参考
Set up and administration

NetApp
July 18, 2022

目录

参考

Cloud Manager权限摘要

要使用Cloud Manager中的功能和服务、您需要提供权限、以便Cloud Manager可以在您的云环境中执行操作。使用此页面上的链接可根据您的目标快速访问所需的权限。

AWS权限

目的	Description	链接。
连接器部署	从Cloud Manager创建Connector的用户需要特定权限才能在AWS中部署实例。	"从 Cloud Manager 在 AWS 中创建连接器"
连接器操作	Cloud Manager启动Connector时、它会将一个策略附加到实例、该实例提供管理AWS帐户中资源和进程所需的权限。如果需要、您需要自行设置策略 "从市场启动Connector" 或者 "向Connector添加更多AWS凭据"。此外、您还需要确保在后续版本中添加新权限时策略是最新的。	"Connector 的 AWS 权限"
Cloud Volumes ONTAP 操作	必须将IAM角色附加到AWS中的每个Cloud Volumes ONTAP 节点。HA调解器也是如此。默认选项是让Cloud Manager为您创建IAM角色、但您可以使用自己的角色。	"了解如何自己设置IAM角色"

Azure权限

目的	Description	链接。
连接器部署	从Cloud Manager部署Connector时、您需要使用有权在Azure中部署Connector VM的Azure帐户或服务主体。	"从 Cloud Manager 在 Azure 中创建 Connector"
连接器操作	当Cloud Manager在Azure中部署Connector VM时、它会创建一个自定义角色、此角色可提供在该Azure订阅中管理资源和进程所需的权限。 如果需要、您需要自己设置自定义角色 "从市场启动Connector" 或者 "向Connector添加更多Azure凭据"。 此外、您还需要确保在后续版本中添加新权限时策略是最新的。	"Connector 的 Azure 权限"

Google Cloud权限

目的	Description	链接。
连接器部署	从Cloud Manager部署Connector的Google Cloud用户需要特定权限才能在Google Cloud中部署Connector。	"设置部署Connector的权限"
连接器操作	Connector VM实例的服务帐户必须具有执行日常操作的特定权限。在从Cloud Manager部署服务帐户时、您需要将其与Connector相关联。此外、您还需要确保在后续版本中添加新权限时策略是最新的。	"为Connector设置服务帐户"

Connector 的 AWS 权限

当Cloud Manager在AWS中启动Connector实例时、它会向此实例附加一个策略、此策略可为Connector提供管理该AWS帐户中资源和进程的权限。Connector使用这些权限对多个AWS服务进行API调用、包括EC2、S3、CloudFormation、IAM、 密钥管理服务(KMS)等。

IAM策略

下面显示的IAM策略提供了Connector根据您的AWS区域管理公有 云环境中的资源和流程所需的权限。

直接从Cloud Manager创建Connector时、Cloud Manager会自动将此策略应用于Connector。

如果您从AWS Marketplace部署Connector、或者在Linux主机上手动安装Connector、则需要自己设置策略。

此外、您还需要确保在后续版本中添加新权限时策略是最新的。

标准区域

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "cvoServicePolicy",
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeInstances",
        "ec2:DescribeInstanceStatus",
        "ec2:RunInstances",
        "ec2:ModifyInstanceAttribute",
        "ec2:DescribeInstanceAttribute",
        "ec2:DescribeRouteTables",
        "ec2:DescribeImages",
        "ec2:CreateTags",
        "ec2:CreateVolume",
        "ec2:DescribeVolumes",
        "ec2:ModifyVolumeAttribute",
        "ec2:CreateSecurityGroup",
        "ec2:DescribeSecurityGroups",
        "ec2:RevokeSecurityGroupEgress",
        "ec2:AuthorizeSecurityGroupEgress",
        "ec2:AuthorizeSecurityGroupIngress",
        "ec2:RevokeSecurityGroupIngress",
        "ec2:CreateNetworkInterface",
        "ec2:DescribeNetworkInterfaces",
        "ec2:ModifyNetworkInterfaceAttribute",
        "ec2:DescribeSubnets",
        "ec2:DescribeVpcs",
        "ec2:DescribeDhcpOptions",
        "ec2:CreateSnapshot",
        "ec2:DescribeSnapshots",
        "ec2:GetConsoleOutput",
        "ec2:DescribeKeyPairs",
        "ec2:DescribeRegions",
        "ec2:DescribeTags",
        "cloudformation:CreateStack",
        "cloudformation:DescribeStacks",
        "cloudformation:DescribeStackEvents",
        "cloudformation:ValidateTemplate",
        "iam:PassRole",
        "iam:CreateRole",
        "iam:PutRolePolicy",
```

```
            "iam:CreateInstanceProfile",
            "iam:AddRoleToInstanceProfile",
            "iam:RemoveRoleFromInstanceProfile",
            "iam:ListInstanceProfiles",
            "sts:DecodeAuthorizationMessage",
            "ec2:AssociateIamInstanceProfile",
            "ec2:DescribeIamInstanceProfileAssociations",
            "ec2:DisassociateIamInstanceProfile",
            "s3:GetBucketTagging",
            "s3:GetBucketLocation",
            "s3:ListBucket",
            "s3:CreateBucket",
            "s3:GetLifecycleConfiguration",
            "s3:ListBucketVersions",
            "s3:GetBucketPolicyStatus",
            "s3:GetBucketPublicAccessBlock",
            "s3:GetBucketPolicy",
            "s3:GetBucketAcl",
            "kms:List*",
            "kms:ReEncrypt*",
            "kms:Describe*",
            "kms:CreateGrant",
            "ce:GetReservationUtilization",
            "ce:GetDimensionValues",
            "ce:GetCostAndUsage",
            "ce:GetTags",
            "ec2:CreatePlacementGroup",
            "ec2:DescribeReservedInstancesOfferings",
            "sts:AssumeRole",
            "ec2:AssignPrivateIpAddresses",
            "ec2:CreateRoute",
            "ec2:DescribeVpcs",
            "ec2:ReplaceRoute",
            "ec2:UnassignPrivateIpAddresses",
            "s3:PutObjectTagging",
            "s3:GetObjectTagging",
            "fsx:Describe*",
            "fsx:List*",
            "ec2:DeleteSecurityGroup",
            "ec2:DeleteNetworkInterface",
            "ec2:DeleteSnapshot",
            "ec2:DeleteTags",
            "ec2:DeleteRoute",
            "ec2:DeletePlacementGroup",
            "iam:DeleteRole",
            "iam:DeleteRolePolicy",
```

```
        "iam:DeleteInstanceProfile",
        "cloudformation:DeleteStack",
        "ec2:DescribePlacementGroups",
        "iam:GetRolePolicy",
        "s3:ListAllMyBuckets",
        "s3:GetObject",
        "iam:GetRole",
        "s3:DeleteObject",
        "s3:DeleteObjectVersion",
        "s3:PutObject",
        "ec2:ModifyVolume",
        "ec2:DescribeVolumesModifications"
      ],
      "Resource": "*"
    },
    {
      "Sid": "backupPolicy",
      "Effect": "Allow",
      "Action": [
        "ec2:StartInstances",
        "ec2:StopInstances",
        "ec2:DescribeInstances",
        "ec2:DescribeInstanceStatus",
        "ec2:RunInstances",
        "ec2:TerminateInstances",
        "ec2:DescribeInstanceAttribute",
        "ec2:DescribeImages",
        "ec2:CreateTags",
        "ec2:CreateVolume",
        "ec2:CreateSecurityGroup",
        "ec2:DescribeSubnets",
        "ec2:DescribeVpcs",
        "ec2:DescribeRegions",
        "cloudformation:CreateStack",
        "cloudformation:DeleteStack",
        "cloudformation:DescribeStacks",
        "kms:List*",
        "kms:Describe*",
        "ec2:describeVpcEndpoints",
        "kms:ListAliases",
        "athena:StartQueryExecution",
        "athena:GetQueryResults",
        "athena:GetQueryExecution",
        "athena:StopQueryExecution",
        "glue:CreateDatabase",
        "glue:CreateTable",
```

```
        "glue:BatchDeletePartition"
      ],
      "Resource": "*"
    },
    {
      "Sid": "backupS3Policy",
      "Effect": "Allow",
      "Action": [
        "s3:GetBucketLocation",
        "s3:ListAllMyBuckets",
        "s3:ListBucket",
        "s3:CreateBucket",
        "s3:GetLifecycleConfiguration",
        "s3:PutLifecycleConfiguration",
        "s3:PutBucketTagging",
        "s3:ListBucketVersions",
        "s3:GetBucketAcl",
        "s3:PutBucketPublicAccessBlock",
        "s3:GetObject",
        "s3:PutEncryptionConfiguration",
        "s3:DeleteObject",
        "s3:DeleteObjectVersion",
        "s3:ListBucketMultipartUploads",
        "s3:PutObject",
        "s3:PutBucketAcl",
        "s3:AbortMultipartUpload",
        "s3:ListMultipartUploadParts",
        "s3:DeleteBucket"
      ],
      "Resource": [
        "arn:aws:s3:::netapp-backup-*"
      ]
    },
    {
      "Sid": "tagServicePolicy",
      "Effect": "Allow",
      "Action": [
        "ec2:CreateTags",
        "ec2:DeleteTags",
        "ec2:DescribeTags",
        "tag:getResources",
        "tag:getTagKeys",
        "tag:getTagValues",
        "tag:TagResources",
        "tag:UntagResources"
      ],
```

```
      "Resource": "*"
    },
    {
      "Sid": "fabricPoolS3Policy",
      "Effect": "Allow",
      "Action": [
        "s3:CreateBucket",
        "s3:GetLifecycleConfiguration",
        "s3:PutLifecycleConfiguration",
        "s3:PutBucketTagging",
        "s3:ListBucketVersions",
        "s3:GetBucketPolicyStatus",
        "s3:GetBucketPublicAccessBlock",
        "s3:GetBucketAcl",
        "s3:GetBucketPolicy",
        "s3:PutBucketPublicAccessBlock",
        "s3:DeleteBucket"
      ],
      "Resource": [
        "arn:aws:s3:::fabric-pool*"
      ]
    },
    {
      "Sid": "fabricPoolPolicy",
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeRegions"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "ec2:StartInstances",
        "ec2:StopInstances",
        "ec2:TerminateInstances"
      ],
      "Condition": {
        "StringLike": {
          "ec2:ResourceTag/netapp-adc-manager": "*"
        }
      },
      "Resource": [
        "arn:aws:ec2:*:*:instance/*"
      ]
    },
```

```
    {
      "Effect": "Allow",
      "Action": [
        "ec2:StartInstances",
        "ec2:TerminateInstances",
        "ec2:AttachVolume",
        "ec2:DetachVolume"
      ],
      "Condition": {
        "StringLike": {
          "ec2:ResourceTag/GFCInstance": "*"
        }
      },
      "Resource": [
        "arn:aws:ec2:*:*:instance/*"
      ]
    },
    {
      "Effect": "Allow",
      "Action": [
        "ec2:StartInstances",
        "ec2:TerminateInstances",
        "ec2:AttachVolume",
        "ec2:DetachVolume",
        "ec2:StopInstances",
        "ec2:DeleteVolume"
      ],
      "Condition": {
        "StringLike": {
          "ec2:ResourceTag/WorkingEnvironment": "*"
        }
      },
      "Resource": [
        "arn:aws:ec2:*:*:instance/*"
      ]
    },
    {
      "Effect": "Allow",
      "Action": [
        "ec2:AttachVolume",
        "ec2:DetachVolume"
      ],
      "Resource": [
        "arn:aws:ec2:*:*:volume/*"
      ]
    },
```

```
    {
      "Effect": "Allow",
      "Action": [
        "ec2:DeleteVolume"
      ],
      "Condition": {
        "StringLike": {
          "ec2:ResourceTag/WorkingEnvironment": "*"
        }
      },
      "Resource": [
        "arn:aws:ec2:*:*:volume/*"
      ]
    },
    {
      "Sid": "K8sServicePolicy",
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeRegions",
        "iam:ListInstanceProfiles",
        "eks:ListClusters",
        "eks:DescribeCluster"
      ],
      "Resource": "*"
    },
    {
      "Sid": "GFCservicePolicy",
      "Effect": "Allow",
      "Action": [
        "cloudformation:DescribeStacks",
        "cloudwatch:GetMetricStatistics",
        "cloudformation:ListStacks"
      ],
      "Resource": "*"
    }
  ]
}
```

GovCloud (美国)地区

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
```

```
                "iam:ListInstanceProfiles",
                "iam:CreateRole",
                "iam:DeleteRole",
                "iam:PutRolePolicy",
                "iam:CreateInstanceProfile",
                "iam:DeleteRolePolicy",
                "iam:AddRoleToInstanceProfile",
                "iam:RemoveRoleFromInstanceProfile",
                "iam:DeleteInstanceProfile",
                "ec2:ModifyVolumeAttribute",
                "sts:DecodeAuthorizationMessage",
                "ec2:DescribeImages",
                "ec2:DescribeRouteTables",
                "ec2:DescribeInstances",
                "iam:PassRole",
                "ec2:DescribeInstanceStatus",
                "ec2:RunInstances",
                "ec2:ModifyInstanceAttribute",
                "ec2:CreateTags",
                "ec2:CreateVolume",
                "ec2:DescribeVolumes",
                "ec2:DeleteVolume",
                "ec2:CreateSecurityGroup",
                "ec2:DeleteSecurityGroup",
                "ec2:DescribeSecurityGroups",
                "ec2:RevokeSecurityGroupEgress",
                "ec2:AuthorizeSecurityGroupEgress",
                "ec2:AuthorizeSecurityGroupIngress",
                "ec2:RevokeSecurityGroupIngress",
                "ec2:CreateNetworkInterface",
                "ec2:DescribeNetworkInterfaces",
                "ec2:DeleteNetworkInterface",
                "ec2:ModifyNetworkInterfaceAttribute",
                "ec2:DescribeSubnets",
                "ec2:DescribeVpcs",
                "ec2:DescribeDhcpOptions",
                "ec2:CreateSnapshot",
                "ec2:DeleteSnapshot",
                "ec2:DescribeSnapshots",
                "ec2:StopInstances",
                "ec2:GetConsoleOutput",
                "ec2:DescribeKeyPairs",
                "ec2:DescribeRegions",
                "ec2:DeleteTags",
                "ec2:DescribeTags",
                "cloudformation:CreateStack",
```

```
                "cloudformation:DeleteStack",
                "cloudformation:DescribeStacks",
                "cloudformation:DescribeStackEvents",
                "cloudformation:ValidateTemplate",
                "s3:GetObject",
                "s3:ListBucket",
                "s3:ListAllMyBuckets",
                "s3:GetBucketTagging",
                "s3:GetBucketLocation",
                "s3:CreateBucket",
                "s3:GetBucketPolicyStatus",
                "s3:GetBucketPublicAccessBlock",
                "s3:GetBucketAcl",
                "s3:GetBucketPolicy",
                "kms:List*",
                "kms:ReEncrypt*",
                "kms:Describe*",
                "kms:CreateGrant",
                "ec2:AssociateIamInstanceProfile",
                "ec2:DescribeIamInstanceProfileAssociations",
                "ec2:DisassociateIamInstanceProfile",
                "ec2:DescribeInstanceAttribute",
                "ce:GetReservationUtilization",
                "ce:GetDimensionValues",
                "ce:GetCostAndUsage",
                "ce:GetTags",
                "ec2:CreatePlacementGroup",
                "ec2:DeletePlacementGroup"
            ],
            "Resource": "*"
        },
        {
            "Sid": "fabricPoolPolicy",
            "Effect": "Allow",
            "Action": [
                "s3:DeleteBucket",
                "s3:GetLifecycleConfiguration",
                "s3:PutLifecycleConfiguration",
                "s3:PutBucketTagging",
                "s3:ListBucketVersions",
                "s3:GetBucketPolicyStatus",
                "s3:GetBucketPublicAccessBlock",
                "s3:GetBucketAcl",
                "s3:GetBucketPolicy",
                "s3:PutBucketPublicAccessBlock"
            ],
```

```
            "Resource": [
                "arn:aws-us-gov:s3:::fabric-pool*"
            ]
        },
        {
            "Sid": "backupPolicy",
            "Effect": "Allow",
            "Action": [
                "s3:DeleteBucket",
                "s3:GetLifecycleConfiguration",
                "s3:PutLifecycleConfiguration",
                "s3:PutBucketTagging",
                "s3:ListBucketVersions",
                "s3:GetObject",
                "s3:ListBucket",
                "s3:ListAllMyBuckets",
                "s3:GetBucketTagging",
                "s3:GetBucketLocation",
                "s3:GetBucketPolicyStatus",
                "s3:GetBucketPublicAccessBlock",
                "s3:GetBucketAcl",
                "s3:GetBucketPolicy",
                "s3:PutBucketPublicAccessBlock"
            ],
            "Resource": [
                "arn:aws-us-gov:s3:::netapp-backup-*"
            ]
        },
        {
            "Effect": "Allow",
            "Action": [
                "ec2:StartInstances",
                "ec2:TerminateInstances",
                "ec2:AttachVolume",
                "ec2:DetachVolume"
            ],
            "Condition": {
                "StringLike": {
                    "ec2:ResourceTag/WorkingEnvironment": "*"
                }
            },
            "Resource": [
                "arn:aws-us-gov:ec2:*:*:instance/*"
            ]
        },
        {
```

```
            "Effect": "Allow",
            "Action": [
                "ec2:AttachVolume",
                "ec2:DetachVolume"
            ],
            "Resource": [
                "arn:aws-us-gov:ec2:*:*:volume/*"
            ]
        }
    ]
}
```

C2S环境

```
{
    "Version": "2012-10-17",
    "Statement": [{
            "Effect": "Allow",
            "Action": [
                "ec2:DescribeInstances",
                "ec2:DescribeInstanceStatus",
                "ec2:RunInstances",
                "ec2:ModifyInstanceAttribute",
                "ec2:DescribeRouteTables",
                "ec2:DescribeImages",
                "ec2:CreateTags",
                "ec2:CreateVolume",
                "ec2:DescribeVolumes",
                "ec2:ModifyVolumeAttribute",
                "ec2:DeleteVolume",
                "ec2:CreateSecurityGroup",
                "ec2:DeleteSecurityGroup",
                "ec2:DescribeSecurityGroups",
                "ec2:RevokeSecurityGroupEgress",
                "ec2:RevokeSecurityGroupIngress",
                "ec2:AuthorizeSecurityGroupEgress",
                "ec2:AuthorizeSecurityGroupIngress",
                "ec2:CreateNetworkInterface",
                "ec2:DescribeNetworkInterfaces",
                "ec2:DeleteNetworkInterface",
                "ec2:ModifyNetworkInterfaceAttribute",
                "ec2:DescribeSubnets",
                "ec2:DescribeVpcs",
                "ec2:DescribeDhcpOptions",
                "ec2:CreateSnapshot",
                "ec2:DeleteSnapshot",
```

```
                "ec2:DescribeSnapshots",
                "ec2:GetConsoleOutput",
                "ec2:DescribeKeyPairs",
                "ec2:DescribeRegions",
                "ec2:DeleteTags",
                "ec2:DescribeTags",
                "cloudformation:CreateStack",
                "cloudformation:DeleteStack",
                "cloudformation:DescribeStacks",
                "cloudformation:DescribeStackEvents",
                "cloudformation:ValidateTemplate",
                "iam:PassRole",
                "iam:CreateRole",
                "iam:DeleteRole",
                "iam:PutRolePolicy",
                "iam:CreateInstanceProfile",
                "iam:DeleteRolePolicy",
                "iam:AddRoleToInstanceProfile",
                "iam:RemoveRoleFromInstanceProfile",
                "iam:DeleteInstanceProfile",
                "s3:GetObject",
                "s3:ListBucket",
                "s3:GetBucketTagging",
                "s3:GetBucketLocation",
                "s3:ListAllMyBuckets",
                "kms:List*",
                "kms:Describe*",
                "ec2:AssociateIamInstanceProfile",
                "ec2:DescribeIamInstanceProfileAssociations",
                "ec2:DisassociateIamInstanceProfile",
                "ec2:DescribeInstanceAttribute",
                "ec2:CreatePlacementGroup",
                "ec2:DeletePlacementGroup",
                "iam:ListinstanceProfiles"
            ],
            "Resource": "*"
        },
        {
            "Sid": "fabricPoolPolicy",
            "Effect": "Allow",
            "Action": [
                "s3:DeleteBucket",
                "s3:GetLifecycleConfiguration",
                "s3:PutLifecycleConfiguration",
                "s3:PutBucketTagging",
                "s3:ListBucketVersions"
```

```
                ],
                "Resource": [
                    "arn:aws-iso:s3:::fabric-pool*"
                ]
            },
            {
                "Effect": "Allow",
                "Action": [
                    "ec2:StartInstances",
                    "ec2:StopInstances",
                    "ec2:TerminateInstances",
                    "ec2:AttachVolume",
                    "ec2:DetachVolume"
                ],
                "Condition": {
                    "StringLike": {
                        "ec2:ResourceTag/WorkingEnvironment": "*"
                    }
                },
                "Resource": [
                    "arn:aws-iso:ec2:*:*:instance/*"
                ]
            },
            {
                "Effect": "Allow",
                "Action": [
                    "ec2:AttachVolume",
                    "ec2:DetachVolume"
                ],
                "Resource": [
                    "arn:aws-iso:ec2:*:*:volume/*"
                ]
            }
        ]
}
```

如何使用AWS权限

以下各节介绍了如何对每个NetApp云服务使用权限。如果您的公司策略规定仅在需要时提供权限、则此信息会很有用。

AppTemplate标记

在使用AppTemplate标记服务时、Connector会发出以下API请求来管理AWS资源上的标记：

- EC2：CreateTags
- EC2：DeleteTags
- EC2：Describe标记
- 标记：getResources
- 标记：getTag密钥
- 标记：getTagValues
- 标记：标记资源
- 标记：未标记资源

云备份

Connector会发出以下API请求来部署Cloud Backup的还原实例：

- EC2：StartInstances
- EC2：StopInstances
- EC2：Describe实例
- EC2：Describe实例状态
- EC2：RunInstances
- EC2：终端状态
- EC2：Describe实例属性
- EC2：Describe
- EC2：CreateTags
- EC2：CreateVolume
- EC2：CreateSecurityGroup
- EC2：Describe子网
- EC2：Describe
- EC2：Describe注册
- CloudFormation：CreateStack
- CloudFormation：DeleteStack
- CloudFormation：Describe堆栈

Connector会发出以下API请求来管理Amazon S3中的备份：

- S3： GetBucketLocation
- S3： ListAllMy桶
- S3： ListBucket
- S3： CreateBucket
- S3： GetLifeycleConfiguration

- S3： PutLifeycleConfiguration
- S3： PutBucketTagging
- S3： ListBucketVersions
- S3： GetBucketAcl
- S3：PutBucketPublicAccessBlock
- 公里：列表*
- 公里：描述*
- S3： GetObject
- EC2：介绍VpcEndpoints
- Kms：ListAliases
- S3： PutEncryptionConfiguration

在使用搜索和还原方法还原卷和文件时、Connector会发出以下API请求：

- S3： CreateBucket
- S3： DeleteObject
- S3： DeleteObjectVersion
- S3： GetBucketAcl
- S3： ListBucket
- S3： ListBucketVersions
- S3： ListBucketMultipartUploads
- S3： PutObject
- S3：PutBucketAcl
- S3： PutLifeycleConfiguration
- S3：PutBucketPublicAccessBlock
- S3： AbortMultipartUpload
- S3： ListMultipartUploadPart
- Athena：StartQueryExecutionc
- Athena：GetQueryResults
- Athena：GetQueryExecution
- Athena：StopQueryExecution
- 胶水：CreateDatabase
- 胶水：CreateTable
- 粘附：BatechDelete分区

云数据感知

Connector发出以下API请求以部署Cloud Data sense实例：

- EC2：Describe实例
- EC2：Describe实例状态
- EC2：RunInstances
- EC2：终端状态
- EC2：CreateTags
- EC2：CreateVolume
- EC2：Attach卷
- EC2：CreateSecurityGroup
- EC2：DeleteSecurityGroup
- EC2：Describe安全性组
- EC2：CreateNetworkInterface
- EC2：Describe网络接口
- EC2：DeleteNetworkInterface
- EC2：Describe子网
- EC2：Describe
- EC2：CreateSnapshot
- EC2：Describe注册
- CloudFormation：CreateStack
- CloudFormation：DeleteStack
- CloudFormation：Describe堆栈
- CloudFormation：Describe StackEvents
- IAM：AddRoleToInstanceProfile
- EC2：AssociateIamInstanceProfile
- EC2：Describe IamInstanceProfileAssociations

在使用Cloud Data sense时、Connector会发出以下API请求来扫描S3存储分段：

- IAM：AddRoleToInstanceProfile
- EC2：AssociateIamInstanceProfile
- EC2：Describe IamInstanceProfileAssociations
- S3： GetBucketTagging
- S3： GetBucketLocation
- S3： ListAllMy桶

- S3： ListBucket
- S3：GetBucketPolicyStatus
- S3： GetBucketPolicy
- S3： GetBucketAcl
- S3： GetObject
- IAM：GetRole
- S3： DeleteObject
- S3： DeleteObjectVersion
- S3： PutObject
- STS：AssumeRole

云分层

在使用Cloud Tiering时、Connector会发出以下API请求、将数据分层到Amazon S3。

Action	用于设置?	用于日常操作?
S3： CreateBucket	是的。	否
S3： PutLifeycleConfiguration	是的。	否
S3： GetLifeycleConfiguration	是的。	是的。
EC2：Describe注册	是的。	是的。

Cloud Volumes ONTAP

Connector会发出以下API请求、以便在AWS中部署和管理Cloud Volumes ONTAP。

目的	**Action**	用于部署?	用于日常操作?	用于删除?
创建和管理Cloud Volumes ONTAP 实例的IAM角色和实例配置文件	IAM：ListInstanceProfile	是的。	是的。	否
	IAM：CreateRole	是的。	否	否
	IAM：DeleteRole	否	是的。	是的。
	IAM：PutRolePolicy	是的。	否	否
	IAM：CreateInstanceProfile	是的。	否	否
	IAM：DeleteRolePolicy	否	是的。	是的。
	IAM：AddRoleToInstanceProfile	是的。	否	否
	IAM：RemoveRoleFromInstanceProfile	否	是的。	是的。
	IAM：DeleteInstanceProfile	否	是的。	是的。
	IAM：PassRole	是的。	否	否
	EC2：AssociateIamInstanceProfile	是的。	是的。	否
	EC2：DescribeIamInstanceProfileAssociations	是的。	是的。	否
	EC2：DisassociateIamInstanceProfile	否	是的。	否
对授权状态消息进行解码	STS：DecodeAuthorizationMessage	是的。	是的。	否
描述可供帐户使用的指定映像(AMI)	EC2：Describe	是的。	是的。	否
描述VPC中的路由表(仅HA对需要)	EC2：DescribeRouteTables	是的。	否	否

目的	Action	用于部署?	用于日常操作?	用于删除?
停止、启动和监控实例	EC2：StartInstances	是的。	是的。	否
	EC2：StopInstances	是的。	是的。	否
	EC2：Describe实例	是的。	是的。	否
	EC2：Describe实例状态	是的。	是的。	否
	EC2：RunInstances	是的。	否	否
	EC2：终端状态	否	否	是的。
	EC2：ModifyInstance属性	否	是的。	否
验证是否已为支持的实例类型启用增强型网络连接	EC2：Describe实例属性	否	是的。	否
使用"WorkingEnvironment"和"WorkingEnvironmentId"标记标记资源、用于维护和成本分配	EC2：CreateTags	是的。	是的。	否
管理Cloud Volumes ONTAP 用作后端存储的EBS卷	EC2：CreateVolume	是的。	是的。	否
	EC2：Describe卷	是的。	是的。	是的。
	EC2：ModifyVolumeAttribute	否	是的。	是的。
	EC2：Attach卷	是的。	是的。	否
	EC2：DeleteVolume	否	是的。	是的。
	EC2：分离卷	否	是的。	是的。

目的	Action	用于部署?	用于日常操作?	用于删除?
创建和管理Cloud Volumes ONTAP 的安全组	EC2：CreateSecurityGroup	是的。	否	否
	EC2：DeleteSecurityGroup	否	是的。	是的。
	EC2：Describe安全性组	是的。	是的。	是的。
	EC2：RevokeSecurityGroupEgress	是的。	否	否
	EC2：AuthorizeSecurityGroupEgress	是的。	否	否
	EC2：AuthorizeSecurityGroupIngress	是的。	否	否
	EC2：RevokeSecurityGroupIngress	是的。	是的。	否
在目标子网中为Cloud Volumes ONTAP 创建和管理网络接口	EC2：CreateNetworkInterface	是的。	否	否
	EC2：Describe网络接口	是的。	是的。	否
	EC2：DeleteNetworkInterface	否	是的。	是的。
	EC2：ModifyNetworkInterfaceAttribute	否	是的。	否
获取目标子网和安全组的列表	EC2：Describe子网	是的。	是的。	否
	EC2：Describe	是的。	是的。	否
获取DNS服务器和Cloud Volumes ONTAP 实例的默认域名	EC2：Describe DhcpOptions	是的。	否	否
为Cloud Volumes ONTAP 的EBS卷创建快照	EC2：CreateSnapshot	是的。	是的。	否
	EC2：DeleteSnapshot	否	是的。	是的。
	EC2：Describe Snapshot	否	是的。	否

目的	Action	用于部署?	用于日常操作?	用于删除?
捕获附加到AutoSupport 消息的Cloud Volumes ONTAP 控制台	EC2：GetConsoleOutput	是的。	是的。	否
获取可用密钥对的列表	EC2：Describe KeyPairs	是的。	否	否
获取可用AWS区域的列表	EC2：Describe注册	是的。	是的。	否
管理与Cloud Volumes ONTAP 实例关联的资源的标记	EC2：DeleteTags	否	是的。	是的。
	EC2：Describe标记	否	是的。	否
为AWS CloudFormation模板创建和管理堆栈	CloudFormation：CreateStack	是的。	否	否
	CloudFormation：DeleteStack	是的。	否	否
	CloudFormation：Describe堆栈	是的。	是的。	否
	CloudFormation：Describe StackEvents	是的。	否	否
	CloudFormation：验证模板	是的。	否	否

目的	Action	用于部署?	用于日常操作?	用于删除?
创建和管理Cloud Volumes ONTAP 系统用作数据分层容量层的S3存储分段	S3： CreateBucket	是的。	是的。	否
	S3： DeleteBucket	否	是的。	是的。
	S3： GetLifeycleConfiguration	否	是的。	否
	S3： PutLifeycleConfiguration	否	是的。	否
	S3： PutBucketTagging	否	是的。	否
	S3： ListBucketVersions	否	是的。	否
	S3 ：GetBucketPolicyStatus	否	是的。	否
	S3 ：GetBucketPublicAccessBlock	否	是的。	否
	S3： GetBucketAcl	否	是的。	否
	S3： GetBucketPolicy	否	是的。	否
	S3 ：PutBucketPublicAccessBlock	否	是的。	否
	S3： GetBucketTagging	否	是的。	否
	S3： GetBucketLocation	否	是的。	否
	S3： ListAllMy桶	否	否	否
	S3： ListBucket	否	是的。	否
使用AWS密钥管理服务(KMS)对Cloud Volumes ONTAP 启用数据加密	公里：列表*	是的。	是的。	否
	kms：重新加密*	是的。	否	否
	公里：描述*	是的。	是的。	否
	公里：CreateGrant	是的。	是的。	否

目的	Action	用于部署?	用于日常操作?	用于删除?
获取Cloud Volumes ONTAP 的AWS成本数据	CE：GetReservationUtilization	否	是的。	否
	CE：GetDimensionValues	否	是的。	否
	CE：GetCostAndUsage	否	是的。	否
	CE：GetTags	否	是的。	否
在一个AWS可用性区域中为两个HA节点和调解器创建和管理一个AWS分布式放置组	EC2：CreatePlacementGroup	是的。	否	否
	EC2：DeletePlacementGroup	否	是的。	是的。
创建报告	FSX：描述*	否	是的。	否
	FSX：List*	否	是的。	否
创建和管理支持Amazon EBS弹性卷功能的聚合	EC2：Describe卷修改	否	是的。	否
	EC2：ModifyVolume	否	是的。	否

全局文件缓存

Connector会发出以下API请求、以便在部署期间部署全局文件缓存实例：

- CloudFormation：Describe堆栈
- CloudWatch：GetMetricStatistics
- CloudFormation：ListStack

Kubernetes

Connector会发出以下API请求来发现和管理Amazon EKS集群：

- EC2：Describe注册
- EKS：ListClusters
- EKS：Describe集群
- IAM：GetInstanceProfile

Connector 的 Azure 权限

当Cloud Manager在Azure中启动Connector VM时、它会将一个自定义角色附加到该VM、从而使Connector能够管理该Azure订阅中的资源和进程。Connector使用权限对多个Azure

服务进行API调用。

自定义角色权限

下面显示的自定义角色提供了Connector管理Azure网络中的资源和进程所需的权限。

直接从Cloud Manager创建Connector时、Cloud Manager会自动将此自定义角色应用于Connector。

如果您从Azure Marketplace部署Connector、或者在Linux主机上手动安装Connector、则需要您自己设置自定义角色。

您还需要确保角色是最新的、因为在后续版本中添加了新权限。

```
{
    "Name": "Cloud Manager Operator",
    "Actions": [
       "Microsoft.Compute/disks/delete",
                        "Microsoft.Compute/disks/read",
                        "Microsoft.Compute/disks/write",
                        "Microsoft.Compute/locations/operations/read",
                        "Microsoft.Compute/locations/vmSizes/read",

"Microsoft.Resources/subscriptions/locations/read",
                        "Microsoft.Compute/operations/read",

"Microsoft.Compute/virtualMachines/instanceView/read",

"Microsoft.Compute/virtualMachines/powerOff/action",
                        "Microsoft.Compute/virtualMachines/read",

"Microsoft.Compute/virtualMachines/restart/action",

"Microsoft.Compute/virtualMachines/deallocate/action",
                        "Microsoft.Compute/virtualMachines/start/action",
                        "Microsoft.Compute/virtualMachines/vmSizes/read",
                        "Microsoft.Compute/virtualMachines/write",
                        "Microsoft.Compute/images/write",
                        "Microsoft.Compute/images/read",

"Microsoft.Network/locations/operationResults/read",
                        "Microsoft.Network/locations/operations/read",
                        "Microsoft.Network/networkInterfaces/read",
                        "Microsoft.Network/networkInterfaces/write",
                        "Microsoft.Network/networkInterfaces/join/action",
                        "Microsoft.Network/networkSecurityGroups/read",
                        "Microsoft.Network/networkSecurityGroups/write",
```

```
"Microsoft.Network/networkSecurityGroups/join/action",
                        "Microsoft.Network/virtualNetworks/read",

"Microsoft.Network/virtualNetworks/checkIpAddressAvailability/read",
                        "Microsoft.Network/virtualNetworks/subnets/read",
                        "Microsoft.Network/virtualNetworks/subnets/write",

"Microsoft.Network/virtualNetworks/subnets/virtualMachines/read",

"Microsoft.Network/virtualNetworks/virtualMachines/read",

"Microsoft.Network/virtualNetworks/subnets/join/action",
                        "Microsoft.Resources/deployments/operations/read",
                        "Microsoft.Resources/deployments/read",
                        "Microsoft.Resources/deployments/write",
                        "Microsoft.Resources/resources/read",

"Microsoft.Resources/subscriptions/operationresults/read",

"Microsoft.Resources/subscriptions/resourceGroups/delete",

"Microsoft.Resources/subscriptions/resourceGroups/read",

"Microsoft.Resources/subscriptions/resourcegroups/resources/read",

"Microsoft.Resources/subscriptions/resourceGroups/write",
                        "Microsoft.Storage/checknameavailability/read",
                        "Microsoft.Storage/operations/read",

"Microsoft.Storage/storageAccounts/listkeys/action",
                        "Microsoft.Storage/storageAccounts/read",
                        "Microsoft.Storage/storageAccounts/delete",

"Microsoft.Storage/storageAccounts/regeneratekey/action",
                        "Microsoft.Storage/storageAccounts/write",

"Microsoft.Storage/storageAccounts/blobServices/containers/read",
                        "Microsoft.Storage/usages/read",
                        "Microsoft.Compute/snapshots/write",
                        "Microsoft.Compute/snapshots/read",
                        "Microsoft.Compute/availabilitySets/write",
                        "Microsoft.Compute/availabilitySets/read",
                        "Microsoft.Compute/disks/beginGetAccess/action",

"Microsoft.MarketplaceOrdering/offertypes/publishers/offers/plans/agreemen
ts/read",
```

```
"Microsoft.MarketplaceOrdering/offertypes/publishers/offers/plans/agreements/write",
                        "Microsoft.Network/loadBalancers/read",
                        "Microsoft.Network/loadBalancers/write",
                        "Microsoft.Network/loadBalancers/delete",

"Microsoft.Network/loadBalancers/backendAddressPools/read",

"Microsoft.Network/loadBalancers/backendAddressPools/join/action",

"Microsoft.Network/loadBalancers/frontendIPConfigurations/read",

"Microsoft.Network/loadBalancers/loadBalancingRules/read",
                        "Microsoft.Network/loadBalancers/probes/read",

"Microsoft.Network/loadBalancers/probes/join/action",
                        "Microsoft.Authorization/locks/*",
                        "Microsoft.Network/routeTables/join/action",
                        "Microsoft.NetApp/netAppAccounts/read",

"Microsoft.NetApp/netAppAccounts/capacityPools/read",

"Microsoft.NetApp/netAppAccounts/capacityPools/volumes/write",

"Microsoft.NetApp/netAppAccounts/capacityPools/volumes/read",

"Microsoft.NetApp/netAppAccounts/capacityPools/volumes/delete",
                        "Microsoft.Network/privateEndpoints/write",

"Microsoft.Storage/storageAccounts/PrivateEndpointConnectionsApproval/action",

"Microsoft.Storage/storageAccounts/privateEndpointConnections/read",

"Microsoft.Storage/storageAccounts/managementPolicies/read",

"Microsoft.Storage/storageAccounts/managementPolicies/write",
                        "Microsoft.Network/privateEndpoints/read",
                        "Microsoft.Network/privateDnsZones/write",

"Microsoft.Network/privateDnsZones/virtualNetworkLinks/write",
                        "Microsoft.Network/virtualNetworks/join/action",
                        "Microsoft.Network/privateDnsZones/A/write",
                        "Microsoft.Network/privateDnsZones/read",
```

```
"Microsoft.Network/privateDnsZones/virtualNetworkLinks/read",

"Microsoft.Resources/deployments/operationStatuses/read",
                        "Microsoft.Insights/Metrics/Read",

"Microsoft.Compute/virtualMachines/extensions/write",

"Microsoft.Compute/virtualMachines/extensions/delete",

"Microsoft.Compute/virtualMachines/extensions/read",
                        "Microsoft.Compute/virtualMachines/delete",
                        "Microsoft.Network/networkInterfaces/delete",
                        "Microsoft.Network/networkSecurityGroups/delete",
                        "Microsoft.Resources/deployments/delete",
                        "Microsoft.Compute/diskEncryptionSets/read",
                        "Microsoft.Compute/snapshots/delete",
                        "Microsoft.Network/privateEndpoints/delete",
                        "Microsoft.Compute/availabilitySets/delete",
                        "Microsoft.Network/loadBalancers/delete",
                        "Microsoft.KeyVault/vaults/read",
                        "Microsoft.KeyVault/vaults/accessPolicies/write",
                        "Microsoft.Compute/diskEncryptionSets/write",
                        "Microsoft.KeyVault/vaults/deploy/action",
                        "Microsoft.Compute/diskEncryptionSets/delete",
                        "Microsoft.Resources/tags/read",
                        "Microsoft.Resources/tags/write",
                        "Microsoft.Resources/tags/delete",

"Microsoft.Network/applicationSecurityGroups/write",

"Microsoft.Network/applicationSecurityGroups/read",

"Microsoft.Network/applicationSecurityGroups/joinIpConfiguration/action",

"Microsoft.Network/networkSecurityGroups/securityRules/write",

"Microsoft.Network/applicationSecurityGroups/delete",

"Microsoft.Network/networkSecurityGroups/securityRules/delete"
    ],
    "NotActions": [],
    "AssignableScopes": [],
    "Description": "Cloud Manager Permissions",
    "IsCustom": "true"
}
```

如何使用Azure权限

操作	目的
Microsoft.Compute/locations/operations/read"，Microsoft.Compute/locations/vmSizes/read"，Microsoft.Compute/operations/read"，Microsoft.Compute/virtualMachines/instanceView/read"，Microsoft.Compute/virtualMachines/powerOff/action"， Microsoft.Compute/virtualMachines/read"，Microsoft.Compute/virtualMachines/restart/action"，Microsoft.Compute/virtualMachines/start/action"，Microsoft.Compute/virtualMachines/deallocate/action"， Microsoft.Compute/virtualMachines/vmSizes/read"， " Microsoft.Compute/virtualMachines/write"，	创建 Cloud Volumes ONTAP 并停止、启动、删除和获取系统状态。
"Microsoft.compute/images/write"、"Microsoft.compute/images/read"、	支持从 VHD 部署 Cloud Volumes ONTAP 。
Microsoft.Compute/disks/delete"，Microsoft.Compute/disks/read"，Microsoft.Compute/disks/write"，"microsoft.Storage/SchecknameAvailability /Read"，"microsoft.Storage/operations/Read"，"microsoft.Storage/storageAccounts"，"microsoft.Storage/storageAccouns/Read"，"microsoft.Storage/storageAccounts"，"microsoft.Storage/storageAccounts"，"microsoft.Storage/storageAccounts"，"microsoft.Storage/storageAccounts"，"microsoft.Storage/Acces/ Read"，	管理 Azure 存储帐户和磁盘、并将磁盘连接到 Cloud Volumes ONTAP 。
"microsoft.Storage/storageAccounts/blobServices/contains/read"， "microsoft.KeyVault/vauls/read"，"microsoft.KeyVault/vauls/accessPolicies/write"	可备份到 Azure Blob 存储并对存储帐户进行加密
"microsoft.network/networkinterfaces/read"、"microsoft.network/networkinterfaces/write"、"microsoft.network/networkinterfaces/join/action"、	在目标子网中为 Cloud Volumes ONTAP 创建和管理网络接口。
"microsoft.network/networksecuritygroups/read"、"microsoft.network/networksecuritygroups/write"、"microsoft.network/networksecuritygroups/join/action"、	为 Cloud Volumes ONTAP 创建预定义的网络安全组。

操作	目的
"microsoft.resources/subscriptions/locations/read"，Microsoft.Network/locations/operationResults/read"，Microsoft.Network/locations/operations/read"，Microsoft.Network/virtualNetworks/read"，Microsoft.Network/virtualNetworks/checkIpAddressAvailability/read"，Microsoft.Network/virtualNetworks/subnets/read"，Microsoft.Network/virtualNetworks/subnets/virtualMachines/read"，Microsoft.Network/virtualNetworks/virtualMachines/read"，Microsoft.Network/virtualNetworks/subnets/join/action"，	获取有关区域、目标 VNet 和子网的网络信息、并将 Cloud Volumes ONTAP 添加到 VNETS 。
Microsoft.Network/virtualNetworks/subnets/write"，Microsoft.Network/routeTables/join/action"，	启用 VNet 服务端点以进行数据分层。
"Microsoft.Resources/deployments/operations/read"、 "Microsoft.Resources/deployments/read"、"Microsoft.Resources/deployments/write"、	从模板部署 Cloud Volumes ONTAP 。
"microsoft.resources/deployments/operations/read"，"microsoft.resources/deployments/read"，"microsoft.resources/deployments/write"，"microsoft.resources/resources/read"，"microsoft.resources/subscriptions/operationresults/read"，"microsoft.resources/subscriptions/resourcegroups/delete"，"microsoft.resources/subscriptions/resourcegroups/read"，"microsoft.resources/subscriptions/resourcegroups/write"，	为 Cloud Volumes ONTAP 创建和管理资源组。
Microsoft.Compute/snapshots/write"，Microsoft.Compute/snapshots/read"，Microsoft.Compute/snapshots/delete"，Microsoft.Compute/disks/beginGetAccess/action"，	创建和管理 Azure 管理的快照。
"microsoft.compute/availabilitysets/write"、"microsoft.compute/availabilitysets/read"、	创建和管理 Cloud Volumes ONTAP 的可用性集。
"Microsoft.Marketplac订购 / 服务类型 / 发布者 / 服务 / 计划 / 协议 / 读取 "、 "Microsoft.Marketplac订购 / 服务类型 / 发布者 / 服务 / 计划 / 协议 / 写入 "	支持从 Azure Marketplace 进行编程部署。

操作	目的
Microsoft.Network/loadBalancers/read" ， Microsoft.Network/loadBalancers/write" ， Microsoft.Network/loadBalancers/delete" ， Microsoft.Network/loadBalancers/backendAddressPools/read" ， Microsoft.Network/loadBalancers/backendAddressPools/join/action" ， Microsoft.Network/loadBalancers/frontendIPConfigurations/read" ， Microsoft.Network/loadBalancers/loadBalancingRules/read" ， Microsoft.Network/loadBalancers/probes/read" ， Microsoft.Network/loadBalancers/probes/join/action" ，	管理 HA 对的 Azure 负载平衡器。
"Microsoft.Authorization/Locks/*"	支持管理 Azure 磁盘上的锁定。
"microsoft.Authorization/roleDefinitions/write" ， "microsoft.Authorization/roleAssignments/write" ， "microsoft.Web/sites/*"	管理 HA 对的故障转移。
Microsoft.Network/privateEndpoints/write" ， "microsoft.Storage/storageAccounts/PrivateEndpointConnectionsApproval/Actions" ， "microsoft.Storage/storageAccounts/privateEndpointConnections/Read" ， Microsoft.Network/privateEndpoints/read" ， Microsoft.Network/privateDnsZones/write" ， Microsoft.Network/privateDnsZones/virtualNetworkLinks/write" ， Microsoft.Network/virtualNetworks/join/action" ， Microsoft.Network/privateDnsZones/A/write" ， Microsoft.Network/privateDnsZones/read" ， Microsoft.Network/privateDnsZones/virtualNetworkLinks/read" ，	用于管理私有端点。如果未向子网外部提供连接，则会使用私有端点。Cloud Manager 会为 HA 创建存储帐户，但子网中只有内部连接。
" Microsoft.NetApp/netAppAccounts/capacityPools/volumes/delete" ，	允许 Cloud Manager 删除 Azure NetApp Files 的卷。
"microsoft.resources/deployments/operationStatuss/Read"	Azure 在某些虚拟机部署中需要此权限（取决于部署期间使用的底层物理硬件）。
"microsoft.resources/deployments/operationStatuss/Read" ， "microsoft.Insights / Metrics /Read" ， Microsoft.Compute/virtualMachines/extensions/write" ， Microsoft.Compute/virtualMachines/extensions/read" ， Microsoft.Compute/virtualMachines/extensions/delete" ， Microsoft.Compute/virtualMachines/delete" ， Microsoft.Network/networkInterfaces/delete" ， Microsoft.Network/networkSecurityGroups/delete" ， "Microsoft 。 resources/deployments/delete" ，	用于使用全局文件缓存。

操作	目的
Microsoft.Network/privateEndpoints/delete" ， Microsoft.Compute/availabilitySets/delete" ，	允许 Cloud Manager 在部署失败或删除时从属于 Cloud Volumes ONTAP 的资源组中删除资源。
Microsoft.Compute/diskEncryptionSets/read" Microsoft.Compute/diskEncryptionSets/write" ， Microsoft.Compute/diskEncryptionSets/delete" "microsoft.KeyVault/vauls/deploy/action" ， "microsoft.KeyVault/vauls/read" ， "microsoft.KeyVault/vauls/accessPolicies/write" ，	支持将客户管理的加密密钥与 Cloud Volumes ONTAP 结合使用。使用 API 支持此功能。
"microsoft.resources/tags /read" ， "microsoft.resources/tags /write" ， "microsoft.resources/tags /delete"	用于使用 Cloud Manager 标记服务管理 Azure 资源上的标记。
Microsoft.Network/applicationSecurityGroups/write" ， Microsoft.Network/applicationSecurityGroups/read" ， Microsoft.Network/applicationSecurityGroups/joinIpConfiguration/action" ， Microsoft.Network/networkSecurityGroups/securityRules/write" ， Microsoft.Network/applicationSecurityGroups/delete" ， " Microsoft.Network/networkSecurityGroups/securityRules/delete"	通过 Cloud Manager 可以为 HA 对配置应用程序安全组，从而隔离 HA 互连和集群网络 NIC 。

适用于 Connector 的 Google Cloud 权限

Cloud Manager需要在Google Cloud中执行操作的权限。这些权限包含在NetApp提供的自定义角色中。您可能希望了解 Cloud Manager 使用这些权限执行的操作。

服务帐户权限

下面显示的自定义角色提供了Connector在Google Cloud网络中管理资源和进程所需的权限。

您需要将此自定义角色应用于连接到Connector VM的服务帐户。 "查看分步说明"。

您还需要确保角色是最新的、因为在后续版本中添加了新权限。

```
title: NetApp Cloud Manager
description: Permissions for the service account associated with the
Connector instance.
stage: GA
includedPermissions:
- iam.serviceAccounts.actAs
- compute.regionBackendServices.create
- compute.regionBackendServices.get
- compute.regionBackendServices.list
- compute.networks.updatePolicy
- compute.backendServices.create
```

```
- compute.addresses.list
- compute.disks.create
- compute.disks.createSnapshot
- compute.disks.delete
- compute.disks.get
- compute.disks.list
- compute.disks.setLabels
- compute.disks.use
- compute.firewalls.create
- compute.firewalls.delete
- compute.firewalls.get
- compute.firewalls.list
- compute.globalOperations.get
- compute.images.get
- compute.images.getFromFamily
- compute.images.list
- compute.images.useReadOnly
- compute.instances.addAccessConfig
- compute.instances.attachDisk
- compute.instances.create
- compute.instances.delete
- compute.instances.detachDisk
- compute.instances.get
- compute.instances.getSerialPortOutput
- compute.instances.list
- compute.instances.setDeletionProtection
- compute.instances.setLabels
- compute.instances.setMachineType
- compute.instances.setMetadata
- compute.instances.setTags
- compute.instances.start
- compute.instances.stop
- compute.instances.updateDisplayDevice
- compute.machineTypes.get
- compute.networks.get
- compute.networks.list
- compute.projects.get
- compute.regions.get
- compute.regions.list
- compute.snapshots.create
- compute.snapshots.delete
- compute.snapshots.get
- compute.snapshots.list
- compute.snapshots.setLabels
- compute.subnetworks.get
- compute.subnetworks.list
```

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- compute.subnetworks.use
- compute.subnetworks.useExternalIp
- compute.zoneOperations.get
- compute.zones.get
- compute.zones.list
- compute.instances.setServiceAccount
- deploymentmanager.compositeTypes.get
- deploymentmanager.compositeTypes.list
- deploymentmanager.deployments.create
- deploymentmanager.deployments.delete
- deploymentmanager.deployments.get
- deploymentmanager.deployments.list
- deploymentmanager.manifests.get
- deploymentmanager.manifests.list
- deploymentmanager.operations.get
- deploymentmanager.operations.list
- deploymentmanager.resources.get
- deploymentmanager.resources.list
- deploymentmanager.typeProviders.get
- deploymentmanager.typeProviders.list
- deploymentmanager.types.get
- deploymentmanager.types.list
- logging.logEntries.list
- logging.privateLogEntries.list
- resourcemanager.projects.get
- storage.buckets.create
- storage.buckets.delete
- storage.buckets.get
- storage.buckets.list
- cloudkms.cryptoKeyVersions.useToEncrypt
- cloudkms.cryptoKeys.get
- cloudkms.cryptoKeys.list
- cloudkms.keyRings.list
- storage.buckets.update
- iam.serviceAccounts.getIamPolicy
- iam.serviceAccounts.list
- storage.objects.get
- storage.objects.list
- monitoring.timeSeries.list
- storage.buckets.getIamPolicy
```

如何使用Google Cloud权限

操作	目的
— compute.disks.create — compute.disks.createSnapshot — compute.disks.delete — compute.disks.get — compute.disks.list — compute.disks.setLabels — compute.disks.use	为 Cloud Volumes ONTAP 创建和管理磁盘。
— compute.v防火墙 创建— compute.firewalls.delete — compute.v防火墙 .get — compute.v防火墙 列表	为 Cloud Volumes ONTAP 创建防火墙规则。
— compute.globalOperations.get	以获取操作状态。
— compute.images.get — compute.images.getFromFamily — compute.images.list — compute.images.useReadOnly	为 VM 实例获取映像。
— compute.instances.attachDisk — compute.instances.detachDisk	将磁盘连接和断开与 Cloud Volumes ONTAP 的连接。
— compute.instances.create — compute.instances.delete	创建和删除 Cloud Volumes ONTAP VM 实例。
— compute.instances.get	列出 VM 实例。
— compute.instances.getSerialPortOutput	以获取控制台日志。
— compute.instances.list	检索区域中实例的列表。
— compute.instances.setDeletionProtection	为实例设置删除保护。
— compute.instances.setLabels	以添加标签。
— compute.instances.setMachineType — compute.instances.setMinCpuPlatform	更改 Cloud Volumes ONTAP 的计算机类型。
— compute.instances.setMetadata	以添加元数据。
— compute.instances.setTags	为防火墙规则添加标记。
— compute.instances.start — compute.instances.stop — compute.instances.updateDisplayDevice	启动和停止 Cloud Volumes ONTAP 。
— compute.machineTypes.get	获取要检查 qoutas 的核心数。
— compute.projects.get	以支持多个项目。
— compute.snapshots.create — compute.snapshots.delete — compute.snapshots.get — compute.snapshots.list — compute.snapshots.setLabels	创建和管理永久性磁盘快照。
— compute.networks.get — compute.networks.list — compute.regions.get — compute.regions.list — compute.subnetworks.get — compute.subnetworks.list — compute.zoneOperations.get — compute.zones.get — compute.zones.list	获取创建新 Cloud Volumes ONTAP 虚拟机实例所需的网络信息。

操作	目的
- deploymentmanager.compositeTypes.get - deploymentmanager.compositeTypes.list - deploymentmanager.deployments.create - deploymentmanager.deployments.delete - deploymentmanager.deployments.get - deploymentmanager.deployments.list - deploymentmanager.manifes.get - deploymentmanager.manifes.list - deploymentmanager.operations.get - deploymentmanager.resources.get - deploymentmanager.resources.list - deploymentmanager.typeProvider.get - deploymentmanager.typeProvider.get - deploymentmanager.typeProvider.list - get	使用 Google Cloud 部署管理器部署 Cloud Volumes ONTAP 虚拟机实例。
— logging.logEnrees.list — logging.privateLogEnrees.list	获取堆栈日志驱动器。
— resourcemanager.projects.get	以支持多个项目。
— storage.buctions.create — storage.buckets.delete — storage.buctions.get — storage.buctions.list — storage.buctions.update	创建和管理用于数据分层的 Google Cloud Storage 存储分段。
— cloudkms.cryptoKeyVersions.useToEncrypt — cloudkms.encryptoKeys.get — cloudkms.encryptoKeys.list — cloudkms.keyrings.list	将云密钥管理服务中由客户管理的加密密钥与 Cloud Volumes ONTAP 结合使用。
— compute.instances.setServiceAccount — iam.serviceAccounts.actAs — iam.serviceAccounts.getIamPolicy — iam.serviceAccounts.list — storage.objects.get — storage.objects.list	在 Cloud Volumes ONTAP 实例上设置服务帐户。此服务帐户提供将数据分层到 Google Cloud Storage 存储分段的权限。
— compute.addresses … list — compute.backendServices.create — compute.networks.updatePolicy — compute.regionBackendServices.create — compute.regionBackendServices.get — compute.regionBackendServices.list	部署 HA 对。
— compute.subnetworks.use — compute.subnetworks.useExternalIp — compute.instances.addAccessConfig	启用 Cloud Data sense 。
— container.clusters 。 get — container.clusters 。 list	发现在 Google Kubernetes Engine 中运行的 Kubernetes 集群。
—compute.instanceGroups.get—compute.addresses 。get	在HA对上创建和管理Storage VM。
—monitoration.timesery.list—storage.bames.getIamPolicy	了解有关Google Cloud存储分段的信息。