AWS Savings Plans vs Reserved Instances

gorillastack.com/news/aws-savings-plans-reserved-instances/

Amazon has announced Savings Plans, a pricing and discount plan for EC2 and fargate. We've often thought the Reserved Instance (RI) model to be overly complex and in many cases more disadvantageous than it is useful. That's why we've never created automation for RIs.

Whats wrong with Reserved Instances

For an organization that preaches the power of on-demand, our main objections to RIs are the lack of flexibility that you get by committing to a specifc instance type for 1 to 3 years. One of the most fundamental promises of the cloud is that its truly on demand and elastic. You have any number of services at your fingertips and the freedom to turn them on and off as you see fit, and to pay accordingly.

Amazon has adapted over the years to unleash people from this burden by permitting the resale of unwanted RIs on a secondary marketplace. The other flexibility offered by Amazon is the ability for organizations to buy convertible RIs that permit their buyers to change the Availability Zone, instance size and networking type. Both of these options bring with them increased discounts but also a great deal of complexity in the purchasing and ongoing management of the Reserved Instances.

Reserved Instance Tooling

From there have sprouted a number of tools and consultants who's sole raison d'etre is to untangle the spaghetti of billing and compute confusion unleashed by these programs, in many cases undermining the cost efficiencies that were intended by Reserved Instances in the first place.

More pertinently, organizations who figure out how to use RIs effectively see few of the benefits of adjusting capacity to meet demand as they're mostly locked in to paying for continuous usage. There are of course ways around this with striking the right mix of Reserved Instance, On-Demand (and often Spot) but they require complicated calculations and implementations.

AWS EDP

At GorillaStack we've always felt that EDP (Enterprise Discount Programs), whereby an organization can receive a discount for an overall financial incumbancy is a far better way to reward an organization's ongoing commitment to AWS without burdening the end user with onerous and expensive complexity. EDPs are usually reserved for organizations spending hundreds of thousands of dollars a month on AWS and thats why we welcome this "EDP lite" or "EDP hybrid".

AWS Savings Plans allow organizations to take some (but not all) of the simplicty of on-demand cloud while leveraging the benefits tradtionally reserved for RIs and EDPs.

AWS Savings Plans, the new discount strategy

With Amazon's announcement of their new pricing program, a lot of organizations are asking how to distinguish between Reserved Instances and Savings Plans.

So what exactly are they, should organizations change their approach to Amazon Web Services cost management and whats the best way to think about Savings Plans in the mix of Reserved Instances and other other cost optimization strategies including elasticity automation, rightsizing, spot and EDPs?

What are AWS Savings Plans?

There are 2 types of Savings Plans: ***Compute Savings Plans*** and ***EC2 Instance Savings Plans***. Compute Savings Plans can be applied automatically regardless of family, size, region etc whereas EC2 Savings Plans require you to commit to the same family in the same region. Both require commitments of either 1 year or 3 years.

Compute Savings Plans can be used for EC2 instances and Fargate. The program seems to be designed as a hybrid between AWS's Enterprise Discount Program and AWS's longstanding Reserved Instances pricing structure. Essentially you can commit to a predetemined amount of ongoing compute for either 1 year or 3 years and in return receive a discount for that commitment. In the case of Compute Savings Plans, unlike Reserved Instances you don't have to apply that commitment to a certain type of instance or family of instances, you're simply agreeing to spend that much on overall EC2 usage or Fargate usage.

To be clear, it doesn't matter which type of instances within EC2 or Fargate that you spend the commitment on, nor does it matter how many hours you run the services for.

In the case of EC2 Savings Plans, they're a lot more similar to the classic Reserved Instance, requiring an organisation to commit to an individual instance family in a specific region. They differ from RIs in as much as you can change the Instance Type within the family.

Compute Savings Plans

- Highly flexible
- Discounts up to 66%
- Can change region, family, size, AZ, OS or tenancy
- Can be applied to EC2 and Fargate

EC2 Savings Plans

- Less flexible but lowest prices
- Must commit to individual instance family in a region
- Can change usage withing a family in a region

How much discount can I get with AWS Savings Plans?

The discounts for AWS's Savings Plans program vary depending on the length of your commitment and the plan your committing to. Like RIs, Amazon offers 1 and 3 year terms with No Upfront (pay monthly), Partial Upfront (pay some at the beginning and some monthly) and All Upfront (pay for everything right away). The discounts scale with your commitment but can be up to 72%.

At time of launch in November 2019, you can expect the following discounts:

AWS Savings Plans and Reserved Instances Comparison

Unit	Reserved Instance	EC2 Instance Savings Plan	Compute Savings Plan
Average 1y Discount	38%	29%	29%

Unit	Reserved Instance	EC2 Instance Savings Plan	Compute Savings Plan
Average 3y Discount	58%	58%	51%
Instance Family	Fixed	Fixed	Flexible
Instance size	Fixed (except linux)	Flexible	Flexible
Geography	1 Region	1 Regions	Flexible
OS	Fixed	Flexible	Flexible
Service	EC2 / RDS	EC2	EC2 / Fargate

Advantage of AWS Savings Plans over AWS Reserved Instances

- With Reserved Instances, you're locking yourself into a certain instance type for 1 or 3 years but your requirements may change in that time.
- Prices may change over your commitment period but you'll see no benefit of that reduction with Reserved Instances
- Savings Plans allow you to take advantage of a discount without committing to use it on any specific instance type (although flexibility varies between the Compute Plan and the EC2 Instance Plan)
- Savings Plans can be applied to Fargate as well as EC2 although it cannot be applied to RDS.
- The complexity of RIs has been eliminated with Savings Plans - there is far less planning around which type of RI, which family and wether you'll want to later convert the RI or sell it on the marketplace.
- There's also less infrastructure planning - organizations no longer have to so deeply plan complex infrastructure 1-3 years out, they can simply commit to using a certain amount of compute.
- With Savings Plans, the fundamentals allow you to flexibly transfer workloads between instance types to meet demand and leverage something akin to elasticity, although you gain no advantage from down time. With Reserved Instances, an organization sees no advantage from switching instance types or families as they're committed to 24/7/365 usage of a specific instance type regardless.

Advantage of AWS Reserved Instances over Savings Plans

- You can get shorter term RIs on the marketplace
- You can get discounts for RDS as well as EC2 (but not Fargate).
- The discounts are larger and at the top end may be over 60% in the case of some 3 year all upfront terms.

Should you use Savings Plans?

We believe so, but even with Savings Plans it's important that you plan correctly so that you make the correct commitment. If you're coming off of RIs (or even if you're not), make sure that your organization takes full account of what an instance scheduler for EC2 can provide when you calculate savings through elasticity and maybe consider using a tool like GorillaStack's Cost Optimization to drive those savings.

Don't get caught out by investing in 24/7/365 prices or specific instance types when you're now much more free to take advantage of AWS' on demand model. Bear in mind that you don't have to buy your whole year up front with on-demand. With Savings Plans you may want to consider drip-feeding your pre-purchases on a month-by-month basis as you become more comfortable with this new model of thinking about AWS discounting.