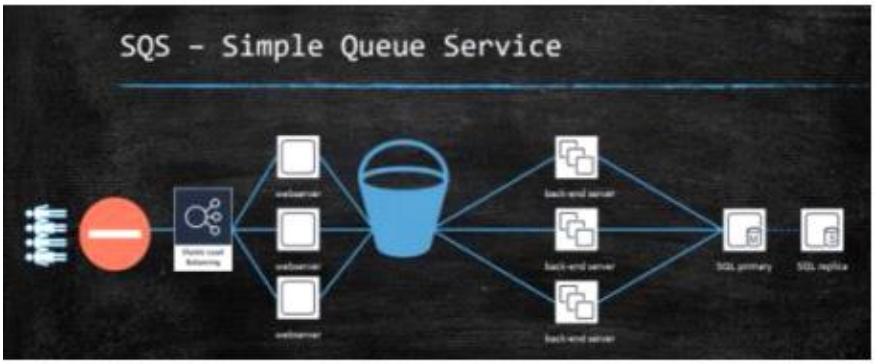
ARUSWAY
TO REINVENT YOURSELF

What is SQS?



Online otel hizmeti Kullanicilar front end e baglanip rezervasyon islemi ve kredi karti islemleri yapacak. Front end back end e yonlendirecek. Back end de cevap verilecek mesajlari front ende diger kismini da database ye gonderecek Normalde arada load balancerlar var ve yuku dengelemektedir. Ya yuk artar ve load balancer gibi dengeleyicilerde yuku karsilayamazlarsa. Yuk artarsa front end talepleri back ende ulasamayacak ve islem gerceklesemedi hatasi doner

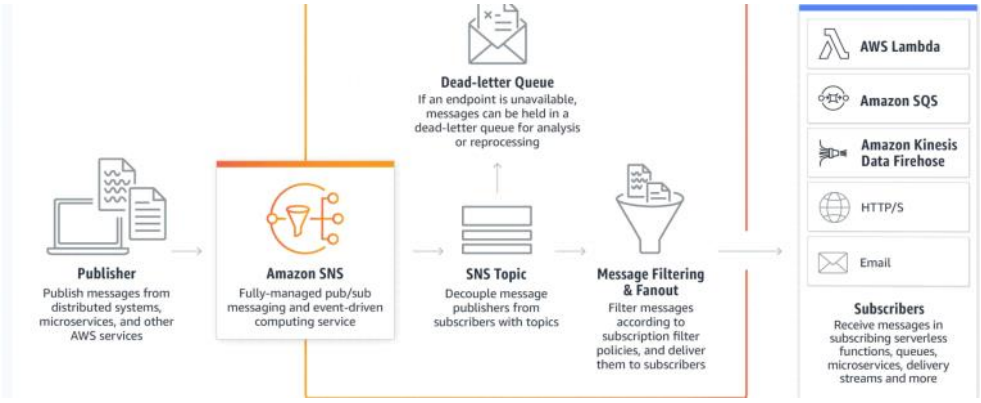
Decouple mantiginda sqs kullaniyoreuz On ve arka taraftaki backend serverler birbirleriyle iliskil

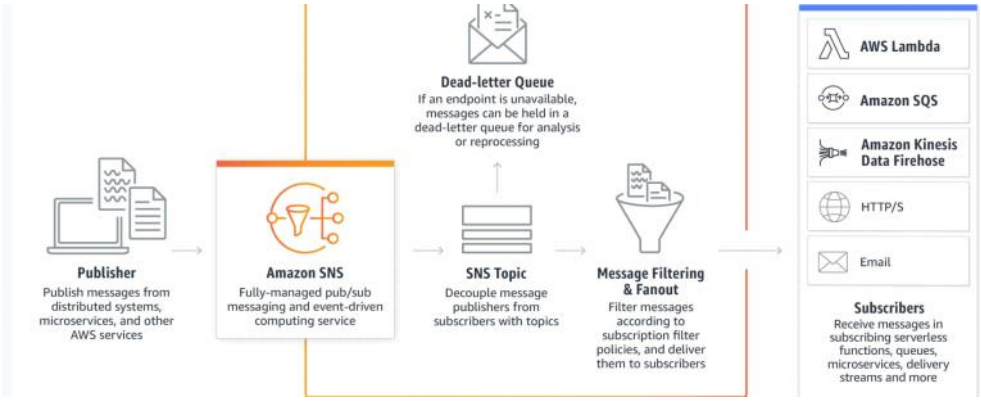


SQS yukaridaki gorseldeki gibi gelen mesajlari beklettigi bir kova sistemi uygulamaktadir. Ve musteriye isleminiz yapiliyor bir sure bekleyiniz seklinde bilgilendirme yapilmaktadir (artik musteriye hata mesaji gitmemektedir

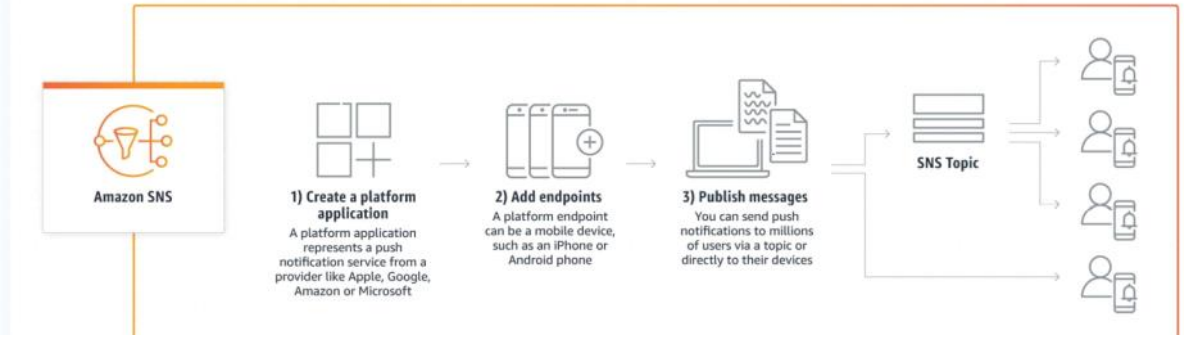
SQS mesajlari gelen mesajlari belli bir sure tutuyor backend server islem yapamadigi zaman mesaj sqs icinde sirada bekliyor. Islem bitince sqs icindeki mesaj siliniyor. Decouple microservis uygulamalarinda birbirinden ayiiyor. Fault tolerance i azaltiyoruz bu mimariyle.

Yine ASG ile SQS in icinde visible olan metric e gore backend serverlarin sayisiini artirip azaltabiliyoruz What is decouple SQS? SQS lets you decouple application components so that they run and fail independently, increasing the overall fault tolerance of the system. Multiple copies of every message are stored redundantly across multiple availability zones so that they are available whenever needed. SQS, uygulama bileşenlerini birbirinden bağımsız olarak çalışacak ve arızalanacak şekilde ayırmanıza olanak tanıyarak sistemin genel hata toleransını artırır. Her mesaj



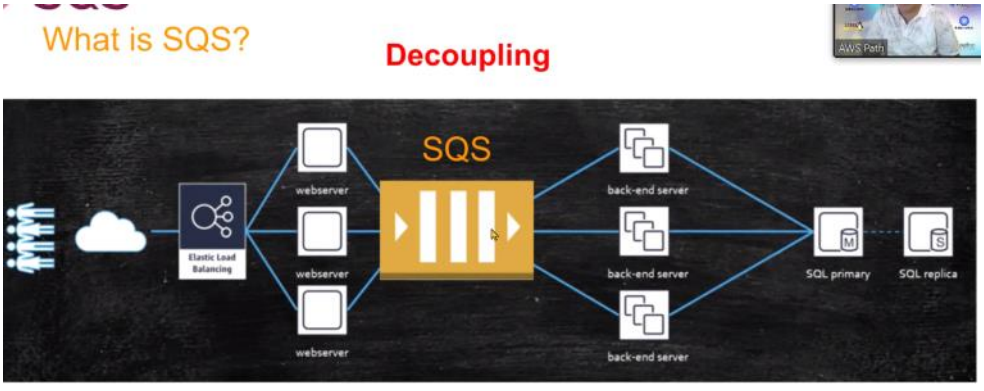


MOBILE PUSH



Amazon Simple Notification Service (Amazon SNS

From < https://app.slack.com/client/T0227UVRJU8/C021BG84YJJ/thread/C025D0P6R7B-1629234556.001700>



Load balancer yerine SQS eklenmis oldu ve belli bir sureligine mesajari muhafaza edebiliriz (14 gun)

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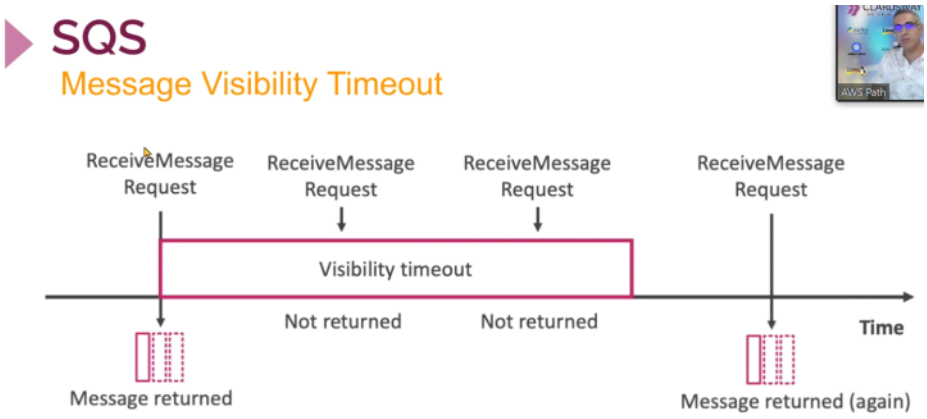
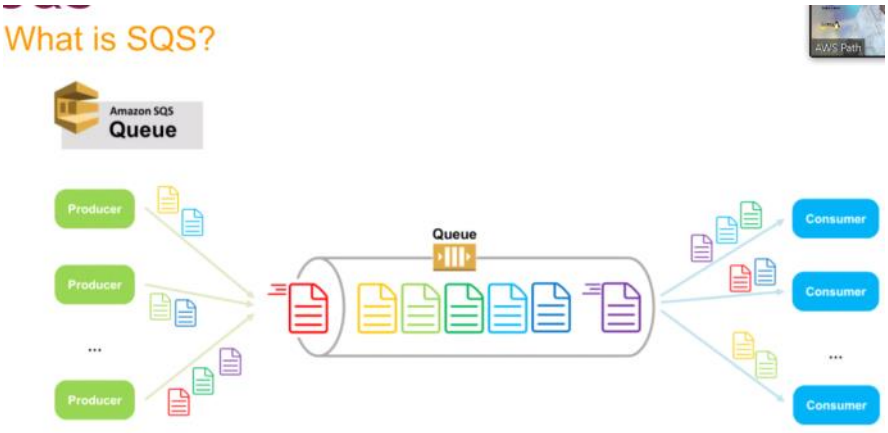
SQS iki tür ileti kuyruğu sunar. Standart kuyruklar tarafından en yüksek aktarım hızı, en iyi çaba ilkesine göre sıralama ve en az bir kez teslim olanakları sunulur. SQS FIFO kuyrukları, iletilerin tam olarak bir kez ve tam olarak gönderildikleri sırada işlenmesi konusunda güvence sağlayacak şekilde tasarlanmıştır.

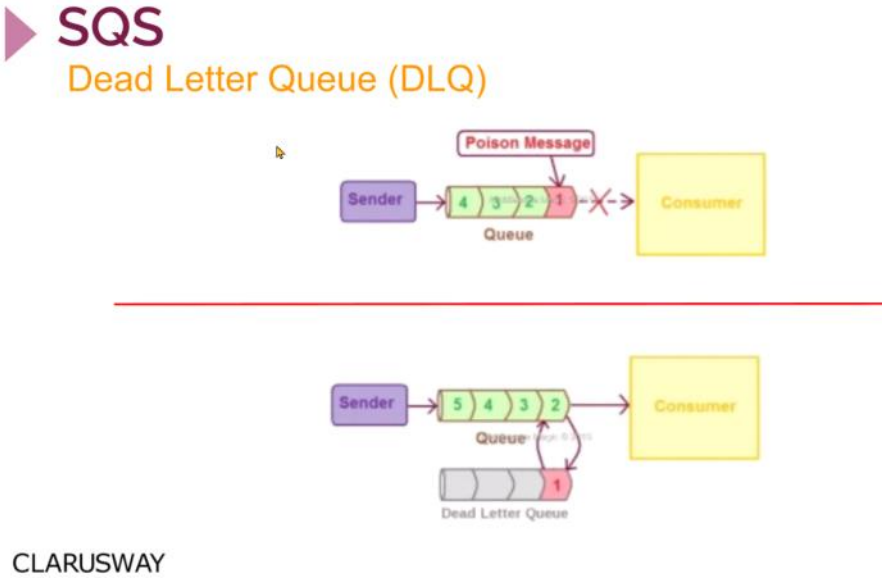
From < https://aws.amazon.com/tr/sqs/>



Gelen mesaj consumer tarafindan isleniyor. Ayni mesajin diger consumer taragfindan da islenmesini engellenemk icin message visibility time oout ayarlaniyor. Bu sure icinde diger consumerlar mesaji goremiyor



Decouple onemli konu sinavlarda cikabilir



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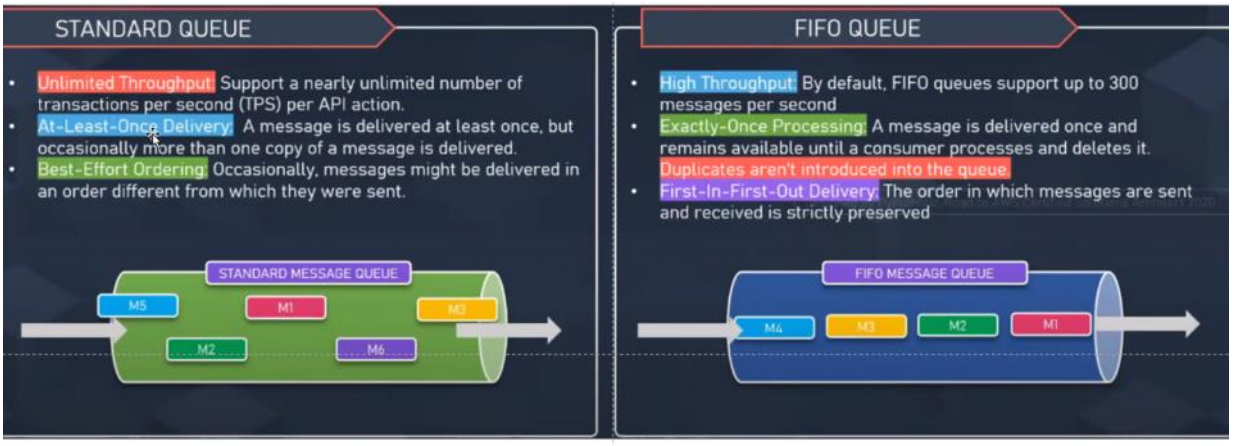
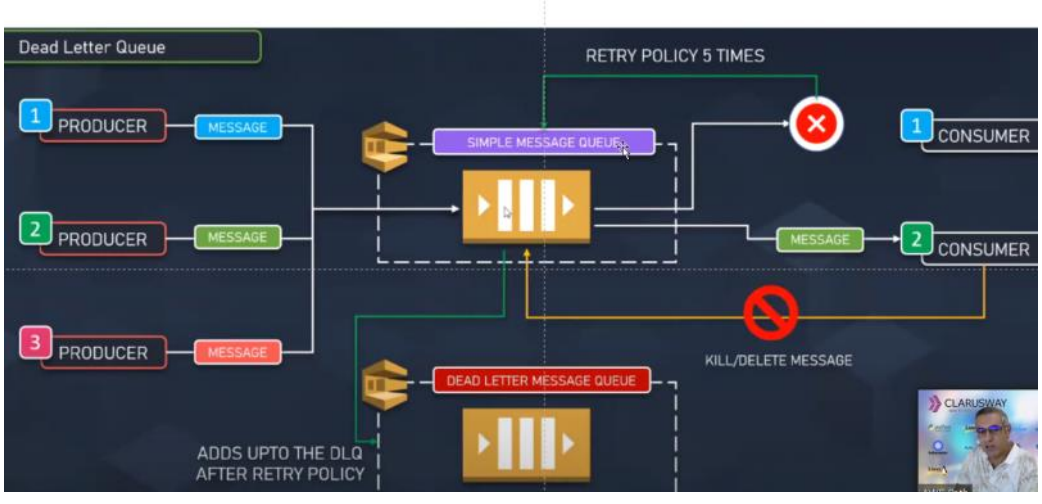


Saniyeeki islem sayisinda Standart q da limit yok. Ancak FIFO Q da hightruepoot dedigimiz 300 sinirlamasi var, bash ozelligi kullanirak 300*10 = 3 000 3000 e cikrtrilabiliyor, Standart q da siraya girenmesajin sirasi girise gore oolmayabiliyor, comsumerlar icin mesajin sirasi onemli degil. Mesaj birden fazla process islem gorebiliyor Standart q da. Fifo da dublicate diye bir kavram yok. Standart q da olabiliyor. FIFO DA ILK GIREN MESAJK ILK CIKIYOR



DLQ standart Q nun aynisi. Consumer gelen mesaji islemee calisti ancak isleyemedi tekrar Q ya gonderiyor consumer deniyro belli bir sayida bizim ayarladigimiz sayida. Olmazsa DLQ ye gonderiliyor. Dah asonra troubleshooting yaparken icindeki mesajlara bakilabiliyor. HATALI MESAJLARIN GONDERILDIGI YER. STANDART q nun icinde mesajlar 14 gune kadar duruyor. Death LQ nin standartdan daha fazla olmasi lazimki buraya gonderilen hata mesajini daha sonra inceleyebilelim

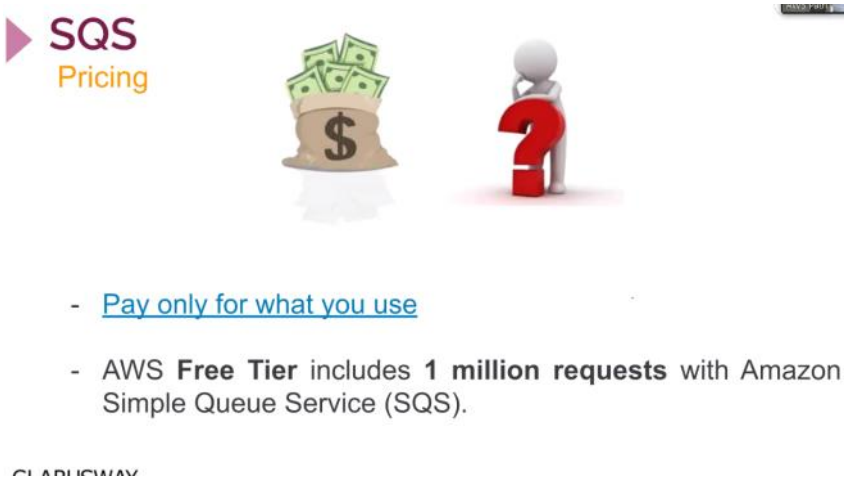
Sqs in un limited bir kapasitesi var 14 gune kadar bir kapasitesi var

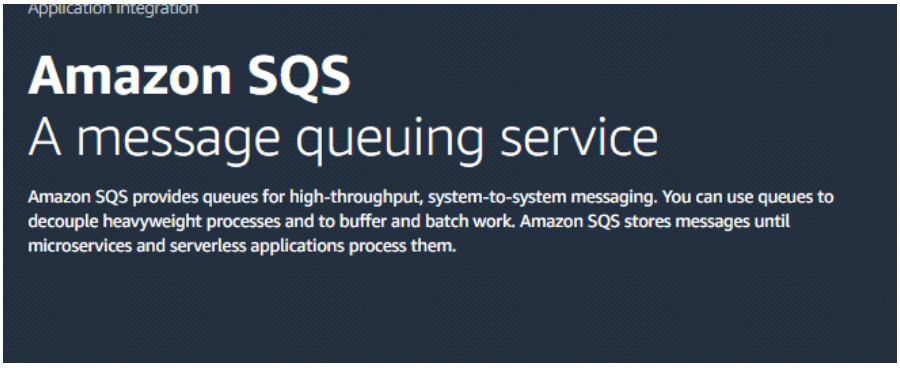
Amazon SQS, ileti kuyruklarını yönetmek için kendi yazılımınızı derlemeye veya geliştirme ve yapılandırma için önemli hazırlık süresi gerektiren ücretli ya da açık kaynaklı ileti kuyruğa alma sistemlerini kullanmaya göre çok sayıda avantaj sağlar.

Bu alternatif sürekli donanım bakımı ve sistem yönetim kaynakları gerektirir. Bu sistemleri yapılandırma ve yönetmenin karmaşıklığı, donanımın arıza yapması durumunda iletilerin kaybedilmemesini sağlayan yedek ileti deposu gereksinimi ile birleşir.

Buna karşılık, Amazon SQS idari bir yük gerektirmez ve çok az yapılandırma içerir. Amazon SQS, çok büyük ölçekte çalışır ve bir günde milyarlarca mesajı işler. Herhangi bir yapılandırma olmadan Amazon SQS'ye gönderdiğiniz trafik miktarının ölçeğini artırıp azaltabilirsiniz. Amazon SQS, ayrıca son derece yüksek ileti dayanıklılığı sağlayarak size ve paydaşlarınıza daha fazla güven verir.

From < https://aws.amazon.com/tr/sqs/faqs/>





Visibility timeout

The default visibility timeout setting is 30 seconds.

Message retention period Info Days Should be between 1 minute and 14 days.
TURKISH
Mesaj saklama süresi Bilgi Günler 1 dakika ile 14 gün arasında olmalıdır.

Delivery delay
TURKISH
Teslim gecikmesi

Any messages that you send to the queue remain invisible to consumers for the duration of the delay period. The default (minimum) delay for a queue is 0 seconds. The maximum is 15 minutes.
TURKISH
Kuyruğa gönderdiğiniz tüm iletiler, gecikme süresi boyunca tüketicilere görünmez kalır. Bir kuyruk için varsayılan (minimum) gecikme 0 saniyedir. Maksimum 15 dakikadır.

From < https://console.aws.amazon.com/sqs/v2/home?region=us-east-1#/create-queue#/>

-----Hands -on !!!

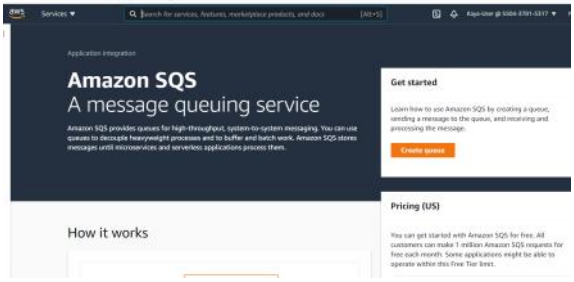
- **Let´s go to the AWS Management Console**
-
-

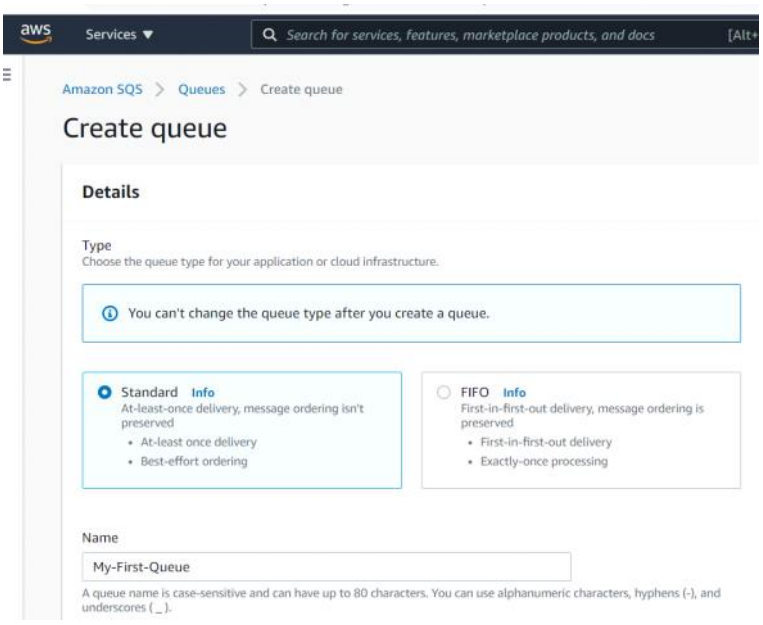
SNS Hands-on
Part 1 - Creating Topic, Subscription and Publishing Message
Step 1 : Create Topic

Manuel yapacagiz mesaj yazcaz gondercez cosumer gibi pull edecez vs SQS i lambda ile entegre edecegiz, mesjaj gidince lambda fonksiyonun trigger edecek daha sonra cloudwatchda loglara yazacak

---

```
Go to `SNS` service on AWS console.
- Click `Topics` >> `Create topic`.
- `Details`.
    - Type: Standart
    - Name: Demo-topic
    - Display Name: My-First-Topic
- Keep rest default.
- Click `Create`.
```

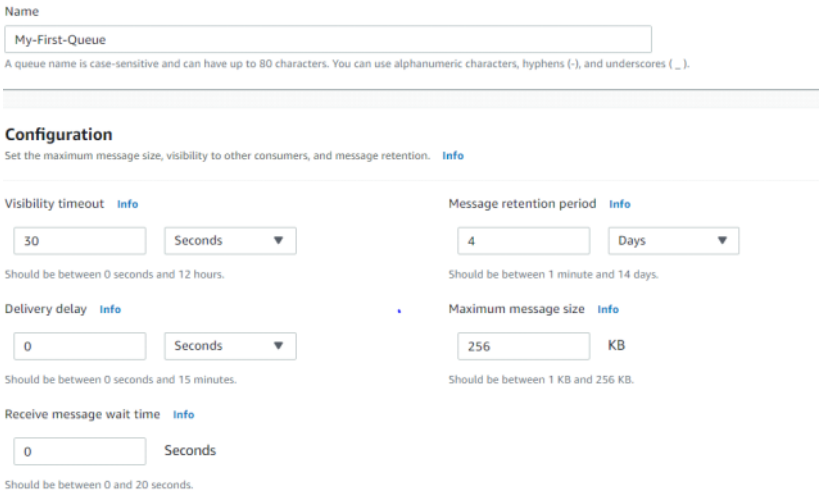


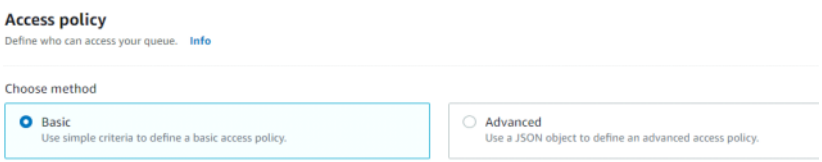


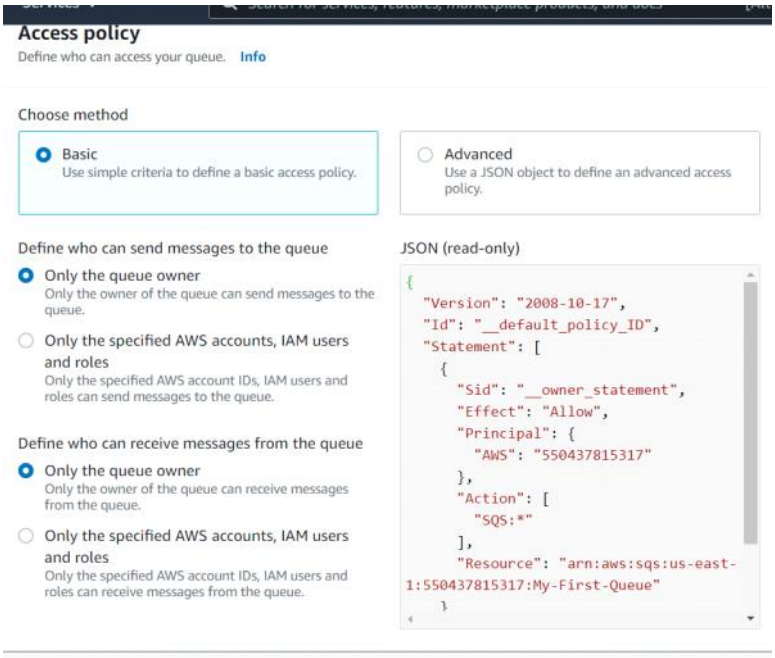
Delay queues let you postpone the delivery of new messages to a queue for a number of seconds, for example, when your consumer application needs additional time to process messages. If you create a delay queue, any messages that you send to the queue remain invisible to consumers for the duration of the delay period. The default (minimum) delay for a queue is 0 seconds. The maximum is 15 minutes. For information about configuring delay queues using the console see Configuring queue parameters (console).

From < **https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-delay-queues.html**>

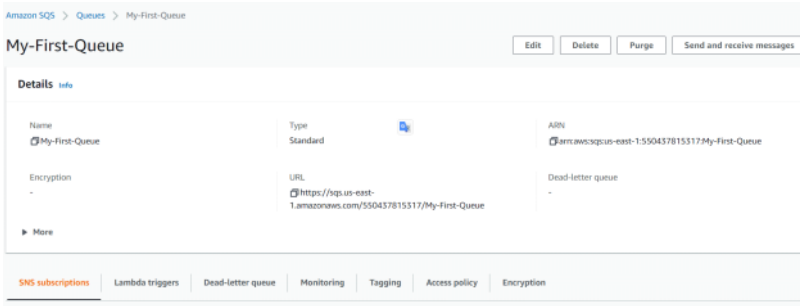
Sayisal degerler önemli sinavda sorulabilir



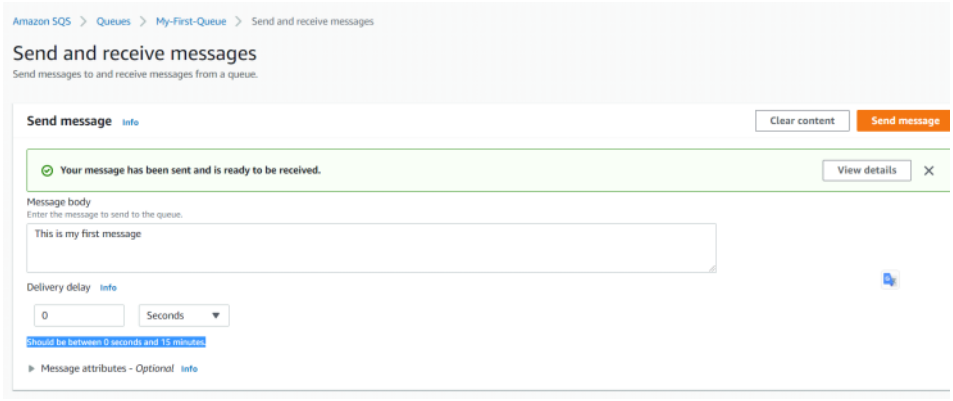


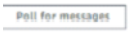


Manuel olarak mesaj gonderecegiz



Step 2 : Send Message
- On My-First-Queue page Click `Send and receive messages`.
- `Send message`.
    - Message body: "This is the first message for sqs."
- Keep rest default.
- Click `Send message`.
- Show `Receive messages` >> `Messages available` = 1.



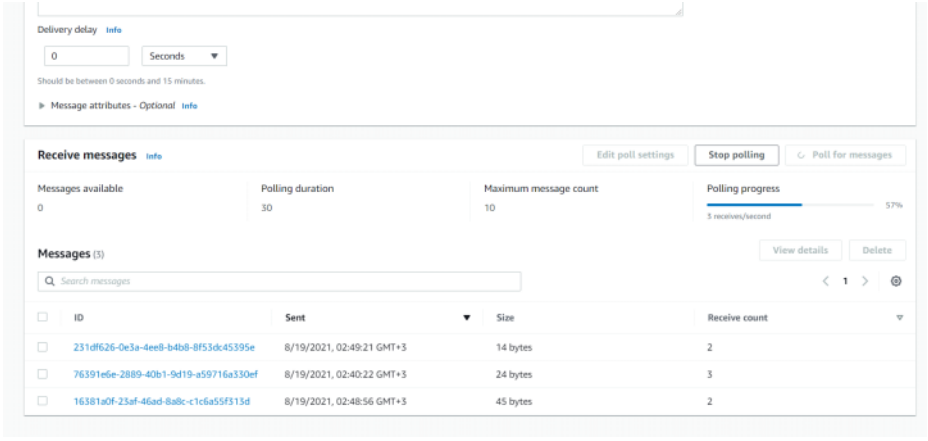


Menusune basinca bir tane mesaj geldigini gorebiliriz

Menusune basinca bir tane mesaj geldigini gorebiliriz

Poll ==> mesaji request sayesinde consumer (aliciya) a gonderiliyor yani cekiliyor

```
### Step 3 : Poll for Messages
- Click `Poll for messages` under `Receive messages`.
- Click on the polled message under `Messages`.
- Show the message.
- Click `Done`.
- Select the polled message and click `Delete` and delete the message.
```

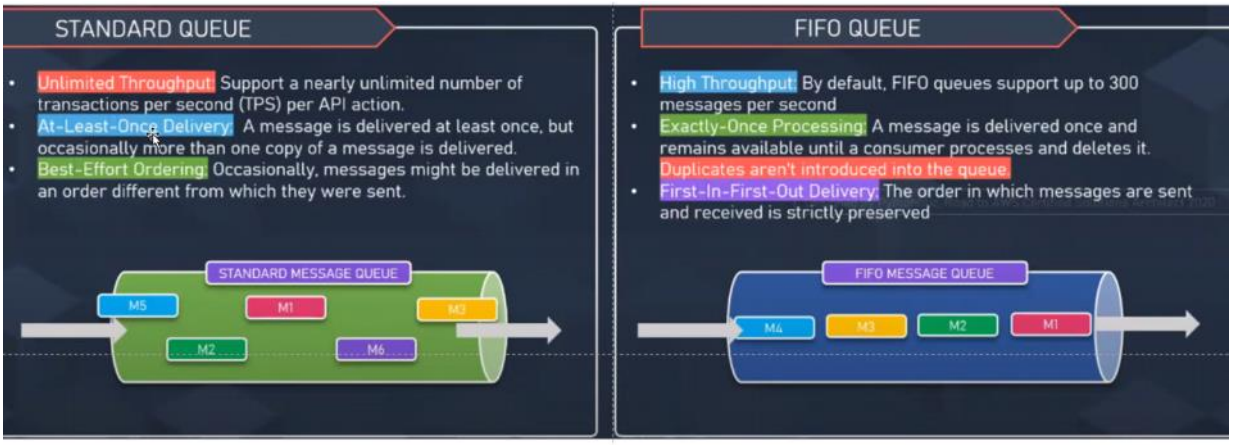


Gönderdigim diger mesajlar

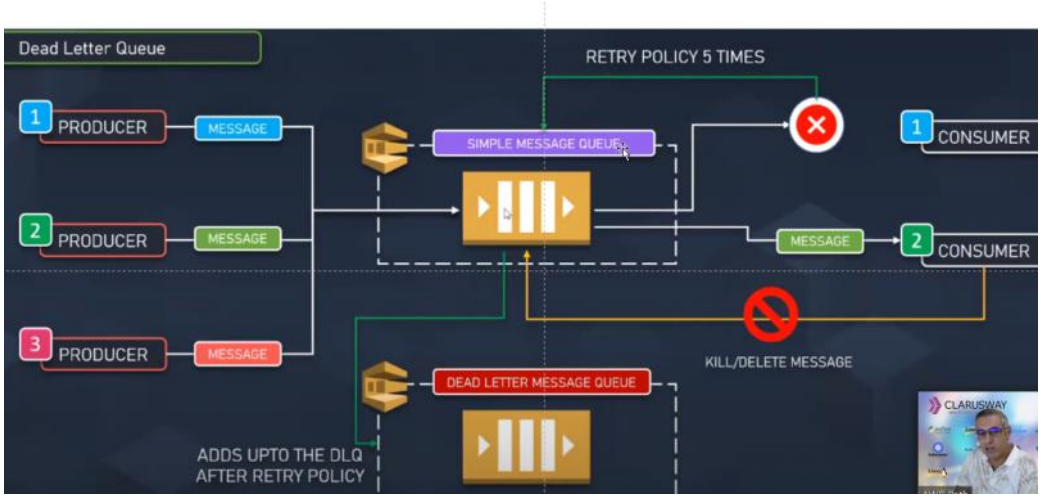
Building Loosely Coupled, Scalable, C# Applications with Amazon SQS and Amazon SNS

From < https://aws.amazon.com/tr/blogs/compute/building-loosely-coupled-scalable-c-applications-with-amazon-sqs-and-amazon-sns/>

From < https://app.slack.com/client/T0227UVRJU8/C021BG84YJJ/thread/C025D0P6R7B-1629234556.001700>



Saniyeeki islem sayisinda Standart q da limit yok. Ancak FIFO Q da hightruepoot dedigimiz 300 sinirlamasi var, bash ozelligi kullanirak 300*10 = 3 000 3000 e cikrtrilabiliyor, Standart q da siraya girenmesajin sirasi girise gore oolmayabiliyor, comsumerlar icin mesajin sirasi onemli degil. Mesaj birden fazla process islem gorebiliyor Standart q da. Fifo da dublicate diye bir kavram yok. Standart q da olabiliyor. FIFO DA ILK GIREN MESAJK ILK CIKIYOR



DLQ standart Q nun aynisi. Consumer gelen mesaji islemee calisti ancak isleyemedi tekrar Q ya gonderiyor consumer deniyro belli bir sayida bizim ayarladigimiz sayida. Olmazsa DLQ ye gonderiliyor. Dah asonra troubleshooting yaparken icindeki mesajlara bakilabiliyor. HATALI MESAJLARIN GONDERILDIGI YER. STANDART q nun icinde mesajlar 14 gune kadar duruyor. Death LQ nin standartdan daha fazla olmasi lazimki buraya gonderilen hata mesajini daha sonra inceleyebilelim

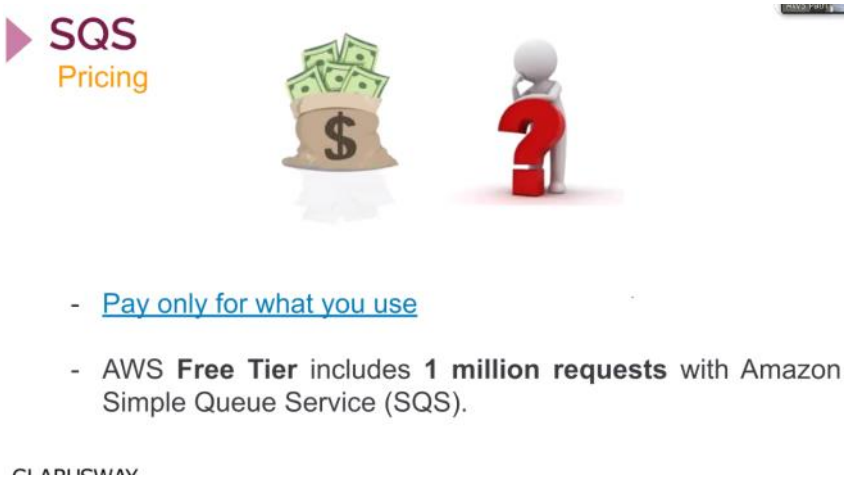
Sqs in un limited bir kapasitesi var 14 gune kadar bir kapasitesi var

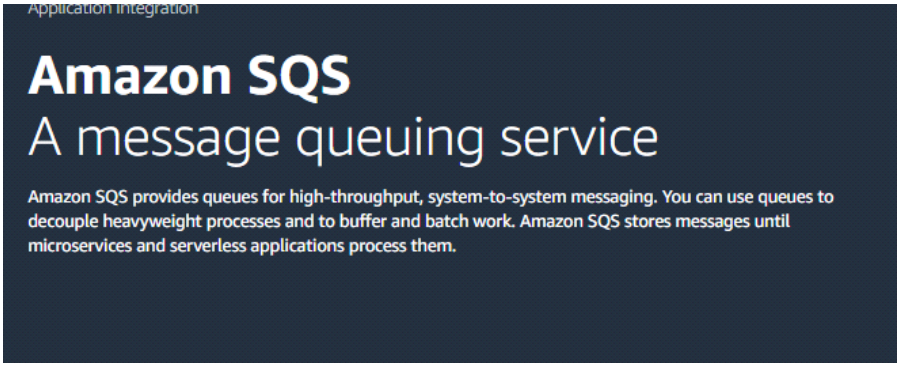
Amazon SQS, ileti kuyruklarını yönetmek için kendi yazılımınızı derlemeye veya geliştirme ve yapılandırma için önemli hazırlık süresi gerektiren ücretli ya da açık kaynaklı ileti kuyruğa alma sistemlerini kullanmaya göre çok sayıda avantaj sağlar.

Bu alternatif sürekli donanım bakımı ve sistem yönetim kaynakları gerektirir. Bu sistemleri yapılandırma ve yönetmenin karmaşıklığı, donanımın arıza yapması durumunda iletilerin kaybedilmemesini sağlayan yedek ileti deposu gereksinimi ile birleşir.

Buna karşılık, Amazon SQS idari bir yük gerektirmez ve çok az yapılandırma içerir. Amazon SQS, çok büyük ölçekte çalışır ve bir günde milyarlarca mesajı işler. Herhangi bir yapılandırma olmadan Amazon SQS'ye gönderdiğiniz trafik miktarının ölçeğini artırıp azaltabilirsiniz. Amazon SQS, ayrıca son derece yüksek ileti dayanıklılığı sağlayarak size ve paydaşlarınıza daha fazla güven verir.

From < https://aws.amazon.com/tr/sqs/faqs/>





Visibility timeout

The default visibility timeout setting is 30 seconds.

Message retention period Info Days Should be between 1 minute and 14 days.
TURKISH
Mesaj saklama süresi Bilgi Günler 1 dakika ile 14 gün arasında olmalıdır.

Delivery delay
TURKISH
Teslim gecikmesi

Any messages that you send to the queue remain invisible to consumers for the duration of the delay period. The default (minimum) delay for a queue is 0 seconds. The maximum is 15 minutes.
TURKISH
Kuyruğa gönderdiğiniz tüm iletiler, gecikme süresi boyunca tüketicilere görünmez kalır. Bir kuyruk için varsayılan (minimum) gecikme 0 saniyedir. Maksimum 15 dakikadır.

From < https://console.aws.amazon.com/sqs/v2/home?region=us-east-1#/create-queue#/>

-----Hands -on !!!

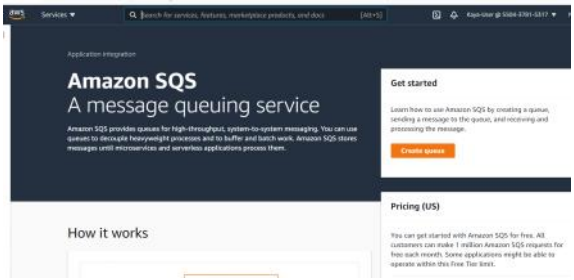
- **Let´s go to the AWS Management Console**
-
-

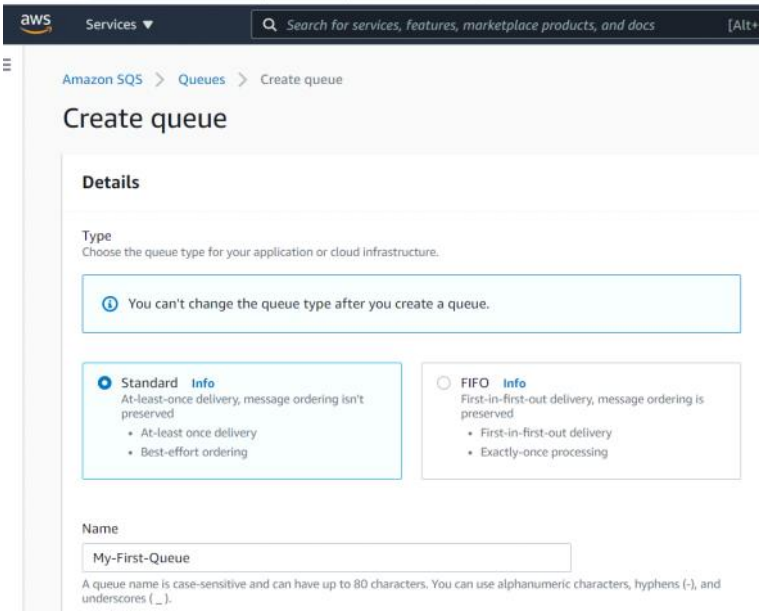
SNS Hands-on
Part 1 - Creating Topic, Subscription and Publishing Message
Step 1 : Create Topic

Manuel yapacagiz mesaj yazcaz gondercez cosumer gibi pull edecez vs SQS i lambda ile entegre edecegiz, mesjaj gidince lambda fonksiyonun trigger edecek daha sonra cloudwatchda loglara yazacak

---

```
Go to `SNS` service on AWS console.
- Click `Topics` >> `Create topic`.
- `Details`.
    - Type: Standart
    - Name: Demo-topic
    - Display Name: My-First-Topic
- Keep rest default.
- Click `Create`.
```

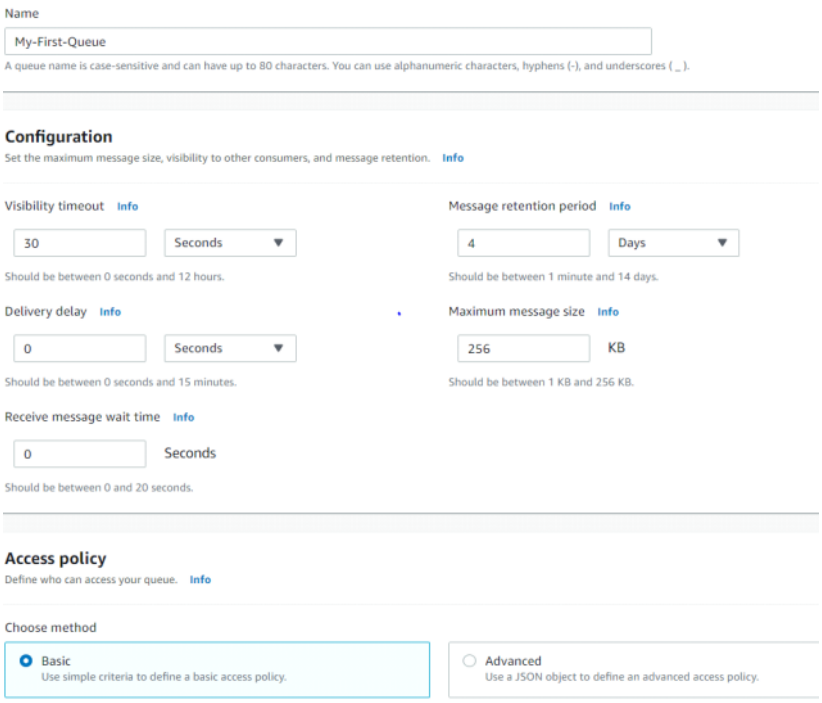


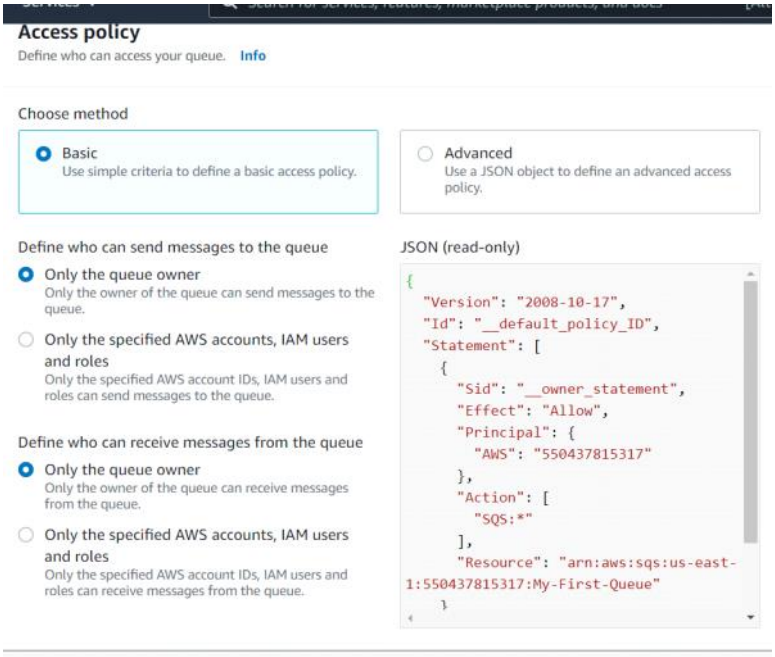


Delay queues let you postpone the delivery of new messages to a queue for a number of seconds, for example, when your consumer application needs additional time to process messages. If you create a delay queue, any messages that you send to the queue remain invisible to consumers for the duration of the delay period. The default (minimum) delay for a queue is 0 seconds. The maximum is 15 minutes. For information about configuring delay queues using the console see Configuring queue parameters (console).

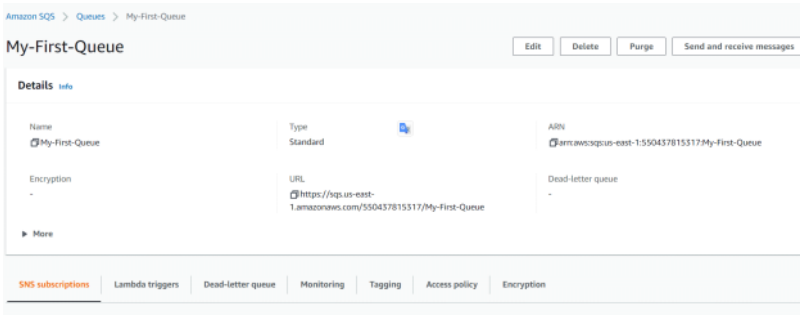
From < **https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-delay-queues.html**>

Sayisal degerler önemli sinavda sorulabilir

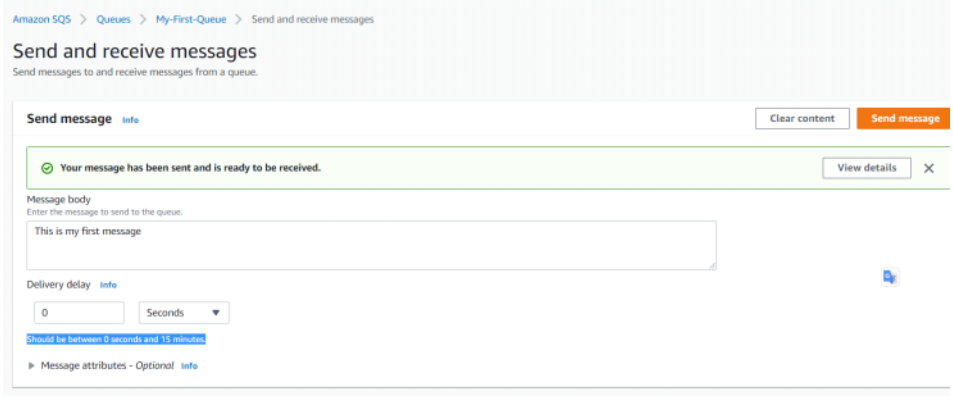




Manuel olarak mesaj gonderecegiz



Step 2 : Send Message
- On My-First-Queue page Click `Send and receive messages`.
- `Send message`.
    - Message body: "This is the first message for sqs."
- Keep rest default.
- Click `Send message`.
- Show `Receive messages` >> `Messages available` = 1.

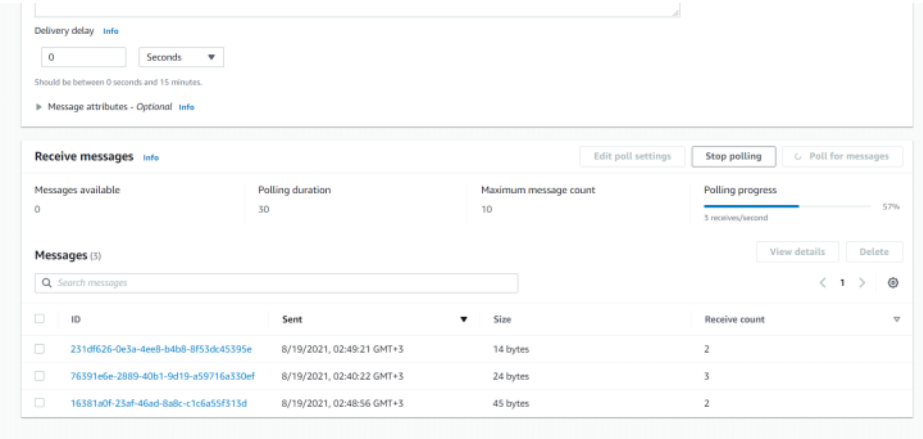


Menusune basinca bir tane mesaj geldigini gorebiliriz

Menusune basinca bir tane mesaj geldigini gorebiliriz

Poll ==> mesaji request sayesinde consumer (aliciya) a gonderiliyor yani cekiliyor

Step 3 : Poll for Messages
- Click `Poll for messages` under `Receive messages`.
- Click on the polled message under `Messages`.
- Show the message.
- Click `Done`.
- Select the polled message and click `Delete` and delete the message.



Gönderdigim diger mesajlar

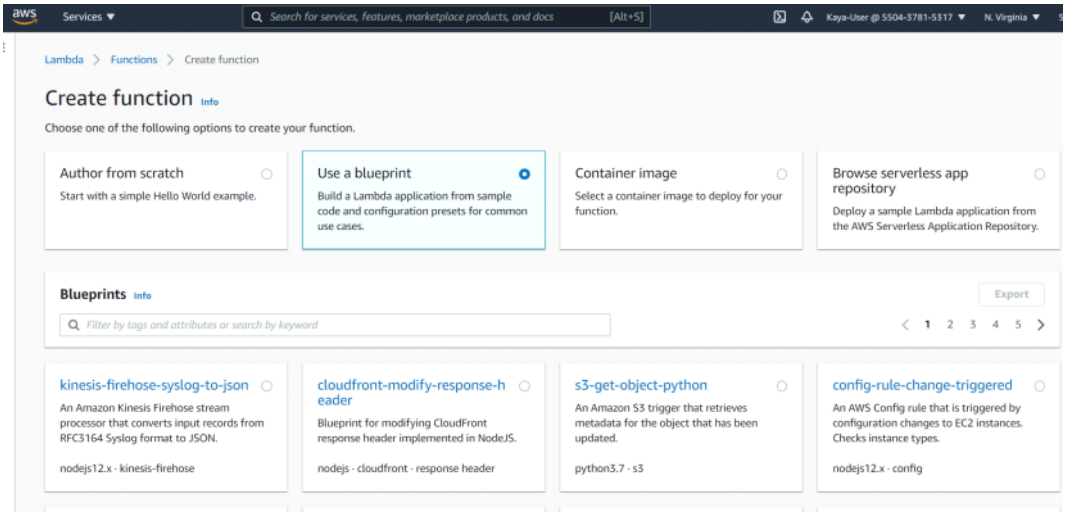
Building Loosely Coupled, Scalable, C# Applications with Amazon SQS and Amazon SNS

From < https://aws.amazon.com/tr/blogs/compute/building-loosely-coupled-scalable-c-applications-with-amazon-sqs-and-amazon-sns/>

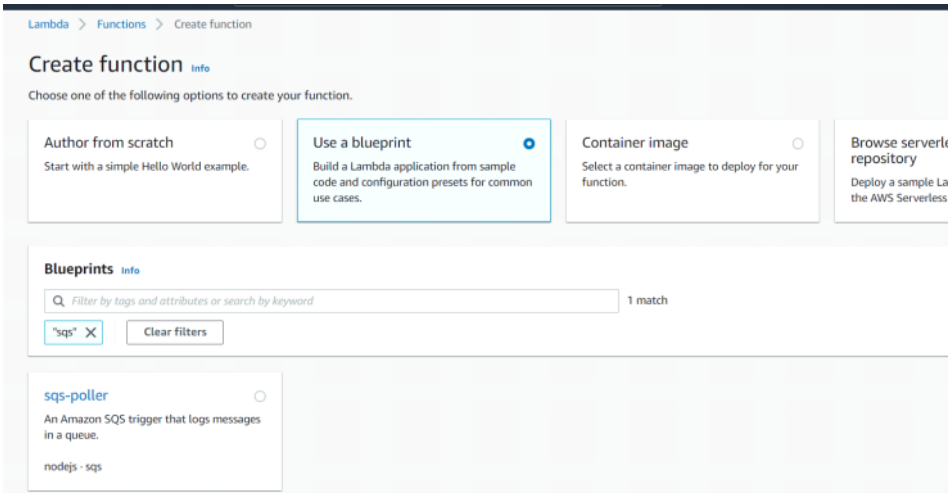
Delete menusu ile silebiliriz Bir tane Lambda function olusturacagiz

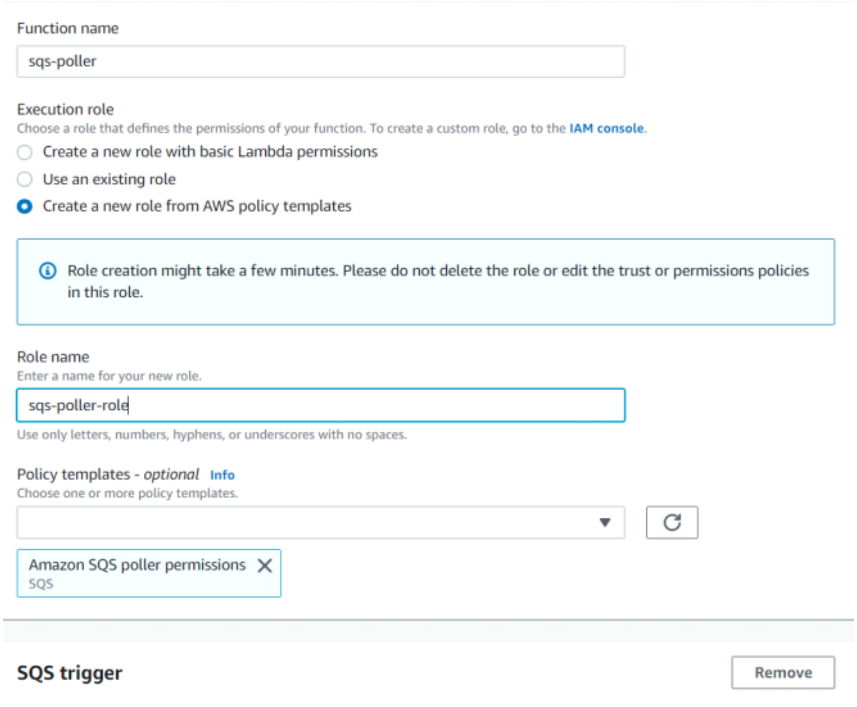
Part 2 - Creating Lambda Function to Be Triggered by SQS
Step 1 : Create Lambda Function
- Go to `Lambda` service on AWS console.
- Click `Create function`.
- Select `Use a blueprint`.
- Search `sqs` in the the blueprints search bar.
- Select `sqs-poller` and click `Configure`.
- `Basic information`
    - Function name : sqs-poller
    - Execution role : Create a new role from AWS policy templates (Keep default)
    - Role name : sqs-poller-role
    - Policy templates : **Keep** the default "Amazon SQS poller permissions"

Aws nin bize hazir sundugu template/function kullanacagiz



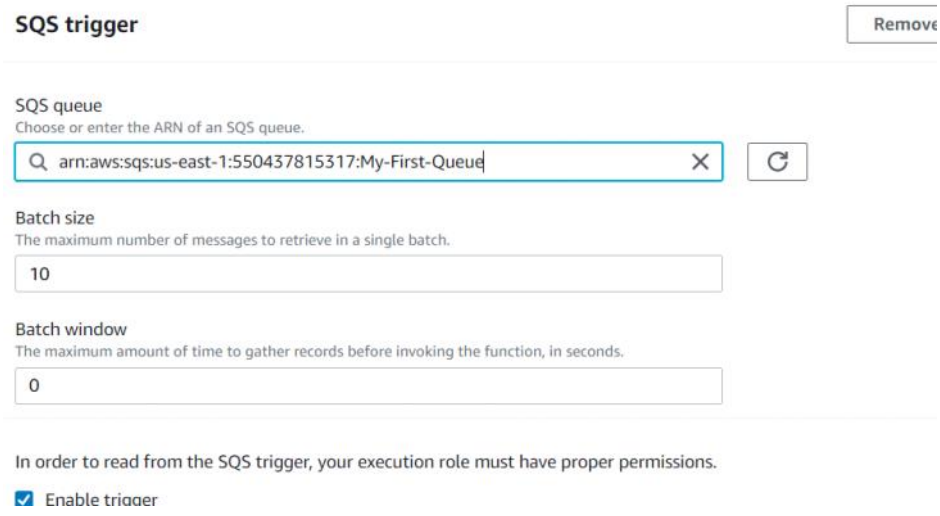
Sqs yazip enter diyelim



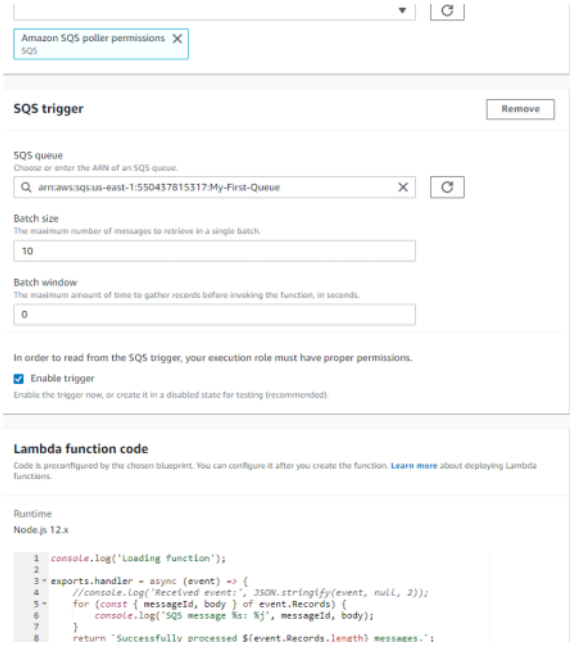


`SQS trigger`
- SQS queue : My-First-Queue
- Keep rest default.
- Click `Create function`.
- Click `Configuration`tab under `sqs-poller` function.
- Select `SQS: My-First-Queue` and click `Enable` to enable trigger.(Wait for it to be "Enabled")

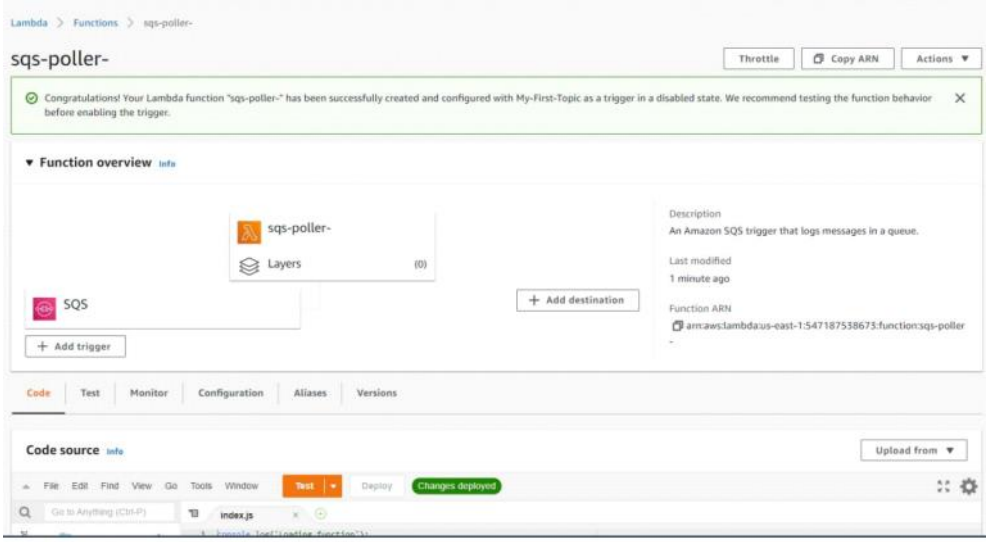
Permission otomatik geldi



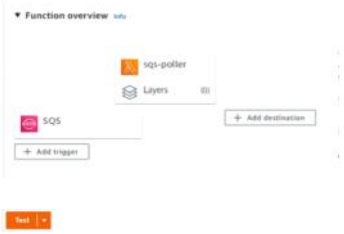
Yukariya tikladigimizda my first queue otomatik geliyor



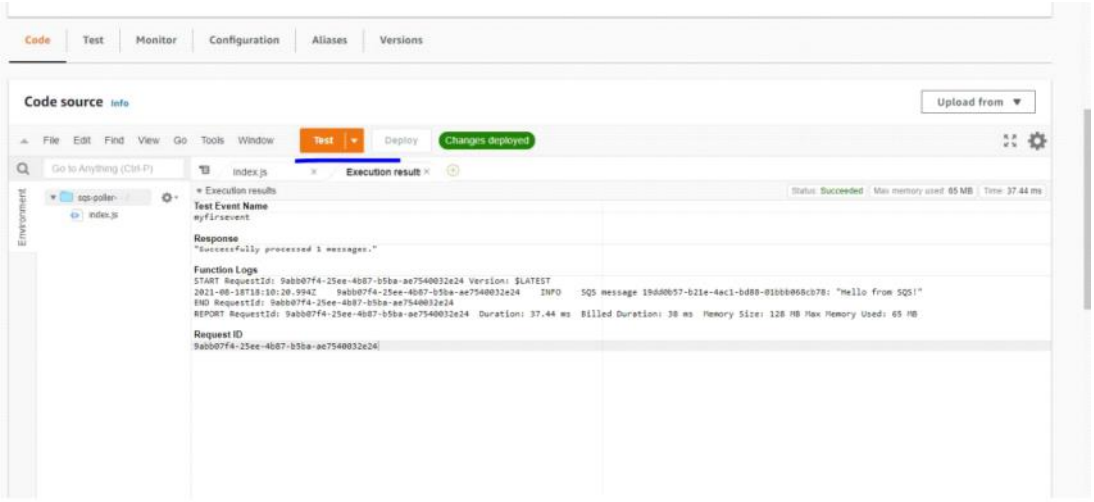
Function olustur ve triger da sqs

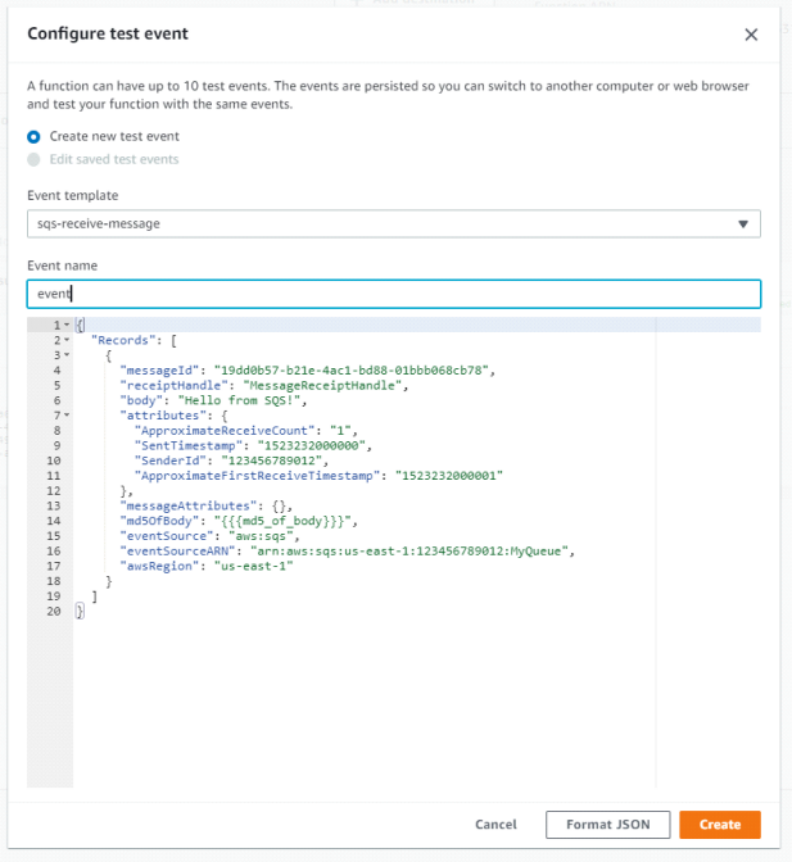


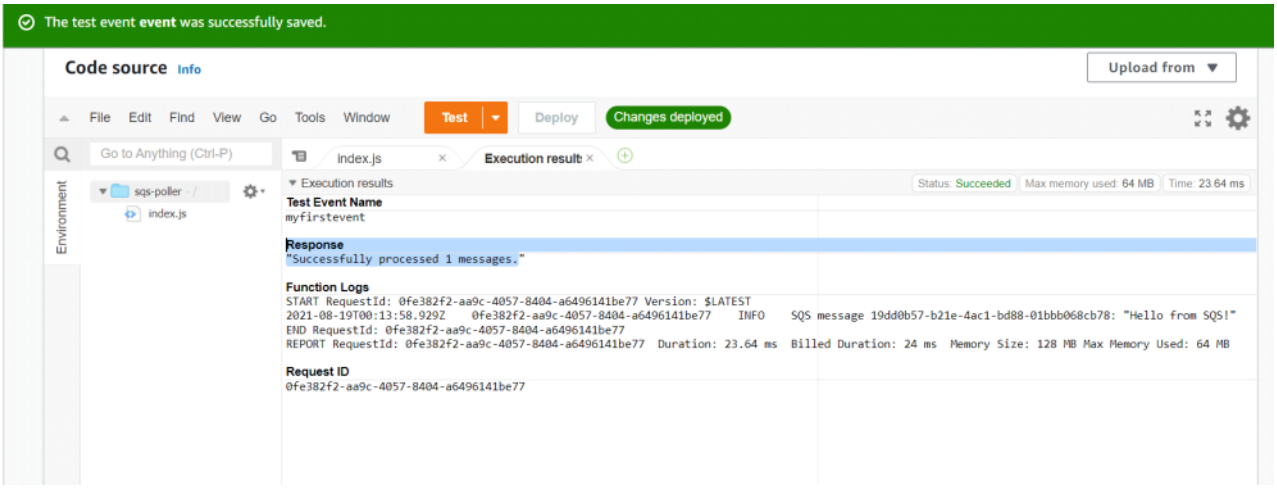
Function olustur ve triger da sqs



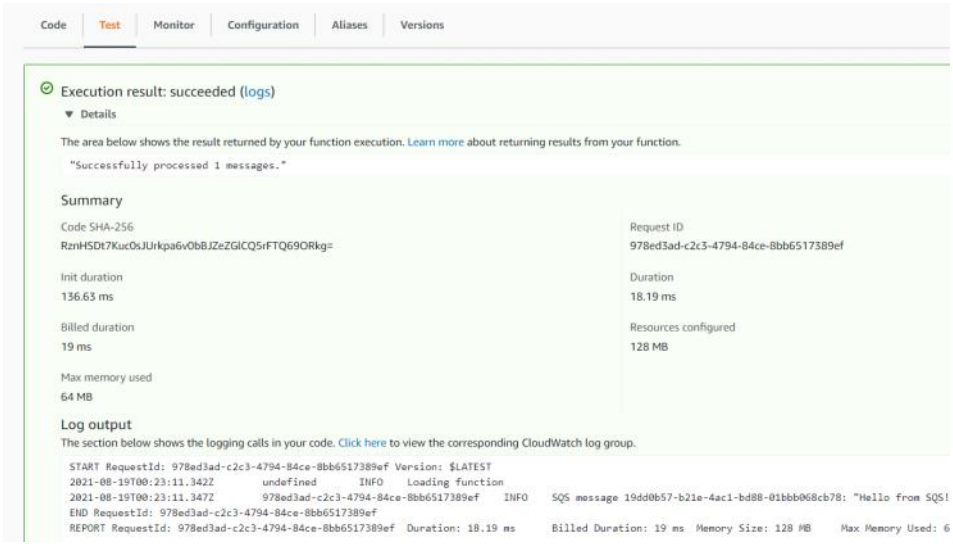
TESTI TEST ETTIK





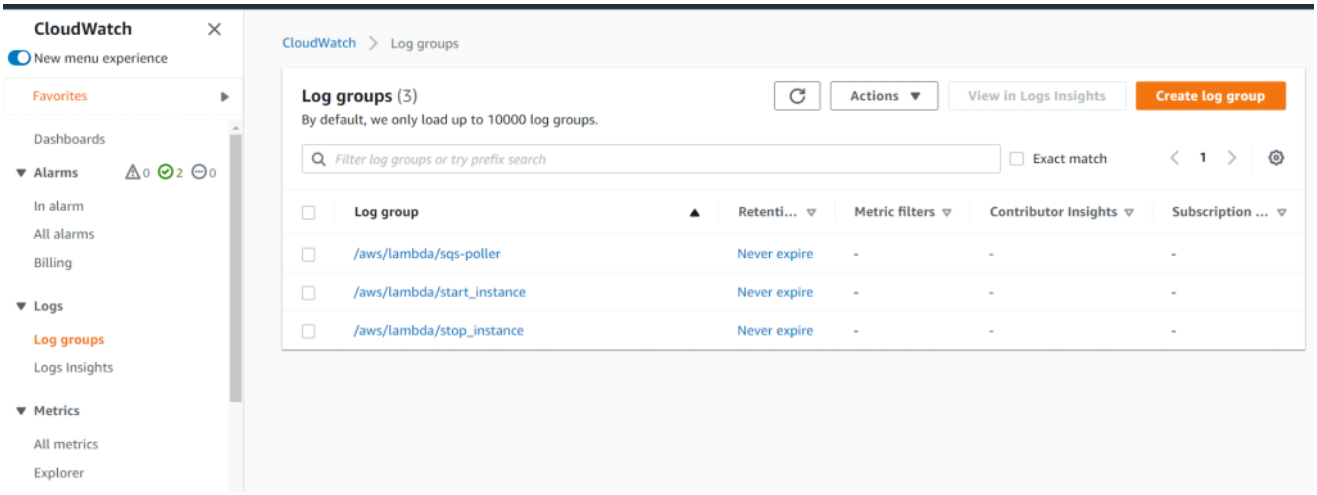


Create and test



Step 2 : Send Message to Invoke Lambda
- Go back to `SQS` service on AWS console.
- Send a new message like "This message is sent from sqs to trigger lambda" to the `My-First-Queue`.
- Show there is no message since it has been polled by lambda.

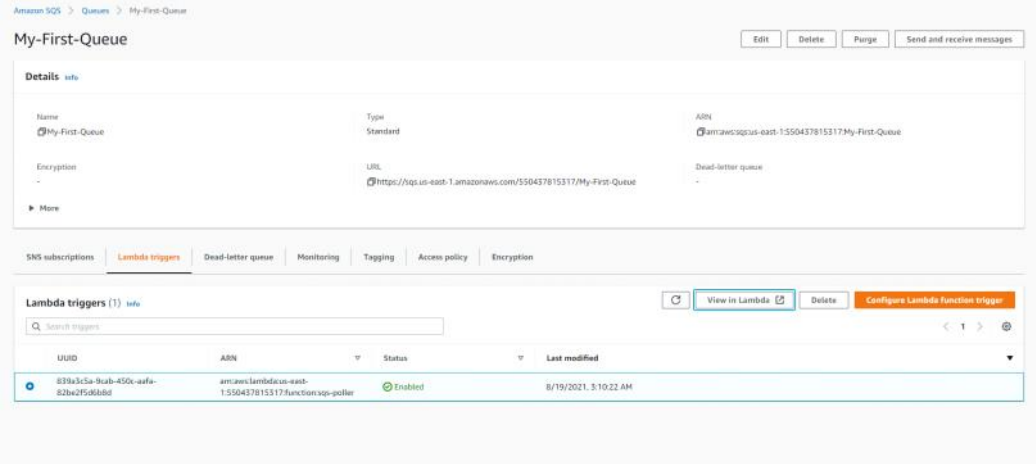
Cloudwatch ekranina gidelim

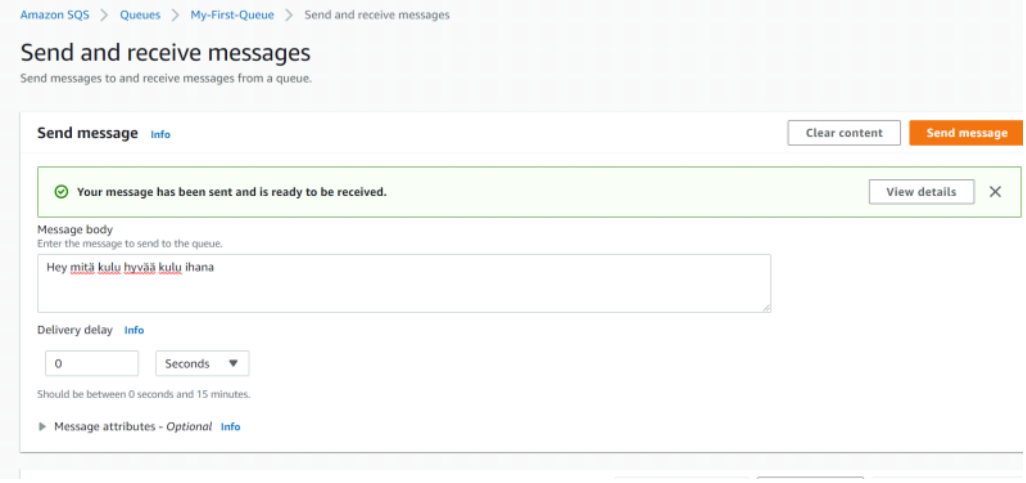


Logs ---- **Logs** groups sekmesinin altinda sqs-poller i görebiliyoruz

Amacimiz : biz consumer yerine lambda yi configure ettik. Mesaj koydugumuzda consumer yerine lambda mesaji cekecek ve cloudwatch e yazacak.

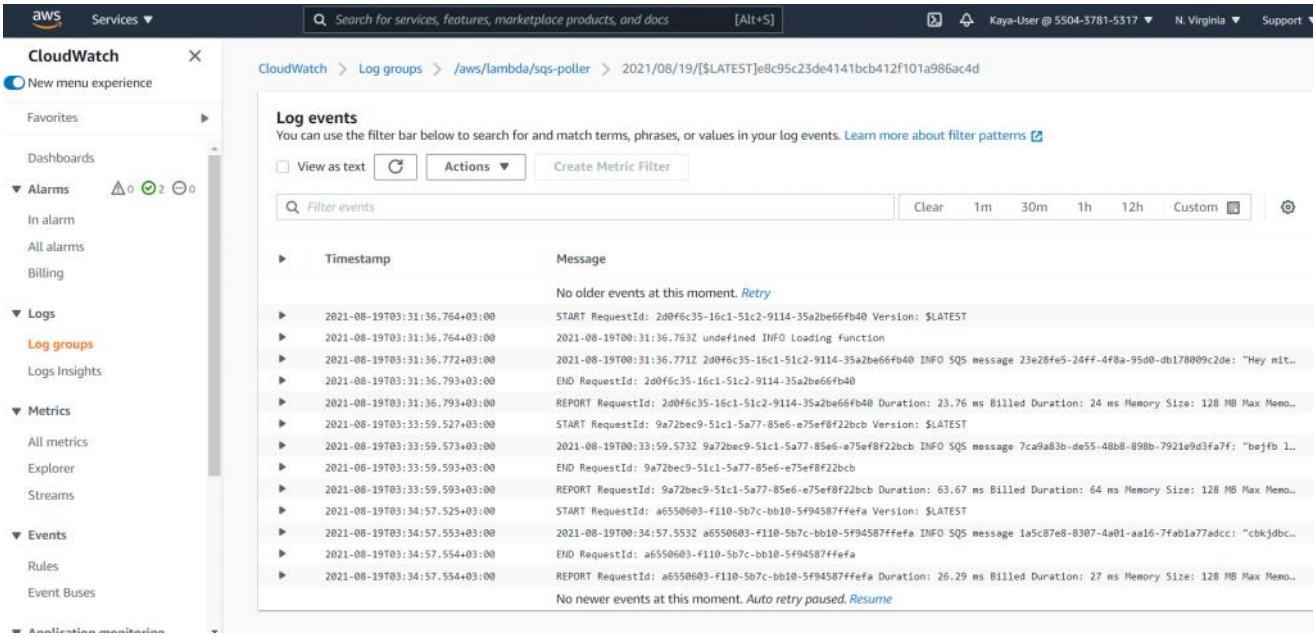
BMW Group, sürücülerine dinamik olarak güncellenen harita bilgileri sunmak için BMW 7 Serisi araçlardan sensör verilerini toplayan bağlı araç uygulaması için AWS'yi kullanıyor. BMW, sensör olarak araç (CARASSO) adını verdiği yeni hizmetini Amazon SQS, Amazon S3, Amazon DynamoDB, Amazon RDS ve AWS Elastic Beanstalk'tan yararlanarak yalnızca altı ayda oluşturdu.





Lambda da mesaj log kayitlarini gorebiliriz

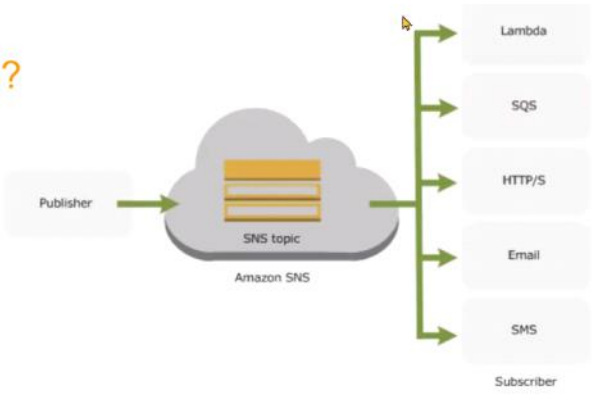
Send diyelim



Step 3 : Check Logs
- Go back to `CloudWatch` service on AWS console.
- From left-hand menu `Logs` >> `Log groups`
- Click on `/aws/lambda/sqs-poller`
- Click on the log stream and show the message sent from sqs and processed by lambda.
- Delete/terminate the resources created.

SNS

What is SNS?



- Clients can subscribe to the **SNS topic** and receive published messages using a supported protocol, such as Amazon SQS, AWS Lambda, HTTP, email, mobile push notifications, and mobile text messages (SMS).

CLARUSWAY

>Ayni anda bir cok farkli yere ayni mesaji gönderebiliyoruz

SNS

What is SNS?

Application-to-Application (A2A)

SNS

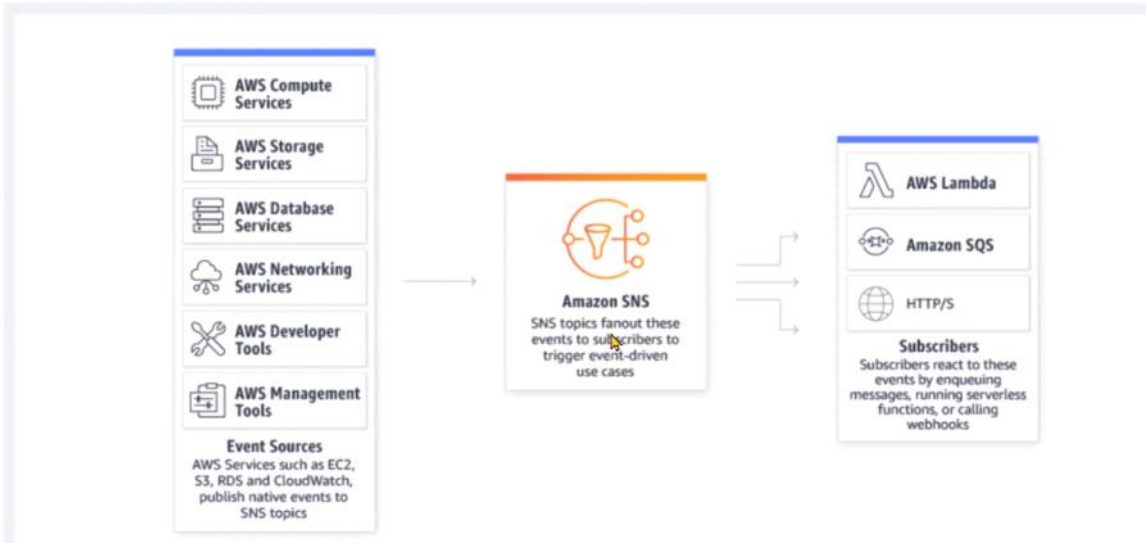
What is SNS?

SNS is integrated with many AWS Services

- CloudWatch (Alarms/Events)
- S3 (Bucket Events)
- CloudFormation (State changes etc.)
- Auto Scaling Groups
- And many others **can invoke SNS.**

SNS

What is SNS?



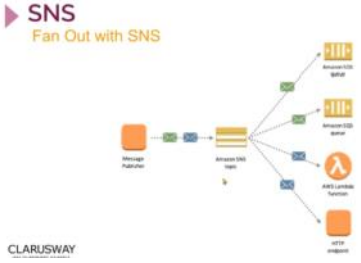
Farkli protokold gelen mesajlari iletmesine denir

SNS

What is SNS?

Application-to-Person (A2P)

Burda application Bir topic de mesaj yaziyoruz lambdaya sqs e http s e gidiyor.
Bir topic olusturuoruz bu topic i birden fazla kullanici ya gondereiliyoruz veya birden farkli protokloldeki kisye gonderebiliyoruz



SNS
Pricing

- Amazon SNS has **no upfront costs** and you can **pay as you go**. You pay based on the number of notifications you publish, the number of notifications you deliver, and any additional API calls for managing topics and subscriptions. Delivery pricing varies by endpoint type. You can get started for free with the SNS free tier.

SQS & SNS
Hands on

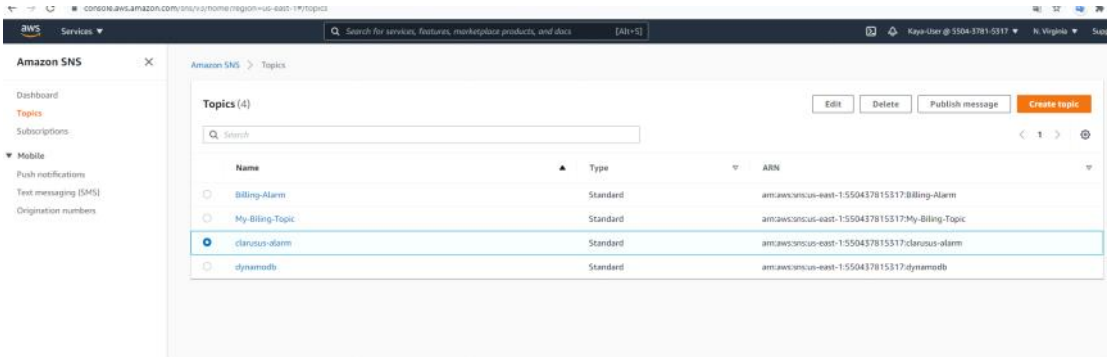
- Hands-on!!!
- Let's go to the AWS Management Console

APIGWAY

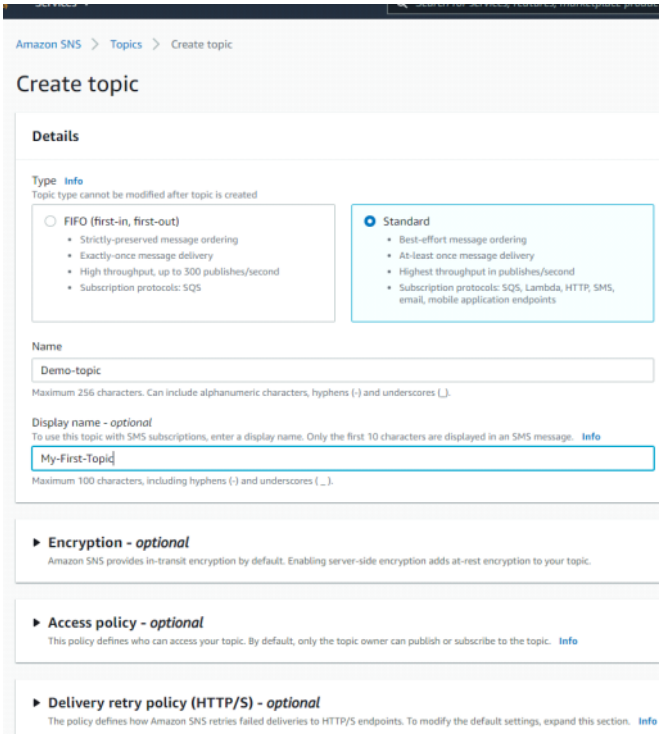
SNS Hands-on
Part 1 - Creating Topic, Subscription and Publishing Message
Step 1 : Create Topic

- Go to `SNS` service on AWS console.

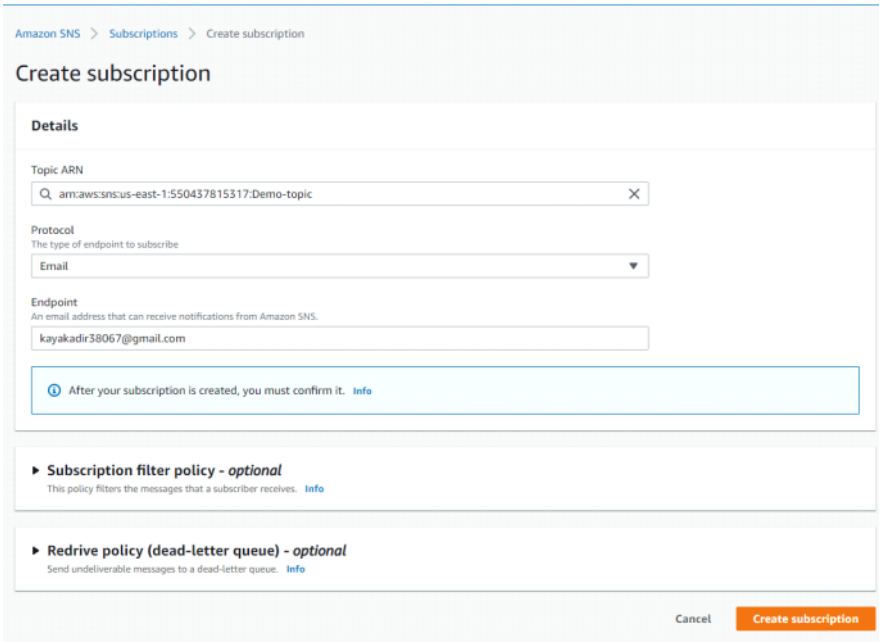
- Click `Topics` >> `Create topic`.

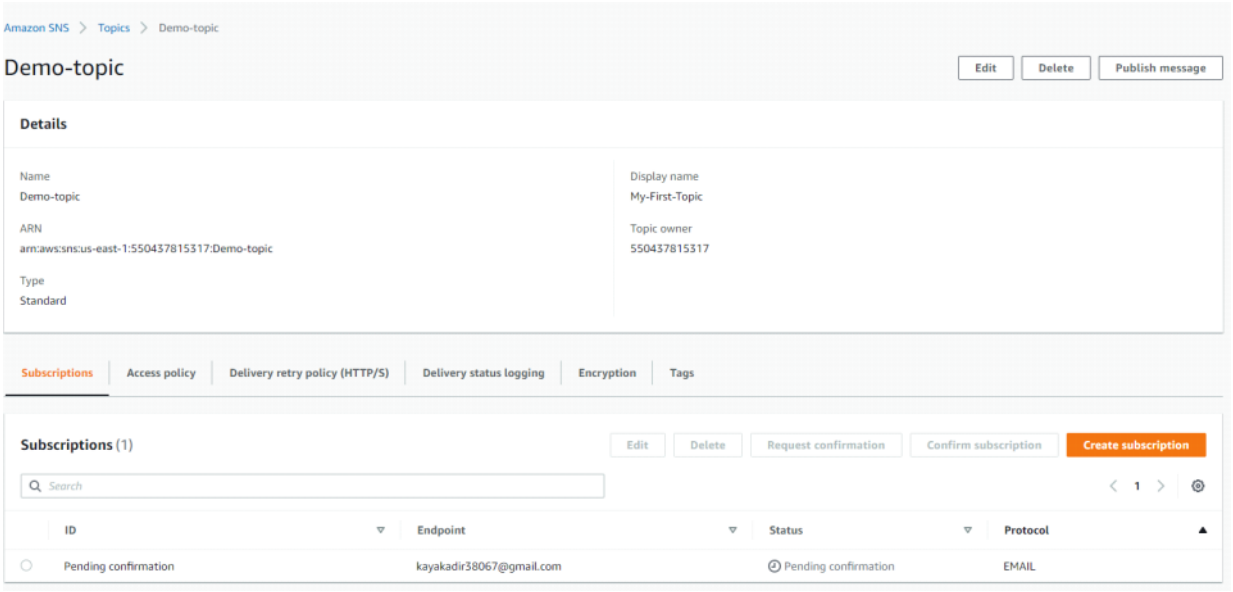


- `Details`.
- Type: Standart
- Name: Demo-topic
- Display Name: My-First-Topic
- Keep rest default.
- Click `Create`.



Step 2 : Create Subscription
- On Demo-topic page Click `Create subscription`.
- `Details`.
    - Topic ARN: arn:aws:sns:us-east-1:046402772087:Demo-topic (comes default)
    - Protocol: Email
    - Endpoint: test@example.com (your mail here)
- Keep rest default.
- Click `Create subscription`.
- Show `Status` >> `Pending Confirmation`.





Step 3 : Confirm subscription

- Go to your mail and check inbox.
-

Step 2 : Send Message to Invoke Lambda
- Go back to `SQS` service on AWS console.
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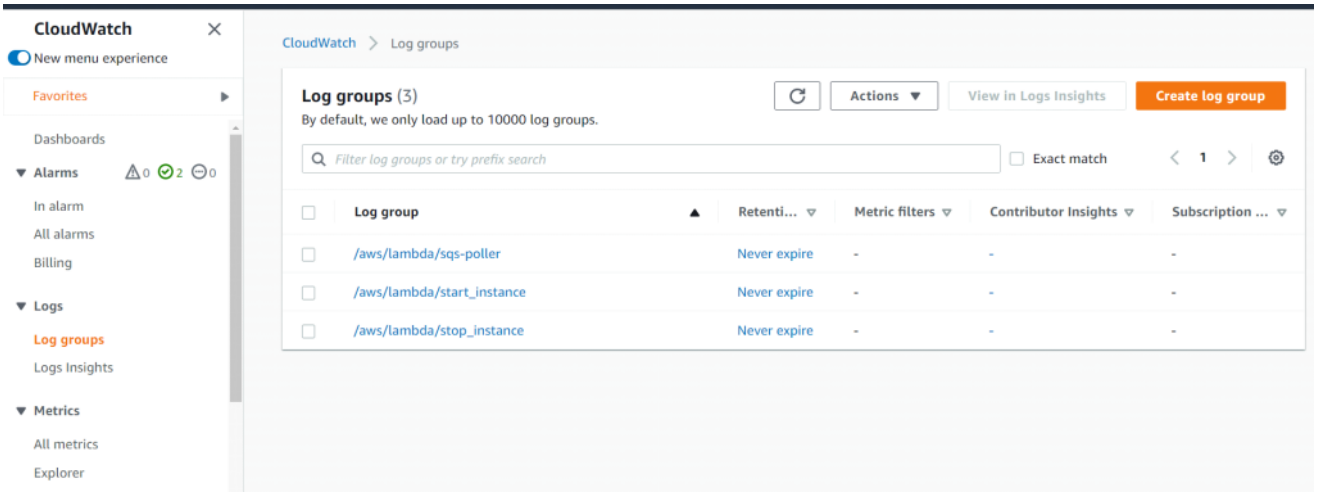
Cloudwatch ekranina gidelim



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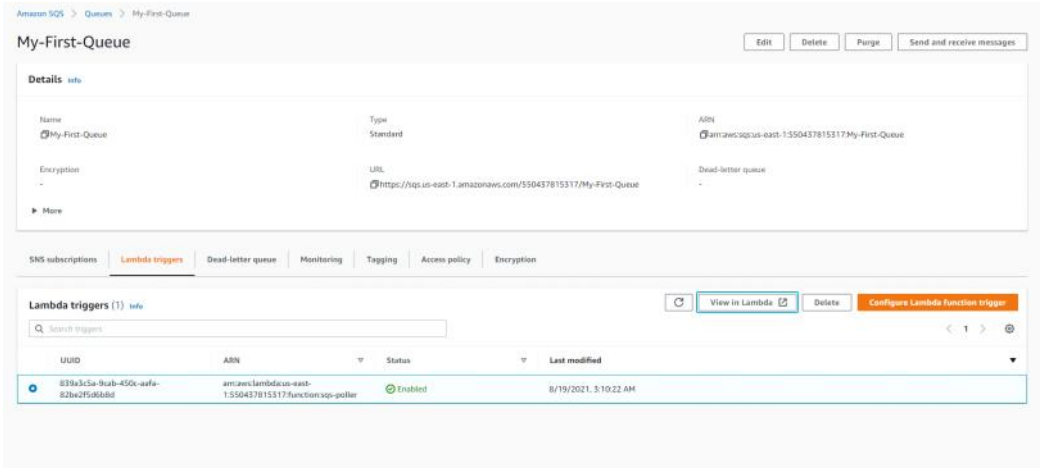
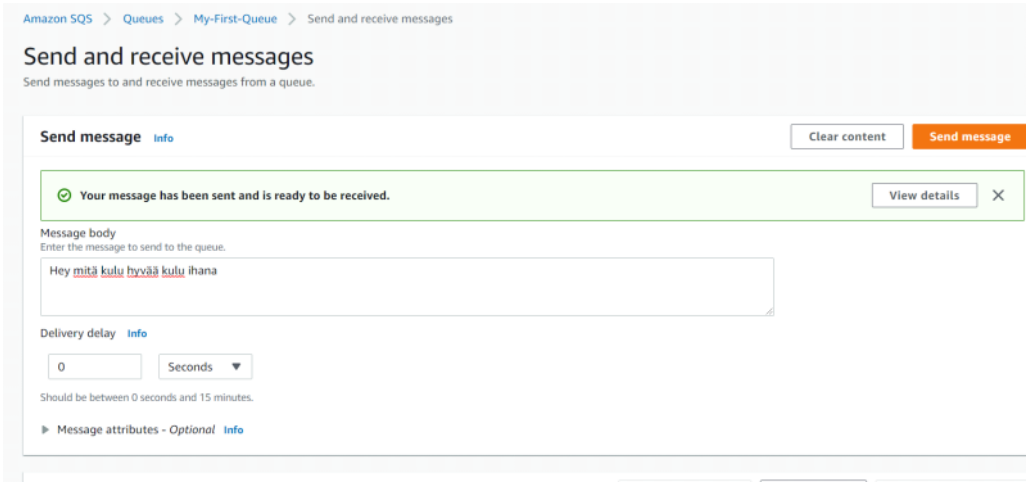
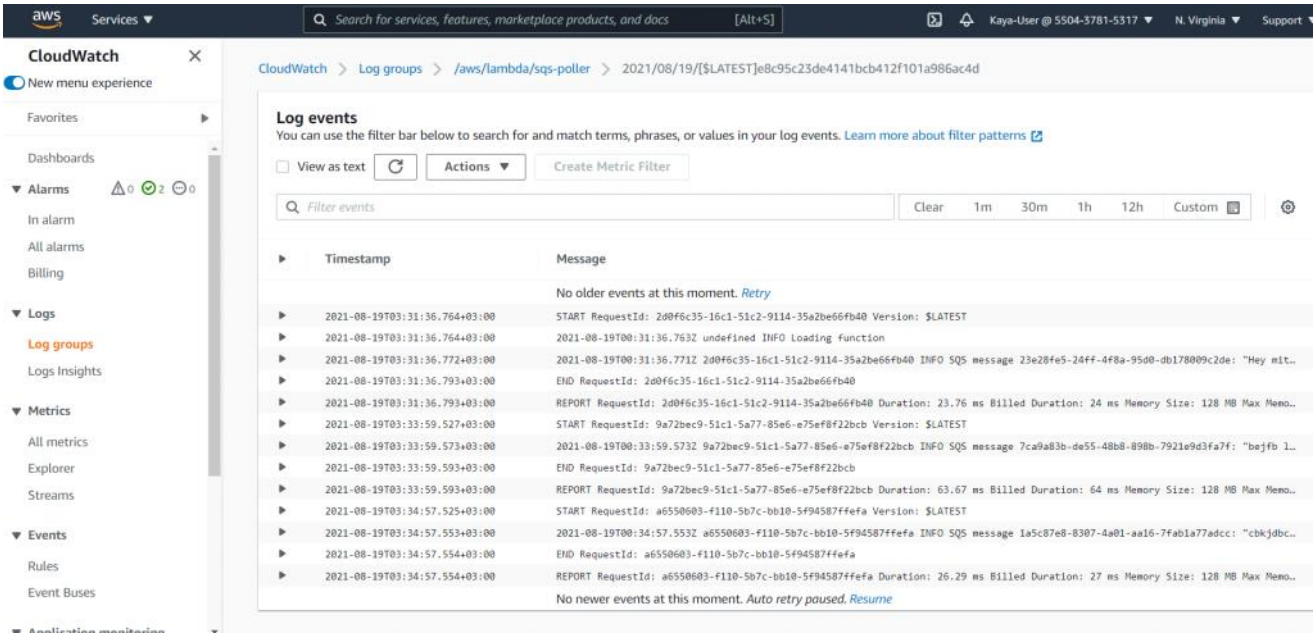
BMW Group, sürücülerine dinamik olarak güncellenen harita bilgileri sunmak için BMW 7 Serisi araçlardan sensör verilerini toplayan bağlı araç uygulaması için AWS'yi kullanıyor. BMW, sensör olarak araç (CARASSO) adını verdiği yeni hizmetini Amazon SQS, Amazon S3, Amazon DynamoDB, Amazon RDS ve AWS Elastic Beanstalk'tan yararlanarak yalnızca altı ayda oluşturdu.





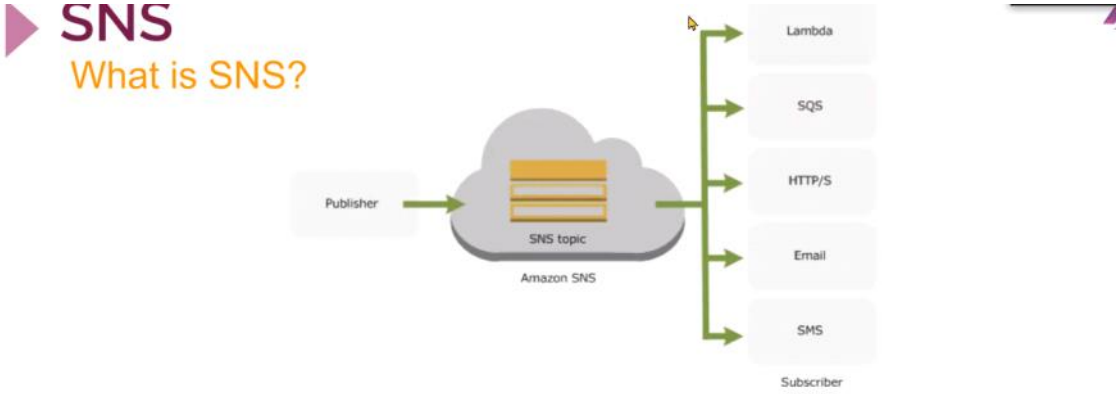
Lambda da mesaj log kayitlarini gorebiliriz

Send diyelim



Step 3 : Check Logs
- Go back to `CloudWatch` service on AWS console.
- From left-hand menu `Logs` >> `Log groups`
- Click on `/aws/lambda/sqs-poller`

- Click on the log stream and show the message sent from sqs and processed by lamb
da.
- Delete/terminate the resources created.



>Ayni anda bir cok farkli yere ayni mesaji gönderebiliyoruz

SNS

What is SNS?

Application-to-Application (A2A)

SNS

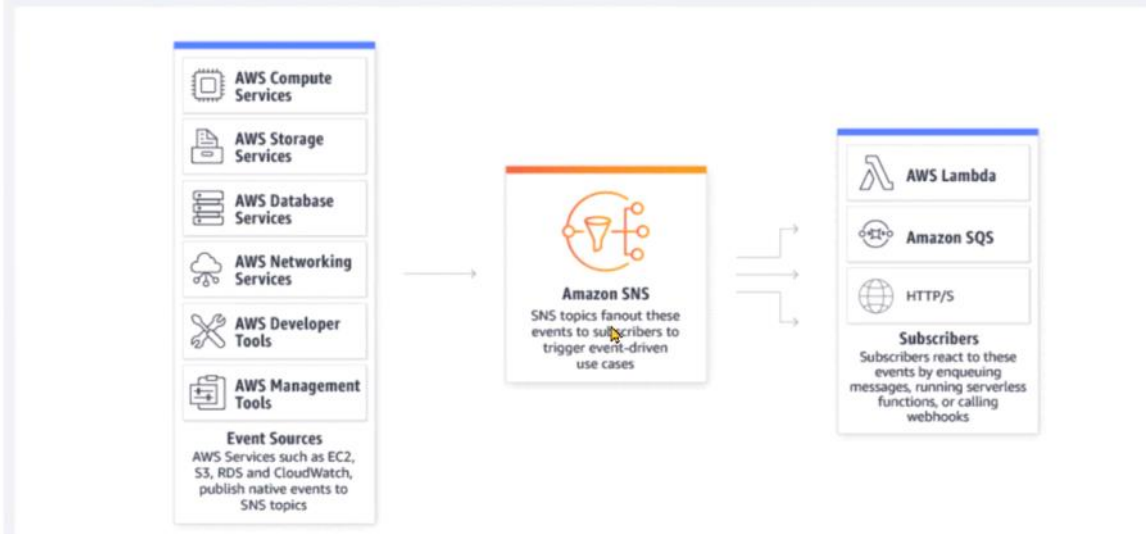
What is SNS?

SNS is integrated with many AWS Services

- CloudWatch (Alarms/Events)
- S3 (Bucket Events)
- CloudFormation (State changes etc.)
- Auto Scaling Groups
- And many others **can invoke SNS.**

SNS

What is SNS?



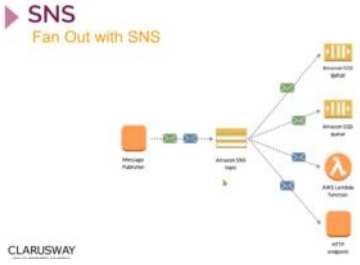
Farkli protokold gelen mesajlari iletmesine denir

SNS

What is SNS?

Application-to-Person (A2P)

Burda application Bir topic de mesaj yaziyoruz lambdaya sqs e http s e gidiyor.
Bir topic olusturuoruz bu topic i birden fazla kullanici ya gondereiliyoruz veya birden farkli protokloldeki kisye gonderebiliyoruz



SNS

Pricing

- Amazon SNS has **no upfront costs** and you can **pay as you go**. You pay based on the number of notifications you publish, the number of notifications you deliver, and any additional API calls for managing topics and subscriptions. Delivery **pricing varies by endpoint type**. You can get started for free with the SNS free tier.

SQS & SNS
Hands on

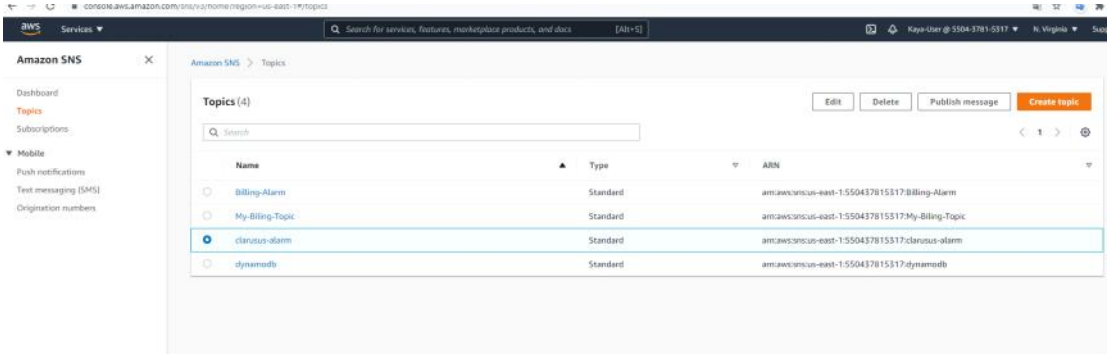
- Hands-on!!!
- Let's go to the AWS Management Console

APIGWAY

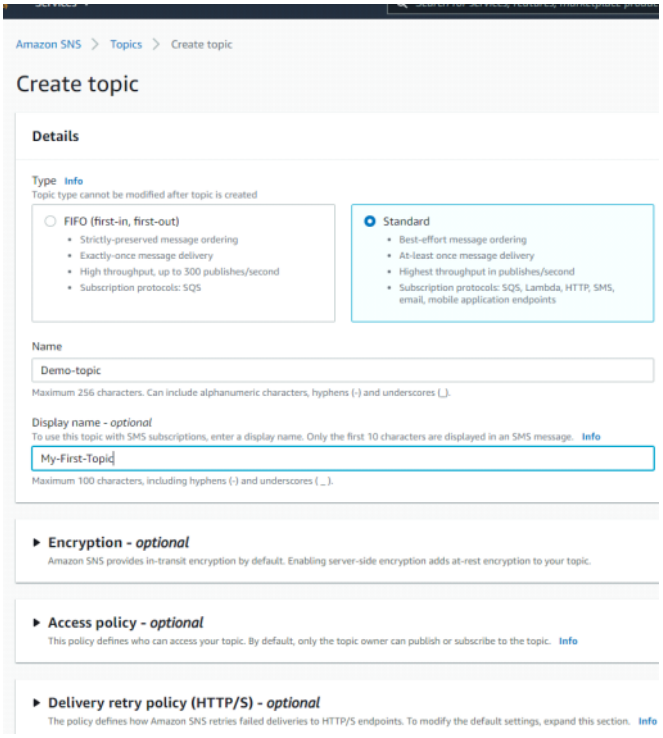
SNS Hands-on
Part 1 - Creating Topic, Subscription and Publishing Message
Step 1 : Create Topic

- Go to `SNS` service on AWS console.

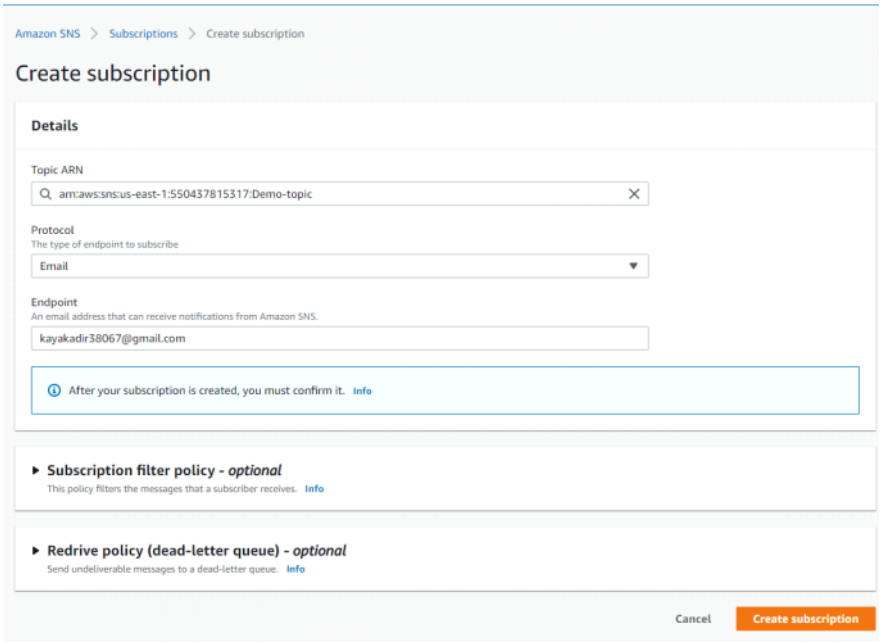
- Click `Topics` >> `Create topic`.

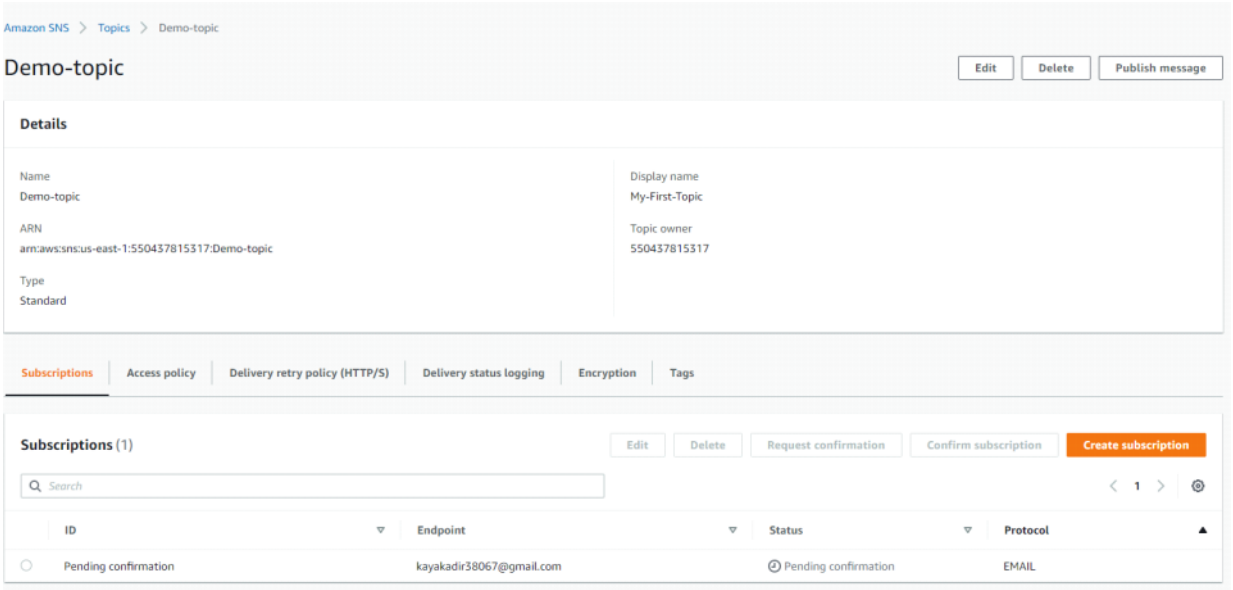


- `Details`.
- Type: Standart
- Name: Demo-topic
- Display Name: My-First-Topic
- Keep rest default.
- Click `Create`.



Step 2 : Create Subscription
- On Demo-topic page Click `Create subscription`.
- `Details`.
    - Topic ARN: arn:aws:sns:us-east-1:046402772087:Demo-topic (comes default)
    - Protocol: Email
    - Endpoint: test@example.com (your mail here)
- Keep rest default.
- Click `Create subscription`.
- Show `Status` >> `Pending Confirmation`.

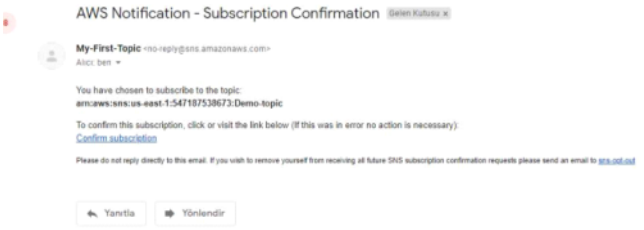




Step 3 : Confirm subscription

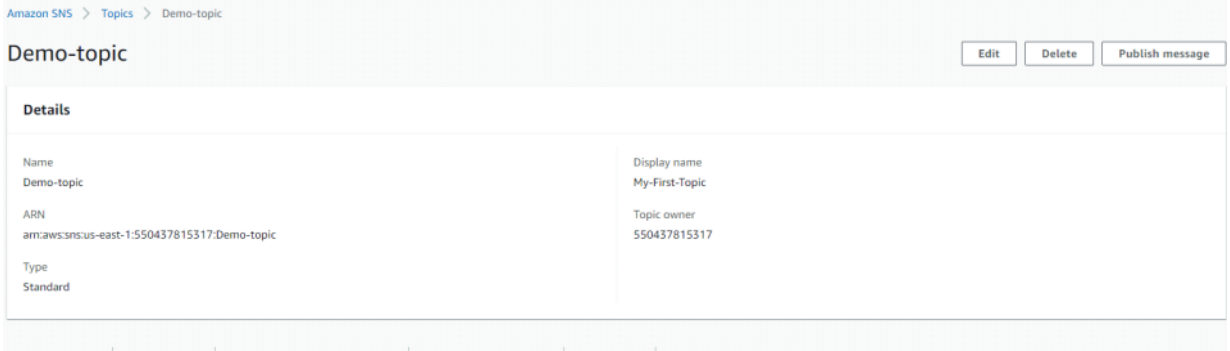
- Go to your mail and check inbox.
-
- Open mail from `My-First-Topic`.
- Click `Confirm subscription`.
- Go back to Demo-topic subscription and refresh the page.
- Show `Status` >> `Confirmed`.

Maile gidip confirmation aciyoruz



Step 4 : Publish message

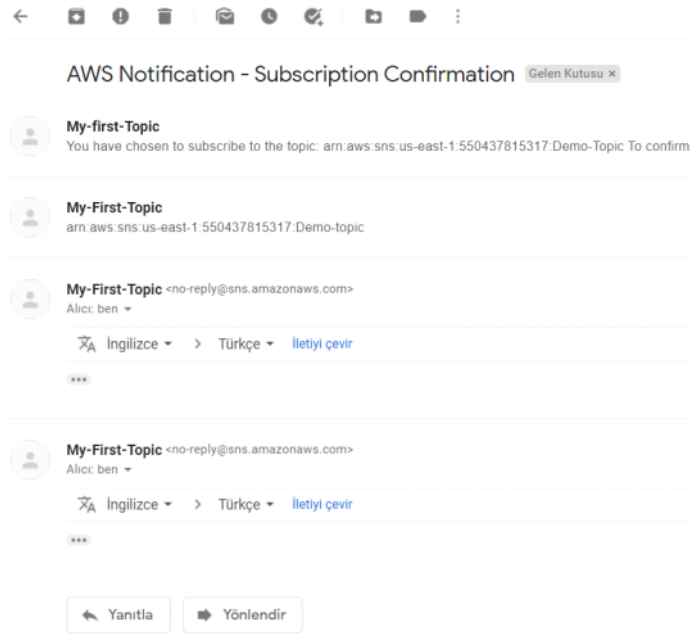
- Select `Topics` from the left-hand menu and click on `Demo-topic`.
- Click `Publish message`.



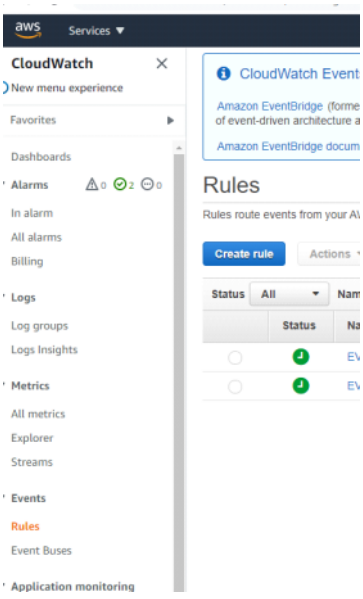
- `Message details`.
    - Subject: sns-test
    - Time to Live (TTL) : -
- `Message body`.
    - Message structure: Identical payload for all delivery protocols.

    - "This is a test message for sns inclass session".
- Keep rest default.
- Click `Publish message`.
- Go to your mail and check inbox.
- Open mail from `My-First-Topic`.
- Show the topic and the test message sent from SNS.

En alttta publish yapiyoruzx Mailimizi kontrol ediyoruz Mesaj endpoint suscription olarak mail adresini verdigiiz icin oraya gitmi

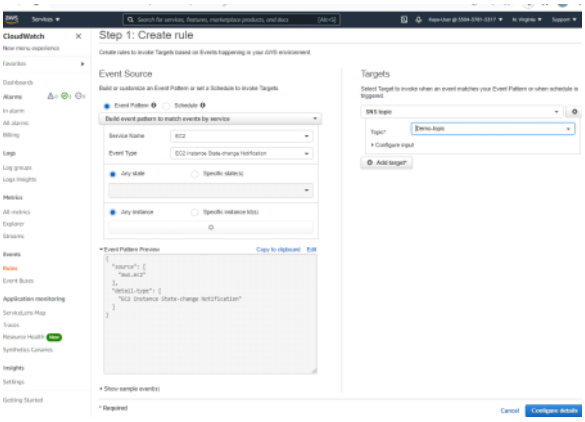


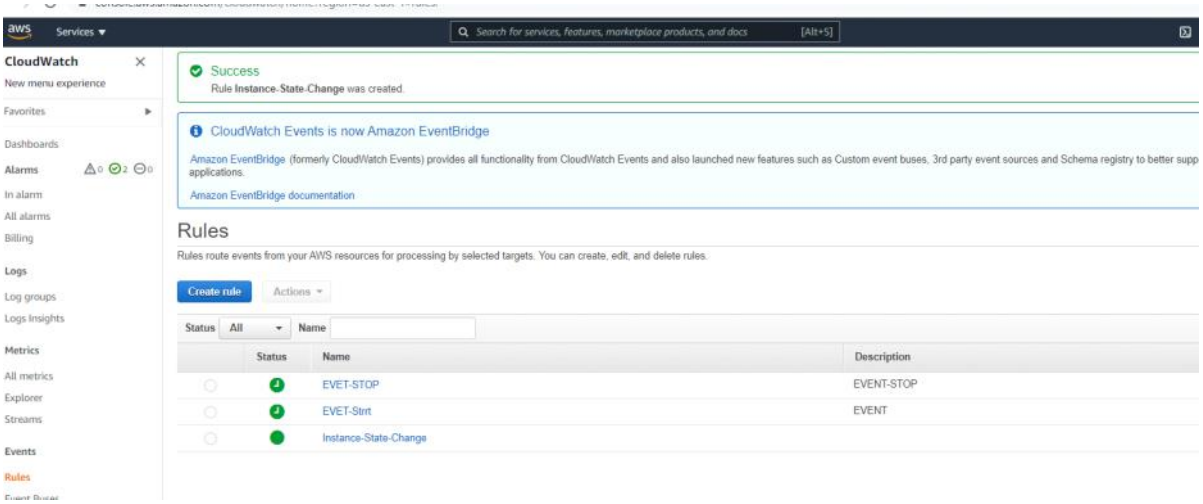
Part 2 - Creating a CloudWatch Event to Invoke SNS
Step 1 : Create Rule
- Go to `CloudWatch` service on AWS console.
- Click `Events` >> `Rules` from the left-hand menu.



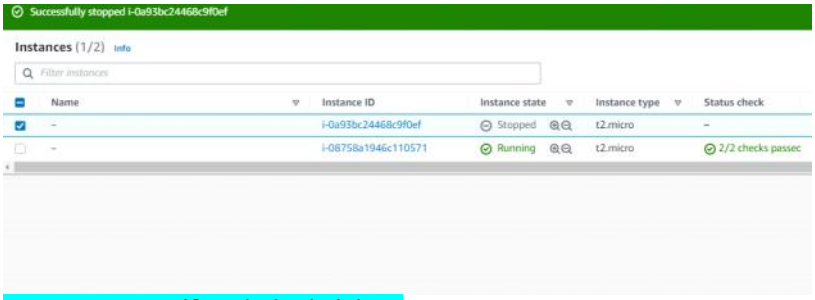
- Click `Create Rule`.
- `Event Source`
    - Event Pattern
    - Service Name : EC2
    - Event Type : EC2 Instance State-change Notification
- `Targets` >> Add target
    - SNS topic
    - Topic : Demo-topic

- Click `Configure details`.
    - Name: Instance-State-Change
    - Keep rest default.
- Click `Create Rule`.

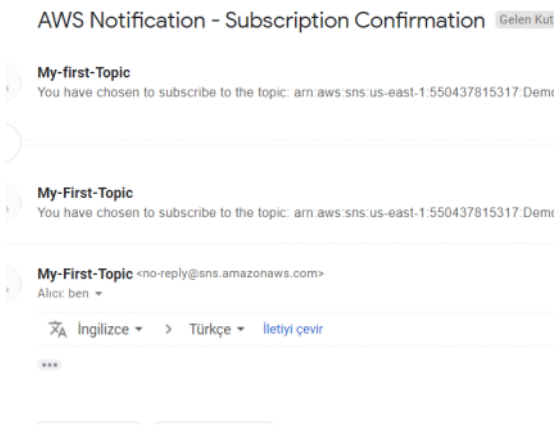




Step 2 : Invoke SNS
- Go to `EC2` service on AWS console.
- Change state of any available instance like starting a stopped one (Launch a new one if you don't have any).



- Go to your mail and check inbox.
- Open mail from `My-First-Topic`.
- Show the topics and the messages sent from SNS.
- Delete/terminate the resources created.


AWS Notification - Subscription Confirmation
Gelen Kut
My-first-Topic
You have chosen to subscribe to the topic: arn:aws:sns:us-east-1:550437815317:Demo
My-First-Topic
You have chosen to subscribe to the topic: arn:aws:sns:us-east-1:550437815317:Demo
My-First-Topic <no-reply@sns.amazonaws.com>
Alıcı: ben
İngilizce
Türkçe
İletiyi çevir

AWS SQS & SNS

AWS SQS & SNS

Wednesday, 18 August 2021 20.00

Table of Contents

Amazon Simple Queue Service (SQS), dağıtılmış sistemleri ve sunucusuz uygulamaları birbirinden ayırmanıza ve ölçeklendirmenize imkan tanıyan, tam olarak yönetilen bir iletileri kuyruğa alma hizmetidir. SQS, mesajlaşmaya yönelik ara yazılımları yönetmenin ve işletmenin getirdiği karmaşıklık ile ek iş yükünü ortadan kaldırarak geliştiricilerin farklı işlere odaklanmasına imkan tanır. SQS ile ileti kaybı yaşamadan veya diğer hizmetlerin erişilebilir olmasına gereksinim duymadan yazılım bileşenleri arasında dilediğiniz hacimde ileti gönderebilir, depolayabilir ve alabilirsiniz. AWS konsolunu, tercih ettiğiniz Komut Satırı Arabirimini veya SDK'yı ve üç basit komutu kullanarak SQS'yi dakikalar içinde kullanmaya başlayabilirsiniz.

SQS iki tür ileti kuyruğu sunar. Standart kuyruklar tarafından en yüksek aktarım hızı, en iyi çaba ilkesine göre sıralama ve en az bir kez teslim olanakları sunulur. SQS FIFO kuyrukları, iletilerin tam olarak bir kez ve tam olarak gönderildikleri sırada işlenmesi konusunda güvence sağlayacak şekilde tasarlanmıştır.==> https://aws.amazon.com/tr/sqs/

SQS servisi Elastic Load Balancer' a bir alternatif servis diyebiliriz

SQS
What is SQS?

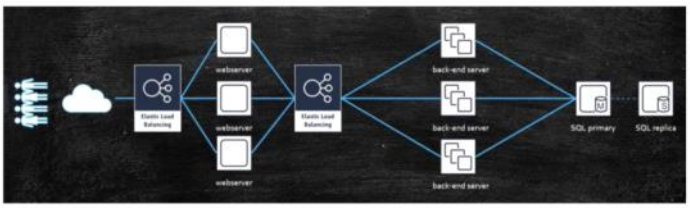
- Amazon **Simple Queue Service (SQS)** is a fully managed **message queuing service** that enables you to decouple and scale microservices, distributed systems, and serverless applications.

SQS
What is SQS?

Producer	Client, application, mesaj gonderen taraf
Consumer	Mesaji isleyen taraf

SQS

What is SQS?



Online otel hizmeti
Kullanicilar front end e baglanip rezervasyon islemi ve kredi karti islemleri yapacak.
Front end back end e yonlendirecek. Back end de cevap verilecek mesajlari front ende diger kismini da database ye gonderecek

Normalde arada load balancerlar var ve yuku dengelemektedir. Ya yuk artar ve load balancer gibi dengeleyicilerde yuku karsilayamazlarsa. Yuk artarsa front end talepleri back ende ulasamayacak ve islem gerceklesemedi hatasi doner

SQS yukaridaki gorseldeki gibi gelen mesajlari beklettigi bir kova sistemi uygulamaktadir. Ve musteriye isleminiz yapiliyor bir sure bekleyiniz seklinde bilgilendirme yapilmaktadir (artik musteriye hata mesaji gitmemektedir)

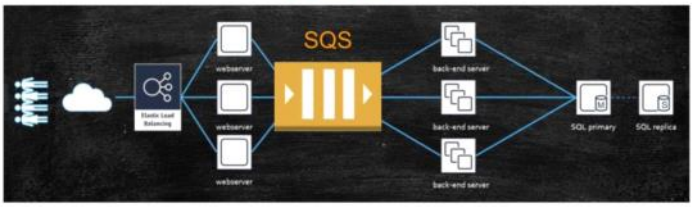
https://aws.amazon.com/sqs/

Amazon Simple Queue Service (SQS), mikroservisleri, dağıtılmış sistemleri ve sunucu olmayan uygulamaları ölçeklendirmenize olanak tanıyan tam yönetilen bir mesajlaşma hizmetidir. SQS, karmaşık aracılık ve üst düzey yönetim gereken yazılımlar arası mesajlaşma işlemlerini basit ve etkili hale getirir.

SQS

What is SQS?

Decoupling



Load balancer yerine SQS eklenmis oldu ve belli bir sureligine mesajari muhafaza edebiliriz (14 gun)

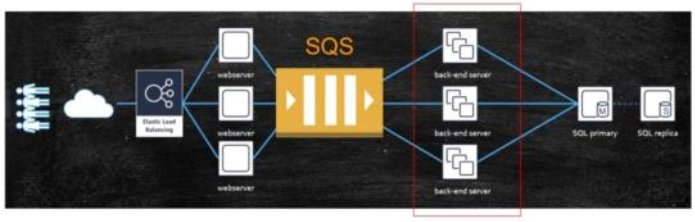
What is decouple SQS?
SQS lets you decouple application components so that they run and fail independently, increasing the overall fault tolerance of the system.
Multiple copies of every message are stored redundantly across multiple availability zones so that they are available whenever needed.

SQS

What is SQS?

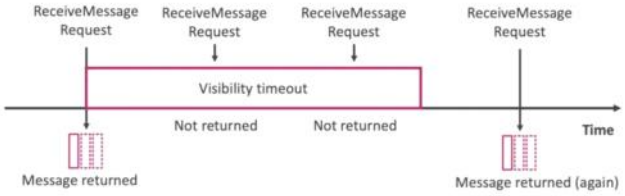
CloudWatch Metric – Queue Length
ApproximateNumberOfMessages

ASG



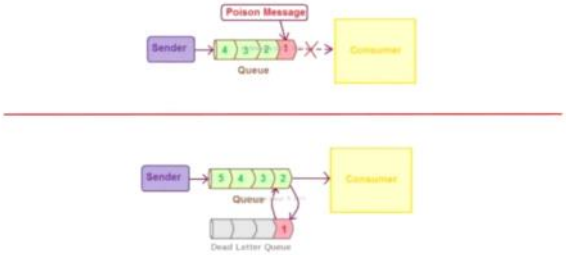
SQS

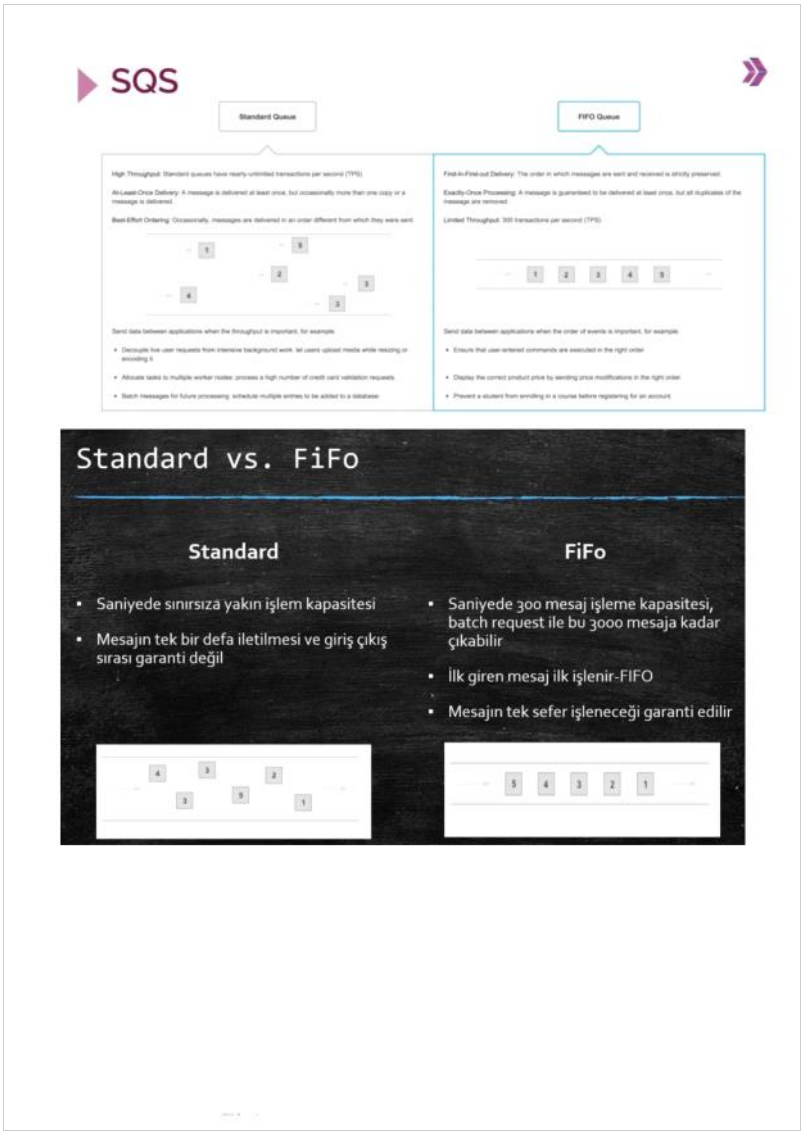
Message Visibility Timeout

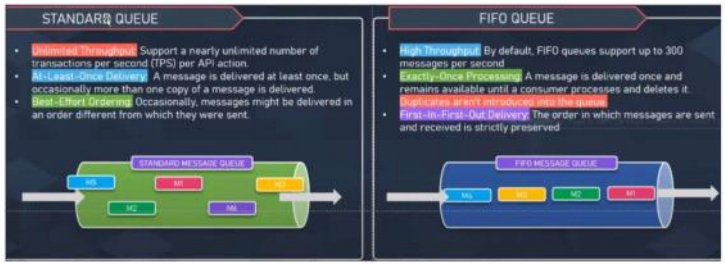


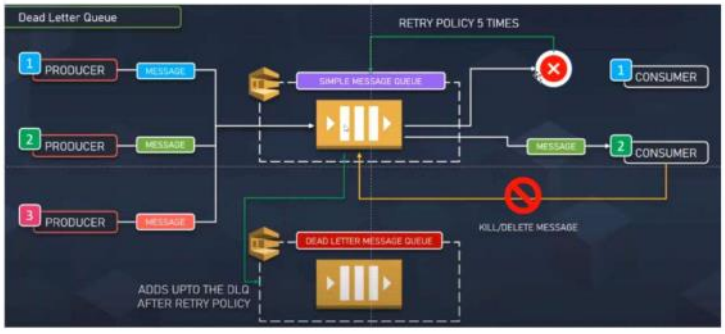
SQS

Dead Letter Queue (DLQ)




SQS
Standard Queue
FIFO Queue
High Throughput: Standard queues have nearly-unlimited transactions per second (TPS).
At-Least-Once Delivery: A message is delivered at least once, but occasionally more than one copy or a message is delivered.
Best-Effort Ordering: Occasionally, messages are delivered in an order different from which they were sent.
Send data between applications when the throughput is important, for example:
Decouple live user requests from intensive background work: let users upload media while resizing or encoding it.
Allocate tasks to multiple worker nodes: process a high number of credit card validation requests.
Batch messages for future processing: schedule multiple entries to be added to a database.
First-In-First-Out Delivery: The order in which messages are sent and received is strictly preserved.
Exactly-Once Processing: A message is guaranteed to be delivered at least once, but all duplicates of the message are removed.
Limited Throughput: 300 transactions per second (TPS).
Send data between applications when the order of events is important, for example:
Ensure that user-entered commands are executed in the right order.
Display the correct product price by sending price modifications in the right order.
Prevent a student from enrolling in a course before registering for an account.
Standard vs. FiFo
Standard
Saniyede sınırsıza yakın işlem kapasitesi
Mesajın tek bir defa iletilmesi ve giriş çıkış sırası garanti değil
FiFo
Saniyede 300 mesaj işleme kapasitesi, batch request ile bu 3000 mesaja kadar çıkabilir
İlk giren mesaj ilk işlenir-FIFO
Mesajın tek sefer işleneceği garanti edilir





SQS Pricing

- Pay only for what you use
- AWS **Free Tier** includes **1 million requests** with Amazon Simple Queue Service (SQS).

https://aws.amazon.com/sqs/pricing/

2 SNS

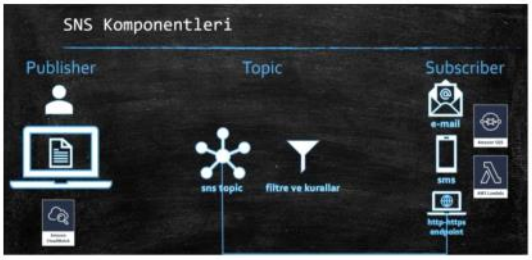
SNS
What is SNS?

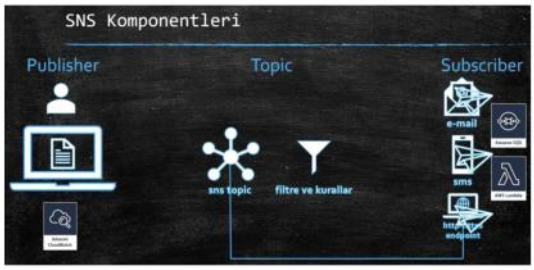
Amazon SNS

- Amazon **Simple Notification Service** (Amazon SNS) is a managed service that provides message delivery from **publishers** to **subscribers** (also known as **producers** and **consumers**).

https://aws.amazon.com/tr/sns/

Amazon Simple Notification Service (SNS), mesajların uç noktalara ve müşterilere abone olarak almalarını sağlamak için esnek, tamamen yönetilen bir hubsalt mesajlaşma ve mobil bildirimler servisidir. SNS ile, dağıtılmış sistemler ve hizmetler ve mobil cihazlar dahil olmak üzere çok sayıda aboneye mesaj gönderebilirsiniz. Tüm uç noktalarınıza her ölçekte bildirim göndermek, işletmek ve güvenilir şekilde göndermek kolaydır.





SNS
What is SNS?

- Clients can subscribe to the **SNS topic** and receive published messages using a supported protocol, such as Amazon SQS, AWS Lambda, HTTP, email, mobile push notifications, and mobile text messages (SMS).

SNS
What is SNS?

Application-to-Application (A2A)

SNS

What is SNS?

Application-to-Person (A2P)

Bir topic olusturuluyor ve ayni anda birden cok kullaniciya gonderebiliyoruz.

SNS

What is SNS?

SNS is integrated with many AWS Services

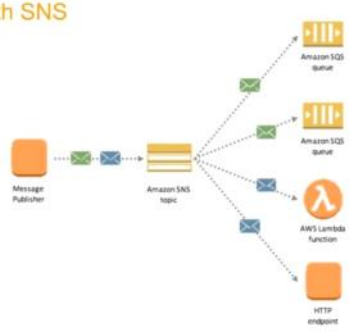
- CloudWatch (Alarms/Events)
- S3 (Bucket Events)
- CloudFormation (State changes etc.)
- Auto Scaling Groups
- And many others **can invoke SNS.**

SNS

What is SNS?

SNS

Fan Out with SNS



CLARUSWAY

SNS
Pricing

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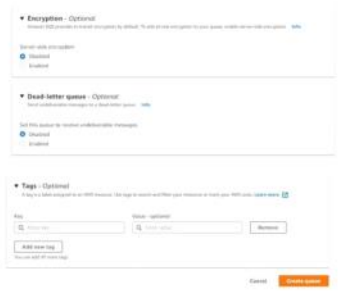
https://aws.amazon.com/sns/pricing/

SQS & SNS
Hands on

- Hands-on!!!
- Let's go to the AWS Management Console

https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-delay-queues.html

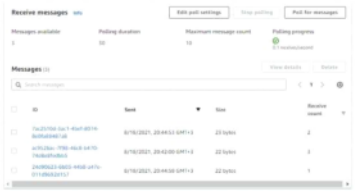


Manuel olarak mesaj gonderecegiz

Send message diyelim

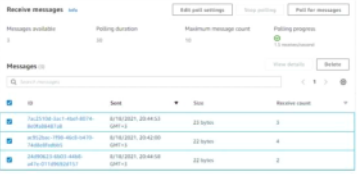
Menusune basinca bir tane mesaj geldigini gorebiliriz

Poll ==> mesaji request sayesinde consumer a gonderiliyor yani cekiliyor



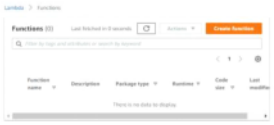
Gonderdigim diger mesajlar

https://aws.amazon.com/blogs/compute/building-loosely-coupled-scalable-c-applications-with-amazon-sqs-and-amazon-sns/



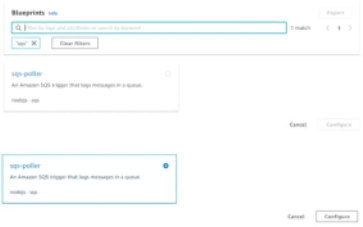
Delete menusu ile silebiliriz

Bir tane **Lambda function** olusturacagiz



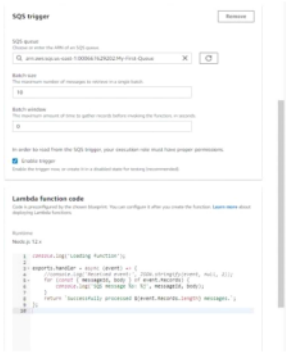
Aws nin bize hazir sundugu template/function kullanacagiz

Sqs yazip enter diyelim

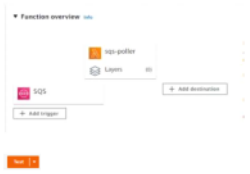


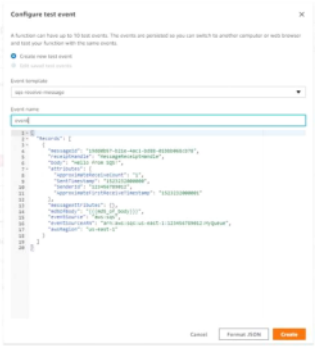
Permission otomatik geldi

Yukariya tikladigimizda my first queue otomatik geliyor



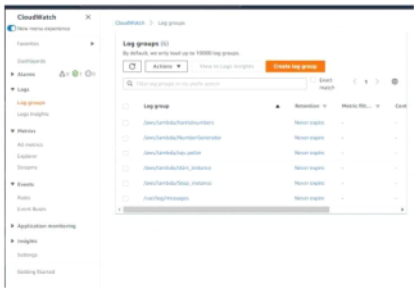
Function olustur ve triger da sqs





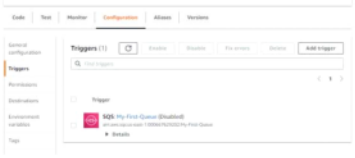
- Create and test

Cloudwatch ekranina gidelim



Sqs-poller adi altinda log grubunun olustugunu gorebiliriz

Lambda ekranina gidelim

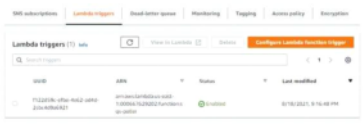


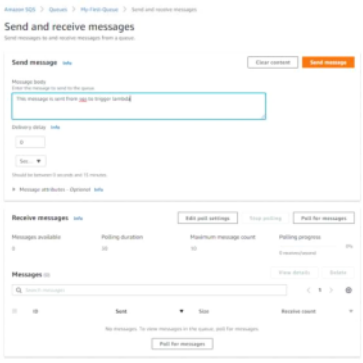
Enable edelim

Sqs i bu function icin enable ettik

Amacimiz : biz consumer yerine lambda yi configure ettik. Mesaj koydugumuzda consumer yerine lambda mesaji cekecek ve cloudwatch e yazacak.

BMW Group, sürücülerine dinamik olarak güncellenen harita bilgileri sunmak için BMW 7 Serisi araçlardan sensör verilerini toplayan bağlı araç uygulaması için AWS'yi kullanıyor. BMW, sensör olarak araç (CARASSO) adını verdiği yeni hizmetini Amazon SQS, Amazon S3, Amazon DynamoDB, Amazon RDS ve AWS Elastic Beanstalk'tan yararlanarak yalnızca altı ayda oluşturdu.





Lambda da mesaj log kayitlarini gorebiliriz

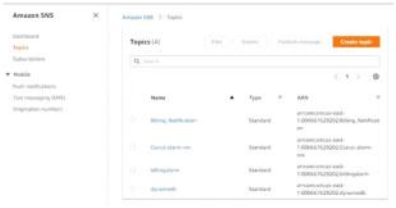
Send diyelim

SQS & SNS

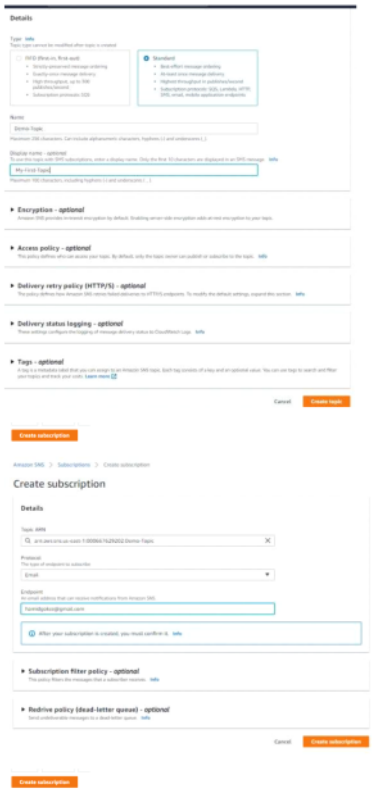
Hands on

- Hands-on!!!
- Let's go to the AWS Management Console

```
## Part 1 - Creating Topic, Subscription and Publishing Message
```



Create topic and standart



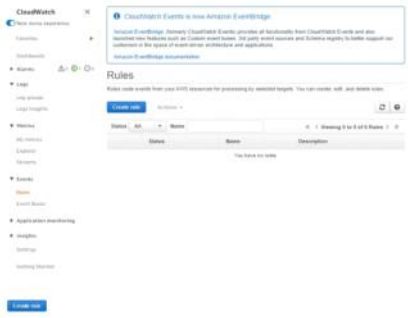
Pending statusunde oldugunu gorebiliriz

Mail olarak confirmation message gelecek

Onay sonrasi statu degisti

Publish message diyelim

Message e maile (end point) gitti



Bir tane ec2 acalim (ozellikler onemli degil)

Ec2 servisine gecelim. Herhangi instance de durum degisikliginide bize mail atacak

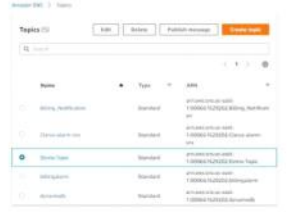
- Instance yi stop veya start edelim

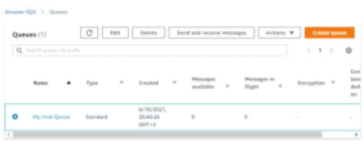
Pending statusunde oldugunu gorebiliriz

Temizlik asamasi:

Cloudwatch rule silelim

Devamli mesaj gelmesini istemiyoruz




Amazon SQS > Queues
Queues (1)
Edit
Delete
Send and receive messages
Actions
Create queue
Name
Type
Created
Messages available
Messages in flight
Encryption
My-First-Queue
Standard
0
0