



# Hikvision Optimus

User Manual

## Legal Information

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The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the Hikvision website ( <https://www.hikvision.com/> ).

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## Hikvision Optimus User Manual




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## Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 <b>Danger</b>	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
 <b>Caution</b>	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 <b>Note</b>	Provides additional information to emphasize or supplement important points of the main text.

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# Chapter 1 About Hikvision Optimus

## 1.1 Introduction

Hikvision Optimus (hereinafter referred to as Optimus) is a service that allows multiple different systems that exist in distinct domains, using wildly different technologies and languages to communicate with each other.

This user manual describes Optimus's functionality, its configuration, and how to operate the software. To ensure the proper usage and stability of Optimus, refer to the contents below and read the manual carefully.

## 1.2 Terminology

This section defines the terms that are used in Optimus.

### Association

An Association is a mapping rule in a flow that associates Integrated System entities of Triggers and Responses.

### Condition

A Condition is a specific variable value or a combination of specific variable values to be satisfied to execute a Flow.

### Connector

A connector is an application that connects an external system to Optimus. It allows Optimus to perform operations on the external system and to listen to the various events that they trigger.

### Data Synchronization Rule

A Data Synchronization Rule is a scheduled or one-time executable rule that specifies the data to be synchronized between two Integrated Systems.

### External System

An External System is any system that one wishes to integrate with Optimus. Once a Connector has been written for the External System, it is called an Integrated System.

### Flow

A Flow is a connection between two or more Integrated Systems. A Flow consists of one or more Triggers, Conditions, and one or more Responses. A flow is executed when all the Triggers and Conditions are satisfied. A Flow terminates by applying Responses in Integrated Systems.

### Integrated System

An Integrated System is an External System that has a Connector that allows it to communicate with Optimus

### **Response**

A Response is the output of a Flow. A Response executes an action in an External System.

### **Trigger**

A Trigger is a requirement for a Flow to execute. An event/alarm from an External System (along with other events/alarms from other External Systems) can trigger a flow.

## Chapter 2 Installation

### 2.1 Windows Administrator Rights

When you install and run the service modules, it is important that you have administrator rights on the PCs or servers that should run these components. Otherwise, you cannot install and configure the system.

Consult your IT system administrator if in doubt about your rights.

### 2.2 Recommended System Requirements

#### Operating System

Microsoft® Windows 8.1 (64-bit), Windows 10 (64-bit), Windows Server 2012 (64-bit), Windows Server 2012 R2 (64-bit), Windows Server 2016 (64-bit), Windows Server 2019 64-bit



#### Note

For added stability, make sure that Windows updates are run before installation, with all the latest security patches.

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#### CPU

Intel® Core E3-1220 V5 @ 3.00 GHz

#### RAM

8 GB

#### NIC

GbE Network Interface Card

#### HDD for OS

SATA-II 7200 RPM Enterprise Class HDD

#### HDD Capacity

At least 500 GB

#### Browser

Google Chrome™ 61 or above

#### Database

MongoDB® 3.6.9

#### Hot Spare

RoseReplicatorPlus\_5.1.0\_175-x64

## 2.3 Install Optimus

Optimus can be installed in typical or custom mode.

### Typical Mode

Installs all the modules in the default install directory.


### Custom Mode

Allows the user to select the installation directory, and the modules to be installed.

### 2.3.1 Install Optimus in Typical Mode


During installation in typical mode, all modules will be installed in the default installation directory.

#### Steps

1. Double-click  to enter the welcome panel of the InstallShield Wizard.
2. Click **License Agreement** and read.
3. Check **I agree to the terms in License Agreement** and continue.



#### Note

You can uncheck **I agree to the terms in License Agreement** and click  to cancel the installation.


---

4. Click **Install Now** to start the installation process.  
A panel indicating progress of the installation displays.
5. Click **Finish** to complete the installation.

### 2.3.2 Install Optimus in Custom Mode


During installation in custom mode, you can select the installation directory and install only the desired modules.

#### Steps

1. Double-click  to enter the welcome panel of the InstallShield Wizard.
2. Click **License Agreement** and read.
3. Check **I agree to the terms in License Agreement** and continue.

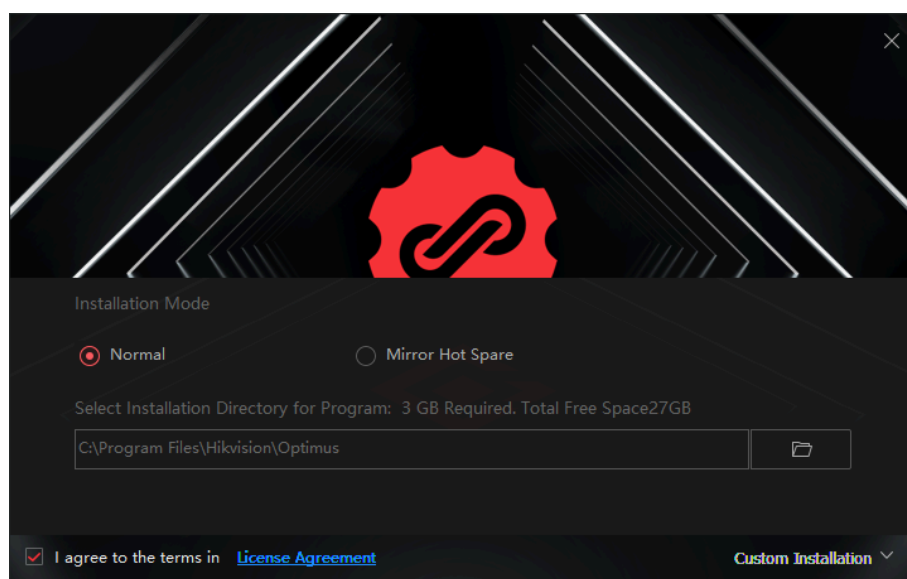


#### Note

You can uncheck **I agree to the terms in License Agreement** and click  to cancel the installation.

---

4. Select **Custom Installation** as setup type.



**Figure 2-1 Configuration Panel of Custom Installation**

- 5. Optional:** Select the installation mode as **Mirror Hot Space** or **Normal** to build a mirror hot space system or not.

---

 **Note**

A hot spare system consists of a host server and spare server. When the host server works, the real-time data in host server is copied to the spare server. When the host server fails, the spare server switches into the status of operation without interruption, thus increasing the reliability of the system. For how to build the hot spare system, contact our technical support.

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- 6. Optional:** Select a proper directory as desired to install the module(s).
- 7.** Click **Custom Installation** again to return to the welcome panel.
- 8.** Click **Install Now** to start the installation process.  
A panel indicating progress of the installation displays.
- 9.** Click **Finish** to complete the installation.

## Chapter 3 Login

### 3.1 First Time Login (admin User)

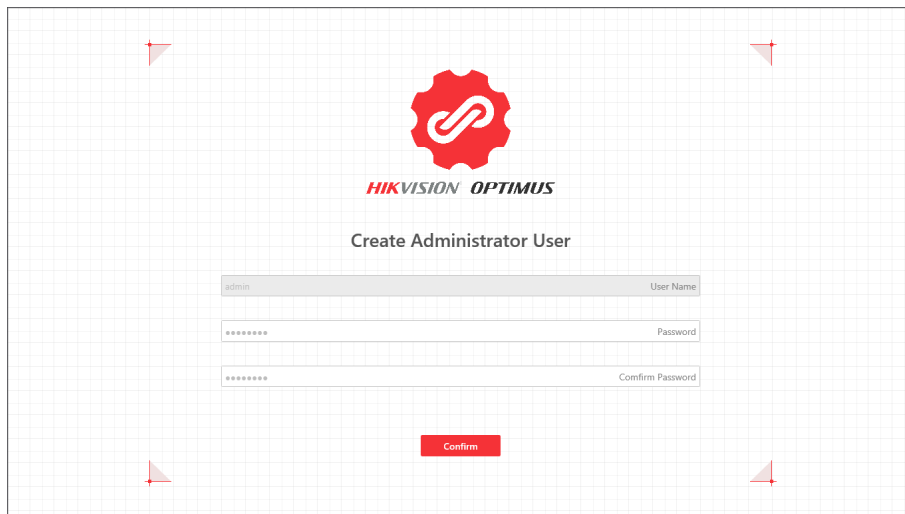
By default, Optimus predefined the administrator user named admin. When you log in for the first time, you are required to create a password for the admin user and activate the License for Optimus before you can properly configure and operate the system.

#### Steps

1. In the address bar of the web browser, enter the IP address and port No. of server running Optimus and press **Enter** key.

#### Example

If the IP address and port No. of server running Optimus are 10.19.185.186 and 44332, you should enter the `https://10.19.185.186:44332`.



**Figure 3-1 Page of Creating admin User**

2. Enter the password and confirm password for the admin user.

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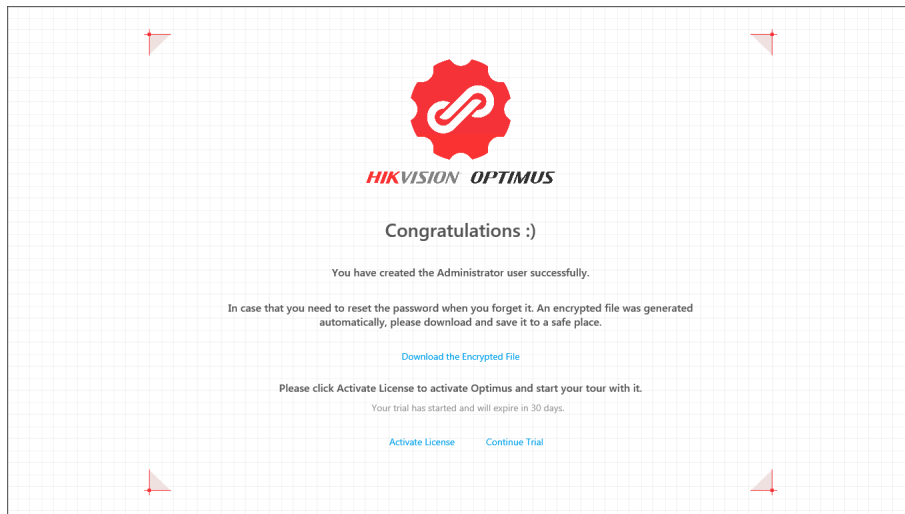
#### **Caution**

The password strength of the device can be automatically checked. We highly recommend you change the password of your own choosing (using a minimum of 8 characters, including at least three kinds of following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you change your password regularly, especially in the high security system, changing the password monthly or weekly can better protect your product.

Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

---

### 3. Click **Confirm**.



**Figure 3-2 admin User Created Page**

An encrypted file will be generated automatically for you to download.

### 4. Click **Download the Encrypted File** to start downloading.

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#### **Note**

As you can log in to the platform by using the encrypted file, be sure to download the encrypted file and keep it at a safe place in case you forget the password and need to reset it in the future (see **Forgot Password** for details).

---

### 5. Activate License for Optimus.

- Click **Continue Trial** to start using Optimus with the free trial License which will expired 30 days later.
- 

#### **Note**

If you use the trial License to start using Optimus for the first time login, you can go to **Maintenance and Management** → **Activate License** to activate the valid core Licenses as needed.

- Click **Activate License** if you have valid License(s). Refer to **Activate Core License - Online** and **Activate Core License - Offline** for details.
- 

## 3.2 Normal Login (Not First Time)

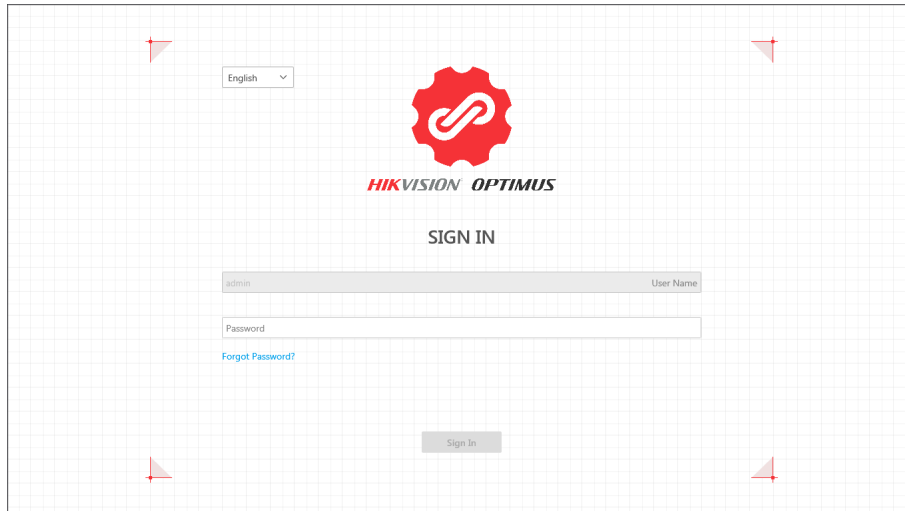
Normally you can log in to Optimus with the admin user password as an admin.

### Steps

1. In the address bar of the web browser, enter the IP address and port No. of server running Optimus and press **Enter** key.

## Example

If the IP address and port No. of server running Optimus are 10.19.185.186 and 44332, you should enter the <http://10.19.185.186:44332> or <https://10.19.185.186:44332>.



**Figure 3-3 Normal Login Page**

2. Enter the password of admin user.

---

### Note

The user name is admin by default and is not editable.

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3. Click **Sign In**.

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### Note

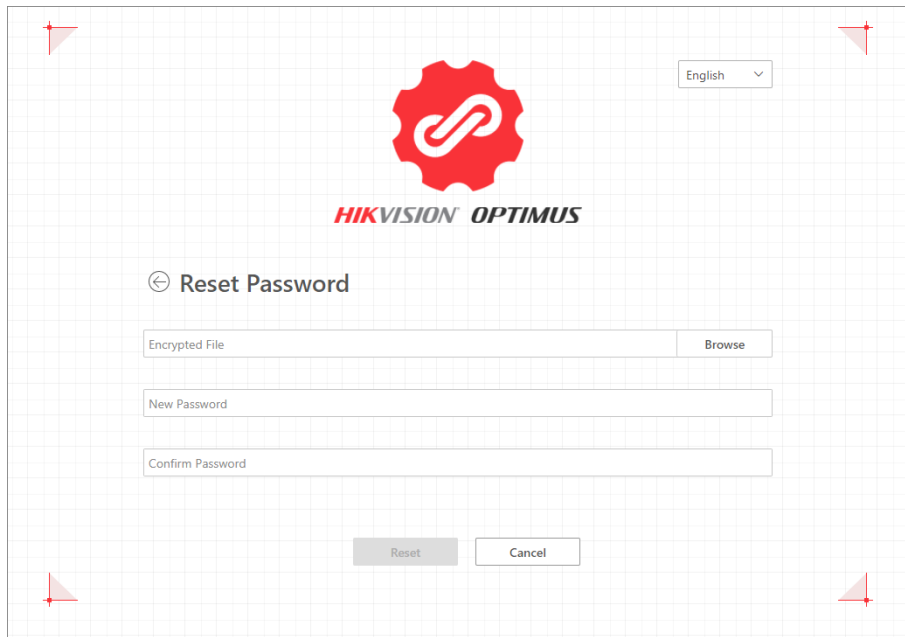
- If a failed password attempt of the current user is detected, you are required to input the verification code before you can log in.
  - If four failed password attempts of the current user are detected, the account will be locked for 10 seconds and you will have one attempt left. After the 10 seconds, if the failed password attempt is detected again, the account will be locked for 30 seconds, and so on. The longer the locking duration, the more the failed password attempts, and the longest duration is one hour.
- 

## 3.3 Forgot Password

If you forgot the password of admin user, you can reset the password and set a new one.

### Steps

1. On the normal login page, click **Forgot Password**.



**Figure 3-4 Forgot Password**

2. Click **Browse** and select the encrypted file that was generated during your first time login.
3. Enter the new password.
4. Enter the new password again to confirm.
5. Click **Reset**.



### **Caution**

The password strength of the device can be automatically checked. We highly recommend you change the password of your own choosing (using a minimum of 8 characters, including at least three kinds of following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you change your password regularly, especially in the high security system, changing the password monthly or weekly can better protect your product.

Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

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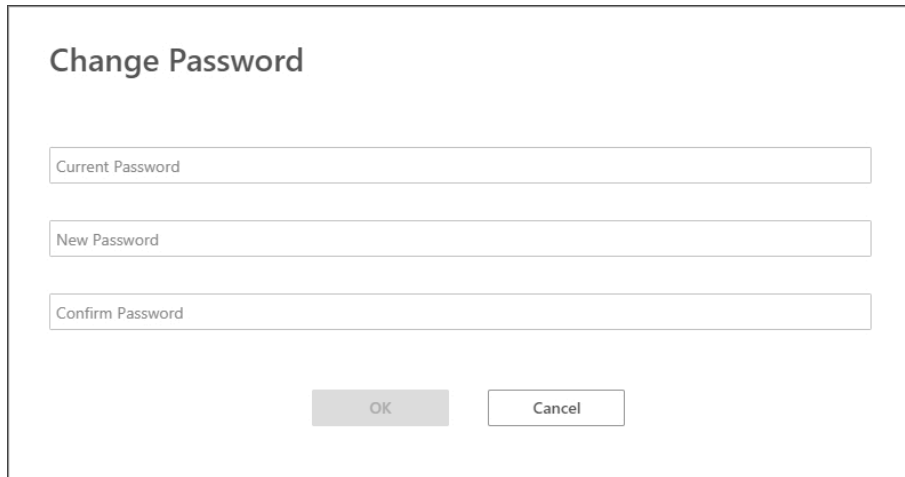
### **Result**

A prompt will show if you have successfully reset the password.

## **3.4 Change Password**

You can change the password for the current user by logging in to Optimus via the web page.

After logging in to Optimus via the web page, click **admin** → **Change Password** in the top right corner to enter the current password, new password and confirm password on the Change Password page.



The screenshot shows a web form titled "Change Password". It contains three input fields: "Current Password", "New Password", and "Confirm Password". Below the input fields are two buttons: "OK" and "Cancel".

**Figure 3-5 Change Password**



### **Caution**

The password strength of the device can be automatically checked. We highly recommend you change the password of your own choosing (using a minimum of 8 characters, including at least three kinds of following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you change your password regularly, especially in the high security system, changing the password monthly or weekly can better protect your product.

Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

---

## Chapter 4 Manage License

After installing a system, you have a temporary License for a specified number of cameras and limited functions. To ensure the proper use of system, you can activate the system to access more functions and manage more devices. If you do not want to activate the system now, you can skip this chapter and activate the system later.

Two types of License are available for system:

- **Base:** You need to purchase at least one basic License to activate the system.
- **Expansion:** If you want to increase the capability of your system (e.g., connect more cameras), you can purchase an expanded License to get additional features.

---

### Note

- Only the admin user can perform the activation, update, and deactivation operation.
  - If you encounter any problems during activation, update, and deactivation, please send the server logs to our technical support engineers.
- 

### 4.1 Activate Core License - Online

If the system server to be activated can properly connect to the Internet, you can activate the system in online mode.

#### Before You Start

Make sure you have created the admin user (see *First Time Login (admin User)* for details) and have valid License(s).

#### Steps

1. On Activate Optimus Core License page, click **Online Activation** to activate the core License in online mode.
2. Enter the activation code received when you purchased your License.

---

### Note

- If you have purchased more than one License, you can click **+** and enter other activation codes.
  - The activation code should contain 32 characters (except dashes).
- 

3. Click **Hikvision Software User License Agreement** to read the License Agreement and click **OK** to close the License Agreement panel.
  4. Check **I accept the terms of the agreement**.
- 

### Note

You can uncheck **I accept the terms of the agreement** to cancel activate the License(s).

---

5. **Optional:** Check the **Hot Spare**, select type, and enter the IP address if you want to build a hot spare system.

 **Note**

- You must select Hot Spare mode when you install Optimus. See ***Install Optimus in Custom Mode*** for details.
  - For how to build the hot spare system, please contact our technical support.
- 

6. Click **Activate**.

## 4.2 Activate Core License - Offline

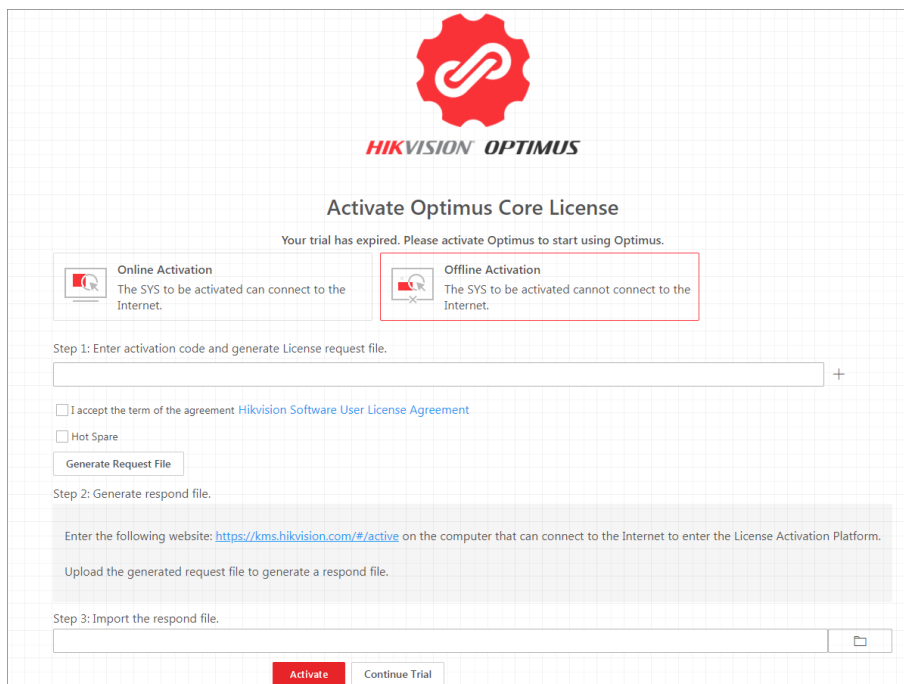
If the system server to be activated cannot connect to the Internet, you can activate the License in offline mode.

### Before You Start

Make sure you have created the admin user (see ***First Time Login (admin User)*** for details) and have valid License(s).

### Steps

1. On Activate Optimus Core License page, click **Offline Activation** to activate the core License in offline mode.



**Figure 4-1 Activate Core License in Offline Mode**

2. Enter the activation code received when you purchased your License.

## Note

- If you have purchased more than one License, you can click **+** and enter other activation codes.
  - The activation code should contain 32 characters (except dashes).
- 

3. Click **Hikvision Software User License Agreement** to read the License Agreement and click **OK** to close the License Agreement panel.
  4. Check **I accept the terms of the agreement**.
- 

## Note

You can uncheck **I accept the terms of the agreement** to cancel activate the License(s).

---


5. **Optional:** Check the **Hot Spare**, select type, and enter the IP address if you want to build a hot spare system.
- 

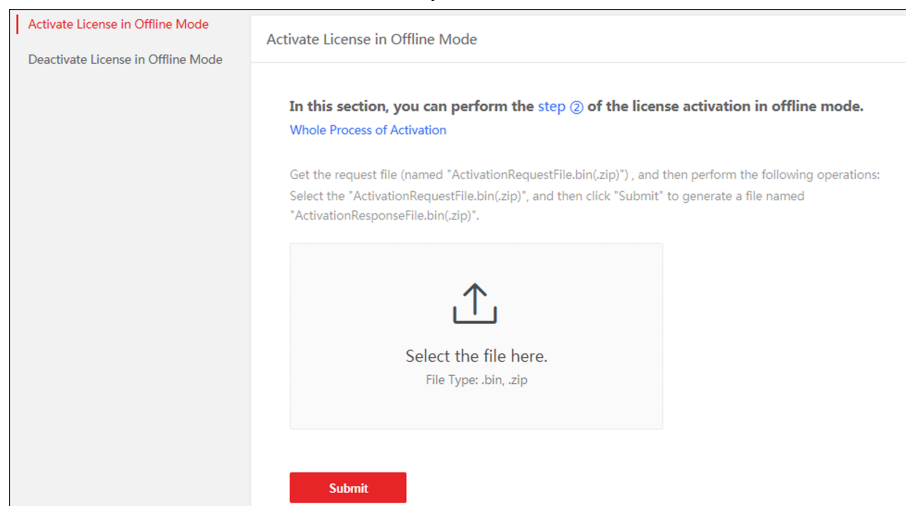
## Note

- You must select Hot Spare mode when you install Optimus. See ***Install Optimus in Custom Mode*** for details.
  - For how to build the hot spare system, please contact our technical support.
- 

6. Click **Generate Request File**.

A request file named "License\_ActiveRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the request file to the proper directory or the removable storage medium (e.g., USB flash disk).

7. Copy the request file to the server that can connect to the Internet.
8. On the server which can connect to the Internet, enter the following website: **<https://kms.hikvision.com/#/active>**.
9. Click  and then select the downloaded request file.



**Figure 4-2 Select Request File**

**10. Click **Submit**.**

A respond file named "License\_ActiveRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the respond file to the proper directory or the removable storage medium (e.g., USB flash disk).

**11. Copy the respond file to the proper directory of the server that accesses Optimus via the web page.**

**12. In the Offline Activation panel, click  and select the downloaded respond file.**

**13. Click **Activate**.**

## 4.3 View License Details

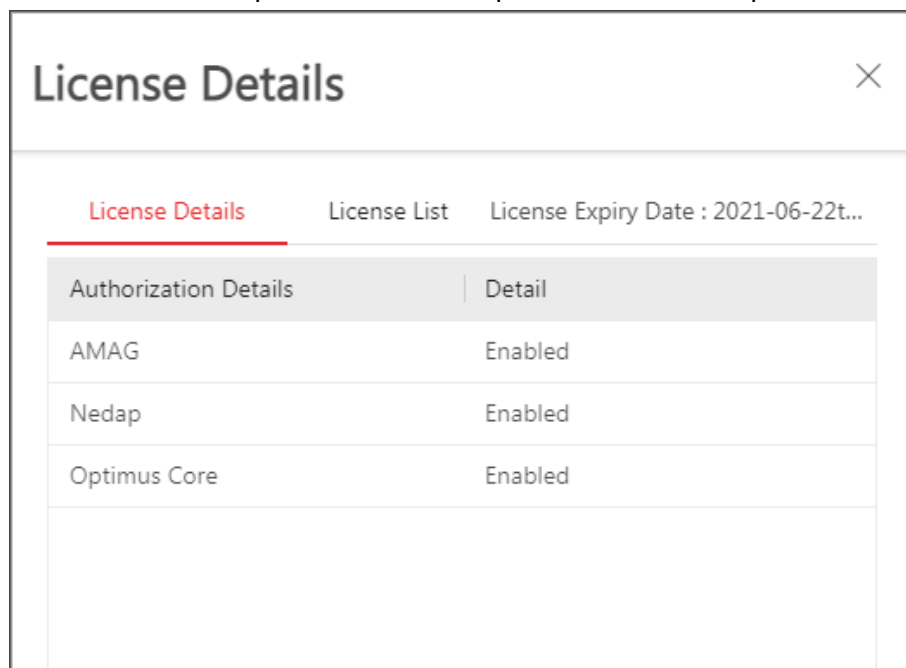
You can check the authorization details of the Licenses and check all activated Licenses of your system. If it is not activated, you can also view the trial period.

### Steps

**1.** Log in to Optimus via the web page. Refer to **Normal Login (Not First Time)** for details.

**2.** In the top right corner of Home page, click **Maintenance and Management** to show the drop-down menu.

**3.** Click **License Details** in the drop-down menu to open License Details panel.



**Figure 4-3 License Details Page**

You can view the authorization details of the Licenses and check the expiry date of core License if you are using the trail core License.

**4. Optional:** Click **License List** to check all activated Licenses of your system and click an activation code to view the related authorization details.

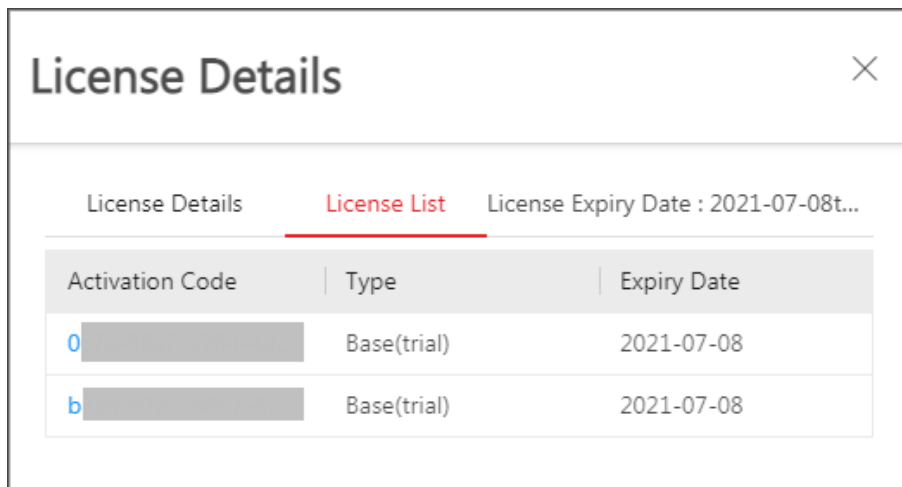


Figure 4-4 License List Page

## 4.4 Update License - Online

As your project grows, you may need to increase the connectable number of resources (e.g., cameras) for Optimus or activate the License(s) for Integrated System(s). If the Optimus to be updated or Integrated System servers to be activated can properly connect to the Internet, you can update or activate the License in online mode.

### Before You Start

Contact your dealer or our sales team to purchase a core License for additional features, or you have got valid Licenses for Integrated Systems.

### Steps

1. Log in to Optimus via the web page. Refer to **Normal Login (Not First Time)** for details.
2. In the top right corner of Home page, click **Maintenance and Management** to show the drop-down menu.
3. Click **Update License** in the drop-down menu to open the Update License panel.
4. Click **Online Update** to update the core License or activate Integrated Systems' Licenses in online mode.
5. Enter the activation code received when you purchase or get your License.

### Note

- If you have purchased more than one License, you can click + and enter other activation codes.
- The activation code should contain 32 characters (except dashes).

6. Click **Hikvision Software User License Agreement** to read the License Agreement and click **OK** to close the License Agreement panel.
7. Check **I accept the terms of the agreement.**



You can uncheck **I accept the terms of the agreement** to cancel update or activate the License(s).

---

8. Click **Update**.

### 4.5 Update License - Offline

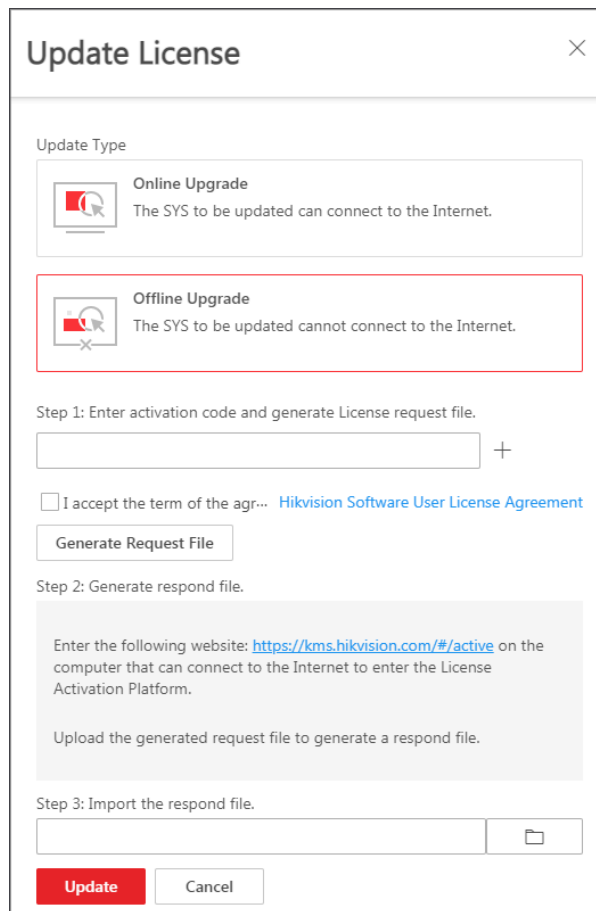
As your project grows, you may need to increase the connectable number of resources (e.g., cameras) for Optimus or activate the License(s) for Integrated System(s). If the Optimus to be updated or Integrated System servers to be activated can properly connect to the Internet, you can update or activate the License in offline mode.

#### Before You Start

Contact your dealer or our sales team to purchase a core License for additional features, or you have got valid Licenses for Integrated Systems.

#### Steps

1. Log in to Optimus via the web page. Refer to **Normal Login (Not First Time)** for details.
2. In the top right corner of Home page, click **Maintenance and Management** to show the drop-down menu.
3. Click **Update License** in the drop-down menu to open the Update License panel.
4. Click **Offline Update** to update the core License or activate Integrated Systems' Licenses in offline mode.



**Figure 4-5 Update License in Offline Mode**

5. Enter the activation code received when you purchase or get your License.

---

 **Note**

- If you have purchased more than one License, you can click + and enter other activation codes.
- The activation code should contain 32 characters (except dashes).

6. Click **Hikvision Software User License Agreement** to read the License Agreement and click **OK** to close the License Agreement panel.
7. Check **I accept the terms of the agreement**.


---

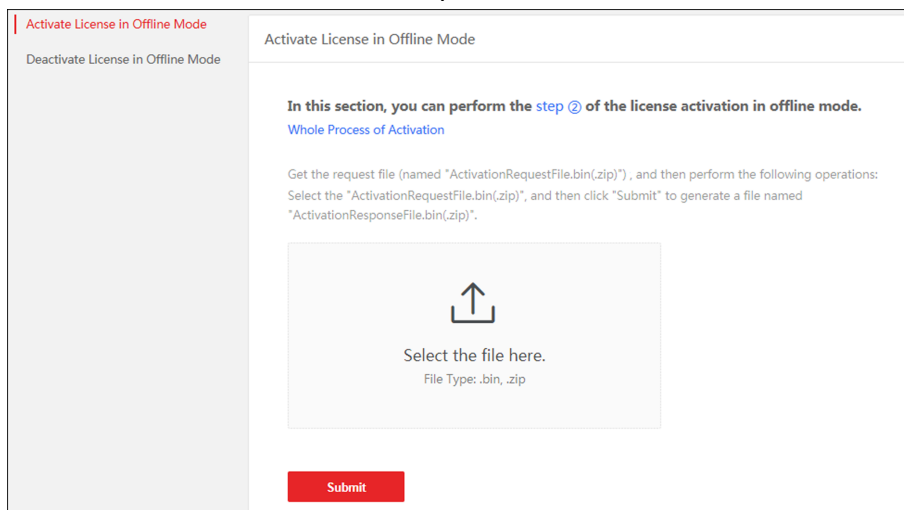
 **Note**

You can uncheck **I accept the terms of the agreement** to cancel update or activate the License(s).

8. Click **Generate Request File**.


A request file named "License\_ActiveRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the request file to the proper directory or the removable storage medium (e.g., USB flash disk).

9. Copy the request file to the computer that can connect to the Internet.
10. On the server which can connect to the Internet, enter the following website: <https://kms.hikvision.com/#/active>.
11. Click , and then select the downloaded request file.



**Figure 4-6 Select Request File**

12. Click **Submit**.

A respond file named "License\_ActiveRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the respond file to the proper directory or the removable storage medium (e.g., USB flash disk).
13. Copy the respond file to the proper directory of the server that accesses Optimus or Integrated Systems via the web page.
14. In the Offline Update panel, click  and select the downloaded respond file.
15. Click **Update**.

## 4.6 Deactivate License - Online

If you want to run the systems on another servers, you should deactivate the systems first and then activate them on other servers again. If the systems to be deactivated can properly connect to the Internet, you can deactivate the Licenses in online mode.

### Steps

1. Log in to Optimus via the web page. Refer to **Normal Login (Not First Time)** for details.
2. In the top right corner of Home page, click **Maintenance and Management** to show the drop-down menu.
3. Click **Deactivate License** in the drop-down menu to open the Deactivate License panel.

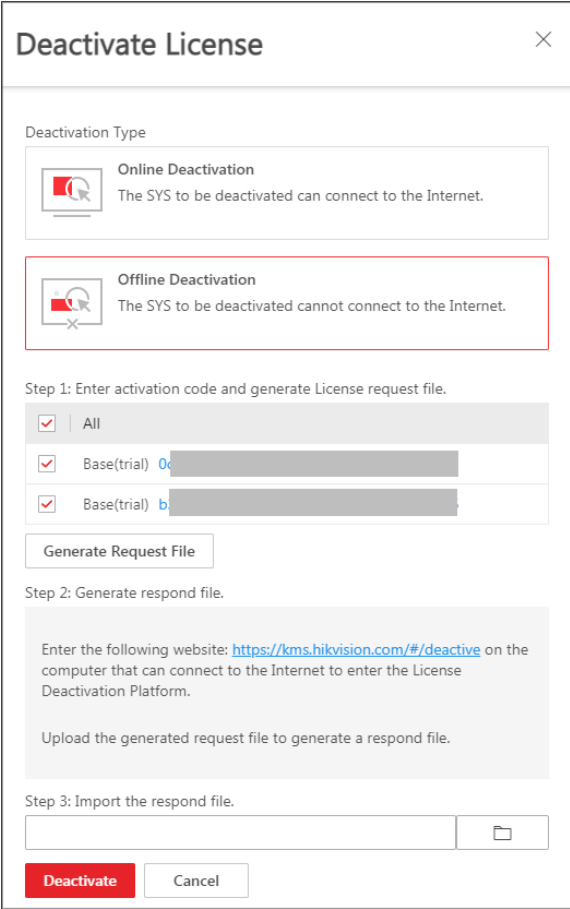
4. Click **Online Deactivation** to deactivate the core License or activate Integrated Systems' Licenses in online mode.
5. Check the activation code(s) to be deactivated.
6. Click **Deactivate**.

## 4.7 Deactivate License - Offline

If you want to run the systems on another servers, you should deactivate the systems first and then activate them on other servers again. If the systems to be deactivated can properly connect to the Internet, you can deactivate the Licenses in offline mode.

### Steps

1. Log in to Optimus via the web page. Refer to **Normal Login (Not First Time)** for details.
2. In the top right corner of Home page, click **Maintenance and Management** to show the drop-down menu.
3. Click **Deactivate License** in the drop-down menu to open the Deactivate License panel.
4. Click **Online Deactivation** to deactivate the core License or activate Integrated Systems' Licenses in offline mode.



The screenshot shows a 'Deactivate License' dialog box with a close button (X) in the top right corner. It is divided into several sections:

- Deactivation Type:** Two options are listed: 'Online Deactivation' (with a red cursor icon) and 'Offline Deactivation' (with a red cursor and a red 'X' icon). The 'Offline Deactivation' option is highlighted with a red border. Below each option is a description: 'The SYS to be deactivated can connect to the Internet.' for online and 'The SYS to be deactivated cannot connect to the Internet.' for offline.
- Step 1: Enter activation code and generate License request file.** This section contains three rows, each with a checked checkbox and a text field containing a partially visible activation code (e.g., 'All', 'Base(trial) 0...', 'Base(trial) b...'). Below these is a 'Generate Request File' button.
- Step 2: Generate respond file.** This section contains instructions: 'Enter the following website: <https://kms.hikvision.com/#/deactive> on the computer that can connect to the Internet to enter the License Deactivation Platform.' and 'Upload the generated request file to generate a respond file.'
- Step 3: Import the respond file.** This section contains a text input field and a folder icon button.
- At the bottom, there are two buttons: a red 'Deactivate' button and a white 'Cancel' button.


Figure 4-7 Deactivate License in Offline Mode

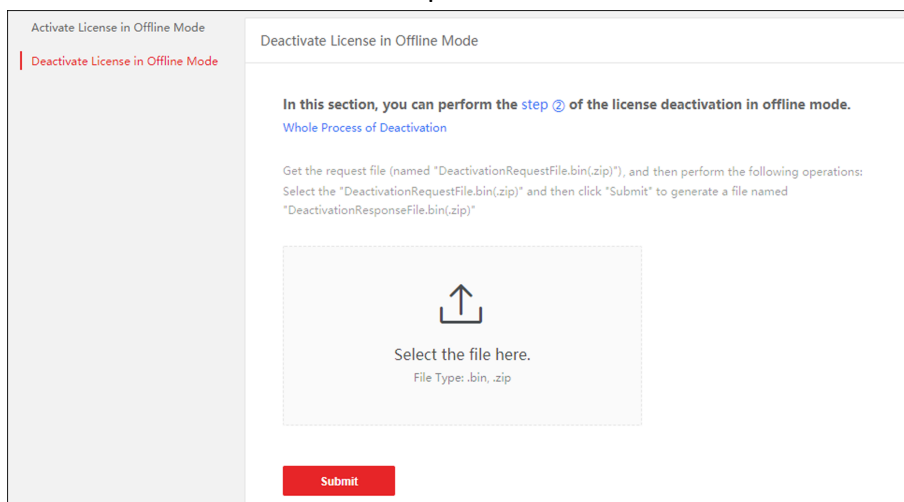
5. Check the activation code(s) to be deactivated.
6. Click **Generate Request File**.

## Note


After the request file is generated, the selected activation code(s) will be unavailable.

A request file named "License\_DeactivateRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the request file to the proper directory or the removable storage medium (e.g., USB flash disk).

7. Copy the request file to the computer that can connect to the Internet.
8. On the server which can connect to the Internet, enter the following website: <https://kms.hikvision.com/#/deactive>.
9. Click  and then select the downloaded request file.



**Figure 4-8 Select Request File**

10. Click **Submit**.  
A respond file named "License\_DeactivateRequest\_XX.bin" (XX is a 2-digit random number) will be downloaded. Save the respond file to the proper directory or the removable storage medium (e.g., USB flash disk).
11. Copy the respond file to the proper directory of the server that accesses Optimus or Integrated Systems via the web page.
12. In the Offline Deactivation panel, click  and select the downloaded respond file.
13. Click **Deactivate**.

## Chapter 5 Modules Overview

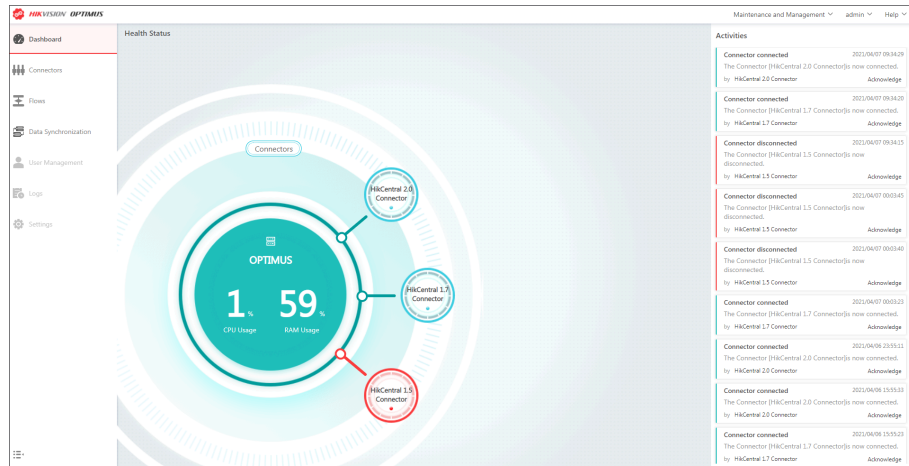


Figure 5-1 Modules Overview

Optimus contains the following modules.

Table 5-1 Modules

Module	Description
Dashboard	Provides monitoring of the operational status of the system, services and components, and logs of system activities.
Connectors	Provides management of connectors. See <b>Connectors</b> for details.
Flows	Provides management of flows. See <b>Flows</b> for details.
Data Synchronization	Provides management of the rules of data synchronization between systems. See <b>Data Synchronization</b> for details.
Maintenance and Management	Provides the License expiry date, the License details, and the License activation/update/deactivation. See <b>Manage License</b> for details.
	Provides the manual backup of system data or configuration of a schedule to run the backup task regularly. See <b>Set System Data Backup</b> for details.
	Provides the restore of backed up system data when an exception occurs. See <b>Restore System Data</b> for details.
	Provides the version information of Optimus, License agreement, and open-source License agreement.
Account	Provides the function of changing password for the current user. See <b>Change Password</b> for details.

Module	Description
	Provides the function of logging out of the system and back to the login page.
Help	Provides a tutorial for you to learn how to start using Optimus.

# Chapter 6 Dashboard

On Dashboard page, you can view the health status of all Optimus services and connectors, and can view all kinds of system activities.



Figure 6-1 Overview of Dashboard

## 6.1 Health Status

On Dashboard page, you can view the health status of Optimus and all connectors.

### Optimus Status

You can view the usage percentage of CPU and RAM of Optimus.

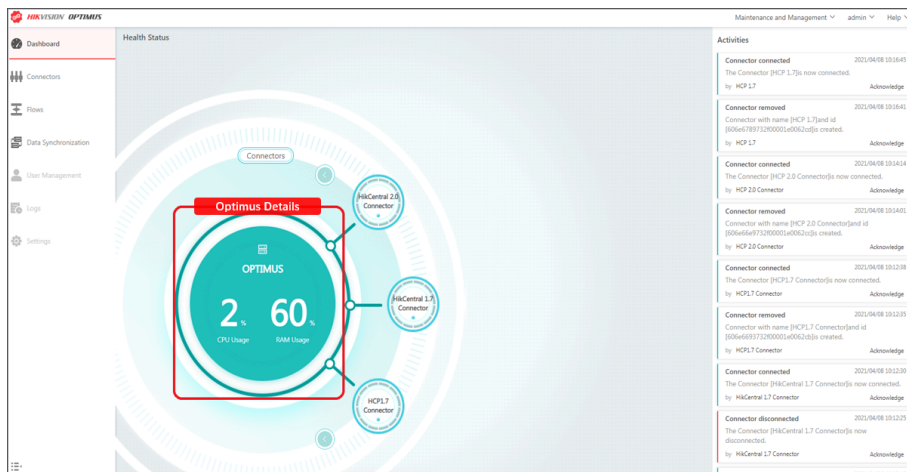



Figure 6-2 Optimus CPU and RAM Usage

## Connector status

Hover the mouse over a connector to view the detailed information.

### Note

- There are two kinds of connector status: normal (marked by green) and error (marked by red).
- Up to three connectors can be displayed at the same time. When there are more than three connectors in the system, click  to view the other connectors.

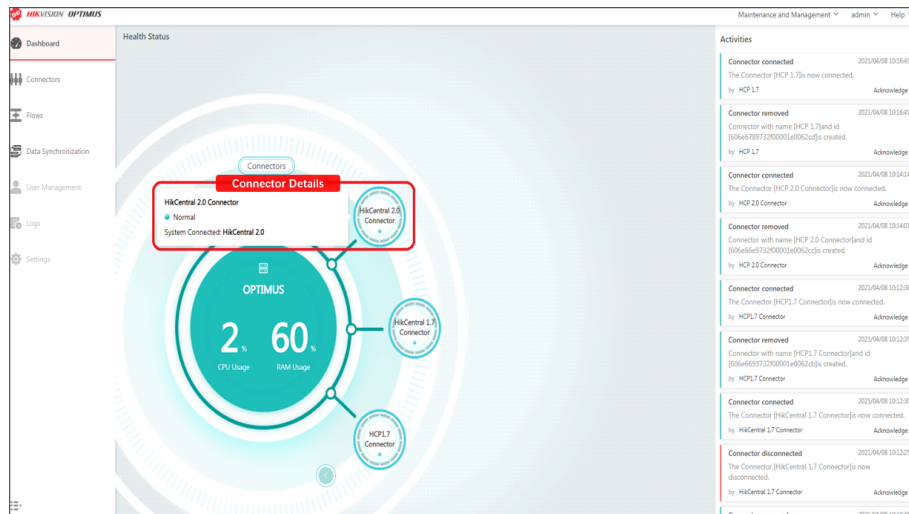


Figure 6-3 Detailed Information of a Connector

## 6.2 Activities

You can view all real-time system activities on the right part of Dashboard page.

### Activity Types

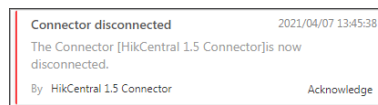
The types of system activity are listed as follows.

Activity Type	Activity Name	Description	Negative System Activity or Not
Connector Activity	Connector connected	Create an activity record when a connector is connected to the specific system.	Yes
	Connector disconnected	Create an activity record when a connector is	Yes

Activity Type	Activity Name	Description	Negative System Activity or Not
		disconnected from the specific system.	
	Connector created	Create an activity record when a connector is created.	No
	Connector removed	Create an activity record when a connector is removed from Optimus.	No

### Acknowledge an Activity

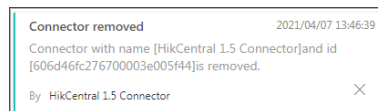
- Only negative system activities need to be acknowledged.
- Click **Acknowledge** on a negative activity card, the activity will be acknowledged and removed from the activity list on Dashboard.



**Figure 6-4 Acknowledge an Activity**

### Remove an Activity

On the Activities panel, if the system activity does not need to be acknowledged, ✕ will appear on the right bottom of the activity card. Click ✕, the activity will be removed from the system activity list on Dashboard.



**Figure 6-5 Remove an Activity**

## Chapter 7 Connectors

Connectors are created to integrate external systems so that data can be exchanged between Optimus and the systems.

---

### Note

Contact [optimus.support@hikvision.com](mailto:optimus.support@hikvision.com) for more information on how to get custom connectors.

---

### 7.1 Add a Connector to Optimus

You can add a connector to integrate an external system into Optimus.

#### Before You Start

- Make sure you have installed the connector on the PC where Hikvision Optimus is installed.
- Make sure you have activated the valid license of the system to be integrated.

#### Steps

---

### Note

A HikCentral 1.5 Professional connector is installed by default along with Optimus. You can get more connectors from Hikvision or Hikvision third-party partners.

---

1. Click **Connectors** on the left pane.
  2. Click **Create New Connector**.
  3. Select an external system to be added.
  4. Under Configuration enter connector name, IP address and port of the PC that runs the connector, user name and password for the connector.
  5. **Optional:** Click **Advanced Settings** to configure the parameters.
- 

### Note

Advanced settings vary for different connectors.

---

6. Click **Save**.  
The added connector will be displayed.
7. **Optional:** Perform the following operations after adding a connector.

#### **Edit a Connector**

On an added connector, click  to edit it.

---

### Note

You are not able to change the system of the connector once it is added to Optimus. If you want to change the system you need to delete the connector and add another one.

---

**Enable/Disable a Connector** On an added connector, click ☺ / ☹ to enable/disable a single connector.



**Note**

If a connector in use by one or multiple flows/data synchronization rules is disabled, the flows/data synchronization rules will be disabled as well.

---

**Delete a Connector** On an added connector, click × to delete a single connector.






**Note**

Deleting a connector will permanently remove the connector from the system. All the flows and data synchronization rules that use the connector will be deleted as well.

---

## 7.2 View Connectors

On the Connectors page, you can view the details of the added connectors, search for the target connectors, and sort the connectors in ascending/descending order.

Switch Display Mode	Click  /  in the top right corner of the page to view the added connectors in the thumbnail mode or in the list mode.
View Connector Details	In the thumbnail mode or list mode, click a card or a list item to view the details of a connector.
Search Connector(s)	Enter a keyword in the search box in the top right corner of the page to quickly search for the target connector(s).
Sort Connectors	Click the drop-down menu in the top right corner of the page and select an item in the list for sorting.   <b>Note</b> By default, the list will be sorted by the selected column in ascending order. You can switch between ascending and descending order by clicking the item in the sorting drop-down list.

## Chapter 8 Flows


A flow connects two or more integrated systems and includes one or more triggers, conditions, and responses. Under specific conditions, when all the triggers are satisfied in specific integrated system(s), with stable network, responses will be made in other specific integrated systems(s) accordingly.

### Example



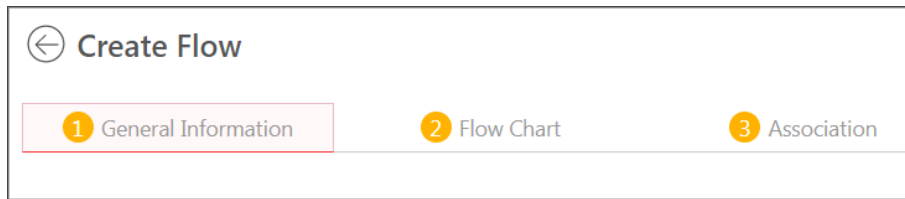
**Figure 8-1 Example of a Flow**

There are two integrated systems in a flow: one is access control system and the other is video management system. If an access denial is detected in the access control system and the card for identity authentication is invalid, a set of PTZ cameras linked to the video management system will adjust their positions and start video recording. In this case, the trigger, condition, and response are as follows:

Flow Element	Description
Trigger	An access denial is detected in the access control system.
Condition	The card for identity authentication is invalid.   <b>Note</b> If the card is valid, there will be no responses in the video management system.
Response	A set of PTZ cameras linked to the video management system will adjust their positions and start video recording.

### 8.1 Create a Flow

To create a flow, you need to set the general information, complete the flow chart (including the triggers, conditions, and responses), and create the association.



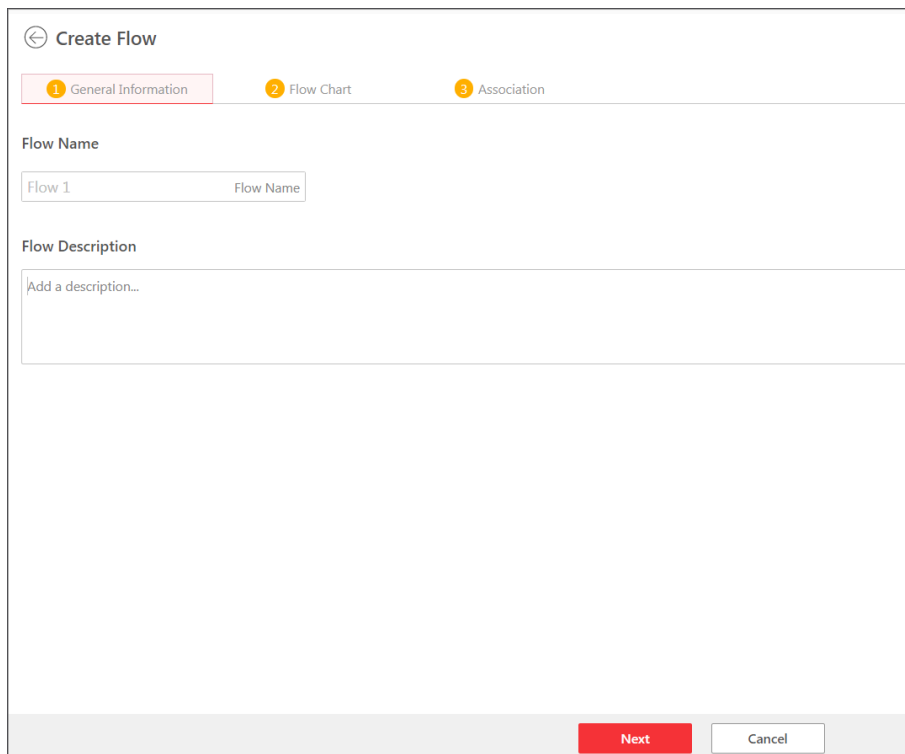
**Figure 8-2 Create a Flow**

## 8.1.1 Set General Information and Triggers


You need to set the flow name and description, and then set the trigger(s) for the flow. At least one trigger is required and you can set multiple triggers in a flow.

### Steps

1. Click **Flows** on the left panel.
2. Click **Create New Flow**.
3. Enter the flow name and the flow description under the General Information tab and click **Next**.



**Figure 8-3 Create New Flow**

4. Click **Add Trigger** in Trigger field to open the Add a Trigger window.
5. Select an integrated system and an event.
6. Click **OK**.
7. **Optional:** Click  and repeat the steps to add more triggers.

---


## Note

- If the flow is triggered by multiple events that occur in a specific order, you need to switch on **Events occur in order** and specify the time interval between the events.
  - If the flow is triggered by multiple events that occur within a specific period disregarding the order, you need to switch off **Events occur in order** and specify the period.
- 

**8. Optional:** For the added triggers, perform the following operations if needed.

**Edit a Trigger**

- a. Click an existing trigger to open the Edit a Trigger window.
- b. Modify the integrated system and event as needed.
- c. Click **OK**.

**Delete a Trigger** Hover the mouse over an existing trigger and click  to delete it.

---

## Note

If you delete all triggers, all the existing conditions and responses will be deleted automatically.

---

### What to do next

Specify response(s) and condition(s). See details in ***Specify Responses*** and ***(Optional) Specify Conditions***.

---

## Note

Response(s) are required while condition(s) are optional.

---


## 8.1.2 (Optional) Specify Conditions

After adding the trigger(s), you can specify one or multiple conditions for the flow. You can customize the order among those conditions.

### Before You Start

Make sure you have added trigger(s). See details in ***Set General Information and Triggers***.

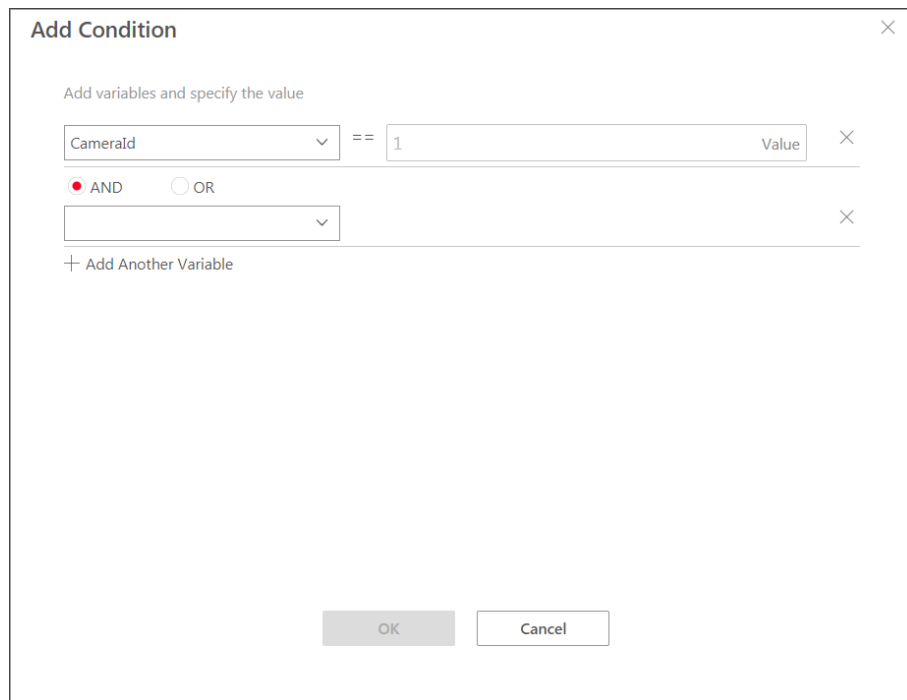
### Steps

1. Under the Flow Chart tab, hover the mouse over  in Response field to show a drop-down list.
2. Click **Add Condition** in the drop-down list.
3. Select variable, set the relation between variable and value, and specify the value.

### Example

If you set the relation between the trigger time and its value to "=", the responses can only be made when the trigger occurs at the specified time.

4. **Optional:** Click **Add Another Variable** to add more variables.
5. **Optional:** Set the relation between each two variables to AND or OR.




**Figure 8-4 Add a Condition**

6. Click **OK**.

7. **Optional:** After adding a condition, perform the following operation(s) if needed.


**Add Another Condition**

Hover the mouse over  to show a drop-down list, click **Add Condition**, and repeat the steps to add another condition.

**Edit a Condition**

Click an existing condition to edit the variables and their values as needed.

**Delete a Condition**

Hover the mouse over an existing condition and click  to delete it.

**What to do next**

You can specify response(s). See details in ***Specify Responses*** .


## 8.1.3 Specify Responses

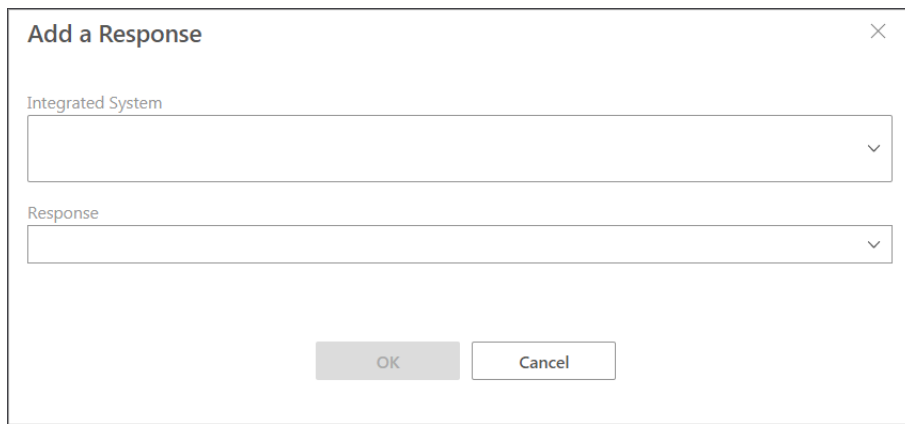
After adding the trigger(s), you need to specify one or multiple responses to complete the flow. You can customize the order among those responses.

**Before You Start**

Make sure you have added trigger(s). See details in ***Set General Information and Triggers*** .

**Steps**

1. Under the Flow Chart tab, hover the mouse over  in Response field to show a drop-down list.
2. Click **Add Response** in the drop-down list.




**Figure 8-5 Add a Response**

3. Select an integrated system and a response.

4. Click **OK**.

5. **Optional:** After adding a response, perform the following operation(s) if needed.


**Add Another Response**

Hover the mouse over  to show a drop-down list, click **Add Response**, and repeat the steps to add a response.

**Edit a Response**

Click an existing condition to edit the variables and their values as needed.

**Delete a Response**

Hover the mouse over an existing response and click  to delete it.

**What to do next**

You can add condition(s) or click **Next** to create the association. See details in ***(Optional) Specify Conditions*** and ***Create Association*** .

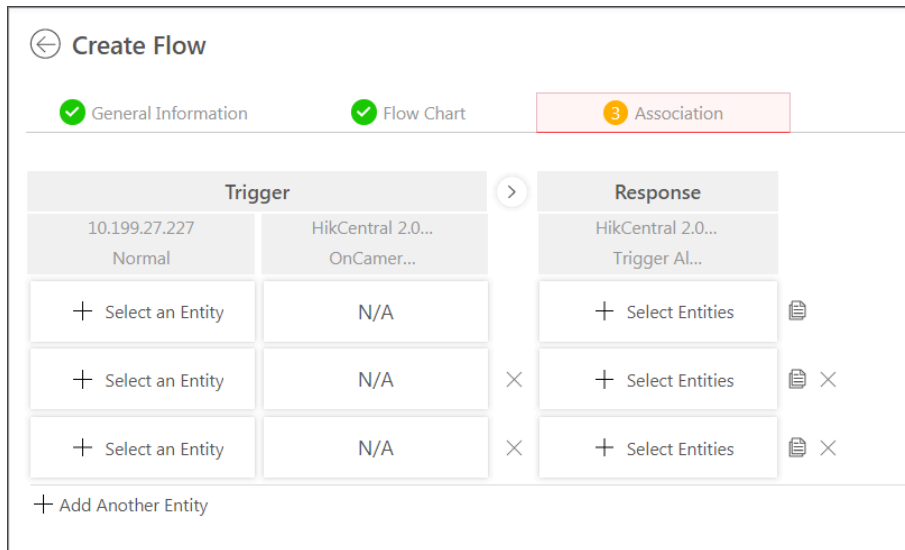
## 8.1.4 Create Association

After adding trigger(s) and specifying response(s), you can specify the entities for each trigger and response, and configure parameters accordingly. Each row is an association group, including entities for each trigger on the left and entities and/or parameters for each response on the right.

**Before You Start**

Make sure you have added trigger(s) and response(s). See details in ***Set General Information and Triggers*** and ***Specify Responses*** .

## Steps



**Figure 8-6 Association**


1. Under the Association tab, specify the entity for a trigger.

- 1) Click **Select an Entity**.
- 2) Search and select an entity in the list.
- 3) Click outside of the list to confirm.
- 4) (Optional) Click the selected entity to edit it.

The name of the selected entity will be displayed.

2. Specify the entities and/or parameters for a response.

### Note

- There are four kinds of responses including response with only parameters involved, response with entities and parameters involved, response with only entities involved, and response with neither entities nor parameters involved. You need to specify the entities and/or configure parameters accordingly.
- You can click  to copy the entities and/or parameters.

### **Configure Parameters Only**

- a. Click **Set Parameters** under a response to open Set Parameters window.
- b. Configure the required parameters.
- c. Click **OK**.

### Note

The parameters vary according to different integrated systems and responses.

**Select Entities with Parameters**

- a. Click **Select Entities** under a response to open Select Entities window.
- b. Click **Add** and check entities in the list.
- c. Configure the parameters accordingly.
- d. Click **OK**.

**Select Entities Only**

- a. Click **Select Entities** under a response to open Select Entities window.
- b. Click **Add** and check entities in the list.
- c. Click **OK**.

The configured entities and/or parameters will be displayed.

**3. Click Save.**

The created flow will be displayed on the Flows page.




## 8.2 Manage Flows

On the Flows page, for the added flow(s), you can enable or disable, edit, or delete the flow(s).

Enable/Disable a Single Flow	On an added flow, click ☺ / ☹ to enable/disable a single flow.
Batch Enable/Disable Flows	Check one or multiple flows and click <b>Enable/Disable</b> to batch enable/disable the selected flows.
Edit a Flow	On an added flow, click ↗ to edit general information, flow chart, and association of the flow.
Delete a Single Flow	On an added flow, click ✕ to delete a single flow.
Batch Delete Flows	Check one or multiple flows and click <b>Delete</b> to batch delete the selected flows.
Copy the Flow	<ol style="list-style-type: none"> <li>1. On an added flow, click 📄 .</li> <li>2. Enter the number of copies.</li> <li>3. Click <b>OK</b>.</li> </ol>

## 8.3 View Flows

On the Flows page, you can view the details of the added flows, search for the target flows, and sort the flows in ascending/descending order.

Switch Display Mode	Click  /  in the top right corner of the page to view the added flows in the thumbnail mode or in the list mode.
View Flow Details	In the thumbnail mode or list mode, click a card or a list item to view the details of a flow.
Search Flow(s)	Enter a keyword in the search box in the top right corner of the page to quickly search for the target flow(s).
Sort Flows	Click the drop-down menu in the top right corner of the page and select an item in the list for sorting.  <b>Note</b> By default, the list will be sorted by the selected column in ascending order. You can switch between ascending and descending order by clicking the item in the sorting drop-down list.

## 8.4 Set Network Parameters for Flows

When all the triggers are satisfied in specific integrated system(s), response(s) may not be made in other specific integrated systems(s) due to unstable network. On the Flows page, you can set the network parameters for flows.

---

### **Note**

Make sure you have added flows. See details in **Create a Flow** .

---

Click **Flows** → **Network Settings** and set the network parameters for flows.

### Network Settings

\*Expiration (Milliseconds)

\*Single Attempt Timeout (Milliseconds)

\*Attempt Interval (Milliseconds)

**Figure 8-7 Network Settings**

**Expiration (Milliseconds)**

Total time for all attempts. Beyond the expiration, no more attempts will be made to execute the response. The unit is millisecond.

**Single Attempt Timeout (Milliseconds)**

Timeout for each attempt. The unit is millisecond.

**Attempt Interval (Milliseconds)**

Time to wait for the next attempt. The unit is millisecond.

## Chapter 9 Data Synchronization

Data synchronization rules specify what data and how the data is synchronized between two integrated systems. You can push or pull data from one integrated system to another in an adapted format.

### 9.1 Create a Data Synchronization Rule

You can create rules for data synchronization.

#### Before You Start

Make sure you have added the connectors of the integrated systems to be synchronized. See details in **Add a Connector to Optimus**.

#### Steps

1. Click **Data Synchronization** on the left pane.
2. Click **Create New Rule** to enter the Create Rule page.

**Figure 9-1 Create a Data Synchronization Rule**

3. Enter the rule name.
4. Specify the synchronization schedule.

#### Manually Synchronize Only

Data can only be synchronized manually.

#### Synchronize on Schedule

You can set the frequency and the start time for data synchronization.

#### Always Synchronize

Data will be synchronized automatically once the source integrated system is updated.

5. Specify the details of the data synchronization rule.

## System

Select a destination system and a source system from the drop-down list.

## Entity Type

Select an entity type for the destination system and the source system respectively.

## Attributes (Destination)



Mandatory attributes of the selected entity type of the destination system will be added by default once the destination system and entity type are specified.

---

Click **Add Optional Attributes** at the bottom to add additional attributes from the destination system.

## Attributes (Source)

Click **Select Attribute**, select an existing attribute or add a string to be synchronized to the attribute of the destination system.

### 6. Click **Save**.

The created synchronization rule will be displayed on Data Synchronization page.

### 7. **Optional:** Perform the following operations if needed.

#### **Edit a Data Synchronization Rule**

On an added rule, click ↗ to edit it.

#### **Enable/Disable a Data Synchronization Rule**

On an added rule, click ... → ☑ / ☒ to enable/disable it.

#### **Batch Enable/Disable Data Synchronization Rules**

Check one or multiple rules and click **Enable/Disable** to batch enable/disable the selected rules.

#### **Delete a Data Synchronization Rule**

On an added rule, click ... → ✕ to delete it.



Deleting a data synchronization rule will permanently remove it from the system, but will not remove the data that is already synchronized between the source and destination systems.

---

#### **Batch Delete Data Synchronization Rules**

Check one or multiple rules and click **Delete** to batch delete the selected rules.


## 9.2 Run a Data Synchronization Rule Manually

You can run a data synchronization rule manually.

 **Note**




Make sure you have added data synchronization rule(s). See details in **Create a Data Synchronization Rule**.

---

On an added rule, click  to synchronize the data from the source integrated system to the destination integrated system according to the rule.

## 9.3 View Data Synchronization Rules

On the Data Synchronization page, you can view the details of the added rules, search for the target rules, and sort the rules in ascending/descending order.

Switch Display Mode	Click  /  in the top right corner of the page to view the added rules in the thumbnail mode or in the list mode.
View Data Synchronization Rule Details	In the thumbnail mode or list mode, click a card or a list item to view the details of a rule.
Search Data Synchronization Rule(s)	Enter a keyword in the search box in the top right corner of the page to quickly search for the target rule(s).
Sort Data Synchronization Rules	Click the drop-down menu in the top right corner of the page and select an item in the list for sorting.   <b>Note</b> By default, the list will be sorted by the selected column in ascending order. You can switch between ascending and descending order by clicking the item in the sorting drop-down list.

## Chapter 10 Maintenance

### 10.1 Set System Data Backup

For purpose of restoring the original system data after a data loss event or recovering data from an earlier time, you can manually back up system data, or configure a schedule to back up regularly. System data includes data configured in the system, pictures, received events and alarms, maintenance data, etc.

#### Steps

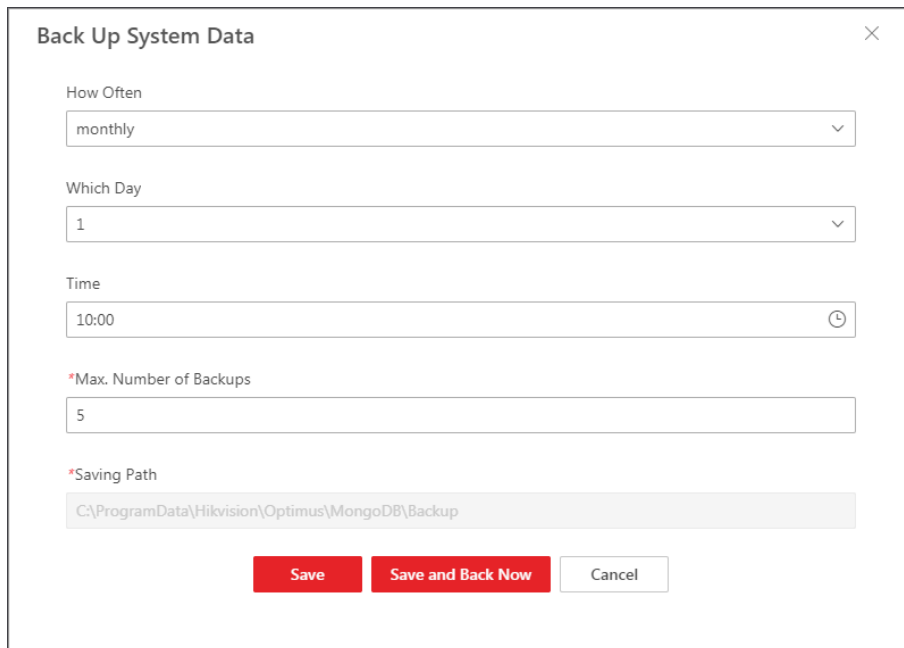
---

#### Note

The backups are stored in the system server. You can edit the saving path only via the Optimus running on the system server.

---

1. In the top right, click **Maintenance and Management** → **Back Up System Data** .
2. Select the **Back Up** tab.



Back Up System Data

How Often  
monthly

Which Day  
1

Time  
10:00

\*Max. Number of Backups  
5

\*Saving Path  
C:\ProgramData\Hikvision\Optimus\MongoDB\Backup

Save Save and Back Now Cancel

**Figure 10-1 Set System Data Backup**

3. In **How Often** field, select the frequency to back up the system data.
4. In **Which Day** field, specify the day of the week or month to back up.

---

#### Note

This field is valid only when the backup frequency is select as weekly or monthly.

---

5. In **Time** field, specify the time of the day to back up.

6. In **Max. Number of Backups** field, set the maximum number of backup files. Old backup files will be automatically deleted.

---

 **Note**

The maximum number of backup files ranges from 1 to 5, and the historical backup files will be automatically deleted.

---

7. Save the settings and back up system data manually or regularly.
  - Click **Save** to save the backup schedule and the system data will be automatically backed up according to the schedule.
  - Click **Save and Back Up Now** to immediately and manually back up the system data, and the system data will be backed up automatically and regularly in the future.

## 10.2 Restore System Data

When an exception occurs, you can restore the system data if you have backed up system data before.

### Before You Start

Make sure you have backed up system data. Refer to **Set System Data Backup** for details.

### Steps

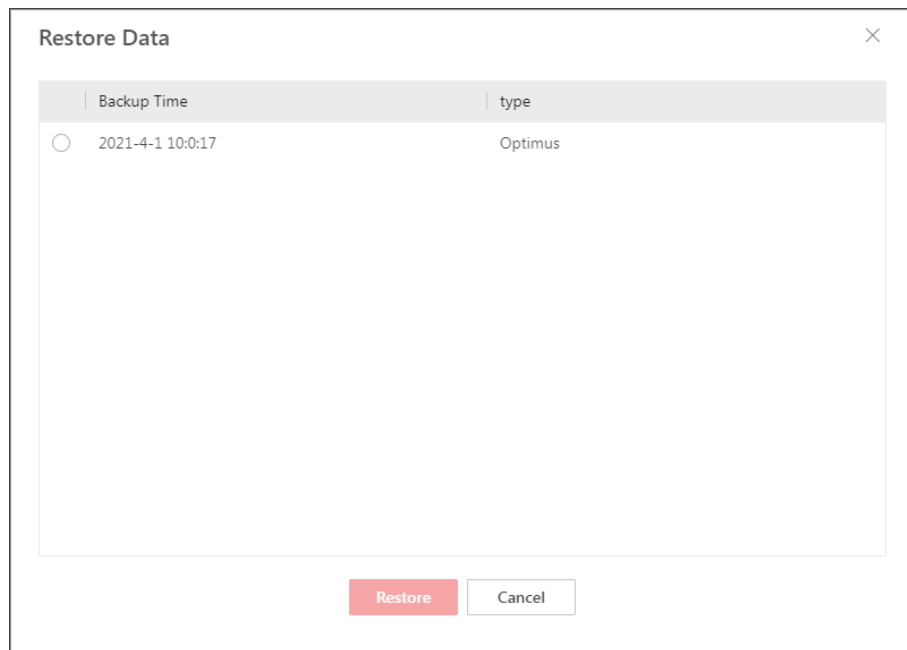
---

 **Note**

System data recovery will restore the system to an earlier state, and thus the data added after backup date will be lost.

---

1. In the top right, click **Maintenance and Management → Restore System Data** .



**Figure 10-2 Restore System Data**

2. Select a backup file to be restored.
3. Click **Restore** to confirm the system data recovery.

**What to do next**

After restoring the system data, you must restart the system service and log in to Optimus again.



See Far, Go Further