Manage security-related accounts

ONTAP 9.13.1 REST API reference

NetApp
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Security accounts endpoint overview

Overview

A valid user account is required to login to and provision, monitor, and manage the cluster. The scope of the management operation can be at the cluster level or at an individual SVM level. There is a need to create user accounts with specific privileges apart from the default user accounts, "admin", for cluster and "vsadmin" for SVM. Custom user accounts can be configured to perform specific (scoped) operations. User accounts can either be created locally (on the Netapp system) or referenced from an external directory server (NIS, LDAP, or Active Directory). Apart from creation, modification, and deletion of a user account, locking and unlocking of a user account or resetting the password (for local accounts only) is possible.

A user account must be associated with the following before it can become operational:

1. A management application (SSH, HTTP, console, service_processor, and such like) for user login. HTTP enables REST API access.
2. Scope - either cluster or SVM.
3. Authentication source - password (local, NIS/LDAP, Active Directory), public/private key pair-based, certificate based.
4. RBAC role - determines what operations are permitted for the user account.

Restrictions

A number of internal/restricted account names, such as admin, diag, autosupport, and root cannot be used.

There must be at least one console cluster administrator account. Any attempt to delete the last remaining administrator account fails.

Multifactor authentication is only possible for SSH applications, and the only possible combinations are password (local or NIS/LDAP/Active Directory) and public key and password or public key (local) and TOTP.

All authentication sources are not supported by all applications. You must select a compatible authentication method based on the application. The following types of authentications methods are supported:

Application	Supported Authentication Methods
amqp	password
console	password
service_processor	password
HTTP	password, domain, nsswitch, certificate
ONTAPI	password, domain, nsswitch, certificate
SSH	password, publickey (key pair), domain, nsswitch, totp

In this table, "totp" means time-based one-time password and is only allowed to be configured as second authentication, "certificate" means security certificate, "domain" means that the user directory server is an external Active Directory, "nsswitch" means the directory server is an external NIS or LDAP server. At login time, the user is authenticated with these external directory servers which must be provisioned separately.

Support for publickey authentication and MFA for Domain users has been added.

Support for TOTP as a secondary authentication method with password or public key as the primary authentication method has been added.

Examples

Creating a cluster-scoped user account

Specify the user account name, role name, and the tuples (of application and authentication methods) in the body of the POST request. The owner.uuid or owner.name are not required to be specified for a cluster-scoped user account.

Each entry in the applications array must be for a different application.

```
# The API:
POST "/api/security/accounts"

# The call to create a cluster user account with applications ssh, http
and password authentication scheme:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"name":"cluster_user1","applications":[{"application":"ssh","authenticat
ion_methods":["password"],"second_authentication_method":"none"},{"applica
tion":"http","authentication_methods":["password"]}],"role":"admin","passw
ord":"p@ssw@rd123"}'
Note: The password is an optional parameter for creation and can be set
later using a PATCH request. See the examples for modification of user
account or password.
```

Creating an SVM-scoped user account

For an SVM-scoped account, specify either the SVM name as the owner.name or SVM uuid as the owner.uuid along with other parameters for the user account. These indicate the SVM for which the user account is being created and can be obtained from the response body of GET performed on the */api/svm/svms* API.

```
# The API:
POST "/api/security/accounts"

# The call:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"owner":{"uuid":"aaef7c38-4bd3-11e9-b238-
0050568e2e25"},"name":"svm_user1","applications":[{"application":"ssh","au
thentication_methods":["password"],"second_authentication_method":"none"}]
,"role":"vsadmin","password":"p@ssw@rd123"}'
```

Retrieving the configured user accounts

Use the following API to retrieve all of the user accounts or a filtered list of user accounts (by name, for a specific SVM, and so on).

```
# The API:
GET "/api/security/accounts"

# The call to retrieve all the user accounts configured in the cluster:
curl -X GET "https://<mgmt-ip>/api/security/accounts"

# The response:
{
"records": [
  {
    "owner": {
      "uuid": "2903de6f-4bd2-11e9-b238-0050568e2e25",
      "name": "cluster1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/2903de6f-4bd2-11e9-b238-0050568e2e25"
        }
      }
    },
    "name": "admin",
    "_links": {
      "self": {
        "href": "/api/security/accounts/2903de6f-4bd2-11e9-b238-
0050568e2e25/admin"
      }
    }
  },
  {
    "owner": {
      "uuid": "2903de6f-4bd2-11e9-b238-0050568e2e25",
```

```
      "name": "cluster1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/2903de6f-4bd2-11e9-b238-0050568e2e25"
        }
      }
    },
    "name": "autosupport",
    "_links": {
      "self": {
        "href": "/api/security/accounts/2903de6f-4bd2-11e9-b238-
0050568e2e25/autosupport"
          }
    }
  },
  {
    "owner": {
      "uuid": "2903de6f-4bd2-11e9-b238-0050568e2e25",
      "name": "cluster1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/2903de6f-4bd2-11e9-b238-0050568e2e25"
        }
      }
    },
    "name": "cluster_user1",
    "_links": {
      "self": {
        "href": "/api/security/accounts/2903de6f-4bd2-11e9-b238-
0050568e2e25/cluster_user1"
      }
    }
  },
  {
    "owner": {
      "uuid": "aaef7c38-4bd3-11e9-b238-0050568e2e25",
      "name": "svm1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/aaef7c38-4bd3-11e9-b238-0050568e2e25"
        }
      }
    },
    "name": "svm_user1",
    "_links": {
      "self": {
```

```
        "href": "/api/security/accounts/aaef7c38-4bd3-11e9-b238-
0050568e2e25/svm_user1"
      }
    }
  },
  {
    "owner": {
      "uuid": "aaef7c38-4bd3-11e9-b238-0050568e2e25",
      "name": "svm1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/aaef7c38-4bd3-11e9-b238-0050568e2e25"
        }
      }
    },
    "name": "vsadmin",
    "_links": {
      "self": {
        "href": "/api/security/accounts/aaef7c38-4bd3-11e9-b238-
0050568e2e25/vsadmin"
      }
    }
  }
],
"num_records": 5,
"_links": {
  "self": {
    "href": "/api/security/accounts"
  }
}
}

# The scoped call to retrieve the configured cluster-scoped user accounts:
curl -X GET "https://<mgmt-ip>/api/security/accounts/?scope=cluster"

# The scoped call to retrieve the configured SVM-scoped user accounts:
curl -X GET "https://<mgmt-ip>/api/security/accounts/?scope=svm"

# The scoped call to retrieve the user accounts configured for the SVM
"svm1":
curl -X GET "https://<mgmt-ip>/api/security/accounts/?owner.name=svm1"

# The scoped call to retrieve the user accounts configured with the
"admin" role:
curl -X GET "https://<mgmt-ip>/api/security/accounts/?role=admin"
```

Creating an Active Directory users with publickey authentication

Specify the Active Directory user account name, role name, and the tuples (application and authentication methods) in the body of the POST request. The owner.uuid or owner.name are not required to be specified for a cluster-scoped user account.

```
# The API:
POST "/api/security/accounts"

# The call to create a cluster user account with application ssh and
publickey authentication scheme for domain users:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"name":"domain_name\\cluster_user__u1","applications":[{"application":"s
sh","authentication_methods":["publickey"]}]}'
```

Creating an Active Directory user with MFA(domain+publickey)

Specify the Active Directory user account name, role name, and the tuples (application and authentication methods) in the body of the POST request. The owner.uuid or owner.name are not required to be specified for a cluster-scoped user account.

```
# The API:
POST "/api/security/accounts"

# The call to create a cluster user account with application ssh and and
MFA for domain users:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"name":"domain_name\\cluster_user_u1","applications":[{"application":"ss
h","authentication_methods":["domain"],"second_authentication_method":"pub
lickey"}]}'
```

Retrieving the configured Active directory user accounts

Use the following API to retrieve all of the Active directory user accounts.

```
# The API:
curl -X GET "https://<mgmt-ip>/api/security/accounts/?name=*\*"

# The response:
{
"records": [
{
  "owner": {
    "uuid": "d6a740a0-4086-11ed-9f68-0050568edfd7",
    "name": "cluster-1",
    "_links": {
      "self": {
        "href": "/api/svm/svms/d6a740a0-4086-11ed-9f68-0050568edfd7"
      }
    }
  },
  "name": "domain\\ad_user_u1",
  "_links": {
    "self": {
      "href": "/api/security/accounts/d6a740a0-4086-11ed-9f68-
0050568edfd7/domain%5Cad_user_u1"
    }
  }
}
 ],
 "num_records": 1,
 "_links": {
"self": {
  "href": "/api/security/accounts/?name=*\\*"
}
 }
}
```

Creating a user with MFA (password+TOTP)

Cluster-scoped user account: Follow the cluster-scoped user creation example and additionally specify the 'totp' as the second_authentication_method.

```
# The API:
POST "/api/security/accounts"

# The call to create a cluster user account with application ssh,
authentication password and totp:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"name":"cluster_user_1","applications":[{"application":"ssh","authentica
tion_methods":["password"],"second_authentication_method":"totp"}]}'
```

SVM-scoped user account: Follow the SVM-scoped user creation example and additionally specify the 'totp' as the second_authentication_method.

```
#The API

# The call to create a SVM-scoped user account with application ssh,
authentication password and totp:
curl -X POST "https://<mgmt-ip>/api/security/accounts" -d
'{"owner":{"uuid":"aaef7c38-4bd3-11e9-b238-
0050568e2e25"},"name":"svm_user1","applications":[{"application":"ssh","au
thentication_methods":["password"],"second_authentication_method":"totp"}]
,"role":"vsadmin","password":"p@ssw@rd123"}'
```

Retrieve user accounts in the cluster

GET `/security/accounts`

Introduced In: 9.6

Retrieves a list of user accounts in the cluster.

Related ONTAP commands

- `security login show`

Learn more

- DOC /security/accounts

Parameters

Name	Type	In	Required	Description
password_hash_algorithm	string	query	False	Filter by password_hash_algorithm • Introduced in: 9.11
role.name	string	query	False	Filter by role.name • Introduced in: 9.7
locked	boolean	query	False	Filter by locked • Introduced in: 9.7
name	string	query	False	Filter by name • Introduced in: 9.7 • maxLength: 64 • minLength: 3
owner.uuid	string	query	False	Filter by owner.uuid • Introduced in: 9.7
owner.name	string	query	False	Filter by owner.name • Introduced in: 9.7
comment	string	query	False	Filter by comment • Introduced in: 9.7
applications.application	string	query	False	Filter by applications.application • Introduced in: 9.7

Name	Type	In	Required	Description
applications.authentication_methods	string	query	False	Filter by applications.authentication_methods • Introduced in: 9.7
applications.second_authentication_method	string	query	False	Filter by applications.second_authentication_method • Introduced in: 9.7
ldap_fastbind	boolean	query	False	Filter by ldap_fastbind • Introduced in: 9.11
scope	string	query	False	Filter by scope • Introduced in: 9.7
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned. • Default value: 1

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. • Default value: 1 • Max value: 120 • Min value: 0
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
num_records	integer	Number of records
records	array[account]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "applications": {
      "application": "amqp",
      "authentication_methods": {
      },
      "second_authentication_method": "none"
    },
    "comment": "string",
    "name": "joe.smith",
    "owner": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    },
    "password_hash_algorithm": "sha512",
    "role": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "admin"
    },
    "scope": "cluster"
  }
}
```

Error

```
Status: Default, Error
```

Name	Type	Description
error	error	

Example error


```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```


Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
next	href	
self	href	

_links

Name	Type	Description
self	href	

account_application

Name	Type	Description
application	string	Applications
authentication_methods	array[string]	
second_authentication_method	string	An optional additional authentication method for multifactor authentication (MFA). This is only supported with SSH as the application. Time-based One-Time Passwords (TOTPs) are only supported with the authentication method password or public key. It is ignored for all other applications.

owner

Owner name and UUID that uniquely identifies the user account.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

role

Name	Type	Description
_links	_links	
name	string	Role name

account

Name	Type	Description
_links	_links	
applications	array[account_application]	
comment	string	Optional comment for the user account.
ldap_fastbind	boolean	Optional property that specifies the mode of authentication is LDAP Fastbind.
locked	boolean	Locked status of the account.
name	string	User or group account name
owner	owner	Owner name and UUID that uniquely identifies the user account.
password	string	Password for the account. The password can contain a mix of lower and upper case alphabetic characters, digits, and special characters.
password_hash_algorithm	string	Optional property that specifies the password hash algorithm used to generate a hash of the user's password for password matching.
role	role	
scope	string	Scope of the entity. Set to "cluster" for cluster owned objects and to "svm" for SVM owned objects.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Create a new user account

POST `/security/accounts`

Introduced In: 9.6

Creates a new user account.

Required parameters

- `name` - Account name to be created.
- `applications` - Array of one or more application tuples (of application and authentication methods).

Optional parameters

- `owner.name` or `owner.uuid` - Name or UUID of the SVM for an SVM-scoped user account. If not supplied, a cluster-scoped user account is created.
- `role` - RBAC role for the user account. Defaulted to `admin` for cluster user account and to `vsadmin` for SVM-scoped account.
- `password` - Password for the user account (if the authentication method is opted as password for one or more of applications).
- `second_authentication_method` - Needed for MFA and only supported for ssh application. Defaults to `none` if not supplied.
- `comment` - Comment for the user account (e.g purpose of this account).
- `locked` - Locks the account after creation. Defaults to `false` if not supplied.

- `ldap_fastbind` - Needed for LDAP Fastbind Authentication and only supported for applications SSH, ONTAPI, and HTTP with authentication method "nsswitch" only. Defaults to false if not supplied.

Related ONTAP commands

- `security login create`

Learn more

- DOC /security/accounts

Parameters

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is false. If set to true, the records are returned. • Default value:

Request Body

Name	Type	Description
_links	_links	
applications	array[account_application]	
comment	string	Optional comment for the user account.
ldap_fastbind	boolean	Optional property that specifies the mode of authentication is LDAP Fastbind.
locked	boolean	Locked status of the account.
name	string	User or group account name
owner	owner	Owner name and UUID that uniquely identifies the user account.
password	string	Password for the account. The password can contain a mix of lower and upper case alphabetic characters, digits, and special characters.

Name	Type	Description
password_hash_algorithm	string	Optional property that specifies the password hash algorithm used to generate a hash of the user’s password for password matching.
role	role	
scope	string	Scope of the entity. Set to "cluster" for cluster owned objects and to "svm" for SVM owned objects.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "applications": {
    "application": "amqp",
    "authentication_methods": {
    },
    "second_authentication_method": "none"
  },
  "comment": "string",
  "name": "joe.smith",
  "owner": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "password_hash_algorithm": "sha512",
  "role": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "admin"
  },
  "scope": "cluster"
}
```

Response

```
Status: 201, Created
```

Headers

Name	Description	Type
Location	Useful for tracking the resource location	string

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
1261215	The role was not found.
1263343	Cannot lock user with password not set or non-password authentication method.
5636099	User creation with a non-admin role is not supported for service-processor application.
5636121	The user account name is reserved for use by the system.
5636126	Cannot create a user with the username or role as AutoSupport because it is reserved by the system.
5636140	Creating a login with application console for a data Vserver is not supported.
5636141	Creating a login with application service-processor for a data Vserver is not supported.
5636154	The second-authentication-method parameter is supported for ssh application.
5636155	The second-authentication-method parameter can be specified only if the authentication-method password or public key nsswitch.
5636156	The same value cannot be specified for the second-authentication-method and the authentication-method.
5636164	If the value for either the authentication-method second-authentication-method is nsswitch or password, the other parameter must differ.
5636197	LDAP fastbind combination for application and authentication method is not supported.
5636198	LDAP fastbind authentication is supported only for nsswitch.
5636206	Non-domain user cannot have a backslash in the username.

Error Code	Description
5636207	If the value for either the authentication-method or second-authentication-method parameters is domain, the other parameter must be publickey or none.
5636212	TOTP is supported only when the primary authentication method is password or public key.
5636214	Configuring the user with TOTP as secondary authentication method requires an effective cluster version of 9.13.1 or later
7077897	Invalid character in username.
7077898	The username must contain both letters and numbers.
7077899	The username does not meet length requirements.
7077906	A role with that name has not been defined for the Vserver.
7077918	The password cannot contain the username.
7077919	The minimum length for new password does not meet the policy.
7077920	A new password must have both letters and numbers.
7077921	The minimum number of special characters required do not meet the policy.
7077929	Cannot lock user with password not set or non-password authentication method.
7077940	The password exceeds the maximum supported length.
7077941	The defined password composition exceeds the maximum password length of 128 characters.
7078900	An admin password is not set. Set the password by including it in the request.

Name	Type	Description
error	error	

Example error


```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```


Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

account_application

Name	Type	Description
application	string	Applications
authentication_methods	array[string]	
second_authentication_method	string	An optional additional authentication method for multifactor authentication (MFA). This is only supported with SSH as the application. Time-based One-Time Passwords (TOTPs) are only supported with the authentication method password or public key. It is ignored for all other applications.

owner

Owner name and UUID that uniquely identifies the user account.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

role

Name	Type	Description
_links	_links	
name	string	Role name

account

Name	Type	Description
_links	_links	
applications	array[account_application]	
comment	string	Optional comment for the user account.
ldap_fastbind	boolean	Optional property that specifies the mode of authentication is LDAP Fastbind.
locked	boolean	Locked status of the account.
name	string	User or group account name
owner	owner	Owner name and UUID that uniquely identifies the user account.
password	string	Password for the account. The password can contain a mix of lower and upper case alphabetic characters, digits, and special characters.
password_hash_algorithm	string	Optional property that specifies the password hash algorithm used to generate a hash of the user's password for password matching.
role	role	
scope	string	Scope of the entity. Set to "cluster" for cluster owned objects and to "svm" for SVM owned objects.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

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