NetApp

Enable multifactor authentication (MFA) accounts

ONTAP 9

NetApp
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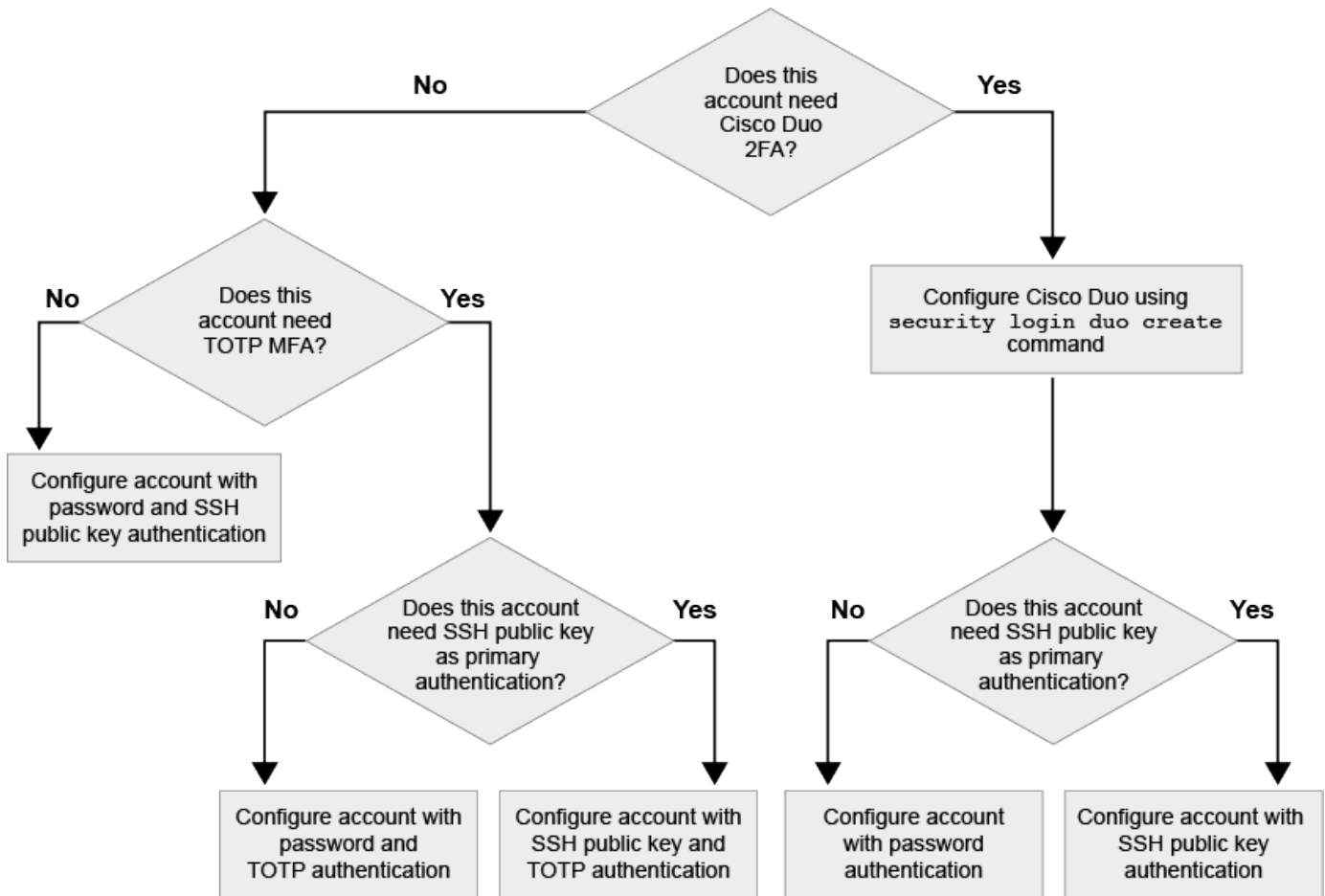# Enable multifactor authentication (MFA) accounts

Multifactor authentication overview

Multifactor authentication (MFA) allows you to enhance security by requiring users to provide two authentication methods to log in to an admin or data storage VM.

Depending upon your version of ONTAP, you can use a combination of an SSH public key, a user password, and a time-based one-time password (TOTP) for multifactor authentication. When you enable and configure Cisco Duo (ONTAP 9.14.1 and later), it serves as an additional authentication method, supplementing the existing methods for all users.

Available beginning with…	First authentication method	Second authentication method
ONTAP 9.14.1	SSH public key	TOTP
	User Password	TOTP
	SSH public key	Cisco Duo
	User password	Cisco Duo
ONTAP 9.13.1	SSH public key	TOTP
	User password	TOTP
ONTAP 9.3	SSH public key	User password

If MFA is configured, the cluster administrator must first enable the local user account, then the account must be configured by the local user.

Enable multifactor authentication

Multifactor authentication (MFA) allows you to enhance security by requiring users to provide two authentication methods to log in to an admin or data SVM.

About this task

- You must be a cluster administrator to perform this task.

- If you are unsure of the access control role that you want to assign to the login account, you can use the `security login modify` command to add the role later.

  Modifying the role assigned to an administrator

- If you are using a public key for authentication, you must associate the public key with the account before the account can access the SVM.

  Associate a public key with a user account

  You can perform this task before or after you enable account access.

- Beginning with ONTAP 9.12.1, you can use Yubikey hardware authentication devices for SSH client MFA using the FIDO2 (Fast IDentity Online) or Personal Identity Verification (PIV) authentication standards.

Enable MFA with SSH public key and user password

Beginning with ONTAP 9.3, a cluster administrator can set up local user accounts to log in with MFA using an SSH public key and a user password.

1. Enable MFA on local user account with SSH public key and user password:

```
security login create -vserver <svm_name> -user-or-group-name
<user_name> -application ssh -authentication-method <password|publickey>
-role admin -second-authentication-method <password|publickey>
```

The following command requires the SVM administrator account `admin2` with the predefined `admin` role to log in to the SVM`engData1` with both an SSH public key and a user password:

```
cluster-1::> security login create -vserver engData1 -user-or-group-name
admin2 -application ssh -authentication-method publickey -role admin
-second-authentication-method password

Please enter a password for user 'admin2':
Please enter it again:
Warning: To use public-key authentication, you must create a public key
for user "admin2".
```

Enable MFA with TOTP

Beginning with ONTAP 9.13.1, you can enhance security by requiring local users to log in to an admin or data SVM with both an SSH public key or user password and a time-based one-time password (TOTP). After the account is enabled for MFA with TOTP, the local user must log in to complete the configuration.

TOTP is a computer algorithm that uses the current time to generate a one-time password. If TOTP is used, it is always the second form of authentication after the SSH public key or the user password.

Before you begin

You must be a storage administrator to perform these tasks.

Steps

You can set up MFA to with a user password or an SSH public key as the first authentication method and TOTP as the second authentication method.

Enable MFA with user password and TOTP

1. Enable a user account for multifactor authentication with a user password and TOTP.

   For new user accounts

   ```
   security login create -vserver <svm_name> -user-or-group-name
   <user_or_group_name> -application ssh -authentication-method
   password -second-authentication-method totp -role <role> -comment
   <comment>
   ```

   For existing user accounts

   ```
   security login modify -vserver <svm_name> -user-or-group-name
   <user_or_group_name> -application ssh -authentication-method
   password -second-authentication-method totp -role <role> -comment
   <comment>
   ```

2. Verify that MFA with TOTP is enabled:

   ```
   security login show
   ```

Enable MFA with SSH public key and TOTP

1. Enable a user account for multifactor authentication with an SSH public key and TOTP.

   For new user accounts

   ```
   security login create -vserver <svm_name> -user-or-group-name
   <user_or_group_name> -application ssh -authentication-method
   publickey -second-authentication-method totp -role <role> -comment
   <comment>
   ```

   For existing user accounts

   ```
   security login modify -vserver <svm_name> -user-or-group-name
   <user_or_group_name> -application ssh -authentication-method
   publickey -second-authentication-method totp -role <role> -comment
   <comment>
   ```

2. Verify that MFA with TOTP is enabled:

```
security login show
```

After you finish

- If you have not associated a public key with the administrator account, you must do so before the account can access the SVM.

  Associating a public key with a user account

- The local user must log in to complete MFA configuration with TOTP.

  Configure local user account for MFA with TOTP

Related information

Learn more about Multifactor Authentication in ONTAP 9 (TR-4647).

Configure local user account for MFA with TOTP

Beginning in ONTAP 9.13.1, user accounts can be configured with multifactor authentication (MFA) using a time-based one-time password (TOTP).

Before you begin

- The storage administrator must enable MFA with TOTP as a second authentication method for your user account.
- Your primary user account authentication method should be a user password or public SSH key.
- You must configure your TOTP app to work with your smartphone and create your TOTP secret key.

  TOTP is supported by various authenticator apps such as Google Authenticator.

Steps

1. Log in to your user account with your current authentication method.

   Your current authentication method should be a user password or an SSH public key.

2. Create the TOTP configuration on your account:

   ```
   security login totp create -vserver "<svm_name>" -username
   "<account_username >"
   ```

3. Verify that the TOTP configuration is enabled on your account:

   ```
   security login totp show -vserver "<svm_name>" -username
   "<account_username>"
   ```

Reset TOTP secret key

To protect your account security, if your TOTP secret key is compromised or lost, you should disable it and create a new one.

Reset TOTP if your key is compromised

If your TOTP secret key is compromised, but you still have access to it, you can remove the compromised key and create a new one.

1. Log in to your user account with your user password or SSH public key and your compromised TOTP secret key.

2. Remove the compromised TOTP secret key:

   ```
   security login totp delete -vserver <svm_name> -username
   <account_username>
   ```

3. Create a new TOTP secret key:

   ```
   security login totp create -vserver <svm_name> -username
   <account_username>
   ```

4. Verify that the TOTP configuration is enabled on your account:

   ```
   security login totp show -vserver <svm_name> -username
   <account_username>
   ```

Reset TOTP if your key is lost

If your TOTP secret key is lost, contact your storage administrator to have the key disabled. After your key is disabled, you can use your first authentication method to log in and configure a new TOTP.

Before you begin

The TOTP secret key must be disabled by a storage administrator. If you do not have a storage administrator account, contact your storage administrator to have the key disabled.

Steps

1. After the TOTP secret is disabled by a storage administrator, use your primary authentication method to log in into your local account.

2. Create a new TOTP secret key:

   ```
   security login totp create -vserver <svm_name> -username
   <account_username >
   ```

3. Verify that the TOTP configuration is enabled on your account:

```
security login totp show -vserver <svm_name> -username
<account_username>
```

Disable TOTP secret key for local account

If a local user's time-based one-time password (TOTP) secret key is lost, the lost key must be disabled by a storage administrator before the user can create a new TOTP secret key.

About this task

This task can only be performed from a cluster administrator account.

Step

1. Disable the TOTP secret key:

```
security login totp delete -vserver "<svm_name>" -username
"<account_username>"
```