Advanced Authentication 6.3

User Guide

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About this Book

Advanced Authentication User Documentation is designed for all users and describes how to enroll authenticators and use the assigned authentication chains for different endpoints (Linux Client, Windows Client, and MacOS Client).

Intended Audience

This book provides information for individuals responsible for understanding administration concepts and implementing a secure, distributed administration model.

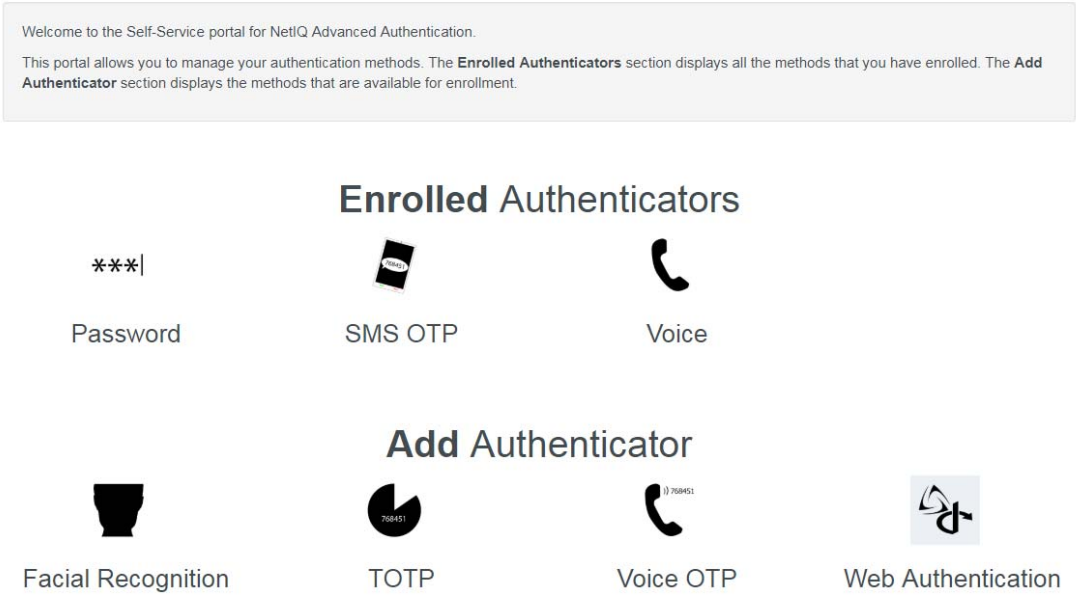
1 Logging In to Advanced Authentication Self-Service Portal

Advanced Authentication provides the Self-Service portal where you can enroll and test the authenticators. You can use the enrolled authenticator to get authorized access to any device and service that is secured with Advanced Authentication.

To access the Self-Service portal, specify `<https://<hostname>/account` in your browser. Contact your system administrator for the URL.

1. Open the URL `<https://<hostname>/account` in the browser.
2. Specify the **User name**.
3. If the administrator has configured the **Google reCAPTCHA** option in the server configurations, you will be prompted to go through the reCAPTCHA to prove that you are a human and not a robot. A series of images are displayed based on a specific criteria and you must select the appropriate images.
4. Click **Next**.
5. Select the preferred language from the list on the upper right corner of the login page.

   You can also change the language from the list on the upper right corner of the Self-Service portal. The languages supported are: Arabic, Canadian French, Chinese Simplified, Chinese Traditional, Danish, Dutch, English, French, German, Italian, Japanese, Polish, Portuguese (Brazilin), Russian, Spanish, and Swedish.



NOTE: In the **Add Authenticator** section, if you do not see a method that you need to enroll, contact your system administrator.

NOTE: For 6.3 Service Pack 1 and newer versions, see Managing Authenticators New UI. For prior versions, see Managing Authenticators

6 Select a method to enroll and test.

To log out from the Self-Service portal, click your user name in the upper-right corner and click **Log Out**.

2 Managing Authenticators

To perform authentication with Advanced Authentication, you must enroll all methods of an authentication chain which you can use for authentication. An authenticator is a set of encrypted data that contains your authentication information. You can use authenticators to log in to different operating systems such as Linux, Mac OS, and Windows. With these authenticators, you can also log in to VPN and web portals such as Citrix NetScaler, Office 365, SalesForce, and so on. Some of the authenticators such as **SMS**, **Email**, **Voice OTP, Swisscom Mobile ID, LDAP Password, Flex OTP**, and **RADIUS** are enrolled automatically.

Advanced Authentication provides the following authenticators:

- "Enrolling Multiple Authenticators of the Same Type" on page 16
- "Apple Touch ID" on page 17
- "Bluetooth" on page 19
- "Card" on page 20
- "Device Authentication" on page 22
- "Email OTP" on page 23
- "Facial Recognition" on page 24
- "Flex OTP" on page 25
- "FIDO2" on page 26
- "FIDO U2F" on page 27
- "Fingerprint" on page 28
- "Home Affairs National Identification System (HANIS) Fingerprint" on page 31
- "HANIS Face" on page 32
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- "Out-of-Band" on page 37
- "Password" on page 38
- "PKI" on page 39
- "RADIUS Client" on page 42
- "SAML Service Provider" on page 42
- "Security Questions" on page 43
- "Smartphone" on page 43
- "SMS OTP" on page 46
- "Swedish BankID" on page 47
- "Swisscom Mobile ID" on page 48

- “TOTP” on page 48
- “Voice” on page 52
- “Voice OTP” on page 53
- “Web Authentication Method” on page 54
- “Windows Hello” on page 55

The following authenticators are enrolled by default:

- Email OTP
- LDAP Password
- RADIUS Client
- SMS OTP
- Swisscom Mobile ID
- Voice OTP
- Flex OTP

Editing an Authenticator

1. Click the enrolled method in the **Enrolled Single Methods for sign in** section.
2. Change the settings and click **Save.**

Deleting an Authenticator

1. Click the enrolled method in the **Enrolled Single Methods for sign in** section.
2. Click the delete icon .

Deleting All Enrolled Authenticators

1. Click the user name in the upper-right corner of the Self-Service portal.
2. Click **Delete me**.
3. Click **OK**.

NOTE: An administrator has the privilege to hide the **Delete me** option in the Self-Service portal.

NOTE: If you are a user of Local repository, using the **Delete me** option will completely remove your account.

Enrolling Multiple Authenticators of the Same Type

If the administrator creates multiple event categories, you can enroll multiple authenticators of the same type. During enrollment, you are required to select an appropriate category according to the administrator’s guidance. Later, during authentication to the Windows workstation, you might get a

prompt to select a category where you must choose one of the categories. For some methods, the category selection prompt is not displayed. However, Advanced Authentication selects an appropriate authenticator automatically.

Sample Scenario: Authenticating to Windows Client with the Multi-Enrollment Supported Method and Non-Supported Method

Thomas, an administrator, has performed the following steps to allow users to enroll the Card and Smartphone methods with multiple devices:

1. Created CAT1 category in addition to the default category in the **Event Categories** policy.
2. Created a chain with the Card and Smartphone methods.
3. Set **All Categories** to **ON** (default) in the **Windows Logon** event and map the chain to the event.

Paul, an end user, has two cards and two mobile phones (Android and iOS) with NetIQ Auth app installed on both. He enrolls each card and phone to a category. He logs in to the Self Service portal and performs the following actions:

- Enrolls the following methods to the default category:
  - Smartphone method: Android phone
  - Card method: Card 1
- Enrolls the following methods to the CAT1 category:
  - Smartphone method: iOS phone
  - Card method: Card 2

After enrollment, Paul selects the chain with Card and Smartphone methods. He can authenticate to the Windows workstation by performing one of the following actions:

- Tap Card 1. Select **default** from the category selection prompt and then accept the push notification on android phone.
- Tap Card 1. Select **CAT1** from the category selection prompt and then accept the push notification on iOS phone.
- Tap Card 2. Select **default** from the category selection prompt and then accept the push notification on android phone.
- Tap Card 2. Select **CAT1** from the category selection prompt and then accept the push notification on iOS phone.

Apple Touch ID

Apple Touch ID enables you to authenticate to Mac operating system using the electronic fingerprint recognition feature available in Mac device. During enrollment, the Apple Touch ID captures the fingerprint. When you try to authenticate to a Mac device, the presented fingerprint is matched with the enrolled fingerprint. If the fingerprints match, you are authenticated.

NOTE: Ensure to install the Advanced Authentication Device Service before you enroll Apple Touch ID. For more information about the Device Service, see the Advanced Authentication - Device Service guide.

NOTE: You can enroll Apple Touch ID only for current login sessions in Mac operating system, and Touch ID session should be active for current users.

Enrolling the Apple Touch ID Authenticator

Perform the following steps to enroll the Apple Touch ID authenticator:

1. Click the **Apple Touch ID** icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the Apple Touch ID authenticator in **Comment**.
3. Specify the current login session account name in **Account Name**.

   User can see the current username in the right corner of the menu bar.
4. Click **Save** to start enrolling.

   Two messages `Please wait` and `"TouchIdservice" is trying to enroll` are displayed.

   NOTE: If you are enrolling for another user who has logged in but not the current user, only `Please wait` message is displayed.
5. Place the finger on the Touch ID reader.

   A message `Authenticator "Apple Touch ID" has been added` is displayed.

Testing the Apple Touch ID

Perform the following steps to test Apple Touch ID authenticator:

1. Click the Apple Touch ID icon in **Enrolled Authenticators**.
2. Click **Test**.
3. Click **Next**

   Two messages `Please wait` and `"TouchIdservice" is trying to authenticate` are displayed.

   NOTE: If you are enrolling for another user who has logged in but not the current user, only `Please wait` message is displayed.
4. Place the finger on the Touch Id reader.

   If the test is successful, a message `Authenticator "Apple Touch ID" passed the test` is displayed.

The following table describes the possible error messages along with the workaround for the Apple Touch ID authentication.

Error	Possible Cause and Workaround
`User is not found`	There is no such account for the current Mac device. Check the account name and try again
`Touch ID not enrolled`	Touch ID isn't enrolled for the specified user. Enable Touch ID in the `Apple -> System Preferences -> Touch ID settings`
`Touch ID is locked`	The user tried to log in with a wrong finger for five times. To enable Touch ID, log in the specified Account with Password
`Touch ID is not available`	Local user hasn't logged in to account yet
`Cancelled by timeout`	Operation was cancelled as the time for presenting fingerprint is out
`Touch ID is cancelled by user`	User not allowed for Device service to use the Touch ID
`Device Service is not available`	Device service isn't installed

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled devic that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use this method, you must install the Advanced Authentication Device Service. For more information about Device Service, see Advanced Authentication - Device Service guide.

Enrolling the Bluetooth Authenticator

1. Click the Bluetooth icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the Bluetooth authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Turn on the Bluetooth in your device and ensure that it is discoverable to the other Bluetooth devices.
5. Select your Bluetooth enabled device from the list in the **Add Bluetooth authenticator** page.

NOTE: If your device is not listed, click **Refresh List** to reload the Bluetooth enabled devices.

6 Click **Save.**

A message `The "Bluetooth" authenticator has been saved` is displayed.

Testing the Bluetooth Authenticator

NOTE: During authentication, ensure that your mobile device is discoverable.

1 Click the Bluetooth icon in **Enrolled Authenticators**.

2 Click **Test.**

A message `Waiting for the Bluetooth service` is displayed. If the enrolled Bluetooth device is within the range, a message `Authenticator "Bluetooth" passed the test` is displayed.

If the Advanced Authentication Device Service is not installed on the system where you want to authenticate, an error message `Bluetooth service is not available` is displayed. Install the Device Service and try to authenticate again.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number) and Near-Field Communication (NFC) cards in the following ways:

- While using contactless cards, when you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.
- In the case of NFC cards, when you place your NFC tag near the NFC reader (smartphone), the NFC reader (smartphone) identifies your NFC tag, and you are authenticated successfully.

TIP: Ensure to install the Advanced Authentication Device Service before you enroll a card. For more information about the Device Service, see the *Advanced Authentication - Device Service* guide.

Some card readers are supported only for Microsoft Windows. For more information about the list of supported card readers, see Supported Card Readers and Cards.

Enrolling the Card Authenticator

Before enrolling the Card authenticator, ensure that the card reader is connected to the computer.

1 Click the Card icon in **Add Authenticator**.

A message `Click "Save" to begin` is displayed.

2 (Optional) Specify a comment related to the Card authenticator in **Comment**.

3 (Optional) Select the preferred category from the Category.

4 Click **Save**.

A message `Waiting for the card` is displayed.

5 Tap a card on the reader.

A message `Authenticator "Card" has been added` is displayed.

Testing the Card Authenticator

1 Click the Card icon in **Enrolled Authenticators**.

2 Click **Test**.

A message `Waiting for the card` is displayed.

3 Tap a card on the reader.

A message `Card has been detected` is displayed for a moment. If the provided card passes the test, a message `Authenticator "Card" passed the test` is displayed. If the card is invalid, a message `Incorrect Card` is displayed.

Enrolling NFC Card Authenticator

You must have a smartphone with NFC support and Google Chrome browser to enroll this method.

1 In your smartphone Google Chrome browser, open the URL `<https://<hostname>/account`.

2 (Optional) if you are using webNFC for the first time, tap **Allow** in the smartphone.

3 Specify the credentials and log in.

4 Tap the Card icon in **Add Authenticator**.

A message `Click "Save" to begin` is displayed.

5 (Optional) Specify a comment related to the Card authenticator in **Comment**.

6 Click **Save**.

A message `Waiting for the card` is displayed.

7 Place the NFC tag near your NFC reader (smartphone).

A message `Authenticator "Card" has been added` is displayed

Testing NFC Card Authenticator

1 Click the Card icon in **Enrolled Authenticators**.

2 Click **Test**.

A message `Waiting for the card` is displayed.

3 Place the NFC tag near your smartphone.

A message `Card has been detected` is displayed for a moment. If the provided card passes the test, a message `Authenticator "Card" passed the test` is displayed. If the card is invalid, a message `Incorrect Card` is displayed.

The following table describes the possible error messages along with the workarounds for the Card authentication.

Table 2-1 Card authenticator - error messages

Error	Possible Cause and Workaround
`Card Service unavailable`	The Advanced Authentication Device Service is not installed on the system. Install the Device Service and try authenticating again.
`Card reader has not been detected`	The card reader is not connected properly or reader is not available in the Device Manager. Check the card reader connection settings and then try authenticating again.

`Card reader detected`	Due to an improper functioning of a system service `pcscd` in the Mac OS X. To fix this issue, open **Terminal** application and run the following commands:
	`kill pcscd`
	`kill pcscdlite`
	Then reconnect the reader and try to enroll again.

Device Authentication

Device Authentication method enables you to authenticate using a valid certificate or a key pair and a PIN. During enrollment, a key pair is generated and is secured with the PIN. When you try to authenticate on any device, the certificate or key pair is validated along with PIN. If the specified PIN matches with enrolled PIN, you are authenticated successfully.

NOTE: Ensure to enroll the Device Authentication method using the workstation where you would perform further authentication. Enrollment on one machine and authentication on another machine is not supported.

Enrolling Device Authentication Authenticator

1. Click the Device Authentication icon in **Add Authenticator**.
2. (Optional) Specify a comment in the **Comment**.
3. (Optional) Select the preferred category from the **Category**.
4. Select the valid certificate from **Key**.

   If the Windows TPM smart card is generated in the workstation, the certificate type and expiry date of certificate is populated in **Key** automatically.
5. (Conditional) To generate key pair, select **Generate a key pair** from **Key** and specify **PIN**.
6. Click **Save**.

   A message `Authenticator "Device Authentication" has been added` is displayed.

Testing Device Authentication Authenticator

1. Click the Device Authentication icon in **Enrolled methods**.
2. Click **Test**.
3. Specify the **PIN**.

   If the test is successful, a message `Authenticator "Device Authentication" passed the test` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

NOTE: If an email address is not registered in the repository for a user profile, then the Email OTP method is not enrolled automatically. However, you can specify the email address in **Override Email** and click **Save** to enroll manually.

Enrolling the Email OTP Authenticator

This authenticator is enrolled automatically and you cannot remove it.

1. Click the Email OTP icon in **Add Authenticator**.
2. (Optional) Specify a comment related to Email OTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the email address in **Email**.

   A message `Verification is sent to <email address>` is displayed.
5. Specify the verification code in **Enter verification code** to confirm the email address is valid.
6. Click **Save**.

   A message `Authenticator "Email OTP" has been added` is displayed.

NOTE: An administrator has the privilege to hide the **Email** and **verification code** to prevent users from providing new email address that is not registered in the repository.

Testing the Email OTP Authenticator

1. Click the Email OTP icon in **Enrolled Authenticators**.
2. Ensure that your email address (specified after the text `The email address to which the OTP is sent to is`) is valid. If the set email address in invalid, update the email address.
3. Click **Test**.

   A message `OTP password sent, please specify` is displayed.

4 Check your email. You must have received an email with the OTP.

5 Specify the OTP in **Password**.

NOTE: Ensure to specify the OTP sequence prompted on the screen.

---

6 Click **Next**.

A message `Authenticator "Email OTP" passed the test` is displayed. If the provided OTP is invalid, a message `Incorrect OTP password` is displayed.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you are successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: If the NetIQ Device Service available on the system where the face is captured, the NetIQ Device Service automatically starts the capturing process once the camera is launched.

The Oval frame is displayed to capture the face when the NetIQ Device Service is not available on the system. However, the browser API captures the facial image. Browser APIs support this customized capturing on web browsers.

Enrolling the Face Authenticator

1 Click the Face icon in **Add Authenticator**.

2 Click **Save** to start enrolling the face.

A message `Face Detecting` is displayed.

3 Your face will be captured by the camera and enrolled.

A message `Authenticator "Facial Recognition" has been added` is displayed.

NOTE:

- Facial recognition authentication method works with or without the Device Service installed. If the Device Service is not installed, then the browser support is used for capturing the face.
- To use the Facial recognition method for OAuth 2.0 and SAML 2.0 integrations, you must have the Advanced Authentication Device Service installed.

Testing the Face Authenticator

1 Click the Face icon in Enrolled Authenticators.

2 Click **Test**.

3 Present your face in front of the camera.

   If your face matches with the enrolled face, the facial authentication is successful and a message `Authenticator "Facial Recognition" passed the test` is displayed.

The following table describes the possible error messages along with the workaround for the Face authentication.

Table 2-2 *Facial Recognition authenticator- error messages*

Error	Possible Cause and Workaround
`Capture Device cannot be opened`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	The enrolled face and presented face does not match. You must present your face again for the authentication.
`Timeout`	The session has timed out. You must present your face again for the authentication.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

Enrolling the Flex OTP Authenticator

This authenticator enrolls automatically.

NOTE: The Flex OTP method is not visible in Self-Service portal until the user authenticates using Flex OTP once in any event.

Testing the Flex OTP Authenticator

1 Click the Flex OTP icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Specify a One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators in **Password**.

   If the password is valid, a message `Test successful` is displayed. If the provided password is invalid, a message `Incorrect password` is displayed.

4 Click **OK**.

FIDO2

The FIDO2 method facilitates you to use any FIDO compliant device either in-built with the system or connected through USB to register and authenticate to the web environment. When you try to authenticate, FIDO compliant device and user gesture, such as tap on token and swipe fingerprint on reader are validated.

NOTE: If the FIDO2 method is enrolled using the Windows Hello in Microsoft Edge 17 or earlier supported browser versions then you must authenticate using the same browser. After upgrading to the latest version of Edge that supports the FIDO 2.0 standards, you must re-enroll the FIDO2 method.

NOTE: On the Safari browser, while authenticating to a web application with the FIDO2 method, click **Next** to initiate the authentication. This applies irrespective of the order of the FIDO2 method in a chain.

Enrolling the FIDO2 Authenticator

1. Click the FIDO2 icon in **Add Authenticator**.
2. (Optional) Specify a comment related to FIDO2 in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Click Save.

   A message `Waiting for Web Authentication data` is displayed.
5. Connect the device that complies with FIDO standards.
6. Perform the action associated to the device.

   For example, if you use the `FIDO2` device, connect it to the computer, set the pin, and touch the device when you see a flash.
7. Click **Save**.

   A message `Authenticator "FIDO2" enrolled` is displayed.

Testing the FIDO2 Authenticator

1. Click the FIDO2 icon in **Enrolled Authenticators**.
2. Click **Test**.

   A message `Waiting for Web Authentication data` is displayed.
3. Perform the action associated to the enrolled device.

   A message `Authenticator "FIDO2" passed the test` is displayed.

FIDO U2F

The FIDO U2F method facilitates you to connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token to authenticate. When you try to authenticate on any device, token connected to the device is compared with the enrolled token. If the token details match, you are authenticated successfully.

TIP: While you enroll and test the FIDO U2F authentication on any browser except Google Chrome, ensure to install the Advanced Authentication Device Service on the system. The Google Chrome contains a built-in module.

Enrolling the FIDO U2F Authenticator

1. Click the U2F icon in **Add Authenticator**.

   A message `Press button "Save" to begin enrolling.` is displayed.
2. (Optional) Specify a comment related to U2F in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Click Save.

   A message `Please touch the flashing U2F device now` is displayed. You may be prompted to allow the site permissions to access your security keys.
5. Touch the FIDO U2F button when there is a flash on the device.

   A message `The "U2F" authenticator has been saved` is displayed. If there is no flash for more than 10 seconds, reconnect your token and repeat the steps.

NOTE: To use U2F in Google Chrome on Linux, you must perform the following steps:

1. Download or create a copy of the file `70-u2f.rules` in the Linux directory: `/etc/udev/rules.d/` from https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

   If the file is already available, ensure that the content is similar to that specified in https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

   NOTE: If your version of UDEV is lower than 188, use the rules specified at https://github.com/Yubico/libu2f-host/blob/master/70-old-u2f.rules.
2. Save the file `70-u2f.rules` and reboot the system.

Testing the FIDO U2F Authenticator

1. Click the U2F icon in **Enrolled Authenticators**.
2. Click **Test**.

   A message `Please touch the flashing U2F device now` is displayed. You may be prompted to allow the site permissions to access the security keys in U2F device.
3. Touch the FIDO U2F button when there is a flash on the device.

   A message `Authenticator "U2F" passed the test` is displayed. If the connected token is invalid, a message `Token is not registered` is displayed.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 2-3 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Cannot reach local FIDO U2F Service. Ask your admin to enable it. You may use Google Chrome browser, it has a built-in U2F support`	The FIDO U2F service is not installed properly. Install the U2F service and try again.
`Timeout. Press "Save" to start again`	The session has timed out. Click **Save** and enroll again.
`Enroll failed: Device not attested. Ask your administrator to upload your token attestation certificate`	The token does not contain attested certificate. Contact your administrator to add the attestation certificate to your token.
`Unexpected error: U2F token error: The visited URL does not match the application ID or it is not in use`	The Facets are not configured appropriately. Contact you administration to check the Facets settings.

Fingerprint

The Fingerprint method enables you to authenticate using your fingerprint(s). During enrollment, the fingerprint reader captures the fingerprint. When you try to authenticate on any device, the presented fingerprint is matched with the enrolled fingerprint. If the fingerprints match, you are authenticated successfully.

You can enroll fingers for the Fingerprint method using one of the following devices:

- Single finger reader
- Multi-finger reader

TIP: Fingerprint(s) enrollment is supported only on Microsoft Windows and Linux RHEL kernel 3.x.x. You must install Advanced Authentication Device Service.

Linux RHEL supports the fingerprint readers: Green Bit DactyScan84c and Nitgen eNBioScan-C1 for the Fingerprint method enrollment and authentication respectively.

Duress Finger

The Fingerprint method also allows you to assign one of the enrolled fingers as duress. Only under an emergency or a threat, you can authenticate with the duress finger. Use of the duress finger for authentication sends an alert notification to the email address and phone number that the administrator has configured.

Enrolling the Fingerprint Authenticator Using Single Finger Reader

1. Click the Fingerprint icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the Fingerprint authenticator in Comment.
3. (Optional) Select the preferred category from **Category**.
4. Select the preferred finger for enrollment and place or swipe the finger on the reader when there is a flash.

   NOTE: Number of fingers to be enrolled and the number of scans performed for each finger are mentioned on the **Add Fingerprint authenticator** page.

   Red indicators below the fingerprint represents the number of captures that the administrator has configured.
5. Repeat Step 4 to add more fingers for authentication.
6. (Conditional) Select one of the enrolled finger as duress from Assign Duress Finger list.

   NOTE: If you have not enrolled fingers for Fingerprint method, then the **Assign Duress Finger** list will be empty.
7. Click **Save**.

   A message `Authenticator "Fingerprint" has been saved` is displayed.

You can also assign a finger as duress, after enrolling the Fingerprint method. For more information, see Assigning a Finger as Duress.

IMPORTANT: It is recommended to test the authenticator after enrollment. If the test fails, delete the authenticator and enroll it again.

Enrolling the Fingerprint Authenticator Using Multi-Finger Reader

1. Click the Fingerprint icon in Add Authenticator.
2. (Optional) Specify a comment related to the Fingerprint authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. (Conditional) Set **Use multi-finger reader for enrollment** to **ON** to use multi-finger reader.

   NOTE: An administrator has the privilege to hide the **Use multi-finger reader for enrollment** and force users to enroll with the multi-finger reader.
5. Select one of the highlighted fingers combination for enrollment. The fingers combination available are:
   - Four fingers of the left hand

- Four fingers of the right hand
- Two thumbs

6 Place the fingers on the reader when you see the LEDs of selected fingers flash.

   Wait till the reader scans the fingers.

   Red indicators below the fingerprint represents the number of captures that the administrator has configured.

7 (Conditional) Select one of the enrolled finger as duress from **Assign Duress Finger** list.

   NOTE: If you have not enrolled fingers for Fingerprint method, then the **Assign Duress Finger** list will be empty.

8 Click **Save**.

   A message `Authenticator "Fingerprint" has been added` is displayed.

You can also assign a finger as duress, after enrolling the Fingerprint method. For more information, see Assigning a Finger as Duress.

Assigning a Finger as Duress

1 Click the Fingerprint icon in **Enrolled Authenticators**.

2 Select the preferred finger as duress from **Assign Duress Finger** list.

   The **Assign Duress Finger** list displays the fingers that are enrolled.

3 Click **Save**.

Testing the Fingerprint Authenticator

1 Click the Fingerprint icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Place or swipe your finger on the reader.

   A message `Authenticator "Fingerprint" passed the test` is displayed. If the fingerprints are not identical, a message `Fingerprint Mismatch` is displayed.

The following table describes the possible error message along with the workarounds for the Fingerprint authentication.

Table 2-4 *Fingerprint authenticator - error messages*

Error	Possible Cause and Workaround
`Fingerprint Service is not available`	The Advanced Authentication Device Service is not installed. Ensure to install Advanced Authentication Device Service and try authenticating again.
`Fingerprint reader is not connected`	The fingerprint reader or vendor specific drivers are not connected properly. Ensure that the fingerprint reader and vendor specific drivers are connected properly to the machine.

Home Affairs National Identification System (HANIS) Fingerprint

The HANIS fingerprint method is for the citizens of South Africa. This method enables you to enroll the personal identification number or passport number issued by Home Affairs National Identification System. When you try to authenticate on any device, the presented fingerprint is matched with the enrolled fingerprint available. If the fingerprints match, you are authenticated successfully.

NOTE: If the Passport number or National ID is not registered in the repository for a user profile, then the HANIS method is not enrolled automatically. However, you can manually enroll the HANIS method from the **Add Authenticator** section.

Enrolling the HANIS Fingerprint Authenticator

1. Click the HANIS icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the passport number or national ID in **ID/Passport number**.
5. Specify the mobile number in **Phone number**.
6. Click **Save**.

   A message `Authenticator "HANIS" added` is displayed.

NOTE: An administrator has the privilege to hide the **ID/Passport** and **Phone number** to prevent users from providing new details that are not registered in the repository.

Testing the HANIS Fingerprint Authenticator

1. Click the HANIS icon in **Enrolled Authenticators**.
2. Click Test.

   A message `Place your finger on the reader` is displayed.
3. Place or swipe your finger on the reader.

   A message `Authenticator "HANIS" passed the test` is displayed. If the fingerprints are not identical, a message `Fingerprint Mismatch` is displayed.

Table 2-5 HANIS authenticator - error messages

Error	Possible Cause and Workaround
`Fingerprint Service is not available`	The Advanced Authentication Device Service is not installed. Ensure to install Advanced Authentication Device Service and try authenticating again.
`Fingerprint reader is not connected`	The fingerprint reader or vendor specific drivers are not connected properly. Ensure that the fingerprint reader and vendor specific drivers are connected properly to the machine.
`The fingerprint capture does not comply with the size standard, image size should be 400 x 400 at least`	The fingerprint reader captured images are not according to the standard size. Ensure to use a reader that provides clear fingerprint image.

HANIS Face

The HANIS (Home Affairs National Identification System) Face method is for the citizens of South Africa. This method enables you to enroll the personal identification number or passport number issued by Home Affairs National Identification System. When you try to authenticate on any device, the presented face is matched with the enrolled face. If the images match, you are authenticated successfully.

NOTE: If the Passport number or National ID is not registered in the repository for a user profile, then the HANIS method is not enrolled automatically. However, you can manually enroll the HANIS Face method from the **Add Authenticator** section.

NOTE: If the NetIQ Device Service available on the system where the face is captured, the NetIQ Device Service automatically starts the capturing process once the camera is launched.

The Oval frame is displayed to capture the face when the NetIQ Device Service is not available on the system. However, the browser API captures the facial image. Browser APIs support this customized capturing on web browsers.

Enrolling HANIS Face Authenticator

1. Click the HANIS Face icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the passport number or national ID in **ID/Passport number**.
5. Specify the mobile number in **Phone number**.
6. Click **Save**.

   A message `Authenticator "HANIS Face" added` is displayed.

NOTE: An administrator has the privilege to hide the **ID/Passport** and **Phone number** to prevent users from providing new details that are not registered in the repository.

Testing the HANIS Face Authenticator

1. Click the HANIS Face icon in **Enrolled Authenticators**.
2. Click **Test**.
3. Perform one of the following:
   - If the oval frame is displayed, position your face within the frame and click **Capture**.
   - If the square frame is displayed, present your face in front of the camera.

   If your face matches with the enrolled face, the facial authentication is successful and a message `Authenticator "HANIS Face" passed the test` is displayed. If the images are not identical, a message `Mismatch` is displayed.

Table 2-6 *HANIS Face authenticator - error messages*

Error	Possible Cause and Workaround
`Capture Device cannot be opened` or `Failed to open camera`	The camera is not connected properly. Check your camera settings and try again.
`Timeout`	The session has timed out. You must present your face again for the authentication.
`Detecting face`	The Face service is detecting the face for testing the HANIS Face authenticator or for authentication.
`Face detected`	The Face service detected the face for validation.
`Validating face`	The Face service is comparing the presented face against the face in database.
`Video service is not available`	The Video service is not available to perform liveness check.
`Cannot detect face`	The Face service is unable to detect the face for validation.
`Face service is not available`	
`Liveness detection failed`	If the person is not physically present or blink is not detected. When a photo is presented for authentication.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You must use

the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If the OTPs are identical, you are authenticated successfully.

Enrolling the HOTP Authenticator

To enroll the HOTP authenticator, you must follow the recommendations of your system administrator. You can enroll HOTP in one of the following ways:

- Using YubiKey Hardware token
- Using Software token (DS3 OATH)
- Synchronizing Existing Token with HOTP Counter
- Assigning a Token Serial To an Account

NOTE: If a token is already assigned to your account, enrollment is not required.

Using YubiKey Hardware Token

To enroll HOTP using YubiKey hardware token, perform the following steps:

1. Click the HOTP icon in **Add Authenticator**.
2. (Optional) Specify a comment related to HOTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the token serial number in **OATH Token Serial**.
5. Specify the **YubiKeyToken Key ID**.
6. Place the cursor in **HOTP 1** and touch the button on YubiKey.

   OTP from YubiKey is inserted in **HOTP 1** automatically.
7. Repeat step 2 in **HOTP 2** and **HOTP 3** to insert consequent OTPs.
8. Click **Save**.

   A message `Authenticator "HOTP" has been added` is displayed.

Using Software Token

To enroll HOTP using RFC 4226 compliant software token, perform the following steps:

1. Click the HOTP icon in **Add Authenticator**.
2. Specify first OTP that generated on the token in **HOTP 1**.
3. Specify consequent OTPs from the token in **HOTP 2** and **HOTP 3**.
4. Specify 40 characters hexadecimal secret code in **Secret (If you know)**.
5. Click **Save**.

   A message `Authenticator "HOTP" has been added` is displayed.

Synchronizing Existing Token with HOTP Counter

If an existing token is assigned to your account, perform the following steps to synchronize the HOTP counter:

1. Click the HOTP icon in **Enrolled Authenticators**.
2. Specify first OTP in **HOTP 1** that generated on the token. In case of YubiKey token, connect the hardware token to the system and perform the following steps:
   - **2a** Place cursor in **HOTP 1**.
   - **2b** Touch button on the token.
3. Specify the consequent OTPs from the token in **HOTP 2** and **HOTP 3**. In case of YubiKey token, repeat the steps 2a and 2b.
4. Click **Save**.

Assigning a Token Serial To an Account

If administrator has uploaded the token details on the Advanced Authentication server and you have got the serial number of a token, perform the following steps to assign serial number to your account:

1. Click the HOTP icon in **Enrolled Authenticators**.
2. (Optional) Specify a comment related to HOTP authenticator in **Comment**.
3. Specify the token's serial number in **OATH Token Serial**.
4. Specify the three consequent OTPs in **HOTP 1**, **HOTP 2**, and **HOTP 3** respectively.
5. Click **Save**.

Testing the HOTP Authenticator

1. Click the HOTP icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Specify the OTP in **Password**.

   If the OTP is valid, a message `Authenticator "HOTP" passed the test` is displayed.

The following table describes the possible error message along with the workarounds for the HOTP authentication.

Table 2-7 *HOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Incorrect OTP password`	If the specified OTP is incorrect or the counter on the token and server are not in sync. Specify a valid OTP and try to authenticate again
`Cannot derive the counter. Check your three OTPs.`	If one of the specified OTP is incorrect during the enrollment. Try to enroll again with the new OTPs.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on an application, the submitted password is compared with the actual password in the corporate directory. If both the passwords are identical, you are authenticated successfully.

Enrolling the LDAP Password Authenticator

This authenticator enrolls automatically and you cannot remove it. However, you can update the existing password.

1. Click the LDAP password icon in **Add Authenticator**.
2. (Optional) Specify a comment related to LDAP password authenticator in **Comment**.
3. (Optional) Select the preferred category from Category.
4. Specify the existing LDAP password in Password.
5. Specify the new LDAP password and confirm it.
6. Click **Save**.

Testing the LDAP Password Authenticator

1. Click the LDAP password icon in Enrolled Authenticators.
2. Click **Test.**
3. Specify the valid password in **Password**.
4. Click **Next**.

   If the password is valid, a message `Authenticator "LDAP password" passed the test` is displayed. If the provided password is invalid, a message `Invalid credentials` is displayed.

Denmark National ID

The Denmark National ID method is for the citizens of Denmark. The Denmark National ID enables you to authenticate using Danish CPR number, password, and a pin from the code card provided during Denmark National ID enrollment.

NOTE: If the Social Security number is not registered in the repository for a user profile, then the Danish National ID method is not enrolled automatically. However, you can manually enroll the Danish National ID method from the **Add Authenticator** section.

Enrolling the Denmark National ID

If the Social Security number is registered in the corporate directory for your user profile, then the Danish National ID method is enrolled automatically. If the Social Security number is not registered in the corporate directory, perform the following steps to enroll Danish National ID.

1. Click the Denmark National ID icon in **Add Authenticator**.
2. (Optional) Specify a comment related to the authenticator in **Comment**.
3. Specify the **Social Security number**.
4. Click **Save**.

   If the enrollment is successful, a message `Authenticator "Denmark National ID" added` is displayed.

Testing the Denmark National ID

1. Click the Denmark National ID icon in **Enrolled Authenticators**.
2. Click **Test**.

   The **NEM ID** pop-up is displayed.
3. Specify the Danish CPR number in **User ID**.
4. Specify **Password**.
5. Click **Next**.
6. Specify the pin corresponding to the serial number displayed in **#.**

   NOTE: The pin is available in the code card provided during Denmark National ID enrollment.
7. Click **Log On**.

   If the test is successful, a message `Authenticator "Denmark National ID" passed the test` is displayed.

Out-of-Band

The Out-of-band method facilitates you to authenticate using the authentication request that is sent to the Out-of-band portal, Authentication Agent for Windows, or Authentication Agent for Web. When you initiate the authentication, an authentication request is sent to the Out-of-band portal, Authentication Agent for Windows, or Authentication Agent for Web. You can accept the request and get authenticated.

Enrolling the Out-of-Band Authenticator

This authenticator enrolls automatically and you cannot remove it.

Testing the Out-of-Band Authenticator

1 Click the Out-of-band icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Open the Out-of-band portal and authenticate using any of the available chains.

If you are using the Authentication Agent for Windows, the Authentication Agent window appears where you can authenticate.

4 Wait for a few seconds. If the authentication request did not appear, right click or long tap on blank space and click **Reload**.

5 Click **Accept** to accept the authentication request.

A message `Authenticator "Out-of-band" passed the test` is displayed.

If you click **Decline**, the authentication is declined and a message `Auth rejected` is displayed.

If you ignore the authentication request, after few minutes a message `Auth confirmation timeout` is displayed.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

Enrolling the Password Authenticator

1 Click the Password icon in **Add Authenticator**.

2 (Optional) Specify a comment related to Password authenticator in **Comment**.

3 (Optional) Select the preferred category from **Category**.

4 Specify **Password** and **Confirmation**.

NOTE: Ensure that the password must contain minimum 5 characters, by default. An administrator has the privilege to change the password length.

5 Click **Save**.

A message `Authenticator "Password" has been added` is displayed.

WARNING: You will not receive any notification about the password expiration. The password expiration value is 42 days, by default. Ensure to sign in to the Self-Service portal and change the password before it expires.

Testing the Password Authenticator

1 Click the Password icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Specify **Password** and **Confirmation**.

4 Click **Next**.

If the test is successful, a message `Authenticator "Password" passed the test` is displayed. If the provided authenticator is invalid, a message `Incorrect password` is displayed.

PKI

The PKI method enables you to authenticate using any one of the following ways:

- PKI Device
- Virtual Smartcard

PKI Device

PKI device is a hardware device such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on any device, the certificate in the device is compared with the actual certificate. If the certificates are identical, you are authenticated successfully.

NOTE: You must install Advanced Authentication Device Service for enrolling the PKI method using PKI device.

Virtual Smartcard

You can also enroll and authenticate the PKI method using a virtual smartcard. Virtual smartcard supports authentication to any web environment and makes use of client SSL certificate to authenticate users. In client certificate authentication, the client browser provides its client certificate to the server to confirm the identity of a user.

A client SSL certificate is a file that contains information, such as digital signature, expiration date, name of user, and name of CA (Certificate Authority). When you try to authenticate on the web environment, authenticity of the client SSL certificate is validated based on the settings that are configured by the administrator.

Enrolling the PKI Authenticator Using PKI Device

1 Click the PKI icon in Add Authenticator.

2 (Optional) Specify a comment in the **Comment**.

3 (Optional) Select the preferred category from **Category**.

A message `Waiting for the card` is displayed.

4 Insert the card in reader or connect the token to the machine.

A message `Use an existing certificate or generate a key pair` is displayed.

5 Select a key from **Key**.

If you have connected the token or card reader, the **Key** automatically populates the certificate with authentication key and its expiry date.

6 (Conditional) Enable **Show all** to view all the certificate keys.

7 (Conditional) To generate key pair, select **Generate a key pair** from **Key** and specify **PIN**.

8 Click **Save**.

A message `Authenticator "PKI" has been added` is displayed.

Enrolling the PKI Authenticator Using Virtual Smartcard

1 Try to access the third party website from the browser where your administrator has imported a valid SSL certificate.

The **Certificate** dialog box is displayed.

2 Select the preferred client SSL certificate that is issued by the administrator.

You get auto-enrolled to PKI method using virtual smartcard.

NOTE: An administrator has the privilege to disable auto-enrollment of the PKI method using virtual smartcard.

Testing the PKI Authenticator

1 Click the PKI icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

A message `Waiting for card...` is displayed.

3 Insert your card or connect your token to the machine, if you are using a PKI device.

If you are using a virtual smartcard, the client SSL certificate is detected automatically.

4 Specify the PIN of the PKI device in **PIN**.

If the test is successful, a message `Authenticator "PKI" passed the test` is displayed. If the card is invalid, a message `Wrong card` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

The following table describes the possible error message along with the workarounds for the PKI authentication.

Table 2-8 *PKI authenticator - error messages*

Error	Possible Cause and Workaround
`Card reader connected`	When a card is not inserted to the reader or the token is not connected to the machine. Insert the card to the reader or connect token to the machine.
`Enroll failed: Cannot check revocation status for …`	When the certificate on your device does not contain information about the revocation status location or if the information is inserted, but the Certificate Authority is not available to verify the revocation status.

Error	Possible Cause and Workaround
`PKI service is not available`	The Advanced Authentication Device Service is not installed on the system. Install the Device Service and try authenticating again.
`Key not found. Wrong Card?`	You have enrolled the PKI authenticator in the RDP session. Enroll the authenticator again in normal session.
`PIN is expired`	The PIN assigned to your token has expired. Contact your administrator for the new PIN.
`PIN is locked`	After certain number of attempts with the incorrect PIN, the PIN is locked. Contact your administrator to reset the PIN.
`Token is not present`	Token is not connected to the system. Connect the token and try authenticating again.
`Token is not recognized`	The Device Service is unable to detect the DLL to recognize the token.
`Unexpected service status: PLUGIN_NOT_INITTED`	A vendor module is absent, invalid or not specified. Contact your administrator to check the configuration.

The following table describes the unexpected error codes that are displayed from a PKCS#11 module.

Table 2-9 *: Unexpected Error codes*

Error Code	Description
`CKR_DEVICE_ERROR`	The token or USB slot is broken. Try to use a different USB slot.
`CKR_DEVICE_MEMORY`	There is no space available in the memory of token or there may be some other issue with the memory.
`CKR_MECHANISM_INVALID`	An invalid mechanism was specified to the cryptographic operation.
`CKR_PIN_EXPIRED`	Ensure that the card has been initialized or do not use the default PIN and the PIN has expired.
`CKR_PIN_LOCKED`	The user PIN is locked.
`CKR_TOKEN_NOT_RECOGNIZED`	The token has not been recognized.
`OPERATION FAILED`	Contact your system administrator to analyze the debug logs.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

Enrolling the RADIUS Client Authenticator

This authenticator is enrolled automatically and you cannot delete it.

By default, a user name from your corporate directory is set. You can change the required user name in **Override User name** and click **Save**.

Testing the RADIUS Client Authenticator

1. Click the RADIUS Client icon in Enrolled Authenticators.
2. Specify a user name in User name.
3. Click **Test**.
4. Specify the password of the RADIUS Client in **Password**.
5. Click Next.

   If the specified password is valid, a message `Test is successful` is displayed.

The following table describes the possible error message along with the workarounds for the RADIUS Client authentication.

Table 2-10 *RADIUS Client - error message*

Error	Possible Cause and Workaround
`Incorrect password`	If the specified RADIUS Client password is invalid. Specify a valid password to test the authenticator.
`RADIUS server does not reply`	If the administrator has not configured RADIUS Client method appropriately. Contact your administrator and report the error message.

SAML Service Provider

SAML Service Provider enables you to use authorization on the third-party websites (Identity Providers) to access the Advanced Authentication portals.

Enrolling the SAML Service Provider Authenticator

This authenticator is enrolled automatically.

Testing the SAML Service Provider Authenticator

1. Click the **Saml Service Provider** icon in **Enrolled Methods**.
2. Click **Test**.
3. Click **Next**.

   A message `Authenticator "Saml Service Provider" passed the test` is displayed.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

Enrolling the Security Questions Authenticator

1. Click the Security Questions icon in **Add Authenticator**.
2. (Optional) Specify an optional comment in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the answers to the security questions that have been set by the administrator.

   Ensure that each answer contains at least one character.
5. Click **Save**.

   A message `Authenticator "Security Questions" added` is displayed.

Testing the Security Questions Authenticator

1. Click the Security Questions icon in **Enrolled Authenticators**.
2. Click **Test**.
3. Specify the answers to the security questions.
4. Click **Next**.

   A message `Authenticator "Security Questions" passed the test` is displayed. If one of the specified answer is invalid, a message `Wrong answers` is displayed.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

Pre-requisite:

To enroll the Smartphone authenticator, you must install the NetIQ Advanced Authentication app on your smartphone.

For more information about downloading and installing the smartphone app, see Installing NetIQ Advanced Authentication App.

Enrolling the Smartphone Authenticator

You can enroll the Smartphone method in one of the following ways:

- Enrolling with a QR code
- Enrolling with a link in the email

Enrolling With a QR Code

During the enrollment, you must scan a QR code that creates an authenticator on your mobile app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To enroll the Smartphone method with a QR code, perform the following steps:

1. Click the Smartphone icon in Add Authenticator.
2. (Optional) Specify a comment related to the Smartphone authenticator in Comment.
3. (Optional) Select the preferred category from **Category**.
4. Click **Save**.

   A QR code is displayed.
5. Scan the QR code with the NetIQ Advanced Authentication smartphone app. To do this, perform the following steps:

   5a Open the Advanced Authentication smartphone app.

   5b Specify a PIN if applicable.

   5c Click the + (plus) icon in the **Enrolled Authenticators** screen.

   5d The camera of your smartphone is launched.

   5e Scan the QR code with the camera.

   A message `Authenticator "Smartphone" added` is displayed.

   5f Specify your user name and an optional comment in the app.

   5g Tap **Save**.

   The smartphone authenticator is created.

If you do not enroll the Smartphone authenticator within few minutes, an error message `Enroll failed: Enroll timeout` is displayed. Refresh the browser and enroll again.

TIP: If you are not able to scan the QR code with the NetIQ Advanced Authentication app, do the following:

1. Zoom the page to 125-150% and scan the zoomed QR code.
2. Ensure that nothing overlaps the QR code (mouse cursor, text).

Enrolling Through a Link

An administrator will send you the link to your email or via SMS. You must click on the link on your smartphone where the NetIQ Auth app is installed and you will be redirected to the smartphone app where you can enroll and an authenticator is created.

To enroll the Smartphone method through a link, perform the following steps:

1. Check your phone for a new email or SMS. You will receive a link sent by the administrator.
2. Click on the link. You will be redirected to the smartphone app.

   If you have not installed the smartphone app, you will be redirected to the Google Play or AppStore from where you can install the app.

   NOTE: In some instances, when you click on the enroll link, you will be redirected to page where the following two links are displayed:

   - Click to enroll.
   - Click to download and install Smartphone authenticator for Android.

   If you have the app installed on your phone, use Click to enroll link. If you do not have the app then use Click to download link.

   ---
3. Specify a PIN or a Touch ID if applicable.
4. Specify your username and password in the **Enroll new authenticator** screen.
5. Tap **Sign In**.
6. Specify an optional comment in the app.
7. Tap **Save**.

The smartphone authenticator is created.

Testing the Smartphone Authenticator

1. Click the Smartphone icon in Enrolled Authenticators.
2. Click **Test**.
3. Open the Advanced Authentication smartphone app.

   A push notification is sent to your smartphone.
4. Tap **Accept** to accept the authentication request.

   A message `Authenticator "Smartphone" passed the test` is displayed.

   If you tap **Reject**, the authentication is declined and a message `Auth rejected` is displayed.

   If you ignore the authentication request, after few minutes a message `Auth confirmation timeout` is displayed.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

When authenticating on the same smartphone that receives SMS, you can do one of the following actions based on the platform of smartphone:

- **iOS**: The OTP auto inserts to clipboard, tap on the input field > OTP displayed above the keyboard.
- **Android 11 and later versions**: Tap Copy <OTP> in the SMS notification then tap on the input field > OTP displayed above the keyboard.
- **Android 10 and prior versions**: Open the SMS notification and copy OTP. Tap on the input field > OTP displayed above the keyboard.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

NOTE: If a phone number is not registered in the repository for a user profile, then the SMS OTP method is not enrolled automatically. However, you can manually enroll the SMS OTP method from the **Add Authenticator** section.

Enrolling the SMS OTP Authenticator

1. Click the SMS OTP icon in Add Authenticator.
2. (Optional) Specify a comment related to SMS OTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the mobile number in **Phone number**.

   A message `Verification is sent to <phone number>` is displayed.
5. Specify the verification code in **Enter verification code** to confirm the phone number is valid.
6. Click **Save**.

   A message `Authenticator "SMS OTP" added` is displayed.

NOTE: An administrator has the privilege to hide the **Phone number** and **verification code** to prevent users from providing new phone number that is not registered in the repository.

Testing the SMS OTP Authenticator

1. Click the SMS OTP icon in **Enrolled Authenticators**.
2. Click **Test**.
3. You will receive an SMS with an OTP.
4. Specify the OTP in **Password**.

NOTE: If you receive multiple SMS, specify the OTP sequence prompted on the screen.

5 Click **Next**.

A message `Authenticator "SMS OTP" passed the test` is displayed.

The following table describes the possible error message along with the workarounds for the SMS OTP authentication.

Table 2-11 *SMS OTP authenticator - error messages*

Error	Possible Cause and Workaround
`Incorrect OTP password`	The specified OTP is invalid. Specify a valid OTP and try again.
`You do not have a phone number. Contact administrator or Helpdesk and register your phone`	If your phone number is not registered in the repository. Contact administrator or helpdesk to register phone number.

Swedish BankID

The Swedish BankID method enables you to authenticate using your Swedish Personal Identification Number. To enroll the Swedish BankID authenticator, you must have the BankID app either on your computer or mobile device. When you try to authenticate any device a request is sent to the BankID app, specify the security code to unlock the app. The recorded personal identification number is compared with actual identification number on the BankID app. If the identification numbers match, you are authenticated successfully.

Enrolling the Swedish BankID Authenticator

Before enrolling, ensure that you have the following prerequisites:

- Social Security Number (SSN)
- BankID app (either desktop or mobile version).

  For more information about the BankID app, see BankID.

NOTE: While you set up the security code for the BankID app, ensure that the code must contain six digits in non-sequential format (for example: 221144).

To enroll the Swedish BankID, perform the following steps:

1 Click the BankID icon in **Add Authenticator**.

2 (Optional) Specify a comment related to BankID authenticator in **Comment**.

3 (Optional) Select the preferred category from **Category**.

4 Specify the personal identification number in **Personal ID (SSN)**.

5 Click **Save**.

A message `Authenticator "BankID" added` is displayed.

Testing the Swedish BankID Authenticator

1. Click the BankID icon in **Enrolled Authenticators**.
2. Click **Test**.

   A message `Start your BankID app` is displayed.
3. Open the BankID app.
4. Specify **Security Code**.
   - (Conditional) Click **Identify** on the mobile app.
   - (Conditional) Click **Verify my identity** on the desktop app.

   If the test is successful, a message `Authenticator "BankID" passed the test` is displayed.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

This authenticator is enrolled automatically and you cannot remove it.

Testing the Swisscom Mobile ID Authenticator

1. Click the Swisscom Mobile ID icon in **Enrolled Authenticators**.
2. Click **Test**.

   A message is displayed indicating that you must accept the request on the mobile phone.
3. Accept the request.

   A message `Authenticator "Swisscom Mobile ID" passed the test` is displayed.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token, Desktop OTP tool, or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

You can enroll the TOTP authenticator using the Desktop OTP tool. To initiate the tool, use the link that is sent from your administrator. You must click on the link and the Desktop OTP tool is prompted where you can enroll and create an account. While authenticating to any service, you must copy the OTP from the tool and use the OTP to get authenticated.

Enrolling the TOTP Authenticator

To enroll the TOTP authenticator, follow the recommendations of your system administrator. You can enroll TOTP method using any one of the following ways:

- NetIQ Advanced Authentication App
- Google Authenticator App
- OATH Compliant Hardware Token
- Enrolling TOTP Manually
- Desktop OTP Tool

WARNING: The QR code format in the Advanced Authentication and Google Authenticator apps are different. Contact your system administrator to confirm the app recommended for enrollment.

NetIQ Advanced Authentication App

To enroll the TOTP authenticator using Advanced Authentication smartphone app, perform the following steps:

1. Click the TOTP icon in **Add Authenticator**.
2. (Optional) Specify a comment related to TOTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Open the Advanced Authentication app on your phone.
5. Tap **Offline authentication**.
6. Tap **+** to add a new authenticator.
7. Scan the QR code using the camera on your phone.
8. Click **Save** in the **Add TOTP authenticator** page.

   A message `Authenticator "TOTP" has been added` is displayed.
9. Tap the new authenticator and specify account name and additional details in **Account** and **Additional info** respectively in the app.
10. Click **Save**.

TIP: If you are unable to scan the QR code with Advanced Authentication app, perform the following steps:

1. Zoom the page to 125 - 150%.
2. Scan the zoomed QR code using Google Authenticator app.

   Ensure that the mouse cursor is not overlapping the QR code.

If you are still unable to scan the QR code, contact your system administrator.

Google Authenticator App

To enroll the TOTP authenticator using Google Authenticator app, perform the following steps:

1. Click the TOTP icon in **Add Authenticator**.
2. (Optional) Specify a comment to TOTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Open the Google Authenticator app on your phone.
5. Tap **BEGIN SETUP** in the app.
6. Tap **Scan barcode** to add a new authenticator in the app.
7. Scan the QR code using the camera on your phone.
8. Click **Save**.

   A message `Authenticator "TOTP" has been added` is displayed.

TIP: If you scan Advanced Authentication app compatible QR code with Google Authenticator app, a message `Invalid barcode` is displayed.

OATH Compliant Hardware Token

To enroll the TOTP authenticator using OATH compliant hardware token, perform the following steps:

1. Click the TOTP icon in **Add Authenticator**.
2. (Optional) Specify a comment related to TOTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Specify the token's serial number in **OATH Token Serial**.

   You can find the serial number behind the token.
5. Press the button on the token and specify the one-time password in **OTP**.
6. Click **Save**.

   A message `Authenticator "TOTP" has been added` is displayed.

Enrolling TOTP Manually

1. Click the TOTP icon in **Add Authenticator**.
2. (Optional) Specify a comment related to TOTP authenticator in **Comment**.
3. (Optional) Select the preferred category from **Category**.
4. Click **+** adjacent to **Specify the TOTP secret manually**.
5. Specify 40 hexadecimal characters in **Secret**.
6. Set **Google Authenticator format of secret (Base32)** to **ON** to display the Google Authenticator app compatible QR code.

By default, **Google Authenticator format of secret (Base32)** is set to **OFF** and Advanced Authentication app compatible QR code is displayed.

NOTE: The administrator has privilege to configure the **Google Authenticator format of secret (Base32)** option in the Administration portal. But you can override the administrator configured setting.

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7 Set the preferred value in **Period**. 30 seconds is set by default.

8 Click **Save**.

A message `Authenticator "TOTP" has been added` is displayed.

NOTE: If the administrator has disabled the manual enrollment of TOTP in the Administration portal, then the **Specify the TOTP secret manually** section is not displayed.

Desktop OTP Tool

You can enroll the TOTP authenticator with the Desktop OTP tool in one of the following ways:

- "Enrolling with a Link" on page 51
- "Enrolling with a Secret Key" on page 51

Before enrolling the TOTP authenticator using the link, ensure that NetIQ Desktop OTP tool is installed on your system.

Enrolling with a Link

1 Check your registered email or phone for the enrollment link.

2 Click on the link.

You are directed to the Desktop OTP tool.

3 Specify your LDAP repository or local username, password and optional comment in the **NetIQ Advanced Authentication OTP Tool** window.

4 Click **OK**.

The TOTP authenticator is created in the Desktop OTP tool and enrolled in the Self-Service portal.

Enrolling with a Secret Key

Advanced Authentication generates a secret key in the **Specify the TOTP secret manually** section of the Self-Service portal > **TOTP > Add TOTP authenticator**. You can enroll the TOTP authenticator manually with the Desktop OTP tool using this secret key as a seed.

1 Click the TOTP icon in **Add Authenticator**.

2 (Optional) Specify a comment related to the TOTP authenticator in **Comment**.

3 (Optional) Select the preferred category from **Category**.

4 Ensure the **OATH Token Serial** and **OTP** fields are empty.

5 Click the + icon adjacent to **Specify the TOTP secret manually**.

6 Click the lock icon adjacent to **Secret** and copy the 40 hexadecimal characters.

7 Ensure the option Google Authenticator format of QR code (Key URI) is set to OFF

8 Set the preferred value in **Period**. The default value is 30 seconds.

9 Click **Save**.

A message `Authenticator "TOTP" has been added` is displayed.

10 Launch the Desktop OTP tool.

11 Click **Add by seed**.

12 Perform the following in the **NetIQ Advanced Authentication OTP Tool** window:

- Specify a brief description related to the TOTP authenticator in **Description**.
- Specify the length of OTP in **Number of digits (4 -10)**. Ensure that the value in the **Number of digits** field of the OTP tool is the same as the OTP format configured in the Administration portal.
- Specify the time interval to generate a new OTP in **Period (sec)**. Ensure that the value in Period is the same in both the OTP tool and Self-Service portal.
- Paste the secret in **Secret (hex string)** that you copied in Step 5.

13 Click **OK**.

This creates the TOTP authenticator in the Desktop OTP tool.

Testing the TOTP Authenticator

1 Click the TOTP icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Specify one-time password in **Password**.

4 Click **Next**.

If the test is successful, a message `Authenticator "TOTP" passed the test` is displayed. If the one-time password is invalid or the server time is not in sync, a message `Incorrect OTP password` is displayed.

Voice

The Voice method initiates a call to your registered phone number. The phone call requests you to specify the PIN in the dial pad of your mobile to authenticate. When you try to authenticate on any device, the recorded PIN is compared with the actual PIN. If both PINs are identical, you are authenticated successfully.

Enrolling the Voice Authenticator

1 Click the Voice icon in Add Authenticator.

2 Check whether a valid phone number is specified in **Phone number**.

3 (Optional) Specify a comment related to Voice authenticator in **Comment**.

4 (Optional) Select the preferred category from **Category**.

5 Specify your PIN in **PIN**.

The PIN must contain minimum 3 digits, by default.

6 Click **Save**.

A message `Authenticator "Voice" added` is displayed.

NOTE: An administrator has the privilege to hide **Phone number** to prevent users from providing new phone number that is not registered in the repository.

Testing the Voice Authenticator

1 Click the Voice icon in **Enrolled Authenticators**.

2 Click **Test**.

A message `Call has been initiated` is displayed.

3 Answer the call on your phone.

4 Specify your PIN followed by a hash symbol (#) in the dial pad of your mobile phone.

A message `Authenticator "Voice" passed the test` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

WARNING: You will not receive any notification about the PIN expiration. The PIN expiration is set as 42 days, by default. You must sign in to the Self-Service Portal and change the PIN before it expires.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short duration. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

NOTE: If a phone number is not registered in the repository for a user profile, then the Voice OTP method is not enrolled automatically. However, you can manually enroll the Voice OTP method from the **Your Enrolled Single Methods for sign in** section, specify the phone number and click **Save**.

Enrolling the Voice OTP Authenticator

This authenticator enrolls automatically and you cannot remove it.

1 Click the Voice OTP icon in **Add Authenticator**.

2 (Optional) Specify a comment related to voice OTP authenticator in **Comment**.

3 (Optional) Select the preferred category from **Category**.

4 Specify the mobile number in **Phone number**.

A message `Verification is sent to <phone number>` is displayed.

Receive the call on your phone and listen to the voice OTP.

5 Specify the verification code in **Enter verification code** to confirm the phone number is valid.

6 Click **Save**.

A message `Authenticator "Voice OTP" added` is displayed.

NOTE: An administrator has the privilege to hide **Phone number** and **verification code** to prevent users from providing new phone number that is not registered in the repository.

Testing the Voice OTP Authenticator

1 Click the Voice OTP icon in **Enrolled Authenticators**.

2 Click **Test**.

3 Receive the call on your phone and listen to the voice OTP.

4 Specify the OTP in **Password**.

5 Click **Next**.

A message `Authenticator "Voice OTP" passed the test` is displayed. If the specified OTP is invalid, a message `Incorrect answer, try again` is displayed.

Web Authentication Method

Advanced Authentication enables you to use authorization on the third-party websites (Identity Providers) to access the Advanced Authentication portals.

Enrolling the Web Authentication Authenticator

1 Click the Web Authentication icon in **Add Authenticator**.

2 (Optional) Specify something related to the authenticator in **Comment**.

3 (Optional) Select the preferred category from **Category**.

4 Select the **Identity Provider**.

5 (Optional) Specify a hint for the user in **Username hint.**

6 Click **Save**.

The enrollment is redirected to the Identity Provider page that you have selected. Specify your credentials.

You will be redirected to the Enrollment page with your enrolled authenticator.

An error `Web Authentication failed` might be displayed after the authorization on third-party websites during enrollment. Contact your administrator to verify the Web Authentication method settings.

Testing the Web Authentication Authenticator

1 Click the Web Authentication icon in **Enrolled Authenticators**.

2 Click **Test**.

You will be automatically authenticated by the enrolled Identity Provider.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint, facial recognition and PIN authentication to log in to the Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint and facial recognition.

NOTE: To use Windows Hello for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

Configuring the System Settings for Windows Hello

Before enrolling Windows Hello, you must configure the system settings.

- "Configuring Settings for Windows Hello Fingerprint" on page 55
- "Configuring Settings for Windows Hello Face Recognition" on page 56

NOTE: You cannot enroll the Windows Hello authentication on an RDP session.

Configuring Settings for Windows Hello Fingerprint

1 Click **Start > Settings > Accounts > Sign-in options**.

Under **Windows Hello**, the options for fingerprint is displayed if your PC has a fingerprint reader.

2 Click **Set up** under **Fingerprint**.

3 Click **Get started**.

4 Specify your PIN.

NOTE: If you do not have a PIN, you must create one to set up the fingerprint.

---

5 To enroll fingerprint, scan your finger on the fingerprint reader.

You will have to place your finger multiple times to provide the scanner a good picture of your fingerprints.

6 Click **Add Another** if you want to add another fingerprint.

Configuring Settings for Windows Hello Face Recognition

1 Click **Start > Settings > Accounts > Sign-in options**.

   Under **Windows Hello**, the option for face recognition is displayed if your computer has an external camera.

2 Click **Set up** under **Face Recognition**.

3 Click **Get started**.

4 Specify your PIN.

   NOTE: If you do not have a PIN, you must create one to set up the face recognition.

5 To enroll the face, present your face to the camera. Scan your face by following the on-screen instructions.

6 Select **Finish** to complete scanning or choose **Improve Recognition** to continue scanning.

   NOTE: It is recommended that you select to improve recognition if you change your appearance often. Scanning your face again does not erase the earlier scans. It just helps Windows Hello get better at recognizing you.

For more information about Windows Hello, see the Microsoft Windows website https://support.microsoft.com/en-in/help/17215/windows-10-what-is-hello.

NOTE: To enable Windows Hello for all domain-joined Windows 10 workstations and for Windows 10 Enterprise, see https://community.spiceworks.com/topic/1840001-windows-10-fingerprint-some-settings-are-managed-by-your-organization.

Enrolling the Windows Hello Authenticator

1 Click the Windows Hello icon .

2 (Optional) Specify a **Comment** in **Add Windows Hello authenticator**.

3 (Optional) Select the preferred category from **Category**.

   The **Category** option is displayed only if the administrator has set the **Event Categories** option in the Administration portal.

4 Specify your username for which Windows Hello is enrolled in **Windows User Name**.

   NOTE: If you have enrolled Windows Hello for a local account, you must specify the `<workstationname>\<username>`.

   If you want to enroll Windows Hello that is set for a Microsoft account, you can specify `microsoftaccount\user@outlook.com` as the user name. This is helpful if you must login to the Windows operating system using your Microsoft account.

5 Click **Save.**

Testing the Windows Hello Authenticator

1. Click the Windows Hello icon in **Enrolled authenticators**.
2. Click **Test**.
3. Place your finger on the reader or swipe your finger on the swipe sensor for the fingerprint authentication. Present your face for the facial recognition.

   An appropriate message is displayed indicating the result of the test.

3 Managing Authenticators New UI

To perform authentication with Advanced Authentication, you must enroll all methods of an authentication chain which you can use for authentication. An authenticator is a set of encrypted data that contains your authentication information. You can use authenticators to log in to different operating systems such as Linux, Mac OS, and Windows. With these authenticators, you can also log in to VPN and web portals such as Citrix NetScaler, Office 365, SalesForce, and so on. Some of the authenticators such as **SMS, Email, Voice OTP, Swisscom Mobile ID, LDAP Password,** and **RADIUS** are enrolled automatically. The new self enrollment UI enables the users to perform 2 types of enrollment. Those enrollments are:

- Enroll the methods separately in **Your Enrolled Single Methods for sign in**.
- Enroll the methods available in the chains for you in **Your Enrolled Sequence for sign in**.

Advanced Authentication provides the following authenticators:

- "Apple Touch ID" on page 60
- "Bluetooth" on page 62
- "Card" on page 63
- "Device Authentication" on page 65
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The following authenticators are enrolled by default:

- Email OTP
- LDAP Password
- RADIUS Client
- SMS OTP
- Swisscom Mobile ID
- Voice OTP

Editing an Authenticator

1. Click the enrolled method in the **Your Enrolled Single Methods for sign in** section.
2. Change the settings and click **Save.**

Deleting an Authenticator

1. Click the enrolled method in the **Your Enrolled Single Methods for sign in** section.
2. Click the delete icon .

Deleting All Enrolled Authenticators

1. Click the user name in the upper-right corner of the Self-Service portal.
2. Click **Delete me**.
3. Click **OK**.

NOTE: An administrator has the privilege to hide the **Delete me** option in the Self-Service portal.

NOTE: If you are a user of Local repository, using the **Delete me** option will completely remove your account.

Apple Touch ID

Apple Touch ID enables you to authenticate to Mac operating system using the electronic fingerprint recognition feature available in Mac device. During enrollment, Apple Touch ID captures the fingerprint. When you try to authenticate to a Mac device, the presented fingerprint is matched with the enrolled fingerprint. If the fingerprints match, you are authenticated.

NOTE: Ensure to install the Advanced Authentication Device Service before you enroll Apple Touch ID. For more information about the Device Service, see the Advanced Authentication - Device Service guide.

NOTE: You can enroll Apple Touch ID only for current login sessions in Mac operating system, and Touch ID session should be active for current users.

Enrolling the Apple Touch ID Authenticator

Perform the following steps to enroll the Apple Touch ID authenticator:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the **Apple Touch ID** icon in **Available Methods for Enrollment.**
3. (Optional) Specify the **Display Name**.
4. Specify the current login session account name in **Touch ID Account Name**.

   User can see the current username in the right corner of the menu bar.
5. Click **Save** to start enrolling.

   Two messages `Please wait` and `"TouchIdservice" is trying to enroll` are displayed.

   NOTE: If you are enrolling for another user who has logged in but not the current user, only `Please wait` message is displayed.
6. Place the finger on the Touch ID reader.

   A message `The "Apple Touch ID" authenticator has been added` is displayed.

Testing the Apple Touch ID

Perform the following steps to test the Apple Touch ID authenticator:

1. Click the Apple Touch ID icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Click **Next**

   Two messages `Please wait` and `"TouchIdservice" is trying to authenticate` are displayed.

   NOTE: If you are enrolling for another user who has logged in but not the current user, only `Please wait` message is displayed.
4. Place the finger on the Touch Id reader.

   If the test is successful, a message `Test successful` is displayed.

The following table describes the possible error messages along with the workaround for the Apple Touch ID authentication.

Error	Possible Cause and Workaround
`User is not found`	There is no such account for the current Mac device. Check the account name and try again
`Touch ID not enrolled`	Touch ID isn't enrolled for the specified user. Enable Touch ID in the `Apple -> System Preferences -> Touch ID settings`
`Touch ID is locked`	The user tried to log in with a wrong finger for five times. To enable Touch ID, log in the specified Account with Password
`Touch ID is not available`	Local user hasn't logged in to account yet
`Cancelled by timeout`	Operation was cancelled as time for presenting fingerprint is out
`Touch ID is cancelled by user`	User not allowed for Device service to use the Touch ID
`Device Service is not available`	Device service isn't installed

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use this method, you must install the Advanced Authentication Device Service. For more information about Device Service, see Advanced Authentication - Device Service guide.

Enrolling the Bluetooth Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Bluetooth icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Turn on the Bluetooth in your device and ensure that it is discoverable to the other Bluetooth devices.

5 Click **Search for Devices** to detect your Bluetooth enabled device.

NOTE: If your device is not listed, click **Search for Devices** to reload the Bluetooth enabled devices.

---

6 Select the preferred device from the list.

7 Click **Save.**

A message `The "Bluetooth" authenticator has been saved` is displayed.

Testing the Bluetooth Authenticator

NOTE: During authentication, ensure that your mobile device is discoverable.

---

1 Click the Bluetooth icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method.**

A message `Waiting for the Bluetooth service` is displayed. If the enrolled Bluetooth device is within the range, a message `Test successful` is displayed. If the enrolled Bluetooth device is not within the range, a message `Waiting for an authentication response` is displayed.

If the Advanced Authentication Device Service is not installed on the system where you want to authenticate, an error message `Bluetooth service is not available` is displayed. Install the Device Service and try to authenticate again.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number) and Near-Field Communication (NFC) cards in the following ways:

- While using contactless cards, when you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.
- In the case of NFC cards, when you place your NFC tag near the NFC reader (smartphone), the NFC reader (smartphone) identifies your NFC tag, and you are authenticated successfully.

TIP: Ensure to install the Advanced Authentication Device Service before you enroll a card. For more information about the Device Service, see the *Advanced Authentication - Device Service* guide.

Some card readers are supported only for Microsoft Windows. For more information about the list of supported card readers, see Supported Card Readers and Cards.

Enrolling the Card Authenticator

Before enrolling the Card authenticator, ensure that the card reader is connected to the computer.

1. Click **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Card icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Click **Scan Card**.

   A message `Waiting for the card` is displayed.
5. Tap a card on the reader.

   A message `Enrollment is complete` is displayed.
6. Click Save.

   A message `The "Card" authenticator has been saved` is displayed.

Testing the Card Authenticator

1. Click the Card icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message `Waiting for the card` is displayed.
3. Tap a card on the reader.

   If the provided card passes the test, a message `Test successful` is displayed. If the card is invalid, a message `Incorrect Card` is displayed.

Enrolling NFC Card Authenticator

You must have a smartphone with NFC support and Google Chrome browser to enroll this method.

1. In your smartphone Google Chrome browser, open the URL `<https://<hostname>/account`.
2. Specify the credentials and log in.
3. Click **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page
4. Click the Card icon in **Available Methods for Enrollment**.
5. (Optional) Specify the **Display Name**
6. Click **Scan Card**.

   A message `Waiting for the card` is displayed.
7. Place the NFC tag near your NFC reader (smartphone).

   A message `Enrollment is complete` is displayed

8 Click **Save**.

A message `The "Card" authenticator has been saved` is displayed.

Testing NFC Card Authenticator

1 Click the Card icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

A message `Waiting for the card` is displayed.

3 Place the NFC tag near your smartphone.

A message `Card has been detected` is displayed for a moment. If the provided card passes the test, a message `Authenticator "Card" passed the test` is displayed. If the card is invalid, a message `Incorrect Card` is displayed.

The following table describes the possible error messages along with the workarounds for the Card authentication.

Table 3-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Card Service unavailable`	The Advanced Authentication Device Service is not installed on the system. Install the Device Service and try authenticating again.
`Card reader has not been detected`	The card reader is not connected properly or reader is not available in the Device Manager. Check the card reader connection settings and then try authenticating again.

`Card reader detected`	Due to an improper functioning of a system service `pcscd` in the Mac OS X. To fix this issue, open **Terminal** application and run the following commands:
	`kill pcscd`
	`kill pcscdlite`
	Then reconnect the reader and try to enroll again.

Device Authentication

Device Authentication method enables you to authenticate using a valid certificate or a key pair and a PIN. During enrollment, a key pair is generated and is secured with the PIN. When you try to authenticate on any device, the certificate or key pair is validated along with PIN. If the specified PIN matches with enrolled PIN, you are authenticated successfully.

NOTE: Ensure to enroll the Device Authentication method using the workstation where you would perform further authentication. Enrollment on one machine and authentication on another machine is not supported.

Enrolling Device Authentication Authenticator

1 Click **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Device Authentication icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Select the valid certificate from Key.

   If the Windows TPM smart card is generated in the workstation, the certificate type and expiry date of certificate is populated in Key automatically.

5 (Conditional) To generate key pair, select Generate a key pair from Key and specify PIN.

6 Click Save.

   A message `The "Device Authentication" authenticator has been saved` is displayed.

Testing Device Authentication Authenticator

1 Click the Device Authentication icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Specify the PIN.

   If the test is successful, a message `Test Successful` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

NOTE: If an email address is not registered in the repository for a user profile, then the Email OTP method is not enrolled automatically. However, you can specify the email address in **Override Email** and click **Save** to enroll manually.

Enrolling the Email OTP Authenticator

This authenticator is enrolled automatically and you cannot remove it.

1 Click **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Email OTP icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Specify the email address in **Override Email**.

   A message `Please enter OTP` is displayed.

5 Specify the verification code in **Enter verification code** to confirm the email address is valid.

6 Click **Verify**.

   A message `The "Email OTP" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide the **Override Email** and **Enter verification code** to prevent users from providing new email address that is not registered in the repository.

Testing the Email OTP Authenticator

1 Click the Email OTP icon in **Your Enrolled Single Methods for sign in**.

2 Ensure that your email address (specified after the text `The email address to which the OTP is sent to is`) is valid. If the set email address in invalid, update the email address.

3 Click **Test Method**.

   A message `OTP password sent, please specify` is displayed.

4 Check your email. You must have received an email with the OTP.

5 Specify the OTP in **Password**.

6 Click **Next**.

   A message `Test Successful` is displayed. If the provided OTP is invalid, a message `Incorrect OTP password` is displayed.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you are successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

Enrolling the Face Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Facial Recognition icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Click **Start Capture** to capture the face.

   A message `Detecting a Face` is displayed.

Your face will be captured by the camera and enrolled. A message `Enrollment is complete` is displayed.

5 Click **Save**.

NOTE: ◆Facial recognition authentication method works with or without the Device Service installed. If the Device Service is not installed, then the browser support is used for capturing the face.

◆ To use the Facial recognition method for OAuth 2.0 and SAML 2.0 integrations, you must have the Advanced Authentication Device Service installed.

Testing the Face Authenticator

1 Click the Facial Recognition icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Present your face in front of the camera.

If your face matches with the enrolled face, the facial authentication is successful and a message `Test successful` is displayed.

4 Click **OK**.

The following table describes the possible error messages along with the workaround for the Face authentication.

Table 3-2 *Facial Recognition authenticator- error messages*

Error	Possible Cause and Workaround
`Capture Device cannot be opened`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	The enrolled face and presented face does not match. You must present your face again for the authentication.
`Timeout`	The session has timed out. You must present your face again for the authentication.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

Enrolling the Flex OTP Authenticator

This authenticator enrolls automatically.

NOTE: The Flex OTP method is not visible in Self-Service portal until the user authenticates using Flex OTP once in any event.

Testing the Flex OTP Authenticator

1. Click the Flex OTP icon in **Enrolled Authenticators**.
2. Click **Test Method**.
3. Specify a One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators in **Password**.

   If the password is valid, a message `Test successful` is displayed. If the provided password is invalid, a message `Incorrect password` is displayed.
4. Click **OK**.

FIDO2

The FIDO2 method facilitates you to use any FIDO compliant device either in-built with the system or connected through USB to register and authenticate to the web environment. When you try to authenticate, FIDO compliant device and user gesture, such as tap on token and swipe fingerprint on reader are validated.

NOTE: If the FIDO2 method is enrolled using the Windows Hello in Microsoft Edge 17 or earlier supported browser versions then you must authenticate using the same browser. After upgrading to the latest version of Edge that supports the FIDO 2.0 standards, you must re-enroll the FIDO2 method.

Enrolling the FIDO2 Authenticator

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the FIDO2 icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Connect the device that complies with FIDO standards.
5. Click **Detect Device**.

   A message `Waiting for Web Authentication data` is displayed.
6. Perform the action associated to the device.

   For example, if you use the `FIDO2` device, connect it to the computer, set the pin, and touch the device when you see a flash. A message `Enrollment is complete` is displayed.
7. Click **Save**.

   A message `The "FIDO2" authenticator has been saved` is displayed.

Testing the FIDO2 Authenticator

1 Click the FIDO2 icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

A message `Waiting for Web Authentication data` is displayed.

3 Perform the action associated to the enrolled device.

A message `Test successful` is displayed.

FIDO U2F

The FIDO U2F method facilitates you to connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token to authenticate. When you try to authenticate on any device, token connected to the device is compared with the enrolled token. If the token details match, you are authenticated successfully.

TIP: While you enroll and test the FIDO U2F authentication on any browser except Google Chrome, ensure to install the Advanced Authentication Device Service on the system. The Google Chrome contains a built-in module.

Enrolling the FIDO U2F Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the FIDO U2F icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Connect the device that complies with the U2F standards.

5 Click **Detect U2F device**.

A message `Please touch the flashing U2F device now. You may be prompted to allow the site permissions to access your security keys` is displayed.

6 Touch the FIDO U2F button when there is a flash on the device.

A message `Enrollment is complete` is displayed.

7 Click **Save**.

A message `The "U2F" authenticator has been saved` is displayed. If there is no flash for more than 10 seconds, reconnect your token and repeat the steps.

NOTE: To use U2F in Google Chrome on Linux, you must perform the following steps:

1 Download or create a copy of the file `70-u2f.rules` in the Linux directory: `/etc/udev/rules.d/` from https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

If the file is already available, ensure that the content is similar to that specified in https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

NOTE: If your version of UDEV is lower than 188, use the rules specified at https://github.com/Yubico/libu2f-host/blob/master/70-old-u2f.rules.

2 Save the file `70-u2f.rules` and reboot the system.

Testing the FIDO U2F Authenticator

1 Click the U2F icon in **Your Enrolled Single Methods for sign in.**

2 Click **Test Method**.

A message `Please touch the flashing U2F device now` is displayed. You may be prompted to allow the site permissions to access the security keys in U2F device.

3 Touch the FIDO U2F button when there is a flash on the device.

A message `Test Successful` is displayed. If the connected token is invalid, a message `Token is not registered` is displayed.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 3-3 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Cannot reach local FIDO U2F Service. Ask your admin to enable it. You may use Google Chrome browser, it has a built-in U2F support`	The FIDO U2F service is not installed properly. Install the U2F service and try again.
`Timeout. Press "Save" to start again`	The session has timed out. Click **Save** and enroll again.
`Enroll failed: Device not attested. Ask your administrator to upload your token attestation certificate`	The token does not contain attested certificate. Contact your administrator to add the attestation certificate to your token.
`Unexpected error: U2F token error: The visited URL does not match the application ID or it is not in use`	The Facets are not configured appropriately. Contact you administration to check the Facets settings.

Fingerprint

The Fingerprint method enables you to authenticate using your fingerprint(s). During enrollment, the fingerprint reader captures the fingerprint. When you try to authenticate on any device, the presented fingerprint is matched with the enrolled fingerprint. If the fingerprints match, you are authenticated successfully.

You can enroll fingers for the Fingerprint method using one of the following devices:

- Single finger reader
- Multi-finger reader

TIP: Fingerprint(s) enrollment is supported only on Microsoft Windows and Linux RHEL kernel 3.x.x. You must install Advanced Authentication Device Service.

Linux RHEL supports the fingerprint readers: Green Bit DactyScan84c and Nitgen eNBioScan-C1 for the Fingerprint method enrollment and authentication respectively.

Duress Finger

The Fingerprint method also allows you to assign one of the enrolled fingers as duress. Only under an emergency or a threat, you can authenticate with the duress finger. Use of the duress finger for authentication sends an alert notification to the email address and phone number that the administrator has configured.

Enrolling the Fingerprint Authenticator Using Single Finger Reader

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Fingerprint icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Select the preferred finger for enrollment and place or swipe the finger on the reader when there is a flash.

   NOTE: Number of fingers to be enrolled and the number of scans performed for each finger are mentioned on the **SCAN FINGERPRINT** screen.

5. Click **Done** after you scan the fingerprint.
6. Repeat Step 4 to add more fingers for authentication.

   NOTE: If you have not enrolled fingers for Fingerprint method, then the **Assign Duress Finger** list will be empty.

7. Click **Save**.

   A message `The "Fingerprint" authenticator has been saved` is displayed.

You can also assign a finger as duress, after enrolling the Fingerprint method. For more information, see Assigning a Finger as Duress.

IMPORTANT: It is recommended to test the authenticator after enrollment. If the test fails, delete the authenticator and enroll it again.

Enrolling the Fingerprint Authenticator Using Multi-Finger Reader

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Fingerprint icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 (Conditional) Set **Use multi-finger reader for enrollment** to **ON** to use multi-finger reader.

NOTE: An administrator has the privilege to hide the **Use multi-finger reader for enrollment** and force users to enroll with the multi-finger reader.

---

5 Select one of the highlighted fingers combination for enrollment. The fingers combination available are:

- Four fingers of the left hand
- Four fingers of the right hand
- Two thumbs

6 Place the fingers on the reader when you see the LEDs of selected fingers flash.

Wait till the reader scans the fingers.

Red indicators below the fingerprint represents the number of captures that the administrator has configured.

7 (Conditional) Select one of the enrolled finger as duress from **Assign Duress Finger** list.

NOTE: If you have not enrolled fingers for Fingerprint method, then the **Assign Duress Finger** list will be empty.

---

8 Click **Save**.

A message `The "Fingerprint" authenticator has been added` is displayed.

You can also assign a finger as duress, after enrolling the Fingerprint method. For more information, see Assigning a Finger as Duress.

Assigning a Finger as Duress

1 Click the Fingerprint icon in **Enrolled Authenticators**.

2 Select the preferred finger as duress from **Assign Duress Finger** list.

The **Assign Duress Finger** list displays the fingers that are enrolled.

3 Click **Save**.

Testing the Fingerprint Authenticator

1 Click the Fingerprint icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Place or swipe your finger on the reader.

   A message `Test Successful` is displayed. If the fingerprints are not identical, a message `Fingerprint Mismatch` is displayed.

The following table describes the possible error message along with the workarounds for the Fingerprint authentication.

Table 3-4 *Fingerprint authenticator - error messages*

Error	Possible Cause and Workaround
`Fingerprint Service is not available`	The Advanced Authentication Device Service is not installed. Ensure to install Advanced Authentication Device Service and try authenticating again.
`Fingerprint reader is not connected`	The fingerprint reader or vendor specific drivers are not connected properly. Ensure that the fingerprint reader and vendor specific drivers are connected properly to the machine.

Home Affairs National Identification System (HANIS) Fingerprint

The HANIS fingerprint method is for the citizens of South Africa. This method enables you to enroll the personal identification number or password number issued by Home Affairs National Identification System. When you try to authenticate on any device, the presented fingerprint is matched with the enrolled fingerprint in the HANIS database. If the fingerprints match, you are authenticated successfully.

NOTE: If the Passport number or National ID is not registered in the repository for a user profile, then the HANIS method is not enrolled automatically. However, you can manually enroll the HANIS method from the Authentication Methods page.

Enrolling the HANIS Fingerprint Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the HANIS icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Specify the passport number or national ID in **ID/Passport number**.

5 Specify the mobile number in **Phone number**.

6 Click **Save**.

   A message `The "HANIS Fingerprint" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide the **ID/Passport** and **Phone number** to prevent users from providing new details that are not registered in the repository.

Testing the HANIS Fingerprint Authenticator

1. Click the HANIS icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message `Place your finger on the reader` is displayed.
3. Place or swipe your finger on the reader.

   A message `Test Successful` is displayed. If the fingerprints are not identical, a message `Fingerprint Mismatch` is displayed.

Table 3-5 *HANIS Fingerprint authenticator - error messages*

Error	Possible Cause and Workaround
`Fingerprint Service is not available`	The Advanced Authentication Device Service is not installed. Ensure to install Advanced Authentication Device Service and try authenticating again.
`Fingerprint reader is not connected`	The fingerprint reader or vendor specific drivers are not connected properly. Ensure that the fingerprint reader and vendor specific drivers are connected properly to the machine.
`The fingerprint capture does not comply with the size standard, image size should be 400 x 400 at least`	The fingerprint reader captured images are not according to the standard size. Ensure to use a reader that provides clear fingerprint image.

HANIS Face

The HANIS (Home Affairs National Identification System) Face method is for the citizens of South Africa. This method enables you to enroll the personal identification number or passport number issued by Home Affairs National Identification System. When you try to authenticate on any device, the presented face is matched with the enrolled face in the HANIS database. If the images match, you are authenticated successfully.

NOTE: If the Passport number or National ID is not registered in the repository for a user profile, then the HANIS method is not enrolled automatically. However, you can manually enroll the HANIS Face method from the **Authentication Methods** page.

Enrolling the HANIS Face Authenticator

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the HANIS Face icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Specify the passport number or national ID in **ID/Passport number**.

5 Specify the mobile number in **Phone number**.

6 Click **Save**.

A message `The "HANIS Face" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide the **ID/Passport** and **Phone number** to prevent users from providing new details that are not registered in the repository.

Testing the HANIS Face Authenticator

1 Click the HANIS Face icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Present your face in front of the camera.

If your face matches with the enrolled face, the authentication is successful and a message `Test successful` is displayed.

4 Click **OK**.

The following table describes the possible error messages along with the workaround for the HANIS Face authentication:

Table 3-6 *HANIS Face authenticator - error messages*

Error	Possible Cause and Workaround
`Capture Device cannot be opened`	The camera is not connected properly. Check your camera settings and try again.
`Timeout`	The session has timed out. You must present your face again for the authentication.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You must use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If the OTPs are identical, you are authenticated successfully.

Enrolling the HOTP Authenticator

To enroll the HOTP authenticator, you must follow the recommendations of your system administrator. You can enroll HOTP in one of the following ways:

- Using YubiKey Hardware Token
- Using Software Token
- Synchronizing Existing Token with HOTP Counter
- Assigning a Token Serial To an Account

NOTE: If a token is already assigned to your account, enrollment is not required.

Using YubiKey Hardware Token

To enroll HOTP using YubiKey hardware token, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the HOTP icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Specify the token serial number in **OATH Token Serial**.
5. Specify the **YubiKeyToken Key ID**.
6. Specify the **Secret (if you know)**.
7. Place the cursor in **Value 1** and touch the button on YubiKey.

   OTP from YubiKey is inserted in **Value 1** automatically.
8. Repeat step 7 in **Value 2** and **Value 3** to insert consequent OTPs.
9. Click **Save**.

   A message `The "HOTP" authenticator has been saved` is displayed.

Using Software Token

To enroll HOTP using RFC 4226 compliant software token, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page
2. Click the HOTP icon in **Available Methods for Enrollment**.
3. Specify first OTP that generated on the token in **HOTP 1**.
4. Specify consequent OTPs from the token in **HOTP 2** and **HOTP 3**.
5. Specify 40 characters hexadecimal secret code in **Secret (If you know)**.
6. Click **Save**.

   A message `The "HOTP" authenticator has been saved`is displayed.

Synchronizing Existing Token with HOTP Counter

If an existing token is assigned to your account, perform the following steps to synchronize the HOTP counter:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page
2. Click the HOTP icon in **Available Methods for Enrollment**.
3. Specify first OTP in **HOTP 1** that generated on the token. In case of YubiKey token, connect the hardware token to the system and perform the following steps:
   - **3a** Place cursor in **HOTP 1**.
   - **3b** Touch button on the token.
4. Specify the consequent OTPs from the token in **HOTP 2** and **HOTP 3**. In case of YubiKey token, repeat the steps 2a and 2b.
5. Click **Save**.

   A message `The "HOTP" authenticator has been saved` is displayed.

Assigning a Token Serial To an Account

If administrator has uploaded the token details on the Advanced Authentication server and you have got the serial number of a token, perform the following steps to assign serial number to your account:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page
2. Click the HOTP icon in **Available Methods for Enrollment**.
3. (Optional) Specify a comment related to HOTP authenticator in **Comment**.
4. Specify the token's serial number in **OATH Token Serial**.
5. Specify the three consequent OTPs in **HOTP 1**, **HOTP 2**, and **HOTP 3** respectively.
6. Click **Save**.

   A message `The "HOTP" authenticator has been saved` is displayed.

Testing the HOTP Authenticator

1. Click the HOTP icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Specify the OTP in **Password**.

   If the OTP is valid, a message `Authenticator "HOTP" passed the test` is displayed.

The following table describes the possible error message along with the workarounds for the HOTP authentication.

Table 3-7 HOTP authenticator - error messages

Error	Possible Cause and Workaround
`Incorrect OTP password`	If the specified OTP is incorrect or the counter on the token and server are not in sync. Specify a valid OTP and try to authenticate again
`Cannot derive the counter. Check your three OTPs.`	If one of the specified OTP is incorrect during the enrollment. Try to enroll again with the new OTPs.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on an application, the submitted password is compared with the actual password in the corporate directory. If both the passwords are identical, you are authenticated successfully.

Enrolling the LDAP Password Authenticator

This authenticator enrolls automatically and you cannot remove it.

1. Click the Add icon in Your Enrolled Single Methods for sign in on the Authentication Methods page.
2. Click the LDAP Password icon in **Your Enrolled Single Methods for sign in**.
3. Specify the existing LDAP password in **Current Password**.
4. Specify the new LDAP password and confirm it.
5. Click **Save**.

Testing the LDAP Password Authenticator

1. Click the LDAP password icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Specify the valid password in **Password**.

   If the password is valid, a message `Test successful` is displayed. If the provided password is invalid, a message `Incorrect password` is displayed.
4. Click **OK**.

Out-of-Band

The Out-of-band method facilitates you to authenticate using the authentication request that is sent to the Out-of-band portal, Authentication Agent for Windows or Authentication Agent for Web. When you initiate the authentication, an authentication request is sent to the Out-of-band portal, Authentication Agent for Windows or Authentication Agent for Web. You can accept the request and get authenticated.

Enrolling the Out-of-Band Authenticator

This authenticator enrolls automatically and you cannot remove it.

Testing the Out-of-Band Authenticator

1. Click the Out-of-band icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Open the Out-of-band portal and authenticate using any of the available chains.

   If you are using the Authentication Agent for Windows, the Authentication Agent window appears where you can authenticate.
4. Wait for a few seconds. If the authentication request did not appear, right click or long tap on blank space and click **Reload**.
5. Click **Accept** to accept the authentication request.

   A message `Authenticator "Out-of-band" passed the test` is displayed.

   If you click **Decline**, the authentication is declined and a message `Auth rejected` is displayed.

   If you ignore the authentication request, after few minutes a message `Auth confirmation timeout` is displayed.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

Enrolling the Password Authenticator

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Password icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Specify **Password** and **Confirmation**.

   NOTE: Ensure that the password must contain minimum 5 characters, by default. An administrator has the privilege to change the password length.
5. Click **Save**.

   A message `The"Password" authenticator has been added` is displayed.

WARNING: You will not receive any notification about the password expiration. The password expiration value is 42 days, by default. Ensure to sign in to the Self-Service portal and change the password before it expires.

Testing the Password Authenticator

1. Click the Password icon in **Enrolled Authenticators**.
2. Click **Test method**.
3. Specify **Password**.
4. Click **Next**.

   If the test is successful, a message `Test Successful` is displayed. If the provided authenticator is invalid, a message `Incorrect password` is displayed.

PKI

The PKI method enables you to authenticate using any one of the following ways:

- PKI Device
- Virtual Smartcard

PKI Device

PKI device is a hardware device such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on any device, the certificate in the device is compared with the actual certificate. If the certificates are identical, you are authenticated successfully.

NOTE: You must install Advanced Authentication Device Service for enrolling the PKI method using PKI device.

Virtual Smartcard

You can also enroll and authenticate the PKI method using a virtual smartcard. Virtual smartcard supports authentication to any web environment and makes use of client SSL certificate to authenticate users. In client certificate authentication, the client browser provides its client certificate to the server to confirm the identity of a user.

A client SSL certificate is a file that contains information, such as digital signature, expiration date, name of user, and name of CA (Certificate Authority). When you try to authenticate on the web environment, authenticity of the client SSL certificate is validated based on the settings that are configured by the administrator.

Enrolling the PKI Authenticator Using PKI Device

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the PKI icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Insert the card in reader or connect the token to the machine.
5. Click **Get Certificates**.

   A message `Use an existing certificate or generate a key pair` is displayed.
6. Select a key from **Key**.

   If you have connected the token or card reader, the **Key** automatically populates the certificate with authentication key and its expiry date.
7. (Conditional) Enable **Show all** to view all the certificates.
8. Specify **PIN** code of the device.
9. Click **Save**.

   A message `The "PKI" authenticator has been saved` is displayed.

Enrolling the PKI Authenticator Using Virtual Smartcard

1. Try to access the third party website from the browser where your administrator has imported a valid SSL certificate.

   The **Certificate** dialog box is displayed.
2. Select the preferred client SSL certificate that is issued by the administrator.

   You get auto-enrolled to PKI method using virtual smartcard.

NOTE: An administrator has the privilege to disable auto-enrollment of the PKI method using virtual smartcard.

Testing the PKI Authenticator

1. Click the PKI icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message `Waiting for card...` is displayed.
3. Insert your card or connect your token to the machine, if you are using a PKI device.

   If you are using a virtual smartcard, the client SSL certificate is detected automatically.
4. Specify the PIN of the PKI device in **PIN**.

   If the test is successful, a message `Test Successful` is displayed. If the card is invalid, a message `Wrong card` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

The following table describes the possible error message along with the workarounds for the PKI authentication.

Table 3-8 *PKI authenticator - error messages*

Error	Possible Cause and Workaround
`Card reader connected`	When a card is not inserted to the reader or the token is not connected to the machine. Insert the card to the reader or connect token to the machine.
`Enroll failed: Cannot check revocation status for …`	When the certificate on your device does not contain information about the revocation status location or if the information is inserted, but the Certificate Authority is not available to verify the revocation status.
`PKI service is not available`	The Advanced Authentication Device Service is not installed on the system. Install the Device Service and try authenticating again.
`Key not found. Wrong Card?`	You have enrolled the PKI authenticator in the RDP session. Enroll the authenticator again in normal session.
`PIN is expired`	The PIN assigned to your token has expired. Contact your administrator for the new PIN.
`PIN is locked`	After certain number of attempts with the incorrect PIN, the PIN is locked. Contact your administrator to reset the PIN.
`Token is not present`	Token is not connected to the system. Connect the token and try authenticating again.
`Token is not recognized`	The Device Service is unable to detect the DLL to recognize the token.
`Unexpected service status: PLUGIN_NOT_INITTED`	A vendor module is absent, invalid or not specified. Contact your administrator to check the configuration.

The following table describes the unexpected error codes that are displayed from a PKCS#11 module.

Table 3-9 *: Unexpected Error codes*

Error Code	Description
`CKR_DEVICE_ERROR`	The token or USB slot is broken. Try to use a different USB slot.
`CKR_DEVICE_MEMORY`	There is no space available in the memory of token or there may be some other issue with the memory.
`CKR_MECHANISM_INVALID`	An invalid mechanism was specified to the cryptographic operation.

Error Code	Description
`CKR_PIN_EXPIRED`	Ensure that the card has been initialized or do not use the default PIN and the PIN has expired.
`CKR_PIN_LOCKED`	The user PIN is locked.
`CKR_TOKEN_NOT_RECOGNIZED`	The token has not been recognized.
`OPERATION FAILED`	Contact your system administrator to analyze the debug logs.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

Enrolling the RADIUS Client Authenticator

This authenticator is enrolled automatically and you cannot delete it.

By default, a user name from your corporate directory is set. You can change the required user name in **Override User name** and click **Save**.

Testing the RADIUS Client Authenticator

1. Click the RADIUS Client icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.
3. Specify the password of the RADIUS Client in **Password**.

   If the specified password is valid, a message `Test successful` is displayed.

The following table describes the possible error message along with the workarounds for the RADIUS Client authentication.

Table 3-10 *RADIUS Client - error message*

Error	Possible Cause and Workaround
`Incorrect password`	If the specified RADIUS Client password is invalid. Specify a valid password to test the authenticator.
`RADIUS server does not reply`	If the administrator has not configured RADIUS Client method appropriately. Contact your administrator and report the error message.

SAML Service Provider

SAML Service Provider enables you to use authorization on the third-party websites (Identity Providers) to access the Advanced Authentication portals.

Enrolling the SAML Service Provider Authenticator

This authenticator is enrolled automatically.

By default, a user name from your corporate directory is set. You can change the required user name in **Display name** and click **Save**.

Testing the SAML Service Provider Authenticator

1 Click the **Saml Service Provider** icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

A message `Test successful` is displayed.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

Enrolling the Security Questions Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Security Questions icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 (Optional) Select the preferred category from **Category**.

5 Specify the answers to the security questions that have been set by the administrator.

Ensure that each answer contains at least one character.

6 Click **Save**.

A message `The "Security Questions" authenticator has been saved` is displayed.

Testing the Security Questions Authenticator

1. Click the Security Questions icon in **Your Enrolled Single Methods for sign in**
2. Click **Test Method**.

3. Specify the answers to the security questions.

   A message `Test successful` is displayed. If one of the specified answer is invalid, a message `Incorrect answers` is displayed.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

Pre-requisite:

To enroll the Smartphone authenticator, you must install the NetIQ Advanced Authentication app on your smartphone.

For more information about downloading and installing the smartphone app, see Installing NetIQ Advanced Authentication App.

Enrolling the Smartphone Authenticator

You can enroll the Smartphone method in one of the following ways:

- Enrolling with a QR code
- Enrolling with a link in the email

Enrolling With a QR Code

During the enrollment, you must scan a QR code that creates an authenticator on your mobile app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To enroll the Smartphone method with a QR code, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Smartphone icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Click **Get QR Code**.

   A QR code is displayed.
5. Scan the QR code with the NetIQ Advanced Authentication smartphone app. To do this, perform the following steps:

   5a Open the Advanced Authentication smartphone app.

   5b Specify a PIN if applicable.

   5c Click the **+** (plus) icon in the **Enrolled Authenticators** screen.

   5d The camera of your smartphone is launched.

   5e Scan the QR code with the camera.

5f Specify your user name and an optional comment in the app.

5g Tap **Save**.

The smartphone authenticator is created.

A message `Enrollment is complete` is displayed .

If you do not enroll the Smartphone authenticator within few minutes, an error message `Enrollment timeout` is displayed. Refresh the browser and enroll again.

TIP: If you are not able to scan the QR code with the NetIQ Advanced Authentication app, do the following:

1. Zoom the page to 125-150% and scan the zoomed QR code.
2. Ensure that nothing overlaps the QR code (mouse cursor, text).

Enrolling Through a Link

An administrator will send you the link to your email or via SMS. You must click on the link on your smartphone where the NetIQ Auth app is installed and you will be redirected to the smartphone app where you can enroll and an authenticator is created.

To enroll the Smartphone method through a link, perform the following steps:

1. Check your phone for a new email or SMS. You will receive a link sent by the administrator.
2. Click on the link. You will be redirected to the smartphone app.

   If you have not installed the smartphone app, you will be redirected to the Google Play or AppStore from where you can install the app.

   NOTE: In some instances, when you click on the enroll link, you will be redirected to page where the following two links are displayed:

   - Click to enroll.
   - Click to download and install Smartphone authenticator for Android.

   If you have the app installed on your phone, use Click to enroll link. If you do not have the app then use Click to download link.

   ---

3. Specify a PIN or a Touch ID if applicable.
4. Specify your username and password in the **Enroll new authenticator** screen.
5. Tap **Sign In**.
6. Specify an optional comment in the app.
7. Tap **Save**.

The smartphone authenticator is created.

Testing the Smartphone Authenticator

1. Click the Smartphone icon in **Your Enrolled Single Methods for sign in**
2. Click **Test Method**.

3 Open the Advanced Authentication smartphone app.

   A push notification is sent to your smartphone.

4 Tap **Accept** to accept the authentication request.

   A message `Test successful` is displayed.

   If you tap **Reject**, the authentication is declined and a message `Authentication has been rejected` is displayed.

   If you ignore the authentication request, after few minutes a message `Authentication confirmation timeout` is displayed.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

When authenticating on the same smartphone that receives SMS, you can do one of the following actions based on the platform of smartphone:

- **iOS**: The OTP auto inserts to clipboard, tap on the input field > OTP displayed above the keyboard.
- **Android 11 and later versions**: Tap Copy <OTP> in the SMS notification then tap on the input field > OTP displayed above the keyboard.
- **Android 10 and prior versions**: Open the SMS notification and copy OTP. Tap on the input field > OTP displayed above the keyboard.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

NOTE: If a phone number is not registered in the repository for a user profile, then the SMS OTP method is not enrolled automatically. However, you can manually enroll the SMS OTP method from the **Add Authenticator** section, by specifying the phone number and clicking **Save.**

Enrolling the SMS OTP Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the SMS OTP icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 If your mobile phone number is registered in the LDAP repository, then the phone number is displayed. To override the registered phone number, specify the mobile number in **Override Mobile Phone**.

   A message `Please enter OTP` is displayed.

5 Specify the verification code in **Enter verification code** to confirm the phone number is valid.

6 Click **Verify**.

A message `The "SMS OTP" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide the **Override Mobile Phone** and **verification code** to prevent users from providing new phone number that is not registered in the repository.

Testing the SMS OTP Authenticator

1 Click the SMS OTP icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 You will receive an SMS with an OTP.

4 Specify the OTP in **Password**.

5 Click **Test**.

A message `Test successful` is displayed.

The following table describes the possible error message along with the workarounds for the SMS OTP authentication.

Table 3-11 *SMS OTP authenticator - error messages*

Error	Possible Cause and Workaround
`Incorrect OTP password`	The specified OTP is invalid. Specify a valid OTP and try again.
`You do not have a phone number. Contact administrator or Helpdesk and register your phone`	If your phone number is not registered in the repository. Contact administrator or helpdesk to register phone number.

Swedish BankID

The Swedish BankID method enables you to authenticate using your Swedish Personal Identification Number. To enroll the Swedish BankID authenticator, you must have the BankID app either on your computer or mobile device. When you try to authenticate any device a request is sent to the BankID app, specify the security code to unlock the app. The recorded personal identification number is compared with actual identification number on the BankID app. If the identification numbers match, you are authenticated successfully.

Enrolling the Swedish BankID Authenticator

Before enrolling, ensure that you have the following prerequisites:

- Social Security Number (SSN)
- BankID app (either desktop or mobile version).

  For more information about the BankID app, see BankID.

NOTE: While you set up the security code for the BankID app, ensure that the code must contain six digits in non-sequential format (for example: 221144).

To enroll the Swedish BankID, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the BankID icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Specify the personal identification number in **Personal ID (SSN)**.
5. Click **Save**.

   A message `The "BankID" authenticator has been saved` is displayed.

Testing the Swedish BankID Authenticator

1. Click the BankID icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message `Enter your security code in the BankID app and select Identify` is displayed.
3. Open the BankID app.
4. Specify **Security Code**.
   - (Conditional) Click **Identify** on the mobile app.
   - (Conditional) Click **Verify my identity** on the desktop app.

   If the test is successful, a message `Test successful` is displayed.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

This authenticator is enrolled automatically and you cannot remove it.

Testing the Swisscom Mobile ID Authenticator

1. Click the My Swisscom Mobile ID icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message is displayed indicating that you must accept the request on the mobile phone.
3. Accept the request.

   A message `Authenticator "Swisscom Mobile ID" passed the test` is displayed.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token, Desktop OTP tool, or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

You can enroll the TOTP authenticator using the Desktop OTP tool. To initiate the tool, use the link that is sent from your administrator. You must click on the link and the Desktop OTP tool is prompted where you can enroll and create an account. While authenticating to any service, you must copy the OTP from the tool and use the OTP to get authenticated.

Enrolling the TOTP Authenticator

To enroll the TOTP authenticator, follow the recommendations of your system administrator. You can enroll TOTP method using any one of the following ways:

- NetIQ Advanced Authentication App
- Google Authenticator App
- OATH Compliant Hardware Token
- Enrolling TOTP Manually
- Desktop OTP Tool

WARNING: The QR code format in the Advanced Authentication and Google Authenticator apps are different. Contact your system administrator to confirm the app recommended for enrollment.

NetIQ Advanced Authentication App

To enroll the TOTP authenticator using Advanced Authentication smartphone app, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the TOTP icon in **Available Methods for Enrollment**.
3. Click **Get QR Code**
4. Open the Advanced Authentication app on your phone.
5. Tap **Offline authentication**.
6. Tap **+** to add a new authenticator.
7. Scan the QR code using the camera on your phone.
8. Click **Save** in the **Add TOTP authenticator** page.

   A message `The "TOTP" authenticator has been saved` is displayed.
9. Tap the new authenticator and specify account name and additional details in **Account** and **Additional info** respectively in the app.
10. Click **Save**.

TIP: If you are unable to scan the QR code with Advanced Authentication app, perform the following steps:

1. Zoom the page to 125 - 150%.
2. Scan the zoomed QR code using Google Authenticator app.

   Ensure that the mouse cursor is not overlapping the QR code.

If you are still unable to scan the QR code, contact your system administrator.

Google Authenticator App

To enroll the TOTP authenticator using Google Authenticator app, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the TOTP icon in **Available Methods for Enrollment**.
3. Open the Google Authenticator app on your phone.
4. Tap **BEGIN SETUP** in the app.
5. Tap **Scan barcode** to add a new authenticator in the app.
6. Scan the QR code using the camera on your phone.
7. Click **Save**.

   A message `The "TOTP" authenticator has been saved` is displayed.

TIP: If you scan Advanced Authentication app compatible QR code with Google Authenticator app, a message `Invalid barcode` is displayed.

OATH Compliant Hardware Token

To enroll the TOTP authenticator using OATH compliant hardware token, perform the following steps:

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the TOTP icon in **Available Methods for Enrollment**.
3. (Optional) Specify a comment related to TOTP authenticator in **Comment**.
4. (Optional) Select the preferred category from **Category**.
5. Specify the token's serial number in **OATH Token Serial**.

   You can find the serial number behind the token.
6. Press the button on the token and specify the one-time password in **OTP**.
7. Click **Save**.

   A message `The "TOTP" authenticator has been saved` is displayed.

Enrolling TOTP Manually

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the TOTP icon in **Available Methods for Enrollment**.

3 (Optional) Specify a comment related to TOTP authenticator in **Comment**.

4 (Optional) Select the preferred category from **Category**.

5 Click **+** adjacent to **Specify the TOTP secret manually**.

6 Specify 40 hexadecimal characters in **Secret**.

7 Set **Google Authenticator format of secret (Base32)** to **ON** to display the Google Authenticator app compatible QR code.

   By default, **Google Authenticator format of secret (Base32)** is set to **OFF** and Advanced Authentication app compatible QR code is displayed.

   NOTE: The administrator has privilege to configure the **Google Authenticator format of secret (Base32)** option in the Administration portal. But you can override the administrator configured setting.

8 Set the preferred value in **Period**. 30 seconds is set by default.

9 Click **Save**.

   A message `The "TOTP" authenticator has been saved` is displayed.

NOTE: If the administrator has disabled the manual enrollment of TOTP in the Administration portal, then the **Specify the TOTP secret manually** section is not displayed.

Desktop OTP Tool

Before enrolling the TOTP authenticator using the link, ensure that NetIQ Desktop OTP tool is installed on your system.

1 Check your registered email or phone for the enrollment link.

2 Click on the link.

   You are directed to the Desktop OTP tool.

3 Specify your LDAP repository or local username, password and optional comment in the **NetIQ Advanced Authentication OTP Tool** window.

4 Click **OK**.

   The TOTP authenticator is created in the Desktop OTP tool and enrolled in the Self-Service portal.

Testing the TOTP Authenticator

1 Click the TOTP icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Specify one-time password in **Password**.

4 Click **Next**.

If the test is successful, a message `Test Successful` is displayed. If the one-time password is invalid or the server time is not in sync, a message `Incorrect OTP password` is displayed.

Voice

The Voice method initiates a call to your registered phone number. The phone call requests you to specify the PIN in the dial pad of your mobile to authenticate. When you try to authenticate on any device, the recorded PIN is compared with the actual PIN. If both PINs are identical, you are authenticated successfully.

Enrolling the Voice Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Voice icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Specify a PIN. The PIN must contain minimum 3 digits, by default.

5 If your mobile phone number is registered in the LDAP repository, then the phone number is displayed. To override the registered phone number, specify the mobile number in **Override Phone**.

6 Click **Save**.

A message `The "Voice" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide **Phone number** to prevent users from providing new phone number that is not registered in the repository.

Testing the Voice Authenticator

1 Click the Voice icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

A message `Call has been initiated` is displayed.

3 Answer the call on your phone.

4 Specify your PIN followed by a hash symbol (#) in the dial pad of your mobile phone.

A message `Test successful` is displayed. If the specified PIN is invalid, a message `Incorrect PIN` is displayed.

WARNING: You will not receive any notification about the PIN expiration. The PIN expiration is set as 42 days, by default. You must sign in to the Self-Service Portal and change the PIN before it expires.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short duration. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

NOTE: If a phone number is not registered in the repository for a user profile, then the Voice OTP method is not enrolled automatically. However, you can manually enroll the Voice OTP method from the **Your Enrolled Single Methods for sign in** section, specify the phone number and click **Save**.

Enrolling the Voice OTP Authenticator

This authenticator enrolls automatically and you cannot remove it.

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Voice OTP icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. If your mobile phone number is registered in the LDAP repository, then the phone number is displayed. To override the registered phone number, specify the mobile number in **Override Mobile Phone**.

   A message `Please enter OTP` is displayed.
5. Specify the verification code in **Enter verification code** to confirm the phone number is valid.
6. Click **Save**.

   A message `The "Voice OTP" authenticator has been saved` is displayed.

NOTE: An administrator has the privilege to hide **Override Mobile Phone** and **verification code** to prevent users from providing new phone number that is not registered in the repository.

Testing the Voice OTP Authenticator

1. Click the Voice icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

   A message `OTP password sent, please specify` is displayed.
3. Receive the call on your phone and listen to the voice OTP.
4. Specify the OTP in **Password**.

   A message `Test successful` is displayed. If the specified OTP is invalid, a message `Incorrect OTP password` is displayed

Web Authentication Method

Advanced Authentication enables you to use authorization on the third-party websites (Identity Providers) to access the Advanced Authentication portals.

Enrolling the Web Authentication Authenticator

1. Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.
2. Click the Web Authentication icon in **Available Methods for Enrollment**.
3. (Optional) Specify the **Display Name**.
4. Select the **Identity Provider**.
5. (Optional) Specify a hint for the user in **Username or email.**
6. Click **Start**.
7. Click **Save**.

   The enrollment is redirected to the Identity Provider page that you have selected. Specify your credentials.

   You will be redirected to the Enrollment page with your enrolled authenticator.

An error `Web Authentication failed` might be displayed after the authorization on third-party websites during enrollment. Contact your administrator to verify the Web Authentication method settings.

Testing the Web Authentication Authenticator

1. Click the Web Authentication icon in **Your Enrolled Single Methods for sign in**.
2. Click **Test Method**.

You will be automatically authenticated by the enrolled Identity Provider.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint and facial recognition authentication to log in to the Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint and facial recognition.

NOTE: To use Windows Hello for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

Configuring the System Settings for Windows Hello

Before enrolling Windows Hello, you must configure the system settings.

- "Configuring Settings for Windows Hello Fingerprint" on page 97
- "Configuring Settings for Windows Hello Face Recognition" on page 97

NOTE: You cannot enroll the Windows Hello authentication on an RDP session.

Configuring Settings for Windows Hello Fingerprint

1 Click **Start > Settings > Accounts > Sign-in options**.

Under **Windows Hello**, the options for fingerprint is displayed if your PC has a fingerprint reader.

2 Click **Set up** under **Fingerprint**.

3 Click **Get started**.

4 Specify your PIN.

NOTE: If you do not have a PIN, you must create one to set up the fingerprint.

5 To enroll fingerprint, scan your finger on the fingerprint reader.

You will have to place your finger multiple times to provide the scanner a good picture of your fingerprints.

6 Click **Add Another** if you want to add another fingerprint.

Configuring Settings for Windows Hello Face Recognition

1 Click **Start > Settings > Accounts > Sign-in options**.

Under **Windows Hello**, the option for face recognition is displayed if your computer has an external camera.

2 Click **Set up** under **Face Recognition**.

3 Click **Get started**.

4 Specify your PIN.

NOTE: If you do not have a PIN, you must create one to set up the face recognition.

5 To enroll the face, present your face to the camera. Scan your face by following the on-screen instructions.

6 Select **Finish** to complete scanning or choose **Improve Recognition** to continue scanning.

NOTE: It is recommended that you select to improve recognition if you change your appearance often. Scanning your face again does not erase the earlier scans. It just helps Windows Hello get better at recognizing you.

For more information about Windows Hello, see the Microsoft Windows website https://support.microsoft.com/en-in/help/17215/windows-10-what-is-hello.

NOTE: To enable Windows Hello for all domain-joined Windows 10 workstations and for Windows 10 Enterprise, see https://community.spiceworks.com/topic/1840001-windows-10-fingerprint-some-settings-are-managed-by-your-organization.

Enrolling the Windows Hello Authenticator

1 Click the **Add** icon in **Your Enrolled Single Methods for sign in** on the **Authentication Methods** page.

2 Click the Windows Hello icon in **Available Methods for Enrollment**.

3 (Optional) Specify the **Display Name**.

4 Specify your username for which Windows Hello is enrolled in **Windows User Name**.

NOTE: If you have enrolled Windows Hello for a local account, you must specify the `<workstationname>\<username>`.

If you want to enroll Windows Hello that is set for a Microsoft account, you can specify `microsoftaccount\user@outlook.com` as the user name. This is helpful if you must login to the Windows operating system using your Microsoft account.

5 Click **Save.**

A message `The "Windows Hello" authentication has been saved` is displayed.

Testing the Windows Hello Authenticator

1 Click the Windows Hello icon in **Your Enrolled Single Methods for sign in**.

2 Click **Test Method**.

3 Place your finger on the reader or swipe your finger on the swipe sensor for the fingerprint authentication. Present your face for the facial recognition.

An appropriate message is displayed indicating the result of the test.

Enrolling Multiple Methods of a Chain in Sequence

If the administrator creates a chain with multiple methods in it, you must enroll all methods in the chain to perform authentication with Advanced Authentication. You can enroll the methods individually in **Your Enrolled Single Methods for sign in** or sequentially in **Your Enrolled Sequence for sign in**. During authentication, you might get a prompt to select the chain available for you. However, Advanced Authentication selects an appropriate chains automatically.

Sample Scenario: Enrolling Card and U2F Methods in the Sequence of a Chain

Sam, an administrator, has performed the following steps to create a chain with multiple methods in it:

1. Created a chain with the Card and U2F method.
2. Set **All Categories** to **ON** (default) in the **Windows Logon** event and map the chain to the event.

Tom, an end user, logs in to the Self Service portal and performs the following actions to enroll the chain:

1. Click the **Add** icon in **Your Enrolled Sequences for sign in** on the **Authentication Methods** page.
2. Select the chain icon in **Available Sequences for Enrollment**.
3. (Optional) Specify the Display Name.

   Connect the card reader.
4. Click **Scan Card**.

   A message `Waiting for the card` is displayed.
5. Tap a card on the reader.

   A message `Enrollment is complete` is displayed.
6. Click **Next**.

   A message `The "Card" authenticator has been saved` is displayed.
7. (Optional) Specify the Display Name.

   Connect the device that complies with the U2F standards.
8. Click **Detect U2F device**

   A message `Please touch the flashing U2F device now. You may be prompted to allow the site permissions to access your security keys` is displayed.
9. Touch the FIDO U2F button when there is a flash on the device.

   A message `Enrollment is complete` is displayed.
10. Click **Finish**.

    A message `The "U2F" authenticator has been saved` is displayed.

Testing the Authenticators

After enrollment, Tom performs the following steps to test the chain with Card and U2F methods:

1. Select the chain with Card and U2F methods in **Your Enrolled Sequences for sign in**.
2. Click **Test Method**.

   A message `Test Card Method` is displayed.
3. Tap the enrolled card on the reader.

   If the provided card passes the test, a message `Test successful` is displayed.

4 Click **Next.**

5 Click **Test Method.**

A message `Please touch the flashing U2F device now is displayed. You may be prompted to allow the site permissions to access the security keys in U2F device is` displayed.

6 Touch the FIDO U2F button when there is a flash on the device.

A message `Test successful` is displayed.

7 Click **Finish**.

4 Logging In to Authentication Agent for Windows

Authentication Agent for Windows enables you to perform multi-factor authentication on one device to get authorized access to another device, where it is not possible to display the user interface or connect any external authentication device. You can install the Authentication Agent for Windows on a workstation or a laptop with Microsoft Windows. When an authentication is initiated from a computer using the chain with OOB method, the Authentication Agent for Windows on another computer prompts a restricted browser where you must perform the authentication to access the Out-of-Band portal. In the Out-of-Band portal, accept the authentication request to authenticate successfully.

Scenario 1: Authenticating to Linux computer using the Authentication Agent for Windows

Mark uses the SSH to access Linux computer. But, the external devices such as FIDO U2F token and card reader are not supported in SSH. He cannot get authenticated to Linux computer because it is not possible to redirect the external devices. In this case, Mark can use Authentication Agent for Windows to perform authentication on Windows computer and get seamless access to Linux computer.

Consider the following setup:

- Windows computer is installed with the Authentication Agent for Windows and is connected with the external devices such as FIDO U2F token and card reader.
- Linux computer is not connected with the external devices.

Following sequence describes the authentication process using Authentication Agent for Windows:

1. Specify **user name** and select the chain with OOB method in the Linux machine.

   This initiates an authentication request.
2. Authentication Agent for Windows launches a restricted browser.
3. Select the chain with FIDO U2F and Card methods in the restricted browser to authenticate to the Out-of-Band portal.
4. Perform the authentication using the FIDO U2F token and card reader in the restricted browser.
5. An authentication request with **Accept** and **Decline** buttons are displayed on the portal.
6. Click **Accept**.

   Mark logs in to Linux computer automatically.

Scenario 2: Authenticating to Windows computer using the Authentication Agent for Windows

Thomas works on two Windows computers simultaneously. However, the external devices such as FIDO U2F token and card reader are connected to one Windows computer. He cannot get authenticated to the other computer because there are no external devices connected to this computer and cannot redirect the external devices. In this case, Thomas can use Authentication Agent for Windows to perform authentication on one Windows computer and get seamless access to another Windows computer that does not have external devices.

Consider the following setup:

- Windows A is a computer with the Authentication Agent for Windows installed and is connected with the external devices such as FIDO U2F token and card reader.
- Windows B is computer without the external devices.

The following sequence describes the authentication process using the Authentication Agent:

1. Specify **user name** and select the chain with OOB method in Windows B computer.
2. The Authentication Agent on Windows A computer launches a restricted browser.
3. Select the chain with FIDO U2F and Card methods in the restricted browser to authenticate to the Out-of-Band portal.
4. Perform the authentication using the FIDO U2F token and card reader in the restricted browser.
5. An authentication request with **Accept** and **Decline** buttons are displayed on the portal.
6. Click **Accept**.

   Thomas is logged in to Windows B computer automatically.

Logging In to Authentication Agent for Windows

You can log in to the Authentication Agent in one of the following ways:

- Single Sign-on Login
- Manual Login

Ensure that you have installed the Authentication Agent for Windows as a pre-requisite.

Single Sign-on Login

If Windows Client is installed along with the Authentication Agent for Windows and when you authenticate to Windows you are automatically logged in to the Authentication Agent for Windows. Else, when Windows is loading, you are prompted with an authentication request to log in manually. You must log in to authorize the Authentication Agent for Windows to receive any authentication request.

Manual Login

To log in to the Authentication Agent for Windows manually, perform the following steps:

1. Right-click on the Authentication Agent icon in the System Tray.
2. Select **Log on**.

3 Authenticate using the available chain in Windows.

A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

Advanced Authentication provides the following authenticators for logging in to Authentication Agent for Windows:

- "Bluetooth" on page 103
- "Card" on page 104
- "Device Authentication" on page 105
- "Email OTP" on page 106
- "Emergency Password" on page 106
- "Facial Recognition" on page 107
- "Flex OTP" on page 108
- "Fingerprint" on page 108
- "Home Affairs National Identification System (HANIS)" on page 109
- "HOTP" on page 109
- "LDAP Password" on page 110
- "Password" on page 110
- "PKI" on page 111
- "RADIUS Client" on page 112
- "Security Questions" on page 112
- "Smartphone" on page 113
- "SMS OTP" on page 114
- "Swisscom Mobile ID" on page 115
- "TOTP" on page 115
- "FIDO U2F" on page 116
- "Voice" on page 116
- "Voice OTP" on page 117
- "Windows Hello" on page 117

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use the **Bluetooth** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1. Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.
2. The Device Service detects your bluetooth device and authenticates.

   If the paired bluetooth device is within the range, the bluetooth authentication is successful.

NOTE: If the administrator has set **Enable reaction on device removal** option to **ON** for Bluetooth method then the operating system automatically locks, if one of the following is true:

- The Bluetooth device is disabled.
- The Buletooth device is out of range.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number). When you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.

NOTE: To use the Card method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Card method, perform the following steps:

1. Ensure that the card reader is connected to your system.
2. Tap your card on the reader or insert a smart card in the reader.

   If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

IMPORTANT: The **Card** method supports the `1:N` feature that Advanced Authentication to detect the user name automatically. You can press **CTRL+ALT+DEL** then place a card to the reader to authenticate.

The following table describes the possible error messages along with the workarounds for the Card authentication.

Table 4-1 Card authenticator - error messages

Error	Possible Cause and Workaround
`Wrong card`	The card you have placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and try again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

IMPORTANT: An administrator has the privilege to configure an automatic session lock or log off for the events with Card authentication method. In such a scenario, you must:

- When **Tap&Go** is disabled, you must place your card on the reader during login. After login you can remove the card from the reader to lock the operating system or log off automatically.

  Or

- When **Tap&Go** is enabled, you must tap a card on the reader to log in and to lock, unlock, or log off.

Device Authentication

You can authenticate to Windows workstation using the Device Authentication method using one of the following:

- Using Trusted Platform Module (TPM) chip

  The TPM chip is a crypto-processor available in Windows workstation to achieve actions, such as generating, storing, and limiting the use of cryptographic keys. Device Authentication supports authentication to Windows workstation and makes use of information available in the chip to authenticate users.

- Non-TPM mode

  In this mode, a key pair is generated in the workstation during the enrollment process that is used for further authentication on the same workstation.

  NOTE: In non-TPM mode, ensure to enroll the Device Service method using the workstation where you would perform further authentication. Enrollment on one machine and authentication on another machine is not supported.

To authenticate with the Device Authentication method, perform the following steps:

1 Specify one of the following:
   - The TPM chip generated PIN
   - The enrolled PIN
2 Click **Next**.

   If the PIN matches with the TPM chip generated PIN or enrolled PIN, the Device Authentication is successful.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate using the Email method, perform the following steps:

1 Check your email. You will receive an email with an OTP.
2 Specify the OTP from email in **Password**.
3 Click **Next**.

   If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workarounds for the Email OTP authentication.

Table 4-2 *Email authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Try to specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate using the Emergency Password method, perform the following steps:

1 Specify the emergency password.

2 Click **Next**.

If the emergency password matches with the enrolled password, the emergency password authentication is successful.

The following table describes the possible error message along with the workarounds for the Emergency Password authentication.

Table 4-3 *Emergency Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your face image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you will be successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate using the Facial Recognition method, perform the following steps:

1 Ensure that a camera is connected to your device.

2 Present your face to the camera.

If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error message along with the workarounds for the Facial Recognition authentication.

Table 4-4 Facial Recognition authenticator - error messages

Error	Possible Cause and Workaround
`Failed to open camera`	If the camera is not connected properly. Check your camera settings and try again.
`Mismatch`	The enrolled face and presented face does not match. You must present your face again for the authentication.
`Face service is not available`	The Device Service is not available. Ensure that the Device Service is installed.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

To authenticate using the Flex OTP method, perform the following steps:

1. Specify the One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators
2. If the password is valid, the Flex OTP authentication is successful.

Fingerprint

The Fingerprint authentication method enables you to authenticate using your fingerprint. The fingerprint scanner captures the fingerprint. When you try to authenticate on any device, the recorded fingerprint is compared with the actual fingerprint. If the fingerprints are identical, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Fingerprint method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the computer.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

NOTE: Ensure to enroll the required fingers that are highlighted in the **Add Fingerprint Authenticator** page.

The following table describes the possible error message along with the workarounds for the Fingerprint authentication.

Table 4-5 Fingerprint authenticator - error messages

Error	Possible Cause and Workaround
`Please connect a scanner`	The reader is not connected properly. Ensure that the reader is properly connected or try to connect it to a different USB slot.
`Mismatch`	If there is a mismatch in the fingerprints. Ensure that you are using the same fingerprint that was enrolled and try to authenticate again.
`<Your user name> has no authenticator for Fingerprint`	You have not enrolled for Fingerprint. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Home Affairs National Identification System (HANIS)

The HANIS method is for the citizens of South Africa. The HANIS method enables you to authenticate using your fingerprint that is registered in the National Identification System. The fingerprint scanner captures the fingerprint. When you try to authenticate on any device, the fingerprint available in the Nation Identification System is compared with the captured fingerprint. If fingerprints are identical, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information, see Installing Device Service on Windows in the Advanced Authentication - Device Service.

To authenticate using the HANIS method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the computer.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If fingerprint matches with the fingerprint available in the National Identification System, the authentication is successful.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You must use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If the OTPs are identical, you are authenticated successfully.

To authenticate using the HOTP method, perform the following steps:

1. Specify the OTP when using software token or some kind of hardware tokens or connect the USB token, press button on the token.

2 Click **Next**.

If the OTP on the token and the server generated OTP are identical, the HOTP authentication is successful.

The following table describes the possible error message along with the workarounds for the HOTP authentication.

Table 4-6 *HOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try again.
`<Your user name> has no authenticator for HOTP`	You have not enrolled for HOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on any device, the specified password is compared with the actual password in the corporate directory. If both the passwords are identical, you are authenticated successfully.

To authenticate using the LDAP Password method, perform the following steps:

1 Specify your domain password.

2 Click **Next**.

If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect, an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate using the Password method, perform the following steps:

1 Specify the password of your Advanced Authentication account.

2 Click **Next**.

If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error message along with the workarounds for the Password authentication.

Table 4-7 Password authenticator - error messages

Error	Possible Cause and Workaround
`Wrong password`	The password you have specified is incorrect. Specify a valid password and try to authenticate again.
`<Your user name> has no authenticator for Password`	You have not enrolled for Password method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you authenticate using any PKI device, such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on an application, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: To use the **PKI** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the PKI method, perform the following steps:

1. Insert a card or plug the token to your machine.
2. Specify the PIN.

   If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

IMPORTANT: The PKI method supports the `1:N` feature. The user name is detected automatically by the Advanced Authentication. You can authenticate by pressing **CTRL+ALT+DEL** and then plugging in your PKI device.

The following table describes the possible error message along with the workarounds for the PKI authentication.

Table 4-8 PKI authenticator - error messages

Error	Possible Cause and Workaround
`Wrong card`	The card that is used is incorrect. Try authenticating with another valid card or token. Enroll the authenticator again in Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.

Error	Possible Cause and Workaround
`<Your user name> has no authenticator for PKI`	You have not enrolled for PKI method. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

NOTE: To log in to a computer using the PKI authenticator, you must place the card on the reader or connect a token to the computer. After the login, you can remove the card from the reader or disconnect the token to lock the computer automatically.

Advanced Authentication does not support the tapping of a card to lock or unlock a computer.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate with the Security Questions method, perform the following steps:

1. Specify your answer for the displayed security question.
2. Click **Next**.
3. Repeat steps 1 to 2 for all the security questions.

   If all the specified answers match with enrolled answers, the Security Questions authentication is successful.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 4-9 Security Questions authenticator - error messages

Error	Possible Cause and Workaround
`Wrong answer`	The specified answer is incorrect. Specify the valid answer and try to authenticate again.
`<Your user name> has no authenticator for Security Questions`	You have not enrolled for Security Questions method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate with the Smartphone method, perform the following steps:

When you select the Smartphone method from the Chains list, a message `Accept on smartphone or enter the one-time password` is displayed on your computer.

1. Open the Advanced Authentication smartphone app.

   A push notification is sent to your smartphone.

2. Tap **Accept**.

   If the smartphone matches with the enrolled smartphone, the authentication is successful.

To authenticate with the Smartphone method using the offline authentication, perform the following steps:

1. Open the Advanced Authentication smartphone app.
2. Click **Enrolled Authenticators** in the menu of the smartphone app.
3. Specify the OTP from the smartphone app in **Password**.
4. Click **Next.**

   If the OTP on the smartphone app matches with server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 4-10 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	The authentication request is declined in the smartphone app. Initiate the authentication and accept the request to authenticate again.

Error	Possible Cause and Workaround
`Wrong TOTP password`	Specified OTP for the offline authentication is incorrect or the time on your smartphone is not synchronized. Specify the valid OTP and try authenticating again.
`TOTP login is disabled`	If the administrator has disabled TOTP login or when the geo-fencing is enabled. Contact your administrator for further assistance.
`<Your user name> has no authenticator for smartphone`	You have not enrolled for Smartphone method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To authenticate with the SMS method, perform the following steps:

1. Check your phone.

   An SMS message with an OTP is sent to your phone.
2. Specify the OTP in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the SMS OTP authentication is successful.

The following table describes the possible error messages along with the workaround for the SMS OTP authentication.

Table 4-11 *SMS OTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have a cell phone`	Your email address is not set in the profile of the repository. Contact your system administrator to add your phone number to the profile.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

To authenticate with the Swisscom Mobile ID method, perform the following steps:

1. Check your mobile phone.

   A request message is displayed on your mobile phone.

2. Accept the request.

   If the Mobile ID matches with the enrolled Mobile ID, the Swisscom Mobile ID authentication is successful.

NOTE: To authenticate with Swisscom Mobile ID method, you must activate the Mobile ID service for your Swisscom SIM card.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate using the TOTP method, perform the following steps:

1. Specify the TOTP from your hardware or software token.
2. Click **Next.**

   If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error message along with the workaround for the TOTP authentication.

Table 4-12 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
Incorrect OTP password	The OTP you have provided is incorrect or the server time is not in sync. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for TOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

The FIDO U2F facilitates method enables you connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token to authenticate. When you try to authenticate on any device, token connected to the device is compared with the actual device. If the device details match, you are authenticated successfully.

NOTE: To use the FIDO U2F method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the FIDO U2F method, perform the following steps:

1. Ensure that the FIDO U2F token is connected to the workstation.

   A message `Please touch the flashing U2F device now` is displayed.

2. Touch the button on the token when you see a blink.

   If the token and attestation certificate in the token matches with the enrolled U2F token, the FIDO U2F authentication is successful.

   If the device does not blink, wait for few seconds. If you do not see the blink for more than a minute, try to reconnect your token and repeat the steps.

NOTE: Administrator can configure an automatic session lock or log off on the U2F events. When a user returns to the workstation, the user must connect the U2F device to the workstation to unlock.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 4-13 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token that you have connected is incorrect. Try to authenticate with another token or re-enroll the authenticator in Self-Service portal or contact your helpdesk administrator.
`Connect a token`	The token is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for U2F`	You have not enrolled for U2F method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Voice

The Voice authenticator initiates a call to your registered phone number. The phone call requests you to specify the PIN for authentication. When you try to authenticate on an application, the recorded PIN is compared with the actual PIN. If both the PINs match, you are successfully authenticated.

To authenticate using the Voice method, perform the following steps:

1. Answer the phone call on your phone and listen to the request.
2. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP authenticator initiates a phone call to your registered phone number. You will receive the voice OTP in the phone call. You can use this OTP for authentication within a short time frame.

To authenticate using the Voice OTP method, perform the following steps:

1. Answer the phone call on your phone and listen to the voice OTP.
2. Specify the OTP in **Password**.
3. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint and facial recognition authentication to log in to the Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint and facial recognition.

To authenticate using the Windows Hello, perform the following steps:

1. **For fingerprint authentication**: Ensure that a fingerprint reader is connected to the required device.

   1a. Place your enrolled finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the fingerprint enrolled on Windows 10 operating system, Windows Hello authentication is successful.

2. **For facial recognition**: Ensure that an external camera is connected to your computer.

NOTE: This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

   2a. Present your face to the camera.

   If the face matches with the facial image enrolled on Windows 10 operating system, Windows Hello authentication is successful.

5 Logging In to Linux

You can use the enrolled authenticators to log in to the Linux operating system. You must pass through the authenticators in the chain to get authenticated.

To log in to Linux with the Advanced Authentication, perform the following steps:

1. Specify the username in the format: `repositoryname\username` (e.g. company\pjones) and click **Next**.
2. Specify the number of the chain to select preferred authentication chain.
3. Authenticate with the preferred authentication method(s) of the chain.

   A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

NOTE: In case of a password change you are prompted to specify a (Current) NT password. In this case, you must specify your old domain password.

NOTE: If you log in to a non-domain joined workstation for the first time, you are prompted to provide credentials for your local account to map the domain account to the local account. In the **Enter a standalone user name**, specify the username of local account. In the next step, specify the local account's password.

Logging In As a Local User

A local user on the Linux Client can use his password to log in even if there are bound domain users in a non-domain mode. However, if a bound domain user is still logged in, then the local user can use the authentication chains of a bound user instead of his own password.

The following two examples provide information about how a local user can log in using his own password or chains.

Example1: When a linux local user uses his own password with a pre-condition that the domain user is bound to a local user, and the local user performs the following:

1. Goto the login page of the linux machine.
2. Click **Not listed?**.
3. Specify the username of a domain user from the precondition.
4. Select a chain and submit the correct value of the chain and log in.
5. Log out.
6. Click the icon of the local user from preconditions or click **Not listed?**.
7. Specify the username of the local user from preconditions.

Result: Password of the local user is used for login.

Example2: When linux local user uses the chains of a bound user with a pre-condition that the domain user is bound to a local user, and the local user perform the following:

1. Goto the login page of the linux machine.
2. Click **Not listed?**.
3. Specify the username of a domain user from the precondition.
4. Select a chain and submit the correct value of the chain and log in.
5. Lock the screen
6. Press any key and click **Not listed?**.
7. Click the icon of the local user from preconditions or click **Not listed?**.
8. Specify the username of the local user from preconditions.

Result: Chains of the bound domain user are used for login.

Authenticators for Linux Client

Advanced Authentication provides the following authenticators for logging in to Linux Client:

- "Bluetooth" on page 121
- "Authentication Agent" on page 121
- "Card" on page 122
- "Device Authentication" on page 123
- "Email OTP" on page 124
- "Emergency Password" on page 124
- "Facial Recognition" on page 125
- "Flex OTP" on page 126
- "Fingerprint" on page 126
- "HOTP" on page 126
- "LDAP Password" on page 127
- "Out-of-Band" on page 127
- "Password" on page 128
- "PKI" on page 128
- "RADIUS Client" on page 129
- "Security Questions" on page 129
- "Smartphone" on page 130
- "SMS OTP" on page 131
- "TOTP" on page 131
- "FIDO U2F" on page 132
- "Voice" on page 133
- "Voice OTP" on page 134

NOTE: On SUSE Linux Enterprise, do not specify anything until a message `Please wait` is displayed, else you will not be able to unlock the operating system.

NOTE: When you log in to SLES 12 Service Pack 3 as a domain user and pass all the authentication methods in the chain, if you are prompted with an error message `Sorry that didn't work` then see Domain Users Are Unable to Log In Even After Authenticating All the Methods In a Chain to resolve the issue and login to the machine successfully.

NOTE: Sometimes in Ubuntu 18.04 LTS, a current logged in user is unable to login as another user with **Log in as another user** option in the locked screen or after performing the following steps:

1. Click System Menu on the upper-right corner.
2. Click user name > **Switch User**.

   This issue occurs even when the Linux PAM Client is not installed on Ubuntu 18.04.

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room.

NOTE: To use the **Bluetooth** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1. Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.
2. The Device Service detects your bluetooth device and authenticates.

   If the paired bluetooth device is within the range, the bluetooth authentication is successful.

Authentication Agent

Authentication Agent enables you to perform multi-factor authentication on one computer to get authorized access to another computer, where it is not possible to display the user interface or connect any external authentication devices. You can install the Authentication Agent on Windows system. When an authentication is initiated from a computer using the Authentication Agent chain, the Authentication Agent on another computer prompts a restricted browser where you must perform the authentication.

NOTE: You can install the Authentication Agent only on Windows workstation.

IMPORTANT: If both the Windows Client and Authentication Agent are installed on the same workstation, the Authentication Agent is logged in automatically through the SSO feature. If the Windows Client is not installed, you must log in to the Authentication Agent manually.

To log in to Linux using the Authentication Agent on Windows, perform the following steps:

1. Specify **User name** in the Linux computer.
2. Click **Next** and specify the chain number corresponding to the **Authentication Agent** in the list.

   For more information about enabling the Authentication Agent chain in the Linux computer, see Enabling the Authentication Agent Chain.
3. The Authentication Agent that is active on a Windows computer launches a restricted browser.

   IMPORTANT: If a restricted browser is not launched automatically, place the cursor on the Authentication Agent icon in System tray and ensure that the agent is logged in. If the agent is not logged in, double click the Authentication Agent icon to log in.

   The restricted browser prompts the login page. The user name that you have specified in the Linux computer is set in the login page by default.
4. Click **Next**.
5. Select and authenticate the preferred chain to log in to Linux computer in the restricted browser.

   For more information, see Logging In to Authentication Agent for Windows.
6. After the successful authentication in the restricted browser, you are logged in to the Linux computer automatically.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number) and Near-Field Communication (NFC) cards in the following ways:

- While using contactless cards, when you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.
- In the case of NFC cards, when you place your NFC tag near the NFC reader (smartphone), the NFC reader (smartphone) identifies your NFC tag, and you are authenticated successfully.

NOTE: To use the card for authentication, you must install the Advanced Authentication Device Service.

To authenticate using the contactless card, perform the following steps:

1. Ensure that the card reader is connected to your machine.

   A message `Waiting for card` is displayed.

2 Tap your card on the reader.

If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

The following table describes the possible error messages along with the workaround for the Card authentication.

Table 5-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card you have placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Using Card Method on Ubuntu LightDM

NOTE: When you specify the chain number corresponding to the Card method and try to authenticate to Ubuntu LightDM, the hints are not prompted. Tap your card on the reader to continue authentication.

1 Ensure that the card reader is connected to your machine.

2 Tap your card on the reader.

A message `Waiting for card` is displayed.

If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

Device Authentication

The Device Authentication method enables you to authenticate using a unique key pair stored in the workstation and PIN. During the enrollment process, a key pair is generated in the workstation and the same is used for further authentication. Device Authentication supports authentication to the Linux workstation and verifies the key pair to authenticate users.

To authenticate with the Device Authentication method, perform the following steps:

1 Specify the PIN.

2 Click **Next**.

If the PIN matches with the enrolled PIN, the Device authentication is successful.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate using the Email method, perform the following steps:

1. Check your email. You must receive an email with OTP.
2. Specify the OTP from Email in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workarounds for the Email OTP authentication.

Table 5-2 *Email OTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate by using the Emergency Password method, perform the following steps:

1. Specify the Emergency Password.
2. Click **Next**.

   If the Emergency Password matches with the enrolled password, the Emergency Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Emergency Password authentication.

Table 5-3 Emergency password - error messages

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you are successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate by using the Facial Recognition method, perform the following steps:

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error messages along with the workaround for the Facial Recognition authentication.

Table 5-4 Facial Recognition - error messages

Error	Possible Cause and Workaround
`Failed to open camera`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	The enrolled face and presented face does not match. You must present your face again for the authentication.
`Face service is not available`	The Device Service is not installed. Ensure that the Device Service is installed.

Using Facial Recognition Method on Ubuntu LightDM

NOTE: When you specify the chain number corresponding to the Facial Recognition method and try to authenticate to Ubuntu LightDM, the hints are not prompted. Present your face to the camera to continue authentication.

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   A message `Detecting a face` is displayed.

   If your face matches with the enrolled face, the face authentication is successful.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

To authenticate using the Flex OTP method, perform the following steps:

1. Specify the One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators
2. If the password is valid, the Flex OTP authentication is successful.

Fingerprint

The Fingerprint method enables you authenticate using your finger print. The fingerprint scanner captures the fingerprint. When you try to authenticate on an application, the recorded fingerprint(s) are compared with the actual fingerprint. If the fingerprints match, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate with the Fingerprint method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the required device.
2. Place enrolled finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

HOTP

HOTP is a counter-based one-time password. his method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You can use the

static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If both the OTPs are identical, you are authenticated successfully.

To authenticate by using the HOTP method, perform the following steps:

1. Specify the HOTP when using software token or connect the USB token, press button on the token.
2. Click **Next**.

   If the OTP on the token matches with the server generated OTP, the HOTP authentication is successful.

The following table describes the possible errors along with the workaround for the HOTP authentication.

Table 5-5 *HOTP - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect or the OTP on the token and server are out of sync. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for HOTP`	You have not enrolled for HOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on an application, the submitted password is compared with the actual password in the corporate directory. If both passwords are same, you are authenticated successfully.

To authenticate by using the LDAP Password method, perform the following steps:

1. Specify your domain password.
2. Click **Next**.

   If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Out-of-Band

The Out-of-band method facilitates you to authenticate using the push notification that is sent to the Out-of-band portal or OOB agent. When you initiate the authentication, a push notification is sent to the portal or agent. You can accept the request and get authenticated.

To authenticate by using the Out-of-band method, perform the following steps:

When you specify the chain number corresponding to the Out-of-band method, a message `Continue at https://<AdvancedAuthenticationServerdomainname>/oob/ui` is displayed on your computer.

1 Open the OOB agent installed on your mobile or navigate to the OOB portal.

   A push notification is displayed.

   NOTE: If the push notification does not appear after 5 seconds, tap the Refresh icon to view the push notification for the initiated authentication.

2 Tap **Accept**.

   If the response to authentication request is from a secured origin, the authentication is successful.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate by using the Password (PIN) method, perform the following steps:

1 Specify the password for your Advanced Authentication account.

2 Click **Next**.

   If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Password authentication.

Table 5-6 *Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The password you have provided is incorrect. Specify a valid password and try to authenticate again.
`<Your user name> has no authenticator for Password`	You have not enrolled for Password method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you authenticate using any PKI device, such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on any device, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: You must install the Advanced Authentication Device Service for the PKI method enrollment.

To authenticate by using the PKI method, perform the following steps:

1. Insert the card in the reader or connect token to your machine.
2. Specify the PIN.

   If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

The following table describes the possible error messages along with the workaround for the PKI authentication.

Table 5-7 *PKI authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card that is used is incorrect. Try authenticating with another valid card or token. You can enroll the authenticator again in the Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for PKI`	You have not enrolled for PKI method. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate using the Security Questions method, perform the following steps:

1. Specify the answer for the security question.
2. Click **Next**.
3. Repeat steps 1 to 2 for all the required security questions.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 5-8 *Security Questions authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The answer that you have provided is incorrect. Specify the correct answer and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled the Security Questions method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate with the Smartphone method, perform the following steps:

When you specify the chain number corresponding to the Smartphone method, a message `Accept on smartphone or enter the one-time password` is displayed on your computer.

1. Open the Advanced Authentication smartphone app.

   A push notification is displayed to your smartphone.
2. Tap Accept.

   If the smartphone matches with the enrolled smartphone, the authentication is successful.

To authenticate with the **Smartphone** method using the offline authentication, perform the following steps:

1. Open the Advanced Authentication smartphone app.
2. Click **Enrolled Authenticators** from Menu in the smartphone app.
3. Specify the OTP from the smartphone app in **Password**.
4. Click **Next.**

   If the OTP on the smartphone app matches with server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 5-9 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	You have declined the authentication request.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for the Smartphone method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To perform authentication using the SMS OTP method, perform the following steps:

1. You will receive an SMS message with an OTP on your phone.
2. Specify the OTP from the SMS.
3. Click **Next**.

The following table describes the possible error messages along with the workaround for the SMS OTP authentication.

Table 5-10 SMS OTP authenticator - error messages

Error	Possible Cause and Workaround
`Cannot send OTP. User does not have a cell phone`	Your phone number is not registered in the repository. Contact your system administrator to add your mobile phone number to the account properties.
`Login failed`	Either the OTP that you have specified is incorrect or you have specified the expired OTP. Try to authenticate again.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate using the TOTP method, perform the following steps:

1. Specify the TOTP from your hardware or software token.

2 Click **Next**.

If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the TOTP authentication.

Table 5-11 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for TOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

The FIDO U2F authentication method facilitates you to connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token to authenticate. When you try to authenticate on any device, token connected to the device is compared with the actual device. If the device details match, you are authenticated successfully.

NOTE: You must install the Advanced Authentication Device Service for the FIDO U2F authentication.

To authenticate using the FIDO U2F method, perform the following steps:

1 Ensure that the FIDO U2F token is connected to your computer.

A message `Please connect a U2F token. Please touch the flashing U2F device now` is displayed.

2 Touch the button on the token when there is a flash.

If the token and attestation certificate in the token matches with the enrolled U2F token, the FIDO U2F authentication is successful.

If there is no flash, wait for few seconds. If there is no flash for more than a minute then try to reconnect your token and repeat the steps.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 5-12 FIDO U2F authenticator - error messages

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token that you have connected is incorrect. Try to authenticate with another token or re-enroll the authenticator in Self-Service portal or contact your helpdesk administrator.
`Connect a token`	The token is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for U2F`	You have not enrolled for U2F method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

NOTE: To use U2F on Google Chrome, you must perform the following steps:

1. Download or create a copy of the file `70-u2f.rules` in the Linux directory: `/etc/udev/rules.d/` from https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

   If the file is already available, ensure that the content is similar to that specified in https://github.com/Yubico/libu2f-host/blob/master/70-u2f.rules.

   NOTE: If your version of UDEV is lower than 188, use the rules specified at https://github.com/Yubico/libu2f-host/blob/master/70-old-u2f.rules.

2. Save the `70-u2f.rules` file and reboot the system.

Using FIDO U2F on Ubuntu LightDM

NOTE: When you specify the chain number corresponding to the FIDO U2F method and try to authenticate to Ubuntu LightDM, the hints are not prompted. Connect the U2F token to the computer and touch the button when there is a flash on the token.

1. Ensure that the FIDO U2F token is connected to your computer.
2. Touch the button on the token when there is a flash.

   A message `Please connect a U2F token. Please touch the flashing U2F device now` is displayed.

   If the token and attestation certificate in the token matches with the enrolled U2F token, the FIDO U2F authentication is successful.

Voice

The Voice method initiates a call to your registered phone number. The phone call requests you to specify the PIN in the dial pad of your mobile to authenticate. When you try to authenticate on any device, the recorded PIN is compared with the actual PIN. If both PINs are identical, you are authenticated successfully.

To authenticate using the Voice method, perform the following steps:

When you specify the chain number corresponding to the Voice method, a message `Wait a phone call` is displayed on your computer.

1. Check your mobile phone.

   You will receive a phone call.
2. Answer the phone call, listen to the request on the phone.
3. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Using Voice Method on Ubuntu LightDM

NOTE: When you specify the chain number corresponding to the Voice method and try to authenticate to Ubuntu LightDM, the hints are not prompted. Receive the phone call and specify your PIN followed by hash symbol in the dial pad to continue authentication.

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1. Check your mobile phone.

   You will receive a phone call.
2. Answer the phone call, listen to the request on the phone.
3. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   A message `Wait a phone call` is displayed on your computer.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short time frame. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

To authenticate using Voice OTP method, perform the following steps:

When you specify the chain number corresponding to the Voice OTP method, a message `Wait a phone call` is displayed on your computer.

1. Check you mobile phone.

   You will receive a phone call.
2. Answer the call on your phone and listen to the voice OTP.
3. Specify the OTP in **Password**.
4. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

6 Unlocking Linux

The Linux operating system gets locked, when the session remains inactive more than the set value (time in minutes) or when you lock manually using the **Lock** option. You can unlock Linux on the following platforms:

- Unlocking Linux on Cent OS 7 KDE
- Unlocking Linux on SUSE 11

Unlocking Linux on Cent OS 7 KDE

Following are the scenarios on Cent OS 7 with KDE environment, when you want to unlock Linux operating system:

Scenario 1: Multiple Chains

As a domain user, when you are locked on Cent OS 7 (KDE) and there are multiple chains, PAM selects the first chain based on the following criteria:

Table 6-1 *Multiple Chains - Criteria and required action*

Criteria	Action
Criterion 1: The chain consists of one of the following methods as the first method: ◆ Password ◆ LDAP Password ◆ TOTP ◆ HOTP	PAM selects the chain that meets the condition listed in criterion 1 and you must perform the following steps: 1. Specify the password. 2. Click **Unlock**. 3. Specify valid data for other methods to pass the chain.

Criteria	Action
Criterion 2: There are two chains that contain one of the following methods as the first method: ◆ Password ◆ LDAP Password ◆ TOTP ◆ HOTP	PAM selects the top chain of the used list that meets the condition listed in criterion 2. You must perform the following steps: 1. Specify the password. 2. Click **Unlock**. 3. Specify valid data for other methods to pass the chain. For example: Assume that there are two chains as follows: ◆ **Chain 1:** This chain consists of methods: TOTP, FIDO U2F and Voice OTP. ◆ **Chain 2:** This chain consists of methods: Password, Card and SMS OTP. PAM selects Chain 1 that is on top of the used list and meets the condition.
Criterion 3: The chain consists of any Advanced Authentication methods (except Password, LDAP, HOTP, and TOTP methods) as the first method.	PAM selects the top chain of the used list, you must follow the chain and specify valid data to pass the chain. For example: Assume that there are two chains as follows: ◆ **Chain 1:** This chain consists of methods: Card, Email OTP, and FIDO U2F. ◆ **Chain 2:** This chain consists methods: Fingerprint, PKI and SMS OTP. PAM selects Chain 1 that is on top of the used list, you must perform the following to pass authentication: 1. Click **Unlock** without specifying the password. 2. Tap valid card on the reader. 3. Specify **OTP** received from email. 4. Tap finger on the FIDO U2F device.

NOTE: In the authentication chain, irrespective of the position of Email OTP, SMS OTP, or Voice OTP method, if you specify invalid OTP, the authentication cannot be continued or initiated again. You can perform one of the following to continue or initiate the authentication:

- Specify a valid OTP.
- Wait till the login session expires.

NOTE: If you select the authentication chain that contains Password, LDAP Password, TOTP, or HOTP as the second method (for example, Smartphone+Password, Card+TOTP, or U2F+HOTP), then ensure to specify the Password, LDAP Password, TOTP, or HOTP in **Password**. Later, accept authentication request on smartphone, swipe the card or touch the U2F token.

Scenario 2: First or Single Method in Chain

Below table describes the behavior of the chain that consists of each method, when the method is first or single in an authentication chain:

Table 6-2 *Method behavior and required action*

Method	Action
LDAP password	You must perform the following steps: 1. Specify the LDAP password. 2. Click **Unlock**.
Password	1. Specify the password. 2. Click **Unlock**.
HOTP	1. Specify the HOTP. 2. Click **Unlock**.
TOTP	1. Specify the TOTP. 2. Click **Unlock**.
RADIUS	1. Specify the RADIUS password. 2. Click **Unlock**.
SMS OTP	1. Click **Unlock**. 2. Specify the SMS OTP.
Email OTP	1. Click **Unlock**. 2. Specify the Email OTP.
Voice OTP	1. Click **Unlock**. 2. Specify the Voice OTP.
Emergency password	1. Specify the Emergency password. 2. Click **Unlock**.
Voice	1. Click **Unlock** to initiate phone call. 2. Specify the PIN.
Security questions	With Security questions as a first or single method in the chain, you cannot unlock operating system.

Method	Action
Smartphone	1. Click **Unlock** to initiate an authentication request. 2. Open the Advanced Authentication smartphone app and tap **Accept**. **NOTE:** When there is no mobile data on your smartphone, you cannot unlock operating system with smartphone OTP. If you tap **Reject**, login fails.
FIDO U2F	1. Click **Unlock**. 2. Touch U2F device when you see a flash. **NOTE:** If you touch incorrect U2F device that is not enrolled, a new authentication session appears.
Card	1. Click **Unlock**. 2. Tap card on the reader. **NOTE:** If you tap an invalid card, a new login session appears.
Bluetooth	With Bluetooth as a first or single method in the chain, you cannot unlock operating system.
PKI	With PKI as a first or single method in the chain, you cannot unlock operating system.

Unlocking Linux on SUSE 11

Following are the scenarios on SUSE 11, to unlock Linux operating system:

- Scenario 1: Multiple Chains
- Scenario 2: Single Chain

Scenario 1: Multiple Chains

As a domain user, when you are locked on SUSE 11 and there are multiple authentication chains, PAM selects the first chain based on the following criteria:

Table 6-3 *Criteria and required action*

Criteria	Action
Criterion 1: The chain consists of a single method and the method is one of the following: - Password - LDAP Password - TOTP - HOTP	If PAM selects the chain with a single method as first chain, you must perform the following steps to unlock the account: 1. Specify the password. 2. Click **Unlock**.

Criteria	Action
Criterion 2: The chain consists of the following two methods (irrespective of the order of the methods): ◆ Password, LDAP Password, TOTP or HOTP ◆ Out-of-band (Smartphone or Voice Call)	If PAM selects the chain with two methods as first chain, you perform the following steps to unlock the account: 1. Specify the password. 2. Accept Out-of-band method (For example: Push message on the smartphone). **NOTE:** When the smartphone does not have network connection, user cannot unlock the operating system with chain that consists of Smartphone method. Therefore, click **Switch User** and try to log in using preferred authentication chain.
Criterion 3: The chain consists of more than two methods that are any of the Advanced Authentication methods.	Click **Switch User** and try to log in again using the same authentication chain.
Criterion 4: The chain consists of following methods (except Password, LDAP, HOTP, TOTP, Smartphone, and Voice Call methods): ◆ Card ◆ Email OTP ◆ FIDO U2F ◆ Fingerprint ◆ PKI ◆ SMS OTP ◆ Swiss Mobile ID ◆ Voice OTP	Click **Switch User** and try to log in again using the same authentication chain. If you specify any text in the password, a error message `Unable to authenticate user` is displayed.

Scenario 2: Single Chain

When a domain user is locked on SUSE 11 and there is a single chain, PAM selects this single chain for authentication.The chain can consist of one or more of the following methods:

Table 6-4 *Criteria and required action*

Criteria	Action
Criterion 1: The chain consists of a single method and the method is one of the following: ◆ Password ◆ LDAP Password ◆ TOTP ◆ HOTP	If the chain consists of a single method, user must perform the following: 1. Specify the password. 2. Click **Unlock**.

Criteria	Action
Criterion 2: The chain consists of the following two methods (irrespective of the order of the methods): ◆ Password, LDAP Password, TOTP or HOTP. ◆ Out-of-band (Smartphone or Voice Call).	With two methods in the chain, PAM prompts the user to perform the following: 1. Specify the password. 2. Accept Out-of-band method (For example: Push message on the smartphone). **NOTE:** When the smartphone does not have network connection, user cannot unlock the operating system with chain that consists of Smartphone method. Therefore, user must click **Switch User** and try to log in using preferred authentication chain.
Criterion 3: The chain consists of more than two methods that are any of the Advanced Authentication methods.	The user must click **Switch User** and try to log in again using the same authentication chain.
Criterion 4: The chain consists of following methods (except Password, LDAP, HOTP, TOTP, Smartphone, and Voice Call methods): ◆ Card ◆ Email OTP ◆ FIDO U2F ◆ Fingerprint ◆ PKI ◆ SMS OTP ◆ Swiss Mobile ID ◆ Voice OTP	The user must click **Switch User** and try to log in again using the same authentication chain. If user specifies any text in the password, a error message `Unable to authenticate user` is displayed.

7 Logging In to Mac

You can use the enrolled authenticators to log in to the Mac operating system. You must pass through the authenticators in the chain to get authenticated.

To log in to Mac with the Advanced Authentication, perform the following steps:

1. Select a user from the Mac login screen or specify the user name in the **Other user** screen.

   NOTE: You can switch between languages by clicking the flag icon beside the text box.

2. Click **Next**.
3. Select an authentication chain from the list.
4. Authenticate with the preferred authentication method(s) of the chain.

   A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

NOTE: If you log in to a non-domain joined workstation for the first time, you will be asked to provide credentials for your local account to map the domain account to the local account. In **username**, specify the username of local account. In the next step, specify the local account's password.

A domain user cannot log in, if a local user with the same username exist. For example, Mac OS has a local user Bob and a domain user mycompany\bob. Mac OS is joined to the domain Mycompany. After specifying the username of the domain user mycompany\bob, selecting a chain, an error `Network account name cannot be the same as local account name` is displayed.

Advanced Authentication provides the following authenticators for logging in to Mac computer:

- “Apple Touch ID” on page 142
- “Bluetooth” on page 142
- “Authentication Agent” on page 143
- “Card” on page 143
- “Device Authentication” on page 145
- “Email OTP” on page 145
- “Emergency Password” on page 146
- “Facial Recognition” on page 147
- “Flex OTP” on page 147
- “HOTP” on page 148
- “LDAP Password” on page 148
- “Out-of-Band” on page 149
- “Password” on page 149

- "PKI" on page 150
- "RADIUS Client" on page 151
- "Security Questions" on page 151
- "Smartphone" on page 152
- "SMS OTP" on page 153
- "TOTP" on page 153
- "FIDO U2F" on page 154
- "Voice" on page 155
- "Voice OTP" on page 155

Apple Touch ID

Apple Touch ID enables you to authenticate to a Mac operating system using the electronic fingerprint recognition feature available in Mac device. When you try to authenticate Mac device, the presented fingerprint is matched with the enrolled fingerprint. If the fingerprints match, you are authenticated.

NOTE: It is not possible to perform an initial authentication by Touch ID after boot

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Perform the following steps to authenticate using the Apple Touch ID:

1. Place your finger on the Touch ID reader.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room.

NOTE: To use the **Bluetooth** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1. Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.
2. The Device Service detects your bluetooth device and authenticates.

   If the paired bluetooth device is within the range, the bluetooth authentication is successful.

Authentication Agent

Authentication Agent enables you to perform multi-factor authentication on one computer to get authorized access to another computer, where it is not possible to display the user interface or connect any external authentication devices. You can install the Authentication Agent on a workstation or a laptop. When an authentication is initiated from a computer using Authentication Agent chain, the Authentication Agent on another computer prompts a restricted browser where you must perform the authentication.

NOTE: You can install the Authentication Agent only on the Windows workstation.

IMPORTANT: If both the Windows Client and Authentication Agent are installed on the same workstation, the Authentication Agent is logged in automatically through the SSO feature. If the Windows Client is not installed, you must log in to the Authentication Agent manually.

To log in to Mac using the Authentication Agent on Windows, perform the following steps:

1. Specify **User name** in the Mac computer.
2. Click **Next** and select **Authentication Agent** from the Chains list.

   For more information about enabling the Authentication Agent chain in the Mac computer, see Enabling the Authentication Agent Chain.
3. The Authentication Agent that is active on a Windows computer launches a restricted browser.

   IMPORTANT: If a restricted browser is not launched automatically, place the cursor on the Authentication Agent icon in System tray and ensure that the agent is logged in. If the agent is not logged in, double click the Authentication Agent icon to log in.

   The restricted browser prompts the login page. The user name that you have specified in the Mac computer is set in the login page by default.
4. Click **Next**.
5. Select the preferred chain to log in to Mac computer in the restricted browser.

   For more information, see Logging In to Authentication Agent for Windows.
6. After Successful authentication in the restricted browser, you are logged in to the Mac computer automatically.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number). When you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.

NOTE: You must install the Advanced Authentication Device Service for the **Card** authentication.

To authenticate by using the Card method, perform the following steps:

1. Ensure that the card reader is connected to your machine.
2. Tap your card on the reader or insert a smart card to the reader.

   If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

IMPORTANT: The Card method supports the `1:N` feature that indicates that Advanced Authentication automatically detects the user name. You can authenticate by pressing **CTRL+ALT+DEL** and then placing a card to the reader.

The following table describes the possible error messages along with the workaround for the Card authentication.

Table 7-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card you have placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Observations of the 1:N Behavior on Mac

The behavior of 1:N login depends on the window that is displayed when a card is placed to the card reader:

When the **Username and password** login window is set:

- **Case 1**: The **Other user** window is displayed (username of the user is not submitted). User is logged in through 1:N when the card is placed to a card reader.
- **Case 2**: The list of chains is displayed (username of the user is submitted). User is logged in through 1:N when the card is placed to a card reader.
- **Case 3**: Chain is selected (example, Password only). **Enter password** window is displayed. User is not logged in through the 1:N when the card is placed to a card reader.

When the **List of users** login window is set.

- 1:N login is performed when the login window with the list of users is displayed (authentication window is not displayed) or after selecting the **Other user**.

- 1-N login is not performed after selecting a user from the list when the list of chain for the user is displayed. When you select any user from the list:
  - **Case 1**: The list of chains is displayed: User is not logged in through 1:N, when placing the card to the card reader.
  - **Case 2**: Select a chain: User is not logged in through 1:N, when placing the card to the card reader.
- When you select **Other user** item on login window: The behavior is the same as in the case of **Username and password**.

NOTE: ◆1:N does not work in FUS. After selecting a user from the list in FUS, 1:N login cannot be performed.

- For the screens that are in the sleep or screensaver mode, the authentication window must be opened to perform 1:N login.

Device Authentication

The Device Authentication method enables you to authenticate using a unique key pair stored in the workstation and PIN. During the enrollment process, a key pair is generated in the workstation and the same is used for further authentication. Device Authentication supports authentication to the Mac workstation and verifies the key pair to authenticate users.

To authenticate with the Device Authentication method, perform the following steps:

1. Specify the PIN.
2. Click **Next**.

   If the PIN matches with the enrolled PIN, the Device authentication is successful.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate by using the Email method, perform the following steps:

1. Check your email. You must receive an email with OTP.
2. Specify the OTP from email in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workarounds for the Email OTP authentication.

Table 7-2 Email OTP authenticator - error messages

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate by using the Emergency Password method, perform the following steps:

1. Specify the Emergency Password.
2. Click **Next**.

   If the Emergency Password matches with the enrolled password, the Emergency Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Emergency Password authentication.

Table 7-3 Emergency Password authenticator - error messages

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you are authenticated successfully.

The Facial Recognition method works with both an integrated and external web camera.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate by using the Facial Recognition method, perform the following steps:

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error messages along with the workarounds for the Facial Recognition authentication.

Table 7-4 *Facial Recognition - error messages*

Error	Possible Cause and Workaround
`Failed to open camera`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	There is a mismatch in the faces. You must present your face again for the authentication.
`Face service is not available`	Device Service is not available. Ensure that the Device Service is connected.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

To authenticate using the Flex OTP method, perform the following steps:

1. Specify the One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators
2. If the password is valid, the Flex OTP authentication is successful.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You can use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If both OTPs are identical, you are authenticated successfully.

To authenticate by using the HOTP method, perform the following steps:

1. Specify the HOTP when using software token or connect the USB token, press button on the token.
2. Click **Next**.

   If the OTP on the token matches with the server generated OTP, the HOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the HOTP authentication.

Table 7-5 *HOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try again.
`<Your user name> has no authenticator for HOTP`	The HOTP authenticator is not enrolled. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on any device, the specified password is compared with the actual password in the corporate directory. If the passwords match, you are authenticated successfully.

To authenticate by using the LDAP Password method, perform the following steps:

1. Specify your domain password.
2. Click **Next**.

   If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect, an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Out-of-Band

The Out-of-band method facilitates you to authenticate using the push notification that is sent to the Out-of-band portal or OOB agent. When you initiate the authentication, a push notification is sent to the portal or agent. You can accept the request and get authenticated.

To authenticate by using the Out-of-band method, perform the following steps:

When you specify the chain number corresponding to the Out-of-band method, a message `Continue at https://<AdvancedAuthenticationServerdomainname>/oob/ui` is displayed on your computer.

1 Open the OOB agent installed on your mobile or navigate to the OOB portal.

   A push notification is displayed.

   NOTE: If the push notification does not appear after 5 seconds, tap the Refresh icon to view the push notification for the initiated authentication.

2 Tap **Accept**.

   If the response to authentication request is from a secured origin, the authentication is successful.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate by using the Password method, perform the following steps

1 Enter the password for your Advanced Authentication account.

2 Click **Next**.

   If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Password authentication.

Table 7-6 *Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The password you have specified is incorrect. Specify a valid password and try to authenticate again.
`<Your user name> has no authenticator for Password`	You have not enrolled for the Password method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you to authenticate using any PKI device such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on any device, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: You must install the Device Service for the PKI method enrollment.

To authenticate by using the PKI method, perform the following steps:

1. Insert the card in the reader or connect token to your machine.
2. Specify the PIN.

   If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

IMPORTANT: The PKI method supports the `1:N` feature. The user name is detected automatically by the Advanced Authentication. You can authenticate by pressing **CTRL+ALT+DEL** and then plugging in your PKI device.

The following table describes the possible error messages along with the workaround for the PKI authentication.

Table 7-7 *PKI authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card that is used is incorrect. Try authenticating with another valid card or token. You can enroll the authenticator again in the Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for PKI`	You have not enrolled for PKI method. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.

Observations of the 1:N Behavior on Mac

The behavior of 1:N login depends on the window that is displayed when a card is placed to the card reader:

When the **Username and password** login window is set:

- **Case 1**: The **Other user** window is displayed (username of the user is not submitted). User is logged in through 1:N when the card is placed to a card reader.

- **Case 2**: The list of chains is displayed (username of the user is submitted). User is logged in through 1:N when the card is placed to a card reader.
- **Case 3**: Chain is selected (example, Password only). **Enter password** window is displayed. User is not logged in through the 1:N when the card is placed to a card reader.

When the **List of users** login window is set.

- 1:N login is performed when the login window with the list of users is displayed (authentication window is not displayed) or after selecting the **Other user**.
- 1-N login is not performed after selecting a user from the list when the list of chain for the user is displayed. When you select any user from the list:
  - **Case 1**: The list of chains is displayed: User is not logged in through 1:N, when placing the card to the card reader.
  - **Case 2**: Select a chain: User is not logged in through 1:N, when placing the card to the card reader.
- When you select **Other user** item on login window: The behavior is the same as in the case of **Username and password**.

NOTE: ◆1:N does not work in FUS. After selecting a user from the list in FUS, 1:N login cannot be performed.

- For the screens that are in the sleep or screensaver mode, the authentication window must be opened to perform 1:N login.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate using the Security Questions method, perform the following steps:

1. Specify the answer for the security question.

2 Click **Next**.

3 Repeat steps 1 to 2 for all the required security questions.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 7-8 *Security Questions authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The answer that you have provided is incorrect. Specify the correct answer and try to authenticate again.
`<Your user name> has no authenticator for security questions`	You have not enrolled the Security Questions method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate using the Smartphone method, perform the following steps:

1 If there is internet connection on your smartphone, open the smartphone app and accept the authentication request.

2 If there is no internet connection on your smartphone, perform the following steps:

   2a Open the smartphone app.

   2b Specify the OTP that you received on your smartphone app.

   2c Click **Next.**

To authenticate with the **Smartphone** method using the offline authentication, perform the following steps:

1 Open the Advanced Authentication smartphone app.

2 Click **Enrolled Authenticators** from Menu in the smartphone app.

3 Specify the OTP from the smartphone app in **Password**.

4 Click **Next.**

   If the OTP on the smartphone app matches with the server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 7-9 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	You have declined the authentication request.
`Wrong TOTP password`	You are using offline authentication and specified an incorrect TOTP password or the time on your smartphone is not synchronized.
`TOTP login is disabled`	You are using offline authentication and Geo-fencing is enabled. Contact the administrator for further assistance.
`<Your user name> has no authenticator for smartphone`	You have not enrolled the smartphone method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To perform authentication using the SMS OTP method, perform the following steps:

1. You will receive an SMS message with an OTP on your phone.
2. Specify the OTP from the SMS.
3. Click **Next**.

If you get the error `Cannot send OTP. User does not have a cell` phone, contact your system administrator to add your mobile phone number to the profile of the repository.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate by using the TOTP method, perform the following steps:

1. Enter the TOTP from your hardware or software token.
2. Click **Next.**

   If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the TOTP authentication.

Table 7-10 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for TOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

The FIDO U2F authentication method facilitates you connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token for authentication. When you try to authenticate on any device, token connected to the device is compared with the actual device. If the device details match, you are authenticated successfully.

NOTE: You must install the Advanced Authentication Device Service for all browsers except Google Chrome. It contains a built-in module.

To authenticate using the FIDO U2F method, perform the following steps:

1. Ensure that the FIDO U2F token is connected to the workstation.

   A message Please touch the flashing U2F device now is displayed.
2. Touch button on the token when there is a flash.

   If the token matches with the enrolled U2F token, the FIDO U2F authentication is successful.

   If there is no flash, wait for few seconds. If there is no flash for more than a minute then try to reconnect your token and repeat the steps.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 7-11 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token that you have connected is incorrect. Try to authenticate with another token or re-enroll the authenticator in Self-Service portal or contact your helpdesk administrator.

Error	Possible Cause and Workaround
`Connect a token`	The token is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for U2F`	You have not enrolled for U2F method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Voice

The Voice authenticator initiates a call to your registered phone number. The phone call requests you to specify the PIN for authentication. When you try to authenticate on an application, the recorded PIN is compared with the actual PIN. If both PINs match, you are authenticated successfully.

To authenticate using the Voice method, perform the following steps:

1. Check your mobile phone. You must receive a phone call.
2. Answer the phone call, listen to the request.
3. Specify your PIN followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with the enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short time frame. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

To authenticate using Voice OTP method, perform the following steps:

1. Answer the phone call on your phone and listen to the voice OTP.
2. Specify the OTP in **Password**.
3. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

8 Switching Input Language on Mac OS

On the Mac OS system, when you use more than one language you can switch between the input languages without changing the keyboard on screens, such as login, lock, FUS, and Preferences.

Adding Input Sources

Before you switch between preferred languages, ensure to add language and make the Input menu visible in the menu bar on all screens. To add languages as input sources, perform the following steps:

1. Click the Apple icon > **System Preferences > Keyboard > Input Sources** on your Mac OS system.
2. Click Add button +, search for the preferred language (for example, German) and then select one or more languages.
3. Click **Add**.

After you add languages, the Input menu is displayed in the menu bar automatically. The Input menu allows you to quickly switch input languages as per your requirement.

Following table describes how you can switch language on different screen:

Screen	Action to Switch Input Language
Login screen	Use one of the following ways to switch input language: ◆ Click Input menu in the menu bar and select the preferred language. ◆ Use one of the following shortcut: ◆ control + option + space: To view all language and switch to one language ◆ control + space: To switch between two input languages
Screensaver, Lock screen, or Sleep mode	Use one of the following shortcut: ◆ control + option + space: To view all language and switch to one language ◆ control + space: To switch between two input languages

Screen	Action to Switch Input Language
FUS, System preferences, or authenticating during software installation	Use one of the following ways to switch input language: ◆ Click Input menu in the menu bar and select the preferred language. ◆ Use one of the following shortcut: ◆ control + option + space: To view all language and switch to one language ◆ control + space: To switch between two input languages **NOTE:** In some scenarios, shortcut keys do not work and you are required to use Input menu to switch language.

9 Logging In to Out-of-Band Portal

The Out-of-band (OOB) portal allows you to manage the authentication requests that the OOB method sends to authenticate to any device or service.

You can use the enrolled authenticators to log in to the Out-of-band portal. You must pass through the authenticators in the chain to get authenticated successfully.

To log in to Out-of-band portal, perform the following steps:

1. Log in to the Advanced Authentication OOB portal (`https://<AdvancedAuthenticationServerdomainname>/oob/ui`)
2. Specify the username in the format: `repositoryname\username` (e.g. company\pjones) and click **Next**.
3. Select the preferred authentication chain from the list.
4. Authenticate with the preferred authentication method(s) of the chain.

   A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

Instead of logging in to OOB portal for each authentication, you can install the Authentication Agent for Web on a desktop or mobile using the Google Chrome browser. Perform the following steps to install the Authentication Agent for Web:

1. Log in to the Advanced Authentication OOB portal (`https://<AdvancedAuthenticationServerdomainname>/oob/ui`) using the Chrome browser.
2. Authenticate with the preferred authentication method(s) of the chain.

   On successful authentication, the Authentication Requests page appears.
3. Perform one of the following:

   - **Desktop**: Click the Install icon in the address bar.
   - **Mobile**: Tap the Install icon adjacent to the user name.

   A message is displayed to confirm the install.
4. Click **Install**.

   The Authentication Agent for Web is installed on your desktop or mobile.

NOTE: To receive the push messages, you must enable the notifications in your browser for the OOB portal or Authentication Agent for Web app. By default, the notifications are blocked.

NOTE: After initiating the authentication if the push notification does not appear after 5 seconds, click the Refresh icon to view the push notification for the initiated authentication.

The following examples describe the different scenarios where the OOB portal is used:

- Scenario 1: Authenticating to Linux using the OOB Method
- Scenario 2: Authenticating to VPN using the Out-of-Band Portal and Biometrics
- Scenario 3: Authenticating to z/OS Mainframe Using the Authentication Agent for Web on Smartphone

Scenario 1: Authenticating to Linux using the OOB Method

The OOB method is enrolled for Paul in the Advanced Authentication Self-Service portal. Using the OOB portal, he has installed the Authentication Agent for Web on his Android smartphone.

Consider administrator has set-up the following:

- Assigned a chain with the **Password** and TOTP methods to the OOB portal.
- Assigned a chain with the **OOB** method to the Linux machine.

Following sequence describes the authentication process using the Authentication Agent for Web:

1. Paul opens the Authentication Agent for Web that is installed on his Android smartphone and authenticates on it using the Password and TOTP methods.
2. Specify **user name** and select the chain with **Out-of-band** method in Linux computer.

   This initiates an authentication request.
3. An authentication request with **Accept** and **Decline** buttons is displayed on the Authentication Agent for Web.

   NOTE: After initiating the authentication if the push notification does not appear after 5 seconds, click the Refresh icon to view the push notification for the initiated authentication.
4. Tap **Accept**.

   Paul logs in to the Linux computer successfully.

Scenario 2: Authenticating to VPN using the Out-of-Band Portal and Biometrics

An organization has secured the VPN network with strong multi-factor authentication using domain password and Windows Hello. Janet wants to connect to the corporate VPN. However, it is not possible to use fingerprint and face recognition directly in the RADIUS authentication. The organization has decided to use the Out-of-Band method for this scenario.

Janet has Windows laptop with a built-in fingerprint sensor.

Consider the following setup:

- Assigned a chain with the Windows Hello method to the OOB portal.
- Assigned a chain with the LDAP Password and Out-of-band methods to the RADIUS Server.

Following sequence describes the authentication process using the OOB portal:

1. Specify **username** and domain password in the VPN connection request.
2. Navigate to the OOB portal in any browser using the `https://<AAFserver>/oob/ui`.
3. Authenticate to the OOB portal using the Windows Hello method.

4 The pending authentication request appears.

NOTE: After initiating the authentication if the push notification does not appear after 5 seconds, click the Refresh icon to view the push notification for the initiated authentication.

---

5 Click **Accept**.

Janet gets connected to the corporate VPN.

Scenario 3: Authenticating to z/OS Mainframe Using the Authentication Agent for Web on Smartphone

Nick wants to log in to the z/OS mainframe. The mainframe is secured with Advanced Authentication OOB method.

Consider the following setup:

- The Authentication Agent for Web and NetIQ Advanced Authentication applications are installed on an Android smartphone.
- Windows laptop has access to the z/OS terminal.
- Assigned a chain with the Smartphone method to the OOB portal.
- Assigned a chain with the OOB method to the Mainframe.

Following sequence describes the authentication process using the Authentication Agent for Web:

1 Initiate login to z/OS mainframe on Windows laptop and specify oob in the **Password**.

This initiates the authentication request.

2 Authentication Agent for Web on the smartphone receives a notification about the pending authentication request.

3 Tap the notification to open Authentication Agent for Web and authenticate using the Smartphone method.

4 The pending authentication request is displayed in Authentication Agent for Web.

NOTE: After initiating the authentication if the push notification does not appear after 5 seconds, click the Refresh icon to view the push notification for the initiated authentication.

---

5 Click **Accept**.

Nick connects to the z/OS mainframe.

Advanced Authentication provides the following authenticators for logging in to the Out-of-band portal:

- "Bluetooth" on page 162
- "Card" on page 163
- "Device Authentication" on page 164
- "Email OTP" on page 165
- "Emergency Password" on page 165
- "Facial Recognition" on page 166

- “Flex OTP” on page 167
- “Fingerprint” on page 167
- “Home Affairs National Identification System (HANIS)” on page 168
- “HOTP” on page 168
- “LDAP Password” on page 169
- “Password” on page 169
- “PKI” on page 170
- “RADIUS Client” on page 171
- “Security Questions” on page 171
- “Smartphone” on page 172
- “SMS OTP” on page 173
- “Swisscom Mobile ID” on page 174
- “TOTP” on page 174
- “FIDO U2F” on page 175
- “Voice” on page 175
- “Voice OTP” on page 176
- “Windows Hello” on page 176

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use the **Bluetooth** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1. Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.
2. The Device Service detects your bluetooth device and authenticates.

   If the paired bluetooth device is within the range, the bluetooth authentication is successful.

NOTE: If the administrator has set **Enable reaction on device removal** option to **ON** for Bluetooth method then the operating system automatically locks, if one of the following is true:

- The Bluetooth device is disabled.
- The Buletooth device is out of range.

Card

The Card method enables you to authenticate using the contactless smart card (with the card serial number). When you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.

NOTE: To use the Card method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Card method, perform the following steps:

1. Ensure that the card reader is connected to your system.
2. Tap your card on the reader or insert a smart card in the reader.

   If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

IMPORTANT: The **Card** method supports the `1:N` feature that Advanced Authentication to detect the user name automatically. You can press **CTRL+ALT+DEL** then place a card to the reader to authenticate.

The following table describes the possible error messages along with the workarounds for the Card authentication.

Table 9-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card you have placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and try again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Error	Possible Cause and Workaround
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

IMPORTANT: An administrator has the privilege to configure an automatic session lock or log off for the events with Card authentication method. In such a scenario, you must:

- When **Tap&Go** is disabled, you must place your card on the reader during login. After login you can remove the card from the reader to lock the operating system or log off automatically.

  Or

- When **Tap&Go** is enabled, you must tap a card on the reader to log in and to lock, unlock, or log off.

Device Authentication

You can authenticate to Windows workstation using the Device Authentication method using one of the following:

- Using Trusted Platform Module (TPM) chip

  The TPM chip is a crypto-processor available in Windows workstation to achieve actions, such as generating, storing, and limiting the use of cryptographic keys. Device Authentication supports authentication to Windows workstation and makes use of information available in the chip to authenticate users.

- Non-TPM mode

  In this mode, a key pair is generated in the workstation during the enrollment process that is used for further authentication on the same workstation.

  NOTE: In non-TPM mode, ensure to enroll the Device Service method using the workstation where you would perform further authentication. Enrollment on one machine and authentication on another machine is not supported.

To authenticate with the Device Authentication method, perform the following steps:

1. Specify one of the following:
   - The TPM chip generated PIN
   - The enrolled PIN
2. Click **Next**.

   If the PIN matches with the TPM chip generated PIN or enrolled PIN, the Device Authentication is successful.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate using the Email method, perform the following steps:

1. Check your email. You will receive an email with an OTP.
2. Specify the OTP from email in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workarounds for the Email OTP authentication.

Table 9-2 *Email authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Try to specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate using the Emergency Password method, perform the following steps:

1. Specify the emergency password.
2. Click **Next**.

   If the emergency password matches with the enrolled password, the emergency password authentication is successful.

The following table describes the possible error message along with the workarounds for the Emergency Password authentication.

Table 9-3 Emergency Password authenticator - error messages

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your face image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you will be successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate using the Facial Recognition method, perform the following steps:

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error message along with the workarounds for the Facial Recognition authentication.

Table 9-4 Facial Recognition authenticator - error messages

Error	Possible Cause and Workaround
`Failed to open camera`	If the camera is not connected properly. Check your camera settings and try again.
`Mismatch`	The enrolled face and presented face does not match. You must present your face again for the authentication.
`Face service is not available`	The Device Service is not available. Ensure that the Device Service is installed.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

To authenticate using the Flex OTP method, perform the following steps:

1. Specify the One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators
2. If the password is valid, the Flex OTP authentication is successful.

Fingerprint

The Fingerprint authentication method enables you to authenticate using your fingerprint. The fingerprint scanner captures the fingerprint. When you try to authenticate on any device, the recorded fingerprint is compared with the actual fingerprint. If the fingerprints are identical, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Fingerprint method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the computer.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

NOTE: Ensure to enroll the required fingers that are highlighted in the **Add Fingerprint Authenticator** page.

The following table describes the possible error message along with the workarounds for the Fingerprint authentication.

Table 9-5 *Fingerprint authenticator - error messages*

Error	Possible Cause and Workaround
`Please connect a scanner`	The reader is not connected properly. Ensure that the reader is properly connected or try to connect it to a different USB slot.
`Mismatch`	If there is a mismatch in the fingerprints. Ensure that you are using the same fingerprint that was enrolled and try to authenticate again.

Error	Possible Cause and Workaround
`<Your user name> has no authenticator for Fingerprint`	You have not enrolled for Fingerprint. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Home Affairs National Identification System (HANIS)

The HANIS method is for the citizens of South Africa. The HANIS method enables you to authenticate using your fingerprint that is registered in the National Identification System. The fingerprint scanner captures the fingerprint. When you try to authenticate on any device, the fingerprint available in the Nation Identification System is compared with the captured fingerprint. If fingerprints are identical, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information, see Installing Device Service on Windows in the Advanced Authentication - Device Service.

To authenticate using the HANIS method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the computer.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If fingerprint matches with the fingerprint available in the National Identification System, the authentication is successful.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You must use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If the OTPs are identical, you are authenticated successfully.

To authenticate using the HOTP method, perform the following steps:

1. Specify the OTP when using software token or some kind of hardware tokens or connect the USB token, press button on the token.
2. Click **Next**.

   If the OTP on the token and the server generated OTP are identical, the HOTP authentication is successful.

The following table describes the possible error message along with the workarounds for the HOTP authentication.

Table 9-6 HOTP authenticator - error messages

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try again.
`<Your user name> has no authenticator for HOTP`	You have not enrolled for HOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on any device, the specified password is compared with the actual password in the corporate directory. If both the passwords are identical, you are authenticated successfully.

To authenticate using the LDAP Password method, perform the following steps:

1. Specify your domain password.
2. Click **Next**.

   If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect, an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate using the Password method, perform the following steps:

1. Specify the password of your Advanced Authentication account.
2. Click **Next**.

   If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error message along with the workarounds for the Password authentication.

Table 9-7 Password authenticator - error messages

Error	Possible Cause and Workaround
`Wrong password`	The password you have specified is incorrect. Specify a valid password and try to authenticate again.

Error	Possible Cause and Workaround
`<Your user name> has no authenticator for Password`	You have not enrolled for Password method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you authenticate using any PKI device, such as a contact card and USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on an application, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: To use the **PKI** method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the PKI method, perform the following steps:

1. Insert a card or plug the token to your machine.
2. Specify the PIN.

   If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

IMPORTANT: The PKI method supports the `1:N` feature. The user name is detected automatically by the Advanced Authentication. You can authenticate by pressing **CTRL+ALT+DEL** and then plugging in your PKI device.

The following table describes the possible error message along with the workarounds for the PKI authentication.

Table 9-8 *PKI authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card that is used is incorrect. Try authenticating with another valid card or token. Enroll the authenticator again in Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for PKI`	You have not enrolled for PKI method. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.

Error	Possible Cause and Workaround
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

NOTE: To log in to a computer using the PKI authenticator, you must place the card on the reader or connect a token to the computer. After the login, you can remove the card from the reader or disconnect the token to lock the computer automatically.

Advanced Authentication does not support the tapping of a card to lock or unlock a computer.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use the RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate with the Security Questions method, perform the following steps:

1. Specify your answer for the displayed security question.
2. Click **Next**.
3. Repeat steps 1 to 2 for all the security questions.

   If all the specified answers match with enrolled answers, the Security Questions authentication is successful.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 9-9 Security Questions authenticator - error messages

Error	Possible Cause and Workaround
`Wrong answer`	The specified answer is incorrect. Specify the valid answer and try to authenticate again.
`<Your user name> has no authenticator for Security Questions`	You have not enrolled for Security Questions method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate with the Smartphone method, perform the following steps:

When you select the Smartphone method from the Chains list, a message `Accept on smartphone or enter the one-time password` is displayed on your computer.

1. Open the Advanced Authentication smartphone app.

   A push notification is sent to your smartphone.

2. Tap **Accept**.

   If the smartphone matches with the enrolled smartphone, the authentication is successful.

To authenticate with the Smartphone method using the offline authentication, perform the following steps:

1. Open the Advanced Authentication smartphone app.
2. Click **Enrolled Authenticators** in the menu of the smartphone app.
3. Specify the OTP from the smartphone app in **Password**.
4. Click **Next.**

   If the OTP on the smartphone app matches with server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 9-10 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	The authentication request is declined in the smartphone app. Initiate the authentication and accept the request to authenticate again.

Error	Possible Cause and Workaround
`Wrong TOTP password`	Specified OTP for the offline authentication is incorrect or the time on your smartphone is not synchronized. Specify the valid OTP and try authenticating again.
`TOTP login is disabled`	If the administrator has disabled TOTP login or when the geo-fencing is enabled. Contact your administrator for further assistance.
`<Your user name> has no authenticator for smartphone`	You have not enrolled for Smartphone method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication. You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To authenticate with the SMS method, perform the following steps:

1. Check your phone.

   An SMS message with an OTP is sent to your phone.
2. Specify the OTP in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the SMS OTP authentication is successful.

The following table describes the possible error messages along with the workaround for the SMS OTP authentication.

Table 9-11 *SMS OTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have a cell phone`	Your email address is not set in the profile of the repository. Contact your system administrator to add your phone number to the profile.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

To authenticate with the Swisscom Mobile ID method, perform the following steps:

1. Check your mobile phone.

   A request message is displayed on your mobile phone.

2. Accept the request.

   If the Mobile ID matches with the enrolled Mobile ID, the Swisscom Mobile ID authentication is successful.

NOTE: To authenticate with Swisscom Mobile ID method, you must activate the Mobile ID service for your Swisscom SIM card.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate using the TOTP method, perform the following steps:

1. Specify the TOTP from your hardware or software token.
2. Click **Next.**

   If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error message along with the workaround for the TOTP authentication.

Table 9-12 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
Incorrect OTP password	The OTP you have provided is incorrect or the server time is not in sync. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for TOTP method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

The FIDO U2F facilitates method enables you connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token to authenticate. When you try to authenticate on any device, token connected to the device is compared with the actual device. If the device details match, you are authenticated successfully.

NOTE: To use the FIDO U2F method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the FIDO U2F method, perform the following steps:

1. Ensure that the FIDO U2F token is connected to the workstation.

   A message `Please touch the flashing U2F device now` is displayed.

2. Touch the button on the token when you see a blink.

   If the token and attestation certificate in the token matches with the enrolled U2F token, the FIDO U2F authentication is successful.

   If the device does not blink, wait for few seconds. If you do not see the blink for more than a minute, try to reconnect your token and repeat the steps.

NOTE: Administrator can configure an automatic session lock or log off on the U2F events. When a user returns to the workstation, the user must connect the U2F device to the workstation to unlock.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 9-13 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token that you have connected is incorrect. Try to authenticate with another token or re-enroll the authenticator in Self-Service portal or contact your helpdesk administrator.
`Connect a token`	The token is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for U2F`	You have not enrolled for U2F method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Voice

The Voice authenticator initiates a call to your registered phone number. The phone call requests you to specify the PIN for authentication. When you try to authenticate on an application, the recorded PIN is compared with the actual PIN. If both the PINs match, you are successfully authenticated.

To authenticate using the Voice method, perform the following steps:

1. Answer the phone call on your phone and listen to the request.
2. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP authenticator initiates a phone call to your registered phone number. You will receive the voice OTP in the phone call. You can use this OTP for authentication within a short time frame.

To authenticate using the Voice OTP method, perform the following steps:

1. Answer the phone call on your phone and listen to the voice OTP.
2. Specify the OTP in **Password**.
3. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint and facial recognition authentication to log in to the Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint and facial recognition.

To authenticate using the Windows Hello, perform the following steps:

1. **For fingerprint authentication**: Ensure that a fingerprint reader is connected to the required device.

   1a. Place your enrolled finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the fingerprint enrolled on Windows 10 operating system, Windows Hello authentication is successful.

2. **For facial recognition**: Ensure that an external camera is connected to your computer.

   NOTE: This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

   2a. Present your face to the camera.

   If the face matches with the facial image enrolled on Windows 10 operating system, Windows Hello authentication is successful.

10 Logging In to Windows

You can use the enrolled authenticators to log in to the Windows operating system. You must pass through the authenticators in the chain to get authenticated.

To log in to Windows with Advanced Authentication, perform the following steps:

1. Specify the user name in the **Other user** screen.

   NOTE: To log in to the local account, enter `<computer name>\<Username of local account>` or `.\<Username of local account>`.

2. Press **Enter** or click **Next**.
3. Select an authentication chain from the list.
4. Authenticate with the required authentication method(s) of the chain.

   A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

5. (Conditional) If the administrator has configured Windows Hello for Business, you are required to specify Windows Hello PIN on the Windows 10 workstation as an additional factor after authenticating with the Advanced Authentication chain.

   For more information on how to setup Windows Hello PIN, see Windows 10 Sign-in options (https://support.microsoft.com/en-us/help/4468253/windows-10-sign-in-options-and-privacy).

NOTE: If you log in to a non-domain joined workstation for the first time, you are prompted to provide credentials of your local account to map the domain account to the local account. Specify `<computer name>\<Username of local account>` or `.\<Username of local account>` in **user name** then specify the password of your local account and click **Next**.

Advanced Authentication provides the following authenticators for logging in to Windows:

- "Authentication Agent" on page 178
- "Bluetooth" on page 179
- "Card" on page 180
- "Device Authentication" on page 181
- "Email OTP" on page 181
- "Emergency Password" on page 182
- "Facial Recognition" on page 183
- "Flex OTP" on page 183
- "FIDO2" on page 184
- "Fingerprint" on page 184
- "HOTP" on page 185
- "LDAP Password" on page 186

- "Out-of-Band" on page 186
- "Password" on page 186
- "PKI" on page 187
- "RADIUS Client" on page 188
- "Security Questions" on page 188
- "Smartphone" on page 189
- "SMS OTP" on page 190
- "Swisscom Mobile ID" on page 190
- "TOTP" on page 191
- "FIDO U2F" on page 191
- "Voice" on page 192
- "Voice OTP" on page 193
- "Windows Hello" on page 193

Authentication Agent

Authentication Agent enables you to perform multi-factor authentication on one computer to get authorized access to another computer, where it is not possible to display the user interface or connect any external authentication devices. You can install the Authentication Agent on a workstation or a laptop. When an authentication is initiated from a computer using Authentication Agent chain, the Authentication Agent on another computer prompts a restricted browser where you must perform authentication.

NOTE: You can install the Authentication Agent only on the Windows workstation.

IMPORTANT: If both the Windows Client and Authentication Agent are installed on the same workstation, the Authentication Agent is logged in automatically through the SSO feature. If the Windows Client is not installed, user must log in to the Authentication Agent manually.

Consider the following setup:

- Windows 1 is computer without the devices required for authentication and where the **Authentication Agent** chain is enabled.
- Windows 2 is Windows computer with the Authentication Agent installed and is connected with the devices used for authentication such as, FIDO U2F token and card reader.

To log in to Windows 1 using the Authentication Agent on Windows 2, perform the following steps:

1. Specify **User name** in Windows 1.
2. Click **Next** and select **Authentication Agent** from the **Chains** list.

   For more information about enabling the Authentication Agent chain in Windows computer, see Configuring to Enable the Authentication Agent Chain.
3. The Authentication Agent that is active on Windows 2 launches a restricted browser.

IMPORTANT: If a restricted browser is not launched automatically, place the cursor on the Authentication Agent icon in System tray and ensure that the agent is logged in. If the agent is not logged in, double click the Authentication Agent icon to log in.

The restricted browser prompts the login page. The user name that you have specified in the Windows 1 is set in the login page by default.

4 Click **Next**.

5 Select and authenticate the preferred chain to log in to Windows 1 in the restricted browser.

For more information, see Logging In to Authentication Agent for Windows.

6 After successful authentication in the restricted browser, you are logged in to the Windows 1 automatically.

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use the Bluetooth method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1 Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.

2 The Device Service detects your bluetooth device and authenticates.

If the paired bluetooth device is within the range, the bluetooth authentication is successful.

NOTE: If the administrator has set **Enable reaction on device removal** option to **ON** for Bluetooth method then the operating system automatically locks, if one of the following is true:

- The Bluetooth device is disabled.
- The Buletooth device is out of range.

Card

The Card method enables you to authenticate using the contactless smart card (with Card Serial Number). When you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.

NOTE: To use the Card method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate with the Card method, perform the following steps:

1. Ensure that the card reader is connected to your machine.
2. Tap your card on the reader or insert a smart card in the reader.

   If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

IMPORTANT: The Card method supports the `1:N` feature that indicates that Advanced Authentication automatically detects the user name. You can authenticate by pressing **CTRL+ALT+DEL** and then placing a card to the reader.

The following table describes the possible error messages along with the workaround for the Card authentication.

Table 10-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and try again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

IMPORTANT: An administrator can configure an automatic session lock or log off on card events. In such a scenario, you must perform one of the following:

- When **Tap&Go** is disabled, you must place your card on the reader during login. After login you can remove the card from the reader to lock the operating system or log off automatically.
- When **Tap&Go** is enabled, you must tap a card on the reader to log in and to lock, unlock, or log off.

Device Authentication

You can authenticate to Windows workstation using the Device Authentication method using one of the following:

- Using Trusted Platform Module (TPM) chip

  The TPM chip is a crypto-processor available in Windows workstation to achieve actions, such as generating, storing, and limiting the use of cryptographic keys. Device Authentication supports authentication to Windows workstation and makes use of information available in the chip to authenticate users.

- Non-TPM mode

  In this mode, a key pair is generated in the workstation during the enrollment process that is used for further authentication on the same workstation.

  NOTE: In non-TPM mode, ensure to enroll the Device Service method using the workstation where you would perform further authentication. Enrollment on one machine and authentication on another machine is not supported.

To authenticate with the Device Authentication method, perform the following steps:

1. Specify one of the following:
   - The TPM chip generated PIN
   - The enrolled PIN
2. Click **Next**.

   If the PIN matches with the TPM chip generated PIN or enrolled PIN, the Device Authentication is successful.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate with the Email method, perform the following steps:

1. Check your email. You will receive an email with an OTP.
2. Specify the OTP from Email in **Password**.

3 Click **Next**.

If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workaround for the Email OTP authentication.

Table 10-2 *Email authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate with the Emergency Password method, perform the following steps:

1 Specify the Emergency Password.

2 Click **Next**.

If the Emergency Password matches with the enrolled password, the Emergency Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Emergency Password authentication.

Table 10-3 *Emergency Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you will be successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate by using the Facial Recognition method, perform the following steps:

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error messages along with the workaround for the Facial Recognition authentication.

Table 10-4 *Facial Recognition authenticator - error messages*

Error	Possible Cause and Workaround
`Failed to open camera`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	There is a mismatch in the faces. You must present your face again for the authentication.
`Face service is not available`	Device Service is not available. Ensure that the Device Service is connected.

Flex OTP

The Flex OTP authenticator facilitates you to authenticate by using your otp password from any of HOTP, TOTP and Smartphone (Offline) authenticator. When you try to authenticate to any device, the OTP in the token is compared with the OTP generated in any of HOTP, TOTP and Smartphone (Offline) authenticators. If the OTPs are valid, you are authenticated successfully.

To authenticate using the Flex OTP method, perform the following steps:

1. Specify the One-Time Password from any of HOTP, TOTP and Smartphone (Offline) authenticators
2. If the password is valid, the Flex OTP authentication is successful.

FIDO2

The FIDO2 method facilitates you to use any FIDO compliant device either in-built with the system or connected through USB to register and authenticate to the Windows workstation. When you try to authenticate, FIDO compliant device and user gesture, such as a tap on the token and swipe fingerprint on the reader are validated.

NOTE: To use the FIDO2 method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the Advanced Authentication - Device Service guide.

NOTE: To use the FIDO2 method for authentication, install the Advanced Authentication Device Service 6.3.60028 or newer version.

To authenticate with the FIDO2 method, perform the following steps:

Ensure that the FIDO U2F token is connected to your workstation.

1. Perform the action associated to the device.

   For example, if you use the FIDO2 device, connect it to the computer, set the pin, and touch the device when you see a flash.

Fingerprint

The Fingerprint method enables you authenticate using your finger print. The fingerprint scanner captures the fingerprint. When you try to authenticate on an application, the recorded fingerprint is compared with the actual fingerprint. If the fingerprints match, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate with the Fingerprint method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the required device.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

NOTE: Ensure to enroll the required fingers that are highlighted on the **Add Fingerprint Authenticator** page.

The following table describes the possible error messages along with the workaround for the Fingerprint authentication.

Table 10-5 Fingerprint authenticator - error messages

Error	Possible Cause and Workaround
`Please connect a scanner`	The reader is not connected properly. Ensure that the reader is properly connected or try to connect it to a different USB slot.
`Mismatch`	There might be a mismatch in the fingerprints. Ensure that you are using the same fingerprint that was enrolled and try to authenticate again.
`<Your user name> has no authenticator for Fingerprint`	You have not enrolled for Fingerprint. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You can use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If both OTPs are identical, you are authenticated successfully.

To authenticate using the HOTP method, perform the following steps:

1. Specify the HOTP when using software token or connect the USB token, press button on the token.
2. Click **Next**.

   If the OTP on the token and the server generated OTP are identical, the HOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the HOTP authentication.

Table 10-6 HOTP authenticator - error messages

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try again.
`<Your user name> has no authenticator for HOTP`	You have not enrolled for the HOTP authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on any device, the specified password is compared with the actual password in the corporate directory. If the passwords match, you are authenticated successfully.

To authenticate using the LDAP Password method, perform the following steps:

1. Specify your domain password.
2. Click **Next**.

   If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect, an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Out-of-Band

The Out-of-band method facilitates you to authenticate using the push notification that is sent to the Out-of-band portal or OOB agent. When you initiate the authentication, a push notification is sent to the portal or agent. You can accept the request and get authenticated.

To authenticate by using the Out-of-band method, perform the following steps:

When you specify the chain number corresponding to the Out-of-band method, a message `Continue at https://<AdvancedAuthenticationServerdomainname>/oob/ui` is displayed on your computer.

1. Open the OOB agent installed on your mobile or navigate to the OOB portal.

   A push notification is displayed.

   NOTE: If the push notification does not appear after 5 seconds, tap the Refresh icon to view the push notification for the initiated authentication.

2. Tap **Accept**.

   If the response to authentication request is from a secured origin, the authentication is successful.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate using the Password method, perform the following steps:

1. Specify the password of your Advanced Authentication account.

2 Click **Next**.

If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Password authentication.

Table 10-7 *Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The password you have specified is incorrect. Specify a valid password and try to authenticate again.
`<Your user name> has no authenticator for Password`	You have not enrolled for the Password authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you to authenticate using any PKI device such as a contact card or USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on an application, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: To use the PKI method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the PKI method, perform the following steps:

1 Insert a card or plug the token to your machine.

2 Specify the PIN.

If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

IMPORTANT: The PKI method supports the `1:N` feature. The user name is detected automatically by the Advanced Authentication. You can authenticate by pressing **CTRL+ALT+DEL** and then plugging in your PKI device.

The following table describes the possible error messages along with the workaround for the PKI authentication.

Table 10-8 PKI authenticator - error messages

Error	Possible Cause and Workaround
`Wrong card`	The card you have used for authentication is incorrect. Try authenticating with another valid card or token. Enroll the authenticator again in the Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for PKI`	You have not enrolled for the PKI authenticator. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

NOTE: To log in to a computer using the PKI authenticator, you must place the card on the reader or connect token to the computer. After log in, you can remove the card from the reader or disconnect token to lock the computer automatically.

Advanced Authentication does not support the tapping of a card to lock or unlock a computer.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate using the Security Questions method, perform the following steps:

1. Specify the answer for the security question.
2. Click **Next**.
3. Repeat steps 1 to 2 for all the required security questions.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 10-9 *Security Questions authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The answer that you have provided is incorrect. Specify the correct answer and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled the Security Questions method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate using the Smartphone method, perform the following steps:

1. Open the smartphone app.

   Ensure that you have the internet connection on your phone.
2. Accept the authentication request.

To authenticate with the **Smartphone** method using the offline authentication, perform the following steps:

1. Open the Advanced Authentication smartphone app.
2. Click **Enrolled Authenticators** from Menu in the smartphone app.
3. Specify the OTP from the smartphone app in **Password**.
4. Click **Next.**

   If the OTP on the smartphone app matches with server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 10-10 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	You have declined the authentication request.
`Wrong TOTP password`	You are using offline authentication and specified an incorrect TOTP password, or the time on your smartphone is not synchronized.
`TOTP login is disabled`	You are using offline authentication and Geo-fencing is enabled. Contact the administrator for further assistance.
`<Your user name> has no authenticator for smartphone`	You have not enrolled the smartphone method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication.You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To perform authentication using the SMS OTP method, perform the following steps:

1. You will receive an SMS message with an OTP on your phone.
2. Specify the OTP from the SMS.
3. Click Next.

If you get the error `Cannot send OTP. User does not have a cell` phone, contact your system administrator to add your mobile phone number to the profile of the repository.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

To authenticate with the Swisscom Mobile ID method, perform the following steps:

1. Check your mobile phone.

   A request message is displayed on your mobile phone.
2. Accept the request.

   If the Mobile ID matches with the enrolled Mobile ID, the Swisscom Mobile ID authentication is successful.

NOTE: To authenticate with the Swisscom Mobile ID authenticator, you must activate the Mobile ID service of your Swisscom SIM card.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate using the TOTP method, perform the following steps:

1. Specify the TOTP from your hardware or software token.
2. Click **Next.**

   If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the TOTP authentication.

Table 10-11 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP that you have specified is incorrect. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for the TOTP authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

This authentication method facilitates you to connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token for authentication. When you try to authenticate on any device, token connected to the device is compared with the enrolled token. If the token details match, you are authenticated successfully.

TIP: To use the FIDO U2F method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate with the FIDO U2F method, perform the following steps:

Ensure that the FIDO U2F token is connected to your workstation.

A message `Please touch the flashing U2F device now` is displayed.

1. You will be able to view a blink on the token. Touch the token's button. If the token does not blink, reconnect your token.

NOTE: An administrator can configure an automatic session lock or log off on the U2F event. When a user returns to his workstation, the user needs to insert the U2F device into the computer and unlock the workstation.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 10-12 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token is incorrect. Repeat with another token, or re-enroll the authenticator in the Self-Service portal, or contact the helpdesk administrator.
`Connect a token`	Ensure that the token is connected to the workstation.
`<Your user name> has no authenticator for U2F`	You have not enrolled for the FIDO U2F authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`The token's counter is out of sync`	Ensure the server is available.

Voice

The Voice method initiates a call to your registered phone number. The phone call requests you to specify the PIN in the dial pad of your mobile to authenticate. When you try to authenticate on any device, the recorded PIN is compared with the actual PIN. If both PINs are identical, you are authenticated successfully.

To authenticate using the Voice method, perform the following steps:

1. Answer the phone call on your phone and listen to the request.
2. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short time frame. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

To authenticate using the Voice OTP method, perform the following steps:

1. Answer the phone call on your phone and listen to the voice OTP.
2. Specify the OTP in **Password**.
3. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint, facial recognition authentication and PIN to log in to Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint, facial recognition and PIN.

To authenticate using the Windows Hello, perform the following steps:

1. **For fingerprint authentication**: Ensure that a fingerprint reader is connected to the required device.

   1a Place your enrolled finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the fingerprint enrolled on Windows 10 operating system, Windows Hello authentication is successful.

2. **For facial recognition**: Ensure that an external camera is connected to your computer.

   NOTE: This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

   2a Present your face to the camera.

   If the face matches with the facial image enrolled on Windows 10 operating system, Windows Hello authentication is successful.

11 Logging In to Virtual Desktop Authentication Agent

The Virtual Desktop Authentication (VDA) agent allows you to perform multi-factor authentication and get authorized access to the following desktop virtualization client softwares where you can access applicable remote computer or application:

- VMware Horizon (formerly known as VMware View)
- Microsoft Remote Desktop
- Citrix XenApp or XenDesktop

To log in to Windows with Advanced Authentication, perform the following steps:

1. In command prompt, run one of the following command as per your requirement:
   - To launch **VDA Profiles List** window:

     ```
     cd C:/Program Files\NetIQ\Virtual Desktop Authentication
     AAA.VDA.Shell.exe/showProfiles
     ```
   - To launch the default VDA profile:

     ```
     cd C:/Program Files\NetIQ\Virtual Desktop
     Authentication\AAA.VDA.Shell.exe
     ```
2. Select the preferred profile and click **OK**.

   The authentication window appears.
3. Specify the user name and select an authentication chain from the list.
4. Authenticate with all authentication method(s) of the chain.

   A prompt to select category might appear, if you have enrolled an authenticator for more than one category.

The VDA agent supports in-line enrollment of Card and Password method. For more information, see In-Line Enrollment.

Advanced Authentication provides the following authenticators for logging in to VDA agent:

- "Bluetooth" on page 196
- "Card" on page 197
- "Email OTP" on page 199
- "Emergency Password" on page 199
- "Facial Recognition" on page 200
- "Fingerprint" on page 201
- "HOTP" on page 201
- "LDAP Password" on page 202
- "Password" on page 202

- “PKI” on page 203
- “RADIUS Client” on page 204
- “Security Questions” on page 204
- “Smartphone” on page 205
- “SMS OTP” on page 206
- “Swisscom Mobile ID” on page 206
- “TOTP” on page 207
- “FIDO U2F” on page 207
- “Voice” on page 208
- “Voice OTP” on page 209
- “Windows Hello” on page 209

Bluetooth

The Bluetooth method enables you to authenticate using any Bluetooth enabled device that is within the range. When you initiate authentication, the Advanced Authentication server searches for the enrolled Bluetooth device. If the enrolled device is within the range, you are authenticated successfully.

For example, Susanne, who is a doctor, attends many in-patients in the hospital. She accesses the computer located in each room to monitor and update the health status of the patient. In this case, Susane can specify her first-factor authentication details and use her Bluetooth enabled mobile phone to log in to the computer automatically when she is within range of a particular room. When she exits the room, she is logged out of that computer automatically.

NOTE: To use the Bluetooth method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the Bluetooth method, perform the following steps:

1. Ensure that Bluetooth is turned on in your device and is discoverable to the paired devices.
2. The Device Service detects your bluetooth device and authenticates.

   If the paired bluetooth device is within the range, the bluetooth authentication is successful.

NOTE: If the administrator has set **Enable reaction on device removal** option to **ON** for Bluetooth method then the operating system automatically locks, if one of the following is true:

- The Bluetooth device is disabled.
- The Buletooth device is out of range.s

Card

The Card method enables you to authenticate using the contactless smart card (with Card Serial Number). When you try to authenticate on any device, the recorded serial number of the card is compared with the actual serial number. If the card serial numbers are identical, you are authenticated successfully.

NOTE: To use the Card method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate with the Card method, perform the following steps:

1. Ensure that the card reader is connected to your machine.
2. Tap your card on the reader or insert a smart card in the reader.

   If the Card Serial Number in the card matches with enrolled card, the card authentication is successful.

IMPORTANT: The Card method supports the `1:N` feature that indicates that Advanced Authentication automatically detects the user name. You can authenticate by pressing **CTRL+ALT+DEL** and then placing a card to the reader.

The following table describes the possible error messages along with the workaround for the Card authentication.

Table 11-1 *Card authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong card`	The card placed on the reader is incorrect. Try again with another card or re-enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`Connect reader`	The reader is not connected properly. Try to connect it to a different USB slot and try again.
`<Your user name> has no authenticator for Card`	You have not enrolled the card method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

IMPORTANT: An administrator can configure an automatic session lock or log off on card events. In such a scenario, you must perform one of the following:

- When **Tap&Go** is disabled, you must place your card on the reader during login. After login you can remove the card from the reader to lock the operating system or log off automatically.
- When **Tap&Go** is enabled, you must tap a card on the reader to log in and to lock, unlock, or log off.

In-Line Enrollment

You can enroll the Card and Password authentication methods using the VDA agent and associate the enrolled methods to your account without logging in to the Self-Service portal. However, enrolled methods are listed under the **Enrolled Authenticators** section of Self-Service portal. The VDA agent supports in-line enrollment for the Card and Password methods when the methods are in the same chain.

To enroll the Card and Password methods using the VDA agent, perform the following steps:

1. In command prompt, run one of the following command as per your requirement:
   - To launch VDA Profiles List window:

     `cd C:/Program Files\NetIQ\Virtual Desktop Authentication`

     `AAA.VDA.Shell.exe/showProfiles`
   - To launch the default VDA profile:

     `AAA.VDA.Shell.exe`
2. (Conditional) If you have launched VDA Profiles List, select the preferred profile from the list.

   The **VDA Authentication** window appears.
3. Tap the card on the card reader.

   A message `The card is not found. Do you want to enroll it?` is displayed.
4. Click **Yes** to enroll the presented card.
5. Specify your user name and click **Next**.
6. Specify the LDAP password and click **Next**.

   A message `Card is enrolled` is displayed. The presented card is enrolled for your account.
7. Specify the password and confirm it then click **Next**.

   A message `The Password is not found. Do you want to enroll it?` is displayed.
8. Click **Yes** to enroll the specified password.

   A message `Password is enrolled` is displayed. The Password method is enrolled for your account.

Email OTP

The Email OTP method enables you to authenticate using the one-time password (OTP) that is sent to the registered email address. When you try to authenticate on any device, the server sends an email to the registered email address with the OTP. You can use this OTP for single authentication within a short time frame.

To authenticate with the Email method, perform the following steps:

1. Check your email. You will receive an email with an OTP.
2. Specify the OTP from Email in **Password**.
3. Click **Next**.

   If the OTP matches with the server generated OTP, the Email OTP authentication is successful.

The following table describes the possible error messages along with the workaround for the Email OTP authentication.

Table 11-2 *Email authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The specified OTP is incorrect or is expired. Specify a valid OTP within the time frame.
`Cannot send OTP. User does not have an email`	Your email address is not set in the profile of the repository. Contact your system administrator to add your email address to the profile.

Emergency Password

The Emergency Password method enables you to authenticate using a temporary password with the help of helpdesk administrator if you have lost a smart card or forgot your smart phone. The emergency password is valid for certain days and is set to 3 days by default. When you try to authenticate on any device, the submitted emergency password is compared with the enrolled password in the appliance. If the emergency passwords are identical, you are authenticated successfully.

To authenticate with the Emergency Password method, perform the following steps:

1. Specify the Emergency Password.
2. Click **Next**.

   If the Emergency Password matches with the enrolled password, the Emergency Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Emergency Password authentication.

Table 11-3 Emergency Password authenticator - error messages

Error	Possible Cause and Workaround
`Wrong password`	The specified emergency password is incorrect. Specify a valid emergency password and try to authenticate again.
`<Your user name> has no authenticator for Emergency Password`	You have not enrolled for Emergency Password method. Enroll the authenticator on the Self-Service portal or contact your helpdesk administrator.

Facial Recognition

The Facial Recognition method enables you to get automatically authenticated by presenting your face. You need to register your facial image using the web camera. When you try to authenticate on an application, the recorded image is compared with the actual image. If the images match, you will be successfully authenticated.

The Facial Recognition method works with both integrated and external web cameras.

NOTE: To use the Facial Recognition method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate by using the Facial Recognition method, perform the following steps:

1. Ensure that a camera is connected to your device.
2. Present your face to the camera.

   If your face matches with the enrolled face, the face authentication is successful.

The following table describes the possible error messages along with the workaround for the Facial Recognition authentication.

Table 11-4 Facial Recognition authenticator - error messages

Error	Possible Cause and Workaround
`Failed to open camera`	The camera is not connected properly. Check your camera settings and try again.
`Mismatch`	There is a mismatch in the faces. You must present your face again for the authentication.
`Face service is not available`	Device Service is not available. Ensure that the Device Service is connected.

Fingerprint

The Fingerprint method enables you authenticate using your finger print. The fingerprint scanner captures the fingerprint. When you try to authenticate on an application, the recorded fingerprint is compared with the actual fingerprint. If the fingerprints match, you are authenticated successfully.

NOTE: To use the Fingerprint method for authentication, you must install the Advanced Authentication Device Service. For more information on Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate with the Fingerprint method, perform the following steps:

1. Ensure that a fingerprint reader is connected to the required device.
2. Place your finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the enrolled fingerprint, the authentication is successful.

NOTE: Ensure to enroll the required fingers that are highlighted on the **Add Fingerprint Authenticator** page.

The following table describes the possible error messages along with the workaround for the Fingerprint authentication.

Table 11-5 *Fingerprint authenticator - error messages*

Error	Possible Cause and Workaround
`Please connect a scanner`	The reader is not connected properly. Ensure that the reader is properly connected or try to connect it to a different USB slot.
`Mismatch`	There might be a mismatch in the fingerprints. Ensure that you are using the same fingerprint that was enrolled and try to authenticate again.
`<Your user name> has no authenticator for Fingerprint`	You have not enrolled for Fingerprint. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

HOTP

HOTP is a counter-based one-time password. This method enables you to authenticate using the counter-based one-time password generated on the HOTP token. The counter on the token must be is in sync with the server. You can use generic HOTP tokens that adhere to RFC 4226. You can use the static secret key and three consequent OTP generated from the token to enroll. When you try to authenticate on any device, the OTP in the token is compared with the OTP generated in the server. If both OTPs are identical, you are authenticated successfully.

To authenticate using the HOTP method, perform the following steps:

1. Specify the HOTP when using software token or connect the USB token, press button on the token.
2. Click **Next**.

   If the OTP on the token and the server generated OTP are identical, the HOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the HOTP authentication.

Table 11-6 *HOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP you have provided is incorrect. Specify a valid OTP and try again.
`<Your user name> has no authenticator for HOTP`	You have not enrolled for the HOTP authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

LDAP Password

The LDAP password method enables you to authenticate using the password of your corporate account. When you try to authenticate on any device, the specified password is compared with the actual password in the corporate directory. If the passwords match, you are authenticated successfully.

To authenticate using the LDAP Password method, perform the following steps:

1. Specify your domain password.
2. Click **Next**.

   If the LDAP Password matches with the password on the directory, the LDAP Password authentication is successful.

If the specified domain password is incorrect, an error message `Invalid credentials` is displayed. Specify a valid password and try to authenticate again.

Password

The Password method enables you to authenticate using a secret string. The enrolled password is stored locally in the Advanced Authentication. When you try to authenticate on any device, the specified password is compared with the actual password. If the passwords are identical, you are authenticated successfully.

To authenticate using the Password method, perform the following steps:

1. Specify the password of your Advanced Authentication account.

2 Click **Next**.

If the password matches with the enrolled password, the Password authentication is successful.

The following table describes the possible error messages along with the workaround for the Password authentication.

Table 11-7 *Password authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong password`	The password you have specified is incorrect. Specify a valid password and try to authenticate again.
`<Your user name> has no authenticator for Password`	You have not enrolled for the Password authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

PKI

The PKI method enables you to authenticate using any PKI device such as a contact card or USB token that contains the digital certificate. The PKI reader validates the digital certificate and the identity of users. When you try to authenticate on an application, the certificate in the device is compared with the actual certificate. If the certificates match, you are authenticated successfully.

NOTE: To use the PKI method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the *Advanced Authentication - Device Service* guide.

To authenticate using the PKI method, perform the following steps:

1 Insert a card or plug the token to your machine.

2 Specify the PIN.

If the digital certificate in the card or token and enrolled certificate are identical, the PKI authentication is successful.

IMPORTANT: The PKI method supports the `1:N` feature. The user name is detected automatically by the Advanced Authentication. You can authenticate by pressing **CTRL+ALT+DEL** and then plugging in your PKI device.

The following table describes the possible error messages along with the workaround for the PKI authentication.

Table 11-8 PKI authenticator - error messages

Error	Possible Cause and Workaround
`Wrong card`	The card you have used for authentication is incorrect. Try authenticating with another valid card or token. Enroll the authenticator again in the Self-Service portal or contact your helpdesk administrator.
`Present card`	The PKI device is not connected properly. Try to connect it to a different USB slot and authenticate again.
`<Your user name> has no authenticator for PKI`	You have not enrolled for the PKI authenticator. You must enroll the authenticator in the Self-Service portal or contact the helpdesk administrator.
`No template for Card`	The card is not enrolled or you are trying to log in with the non-cached authenticator in the offline mode.

NOTE: To log in to a computer using the PKI authenticator, you must place the card on the reader or connect token to the computer. After log in, you can remove the card from the reader or disconnect token to lock the computer automatically.

Advanced Authentication does not support the tapping of a card to lock or unlock a computer.

RADIUS Client

The RADIUS Client method enables Advanced Authentication to forward the authentication request to a third-party RADIUS server. This can be any RADIUS server.

For example, you can use RADIUS Client as an authentication method for token solutions such as RSA or Vasco.

To authenticate using the RADIUS Client method, perform the following steps:

1. Specify the RADIUS password.
2. Click **Next.**

If you get an error `Wrong answer`, it could be an incorrect RADIUS password.

Security Questions

Security Questions method enables you to enroll answers to a pre-defined set of security questions. When you authenticate using security questions, Advanced Authentication prompts you the configured security questions or a subset of the security questions. You must answer the appropriate questions and based on the correctness of the answers, you are authenticated successfully.

To authenticate using the Security Questions method, perform the following steps:

1. Specify the answer for the security question.
2. Click **Next**.
3. Repeat steps 1 to 2 for all the required security questions.

The following table describes the possible error messages along with the workaround for the Security Questions authentication.

Table 11-9 *Security Questions authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The answer that you have provided is incorrect. Specify the correct answer and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled the Security Questions method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Smartphone

The Smartphone method facilitates you to enroll and authenticate using the smartphone app. When you initiate the authentication, a push notification is sent to the app. You can accept the request and get authenticated.

To authenticate using the Smartphone method, perform the following steps:

1. Open the smartphone app.

   Ensure that you have the internet connection on your phone.
2. Accept the authentication request.

To authenticate with the **Smartphone** method using the offline authentication, perform the following steps:

1. Open the Advanced Authentication smartphone app.
2. Click **Enrolled Authenticators** from Menu in the smartphone app.
3. Specify the OTP from the smartphone app in **Password**.
4. Click **Next.**

   If the OTP on the smartphone app matches with server generated OTP, the authentication is successful.

The following table describes the possible error messages along with the workaround for the Smartphone authentication.

Table 11-10 Smartphone authenticator - error messages

Error	Possible Cause and Workaround
`Auth rejected`	You have declined the authentication request.
`Wrong TOTP password`	You are using offline authentication and specified an incorrect TOTP password, or the time on your smartphone is not synchronized.
`TOTP login is disabled`	You are using offline authentication and Geo-fencing is enabled. Contact the administrator for further assistance.
`<Your user name> has no authenticator for smartphone`	You have not enrolled the smartphone method. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

SMS OTP

The SMS OTP method facilitates you to generate a single-use password or OTP and send it to the registered mobile number for authentication.You can use this OTP to authenticate within a short time frame.

NOTE: The OTP period is set to 120 seconds by default. An administrator has the privilege to change the OTP period.

To perform authentication using the SMS OTP method, perform the following steps:

1. You will receive an SMS message with an OTP on your phone.
2. Specify the OTP from the SMS.
3. Click Next.

If you get the error `Cannot send OTP. User does not have a cell` phone, contact your system administrator to add your mobile phone number to the profile of the repository.

Swisscom Mobile ID

The Swisscom Mobile ID authentication method uses the phone number from your profile of the repository. The authenticator sends an authentication request to your mobile phone. You need to accept it.

To authenticate with the Swisscom Mobile ID method, perform the following steps:

1. Check your mobile phone.

   A request message is displayed on your mobile phone.
2. Accept the request.

   If the Mobile ID matches with the enrolled Mobile ID, the Swisscom Mobile ID authentication is successful.

NOTE: To authenticate with the Swisscom Mobile ID authenticator, you must activate the Mobile ID service of your Swisscom SIM card.

TOTP

The TOTP method enables you to authenticate using the time-based-one-time password. TOTP is generated on the hardware token or the mobile app, such as NetIQ Advanced Authentication app or Google Authenticator app. The TOTP is valid for a short duration. This method uses a predefined period. The default value is 30 seconds.

To authenticate using the TOTP method, perform the following steps:

1. Specify the TOTP from your hardware or software token.
2. Click **Next.**

   If the OTP on the token matches with the server generated OTP, the TOTP authentication is successful.

The following table describes the possible error messages along with the workaround for the TOTP authentication.

Table 11-11 *TOTP authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong answer`	The OTP that you have specified is incorrect. Specify a valid OTP and try to authenticate again.
`<Your user name> has no authenticator for TOTP`	You have not enrolled for the TOTP authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

FIDO U2F

This authentication method facilitates you to connect the FIDO U2F compliant token to the computer or laptop and touch the flashing token for authentication. When you try to authenticate on any device, token connected to the device is compared with the enrolled token. If the token details match, you are authenticated successfully.

TIP: To use the FIDO U2F method for authentication, you must install the Advanced Authentication Device Service. For more information about the Device Service, see the "Advanced Authentication - Device Service" guide.

To authenticate with the FIDO U2F method, perform the following steps:

Ensure that the FIDO U2F token is connected to your workstation.

A message `Please touch the flashing U2F device now` is displayed.

1. You will be able to view a blink on the token. Touch the token's button. If the token does not blink, reconnect your token.

NOTE: An administrator can configure an automatic session lock or log off on the U2F event. When a user returns to his workstation, the user needs to insert the U2F device into the computer and unlock the workstation.

The following table describes the possible error messages along with the workaround for the FIDO U2F authentication.

Table 11-12 *FIDO U2F authenticator - error messages*

Error	Possible Cause and Workaround
`Wrong token. Try another one`	The token is incorrect. Repeat with another token, or re-enroll the authenticator in the Self-Service portal, or contact the helpdesk administrator.
`Connect a token`	Ensure that the token is connected to the workstation.
`<Your user name> has no authenticator for U2F`	You have not enrolled for the FIDO U2F authenticator. You must enroll the authenticator in the Self-Service portal or contact your helpdesk administrator.

Voice

The Voice method initiates a call to your registered phone number. The phone call requests you to specify the PIN in the dial pad of your mobile to authenticate. When you try to authenticate on any device, the recorded PIN is compared with the actual PIN. If both PINs are identical, you are authenticated successfully.

To authenticate using the Voice method, perform the following steps:

1. Answer the phone call on your phone and listen to the request.
2. Specify your PIN code followed by the hash symbol (#) in the dial pad of your mobile phone.

   If the PIN matches with enrolled PIN, the Voice authentication is successful.

Voice OTP

The Voice OTP method enables you to authenticate using the OTP that is sent through the phone call to your registered phone number. You can use this OTP for authentication within a short time frame. When you try to authenticate on any device, the specified OTP is compared with the OTP generated on the server. If both the OTPs are identical, you are authenticated successfully.

To authenticate using the Voice OTP method, perform the following steps:

1. Answer the phone call on your phone and listen to the voice OTP.
2. Specify the OTP in **Password**.
3. Click **Next.**

   If the OTP matches with the server generated OTP, the Voice OTP authentication is successful.

Windows Hello

The Windows Hello method facilitates you to use your Windows Hello fingerprint and facial recognition authentication to log in to Windows 10 operating system. Advanced Authentication supports the Windows Hello fingerprint and facial recognition.

To authenticate using the Windows Hello, perform the following steps:

1. **For fingerprint authentication**: Ensure that a fingerprint reader is connected to the required device.

   1a Place your enrolled finger on the reader when using a touch sensor or swipe your finger when using a swipe sensor.

   If the fingerprint matches with the fingerprint enrolled on Windows 10 operating system, Windows Hello authentication is successful.

2. **For facial recognition**: Ensure that an external camera is connected to your computer.

   NOTE: This method supports all the devices that Windows Hello works with. For example, the Windows Hello facial recognition works with only the infrared cameras. Therefore, the Advanced Authentication Windows Hello method also supports only the infrared camera for facial recognition.

   2a Present your face to the camera.

   If the face matches with the facial image enrolled on Windows 10 operating system, Windows Hello authentication is successful.