IronCode RDS right sizing tutorial

How to determine if the RDS database size is optional or change is needed?

1. Check the metrics for performance data:  
   General rule of a thumb an instance is optimized if its usage is around 50-60% on average and there are not critical jitters towards 90-100%
   1. Go to AWS console RDS service
   2. Click on the Databases option on the left-hand side.
   3. Click on the database ID to be investigated
   4. Change to Monitoring tab
   5. Check the following metrics
      1. CPUUtilization
         1. Check CPU Credit related metrics as well if the instance type is t\* as it is a burstable instance which can burst above its baseline CPU.
      2. FreeableMemory
      3. NetworkReceiveThroughput
      4. NetworkTransmitThroughput
2. Consider your Usage needs.
   1. Before going for any changes based on step 1. always consider you application, network or user base needs.  
      For example it could be that your database runs on 20% CPU usage for most of the day but there are high peaks where it goes up around 90% CPU usage for a short period of time as user\application grows. In that case you need to consider changing the database type to a lower one, would cause any outage, or delays into your application, worsening the end user experience.
3. Frequently check AWS Billing and Cost Management \ Cost Optimization Hub \ Saving opportunities.
   1. If AWS recognizes that you can downsize an instance it will list it out.
   2. As I wrote in Step 2, ALWAYS consider your Usage needs before doing any changes, as AWS does not know about it.
4. Consider using Reserved Instances and pay upfront
   1. This makes the instances not only cheaper, but if you have a certain amount of budget for RDS instances which you would not like to go above, it can give you the opportunity to reserve a bigger instance type which is more future proof for possible load increase.
   2. Before doing any commitment it is recommended to check [AWS Cost Calculator](https://calculator.aws/#/createCalculator/RDSPostgreSQL), and or this third party tool <https://instances.vantage.sh/> to see the prices \ performance ratio.

Useful links:  
<https://docs.aws.amazon.com/whitepapers/latest/cost-optimization-right-sizing/tips-for-right-sizing-your-workloads.html>

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Overview.DBInstance.Modifying.html>