OMRON

Data Flow Controller

DX-series

Web UI

Operation Manual

DX100-0010

CPU Unit

V242-E1-02

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Data Flow Controller DX Series Web UI Operation Manual

None

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1. Introduction

This manual describes how to operate Data Flow Controller DX Series Web UI. By utilizing
Data Flow Controller, it is possible to collect data from equipment on the manufacturing floor and integrate it with other systems.

1.1 Intended Audience

This manual is intended for the following users.

- Those who manage this Controller
- Those who actually configure and operate this Controller

1.2 Safety Precautions

The following functions allow changes to this Controller’s network settings and system information. As a result, these changes may affect the behavior of installed applications and connected equipment.
Before using these functions, ensure that you thoroughly consider and verify any equipment impact.

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2. Initial Setup Procedure

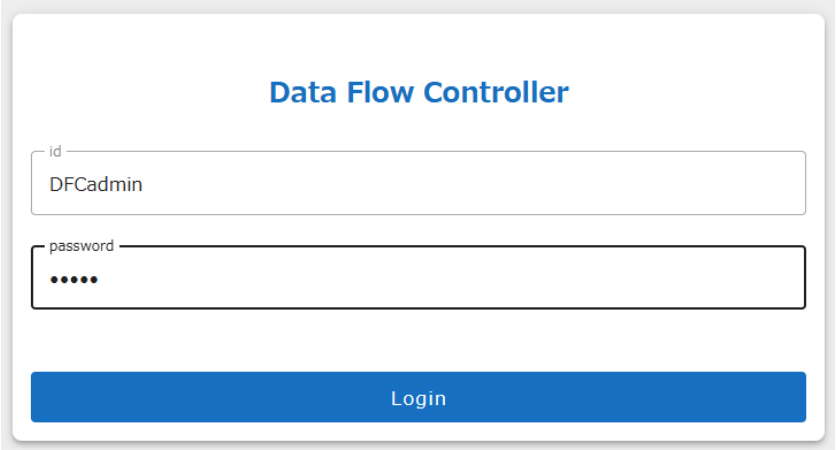
This section describes the initial setup procedure for introducing Data Flow Controller.

2.1 First Login

DFCadmin is the user registered by default in Data Flow Controller. The default set values for the DFCadmin user are as follows.

Item	Description
Login ID	DFCadmin
Permissions	Administrator
Password	omron

1. On the login screen, enter DFCadmin for id and omron for password, and press Login.



2.2 Initial Setup

After the first login, configure the settings on the initial setup screen.
The initial setup items are as follows.

Item	Description
Activate	Enter the activation code. for activating the product.
Change Initial Password	Change the password of the default user.
System Time Settings	Set the system time of the Controller.

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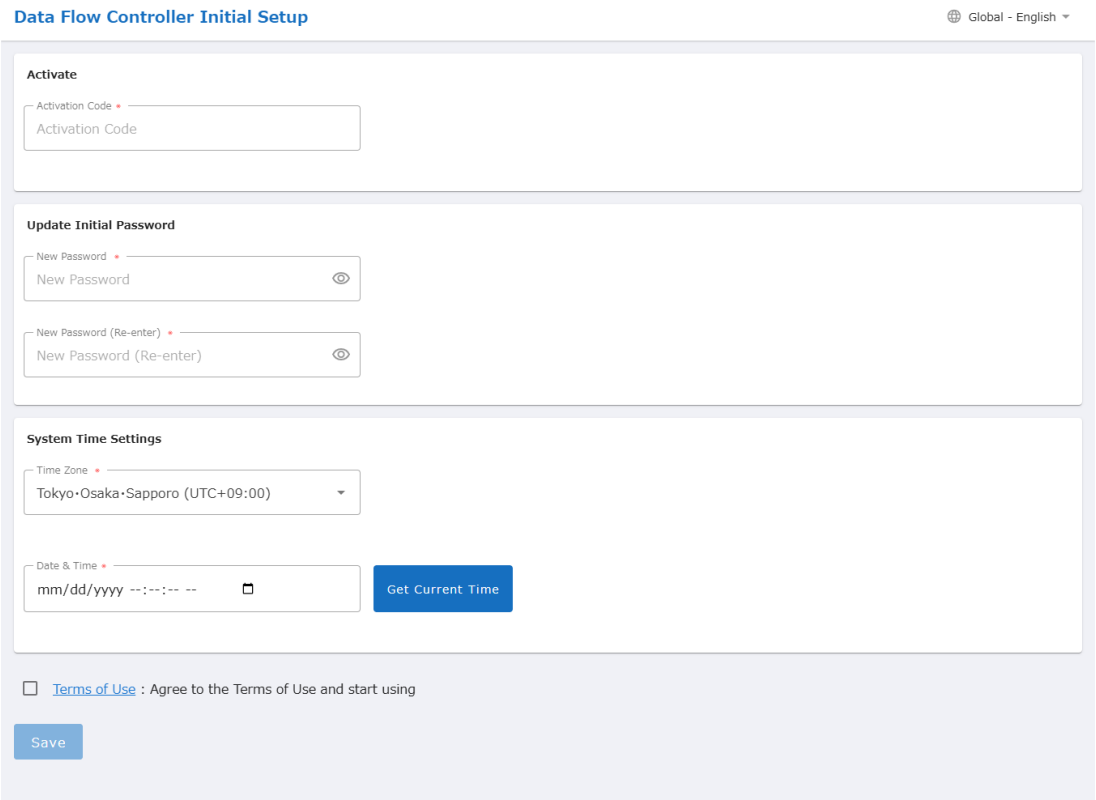
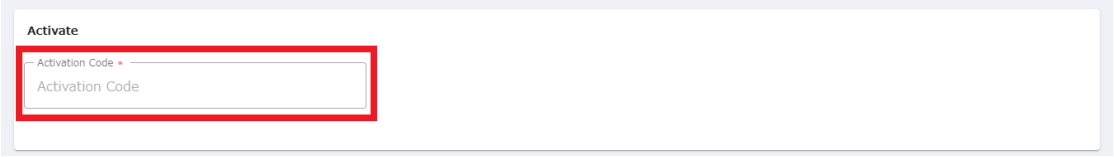


2.2.1 Activate

Activate the product.

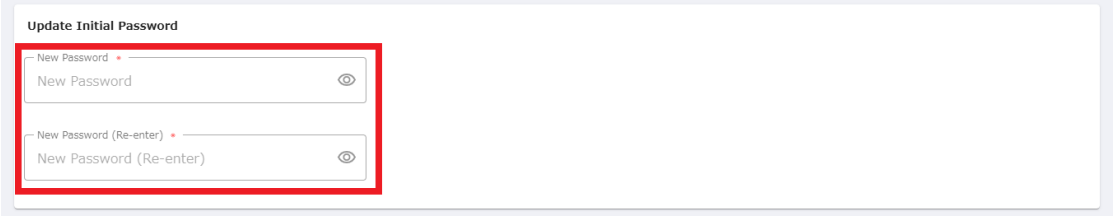
1. In the Serial No field under Activate, enter the serial No.



2.2.2 Change Initial Password

Change the DFCadmin user’s password from the default set value.

1. In the New Password and New Password (re-enter) fields under Update Initial Password, enter a desired password different from the one used during the first login.



2.2.3 System Time Settings

Set the system time.

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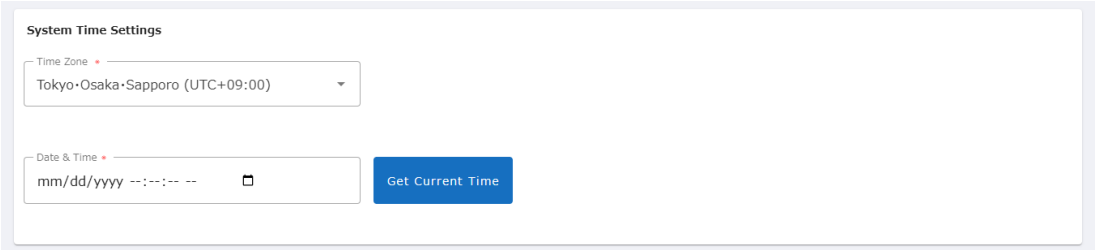
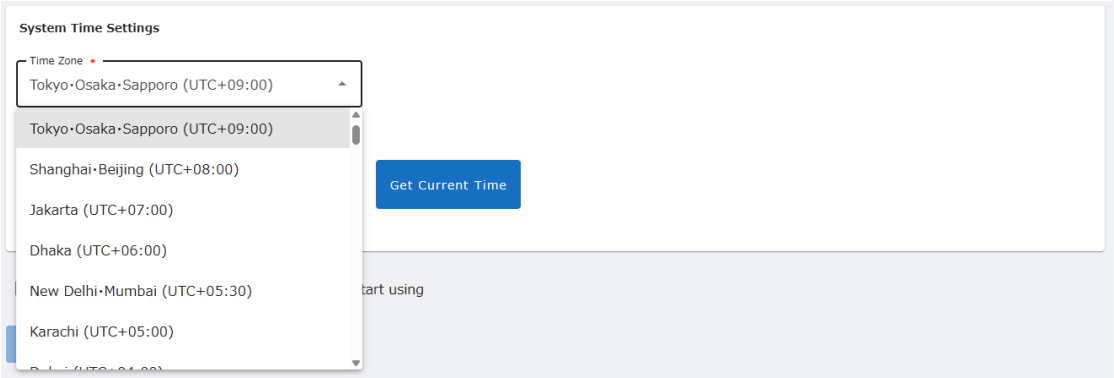


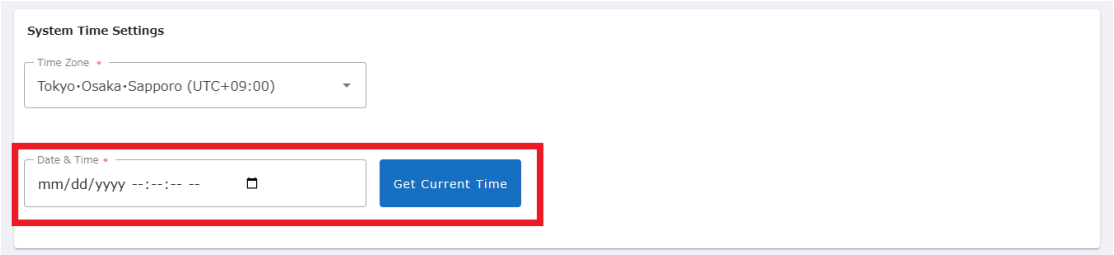
Select Time Zone

1. Select the desired time zone from Time Zone in the System Time Settings field.



SET TIME MANUALLY

1. Enter the system time in Date & Time.
2. By pressing the Get Current Time button, you can set the current date and time in Date & Time.



2.2.4 Save Initial Setup

1. After reviewing the Terms of Use, check the Agree to the terms of use and start using box.
2. Press the Save button.

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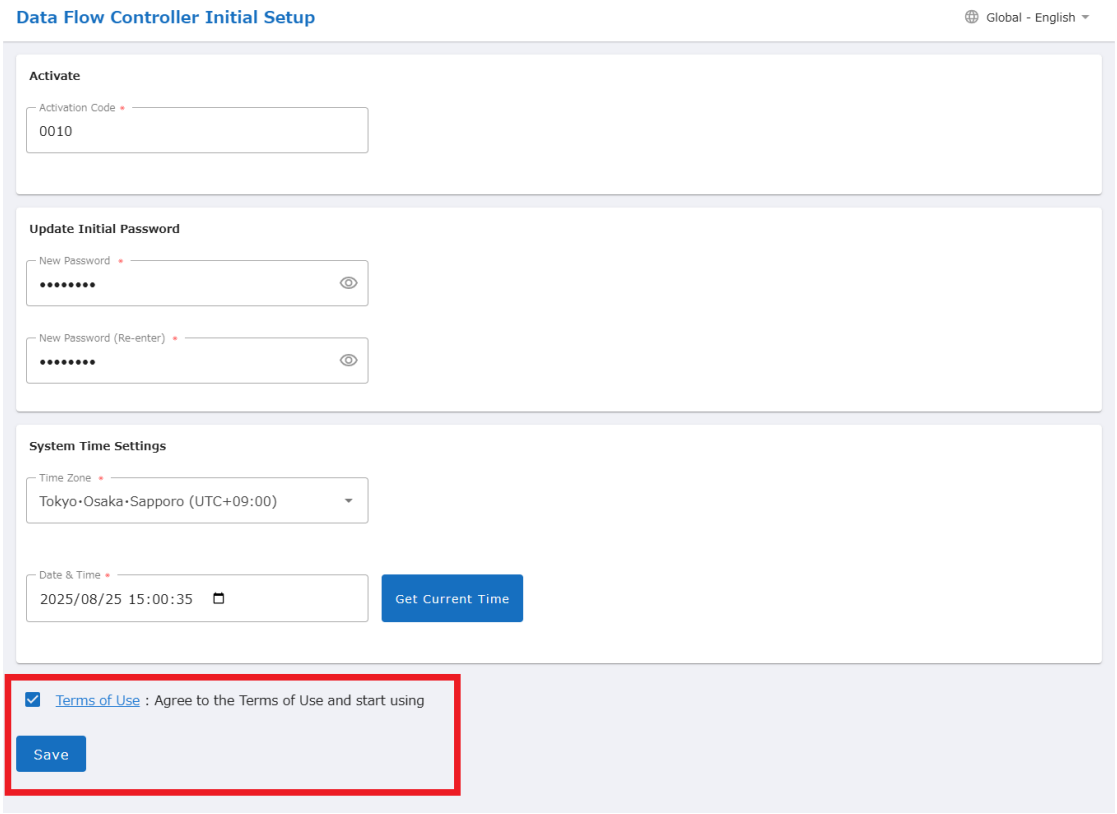
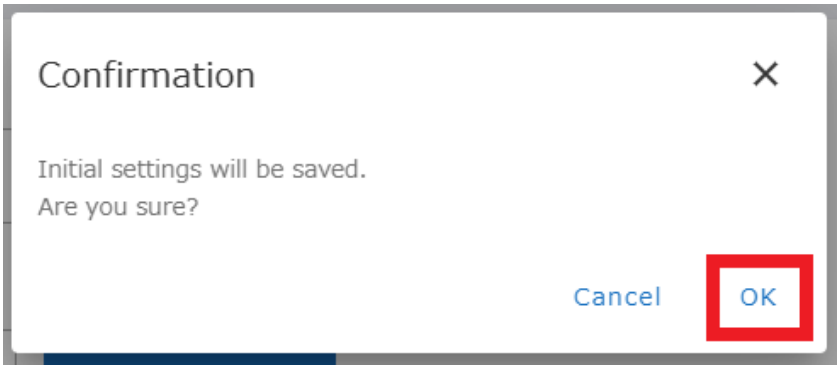
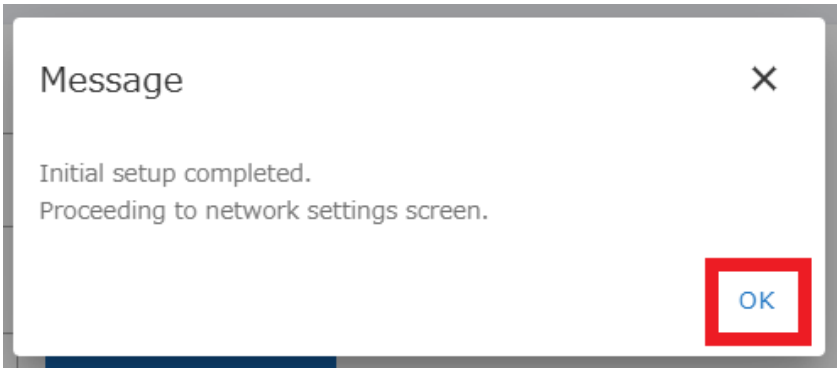


3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.



5. You will be navigated to the Network Settings screen. Refer to Network Settings and configure the network settings for this Controller.

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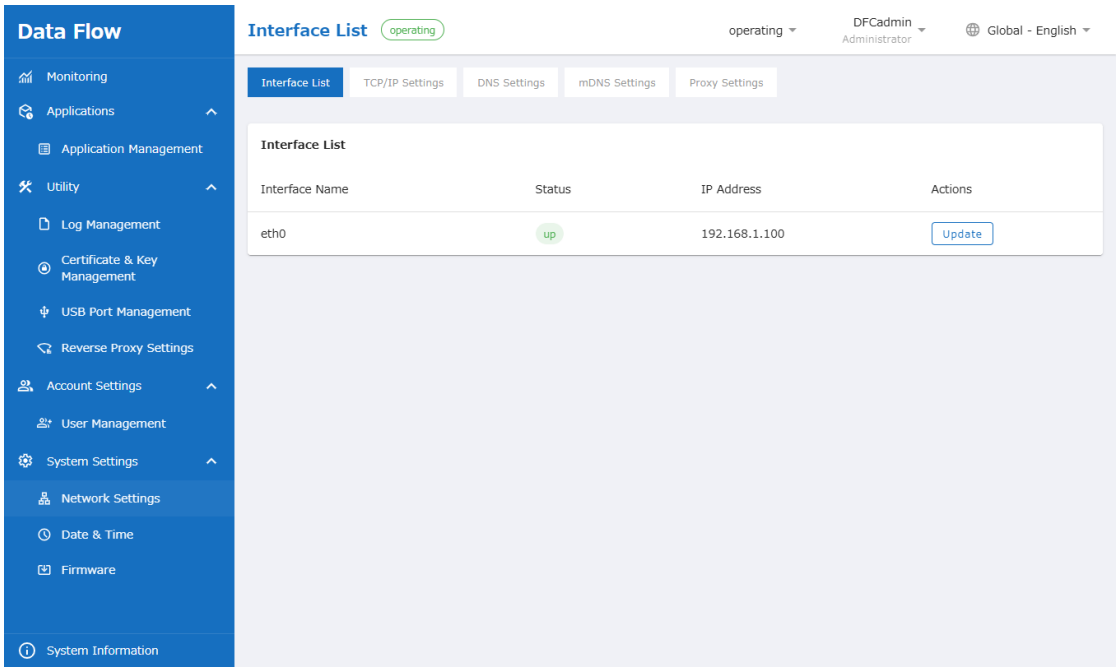

Note

After completing the initial setup, the Controller operates in setup mode.
setup is the mode for changing the settings of the Controller. It is not the mode for running applications.

To run applications, you need to change the operating mode to operating mode.
To change to operating mode, refer to Mode Settings and change the operating mode.

Alternatively, by restarting, it will start in operating mode from the next time onward.
To restart, refer to Restart and perform the restart.

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3. Description of Various Functions

3.1 Description of Various Functions

This section describes various functions.

The contents are as follows.

1. Overview of Web UI Functions
2. Mode Settings
3. Monitoring
4. Application Management
5. Utility Management
6. Account Management
7. System Settings
8. System Information
9. Shutdown Management
10. REST API

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3.2 Overview of Web UI Functions

This section describes the overview of the Web UI.

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3.2.1 Web UI Functions List

The Web UI provides the screen of Data Flow Controller that the user operates.
The Web UI provides the following functions.

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Item	Description
Mode Settings	Provides the following functions to set the operating mode of Data Flow Controller. • Displaying the operating mode • Setting the operating mode Refer to Mode Settings for details.
Monitoring	You can monitor the load status of Data Flow Controller. Provides the following functions for reviewing the SpeeDBee Synapse/Grafana/dashboard generator settings and determining the USB memory replacement timing. • Viewing the CPU, memory, and network usage • Viewing the storage usage status Refer to Monitoring for details.
Application Management	Provides the following functions for managing applications. • Viewing the application information • Viewing the application logs Refer to Application Management for details.
Utility Management	Provides the following functions necessary for system operation. • Viewing the logs • Managing the USB memory for application data storage • Managing the certificates and keys for enhanced security, and configuring TLS for reverse proxy using them Refer to Utility Management for details.
Account Management	Provides the following functions for managing user accounts. • Adding/Deleting user accounts • Changing user account roles • Resetting user account passwords Refer to Account Management for details.
System Settings	System Settings provides the following functions. • Configuring the network settings • Setting the time • Updating the firmware Refer to System Settings for details.
System Information	Provides the following information related to Data Flow Controller. • Production Information • System Information • License Information Refer to System Information for details.
Shutdown Management	Shutdown Management provides the following functions. • System shutdown • Restart Refer to Shutdown Management for details.
REST API	Provides the following functions for operating Data Flow Controller from an external system. • REST API Refer to REST API for details.

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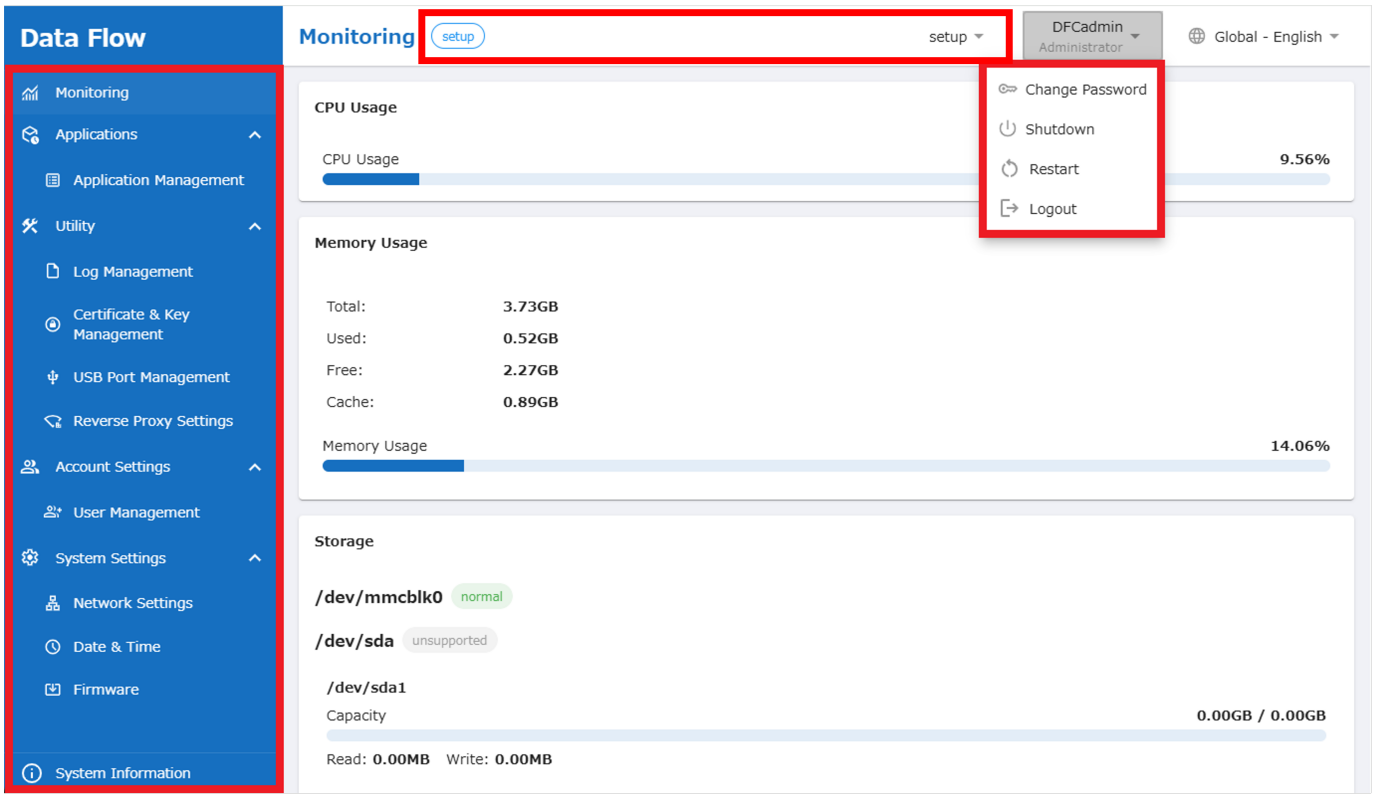

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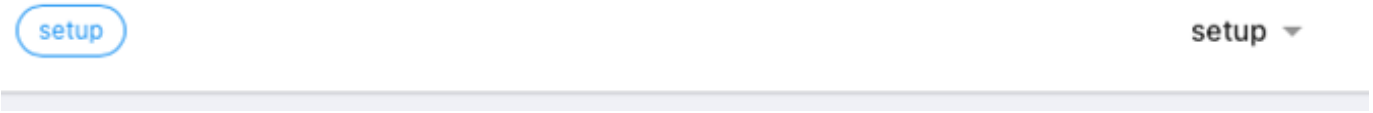
3.3 Mode Settings

This section describes the mode settings.
The displayed items are as follows.

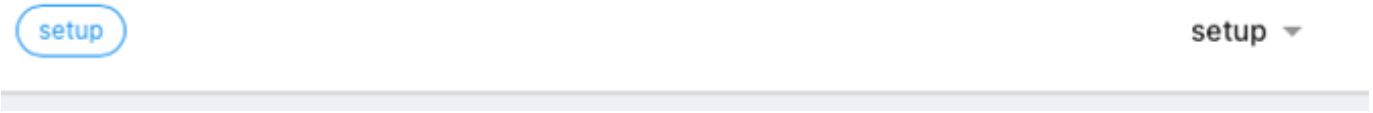
Item	Description
Mode Display	Displays the current operating mode.
Mode Setting	Sets the operating mode.



3.3.1 Mode Display

Displays the operating mode of the controller.
The displayed items are as follows.

Item	Description
setup	The setup state.
operating	The operating state. Indicates that the application is running.



3.3.2 Mode Setting

Sets the operating mode of the controller.

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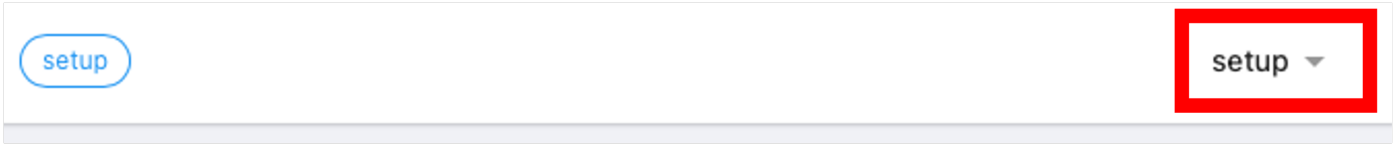
Mode Setting Method

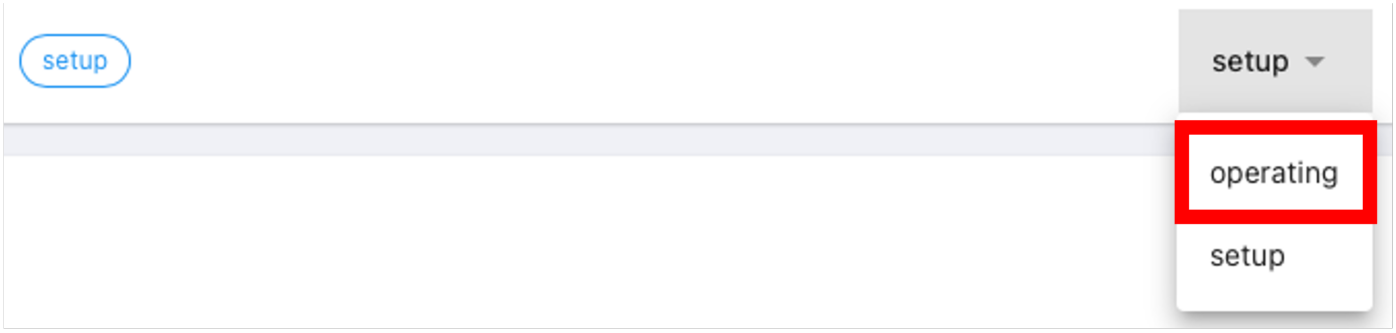
Follow these steps to set the operating mode.

1. Press the Mode Setting button displayed on the right side of the header.



2. From the list of displayed items, select the mode you want to set.

*In this example, the mode is being changed from setup to operating.



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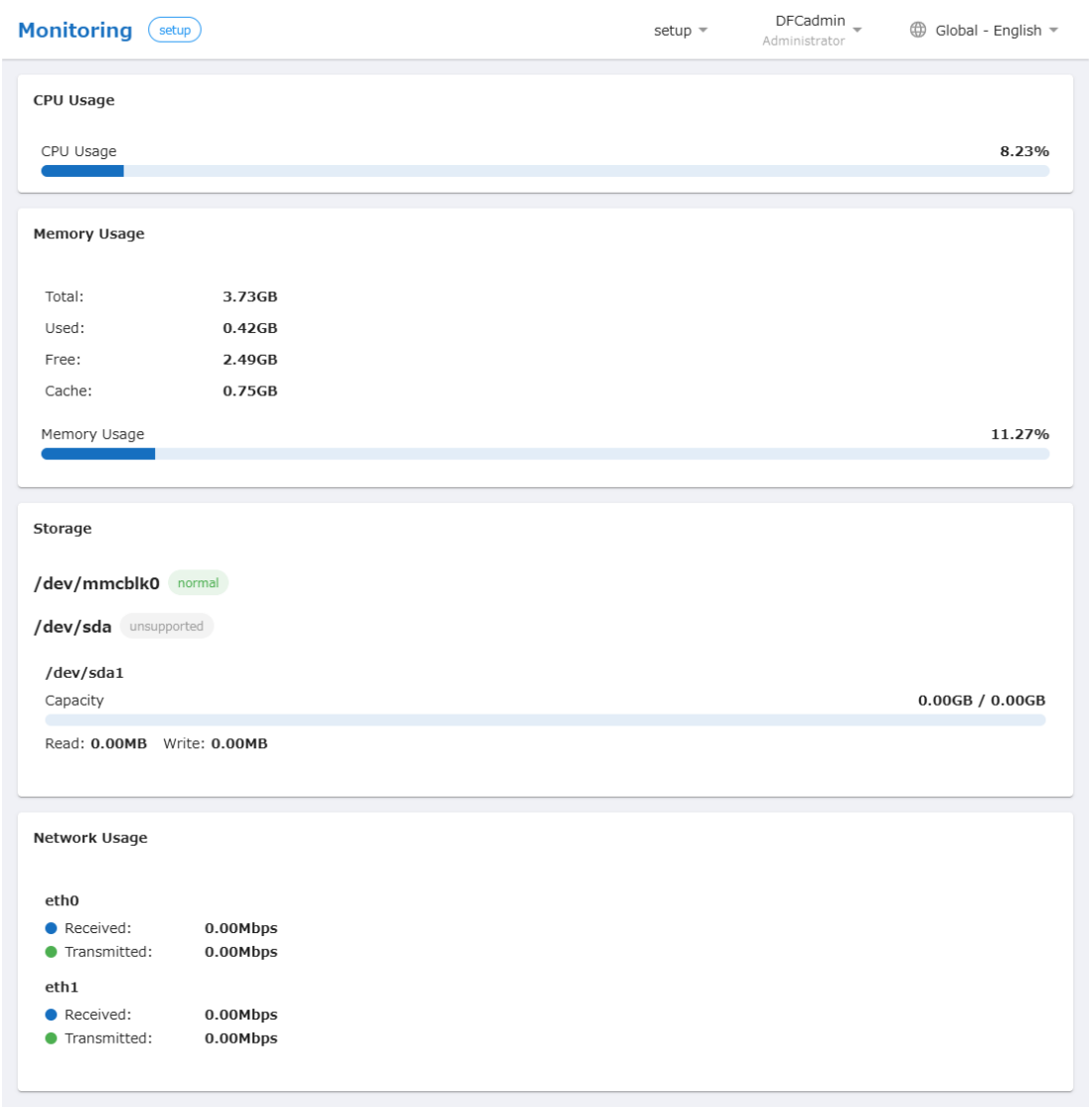
3.4 Monitoring

This section describes the monitoring.
Monitoring items are retrieved every 5 seconds and displayed on the screen.
The monitoring items are as follows.

Item	Description
CPU Usage	Displays the CPU usage status of the Controller.
Memory Usage	Displays the memory usage status of the Controller.
Storage	Displays the storage usage status of the Controller.
Network Usage	Displays the network usage status of the Controller.



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3.4.1 CPU Usage

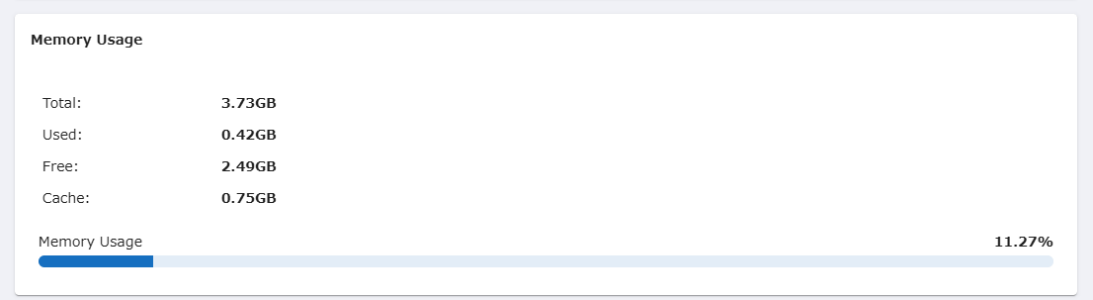
The following items can be monitored in the CPU usage display area.

Item	Description
CPU Usage	Displays the CPU usage as a percentage and as a bar graph.

3.4.2 Memory Usage

The following items can be monitored in the memory usage display area.

Item	Description
Total	Displays the total memory capacity.
Used	Displays the used memory capacity.
Free	Displays the free memory capacity.
Cache	Displays the memory cache usage.
Memory Usage	Displays the memory usage as a percentage and as a bar graph.



3.4.3 Storage

The following items can be monitored per disk or partition in the storage display area.

Item	Description
Health Status	Displays the Health status of the embedded ROM.
Capacity	Displays the usage and capacity of the target partition, and shows the capacity as a bar graph.
Read	Displays the read speed of the target partition.
Write	Displays the write speed of the target partition.

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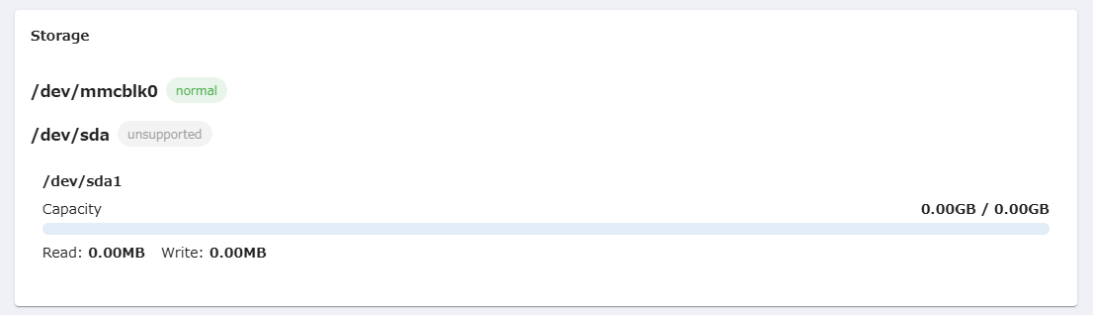
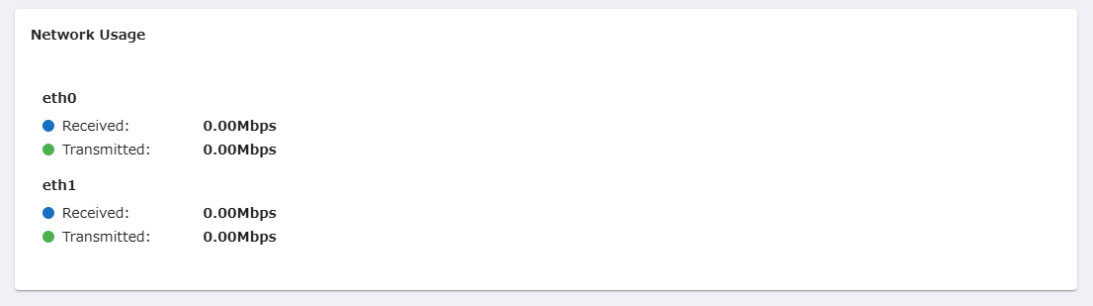


3.4.4 Network Usage

The following items can be monitored per physical interface in the network usage display area.

Item	Description
Received	Displays the receive speed of the target interface.
Transmitted	Displays the transmit speed of the target interface.



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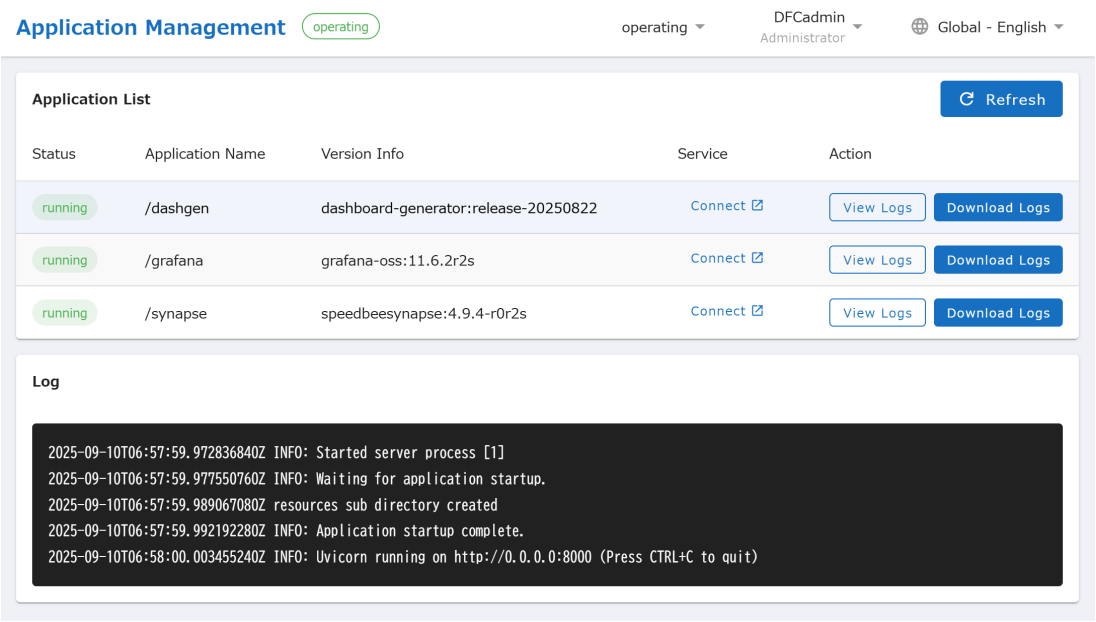
3.5 Application Management

This section describes the application management.
The displayed items are as follows.

Item	Description
Application List	Displays a list of applications provided on the Controller.
Log Management	Display and download application logs.



3.5.1 Application List

Displays a list of applications provided on this Controller.
The displayed items are as follows.

Item	Description
Refresh button	Operation button to refresh and re-display the application list
Status	Displays the operating status.
Application Name	Displays the application name.
Version Information	Displays the version information.
Service	Connect link
Action	View Logs button, Download Logs button

Pressing the Connect link button opens a new browser tab for accessing the corresponding application.
Pressing the View Logs button displays the target application log in the log display area. Pressing the Download Logs button downloads the target application log file.

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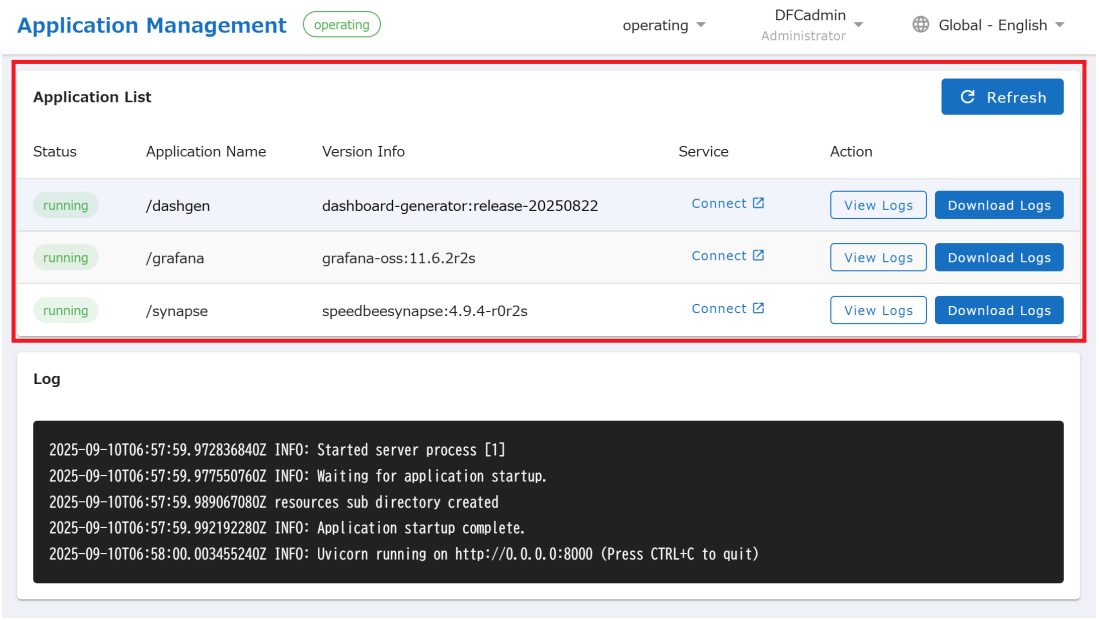
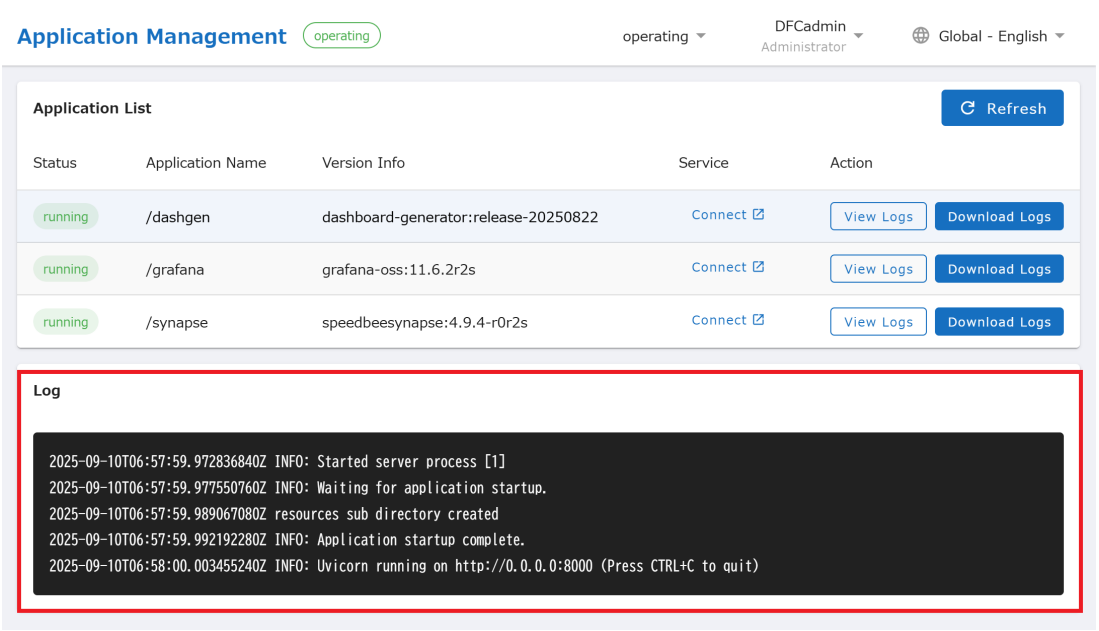


3.5.2 Log Management

Displays the logs of the application selected from the Application List.

Item	Description
Log display area	Displays the contents of application logs.



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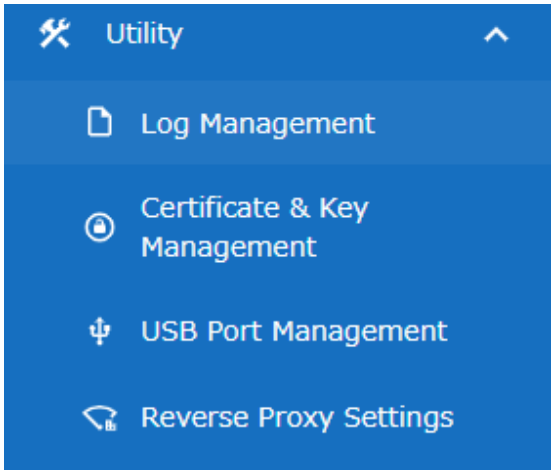
3.6 Utility Management

This section describes the utility management.
The configurable items are as follows.

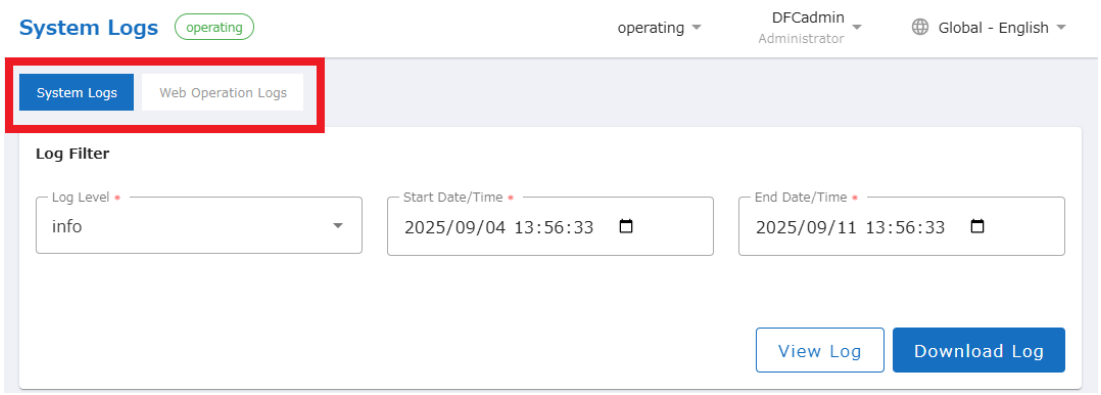
Item	Description
Log Management	Manage the logs of this Controller.
Certificate & Key Management	Manage certificates and private keys for reverse proxy.
USB Port Settings	Manage the USB ports of this Controller.
Reverse Proxy Settings	Configure the TLS settings of the reverse proxy of this Controller.



3.6.1 Log Management

Manage the logs of this Controller. The target management logs are as follows.

Item	Description
System Logs	Configure system log rotation settings and acquires logs.
Operation Logs	Acquires operation logs.



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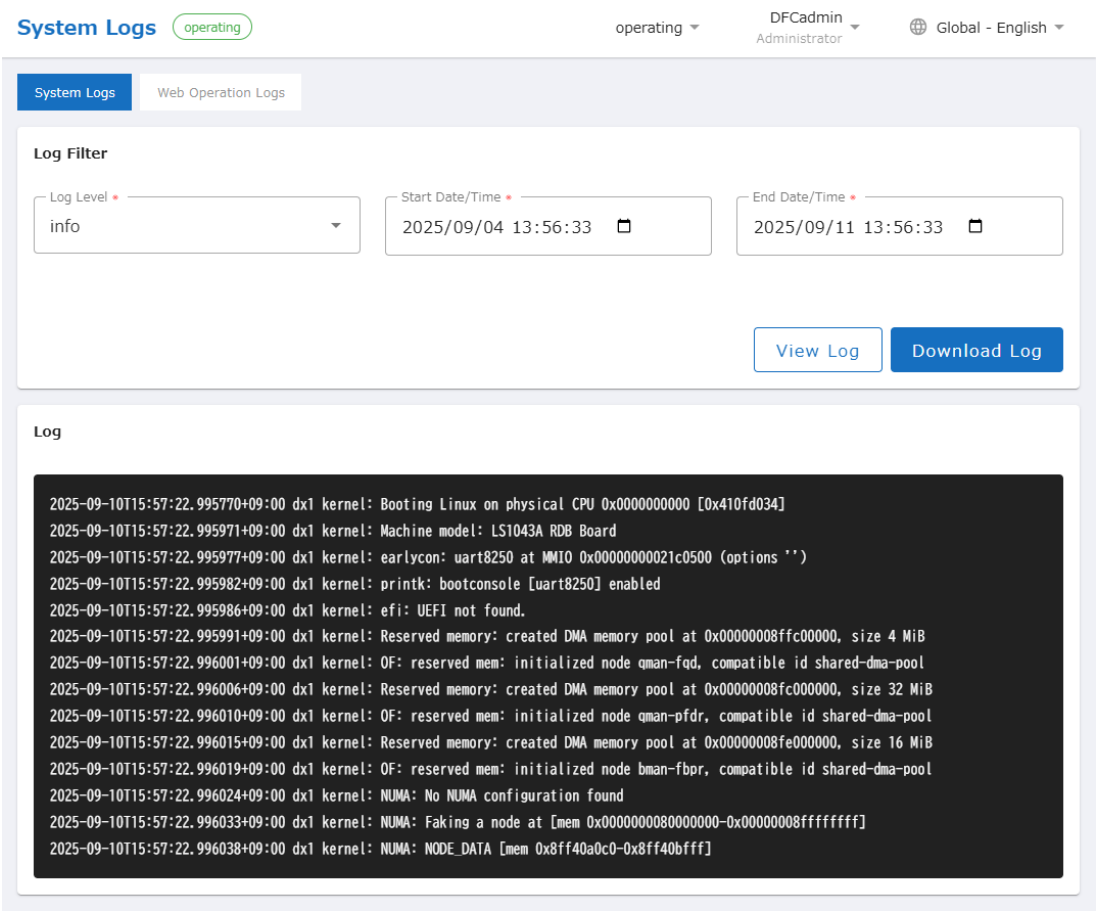
System Logs

Manage the system logs. The log setting items are as follows.

Item	Description
Log Filter	Performs filtering for acquiring system logs. View and download the acquired logs.
Log display area	This is a display area for viewing system logs.



LOG FILTER

Performs filtering for acquiring system logs. The setting items are as follows.

Item	Description
Log Level	Pulldown for selecting the log level of logs to acquire
Start Date/Time	From date of the log file to acquire
End Date/Time	To date of the log file to acquire
View Log button	Operation button to display the target log in the log display area
Download Log button	Operation button to download the log file

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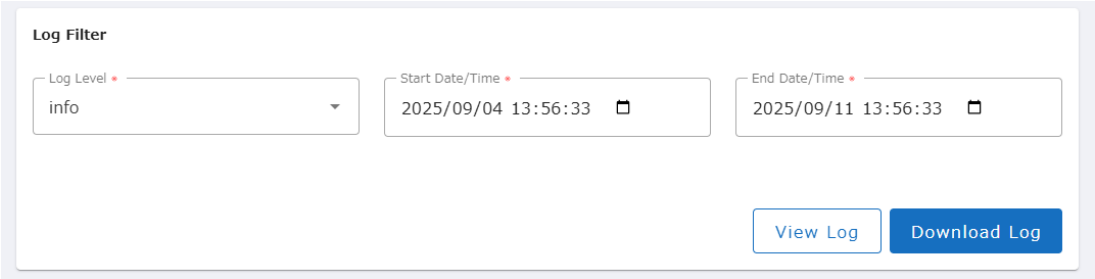
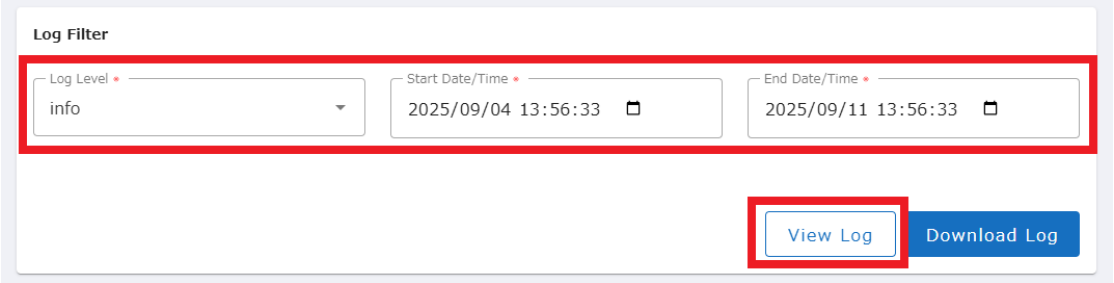


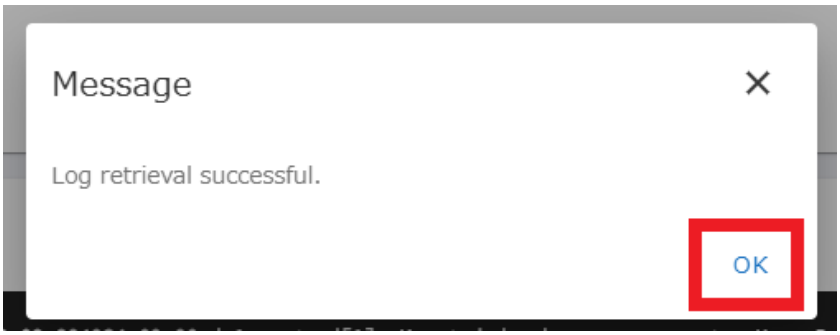
VIEW LOG

You can view system logs by the following procedure.

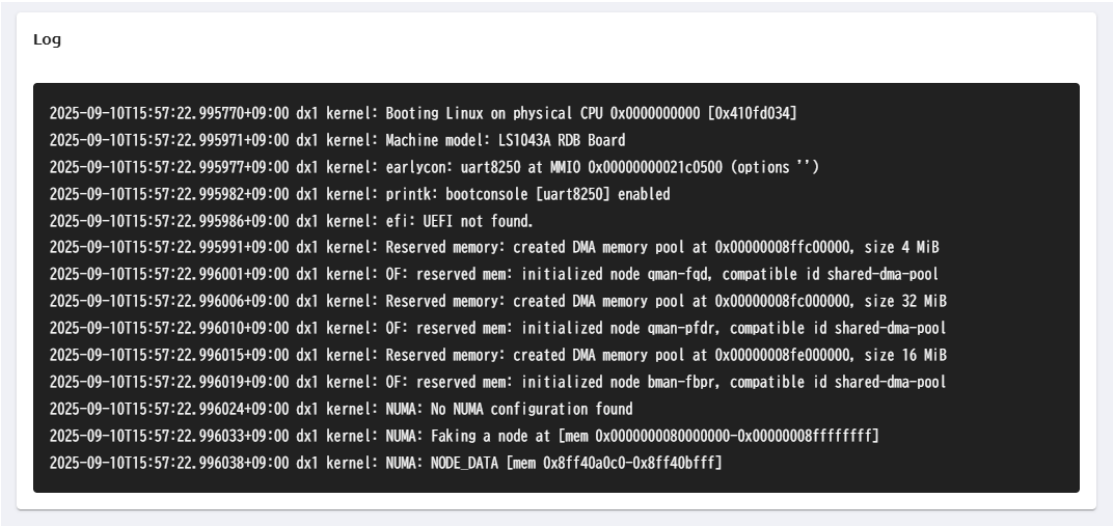
1. Enter all values for log level, start date/time, and end date/time.
   After entering them, press the View Log button.



2. In the message dialog, press the OK button.



3. Check the contents of the log file in the Log display area.



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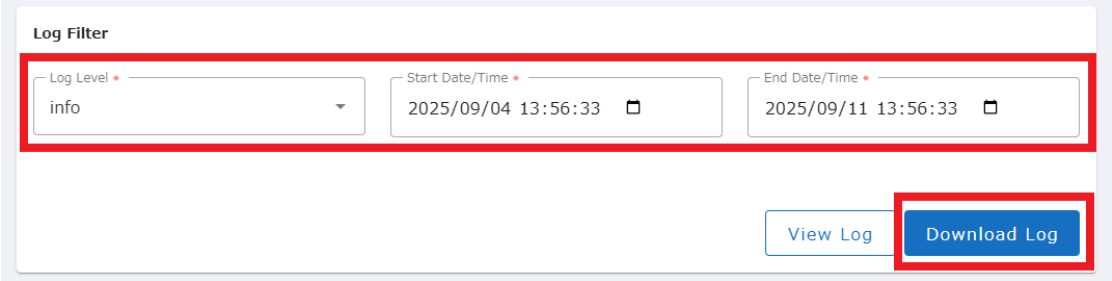
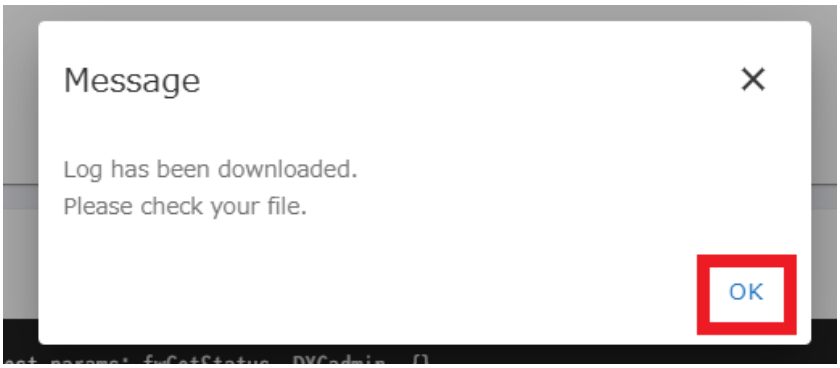
DOWNLOAD LOG

You can download system logs by the following procedure.

1. Enter all values for log level, start date/time, and end date/time.
   After entering them, press the Download Log button.



2. In the message dialog, press the OK button.



3. Confirm that the target log file has been downloaded.

Operation Logs

Manage the operation logs.
The log setting items are as follows.

Item	Description
Log Filter	Performs filtering for acquiring operation logs. View and download the acquired logs.
Log display area	This is a display area for viewing operation logs.

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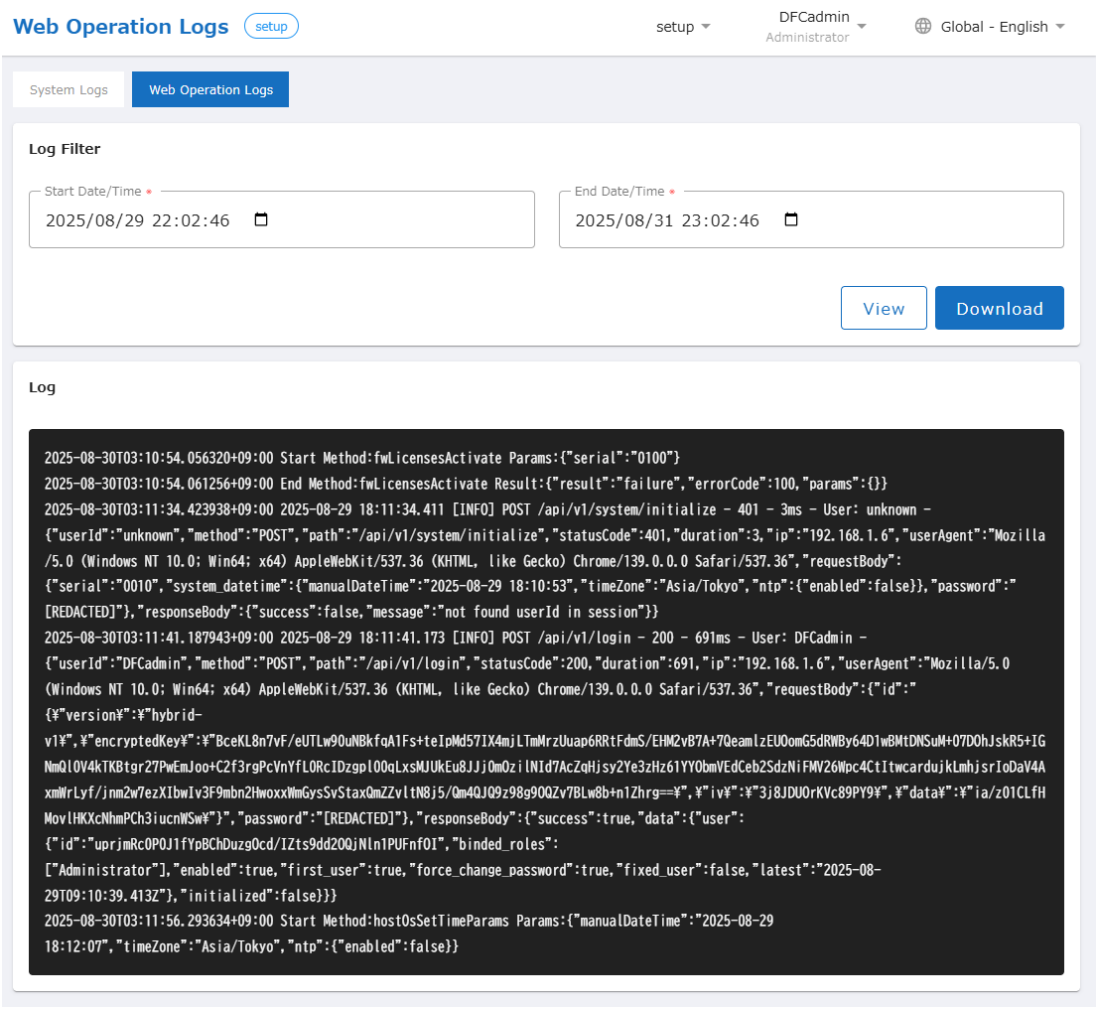
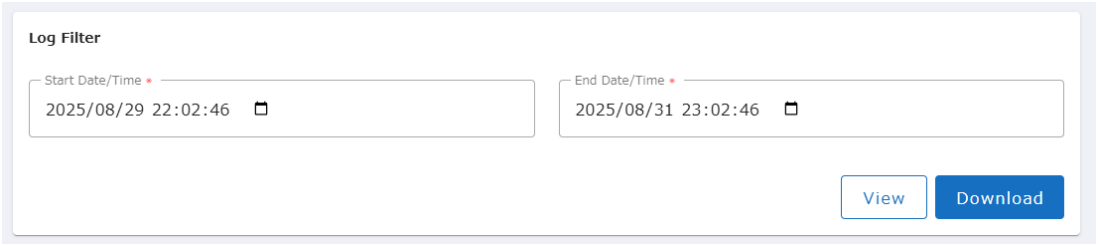


LOG FILTER

Performs filtering for acquiring operation log files. The setting items are as follows.

Item	Description
Start Date/Time	From date of the log file to acquire
End Date/Time	To date of the log file to acquire
View Log button	Operation button to display the target log in the log display area
Download Log button	Operation button to download the log file



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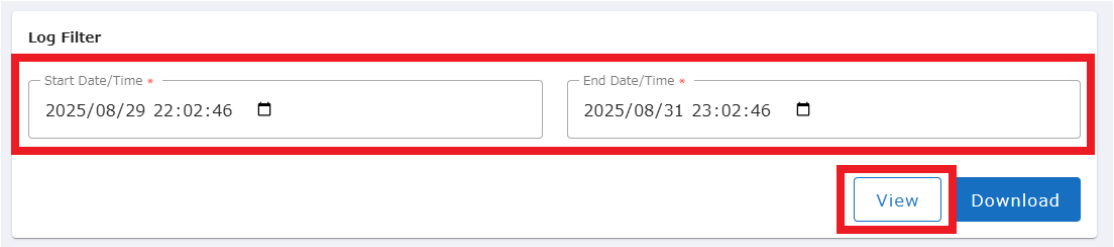
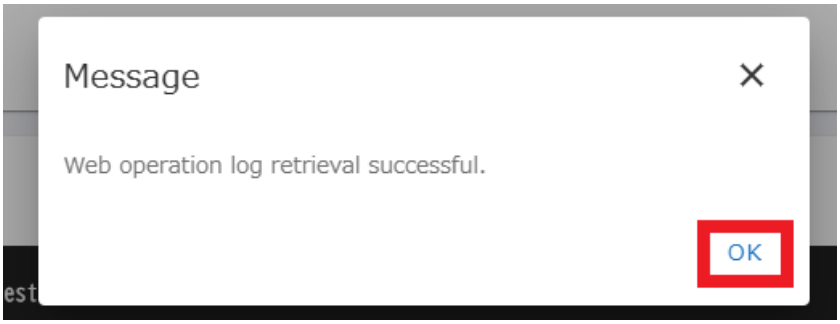
VIEW LOG

You can view operation logs by the following procedure.

1. Enter all values for start date/time, and end date/time.
   After entering them, press the View Log button.



2. In the message dialog, press the OK button.



3. Check the contents of the log file in the Log display area.

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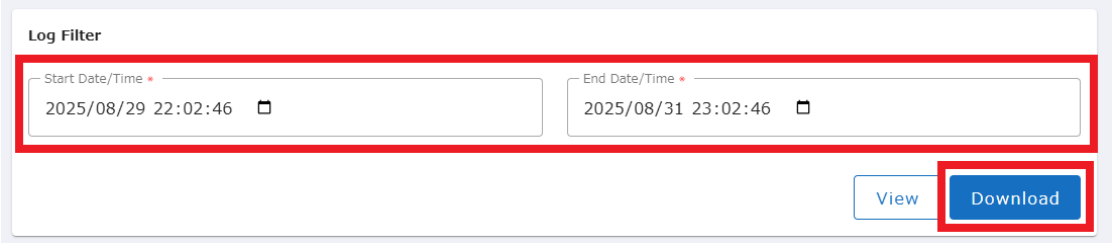
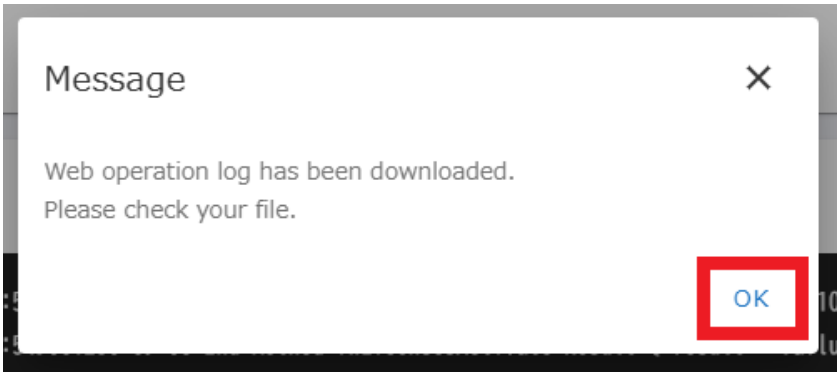
DOWNLOAD LOG

You can download operation logs by the following procedure.

1. Enter all values for start date/time, and end date/time.
   After entering them, press the Download Log button.



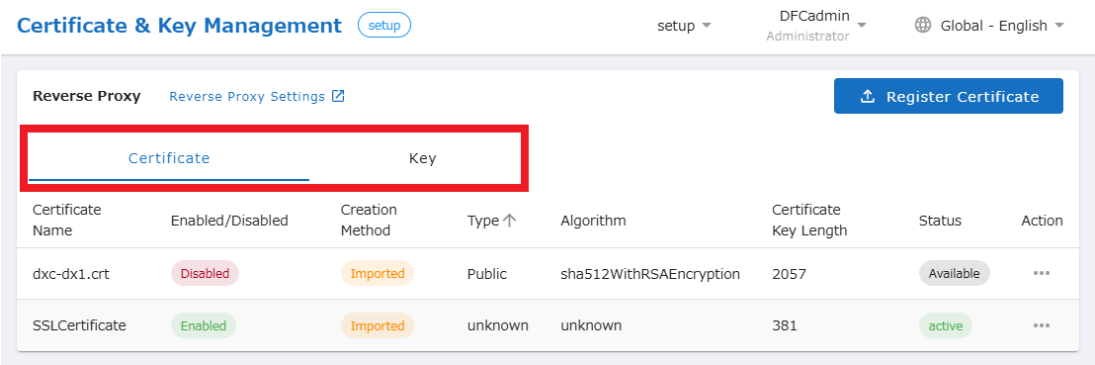
2. In the message dialog, press the OK button.



3. Confirm that the target log file has been downloaded.

3.6.2 Certificate & Key Management

Manage certificates and private keys for reverse proxy.



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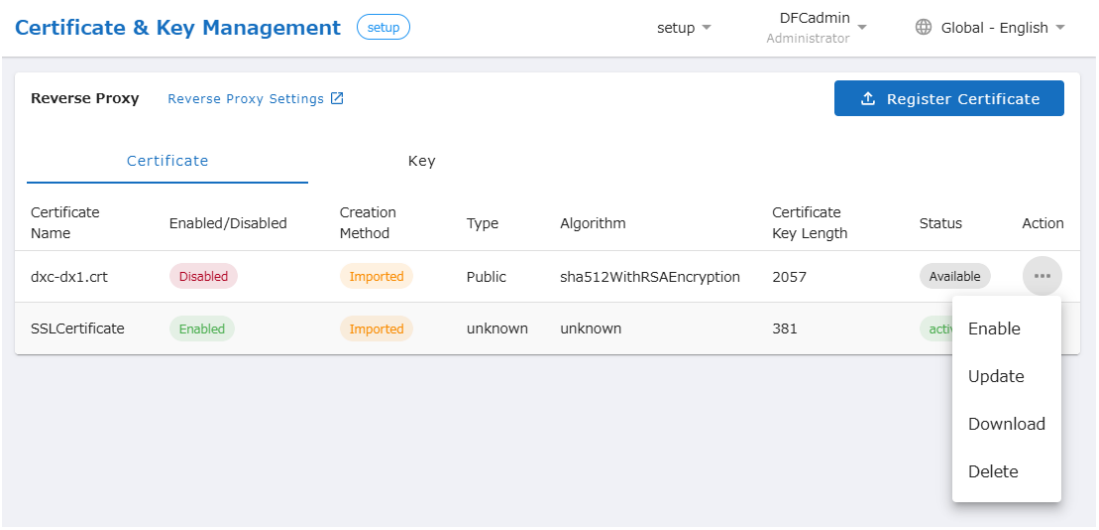
Certificate Management

Displays the registered certificates in list form.
The displayed items are as follows.

Item	Description
Register Certificate button	Operation button to register a certificate
Certificate Name	Certificate Name
Enabled/Disabled	Displays whether the certificate is enabled/disabled.
Creation Method	Displays the creation type of the certificate.
Type	Displays the type of the certificate.
Algorithm	Displays the algorithm of the certificate.
Key Length	Displays the length of the certificate key.
Status	Displays the status of the certificate.
Action	Displays operation categories using the three-dot leader. Refer to the table below for each operation category.

There are four operation categories.
Press to perform each operation.

Operation category	Description
Enable	Enable the selected certificate.
Update	Update the certificate.
Download	Downloads the certificate file.
Delete	Delete the certificate.



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REGISTER CERTIFICATE

You can register a certificate by the following procedure.

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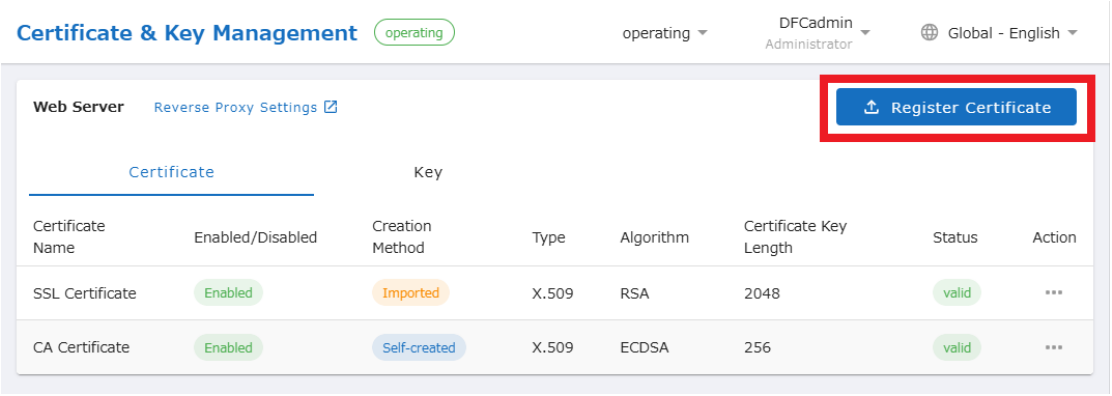
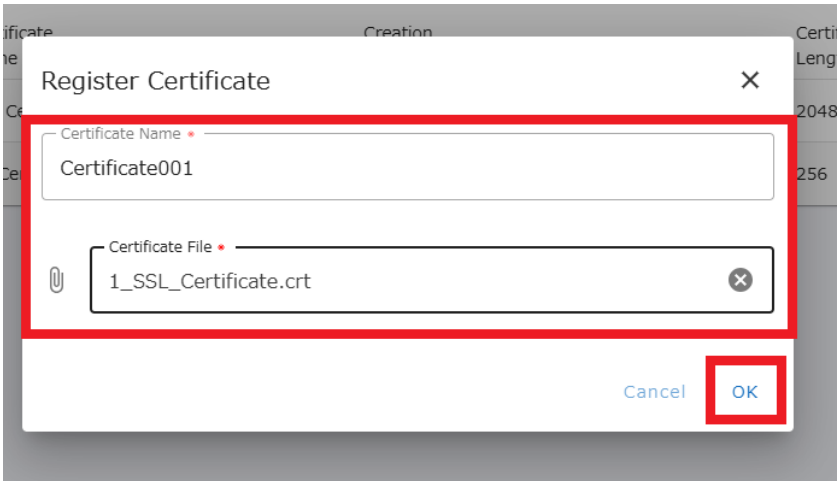
1. Press the Register Certificate button on the certificate management screen.

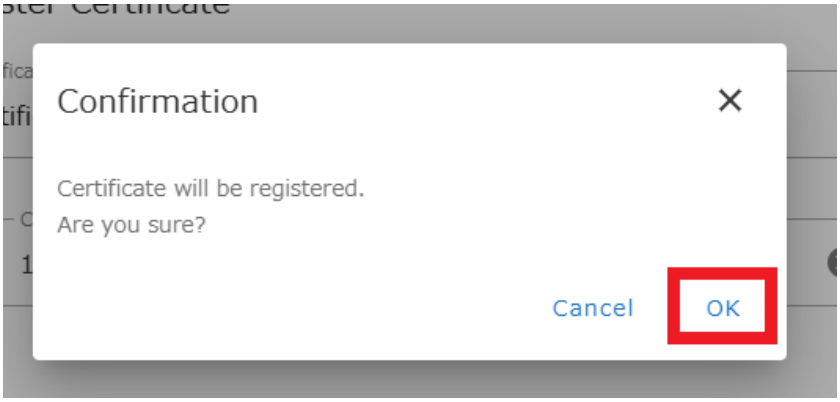


2. In the displayed Register Certificate dialog, enter all of the following items.
   After entering them, press the OK button.

Item	Description
Certificate Name	Field to enter the certificate name
Certificate File	Select the certificate file to register from the file dialog.



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.

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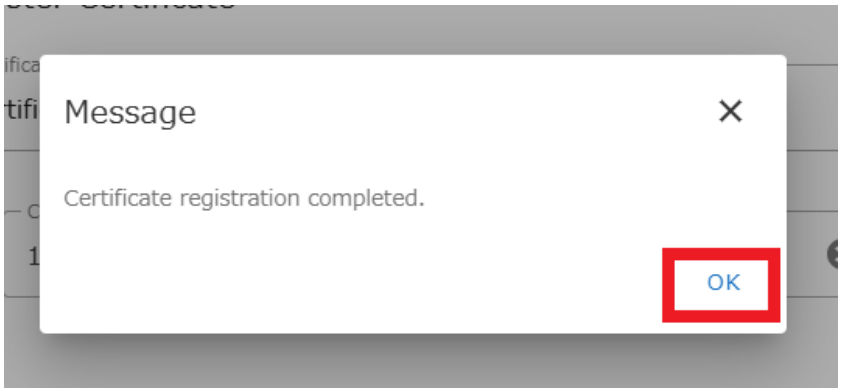

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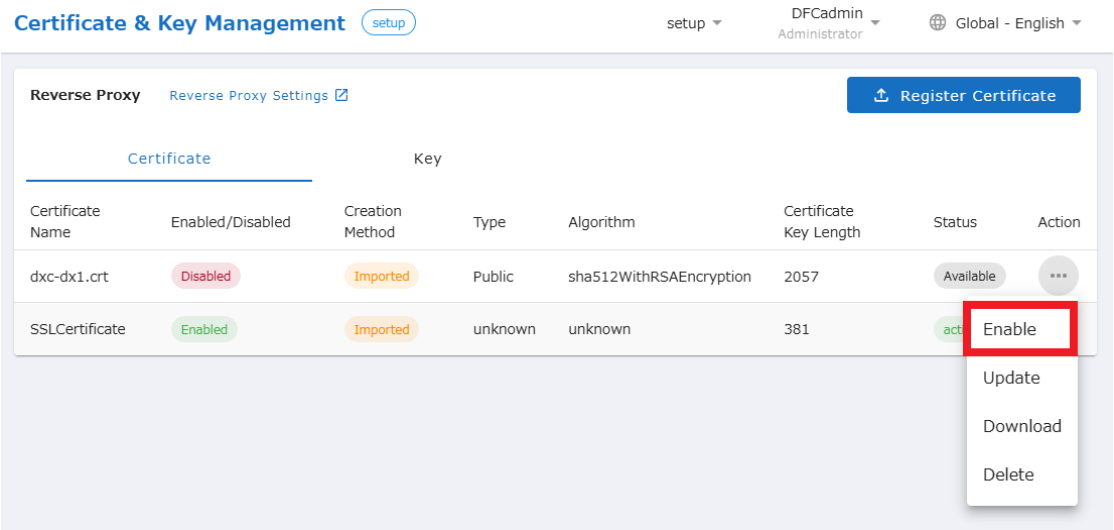
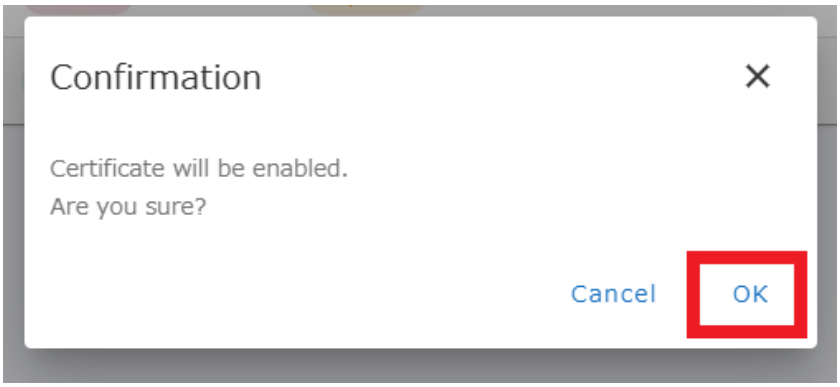
CHANGING CERTIFICATE'S ENABLED/DISABLED STATUS

You can enable/disable a certificate by the following procedure.

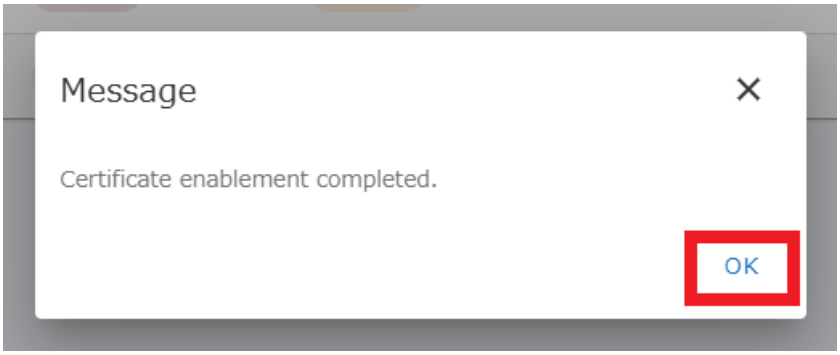
1. Click the three-dot leader in the Actions Column of the certificate displayed in the certificate list and press Disable.
   *In this example, the status is changed from Enabled to Disabled.



2. In the confirmation dialog, press the OK button.



3. In the message dialog, press the OK button.



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UPDATE CERTIFICATE

You can update a certificate by the following procedure.

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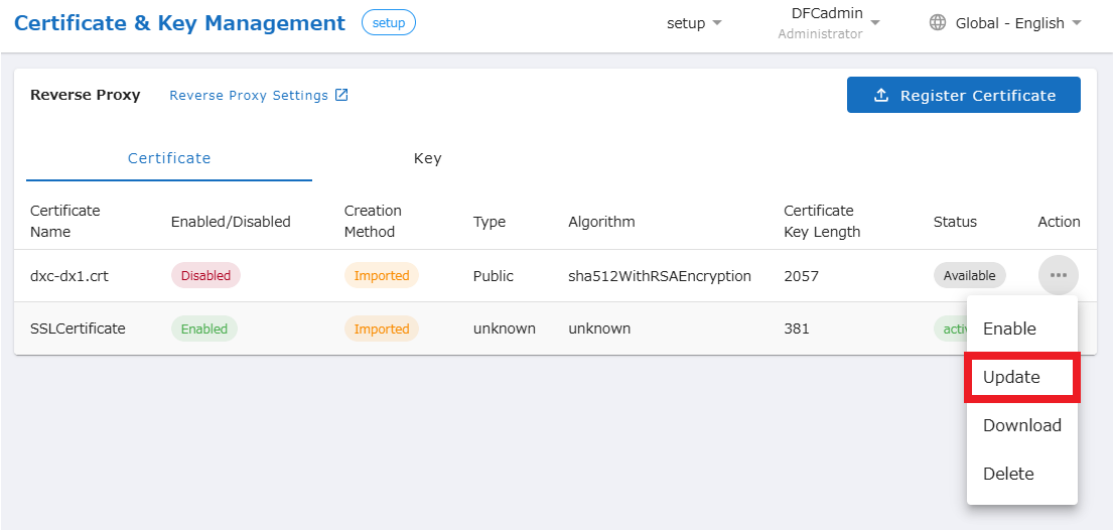
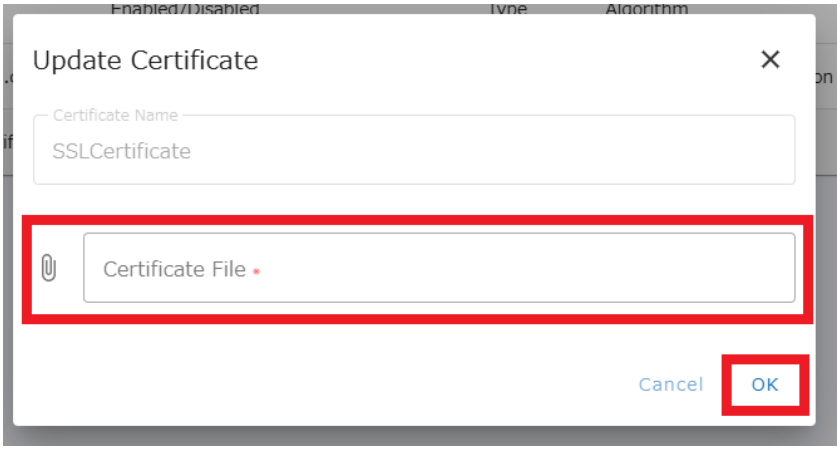
1. Click the three-dot leader in the Actions Column of the certificate displayed in the certificate list and press Update.

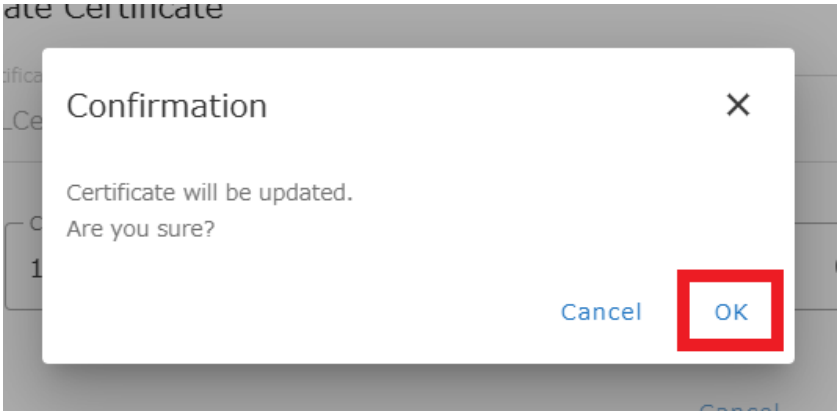


2. In the displayed Update Certificate dialog, enter the following item.
   After entering them, press the OK button.

Item	Description
Certificate File	Select the certificate file to register from the file dialog.



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.

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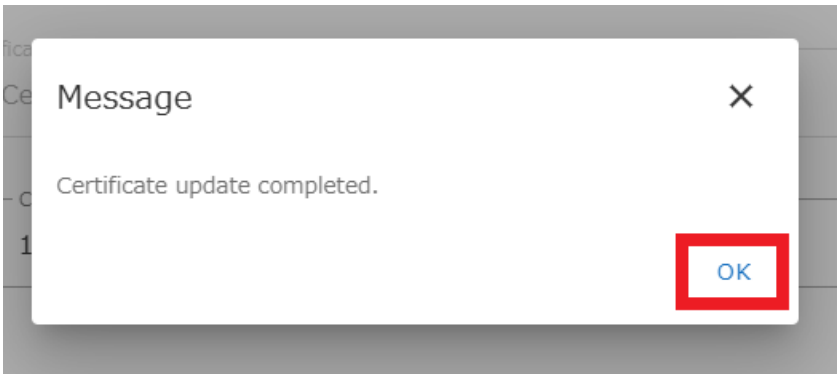
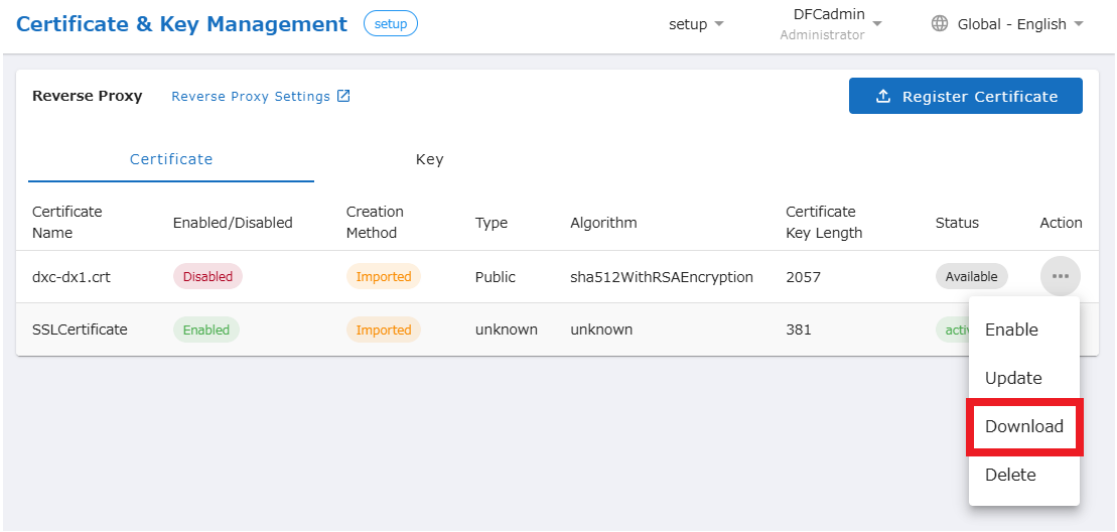


DOWNLOAD CERTIFICATE

You can download a certificate file by the following procedure.

1. Click the three-dot leader in the Actions Column of the certificate displayed in the certificate list and press Download.



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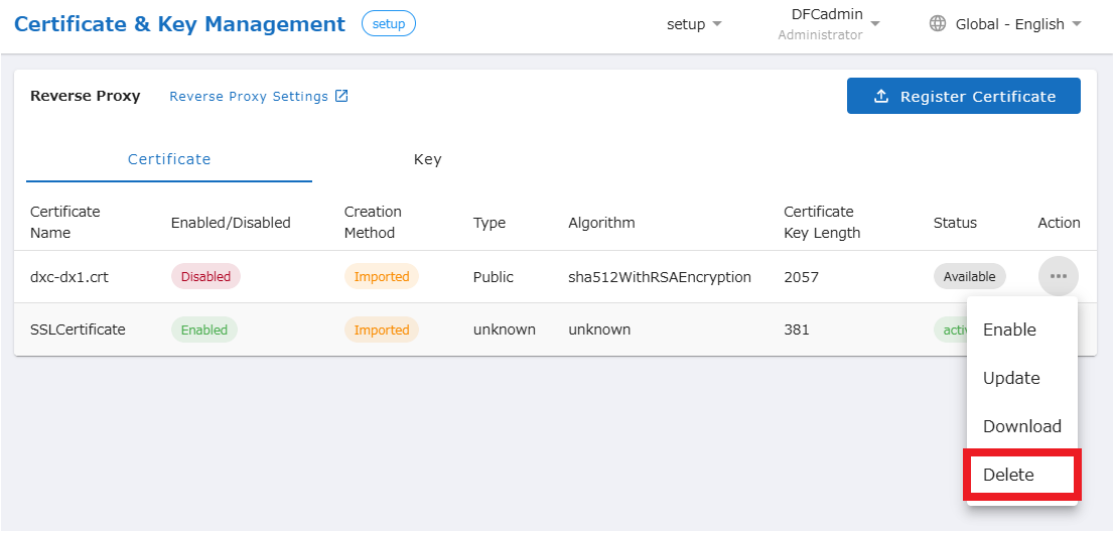
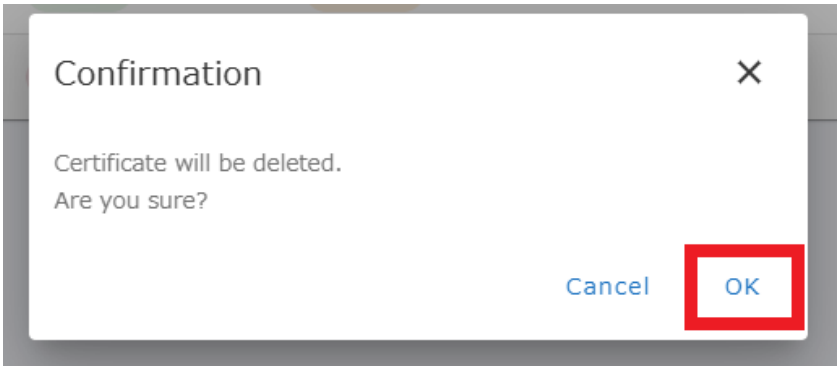
DELETE CERTIFICATE

You can delete a certificate by the following procedure.

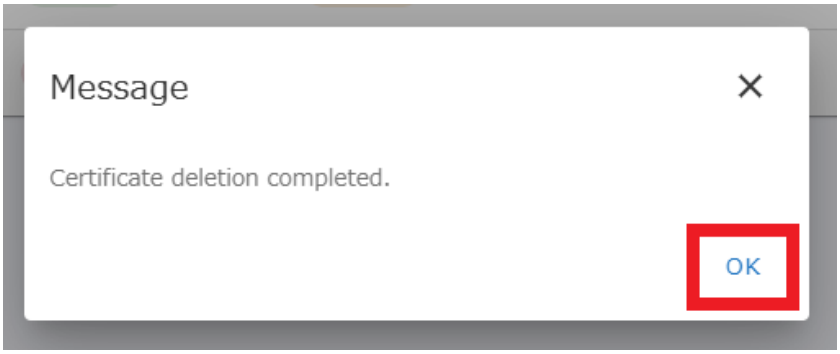
1. Click the three-dot leader in the Actions Column of the certificate displayed in the certificate list and press Delete.



2. In the confirmation dialog, press the OK button.



3. In the message dialog, press the OK button.



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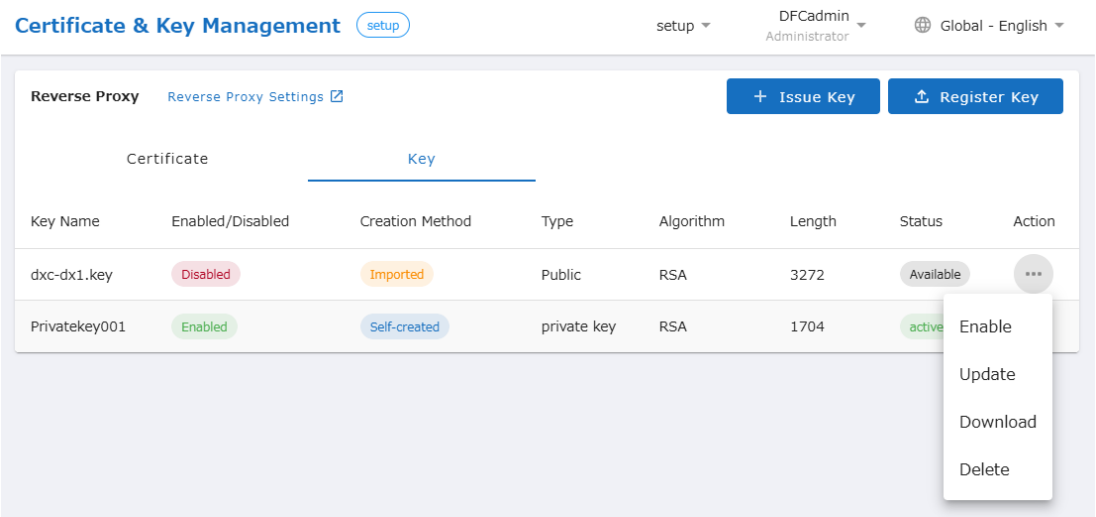
Key Management

Displays the registered private keys in list form.
The displayed items are as follows.

Item	Description
Issue Key button	Operation button to issue a private key
Register Key button	Operation button to register a private key
Key Name	Name of the private key
Enabled/Disabled	Displays whether the private key is enabled/disabled.
Creation Method	Displays the creation type of the private key.
Type	Displays the type of the private key.
Algorithm	Displays the algorithm of the private key.
Key Length	Displays the length of the private key.
Status	Displays the status of the private key.
Action	Displays operation categories using the three-dot leader. Refer to the table below for each operation category.

There are four operation categories.
Press to perform each operation.

Operation category	Description
Enable	Enable the selected private key.
Update	Update the private key.
Download	Download the private key file.
Delete	Delete the key.



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ISSUE KEY

You can register a private key by the following procedure.

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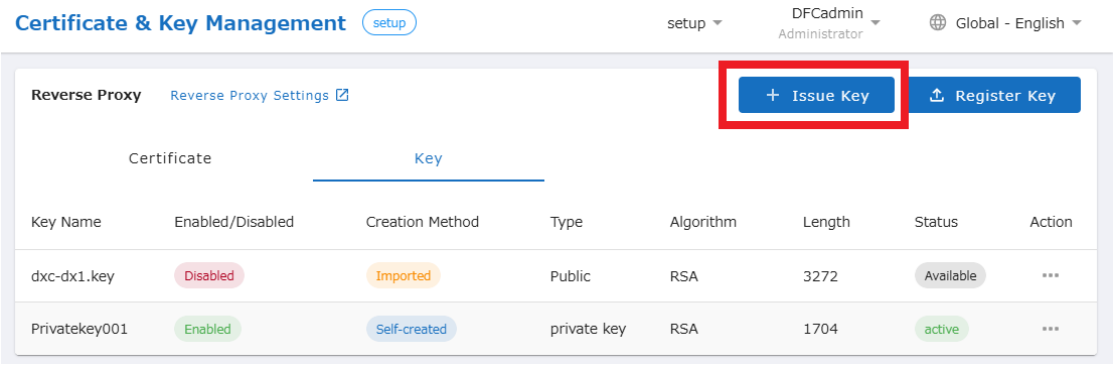
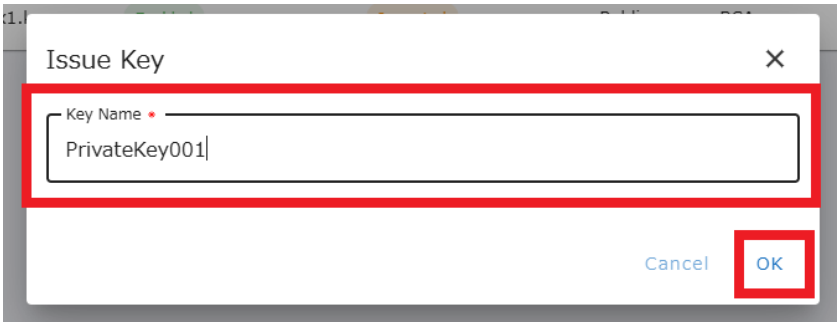
1. Press the Issue Key button on the certificate management screen.

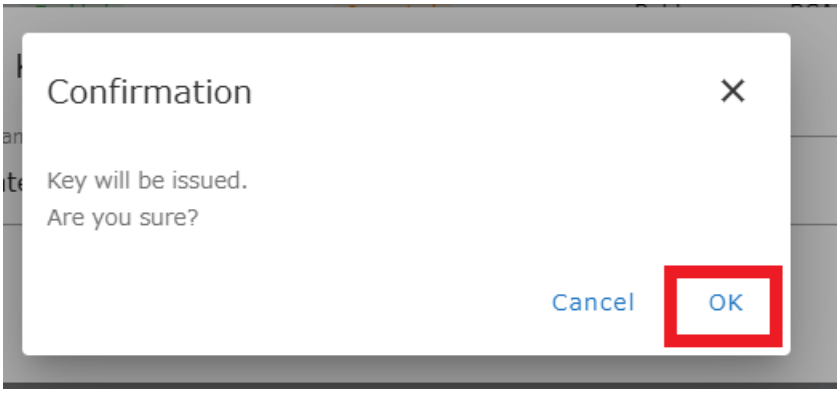


2. In the displayed Issue Key dialog, enter the following item.
   After entering them, press the OK button.

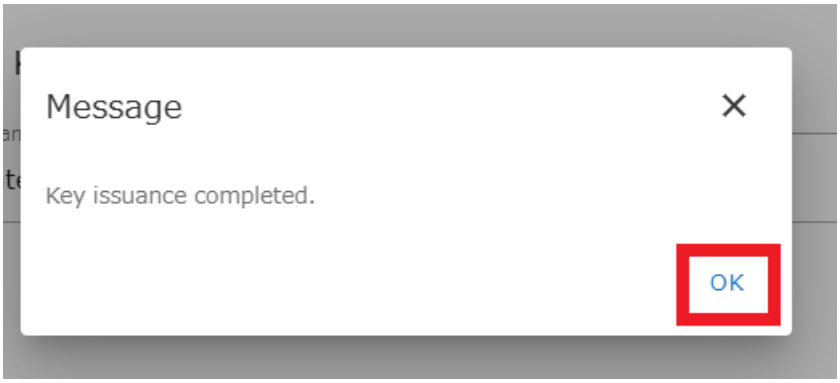
Item	Description
Key Name	Field to enter the private key name



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.



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REGISTER KEY

You can register a private key by the following procedure.

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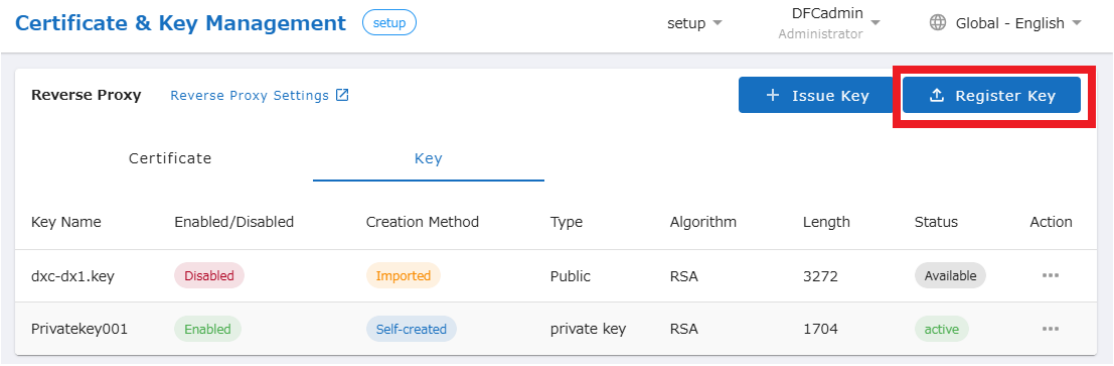
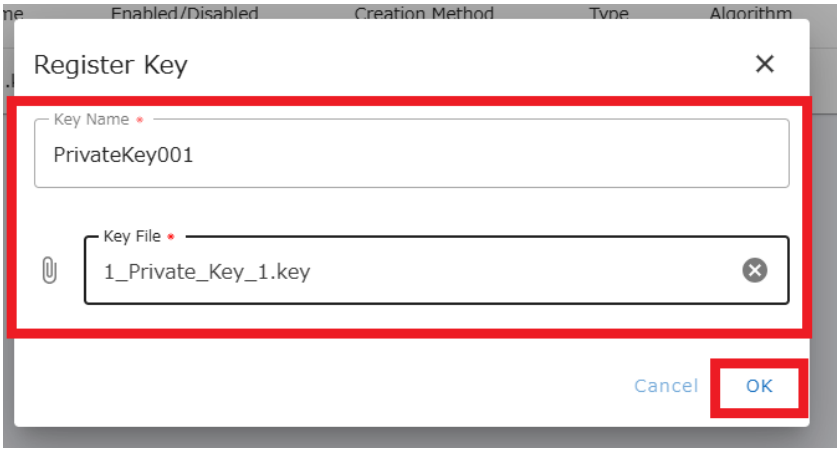
1. Press the Register Key button on the key management screen.

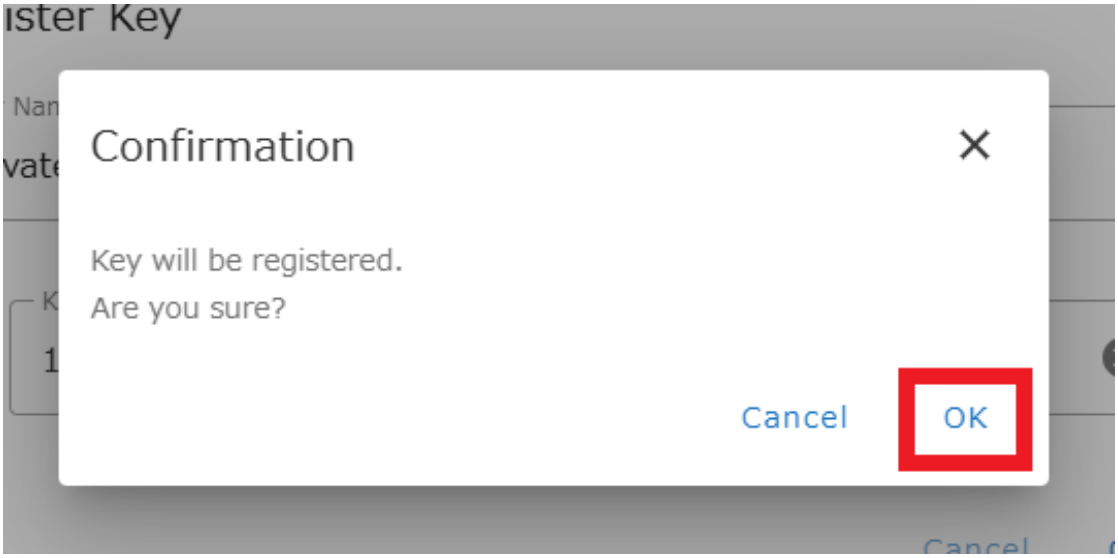


2. In the displayed Register Key dialog, enter all of the following items.
   After entering them, press the OK button.

Item	Description
Key Name	Field to enter the private key name
Key File	Select the private key file to register from the file dialog.



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.

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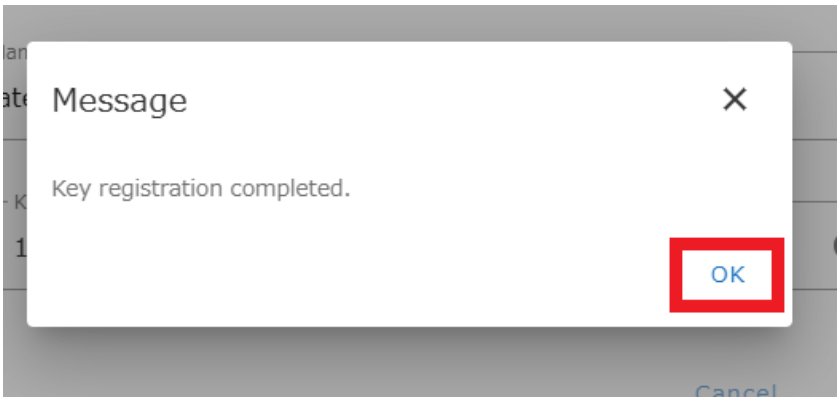

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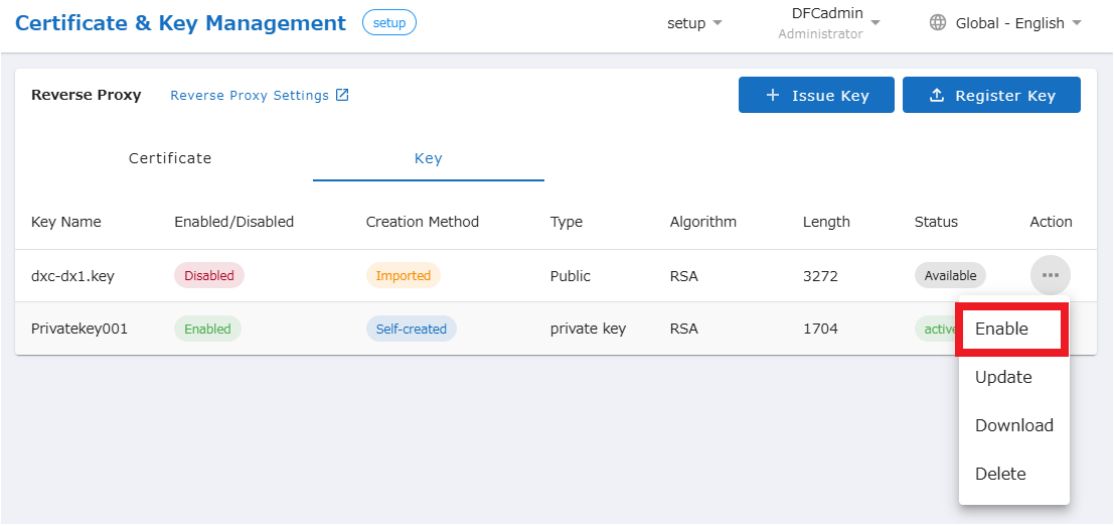
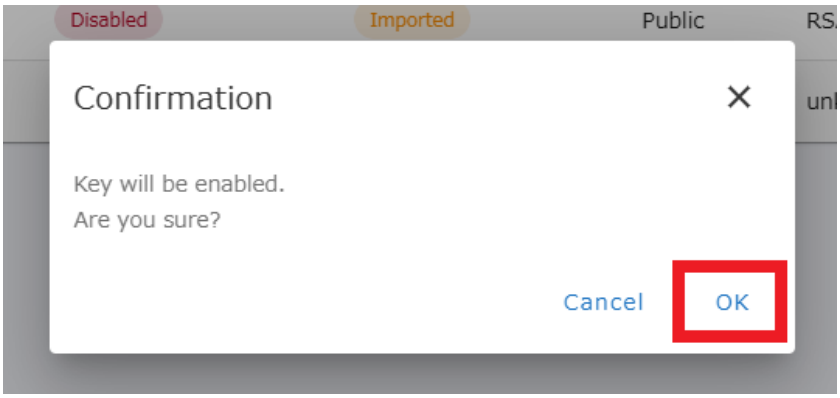
CHANGING KEY'S ENABLED/DISABLED STATUS

You can enable/disable a private key by the following procedure.

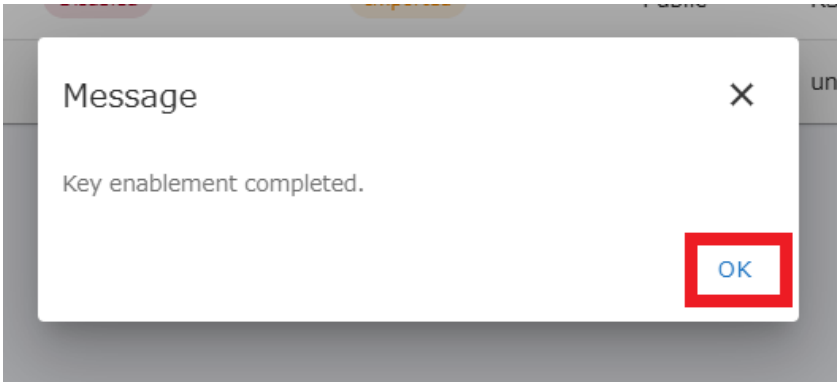
1. Click the three-dot leader in the Actions Column of the private key displayed in the key list and press Disable.
   *In this example, the status is changed from Disabled to Enabled.



2. In the confirmation dialog, press the OK button.



3. In the message dialog, press the OK button.



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UPDATE KEY

You can update a private key by the following procedure.

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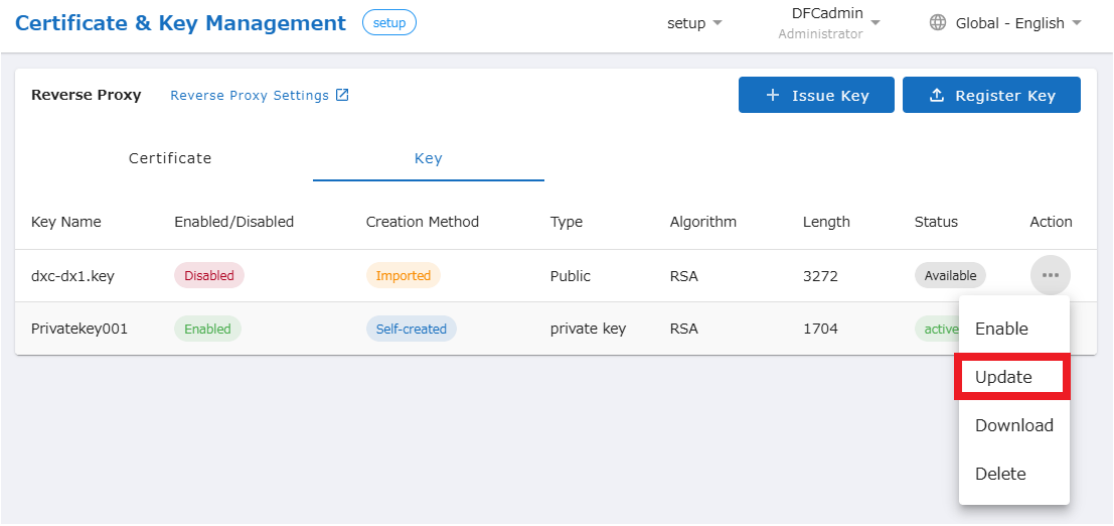
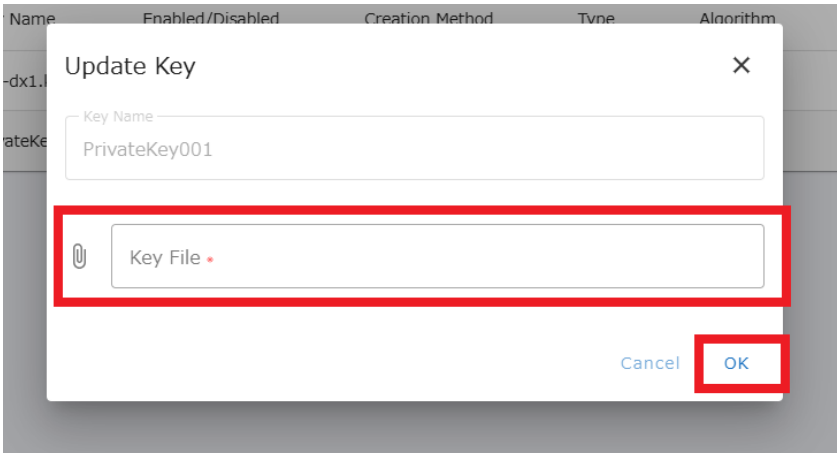
1. Click the three-dot leader in the Actions Column of the private key displayed in the key list and press Update.

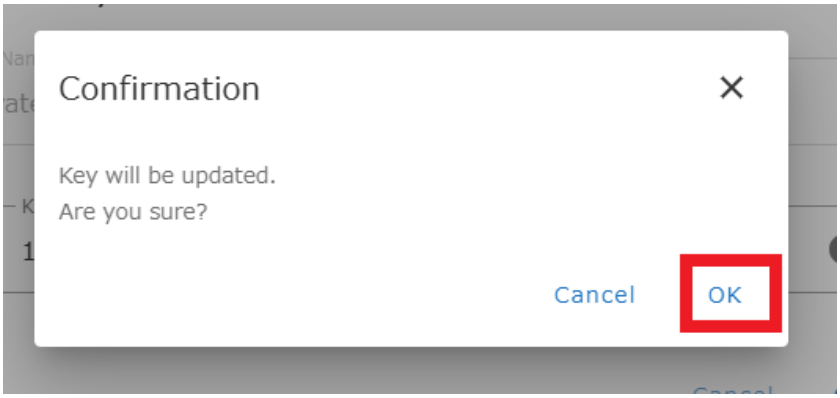


2. In the displayed Update Private Key dialog, enter the following item.
   After entering them, press the OK button.

Item	Description
Key File	Select the private key file to register from the file dialog.



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.

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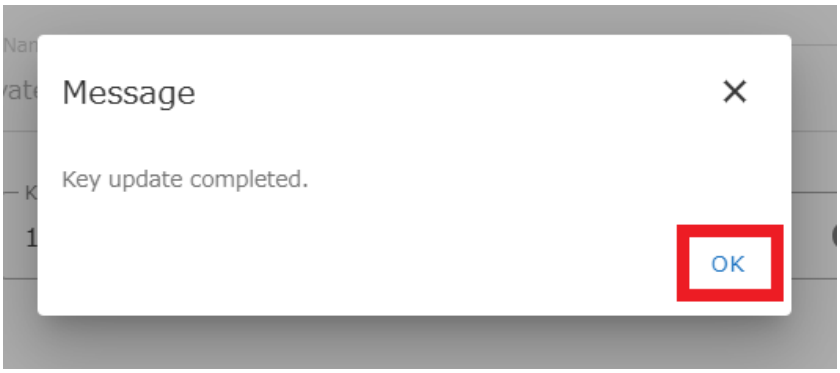
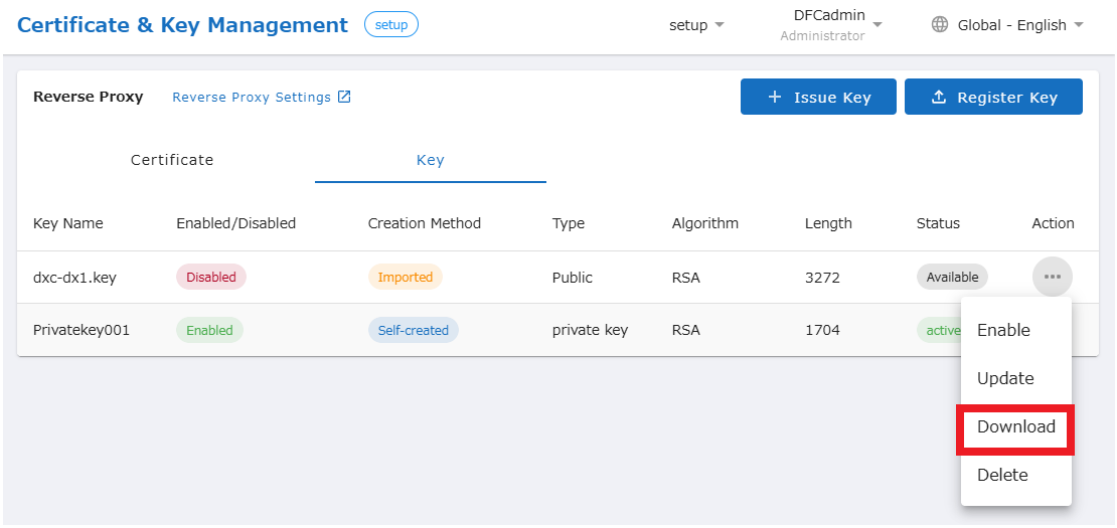


DOWNLOAD KEY

You can download a private key file by the following procedure.

1. Click the three-dot leader in the Actions Column of the private key displayed in the key list and press Download.



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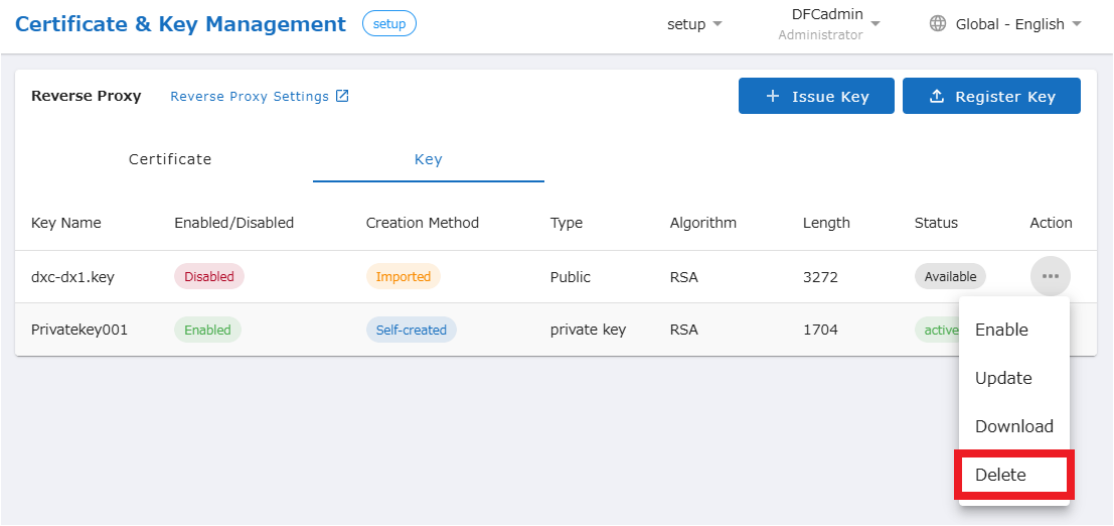
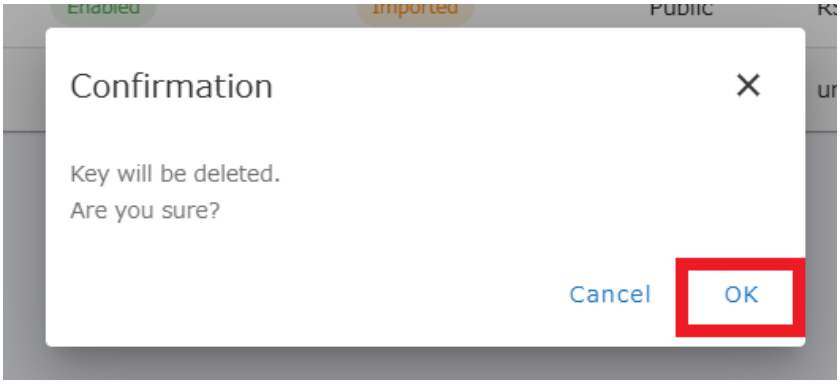
UPDATE KEY

You can delete a private key by the following procedure.

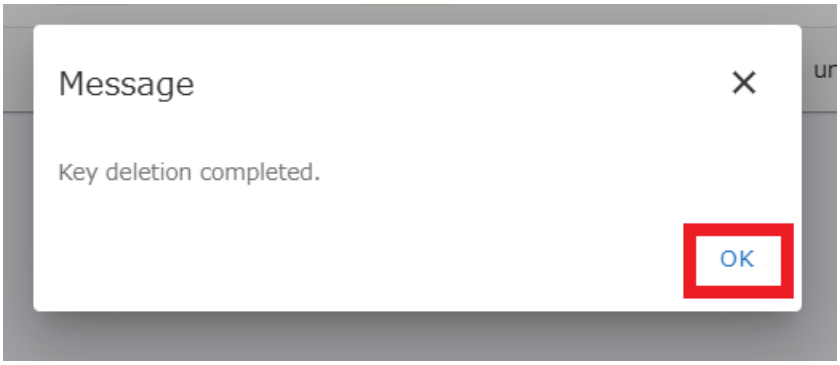
1. Click the three-dot leader in the Actions Column of the private key displayed in the key list and press Delete.



2. In the confirmation dialog, press the OK button.



3. In the message dialog, press the OK button.



3.6.3 USB Port Management

Manage the USB ports of this Controller.

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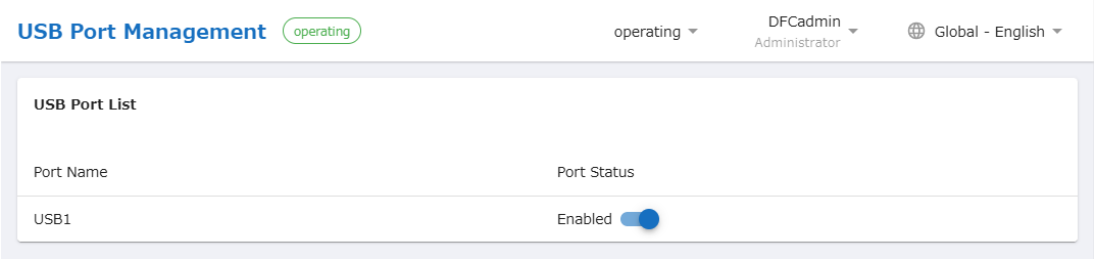
USB Port List

Displays the USB ports of this Controller in list form.
The displayed items are as follows.

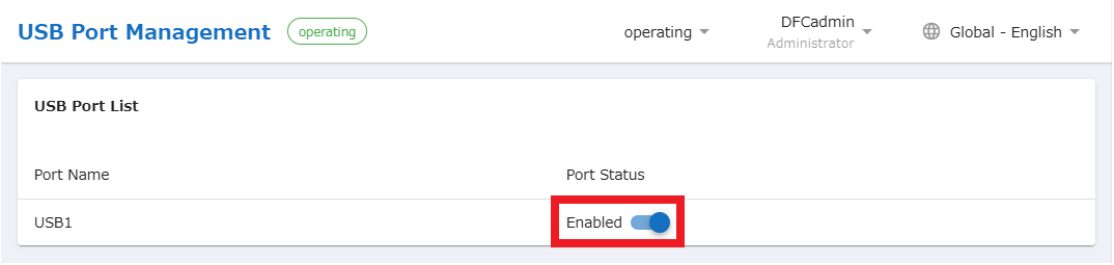
Item	Description
Port Name	USB port name
Port Status	Toggle switch for enable/disable control of the target USB port



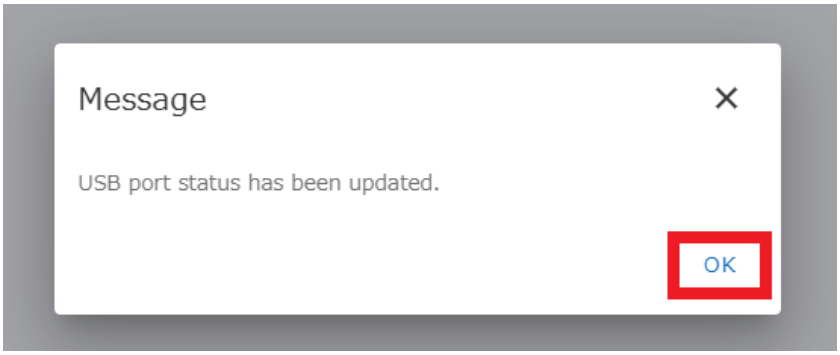
Changing USB Port Status

You can change the Port Status (Enabled/Disabled) by the following procedure.

1. Press the Port Status toggle switch for the port displayed in the USB Port List.
   *In this example, the status is changed from Enabled to Disabled.



2. In the message dialog, press the OK button.



3. Confirm that the Port Status has been changed.

3.6.4 Reverse Proxy Settings

Configure the reverse proxy settings of this Controller.

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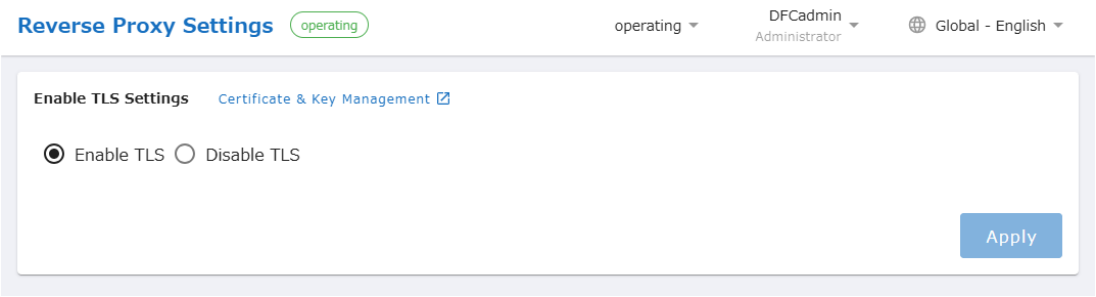

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TLS Setting Method

You can configure the enable/disable setting for TLS by the following procedure.

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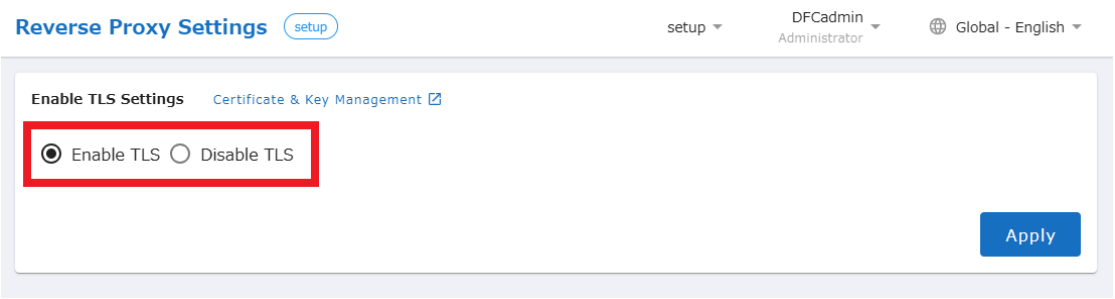
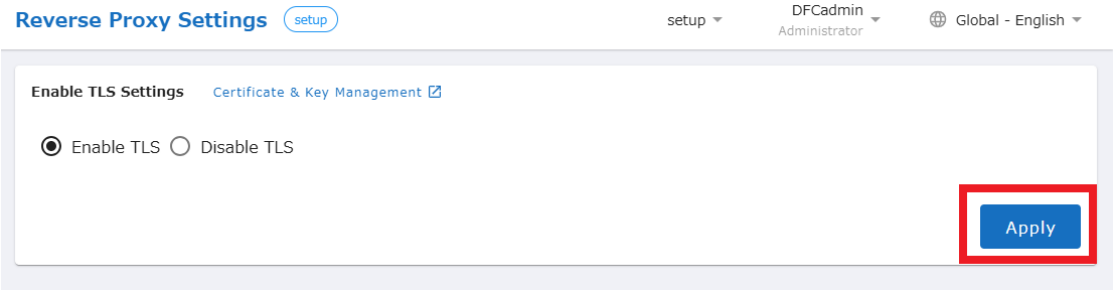
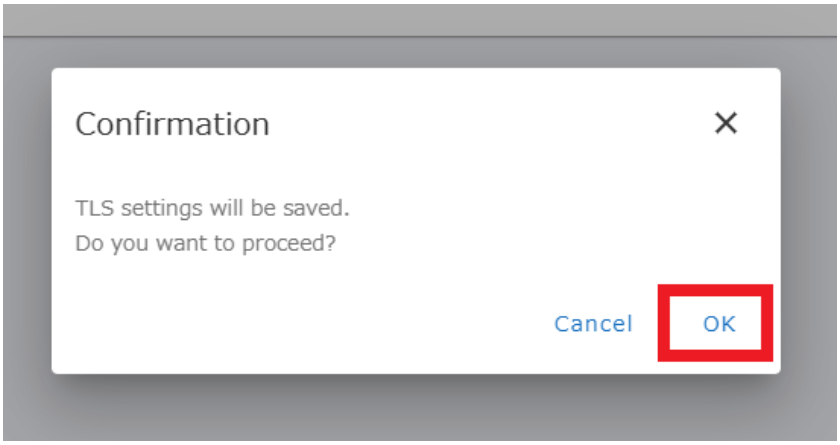
1. Select either Enable TLS or Disable TLS using the TLS Enable radio button.
   *In this example, Enable TLS is set.



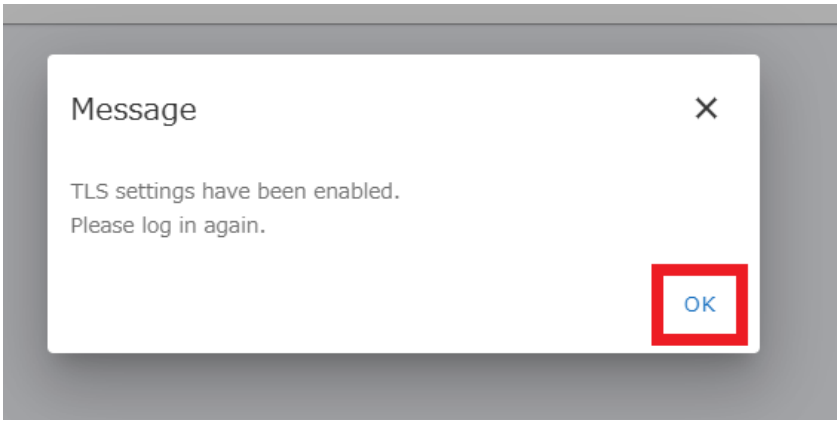
2. Press Apply.



3. In the confirmation dialog, press the OK button.



4. In the message dialog, press the OK button.



5. Confirm that the TLS settings have been changed.

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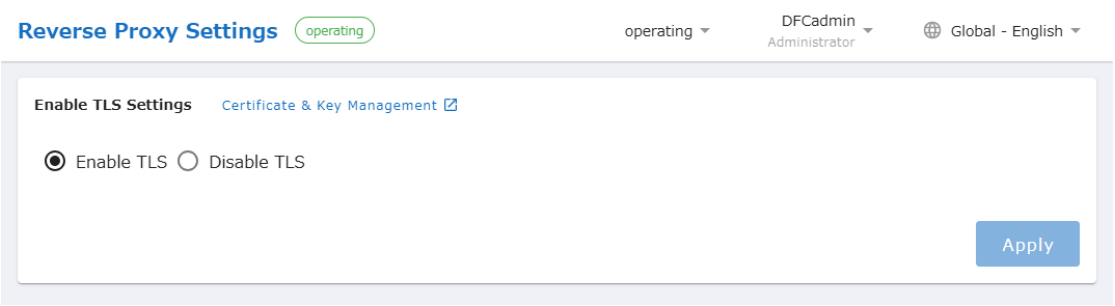

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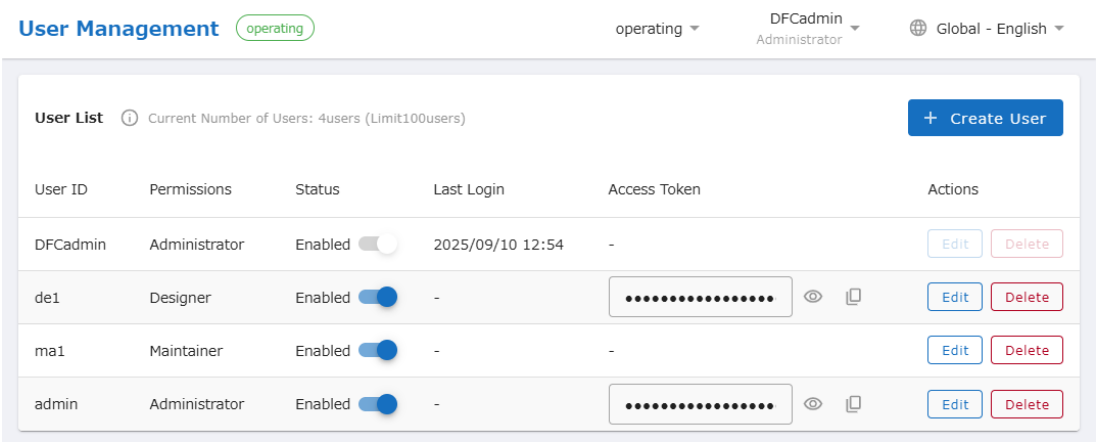
3.7 Account Management

This section describes the account management.

3.7.1 Viewing User List

Displays a list of Web UI users. The displayed items are as follows.

Item	Description
User ID	User ID
Permissions	Permissions
Status	Toggle switch for enabling/disabling a user
Last Login	Last login date and time
Access Token	Access token for external integration, display control switch, copy button
Action	Edit button, Delete button



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3.7.2 Adding User

You can add a user by the following procedure.

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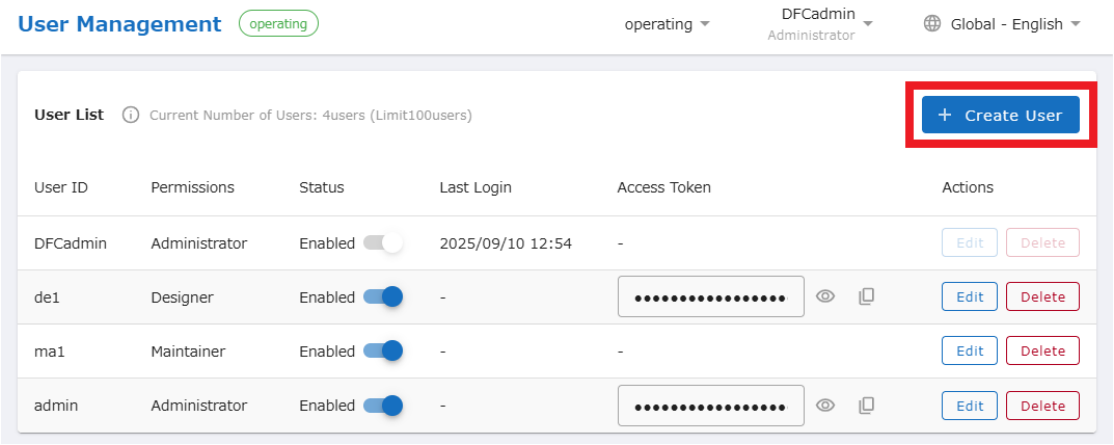
1. Press the Create User button on the User Management screen.



2. In the displayed Create New User dialog, enter all of the following items.
   After entering them, press the OK button.

Item	Description
User ID	This is an ID entered on login.
New Password	This is a password entered on login.
Confirm Password	This is an input item for confirming the password entered on login.
Permissions	Refer to the table below.
Access Token	Select whether to create an access token.
Force password change on next login	This is an input item to force a password change on the next login.

There are three types of user permissions.

Permission	Description
Administrator	All operations are available. It is assigned to the initial user “DFCadmin” and at least one person is required.
Designer	Operations other than user management and firmware management are available.
Maintainer	Monitoring, application management, and some utility management are available.

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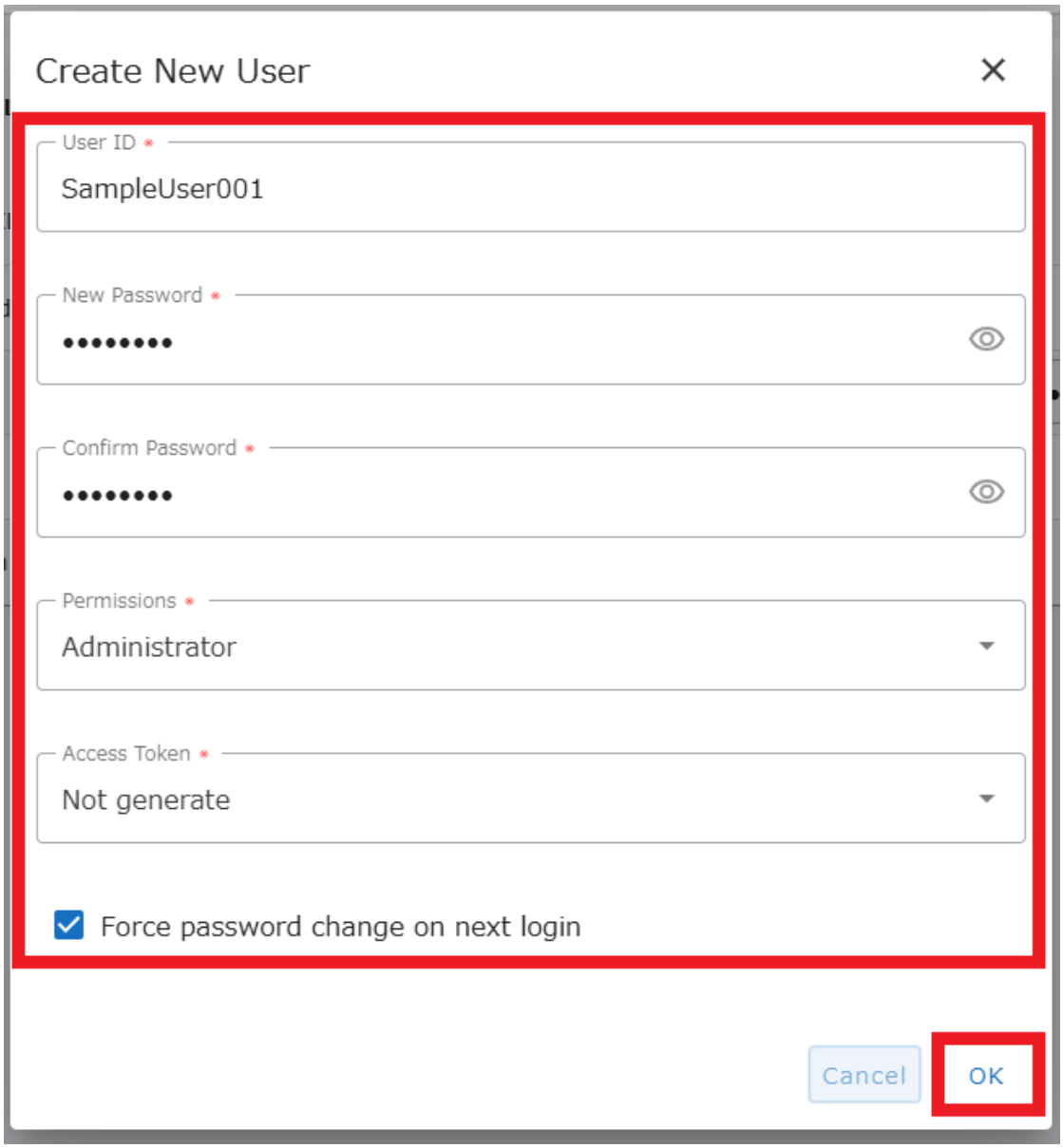

3. In the confirmation dialog, press the OK button.

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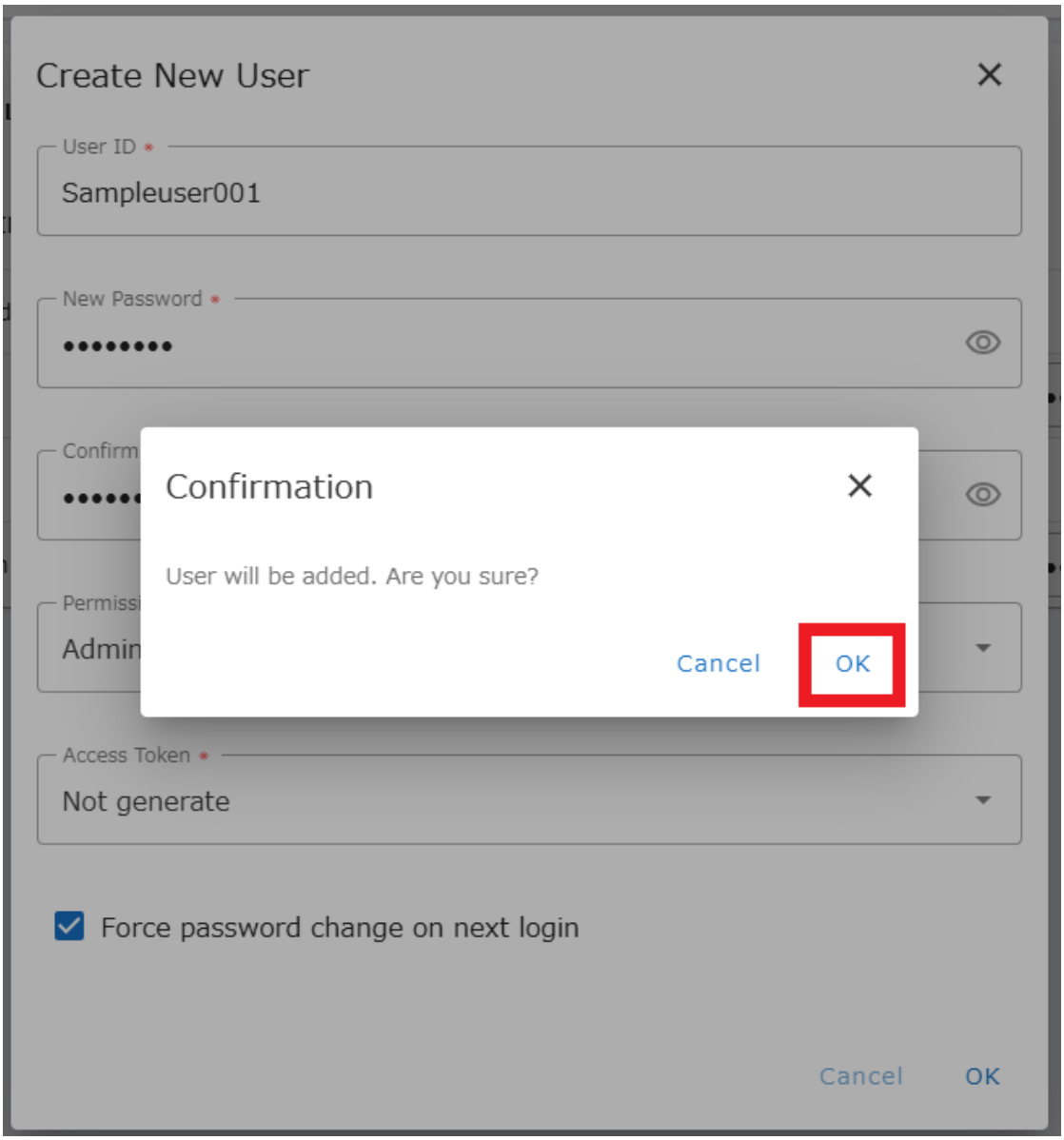
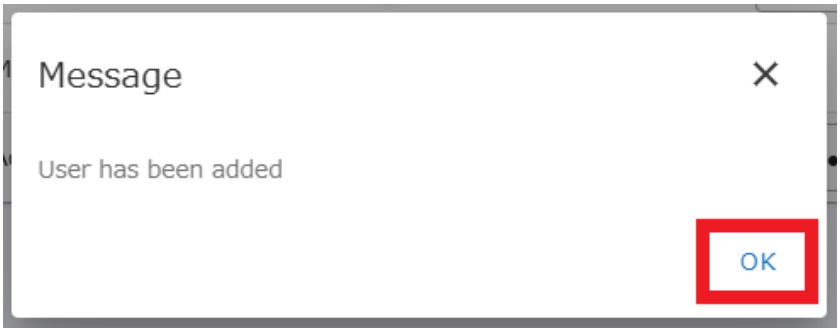


4. In the message dialog, press the OK button.



5. Confirm that the user has been added.

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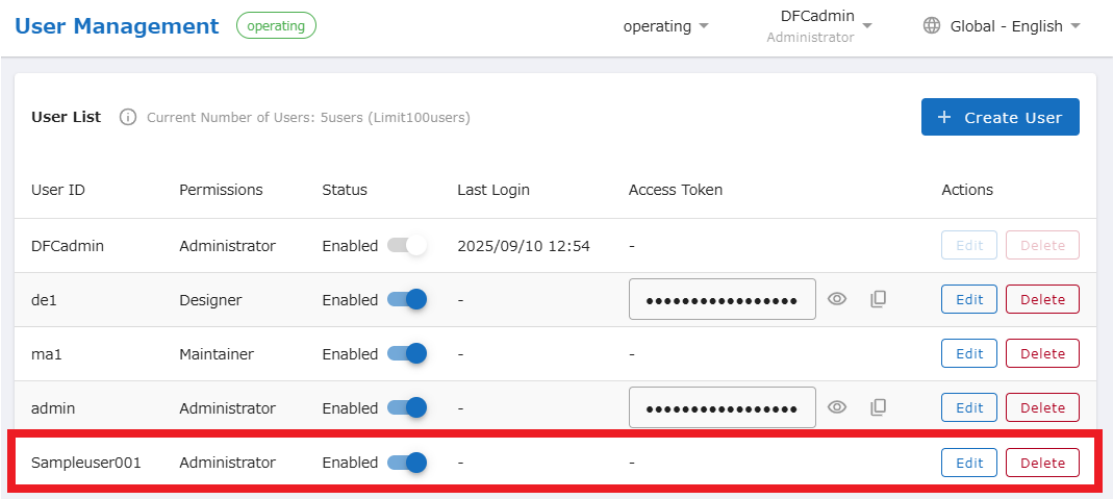

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3.7.3 Changing User Information

You can change a user by the following procedure.

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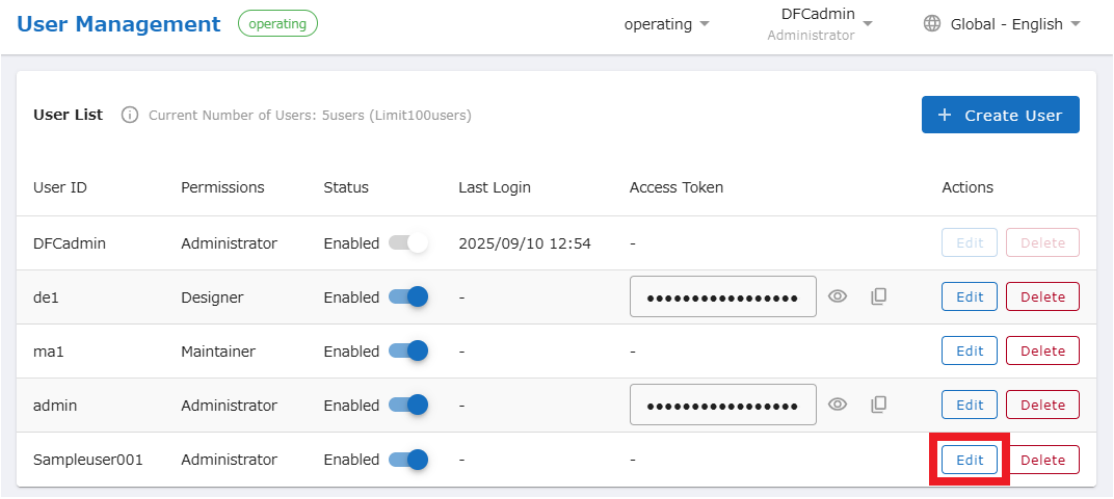
1. Press the Edit button for the user you want to edit in the User List.



2. In the displayed Edit User dialog, enter the following items you want to change.
*In this example, the permission is changed from Administrator to Designer.
After entering them, press the OK button.

Item	Description
New Password	This is a password entered on login.
Confirm Password	This is an input item for confirming the password entered on login.
Permissions	Refer to the table below.
Access Token	Choose to create, update, or delete the access token.
Force password change on next login	This is an input item to force a password change on the next login.

There are three types of user permissions.

Permission	Description
Administrator	All operations are available. It is assigned to the initial user “admin” and at least one person is required.
Designer	Operations other than user management and firmware management are available.
Maintainer	Monitoring, application management, and some utility management are available.

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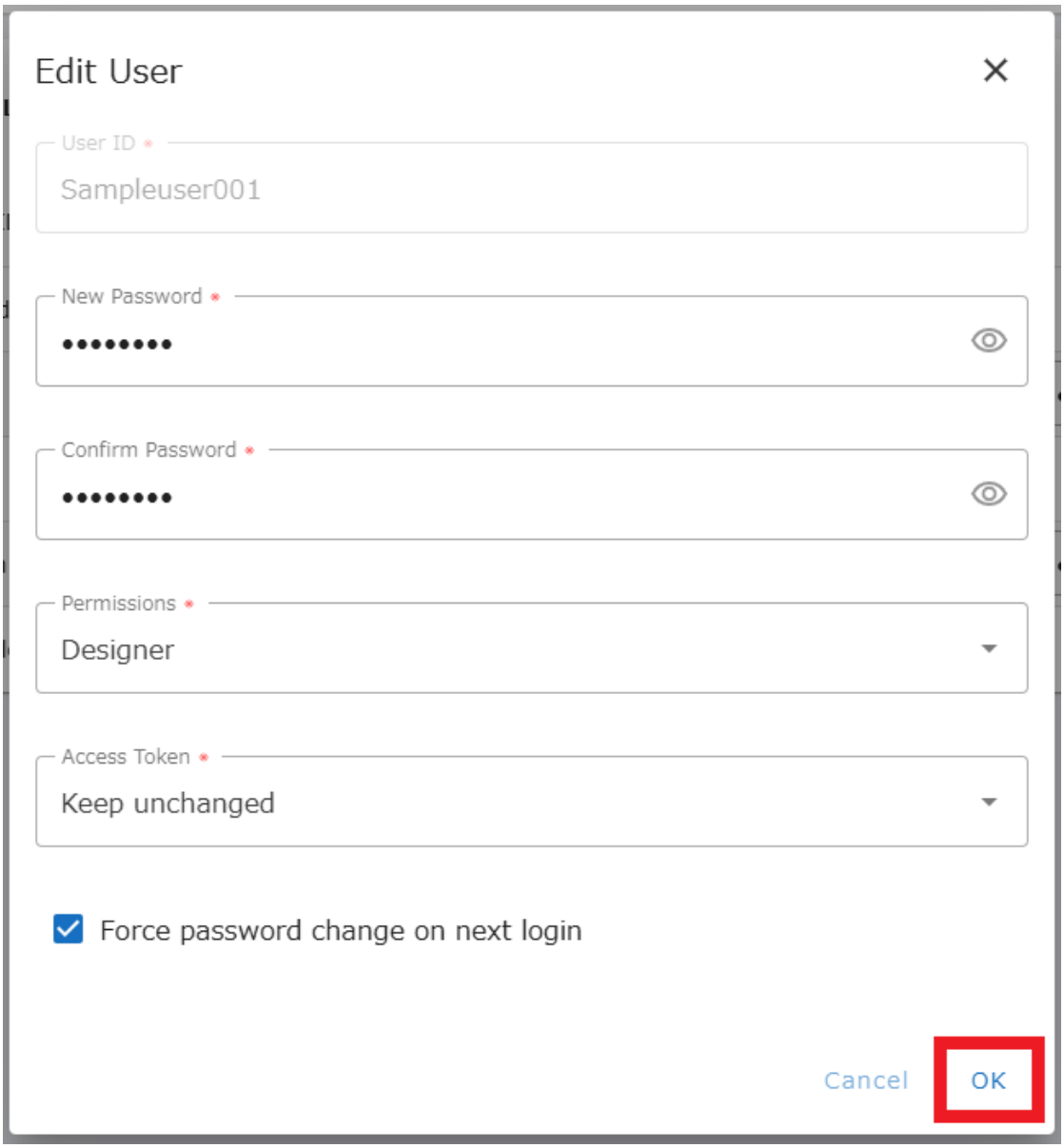

3. In the confirmation dialog, press the OK button.

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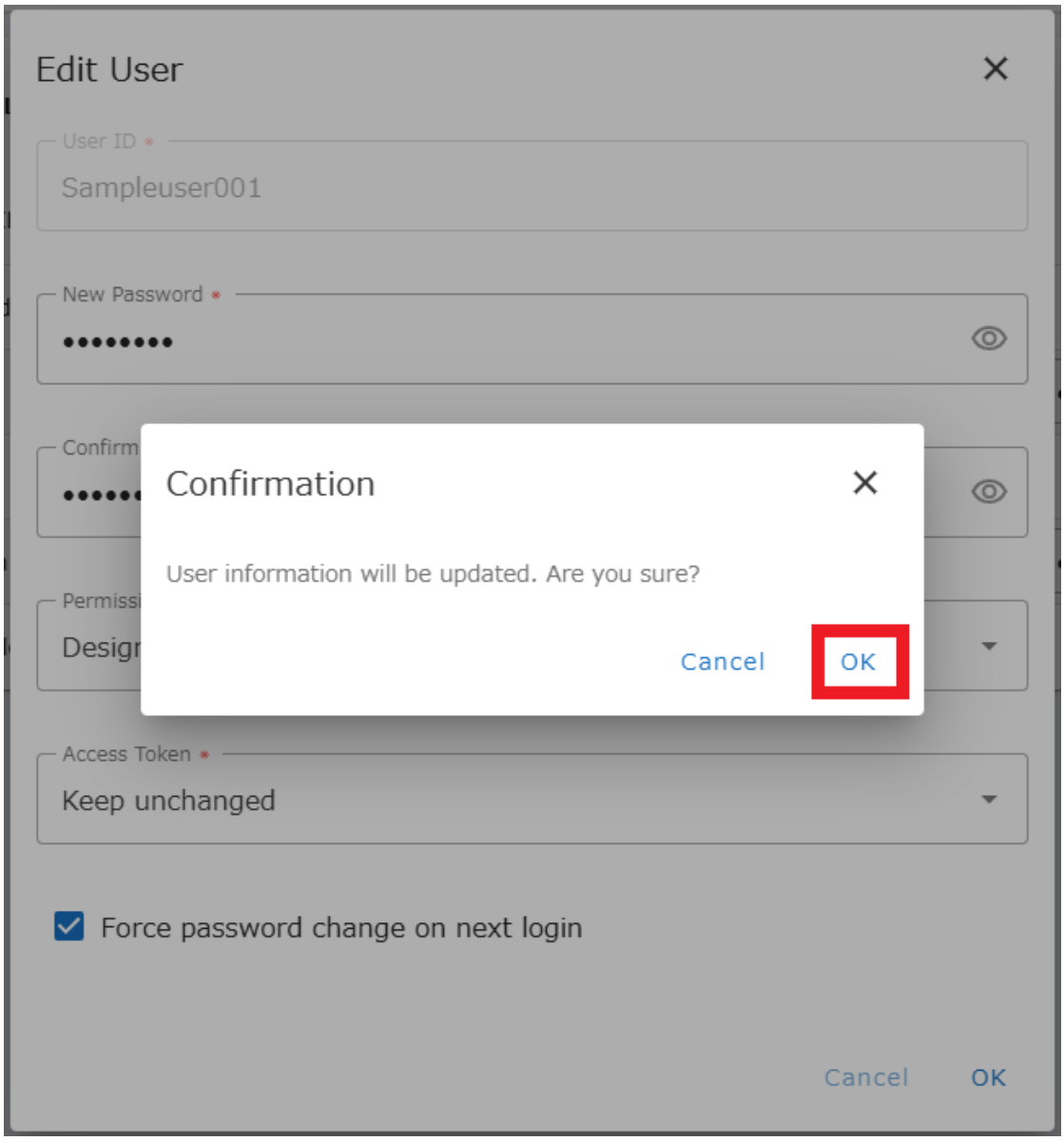
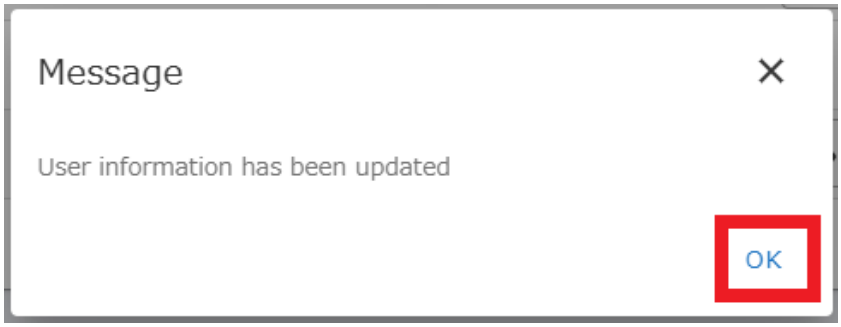


4. In the message dialog, press the OK button.



5. Confirm that the user information has been changed.

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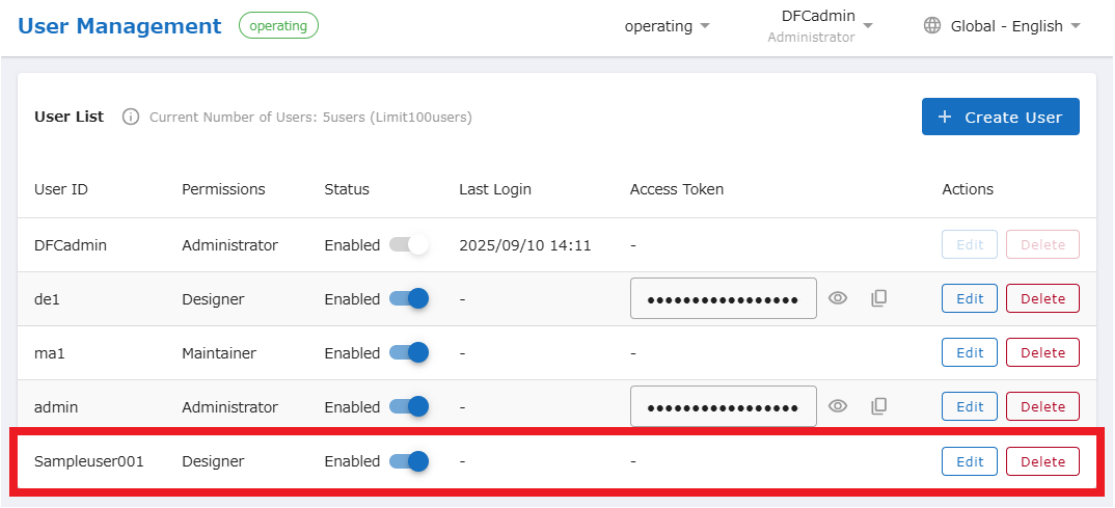

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3.7.4 Deleting User Information

You can delete a user by the following procedure.

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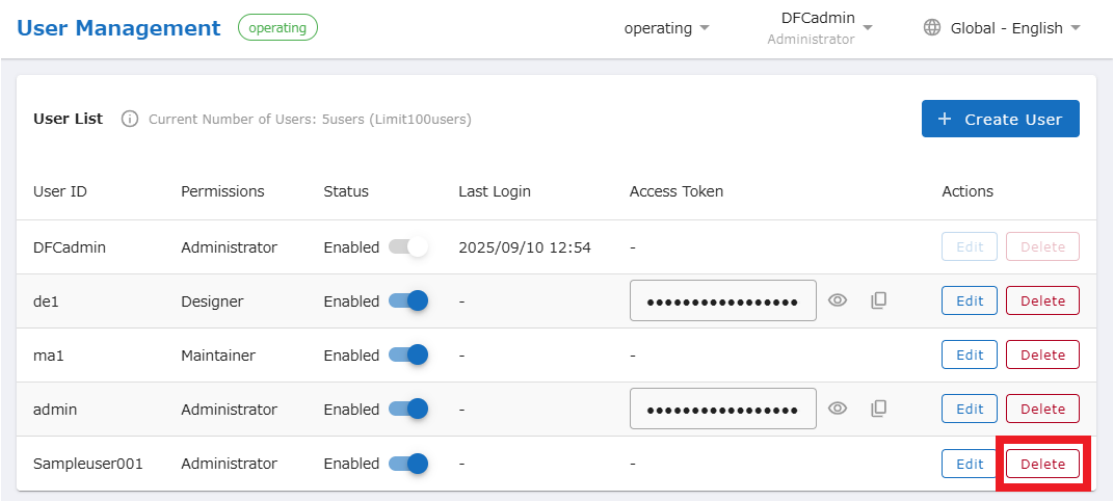
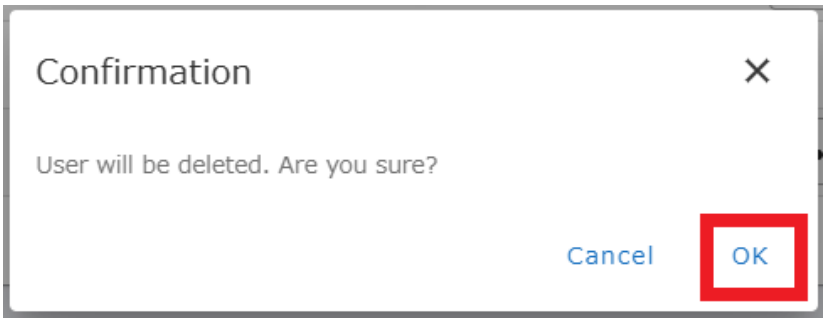
1. Press the Delete button for the user displayed in the User List.
   *In this example, SampleUser001 is deleted.

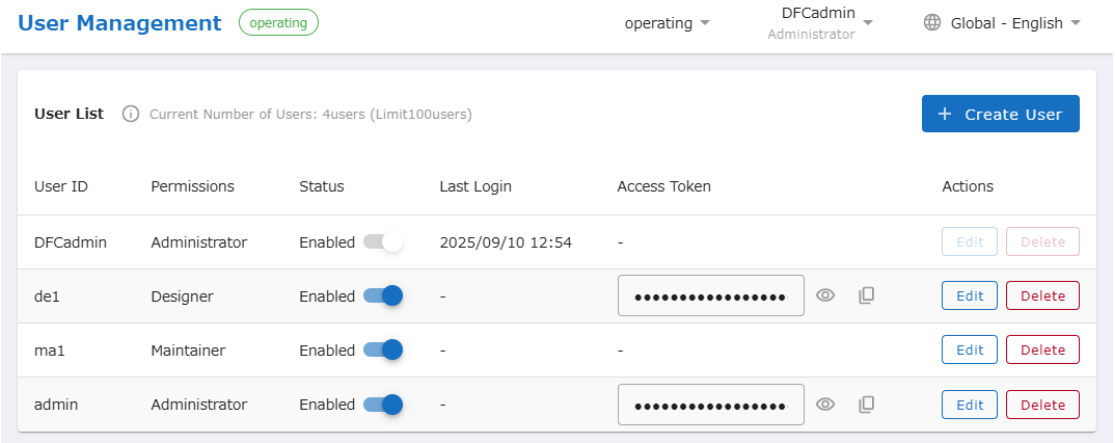


2. In the confirmation dialog, press the OK button.



3. In the message dialog, press the OK button.

4. Confirm that the user has been deleted.



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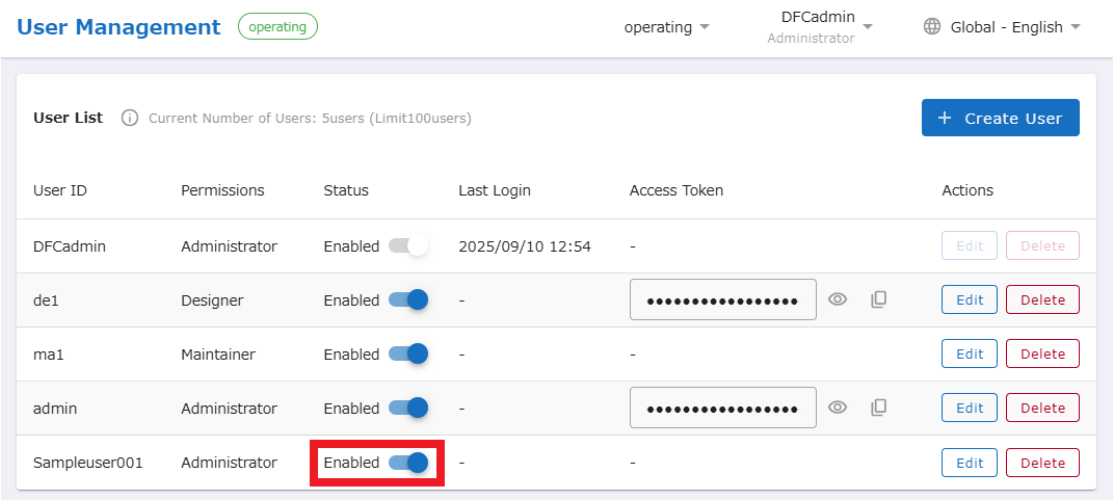
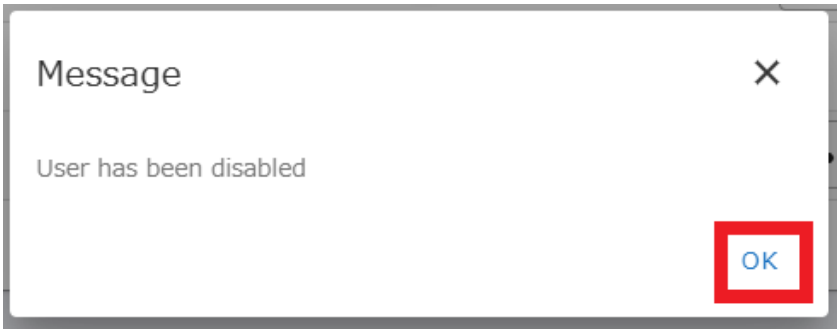
3.7.5 Changing User Status

You can change the user status (Enabled/Disabled) by the following procedure.

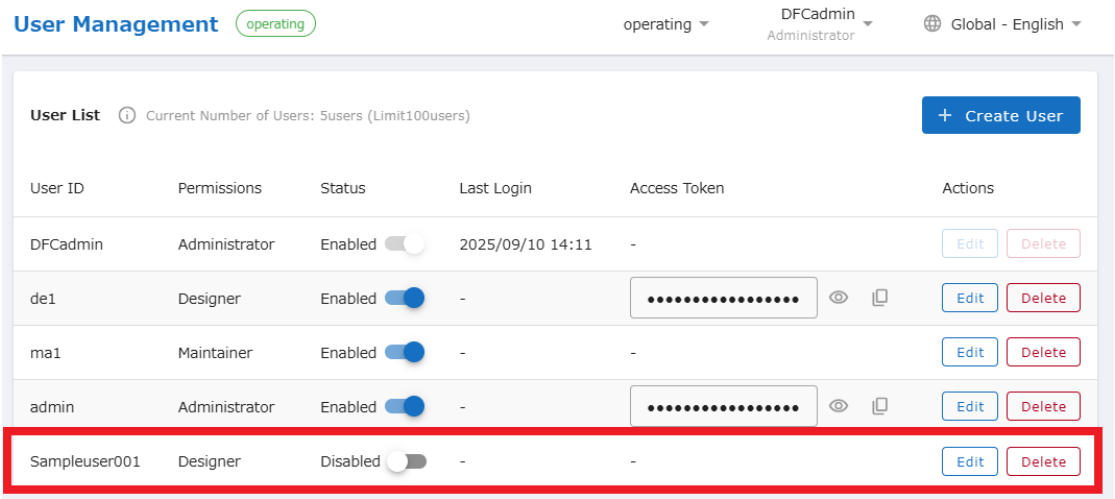
1. Press the Status toggle switch for the user displayed in the User List.
   *In this example, the status is changed from Enabled to Disabled.



2. In the message dialog, press the OK button.



3. Confirm that the user status has been changed.



3.7.6 About Access Token

If you choose to Create an access token in the Create New User dialog or the Edit User dialog, the access token will also be issued simultaneously with user creation or change.

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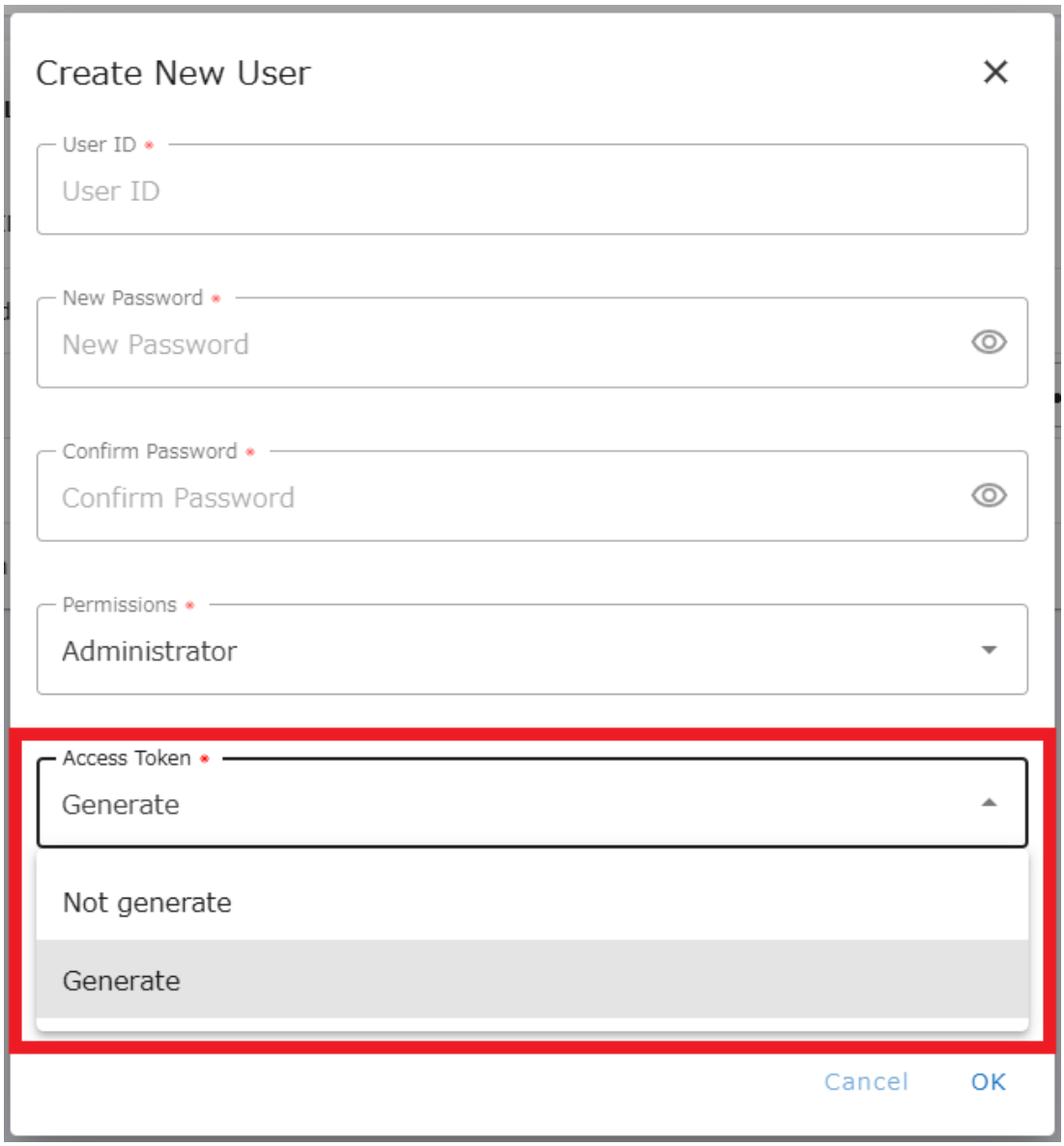
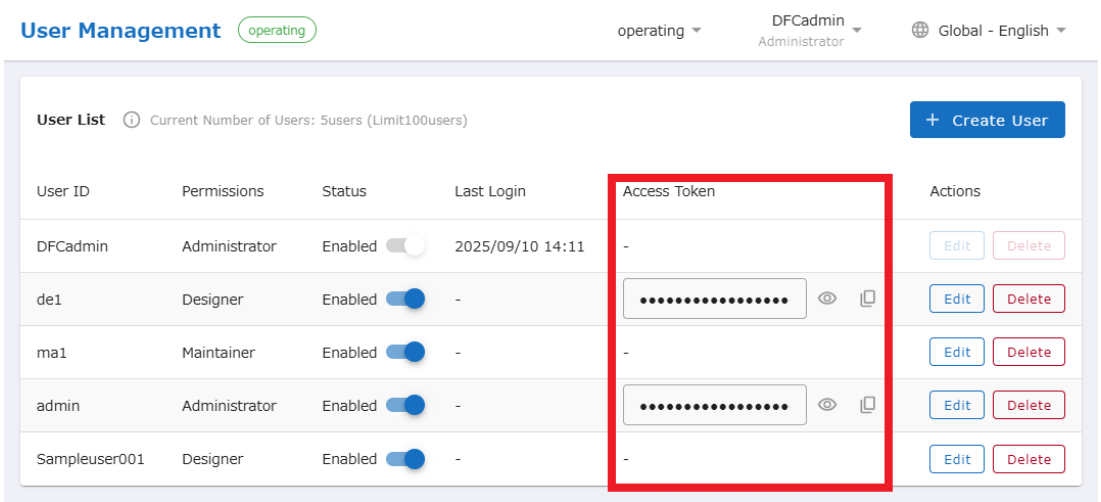


The issued access token can be used with the REST API.



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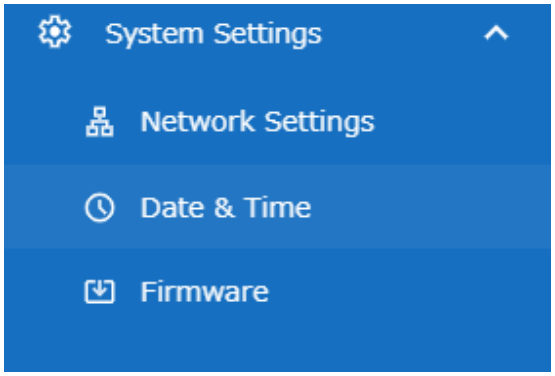
3.8 System Settings

This section describes the system settings.
The configurable items are as follows.

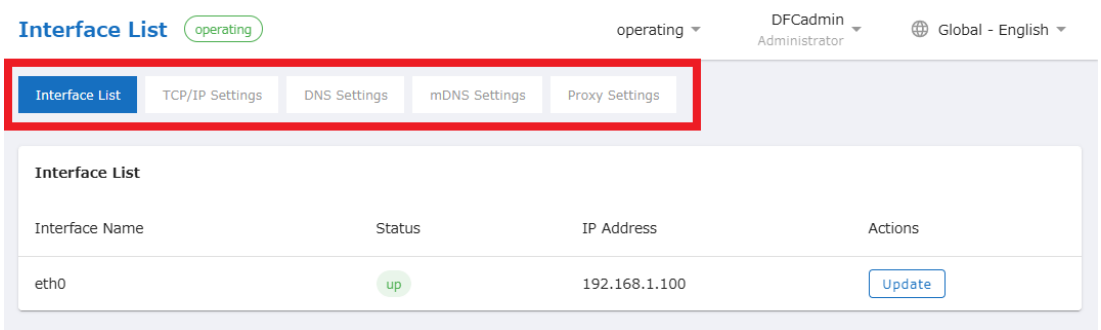
Item	Description
Networks	Configure the network-related settings of this Controller.
Date & Time	Set the system time of this Controller.
Firmware	Update the firmware.



3.8.1 Network Settings

Configure the network-related settings of this Controller.
The network setting items are as follows.

Item	Description
Interface List	Displays the set values of network interfaces in list form.
TCP/IP Address Settings	Set the IP addresses per network interface.
DNS Settings	Configure the DNS settings of this Controller.
mDNS Settings	Configure the mDNS settings of this Controller.
Proxy Settings	Configure the proxy settings of this Controller.



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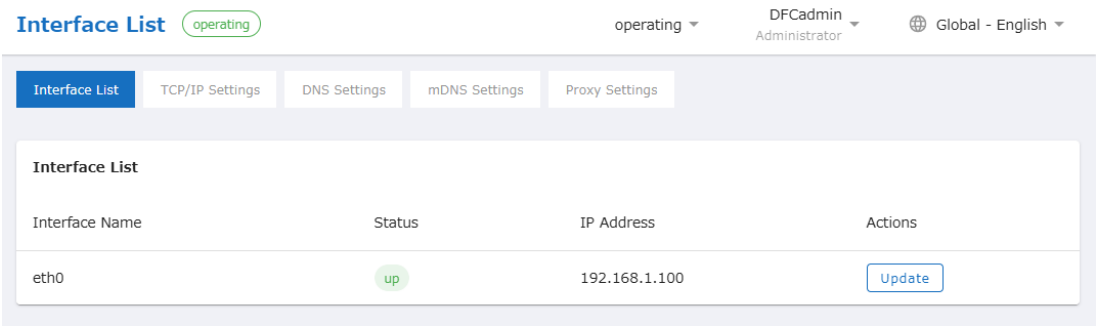
Interface List

Displays the set values of network interfaces of this Controller in list form.
The displayed items are as follows.

Item	Description
Interface Name	Physical interface name
Status	Displays the operating status.
IPv4 Address	IP address set for the corresponding interface
Action	Edit button: Pressing this navigates you to the TCP/IP Settings tab of the corresponding interface.



TCP/IP Address Settings

Set the IP addresses for network interfaces.
When the IP address is automatically set by DHCP, the setting items are displayed as follows.

Item	Input method	Description
Interface	Pulldown	List of physical interface names
IP setting method	Radio button	Select whether to set the IP address by DHCP or manually.
IP Address	Label	IP address set for the corresponding interface
Subnet Mask	Label	Subnet mask set for the corresponding interface
Default Gateway	Label	Default gateway set for the corresponding interface

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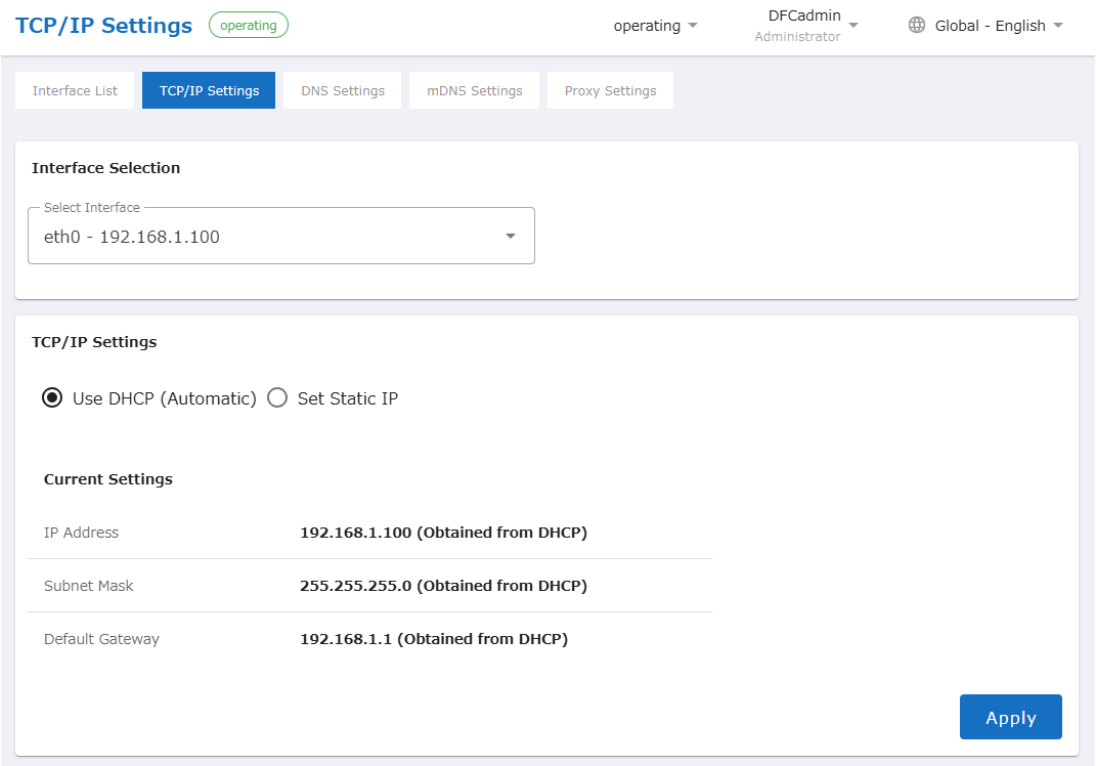

When the IP address is manually set, the setting items are displayed as follows.

Item	Input method	Description
Interface	Pulldown	List of physical interface names
IP setting method	Radio button	Select whether to set the IP address by DHCP or manually.
IP Address	Text	IP address set for the corresponding interface
Subnet Mask	Text	Subnet mask set for the corresponding interface
Default Gateway	Text	Default gateway set for the corresponding interface

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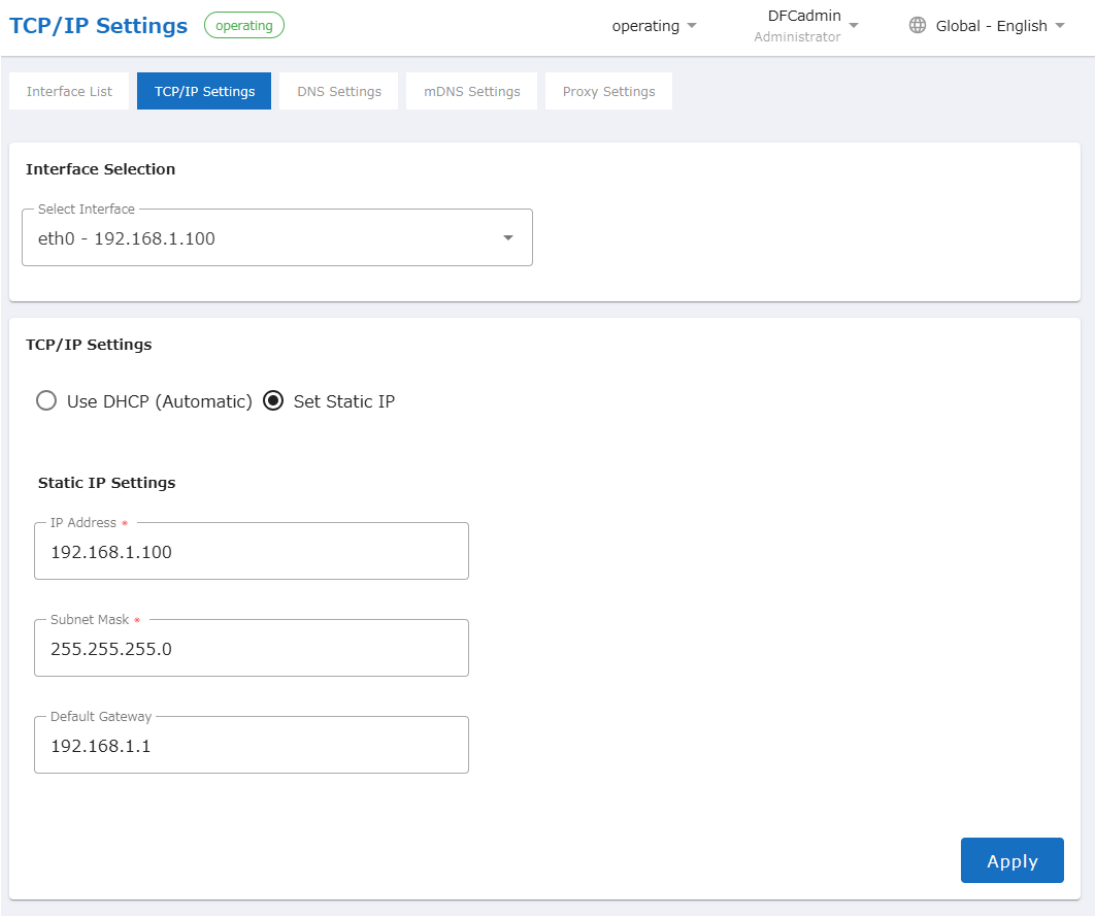

IP ADDRESS SETTING METHOD

You can use the following procedure to set the IP address for the target interface.

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WARNING

If you change the IP address or hostname, communication with the Controller may become impossible and an error screen may be displayed. Please access it again with the new address.

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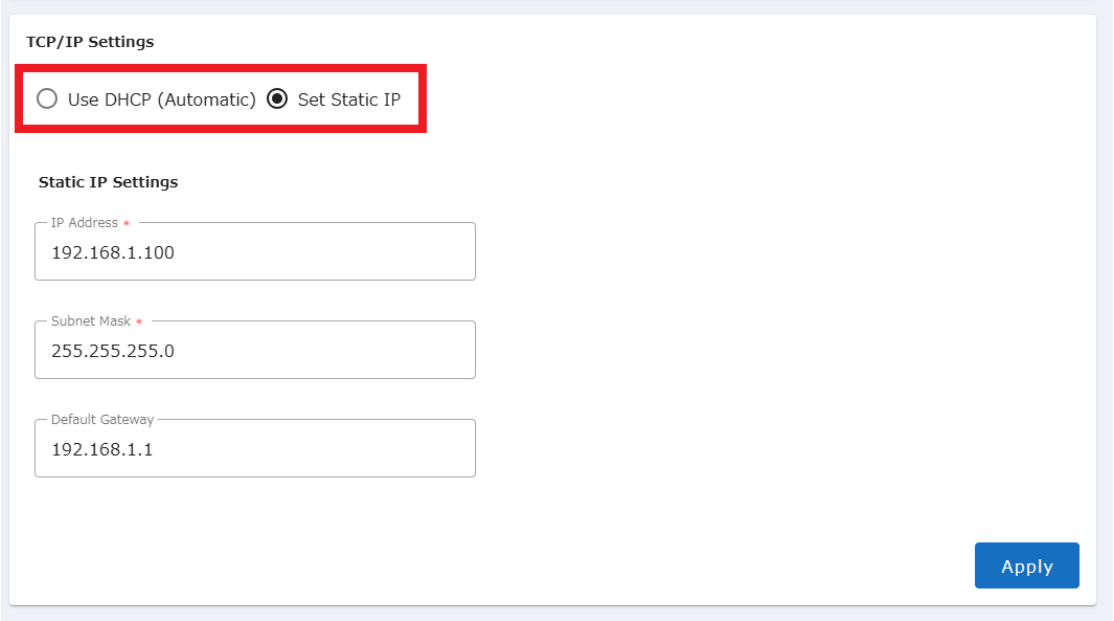
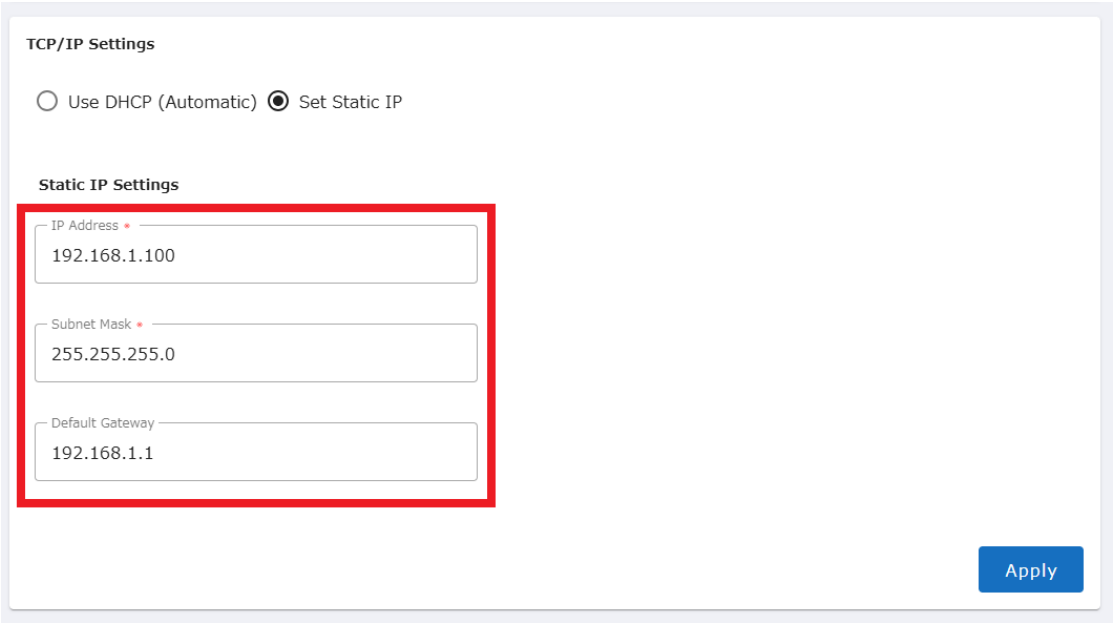
1. Select the target interface from the pulldown list.

2. Select the IP address setting method.



3. If Set Static IP is selected, enter the following items.

Item	Input method	Description
IP Address	Text	IP address to be set for the corresponding interface
Subnet Mask	Text	Subnet mask to be set for the corresponding interface
Default Gateway	Text	Default gateway to be set for the corresponding interface



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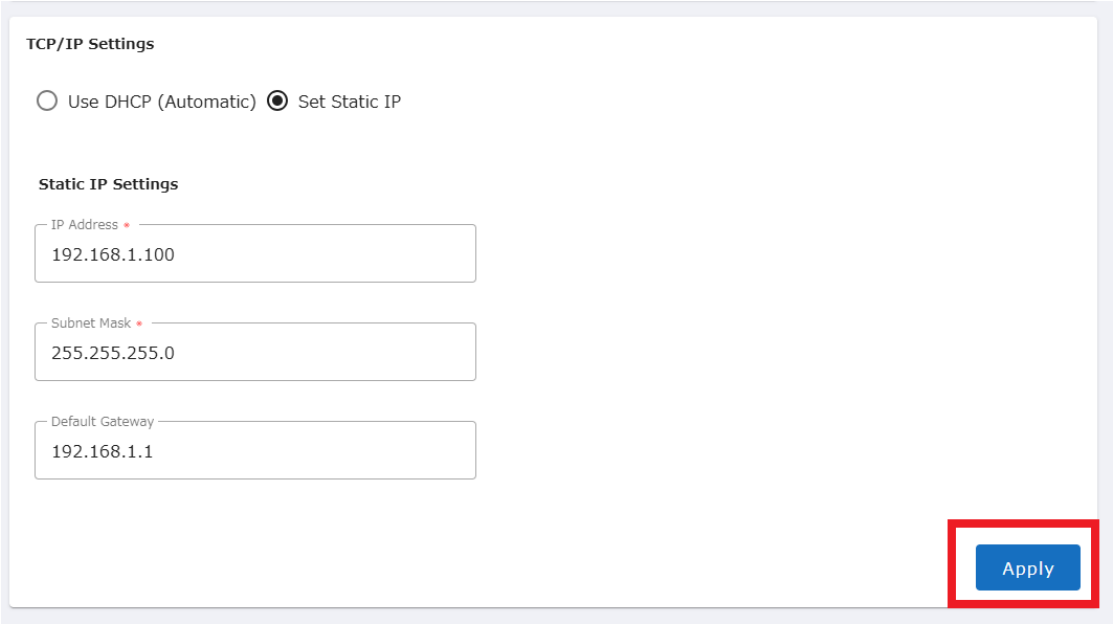
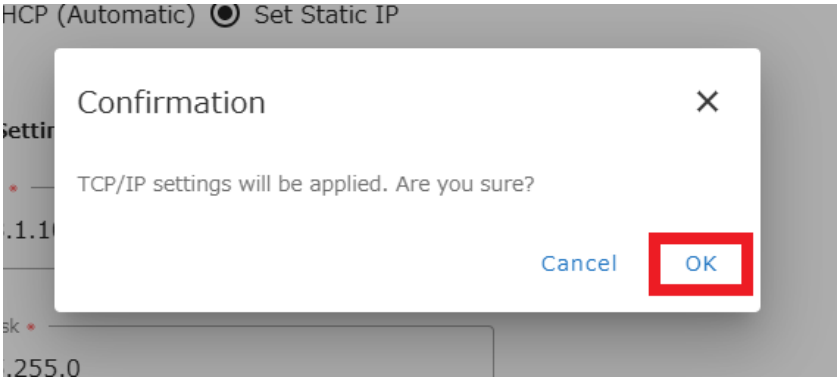
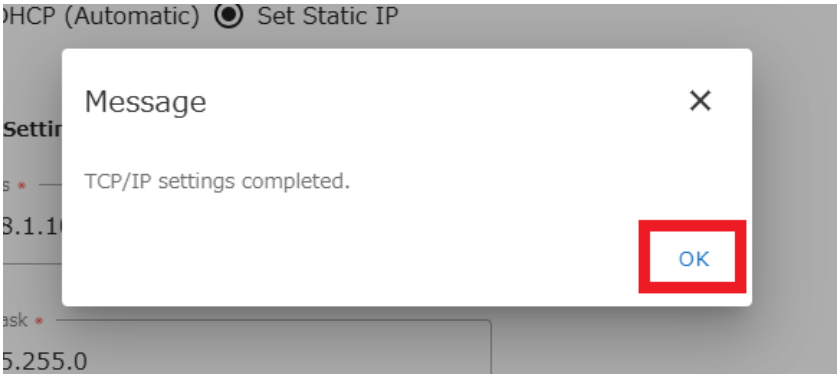
4. Press the Apply button.



5. In the confirmation dialog, press the OK button.



6. In the message dialog, press the OK button.



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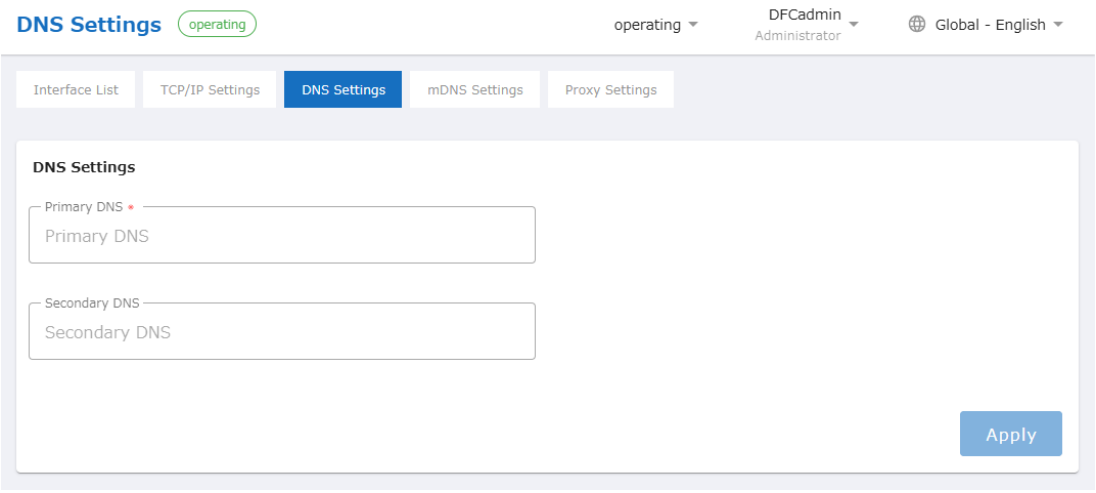
DNS Settings

Configure the DNS settings of this Controller.



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DNS SETTING METHOD

You can set the DNS information by the following procedure.

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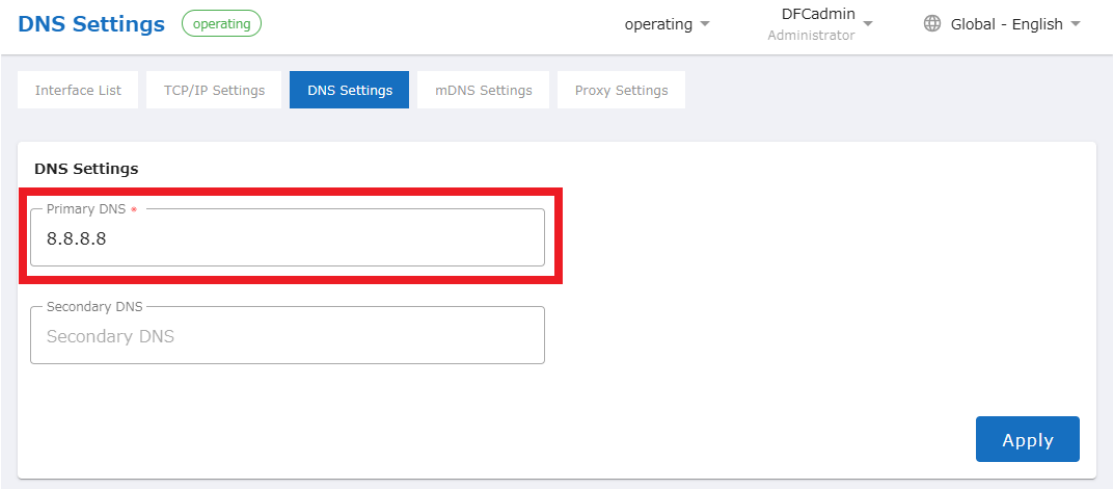
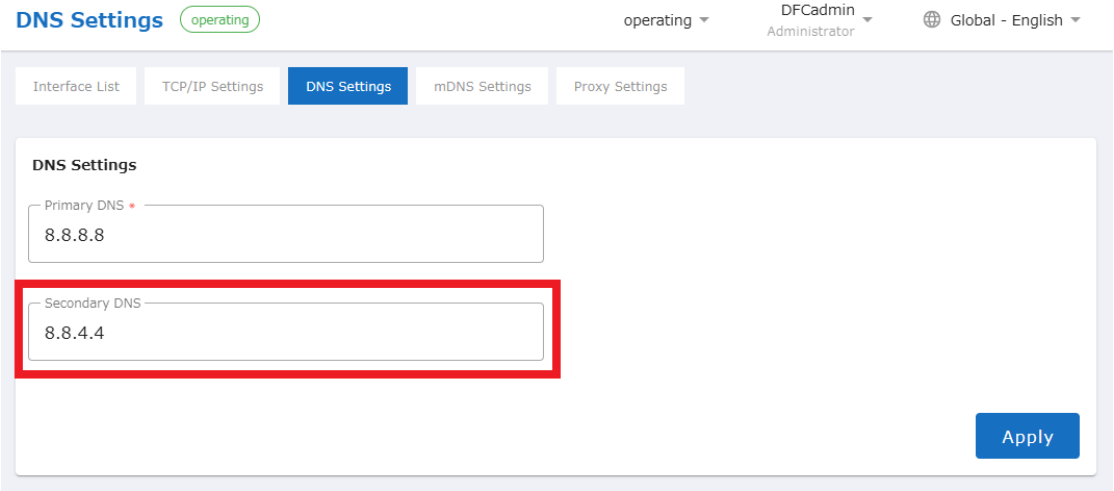
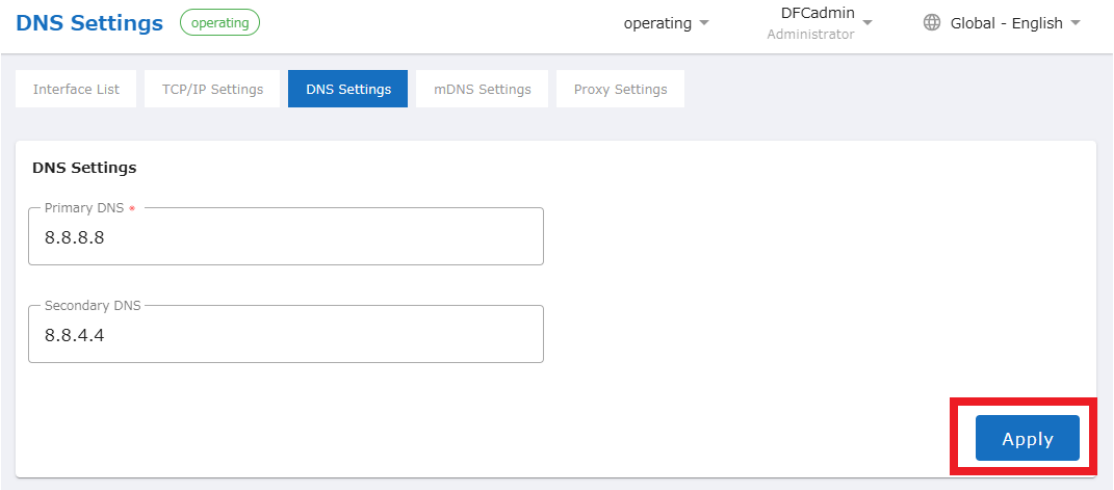
1. Enter the address in Primary DNS.



2. Enter the address in Secondary DNS.



3. Press Apply.



4. In the confirmation dialog, press the OK button.

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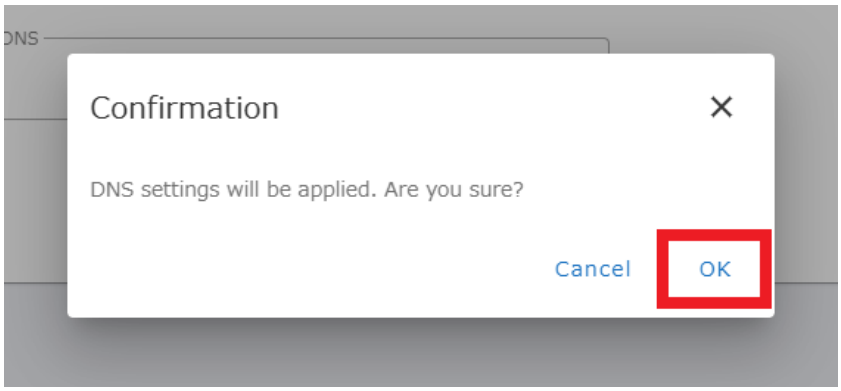
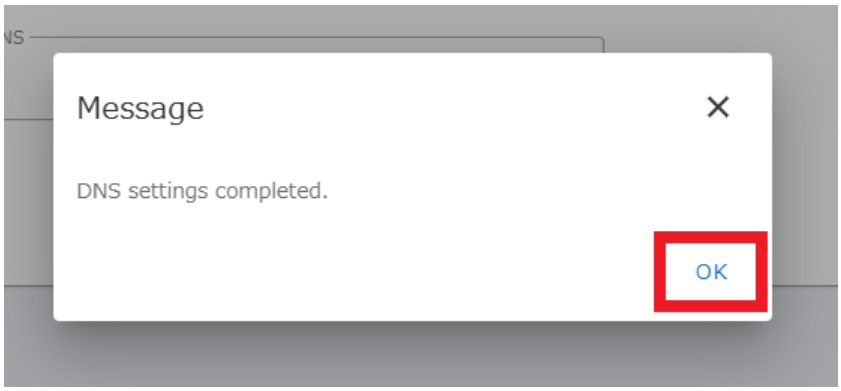
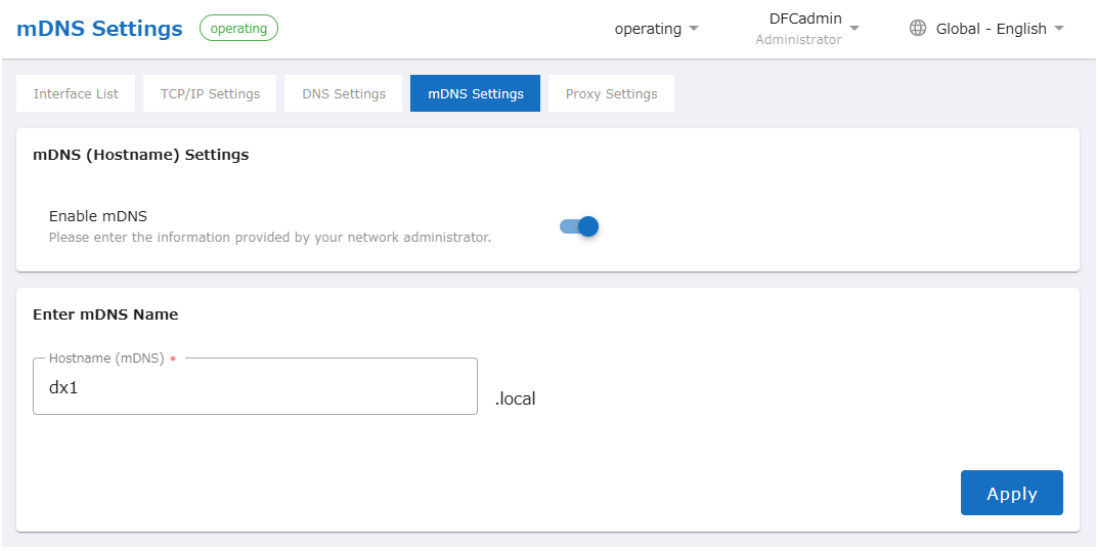


5. In the message dialog, press the OK button.



mDNS Settings

Configure the mDNS settings of this Controller.



MDNS SETTING METHOD

You can set the mDNS information by the following procedure.

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WARNING

If you change the IP address or hostname, communication with the Controller may become impossible and an error screen may be displayed. Please access it again with the new address.

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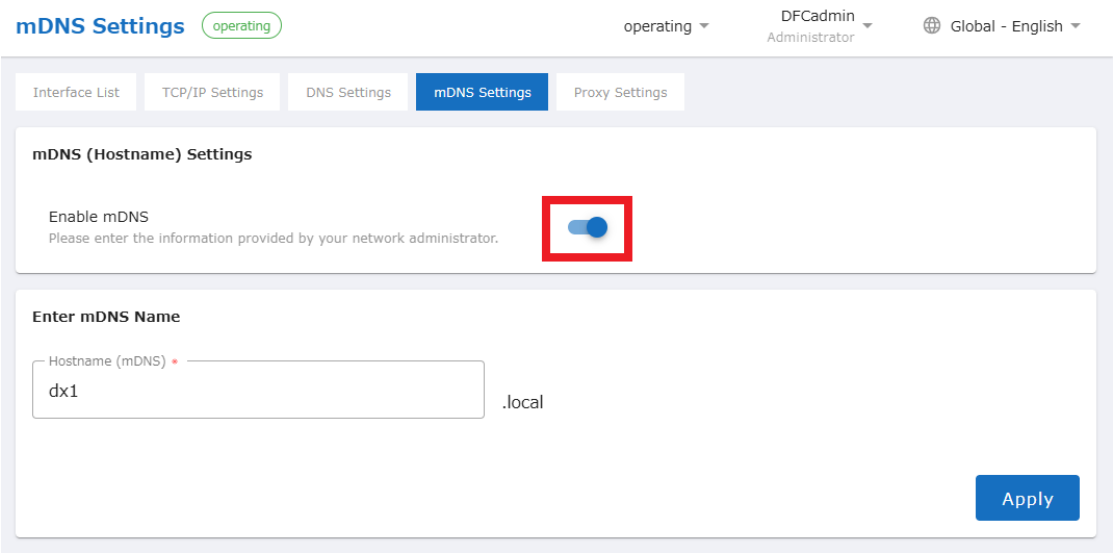
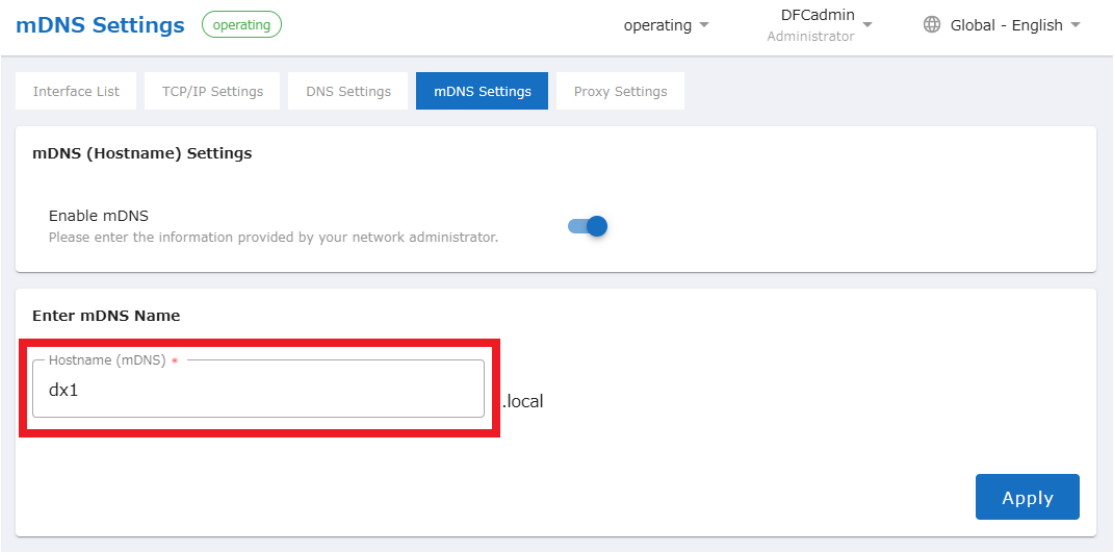
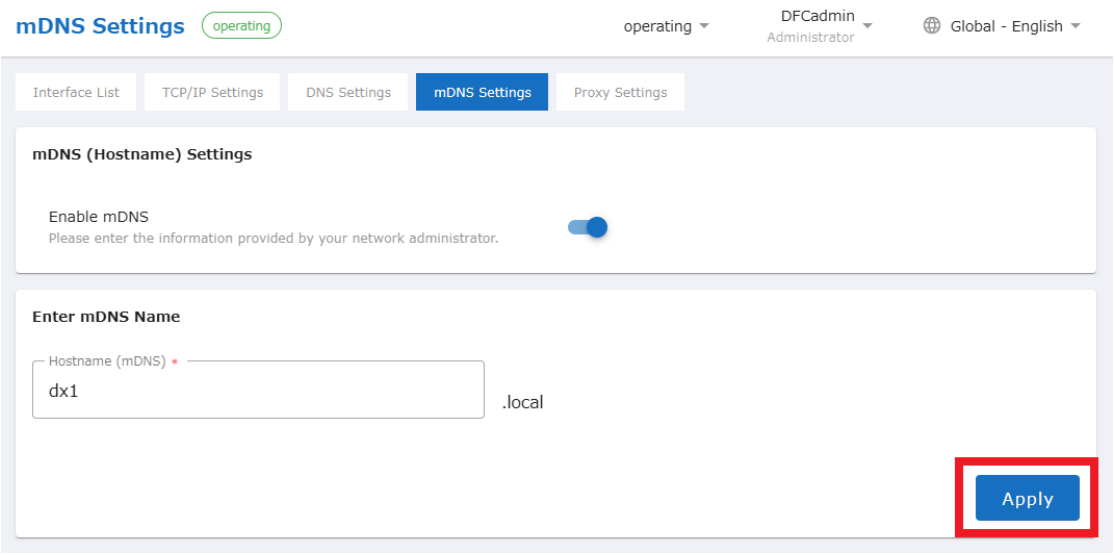
1. Turn the Set mDNS toggle switch to ON.



2. Enter the mDNS name in Hostname (mDNS).



3. Press Apply.



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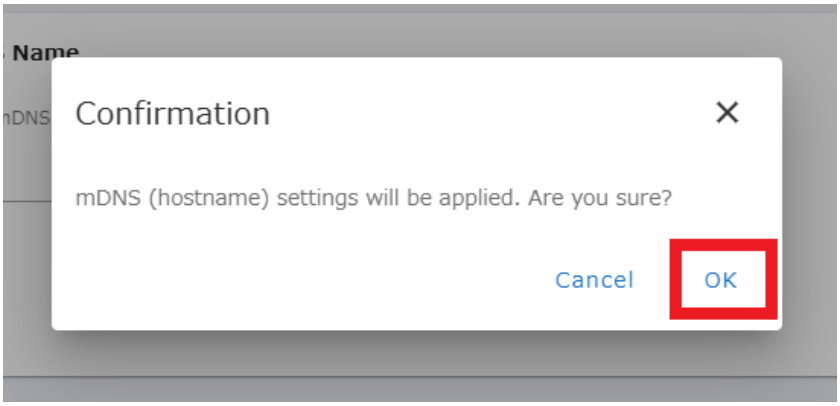
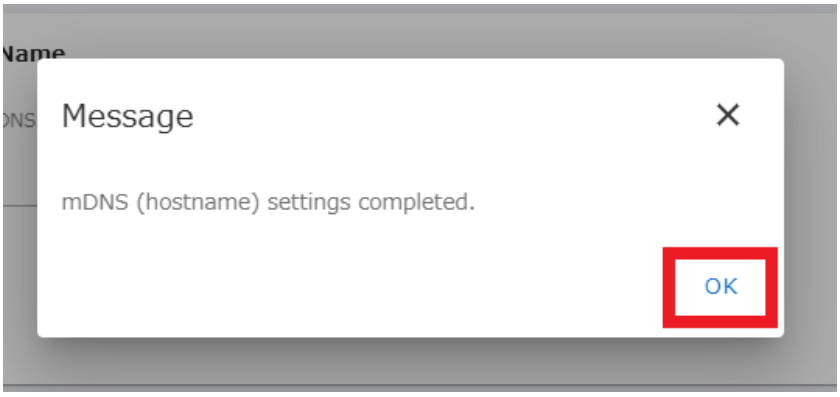
4. In the confirmation dialog, press the OK button.



5. In the message dialog, press the OK button.



Proxy Settings

Configure the proxy settings of this Controller.

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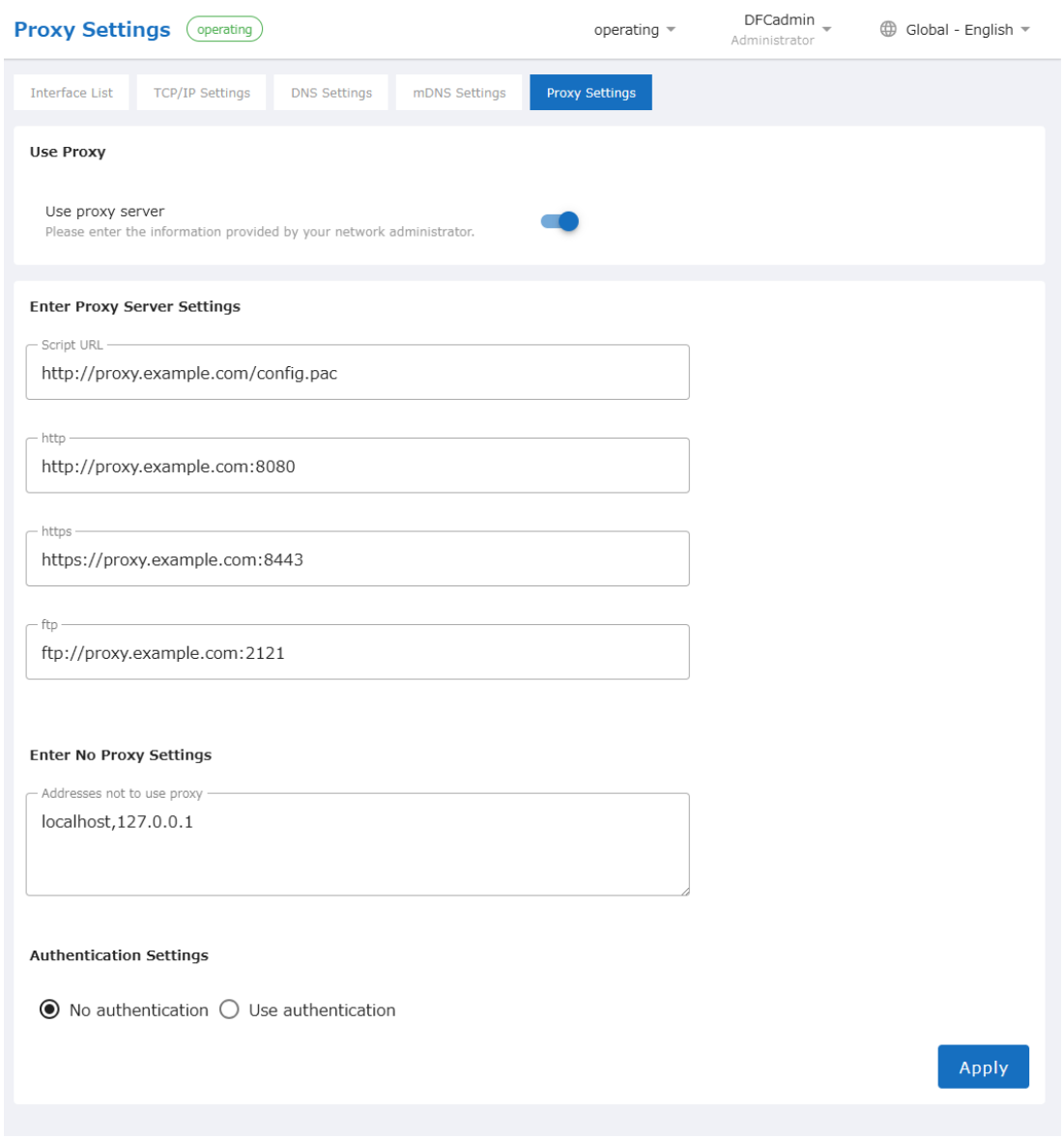

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PROXY SETTING METHOD

You can set the proxy information by the following procedure.

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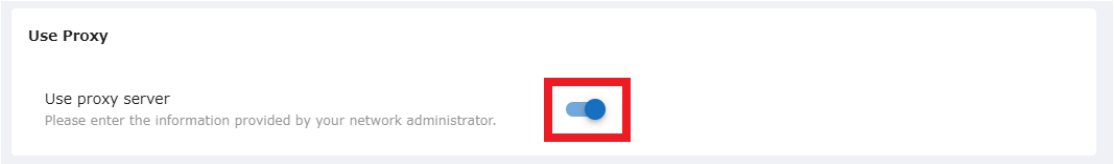
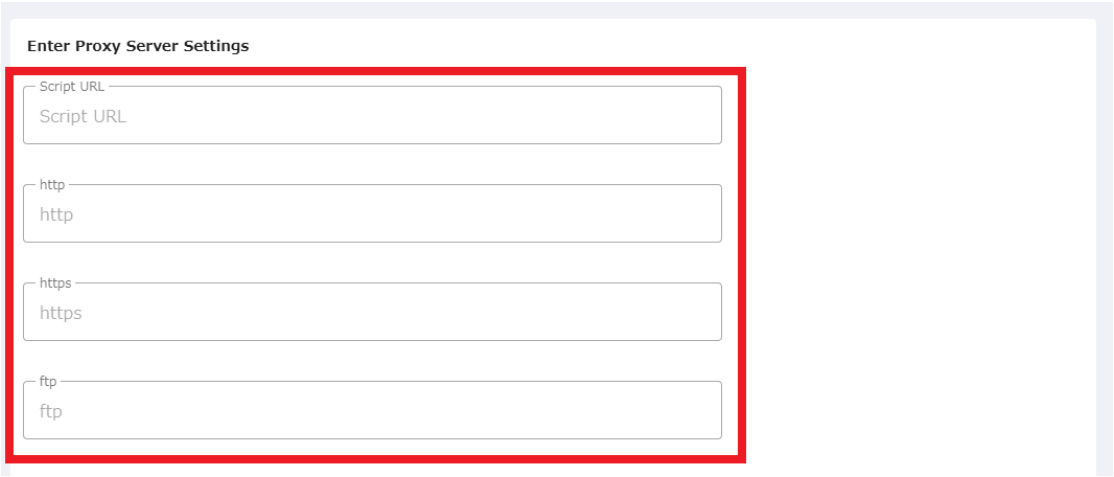
1. Turn the Use proxy server toggle switch to ON.



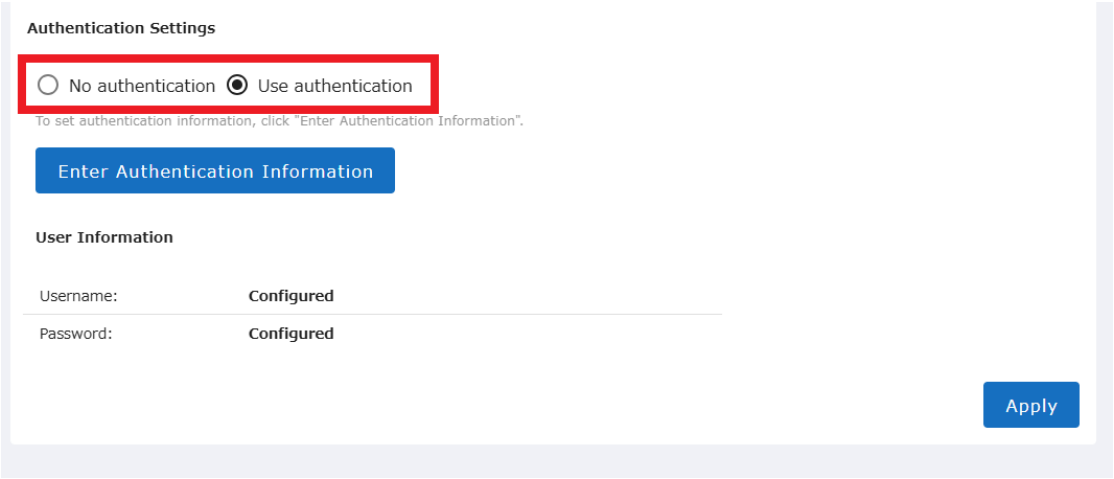
2. Enter the following items for proxy server settings.

Item	Input method	Description
Proxy Auto-Configuration (PAC) URL	Text	URL for auto-configuration script
http Proxy	Text	Address for http connection
https Proxy	Text	Address for https connection
ftp Proxy	Text	Address for ftp connection



3. To configure No Proxy settings, enter the address in Proxy exclusion hosts.

4. Select whether to use proxy authentication.



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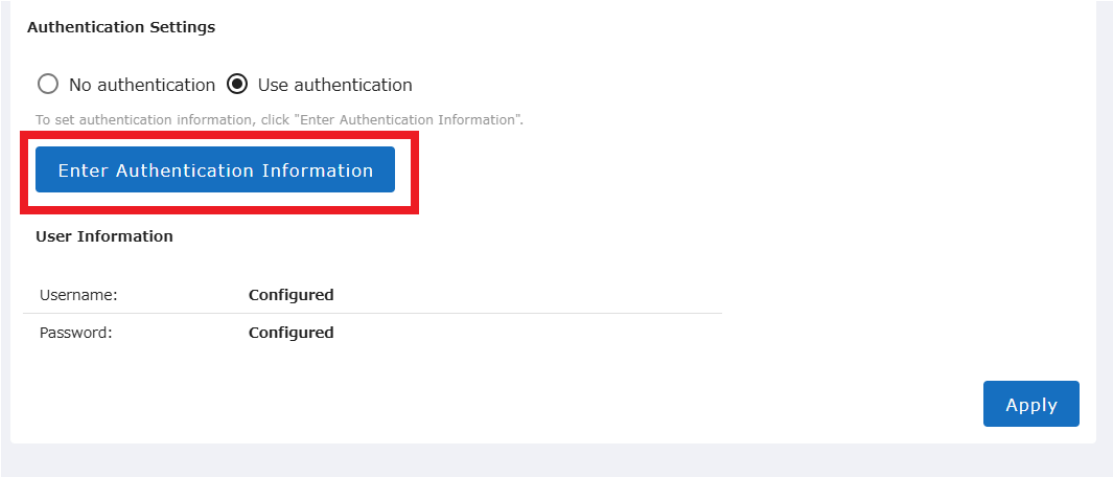
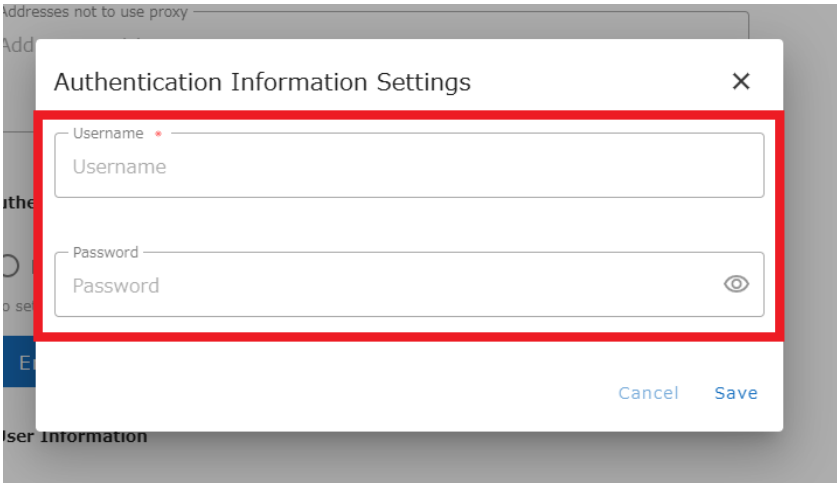
5. If Use authentication is selected, press the Enter Authentication Information button.

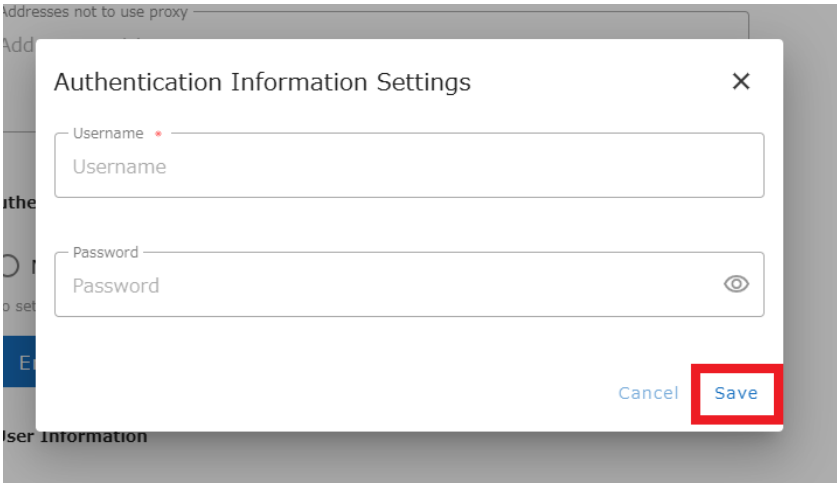


6. In the displayed Enter Authentication Information dialog, enter the following items.

Item	Input method	Description
Proxy Authentication User	Text	User ID for proxy server connection
Proxy Authentication Password	Text	Password for proxy server connection



7. Press the Save button in the dialog.



8. Press Apply.

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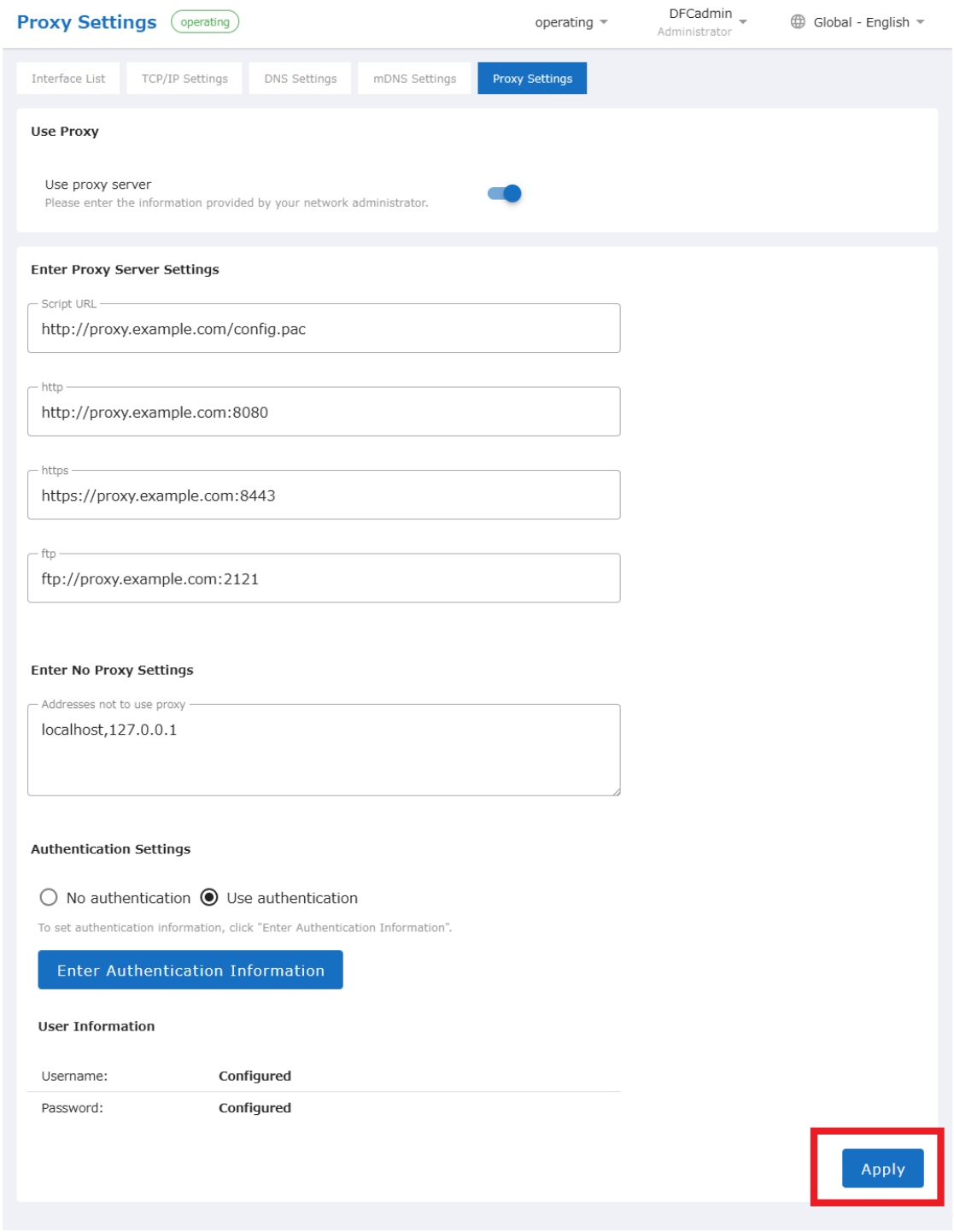

9. In the confirmation dialog, press the OK button.

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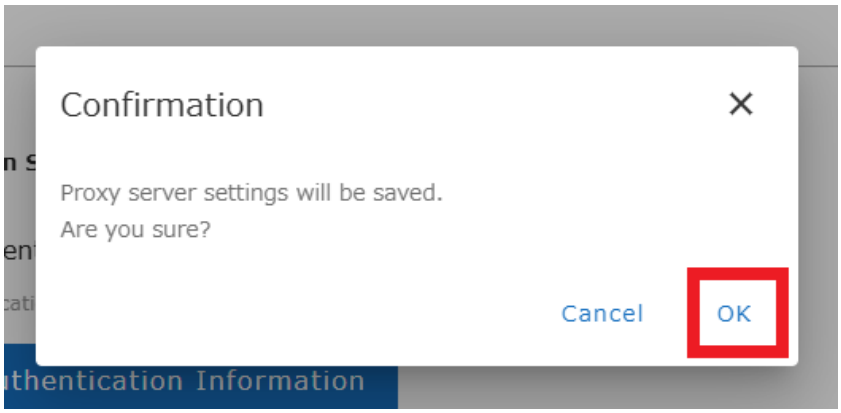
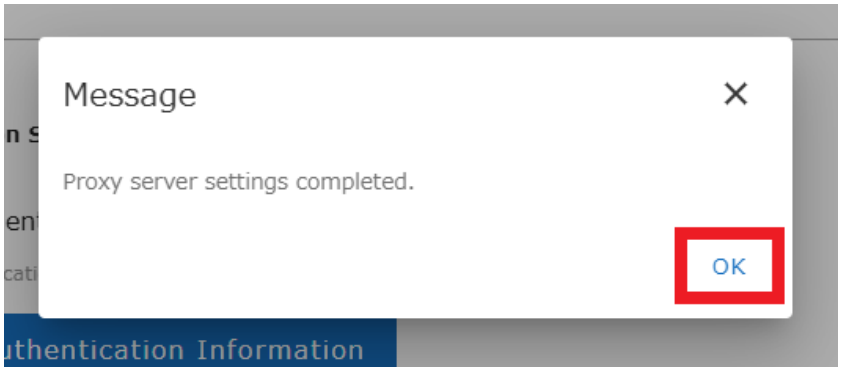


10. In the message dialog, press the OK button.



3.8.2 Time Settings

Set the system time of this Controller.
The system time setting items are as follows.

Item	Input method	Description
Time Zone	Pulldown	Displays a list of selectable time zones.
NTP usage setting	Radio button	Select whether to set the time by NTP synchronization or manually.
Date & Time	Text box	When performing manual setting, enter the date and time to be set.
NTP Server 1	Text	When using NTP, directly enter the NTP server information to be used.
NTP Server 2	Text	When using NTP, directly enter the NTP server information to be used. (Optional)

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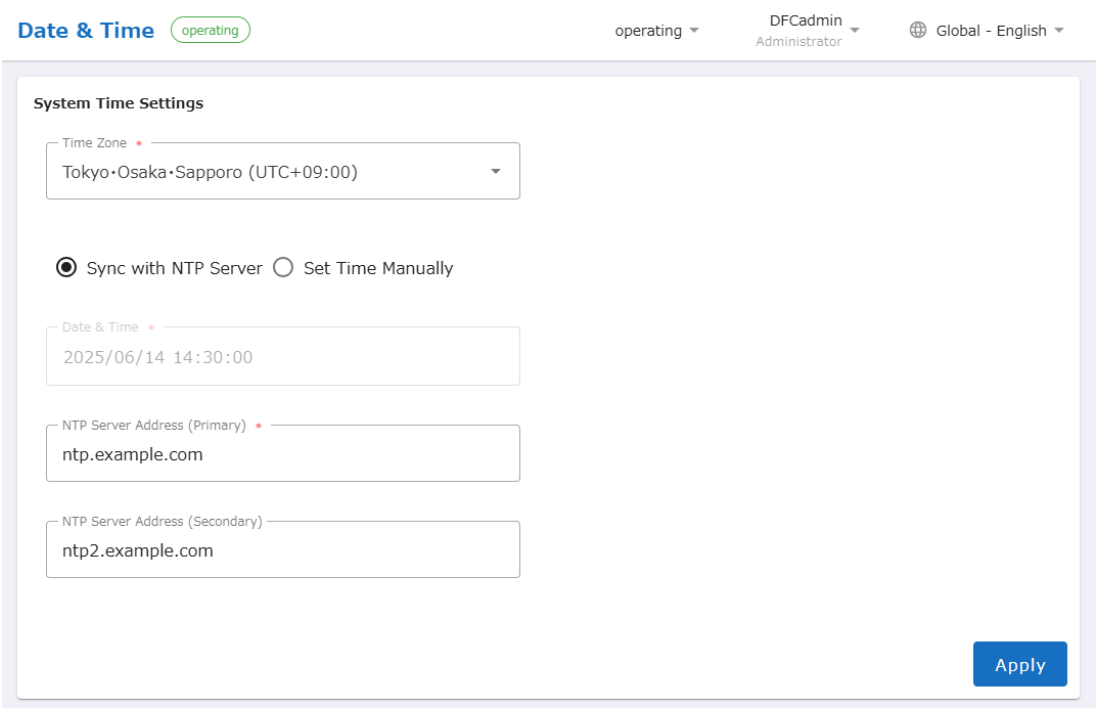

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Time Setting Method

You can set the system time by the following procedure.

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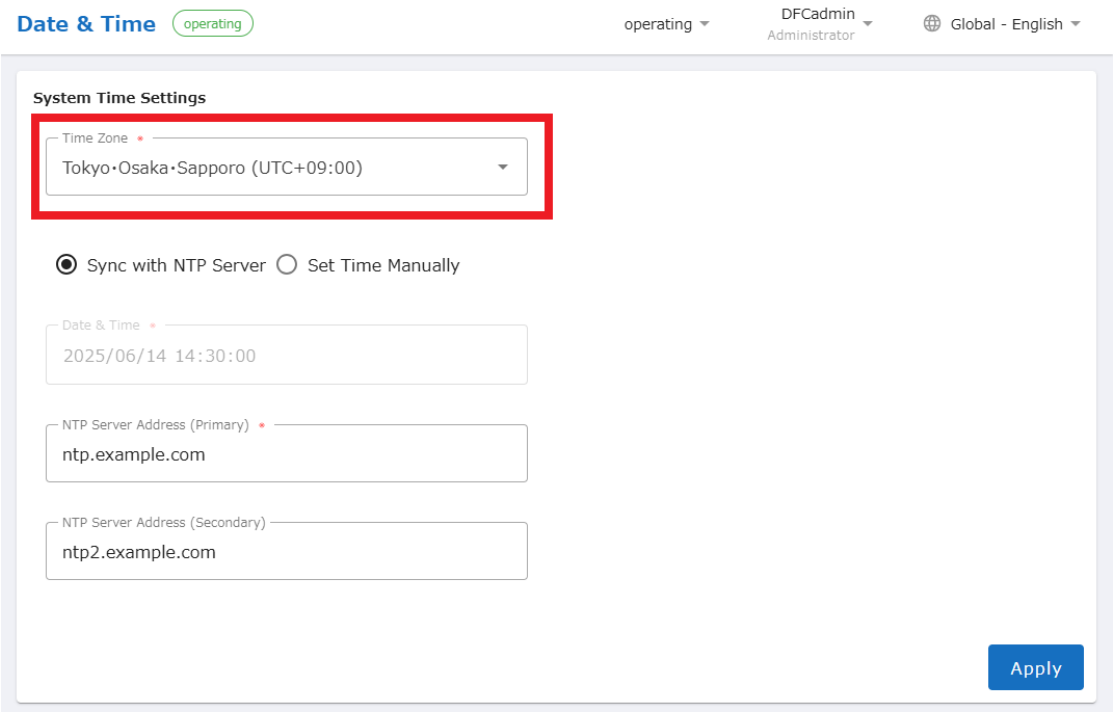
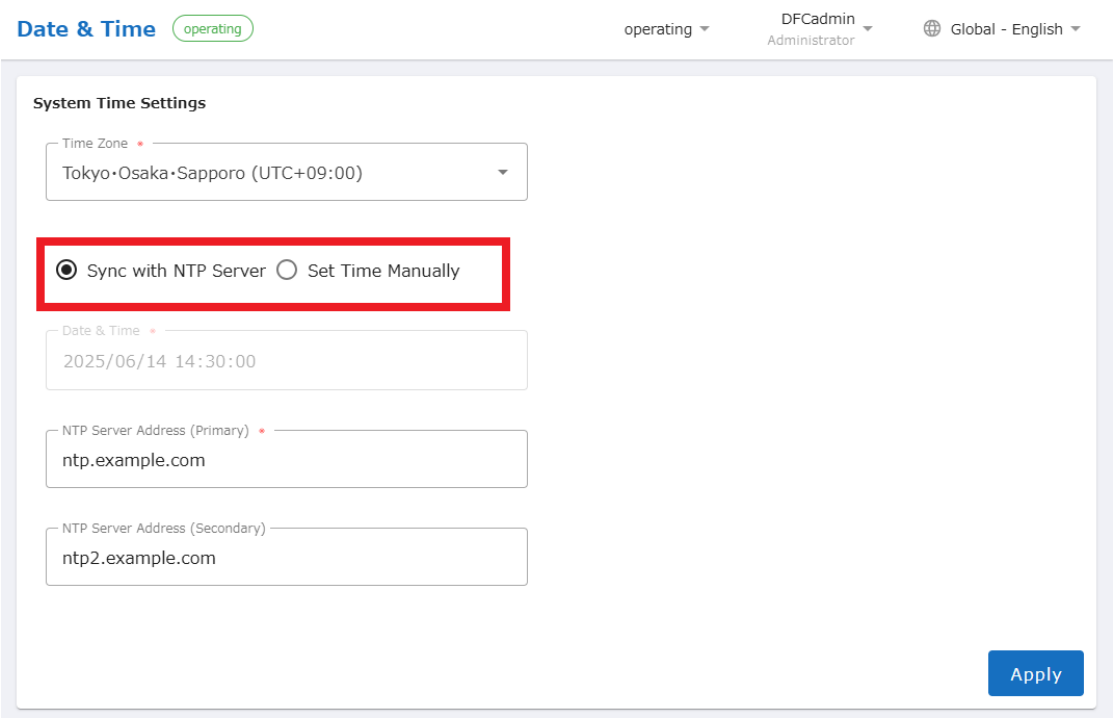
1. Select the desired time zone from Time Zone in the System Time Settings field.



2. Select either Sync with NTP Server or Set Time Manually using the radio button.



3. If Sync with NTP Server is selected using the radio button, enter one or more NTP server URLs in NTP Server.

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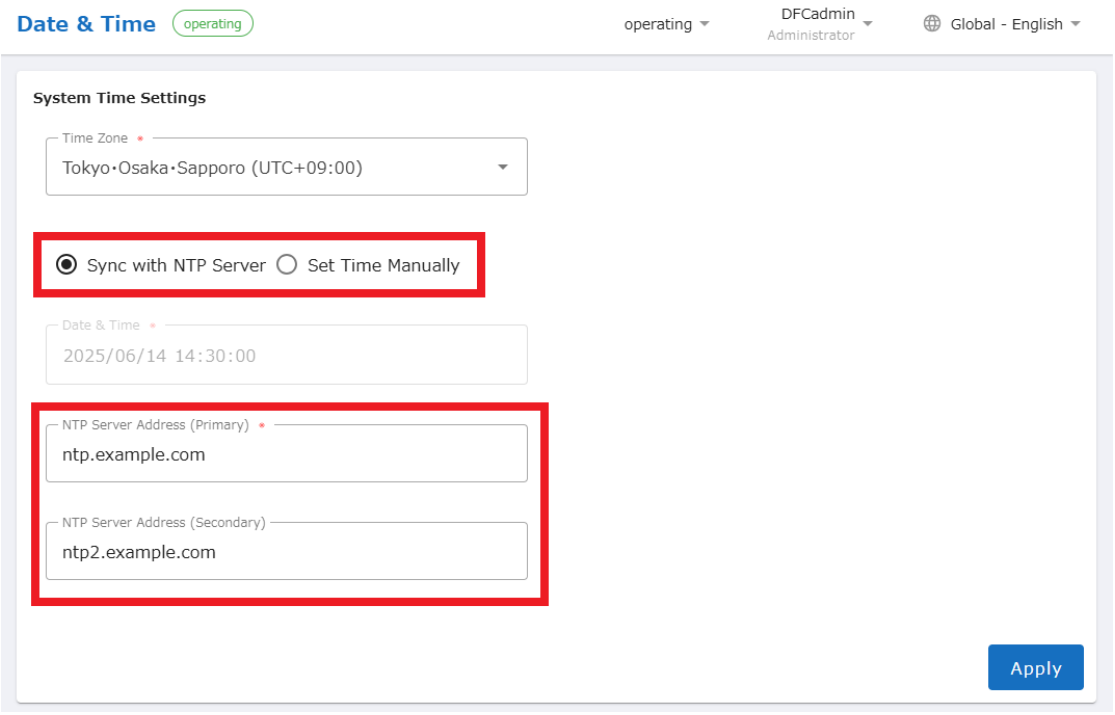
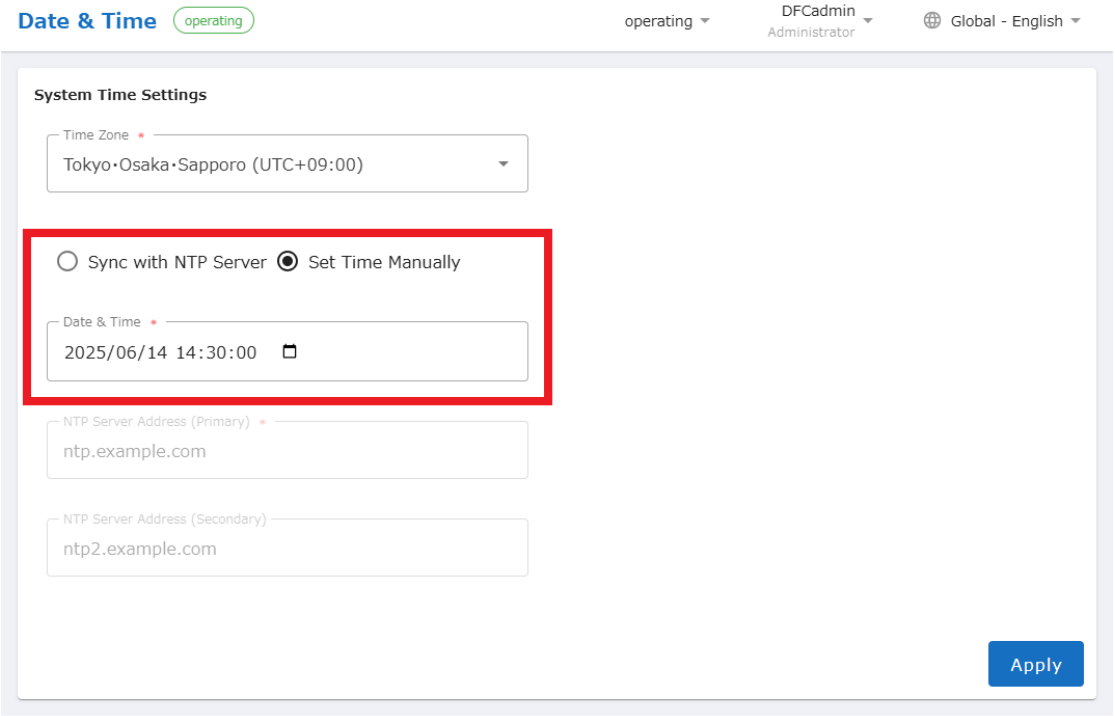


4. If Set Time Manually is selected using the radio button, enter the system time in Date & Time.



5. Press the Apply button.

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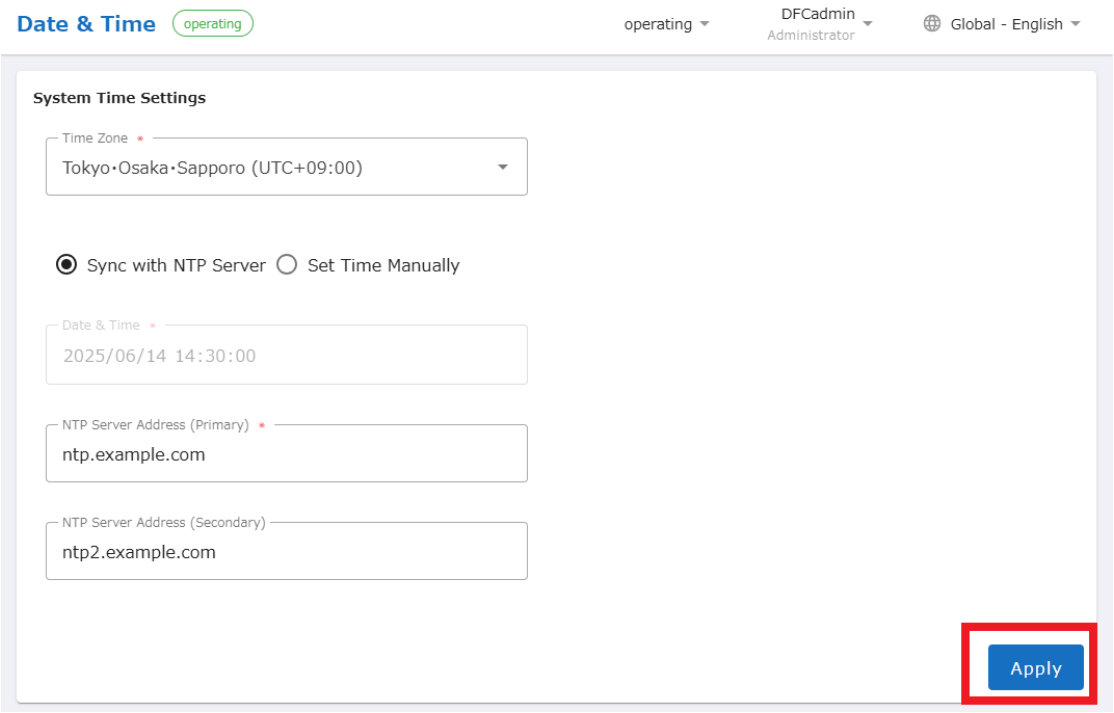
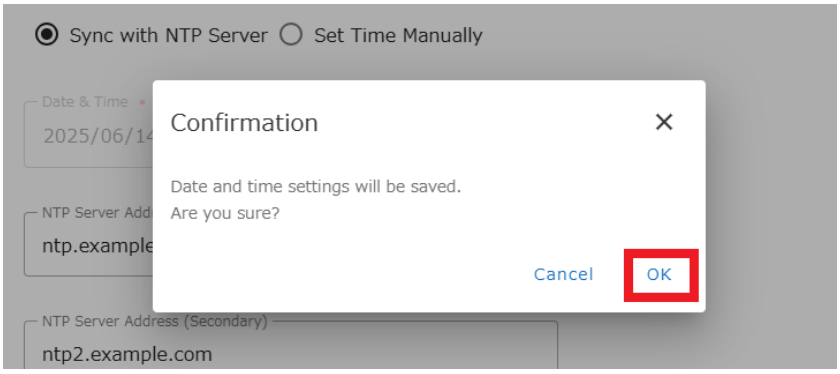
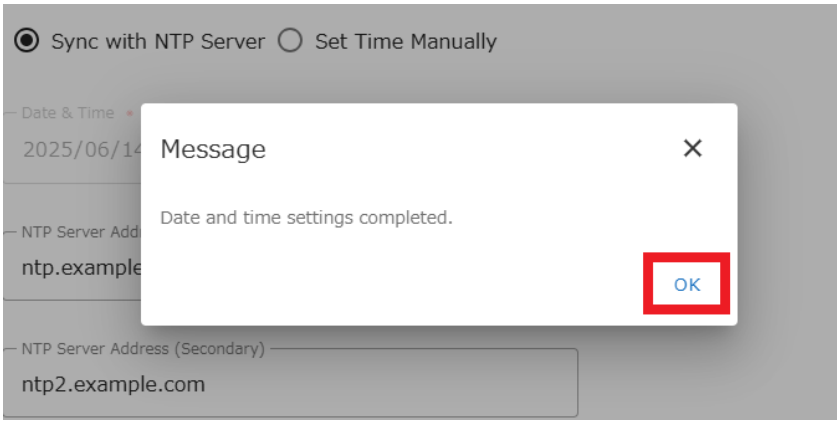


6. In the confirmation dialog, press the OK button.



7. In the message dialog, press the OK button.



3.8.3 Firmware Management

Manage the firmware update of this Controller.

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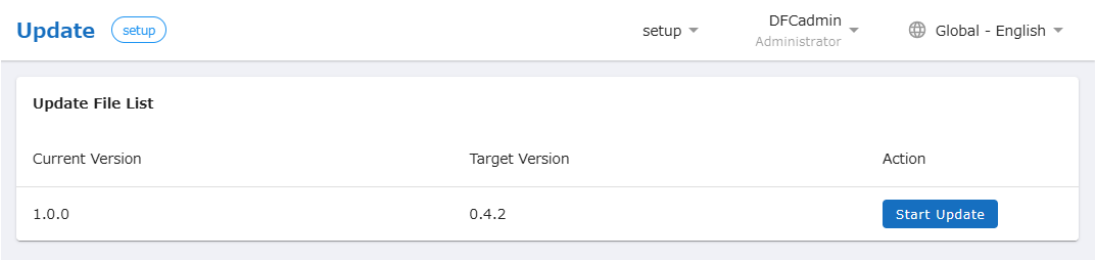

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How to Update the Firmware

You can update the firmware by the following procedure.

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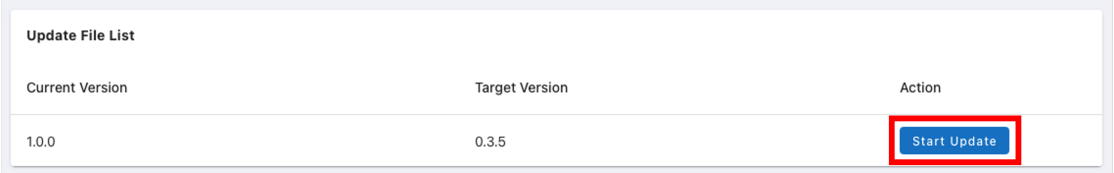
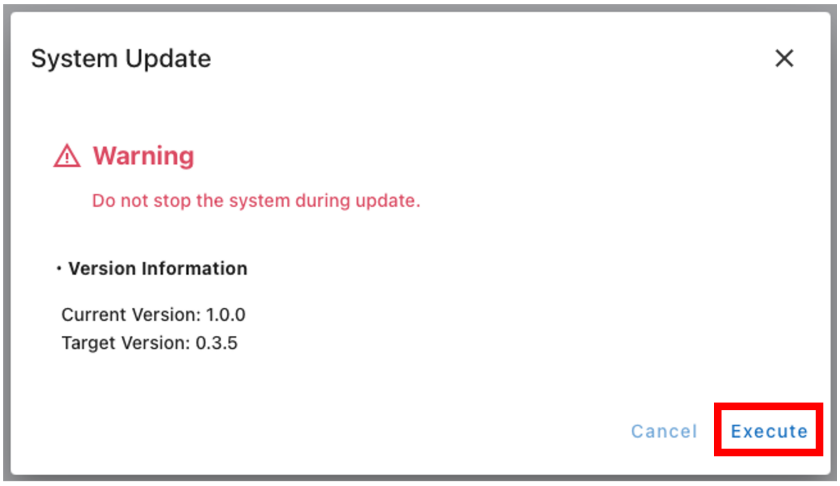
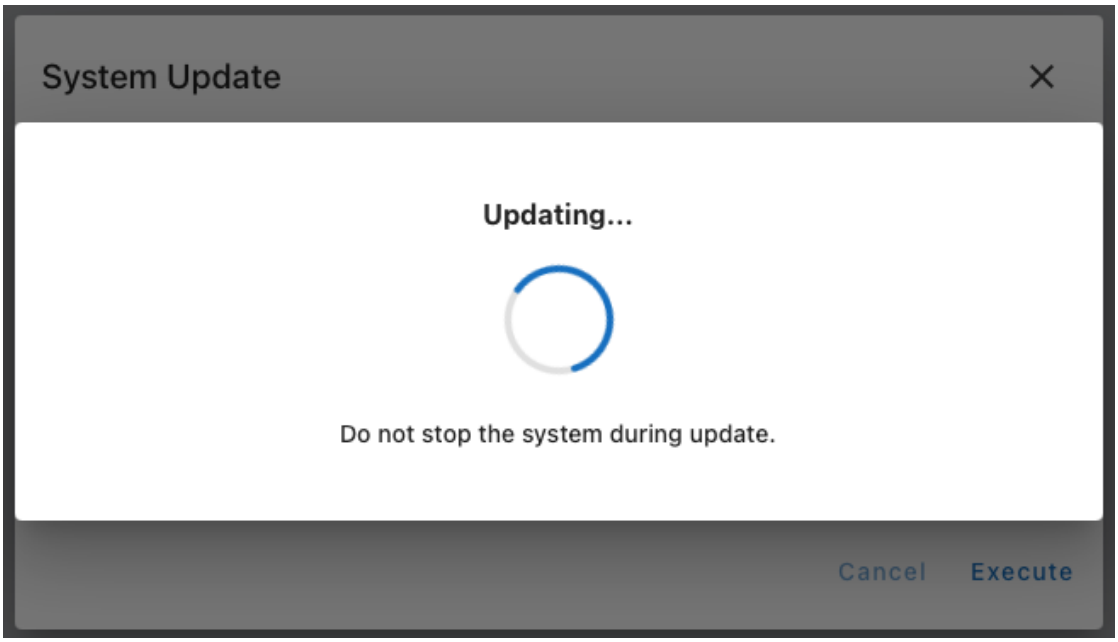
1. Press the Start Update button for the target bundle version.
   *In this example, the version is updated to v0.3.5 .



2. In the displayed system update dialog, press the Execute button.



3. The update process is executed. Wait until the update is complete.



4. Check the message displayed in the dialog, power off the controller.

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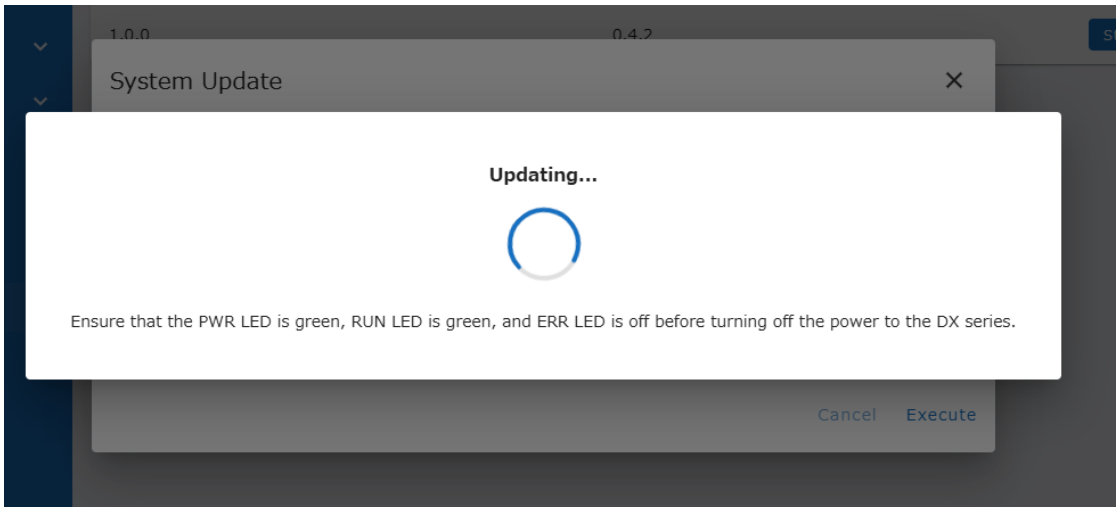

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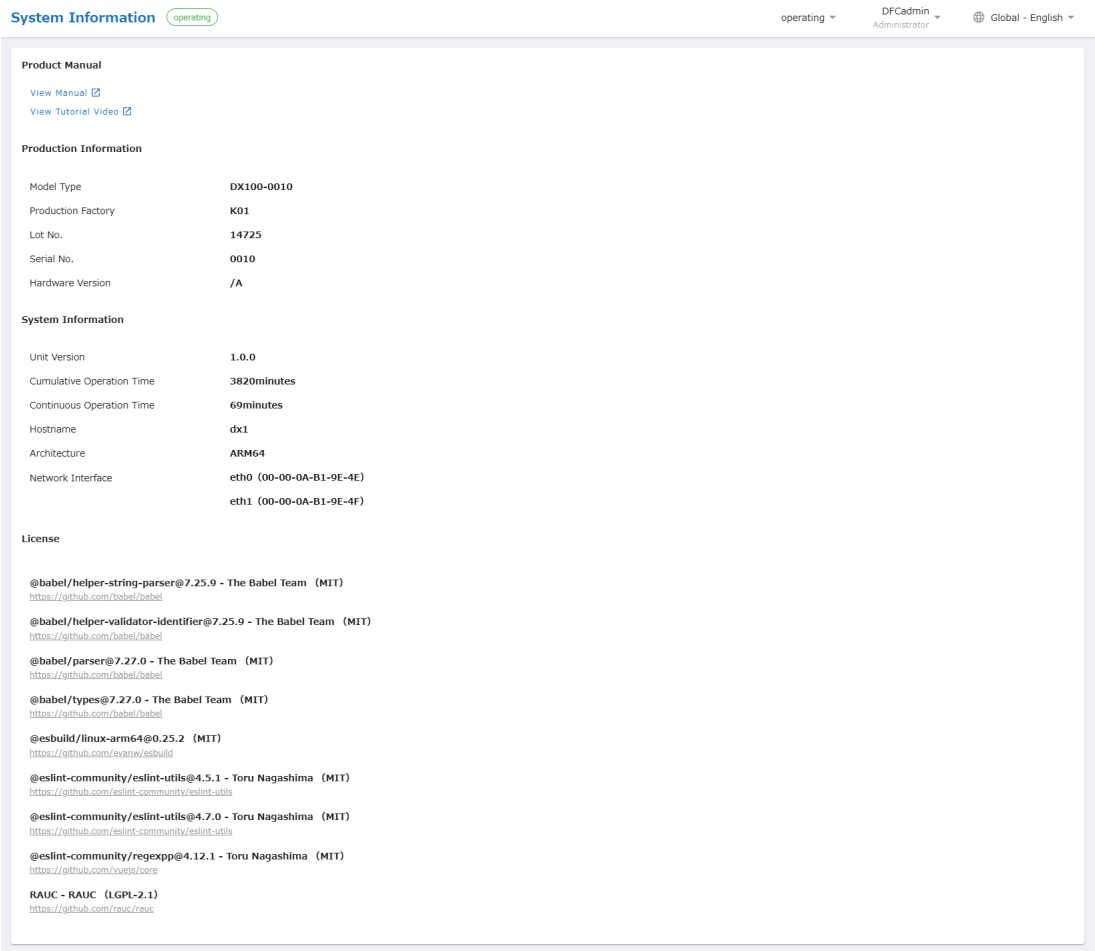
3.9 System Information

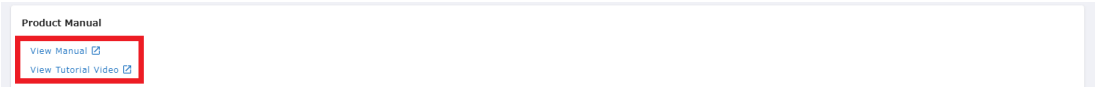
This section describes the system information.
The displayed items are as follows.

Item	Description
Product Manual	Displays a link to the operation manual of the Controller.
Production Information	Displays the production information of the Controller.
System Information	Displays the system information of the Controller.
License	Displays the OSS information used by the Controller.



3.9.1 Product Manual

Displays a link to the operation manual of the Web UI.
Clicking the link will display the manual in a separate tab.



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3.9.2 Production Information

The following items are displayed in the production information display area.

Item
Model Type
Production Factory
Lot No.
Serial No.
Hardware Version

3.9.3 System Information

The following items are displayed in the system information display area.

Item	Description
Unit Version	Displays the unit version of the Controller.
Cumulative Operation Time	Displays the cumulative operation time of the Controller.
Continuous Operation Time	Displays the continuous operation time of the Controller.
Hostname	Displays the hostname of the Controller.
Architecture	Displays the CPU architecture provided on the Controller.
Network Interface	Displays the interface name of the Controller.

3.9.4 License

The OSS information used by the Controller is displayed in the license display area.

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License

@babel/helper-string-parser@7.25.9 - The Babel Team （MIT）
https://github.com/babel/babel

@babel/helper-validator-identifier@7.25.9 - The Babel Team （MIT）
https://github.com/babel/babel

@babel/parser@7.27.0 - The Babel Team （MIT）
https://github.com/babel/babel

@babel/types@7.27.0 - The Babel Team （MIT）
https://github.com/babel/babel

@esbuild/linux-arm64@0.25.2 （MIT）
https://github.com/evanw/esbuild

@eslint-community/eslint-utils@4.5.1 - Toru Nagashima （MIT）
https://github.com/eslint-community/eslint-utils

@eslint-community/eslint-utils@4.7.0 - Toru Nagashima （MIT）
https://github.com/eslint-community/eslint-utils

@eslint-community/regexpp@4.12.1 - Toru Nagashima （MIT）
https://github.com/vuejs/core

RAUC - RAUC （LGPL-2.1）
https://github.com/rauc/rauc

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3.10 Shutdown Management

This section describes the shutdown management.

3.10.1 Shutdown

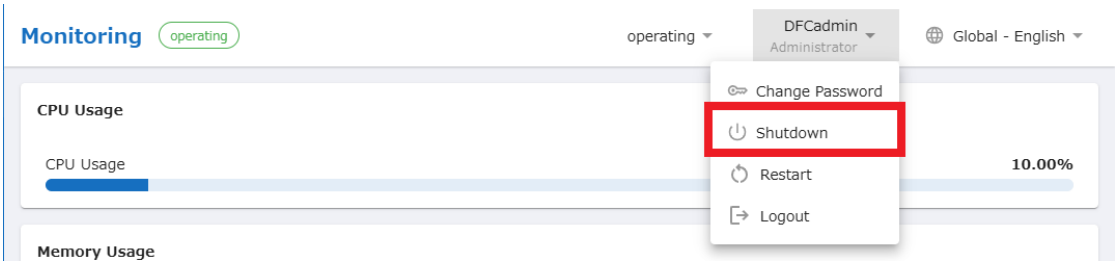
Shuts down the system of this Controller.

Shutdown Procedure

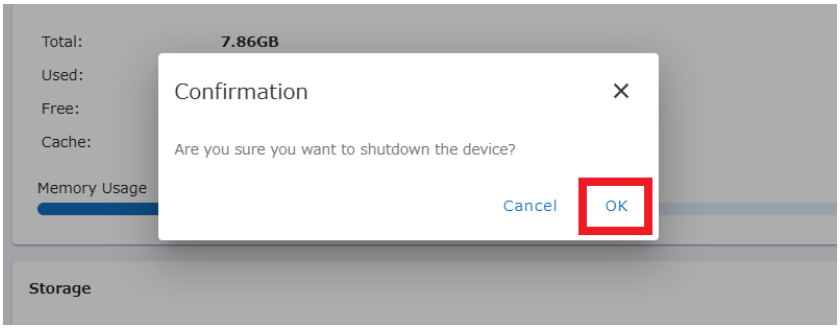
Use the following procedure to shut down the Controller.

1. Press the username displayed at the right part of the header.

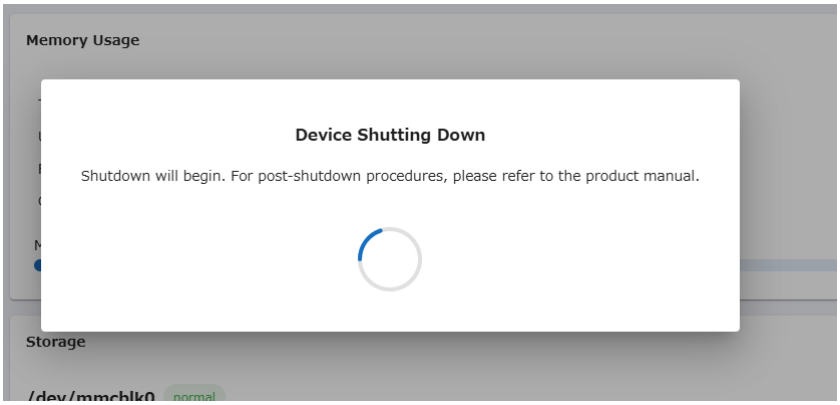
2. From the displayed list, press Shutdown.



3. In the confirmation dialog, press the OK button.



4. Wait until the shutdown is complete.



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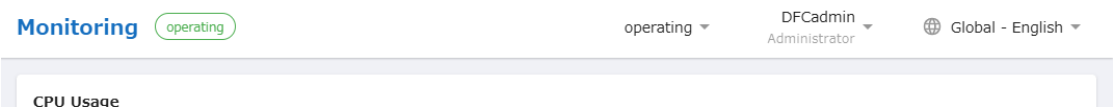
3.10.2 Restart

Restarts the system of this Controller.

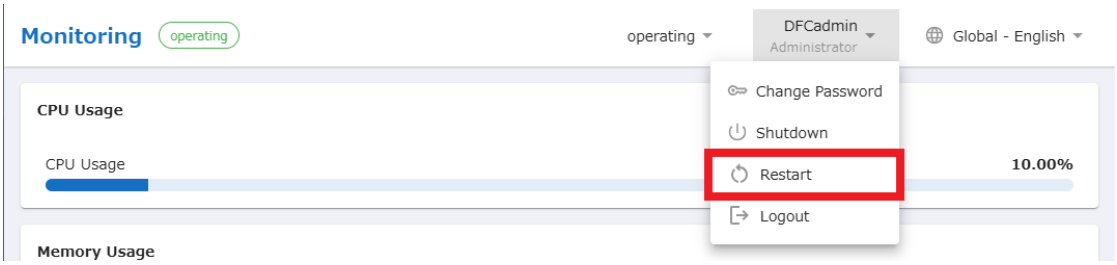
Restart Procedure

Use the following procedure to restart the Controller.

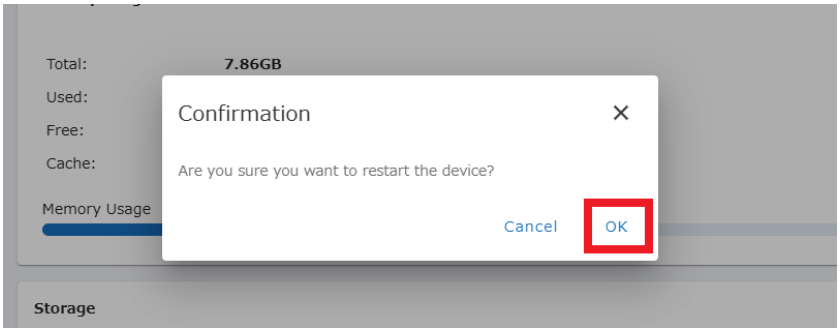
1. Press the username displayed at the right part of the header.



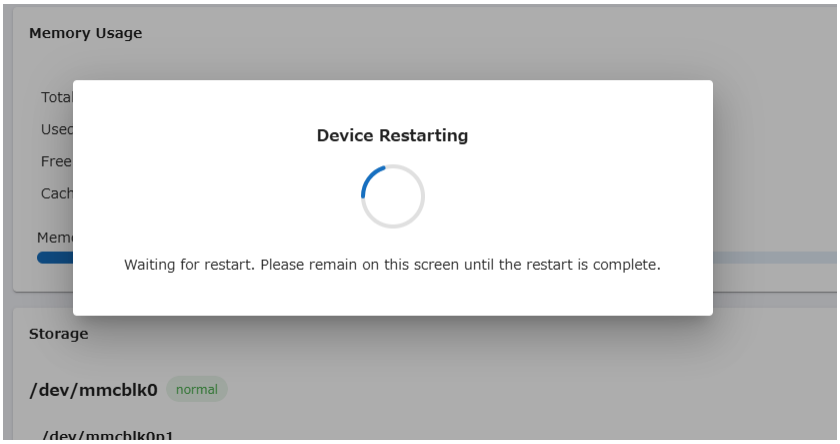
2. From the displayed list, press Restart.



3. In the confirmation dialog, press the OK button.



4. Wait until the restart is complete.



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3.11 REST API

3.11.1 Introduction to the API

Some operations of Data Flow Controller can be performed externally using the API.

3.11.2 How to Execute the API

Here, we describe how to execute the API using the curl command as an example.
If curl is not installed, download it from the official curl website and install it on your machine.

1. Open an environment to execute the curl command. On Linux, open the terminal; on Windows, open the command prompt.
2. Copy the Request using the curl command of each API in API Specifications and paste it into the environment to execute the curl command.
   *Some parts of the Request using the curl command need to be replaced. Refer to Common Items for details.
3. Pressing the Enter key will execute the API, and the response will be displayed.
   Refer to the Response of each API in API Specifications for details of the response.

> The Request using the curl command of each API in API Specifications specifies the following items.
> When executing the API using a method other than the curl command, the same items need be specified.
>
> | Item | Description |
> |---|---|
> | HTTP method | Specified in the form of -X "~~~". |
> | Request URL | This is a URL starting with "http://". |
> | HTTP header | Specified in the form of -H "~~~". |
> | Data transmitted with PUT method or POST method | Specified in the form of -d "~~~". |

3.11.3 API Specifications

Provides a list of operations that can be performed using the API, along with their request methods and responses. By understanding the API specifications and transmitting identical requests from various programs, usage across various programming languages and integration with control programs are enabled.

> Refer to API Interface for the document of detailed API specifications.

Common Items

The following list contains common items for the contents provided in the subsequent request examples.

- should be replaced with the host and port where Data Flow Controller is running.
- should be replaced with the access token issued in About Access Token.
- If a reverse proxy is configured, access via https.

Retrieving Main Unit Information

- Introduction

  Retrieves the main unit status of Data Flow Controller.

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- Request URL

```
http://<Data Flow Controller host:port>/api/v1/fwGetStatus
```

- Request using the curl command

Linux Windows

```
$ curl -X "GET" "http://<Data Flow Controller host:port>/api/v1/fwGetStatus" -H "accept: application/json" -H "X-API-Token: <Access Token>"

$ curl.exe -X "GET" "http://<Data Flow Controller host:port>/api/v1/fwGetStatus" -H "accept: application/json" -H "X-API-Token: <Access Token>"
```

- Response

Code	Description
200	Normal (OK)
400	Request error (Bad Request)
401	Authentication error (Unauthorized)
403	Authentication error (Forbidden)
404	Nonexistence error (Not Found)
409	Request conflict (Conflict)
429	Request limit exceeded (Too Many Requests)
500	Server error (Internal Server Error)
503	Service unavailable (Service Unavailable)

The normal response is in the following format.

```
{
    "success": "Completion flag (boolean value)",
    "data": {
        "state": "Main unit status of Data Flow Controller",
        "abnormalState": "Main unit abnormal status of Data Flow Controller",
        "activated": "Status of activation (boolean value)",
        "restartRequired": "Restart required flag (boolean value)",
    }
}
```

Updating Main Unit Information

- Introduction

  Update the main unit status of Data Flow Controller.

- Request URL

```
http://<Data Flow Controller host:port>/api/v1/fwSetStatus
```

- Request using the curl command

Linux Windows

```
$ curl -X "POST" "http://<Data Flow Controller host:port>/api/v1/fwSetStatus" -H "accept: application/json" -H "X-API-Token: <Access Token>" -d
"{\"state\": \"<Main unit status code>\"}"

$ curl.exe -X "POST" "http://<Data Flow Controller host:port>/api/v1/fwSetStatus" -H "accept: application/json" -H "X-API-Token: <Access Token>" -d
"{\"state\": \"<Main unit status code>\"}"
```


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- Response

Code	Description
200	Normal (OK)
400	Request error (Bad Request)
401	Authentication error (Unauthorized)
403	Authentication error (Forbidden)
404	Nonexistence error (Not Found)
409	Request conflict (Conflict)
429	Request limit exceeded (Too Many Requests)
500	Server error (Internal Server Error)
503	Service unavailable (Service Unavailable)

The normal response is in the following format.

```
{
    "success": "Completion flag (boolean value)",
    "data": {}
}
```

Shutdown

- Introduction

  Transmits the shutdown request of Data Flow Controller.

- Request URL

```
http://<Data Flow Controller host:port>/<subpath>/api/v1/shutdownStart
```

- Request using the curl command

Linux Windows

```
$ curl -X "POST" "http://<Data Flow Controller host:port>/api/v1/shutdownStart" -H "accept: application/json" -H "X-API-Token: <Access Token>"

$ curl.exe -X "POST" "http://<Data Flow Controller host:port>/api/v1/shutdownStart" -H "accept: application/json" -H "X-API-Token: <Access Token>"
```


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- Response

Code	Description
200	Normal (OK)
400	Request error (Bad Request)
401	Authentication error (Unauthorized)
403	Authentication error (Forbidden)
404	Nonexistence error (Not Found)
409	Request conflict (Conflict)
429	Request limit exceeded (Too Many Requests)
500	Server error (Internal Server Error)
503	Service unavailable (Service Unavailable)

The normal response is in the following format.

```
{
    "success": "Completion flag (boolean value)",
    "data": {}
}
```

Restart

- Introduction

  Transmits the restart request of Data Flow Controller.

- Request URL

```
http://<Data Flow Controller host:port>/<subpath>/api/v1/rebootStart
```

- Request using the curl command

Linux Windows

```
$ curl -X "POST" "http://<Data Flow Controller host:port>/api/v1/rebootStart" -H "accept: application/json" -H "X-API-Token: <Access Token>"

$ curl.exe -X "POST" "http://<Data Flow Controller host:port>/api/v1/rebootStart" -H "accept: application/json" -H "X-API-Token: <Access Token>"
```


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- Response

Code	Description
200	Normal (OK)
400	Request error (Bad Request)
401	Authentication error (Unauthorized)
403	Authentication error (Forbidden)
404	Nonexistence error (Not Found)
409	Request conflict (Conflict)
429	Request limit exceeded (Too Many Requests)
500	Server error (Internal Server Error)
503	Service unavailable (Service Unavailable)

The normal response is in the following format.

```
{
    "success": "Completion flag (boolean value)",
    "data": {}
}
```


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4. Secure Usage Guide

This section describes how to use Data Flow Controller securely.

4.1 Managing Users

This section describes how to manage users in order to enhance the security level.

Disabling the admin user

The admin user is a default user registered in Data Flow Controller. This user is granted all permissions. To prevent abuse through unauthorized access, it is recommended to disable it unless necessary. Before disabling it, ensure that another user with system administrator permissions has been added.

For how to disable users, refer to Account Management.

Strong password policy

It is desirable that the passwords registered for users be strong. Examples of the strong password policy are shown below. When using a tool to generate passwords automatically, you are recommended to generate a password that meets the following criteria.

- Contains at least 8 characters in length
- Contains at least one uppercase letter, one lowercase letter, one number, and one symbol
- Different from passwords used for other accounts
- Cannot be guessed from personal information such as names
- Does not use English words as they are
- Does not use easily guessable patterns or simple combinations of them

4.2 Strict Management of Tokens

Access tokens represent access permission to access resources when connecting to Data Flow Controller from external sources. If a malicious attacker abuses any access token, there is a risk of unauthorized access to the resources of Data Flow Controller. It is recommended to manage access tokens strictly to prevent them from falling into the hands of third parties.

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5. Appendix

- API Interface

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Data Flow Controller API Specification (1.0.0)

System

Returns the firmware status

This operation can be executed with any roles.

HEADER PARAMETERS

`X-API-Token` required	string Example: `your-token-here` API authentication token

Responses

200 OK

RESPONSE SCHEMA: application/json

`success`	boolean
`data` >	object

400 Bad Request

401 Unauthorized

403 Forbidden

404 Not Found

— **409** Conflict

— **429** Too Many Requests

— **500** Internal Server Error

— **503** Service Unavailable

GET /fwGetStatus

Response samples

200

Content type
application/json

Copy Expand all Collapse all


```
{
   "success": true,
 - "data": {
      "state": "string",
      "abnormalState": "string",
      "activated": true,
      "restartRequired": true
   }
}
```


Updates the firmware status

This operation can be executed with any roles.

HEADER PARAMETERS

X-API-Token
required

string
Example: `your-token-here`
API authentication token

REQUEST BODY SCHEMA: application/json

required

- `state` (required) — string
  Enum: `"operating"` `"setup"`
  The firmware mode to set

Responses

200 OK

RESPONSE SCHEMA: application/json

- `success` — boolean
- `data` — object

400 Bad Request

401 Unauthorized

403 Forbidden

404 Not Found

409 Conflict

429 Too Many Requests

500 Internal Server Error

503 Service Unavailable

POST `/fwSetStatus`

Request samples

Payload

Content type
application/json

Copy


```
{
    "state": "operating"
}
```


Response samples

200

Content type
application/json

Copy Expand all Collapse all


```
{
    "success": true,
    "data": { }
}
```


Shuts down the Controller

This operation can be executed with any roles.

HEADER PARAMETERS

X-API-Token
required

string
Example: `your-token-here`
API authentication token

Responses

200 OK

RESPONSE SCHEMA: application/json

success

boolean

data object

— **400** Bad Request

— **401** Unauthorized

— **403** Forbidden

— **404** Not Found

— **409** Conflict

— **429** Too Many Requests

— **500** Internal Server Error

— **503** Service Unavailable

POST /shutdownStart

Response samples

200

Content type
application/json

Copy Expand all Collapse all


```
{
   "success": true,
   "data": { }
}
```


Restarts the Controller

This operation can be executed with any roles.

HEADER PARAMETERS

X-API-Token
required

string
Example: `your-token-here`
API authentication token

Responses

200 OK

RESPONSE SCHEMA: application/json

success — boolean

data — object

400 Bad Request

401 Unauthorized

403 Forbidden

404 Not Found

409 Conflict

429 Too Many Requests

500 Internal Server Error

503 Service Unavailable

POST /rebootStart

Response samples

200

Content type
application/json

Copy Expand all Collapse all


```
{
    "success": true,
    "data": { }
}
```

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