AWS CloudWatch

What is CloudWatch ?

CloudWatch is a monitoring service which allows you to collect, monitor, act and analyze your aws services and environments health and performance.

ServiceLens : Gives you unified access to metrics, logs, traces and canaries, enabling performance monitoring from end user interaction to infrastructure layer insights

Canaries : Check the availability and latency of your endpoints and can store load time data and screenshots of the UI. They monitor your REST APIs, URLs, and website content, and they can check for unauthorized changes from phishing, code injection and cross-site scripting.

Resource health : Helps you automatically discover, manage, and visualize the health and performance of hosts across your applications in a single view

Synthetics : To monitor complete transactions for broken or dead links, step by step task completions, page load errors, load latencies for UI assets, and more complex wizard flows, or checkout flows. (Monitor web applications)

Monitor memory and disk metrics for Amazon EC2 Linux instances :

1. Create an IAM role with CloudWatch Full Permission and attach to the EC2 instance
2. Download and Install the CloudWatch agent followed by below command
3. Link and command : $ wget https://s3.amazonaws.com/amazoncloudwatch-agent/amazon_linux/amd64/latest/amazon-cloudwatch-agent.rpm
4. Link to download agent based on the operating system : Link
5. Install and change the file ownership by executing the below command
6. $ sudo rpm -U ./amazon-cloudwatch-agent.rpm
7. Configure the agent by creating config.json file on the following path
8. $ sudo vim /opt/aws/amazon-cloudwatch-agent/bin/config.json

```
{
    "metrics":{
       "metrics_collected":{
          "mem":{
             "measurement":[
                "mem_used_percent"
             ],
             "metrics_collection_interval":30
          }
       }
    }
}
```

9. Start the CloudWatch agent by running the below command

10. $ sudo /opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -a fetch-config -m ec2 -c file:/opt/aws/amazon-cloudwatch-agent/bin/config.json -s
11. Path for the windows Ec2 instance to put the config file : [$Env:ProgramData\Amazon\AmazonCloudWatchAgent\amazon-cloudwatch-agent.json]
12. Now go to CloudWatch dashboard on the AWS console and click on the metrics, then you will see a new box appear with the name “CWAgent” which contains the custom metrics fro the memory utilization

Advanced Configuration :

- For more details follow the link : https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/mon-scripts.html
- For more metrics configuration follow the link : https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/CloudWatch-Agent-Configuration-File-Details.html

AWS System Manager :

- You can use the CloudWatch agent to collect both system metrics and log files from Amazon EC2 instances and on-premises servers. The agent supports both Windows Server and Linux
- https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Install-CloudWatch-Agent.html
- Create the IAM role to attach on the EC2 instance to run the CloudWatch agent
- Attach “ CloudWatchAgentServerPolicy” “AmazonSSMManagedInstanceCore”policy to the role

- Enter a name “EC2-CloudWatchAgentServerRole”
- Crate an EC2 instance by attaching the above role
- Then go the “System Manager” and select “Run Command” then search for “AWS-ConfigureAWSPackage” document
- Then from the target search the instance by Tag name or manually and select the instance to install the CloudWatch agent
- Then on the command parameters section under Action select Install and for Name enter “AmazonCloudWatchAgent” keep the version with latest and click on Run
- Then check the status and the status code should be Success