

Tech Talk: (2019_1203-CON)

Fargate Spot

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Agenda

- What is Fargate Spot?
- Benefits of Fargate Spot
- What applications should I use with Fargate Spot?
- How is it different from Amazon EC2 Spot?
- Demo 1 – using 100% Fargate Spot
- Demo 2 - Mixing Fargate purchase options
- Fargate purchase options
- Best practices
- Resources

What is Fargate Spot?

New pricing option for Fargate – up to 70% off of Fargate prices

Caveat – Fargate tasks can be interrupted with a 2 min notification.



The screenshot shows a GitHub issue page for the repository 'aws / containers-roadmap'. The issue title is 'Spot Pricing for Containers (Fargate) #31'. The issue is marked as 'Open' and was opened by user 'tedivm' on December 11, 2018, with 3 comments. The page includes navigation tabs for Code, Issues (385), Pull requests (1), Actions, Projects (1), Security, Insights, and Settings. At the top right, there are buttons for Watch (496), Star (2k), and Fork (90). At the bottom right of the issue header, there are 'Edit' and 'New issue' buttons.

Benefits of Fargate Spot

Up to 70%

Steep discounts for applications that are fault tolerant and time insensitive

Migration friendly

We use the same SIGTERM event which is what customers listen today to perform cleanup

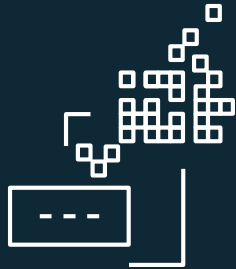
Application first controls

Every service can define a mix of Fargate and Fargate Spot

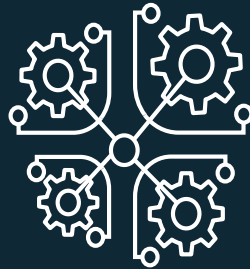
What applications should I use with Fargate Spot?

Fargate Spot is ideal for:

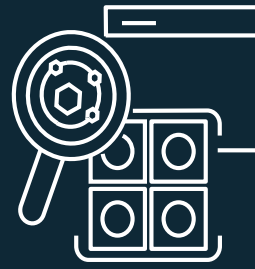
- ✓ Fault-tolerant
- ✓ Loosely coupled
- ✓ Stateless workloads



Big data



CI/CD



Web services



HPC

How is it different from Amazon EC2 Spot?



Amazon EC2 Spot

Spare EC2 Capacity

Save up to 90% over On-Demand

Can be *reclaimed* by EC2 (with two minute warning)

Follow EC2 Spot best practices – instance flexibility and use capacity optimized allocation strategy for ASGs.



AWS Fargate Spot

Spare compute Capacity

Save up to 70% over standard Fargate

Can be *reclaimed* (with two minute warning)

Automatic diversification

Demo 1 – Using 100% Fargate Spot

Update cluster

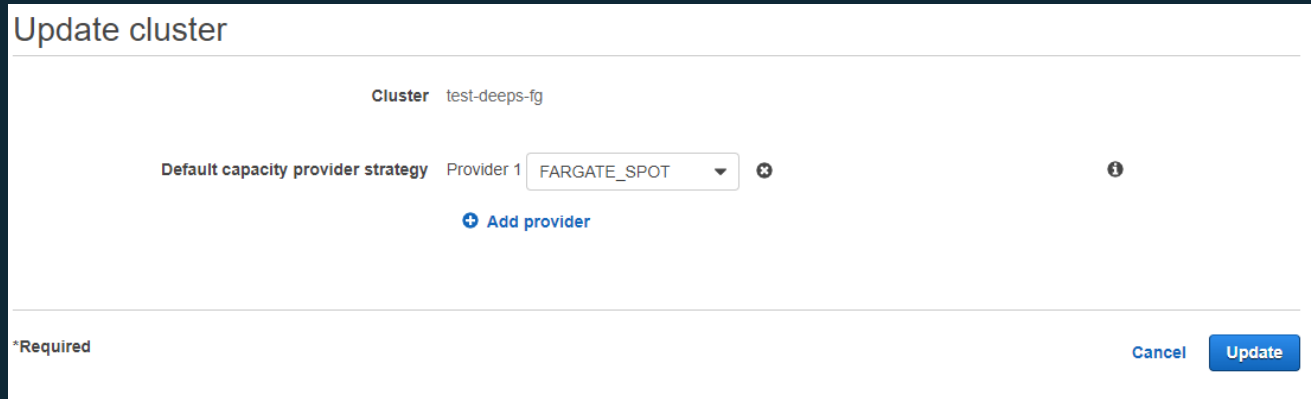
Cluster test-deeps-fg

Default capacity provider strategy Provider 1 FARGATE_SPOT ⓘ

+ Add provider

*Required

Cancel Update



Good fit for 100% Spot:

- ETL
- Batch processing
- Dev/test environments

Demo 2 – Using a mix of Fargate purchase options

Update cluster

Cluster test-deeps-fg

Default capacity provider strategy

Provider 1	FARGATE	Base	5	Weight	2	⊗	?
Provider 2	FARGATE_SPOT	Base		Weight	1	⊗	

+ Add provider

*Required

Cancel Update

Good fit - Long running services that need baseline compute with intermittent burst compute needs

Fargate Spot Interruption events

```
// ECS Event after an interruption
{
  ...
  'detail-type': 'ECS Task State Change',
  source: 'aws.ecs',
  account: '123456789012',
  ...
  detail: {
    ...
    desiredStatus: 'STOPPED',
    lastStatus: 'RUNNING',
    stoppedReason: 'Your Spot Task was interrupted.',
    stopCode: 'TerminationNotice',
    taskArn: 'arn:aws:ecs:us-west-2:123456789012:task/8c301e27-f5fd-4e1d-b837-221db7285ce4',
    ...
  }
}
```

Fargate Spot Interruption events

```
aws ecs describe-tasks --tasks 8c301e27-f5fd-4e1d-b837-221db7285ce4
```

```
{
  "tasks": [
    {
      "taskArn": "arn:aws:ecs:us-west-2:123456789012:task/8c301e27-f5fd-4e1d-b837-221db7285ce4",
      "clusterArn": "arn:aws:ecs:us-west-2:334552443286:cluster/default",
      "desiredStatus": "STOPPED",
      "lastStatus": "RUNNING",
      ...
      "stopCode": "TerminationNotice"
      "stoppedReason": "Your Spot Task was interrupted.",
      ...
    }
  ]
}
```

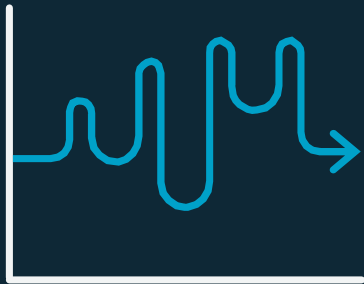
Interruption cloud watch logs

Filter events	
Time (UTC +00:00)	Message
2019-11-10	
▶ 21:38:28	Sleeping for 10 seconds
▶ 21:38:28	2019-11-10 21:37:48.138046
▶ 21:38:28	Sleeping for 10 seconds
▶ 21:38:28	2019-11-10 21:37:58.146623
▶ 21:38:28	Sleeping for 10 seconds
▶ 21:38:28	2019-11-10 21:38:08.149398
▶ 21:38:28	Sleeping for 10 seconds
▶ 21:38:28	2019-11-10 21:38:18.150767
▶ 21:38:28	Sleeping for 10 seconds
▶ 21:38:28	Gracefully shutting down

Fargate Purchase options

Fargate

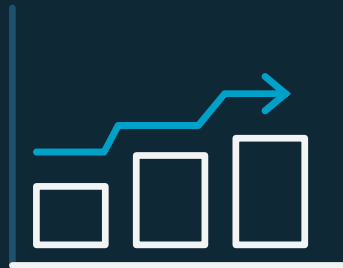
Pay for containers per-second with no long-term commitment



Capacity needs can change rapidly

Compute Savings Plan

Make a 1 or 3-year commitment and receive a significant discount



Baseline compute needs known in advance

Fargate Spot

Spare capacity with savings up to 70% off Fargate standard pricing



Fault-tolerant, flexible workloads

Best practices

- Use an ECS Service instead of your own scheduler
- Don't rely 100% on Fargate Spot for critical workloads with SLA
- Configure a base number of regular Fargate Tasks
- Applications should be fault-tolerant. Handle interruptions gracefully by catching SIGTERM
- Great for: stateless, fault-tolerant workloads

Resources

<https://aws.amazon.com/blogs/aws/aws-fargate-spot-now-generally-available/>

https://docs.aws.amazon.com/AmazonECS/latest/developer-guide/AWS_Fargate.html#fargate-spot

<https://www.youtube.com/watch?v=OpNBldEww0Q&t=207s>

<https://www.twitch.tv/videos/516666118?t=2h59m40s>