Knox E-FOTA On-Premise admin guide

Introduction

Knox E-FOTA On-Premise allows IT administrators to manage device firmware-over-the-air (FOTA) updates on their organization's network environment. With on-premises features that extend beyond its cloud counterpart, Knox E-FOTA On-Premise is a great FOTA management option for organizations that prioritize security and flexibility in their operations.

NOTE — This admin guide only discusses features unique to Knox E-FOTA On-Premise. For more information on general Knox E-FOTA features, see the [Knox E-FOTA admin guide](#).

Audience

This document is intended for **IT admins**. Learn how to set up the Knox E-FOTA On-Premise web portal, manage firmware versions, and enroll devices.

Key features

- **Multitenant support** – If your organization has multiple business units, IT admins can work within their respective workspaces to avoid unwanted interactions between units.
- **Firmware testing** – Use the Knox E-FOTA On-Premise console to track firmware versions, mark them as tested, or block them from being installed on devices.

Key benefits

Like Knox E-FOTA, Knox E-FOTA On-Premise provides these key benefits:

- **Schedule updates** – Prevent business interruptions by configuring OS updates to install outside of business hours.
- **Selectively update OS versions** – Choose a specific OS version to roll out to your devices to avoid potential interference with business app functions.
- **Force update target devices** – Ensure devices are always up-to-date with the latest security updates, regardless of user consent.
- **No user interactions** – Update device software without requiring user action, streamlining the device management process.

How it works

Knox E-FOTA On-Premise is comprised of three parts:

1. The web portal
2. The client app
3. The organization's network infrastructure

These three components interface to perform FOTA management in a containerized environment, isolated from the cloud. IT admins can log in to the web portal to enroll devices, create campaigns,

update policies, and schedule firmware downloads—all from the safety of an organization's in-house infrastructure.

Get started > Step 1: Download and install the agent app

First, obtain access to Knox E-FOTA On-Premise from a Samsung reseller. Once your account is granted access, it's time to install the Knox E-FOTA On-Premise agent app. Contact a Samsung technical support engineer to get new agent app versions.

There are three ways to install the app on your devices:

- Upload the package through the Knox E-FOTA On-Premise portal
  NOTE – Package upload is only supported if the Knox E-FOTA agent is already installed and running on your devices.
- Manually install the package
- Install the client through your EMM

Upload the package through the Knox E-FOTA On-Premise portal

If you want to automatically install the agent on your devices, do as follows:

1. Log in to the Knox E-FOTA On-Premise admin console. Ensure you're in the correct workspace, which you can verify in the upper-right corner of the console.
1. In the top right corner, click your username.
2. In the menu that's shown, click **Settings**.
3. The left navigation pane refreshes with a new set of tabs. Click **Agent**.
4. Click **ACTIONS** > **Upload Agent**.
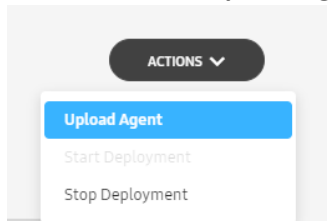
5. A popup is displayed prompting you to upload an agent file. Click **BROWSE** to launch your PC's file explorer and select the file. Then, click **UPLOAD**.

The **Agent** screen is then refreshed with the new agent information. Click **Actions** > **Start Deployment** to allow the devices in your workspace to download and install the new Knox E-FOTA On-Premise agent app.

Manually install the package

Alternatively, you can manually install the package on a device. This method is recommended if you want to test the agent before deploying it to the full device fleet.

Before you begin, ensure you have the following prepared:

- A PC running Windows 10
- Your organization's server, connected to the internet through Wi-Fi or mobile network
- A Samsung Knox-supported device, connected to the internet through a Wi-Fi or mobile network

Create a configuration file

On your PC, you first need to create a file called *efota_config*. In a text editor of your choice, enter the URL of your on-premise server and save it. Ensure that the file is not saved with a file extension.

Copy the configuration file to the device

There are two ways to get the configuration file on your device:

- Use your EMM to push the file to your device's **Downloads** folder, or
- Use your PC's file explorer to manually copy the file to your device's **Downloads** folder.

Then, connect your device to the PC through USB. In your PC's file explorer, locate your *efota_config* file and copy it to your device's **Downloads** folder. Ensure the Knox E-FOTA On-Premise APK you received from your local Samsung representative is also included in the **Downloads** folder.

Install the Knox E-FOTA On-Premise app

On the device, navigate to your **Downloads** folder and tap the Knox E-FOTA On-Premise APK to install it. After it's installed, tap the app icon to launch it.


Get started > Step 2: Add a license

After setting up the agent, the next step is to add a license. You should have obtained one from your Samsung representative along with your access to the Knox E-FOTA On-Premise service. If not, contact them to purchase or obtain one.

Once you have your license key prepared, do as follows:

1. In the top right corner of your Knox E-FOTA On-Premise console, click your username.
2. In the menu that's shown, click **Settings**.
3. The left navigation pane refreshes with a new set of tabs. Click **License**.

4. Click **UPLOAD LICENSE**.

License

UPLOAD LICENSE

Total Workspace (36): Total Devices (113)
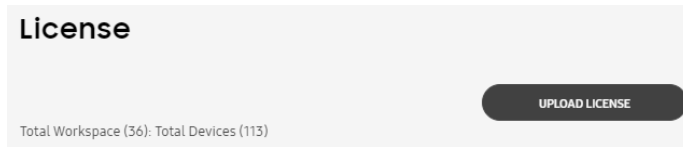
5. In the popup that's shown, click **BROWSER** to launch the file explorer, where you can locate your license file to upload. Select the file, then click **Open**.
6. Click **UPLOAD** to finish uploading the license.

The **License** screen then displays the details of your license.

Seats

Purchased	Assigned	Remaining
300	113	187

License Key		Type
hZiLKQrl		POC

Status	Start Date	End Date
● Active	2021-08-23	2022-08-24

Refer to Manage licenses to learn more.

Get started > Step 3: Add devices

Next, it's time to add devices to the console, which you can do by uploading a CSV file. Note that adding devices without enrolling them does not yet consume seats on your license.

To add devices to the Knox E-FOTA On-Premise console:

1. At the bottom of the left-hand navigation, click **Bulk Actions**.
2. Click **Upload Devices**.

UPLOAD DEVICES

3. Click **Download CSV template** and open the downloaded file.
4. In the first column, enter the IMEIs or serial numbers of the devices you want to upload. Enter one IMEI or serial number per row.

   NOTE—Do not include a header row, do not leave any rows empty, and do not duplicate IMEIs or serial numbers.

5. Save the file.
6. In the Knox E-FOTA On-Premise portal, click **Browse** and select your CSV file.
7. (Optional) Auto-enroll or assign the devices to a campaign. If you skip this step, you can enroll and assign devices at any time.

NOTE—Each device you enroll consumes one license seat.

Choose one of the following options:
- **Auto Enroll/Lock Firmware**—If you choose this option, select the license to be used.
- **Assign default campaign**—You can only assign devices if you already have a campaign. If you choose this option:
  - Select the campaign to assign the devices to.
  - Select the license to be used to enroll the devices.

STEP 2(OPTIONAL)
ENROLL/ASSIGN CAMPAIGN

Select a default method to assign to the devices uploaded by this reseller once they are manually or automatically approved.

◉ Auto Enroll/Lock Firmware
Devices will consume license seats, install agent and firmware will be locked.

| 2500791147Trial1620000157618026… ⌄ |

◯ Assign default campaign
Devices will consume license seats, install agent, firmware will be locked and campaign will be assigned.

| Select campaign ⌄ | 2500791147Trial1620000157618026… ⌄ |

8. Click **Submit**.

A message is shown confirming that the CSV file was uploaded. When your devices are verified and added to your inventory, they're added to the **Devices** tab with the status **Not enrolled**.


Get started > Step 4: Enroll devices

If you chose not to enroll devices when adding them in the last step, you can do that now by selecting specific devices for enrollment through the device list. Note that this action is only available for devices in **Not enrolled** and **Enrollment pending** states.
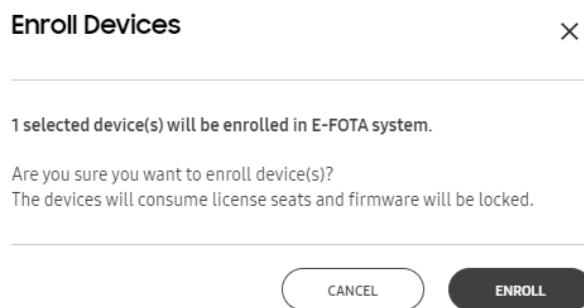
To enroll your devices:

2. In the left sidebar of your Knox E-FOTA On-Premise console, click **Devices**.
3. In the devices list, select the checkboxes next to the devices you want to enroll.

4. Click **ACTIONS**, then **Enroll Devices**.
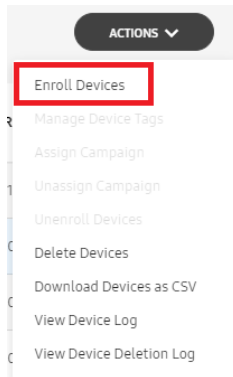
5. In the confirmation popup that appears, click **ENROLL.**

The next time the devices poll the server, they are then enrolled in Knox E-FOTA On-Premise, locking their firmware versions and consuming the corresponding number of license seats.

Create a campaign

Optionally, you can also create and assign your devices to a campaign. Here, you can configure download and installation settings, including scheduled install times, required device battery life, and network limitations.

While creating a campaign in Knox E-FOTA On-Premise is similar compared to Knox E-FOTA, the process is broken down into four steps instead:

1. **BASIC INFO** – Enter a campaign name and description.
2. **TARGET FIRMWARE** – Choose one or more target firmware versions that were uploaded in the **Versions** menu. These firmware versions are pushed to your devices once the campaign activates.
3. **POLICY** – Select policies for download network, minimum battery level, and allowed number of postponements.

    NOTE – Knox E-FOTA On-Premise does not provide the option to block factory resets or enter support contact details.
4. **SCHEDULE** – Select a start and end date for your campaign, as well as the window of time during which the firmware download and installation occur.

See the [Knox E-FOTA admin guide](#) for detailed steps on how to create a campaign.

NOTE – Ensure you instruct each device user to manually launch the Knox E-FOTA On-Premise app on their device to complete enrollment.


Settings > Overview

While Knox E-FOTA On-Premise has a similar feature set to its cloud counterpart, Knox E-FOTA, certain functionalities are extended to accommodate on-premise setups. These features are located in a separate menu in the Knox E-FOTA On-Premise console.

NOTE – Only super admins can access the **Settings** menu containing the on-premise features.

To navigate to the Knox E-FOTA On-Premise **Settings** menu:

1. Log in to the Knox E-FOTA On-Premise admin console.
2. In the top right corner, click your username.
3. In the menu that's shown, click **Settings**.
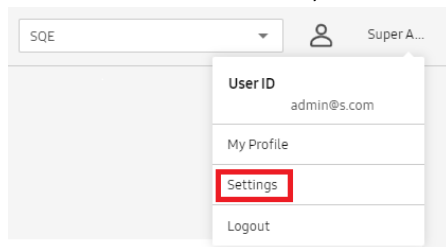
The console view updates to display a new sidebar with the following features exclusive to super admins:

- **Workspaces** – Manage separate admin consoles within one Knox E-FOTA On-Premise instance.
- **Users** – View and edit user roles and information.
- **License** – Upload licenses and view their information.
- **Versions** – Upload and view firmware versions.
- **Agent** – Manage Knox E-FOTA On-Premise app package versions.

To return to the main console view, click the **Knox E-FOTA** logo in the top left corner of the console.

Settings > Manage workspaces

Unique to Knox E-FOTA On-Premise, workspaces allow larger organizations to divide their teams or business units into separate admin consoles. You can easily switch between workspaces using the dropdown menu to the left of your username.

As a super admin, you can view and manage a list of your organization's workspaces.

1. Log in to the Knox E-FOTA On-Premise admin console.
2. In the top right corner, click your username.
3. In the menu that's shown, click **Settings**.
4. The left sidebar refreshes with a new set of tabs. Click **Workspaces**.

The following workspace actions are also available to you through the **ACTIONS** menu:

- **Add Workspace** – Select this option to launch a popup where you can enter the name and description for a new workspace. Click **Save** to confirm the creation.

- **Assign Users** – Select the checkbox next to a workspace in the list to enable this option in the menu. A modal appears with a list of all users in the Knox E-FOTA On-Premise instance, across all workspaces.

Select the checkboxes next to the users you want to assign to the workspace, then click **ASSIGN**.
- **Modify Workspace** - Launches a popup that allows you to edit the workspace name and description.
- **Delete Workspace** – Select this option and click **Delete** in the confirmation popup to delete a workspace.
- **Download Workspace as CSV** – Downloads a CSV file with the information of the selected workspaces.
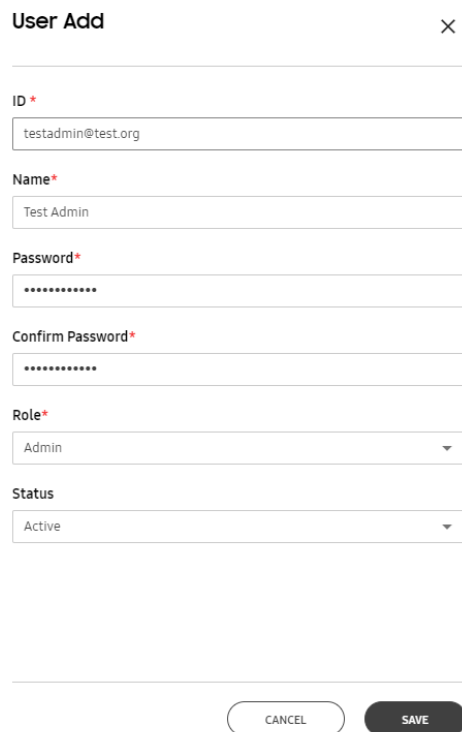
Settings > Add, edit, and delete users

With Knox E-FOTA On-Premise, super admins can manage users and their roles directly from the admin portal. To access the users list:

1. Log in to the Knox E-FOTA On-Premise admin console.
2. In the top right corner, click your username.
3. In the menu that's shown, click **Settings**.
4. The left navigation pane refreshes with a new set of tabs. Click **Users**.

The users list is then displayed, which includes the name, ID, role, status, and join date of each user.

Add a user

1. On the **Users** screen, click **ACTIONS** > **Add User**.
2. A popup is shown, prompting you to enter the user's details. Fill in the required fields as shown, then click **SAVE**.

After saving, the new user is added to the list. The user's role, assigned password and status can be changed at a later date.

Edit a user

1. On the **Users** screen, select the checkbox next to the user you want to modify.
2. Click **ACTIONS** > **Edit User**.

3. Select one of the available options:
   - **APPROVE** – If the user's status is **Pending**, click **APPROVE** to change their status to **Active** and grant them console access.
   - **PASSWORD MODIFY** – Set a new password for the user.
   - **EDIT** – Change the user's name, role, status, or time zone.

Delete a user

1. On the **Users** screen, select the checkbox to the user you want to delete.
2. Click **ACTIONS** > **Delete User**.
3. In the confirmation popup that appears, click **PROCEED**.

The user is then removed from the list and can no longer access the Knox E-FOTA On-Premise instance.

Settings > Manage licenses

Knox E-FOTA On-Premise uses special licenses that can only be obtained through a Samsung representative. For steps on how to add a license, see [Step 2: Add a license](#) in the **Get started** tutorial.

To view your license information:

1. Log in to the Knox E-FOTA On-Premise admin console.
2. In the top right corner, click your username.
3. In the menu that's shown, click **Settings**.
4. The left navigation pane refreshes with a new set of tabs. Click **License**.

The **License** page is displayed, with a list of the total workspaces and devices. As one license services all the workspaces within your Knox E-FOTA On-Premise instance, you can review this list to see how your license seats are distributed.

Underneath the workspace list, the Knox E-FOTA On-Premise license information is shown:

- **Purchased** – The total number of seats on your license.
- **Assigned** – The number of seats currently consumed by devices.
- **Remaining** – The number of seats available to be consumed by devices.

Your license key, its type, status, start date and expiry date are listed below the seat counts. You can also view your license expiration date in the welcome message on your **Dashboard.**

IMPORTANT —

To prevent unexpected workflow issues, please renew or extend your license before its expiry date. If your license expires:

- You can still sign in to the console and view or retrieve information, but you won't be able to perform any campaign-related actions.

- You can still delete and unenroll devices from the console. If you unenroll a device, it reconnects to the B2C FOTA server and continues to receive regular firmware updates.

Settings > Manage firmware versions

To better organize and track firmware versions, Knox E-FOTA On-Premise includes a versions list that allows you to record firmware test results and block certain versions.

To view the versions list:

1. Log in to the Knox E-FOTA On-Premise admin console.
2. In the top right corner, click your username.
3. In the menu that's shown, click **Settings**.
4. The left navigation pane refreshes with a new set of tabs. Click **Versions**.

The version list is then displayed with the following information:

- **TYPE –** Indicates whether the firmware is intended for deployment on devices (**user**), or for testing (**dummy**). See Create a test campaign to learn more.
- **OPEN DATE** – The date the firmware version was publicly released.
- **OS VERSION** – The Android OS version that corresponds to the firmware version.
- **SECURITY PATCH** – The date the security patch was publicly released.
- **FIRMWARE VERSION** – The full name of the firmware version. Click the name to open the firmware details, which includes a description and specific device information.

Above the list, you can filter by device **Model / Sales Code** or search by firmware version ID to quickly identify the firmware versions you need.

Click the **ACTIONS** menu to access more features:

- **Upload Versions** – Select new firmware versions to upload from your PC.
- **Mark as Tested** – Adds an icon to the **TEST RESULT** column to indicate that the firmware version was successfully tested for compatibility with business apps. When creating a campaign, selecting **Latest firmware (Tested)** as the target version allows you to update the latest tested firmware version from the **Versions** menu without modifying the campaign settings.
- **Unmark from Tested** – Removes the icon from the **TEST RESULT** column.
- **Add to Blocklist –** Locks the firmware version, preventing it from being downloaded and installed on devices.
- **Remove from Blocklist –** Unlocks the firmware version and allows it to be downloaded and installed on devices again.
- **Download Versions Scenario –** Downloads a JSON file with device version scenario information, containing a list of changes between the current firmware version and the target version. The file can then be sent to your Samsung representative to request new firmware versions.
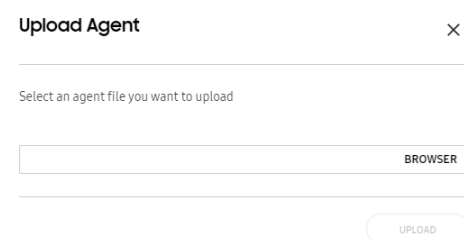

Settings > View the device agent version

The **Agent** tab provides an overview of the Knox E-FOTA On-Premise package version, or agent, that is to be or is currently deployed to your devices.

On this screen, the following details are shown:

- **Deployment** – The deployment status of the agent, either **Started** or **Stopped**.
- **Package Version** – The version number of the agent.
- **Package Name** – The full name of the agent.
- **Release Date** – The date the agent version was made publicly available.

Click the **Actions** menu to view more options:

- **Upload Agent** – Opens a popup to upload an agent file. Click **BROWSER** to launch your PC's file explorer and select the file. Then, click **UPLOAD**.

  The **Agent** screen is then refreshed with the new agent information.
- **Start Deployment** – If you select this action, the devices start downloading and installing the agent the next time they poll for updates.
- **Stop Deployment** – Select this action to stop the devices from downloading and installing the current agent version.

Features > Manage devices

Like Knox E-FOTA, Knox E-FOTA On-Premise lets you manage devices directly from the console. To view the device list:

1. Log in to the Knox E-FOTA On-Premise admin console. Ensure you're in the correct workspace, which you can verify in the upper-right corner of the console.
2. In the left sidebar, click **Devices**.

You're taken to a screen with a device list, which provides the following information:

- **DEVICE** – The IMEI, serial number, or MEID of the device.
- **ENROLLMENT** – The enrollment status of the device, which can be one of the following:
    - Enrollment pending
    - Enrolled
    - Unenrollment pending
    - Not enrolled

- **SALES CODE** – The country-specific code, or CSC, of the device.
- **FIRMWARE VERSION** – The OS version the device is currently running. Hover over the version to display the full name in a tooltip.
- **CAMPAIGN** – The Knox E-FOTA On-Premise campaign the device is currently assigned to. Hover over the campaign name to display the full name in a tooltip.
- **UPDATE STATUS** – The download and installation status of the new firmware.
- **MODIFIED** – The date the device information was last modified.
- **SOURCE** – The method through which the device was uploaded.

TIP – See the [Knox E-FOTA admin guide](#) for descriptions of device actions and statuses.

Features > Manage campaigns

The campaigns in Knox E-FOTA On-Premise have the same functionality as the campaigns in Knox E-FOTA. To view your campaigns:

1. Log in to the Knox E-FOTA On-Premise admin console. Ensure you're in the correct workspace, which you can verify in the upper-right corner of the console.
2. In the left sidebar, click **Campaigns**.

A list of campaigns is displayed with their statuses, assigned devices, repeat frequency, start and end dates, and last modified date. Click a campaign name to view its details or modify it.

If there are no available campaigns, click **CREATE CAMPAIGN** in the upper-right corner to create one.

TIP – See [Create a campaign](#) in the Knox E-FOTA admin guide for detailed instructions on how to create a campaign.

Select a campaign and Click the **ACTIONS** menu to access the following features:

- **Activate Campaign** – If the campaign has a **Deactivated** status, activates it again and starts the firmware rollout.
- **Deactivate Campaign** – If the campaign is currently active, deactivates it and stops the firmware rollout.
- **Modify Campaign** – Allows you to change the configured campaign policies, including the target firmware and campaign period.
- **Delete Campaign** – Deletes the selected campaign.

Features > Update firmware through Ethernet

With Knox E-FOTA On-Premise, you can also update the OS version of a device through a USB Ethernet connection. To do so, ensure you have the following:

1. A network connection
2. A LAN cable

3. A USB-C Ethernet adapter

First, you need to set up your campaign to support the Ethernet connection:

1. Log in to the Knox E-FOTA On-Premise admin portal. Ensure you're in the correct workspace, which you can verify in the upper-right corner of the console.
2. In the left sidebar, click **Campaigns** and create a new campaign or modify an existing one.
3. On the **Create campaign** or **Modify campaign** screen, in the **POLICY** tab and under **Download network**, select **Any (Wi-Fi or Mobile)**.
4. If creating a new campaign, click **CREATE,** or if you're modifying an existing one, click **UPDATE**.

After the device receives the new campaign details, do as follows:

1. Connect the LAN cable to the WI-FI access point and the USB-C Ethernet adapter.
2. Plug the USB-C Ethernet adapter into the device.

A notification appears on the device confirming the Ethernet connection, and it can now download and install the OS update according to the campaign policy.

Features > View the activity log

The activity log displays a list of activities that were performed in the admin portal. Use these logged events to troubleshoot issues and track user actions.

To view the activity log:

1. Log in to the Knox E-FOTA On-Premise admin portal. Ensure you're in the correct workspace, which you can verify in the upper-right corner of the console.
2. In the left navigation, click **Activity Log**.
3. Filter the list as needed by doing any of the following:
   - Click **Show all** and select **Last 7 days** or **Last 30 days**.
   - Filter the activity log by **Name** (of the admin), **Category**, **Event**, or a combination of those.
   - Sort the list by **Date**.
   - Enter a keyword in the search bar.
4. To download the full activity log, click **DOWNLOAD AS CSV** in the upper-right corner of the screen.

Release notes > Knox E-FOTA On-Premise 2Q 2021 release notes

Support for firmware updates through Ethernet connection

This Knox E-FOTA On-Premise v1.0.1.2 release adds a new feature that allows IT admins to update the firmware of devices through a USB Ethernet connection. This feature requires the use of a LAN cable and a USB-C Ethernet adapter.

See [Update firmware through Ethernet](#) for more details.

Release notes > Knox E-FOTA On-Premise 3Q 2021 release notes

Support for Redhat Enterprise Linux 8

This Knox E-FOTA On-Premise v1.0.1.3 release adds support for Redhat Enterprise Linux (RHEL) 8. This allows a wider range of support for RHEL from version 8 onwards. RHEL 8 offers container tools to support containerized applications, while also providing support across hardware architectures and environments.

Release notes > Knox E-FOTA On-Premise 2Q 2022 release notes

Updates to password hash algorithm

Previously, Knox E-FOTA On-Premises used the [bcrypt](#) password hash algorithm.

Starting with this release, passwords are now hashed with the [PBKDF2](#) algorithm to offer more flexible password security measures for high-security enterprises.

Benefits of the PBKDF2 algorithm include:

- Longer salt length and key length — 128 bits or higher

- Higher key iteration count — 10,000 or higher

- Lightweight pseudorandom function (PRF) — HMAC-SHA256 or HMAC-SHA512

Password length configuration

To comply with enterprise security regulations, Samsung installation engineers can now set a minimum and maximum length for user passwords. By default, the minimum password length is set to 8 characters, and the maximum is set to 12. The minimum password length that an installation engineer can set is 8–20 characters. The maximum length can be 12–30 characters.

IMPORTANT — Existing user passwords are not affected by this change. However, when an old password is updated, the new password must conform to the current policy.