



## Storage

### Astra Automation

NetApp

March 17, 2024

This PDF was generated from [https://docs.netapp.com/us-en/astra-automation/workflows\\_infra/wf\\_list\\_storage\\_classes.html](https://docs.netapp.com/us-en/astra-automation/workflows_infra/wf_list_storage_classes.html) on March 17, 2024. Always check docs.netapp.com for the latest.

# Table of Contents

- Storage..... 1
  - List storage classes ..... 1
  - List storage backends ..... 3
  - Enable dynamic ANF pools for self-managed clusters..... 4

# Storage

## List storage classes

You can list the available storage classes.

### 1. Select the cloud

Perform the workflow [List the clouds](#) and select the cloud you'll be working in.

### 2. Select the cluster

Perform the workflow [List the clusters](#) and select the cluster.

### 3. List the storage classes for a specific cluster

Perform the following REST API call to list the storage classes for a specific cluster and cloud.

HTTP method	Path
GET	/accounts/{account_id}/topology/v1/clouds/<CLOUD_ID>/clusters/<CLUSTER_ID>/storageClasses

### Curl example: Return all data for all storage classes

```
curl --location -i --request GET
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/clouds/<CLOUD_ID>/clusters/<CLUSTER_ID>/storageClasses' --header 'Accept: */*' --header
'Authorization: Bearer <API_TOKEN>'
```

### JSON output example

```
{
  "items": [
    {
      "type": "application/astra-storageClass",
      "version": "1.1",
      "id": "4bacbb3c-0727-4f58-b13c-3a2a069baf89",
      "name": "ontap-basic",
      "provisioner": "csi.trident.netapp.io",
      "available": "eligible",
      "allowVolumeExpansion": "true",
      "reclaimPolicy": "Delete",
      "volumeBindingMode": "Immediate",
      "isDefault": "true",
      "metadata": {
        "createdBy": "system",
```

```

        "creationTimestamp": "2022-10-26T05:16:19Z",
        "modificationTimestamp": "2022-10-26T05:16:19Z",
        "labels": []
    },
    {
        "type": "application/astra-storageClass",
        "version": "1.1",
        "id": "150fe657-4a42-47a3-abc6-5dafba3de8bf",
        "name": "thin",
        "provisioner": "kubernetes.io/vsphere-volume",
        "available": "ineligible",
        "reclaimPolicy": "Delete",
        "volumeBindingMode": "Immediate",
        "metadata": {
            "createdBy": "system",
            "creationTimestamp": "2022-10-26T04:46:08Z",
            "modificationTimestamp": "2022-11-04T14:58:19Z",
            "labels": []
        }
    },
    {
        "type": "application/astra-storageClass",
        "version": "1.1",
        "id": "7c6a5c58-6a0d-4cb6-98a0-8202ad2de74a",
        "name": "thin-csi",
        "provisioner": "csi.vsphere.vmware.com",
        "available": "ineligible",
        "allowVolumeExpansion": "true",
        "reclaimPolicy": "Delete",
        "volumeBindingMode": "WaitForFirstConsumer",
        "metadata": {
            "createdBy": "system",
            "creationTimestamp": "2022-10-26T04:46:17Z",
            "modificationTimestamp": "2022-10-26T04:46:17Z",
            "labels": []
        }
    },
    {
        "type": "application/astra-storageClass",
        "version": "1.1",
        "id": "7010ef09-92a5-4c90-a5e5-3118e02dc9a7",
        "name": "vsim-san",
        "provisioner": "csi.trident.netapp.io",
        "available": "eligible",
        "allowVolumeExpansion": "true",

```

```

    "reclaimPolicy": "Delete",
    "volumeBindingMode": "Immediate",
    "metadata": {
      "createdBy": "system",
      "creationTimestamp": "2022-11-03T18:40:03Z",
      "modificationTimestamp": "2022-11-03T18:40:03Z",
      "labels": []
    }
  }
]
}

```

## List storage backends

You can list the available storage backends.

### 1. List the backends

Perform the following REST API call.

HTTP method	Path
GET	/accounts/{account_id}/topology/v1/storageBackends

### Curl example: Return all data for all storage backends

```

curl --location -i --request GET
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/storageBackends
' --header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>'

```

### JSON output example

```

{
  "items": [
    {
      "backendCredentialsName": "10.191.77.177",
      "backendName": "myinchunhcluster-1",
      "backendType": "ONTAP",
      "backendVersion": "9.8.0",
      "configVersion": "Not applicable",
      "health": "Not applicable",
      "id": "46467c16-1585-4b71-8e7f-f0bc5ff9da15",
      "location": "nalab2",
      "metadata": {
        "createdBy": "4c483a7e-207b-4f9a-87b7-799a4629d7c8",
        "creationTimestamp": "2021-07-30T14:26:19Z",
        "modificationTimestamp": "2021-07-30T14:26:19Z"
      },
      "ontap": {
        "backendManagementIP": "10.191.77.177",
        "managementIPs": [
          "10.191.77.177",
          "10.191.77.179"
        ]
      },
      "protectionPolicy": "Not applicable",
      "region": "Not applicable",
      "state": "Running",
      "stateUnready": [],
      "type": "application/astra-storageBackend",
      "version": "1.0",
      "zone": "Not applicable"
    }
  ]
}

```

## Enable dynamic ANF pools for self-managed clusters

When backing up a managed app in a private on-premises cluster that has an ANF storage backend, you must enable the dynamic ANF pools feature. This is done by providing a subscription ID to use when expanding and contracting the capacity pools.



Dynamic ANF pools is feature of the Astra managed apps that use an Azure NetApp Files (ANF) storage backend. When backing up these apps, Astra automatically expands and contracts the capacity pools the persistent volumes belong to by a factor of 1.5. This ensures there is enough space for the backup without incurring an additional permanent charge. See [Azure application backups](#) for more information.

## 1. Add the Azure subscription identifier

Perform the following REST API call.



You need to update the JSON input example as appropriate for your environment, including the subscription ID and the base64 value for the service principal.

HTTP method	Path
POST	/accounts/{account_id}/core/v1/credentials

### JSON input example

```
{
  "keyStore": {
    "privKey": "SGkh",
    "pubKey": "UGhpcyCpcyBhbiBleGFtcGxlLg==",
    "base64":
    "fwogICAgJmFwcElkIjogIjY4ZmSiODFiLTY0YWYtNDdjNC04ZjUzLWE2NDdlZTUzMGMZkZCIsC
    iAgICAiZGZlcGxheU5hbWUiOiAic3AtYXN0cmEtZGV2LXFhIiwKICAgICJuYW1lIjogImh0dHA
    6Ly9zcC1hc3RyYS1kZXYtcWEiLAogICAgInBhc3N3b3JkIjogIml1LQThRfk9IVVJkZWZYM0pST
    WJlLnUeFbleVE0UnNwTG9DcUJjazAiLAogICAgInRlbnRudCI6ICIwMTFjZGY2Yy03NTEyLTQ
    3MDUtYjI0ZS03NzIxYWZkOGNhMzciLAogICAgInN1YnNjcmlwdGlvbklkIjogImIyMDAxNTVmL
    TAwMWEtNDNiZS04N2JlLTNlZGRlODNhY2VmNCIKfQ=="
  },
  "name": "myCert",
  "type": "application/astra-credential",
  "version": "1.1",
  "metadata": {
    "labels": [
      {
        "name": "astra.netapp.io/labels/read-only/credType",
        "value": "service-account"
      },
      {
        "name": "astra.netapp.io/labels/read-only/cloudName",
        "value": "OCP"
      },
      {
        "name": "astra.netapp.io/labels/read-only/azure/subscriptionID",
        "value": "b212156f-001a-43be-87be-3edde83acef5"
      }
    ]
  }
}
```

## Curl example

```
curl --location -i --request POST --data @JSONinput
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/core/v1/credentials'
--header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>'
--header 'Content-Type: application/astra-credential+json'
```

## 2. Add a bucket if needed

You should add a bucket to the managed application if needed.

## 3. Take a backup of the managed app

Perform the workflow [Create a backup for an app](#). The capacity pool where the original persistent volume is present will expand and shrink automatically.

## 4. Review the event log

Activity events are logged during the backup. Perform the workflow [List the notifications](#) to view the messages.



## Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.