Scaling disks

Document Level Classification

300

Adding Additional Disk to Nodes and Pods

Why would you do this?

By default, a single EBS volume is allocated to a node and that volume is used to allocate ephemeral volumes for all the pods provisioned to the node. If any of the pods on that node use IOPS on their ephemeral volume, it comes from the shared pool of IOPS that all pods on that node consume. If you are seeing problems around disk IOPS, you may need to allocate additional EBS volume capacity to either the node or directly within each pod.

Adding additional IOPs to Nodes

To add additional IOPS to nodes provisioned with Karpenter, you will need to modify the Kubernetes resource in the cluster called `awsNodeTemplate`. This resource on our clusters is controlled by our deployment system, ArgoCD. You can see an example of the `yaml` required here. The public documentation for this Karpenter configuration is on karpenter.sh here. Ultimately, you will find your account ID in the argocd/cluster-configs list here and open a PR to add the additional disk configuration to your `default` provisioner. Once completed, all nodes will need rolled to ensure the new configuration is deployed.

Adding dedicated disks to Pods

Another way to increase the IOPS available to pods is to allocate an EBS volume directly to each pod as its ephemeral volume. You can see an example pod volume You can see an example pod volume here. These volumes use the `default` Kubernetes storageclass by default, which provides 3IOPS per Gigabyte. Be sure to mount this volume to the location where your application sees the most IOPS. It is possible to use multiple ephemeral volumes if needed. Volumes will live for the lifetime of your pod (including restarts of that pod) and be deleted automatically from EBS when your pod is deleted.
