# TIBCO Software

# Control Tower

## Storage class

Control Tower requires persistant storage. The storage class on EKS needs Elastic File Storage as provider in order for the hawk-console and msg-gateway to share the same persistant volume using SQLLite.

This section described the creation of EFS based storage in an EKS cluster.

## Environment Variables

```
AWS_DEFAULT_PROFILE=profilename ## change this if required,Based on local config in ~/.aws/config
EKS_AWS_REGION=eu-west-1 ## change this if required
EKS_ACCOUNT_ID=$(aws sts get-caller-identity --query 'Account' --output text)
EKS_EKS_CLUSTER=eks-clustername ## change this if required
EKS_DP_NAMESPACE=ct-namespace ## change this if required
```

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## Kubeconfig EKS Cluster Initialization

Update local kubeconfig to access the EKS cluster

```
aws eks update-kubeconfig --region $EKS_AWS_REGION --name $EKS_EKS_CLUSTER
```

Set VPC/CIDR details retrieved from EKS Cluster

```
EKS_VPC_ID=$(aws eks describe-cluster --name $EKS_EKS_CLUSTER --query "cluster.resourcesVpcConfig.vpcId" --region $EKS_AWS_REGION --output text)
echo "EKS_VPC_ID: $EKS_VPC_ID"
```

```
EKS_CIDR_BLOCK=$(aws ec2 describe-vpcs --vpc-ids $EKS_VPC_ID --query "Vpcs[].CidrBlock" --region $EKS_AWS_REGION --output text)
echo "EKS_CIDR_BLOCK: $EKS_CIDR_BLOCK"
```

```
EKS_VPC_DEFAULT_SG_ID=$(aws ec2 describe-security-groups --filters "Name=vpc-id,Values=$EKS_VPC_ID" "Name=group-name,Values=default" --query
"SecurityGroups[0].GroupId" --output text)
echo "EKS_VPC_DEFAULT_SG_ID: $EKS_VPC_DEFAULT_SG_ID"
```

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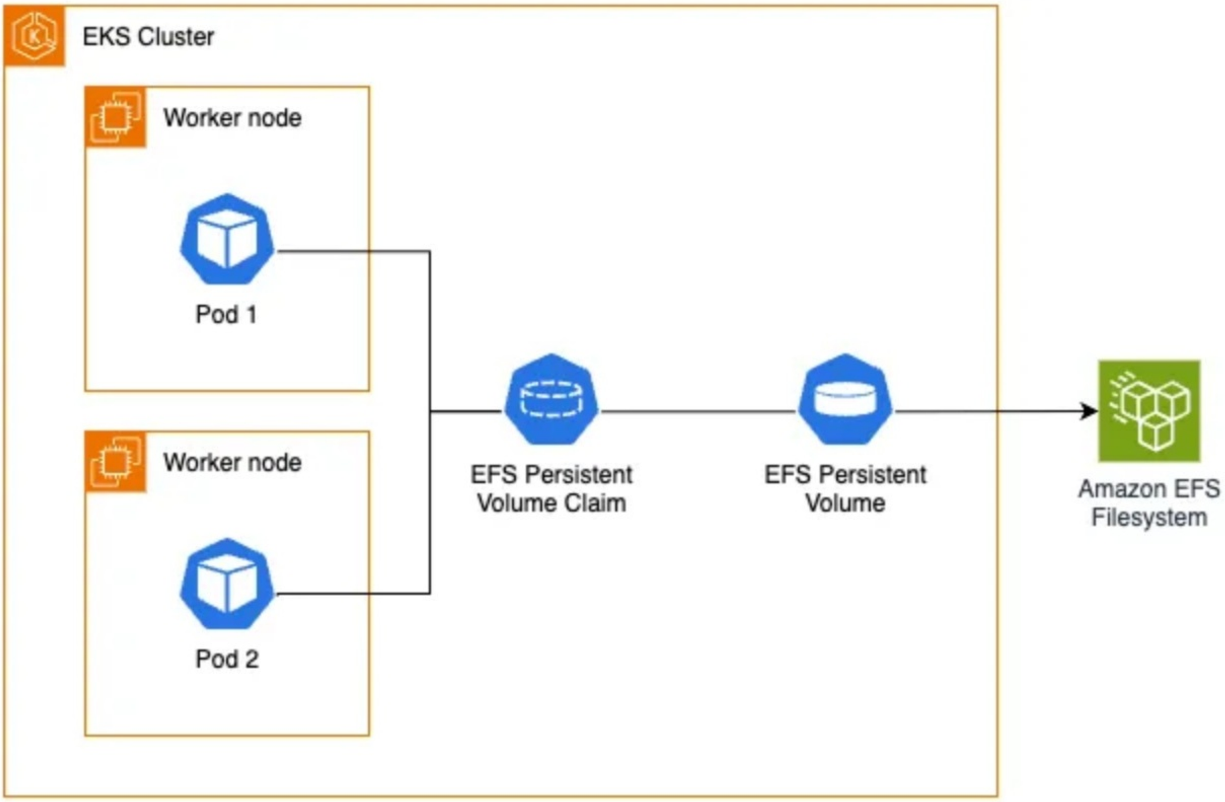
## EFS Setup

This section describes the setup of the persistent storage based on EFS. EFS is the required type of storage on Fargate. Only static assigned storage is permitted on Fargate.



### Create EFS File System

```
EKS_EFS_FS_ID=$(aws efs create-file-system   --creation-token controltower   --
encrypted   --performance-mode generalPurpose   --throughput-mode bursting   --
tags Key=Name,Value=ControlTowerVolume   --region $EKS_AWS_REGION   --query
"FileSystemId" --output text)
echo "EKS_EFS_FS_ID: $EKS_EFS_FS_ID"
```

### Create EFS Access Point

```
EKS_EFS_AP=$(aws efs create-access-point   --file-system-id $EKS_EFS_FS_ID   --
posix-user Uid=0,Gid=0   --root-directory "Path=/"   --region $EKS_AWS_REGION   --
tags Key=Name,Value=tp-ap   --query 'AccessPointId' --output text)
```

```
echo "EKS_EFS_AP= $EKS_EFS_AP"
```

### Create Security Group and Add Ingress

The EKS cluster resources require access to the EFS services. For this port 2049 is allowed in the vpc ingress. The access needs to be created both ingress and egress between EFS servcies and the cluster.

```
EKS_EFS_SG_ID=$(aws ec2 create-security-group   --description eks-controltower-ingress-egress --group-name eks-controltower   --vpc-id $EKS_VPC_ID   --region $EKS_AWS_REGION   --query 'GroupId' --output text)
echo "EKS_EFS_SG_ID: $EKS_EFS_SG_ID"
```

```
aws ec2 authorize-security-group-ingress   --group-id $EKS_EFS_SG_ID   --protocol tcp   --port 2049   --cidr $EKS_CIDR_BLOCK
aws ec2 authorize-security-group-egress   --group-id $EKS_EFS_SG_ID   --protocol tcp   --port 2049   --source-group $EKS_VPC_DEFAULT_SG_ID


aws ec2 describe-security-groups --group-ids $EKS_EFS_SG_ID
```

### Create Mount Targets

An EFS mount target is an NFSv4 endpoint that allows EC2 instances or Fargate tasks within a VPC to access the EFS file system.

```
for subnet in $(aws ec2 describe-instances --filters "Name=tag:eks:cluster-name,Values=$EKS_EKS_CLUSTER" "Name=instance-state-name,Values=running" --query "Reservations[].Instances[].SubnetId" --output text); do
    aws efs create-mount-target       --file-system-id $EKS_EFS_FS_ID       --subnet-id $subnet       --security-group $EKS_EFS_SG_ID       --region $EKS_AWS_REGION
done

aws efs describe-mount-targets --file-system-id $EKS_EFS_FS_ID
```

### Create Storage Class

```
cat <<EOF | kubectl apply -f -
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: efs-sc
provisioner: efs.csi.aws.com
```

```
parameters:
  provisioningMode: efs-ap
  fileSystemId: $EKS_EFS_FS_ID
  directoryPerms: "777"
EOF
```

### Create Persistent Volume

```
cat <<EOF | kubectl apply -f -
apiVersion: v1
kind: PersistentVolume
metadata:
  name: hawk-console-data-tp-dp-hawk-console-0
spec:
  capacity:
    storage: 50Gi
  volumeMode: Filesystem
  accessModes:
    - ReadWriteMany
  persistentVolumeReclaimPolicy: Retain
  storageClassName: efs-sc
  csi:
    driver: efs.csi.aws.com
    volumeHandle: $EKS_EFS_FS_ID::$EKS_EFS_AP
EOF
```