



# Storage backend

## Astra Automation

NetApp  
December 01, 2023

# 목차

Storage backend .....	1
Storage backend overview .....	1
Create a new storage backend .....	1
List all storage backends .....	17
Retrieve a storage backend .....	31
Modify a storage backend .....	45
Delete a storage backend .....	57

# Storage backend

## Storage backend overview

The Storage Backend API provides access to representations of providers of storage services (storage backends) that can be used by managed clusters and applications.

## Create a new storage backend

POST /accounts/{account\_id}/topology/v1/storageBackends

Indicates desired values for the Storage Backend API resource to be created.

### Parameters

Name	Type	In	Required	Description
account_id	string	path	True	ID of the containing account resource <ul style="list-style-type: none"><li>example: {{.Account}}</li></ul>

### Request Body

Indicates desired values for the Storage Backend API resource to be created.

Name	Type	Required	Description
type	string	True	Media type of the resource. Defined values are: <ul style="list-style-type: none"><li>"application/astra-storageBackend"</li></ul>
version	string	True	Version of the resource. Defined values are: <ul style="list-style-type: none"><li>"1.0"</li><li>"1.1"</li><li>"1.2"</li><li>"1.3"</li></ul>

Name	Type	Required	Description
backendName	string	False	<p>JSON string containing a user-specified name for the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendType	string	True	<p>JSON string containing a value indicating the type of the storage backend being represented. Defined values are:</p> <ul style="list-style-type: none"> <li>• "ontap" - The storage backend represents a NetApp ONTAP system</li> <li>• enum: ["ontap"]</li> <li>• example: ontap</li> </ul>
backendVersion	string	False	<p>JSON string containing a value indicating the version of the storage backend being represented. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendCredentialsName	string	False	<p>JSON string containing a value indicating the name of one or more credential resources used for the storage backend. Allows for credential rotation where multiple credential objects have the same name. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>

Name	Type	Required	Description
metadata	<a href="#">type_astra_metadata_update</a>	False	<p>Client and service-specified metadata associated with the resource. Defined values are:</p> <ul style="list-style-type: none"> <li>Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.</li> </ul>

### Example request

```
{
  "type": "application/astra-storageBackend",
  "version": "1.3",
  "backendName": "st1-45",
  "backendType": "ontap",
  "backendCredentialsName": "st1-45-cred"
}
```

### Response

Status: 201, Returns the newly created storageBackend resource in the JSON response body.

Name	Type	Required	Description
type	string	True	<p>Media type of the resource. Defined values are:</p> <ul style="list-style-type: none"> <li>"application/astra-storageBackend"</li> </ul>

Name	Type	Required	Description
version	string	True	Version of the resource. Defined values are: <ul style="list-style-type: none"> <li>• "1.0"</li> <li>• "1.1"</li> <li>• "1.2"</li> <li>• "1.3"</li> </ul>
id	string	True	Globally unique identifier of the resource. Defined values are: <ul style="list-style-type: none"> <li>• Conforms to the UUIDv4 Schema</li> </ul>
backendName	string	True	JSON string containing a user-specified name for the storage backend. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendType	string	True	JSON string containing a value indicating the type of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• "ontap" - The storage backend represents a NetApp ONTAP system</li> <li>• enum: ["ontap"]</li> <li>• example: ontap</li> </ul>
backendVersion	string	True	JSON string containing a value indicating the version of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>

Name	Type	Required	Description
backendCredentialsName	string	True	<p>JSON string containing a value indicating the name of one or more credential resources used for the storage backend. Allows for credential rotation where multiple credential objects have the same name. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
configVersion	string	False	<p>JSON string containing a value indicating the active configuration to be used by the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
state	string	True	<p>JSON string containing a value indicating the operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "discovered" - The storage backend has been discovered from a managed cluster</li> <li>• "running" - The storage backend is running normally</li> <li>• "unknown" - The state of the storage backend cannot be determined</li> <li>• "failed" - The storage backend is in an unavailable state</li> </ul>

Name	Type	Required	Description
stateDesired	string	False	<p>JSON string containing a value indicating the desired operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "running" - The storage backend will be in a normal running state</li> </ul>
stateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why a storage backend is unable to transition to "running", why it has transitioned to "failed" or "unknown", and/or why it is at risk of transitioning to "failed". Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
managedState	string	True	<p>JSON string containing a value indicating the management state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "pending" - The storage backend is scheduled to be discovered or added</li> <li>• "unmanaged" - The storage backend is in a "discovered" state, is not under management, and is eligible for management</li> <li>• "managed" - The storage backend is in a "running" or "unknown" state and is under management</li> </ul>



Name	Type	Required	Description
managedStateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why the storage backend is ineligible to be managed. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
healthState	string	False	<p>JSON string containing a value indicating the health state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "indeterminate" - The health of the resource cannot be determined (for example, due to lack of connectivity)</li> <li>• "normal" - The resource has no known issues and can provide services in accordance with the interface specification</li> <li>• "warning" - The resource has known issues that do not prevent it providing services in accordance with the interface specification</li> <li>• "critical" - The resource has known issues that prevent it from providing services in accordance with the interface specification</li> </ul>

Name	Type	Required	Description
healthStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a storage backend is not in a normal health state. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
protectionState	string	True	<p>JSON string containing a value indicating the protection state of the storage backend. "unknown" for ONTAP. Defined values are:</p> <ul style="list-style-type: none"> <li>• "protected" - The storage backend has a protection policy defined and is in conformance with that policy</li> <li>• "partial" - The storage backend has a protection policy defined but is out of conformance with that policy</li> <li>• "none" - The storage backend is not protected</li> <li>• "unknown" - The storage backend protection policy conformance cannot be determined</li> <li>• enum: ["protected", "partial", "none", "unknown"]</li> <li>• example: protected</li> </ul>

Name	Type	Required	Description
protectionStateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why a protection policy is out of conformance. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
capabilities	capabilities	True	<p>JSON object containing this Storage Backend capabilities.</p>
ontap	ontap	False	<p>JSON object containing specific information related to ONTAP clusters.</p> <ul style="list-style-type: none"> <li>• additionalProperties: false</li> </ul>
metadata	type_astra_metadata_update	True	<p>Client and service-specified metadata associated with the resource. Defined values are:</p> <ul style="list-style-type: none"> <li>• Conforms to the Astra Metadata Schema. If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.</li> </ul>

## Example response

```
{
  "type": "application/astra-storageBackend",
  "version": "1.3",
  "id": "04ad4237-3c89-5ca5-8a40-282ab5eb6428",
  "backendName": "st1-45",
  "backendType": "ontap",
  "backendVersion": "9.8",
  "backendCredentialsName": "st1-45-cred",
  "state": "running",
  "stateUnready": [],
  "managedState": "managed",
  "managedStateUnready": [],
  "protectionState": "unknown",
  "protectionStateUnready": [
    "Waiting for storage backend discovery"
  ],
  "ontap": {
    "authenticationStyle": "basic",
    "backendManagementIP": "10.193.179.105",
    "managementIPs": [
      "10.193.188.110",
      "10.193.179.105",
      "10.193.179.106"
    ]
  },
  "capabilities": {
    "flexClone": "true",
    "snapMirror": "true",
    "s3": "true"
  },
  "metadata": {
    "labels": [],
    "creationTimestamp": "2022-10-06T20:58:16.305662Z",
    "modificationTimestamp": "2022-10-06T20:58:16.305662Z",
    "createdBy": "8f84cf09-8036-51e4-b579-bd30cb07b269"
  }
}
```

## Response

```
Status: 401, Unauthorized
```

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/3",
  "title": "Missing bearer token",
  "detail": "The request is missing the required bearer token.",
  "status": "401"
}
```

### Response

Status: 400, Bad request

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidFields	array[invalidFields]	False	List of invalid request body fields

### Example response

```
{
  "type": "https://astra.netapp.io/problems/5",
  "title": "Invalid query parameters",
  "detail": "The supplied query parameters are invalid.",
  "status": "400"
}
```

### Response

Status: 409, Conflict

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidFields	array[invalidFields]	False	List of invalid request body fields

### Example response

```
{
  "type": "https://astra.netapp.io/problems/10",
  "title": "JSON resource conflict",
  "detail": "The request body JSON contains a field that conflicts with an idempotent value.",
  "status": "409"
}
```

### Response

Status: 403, Forbidden

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/11",
  "title": "Operation not permitted",
  "detail": "The requested operation isn't permitted.",
  "status": "403"
}
```

### Error

Status: 404, Not found

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example error response

```
{
  "type": "https://astra.netapp.io/problems/2",
  "title": "Collection not found",
  "detail": "The collection specified in the request URI wasn't
found.",
  "status": "404"
}
```

# Definitions



## See Definitions

type\_astra\_label

Name	Type	Required	Description
name	string	True	
value	string	True	

type\_astra\_metadata\_update

Client and service-specified metadata associated with the resource. Defined values are:

- Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.

Name	Type	Required	Description
labels	array[type_astra_label]	False	
creationTimestamp	string	False	
modificationTimestamp	string	False	
createdBy	string	False	
modifiedBy	string	False	

capabilities

JSON object containing this Storage Backend capabilities.

Name	Type	Required	Description
flexClone	string	True	JSON string indicating if this Storage Backend supports FlexClone.
snapMirror	string	True	JSON string indicating if this Storage Backend supports SnapMirror.
s3	string	True	JSON string indicating if this Storage Backend supports s3.

ontap

JSON object containing specific information related to ONTAP clusters.

Name	Type	Required	Description
authenticationStyle	string	True	<p>JSON string indicating whether the ONTAP authentication is performed using a username/password combination or a certificate. Defined values are:</p> <ul style="list-style-type: none"> <li>• "basic" - Uses username/password</li> <li>• "certificate" - Uses certificate</li> <li>• enum: ["basic", "certificate"]</li> <li>• example: basic</li> </ul>
backendManagementIP	string	False	<p>JSON string containing the IP address used to connect to this ONTAP cluster.</p>
managementIPs	array[string]	False	<p>JSON array of JSON strings containing the list of all possible management IPs used to connect to this ONTAP cluster. This is used to correlate backends detected through Trident and storage backends in Astra.</p> <ul style="list-style-type: none"> <li>• uniqueItems: 1</li> </ul>

#### invalidParams

Name	Type	Required	Description
name	string	True	Name of the invalid query parameter
reason	string	True	Reason why the query parameter is invalid

#### invalidFields

Name	Type	Required	Description
name	string	True	Name of the invalid request body field
reason	string	True	Reason why the request body field is invalid

## List all storage backends

GET /accounts/{account\_id}/topology/v1/storageBackends

Returns a JSON array of all matching resources in the collection. If individual fields are specified in the request, the items JSON array will contain the fields requested for each matching resource in the order specified.

### Parameters

Name	Type	In	Required	Description
account_id	string	path	True	ID of the containing account resource <ul style="list-style-type: none"> <li>example: <code>{{.Account}}</code></li> </ul>
include	string	query	False	Indicates which fields should be returned when listing a collection. <p>URL examples: "include=id", "include=id,name"</p> <p>OpenAPI examples: "id"</p> <ul style="list-style-type: none"> <li>example: <code>id,name,state</code></li> </ul>

Name	Type	In	Required	Description
limit	string	query	False	Indicates the maximum number of resources to return when listing a collection.  URL examples: "limit=2"  OpenAPI examples: "2"

## Response

Status: 200, Returns a JSON array of all matching resources in the collection. If individual fields are specified in the request, the items JSON array will contain the fields requested for each matching resource in the order specified.

Name	Type	Required	Description
items	array[Any of: <a href="#">storageBackend_1.3_get_response_body</a> , array[]]	True	
metadata	<a href="#">type_astra_metadata_list</a>	True	

## Example response

```
{
  "type": "application/astra-storageBackends",
  "version": "1.3",
  "items": [
    [
      "d6ee1e51-d65f-415a-a3d4-6d7fa8b64943",
      "st1-45",
      "running"
    ],
    [
      "a5c508b7-aacd-4d19-9455-53c0d183ab4e",
      "st2-67",
      "discovered"
    ]
  ],
  "metadata": {
    "labels": [],
    "creationTimestamp": "2022-10-06T20:58:16.305662Z",
    "modificationTimestamp": "2022-10-06T20:58:16.305662Z",
    "createdBy": "8f84cf09-8036-51e4-b579-bd30cb07b269"
  }
}
```

## Response

Status: 401, Unauthorized

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/3",
  "title": "Missing bearer token",
  "detail": "The request is missing the required bearer token.",
  "status": "401"
}
```

### Response

Status: 400, Bad request

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidParams	array[invalidParams]	False	List of invalid query parameters

### Example response

```
{
  "type": "https://astra.netapp.io/problems/5",
  "title": "Invalid query parameters",
  "detail": "The supplied query parameters are invalid.",
  "status": "400"
}
```

### Response

Status: 403, Forbidden

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/11",
  "title": "Operation not permitted",
  "detail": "The requested operation isn't permitted.",
  "status": "403"
}
```

### Error

Status: 404, Not found

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example error response

```
{
  "type": "https://astra.netapp.io/problems/2",
  "title": "Collection not found",
  "detail": "The collection specified in the request URI wasn't
found.",
  "status": "404"
}
```

# Definitions



## See Definitions

capabilities

JSON object containing this Storage Backend capabilities.

Name	Type	Required	Description
flexClone	string	True	JSON string indicating if this Storage Backend supports FlexClone.
snapMirror	string	True	JSON string indicating if this Storage Backend supports SnapMirror.
s3	string	True	JSON string indicating if this Storage Backend supports s3.

ontap

JSON object containing specific information related to ONTAP clusters.

Name	Type	Required	Description
authenticationStyle	string	True	JSON string indicating whether the ONTAP authentication is performed using a username/password combination or a certificate. Defined values are: <ul style="list-style-type: none"><li>• "basic" - Uses username/password</li><li>• "certificate" - Uses certificate</li><li>• enum: ["basic", "certificate"]</li><li>• example: basic</li></ul>
backendManagementIP	string	False	JSON string containing the IP address used to connect to this ONTAP cluster.

Name	Type	Required	Description
managementIPs	array[string]	False	JSON array of JSON strings containing the list of all possible management IPs used to connect to this ONTAP cluster. This is used to correlate backends detected through Trident and storage backends in Astra.  <ul style="list-style-type: none"> <li>uniqueItems: 1</li> </ul>

#### type\_astra\_label

Name	Type	Required	Description
name	string	True	
value	string	True	

#### type\_astra\_metadata\_update

Client and service-specified metadata associated with the resource. Defined values are:

- Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.

Name	Type	Required	Description
labels	array[ <a href="#">type_astra_label</a> ]	False	
creationTimestamp	string	False	
modificationTimestamp	string	False	
createdBy	string	False	
modifiedBy	string	False	

#### storageBackend\_1.3\_get\_response\_body

Name	Type	Required	Description
type	string	True	Media type of the resource. Defined values are:  <ul style="list-style-type: none"> <li>• "application/astra-storageBackend"</li> </ul>

Name	Type	Required	Description
version	string	True	Version of the resource. Defined values are: <ul style="list-style-type: none"> <li>• "1.0"</li> <li>• "1.1"</li> <li>• "1.2"</li> <li>• "1.3"</li> </ul>
id	string	True	Globally unique identifier of the resource. Defined values are: <ul style="list-style-type: none"> <li>• Conforms to the UUIDv4 Schema</li> </ul>
backendName	string	True	JSON string containing a user-specified name for the storage backend. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendType	string	True	JSON string containing a value indicating the type of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• "ontap" - The storage backend represents a NetApp ONTAP system</li> <li>• enum: ["ontap"]</li> <li>• example: ontap</li> </ul>
backendVersion	string	True	JSON string containing a value indicating the version of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>

Name	Type	Required	Description
backendCredentialsName	string	True	<p>JSON string containing a value indicating the name of one or more credential resources used for the storage backend. Allows for credential rotation where multiple credential objects have the same name. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
configVersion	string	False	<p>JSON string containing a value indicating the active configuration to be used by the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
state	string	True	<p>JSON string containing a value indicating the operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "discovered" - The storage backend has been discovered from a managed cluster</li> <li>• "running" - The storage backend is running normally</li> <li>• "unknown" - The state of the storage backend cannot be determined</li> <li>• "failed" - The storage backend is in an unavailable state</li> </ul>

Name	Type	Required	Description
stateDesired	string	False	<p>JSON string containing a value indicating the desired operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "running" - The storage backend will be in a normal running state</li> </ul>
stateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why a storage backend is unable to transition to "running", why it has transitioned to "failed" or "unknown", and/or why it is at risk of transitioning to "failed". Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
managedState	string	True	<p>JSON string containing a value indicating the management state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "pending" - The storage backend is scheduled to be discovered or added</li> <li>• "unmanaged" - The storage backend is in a "discovered" state, is not under management, and is eligible for management</li> <li>• "managed" - The storage backend is in a "running" or "unknown" state and is under management</li> </ul>

Name	Type	Required	Description
managedStateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why the storage backend is ineligible to be managed. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
healthState	string	False	<p>JSON string containing a value indicating the health state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "indeterminate" - The health of the resource cannot be determined (for example, due to lack of connectivity)</li> <li>• "normal" - The resource has no known issues and can provide services in accordance with the interface specification</li> <li>• "warning" - The resource has known issues that do not prevent it providing services in accordance with the interface specification</li> <li>• "critical" - The resource has known issues that prevent it from providing services in accordance with the interface specification</li> </ul>

Name	Type	Required	Description
healthStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a storage backend is not in a normal health state. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
protectionState	string	True	<p>JSON string containing a value indicating the protection state of the storage backend. "unknown" for ONTAP. Defined values are:</p> <ul style="list-style-type: none"> <li>• "protected" - The storage backend has a protection policy defined and is in conformance with that policy</li> <li>• "partial" - The storage backend has a protection policy defined but is out of conformance with that policy</li> <li>• "none" - The storage backend is not protected</li> <li>• "unknown" - The storage backend protection policy conformance cannot be determined</li> <li>• enum: ["protected", "partial", "none", "unknown"]</li> <li>• example: protected</li> </ul>

Name	Type	Required	Description
protectionStateUnready	array[string]	True	JSON array of JSON strings, each indicating a reason why a protection policy is out of conformance. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
capabilities	capabilities	True	JSON object containing this Storage Backend capabilities.
ontap	ontap	False	JSON object containing specific information related to ONTAP clusters. <ul style="list-style-type: none"> <li>• additionalProperties: false</li> </ul>
metadata	type_astra_metadata_update	True	Client and service-specified metadata associated with the resource. Defined values are: <ul style="list-style-type: none"> <li>• Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.</li> </ul>

type\_astra\_metadata\_list

Name	Type	Required	Description
continue	string	False	



Name	Type	Required	Description
count	number	False	
labels	array[type_astra_label]	False	
creationTimestamp	string	False	
modificationTimestamp	string	False	
createdBy	string	False	
modifiedBy	string	False	

invalidParams

Name	Type	Required	Description
name	string	True	Name of the invalid query parameter
reason	string	True	Reason why the query parameter is invalid

## Retrieve a storage backend

GET /accounts/{account\_id}/topology/v1/storageBackends/{storageBackend\_id}

Returns the stored Storage Backend API resource in the JSON response body.

### Parameters

Name	Type	In	Required	Description
account_id	string	path	True	ID of the containing account resource  • example: {{.Account}}
storageBackend_id	string	path	True	ID of the storageBackend collection to list

### Response

Status: 200, Returns the stored Storage Backend API resource in the JSON response body.

Name	Type	Required	Description
type	string	True	Media type of the resource. Defined values are: <ul style="list-style-type: none"> <li>• "application/astra-storageBackend"</li> </ul>
version	string	True	Version of the resource. Defined values are: <ul style="list-style-type: none"> <li>• "1.0"</li> <li>• "1.1"</li> <li>• "1.2"</li> <li>• "1.3"</li> </ul>
id	string	True	Globally unique identifier of the resource. Defined values are: <ul style="list-style-type: none"> <li>• Conforms to the UUIDv4 Schema</li> </ul>
backendName	string	True	JSON string containing a user-specified name for the storage backend. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendType	string	True	JSON string containing a value indicating the type of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• "ontap" - The storage backend represents a NetApp ONTAP system</li> <li>• enum: ["ontap"]</li> <li>• example: ontap</li> </ul>

Name	Type	Required	Description
backendVersion	string	True	<p>JSON string containing a value indicating the version of the storage backend being represented. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendCredentialsName	string	True	<p>JSON string containing a value indicating the name of one or more credential resources used for the storage backend. Allows for credential rotation where multiple credential objects have the same name. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
configVersion	string	False	<p>JSON string containing a value indicating the active configuration to be used by the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>

Name	Type	Required	Description
state	string	True	<p>JSON string containing a value indicating the operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "discovered" - The storage backend has been discovered from a managed cluster</li> <li>• "running" - The storage backend is running normally</li> <li>• "unknown" - The state of the storage backend cannot be determined</li> <li>• "failed" - The storage backend is in an unavailable state</li> </ul>
stateDesired	string	False	<p>JSON string containing a value indicating the desired operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "running" - The storage backend will be in a normal running state</li> </ul>
stateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why a storage backend is unable to transition to "running", why it has transitioned to "failed" or "unknown", and/or why it is at risk of transitioning to "failed". Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>

Name	Type	Required	Description
managedState	string	True	<p>JSON string containing a value indicating the management state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "pending" - The storage backend is scheduled to be discovered or added</li> <li>• "unmanaged" - The storage backend is in a "discovered" state, is not under management, and is eligible for management</li> <li>• "managed" - The storage backend is in a "running" or "unknown" state and is under management</li> </ul>
managedStateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why the storage backend is ineligible to be managed. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>

Name	Type	Required	Description
healthState	string	False	<p>JSON string containing a value indicating the health state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "indeterminate" - The health of the resource cannot be determined (for example, due to lack of connectivity)</li> <li>• "normal" - The resource has no known issues and can provide services in accordance with the interface specification</li> <li>• "warning" - The resource has known issues that do not prevent it providing services in accordance with the interface specification</li> <li>• "critical" - The resource has known issues that prevent it from providing services in accordance with the interface specification</li> </ul>
healthStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a storage backend is not in a normal health state. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>

Name	Type	Required	Description
protectionState	string	True	<p>JSON string containing a value indicating the protection state of the storage backend. "unknown" for ONTAP. Defined values are:</p> <ul style="list-style-type: none"> <li>• "protected" - The storage backend has a protection policy defined and is in conformance with that policy</li> <li>• "partial" - The storage backend has a protection policy defined but is out of conformance with that policy</li> <li>• "none" - The storage backend is not protected</li> <li>• "unknown" - The storage backend protection policy conformance cannot be determined</li> <li>• enum: ["protected", "partial", "none", "unknown"]</li> <li>• example: protected</li> </ul>
protectionStateUnready	array[string]	True	<p>JSON array of JSON strings, each indicating a reason why a protection policy is out of conformance. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
capabilities	<a href="#">capabilities</a>	True	<p>JSON object containing this Storage Backend capabilities.</p>

Name	Type	Required	Description
ontap	ontap	False	<p>JSON object containing specific information related to ONTAP clusters.</p> <ul style="list-style-type: none"> <li>• additionalProperties: false</li> </ul>
metadata	type_astra_metadata_update	True	<p>Client and service-specified metadata associated with the resource. Defined values are:</p> <ul style="list-style-type: none"> <li>• Conforms to the Astra Metadata Schema. If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.</li> </ul>



## Example response

```
{
  "type": "application/astra-storageBackend",
  "version": "1.3",
  "id": "04ad4237-3c89-5ca5-8a40-282ab5eb6428",
  "backendName": "st1-45",
  "backendType": "ontap",
  "backendVersion": "9.8",
  "backendCredentialsName": "st1-45-cred",
  "state": "discovered",
  "stateUnready": [],
  "managedState": "unmanaged",
  "managedStateUnready": [],
  "protectionState": "unknown",
  "protectionStateUnready": [
    "Waiting for storage backend discovery"
  ],
  "capabilities": {
    "flexClone": "true",
    "snapMirror": "true",
    "s3": "true"
  },
  "ontap": {
    "authenticationStyle": "basic",
    "backendManagementIP": "10.193.179.105",
    "managementIPs": [
      "10.193.188.110",
      "10.193.179.105",
      "10.193.179.106"
    ]
  },
  "metadata": {
    "labels": [],
    "creationTimestamp": "2022-10-06T20:58:16.305662Z",
    "modificationTimestamp": "2022-10-06T20:58:16.305662Z",
    "createdBy": "8f84cf09-8036-51e4-b579-bd30cb07b269"
  }
}
```

## Response

```
Status: 401, Unauthorized
```

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/3",
  "title": "Missing bearer token",
  "detail": "The request is missing the required bearer token.",
  "status": "401"
}
```

### Response

Status: 400, Bad request

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidParams	array[invalidParams]	False	List of invalid query parameters

## Example response

```
{
  "type": "https://astra.netapp.io/problems/5",
  "title": "Invalid query parameters",
  "detail": "The supplied query parameters are invalid.",
  "status": "400"
}
```

## Response

Status: 403, Forbidden

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

## Example response

```
{
  "type": "https://astra.netapp.io/problems/11",
  "title": "Operation not permitted",
  "detail": "The requested operation isn't permitted.",
  "status": "403"
}
```

## Error

Status: 404, Not found

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	

Name	Type	Required	Description
status	string	True	
correlationID	string	False	

### Example error response

```
{
  "type": "https://astra.netapp.io/problems/2",
  "title": "Collection not found",
  "detail": "The collection specified in the request URI wasn't
found.",
  "status": "404"
}
```

### Definitions

## See Definitions

capabilities

JSON object containing this Storage Backend capabilities.

Name	Type	Required	Description
flexClone	string	True	JSON string indicating if this Storage Backend supports FlexClone.
snapMirror	string	True	JSON string indicating if this Storage Backend supports SnapMirror.
s3	string	True	JSON string indicating if this Storage Backend supports s3.

ontap

JSON object containing specific information related to ONTAP clusters.

Name	Type	Required	Description
authenticationStyle	string	True	JSON string indicating whether the ONTAP authentication is performed using a username/password combination or a certificate. Defined values are: <ul style="list-style-type: none"><li>• "basic" - Uses username/password</li><li>• "certificate" - Uses certificate</li><li>• enum: ["basic", "certificate"]</li><li>• example: basic</li></ul>
backendManagementIP	string	False	JSON string containing the IP address used to connect to this ONTAP cluster.

Name	Type	Required	Description
managementIPs	array[string]	False	JSON array of JSON strings containing the list of all possible management IPs used to connect to this ONTAP cluster. This is used to correlate backends detected through Trident and storage backends in Astra.  <ul style="list-style-type: none"> <li>• uniqueItems: 1</li> </ul>

#### type\_astra\_label

Name	Type	Required	Description
name	string	True	
value	string	True	

#### type\_astra\_metadata\_update

Client and service-specified metadata associated with the resource. Defined values are:

- Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.

Name	Type	Required	Description
labels	array[ <a href="#">type_astra_label</a> ]	False	
creationTimestamp	string	False	
modificationTimestamp	string	False	
createdBy	string	False	
modifiedBy	string	False	

#### invalidParams

Name	Type	Required	Description
name	string	True	Name of the invalid query parameter
reason	string	True	Reason why the query parameter is invalid

# Modify a storage backend

PUT /accounts/{account\_id}/topology/v1/storageBackends/{storageBackend\_id}

Replaces the entire stored resource with the supplied JSON request body while preserving key values that are not user-modifiable.

## Side Effects

- Specifying a configuration version results in storage backend type-specific configuration changes being applied, which can include the initial installation of a storage backend.
- Specifying a configuration version might result in storageClass resources being added, modified, or removed.

## Parameters

Name	Type	In	Required	Description
account_id	string	path	True	ID of the containing account resource  • example: {{.Account}}
storageBackend_id	string	path	True	ID of the storageBackend collection to list

## Request Body

Replaces the entire stored resource with the supplied JSON request body while preserving key values that are not user-modifiable.

## Side Effects

- Specifying a configuration version results in storage backend type-specific configuration changes being applied, which can include the initial installation of a storage backend.
- Specifying a configuration version might result in storageClass resources being added, modified, or removed.

Name	Type	Required	Description
type	string	True	Media type of the resource. Defined values are:  • "application/astra-storageBackend"

Name	Type	Required	Description
version	string	True	Version of the resource. Defined values are: <ul style="list-style-type: none"> <li>• "1.0"</li> <li>• "1.1"</li> <li>• "1.2"</li> <li>• "1.3"</li> </ul>
id	string	False	Globally unique identifier of the resource. Defined values are: <ul style="list-style-type: none"> <li>• Conforms to the UUIDv4 Schema</li> </ul>
backendName	string	False	JSON string containing a user-specified name for the storage backend. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
backendType	string	False	JSON string containing a value indicating the type of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• "ontap" - The storage backend represents a NetApp ONTAP system</li> <li>• enum: ["ontap"]</li> <li>• example: ontap</li> </ul>
backendVersion	string	False	JSON string containing a value indicating the version of the storage backend being represented. Defined values are: <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>



Name	Type	Required	Description
backendCredentialsName	string	False	<p>JSON string containing a value indicating the name of one or more credential resources used for the storage backend. Allows for credential rotation where multiple credential objects have the same name. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
configVersion	string	False	<p>JSON string containing a value indicating the active configuration to be used by the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 63</li> </ul>
state	string	False	<p>JSON string containing a value indicating the operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "discovered" - The storage backend has been discovered from a managed cluster</li> <li>• "running" - The storage backend is running normally</li> <li>• "unknown" - The state of the storage backend cannot be determined</li> <li>• "failed" - The storage backend is in an unavailable state</li> </ul>

Name	Type	Required	Description
stateDesired	string	False	<p>JSON string containing a value indicating the desired operational state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "running" - The storage backend will be in a normal running state</li> </ul>
stateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a storage backend is unable to transition to "running", why it has transitioned to "failed" or "unknown", and/or why it is at risk of transitioning to "failed". Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
managedState	string	False	<p>JSON string containing a value indicating the management state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "pending" - The storage backend is scheduled to be discovered or added</li> <li>• "unmanaged" - The storage backend is in a "discovered" state, is not under management, and is eligible for management</li> <li>• "managed" - The storage backend is in a "running" or "unknown" state and is under management</li> </ul>

Name	Type	Required	Description
managedStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why the storage backend is ineligible to be managed. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
healthState	string	False	<p>JSON string containing a value indicating the health state of the storage backend. Defined values are:</p> <ul style="list-style-type: none"> <li>• "indeterminate" - The health of the resource cannot be determined (for example, due to lack of connectivity)</li> <li>• "normal" - The resource has no known issues and can provide services in accordance with the interface specification</li> <li>• "warning" - The resource has known issues that do not prevent it providing services in accordance with the interface specification</li> <li>• "critical" - The resource has known issues that prevent it from providing services in accordance with the interface specification</li> </ul>

Name	Type	Required	Description
healthStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a storage backend is not in a normal health state. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
protectionState	string	False	<p>JSON string containing a value indicating the protection state of the storage backend. "unknown" for ONTAP. Defined values are:</p> <ul style="list-style-type: none"> <li>• "protected" - The storage backend has a protection policy defined and is in conformance with that policy</li> <li>• "partial" - The storage backend has a protection policy defined but is out of conformance with that policy</li> <li>• "none" - The storage backend is not protected</li> <li>• "unknown" - The storage backend protection policy conformance cannot be determined</li> <li>• enum: ["protected", "partial", "none", "unknown"]</li> <li>• example: protected</li> </ul>

Name	Type	Required	Description
protectionStateUnready	array[string]	False	<p>JSON array of JSON strings, each indicating a reason why a protection policy is out of conformance. Defined values are:</p> <ul style="list-style-type: none"> <li>• Minimum length: 1</li> <li>• Maximum length: 127</li> </ul>
ontap	ontap	False	<p>JSON object containing specific information related to ONTAP clusters.</p> <ul style="list-style-type: none"> <li>• additionalProperties: false</li> </ul>
metadata	type_astra_metadata_update	False	<p>Client and service-specified metadata associated with the resource. Defined values are:</p> <ul style="list-style-type: none"> <li>• Conforms to the Astra Metadata Schema. If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.</li> </ul>

### Example request

```

{
  "type": "application/astra-storageBackend",
  "version": "1.3",
  "backendName": "st1-46"
}

```

## Response

Status: 204, Indicates if the storageBackend resource was updated.

## Response

Status: 401, Unauthorized

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/3",
  "title": "Missing bearer token",
  "detail": "The request is missing the required bearer token.",
  "status": "401"
}
```

## Response

Status: 400, Bad request

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidFields	array[invalidFields]	False	List of invalid request body fields

### Example response

```
{
  "type": "https://astra.netapp.io/problems/5",
  "title": "Invalid query parameters",
  "detail": "The supplied query parameters are invalid.",
  "status": "400"
}
```

### Response

Status: 409, Conflict

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidFields	array[invalidFields]	False	List of invalid request body fields

### Example response

```
{
  "type": "https://astra.netapp.io/problems/10",
  "title": "JSON resource conflict",
  "detail": "The request body JSON contains a field that conflicts with an idempotent value.",
  "status": "409"
}
```

### Response

Status: 403, Forbidden

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example response

```
{
  "type": "https://astra.netapp.io/problems/11",
  "title": "Operation not permitted",
  "detail": "The requested operation isn't permitted.",
  "status": "403"
}
```

### Error

Status: 404, Not found

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

### Example error response

```
{
  "type": "https://astra.netapp.io/problems/1",
  "title": "Resource not found",
  "detail": "The resource specified in the request URI wasn't found.",
  "status": "404"
}
```



# Definitions

## See Definitions

ontap

JSON object containing specific information related to ONTAP clusters.

Name	Type	Required	Description
backendManagementIP	string	False	JSON string containing the IP address used to connect to this ONTAP cluster.
managementIPs	array[string]	False	JSON array of JSON strings containing the list of all possible management IPs used to connect to this ONTAP cluster. This is used to correlate backends detected through Trident and storage backends in Astra.  • <code>uniqueItems: 1</code>

type\_astra\_label

Name	Type	Required	Description
name	string	True	
value	string	True	

type\_astra\_metadata\_update

Client and service-specified metadata associated with the resource. Defined values are:

- Conforms to the Astra Metadata Schema If not specified on create, a metadata object will be created with no labels. If not specified on update, the metadata object's labels, creationTimestamp and createdBy, will be preserved without modification.

Name	Type	Required	Description
labels	array[type_astra_label]	False	
creationTimestamp	string	False	
modificationTimestamp	string	False	
createdBy	string	False	
modifiedBy	string	False	

invalidParams

Name	Type	Required	Description
name	string	True	Name of the invalid query parameter
reason	string	True	Reason why the query parameter is invalid

invalidFields

Name	Type	Required	Description
name	string	True	Name of the invalid request body field
reason	string	True	Reason why the request body field is invalid

## Delete a storage backend

DELETE /accounts/{account\_id}/topology/v1/storageBackends/{storageBackend\_id}

Removes the specified Storage Backend API resource.

### Side Effects

- All backendConfig resources associated with the storage backend are removed.
- All backendNode resources associated with the storage backend are removed.
- The storage backend might be removed.

### Parameters

Name	Type	In	Required	Description
account_id	string	path	True	ID of the containing account resource <ul style="list-style-type: none"> <li>• example: <code>{{.Account}}</code></li> </ul>
storageBackend_id	string	path	True	ID of the storageBackend collection to list

### Response

Status: 204, Indicates if the storageBackend resource was deleted.

## Response

Status: 401, Unauthorized

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

## Example response

```
{
  "type": "https://astra.netapp.io/problems/3",
  "title": "Missing bearer token",
  "detail": "The request is missing the required bearer token.",
  "status": "401"
}
```

## Response

Status: 400, Bad request

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	
invalidParams	array[invalidParams]	False	List of invalid query parameters

## Example response

```
{
  "type": "https://astra.netapp.io/problems/5",
  "title": "Invalid query parameters",
  "detail": "The supplied query parameters are invalid.",
  "status": "400"
}
```

## Response

Status: 403, Forbidden

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	
status	string	True	
correlationID	string	False	

## Example response

```
{
  "type": "https://astra.netapp.io/problems/11",
  "title": "Operation not permitted",
  "detail": "The requested operation isn't permitted.",
  "status": "403"
}
```

## Error

Status: 404, Not found

Name	Type	Required	Description
type	string	True	
title	string	True	
detail	string	True	

Name	Type	Required	Description
status	string	True	
correlationID	string	False	

### Example error response

```
{
  "type": "https://astra.netapp.io/problems/1",
  "title": "Resource not found",
  "detail": "The resource specified in the request URI wasn't found.",
  "status": "404"
}
```

## Definitions

### See Definitions

#### invalidParams

Name	Type	Required	Description
name	string	True	Name of the invalid query parameter
reason	string	True	Reason why the query parameter is invalid

## 저작권 정보

Copyright © 2023 NetApp, Inc. All Rights Reserved. 미국에서 인쇄된 본 문서의 어떠한 부분도 저작권 소유자의 사전 서면 승인 없이는 어떠한 형식이나 수단(복사, 녹음, 녹화 또는 전자 검색 시스템에 저장하는 것을 비롯한 그래픽, 전자적 또는 기계적 방법)으로도 복제될 수 없습니다.

NetApp이 저작권을 가진 자료에 있는 소프트웨어에는 아래의 라이선스와 고지사항이 적용됩니다.

본 소프트웨어는 NetApp에 의해 '있는 그대로' 제공되며 상품성 및 특정 목적에의 적합성에 대한 명시적 또는 묵시적 보증을 포함하여(이에 제한되지 않음) 어떠한 보증도 하지 않습니다. NetApp은 대체품 또는 대체 서비스의 조달, 사용 불능, 데이터 손실, 이익 손실, 영업 중단을 포함하여(이에 국한되지 않음), 이 소프트웨어의 사용으로 인해 발생하는 모든 직접 및 간접 손해, 우발적 손해, 특별 손해, 징벌적 손해, 결과적 손해의 발생에 대하여 그 발생 이유, 책임론, 계약 여부, 엄격한 책임, 불법 행위(과실 또는 그렇지 않은 경우)와 관계없이 어떠한 책임도 지지 않으며, 이와 같은 손실의 발생 가능성이 통지되었다 하더라도 마찬가지입니다.

NetApp은 본 문서에 설명된 제품을 언제든지 예고 없이 변경할 권리를 보유합니다. NetApp은 NetApp의 명시적인 서면 동의를 받은 경우를 제외하고 본 문서에 설명된 제품을 사용하여 발생하는 어떠한 문제에도 책임을 지지 않습니다. 본 제품의 사용 또는 구매의 경우 NetApp에서는 어떠한 특허권, 상표권 또는 기타 지적 재산권이 적용되는 라이선스도 제공하지 않습니다.

본 설명서에 설명된 제품은 하나 이상의 미국 특허, 해외 특허 또는 출원 중인 특허로 보호됩니다.

제한적 권리 표시: 정부에 의한 사용, 복제 또는 공개에는 DFARS 252.227-7013(2014년 2월) 및 FAR 52.227-19(2007년 12월)의 기술 데이터-비상업적 품목에 대한 권리(Rights in Technical Data -Noncommercial Items) 조항의 하위 조항 (b)(3)에 설명된 제한사항이 적용됩니다.

여기에 포함된 데이터는 상업용 제품 및/또는 상업용 서비스(FAR 2.101에 정의)에 해당하며 NetApp, Inc.의 독점 자산입니다. 본 계약에 따라 제공되는 모든 NetApp 기술 데이터 및 컴퓨터 소프트웨어는 본질적으로 상업용이며 개인 비용만으로 개발되었습니다. 미국 정부는 데이터가 제공된 미국 계약과 관련하여 해당 계약을 지원하는 데에만 데이터에 대한 전 세계적으로 비독점적이고 양도할 수 없으며 재사용이 불가능하며 취소 불가능한 라이선스를 제한적으로 가집니다. 여기에 제공된 경우를 제외하고 NetApp, Inc.의 사전 서면 승인 없이는 이 데이터를 사용, 공개, 재생산, 수정, 수행 또는 표시할 수 없습니다. 미국 국방부에 대한 정부 라이선스는 DFARS 조항 252.227-7015(b)(2014년 2월)에 명시된 권한으로 제한됩니다.

## 상표 정보

NETAPP, NETAPP 로고 및 <http://www.netapp.com/TM>에 나열된 마크는 NetApp, Inc.의 상표입니다. 기타 회사 및 제품 이름은 해당 소유자의 상표일 수 있습니다.