

**iManager NetEco 1000S**

**V001R002C70**

# **User Manual**

**Issue      Draft C**

**Date        2017-12-14**

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# 1 Preface

## Purpose

This document describes the installation, function, maintenance, and troubleshooting methods of the iManager NetEco 1000S V100R002C70 monitoring software. For commercial inverters and residential inverters, there are two scenarios in NetEco 1000S: commercial NetEco 1000S system and residential NetEco 1000S system.

## Intended Audience

This document is intended for:

- Inverter maintenance personnel
- Electronic technicians with related aptitude

## Product Models

This document describes how to use the following Inverter monitoring software:

- SUN2000
- SUN8000
- SUN2000L

## Symbol Conventions

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

Symbol	Description
 <b>DANGER</b>	Indicates a hazard with a high level or medium level of risk which, if not avoided, could result in death or serious injury.
 <b>WARNING</b>	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Symbol	Description
 <b>CAUTION</b>	Indicates a potentially hazardous situation that, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.
 <b>NOTE</b>	Provides additional information to emphasize or supplement important points in the main text.

## Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in earlier issues.

### Draft C (2017-12-14)

This issue is the third release of the iManager NetEco 1000S V100R002C70 beta version. Compared with Draft B (2017-11-13), this issue includes the following changes.

#### Modified

Navigation Tree	Change Description
<b>Installation and Commissioning &gt; NetEco 1000S Installation and Commissioning</b>	For details, see <a href="#">4.1.4 Logging In to the NetEco 1000S Client</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Commercial) &gt; Getting Started &gt; Logging In to the NetEco 1000S</b>	For details, see <a href="#">5.1.1.1.2 Logging In to the NetEco 1000S Client</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; Getting Started</b>	For details, see <a href="#">5.2.1.1 Logging In to the NetEco 1000S</a> .

#### New

Navigation Tree	Change Description
<b>Operation and Maintenance &gt; NetEco 1000S Maintenance &gt; Replacing Certificate of the NetEco 1000S System</b>	See <a href="#">5.4.3.5 Replacing a Certificate for the NetEco 1000S APP Communicating with the Server</a> .

#### Deleted

Navigation Tree	Change Description
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Commercial) &gt; FAQ</b>	Deleted chapter <b>How Do I Enable or Disable the HTTP Mode for Logging In to the NetEco Client?</b> , since HTTP mode for logging in to the NetEco client is disabled.

## Draft B (2017-11-13)

This issue is the second release of the iManager NetEco 1000S V100R002C70 beta version. Compared with Draft A (2017-09-30), this issue includes the following changes.

### Modified

Navigation Tree	Change Description
<b>Installation and Commissioning &gt; NetEco 1000S Installation and Commissioning</b>	<ul style="list-style-type: none"> <li>● For details, see <a href="#">4.1.2 Installing the NetEco 1000S Software</a>.</li> <li>● For details, see <a href="#">4.1.4 Logging In to the NetEco 1000S Client</a>.</li> </ul>
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Commercial) &gt; Getting Started &gt; Logging In to the NetEco 1000S</b>	For details, see <a href="#">5.1.1.1.2 Logging In to the NetEco 1000S Client</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Commercial) &gt; System Management &gt; Managing User Information</b>	For details, see <a href="#">5.1.7.1.3 Modifying User Information</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Commercial) &gt; FAQ</b>	For details, see <a href="#">5.1.8.22 What Do I Do to Control the User Authorization upon First Login?</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; Getting Started</b>	For details, see <a href="#">5.2.1.1 Logging In to the NetEco 1000S</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; Managing the PV Plants</b>	For details, see <a href="#">5.2.2.2 Creating a PV Plant</a> .
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; System Management &gt; Managing User Information</b>	For details, see <a href="#">5.2.6.1.4 Modifying User Information</a> .

### New

Navigation Tree	Change Description
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; FAQ</b>	<ul style="list-style-type: none"><li>● See <a href="#">5.2.7.7 What Do I Do to Switch to the Residential NetEco 1000S System.</a></li><li>● See <a href="#">5.2.7.8 What Do I Do to Control the User Authorization upon First Login?</a></li></ul>

#### Deleted

Navigation Tree	Change Description
<b>Operation and Maintenance &gt; NetEco 1000S Web Client Operation (Residential) &gt; System Management &gt; Setting Remote Notification</b>	Deleted chapter <b>Setting Parameters for the SMS Modem</b> , since SMS Modem is disabled in the residential NetEco 1000S system.

#### Draft A (2017-09-30)

This issue is the first release of the iManager NetEco 1000S V100R002C70 beta version.

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# 2 Privacy Policy

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Dear user,

Huawei Technologies Co., Ltd and its affiliates (Huawei for short) attach great importance on your personal data and privacy. Before using the NetEco 1000S and NetEco 1000S APP, please carefully read, learn, and agree to this policy.

By learning this privacy policy, you can understand the following information:

- How to use your personal data
- How to protect your personal data
- Contact Huawei

## How to Use Your Personal Data

- NetEco 1000S: NetEco 1000S is able to send report, alarm data, and the email for retrieving the password. In this case, NetEco 1000S collects your Email address or mobile phone number to accept report, alarm data, and the email for retrieving the password. You can register yourself as an installer on the residential NetEco 1000S system. You need to provide your email address, device SN, and device registration code when registering a system operator account. The NetEco 1000S records the login and operation logs of your account within the recent half a year. The operation logs include the access IP address and user name and are used for security audit.
- NetEco 1000S APP: To ensure service security, the NetEco 1000S APP collects the identification number of your mobile terminal. Only the registered mobile terminal can access the server.

## How to Protect Your Personal Data

- NetEco 1000S: Email address and mobile phone number are only used to accept report, alarm data, and the email for retrieving the password. Device SN, and device registration code are only used to register yourself as an installer. Huawei will protect data security through technical measures.
- NetEco 1000S APP: To identify the validity of a mobile terminal, the IMEI of your mobile equipment is stored on the NetEco 1000S server. Huawei will protect data security through technical measures, and ensure server security according to physical and guidance proposals. Although Huawei take appropriate measures to protect your personal data, there is still no a perfect security measure.

Your personal data will not be disclosed to a third party.

## Contact Huawei



### NOTICE

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# 3 Description

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## 3.1 Product Description

For details, see *iManager NetEco 1000S V100R002C70 Product Description.pdf*.

## 3.2 Security Management Description

The NetEco 1000S provides various security features and mechanisms to protect the NetEco 1000S system and the entire operations support system (OSS) network from attacks and eavesdropping.

### 3.2.1 Networking Security

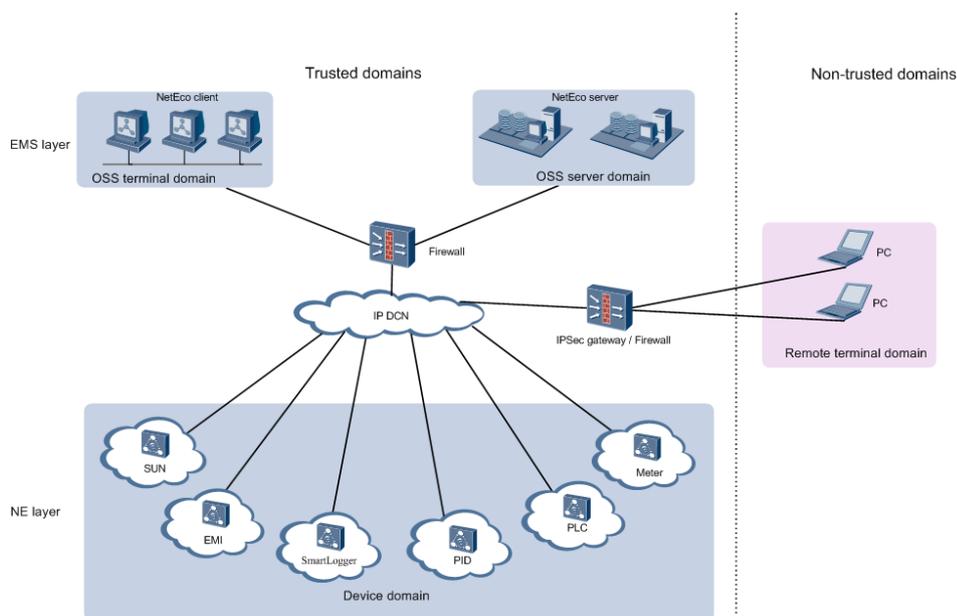
Networking security provides policies such as security domain division and firewall isolation to protect the OSS network.

#### 3.2.1.1 Security Domain Planning

This section describes how to plan security domains. During the initial stage of networking, system administrator need to divide an OSS network into multiple subnets based on security domains, separate trusted domains from non-trusted domains, and properly plan IP addresses. This ensures the security of the OSS network and NetEco 1000S servers.

**Figure 3-1** shows the security domains on an OSS network. The four OSS security domains are interconnected. Devices in the OSS server domain and device domain are essential to the OSS network and require the highest security protection level. Security domains other than the OSS server domain and device domain belong to subnets that are used for access. Therefore, security risks brought about by these subnets to the OSS server domain and device domain must be fully considered before and during the design of security policies for these subnets. Possible security risks include eavesdropping and network attacks.

**Figure 3-1** Security domains on an OSS network



## OSS Server Domain

The OSS server domain comprises devices (mainly OSS servers such as NetEco 1000S servers and Trace Servers) that are crucial to the entire OSS network. After connecting to the NetEco 1000S, this domain operates and maintains the entire network and even controls the network. Therefore, this domain requires the highest level of security protection. It must be isolated from other domains and access to devices in this domain must be restricted.

## Device Domain

The device domain comprises all NEs managed by the NetEco 1000S, specifically the units of NEs including SUN, EMI, SmartLogger, PID, PLC, and Meter.

The NEs managed by NetEco 1000S are at the same security level.

## OSS Terminal Domain

The OSS terminal domain comprises PCs only for O&M operations on the OSS network. These PCs may be placed either in central offices where NetEco 1000S servers are located or in remote equipment rooms where only NEs are located. This domain comprises of NetEco 1000S clients, and LMTs. These terminals are applicable only to mobile network devices' O&M services.

The OSS terminal domain and OSS server domain work in similar network environments, but devices in the OSS terminal domain have lower security levels. Security policies in this domain depend on customer requirements and network environments. For example, customers determine whether to install firewalls between the OSS terminal domain and the OSS server domain or between the OSS terminal domain and the OSS device domain. By default, customers provide the VLAN policy.

## Remote Terminal Domain

The remote terminal domain comprises terminals that remotely access the OSS network, for example, using LANs or dial-up connections. If authorized customers, device vendors, or

third parties want to remotely access to the OSS network, security control must be implemented because: 1. Uncertainties exist in the environments where remote O&M terminals are located. 2. Remote O&M terminals often attempt to access the OSS network through public networks. Users are advised to disable the access between this domain and the OSS server domain and provide remote access through a secure VPN channel as required.

### 3.2.1.2 Firewall Deployment

During OSS network deployment, firewalls must be deployed between the entities.

Firewalls should be deployed between the following entities:

- The OSS server domain and the device domain
- The OSS server domain and the OSS terminal domain
- The device domain and the OSS terminal domain

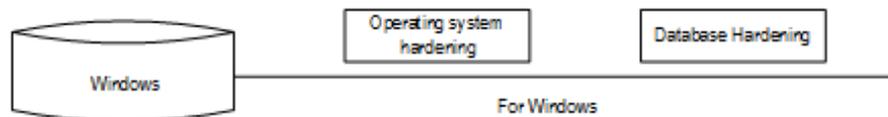
Policies for deploying firewalls contains: configuring the firewall port and configuring the IP access.

## 3.2.2 Platform Security

This section describes operations for enhancing platform security, including operating system hardening, database hardening, antivirus solution deployment. These operations increase the security levels of operating systems and databases and provide a secure and reliable platform for OSS service applications.

In terms of security risks on operating systems, provide security hardening solutions for increasing the security levels of operating systems and databases. [Figure 3-2](#) describes the security policies for operating systems and databases.

**Figure 3-2** Security policies for operating systems and databases



- OS hardening: You are advised to perform security hardening on the PC running the NetEco software according to [Policies for MySQL Database Hardening in 3.2.2.1 Operating System and Database Hardening](#).
- Database hardening: The MySQL database is automatically installed when you install the NetEco software and has been hardened upon delivery. For details about the hardening policies, see [Policies for MySQL Database Hardening in 3.2.2.1 Operating System and Database Hardening](#).
- Antivirus software: The NetEco software does not contain the antivirus software for the OS upon factory delivery. You need to install the mainstream commercial antivirus software on the OS of the NetEco.

Third-party antivirus software is integrated into Huawei products to protect Windows against virus and worm threats.

### 3.2.2.1 Operating System and Database Hardening

Security hardening policies are based on the features of NetEco 1000S service applications. The policies can increase the security levels of operating systems and databases.

## Policies for Windows Hardening

Main policies for Windows hardening are as follows:

- Set auditing and user account policies.
  - Auditing policies:  
Set events to be audited, such as events about user account login and management success and failure.
  - User account policies:  
Set attributes for user account passwords, such as shortest and longest storage duration, length, and complexity.
  - Policies for locking user accounts:  
Set thresholds for user account locking, locking duration, and time for resetting the account-locking timer.
  - Event log settings:  
Set logs that user **Guest** cannot query, event log size, and storage mode. Event logs include application logs, security logs, and system logs.
- Security options:  
For example, user account, auditing, network security, and network access.
- More security protection polices:  
For example, shared folder deletion, registry settings, user rights assignment, firewall settings, and directory permission settings.

### NOTE

For details about the hardening policies and suggested measures, see [3.2.2.2 Windows OS Security Hardening](#).

You are advised to use the mainstream commercial Windows hardening tool to harden the Windows OS.

## Policies for MySQL Database Hardening

The policies for hardening the MySQL database are as follows:

- Installation and configuration
  - Control the user who can access the **MySQL.user** table.
  - Control the access to the MySQL database.
  - Set the maximum number of allowed login attempts.
  - Close default ports.
  - Record user login.
  - Change the password of the database administrator and delete empty passwords.
  - Add the password complexity check for database users.
  - Set the timeout interval for database connection.
- Permission minimization management
  - Manage authorization with the **GRANT** option.
  - Forbid users other than the database administrator to access the objects in the MySQL database.
  - Set the OS rights for the MySQL installation path.

- Set the OS rights for the MySQL parameter file.
- Set the OS rights for the MySQL log file.
- Forbid the remote login of database administrators.
- Forbid database access from another PC.
- Delete the default test database.

 **NOTE**

The user **administrator** in the MySQL database hardening policies is the system administrator of MySQL database.

Database security hardening has been performed for NetEco 1000S V100R002C70 upon factory delivery.

### 3.2.2.2 Windows OS Security Hardening

When the NetEco 1000S software runs on Windows, perform security hardening for the Windows OS to improve the NetEco 1000S security.

#### Prerequisites

You have obtained the **SecureCAT SetWin.exe** installation package for the security hardening tool and the **SetWin\_2K12R2\_CIS\_V1.1.0.inf** configuration file from Huawei technical support engineers.

#### Context

The NetEco 1000S can run on Windows 7, Windows 10 or Windows Server 2012. This section describes how to perform security hardening for the Windows Server 2012 OS. To learn the detailed security hardening policy for Windows 7 and Windows 10, see *Windows OS Security Hardening Policy.pdf*.

#### Procedure

- Step 1** Copy **SecureCAT SetWin.exe** and **SetWin\_2K12R2\_CIS\_V1.1.0.inf** to the Windows Server 2012 OS to be hardened.
- Step 2** Double-click **SecureCAT SetWin.exe** to install the security hardening tool.  
After the installation is complete, the **SetWin** icon is displayed on the desktop.
- Step 3** Right-click the **SetWin** icon and choose **Run as Administrator** from the shortcut menu.  
The home page of the SetWin tool is displayed, as shown in [Figure 3-3](#).



---

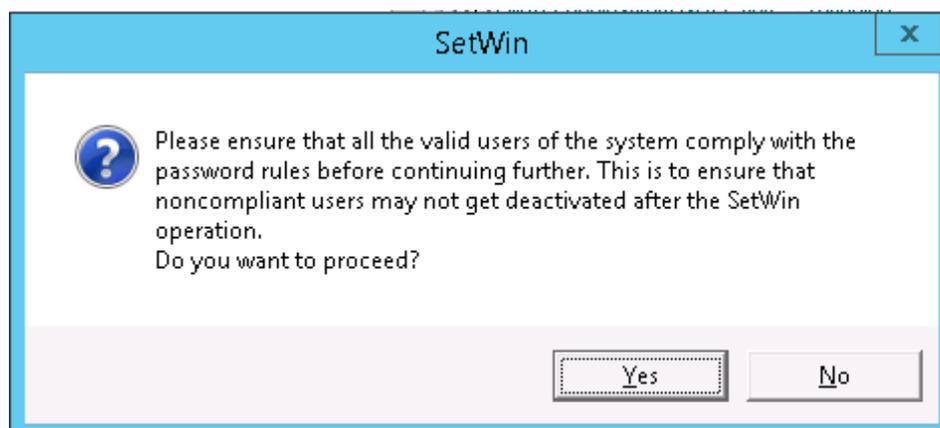
**NOTICE**

- If you perform security hardening remotely, choose **SetWin Policies > Security Settings > Security Options > Network Security** in the left navigation tree and clear **LAN Manager authentication** in the right pane. If **LAN Manager authentication** is not cleared, remote access to the OS will fail after security hardening.
  - The item **Rename administrator account** is under **SetWin Policies > Security Settings > Security Options > Accounts**. After security hardening, the system administrator will be renamed **SWMaster**. If you do not want the system administrator user to be renamed, clear **Rename administrator account**.
- 

**Step 9** Choose **Policy > Execute**.

The message shown in [Figure 3-4](#) is displayed.

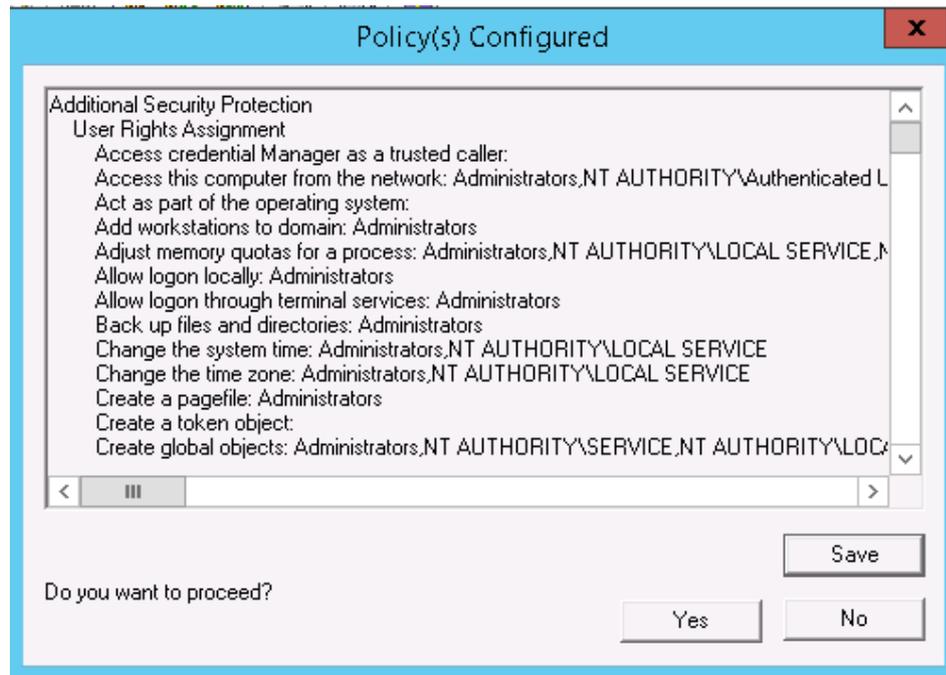
**Figure 3-4** Confirming password complexity



**Step 10** Click **Yes**.

The message shown in [Figure 3-5](#) is displayed.

**Figure 3-5** Confirming policy execution



**Step 11** Click **Yes**.

When a browser is displayed, click **Allow blocked content**. The browser displays the execution status of each security hardening item. If an item fails to be executed, view the operation logs and solve the problem. If the problem persists, roll back the operation by following instructions provided in [Exception Handling](#).

When the "Execution completed" message indicating completion of security hardening is displayed, click **OK**. A dialog box is displayed, prompting you whether to restart the OS for the policy to take effect. Do not restart the OS because you still need to configure the firewall port.

**Step 12** Configure the firewall port.

1. Open the control panel.
2. Choose **Windows Firewall > Advanced settings**.  
The **Windows Firewall with Advanced Security** page is displayed.
3. In the left navigation tree, right-click **Inbound Rules** and choose **New Rule**.  
The **New Inbound Rule Wizard** page is displayed.
4. In the **Rule Type** pane, select **Port** and click **Next**.
5. Select **Specific local ports** and enter **8010,8443,33000,16100,11000-11500,2121** in the text box.
6. Click **Next** until you go to the pane for setting a rule name.  
Set a rule name.
7. Click **Finish**.

 **NOTE**

If the created rule is displayed in the **Inbound Rules** pane and the rule state is , the rule has taken effect.

**Step 13** Restart the OS to complete security hardening.

---End

## Exception Handling

If the security hardening operation fails or you want to cancel it, perform the following steps to roll back the operation:

**Step 1** Right-click the **SetWin** icon and choose **Run as Administrator**.

The login page is displayed.

**Step 2** Enter the user name and password and click **Yes**.

After performing security hardening, you must enter the user name and password of the administrator to log in to the tool.

If **Rename administrator account** is selected for the security hardening policy in **Step 8** in **Procedure**, the user name of the system administrator is automatically changed to **SWMaster**. The password remains unchanged.

**Step 3** Choose **Policy > Roll back**.

The **Open Rollback File** dialog box is displayed.

**Step 4** Select the file backed up in **Step 7** in **Procedure**.

The rollback automatically starts. When the rollback is complete, you will be asked whether to restart the OS for the configuration to take effect. Determine whether to restart the OS based on the actual situation.

---End

### 3.2.2.3 Antivirus Solutions for Operating Systems

This section describes the antivirus solutions for operating systems to prevent viruses from attacking NetEco 1000S software and virus spreading.

The NetEco 1000S software does not contain the antivirus software for the OS upon factory delivery. You need to install the mainstream commercial antivirus software on the OS of the NetEco 1000S.

- Update the antivirus software to the latest version in time.
- Enable the firewall.
- Enable the anti-DoS attack function.
- Enable the anti-port-scanning function.

#### NOTE

The preceding measures are some common functions of the antivirus software. To ensure your information security, you must enable these functions in time.

## 3.2.3 Application Security

This section describes application security solutions dedicated to service applications, such as user management, session management, and log management.

### 3.2.3.1 User Authentication and Authorization Management

The system administrator must authenticate users and manage authorities so that only authorized users can log in to the system and perform operations. This ensures system security.

Users need to enter correct user names and passwords to log in to the NetEco 1000S. After user authentication succeeds, the NetEco 1000S authenticates user operations and users can perform only the operations that they are allowed to perform.

#### Role-based User Management Policies

- The commercial NetEco 1000S system provides four types of roles: system administrator, system operators, guest users, and OpenAPI users.
- The residential NetEco 1000S system provides four types of roles: system administrator, installers, customers, and OpenAPI users.

Role system administrator needs to classify users into the corresponding roles based on the management mode.

Role system administrator is unique and cannot be added, modified or deleted.

#### User Information and Password Policies

- User information policies  
User information managed on the NetEco 1000S includes the user name, description, account validity, password, password validity period, user type.
- Password policies  
Password policies include:
  - Password complexity policy: Complex passwords are required to reduce possibility of password cracking. Security administrators can set the password complexity policy on the NetEco 1000S client. For details about password complexity requirements, see [5.1.7.1.7 Setting a Password Policy](#).
  - Password update policy: Security administrators need to pose restrictions on password updates, such as password update period, message prompting for a new password, and password validity period, to ensure that users update passwords timely.

#### Authority Management Policies

Four types of roles provided by the NetEco 1000S system have different rights. You can set user rights by specifying roles for users.

##### NOTE

- For details about the role rights in commercial NetEco 1000S system, see [5.1.7.1.1 User Categories](#).
- For details about the role rights in residential NetEco 1000S system, see [5.2.6.1.1 User Categories](#).

#### Idle Logout Time

The NetEco 1000S supports automatic client automatically logged out. If a user does not perform any operations during the preset period, the NetEco 1000S client automatically logged out. When the user attempts to log in to the NetEco 1000S client again, the user name and password are required.

### 3.2.3.2 Log Auditing

System administrator can audit operations and activities performed by NetEco 1000S users and check for any illegal user operations.

# 4 Installation and Commissioning

---

## 4.1 NetEco 1000S Installation and Commissioning

This section describe the installation and commissioning procedures of NetEco 1000S.

### 4.1.1 Installing Hardware

#### Direct Connection Using the RS232 Cable

Direct connection using the RS232 cable: It is applicable only to local commissioning. In this case, you can search Inverter based on serial port addresses.

 **NOTE**

Direct connection using the the RS232 cable applies only to the Windows 7 OS. The following serial port-related functions are available only in the Windows 7 OS:

- Searching Devices Based on Serial Port Addresses
- Setting Parameters for the SMS Modem
- Setting Communication Parameters

You can connect the RS485 serial port on the Inverters to the idle RS232 serial port on the PC by using the RS232 cable (RS485 needs to be converted to RS232 through the signal converter). You can also connect multiple Inverters to one RS485 bus which is connected to the PC serial port.

- The serial port number is the one used for connecting the monitoring PC and a device.
- The address of the RS485 bus is the **RS485 Com Address** of the Inverter. For details about how to obtain this address, see the corresponding *User Manual on the monitored device side*.

Contact Huawei technical support engineers to obtain the *User Manual on the monitored device side*.

---

 **NOTICE**

It is recommended that no more than six inverters be connected to the bus for better monitoring performance.

If new physical or logical serial ports are added on the PC on which the NetEco 1000S is running, you need to restart the NetEco 1000S. Otherwise, the newly added ports cannot be automatically identified by the NetEco 1000S.

Currently, the serial-port connection mode does not support security authentication, which may introduce security risks. You are advised to use network cables for connection.

---

## Connection by Using Network Cables

Connection by using network cables: It is applicable to remote Inverter monitoring. In this case, you can search target device based on IP addresses.

- Connection using the SmartLogger: Connect the inverter, EMI, PID, PLC, or Meter to the SmartLogger and then connect the SmartLogger to the monitoring PC through an IP network.

The IP address is that of the SmartLogger. For details about how to obtain the IP address, see the corresponding *Smart Logger User Manual*.

Contact Huawei technical support engineers to obtain the *Smart Logger User Manual*.

- Direct connection to the FE: Inverters that support direct connection to the FE can be directly connected to the FE and can access the NetEco 1000S through the client.

## 4.1.2 Installing the NetEco 1000S Software

### Preinstallation Check

Before installing the NetEco 1000S software, check whether the PC meets the requirements listed in [Table 4-1](#).

**Table 4-1** Preinstallation check item

Check Item	Description
Software package	<p>Contacted Huawei technical support engineers to obtain the software package iManagerNetEco1000S_V100R002C70SPCXXX_win7_standard.zip or iManagerNetEco1000S_V100R002C70SPCXXX_win2012_enterprise.zip. To obtain the software package, Huawei technical support engineers can choose <b>SUPPORT &gt; Software &gt; Energy &gt; PV Inverter &gt; Smart PV Plant System &gt; iManager NetEco 1000S &gt; V100R002C70</b> at <a href="http://support.huawei.com/carrier/">http://support.huawei.com/carrier/</a>.</p> <p>Contact the Huawei technical support engineers and obtain the signature files <b>iManagerNetEco1000S_V100R002C70SPCXXX_win7_standard.zip.asc</b> and the<b>iManagerNetEco1000S_V100R002C70SPCXXX_win2012_enterprise.zip.asc</b> from the path <b>SUPPORT &gt; Software &gt; Energy &gt; PV Inverter &gt; Smart PV Plant System &gt; iManager NetEco 1000S &gt; V100R002C70</b> on the <a href="http://support.huawei.com/carrier/">http://support.huawei.com/carrier/</a> website.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● If the Windows Server 2012 OS is used, obtain the <b>iManagerNetEco1000S_V100R002C70SPCXXX_win2012_enterprise.zip</b> installation package and <b>iManagerNetEco1000S_V100R002C70SPCXXX_win2012_enterprise.zip.asc</b> digital signature file.</li> <li>● If the Windows 7 or Windows 10 OS is used, obtain the <b>iManagerNetEco1000S_V100R002C70SPCXXX_win7_standard.zip</b> installation package and <b>iManagerNetEco1000S_V100R002C70SPCXXX_win7_standard.zip.asc</b> digital signature file.</li> </ul> <p>You can check the integrity of the software package by referring to <a href="#">5.1.8.6 Verifying OpenPGP Signature</a>.</p> <p><b>NOTE</b> Software package integrity check is related to the software security. You must perform the check to ensure the software security.</p>
Hardware	<p>Minimum configuration:</p> <ul style="list-style-type: none"> <li>● Standard edition: CPU: 1*quad-core 2.4 GHz; memory: 4 GB; hard disk: 250 GB</li> <li>● Enterprise edition: CPU: 1*octa-core 2.4 GHz; memory: 12 GB; hard disk: 600GB</li> </ul> <p>Recommended configuration:</p> <ul style="list-style-type: none"> <li>● Standard edition: CPU: 1*quad-core 3.6 GHz; memory: 4 GB; hard disk: 500 GB or above</li> <li>● Enterprise edition: CPU: 2*octa-core 3.6 GHz; memory: 16 GB; hard disk: 2TB or above</li> </ul>

Check Item	Description
Software	<p>Operating system:</p> <ul style="list-style-type: none"> <li>● Standard edition: Windows 7 professional edition, Windows 7 enterprise edition, Windows 10 professional edition, or Windows 10 enterprise edition</li> <li>● Enterprise edition: Windows Server 2012 standard edition</li> </ul> <p><b>NOTE</b> The NetEco 1000S supports the Chinese, English, German, French, and Japanese operating systems. For the Chinese, German, French, and Japanese operating systems, only the NetEco 1000S with the same language can be installed. For the English operating system, there is no requirement on the language of the NetEco 1000S.</p>
	<p>Web browser: Internet Explorer 11 or Chrome 50.</p>
	<p>The antivirus software that can be updated properly must be installed on the PC.</p> <p>You are not advised to install other applications.</p> <p>You are not allowed to install the MySQL database.</p> <p>Services that are unnecessary or have potential security risks must be disabled.</p> <p>Operating system patches must be updated in a timely manner.</p>
	<p>Only users in the system administrator group can install the NetEco 1000S.</p> <p><b>WARNING</b> Only a fixed user in the system administrator group can install and maintain the NetEco 1000S. Other users in the system administrator group are not allowed to reinstall the NetEco 1000S. Otherwise, the database for the installed NetEco 1000S will be initialized and all data will be lost.</p> <p>You are not allowed to share the NetEco 1000S installation directory with other system accounts or grant the NetEco 1000S permission to other system accounts. Otherwise, security risks may occur.</p>

## Procedure

**Step 1** After the software package is decompressed, double-click **setup.bat** in the folder.



The path where the software package is decompressed consists of only letters or contains letters, digits, and underscores (\_). Otherwise, the installation fails.

During the installation, you can click **Cancel** in any window that has the **Cancel** button. A **Are you sure to cancel installation?** dialog box is displayed.

- Click **Yes** to exit the installation.
- Click **No** to continue the installation.

The **Select Installation Language** window is displayed.

**Step 2** Choose **English**, and click **OK**.

The **Introduction** window is displayed.

**Step 3** Click **Next**.

The **Copyright Notice** window is displayed.

Read the terms of the copyright notice in the **Copyright Notice** window.

**Step 4** Select **I agree**, and click **Next**.

The **Select Installation Directory** window is displayed.

The default installation directory is **D:\NetEco1000S\NetEco1000S**.



## WARNING

You are not allowed to install the software in a system volume.

You are not allowed to share the NetEco 1000S installation directory with other system accounts or grant the NetEco 1000S permission to other system accounts. Otherwise, the software cannot be used.

---

**Step 5** Specify an installation directory and click **Next**.

### NOTE

If the specified installation directory does not exist, the following information is displayed.

The directory **D:\NetEco1000S\NetEco1000S** does not exist. Do you want to create it?

- Click **Yes** to create the specified installation directory.
- Click **No** to return to the last step to re-specify an installation directory.

The installation directory consists of only letters or contains letters, digits, and underscores (\_). The installation directory length cannot exceed 50 characters.

The **Set Currency and TimeZone Parameters** window is displayed.

**Step 6** Choose the currency and time zone you need, and click **Next**.

The **Select Software Components** window is displayed.

**Step 7** Select **NetEco 1000S** for installation and click **Next**.

The **Confirm Installation** window is displayed.

**Step 8** Confirm the installation settings and click **Next**.

The installation status window is displayed.

The **Installation Completed** window is displayed after the installation process reaches 100%.

**Step 9** Click **Finish**.

When the software is installed successfully, the NetEco 1000S shortcut menu is available under **Start > All Program**.

---



## NOTICE

- You are not allowed to change the OS time whereas installing the software.
  - After the software is installed successfully, you are advised to remove the software package. Otherwise, security risks may occur.
- 

----End

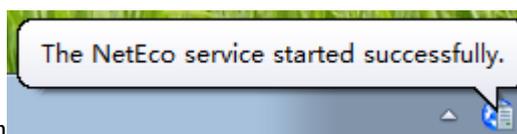
### 4.1.3 Starting NetEco 1000S Services

This section describes how to start the NetEco 1000S services. Before logging in to the NetEco 1000S, you need to start the NetEco 1000S services. Otherwise, the login will be fail.

#### Procedure

**Step 1** Choose **Start > All Program > NetEco 1000S > NetEco 1000S Service** to start the NetEco 1000S services in the operating system.

- When the service is starting, the icon  is displayed in the lower right corner of the taskbar of the desktop.



- After being started, the icon  is displayed in the lower right corner of the taskbar of the desktop.

----End

#### Related Operations

Stop NetEco 1000S services.

Right-click the NetEco 1000S service icon in the lower right corner of the taskbar of the desktop and choose **Exit** from the shortcut menu.

### 4.1.4 Logging In to the NetEco 1000S Client

This section describes how to log in to the NetEco 1000S before using the service functions supported by NetEco 1000S.

#### Prerequisites

- You have started the NetEco 1000S services. For details about how to start the services, see [4.1.3 Starting NetEco 1000S Services](#).
- You have obtained the user Account/Email and password for logging in to the NetEco 1000S.

#### Procedure

**Step 1** Log in to the NetEco 1000S client in a correct mode as required.

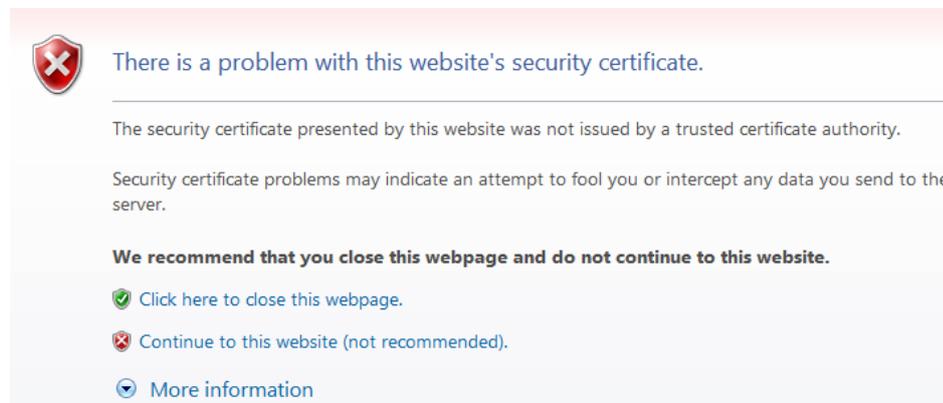
 **NOTICE**

The web browser must be Internet Explorer 11 or Chrome 50. Otherwise, some browser problems may occur when users query data.

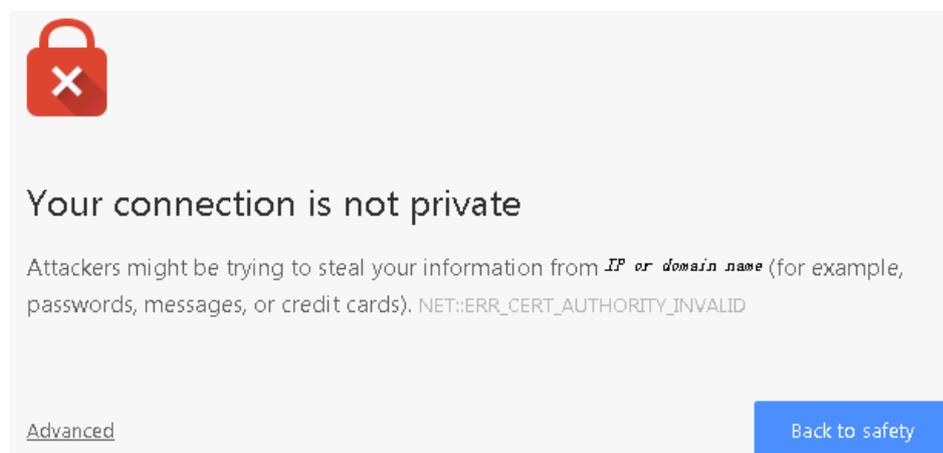
Login Mode	Procedure
Local login	Use either of the following methods to log in to the NetEco 1000S client: <ul style="list-style-type: none"> <li>● Choose <b>Start &gt; All Program &gt; NetEco 1000S &gt; NetEco 1000S Client</b> in the operating system.</li> <li>● Double-click the NetEco 1000S client icon on the desktop of a PC that running a Windows operating system.</li> </ul>
Remote login	1. Open the web browser. 2. Enter <b>https://IP address:8443</b> in the address bar, and press <b>Enter</b> .

If you have selected **Use Security Web Service** during NetEco 1000S installation, the GUI shown in [Figure 4-1](#) or [Figure 4-2](#) will be displayed when you start the client.

**Figure 4-1** Website Security Certificate window (Internet Explorer)



**Figure 4-2** Website Security Certificate window (Chrome 50)



 **NOTE**

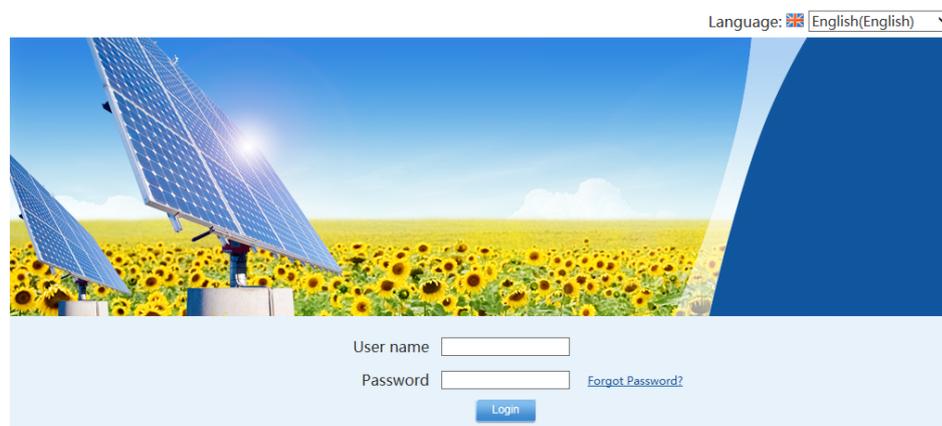
The HTTPS secure communication channel between the NetEco 1000S browser and the server is set up to ensure that sensitive data (such as passwords) is transmitted securely. A security certificate is required when the HTTPS channel is set up. A default security self-signed certificate is provided by the NetEco 1000S, but this default certificate is not issued by a Certificate Authority (CA). As a result, the message **There is a problem with this website's security certificate.** is displayed. To replace the certificate, see [5.4.3.2 Replacing a Certificate for the NetEco 1000S Client Communicating with the Server](#).

Between the browser and the server using TLSv1.1 or TLSv1.2 way connection, these two ways are safe connection mode.

When using the Internet Explorer, click **Continue to this website (not recommended)** in [Figure 4-1](#). When using the Chrome, choose **Advanced > Proceed to IP or domain name (unsafe)** in [Figure 4-2](#).

The **Login** window is displayed, as shown in [Figure 4-3](#).

**Figure 4-3** Login



**Step 2** On the **Login** page, select a language to be used by the NetEco 1000S client from the drop-down list box.

 **NOTE**

- Chinese, English, Japanese, German, and French are supported. If you do not select a language, the language used during the NetEco 1000S client installation is used.
- The selected language takes effect only for the currently user who is logged in using the current browser.
- After changing the language, only the static information (information not entered by users) is changed, such as the titles, menu names, and messages. Dynamically generated information such as operation logs are still recorded and displayed in the language used during the NetEco 1000S client installation. Information entered by users, such as the plant name, plant description, and device name, are displayed in the language in which the information is entered.
- After you select a language on the **Login** page or the home page, the browser will record the language information (for 30 days). If the browser cache is not cleared or disabled, the recorded language is used upon your next login.

**Step 3** Set **Account/Email** and **Password** when you log in to the NetEco 1000S for the first time, and click **Login**.

---

**NOTICE**

If the **User Authorization** page is displayed here, select **Agree to the Privacy Policy** and **Agree to the Terms of Use** (If the Terms of Use is set not to be displayed, you cannot view the Terms of Use here) before clicking **OK** to continue the operations. For details, see [5.1.8.22 What Do I Do to Control the User Authorization upon First Login?](#)

---

The **System Initial Password** page is automatically displayed after the password expires. Change the password and log in to the NetEco 1000S client using the new password.

---

**NOTICE**

- Use the system administrator user when you log in to the NetEco 1000S for the first time. This user has the highest operation rights.
- To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.
- The password cannot be the user name or the reversed user name.
- The length ranges from 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#%&'()\*+,-./:;<=>?@[\\]^\_{|}~ and space.

---

If you forget the password, perform the following operations.

---

**NOTICE**

- Ensure that the email server has been configured. Otherwise, the password cannot be reset. For details about how to configure the email server, see [5.1.7.3.1 Setting Parameters for the Email Server](#).
- This operation requires that the current user is the system operators or guest users.
- A user can reset a password three times a day at most.

- 
1. Click **Forget Password**.

The **Reset Password** page is displayed, as shown in [Figure 4-4](#).

Figure 4-4 Reset Password



The image shows a dialog box titled "NetEco Reset Password". It contains two input fields: "\*Email address:" followed by a text box, and "\*Verification code:" followed by a text box and a CAPTCHA image showing the characters "ZCIY". Below the input fields are two buttons: "OK" and "Cancel".

2. Enter the email address and verification code.
3. Click **OK**.  
The Operation succeeded. Confirm the initialization password within 5 minutes. Otherwise, the confirmation email will be invalid. prompt message is displayed.
4. Click **OK**.  
Check the email for retrieving the password and perform the operations specified in the email.

---



### NOTICE

If the link in the email cannot be accessed, check whether the IP address contained in the link is the same as the IP address of the NetEco 1000S server. If no, change the IP address contained in the link to the IP address of the NetEco 1000S server. Then, you can access the link successfully.

---

----End

## Exception Handling

When user B logs in to the client after user A logs in to it, the following problems may occur:

- After user B enters the login address in the address box of the browser, the login window for user A is displayed but that for user B is not displayed.
- After user B logs in to the client, user A's session window is automatically switched to user B's login window and user A is logged out.

The preceding problems are caused by the browser mechanism. They can be prevented using the following methods:

- When using the Internet Explorer, choose **File > New Session** from the menu bar.

In the displayed session window, enter the login address. You can log in to the client as user B successfully.

- When using the Chrome, open the menu and choose **New incognito window**.

In the displayed incognito window, enter the login address. You can log in to the client as user B successfully.

## 4.1.5 Logging Out of the NetEco 1000S Client

### Procedure

**Step 1** Click  in the upper right corner from the main menu to log out. The **Login** page is displayed.

----End

## 4.1.6 Logging Out of the NetEco 1000S Services

### Prerequisites

You have logged out of the NetEco 1000S client. For detailed operations, see [4.1.5 Logging Out of the NetEco 1000S Client](#).

### Procedure

**Step 1** Right-click the NetEco 1000S service icon  in the lower right corner of the task bar of the desktop and choose **Exit** from the shortcut menu.

#### NOTE

If the  icon is not displayed in the lower right corner in the Windows operating system, perform the following steps to stop the NetEco 1000S services:

1. Start the task manager.
2. Click the **Services** tab.
3. Stop the **NetEcoSUNService** Service.
4. Stop the **NetEcoSUNMysql** Service.

----End

## 4.1.7 Remove the NetEco 1000S Software

This section describes how to remove the NetEco 1000S software.

### Prerequisites

The NetEco 1000S software has been installed.

### Procedure

**Step 1** Right-click NetEco 1000S in the lower right corner of the desktop and choose **Exit** from the shortcut menu.

#### NOTE

If the NetEco 1000S service is not started, skip this step.

**Step 2** Choose **Start > All Program > NetEco 1000S > Uninstall NetEco 1000S** in the operating system to start the uninstallation program.

The **Select Software Components** window is displayed.

**Step 3** Select the **NetEco 1000S** component, and click **Next**.

**Step 4** Click **Yes**.

The NetEco 1000S uninstallation progress is displayed in the window.

**Step 5** Click **Finish** when the uninstallation is complete.

The **Conformation** dialog box is displayed.

**Step 6** Determine whether to restart the operating system.

- If you click **Yes**, the operating system is restarted, and the NetEco 1000S installation directory is deleted automatically.
- If you click **No**, the operating system will not be restarted, and you need to manually delete the NetEco 1000S installation directory.

---End

## 4.2 NetEco 1000S APP Installation and Commissioning

This section describes installation and commissioning procedure of NetEco 1000S APP.

### 4.2.1 NetEco 1000S APP Networking

This section describes the networking schemes when the NetEco 1000S APP is used on the mobile device.

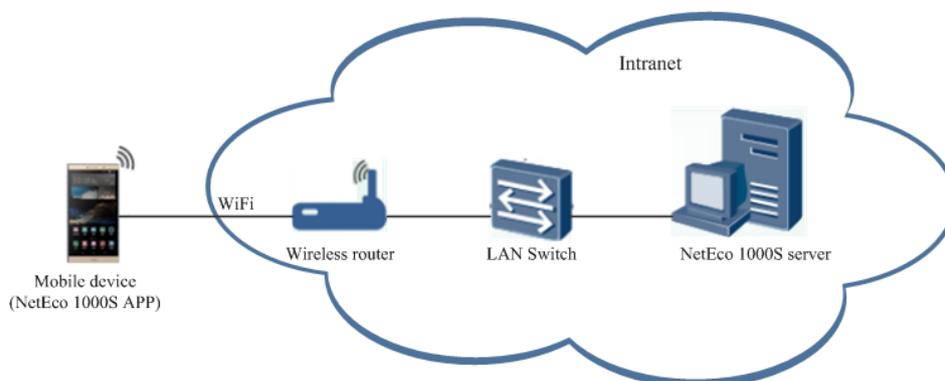
The mobile device supports the following two typical networking schemes when the NetEco 1000S APP is used on the mobile device:

#### NOTE

Customers are responsible for all network design and network-device-level security planning.

- The mobile device is connected to the internal network of the NetEco 1000S directly. [Figure 4-5](#) shows the networking diagram.

**Figure 4-5** Mobile device connecting to the internal network of the NetEco 1000S directly



---

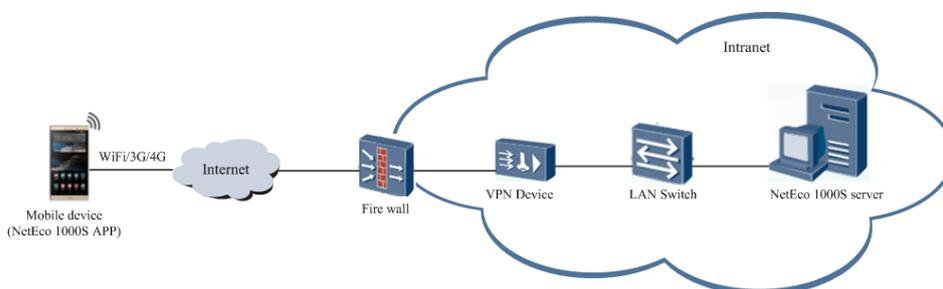
## NOTICE

The following requirements must be met when the mobile device is directly connected to the internal network:

- You have configured a wireless router in the internal network.
- The mobile device is located in an area covered by Wi-Fi signals.

- 
- The mobile device is connected to the internal network of the NetEco 1000S through the virtual private network (VPN). [Figure 4-6](#) shows the networking diagram.

**Figure 4-6** Mobile device connecting to the internal network of the NetEco 1000S through the VPN



---

## NOTICE

The following requirements must be met when the mobile device is connected to the internal network through the VPN:

- The VPN device is installed on the customer's internal network.
- Parameters, including the network port and virtual gateway, of the VPN device are configured through the serial port or network port on the PC.

Configuration methods and parameters of the VPN devices vary with the vendors. For details, see the VPN device description.

- Mobile terminal VPN access is configured on the mobile device. For example, choose **Settings > Wireless&networks; > VPN > Add VPN network** on a Huawei mobile phone to configure the VPN access.
- Port 33000 of the NetEco 1000S server is opened.

---

## 4.2.2 Installing the NetEco 1000S APP Software

This section describes the operating environment requirements of NetEco 1000S APP, how to download and install the NetEco 1000S APP software.

### Preinstallation Check

Before installing the NetEco 1000S APP software, check whether the mobile device meets the requirements listed in [Table 4-2](#).

**Table 4-2** Check items

Check Item	Description
Operating environment	When the NetEco 1000S APP runs on a mobile device, the mobile device must meet the following requirements: <ul style="list-style-type: none"><li>● The mobile device must run the following OSs:<ul style="list-style-type: none"><li>- Mobile phone or Pad running the OS later than Android 4.0</li><li>- Mobile phone or iPad running the OS later than iOS 6.0</li></ul></li><li>● The mobile device is connected to the Internet properly. The rate is 500 kbit/s and higher.</li><li>● There are sufficient space and power on the mobile device so that new apps can be installed.</li></ul>
Software package	The NetEco 1000S APP software package has been obtained. If it is not obtained, download it using the following methods: <ul style="list-style-type: none"><li>● Mobile device running Android: Search for <b>neteco</b> on the Google Play.</li><li>● Mobile device running iOS: Search for <b>neteco</b> on the APP Store.</li></ul>

## Procedure

1. Click the NetEco 1000S APP software package, and then install the NetEco 1000S APP software according to the system information.

After the installation is complete, the icon of the NetEco 1000S APP is displayed on the desktop of the mobile device.

## 4.2.3 Security Configuration for NetEco 1000S APP

To ensure system security, you must perform the following configurations before accessing the NetEco 1000S system through the NetEco 1000S APP.

## Context

The identification number of the mobile terminal has been anonymized on the NetEco 1000S APP screen to protect user's privacy.

## Procedure

- Step 1** Obtain the identification number of the mobile terminal.

### NOTE

Identification number of the iOS mobile terminal is the IDFV identifier. Identification numbers of other mobile terminals are IMEIs/MEIDs of mobile phones or MAC addresses of tablets.

- Method of obtaining the IDFV identifier: When using the iOS mobile terminal to log in to the NetEco 1000S APP, click **IDFV** on the login page to view the identifier.
- Method of obtaining the IMEI/MEID: Enter **\*#06#** in the dial keyboard of your mobile phone.
- Method of obtaining the MAC address: Choose **Settings > WLAN > Advanced settings** on your tablet to view the MAC address.



The navigation path of **Advanced settings** may vary depending on the OS version. Choose the corresponding path as required.

**Step 2** Add the identification number of the mobile terminal to the NetEco 1000S.

1. Log in to the NetEco 1000S system through the web browser.
2. Choose **System > User Management** from the main menu.
3. Click **Mobile Terminal**, and then add the identification number of the mobile terminal.

---End

## 4.2.4 Logging In to the NetEco 1000S APP

After installing the NetEco 1000S APP on the mobile terminal, you can access the NetEco 1000S server through the NetEco 1000S APP.

### Prerequisites

- You have added the identification number of the mobile terminal in the NetEco 1000S system. For details, see [4.2.3 Security Configuration for NetEco 1000S APP](#).
- You have installed the NetEco 1000S APP software on the mobile terminal. For detailed operations, see [4.2.2 Installing the NetEco 1000S APP Software](#).
- You have obtained the user Account/Email and password for logging in to NetEco 1000S APP.
- The mobile terminal has been connected to the network.

### Context

The NetEco 1000S APP can be installed on mobile terminals running iOS6.0, Android4.0, and later versions. Different Android versions support different communication protocols.

- Versions earlier than Android4.4: supports TLSv1.
- Android4.4 and later: support TLSv1, TLSv1.1, and TLSv1.2.

The NetEco 1000S APP supports the TLSv1, TLSv1.1, and TLSv1.2 by default. The TLSv1 has security risks. You are advised to upgrade the Android. For mobile terminals running Android4.4 or later, disable the TLSv1 by following the instructions provided in [5.3.4 How Do I Disable the TLSv1?](#)

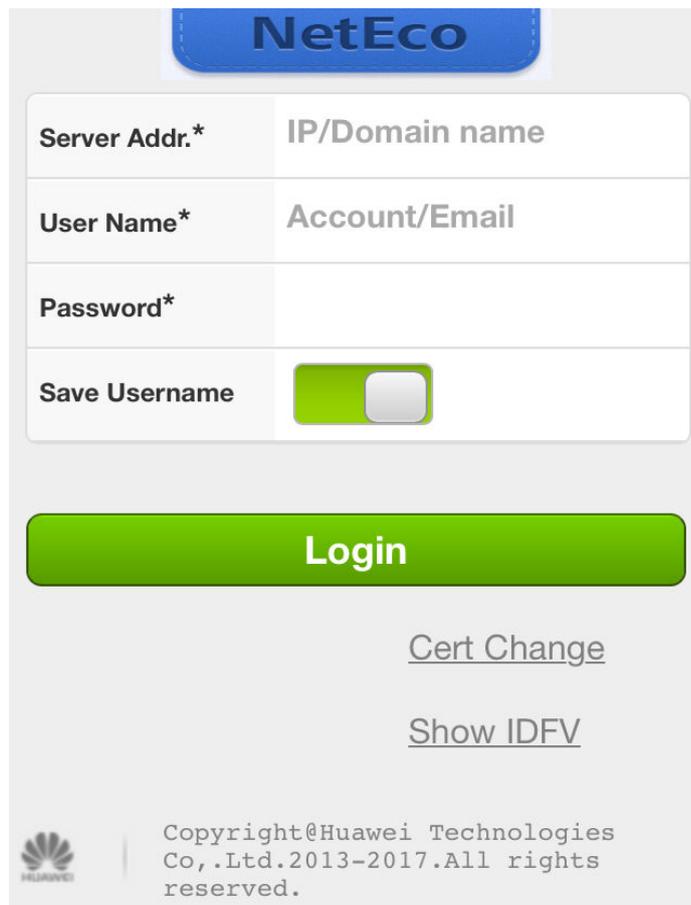
### Procedure

**Step 1** Click the NetEco 1000S APP icon on the desktop of the mobile terminal to open the login page.

**Step 2** **Optional:** Set the server address of the NetEco 1000S server if this is the first time that you log in to the NetEco 1000S APP.

**Server Addr.** indicates the IP address of the NetEco 1000S server. Specify the IP address or domain name of the server as required.

Figure 4-7 Setting the server address



The image shows a login interface for NetEco. At the top, there is a blue header with the text "NetEco". Below the header is a form with four rows. The first row is labeled "Server Addr.\*" and has a placeholder "IP/Domain name". The second row is labeled "User Name\*" and has a placeholder "Account/Email". The third row is labeled "Password\*" and is empty. The fourth row is labeled "Save Username" and has a green toggle switch that is currently turned on. Below the form is a large green button labeled "Login". Underneath the button are two links: "Cert Change" and "Show IDFV". At the bottom left is the Huawei logo, and at the bottom right is the copyright notice: "Copyright@Huawei Technologies Co., Ltd.2013-2017.All rights reserved."

**Step 3** Enter **Account/Email** and **password**.

**Step 4** Click **Log In**.

---

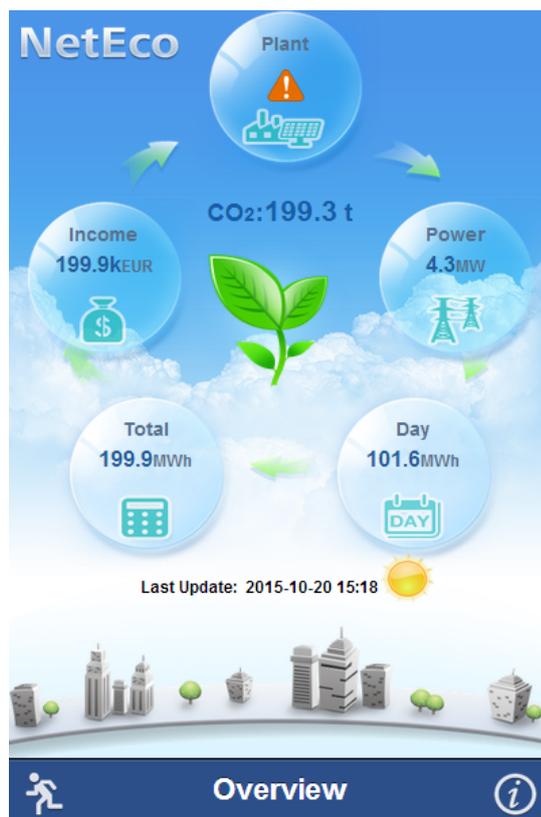
 **NOTICE**

If the message **The Privacy Policy is updated. Log in to read and agree the Privacy Policy on WebUI.** is displayed, log in to the NetEco 1000S client and agree the Privacy Policy before logging in to the NetEco 1000S app to continue the operations. For details, see [5.1.8.22 What Do I Do to Control the User Authorization upon First Login?](#).

---

After you successfully log in to the NetEco 1000S service, the **Overview** window is displayed, as shown in [Figure 4-8](#).

Figure 4-8 Summary window



NOTE

- You can click to view the version of the NetEco 1000S APP.

- You can click to deregister an application.

- You can click to update data on the overview page.

---End

## 4.3 Planning Operating System Users and Their Initial Passwords

This section describes the user names and their initial passwords required during the operation of the NetEco 1000S system.

**Table 4-3** lists the user names and initial passwords required during the installation and operation of the NetEco 1000S system, and their creation time.

**Table 4-3** Planning of user names and passwords

System or Device	User Name	Initial User Password	Description	How to Change the Password
MySQL	administ rator	NetEco_1 23	Administrator who managing the MySQL database.	You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.  For details, see <a href="#">5.4.1.1.2 Changing the Passwords of MySQL Users.</a>
	dbuser	NetEco_1 23	User used for NetEco 1000S system access the MySQL database.	
NetEco 1000S	admin	Changeme 123	User who operates and maintains the NetEco 1000S system. You can manage the NetEco 1000S users by creating users. <b>NOTE</b> When you log in to the NetEco 1000S for the first time, the system forces the user to change the password to make sure the security of visiting the system.	You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.  For details, see <a href="#">5.1.7.1.5 Modifying the Password of the Current User.</a>
	emscom m	/EzFp +2%r6@I xSCv	User used for the reauthentication of the device and NetEco 1000S.	You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.  For details, see <a href="#">5.1.3.11 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S.</a>

System or Device	User Name	Initial User Password	Description	How to Change the Password
	ftpuser	NetEco123	User ftpuser is used by the NetEco 1000S to transfer NetEco 1000S files. Normally, during the installation of the NetEco 1000S, user ftpuser is automatically created in the system, and therefore you need not create user ftpuser manually.	You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.  For details, see <a href="#">5.1.8.12 How Do I Change the Password of the ftpuser user?</a> .
	plantcontroller	Modifyme123	User used for the Plant Controller devices to transfer files to the NetEco 1000S.	You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.  For details, see <a href="#">5.1.8.16 How Do I Change the Password of the plantcontroller user?</a> .

## 4.4 Communication Matrix

For details, see *iManager NetEco 1000S V100R002C70 Communication Matrix.xls*.

# 5 Operation and Maintenance

## 5.1 NetEco 1000S Web Client Operation (Commercial)

This section describes how to log in to the NetEco 1000S and how to perform the operations to the NetEco 1000S on the web client.

You are not allowed to change the OS time whereas the software is running. When you need to change the OS time, you must log out the NetEco service first, for details, see [5.1.1.2 Logging Out of the NetEco 1000S](#).

### 5.1.1 Getting Started

#### 5.1.1.1 Logging In to the NetEco 1000S

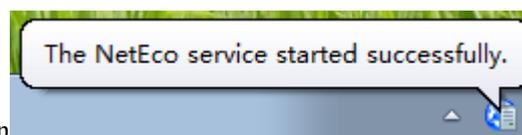
##### 5.1.1.1.1 Starting NetEco 1000S Services

This section describes how to start the NetEco 1000S services. Before logging in to the NetEco 1000S, you need to start the NetEco 1000S services. Otherwise, the login will be fail.

### Procedure

**Step 1** Choose **Start > All Program > NetEco 1000S > NetEco 1000S Service** to start the NetEco 1000S services in the operating system.

- When the service is starting, the icon  is displayed in the lower right corner of the taskbar of the desktop.



- After being started, the icon  is displayed in the lower right corner of the taskbar of the desktop.

----End

### Related Operations

Stop NetEco 1000S services.

Right-click the NetEco 1000S service icon in the lower right corner of the taskbar of the desktop and choose **Exit** from the shortcut menu.

### 5.1.1.1.2 Logging In to the NetEco 1000S Client

This section describes how to log in to the NetEco 1000S before using the service functions supported by NetEco 1000S.

#### Prerequisites

- You have started the NetEco 1000S services. For details about how to start the services, see [5.1.1.1.1 Starting NetEco 1000S Services](#).
- You have obtained the user Account/Email and password for logging in to the NetEco 1000S.

#### Procedure

**Step 1** Log in to the NetEco 1000S client in a correct mode as required.



#### NOTICE

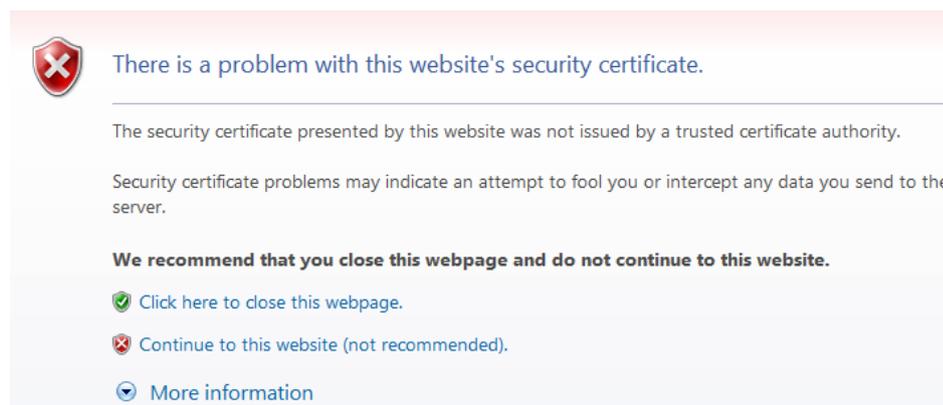
The web browser must be Internet Explorer 11 or Chrome 50. Otherwise, some browser problems may occur when users query data.

---

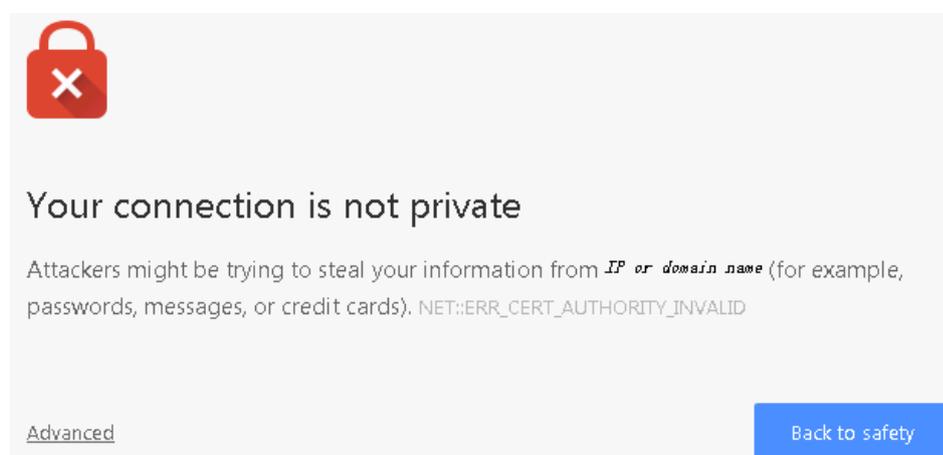
Login Mode	Procedure
Local login	Use either of the following methods to log in to the NetEco 1000S client: <ul style="list-style-type: none"><li>● Choose <b>Start &gt; All Program &gt; NetEco 1000S &gt; NetEco 1000S Client</b> in the operating system.</li><li>● Double-click the NetEco 1000S client icon on the desktop of a PC that running a Windows operating system.</li></ul>
Remote login	<ol style="list-style-type: none"><li>1. Open the web browser.</li><li>2. Enter <b>https://IP address:8443</b> in the address bar, and press <b>Enter</b>.</li></ol>

If you have selected **Use Security Web Service** during NetEco 1000S installation, the GUI shown in [Figure 5-1](#) or [Figure 5-2](#) will be displayed when you start the client.

**Figure 5-1** Website Security Certificate window (Internet Explorer)



**Figure 5-2** Website Security Certificate window (Chrome 50)



 **NOTE**

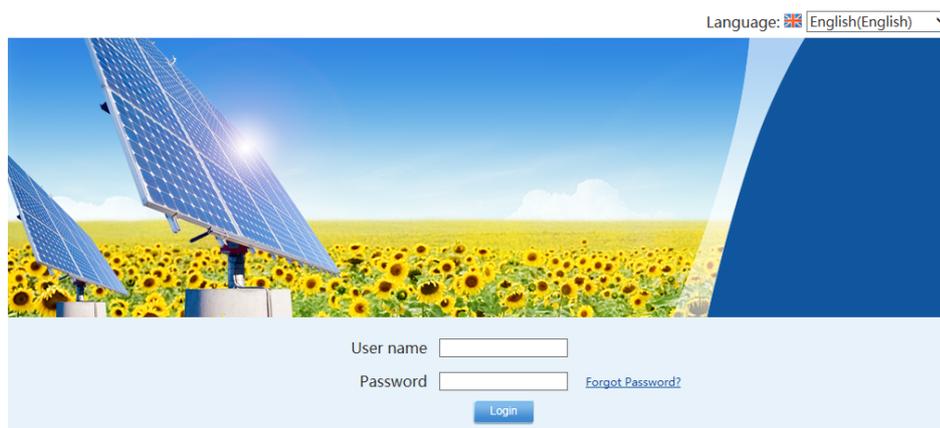
The HTTPS secure communication channel between the NetEco 1000S browser and the server is set up to ensure that sensitive data (such as passwords) is transmitted securely. A security certificate is required when the HTTPS channel is set up. A default security self-signed certificate is provided by the NetEco 1000S, but this default certificate is not issued by a Certificate Authority (CA). As a result, the message **There is a problem with this website's security certificate.** is displayed. To replace the certificate, see [5.4.3.2 Replacing a Certificate for the NetEco 1000S Client Communicating with the Server](#).

Between the browser and the server using TLSv1.1 or TLSv1.2 way connection, these two ways are safe connection mode.

When using the Internet Explorer, click **Continue to this website (not recommended)** in [Figure 5-1](#). When using the Chrome, choose **Advanced > Proceed to IP or domain name (unsafe)** in [Figure 5-2](#).

The **Login** window is displayed, as shown in [Figure 5-3](#).

**Figure 5-3** Login



**Step 2** On the **Login** page, select a language to be used by the NetEco 1000S client from the drop-down list box.

 **NOTE**

- Chinese, English, Japanese, German, and French are supported. If you do not select a language, the language used during the NetEco 1000S client installation is used.
- The selected language takes effect only for the currently user who is logged in using the current browser.
- After changing the language, only the static information (information not entered by users) is changed, such as the titles, menu names, and messages. Dynamically generated information such as operation logs are still recorded and displayed in the language used during the NetEco 1000S client installation. Information entered by users, such as the plant name, plant description, and device name, are displayed in the language in which the information is entered.
- After you select a language on the **Login** page or the home page, the browser will record the language information (for 30 days). If the browser cache is not cleared or disabled, the recorded language is used upon your next login.

**Step 3** Set **Account/Email** and **Password** when you log in to the NetEco 1000S for the first time, and click **Login**.

---

 **NOTICE**

If the **User Authorization** page is displayed here, select **Agree to the Privacy Policy** and **Agree to the Terms of Use** (If the Terms of Use is set not to be displayed, you cannot view the Terms of Use here) before clicking **OK** to continue the operations. For details, see [5.1.8.22 What Do I Do to Control the User Authorization upon First Login?](#)

---

The **System Initial Password** page is automatically displayed after the password expires. Change the password and log in to the NetEco 1000S client using the new password.

---

 **NOTICE**

- Use the system administrator user when you log in to the NetEco 1000S for the first time. This user has the highest operation rights.
- To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.
- The password cannot be the user name or the reversed user name.
- The length ranges from 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#\$%&'()\*+,-./:;<=>?@[\\]^`{\_|}~ and space.

---

If you forget the password, perform the following operations.

---

 **NOTICE**

- Ensure that the email server has been configured. Otherwise, the password cannot be reset. For details about how to configure the email server, see [5.1.7.3.1 Setting Parameters for the Email Server](#).
- This operation requires that the current user is the system operators or guest users.
- A user can reset a password three times a day at most.

---

1. Click **Forget Password**.

The **Reset Password** page is displayed, as shown in [Figure 5-4](#).

Figure 5-4 Reset Password



The image shows a dialog box titled "NetEco Reset Password". It contains two input fields: "\*Email address:" followed by a text box, and "\*Verification code:" followed by a text box and a CAPTCHA image showing the characters "ZCIY". Below the input fields are two buttons: "OK" and "Cancel".

2. Enter the email address and verification code.
3. Click **OK**.  
The Operation succeeded. Confirm the initialization password within 5 minutes. Otherwise, the confirmation email will be invalid. prompt message is displayed.
4. Click **OK**.  
Check the email for retrieving the password and perform the operations specified in the email.

---

**NOTICE**

If the link in the email cannot be accessed, check whether the IP address contained in the link is the same as the IP address of the NetEco 1000S server. If no, change the IP address contained in the link to the IP address of the NetEco 1000S server. Then, you can access the link successfully.

---

----End

## Exception Handling

When user B logs in to the client after user A logs in to it, the following problems may occur:

- After user B enters the login address in the address box of the browser, the login window for user A is displayed but that for user B is not displayed.
- After user B logs in to the client, user A's session window is automatically switched to user B's login window and user A is logged out.

The preceding problems are caused by the browser mechanism. They can be prevented using the following methods:

- When using the Internet Explorer, choose **File > New Session** from the menu bar.

In the displayed session window, enter the login address. You can log in to the client as user B successfully.

- When using the Chrome, open the menu and choose **New incognito window**.

In the displayed incognito window, enter the login address. You can log in to the client as user B successfully.

## 5.1.1.2 Logging Out of the NetEco 1000S

### 5.1.1.2.1 Logging Out of the NetEco 1000S Client

#### Procedure

**Step 1** Click  in the upper right corner from the main menu to log out. The **Login** page is displayed.

----End

### 5.1.1.2.2 Logging Out of the NetEco 1000S Services

#### Prerequisites

You have logged out of the NetEco 1000S client. For detailed operations, see [5.1.1.2.1 Logging Out of the NetEco 1000S Client](#).

#### Procedure

**Step 1** Right-click the NetEco 1000S service icon  in the lower right corner of the task bar of the desktop and choose **Exit** from the shortcut menu.

#### NOTE

If the  icon is not displayed in the lower right corner in the Windows operating system, perform the following steps to stop the NetEco 1000S services:

1. Start the task manager.
2. Click the **Services** tab.
3. Stop the **NetEcoSUNService** Service.
4. Stop the **NetEcoSUNMysql** Service.

----End

## 5.1.1.3 Getting to Know the NetEco 1000S Home Page

This section describes the NetEco 1000S home page. Getting familiar with the NetEco 1000S home page helps you quickly find the entry for an operation and improve operation efficiency.

[Figure 5-5](#) shows the home page of the NetEco 1000S client after the login. [Table 5-1](#) describes items on the home page.

Figure 5-5 NetEco 1000S home page

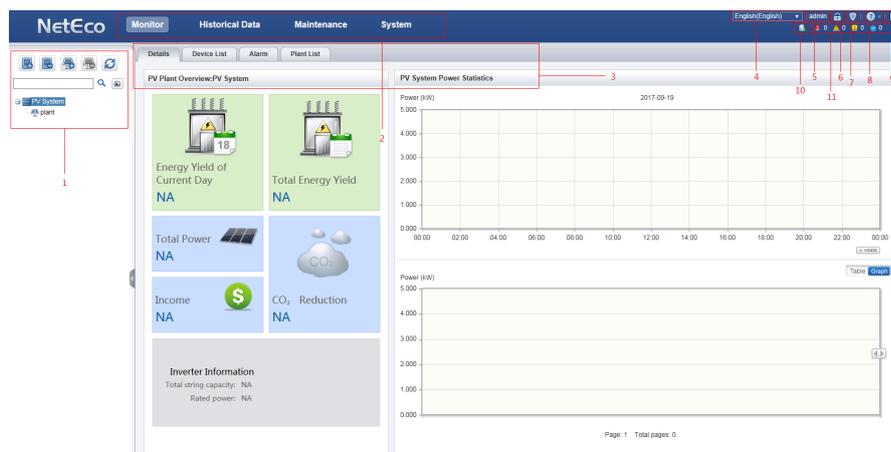


Table 5-1 Items on the NetEco 1000S home page

No.	Name	Description
1	Device navigation tree	You can choose the device to be operated.
2	Menu bar	Indicates the main menu of the system.
3	Operation display area	Displays the GUI of the selected function.
4	English(English)	<p>You can click this icon to select a language to be used by the NetEco 1000S client.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>Chinese, English, Japanese, German, and French are supported. If you do not select a language, the language used during the NetEco 1000S client installation is used.</li> <li>The selected language takes effect only for the currently user who is logged in using the current browser.</li> <li>After changing the language, only the static information (information not entered by users) is changed, such as the titles, menu names, and messages. Dynamically generated information such as operation logs are still recorded and displayed in the language used during the NetEco 1000S client installation. Information entered by users, such as the plant name, plant description, and device name, are displayed in the language in which the information is entered.</li> <li>After you select a language on the <b>Login</b> page or the home page, the browser will record the language information (for 30 days). If the browser cache is not cleared or disabled, the recorded language is used upon your next login.</li> </ul>
5	Current logged-in user	Displays the name of the current logged-in user.
6	Password changing icon	You can click this icon to change the current user name.

No.	Name	Description
7	User Authorization icon	You can click this icon to open the <b>User Authorization</b> page to view the Privacy Policy and Terms of Use. <b>NOTE</b> <ul style="list-style-type: none"> <li>● If the Terms of Use is set to not be displayed, you cannot view the Terms of Use here.</li> <li>● If no user authorization is required upon the first login, there will not be this icon. For detailed operations, see <a href="#">5.1.8.22 What Do I Do to Control the User Authorization upon First Login?</a>.</li> </ul>
8	Help icon	You can click <b>Help</b> under this icon to open the online help. You can click <b>About</b> under this icon to check the version information.
9	Exit icon	You can click this icon to exit the client.
10	NetEco Alarm icon	Displays whether the NetEco 1000S has generated alarms. <ul style="list-style-type: none"> <li>● : The NetEco 1000S has generated alarms. For details, see <a href="#">5.1.6.6 Querying NetEco Alarms</a>.</li> <li>● : The NetEco 1000S generates no alarm.</li> </ul>
11	Alarm board icon	Displays the number of the current alarms. Alarms of different alarm severities are marked in different colors. You can click this icon to enter the <b>Alarms</b> window. <a href="#">Table 5-2</a> lists the icon meaning.

**Table 5-2** Alarm status images

Image	Status
	Critical
	Minor
	Major
	Warning

## 5.1.2 Managing the PV Plants

### 5.1.2.1 Browsing the PV Plant List

This section describes how to browse the PV Plant list to learn the overview of all PV plants connected to the NetEco 1000S.

## Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

## Context

The PV plant list displayed on the **Plant List** page varies according to the logged-in user. The details are as follows:

- system administrator: displays all PV plants connected to the NetEco 1000S.
- system operators or guest users: displays only PV plants that the current user can access.

## Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose **PV System** in the navigation tree on the left.
- Step 3** Choose the **Plant List** tab in the operation display area.

The **Plant List** page is displayed, as shown in [Figure 5-6](#).

**Figure 5-6** Plant List

PV plant name	Status	PV plant address	Rated Power(KW)	Performance Ratio(%)	Total Power(KW)	Energy Yield of Current Day (kWh)	Total Energy Yield (kWh)	Income(CNY)	City	Enable daylight saving time
plant	-	-	-	-	-	-	-	-	(UTC+08:00)Kunsk	Disable

You can view data, such as the current status and performance ratio, of each PV plant on the **Plant List** page. For details, see [Table 5-3](#).

**Table 5-3** Parameter description

Parameter	Description
PV plant name	<p>Name of a PV plant.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● You can click a PV plant name to switch to the <b>Details</b> page of the PV plant.</li> <li>● You can click  next to the <b>PV plant name</b> column to sort PV plants by name in ascending or descending order.</li> <li>● PV plant names are sorted in Unicode mode. The priority of PV plants whose names contain -, digits, uppercase letters, _, lowercase letters, and Chinese characters decreases in sequence.</li> </ul>
Status	<p>Alarm with the highest severity in a PV plant.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● You can click  next to the <b>Status</b> column to sort alarms by severity in ascending or descending order.</li> <li>● If no devices are connected in the current PV plant, - will be displayed.</li> </ul>

Parameter		Description
PV plant address		Address of a PV plant. <b>NOTE</b> <ul style="list-style-type: none"> <li>Click  on the left of <b>PV plant address</b> to sort PV plants in ascending or descending order.</li> <li>PV plant addresses are sorted in Unicode mode. The priority of PV plants whose names contain hyphens (-), digits, uppercase letters, underscores (_), lowercase letters, or Chinese characters decreases in sequence.</li> </ul>
Rated Power		Total rated power of inverters in a PV plant.
Performance Ratio		Energy generation performance ratio of a PV plant. <b>NOTE</b> If none of the inverters in the PV plant is configured with string capacity or no EMIs are connected to the PV plant, a hyphen (-) is displayed.
Total Power		Total power of a PV plant.
Energy Yield of Current Day		Current-day energy yield of a PV plant.
Total Energy Yield		Total energy yield of a PV plant.
Income		Total income of a PV plant. <b>NOTE</b> Currency of the total income of a PV plant is the standard currency selected when the NetEco 1000S is installed.
Time zone	City	Time zone where the plant is located.
	Enable daylight saving time	Indicating whether the daylight saving time is used in the time zone where the plant is located. If the daylight saving time is not used, - will be displayed.

---End

### 5.1.2.2 Creating a PV Plant

This section describes how to create a plant. After the NetEco 1000S is installed, a default plant is available. You can also create another plant as required.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Click  in the navigation tree on the left.  
The **Create PV Plant** window is displayed.

**Step 3** Set plant parameters by referring to [Table 5-4](#).

**Table 5-4** PV Plant parameters

Parameter name	Mandatory (Yes/No)	Description
PV plant name	Yes	Name of a PV plant.
PV plant address	No	Address of a PV plant. You can set this parameter as required.
PV plant description	No	Description of a PV plant. You can enter utility information about the PV plant.
SN	No	SN of the inverters directly connected to the FE or SmartLogger. Multiple SNs are separated by semicolons (;).  You can enter the SN of the inverters directly connected to the FE or SmartLogger. After a PV plant is created on the NetEco 1000S, the inverters directly connected to the FE or SmartLogger automatically mounts the SmartLogger and devices connected to the SmartLogger to the PV plant.
City	Yes	Select the time zone for the plant from the drop-down list box. The time zone where the NetEco 1000S server is located is selected by default.  If the daylight saving time is used in the selected time zone, the <b>Enable daylight saving time</b> check box will be displayed. You can select the check box to enable daylight saving time.
Electricity price	Yes	Price of the power. Value range: 0.0000-99.9999
Currency	Yes	Price unit. You can set the unit in the <b>Income Settings</b> dialog box by choosing <b>System &gt; System Settings &gt; Income Settings</b> .

**Step 4** Click **Save**.

----End

### 5.1.2.3 Obtaining an Overview of a PV Plant

You can learn the device status and PV plant running information by querying the overview of the PV plant.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Choose **PV System** or a user-defined plant in the navigation tree on the left.

**Step 3** Click the **Details** tab in the operation display area.

Running status information about the selected plant is displayed on the **Details** tab page, such as power generation efficiency and cumulative generated power.

#### NOTE

If the DST is enabled on the SmartLogger, the following situations may occur:

- When users query data generated on the date shifting to the DST, the queried graph or table has no data on this time segment.
- When users query data generated on the date shifting out of the DST, the queried graph or table displays only the latest one data record on this time segment.

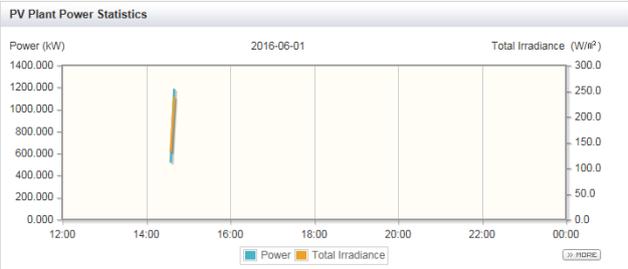
----End

#### Follow-up Procedure

Perform the following operations on the **Details** tab page:

Procedure	Step
<p>View details about <b>Energy Yield of Current Day</b>, <b>Total Energy Yield</b>, <b>Performance Ratio</b>, <b>CO<sub>2</sub> Reduction</b>, <b>Total Power</b>, <b>Specific Energy</b>, <b>Income</b>, and <b>Total Irradiance</b>.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>You can view details about <b>Income</b> only on the <b>Details</b> page of the PV system.</li> <li><b>Performance Ratio</b>, <b>Specific Energy</b> and <b>Total Irradiance</b> are not displayed on the <b>Details</b> tab page of the PV System.</li> <li><b>Performance Ratio</b> and <b>Total Irradiance</b> are displayed on the <b>Details</b> tab page of the plant only when devices in the plant contain environment monitors.</li> <li>If multiple EMIs are connected to the PV plant, values of <b>Performance Ratio</b> and <b>Total Irradiance</b> are calculated according to data reported by the EMI selected on the <b>Settings</b> tab page of the PV plant.</li> <li>If the value of <b>Performance Ratio</b> is displayed in red for a plant, the performance ratio is abnormal. Handle the issue by following the instructions provided in <b>5.1.8.18 How Do I Solve the Problem that the Calculated Performance Ratio Is Inaccurate?</b>.</li> </ul>	<p>The way of viewing each running information about a plant is the same. Viewing information about <b>Energy Yield of Current Day</b> is used as an example:</p> <ol style="list-style-type: none"> <li>Move the mouse pointer to the pane displaying the information about <b>Energy Yield of Current Day</b>. The <b>View Details</b> link is displayed.</li> </ol> <p><b>Figure 5-7 View Details</b></p>  <ol style="list-style-type: none"> <li>Click <b>View Details</b>. Information about <b>Energy Yield of Current Day</b> for each device is displayed in the <b>Details</b> window.</li> </ol> <p><b>NOTE</b></p> <p>In the PV System, information about <b>Energy Yield of Current Day</b> for each plant will be displayed.</p>

Procedure	Step
<p>View the information about inverters accessed in PV plant.</p> <p><b>NOTE</b> If the value of <b>Total string capacity</b> in inverter information is displayed in red, <b>Total string capacity</b> is not configured for the inverter. Configure it by following the instructions provided in <a href="#">5.1.3.6 Modifying the Information About a Device</a>.</p>	<ul style="list-style-type: none"> <li>● On the <b>Details</b> tab page of the <b>PV System</b>, you can view the icons of the inverters connected to all PV plants.</li> <li>● On the <b>Details</b> tab page of the PV plant, you can view the icons of all the inverters connected to the PV plant.</li> </ul> <p><b>NOTE</b> The inverter icons indicate the following inverter versions:</p> <ul style="list-style-type: none"> <li>● Icons of SUN2000 inverter <ul style="list-style-type: none"> <li>● 28KTL and earlier versions: </li> <li>● 33KTL to 30KTL-A versions: </li> <li>● 50KTL-C1 and later versions: </li> </ul> </li> <li>● Icon of SUN8000 inverter: </li> <li>● Icon of SUN2000L inverter: </li> </ul>

Procedure	Step
<p>View the PV plant power and total irradiance curve.</p>	<p>View the PV plant power and total irradiance curve in the <b>PV Plant Power Statistics</b> area, as shown in <b>Figure 5-8</b>.</p> <p><b>Figure 5-8</b> PV plant power and total irradiance curve</p>  <p>Each coordinate is defined as follows:</p> <ul style="list-style-type: none"> <li>● Left vertical coordinate: PV plant power</li> <li>● Right vertical coordinate: total irradiance The PV plant power and total irradiance are displayed only when an EMI is connected to the PV plant. Values of the vertical coordinates are calculated based on the EMI selected on the <b>Settings</b> page for the PV plant.</li> <li>● Horizontal coordinate: data collection period. The interval is two hours. For how to configure <b>Collection time</b>, please see <b>5.1.2.6 Modifying the Information About a PV Plant</b>.</li> </ul> <p><b>NOTE</b> The start time of the horizontal coordinate is an even number. If the data collection start time configured in <b>5.1.2.6 Modifying the Information About a PV Plant</b> is an odd number, use the previous one even number as the start time of the horizontal coordinate. For example, if the start time for <b>Collection time</b> is set to <b>01:00</b>, the start time of the horizontal coordinate is <b>00:00</b>.</p> <p>Click <b>Power</b> or <b>Total Irradiance</b> on  to close the corresponding curve and click them again to display the curve.</p>
<p>Switch to the <b>Performance Data</b> page.</p>	<p>Click <b>MORE</b> on the right of <b>Details</b>.</p>
<p>Switch the mode for displaying power statistics.</p>	<p>Click <b>Table</b> or <b>Graph</b> in the lower area of the <b>PV Plant Power Statistics</b> column.</p> <ul style="list-style-type: none"> <li>●   : The power statistics are displayed in a table.</li> <li>●   : The power statistics are displayed in a line chart.</li> </ul> <p><b>NOTE</b> The power statistics are displayed in a line chart by default.</p>

### 5.1.2.4 Browsing the Device List of a PV Plant

This section describes how to browse the device list of a plant to learn the devices in the plant.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

#### Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose **PV System** or a user-defined plant in the navigation tree on the left.
- Step 3** Click the **Device List** tab in the operation display area.

Key information about all devices under the selected plant is displayed on the **Device List** tab page, as shown in [Figure 5-9](#).

**Figure 5-9** Overview of Device Information

Status	Device Name	Inverter Status	Device Type	Real-time Monitoring Status	Total Input Power (kW)	Output Active Power (kW)	Output Reactive Power (kVar)	Energy yield current day
Major	SUN2000_99	On-grid	SUN2000	Stop	1376.257	1376.277	1376.277	13762.77
Major	SUN2000_100	On-grid	SUN2000	Stop	1376.257	1376.277	1376.277	13762.77
Major	SUN2000_101	On-grid	SUN2000	Stop	1376.257	1376.277	1376.277	13762.77

#### NOTE

If multiple environmental monitoring instruments (EMIs) are connected to the PV plant, you can select the EMI to be checked from the **EMI** drop-down list in the upper left corner. Coefficients, such as **Total irradiance**, **Daily irradiation amount**, and **Environment temperature**, of the EMI are displayed.

in the upper right corner provides the function of displaying only specified columns in the table on the **Device List** tab page. To display specified columns, perform the following steps:

1. Click .
- The **Select Column** dialog box is displayed.
2. Select the names of the columns that need to be displayed. Then, click **OK**.

----End

#### Follow-up Procedure

System administrator and system operators can also perform the following operations on the **Device List** tab page:

Operation	Steps
<p>Start the real-time data collection task</p>	<ol style="list-style-type: none"> <li>1. Select one or more devices for which you want to start the real-time data collection task.</li> <li>2. Click .</li> <li>3. In the displayed dialog box, click <b>OK</b>.</li> </ol> <p><b>NOTE</b> The period with which the SmartLogger collects real-time data of devices vary with its version.</p> <ul style="list-style-type: none"> <li>● The SmartLogger of an old version (earlier than V100R001C95SPC020) collects real-time data of devices every minute.</li> <li>● The SmartLogger of a new version (V100R001C95SPC020 or later) collects real-time data of devices using the value of <b>Real-time data collection period</b> on the <b>Settings</b> tab page of a PV plant as the period.</li> </ul> <p>If you modify <b>Real-time data collection period</b> after starting the real-time data collection task mounted under the SmartLogger of a new version, you need to stop the task and then start it again. In this way, the SmartLogger can collect real-time data using the new <b>Real-time data collection period</b> value as the period.</p>
<p>Stop the real-time data collection task</p>	<ol style="list-style-type: none"> <li>1. Select one or more devices for which you want to stop the real-time data collection task.</li> <li>2. Click .</li> <li>3. In the displayed dialog box, click <b>OK</b>.</li> </ol>

### 5.1.2.5 Browsing Alarm Information About a PV Plant

This section describes how to browse alarm information about a plant to learn about the current alarms for all devices under the plant.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

#### Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose **PV System** or a user-defined plant in the navigation tree on the left.
- Step 3** Click the **Alarm** tab in the operation display area.

The current alarms for all devices under the selected plant is displayed on the **Alarm** tab page, as shown in [Figure 5-10](#).

**Figure 5-10** Overview of Alarm Information about a PV Plant

Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On
▲ Major	System Fault	SUN2000	SUN2000_1734	--Inverter_NA	2106-02-07 06:28:15
▲ Major	Abnormal Invert Circuit	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	Low Insulation Resistance	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>Cabinet Overtemperature</b>	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>Abnormal Grid Frequency</b>	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>String 1 Reverse</b>	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>Abnormal DC Circuit</b>	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>System Fault</b>	SUN2000	SUN2000_1733	--Inverter_NA	2106-02-07 06:28:15
▲ Major	<b>System Fault</b>	SUN2000	SUN2000_1735	--Inverter_NA	2106-02-07 06:28:15

**Step 4 Optional:** Click an alarm name in the **Alarm Name** column to view the details.

**NOTE**

Alarms that have not been browsed are highlighted in bold.

**Step 5 Optional:** Click **Export** to export the queried alarm information into a CSV file.

----End

## Follow-up Procedure

Click **Lock**. Alarms are no longer automatically updated on the **Alarm** page. In this way, you can view the alarms reported only before the lock. To enable the automatic update function again and view newly reported alarms, click **Scroll Unlock**.

**NOTE**

If excessive alarms are generated, these alarms are displayed on multiple pages. In this case, pages except the first one are locked and the **Scroll Unlock** button is unavailable for you to unlock those pages.

By default, the alarm lock function on the **Alarm** page is disabled.

### 5.1.2.6 Modifying the Information About a PV Plant

This section describes how to modify the information about a plant on the NetEco 1000S if the information is inconsistent with that about the actual plant.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.2 Logging In to the NetEco 1000S Client](#).

#### Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Select the plant whose information is to be changed in the navigation tree on the left.
- Step 3** Click the **Settings** tab in the operation display area.

Information about the selected plant is displayed on the **Settings** tab page.

 **NOTE**

In **PV Plant Description** area, **Initialization time** indicates the creating time of the plant, and it is non-editable.

**Step 4** Click **Refresh** in the upper right corner to refresh the parameter information.

**Step 5** Modify the following information about a plant as required.

- The guest user could only modify the parameters in **Table 5-5**.
- The system administrator and system operator can modify the parameters both in **Table 5-5** and **Table 5-6**.

**Table 5-5** Basic parameters of the PV plant

Parameter Type	Parameter	Description
PV Plant Description	PV plant name	Enter a PV plant name.
	Description	Enter the description of a PV plant.
	PV plant address	Enter the PV plant address.
Parameter Setting	Ratio threshold(%)	Set the ratio threshold as required.
	Electricity price	Set the electricity price as required. <b>NOTE</b> <ul style="list-style-type: none"> <li>● If you want to update the income within historical time segments (current day also included), change the electricity price, click <b>Update Income</b>, and select a historical time segment.</li> <li>● If you need the income to be calculated based on the new electricity price from current day on, click <b>Save</b> in the upper-right corner of the configuration page.</li> </ul>
	Currency	Set the currency as required.
	CO <sub>2</sub> emission reduction coefficient (kg/kWh)	Set the CO <sub>2</sub> emission reduction coefficient as required.

**Table 5-6** Parameters of the PV plant

Parameter Type	Parameter	Description
Parameter Setting	Reference Value Settings	<p>Incomplete historical energy yield data may lead to an inaccurate income value. You can set reference values to correct the income value.</p> <ol style="list-style-type: none"> <li>On the <b>Settings</b> page of PV plants, click <b>Reference Value Settings</b>. The <b>Reference Value Settings</b> dialog box is displayed.</li> <li>Click <b>Auto Calculate</b> or enter a total energy yield reference value, and specify the electricity price.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The default value is the electricity price set for the PV plant.</li> <li>The value of this parameter cannot be modified. It is automatically calculated by multiplying <b>Total energy yield reference value(kWh)</b> and <b>Electricity price</b>.</li> </ul> <ol style="list-style-type: none"> <li>Click <b>OK</b> to save the modification.</li> </ol>
	Time Zone Setting	<p>Change the time zone for the plant.</p> <ol style="list-style-type: none"> <li>Click <b>Time Zone Settings</b> on the <b>Settings</b> page of the plant. The <b>Time Zone Settings</b> dialog box is displayed.</li> <li>Select the time zone for the plant from the <b>City</b> drop-down list box.</li> <li>Enable or disable the daylight saving time from the <b>Enable daylight saving time</b> drop-down list box.</li> </ol> <p><b>NOTE</b></p> <p>You can set the parameter only if the selected time zone uses the daylight saving time.</p> <ol style="list-style-type: none"> <li>Click <b>OK</b> to save the setting.</li> </ol>
Performance ratio configuration <b>NOTE</b>	Line loss(%)	<p>Line loss indicates the power loss when electric lines are transferring power. Line loss should be excluded from the energy yield for calculating the plant <b>Specific Energy</b> and <b>Performance Ratio</b>.</p> <p>Value range: 0.00 - 10.00.</p>
		<p>● For details about how to calculate the plant performance ratio, see <a href="#">5.1.5.3.2 Querying the Energy Yield Performance Ratio of the PV Plant</a>.</p>

Parameter Type	Parameter	Description
	EMI	<p>Data from <b>EMI</b> selected here is used to calculate the values of <b>Performance Ratio</b> and <b>Availability</b>, as well as the EMI values of <b>PV Plant Overview</b>, <b>PV Plant Analysis</b>, and <b>Data Export</b>.</p> <ol style="list-style-type: none"> <li>Click <b>Select EMI</b>. The <b>Select EMI</b> dialog box is displayed.</li> <li>Select a target EMI.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li><b>Mean value</b> on the <b>Select EMI</b> page indicates that the average value is used for calculation. The <b>Mean value</b> option is displayed only when multiple <b>EMIs</b> access the PV plant. If only one EMI is connected to the PV plant, set this parameter to the connected EMI by default.</li> <li>Select <b>Display EMIs of other plants</b>. Select an EMI that is connected to other plants.</li> </ul> <ol style="list-style-type: none"> <li>Click <b>OK</b>.</li> </ol>
	Component peak power temperature coefficient(%/°C)	<p>Used for calculating the temperature correction coefficient.</p> <p>Value range: 0.00 - 0.99.</p>
	Update Historical PR	<ol style="list-style-type: none"> <li>Click <b>Update Historical PR</b>. The <b>Update Historical PR</b> dialog box is displayed.</li> <li>Specify <b>Start time</b> and <b>End time</b>.</li> </ol> <p><b>NOTE</b></p> <p>The specified time period must be within recent 30 days. The time of the current date or later cannot be selected.</p> <ol style="list-style-type: none"> <li>Click <b>OK</b>. <b>Specific Energy</b>, <b>Performance Ratio</b>, and <b>Availability</b>, as well as EMI values of the <b>PV Plant Overview</b>, <b>PV Plant Analysis</b>, and <b>Data Export</b> of the PV plant within the time segments selected are calculated based on the latest parameters.</li> </ol>
Availability Configuration	PR value range(%)	<p>Availability is not calculated for the period when the PR value is outside the configured range.</p> <p>Default value: 65-95</p>
	Minimum irradiance(W/m <sup>2</sup> )	<p>Default value: 50</p>

Parameter Type	Parameter	Description
	Downtime rate threshold(%)	Availability is not calculated for the period when the downtime rate exceeds the configured threshold. Default value: 10
	Update Historical Availability	<ol style="list-style-type: none"> <li>Click <b>Update Historical Availability</b>. The <b>Update Historical Availability</b> dialog box is displayed.</li> <li>Set <b>Start time</b> and <b>End time</b>.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The interval between <b>Start time</b> and <b>End time</b> must not exceed 30 days.</li> <li>The interval between <b>Start time</b> and the current time must not exceed 30 days.</li> </ul> <ol style="list-style-type: none"> <li>Click <b>OK</b>.</li> </ol>
Communicate Parameter	Collection time	<b>Collection time</b> indicates that the SmartLogger or the inverter directly connected to the FE in the current plant needs to collect device performance data of this period on a day.
	Real-time data collection period	<b>Real-time data collection period</b> indicates that the SmartLogger or the inverter directly connected to the FE in the current plant needs to collect changed device performance data by this period in real time.
	Full synchronization period (minutes)	<b>Full synchronization period (minutes)</b> indicates that the SmartLogger or the inverter directly connected to the FE in the current plant needs to collect all device performance data by this period in real time.
	Performance file collection period (minutes)	<b>Performance file collection period (minutes)</b> indicates that the SmartLogger or the inverter directly connected to the FE in the current plant needs to collect historical device performance data by this period.

**Step 6** Modify the plant image.

- Click **Upload**.
- Select a plant image and click **Open**.

 **NOTE**

The size of the plant image must be less than 5 MB, and the image can be saved only in **jpg**, **png**, or **gif** format. Otherwise, the image fails to be uploaded.

**Step 7 Optional:** Remotely control devices.

- Click  to synchronize time. The NetEco 1000S performs time synchronization to synchronize time from the NetEco 1000S server to devices in the current plant.

 **NOTE**

You can synchronize time only as system administrator.

- Power on or off inverters, see [5.1.3.8 Remotely Controlling an Inverter](#).

----End

### 5.1.2.7 Deleting a PV Plant

This section describes how to delete a plant that is created incorrectly or do not need to be managed after network adjustment from the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the plant to be deleted in the navigation tree on the left.

**Step 3** Click .

A confirmation dialog box containing the message **Are you sure you want to delete?** is displayed.

 **NOTE**

A plant can be deleted only when no device exists under it. Otherwise,  is dimmed.

**Step 4** Click **Yes**.

A dialog box containing the message **Deletion succeeded** is displayed.

**Step 5** Click **OK**.

----End

## 5.1.3 Managing Devices

### 5.1.3.1 Accessing Devices Through the SmartLogger

This section describes how to enable devices to access the NetEco 1000S through the SmartLogger, helping manage and monitor devices through the NetEco 1000S.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- Devices access NetEco 1000S through SmartLogger. SmartLogger and NetEco 1000S must be in the same time zone. For details on how to set the time zone of SmartLogger, see [5.1.3.6 Modifying the Information About a Device](#) or *Smart Logger User Manual*.
- You have set the IP address of NetEco 1000S on the web page of the SmartLogger. For detailed operations, see *Smart Logger User Manual*.
- You have obtained the authentication passwords of the SmartLogger and NetEco 1000S and the SN of the SmartLogger.
- You have created the target plant. For detailed operations, see [5.1.2.2 Creating a PV Plant](#).

## Context

- If the NetEco 1000S or SmartLogger is powered on and started before the device, the device list displayed on the NetEco 1000S is different from that on the SmartLogger, or the device list is incomplete. You need to manually search for devices on the SmartLogger.
- After devices are added or replaced, you also need to manually search for devices on the SmartLogger or restart the SmartLogger, and then search for devices on the NetEco 1000S again.
- The TLS protocol is used for the NetEco 1000S to communicate with the SmartLogger.



### NOTICE

The TLS protocol provides the following three versions:

- TLS1.0: This version has security risks.
- TLS1.1: This version is secure.
- TLS1.2: This version is secure.

In order to be compatible with the low version of the device, the NetEco 1000S supports all of the preceding protocol versions by default. TLS1.0 has security risks. For security purposes, you are advised to use TLS1.1 or TLS1.2. For details, see [5.1.8.13 How Do I Modify the Data or File Transmission Protocol?](#)

The SmartLogger may not support TLS1.1/1.2. You are advised to replace the SmartLogger with the one supporting TLS1.1/1.2 or upgrade the SmartLogger to the version supporting TLS1.1/1.2.

---

## Procedure

- **If the SmartLogger has accessed the NetEco 1000S, perform the following operations to add the SmartLogger to the plant:**



### NOTE

This operation requires that the current user is the system administrator.

**Step 1** Choose **Maintenance > Device Access** from the main menu.

**Step 2** In the **Device Access** page, select the target SmartLogger and click **Add to PV plant**.

 **NOTE**

The SmartLogger and NetEco 1000S are connected through password authentication. **Authentication Status** may be any of the following values:

- **Successful:** indicates that the authentication passwords on both sides are the same. Then, perform [Step 3](#).
- **Failed:** You can perform the following operations to reconfigure the authentication password:
  1. Click **Set Authentication Password**.
  2. Enter the authentication password same as the SmartLogger side and click **OK**.  
The authentication passwords on the SmartLogger and NetEco 1000S sides are **/EzFp+2%r6@IxSCv** by default. You are advised to change the password every three months. For details, see [5.1.3.11 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S](#).
  3. Click **Refresh** on the **Device Access** page. When **Authentication Status** changes to **Successful**, perform [Step 3](#).
- **Not authenticated:** perform [Step 3](#).
  - Not authenticated: It indicates the current version of SmartLogger is too early and does not support authentication. When you perform the next step, a security risk may occur. To ensure connection security, you are advised to upgrade SmartLogger to a version supporting authentication.
  - The NetEco 1000S allows you to set whether to allow the access of the SmartLogger that does not support authentication. For details, see [5.1.7.4.3 Setting Communication Parameters](#).

**Step 3** On the **Select Power Station** page, select the target plant and click **OK**.

**Step 4** Click **OK** in the **Confirm** dialog box.

**Step 5** View operation results.

1. Choose **Monitor** from the main menu.
2. Select the target PV plant and expand to view the added SmartLogger and devices mounted under it.

----End

- **If the SmartLogger does not access the NetEco 1000S, perform the following operations to add the SmartLogger to the plant:**

 **NOTE**

This operation requires that the current user is the system administrator or system operator.

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the target plant in the navigation tree on the left.

**Step 3** Click the **Add Device** tab in the operation display area, and then click **Add Device** button.

**Step 4** On the **Add Device SN** page, perform the following operations to add the SmartLogger:

 **NOTE**

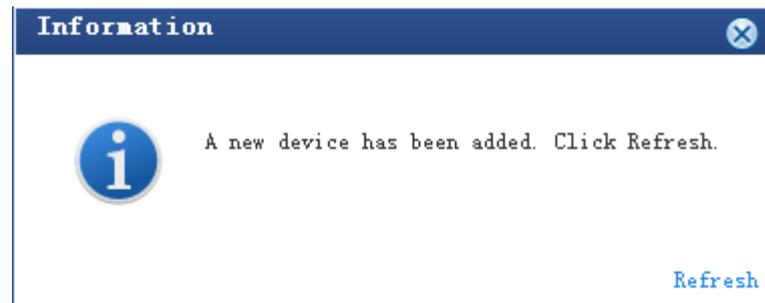
The SmartLogger and the NetEco 1000S are connected through password authentication. If the SmartLogger does not support password authentication, enable **Compatible Access only supports SSL authentication** NEs. For details, see [5.1.7.4.3 Setting Communication Parameters](#). Then the SmartLogger can automatically connect to the PV plant by referring to the following instructions.

1. Enter the SN of the SmartLogger to be added to the current PV plant and click **Advanced Settings**.

2. Enter the authentication password same as the SmartLogger side and click **OK**.  
The authentication passwords on the SmartLogger and NetEco 1000S sides are **/EzFp+2%r6@IxSCv** by default. You are advised to change the password every three months. For details, see [5.1.3.11 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S](#).

When the SmartLogger added to the PV plant accesses the NetEco 1000S, the following prompt is displayed in the lower right corner of the NetEco 1000S.

**Figure 5-11** Device access prompt



- Step 5** Click **Refresh** in [Figure 5-11](#) or re-select the target PV plant in in the navigation tree on the left to view the added SmartLogger and devices mounted under it.

----End

### 5.1.3.2 Accessing the Directly Connected Inverter

This section describes how to enable the inverter directly connected to the FE to access the NetEco 1000S, helping manage and monitor devices through the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- The inverter to be accessed has accessed the NetEco 1000S in FE direct connection mode.
- You have set the IP address of NetEco 1000S on the inverter. For detailed operations, see *Inverter User Manual*.
- You have obtained the authentication password between the inverter and NetEco 1000S and the SN of the inverter.
- You have created the target plant. For detailed operations, see [5.1.2.2 Creating a PV Plant](#).

#### Context

The TLS protocol is used for the NetEco 1000S to communicate with the inverter.

---



## NOTICE

The TLS protocol provides the following three versions:

- TLS1.0: This version has security risks.
- TLS1.1: This version is secure.
- TLS1.2: This version is secure.

In order to be compatible with the low version of the device, the NetEco 1000S supports all of the preceding protocol versions by default. TLS1.0 has security risks. For security purposes, you are advised to use TLS1.1 or TLS1.2. For details, see [5.1.8.13 How Do I Modify the Data or File Transmission Protocol?](#)

The inverter may not support TLS1.1/1.2. You are advised to replace the inverter with the one supporting TLS1.1/1.2 or upgrade the inverter to the version supporting TLS1.1/1.2.

---

## Procedure

- **If the inverter has accessed the NetEco 1000S, perform the following operations to add the inverter to the plant:**



### NOTE

This operation requires that the current user is the system administrator.

**Step 1** Choose **Maintenance**> **Device Access** from the main menu.

**Step 2** In the **Device Access** page, select the target inverter and click **Add to PV plant**.



### NOTE

The inverter and NetEco 1000S are connected through password authentication. **Authentication Status** may be any of the following values:

- **Successful:** indicates that the authentication passwords on both sides are the same. Then, perform [Step 3](#).
- **Failed:** You can perform the following operations to reconfigure the authentication password:
  1. Click **Set Authentication Password**.
  2. Enter the authentication password same as the inverter side and click **OK**.

The authentication passwords on the inverter and NetEco 1000S sides are `/EzFp+2%r6@IxSCv` by default.

You are advised to change the password every three months. For details, see [5.1.3.11 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S](#).
  3. Click **Refresh** on the **Device Access** page. When **Authentication Status** changes to **Successful**, perform [Step 3](#).
- **Not authenticated:** perform [Step 3](#).
  - **Not authenticated:** It indicates the current version of inverter is too early and does not support authentication. When you perform the next step, a security risk may occur. To ensure connection security, you are advised to upgrade SmartLogger to a version supporting authentication.
  - The NetEco 1000S allows you to set whether to allow the access of the inverter that does not support authentication. For details, see [5.1.7.4.3 Setting Communication Parameters](#).

**Step 3** On the **Select Power Station** page, select the target plant and click **OK**.

**Step 4** Click **OK** in the **Confirm** dialog box.

**Step 5** View operation results.

1. Choose **Monitor** from the main menu.
2. Select the target PV plant and expand to view the added inverter and devices mounted under it.

----End

- **If the inverter does not access the NetEco 1000S, perform the following operations to add the inverter to the plant:**

 **NOTE**

This operation requires that the current user is the system administrator or system operators.

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the target plant in the navigation tree on the left.

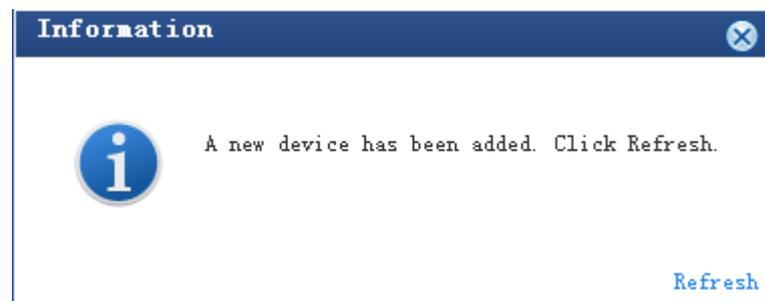
**Step 3** Click the **Add Device** tab in the operation display area, and then click **Add Device** button.

**Step 4** Enter the SN of the inverter to be added to the current PV plant and click **Advanced Settings**.

**Step 5** Enter the authentication password same as the inverter side and click **OK**.

When the inverter added to the PV plant accesses the NetEco 1000S, the following prompt is displayed in the lower right corner of the NetEco 1000S.

**Figure 5-12** Device access prompt



**Step 6** Click **Refresh** in **Figure 5-12** or re-select the target PV plant in the navigation tree on the left to view the added inverter.

----End

### 5.1.3.3 Searching Devices Based on Serial Port Addresses

This section describes how to search Inverter devices based on serial port addresses when Inverters are connected to the monitoring PC using serial cables. The NetEco 1000S can automatically identify and add new devices after the search. The serial-port connection mode applies to local commissioning and is not recommended for remote connection.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

- You have obtained the serial port number, start bus address, and end bus address for an Inverter.
- The Inverter is in the same time zone as the NetEco 1000S. If they are not in the same time zone, change the time zone of the Inverter by following instructions provided in *User Manual on the monitored device side*.

## Context

If one of the following changes occurs on a device that has been added to the NetEco 1000S, you need to search the device again so that information about the device can be updated on the NetEco 1000S.

- The connection mode between the device and the NetEco 1000S is changed: Network cable-based connection is changed to the RS232 cable-based direct connection.
- The **RS485 Com Address** of the device is changed.



## NOTICE

Currently, the serial-port connection mode does not support security authentication, which may introduce certain security risks. You are advised to use network cables for connection. For details, see [5.1.3.1 Accessing Devices Through the SmartLogger](#) or [5.1.3.2 Accessing the Directly Connected Inverter](#).

---

## Procedure

**Step 1** Enable the function of serial ports.

Navigate to the **NetEco 1000S installation directory\WebRoot\WEB-INF\classes** directory, open the **userManagement.properties** file, change the value of **isStartCom** to 1, and save the change result. Then, restart the NetEco 1000S.

**Step 2** Choose **Monitor** from the main menu.

**Step 3** Click  in the navigation tree on the left.

**Step 4** Enter the serial port number, start bus address, and end bus address for the Inverter device and select the PV Plant to which the device belongs by referring to [Table 5-7](#).

**Table 5-7** Parameters for searching devices based on serial port addresses

Parameter	Description
Serial port No.	Serial port number for connecting the device to the PC.
Start bus address/End bus address	Start bus address/End bus address of the <b>RS485 Com Address</b> .
PV Plant	Name of the PV Plant to which the device belongs.

**Step 5** Click **Search**.

The added devices are displayed in the navigation tree on the left after the search.

**Step 6** Disable the function of serial ports.

Navigate to the **NetEco 1000S installation directory\WebRoot\WEB-INF\classes** directory, open the **userManagement.properties** file, change the value of **isStartCom** to 0, and save the change result. Then, restart the NetEco 1000S.



## NOTICE

To ensure NetEco 1000S system security, the NetEco 1000S shields the function of serial ports by default. After completing the operation, disable this function immediately.

---

----End

### 5.1.3.4 Browsing the Details About a Device

On the **Monitor** tab page of the NetEco 1000S client, you can view the information about the SmartLogger, inverter, EMI, PID device, and Meter. This section describes how to browse the details about a device to learn about its running status, such as the basic information and real-time performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Choose the target device in the navigation tree on the left.

**Step 3** Click the **Details** tab in the operation display area.

Basic information and real-time performance data of the selected device is displayed on the **Details** tab page.

#### NOTE

If the DST is enabled on the SmartLogger, the following situations may occur:

- When users query data generated on the date shifting to the DST, the queried graph or table has no data on this time segment.
- When users query data generated on the date shifting out of the DST, the queried graph or table displays only the latest one data record on this time segment.

----End

## Follow-up Procedure

System administrator and system operators can also perform the following operations on the device **Details** tab page:

Operation	Steps
<p>Start the real-time data collection task</p> <p><b>NOTE</b> You can start the real-time data collection task when its status is .</p>	<p>Click .</p> <p><b>NOTE</b> The period with which the SmartLogger collects real-time data of devices vary with its version.</p> <ul style="list-style-type: none"> <li>● The SmartLogger of an old version (earlier than V100R001C95SPC020) collects real-time data of devices every minute.</li> <li>● The SmartLogger of a new version (V100R001C95SPC020 or later) collects real-time data of devices using the value of <b>Real-time data collection period</b> on the <b>Settings</b> tab page of a PV plant as the period.</li> </ul> <p>If you modify <b>Real-time data collection period</b> after starting the real-time data collection task mounted under the SmartLogger of a new version, you need to stop the task and then start it again. In this way, the SmartLogger can collect real-time data using the new <b>Real-time data collection period</b> value as the period.</p>
<p>Stop the real-time data collection task</p> <p><b>NOTE</b> You can stop the real-time data collection task when its status is .</p>	<p>Click .</p>

### 5.1.3.5 Browsing Alarm Information About a Device

On the **Monitor** tab page of the NetEco 1000S client, you can view and configure the information about the SmartLogger, inverter, EMI, PID device, and Meter. This section describes how to browse alarm information about a device to learn about the current alarms for the device.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- .

## Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose the target device in the navigation tree on the left.
- Step 3** Click the **Alarm** tab in the operation display area.

The information about all the current alarms of the target device is displayed in the **Alarm** tab page. **Figure 5-13** shows the information about all the current alarms of an inverter.

**Figure 5-13** The information about all the current alarms of the target device

Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On
Major	Abnormal DC Circuit	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	Abnormal Invert Circuit	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	Low Insulation Resistance	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	String 1 Reverse	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	Cabinet Overtemperature	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	Abnormal Grid Frequency	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Major	System Fault	SUN2000	SUN2000_1724	--Inverter_NA	2106-02-07 06:28:15
Warning	Abnormal String 2	SUN2000	SUN2000_1724	--Inverter_NA	1971-01-02 14:50:14

- Step 4 Optional:** Click an alarm name in the **Alarm Name** column to view the details.

**NOTE**

Alarms that have not been browsed are highlighted in bold.

- Step 5 Optional:** Click **Export** to export the queried alarm information into a CSV file.

----End

## Follow-up Procedure

Click **Lock**. Alarms are no longer automatically updated on the **Alarm** page. In this way, you can view the alarms reported only before the lock. To enable the automatic update function again and view newly reported alarms, click **Scroll Unlock**.

**NOTE**

If excessive alarms are generated, these alarms are displayed on multiple pages. In this case, pages except the first one are locked and the **Scroll Unlock** button is unavailable for you to unlock those pages.

By default, the alarm lock function on the **Alarm** page is disabled.

### 5.1.3.6 Modifying the Information About a Device

On the **Monitor** tab page of the NetEco 1000S client, you can configure the information about the SmartLogger, inverter, EMI, PID device, and Meter.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

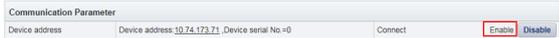
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).

## Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose the target device in the navigation tree on the left.
- Step 3** Click the **Settings** tab in the operation display area.
- Device information about the selected device is displayed on the **Settings** tab page.
- Step 4** Modify configuration information about the selected device by referring to [Table 5-8](#).

**Table 5-8** Modifying device configuration information

Device Type	If You Need To...	Then...
SmartLogger	Change the name and description of a SmartLogger	<ol style="list-style-type: none"> <li>Choose the <b>Device Information</b> tab.</li> <li>Click <b>Refresh</b> in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the SmartLogger.</li> <li>Enter the new name and description in the corresponding text boxes.</li> <li>Click <b>Save</b> in the upper right corner of the <b>Settings</b> page.</li> </ol>
	Switch to the SmartLogger web client	<ol style="list-style-type: none"> <li>Choose the <b>Device Information</b> tab.</li> <li>Click the <b>Device address</b> link under <b>Communication Parameter</b>, as shown in <a href="#">Figure 5-14</a>. Switch to the web client of the SmartLogger.</li> </ol> <p><b>Figure 5-14</b> Device Address</p>  <p>You can also switch to the web client on the <b>Device Management</b> tab page. The details are as follows:</p> <ol style="list-style-type: none"> <li>Choose <b>Maintenance &gt; Device Maintenance</b> from the main menu.</li> <li>Click the <b>Device Management</b> tab.</li> <li>Set <b>Device type</b> to <b>SmartLogger</b>.</li> <li>Click the <b>Device address</b> link in the <b>Communication address</b> column for the SmartLogger whose web client you want to access.</li> </ol> <p><b>NOTE</b> The switch to the web client is successful only when the PC can be used to access the SmartLogger web client directly.</p>

Device Type	If You Need To...	Then...
	<p>Enable or disable the SmartLogger</p>	<p>Choose the <b>Device Information</b> tab.</p> <p>The value of <b>Connect</b> indicates the status of the SmartLogger. According to <a href="#">Figure 5-15</a>, the SmartLogger has started.</p> <p><b>Figure 5-15</b> SmartLogger connection status</p>  <p>● To disable the SmartLogger:</p> <ol style="list-style-type: none"> <li>1. Click <b>Disable</b>. The message "After connection is disabled, NetEco will disconnect and forbid SmartLogger connection" is displayed.</li> <li>2. Click <b>OK</b>. The SmartLogger is disabled, and the value of <b>Connect</b> changes to the value shown in <a href="#">Figure 5-16</a>.</li> </ol> <p><b>Figure 5-16</b> SmartLogger connection status</p>  <p>● To restore the connection between the SmartLogger and NetEco 1000S, click <b>Enable</b>.</p>
	<p>Control an inverter remotely</p>	<p>For details, see <b>Power on or off all inverters in the same plant or SmartLogger in batches</b> in <a href="#">5.1.3.8 Remotely Controlling an Inverter</a>.</p>
	<p>Modify the time zone parameters, power control parameters, NetEco communications parameters, or CO2 emission reduction coefficient of the SmartLogger</p>	<p>The methods for modifying time zone, active power control, reactive power control, or NetEco communications parameters, and CO2 emission reduction coefficient are similar. The following describes how to change the time zone parameter.</p> <ol style="list-style-type: none"> <li>1. Choose the <b>Time Zone Parameter</b> tab.</li> <li>2. Set the value of <b>City</b> as required.</li> <li>3. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b> Click <b>Synchronize</b> to synchronize the parameter values configured on the SmartLogger to the NetEco 1000S.</p>

Device Type	If You Need To...	Then...
Inverter	Synchronize the parameter values of the inverter to the NetEco 1000S	Click <b>Synchronize</b> on the page for the parameter values to be synchronized.
	Change the name and description of an Inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Enter the new name and description in the corresponding text boxes.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Device Information</b> page. After the device name and description are changed, the device name is delivered to the device.</li> </ol>
	Change the total string capacity of inverters	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Enter the target value in the <b>Total string capacity</b> text box. <b>NOTE</b> Click <b>Batch Apply</b> if you need to apply the configured value of <b>Total string capacity</b> to multiple inverters. Then select the target devices in the displayed dialog box and click <b>OK</b>.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Device Information</b> page.</li> </ol>
	Set string parameters of an inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Click <b>String Details Setup</b>. The <b>String Details Setup</b> page is displayed.</li> <li>3. Select the strings to be configured in the <b>String Setup</b> area.</li> <li>4. Set parameters for the strings in the <b>Panel Setup</b> area.</li> <li>5. Click <b>OK</b> to save the settings.</li> </ol> <p><b>NOTE</b> If you need to apply the string configurations to multiple inverters, click <b>Batch Apply</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</p>

Device Type	If You Need To...	Then...
	Modify the power grid parameters, protection parameters, feature parameters, or power adjustment parameters	<p>The methods for changing power grid parameters, protection parameters, feature parameters, or power adjustment parameters are similar. The following describes how to change the power grid parameters.</p> <ol style="list-style-type: none"> <li>1. Choose the <b>Grid Parameters</b> tab.</li> <li>2. Set the parameters as required.</li> </ol> <p><b>NOTE</b> For details about the parameters, see <i>User Manual on the monitored device side</i>.</p> <ol style="list-style-type: none"> <li>3. Select the parameters to be modified.</li> <li>4. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b> If you need to apply the configurations to multiple inverters, click <b>Batch settings</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</p>
	Correct the total energy yield of the inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Adjust Total Energy Yield</b> tab.</li> <li>2. Set the value of the total energy yield as required.</li> <li>3. Select the parameters to be modified.</li> <li>4. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b> If you need to apply the configurations to multiple inverters, click <b>Batch settings</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</p>
EMI	Change the name and description of an EMI	<ol style="list-style-type: none"> <li>1. Click <b>Refresh</b> in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the EMI.</li> <li>2. Enter the new name and description in the corresponding text boxes,</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Settings</b> page.</li> </ol>
PID	Change the name and description of a PID	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Click <b>Refresh</b> in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the PID.</li> <li>3. Enter the new name and description in the corresponding text boxes.</li> <li>4. Click <b>Save</b> in the upper right corner of the <b>Settings</b> page.</li> </ol>

Device Type	If You Need To...	Then...
	Modify PID parameter	<ol style="list-style-type: none"> <li>1. Choose the <b>PID Parameter</b> tab.</li> <li>2. Set parameters as required.</li> <li>3. Select the parameters to be modified.</li> <li>4. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● For details about the parameters, see the <i>User Manual on the monitored device side</i>.</li> <li>● Click <b>Synchronize</b> to synchronize the parameter values configured on the PID to the NetEco 1000S.</li> </ul>
Meter	Change the name and description of a Meter	<ol style="list-style-type: none"> <li>1. Click <b>Refresh</b> in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the Meter.</li> <li>2. Enter the new name and description in the corresponding text boxes.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Settings</b> page.</li> </ol>

---End

### 5.1.3.7 Deleting Devices

This section describes how to delete devices that have been connected to the NetEco 1000S and that do not need to be managed or have been damaged from the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).

#### Procedure

- **Delete devices connecting to the plant:**
  - a. Choose **Monitor** from the main menu.
  - b. Click  in the upper part of the navigation tree.
  - c. In the displayed **Delete Device** window, select the target devices and click **OK**.

- d. Click **Yes** in the **Warning** dialog box.  
The **Deletion succeeded** dialog box is displayed.
- e. Click **OK**.
- **Delete devices that have been connected to the NetEco 1000S but are not connected to a specific plant:**
  - a. Choose **Maintenance > Device Access** from the main menu.
  - b. In the displayed Device Access page, select the check box corresponding to the SmartLogger you want to delete and click **Delete**.
  - c. Click **Yes** in the **Warning** dialog box.  
The **Deletion succeeded** dialog box is displayed.
  - d. Click **OK**.

### 5.1.3.8 Remotely Controlling an Inverter

This section describes how to control an inverter that has been connected to the NetEco 1000S, including powering on and off the inverter, restarting the inverter and starting the arc-fault circuit interrupter (AFCI) self-check.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).

#### Procedure

- **Control one inverter:**
  - a. Choose **Monitor** from the main menu.
  - b. Select the target inverter in the navigation tree on the left.
  - c. Click the **Details** tab in the operation display area.  
The page for inverter details is displayed.
  - d. Issue the control commands to the inverter according to [Table 5-9](#).

**Table 5-9** Controlling one inverter

If You Need To...	Then...
Power on the inverter	Click  .
Power off the inverter	Click  .

If You Need To...	Then...
Start the AFCI self-check	<p>Click  .</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● If the AFCI controller ID on the inverter side is set to 0, this button is not displayed in the <b>Details</b> window.</li> <li>● Only the inverter SUN2000 V2 supports the AFCI self-check function.</li> </ul>
Restart the inverter	<p>Click  .</p> <p><b>NOTE</b></p> <p>The inverter SUN2000 of some versions supports the restart function.</p>

- **Power on or off all inverters in the same plant or SmartLogger in batches:**

The method for powering or off inverters in the same plant or SmartLogger in batches is the same. This section uses the method for powering or off inverters in the same plant as an example.

- Choose **Monitor** from the main menu.
- Select the target plant in the navigation tree on the left.
- Click the **Settings** tab in the operation display area.  
The page for setting the plant is displayed.
- Issue the control commands to all inverters in the current plant according to [Table 5-10](#).

 **NOTE**

If the inverters are connected to the plant through the SmartLogger, issue the control commands to the SmartLogger in the plant.

**Table 5-10** Controlling inverters in batches

If You Need To...	Then...
Power on all inverters	Click  .
Power off all inverters	Click  .

### 5.1.3.9 Remotely Controlling a SmartLogger

This section describes how to control a SmartLogger connected to the NetEco1000S, including restarting the SmartLogger, starting the SmartLogger to search for mounted devices, and deleting devices mounted under the SmartLogger.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).
- You have logged in as system administrator or system operator.

## Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Select the target SmartLogger in the navigation tree on the left.
- Step 3** Click the **Details** tab in the operation display area.
- Step 4** Issue the control commands to the SmartLogger according to [Table 5-11](#).

**Table 5-11** Remotely controlling the SmartLogger

If You Need To...	Then...
Restart the SmartLogger	If the SmartLogger needs to restart due to a fault, you can perform the following operation:  Click  .
Start the SmartLogger to search for mounted devices	If the number of inverters mounted under the SmartLogger is different from the actual one on the NetEco1000S, you can start the SmartLogger on the NetEco1000S to search for devices to ensure that the number of inverters on the NetEco1000S is the same as the actual one.  Click  .
Delete devices mounted under the SmartLogger	If the device mounted under the SmartLogger needs to be deleted due to a fault or aging, you can perform the following operation:  Click  .

----End

### 5.1.3.10 Remotely Controlling a PID Device

This section describes how to control a Potential Induced Degradation (PID) device that has been connected to the NetEco 1000S, including powering on and off the PID device.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have added a device to the NetEco1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).
- You have logged in as system administrator or system operator.

## Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Select the target PID device in the navigation tree on the left.
- Step 3** Click the **Details** tab in the operation display area.
- Step 4** Issue the control commands to the PID device according to [Table 5-12](#).

**Table 5-12** Controlling the PID device

If You Need To...	Then...
Power on the PID device	Click  .
Power off the PID device	Click  .

### NOTE

If the protocol version of a PID device is D3.0, the  button is available on the **Details** tab page of the PID device. You can click  to restart the PID device.

----End

## 5.1.3.11 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S

The SmartLogger and NetEco 1000S are connected through password authentication. To ensure connection security, you are advised to change the authentication passwords of the SmartLogger and NetEco 1000S periodically (for example, every three months).

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.
- The SmartLogger has accessed the PV plant. The connection between the SmartLogger and NetEco 1000S is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).

### Context

- The authentication passwords on the SmartLogger and NetEco 1000S sides are `/EzFp+2%r6@IxSCv` by default.

- The password must comply with the following rules:  
The password cannot be the same as the account name.  
The password contains 16 characters, and it must contain four of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
  - special characters

 **NOTE**

You can change the authentication password between the inverter directly connected to the FE and the NetEco 1000S by referring to this section.

## Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the target plant in the navigation tree on the left.

**Step 3** Click the **Add Device** tab in the operation display area, and then click  in the **Operation** column of the SN.

The **Set Device Authentication Password** dialog box is displayed.

**Step 4** On the **Set Device Authentication Password** page, use the following methods to change the authentication password:

- If you want to change the authentication passwords on the SmartLogger and NetEco 1000S sides at the same time to ensure connection security:  
Select **Issue new authentication password to device**, reset **Password** and **Confirm Password**, and click **OK**.
- If the connection between the SmartLogger and NetEco 1000S fails due to authentication password inconsistency, and if you only need to change the authentication password on the NetEco 1000S side:  
Deselect **Issue new authentication password to device**, enter the password same as the SmartLogger side, and click **OK**.

----End

## 5.1.4 Managing Other Devices

This section describes how to use the NetEco 1000S to manage other devices. Other devices are non-Huawei-developed devices, such as Plant Controller, Power Meter, and Electricity Meter.

### 5.1.4.1 Enabling the Other Device Access Menu

After the NetEco 1000S is installed, the Other Device Access menu is not enabled by default. When adding other devices to the NetEco 1000S, you need to manually enable this menu.

## Context

Other devices are non-Huawei-developed devices, such as Plant Controller, Power Meter, and Electricity Meter, Power Meter, and Electricity Meter is restricted. For detailed technical solutions, contact Huawei technical support engineers.

## Procedure

**Step 1** Navigate to the following directory:

*NetEco 1000S installation directory*\WebRoot\WEB-INF\classes

**Step 2** Open the **userManagement.properties** file, change the value of **isShowThirdEquipment** to **1**, and save the change result.

**Step 3** Restart the NetEco 1000S services and log in to the NetEco 1000S client.

Choose **Maintenance** from the main menu. The **Other Device Access** menu is displayed.

---End

### 5.1.4.2 Adding Other Devices

This section describes how to add other devices to the NetEco 1000S so that you can check performance data of other devices through the NetEco 1000S. Other devices are non-Huawei-developed devices, such as Plant Controller, Power Meter, and Electricity Meter.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.
- You have enabled the Other Device Access menu. For details, see [5.1.4.1 Enabling the Other Device Access Menu](#).
- Communication between the Plant Controller and NetEco 1000S is normal.

## Procedure

**Step 1** Choose **Maintenance > Other Device Access** from the main menu.

**Step 2** In the **Other Device Access** window, click **Add Device**.

**Step 3** In the displayed **Add Device** dialog box, set related parameters.

- To add the Plant Controller, set related parameters according to [Table 5-13](#).

#### NOTE

Before adding the Plant Controller, ensure that you have created a target PV plant, for detailed operations, see [5.1.2.2 Creating a PV Plant](#).

**Table 5-13** Plant Controller parameters

Parameter	Description
Device Type	Set this parameter to <b>PlantControl</b> .

Parameter	Description
<b>Device Name</b>	Set this parameter as required. The specified name is displayed in the <b>Other Device Access</b> page.
<b>PV Plant</b>	Set this parameter to the PV plant to which the Plant Controller belongs.
<b>Device Mark</b>	Set this parameter to the value of <b>PV Plant name</b> configured on the Plant Controller.

- To add the Electricity Meter or Power Meter, set related parameters according to [Table 5-14](#).

 **NOTE**

Before adding the Electricity Meter or Power Meter, ensure that you have added the target Plant Controller.

**Table 5-14** Electricity Meter or Power Meter parameters

Parameter	Description
<b>Device Type</b>	Set this parameter to <b>ElectricityMeter</b> or <b>PowerMeter</b> .
<b>Device Name</b>	Set this parameter as required. The specified name is displayed in the <b>Other Device Access</b> page.
<b>Plant Controller</b>	Set this parameter to the name of the Plant Controller on which the Electricity Meter or Power Meter needs to be mounted.

**Step 4** Click **OK**.

The window shown in [Figure 5-17](#) is displayed after the setting is saved.

**Figure 5-17** Device list



Device Name	PV Plant	Device Type	Plant Controller	Description	Last Reported On	Operation
125456	PV Plant	PlantControl	--			 

Perform the following operations in the [Figure 5-17](#) as required.

Operation	Procedure
Change the name, mark, or description of a device. <b>NOTE</b> Only the Plant Controller supports the changing of device mark.	Click  in the row of the target device.
Delete an added device.	Click  in the row of the target device.

----End

## Follow-up Procedure

After the device is added, you can query the performance data of the device.

1. Choose **Historical Data > Performance Data** from the main menu.
2. Choose an Electricity Meter or Power Meter to be queried in the navigation tree on the left.
3. Set query conditions in the operation display area, and then click **Query**.

The performance parameters of Electricity Meter or Power Meter are displayed, the specific parameters are as follows:

- Power Meter: **Active power, Reactive power, Power factor, Voltage Uab, Voltage Ubc, Voltage Uca, Current Ia, Current Ib, Current Ic, Set value reactive power limitation, Set value cos phi, Set value Q.**
- Electricity Meter: **Time, Energy Yield, Self-Consumed Energy.**

## 5.1.5 Historical Data Query

### 5.1.5.1 Querying Alarm Logs

This section describes how to query alarm logs on the NetEco 1000S. You can set query criteria to obtain the required alarm logs.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Procedure

- Step 1** Choose **Historical Data > Alarm Log** from the main menu.
- Step 2** Choose an target device to be queried in the navigation tree on the left.
- Step 3** Set query conditions in the operation display area, and then click **Query**.

All the alarm records that meet the query conditions are displayed in one or more pages, as shown in [Figure 5-18](#).

**Figure 5-18 Alarm Log**

Alarm Severity	Alarm Name	Type	Name	PV Plant	Generated On	Cleared On	Clearance Type
Warning	String 5 Abnormal	SUN2000	SUN2000_1	PV plant	2013-05-25 06:27:56	2013-05-25 06:45:26	Auto Clear
Warning	String 5 Abnormal	SUN2000	SUN2000_1	PV plant	2013-05-23 08:24:33	2013-05-23 08:31:03	Auto Clear
Warning	String 1 Abnormal	SUN2000	SUN2000_2	PV plant	2013-05-22 17:36:59	2013-05-23 08:31:03	Auto Clear
Warning	String 5 Abnormal	SUN2000	SUN2000_2	PV plant	2013-05-21 08:32:08	2013-05-21 08:24:49	Auto Clear
Warning	String 4 Abnormal	SUN2000	SUN2000_1	PV plant	2013-05-21 09:31:28	2013-05-21 08:21:29	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_10	PV plant	2013-05-17 14:56:10	2013-05-17 16:05:29	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_1	PV plant	2013-05-17 05:29:44	2013-05-17 14:26:43	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_6	PV plant	2013-05-16 15:51:58	2013-05-16 16:00:48	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_5	PV plant	2013-05-16 15:12:48	2013-05-16 15:27:23	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_4	PV plant	2013-05-14 16:10:14	2013-05-14 17:42:35	Auto Clear
Major	Grid Voltage Abnormal	SUN2000	SUN2000_3	PV plant	2013-05-13 08:58:37	2013-05-13 09:13:04	Auto Clear

**Clearance Type** includes **Automatic clear**, **NetEco recovery** and **Cleared by the system**.

Alarms corresponding to different clearance types are as follows:

- **Automatic clear:** The value of **Clearance Type** for an automatically cleared alarm on the device side is **Automatic clear**.
- **Cleared by the system:** When devices reports active alarms to the NetEco 1000S again after reporting 30,000 active alarms to the NetEco 1000S, the NetEco 1000S automatically clears the earliest 1000 alarms and **Clearance Type** of these cleared alarms is **Cleared by the system**.
- **NetEco recovery:** After you enable the automatic active alarm synchronization function, the NetEco 1000S automatically compares alarms reported from the device side with alarms cached in the NetEco 1000S. When an alarm is different from the cached alarm, the NetEco 1000S clears this alarm and considers it as the historical alarm, that is, alarm of the **NetEco recovery** type.

#### NOTE

Alarms of the **NetEco recovery** type can be queried only when you enable the automatic active alarm synchronization function. The function enabling and disabling methods are as follows:

- Enable the function: Navigate to the **NetEco 1000S software installation path\WebRoot\WEB-INF\classes** directory and change the value of **isAutoActiveAlarm** in the **struts.properties** file to **1**. Then, restart the NetEco 1000S services.
- Disable the function: Change the value of **isAutoActiveAlarm** in the **struts.properties** file to **0** and restart the NetEco 1000S services.
- Set the synchronization start time: Modify **activeCurrentAlarm\_Time** in the **struts.properties** file and restart the NetEco 1000S services.

The default value of **activeCurrentAlarm\_Time** is **23:00** on the NetEco 1000S, indicating that active alarms are synchronized at 23:00 everyday.

The automatic active alarm synchronization function is enabled on the NetEco 1000S by default.

**Step 4 Optional:** Click **Export** to export the queried alarm records into a CSV file.

----End

## 5.1.5.2 Querying Performance Data

This section describes how to query performance data on the NetEco 1000S.

### 5.1.5.2.1 Querying the Performance Data of the PV System

This section describes how to query the performance data of the PV System. You can set query criteria to obtain the required performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Procedure

- Step 1** Choose **Historical Data > Performance Data** from the main menu.
- Step 2** Choose the **PV System** to be queried in the navigation tree on the left.
- Step 3** Set search criteria and click **Query** in the operation display area. The window shown in [Figure 5-19](#) is displayed.

#### NOTE

You can set search criteria to query performance data by **Day**, **Month**, **Year**, or **Total**.

- You can view the accumulated power of all PV plants in the PV system in the **PV System Power Statistics** line chart.
- You can view power of five PV plants in the **PV Plant Power Statistics** line chart by default. To view the power of a specific PV plant, click **Select PV Plants** to select the target PV plant.

#### NOTE

When you query performance data by **Day**, queried data is displayed based on the following rules:

- Within one month: The line chart displays 5-minute data.
- Greater than one month and less than three years: The line chart displays 15-minute data.

If the DST is enabled on the SmartLogger, the following situations may occur:

- When users query data generated on the date shifting to the DST, the queried graph or table has no data on this time segment.
- When users query data generated on the date shifting out of the DST, the queried graph or table displays only the latest one data record on this time segment.

**Figure 5-19** Power statistics line chart



**Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

### 5.1.5.2.2 Querying the Performance Data of a PV Plant

This section describes how to query the performance data of a plant. You can set query criteria to obtain the required performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Procedure

- Step 1** Choose **Historical Data > Performance Data** from the main menu.
- Step 2** Choose a plant to be queried in the navigation tree on the left.
- Step 3** Set query conditions according to the following table and click **Query** in the operation display area.

**Table 5-15** Setting query conditions

Query Conditions	Queried Data
<p>Select <b>Day</b> and set the query date.</p>	<ul style="list-style-type: none"> <li>● The <b>PV Plant Power Statistics</b> line chart displays power of the selected PV plant.</li> <li>● The <b>Inverter Power Statistics in PV Plant</b> line chart displays power of five inverters in the selected PV plant by default. To view power of a specific inverter, click <b>Select Inverters</b> to select the target inverter.</li> </ul> <p><b>NOTE</b> If the DST is enabled on the SmartLogger, the following situations may occur:</p> <ul style="list-style-type: none"> <li>● When users query data generated on the date shifting to the DST, the queried graph or table has no data on this time segment.</li> <li>● When users query data generated on the date shifting out of the DST, the queried graph or table displays only the latest one data record on this time segment.</li> </ul>
<ol style="list-style-type: none"> <li>1. Select <b>Month, Year, or Total</b>, and set the query month or query year separately.</li> <li>2. Select the query counter <b>Energy yield, Specific Energy, Performance ratio or Meter Measurement</b>.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● The <b>Performance ratio</b> option is displayed only when the environmental monitoring instrument (EMI) accesses the PV plant. When a PV plant is connected with multiple EMIs, if you do not specify a EMI, the performance ratio is calculated based on the value of the first connected EMI by default. If you need to configure a EMI, see <a href="#">5.1.2.6 Modifying the Information About a PV Plant</a>.</li> <li>● The <b>Meter Measurement</b> option is displayed only when the Electricity Meter accesses the PV plant. For detailed operations to access a Electricity Meter to PV plant, see <a href="#">5.1.4.2 Adding Other Devices</a>.</li> </ul>	<ul style="list-style-type: none"> <li>● PV plant power generation statistics and inverter power generation statistics</li> <li>● PV plant equivalent power generation duration and inverter equivalent power generation duration</li> <li>● PV plant Performance ratio and inverter Performance ratio</li> <li>● Generated power in a electric meter of a PV plant and Meter Statistics Performance Ratio</li> </ul> <p><b>NOTE</b> If the Electricity Meter accesses the PV Plant, but the EMI have not accessed the PV Plant, you cannot query certain data about <b>Meter Statistics Performance Ratio of Meter Measurement</b>.</p> <p><b>NOTE</b> If the value of <b>Performance ratio</b> or <b>Specific Energy</b> cannot be queried, total string capacity may not be configured for inverters. To solve this problem, perform the following operations:</p> <ol style="list-style-type: none"> <li>1. Configure total string capacity for the target inverter. For details, see <a href="#">5.1.3.6 Modifying the Information About a Device</a>.</li> <li>2. Re-collect historical data of the latest 30 days for the target inverter. For details, see <a href="#">5.1.5.4 Synchronizing Historical Performance Data</a>.</li> <li>3. Query the value of <b>Specific energy</b> or <b>Performance ratio</b> again.</li> </ol>

**Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.

---



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

----End

### 5.1.5.2.3 Querying the Performance Data of a Device

This section describes how to query the performance data of a device. You can set query criteria to obtain the required performance data. The devices whose data can be queried include the SmartLogger, inverter, EMI, PID, and Meter.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Procedure

**Step 1** Choose **Historical Data > Performance Data** from the main menu.

**Step 2** Choose a device to be queried in the navigation tree on the left.

**Step 3** Set query conditions in the operation display area, and then click **Query**.

All qualified performance data is displayed on one or more pages. [Figure 5-20](#) shows the inverter performance data.

**Figure 5-20** Querying the performance data of a device



Generated On	Inverter Status	Energy Yield of Current Day (kWh)	Total Energy Yield (kWh)	Total Input Power (kW)	Output Active Power (kW)	Output Reactive Power (kVar)	Power Factor	Grid Frequency (Hz)	Grid Current (A)		
									A	B	C
2017-07-26 16:10:00	NA	13107.40	13107.40	6553.700	13110.740	-	0.920	0.20	2.0	2.0	2.0

**Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.

---



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

----End

## Follow-up Procedure

You can also perform the following operations on the **Querying the performance data of a device** page:

Operation	Steps	Description
Display performance data in a line chart	In the operation display area, click <b>Graph</b> .	Display the queried performance data in a line chart.
Set the vertical coordinate of the line chart	<ol style="list-style-type: none"> <li>Click . The <b>Select Counters</b> dialog box is displayed.</li> <li>Enter the values for the Y1 and Y2 coordinates.</li> </ol> <p><b>NOTE</b> The preceding two values must be different.</p> <ol style="list-style-type: none"> <li>Click <b>OK</b>.</li> </ol>	View the performance data based on different performance counters in the line chart by setting the vertical coordinate.
Display daylight saving time (DST)	Select <b>Show DST</b> .	<p>After DST starts, DST marks are displayed behind each time in the <b>Generated On</b> column.</p> <p>For example, 2013-09-17 09:40:00 DST.</p>

### 5.1.5.3 Querying Report Data

You can query the power generation statistics, power generation performance ratio and income of the plant and the index values of the inverters in the NetEco 1000S system for data analysis.

## Context

### NOTE

If the DST is enabled on the SmartLogger, the following situations may occur:

- When users query data generated on the date shifting to the DST, the queried graph or table has no data on this time segment.
- When users query data generated on the date shifting out of the DST, the queried graph or table displays only the latest one data record on this time segment.

Report data can be emailed to users. For details about the sending rules, see [5.1.7.3.4 Setting Report Sending Rules](#).

#### 5.1.5.3.1 Querying the Energy Yield of the PV Plant

This section describes how to query the energy yield of the PV plant to learn data, such as the energy generated in a certain period, active power, and irradiation strength.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

## Procedure

**Step 1** Choose **Historical Data > Data Analysis** from the main menu.

**Step 2** Choose **PV Plant Analysis > Energy Yield** in the navigation tree on the left

**Step 3** Click  to select the target plant in the operation display area.

 **NOTE**

A maximum of 5 plants can be selected.

**Step 4** Set query conditions according to the following table and click **Query**.

**Table 5-16** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Day</b>	Active power and total irradiance of every 15 minutes from 00:00 on the current day
Querying data by <b>Week</b>	Active power and total irradiance of every hour from 00:00 on each day in the current week <b>NOTE</b> The current week is not the natural week. It considers the current date as the last day of the current week.
Querying data by <b>Month</b>	energy yield and accumulated radiation of each day in the current month
Querying data by <b>Year</b>	energy yield and accumulated radiation of each month in the current year
Querying data by <b>Total</b>	energy yield and accumulated radiation of the each year

**Step 5** Select the data display style.

To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.

**Step 6 Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.



When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

### 5.1.5.3.2 Querying the Energy Yield Performance Ratio of the PV Plant

This section describes how to query the energy yield performance ratio of the PV plant to learn the power energy efficiency of the PV plant in a certain period.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Context

The PV plant performance ratio indicates the rated output loss of the PV plant array caused by the following reasons: the temperature and irradiation are not fully used, or system components are invalid or faulty. The performance ratio reflects the overall operation of devices in the PV plant system from the PV module side to the box-type input substation side in the recording time period.

The inverter performance ratio indicates the ratio between the actual energy yields and theoretical energy yields of inverters. The calculation formula is as follows:  $PR = E_{AC} / (Y_R \times P_O) \times 100\%$ .

- $E_{AC}$  indicates the actual energy yields of inverters in a day.
- $(Y_R \times P_O)$  indicates the theoretical energy yields of inverters in the same period.
  - $Y_R$  indicates the inverter equivalent power generation duration. The calculation formula is as follows:  $Y_R = H/G_{STC}$ . Unit: kW·h.

#### NOTE

H indicates the total irradiance on the inclined plane of the PV plant array. The formula for calculating the total increased irradiance in the recording period is as follows:  $H_T = \sum_{time} (H_k \times \epsilon)$ .

- $\Sigma_{time}$  indicates that the sum is calculated by recording time.
- $H_k$  indicates the Kth 5-minute increased irradiance of the current day monitored by the EMI. The unit is kWh.
- $\epsilon$  indicates the temperature correction coefficient.  $\epsilon = 1 - (T_k - 25) \times \text{Component peak power temperature coefficient}$ .
  - $T_k$  indicates the Kth 5-minute component surface temperature monitored by the EMI.
  - **Component peak power temperature coefficient** indicates the empirical value of the temperature coefficient. It is the component peak power temperature coefficient that is configured for the PV plant where inverters are located. Configure this counter by referring to [5.1.2.6 Modifying the Information About a PV Plant](#).

$G_{STC}$  indicates the standard irradiation strength of the PV panel. The default value is 1 kW/m<sup>2</sup>.

- $P_O$  indicates the string capacity. Configure this counter by referring to [5.1.2.6 Modifying the Information About a PV Plant](#).

The PV plant performance ratio indicates the sum of actual energy yields of inverters multiplied by (1 - Line loss) and divided by the sum of theoretical energy yields of inverters. The calculation formula is as follows:  $PR = \sum_i E_{AC}^{(i)}(1 - \text{Line loss}) / \sum_i (Y_R \times P_O)^{(i)}$ .

- **Line loss** indicates the power loss when electric lines are transferring power. Configure this counter by referring to [5.1.2.6 Modifying the Information About a PV Plant](#).

## Procedure

**Step 1** Choose **Historical Data > Data Analysis** from the main menu.

**Step 2** Choose **PV Plant Analysis > Performance Ratio** in the navigation tree on the left.

**Step 3** Click  to select the target plant in the operation display area.

### NOTE

A maximum of 5 plants can be selected.

**Step 4** Set query conditions according to the following table and click **Query**.

**Table 5-17** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Month</b>	Energy yield and performance ratio of each day in the current month
Querying data by <b>Year</b>	Energy yield and performance ratio of each month in the current year
Querying data by <b>Total</b>	Energy yield and performance ratio of each year

### NOTE

When a PV plant is connected with multiple EMIs, if you do not specify a EMI, the performance ratio is calculated based on the value of the first connected EMI by default. If you need to configure a EMI, see [5.1.2.6 Modifying the Information About a PV Plant](#).

**Step 5** Select the data display style.

To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.

**Step 6** **Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.

## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

### 5.1.5.3.3 Querying the income of the PV Plant

This section describes how to query the income of the PV plant to learn the income generated in a certain period.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Procedure

**Step 1** Choose **Historical Data > Data Analysis** from the main menu.

**Step 2** Choose **PV Plant Analysis > Income** in the navigation tree on the left

**Step 3** Click  to select the target plant in the operation display area.

#### NOTE

A maximum of 5 plants can be selected.

**Step 4** Set query conditions according to the following table and click **Query**.

**Table 5-18** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Month</b>	Income of each day in the current month.
Querying data by <b>Year</b>	Income of each month in the current year.
Querying data by <b>Total</b>	Total income of each year.

**Step 5** Select the data display style.

To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.

**Step 6 Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.



When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

----End

### 5.1.5.3.4 Querying Plant or Inverter Availability

This topic describes how to query plant or inverter availability during a certain period.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.
- Inverters have connected to the NetEco 1000S through the SmartLogger, and there are at least 10 inverters connected to the same SmartLogger. For details about how to connect an inverter, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).
- **Total string capacity** has been configured for inverters. For details, see [5.1.3.6 Modifying the Information About a Device](#).
- An environmental monitoring instrument (EMI) is connected to a plant. For details, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).
- Availability parameters have been configured for a plant. For details, see [5.1.2.6 Modifying the Information About a PV Plant](#).

#### Context

Availability is a key counter for evaluating the performance and reliability of a plant or inverter. At least 10 inverters connected to the same SmartLogger are required for calculating availability.

The availability calculation formula is as follows:  $EA = 1 - \frac{\sum_i E_{\text{loss}}^{(i)}}{E_{\text{total}} + \sum_i E_{\text{loss}}^{(i)}}$ .

- $\sum_i$  indicates the sum calculated by recording time.
- $E_{\text{loss}}^{(i)}$  indicates the energy yield loss of an inverter during a certain period.  $E_{\text{loss}}^{(i)} = PR \times H \times P$ . You can obtain the total energy yield loss by adding the energy yield loss of all inverters together.
  - PR indicates the daily average PR value that meets configured **PR value range** in the last 10 days. For details on how to configure **PR value range**, see [5.1.2.6 Modifying the Information About a PV Plant](#).
  - H indicates the radiation increment during the recording period.
  - P indicates the total string capacity of inverters that are in stopped state (or the active power output is 0).
- $E_{\text{total}}$  indicates the actual total energy yield of a plant.

## Procedure

- Query the plant availability.
    - a. Choose **Historical Data > Data Analysis** from the main menu.
    - b. Choose **PV Plant Analysis > Availability** in the navigation tree on the left.
    - c. Click  to select the target plant in the operation display area.
-  **NOTE**
- A maximum of five plants can be selected.
- d. Set query conditions according to **Table 5-19** and click **Query**.

**Table 5-19** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Month</b>	Daily availability data of plants in the current month
Querying data by <b>Year</b>	Monthly availability data of plants in the current year
Querying data by <b>Total</b>	Yearly availability data of plants

- e. Select the data display style.  
To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.
- f. **Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.

---

## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

- Query the inverter availability.
    - a. Choose **Historical Data > Data Analysis** from the main menu.
    - b. Choose **Inverter Analysis > Availability** in the navigation tree on the left.
    - c. Click  **Select SmartLogger** to select the target SmartLogger in the operation display area.
-  **NOTE**
- A maximum of five SmartLoggers can be selected.
- d. Set query conditions according to **Table 5-20** and click **Query**.

**Table 5-20** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Month</b>	Daily availability data of inverters in the current month
Querying data by <b>Year</b>	Monthly availability data of inverters in the current year
Querying data by <b>Total</b>	Yearly availability data of inverters

- e. Select the data display style.  
To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.
- f. **Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

### 5.1.5.3.5 Querying Index Values of the Inverters

You can query values of some indexes for some inverters as required to learn the running status of these indexes in a certain period.

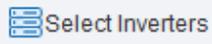
#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

#### Context

The inverter performance ratio indicates the ratio between the actual energy yields and theoretical energy yields of inverters. The calculation formula is as follows:  $PR = E_{AC} / (Y_R \times P_O) \times 100\%$ . For definitions of parameters, see [5.1.5.3.2 Querying the Energy Yield Performance Ratio of the PV Plant](#).

#### Procedure

- Step 1** Choose **Historical Data > Data Analysis** from the main menu.
- Step 2** Choose **Inverter Analysis > Comparative Analysis** in the navigation tree on the left.
- Step 3** In the operation area, click  to select the inverters to be queried.

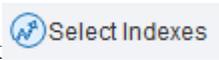
 **NOTE**

A maximum of 50 inverters can be selected.

**Step 4** Set query conditions according to the following table and click **Query**.

**Table 5-21** Setting query conditions

Query Conditions	Queried Data
Querying data by <b>Day</b>	Values of the selected indexes for the selected inverters of every 15 minutes on the current day
Querying data by <b>Week</b>	Values of the selected indexes for the selected inverters of each hour on each day in the current week <b>NOTE</b> The current week is not the natural week. It considers the current date as the last day of the current week.
Querying data by <b>Month</b>	Values of the selected indexes for the selected inverters of each day in the current month
Querying data by <b>Year</b>	Values of the selected indexes for the selected inverters of each month in the current year
Querying data by <b>Total</b>	Values of the selected indexes for the selected inverters of a year

**Step 5** click  to select the indexes to be queried.

 **NOTE**

- When selecting indexes, you can select only one index for the Y1 and Y2 coordinates separately, and indexes selected for the Y1 and Y2 coordinates must be different.
- If the value of **Performance ratio** or **Specific energy** cannot be queried, total string capacity may not be configured for inverters. To solve this problem, perform the following operations:
  1. Configure total string capacity for the target inverter. For details, see [5.1.3.6 Modifying the Information About a Device](#).
  2. Re-collect historical data of the latest 30 days for the target inverter. For details, see [5.1.5.4 Synchronizing Historical Performance Data](#).
  3. Query the value of **Specific energy** or **Performance ratio** again.

**Step 6** Select the data display style.

To display queried data in a chart, click **Graph**. To display queried data in a table, click **Table**.

 **NOTE**

If you use the Chrome browser to view a large number of curves, a layout error may occur on the page. To solve this problem, perform the following operations:

1. Access **chrome://flags/** using the Chrome browser.
2. Set **Display list 2D canvas** to **Disabled**.
3. Click **RELAUNCH NOW**.

**Step 7 Optional:** To export queried data to the PC for viewing, click **Export** on the **Table** tab page and save the file to the PC.



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

----End

### 5.1.5.4 Synchronizing Historical Performance Data

This section describes how to synchronize historical performance data from a device to the NetEco 1000S by creating a synchronization task on the NetEco 1000S. This solves the problem that historical performance data cannot be automatically synchronized to the NetEco 1000S after the device is disconnected from the NetEco 1000S for more than 6 hours.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.
- You have added a device to the NetEco 1000S and the device state is normal.
  - The device has been connected to the NetEco 1000S over the SmartLogger, and the SmartLogger is SmartLogger1000 V100R001C91 or later. For details, see [5.1.3.1 Accessing Devices Through the SmartLogger](#).
  - The inverter has been connected to the NetEco 1000S over the FE. For details, see [5.1.3.2 Accessing the Directly Connected Inverter](#).

#### Context

- If the device is connected to the NetEco 1000S for the first time using the SmartLogger, and if it has been running before the connection and stores performance files on the SmartLogger, you can start the historical performance data synchronization task to synchronize historical performance data of the device before it is connected to the NetEco 1000S to the NetEco 1000S. The SmartLogger saves historical performance data of the latest one month.
- If the inverter directly connected to the FE is connected to the NetEco 1000S for the first time, and if it has been running before the connection and stores performance files, you can start the historical performance data synchronization task to synchronize historical performance data of the inverter before it is connected to the NetEco 1000S to the NetEco 1000S. The inverter directly connected to the FE saves historical performance data of the latest one year.
- The synchronization on the NetEco 1000S succeeds only when the SmartLogger or the inverter directly connected to the FE stores historical performance data that needs to be synchronized.

## NOTICE

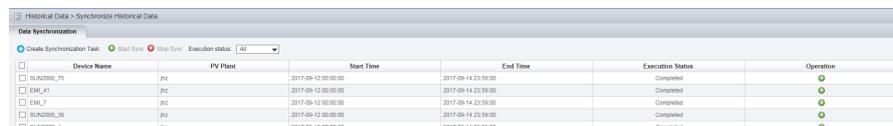
When historical performance data is being synchronized on the device, if you create another synchronization task for the device, the creation fails.

## Procedure

**Step 1** Choose **Historical Data > Synchronize Historical Data** from the main menu.

The **Synchronize Historical Data** page is displayed, as shown in [Figure 5-21](#).

**Figure 5-21** Synchronizing historical data

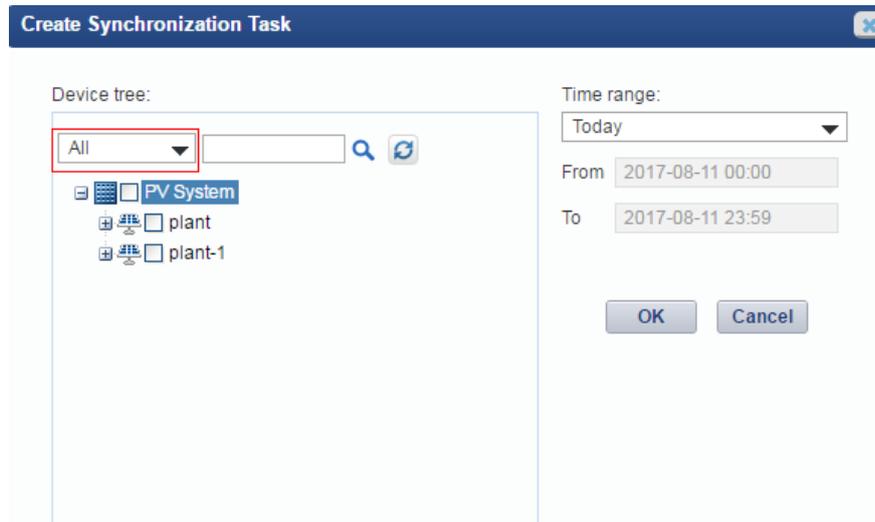


Device Name	PV Plant	Start Time	End Time	Execution Status	Operation
SLN2000_75	plc	2017-08-12 00:00:00	2017-08-14 23:59:00	Completed	
EM_41	plc	2017-08-12 00:00:00	2017-08-14 23:59:00	Completed	
EM_3	plc	2017-08-12 00:00:00	2017-08-14 23:59:00	Completed	
SLN2000_38	plc	2017-08-12 00:00:00	2017-08-14 23:59:00	Completed	
EM_1	plc	2017-08-12 00:00:00	2017-08-14 23:59:00	Completed	

**Step 2** On the **Data Synchronization** page, click **Create Synchronization Task**.

The **Create Synchronization Task** dialog box is displayed, as shown in [Figure 5-22](#).

**Figure 5-22** Creating a synchronization task



**Create Synchronization Task**

Device tree:

All

- PV System
  - plant
  - plant-1

Time range:

Today

From: 2017-08-11 00:00

To: 2017-08-11 23:59

OK Cancel

**Step 3** Choose a device for which you want to create a supplementary collection task from the device navigation tree.

### NOTE

By clicking the drop-down box in [Figure 5-22](#) red area, you can quickly filter device type.

**Step 4** Set the time range as required.

The time range can be set to **Today**, **Last three Days**, **Last seven Days**, **Last thirty Days**, or **Customize**.

### NOTE

The time range of the **Customize** cannot exceed 30 days.

**Step 5** Click **OK**.

The supplementary collection task is performed automatically after the task is created.

----End

## Follow-up Procedure

If the supplementary collection task fails to be executed, click  to execute the task again.

You can click  to stop a synchronization task.

## 5.1.5.5 Exporting Historical Data

This section describes how to export 5-minute historical data of a PV plant in the recent one month on the NetEco 1000S. The data includes data of inverters and EMIs in a PV plant.

### Prerequisites

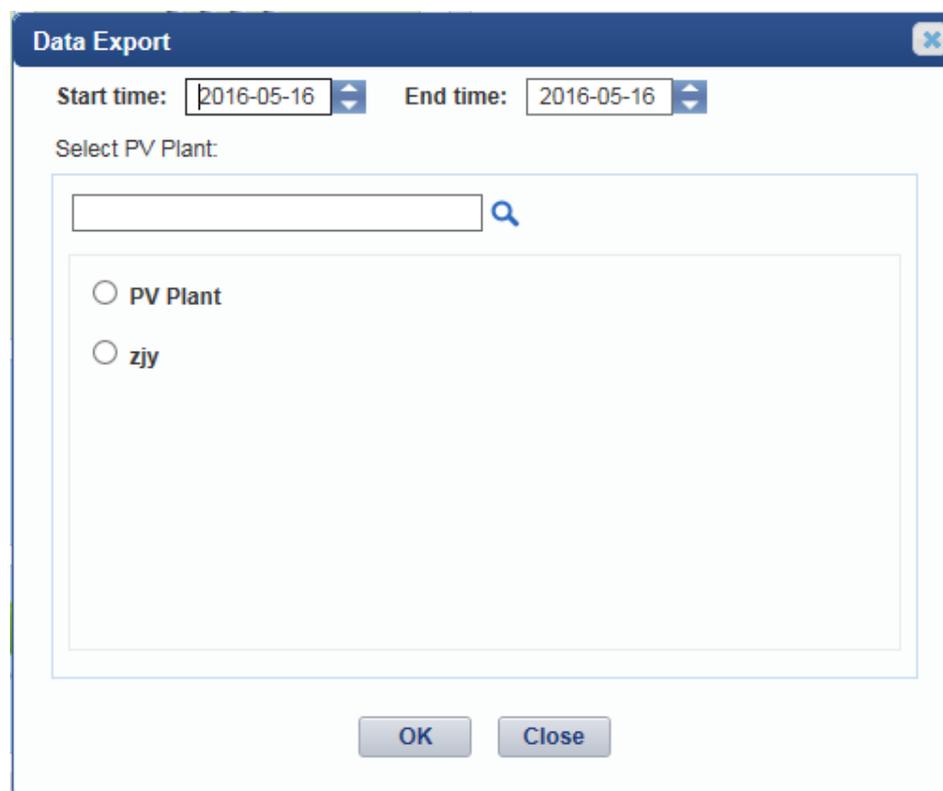
- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator, system operator, or guest user who has been assigned the historical data query permissions.

### Procedure

**Step 1** Choose **Historical** > **Data Export** from the main menu.

The **Data Export** dialog is displayed, as shown in [Figure 5-23](#).

**Figure 5-23** Data Export



**Step 2** Select **Start time**.



**Start time** cannot be one week earlier than **End time**. Otherwise, **The time range cannot exceed 7 days**, is displayed.

**Step 3** Select **End time**.



**End time** cannot be earlier than **Start time**. Otherwise, **The Start time must be earlier than the end time**, is displayed when you click **OK**.

**Step 4** Select the PV plant whose data needs to be exported in the **Select PV Plant** area.

When there are multiple PV plants, enter the PV plant name in the text box and click  to search for the PV plant whose data needs to be exported.

**Step 5** Click **OK**.

A message asking you whether to open or save data is displayed at the bottom of the browser.

**Step 6** Open or save historical data as required.



**NOTICE**

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

## 5.1.6 Device Maintenance

### 5.1.6.1 Upgrading a Device

This section describes how to upload a software package and remotely upgrade a device through the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- You have logged in as system administrator.
- You have contacted Huawei technical support engineers to obtain the software package required for device upgrade and have checked the integrity of the software package.

 **NOTE**

You can check the integrity of the software package by referring to [5.1.8.6 Verifying OpenPGP Signature](#).

Software package integrity check is related to the software security. You must perform the check to ensure the software security.

## Procedure

**Step 1** Choose **Maintenance > Software Management** from the main menu.

**Step 2** Click the **Device Upgrade Management** or **Batch Upgrade Management** tab.

 **NOTE**

- To upgrade some specified devices (for example, SmartLogger, inverter, PLC or PID), you can perform related operations on the **Device Upgrade Management** tab page.
- To upgrade inverters under the same SmartLogger (the version of the SmartLogger must be V100R001C95SPC030 or later) at the same time, you can perform related operations on the **Batch Upgrade Management** tab page. This function applies only to the scenario where the device accesses the NetEco 1000S through the SmartLogger.

**Step 3** Upload the device software package to be upgraded.

1. Click **Software Package Management**.
2. Click **Upload** on the **Software Package Management** page.
3. Click **Browser** to select the software package, and then click **Upload**.

After the upload is complete, information about the new software package is displayed in the software package list.

 **NOTE**

To delete the uploaded software package, select the software version in the software package list and click **Delete**.

4. Click **Close**.

**Step 4** Upgrade the software package of the device.

1. Select the devices to be upgraded in the device list.

 **NOTE**

- You can filter out the list of target devices by device name or plant name.
- On the **Batch Upgrade Management** tab page:
  - If the SmartLogger allows inverters to be selected for upgrade, a check box will be displayed before an inverter under the SmartLogger. Select the check box before a target inverter to upgrade.
  - If the SmartLogger does not allow inverters to be selected for upgrade, a check box will not be displayed before an inverter under the SmartLogger. Select the SmartLogger to upgrade inverters in batches.

2. Click **Select Version**.

The **Select Target Version** dialog box is displayed, showing all upgrade software packages for the device type.

 **NOTE**

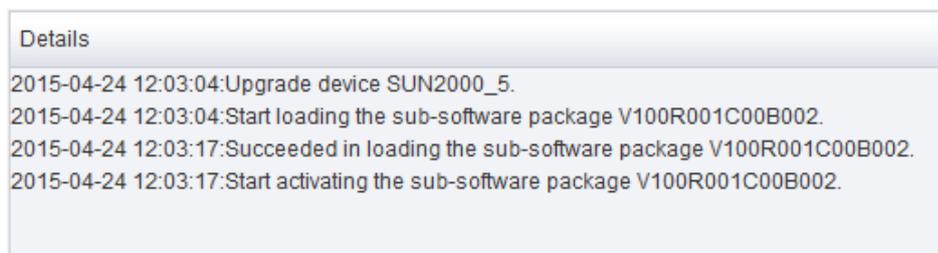
- If the selected target device is an inverter, the **Select Target Version** dialog box shows the software packages applicable to the protocol version of the selected inverter.
  - If the selected target device is a SmartLogger, the **Select Target Version** dialog box shows the software packages applicable to the V version (**VXX** in **VXXRXXCXX**) of the selected SmartLogger.
3. Select the target version in the **Select Target Version** window and click **OK**.
  4. Click **Upgrade** above the device list.

The upgrade progress is displayed in the **Upgrade Progress** column of the device list.

When you upgrade multiple devices at the same time on the **Device Upgrade Management** tab, you can click **Stop Upgrade** to stop the upgrade task whose **Current Status** is **Waiting**.

Click **Details** under **Current Status**. Details about the inverter upgrade are displayed, as shown in [Figure 5-24](#).

**Figure 5-24** Inverter upgrade details

 **NOTE**

When **Loading completed.** is displayed, the NetEco automatically activates the inverter, and **The inverter is going to activate automatically** is displayed. If the device does not meet activation requirements, the NetEco automatically activates the device after activation requirements are met. After the device is activated successfully, the NetEco displays the latest device version.

----End

## 5.1.6.2 Obtaining Device Logs

This section describes how to obtain device logs for device analysis and maintenance.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- You have logged in as system administrator or system operator.

### Context

Remotely obtaining device logs applies SmartLogger, inverters, PLC and PID.

## Procedure

**Step 1** Choose **Maintenance** > **Device Maintenance** from the main menu.

**Step 2** Click the **Device Log** tab.

The **Device Log** window is displayed.

**Step 3** Select a device in the device list, and click **Obtain**.

When **Finish** is displayed in the **Execution Status** column, device logs are synchronized to the NetEco 1000S.

### NOTE

- You can filter out the list of target devices by device name or plant name.
- You can click  in the **Operation** column to stop obtaining device logs.

**Step 4** Click **Download the log** or  in the **Log File** column to download the device log file to the local PC.

---End

## 5.1.6.3 Obtaining the Inverter Patrol Report

This section describes how to obtain the inverter patrol report to help technical support engineers learn the running counter values and state of health (SOH) of inverters and to provide reference for device maintenance and exception location.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- You have logged in as system administrator or system operator.

## Procedure

**Step 1** Choose **Maintenance** > **Device Maintenance** from the main menu.

**Step 2** Click the **Inverter Patrol** tab.

The **Inverter Patrol** tab page is displayed.

### NOTE

You can filter out the list of target devices by device name or plant name.

**Step 3** Start the inverter patrol.

1. Select the target inverter in the device list and click **Start Patrolling** or  in the **Operation** column.
2. When the following information is displayed, click **OK**:

Are you sure you want to execute the task

**Step 4** Obtain the inverter patrol report.

1. Select the target inverter for which a patrol report has been generated and click **Batch Download Report**.

A message asking you whether to open or save data is displayed at the bottom of the browser.

2. Click **Download the report** or  in the **Patrol report** column to download the patrol report to the local PC.

----End

### 5.1.6.4 Managing Device List

User can view and export the device version, SN, and communication address on the Device Management page, as well as modify device names in batches.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- You have logged in as system administrator or system operator.

#### NOTE

A user in the system operator group can only view and export the device information about the plants to which the user has access, and batch modify device names for the plants to which the user has access.

#### Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Device Management** tab.

The **Device Management** window is displayed.

**Step 3** Set **Device name**, **Version No.**, **SN**, **PV plant name** or **Device type**, and click **Query**.

Target devices meeting the preset condition are filtered out.

#### NOTE

For a device whose **Device type** is **SmartLogger**, you can click the **Device address** link in the **Communication address** column to switch to the web client of the SmartLogger.

**Step 4** Click **Export**.

You can export information about devices displayed on the page.

To modify device names in batches, go to the next step.

**Step 5** Change **Device Name** in the exported **.xls** file, and save the file.

**Step 6** In the **Device Management** window, click **Import Names**.

The **Import Names** dialog box is displayed.

**Step 7** Click **Browse**, and select the **.xls** file saved in [Step 5](#).



Only **.xls** files can be imported. The file size must be less than 2 MB. The file must contain the **Device Name** and **SN** columns, and the columns must not be empty.

---

**Step 8** Click **Execution**.



During the Execution, the modification task will be stopped if you close the **Import Names** dialog box.

During the Execution, you can click **Stop** to stop unfinished modification task.

If modifying device names fails, **Details** in **Import Names** will provide the device whose name fails to be modified and the failure cause.

**Step 9** Click **Close**.

----End

### 5.1.6.5 Replacing a Device

This section describes how to replace a device. If the device connecting to the NetEco 1000S needs to be replaced due to a fault or aging, you can replace it with a new one. Devices supporting the replacement include the inverter, EMI, Meter, and SmartLogger.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- The current user is system administrator or system operator.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- The old device has been deleted or is disconnected from the NetEco 1000S.
- The new device and the old device are connected to the same PV Plant.

#### Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Device Management** tab.

The **Device Management** window is displayed.

**Step 3** Click **Replace Device**.

The **Replace Device** dialog box is displayed.

**Step 4** Select a device type, and enter the **Old device SN**, **New device SN** and **Device name**. Then click **OK**.

 **NOTE**

**Device name** specified here is the name of the new device to be displayed in the NetEco 1000S. **Device name** must be different from the names of the existing devices in the same PV plant.

If you attempt to replace an inverter, meter, or EMI, and the old and new devices are not connected to the same SmartLogger, the following message is displayed.

The devices are not connected to the same SmartLogger. Continue?

**Step 5** Click **OK**, and complete the device replacement as prompted.

 **NOTE**

If you want to cancel the replacement, click **Cancel**.

----End

## 5.1.6.6 Querying NetEco Alarms

If the NetEco 1000S certificate has expired, the license has expired, or remote notification emails fail to be sent, the NetEco 1000S will generate a corresponding NetEco alarm. You can query NetEco alarms to learn the NetEco alarm information for the NetEco 1000S and handle alarms accordingly.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

### Context

Check the NetEco alarm icon in the upper right of the home page of the NetEco 1000S client to determine whether a NetEco alarm exists. If a NetEco alarm exists, view the detailed alarm information on the **NetEco Alarm** page.

- : A NetEco alarm is generated on the NetEco 1000S.
- : No NetEco alarm is generated on the NetEco 1000S.

### Procedure

**Step 1** On the home page of the NetEco 1000S client, click the NetEco alarm icon .

The **NetEco Alarm** page is displayed.

**Step 2** Set **Time** and **Clear Status**, and click **Query**.

NetEco alarms that meet the conditions can be queried.

**Step 3** Click **Alarm Name** for a NetEco alarm record to view the detailed alarm information and troubleshooting advice.

 **NOTE**

NetEco alarms whose details are not queried will be highlighted in bold.

**Step 4** **Optional:** Click **Export** to export the queried alarm information into a CSV file.

----End

### 5.1.6.7 Obtaining NetEco Logs

This section describes how to obtain NetEco logs. The logs help you learn the operating status of the NetEco 1000S and locate problems when the NetEco 1000S is not running properly.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Context

The NetEco records run logs automatically every day. When the system becomes abnormal, the system administrator quickly obtains the corresponding logs through the client to locate the problem.

#### Procedure

**Step 1** Choose **Maintenance > NetEco Maintenance** from the main menu.

The **NetEco Maintenance** page is displayed.

**Step 2** Obtain the trace log.

The trace log records the system run log. When the system becomes abnormal, you can obtain the trace log to locate the problem.

1. Click the **Trace Log** tab.
2. Click **Refresh**. The latest log information is displayed.
3. Select the log to be obtained.

 **NOTE**

You can enter the log name keyword, such as the date, in the **File Name** text box and click **Search** to search for all logs whose names contain this keyword.

4. Click **Download**.

A message asking you whether to open or save the log is displayed at the bottom of the browser. You can open or save the log as required.

**Step 3** Obtain other logs.

Other logs record all logs except the trace log. These logs include database error logs, configuration file modification logs, attack logs, FTP logs, and script logs. When problems cannot be located using the trace log, you can obtain other logs to facilitate problem location.

1. Click the **Other Logs** tab.
2. Click **Refresh**. The latest log information is displayed.
3. Select the log to be obtained.

 **NOTE**

You can enter the log name keyword, such as the date, in the **File Name** text box and click **Search** to search for all logs whose names contain this keyword.

4. Click **Download**.

A message asking you whether to open or save the log is displayed at the bottom of the browser. You can open or save the log as required.

----End

### 5.1.6.8 Smart I-V Curve Diagnosis

The smart I-V curve diagnosis function allows you to check the health status of strings for the inverters connected to the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- The current user is system administrator or system operator.
- String parameters have been configured for inverters. For details about how to configure the parameters, see [5.1.3.6 Modifying the Information About a Device](#).
- The inverter license controls the smart I-V curve diagnosis function. To ensure that smart I-V curve diagnosis works properly, perform scheduled inspection and import the inverter license file. For details, see [5.1.6.9 Managing Device Licenses](#).

#### Procedure

- Step 1** Choose **Maintenance > Smart I-V Curve Diagnosis** from the main menu.

The **Smart I-V Curve Diagnosis** page is displayed, as shown in [Figure 5-25](#).

**Figure 5-25** Smart I-V Curve Diagnosis

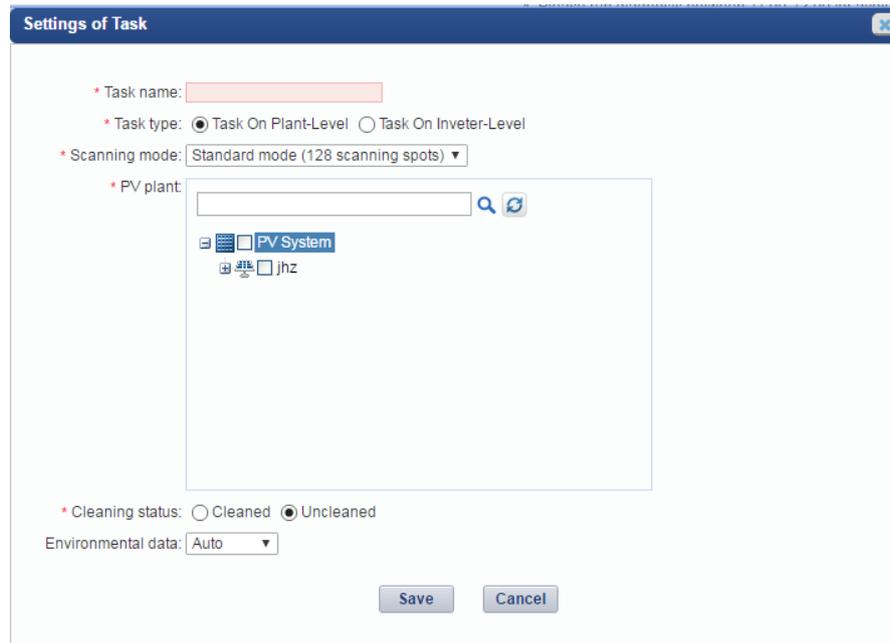


The content in the red frame in [Figure 5-25](#) is the conditions and suggestions for smart I-V curve diagnosis. Read the content carefully and ensure that the conditions are met. To minimize the content, click **Operation Suggestion**.

- Step 2** Click **Start Scanning**.

The **Settings of Task** page is displayed, as shown in [Figure 5-26](#).

**Figure 5-26** Task Settings



**Step 3** Set the I-V diagnosis task.

1. Set I-V diagnosis parameters, as described in [Table 5-22](#).

**Table 5-22** Description of I-V diagnosis parameters

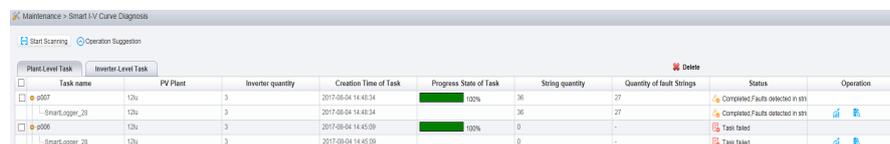
Parameter	Description
Task name	Set this parameter to a string of a maximum of 64 characters.
Task type	<p>Value:</p> <ul style="list-style-type: none"> <li>- <b>Task On Plant-Level:</b> The health check applies to strings for all inverters connected to a PV plant.</li> <li>- <b>Task On Inverter-Level:</b> The health check applies to all strings for an inverter.</li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>- If <b>Task type</b> is set to <b>Task On Plant-Level</b>, the object is a SmartLogger. A maximum of 10 SmartLoggers can be scanned simultaneously, and the SmartLoggers must be connected to the same plant. A task whose type is <b>Task On Plant-Level</b> will be displayed on the <b>Plant-Level Task</b> tab page under <b>Smart I-V Curve Diagnosis</b> after creation.</li> <li>- If <b>Task type</b> is set to <b>Task On Inverter-Level</b>, the object is an inverter. A maximum of 10 inverters can be scanned simultaneously, and the inverters must be connected to the same plant. A task whose type is <b>Task On Inverter-Level</b> will be displayed on the <b>Inverter-Level Task</b> tab page under <b>Smart I-V Curve Diagnosis</b> after creation.</li> </ul>

Parameter	Description
Scanning mode	Select an appropriate scanning mode from the drop-down list box. Value: <ul style="list-style-type: none"> <li>- Standard mode(128 scanning spots)</li> <li>- Rapid mode(64 scanning spots)</li> </ul>
PV plant	In the <b>PV plant</b> area, select the object to be scanned. You can also enter a search criterion in the text box, and click  to search for the object that meets the search criterion.
Cleaning status	Specifies the cleaning status of a string. Select a value as required.
Environmental data	Select a mode from the drop-down list box. Value range: <ul style="list-style-type: none"> <li>- Auto: The system will automatically calculate the values of <b>Irradiance</b> and <b>Temperature of panel</b>.</li> <li>- Manually: You need to manually enter the values of <b>Irradiance</b> and <b>Temperature of panel</b>.</li> </ul>
Irradiance	This parameter is displayed only if <b>Environmental data</b> is set to <b>Manually</b> . Value range: 200.0000 to 9999.9999
Temperature Of Panel	This parameter is displayed only if <b>Environmental data</b> is set to <b>Manually</b> . Value range: - 100.0000 to 100.0000

2. Click **Save**.

After a task is set, smart I-V curve diagnosis starts immediately, as shown in [Figure 5-27](#).

**Figure 5-27** Executing a diagnosis task



Task name	PV Plant	Inverter quantity	Creation Time of Task	Progress State of Task	String quantity	Quantity of fault Strings	Status	Operation
SmartLogger_20	12kv	3	2017-09-04 14:43:34	100%	36	27	Completed/Faults detected in str	
SmartLogger_20	12kv	3	2017-09-04 14:43:34	100%	36	27	Completed/Faults detected in str	
SmartLogger_20	12kv	3	2017-09-04 14:43:39	100%	0	-	Task failed	
SmartLogger_20	12kv	3	2017-09-04 14:43:39	100%	0	-	Task failed	

To stop a I-V diagnosis task, click  in the **Operation** column. After a diagnosis task is stopped or the string diagnosis scanning is complete,  will not be displayed on the page.

After diagnosis tasks are completed,

- By default, the **Plant-Level Task** tab page displays the diagnosis results of all SmartLoggers in the tasks. You can click  next to a task name to collapse the corresponding information.

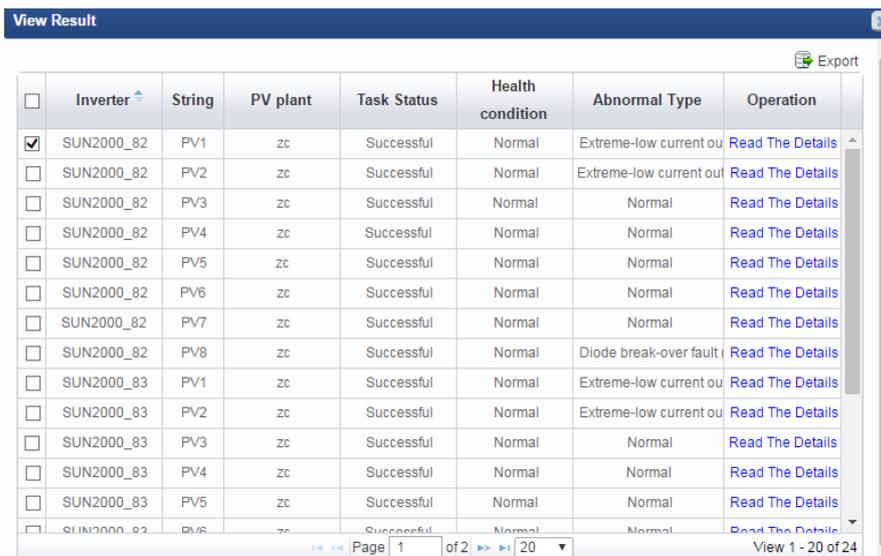
- By default, the **Inverter-Level Task** tab page displays the diagnosis results of all inverters in the tasks. You can click  next to a task name to collapse the corresponding information.

**Step 4** View the diagnosis result and diagnosis details.

1. Click .

The diagnosis task execution result is displayed, as shown in [Figure 5-28](#).

**Figure 5-28** Diagnosis result



<input type="checkbox"/>	Inverter	String	PV plant	Task Status	Health condition	Abnormal Type	Operation
<input checked="" type="checkbox"/>	SUN2000_82	PV1	zc	Successful	Normal	Extreme-low current out	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV2	zc	Successful	Normal	Extreme-low current out	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV3	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV4	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV5	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV6	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV7	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_82	PV8	zc	Successful	Normal	Diode break-over fault	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV1	zc	Successful	Normal	Extreme-low current out	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV2	zc	Successful	Normal	Extreme-low current out	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV3	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV4	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV5	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>
<input type="checkbox"/>	SUN2000_83	PV6	zc	Successful	Normal	Normal	<a href="#">Read The Details</a>

[Table 5-23](#) describes the parameters in the diagnosis result.

**Table 5-23** Description of diagnosis parameters

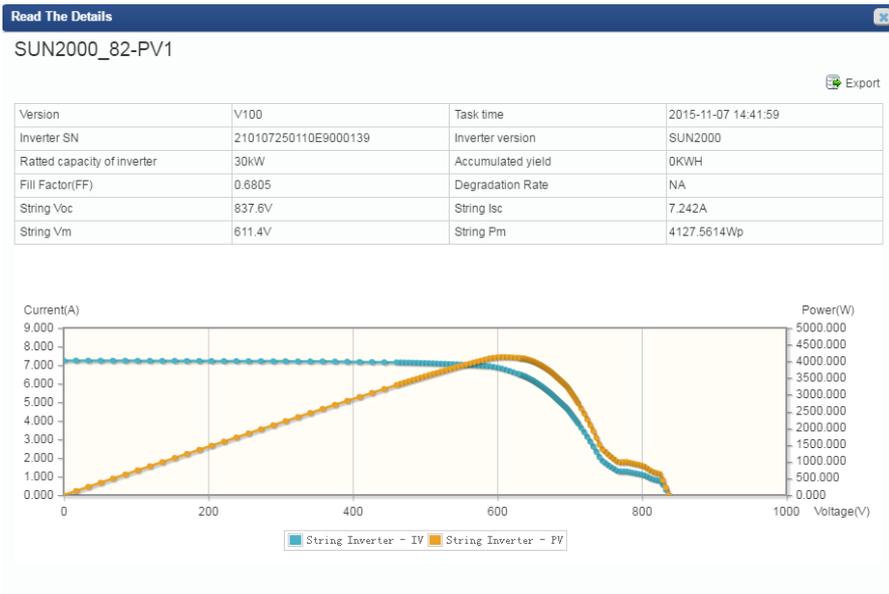
Parameter	Description
Task Status	Status of the I-V diagnosis task
Health condition	Health status of strings
Abnormal Type	A value is displayed for the exception type when the value of <b>Health condition</b> is <b>Abnormal</b> .
Operation	<ul style="list-style-type: none"> <li>- Export the diagnosis details: Select the string whose diagnosis details are to be exported and click <b>Export</b> to export the diagnosis details in batches.</li> <li>- View the diagnosis details. For details, see <a href="#">Step 4.2</a>.</li> </ul>

2. View the diagnosis details.

- a. Click **Read The Details**.

The diagnosis details are displayed, as shown in [Figure 5-29](#).

**Figure 5-29** Diagnosis details



You can view the detailed parameters and current and power curves of strings on the **Read The Details** page.

- b. Click **Export**.

You can export the detailed information of strings.

**Step 5** Query the intelligent diagnostic report.

1. Click  under **Operation** column in **Figure 5-27**.

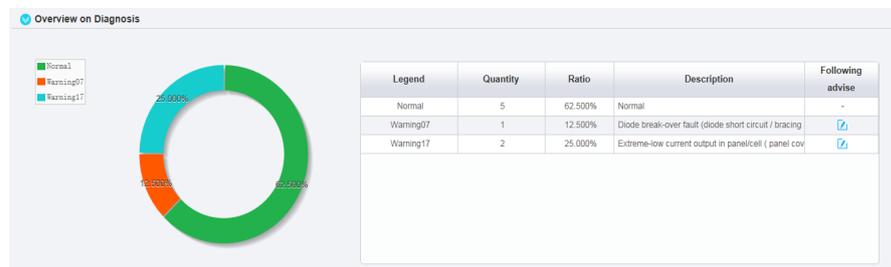
The **Diagnostic Report** page is displayed.

2. The basic information of the string diagnosis task is displayed under **Information of Task** area.

3. Query **Overview on Diagnosis**.

The pie chart and detailed information of the diagnosis result are displayed, as shown in **Figure 5-30**.

**Figure 5-30** PV string diagnosis overview



For the overview parameter description, see **Table 5-24**.

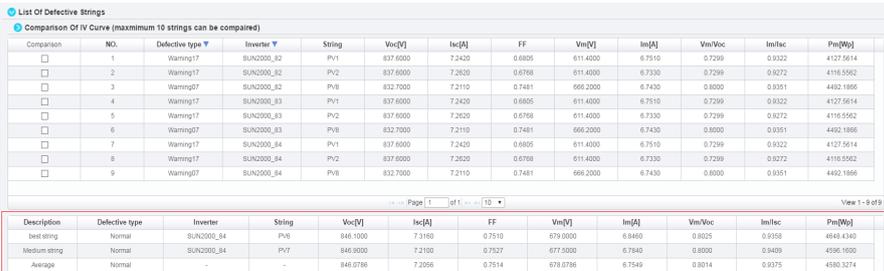
**Table 5-24** PV string diagnosis overview

Parameters	Description
Legend	Corresponds to each legend in the pie chart.
Quantity	Sum of the strings.
Ratio	Proportion of the strings.
Description	Description of health status for strings.
Following Advise	Click  to display suggestions for each exception.

4. Query **List Of Defective Strings**.

Information of all defective strings is displayed, as shown in **Figure 5-31**.

**Figure 5-31** Defective string list



Comparison	NO.	Defective type	Inverter	String	Voc[V]	Isc[A]	FF	Vm[V]	Im[A]	Vm/Voc	Im/Isc	Pm[W]
<input type="checkbox"/>	1	Warning17	SUN2000_32	PV1	837.6000	7.2420	0.8805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	2	Warning17	SUN2000_32	PV2	837.6000	7.2020	0.8768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	3	Warning07	SUN2000_32	PV6	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866
<input type="checkbox"/>	4	Warning17	SUN2000_33	PV1	837.6000	7.2420	0.8805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	5	Warning17	SUN2000_33	PV2	837.6000	7.2020	0.8768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	6	Warning07	SUN2000_33	PV6	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866
<input type="checkbox"/>	7	Warning17	SUN2000_34	PV1	837.6000	7.2420	0.8805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	8	Warning17	SUN2000_34	PV2	837.6000	7.2020	0.8768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	9	Warning07	SUN2000_34	PV6	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866

Description	Defective type	Inverter	String	Voc[V]	Isc[A]	FF	Vm[V]	Im[A]	Vm/Voc	Im/Isc	Pm[W]
Best string	Normal	SUN2000_34	PV6	846.1000	7.3160	0.7510	679.0000	6.8460	0.8025	0.9358	4644.4340
Medium string	Normal	SUN2000_34	PV7	840.9800	7.2100	0.7527	677.9800	6.7840	0.8000	0.9489	4595.1600
Average	Normal	-	-	840.0766	7.2056	0.7514	678.0766	6.7549	0.8014	0.9375	4600.3274

 **NOTE**

In the red frame, the optimal value, intermediate value, and average value of the scanned normal strings are displayed as well as related parameter information of corresponding strings.

5. Select a string under the **Comparison** column to display the I-V curve comparison analysis diagram of the corresponding string, as shown in **Figure 5-32**.

**Figure 5-32** String I-V curve comparison analysis diagram



6. **Optional:** Click **Export** in the upper left corner of the page. Select the format of the intelligent diagnostic report to be exported in the drop-down list box as required.

There are **CSV Format** and **PDF Format** available.

----End

### 5.1.6.9 Managing Device Licenses

The inverter license controls the smart I-V curve diagnosis function. You can manage device licenses on the NetEco 1000S client, for example, loading device licenses and viewing device license information. The NetEco 1000S supports license management only for inverters.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.1.3.1 Accessing Devices Through the SmartLogger](#), [5.1.3.2 Accessing the Directly Connected Inverter](#) or [5.1.3.3 Searching Devices Based on Serial Port Addresses](#).
- You have logged in as system administrator or system operator.

#### Procedure

**Step 1** On the main menu, choose **Maintenance > Device License Management**.

**Step 2** In the navigation tree on the left, select the target device.

You can also specify parameters such as **Device name**, **SN** and **License Status** on the **License Details**, **License Application**, **License Loading**, or **License Revocation** tab page, and then click **Query**. The devices that meet the search criteria are displayed.

**Step 3** Perform operations according to [Table 5-25](#).

**Table 5-25** License-related operations

Task Name	Task Description	Procedure
Querying license information	For routine operation and maintenance, the license validity and function usage are queried routinely to check whether the license is about to expire and solve the problems in a time manner. In this way, the device can function properly.	<p>Choose <b>License Details</b> to view the license information of the target device.</p> <ol style="list-style-type: none"> <li>1. Select the target device and click <b>Refresh</b>. The license information is refreshed.</li> <li>2. Click <b>Device Name</b> of the target device. Then the function control information of the device will be displayed in the lower part of the page, as shown in <b>Figure 5-33</b>.</li> </ol> <p><b>Figure 5-33</b> Function control information</p>  <p>The screenshot shows a web interface titled 'Details SUN2000L_11'. Below the title is a section 'License Details' containing a table with two columns: 'Function Name' and 'Supported or Not'. The first row of the table contains 'Smart I-V Curve Diagnosis' and 'Supported'.</p> <ol style="list-style-type: none"> <li>3. <b>Optional:</b> Export license details. <ul style="list-style-type: none"> <li>- Select <b>Export All</b> from the <b>Export Details</b> drop-down list box and save the license information of all devices that are queried to the PC.</li> <li>- Select the target device in the displayed operation area. Select <b>Export Selected</b> from the <b>Export details</b> drop-down list box and save the license information of the target device to the PC.</li> </ul> </li> </ol> <p><b>NOTE</b> The license information file is saved as a <b>.csv</b> file.</p>
Exporting a license application file	The license application file contains the content required for applying the device license. When you need to apply for a device license, export a license application file on the <b>License Application</b> page.	<ol style="list-style-type: none"> <li>1. Choose <b>License Application</b>.</li> <li>2. Export the license application file. <ul style="list-style-type: none"> <li>- Select <b>Export All</b> from the <b>Export License Application File</b> drop-down list box and save the license application file of all devices that are queried to the PC.</li> <li>- Select the target device in the displayed operation area. Select <b>Export Selected</b> from the <b>Export License Application File</b> drop-down list box and save the license application file of the target device to the PC.</li> </ul> </li> </ol> <p><b>NOTE</b> The license application file is saved as an <b>.xls</b> file.</p>

Task Name	Task Description	Procedure
Loading a license	If the license has not been imported for the device or the license is about to expire, you need to import the new license file to the device, ensuring that the device functions properly.	<ol style="list-style-type: none"> <li>1. Choose <b>License Loading</b>.</li> <li>2. Click <b>Upload License</b>. The <b>Upload License</b> dialog box is displayed.</li> <li>3. Click <b>Browse</b> and select the license to be imported. The License file format should be either <b>.dat</b> or <b>.zip</b>. The number of license file in <b>.zip</b> file cannot exceed 6000.</li> <li>4. Click <b>Upload</b>. The license file is uploaded.</li> <li>5. Load the license. <ul style="list-style-type: none"> <li>- Select <b>Load All</b> from the <b>Load License</b> drop-down list box and import the loaded license file to all the devices that are queried.</li> <li>- Select the target device in the displayed operation area. Select <b>Load Selected</b> from the <b>Load License</b> drop-down list box and import the loaded license file to the target device.</li> </ul> </li> </ol>
Revoking a license	Before a device is replaced, the current device license needs to be revoked so that the revocation code can be generated and used for applying for a new device license. After the monitoring board or device is replaced, you can import the new license file to the device, and then the device functions properly.	<ol style="list-style-type: none"> <li>1. Choose <b>License Revocation</b>.</li> <li>2. Select the device whose license needs to be revoked.</li> <li>3. Click <b>Revoke License</b>.</li> <li>4. In the displayed <b>Warning</b> dialog box, enter the password of the user and click <b>OK</b>.</li> <li>5. <b>Optional:</b> Export the revocation code file. <ul style="list-style-type: none"> <li>- Select <b>Export All</b> from the <b>Export Revocation Code File</b> drop-down list box and save the revocation code file of all devices that are queried to the PC.</li> <li>- Select the target device in the displayed operation area. Select <b>Export Selected</b> from the <b>Export Revocation Code File</b> drop-down list box and save the revocation code file of the target device to the PC.</li> </ul> </li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● The revocation code file is saved as an <b>.csv</b> file.</li> <li>● You need to log in as an admin user to export the revocation code file.</li> </ul>

---End

## 5.1.7 System Management

### 5.1.7.1 Managing User Information

This section describes how to manage user information. The user management function allows you to manage the information about and operation rights of users.

#### 5.1.7.1.1 User Categories

This section describes user categories. You need to familiarize yourself with these user categories before managing users.

Software users: system administrator, system operators, and guest users.

Third-party user: OpenAPI users.

Operation permissions vary by user. [Table 5-26](#) lists the software users and their operation permissions.

**Table 5-26** User operation permissions

User Category	Operation Permissions
<p>System administrator</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● The system administrator cannot be deleted or modified.</li> <li>● To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.</li> </ul>	<p>The system administrator has all the operation permissions, including:</p> <ul style="list-style-type: none"> <li>● PV plant management: creates, modifies, and deletes PV plants; sets information of PV plants, and browses information about PV plants, device lists, and current alarms.</li> <li>● Device management: manually and automatically connects devices, searches, modifies, and deletes devices, sets information of devices, browses information about devices and current alarms, and remotely controls a SmartLogger and PID.</li> <li>● Managing Other Devices: adds other devices.</li> <li>● Historical data: queries alarm logs, performance data, and data analysis; synchronizes historical performance data, and exports data.</li> <li>● Device maintenance: upgrades devices, replaces devices, manages devices, patrol to the inverter, obtains NetEco logs and device logs, and performs smart I-V curve diagnosis.</li> <li>● System management: manages users, sets remote notification, queries user logs, has license management, and sets the system parameters.</li> </ul>

User Category	Operation Permissions
System operators	<ul style="list-style-type: none"> <li>● PV plant management: creates, modifies, and deletes PV plants, sets information of PV plants, and browses information about PV plants, device lists, and current alarms.</li> <li>● Device management: automatically connects devices, modifies and deletes devices, sets information of devices, browses information about devices and current alarms, and remotely controls a SmartLogger and PID.</li> <li>● Historical data: queries alarm logs, performance data, and data analysis; synchronizes historical performance data, and exports data.</li> <li>● Device maintenance: patrol to the inverter, manages devices, performs smart I-V curve diagnosis and obtains device logs.</li> <li>● System management: manages users and sets remote notification rules.</li> </ul>
Guest users	<ul style="list-style-type: none"> <li>● PV plant management: modifies descriptions and parameters of PV plants, browses information about PV plants, device lists, and current alarms, and uploads and deletes PV plant images.</li> <li>● Device management: browses information, settings and current alarms about devices.</li> <li>● Historical data query: queries alarm logs, performance data, and data analysis; and exports data.</li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● Historical data query permissions need to be assigned by the system administrator or operator to the guest user.</li> <li>● After the system administrator or operator modifies the permissions of the guest user, the guest user needs to log in to the NetEco 1000S client again to refresh the permissions.</li> </ul>

User Category	Operation Permissions
<p>OpenAPI users</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● The OpenAPI users can only be created by the system administrator and system operators.</li> <li>● The OpenAPI users do not have permission to access the NetEco 1000S or query other user information in the NetEco 1000S.</li> <li>● For account security purposes, you are advised to change the user password periodically (for example, at an interval of 3 months) to avoid security risks, such as violent key cracking. <ul style="list-style-type: none"> <li>● If the system administrator creates the OpenAPI user, only the system administrator can reset the password.</li> <li>● If the system operator creates the OpenAPI user, the system administrator or operator can reset the password.</li> </ul> </li> </ul>	<p>You can access the data query interface to query the following data:</p> <ul style="list-style-type: none"> <li>● PV plant list;</li> <li>● Device list (only inverter and EMI data included);</li> <li>● Real-time monitoring data of a specific PV plant;</li> <li>● Real-time monitoring data of a device under a specific PV plant (only inverter and EMI data included);</li> <li>● Yearly, monthly, and daily performance data of a specific PV plant as well as its total performance data.</li> </ul>

### 5.1.7.1.2 Adding a User

This section describes how to add a user on the NetEco 1000S. You can add users as required. The operation permissions of users vary according to user categories.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 5-34](#).

Figure 5-34 User

User Name	User Type	PV Plant	Email address	Description	Use Status	Operation
admin	Administrator	All PV Plant			Normal	
hycaozuo	Operator	hy1ddddd,fe	huang****@huawei.com		Normal	
hyguest	Guest	hy1ddddd,fe	huang****@huawei.com		Normal	
wdwdwdw	Operator	PV Plant	lkmi****@nindj.kjshsdjhb		Normal	
hyhycaozuo	Operator	hy1ddddd,fe	huang****@huawei.com		Normal	
HYHYHY	Operator	fe,hy1ddddd	huang****@huawei.com		Normal	
hysssssssss	Operator	fe,hy1ddddd	huang****@huawei.com		Normal	
654321	Guest	CWBRV,FE,PV Plant,ds...	dongy****@huawei.com		Normal	
123456	Operator	CWBRV,FE,PV Plant,ds...	huang****@huawei.com		Normal	

NOTE

System operators can see only their own information and information about guest users and OpenAPI users they have created.

**Step 3** Click **Create User**.

The **Create User** window is displayed.

**Step 4** Set the user parameters according to [Table 5-27](#) and then click **OK**.

Table 5-27 Parameter description

Parameter	Description
User name	<p>Name of the new user.</p> <p>The user name can only contain English characters (A to Z and a to z), digits, hyphens, or underlines.</p> <p><b>NOTE</b></p> <p>The user name cannot be <b>null</b> or <b>NULL</b>.</p> <ul style="list-style-type: none"> <li>System operators can only create guest users and OpenAPI users. The operators can also bind PV Plant with guest users and bind the PV Plants whose data can be queried with OpenAPI users. After the login, guest users can only manage PV Plants bound with the guest users and OpenAPI users can only query data of PV Plants bound with the OpenAPI users.</li> <li>When the system administrator adds the permission of a device for the guest or OpenAPI users created by the system operator, the system operator has no permission of this device.</li> <li>When the system administrator cancels the permission of a device managed by the system operator, guest users and OpenAPI users created by the system operator still have the permission of this device.</li> </ul> <p>See <a href="#">5.1.7.1.6 Setting an Account Policy</a> to set the user name length.</p>

Parameter	Description
Password	<p>Password of the new user. The password must comply with the following rules:</p> <ul style="list-style-type: none"> <li>● The password cannot be the same as the user name or the user name in a reversed order.</li> <li>● The password contains 8 to 32 characters.</li> <li>● The password contains three of the following: <ul style="list-style-type: none"> <li>- Lowercase letters</li> <li>- Uppercase letters</li> <li>- Digits</li> </ul> </li> </ul> <p>The password is advised to contain special characters, which include !"#\$%&amp;'()*+,-./:;&lt;=&gt;?@[\\]^`{ }~ and space.</p> <p><b>NOTE</b> The system administrator can set the password complexity policy on the NetEco 1000S client. For details, see <a href="#">5.1.7.1.7 Setting a Password Policy</a>.</p>
Email address	Email address of the user.
User type	Type of the user. The type can be <b>Operator</b> , <b>Guest</b> , or <b>OpenAPI User</b> .
Optional permissions <b>NOTE</b> This parameter would not be displayed when creating users in the <b>Operator</b> group.	<p>The system administrator or operator can assign the historical data query permissions to the guest user.</p> <ul style="list-style-type: none"> <li>● Select <b>Query historical data</b>: indicating that the user has the historical data query permissions.</li> <li>● Clear <b>Query historical data</b>: indicating that the user does not have the historical data query permissions.</li> </ul>
Description	<p>Description of the user.</p> <p>The description cannot contain more than 255 characters.</p>
User status	<p>Status of the user. The status includes:</p> <ul style="list-style-type: none"> <li>● Disable: The user is disabled and cannot log in to the NetEco 1000S.</li> <li>● Enable: The user can log in to the NetEco 1000S.</li> </ul>
Select a PV plant that can be accessed	Permission for the user to access the PV plant.

The added user is displayed in the user list in the **User Management** window.

---End

### 5.1.7.1.3 Modifying User Information

This section describes how to modify user information. If information about a user needs to be changed, the password of the user is forgotten or the account is locked, you can modify information about the user as an administrator.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 5-35](#).

**Figure 5-35** User

User Name	User Type	PV Plant	Email address	Description	Use Status	Operation
admin	Administrator	All PV Plant			Normal	
hycaozuo	Operator	hy1ddddd.fe	huang****@huawei.com		Normal	
hyguest	Guest	hy1ddddd.fe	huang****@huawei.com		Normal	
wowdwdw	Operator	PV Plant	lkmi****@nindj.kjbhdsjhb		Normal	
hyhycaozuo	Operator	hy1ddddd.fe	huang****@huawei.com		Normal	
HYHYHY	Operator	fe.hy1ddddd	huang****@huawei.com		Normal	
hysssssssss	Operator	fe.hy1ddddd	huang****@huawei.com		Normal	
654321	Guest	CWBIV;FE;PV Plant,ds...	dongy****@huawei.com		Normal	
123456	Operator	CWBIV;FE;PV Plant,ds...	huangy****@huawei.com		Normal	

### NOTE

System operators can see only their own information and information about guest users and OpenAPI users they have created.

**Step 3** In the **User** page, you can do the following operations in [Table 5-28](#).

### NOTE

- The admin user can manage all users.
- System operators can manage only users created by it.

**Table 5-28** operations

Operations	Description
Enable	If the <b>Use Status</b> is <b>invalid</b> , you can click  to enable the account.
Disable	If the <b>Use Status</b> is <b>normal</b> , you can click  to disable the account.
Unlock	If the <b>Use Status</b> is <b>lock</b> , you can click  to unlock the account.
Edit	Click  to modify the Email address, use status, optional permissions, description and control permission of an account.

Operations	Description
Password reset	<p>When a user forgets the password for logging in to the NetEco 1000S, the user can reset the password, and then use the new password to log in to the NetEco 1000S.</p> <p><b>NOTE</b></p> <p>The password of the system administrator cannot be reset. Therefore, you have to remember the password of this user.</p> <ul style="list-style-type: none"> <li>● The password cannot be the same as the user name or the user name in a reversed order.</li> <li>● The password contains 8 to 32 characters.</li> <li>● The password contains three of the following: <ul style="list-style-type: none"> <li>– Lowercase letters</li> <li>– Uppercase letters</li> <li>– Digits</li> </ul> </li> <li>● The password is advised to contain special characters, which include !"#\$%&amp;'()*+,-./:;&lt;=&gt;?@[\\]^`{ }~ and space.</li> </ul> <ol style="list-style-type: none"> <li>1. Click .</li> <li>2. In the displayed window, set <b>New password</b> and <b>Confirm password</b>.</li> <li>3. Click <b>OK</b>.</li> </ol>
Delete	<p>Click . In the displayed window, click <b>OK</b> to delete the account.</p>

---End

## Other operations

In the **User** page, the description of all parameter is as shown in [Table 5-29](#).

**Table 5-29** GUI parameters

Parameter	Description
User Name	Displays names of all accounts in the system.
Email address	Email address of the user.
User Type	Displays the type of an account. The type includes <b>Administrator</b> , <b>Operator</b> , <b>Guest</b> , and <b>OpenAPI User</b> .
Description	Displays the description of an account.

Parameter	Description
Status	<p>Displays the status of an account. The status includes:</p> <ul style="list-style-type: none"> <li>● normal: indicates that the account is properly used.</li> <li>● invalid: indicates that the account is currently not used.</li> <li>● lock: indicates that the account is automatically locked by the system after the user enters the incorrect password for multiple times or disobeys the password policy.</li> </ul>

### 5.1.7.1.4 Querying PV Plants to Which a User Belongs

This section describes how to query PV plants to which a user belongs. This helps learn the PV plants that the user can operate and user information recorded in the PV plants, facilitating the PV plant administrator's management operation.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 5-36](#).

**Figure 5-36** User

User Name	User Type	PV Plant	Email address	Description	Use Status	Operation
admin	Administrator	All PV Plant			Normal	
hycaozuo	Operator	hy1ddddd,fe	huang****@huawei.com		Normal	
hyguest	Guest	hy1ddddd,fe	huang****@huawei.com		Normal	
wdwlwldw	Operator	PV Plant	lkml****@nindj.kjhsdjh		Normal	
hyhycaozuo	Operator	hy1ddddd,fe	huang****@huawei.com		Normal	
HYHYHY	Operator	fe,hy1ddddd	huang****@huawei.com		Normal	
hyssssssssss	Operator	fe,hy1ddddd	huang****@huawei.com		Normal	
654321	Guest	CWBIV,FE,PV Plant,ds...	dongy****@huawei.com		Normal	
123456	Operator	CWBIV,FE,PV Plant,ds...	huang****@huawei.com		Normal	

#### NOTE

System operators can see only their own information and information about guest users and OpenAPI users they have created.

**Step 3** Set search criteria.

- **PV plant:** Enter the name of the to-be-queried PV plant. You can enter names of multiple PV plants and separate them by semicolon (;).
- **User Name:** Enter the to-be-queried user name.

 **NOTE**

You can set **PV plant** or **User Name** as required.

**Step 4** Click **Query**.

---End

### 5.1.7.1.5 Modifying the Password of the Current User

This section describes how to modify the password of the current user. You are advised to modify user password regularly to ensure system security.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

#### Procedure

**Step 1** Click  from the main menu.

The **Modify Password** dialog box is displayed, as shown in [Figure 5-37](#).

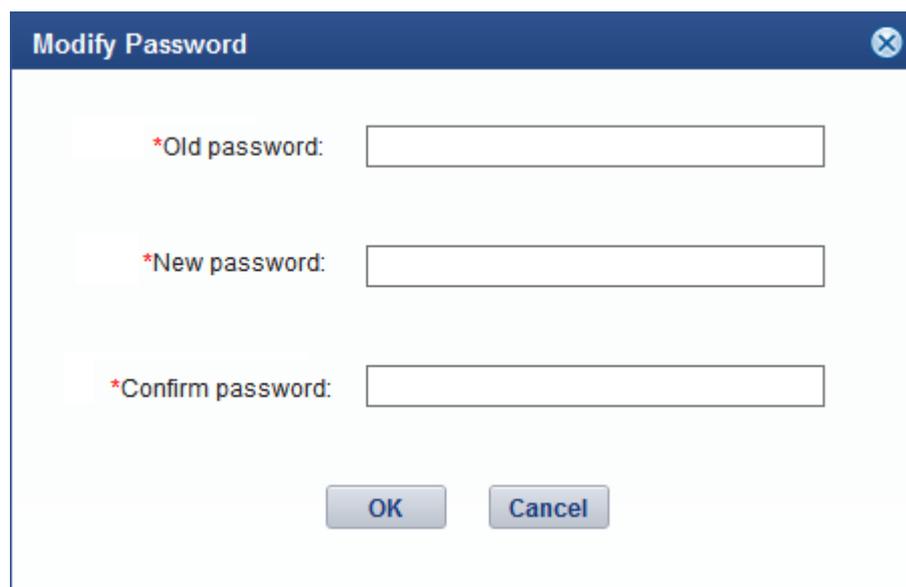


#### NOTICE

To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.

---

**Figure 5-37** Modify Password

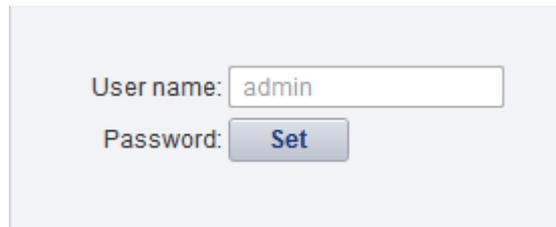


The screenshot shows a 'Modify Password' dialog box with a blue title bar. Inside, there are three text input fields, each preceded by an asterisk and the label 'Old password:', 'New password:', and 'Confirm password:'. At the bottom of the dialog, there are two buttons: 'OK' and 'Cancel'.

**Step 2 Optional:** The current user is system administrator or system operators can change the password in the following way.

1. Choose **System > User Management** from the main menu;
2. The **User Management** dialog box is displayed, Choose **Modify Password** from the menu bar on the left, as shown in [Figure 5-38](#);
3. Click **Set** in [Figure 5-38](#), The **Modify Password** dialog box is displayed, as shown in [Figure 5-37](#).

**Figure 5-38** Modify admin Password



**Step 3** Enter the old password and new password and confirm the new password.

 **NOTE**

- The password cannot be the same as the user name or the user name in a reversed order.
- The password contains 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#\$%&'()\*+,-./:;<=>?@[\\]^\_{|}~ and space.

**Step 4** Click **OK**.

----End

### 5.1.7.1.6 Setting an Account Policy

This topic describes how to set an account policy to improve access security of the NetEco. The account policy settings include the length of the user name and the policies related to user login.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Context

- The account policy applies to the following users after the account policy is successfully set:
  - New users.
  - Users whose information is modified.
- Account policies apply to all accounts except system administrator.
- The NetEco provides the default account policy, and you can modify it as required.

The current login account will be locked if the number of consecutive failed login attempts exceeds the preset value within a certain period. The locking policy is as follows:

- system administrator: The current login IP address will be locked. You can use another IP address to log in to the NetEco 1000S.
- system operators or guest users: The current login account will be locked. For details about how to unlock the account, see [5.1.7.1.3 Modifying User Information](#).

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** In the navigation tree on the left, choose **Account Policy**.

- system operators or guest users: The current login account will be locked if the number of consecutive failed login attempts exceeds the preset value within a certain period. For details about how to unlock the account, see [5.1.7.1.3 Modifying User Information](#).
- system administrator: The current login IP address will be locked 5 minutes if the number of consecutive failed login attempts more than 5 within 10 minutes.



### NOTICE

Restart the service will make the lock failed, please use caution.

---

**i** Account policies apply to all accounts except admin.

Min. user name length:

Account disabling policy

The account has not been used for (consecutive days):

Enable account lock policy

Auto-lock Conditions

Allowed duration (min):

Consecutive failed login attempts:

Account Lock Duration

Lock duration (min):

Permanent lock

**Apply**

**Step 3** On the **Account Policy** page, set the account policy as required.

When **Account disabling policy** is selected, this policy is applicable to all users except the admin user. If a user has not logged in for a consecutive period longer than the period

specified in **The account has not been used for (consecutive days)**, the account will be disabled.

To enable a disabled account, see [5.1.7.1.3 Modifying User Information](#) and perform the required operations.

**Step 4** Click **Apply**.

---End

### 5.1.7.1.7 Setting a Password Policy

You can set a password policy to improve access security of the NetEco. The password policy settings include the user password complexity rules, password change interval, and character restriction.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Context

- A password policy applies to all users once it is configured. After the minimum length of the user password is specified and validated, if an online user wants to change the password, the user needs to set the new password based on the specified minimum password length requirements.
- You need to set a password based on the password policy when you create a user.
- A new password policy does not affect the configured password.
- The NetEco provides the default password policy, and you can modify it as required.



#### NOTICE

Disabling the functions of password strength policies and password change intervals will lower account security. You are advised to enable all password security policies provided by the NetEco.

---

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Password Policy** from the menu bar on the left, as shown in [Figure 5-39](#).

**Figure 5-39 Password Policy**

**Step 2** In the window shown in [Figure 5-39](#), set **Password Policy** as required.

**NOTE**

When you change the passwords of other users as system administrator, the value of **Enable account lock policy** has no impact on the change. That is, the password change interval is not limited when you change the passwords of other users as system administrator.

**Step 3** Click **Apply**.

----End

### 5.1.7.1.8 Managing the Online Users

You can view online user to find unauthorized login users and log out these users, which prevents unauthorized operations performed on the NetEco 1000S client.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** In the navigation tree on the left, choose **View Online User**.

**Step 3** On the **View Online User** page, view online users, and their login time, login IP addresses, and roles to which they belong. In addition, you can perform the following operations:

Task	Procedure
Update online user information	Click <b>Refresh</b> to update the online user information.

Task	Procedure
Force a user to log out	<p>When viewing online users, you can force an unauthorized user to log out. This prevents the unauthorized user from performing unauthorized operations on the NetEco 1000S client.</p> <ol style="list-style-type: none"> <li>1. On the <b>View Online User</b> page, click  in the <b>Operation</b> column where the required user information is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li> </ol> <p><b>NOTE</b> You are advised to view the online users at regular time, force the unauthorized users to log out in time.</p>
Enter Single session Mode	<p>Users can enter the single-session mode to prevent the interference from other users' operations.</p> <ol style="list-style-type: none"> <li>1. Select <b>Single session Mode</b>.</li> <li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● After entering the single-session mode, users can log in to the NetEco 1000S only on one terminal.</li> <li>● After entering the single-session mode, the logged-in users are not affected.</li> <li>● Single-session is a safe mode, recommended for use.</li> </ul>
Exit Single session Mode	<ol style="list-style-type: none"> <li>1. Deselect <b>Single Session Mode</b> .</li> <li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li> </ol> <p><b>NOTE</b> After exiting the single-session mode, users can re-log in to the NetEco 1000S on multiple terminals.</p>

----End

### 5.1.7.1.9 Setting the Idle Logout Time

This topic describes how to set the client to be logged out automatically. To prevent other users from performing unauthorized operations, the NetEco 1000S allows you to set related idle parameters. The client is automatically logged out after being left idle for a specified period of time.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as system administrator.

## Context

This operation applies to the system administrator, system operators, and guest users. For OpenAPI users, the idle logout time is 20 minutes and cannot be modified.

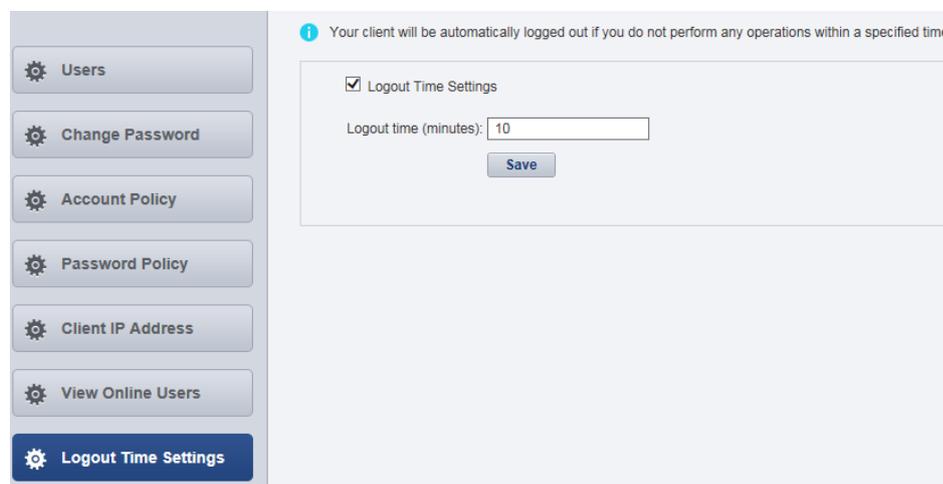
## Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** Choose **Logout Time Setting** on the left.

The **Logout Time Setting** page is displayed, as shown in [Figure 5-40](#).

**Figure 5-40** Logout Time Setting



**Step 3** Set the value of **Logout time (minutes)**.

By default, NetEco 1000S enables the function of logging out users after timeout. To disable this function, clear **Logout Time Settings**.

### NOTE

The logout time ranges from 1 to 1440 minutes. Setting the logout time within 3 minutes is advised.

**Step 4** Click **Save**.

----End

## Follow-up Procedure

After the client is automatically logged out, the current user needs to log in to the NetEco 1000S again.

### 5.1.7.1.10 Setting an IP Access Control Policy

This section describes how to set an access control policy. In this way, users can only use the specified IP address to log in to the NetEco, ensuring the access security of the NetEco.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

## Context

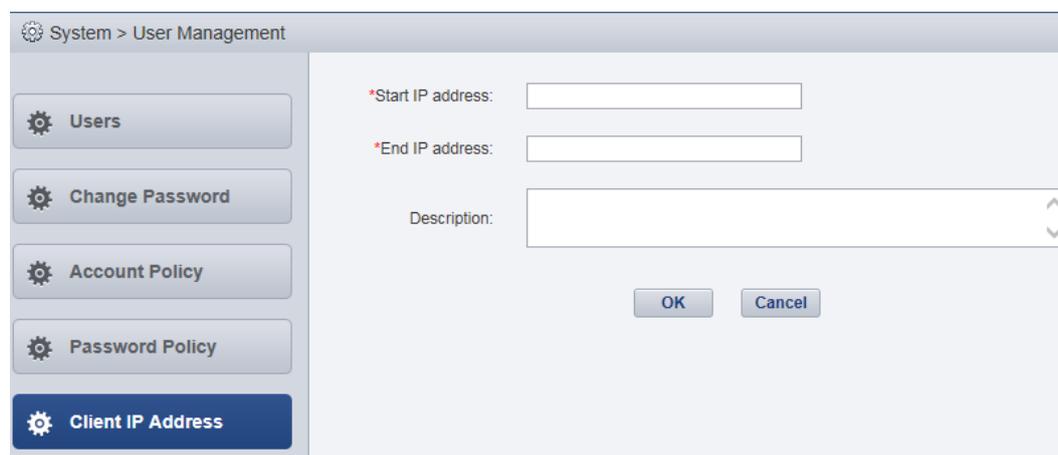
To ensure the access security of the NetEco, you are advised to set an access control policy.

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Client IP Address** from the menu bar on the left. In the displayed **Client IP Address** window, click **Create**, as shown in [Figure 5-41](#).

**Figure 5-41** Client IP Address



**Step 2** Set **Start IP address**, **End IP address**, and **Description** for accessing the client and click **OK**.

----End

### 5.1.7.1.11 Setting Login Time Control Policies

After the login time control policies are set, users other than **admin** can log in to the NetEco 1000S only at the specified control time, which ensures NetEco 1000S access security.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

## Context

If system administrator wants to control the time segment on which other users can access the NetEco 1000S, login time control policies need to be set. After the login time control policies are enabled, the following functions can be implemented:

- Users other than **admin** can log in to the NetEco 1000S only on the control time segment.
- The logged-in user will be forcibly logged out if the valid access time expires.

## Procedure

**Step 1** Choose **System > User Management > Login Time Control** from the main menu

The **Login Time Control** page is displayed, as shown in [Figure 5-42](#).

**Figure 5-42** Login Time Control

**i** Daily start and end time setting notes: By default, the second of the start time is 00, and the second of the end time is 59. For example, if the start and end time is set to 02:00~02:59, the actual time period is 02:00:00~02:59:59.

Enable login time control

\* Start date: 2016-06-15 End date: 2016-06-15

\* Start time: 00 : 00 End time: 00 : 00

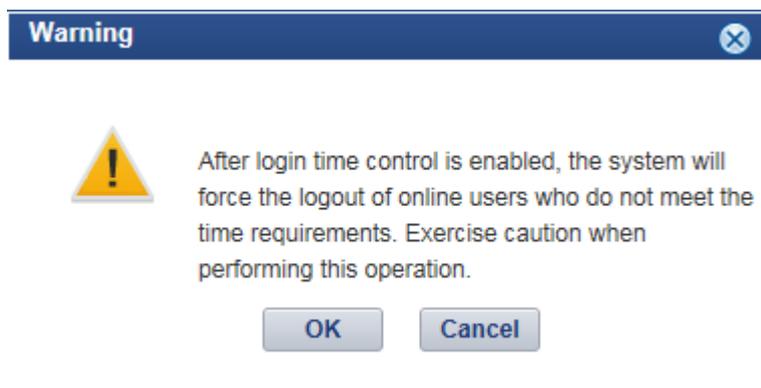
Description:

Apply

**Step 2** Select **Enable login time control**.

Information shown in [Figure 5-43](#) is displayed.

**Figure 5-43** Login time control enabling prompt



**Step 3** Set login time control policies according to [Table 5-30](#).

**Table 5-30** Setting login time control policies

Parameter	Configuration Method
Start date	Select the start date for the login from the drop-down list.
End date	Select the end date for the login from the drop-down list. The end date must be later than or equal to the start date.
Start time	Select the start time for the login from the drop-down list. Other users are allowed to access the NetEco 1000S since the start time.
End time	Select the end time for the login from the drop-down list. Other users are not allowed to access the NetEco 1000S after the end time. The end time must be later than or equal to the start time.
Description	(Optional) Enter the description information about the login time control policy. A maximum of 255 characters are allowed.

---End

### 5.1.7.1.12 Setting Access Control Policies for Mobile Terminals

This section describes how to set access control policies for mobile terminals. In this way, users can log in to the NetEco only from the specified mobile terminal, ensuring the access security of the NetEco.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.
- You have obtained the identification number of the mobile terminal.

#### NOTE

Identification number of the iOS mobile terminal is the IDFV identifier. Identification numbers of other mobile terminals are IMEIs/MEIDs of mobile phones or MAC addresses of tablets.

#### Context

To ensure the access security of the NetEco, enable the access control policies for mobile terminals is advised.

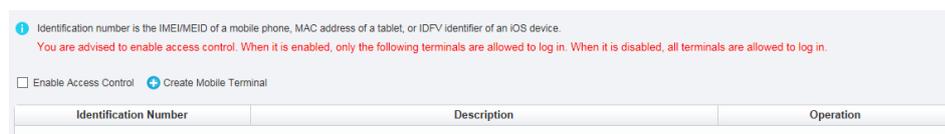
The identification number of the mobile terminal has been anonymized on the NetEco 1000S WebUI to protect user's privacy.

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Mobile Terminal Access Control** from the menu bar on the left, as shown in [Figure 5-44](#).

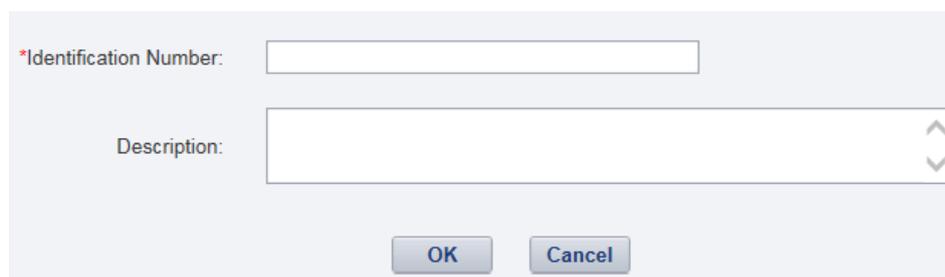
**Figure 5-44** Mobile Terminal Access Control



**Step 2** In the displayed **Mobile Terminal Access Control** window, click **Create Mobile Terminal**.

The **Create Mobile Terminal** page is displayed, as shown in [Figure 5-45](#)

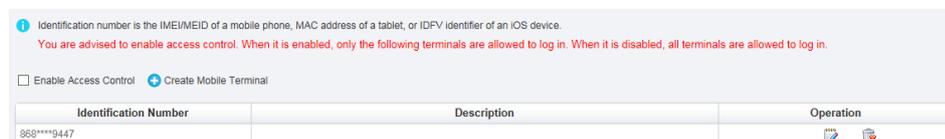
**Figure 5-45** Mobile terminal access setting



**Step 3** Enter the identification number of the mobile terminal that is allowed to access the NetEco, set **Description**, and click **OK**.

After the access control policies are set, the page similar to [Figure 5-46](#) is displayed.

**Figure 5-46** Access Control Policy



**Step 4** Perform the following operations in the [Figure 5-44](#) window.

- Select **Enable Access Control**: The access control policy for the mobile terminal is enabled, and users can log in to the NetEco only from the specified mobile terminal.
- Deselect **Enable Access Control**: The access control policy for the mobile terminal is disabled, and users can log in to the NetEco from any mobile terminals.

----End

## Follow-up Procedure

- You can click  under **Operation** in [Figure 5-46](#) to modify the specified mobile terminal.
- You can click  under **Operation** in [Figure 5-46](#) to delete the specified mobile terminal.

### 5.1.7.2 Querying User Operation Logs

This section describes how to query user operation logs to know the operations performed by users.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Context

The NetEco 1000S checks whether the operation log is out of the life cycle, or whether the number of user operation logs exceeds the preset threshold, at the specified time every day. If the operation log is out of the life cycle, the NetEco 1000S automatically deletes the exceeding logs. If the number exceeds the threshold, the NetEco 1000S automatically deletes 20% of the operation logs.

- Check time: 01:00 every day.
- Life cycle: half a year by default. You can change the life cycle of operation logs by referring to [5.1.8.22 What Do I Do to Control the User Authorization upon First Login?](#).
- Threshold: 100,000.

#### NOTE

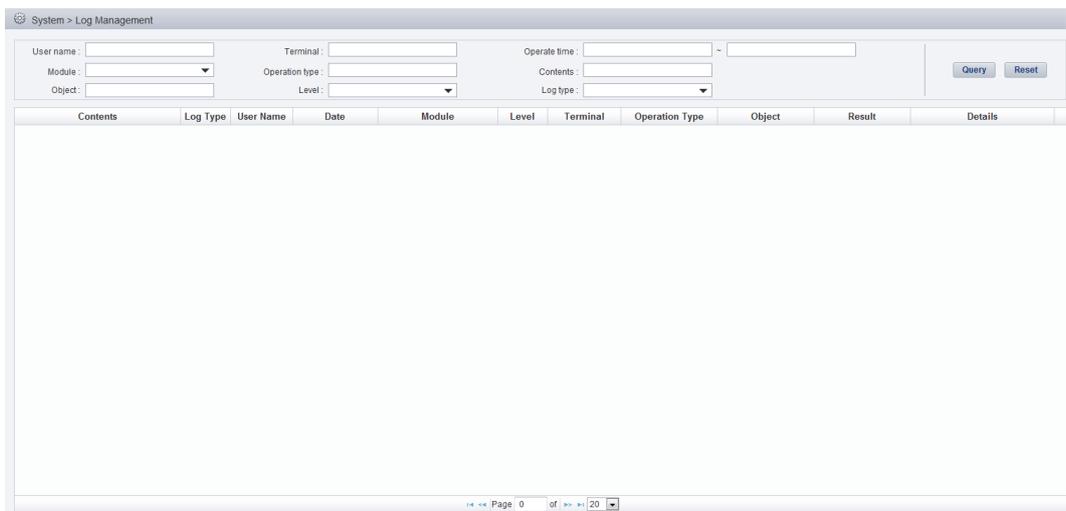
The user operation logs about user authorization will not be deleted, unless this user is deleted.

#### Procedure

**Step 1** Choose **System > Log Management** from the main menu.

The **Log Management** window is displayed.

**Figure 5-47** Log Management



**Step 2 Optional:** Set the query criteria by referring to [Table 5-31](#).

**Table 5-31** Query criteria parameters

Parameter	Description
User name	Name of a user.

Parameter	Description
Module	<p>Module in which an operation is performed, including:</p> <ul style="list-style-type: none"> <li>● Device management: involves plant creation, modification, and deletion, device search, device access, and device deletion.</li> <li>● Configuration management: involves device information modification and control command delivery.</li> <li>● Security management: involves user login and logout, and user creation, user information modification, and user deletion.</li> <li>● Software management: involves software package upload, device upgrade, and software package deletion.</li> <li>● Performance management: involves historical performance data synchronization.</li> <li>● Smart I-V Curve Diagnosis: involves the start, execution, and stop of smart I-V curve diagnosis tasks and export of diagnosis reports.</li> <li>● Device log: involves the obtaining of device logs.</li> <li>● Remote notification: involves email server parameter and SMS message server parameter modification, and remote notification rules creation, modification, deletion, enabling, and disabling.</li> </ul> <p><b>NOTE</b></p> <p>The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.</p> <p>Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.</p> <ul style="list-style-type: none"> <li>● License management: involves querying License Information, importing or revoking a License and obtaining an ESN.</li> <li>● System settings: involves the clock synchronization, baud rate modification, alarm resetting, benefit setting, and collection period setting.</li> </ul>
Object	<p>Object on which an operation is performed, including:</p> <ul style="list-style-type: none"> <li>● Local NetEco</li> <li>● NetEco 1000S user</li> <li>● plant</li> <li>● Device</li> </ul>
Client IP address	<p>IP address of the PC client or identification number of the mobile client used for the login.</p>

Parameter	Description
Operation type	Type of operation a user has performed, including: <ul style="list-style-type: none"><li>● System login</li><li>● System logout</li><li>● Search</li><li>● Add</li><li>● Synchronize</li><li>● Upgrade</li><li>● Modify</li><li>● Delete</li><li>● Reset</li><li>● String scanning</li></ul>
Operation time	The value must be a time segment. The start time must be earlier than or equal to the end time.
Contents	Operation performed by a certain user.
Level	Log level, including: <ul style="list-style-type: none"><li>● Risk</li><li>● Minor</li><li>● Warning</li></ul>
Log type	Log type, including: <ul style="list-style-type: none"><li>● System Logs: record NetEco 1000S running exceptions, network faults, and NetEco 1000S attacks.</li><li>● Operation Logs: record device addition and deletion.</li><li>● Security Logs: record NetEco 1000S security operation information, such as logging in to the client, changing the password, creating a user, and exiting the client.</li></ul>

**Step 3** Click Query.

----End

### 5.1.7.3 Setting Remote Notification

This section describes how to set remote notification. The NetEco 1000S notifies users of information about alarms or generated power remotely based on remote notification rules.

#### 5.1.7.3.1 Setting Parameters for the Email Server

This section describes how to set parameters for the email server for sending emails to users.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as system administrator.

 **NOTE**

You need to disable the mail filtering function of the antivirus software for the operating system.

- The PC on where the NetEco 1000S software is installed is properly connected to the email server, and you have obtained the email server's IP address (or domain name) and port number that are used for email transmission from the email server OM personnel.



**NOTICE**

TLS communication protocols include TLS1.0, TLS1.1, and TLS1.2. The NetEco supports TLS1.1, and TLS1.2 protocols. TLS1.0 has security risks. The NetEco uses TLS1.2 by default.

If an email server supports only TLS1.0, the communication connection may be insecure. In this case, replace the email server with one supporting TLS1.1 or TLS1.2.

 **NOTE**

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.

Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Choose **Email Server**.

The **Setting parameters for email server** window is displayed, as shown in [Figure 5-48](#).

**Figure 5-48** Setting parameters for email server

\*Email sending server:   
Enter an email sending server IP address or domain name(XXX.XXX.COM).

\*Email sending port No.:   
Enter an email sending server port number.

\*Sender email address:   
Enter a senders email address.

Check permission  Enable SSL

\*User name:   
Enter a senders email account.

\*Password:   
Enter a senders email password.

**Step 3** Setting parameters for email server by referring to [Table 5-32](#).

**Table 5-32** Setting parameters for email server

Parameters	Description
Email sending server	<p>Enter the IP address or domain name of the SMTP email server.</p> <p>If the domain name of a website is <b>www.yourdomain.com</b>, the domain name of the SMTP email server for this website may be one of the following:</p> <ul style="list-style-type: none"><li>● smtp.yourdomain.com</li><li>● mail.yourdomain.com</li><li>● smtp.mail.yourdomain.com</li></ul> <p>For example, the domain name of the SMTP email server for <b>email@126.com</b> is <b>smtp.126.com</b>.</p> <p>If the domain name of the SMTP email server obtained based on the preceding domain naming rule is invalid and email-based remote notification fails to be enabled, contact the email service provider to obtain the valid domain name of the SMTP email server.</p> <p>The domain names of the SMTP email servers for some frequently used email boxes are as follows:</p> <ul style="list-style-type: none"><li>● <b>126.com</b>: <b>smtp.126.com</b>.</li><li>● <b>gmail(google.com)</b>: <b>smtp.gmail.com</b>.</li><li>● <b>21cn.com</b>: <b>smtp.21cn.com</b>.</li><li>● <b>163.com</b>: <b>smtp.163.com</b>.</li><li>● <b>sohu.com</b>: <b>smtp.sohu.com</b>.</li><li>● <b>yahoo.com</b>: <b>smtp.mail.yahoo.com</b>.</li></ul>
Email sending port No.	<p>Port of email server</p> <p><b>NOTE</b></p> <p>Select the <b>Enable SSL</b>, the SMTPS protocol is used, the default port is <b>465</b>. Clear the <b>Enable SSL</b> check box, the SMTP protocol is used, the default port is <b>25</b>. Ensure that the server port is correct for successful email transmission.</p>
Sender email address	Enter the email address of the sender.
Check permission	If the SMTP email server requires authentication, select <b>Check permission</b> , and set the user name and password for connecting to the SMTP email server.
Enable SSL	<p>Select the <b>Enable SSL</b>, the SMTPS protocol is used. Clear the <b>Enable SSL</b> check box, the SMTP protocol is used.</p> <p>Use the SMTPS protocol to send email is advised.</p> <p><b>NOTE</b></p> <p>If <b>Enable SSL</b> is selected, you must verify that the email server supports the SMTPS. Otherwise, email sending will fail.</p>

**Step 4 Optional:** Test whether the parameters for the email server are set correctly.

1. Click **Test** in the **Setting parameters for email server** page.

2. Enter the **Recipient email address** in the **Test Email** text box, and click **OK**.  
The test mail is received.

**Step 5** Click **Save**.

---End

## Exception Handling

If **The test email has been sent. Please check.** is displayed on the NetEco 1000S during testing whether the parameters configured for the email server are correct, but the test mail is not received, check the following items:

- Select **Check permission**.
- **Sender email address** and **User name** are the same.

### 5.1.7.3.2 Setting Parameters for the SMS Modem

This section describes how to set parameters for the SMS modem for sending SMS messages to users.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.
- NetEco 1000S is standard edition.
- The SMS modem has been properly installed, and you have obtained the serial port number used for communication between the PC and the SMS modem.
- You have obtained the phone number of the SMS center from the telecom operator providing the SMS service.
- You have enabled the function of serial ports.



## NOTICE

To ensure NetEco 1000S system security, the NetEco 1000S shields the function of serial ports by default. After completing the operation, disable this function immediately.

---

Perform the following operations to enable and disable the function:

- Enable the function: Navigate to the **NetEco 1000S installation directory\WebRoot\WEB-INF\classes** directory, open the **userManagement.properties** file, change the value of **isStartCom** to 1, and save the change result. Then, restart the NetEco 1000S.
- Disable the function: Navigate to the **NetEco 1000S installation directory\WebRoot\WEB-INF\classes** directory, open the **userManagement.properties** file, change the value of **isStartCom** to 0, and save the change result. Then, restart the NetEco 1000S.

 **NOTE**

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.

Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

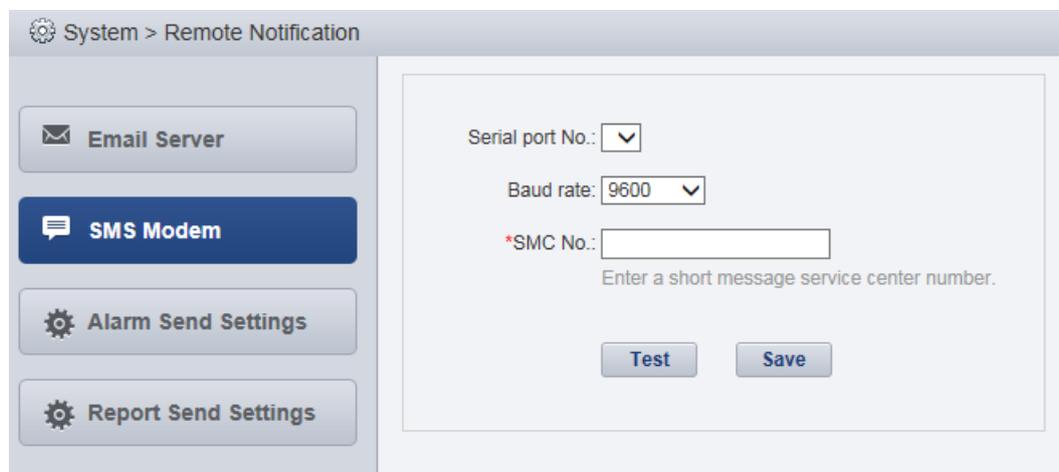
## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Click **SMS Modem**.

The **Setting parameters for SMS modem** window is displayed, as shown in [Figure 5-49](#).

**Figure 5-49** Setting parameters for SMS modem



**Step 3** Setting parameters for SMS modem by referring to [Table 5-33](#).

**Table 5-33** Setting parameters for SMS modem

Parameters	Description
Serial port No.	Enter the RS232 serial port number for communication, through which the SMS modem and the PC are connected.
Baud rate	Choose a matching baud rate.
SMC No.	<p>Enter the number of the SMC which is obtained from the SMC operator.</p> <p><b>NOTE</b></p> <p><b>SMC No.</b> must be set according to the following requirements:</p> <ul style="list-style-type: none"> <li>• A country code must be added preceding the calling number. For example, if the subscriber is located in China, the entered calling number is in the following format: +86<i>Calling number</i>.</li> <li>• If short messages are successfully sent but the subscriber does not receive the short messages, you need to remove the country code.</li> </ul>

**Step 4 Optional:** Test that parameters for the SMS modem are set correctly.

1. Click **Test** in the **Setting parameters for SMS modem** page.
2. Enter the test Phone NO. in the **Receiver phone No.** text box.
3. Click **OK**.

**Step 5** Click **Save**.

----End

### 5.1.7.3.3 Setting Alarm Sending Rules

This section describes how to set alarm sending rules. Based on the preset alarm sending rules, the NetEco 1000S sends emails or SMS messages to notify users of alarm information.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.
- You have set the email server. For details operations, see [5.1.7.3.1 Setting Parameters for the Email Server](#).
- In the NetEco 1000S standard system, to send SMS messages, the GSM modem must be set beforehand. For details, see [5.1.7.3.3 Setting Alarm Sending Rules](#).

#### Context

- The NetEco 1000S notifies users of alarm information by email: After the NetEco 1000S receives an alarm reported by a device, the NetEco 1000S waits for 3 minutes, and then sends all alarm information received within 3 minutes to users using one email.

##### NOTE

**Alarm send delay time** specifies the time that the NetEco 1000S waits before sending alarms. The default value of **Alarm send delay time** is 180s, that is, 3 minutes. After the value of **Alarm send delay time** is changed, the waiting period changes accordingly.

- The NetEco 1000S notifies users of alarm information by SMS: The NetEco 1000S sends the alarm information to users by SMS once receiving an alarm reported by a device.

##### NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.
- Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

#### Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Click **Alarm Send Settings**.

**Step 3** In the **Setting Alarm Sending Rules** page, you can perform the following operations.

Setting Alarm Sending Rules	Operation Method
<b>Create alarm sending rules</b>	<p>A alarm notification rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> <li>1. Click <b>Create</b>.</li> <li>2. On the <b>Create Rule</b> page, set parameters and click <b>Save</b>.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● You can select the alarm email and SMS language by setting <b>Mail language</b>. <ul style="list-style-type: none"> <li>– Available languages include: Chinese, English, Japanese, French, and German.</li> <li>– The <b>Mail language</b> uses the display language on the NetEco 1000S by default.</li> </ul> </li> <li>● In the NetEco 1000S standard system, at least one of parameters <b>Recipient email address</b> and <b>Recipient phone No.</b> must be set.</li> </ul>
<b>Enable alarm sending rules</b>	<p>Enable a disabled alarm notification rule.</p> <p>Select one or more alarm sending rules and click <b>Enable</b> to enable the alarm sending rules.</p>
<b>Disable alarm sending rules</b>	<p>Disable a alarm notification rule that is not used currently.</p> <p>Select one or more alarm sending rules and click <b>Disable</b> to disable the alarm sending rules.</p>
<b>Modify alarm sending rules</b>	<p>Modify a alarm notification rule to meet management requirements.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required alarm notification rule is located.</li> <li>2. On the <b>Modify Rule</b> page, modify the alarm notification rule information.</li> </ol>
<b>Delete alarm sending rules</b>	<p>Delete an unused alarm notification rule to ensure sufficient memory and proper running of tasks on the server.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required alarm notification rule is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>Yes</b>.</li> </ol>

----End

### 5.1.7.3.4 Setting Report Sending Rules

This section describes how to set report sending rules. The NetEco 1000S sends emails to users each day to notify users of day energy, income and total energy generated by the plant based on rules.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator or system operator.

- You have set the email server. For details, see [5.1.7.3.1 Setting Parameters for the Email Server](#).

## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Choose **Report Send Settings**.

### NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.
- Personal data such as email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

Enter search criteria in **Recipient email address** or **PV plant** text box, and click **Query**. Target reports sending rules meeting the preset condition are filtered out.

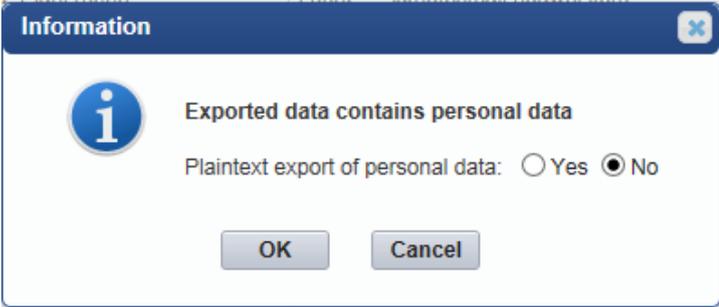
**Figure 5-50** Report Send Settings

The screenshot shows the 'Report Send Settings' interface. At the top, there are buttons for 'Create', 'Refresh', 'Enable', and 'Disable'. Below these are search filters for 'Recipient email address' and 'PV plant', followed by a 'Query' button. An 'Export' dropdown menu is also visible. The main part of the screenshot is a table with the following data:

<input type="checkbox"/>	Rule Name	Mail Subject	PV Plant	Recipient Email Address	Send On	Mail Language	Status	Operation
<input type="checkbox"/>	dsfsdfs	PV Plant Report	plant-a	s****@sakfn.com	22:00	English(English)	Enable	

**Step 3** In the **Report Send Settings** page, you can perform the following operations.

Setting Report Sending Rules	Operation Method
<b>Create report sending rules</b>	<p>Based on the created report sending rules, the NetEco 1000S sends emails to users each day to notify users of day energy and total energy generated by the plant. This helps maintenance personnel that are not onsite to learn the day energy and total energy generated by the plant on the NetEco 1000S in time.</p> <p>A report sending rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> <li>1. Click <b>Create</b>.</li> <li>2. Set <b>Rule name</b>, <b>Mail language</b>, <b>Mail subject</b>, <b>PV plant</b>, <b>Daily send time</b>, and <b>Recipient email address</b> on the <b>Create Rule</b> page.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>– Available mail languages include: Chinese, English, Japanese, French, and German. The <b>Mail language</b> uses the display language on the NetEco 1000S by default.</li> <li>– The NetEco 1000S has a mail subject by default. The language of the mail subject is the display language and changes with the <b>Mail language</b> settings.</li> <li>– The NetEco 1000S sends day energy and total energy generated by the PV Plant from 00:00 of the current day to <b>Daily send time</b>.</li> </ul> <ol style="list-style-type: none"> <li>3. Click <b>Save</b>.</li> </ol>

Setting Report Sending Rules	Operation Method
<b>Enable report sending rules</b>	Enable a disabled report sending rule. Select one or more report sending rules and click <b>Enable</b> to enable the report sending rules.
<b>Disable report sending rules</b>	Disable a report sending rule that is not used currently. Select one or more report sending rules and click <b>Disable</b> to disable the report sending rules.
<b>Modify report sending rules</b>	Modify a report sending rule to meet management requirements. <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required report sending rule is located.</li> <li>2. On the <b>Modify Rule</b> page, modify the report sending rule information.</li> </ol>
<b>Delete report sending rules</b>	Delete an unused report sending rule to ensure sufficient memory and proper running of tasks on the server. <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required report sending rule is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>Yes</b>.</li> </ol>
<b>Export report sending rules</b>	<ol style="list-style-type: none"> <li>1. Click <b>Export</b> drop-down list box.                             <ul style="list-style-type: none"> <li>- Select <b>Export All</b> from the <b>Export</b> drop-down list box and save all the report sending rules that are queried to the PC.</li> <li>- Select the target device in the displayed operation area. Select <b>Export Selected</b> from the <b>Export</b> drop-down list box and save the selected report sending rules to the PC.</li> </ul>                             The message shown in <b>Figure 5-51</b> is displayed.                             <p><b>Figure 5-51</b> Message for rule export</p>  </li> <li>2. Select whether to export personal data in plaintext format, and click <b>OK</b>.                              Personal data refers to the email information about recipients.                         </li> </ol>

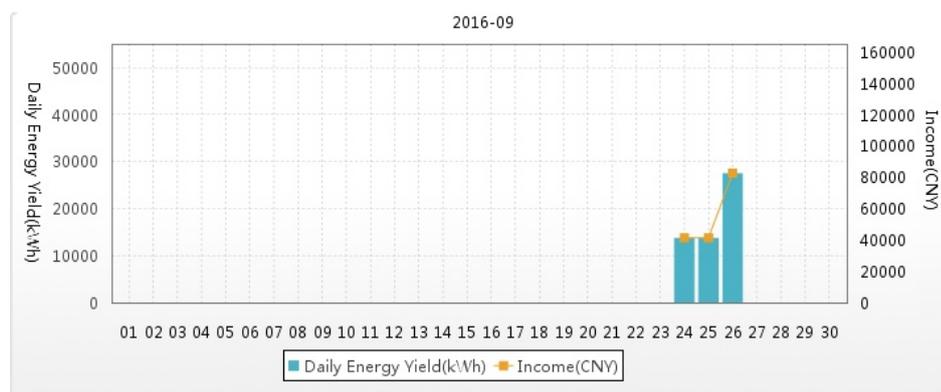
----End

## Result

After the report sending rules are set, the NetEco 1000S automatically sends a report email to the specified mailbox.

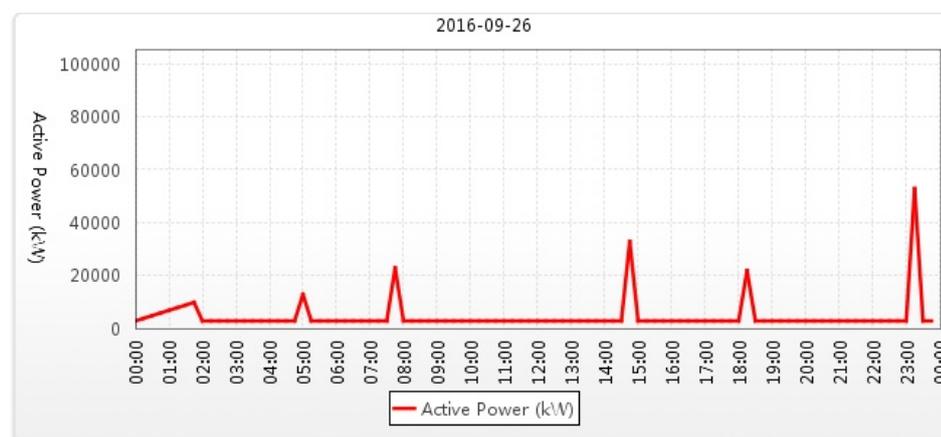
The contents of a report email include the plant and inverter parameters as well as the **Daily Energy Yield** bar graph, **Income** chart, and **Active Power** line chart. The energy **Daily Energy Yield** graph and **Income** chart provide the energy yield and income of every day in the current month, as shown in **Figure 5-52**.

**Figure 5-52** Energy yield and income



The **Active Power** line chart provides the active power of every hour on the current day, as shown in **Figure 5-53**.

**Figure 5-53** Active power



**Table 5-34** describes the descriptions of parameters in the report email.

**Table 5-34** Report email

Type	Parameter	Description
Total	Daily Energy Yield	Total energy yield of PV plants on the current day.

Type	Parameter	Description
<b>NOTE</b> Total data indicates data of all PV plants selected when you set the report sending rules.	Total Energy Yield	Total energy yield of PV plants.
	Total income	Total income generated by PV plants.
Detailed PV plant parameter	PV plant name	Name of a PV plant selected when you set the report sending rules.
	Total string capacity	Total string capacity of inverters under the PV plant. If this parameter is not set, - is displayed.
	Total Energy Yield	Total energy yield of the PV plant.
	Daily Energy Yield	Energy yield of the PV plant on the current day.
	Day Performance Ratio	Performance ratio of the PV plant on the current day.
	Daily income	Income of the PV plant on the current day.
	Total income	Total income generated by the PV plant.
Inverter parameter	Number of Inverters	Number of inverters connected to the PV plant.
	Inverter specific energy mean value	Average equivalent energy generation duration of inverters under the PV plant.
	Specific energy maximum value	Maximum equivalent energy generation duration of inverters under the PV plant.
	Specific energy minimum value	Minimum equivalent energy generation duration of inverters under the PV plant.
	Ratio threshold	Ratio threshold of the PV plant. If this parameter is not set, - is displayed.
	Number of inverters with lower mean value ratio	Number of inverters whose ratio is lower than the average value.

 **NOTE**

The table below inverter data lists **Total Energy Yield**, **Daily Energy Yield**, **Specific Energy**, and **Mean Value Ratio** of each inverter. **Mean Value Ratio** is the ratio of **Specific Energy** to **Inverter specific energy mean value** of an inverter. When the ratio is smaller than **Ratio threshold**, it is displayed in red. In this case, you need to check the inverter to ensure that related functions are available.

## 5.1.7.4 Setting System Parameters

This section describes how to set system parameters to modify communication parameters, reset alarms, synchronize the clock time, and set the income unit.

### 5.1.7.4.1 Resetting Alarms

This section describes how to reset alarms. When the target device restores its factory defaults or changes its connection mode, you must reset alarms for the target device on the NetEco 1000S. In this case, all the existing alarm records for the target device will be deleted, and alarms are synchronized from the target device to the NetEco 1000S again.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

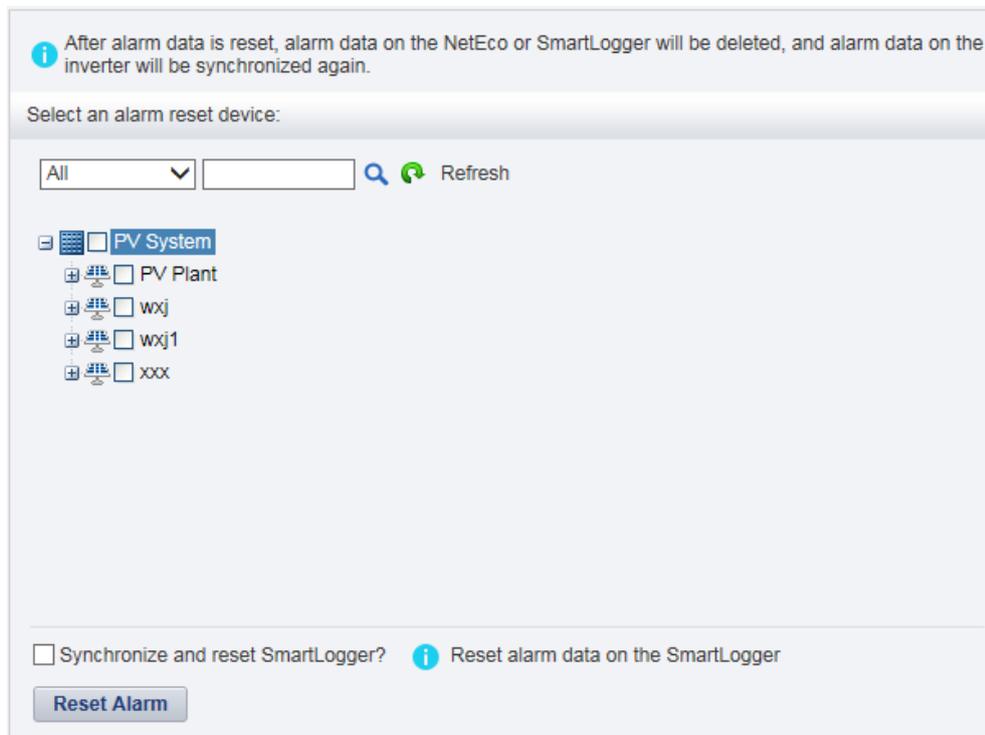
#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Reset Alarm**.

The **Reset Alarm** window is displayed, as shown in [Figure 5-54](#).

**Figure 5-54** Reset Alarm



**Step 3** Select the devices for which you want to reset alarms and click **Reset Alarm**.

The **Warn** dialog box is displayed.

 **NOTE**

If you select **Synchronize and reset SmartLogger?**, the command for resetting alarms will be sent to the SmartLogger. The SmartLogger then clears all alarms of the device in it after receiving the command.

**Step 4** Click **OK**.

After alarms are reset, alarm records on the NetEco 1000S will be deleted. However, all alarms of the device still exist on the device side.

---End

### 5.1.7.4.2 Clock Synchronization

This section describes how to synchronizes the time on the monitoring PC on which the NetEco 1000S is installed to devices. This ensures time consistency between the devices and the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Context

By default, the time synchronization function is not started.

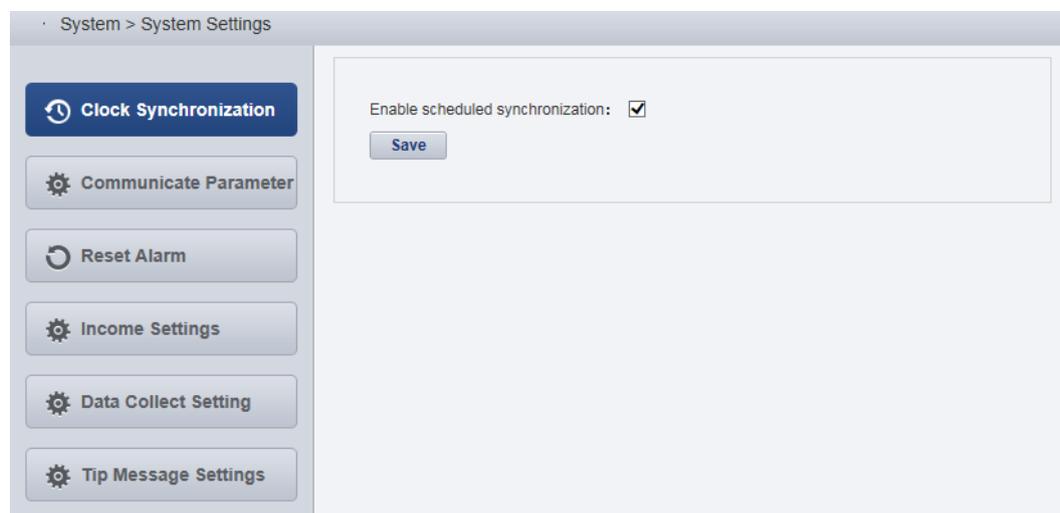
If the time synchronization function is started, the NetEco 1000S performs time synchronization per hour to synchronize time from the NetEco 1000S server to devices mounted to the plant.

#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Clock Synchronization**.

**Figure 5-55** Clock Synchronization



**Step 3** Select this check box, and click **Save**.

The message Are you sure you want to issue the command? is displayed.

**Step 4** Click **OK**.

The message The synchronization command has been issued is displayed.

**Step 5** Click **OK**.

---End

### 5.1.7.4.3 Setting Communication Parameters

This section describes how to set communication parameters. If a device is connected to the monitoring PC using a serial port, the baud rate of the device must be the same as that set on the NetEco 1000S. Otherwise, the device communicates with the monitoring PC improperly. By default, the baud rates of the device and NetEco 1000S are 9600. In normal cases, you can retain the default settings unless the actual transmission rate is insufficient. After the baud rate is changed, you need to restart the NetEco 1000S for the setting to take effect.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Communicate Parameter**.

The **Communicate Parameter** window is displayed.

**Step 3** Changing Baud rate

1. Select a baud rate from the **Baud rate** drop-down list and click **Save**.

The message To change the baud rate, you need to restart the NetEco service. Do you want to continue? is displayed.

2. Click **Yes**.

The message Modification succeeded. Please restart the NetEco service. is displayed.

3. Click **OK**.

4. See [5.1.1.2 Logging Out of the NetEco 1000S](#) and [5.1.1.1 Logging In to the NetEco 1000S](#) to restart NetEco 1000S service.

**Step 4** Set whether the SmartLogger supporting only SSL authentication is allowed to access the NetEco 1000S.

The SmartLogger and NetEco 1000S use the following two authentication modes by default: SSL authentication and user name/password authentication. The NetEco 1000S can be compatible with the SmartLogger supporting only SSL authentication, which has security risks. It is recommended that such SmartLogger be replaced with the SmartLogger supporting both authentication modes or the SmartLogger be upgraded to the version supporting both authentication modes.

- Select **Compatible Access only supports SSL authentication NEs**: The SmartLogger supporting only SSL authentication is allowed to access the NetEco 1000S, and the device connection is normal.
- Deselect **Compatible Access only supports SSL authentication NEs**: The SmartLogger supporting only SSL authentication is allowed to access the NetEco 1000S, but the device is disconnected. To ensure the access security of the NetEco 1000S, you are advised to deselect **Compatible Access only supports SSL authentication NEs**.

 **NOTE**

After installing and upgrading NetEco 1000S, **Compatible Access only supports SSL authentication NEs** is selected by default.

----End

#### 5.1.7.4.4 Setting Income

NetEco 1000S uses **Standard currency** selected during the installation for income statistics. You can set exchange rates between different types of currency and **Standard currency** to collect statistics on the income of all PV plants.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

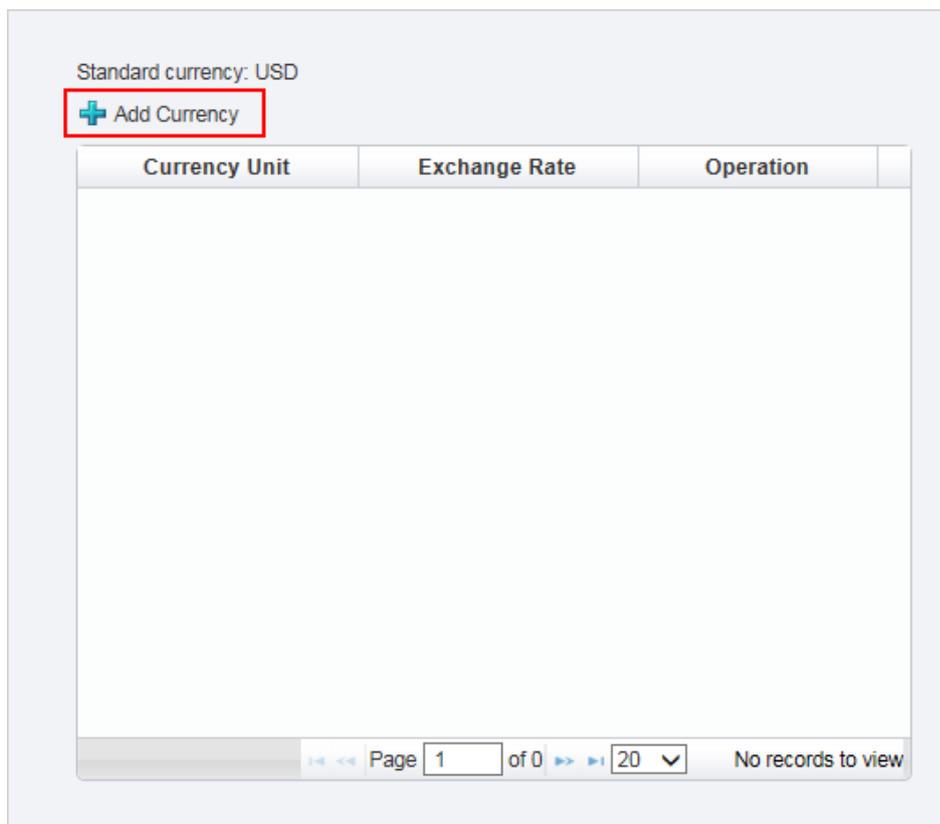
#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Choose **Income Settings**.

The page as shown in [Figure 5-56](#) is displayed.

Figure 5-56 Income Setting



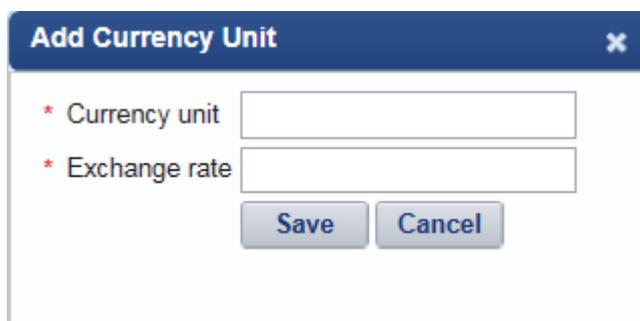
**NOTE**

NetEco 1000S uses **Standard currency** for income statistics. **Standard currency** indicates the currency type selected when you set currency parameters.

**Step 3** Click **Add Currency**.

The **Add Currency Unit** dialog box is displayed, as shown in [Figure 5-57](#).

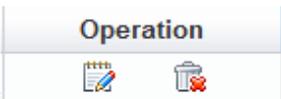
Figure 5-57 Add currency unit



**Step 4** Set the currency used for the PV plant and the exchange rate of the currency against **Standard currency**, and save the setting.

----End

## Follow-up Procedure

- 
- In the **Operation** area of the **Add Currency Unit** dialog box, edit or delete the currency.

### 5.1.7.4.5 Setting Prompt Information

This section describes how to set whether to enable the prompt information displayed after you log in to the client, access devices, and create a PV plant on the NetEco 1000S client.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as system administrator.

## Context

After you log in to the NetEco 1000S, access devices, or create a PV plant, the prompt information is displayed in the lower right corner of the NetEco 1000S client.

You can enable or disable the prompt information as required.

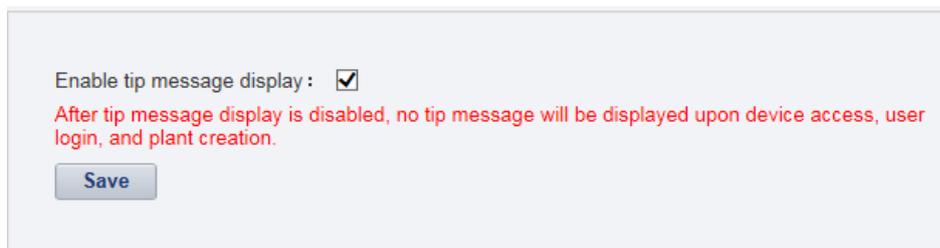
## Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Choose **Tip Message Settings**.

The **Tip Message Settings** page is displayed, as shown in [Figure 5-58](#).

**Figure 5-58** Tip Message Settings



**Step 3** Set whether to enable the prompt information.

- Enable the prompt information: select **Enable tip message display**.
- Disable the prompt information: deselect **Enable tip message display**.

Prompt information is enabled on the NetEco 1000S by default.

**Step 4** Click **Save**.

----End

### 5.1.7.5 License Management

License management includes querying license information, obtaining an ESN, importing a license, and revoking a license. Manage the license to ensure that the NetEco 1000S can be used normally.

#### 5.1.7.5.1 License Usage Description

The license is used to enable or disable the inverter management function. After the NetEco 1000S is installed, there is a license trial period of 90 days by default. During the trial period, a license file needs to be imported so that all the functions of the NetEco 1000S can be used.

If a license file is not imported when the trial period expires, login to the NetEco 1000S client will be limited. After login is limited, the users in the system operator group and visiting user group will not be able to visit the client. Only the system administrator can visit the client. After login, the page requiring license import is displayed.

To ensure that you can use all the functions of the NetEco 1000S, check and import a license file periodically.

### How to Obtain a License

Obtain the ESN of the NetEco 1000S server or the license revocation code, and then contact Huawei technical support to apply for a new license.

#### 5.1.7.5.2 Querying License Information About the NetEco

Query the expiration date and function control of the current License routinely to check whether the License is about to expire, and solve the problems in a timely manner. In this way, the NetEco 1000S function can be used normally.

### Prerequisites

- The License has been imported to NetEco 1000S. If it has not been imported, import it by referring to [5.1.7.5.3 Importing a License File](#).
- You have logged in as system administrator.

### Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **License Information**.

The **License Information** page is displayed.

On the **License Information** page, check the basic information, function control information, and ESN information about the License. For details, see [Table 5-35](#).

**Table 5-35** License information

Item	Attribute	Description
Basic License Information	Expired on	The License is valid until 03:00 this date.

Item	Attribute	Description
Function Control	Function Name	Functions provided by the NetEco 1000S.
	Supported or Not	Whether the function is supported by the License file.
ESN Information	ESN list	ESNs of all the NICs managed by the License. Each ESN is separated by a comma (,).
	ESN quantity	The number of ESNs of all the NICs managed by the License.

 **NOTE**

When the License is about to expire, a prompt will be displayed at the upper part of the **License Information** page. Handle the problem by following the prompt.

----End

### 5.1.7.5.3 Importing a License File

When a License is not imported in NetEco 1000S, or NetEco 1000S License is expires, or cannot meet network management requirements, you must import a new License to the NetEco 1000S to ensure normal services of the NetEco.

#### Prerequisites

- You have logged in as system administrator.
- A new License is obtained.

#### Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **Import License**.

The **Import License** page is displayed.

**Step 3** Click **Browse** and select a License file.

The License file must be less than 1 MB and the file format should be **.dat**.

**Step 4** Click **Upload**.

A dialog box for activating the License is displayed.

**Step 5** Click **Yes**.

----End

### 5.1.7.5.4 Revoking a License

If the NIC is faulty or a new NIC needs to be used, revoke the current license to generate a revocation code which is used to apply for a new license file for free.

## Prerequisites

- You have logged in as system administrator.
- License usage is normal in the current environment.

## Context

If a NIC is found faulty or the existing NIC needs to be replaced, revoke the existing license to generate a revocation code that can be used for applying for a new license file.

After NIC replacement, import the new license file to NetEco 1000S. After that, the NetEco 1000S functions can be used properly. For details about how to import a license file, see [5.1.7.5.6 Importing a License on the Page Requiring License Import](#).

## Procedure

**Step 1** Choose **System > License Management** from the main menu.

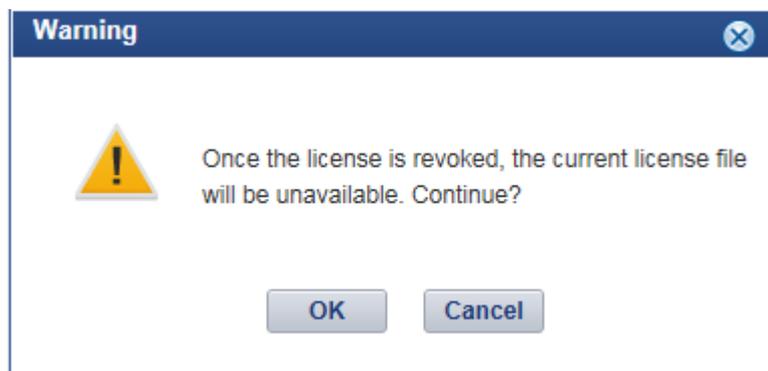
**Step 2** Choose **Revoke License**.

The **Revoke License** page is displayed.

**Step 3** Click **Revoke**.

A warning is displayed, as shown in [Figure 5-59](#).

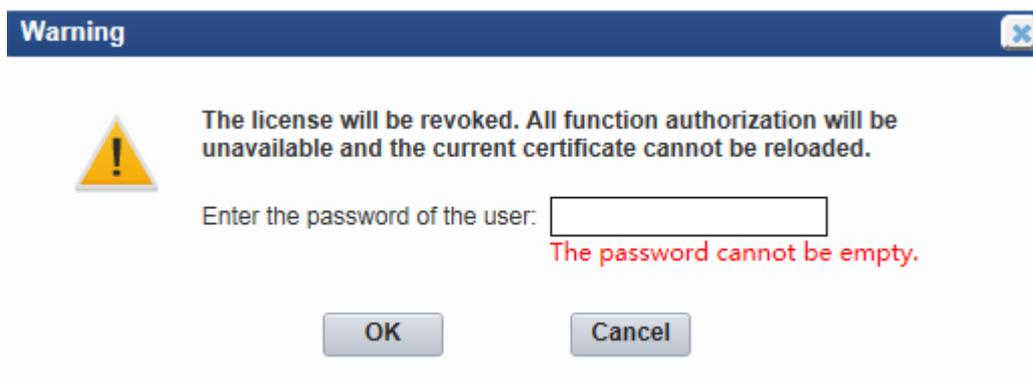
**Figure 5-59** Revocation warning



**Step 4** Click **OK**.

A dialog box is displayed, as shown in [Figure 5-60](#).

**Figure 5-60** Password confirming



**Step 5** Enter the password of the user and click **OK**.

The generated revocation code will be displayed beside the **Revocation code** parameter.

If the revocation code is not generated, contact Huawei technical support.

----End

### 5.1.7.5.5 Obtaining an ESN

If no license is available for the NetEco 1000S, obtain the equipment serial number (ESN) of the NetEco 1000S server to apply for a license.

#### Prerequisites

- You have obtained the Media Access Control (MAC) address of the NetEco server.
- You have logged in as system administrator.
- No license is available or the license has expired.

#### Context

If no license file is found or the license has expired after the NetEco 1000S is installed, obtain the ESN to apply for a new license.

#### Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **Obtain ESN**.

The **Obtain ESN** page is displayed.

**Step 3** Obtain the ESN.

- Obtain the ESN of the current logged-in server only.

#### NOTE

You can use this method to obtain the ESN of the current logged-in server only. Obtain the ESNs of other servers by entering their MAC addresses.

1. Click **Choose MAC address**. In the drop-down list, select a MAC address to generate an ESN.

The MAC addresses provided in the drop-down list are the MAC addresses of the NetEco 1000S servers.

---

#### NOTICE

If there are multiple options, select each MAC address one by one and obtain the ESN for each MAC address.

2. Click **Obtain ESN**.

- Obtain the ESNs of other servers by entering their MAC addresses.
  - a. Click **Enter a MAC address**, and enter a MAC address of the NetEco server.

A maximum of 20 MAC addresses can be entered. Separate two MAC addresses with a comma (,).

- b. Click **Obtain ESN**.

The generated ESN is displayed at the lower part of the page, as shown in [Figure 5-61](#).

**Figure 5-61** Generating an ESN

An ESN is a character string generated by the MAC address and uniquely identifies a device. It ensures that the license is granted to the specified device.

Choose MAC address: 28-6E-D4-89-F0-53 ?

Enter MAC address:  ?  
(Example: 00-24-7E-0E-D9-04)

**Obtain ESN**

ESN: **MjgtNkUtRDQtODktRjAtNTM=**

----End

## Follow-up Procedure

When you need to apply for a new license file, contact Huawei technical support and use the obtained ESN to apply for a new license file.

After the new license is issued, import the license to the NetEco 1000S. For details, see [5.1.7.5.6 Importing a License on the Page Requiring License Import](#).

### 5.1.7.5.6 Importing a License on the Page Requiring License Import

If the license has expired or is invalid, import a new license file or obtain the ESN of the NetEco 1000S on the page requiring license import.

## Prerequisites

- The trial period of the NetEco 1000S has expired, or the license has expired or is invalid.
- You have logged in as system administrator.

## Context

If The trial period of the NetEco 1000S has expired, or the license has expired or is invalid, log in to the NetEco 1000S client as the system administrator. The page requiring license import is displayed.

Import a new license file.

---

 **NOTICE**

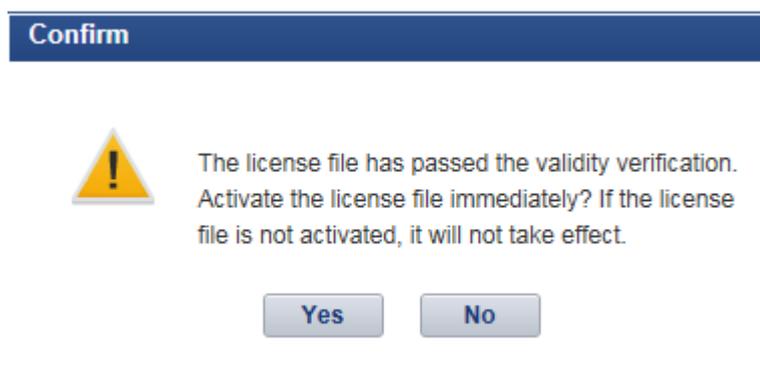
If you perform an operation after more than 10 minutes elapse since the page requiring license import is displayed, the login page will be displayed again. To ensure that you can perform operations successfully, perform the following steps within 10 minutes after the page requiring license import is displayed.

---

## Procedure

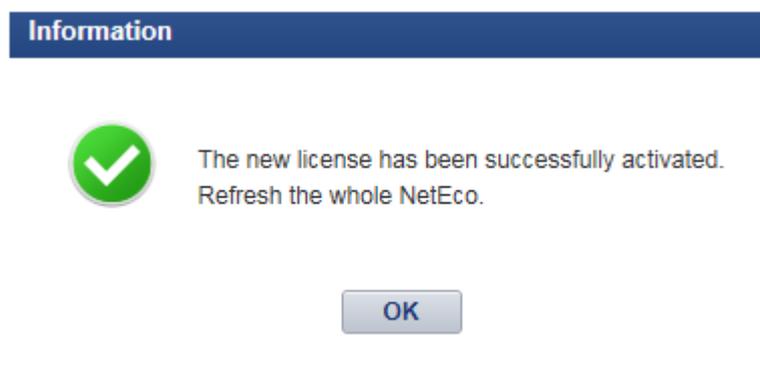
- If you have obtained a new license, perform the following operations:
  - a. Click **Browse** on the right of **License File**.  
A dialog box for selecting a file is displayed.
  - b. Select the license file to be imported and click **OK**.
  - c. Click **Upload**.  
The dialog box shown in [Figure 5-62](#) is displayed.

**Figure 5-62** Confirm



- d. Click **Yes**.  
The dialog box shown in [Figure 5-63](#) is displayed.

**Figure 5-63** Information



- e. Click **OK**.
- f. Click **Return** on the right of **License File**.  
The NetEco 1000S login page is displayed.

- If no license file is available, perform the following operations to obtain the ESN of the NetEco 1000S so that you can use the ESN to apply for a new license.
  - a. Obtain the ESN.
    - Obtain the ESN of the current logged-in server only:  
Click **Choose MAC address**, in the drop-down list, select a MAC address to generate an ESN.  
The MAC addresses provided in the drop-down list are the MAC addresses of the NetEco servers.

---

 **NOTICE**

If there are multiple options, select each MAC address one by one and obtain the ESN for each MAC address.

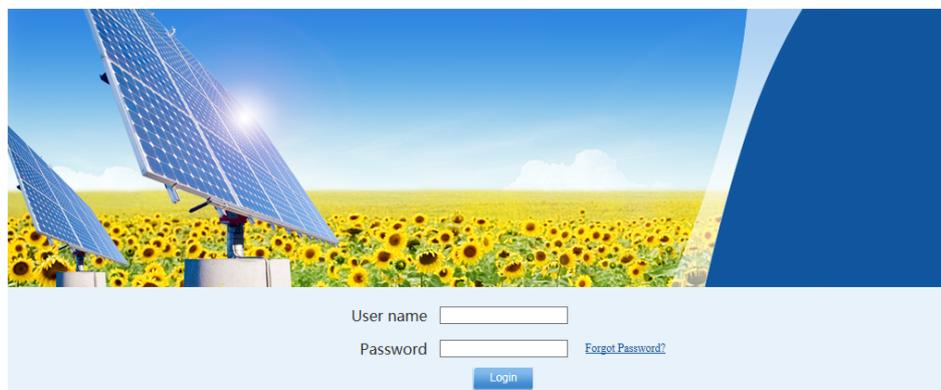
- 
- Obtain the ESNs of other servers by entering their MAC addresses:  
Click **Enter a MAC address**, and enter a MAC address of the NetEco server.  
A maximum of 20 MAC addresses can be entered. Separate two MAC addresses with a comma (,).
  - b. Click **Generate ESN**.  
The generated ESN is displayed at the lower part of the page.  
Contact Huawei technical support engineers to apply for a new license using the obtained ESN, and [a](#).

## 5.1.8 FAQs

### 5.1.8.1 What Do I Do When the Internet Explorer Browser Displays a Message Asking Me to Close the Compatibility View on to the Login Page?

#### Symptom

**Figure 5-64** Message indicating that the compatibility view needs to be closed



Please disable the Microsoft Internet Explorer compatibility view ([Help](#))

## Possible Causes

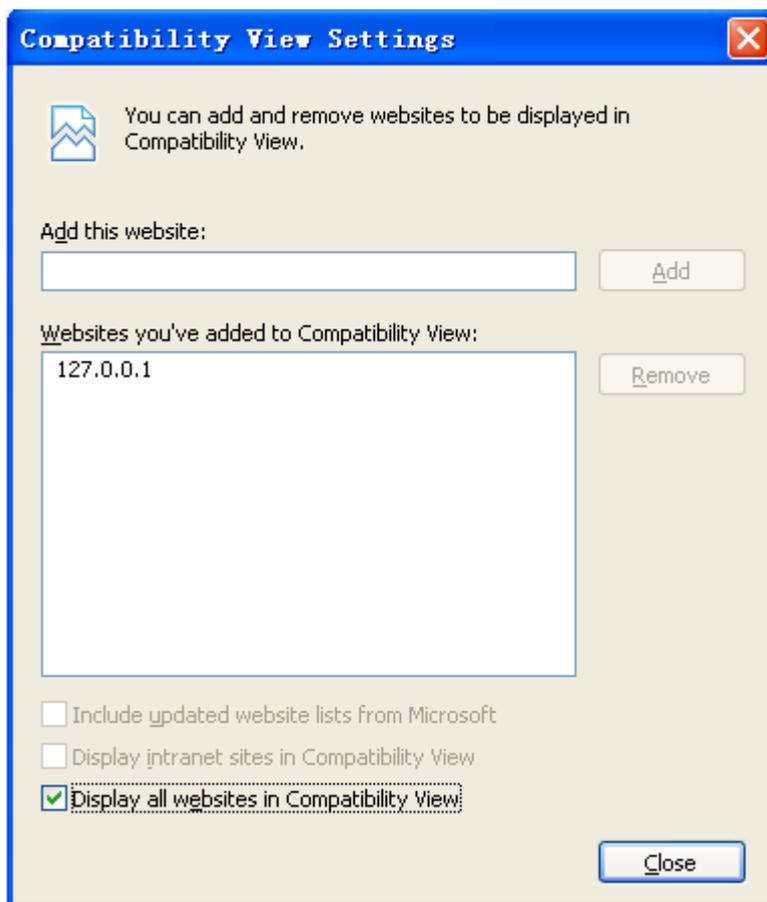
You have enabled the compatibility view of the Internet Explorer browser.

## Procedure

**Step 1** Choose **Tools > Compatibility View Settings** on the Internet Explorer menu bar.

**Step 2** Clear the check box for **Display all websites in Compatibility View**.

**Figure 5-65** Compatibility View Settings



---End

### 5.1.8.2 What Do I Do When Characters in a CSV File Are Displayed in Disorder?

#### Symptom

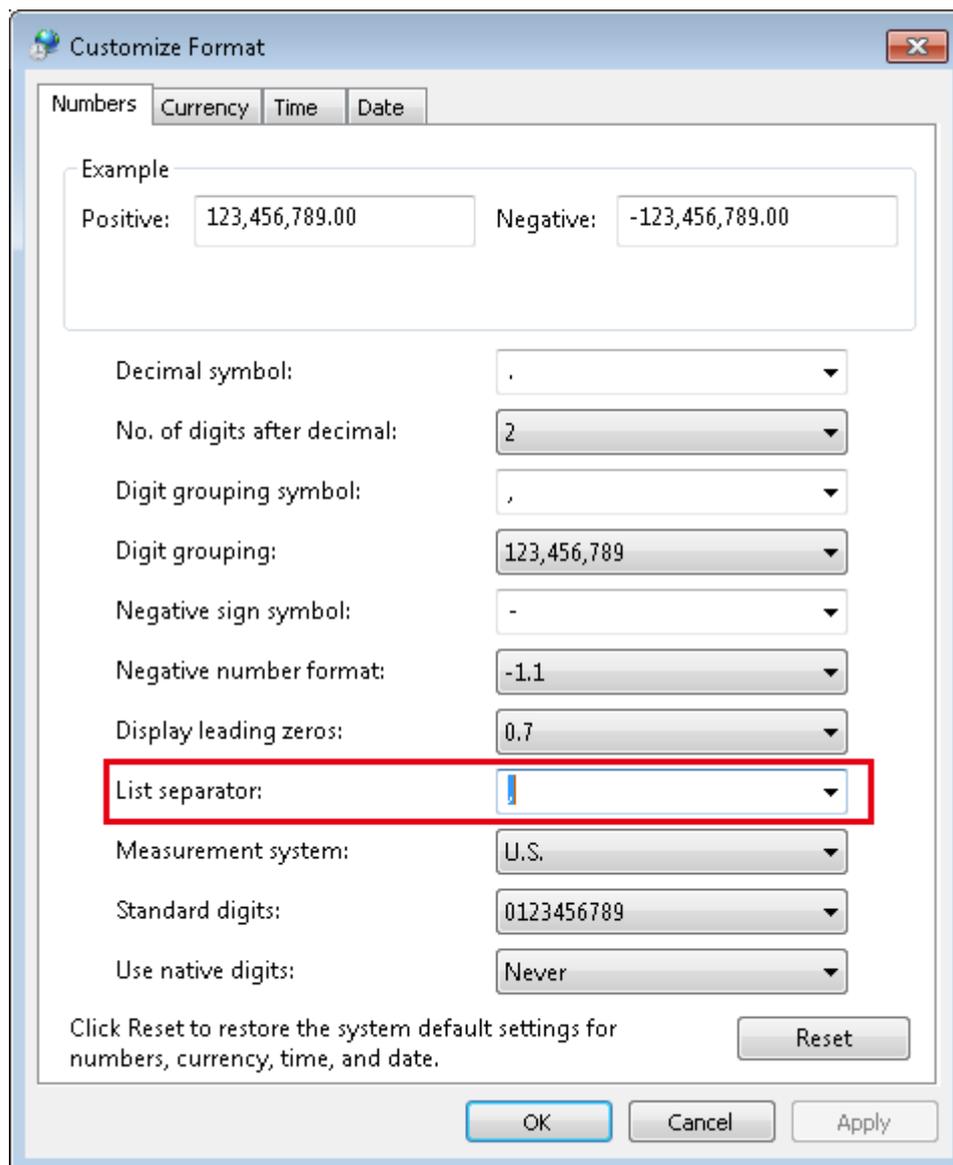
When users open a CSV file exported from the NetEco 1000S, the characters in the file are displayed in disorder.

#### Possible Causes

When data in a list is exported to a CSV file, the default separator used by the operating system is not comma (,).

## Procedure

- Step 1** Choose **Start > Control Panel**.
- Step 2** In the displayed **Control Panel** window, click **Region and Language**.
- Step 3** In the displayed **Region and Language** window, click the **Formats** tab.
- Step 4** Click **Additional settings**.
- Step 5** In the displayed dialog box, set **List separator** to comma (,) on the **Numbers** tab page.



- Step 6** Click **OK**.

----End

### 5.1.8.3 What Do I Do When the NetEco 1000S Service Icon Is Not Displayed?

#### Symptom

On a PC running the Windows operating system, the NetEco 1000S service icon is not displayed on the right of the taskbar when the NetEco 1000S service is running.

#### Possible Causes

An exception occurs in the resource manager of the operating system.

This problem does not affect the functions of the NetEco 1000S. You can ignore it.

#### Procedure

To restart the NetEco 1000S service, perform the following steps:

**Step 1** Log off the Windows operating system.

**Step 2** Log in to the Windows operating system again and then start the NetEco 1000S services.

----End

### 5.1.8.4 How Do I Solve the Problem that the Login Page Fails to Be Displayed When I Access the NetEco 1000S Using a Web Browser?

#### Symptom

The login page fails to be displayed when I access NetEco 1000S using a web browser.

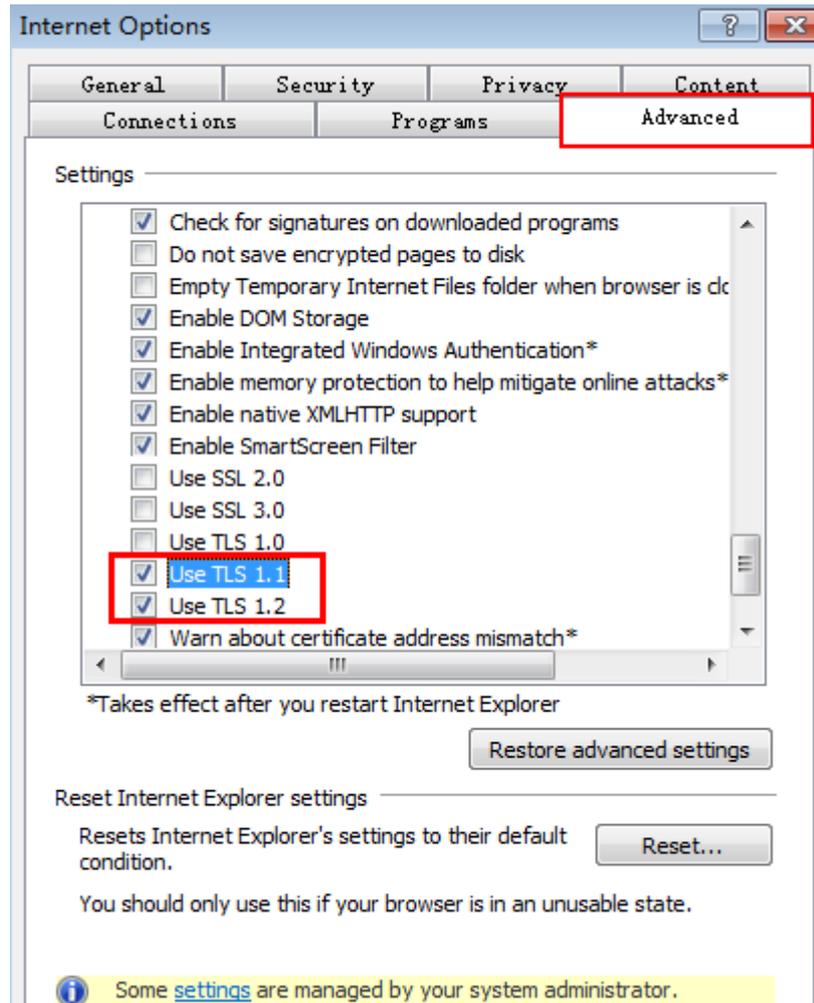
#### Possible Causes

- Connection mode setting on the browser is not correct.
- The network is connected improperly.
- The PC where the NetEco 1000S is installed is powered off.
- The NetEco 1000S service has not been started on the PC.

#### Procedure

**Step 1** Set the connection mode:

Choose **Tools > Internet Options** on the menu bar of the browser. On the **Advanced** tab page, select **Use TLS 1.2** and **Use TLS 1.1** under **Settings**, do not select **Use TLS 1.0**, **Use SSL 2.0** or **Use SSL 3.0**. Click **OK**.



**Step 2** Choose **Start > Search programs and files** in the operating system. In the displayed dialog box, enter **cmd** and press **Enter**. The command-line interface (CLI) is displayed.

**Step 3** Run the following command to check whether the network between the PC on which users can log in to the NetEco 1000S and the PC where the NetEco 1000S is installed is connected properly:

**ping** *IP address*

**NOTE**

Replace *IP address* with the IP address of the PC on which the NetEco 1000S is installed.

- If the IP address cannot be pinged, go to **Step 4**.
- If the IP address can be pinged, go to **Step 6**.

**Step 4** Check whether the PC on which the NetEco 1000S is installed is started.

- If the PC is started, go to **Step 5**.
- If the PC is not started, perform the following operations:
  - a. Start the PC on which the NetEco 1000S is installed.
  - b. Choose **Start > All Program > NetEco 1000S > NetEco 1000S Service** in the operating system to start the NetEco 1000Service.

- Step 5** Check whether the network cable of the PC where the NetEco 1000S is installed is loosened or disconnected.

In normal cases, the indicator of the network port where the network cable is inserted is green. The indicator blinks when data is transmitted.

- If the network cable is loosened or disconnected, connect it again.
- If the network cable is connected properly but the IP address of the NetEco 1000S server still cannot be pinged, check whether network connection problems occur on the user side.

- Step 6** Check whether the NetEco 1000S service has been started on the PC.

- If the NetEco 1000S service is not started, choose **Start > All Program > NetEco 1000S > NetEco 1000S Service** in the operating system to start the NetEco 1000S service.
- If the NetEco 1000S service has been started but logging in to the NetEco 1000S using the web browser fails, contact Huawei technical support.

----End

### 5.1.8.5 How Do I Solve the Problem that the Serial Port for the SMS Modem to Connect to a PC Is Always Occupied After the SMS Is Enabled?

#### Question

How do I solve the problem that the serial port for the SMS modem to connect to a PC is always occupied after the SMS is enabled?

#### NOTE

After the serial cable between the SMS modem and the PC is disconnected or removed, the serial port is still occupied.

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.

Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

#### Answer

Perform the following steps to restart the NetEco 1000S service:

- Step 1** Right-click the NetEco 1000S service icon in the lower right corner of the taskbar of the desktop and choose **Exit** to stop the NetEco 1000S service from the shortcut menu.
- Step 2** Choose **Start > All Program > NetEco 1000S > NetEco 1000S Service** to start the NetEco 1000S service in the operating system.

----End

### 5.1.8.6 Verifying OpenPGP Signature

This section describes how to verify the integrity of an obtained software package, thereby preventing network risks that may be caused by malicious alteration or damage during the transmission of the software package. A software package can be installed only after it passes the verification.

## Prerequisites

You have obtained the signature file for the NetEco 1000S software package. The NetEco 1000S software package and its signature file are in a one-to-one relationship, and are stored in the same directory.

## Context

- The GNU Privacy Guard for Windows (Gpg4Win) is a free open-source GNU tool. It can be used to verify OpenPGP signatures in the Windows operating system.
- You can download the Gpg4Win software package used with the Windows operating system from <http://www.gpg4win.org/>, and then double-click **gpg4win-2.2.1.exe** to install the Gpg4Win tool by following the wizard. You are advised to retain all the default settings during the installation.

## Procedure

### Step 1 Download the public key file.

Download the **OpenPGP Signature Verification Guide** package from <http://support.huawei.com/carrier/digitalSignatureAction>, and then decompress the package to obtain the public key file **KEYS**.

### Step 2 Import the public key file.

1. Log in to the server on which the software package to be verified is stored, and enter the command-line interface (CLI).
2. Go to the directory (for example, **C:\Users\**) for storing the **KEYS** file, and then import the **KEYS** file.

```
gpg --import "C:\Users\KEYS"
```

**C:\Users\KEYS** indicates the directory for storing the **KEYS** file. You need to rename the directory based on site conditions.

The following information is displayed:

```
gpg: key 27A74824: public key "OpenPGP signature key for Huawei software  
(created on 30th Dec,2013) <support@huawei.com>" imported  
gpg: Total number processed: 1  
gpg: imported: 1 (RSA: 1)
```

3. Check whether the public key file is successfully imported.

```
gpg --fingerprint
```

If the following information is displayed, the public key file is successfully imported:

```
pub 2048R/27A74824 2013-12-30 Key fingerprint = B100 0AC3 8C41 525A 19BD C087  
99AD 81DF 27A7 4824 uid OpenPGP signature key for Huawei software (created on  
30th Dec,2013) support@huawei.com
```

### Step 3 Verify the public key.

In normal cases, the validity of the OpenPGP public key needs to be verified according to the ID, fingerprint, and user ID (uid) of the public key published by the involved entity. Huawei publishes the following information about the OpenPGP public key:

- Key ID: 27A74824
- Key fingerprint: B100 0AC3 8C41 525A 19BD C087 99AD 81DF 27A7 4824
- User ID (uid): OpenPGP signature key for Huawei software (created on 30th Dec,2013) support@huawei.com

After the validity of the public key is verified, you can do as follows to set the trust level of the public key:

1. Set the trust level of the public key.

```
gpg --edit-key "OpenPGP signature key for Huawei" trust
```

When the system displays **Your decision?**, enter **5**. When the system displays **Do you really want to set this key to ultimate trust? (y/N)**, enter **y**.

```
1 = I don't know or won't say
2 = I do NOT trust
3 = I trust marginally
4 = I trust fully
5 = I trust ultimately
m = back to the main menu
Your decision? 5
Do you really want to set this key to ultimate trust? (y/N) y
```

2. Run the following command to exit:

```
quit
```

#### Step 4 Verify the signature.

```
gpg --verify "C:\Users\NetEco1000SV100R002C70SPCXXX_win7_standard.zip.asc
```

#### NOTE

- *C:\Users\* indicates the path of the signature file. You need to change it based on site conditions.
- **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip.asc** indicates the name of the signature file. You need to rename the file based on site conditions.
- Contact the Huawei technical support engineers and obtain the signature files **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip.asc** and **iManagerNetEco1000S\_V100R002C70SPCXXX\_win2012\_enterprise.zip.asc** from the path **SUPPORT > Software > Energy > PV Inverter > Smart PV Plant System > iManager NetEco 1000S > V100R002C70** on the <http://support.huawei.com/carrier/> website.
  - If the Windows Server 2012 OS is used, obtain the **iManagerNetEco1000S\_V100R002C70SPCXXX\_win2012\_enterprise.zip** installation package and **iManagerNetEco1000S\_V100R002C70SPCXXX\_win2012\_enterprise.zip.asc** digital signature file.
  - If the Windows 7 or Windows 10 OS is used, obtain the **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip** installation package and **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip.asc** digital signature file.

The following information is displayed, where the RSA key ID in bold is the same as the public key ID (if no error message, such as **WARNING, The signature has expired**, and **The public key has been revoked** is displayed for any other information, the signature is valid):

```
gpg: Signature made Thu Jan 9 15:29:06 2014 CST using RSA key ID 27A74824
gpg: Good signature from "OpenPGP signature key for Huawei software (created on
30th Dec, 2013) <support@huawei.com>"
```

#### NOTE

When signatures of multiple files need to be verified for a software package, the software package is safe only when the verification results of all the files are PASS. If the verification result of any file is WARNING or FAIL, the software package fails the verification, and security risks exist. If this occurs, you need to re-download the software package.

**Table 5-36** Examples of signature verification results

Verification Result Scenario	Output Information Example	Verification Result
The signature verification is successful without any exceptions.	gpg: Signature made Thu Jan 9 15:29:06 2014 CST using RSA key ID 27A74824 gpg: Good signature from "OpenPGP signature key for Huawei software (created on 30th Dec,2013) <support@huawei.com>	PASS
The signature verification fails.	gpg: Signature made Thu Jan 9 15:29:06 2014 CST using RSA key ID 27A74824 gpg: BAD signature from "OpenPGP signature key for Huawei software (created on 30th Dec,2013) <support@huawei.com>"	FAIL
The public key cannot be found.	gpg: Signature made Thu Jan 9 15:20:01 2014 CST using RSA key ID 27A74824 gpg: Cannot check signature: public key not found	FAIL
The signature verification is successful but the public key is not set to ultimate trust.	gpg: Signature made Thu Jan 9 15:29:06 2014 CST using RSA key ID 27A74824 gpg: Good signature from "OpenPGP signature key for Huawei software (created on 30th Dec,2013) <support@huawei.com>" gpg: WARNING: This key is not certified with a trusted signature! gpg: There is no indication that the signature belongs to the owner. Primary key fingerprint: B100 0AC3 8C41 525A 19BD C087 99AD 81DF 27A7 4824	WARNING
The corresponding source file cannot be found.	gpg: no signed data gpg: cannot hash datafile: No data	FAIL
The signature has expired.	gpg: Signature made 04/24/13 10:50:29 CST using RSA key ID 133B64E5 gpg: Expired signature from " OpenPGP signature test key <support@huawei.com>" gpg: Signature expired 04/25/13 10:50:29 CST	FAIL

Verification Result Scenario	Output Information Example	Verification Result
The signature verification is successful but the public key has been revoked.	gpg: Signature made 06/13/13 11:14:49 CST using RSA key ID 133B64E5 gpg: Good signature from " OpenPGP signature test key <support@huawei.com>" gpg: WARNING: This key has been revoked by its owner! gpg: This could mean that the signature is forged. gpg: reason for revocation: Key is no longer used gpg: revocation comment:	WARNING
The corresponding signature file cannot be found for the source file.	None	WARNING

---End

### 5.1.8.7 How Do I Update the NetEco 1000S Software?

#### Question

How do I update the NetEco 1000S software?

#### Answer

- Step 1** Contact Huawei technical support engineers to obtain the software package. To obtain the software package, Huawei technical support engineers can choose **SUPPORT > Software > Energy > PV Inverter > Smart PV Plant System > iManager NetEco 1000S > V100R002C70** at <http://support.huawei.com/carrier/>.

#### NOTE

- If the Windows Server 2012 OS is used, obtain the **iManagerNetEco1000S\_V100R002C70SPCXXX\_win2012\_enterprise.zip** installation package and **iManagerNetEco1000S\_V100R002C70SPCXXX\_win2012\_enterprise.zip.asc** digital signature file.
- If the Windows 7 or Windows 10 OS is used, obtain the **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip** installation package and **iManagerNetEco1000S\_V100R002C70SPCXXX\_win7\_standard.zip.asc** digital signature file.

You can check the integrity of the software package by referring to [5.1.8.6 Verifying OpenPGP Signature](#).

#### NOTE

Software package integrity check is related to the software security. You must perform the check to ensure the software security.

- Step 2** Stop the service, process and close the installation directory of the NetEco 1000S.

#### NOTE

If the service and process of the NetEco 1000S are not started, NetEco 1000S installation directory is not opened, skip this step.

**Step 3** Upgrade the NetEco 1000S by following the instructions provided in *iManager NetEco 1000S V100R002C70 Upgrade Guide*.

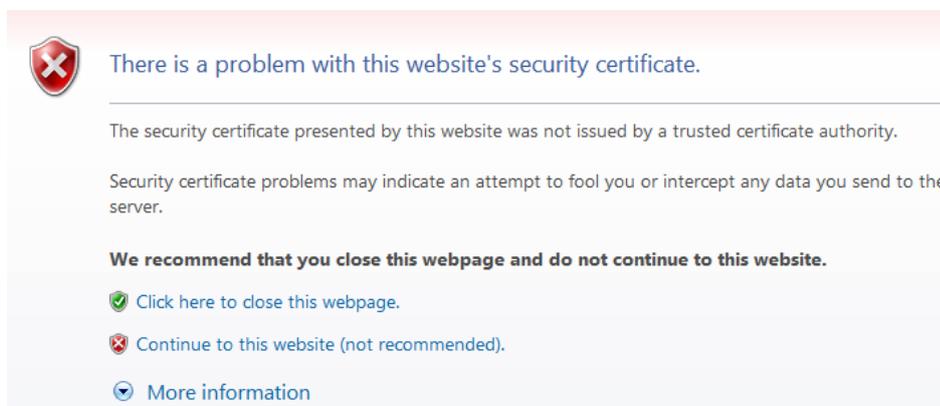
----End

### 5.1.8.8 What Do I Do If a Certificate Error Message or a Security Alarm Is Displayed on Internet Explorer?

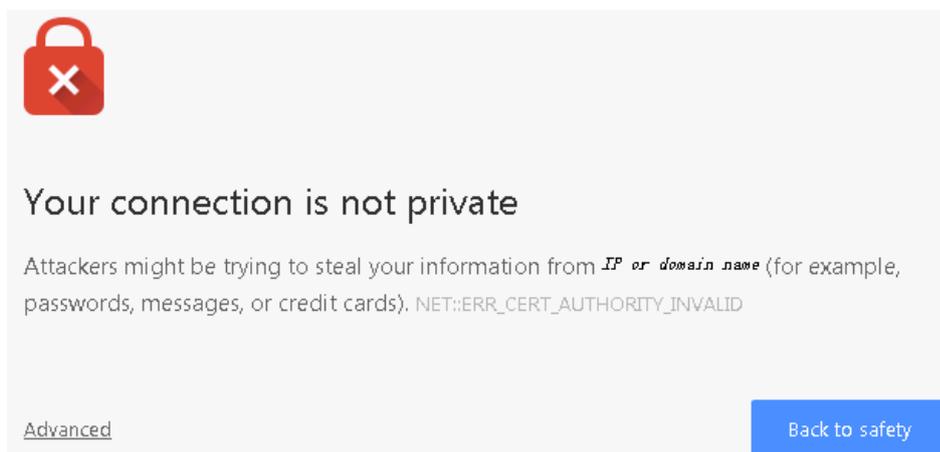
#### Symptom

When log in to NetEco 1000S using Internet Explorer or Chrome, Internet Explorer or Chrome displays a certificate error message similar to that shown in [Figure 5-66](#) or [Figure 5-67](#).

**Figure 5-66** Certificate error message



**Figure 5-67** Website Security Certificate window (Chrome 50)



#### Possible Causes

Trusted certificate has not been loaded in the browser.

#### Procedure

**Step 1** Log in to a PC as a user in the Administrators user group.

After the certificate is replaced on Internet Explorer, the certificate is also replaced on Chrome. This section mainly describes how to replace the certificate on Internet Explorer.

 **NOTE**

If you install only Chrome, choose **Manage Certificate > Trusted Root Certification Authorities > Import** in the setting window of the Chrome browser and import the certificate as prompted.

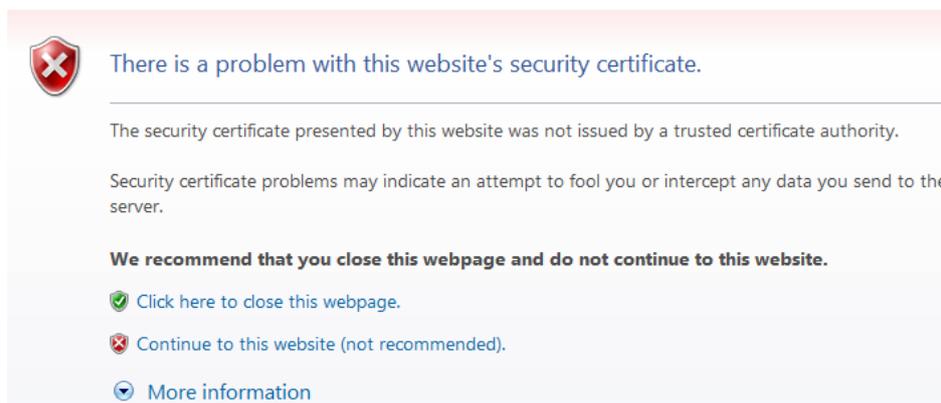
If you start Internet Explorer 11 in the Windows 7 operating system, you need to log in a PC as a user in the Administrators user group and then start Internet Explorer as user Administrator. Otherwise, you cannot properly set Internet Explorer:

1. Choose **Start > Internet Explorer**.
2. In the displayed shortcut menu, choose **Run as Administrator**.

**Step 2** View the certificate.

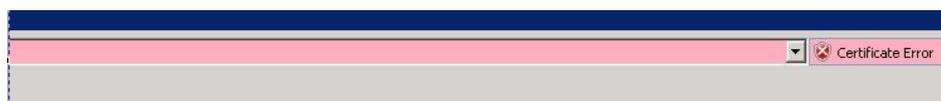
1. When the Internet Explorer displays the security certificate message as shown in **Figure 5-68**, click **Continue to this website**.

**Figure 5-68** Security certificate



2. As shown in **Figure 5-69**, click **Certificate Error**.

**Figure 5-69** Certificate Error



3. In the displayed dialog box, click **View Certificate**.

**Step 3** In the displayed root certificate dialog box as shown in **Figure 5-70**, click **Install Certificate**.

Figure 5-70 Installing the root certificate



**Step 4** In the displayed **Certificate Import Wizard** dialog box, click **Next**.

**Step 5** Set the certificate store to **Trusted Root Certification Authorities**, as shown in [Figure 5-71](#).

**Figure 5-71** Setting the certificate store



- Step 6** Click **Next**.
  - Step 7** After confirming the certificate import information, click **Finish**.
  - Step 8** If the system displays the **Security Warning** dialog box asking you whether to install the certificate, click **Yes**. Otherwise, skip this step.
  - Step 9** In the displayed dialog box indicating the import is successful, click **OK**.
  - Step 10** Click **OK** to close the **Certificate** dialog box.
  - Step 11** In the window of Internet Explorer, choose **Tools > Internet Options**.
  - Step 12** In the displayed **Internet Options** dialog box, click **Advanced**.
  - Step 13** In the **Settings** group box, clear **Warn about certificate address** mismatch under **Security**.
  - Step 14** Click **OK** to close the **Internet Options** dialog box.
  - Step 15** Restart the web browser and log in to NetEco 1000S again.
- End

### 5.1.8.9 How Do I Manage the NetEco 1000S Through the Local IP Address (127.0.0.1) If I Fail to Log In to the NetEco 1000S Client After Setting the Client IP Address Policy?

#### Question

When the IP address you have set is not within the IP address range of the existing network, you will fail to log in to the NetEco 1000S client through the existing network.

#### Answer

For this problem, the NetEco 1000S allows you to enter **https://127.0.0.1:8443** in the address box of the browser only on the local PC where the NetEco 1000S software is installed to log in to the NetEco 1000S client and set a proper IP policy for the NetEco 1000S.

### 5.1.8.10 What Do I Do If the Software Cannot Be Properly Used After I Share the Software Installation Directory?

#### Question

After you share the NetEco 1000S software installation directory with other users, you cannot log in to the NetEco 1000S or you can log in to the NetEco 1000S but the performance file cannot be exported.



You are not allowed to share the NetEco 1000S installation directory with other system accounts or grant the NetEco 1000S permission to other system accounts. Otherwise, security risks may occur.

---

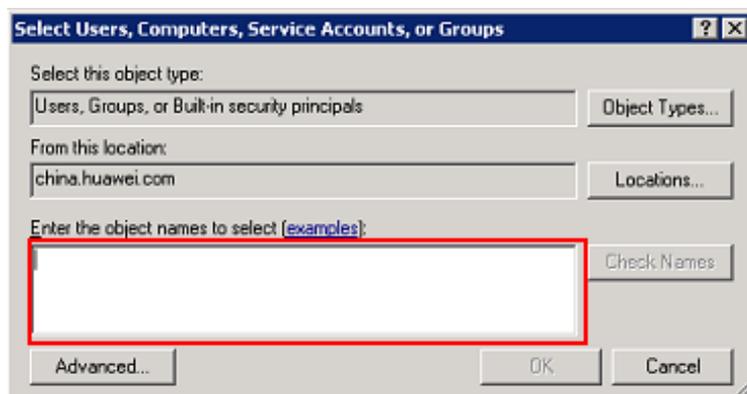
#### Answer

When you share the NetEco 1000S software installation directory with other users, the NetEco 1000S software deletes user **NETWORK SERVICE** that is automatically generated during software installation and is used for accessing the NetEco 1000S software installation directory to ensure security, causing the preceding problem. You can perform the following operations to solve the problem.

- Step 1** Cancel the sharing of the NetEco 1000S software installation directory.
1. Right-click the NetEco 1000S software installation directory and choose **Properties** from the shortcut menu. The **Properties** dialog box is displayed.
  2. Choose **Sharing > Advanced Sharing**. The **Advanced Sharing** dialog box is displayed.
  3. Deselect **Share this folder** and click **OK**.
- Step 2** Add user **NETWORK SERVICE**.
1. Right-click the NetEco 1000S software installation directory and choose **Properties** from the shortcut menu. The **Properties** dialog box is displayed.

2. In the **Properties** dialog box, choose **Security > Edit**.
3. In the displayed dialog box, click **Add**. The dialog box shown in **Figure 5-72** is displayed.

**Figure 5-72** Adding a user



4. Enter **NETWORK SERVICE** in **Figure 5-72** marked in red and click **OK**. The **Properties** dialog box is displayed again. Select **FULL control** and **modify** and click **OK**.



## NOTICE

After you click **OK**, the system might display a security warning dialog box. Click **Continue**.

---

**Step 3** Restart the NetEco 1000S.

----End

### 5.1.8.11 What Do I Do When Devices Fail to Be Detected?

#### Symptom

Devices fail to be detected based on serial port addresses.

#### Possible Causes

- The baud rate set on the NetEco 1000S is inconsistent with that of the device.
- The serial port addresses configured for the device are duplicate.
- The address of RS-485 serial port for the device is out of the default search range (1 to 20) of the NetEco 1000S.

#### Procedure

**Step 1** Check whether the baud rate setting on the device is consistent with that on the NetEco 1000S.

1. Obtain information about the baud rate set for the device by referring to *User Manual on the monitored device side*.

2. Obtain information about the baud rate set on the NetEco 1000S by referring to [5.1.7.4.3 Setting Communication Parameters](#).
3. Check whether the baud rate set for the device is the same as that set on the NetEco 1000S.
  - If the two baud rates are the same, go to [Step 2](#).
  - If the two baud rates are different, change the baud rate on either the device or the NetEco 1000S.

**Step 2** Check whether the value of **RS485 Com Address** for the device is duplicate by referring to *User Manual on the monitored device side*.

- If the value of **RS485 Com Address** is unique, go to [Step 3](#).
- If the value of **RS485 Com Address** is duplicate, change the parameter value by referring to *User Manual on the monitored device side*.

**Step 3** Check whether the value of **RS485 Com Address** for the device is within the default search range (1 to 20) of the NetEco 1000S.

If value is out of the default search range, change the address search range on the NetEco 1000S, or change the value of **RS485 Com Address** by referring to *User Manual on the monitored device side*.

---End

### 5.1.8.12 How Do I Change the Password of the ftpuser user?

After the SmartLogger connects to the NetEco 1000S, log in to the FTPS server of the NetEco 1000S as user **ftpuser** and upload performance data. You are advised to change the password periodically to ensure system security.

#### Prerequisites

- You have obtained the password for **ftpuser**.  
Please see **Installation and Commissioning > Planning Operating System Users and Their Initial Passwords** for details about the password of **ftpuser**.
- You have started the NetEco services. For details about how to start the services, see [5.1.1.1.1 Starting NetEco 1000S Services](#).
- The Smart Logger supports FTPS.

#### NOTE

You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.

#### Procedure

**Step 1** Run the script **NetEco software installation\tools\ConfigTools.bat**. When the following information is displayed, enter **1** and press **Enter**.

```
1) Change FTPServer password
2) Change database password
3) Change Modbus SSL config
4) Change FTPS SSL config
5) Change external IP of the NetEco
6) Change local IP of the NetEco
7) Exit
```

Please choose 1-7:

**Step 2** When the following information is displayed, enter **ftpuser**, and press **Enter**.

```
Please input FTPserver username:
```

**Step 3** When the following information is displayed, enter current password and press **Enter**.

```
Please input the old password:
```

**Step 4** When the following information is displayed, enter new password and press **Enter**.

```
Please input new FTPserver password:
```

 **NOTE**

- The password cannot be the same as the user name or the user name in a reversed order.
- The password contains 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#\$%&'()\*+,-./:;<=>?@[\]^\_{|}~ and space.

**Step 5** When the following information is displayed, enter new password again and press **Enter**.

```
Please confirm new FTPserver password:
```

**Step 6** When the following information is displayed, the password is changed successfully.

```
FTPServer password changed.  
Change succeeded.
```

 **NOTE**

Password take effect after the next restart NetEco 1000S.

----End

### 5.1.8.13 How Do I Modify the Data or File Transmission Protocol?

This section describes how to modify the data or file transmission protocol. Data is transmitted using the Modbus protocol and files are transmitted using the FTPS between the NetEco 1000S and SmartLogger. Data and files are transmitted using the Modbus protocol between the NetEco 1000S and inverters directly connected to the FE.

#### Context

The data or file transmission protocol needs to be modified, that is, modifying the TLS protocol of the Modbus or FTP.

To be compatible with devices of earlier versions, the NetEco 1000S supports the TLSv1.0, TLSv1.1, and TLSv1.2 at the same time by default. TLSv1.0 has security risks. To ensure connection security, you are advised to use TLSv1.1 or TLSv1.2.

---

**NOTICE**

If the SmartLogger or inverters directly connected to the FE does not support TLSv1.1/1.2, the SmartLogger or inverters directly connected to the FE may be disconnected after you change the protocol to TLSv1.1 or TLSv1.2. You are advised to replace the SmartLogger or inverters directly connected to the FE with the one supporting TLSv1.1/1.2 or upgrade the SmartLogger or inverters directly connected to the FE to the version supporting TLSv1.1/1.2.

---

## Procedure

**Step 1** Logging Out of the NetEco 1000S services, for detailed operations, see [5.1.1.2.2 Logging Out of the NetEco 1000S Services](#).

**Step 2** Run the script *NetEco software installation\tools\ConfigTools.bat*. The following information is displayed:

```
1) Change FTPServer password
2) Change database password
3) Change Modbus SSL config
4) Change FTSP SSL config
5) Change external IP of the NetEco
6) Change local IP of the NetEco
7) Exit
```

Please choose 1-7:

**Step 3** Modify the transmission protocol.

- **Modify the data transmission protocol.**

a. Enter **3** and press **Enter**. The following information is displayed:

```
The old config is : TLSv1,TLSv1.1,TLSv1.2
```

```
1) TLSv1,TLSv1.1,TLSv1.2
2) TLSv1.1,TLSv1.2
3) TLSv1.2
4) Cancel
```

Please choose 1-4:

b. Set the data transmission mode as required.

- **Supporting TLS1.0, TLS1.1, and TLS1.2:** Enter **1** and press **Enter**.

---

**NOTICE**

TLSv1.0 has security risks. To ensure connection security, you are advised to use TLSv1.1 or TLSv1.2.

---

When the following information is displayed, the protocol type is changed successfully:

```
Modbus SSL changed to TLSv1, TLSv1.1, TLSv1.2
Change succeeded.
```

- **Supporting TLS1.1 and TLS1.2:** Enter **2** and press **Enter**.

When the following information is displayed, the protocol type is changed successfully:

```
Modbus SSL changed to TLSv1.1, TLSv1.2  
Change succeeded.
```

- **Supporting Only TLS1.2:** Enter **3** and press **Enter**.

When the following information is displayed, the protocol type is changed successfully:

```
Modbus SSL changed to TLSv1.2  
Change succeeded.
```

- **Modify the file transmission protocol.**

- a. Enter **4** and press **Enter**. The following information is displayed:

```
The old config is : TLSv1,TLSv1.1,TLSv1.2
```

```
1) TLSv1,TLSv1.1,TLSv1.2  
2) TLSv1.1,TLSv1.2  
3) TLSv1.2  
4) Cancel
```

```
Please choose 1-4:
```

- b. Set the file transfer mode as required.

- **Supporting TLS1.0, TLS1.1, and TLS1.2:** Enter **1** and press **Enter**.



## NOTICE

TLSv1.0 has security risks. To ensure connection security, you are advised to use TLSv1.1 or TLSv1.2.

---

When the following information is displayed, the protocol type is changed successfully:

```
FTPS SSL config changed to TLSv1, TLSv1.1, TLSv1.2  
Change succeeded.
```

- **Supporting TLS1.1 and TLS1.2:** Enter **2** and press **Enter**.

When the following information is displayed, the protocol type is changed successfully:

```
FTPS SSL config changed to TLSv1.1, TLSv1.2  
Change succeeded.
```

- **Supporting Only TLS1.2:** Enter **3** and press **Enter**.

When the following information is displayed, the protocol type is changed successfully:

```
FTPS SSL config changed to TLSv1.2  
Change succeeded.
```

**Step 4** Restart the NetEco 1000S for the settings to take effect.

----End

### 5.1.8.14 How Do I Ensure that Performance Data Can Be Properly Reported When the NetEco 1000S and SmartLogger Are Deployed On Different Network Segments?

If the NetEco 1000S and SmartLogger are deployed on different network segments, you need to set the external IP address of the NetEco 1000S using the configuration file so that performance data can be properly reported between the NetEco 1000S and SmartLogger.

## Procedure

**Step 1** Logging Out of the NetEco 1000S services, for detailed operations, see [5.1.1.2.2 Logging Out of the NetEco 1000S Services](#).

**Step 2** Run the script *NetEco software installation\tools\ConfigTools.bat*. When the following information is displayed, type **5** and press **Enter**.

```
1) Change FTPServer password
2) Change database password
3) Change Modbus SSL config
4) Change FTSPS SSL config
5) Change external IP of the NetEco
6) Change local IP of the NetEco
7) Exit
```

```
Please choose 1-7:
```

**Step 3** When the following information is displayed, type the external IP address of the NetEco and press **Enter**.

```
Please input external IP of the NetEco:
```

**Step 4** When the following information is displayed, the external IP address of the NetEco is changed successfully.

```
External IP of the NetEco is changed to xxx.xx.xx.xx
Change succeeded.
```

**Step 5** Type **7** and press **Enter** to exit.

**Step 6** Restart the NetEco 1000S for the settings to take effect.

----End

### 5.1.8.15 How Do I Replace the Key File of the NetEco 1000S?

To ensure the security and reliability of the NetEco 1000S key, the system administrator needs to periodically replace the NetEco 1000S key to improve the security of the NetEco 1000S.

## Prerequisites

- You have started the NetEco 1000S services. For details about how to start the services, see [5.1.1.1.1 Starting NetEco 1000S Services](#).
- You have logged in to the NetEco 1000S client.

## Context

You are advised to replace the Key file every 3 months to improve the security of the NetEco 1000S.

## Procedure

**Step 1** Stop the NetEco 1000S services. For detailed operations, see [5.1.1.2.2 Logging Out of the NetEco 1000S Services](#).

**Step 2** Run the script *NetEco software installation directory\tools\KeysTools.bat*.

The following information is displayed:

```
please input database username:
```

**Step 3** Type **dbuser** and press **Enter**.

The following information is displayed:

```
please input database password:
```

**Step 4** Type the password of **dbuser** user and press **Enter**.

The following information is displayed:

```
Do you want to start replacing the key?Y: start. N: cancel.
```

**Step 5** Type **Y** and press **Enter**.

When the following information is displayed, the key is successfully replaced:

```
Starting database ...  
database started  
  
Change succeeded
```



The command window is automatically closed after the key is replaced. You cannot manually close the command window during the key replacement. Otherwise, data interruption will occur.

---

If any statement indicating the replacement failure is displayed, perform the operations as prompted or contact Huawei technical support.

**Step 6** After the replacement is complete, restart the NetEco 1000S services.

----End

### 5.1.8.16 How Do I Change the Password of the plantcontroller user?

User **plantcontroller** is used for plant controller devices to transfer files to the NetEco. You are advised to change the password periodically to ensure system security.

#### Prerequisites

- You have obtained the password of **plantcontroller** user.  
Please see **User\_Manual > Installation and Commissioning > Planning Operating System Users and Their Initial Passwords** for details about the password of **plantcontroller** user.
- You have started the NetEco 1000S services. For details about how to start the services, see [5.1.1.1 Starting NetEco 1000S Services](#).

 **NOTE**

You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.

#### Procedure

**Step 1** Run the script **NetEco software installation\tools\ConfigTools.bat**. When the following information is displayed, type **1** and press **Enter**.

```
1) Change FTPServer password
2) Change database password
3) Change Modbus SSL config
4) Change FTPS SSL config
5) Change external IP of the NetEco
6) Change local IP of the NetEco
7) Exit
```

Please choose 1-7:

**Step 2** When the following information is displayed, type **plantcontroller**, and press **Enter**.

```
Please input FTPserver username:
```

**Step 3** When the following information is displayed, type current password and press **Enter**.

```
Please input the old password:
```

**Step 4** When the following information is displayed, type new password and press **Enter**.

```
Please input new FTPserver password:
```

 **NOTE**

- The password cannot be the same as the user name or the user name in a reversed order.
- The password contains 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#%&'()\*+,-./:;<=>?  
@[\\]^\_{|}~ and space.

**Step 5** When the following information is displayed, enter new password again and press **Enter**.

```
Please confirm new FTPserver password:
```

**Step 6** When the following information is displayed, the password is changed successfully.

```
FTPServer password changed.
Change succeeded.
```

 **NOTE**

Password take effect after the next restart NetEco 1000S.

----End

### 5.1.8.17 What Do I Do If the Email Server Fails to Send an Email?

This section describes how to solve the problem that the email server fails to send an email.

#### Possible Causes

The possible causes of the failure are as follows:

- Incorrect network configuration
- Incorrect IP address or domain name of the email sending server
- Incorrect port number for email sending
- Incorrect user name or password
- Incorrect sender or recipient email address

## Procedure

**Step 1** Check the network configuration.

1. Choose **Start > Control Panel > Network and Internet > Network and Sharing Center > Network Connections** in the operating system.

 **NOTE**

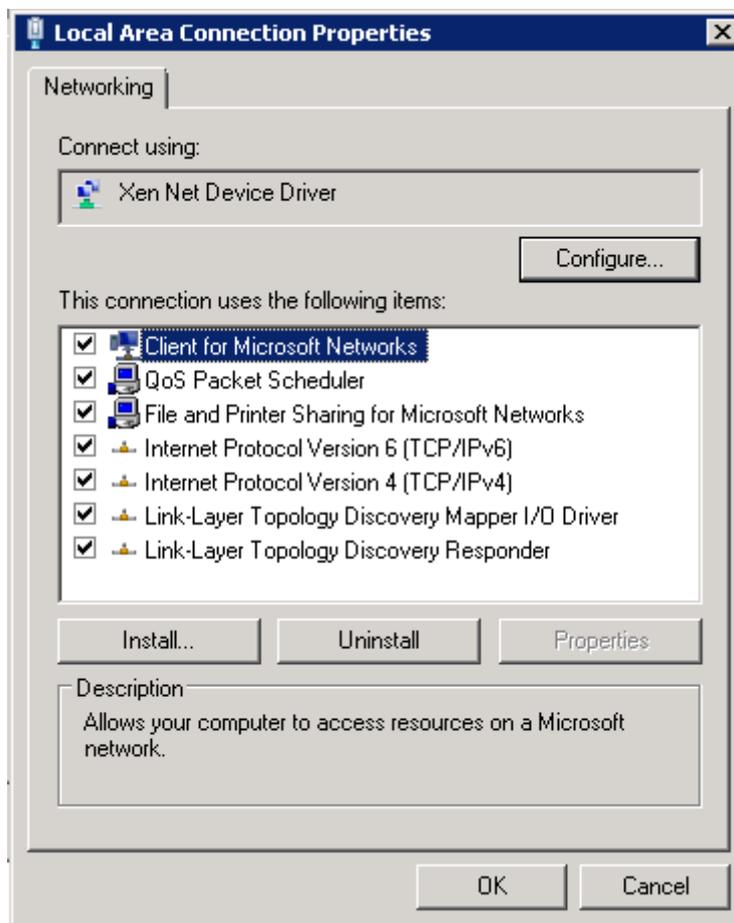
The navigation path of **Network Connections** on the **Control Panel** may vary depending on the OS version. Choose the corresponding path as required.

The **Network Connections** dialog box is displayed.

2. Click **Properties**.

The **Local Area Connection Properties** dialog box is displayed, as shown in [Figure 5-73](#).

**Figure 5-73** Local area connection properties



3. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**, and click **OK**.
5. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 2 Check Email sending server.**

1. Check whether the IP address or domain name configured for **Email sending server** is correct.  
If the configuration is correct, go to the next step. Otherwise, configure the correct IP address or domain name by referring to [5.1.7.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 3 Check Email sending port No.**

1. Check whether the setting of **Email sending port No** is correct.  
If the configuration is correct, go to the next step. Otherwise, configure the correct port number by referring to [5.1.7.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 4 Check User name and Password.**

1. Check whether **User name** and **Password** are correctly configured.  
If the configuration is correct, go to the next step. Otherwise, configure the correct user name and password by referring to [5.1.7.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 5 Check Sender email address and Recipient email address.**

1. Check whether **Sender email address** and **Recipient email address** are correctly configured.  
If the configuration is correct, go to the next step. Otherwise, configure the correct email address by referring to [5.1.7.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 6** If the problem persists after the preceding possible causes are ruled out, contact Huawei technical support engineers.

----End

### 5.1.8.18 How Do I Solve the Problem that the Calculated Performance Ratio Is Inaccurate?

This section describes how to locate the cause of performance ratio inaccuracy and solve this problem.

## Possible Causes

The total component capacity is not configured for inverters.

## Procedure

**Step 1** Check whether total component capacity is configured for all inverters.

1. Log in to the NetEco 1000S client as the system administrator or a user in the system operator group.
2. Click the **Monitor** tab.
3. Choose the inverter to be checked from the navigation tree in the left pane and click the **Settings** tab in the right pane.

The **Device Information** page is displayed.

4. Check whether **Total string capacity** is configured.
  - If it is configured, view the configuration pages of all inverters in sequence and check whether **Total string capacity** has been configured for all inverters.

 **NOTE**

If any inverters are not configured with **Total string capacity**, configure **Total string capacity** for them.

- If it is not configured, enter the target value in the **Total string capacity** text box and click **Save** in the upper right corner.

 **NOTE**

To change the total string capacity of multiple inverters to the value set in last step, click **Batch Apply** and select target devices.

5. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 2** If the problem persists after the preceding possible causes are ruled out, contact Huawei technical support engineers.

---End

### 5.1.8.19 Failure to Receive Emails

#### Symptom

After the alarm or report sending rules are configured on the NetEco 1000S client, no alarm or report emails are received.

#### Possible Causes

- Reasons related to the sender's server: The sender's server categorizes the emails as junk emails and therefore does not send the emails.

An email may be categorized as a junk email for the following reasons:

- The number of emails sent in a day exceeds the limit.
- The content of the email is the same as or similar to that of another email.

- Reasons related to the recipient's server:
  - The emails are categorized as junk emails and therefore cannot be received.
  - In Windows Server 2012, the email server is used for email receiving by default. The cause may be that the default host name or domain name of the email server is not recognized. As a result, the emails fail to be received.  
This problem may occur if customers use the email server installed by themselves.

## Procedure

**Step 1** Check the sender's email server.

- In Windows Server 2012, enable the SMTP server for email sending.
- In Windows 7 or Windows 10, upgrade the mailbox to a VIP mailbox for email sending. For detailed operations, contact Huawei technical support engineers.

**Step 2** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, go to the next step.

**Step 3** Check the recipient's mailbox.

Check whether junk emails contain emails from the NetEco 1000S. If yes, set the mailbox so that emails from the NetEco 1000S are not categorized as junk emails.

**Step 4** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, go to the next step.

**Step 5** If the operating system is Windows Server 2012, change the email server attribute.

Set the host name or domain name of the email server to a value in the `****.****.****` format, such as **mail.neteco.com**.

**Step 6** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, contact Huawei technical support.

----End

### 5.1.8.20 What Do I Do If the Client Does Not Display the Language Selected During Last Access After Access to the NetEco 1000S Using a Web Browser?

#### Symptom

When a user accesses the NetEco 1000S using a web browser again, the client does not display the language selected during last access.

#### Possible Causes

- The browser has been configured to delete browsing history on exit.
- Cookies have been disabled for the browser.
- The URL entered in the address box of the browser for accessing the client carries a language attribute.

## Procedure

**Step 1** Cancel browsing history deletion upon exit for the browser.

1. Choose **Tools > Internet Options** from the main menu of the browser.
2. On the **General** tab page, clear **Delete browsing history on exit**.

**Step 2** Allow cookies.

1. Choose **Tools > Internet Options** from the main menu of the browser.
2. On the **Privacy** tab page, click **Advanced**.  
The **Advanced Privacy Settings** dialog box is displayed.
3. Select **Override automatic cookie handling**, select **Accept** under **First-party Cookies** and **Third-party Cookies**, select **Always allow session cookies**, and click **OK**.

**Step 3** Delete the language attribute (**webLang=xxx**) carried in the client access URL.

For example, if the client access URL is **https://IP address:8443/index.action?webLang=zh\_CN**, delete the language attribute from the URL. That is, use **https://IP address:8443/index.action** to access the client.

---End

### 5.1.8.21 What Should I Do When Running the SSLTools.bat Script to Generate a New Certificate Fails?

#### Symptom

Running the **SSLTools.bat** script to generate a new certificate fails, and the following information is displayed.

```
Create keystore file failed.
```

#### Possible Cause

**vcredist.x86.exe** is not installed for the current operating system.

#### Procedure

**Step 1** Obtain **vc\_redist.x86.exe** from the Microsoft official website and save it to the current operating system.

**Step 2** Double-click **vc\_redist.x86.exe** and install it.

**Step 3** Run the **SSLTools.bat** script again to generate a new certificate.

---End

### 5.1.8.22 What Do I Do to Control the User Authorization upon First Login?

For NetEco 1000S of V100R002C70 or later versions, no user authorization is required upon the first login by default. However, you can modify `userManagement.properties` to change the system configuration so that user authorization is required upon the first login.

## Prerequisites

The NetEco 1000S is of V100R002C70 or a later version.

## Procedure

**Step 1** Update the **Privacy Policy** and **Terms of Use** in compliance with local laws and regulations.

The methods of updating the **Privacy Policy** or **Terms of Use** are similar. The following describes how to update **Privacy Policy**.

1. Navigate to *NetEco 1000S installation directory*\tools\userPrivacy\template to obtain **userPrivacy.xml**:



To update **Terms of Use**, please navigate to *NetEco 1000S installation directory*\tools\UseOfTerms\template to obtain **UseOfTerms.xml**.

2. Store **userPrivacy.xml** under *NetEco 1000S installation directory*\tools\userPrivacy, open the file in text mode, and edit it.



To update **Terms of Use**, please store **UseOfTerms.xml** under *NetEco 1000S installation directory*\tools\UseOfTerms.



### NOTICE

- The file under *NetEco 1000S installation directory*\tools\userPrivacy must be named as **userPrivacy.xml**. If not, modify it.
- The file under *NetEco 1000S installation directory*\tools\UseOfTerms must be named as **UseOfTerms.xml**. If not, modify it.

3. Update the version and time for the Privacy Policy.  
Modify the tag content based on [Table 5-37](#) and actual conditions.

**Table 5-37** Updating the version and time

Pair	Description
<version> 1.0 </version>	Version of the <b>Privacy Policy</b> . Modify the version when the <b>Privacy Policy</b> is updated. The first issue is version 1.0, the second issue version 2.0, and so forth.
<updateTime > 2017-07-06 </updateTime>	Update time of the <b>Privacy Policy</b> . Modify the time when the Privacy Policy is updated. The time format is as 2017-07-06.

4. Update the Privacy Policy in Chinese, English, Japanese, French, and German based on [Table 5-38](#) and actual conditions, and save the updates.

**Table 5-38** Five language environments

Pair	Description
<pre>&lt;country name="zh_CN"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in Chinese environment.
<pre>&lt;country name="en_US"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in English environment.
<pre>&lt;country name="ja_JP"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in Japanese environment.
<pre>&lt;country name="fr_FR"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in French environment.
<pre>&lt;country name="de_DE"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in German environment.

**Step 2** Navigate to *NetEco 1000S software installation directory\tools*, and run the **UserTools.bat** script.

The following information is displayed:

```
1 Update userPrivacy file.
2 Update UseOfTerms file.
3 Change life cycle of operatelog<1~3650>.
4 Exit.
Please Choose:
```

**Step 3** Enter 1 and press **Enter**.

 **NOTE**

If you need to synchronize the updated **Terms of Use** to the NetEco 1000S, enter 2 and press **Enter**.

The **Privacy Policy** is updated successfully.

**Step 4** Navigate to the following directory:

*NetEco 1000S installation directory*\WebRoot\WEB-INF\classes

**Step 5** Open the **userManagement.properties** file, change the value of **PrivacyStatementType** and **isShowUseTerms** to **1**, and save the change result.

 **NOTE**

- If you only want to display Privacy Policy on **User Authorization** page, please only change the value of **PrivacyStatementType** to **1**.
- If you want not to display **User Authorization** page, please change the value of **PrivacyStatementType** to **0**.

**Step 6** Restart the NetEco 1000S.

The settings become valid.

The **User Authorization** page is displayed upon the first login, you need to view the Privacy Policy and Terms of Use and select **Agree to the Privacy Policy** and **Agree to the Terms of Use** (If the Terms of Use is set not to be displayed, you cannot view the Terms of Use here) before clicking **OK** to continue the operations.

---End

## Follow-up Procedure

- If the Privacy Policy and Terms of Use are updated, you can run the **UserTools.bat** script to synchronize the updated Privacy Policy and Terms of Use to the NetEco 1000S. For details, refer to [Step 1](#), [Step 2](#), and [Step 3](#) in [Procedure](#).

---

### **NOTICE**

The NetEco 1000S automatically detects the version of Privacy Policy or Terms of Use (when the Terms of Use is set to be displayed on User Authorization page) at 00:00:00 every day. If a version change is detected, you will be forcibly logged out of both the NetEco 1000S client and the NetEco 1000S app. You need to select **Agree to the Privacy Policy** and **Agree to the Terms of Use** on the NetEco 1000S client before using the NetEco 1000S.

- You can also run the **UserTools.bat** script to change the life cycle of operation logs.

 **NOTE**

- The life cycle of operation logs is half a year by default.
  - This function is irrelevant to updating Privacy Policy and Terms of Use.
- a. Go to *NetEco 1000S software installation directory*\tools, and run the **UserTools.bat** script.

The following information is displayed:

```
1 Update userPrivacy file.
2 Update UseOfTerms file.
3 Change life cycle of operatelog<1~3650>.
4 Exit.
Please Choose:
```

- b. Enter 3 and press **Enter**.

The following information is displayed:

Please input the life cycle of operatelog:

- c. Enter the number of days as required and press **Enter**.  
User-defined life cycle of operation logs ranges from 1 to 3650, indicating 1 - 3650 days.
- d. Restart the NetEco 1000S to validate the settings.

## 5.2 NetEco 1000S Web Client Operation (Residential)

This section describes how to log in to the residential NetEco 1000S and how to perform the operations to the NetEco 1000S on the web client.

You are not allowed to change the OS time whereas the software is running.

### 5.2.1 Getting Started

#### 5.2.1.1 Logging In to the NetEco 1000S

This section describes how to log in to the NetEco 1000S before using the service functions supported by NetEco 1000S.

#### Prerequisites

- NetEco 1000S is switched to a residential system. For details, see [5.2.7.7 What Do I Do to Switch to the Residential NetEco 1000S System](#).
- You have obtained the user Account/Email and password for logging in to the NetEco 1000S.

#### Procedure

- Step 1** Open the web browser.



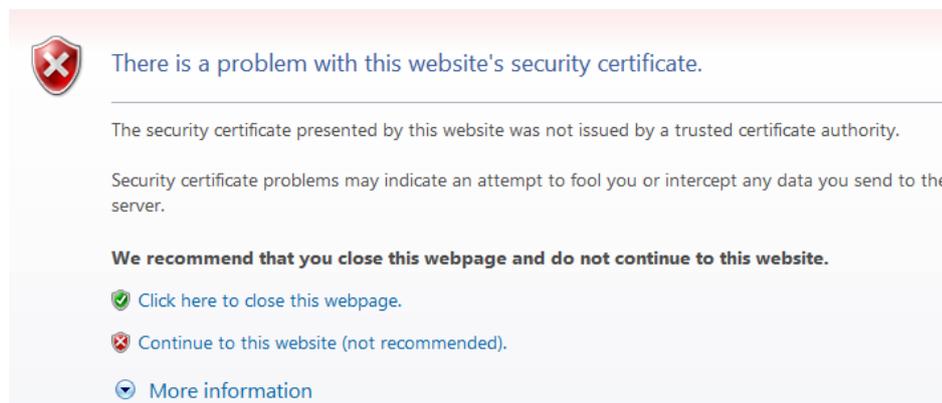
#### NOTICE

The web browser must be Internet Explorer 11 or Chrome 50. Otherwise, some browser problems may occur when users query data.

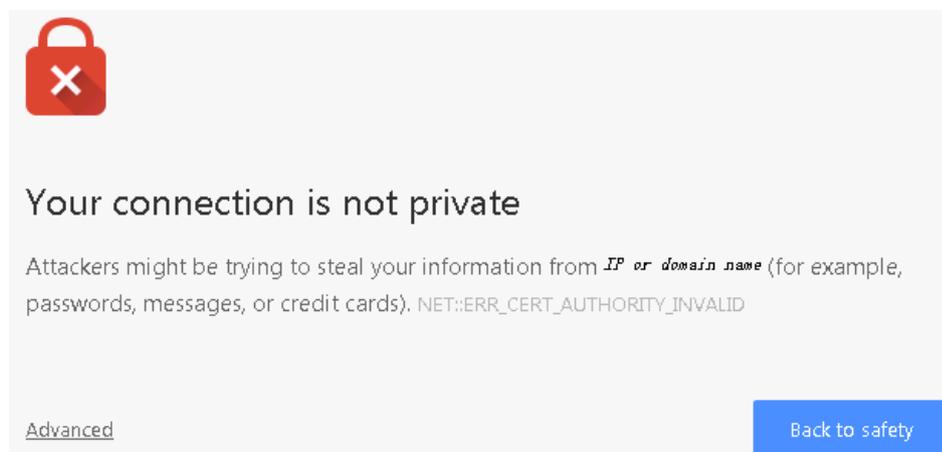
---

- Step 2** Enter **https://IP address:8443** in the address bar, and press **Enter**.
- Step 3** the GUI shown in [Figure 5-74](#) or [Figure 5-75](#) will be displayed when you start the client.

**Figure 5-74** Website Security Certificate window (Internet Explorer)



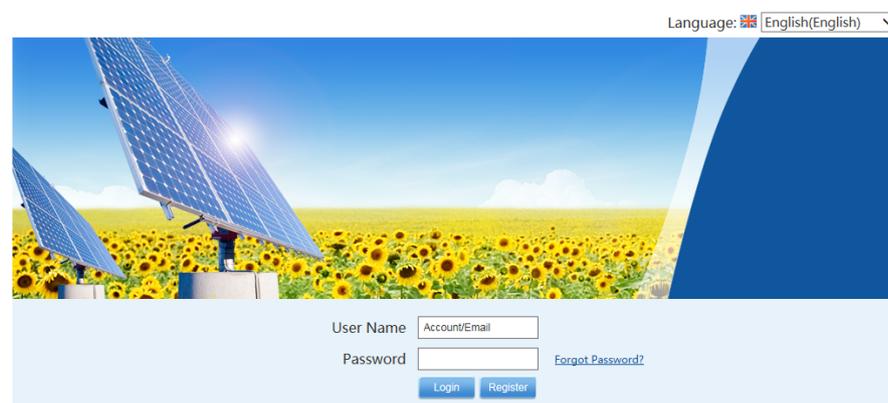
**Figure 5-75** Website Security Certificate window (Chrome 50)



- When using the Internet Explorer, click **Continue to this website (not recommended)** in **Figure 5-74**.
- When using the Chrome, choose **Advanced > Proceed to IP or domain name (unsafe)** in **Figure 5-75**.

The **Login** window is displayed, as shown in **Figure 5-76**.

**Figure 5-76** Login



**Step 4** On the **Login** page, select a language to be used by the NetEco 1000S client from the drop-down list box.

 **NOTE**

- Chinese, English, Japanese, German, and French are supported. If you do not select a language, the language used during the NetEco 1000S client installation is used.
- The selected language takes effect only for the currently user who is logged in using the current browser.
- After changing the language, only the static information (information not entered by users) is changed, such as the titles, menu names, and messages. Dynamically generated information such as operation logs are still recorded and displayed in the language used during the NetEco 1000S client installation. Information entered by users, such as the plant name, plant description, and device name, are displayed in the language in which the information is entered.
- After you select a language on the **Login** page or the home page, the browser will record the language information (for 30 days). If the browser cache is not cleared or disabled, the recorded language is used upon your next login.

**Step 5** Enter **Account/Email** and **Password**, and click **Login**.



**NOTICE**

If the **User Authorization** page is displayed here, select **Agree to the Privacy Policy** and **Agree to the Terms of Use** before clicking **OK** to continue the operations.

---

The **System Initial Password** page is automatically displayed after the password expires. Change the password and log in to the NetEco 1000S client using the new password.



**NOTICE**

- Use the system administrator user when you log in to the NetEco 1000S for the first time. This user has the highest operation rights.
- To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.
- The password cannot be the user name or the reversed user name.
- The length ranges from 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include `!"#$%&'()*+,-./:;<=>?@[\\]^`{|}~` and space.

---

If you forget the password, perform the following operations.

---

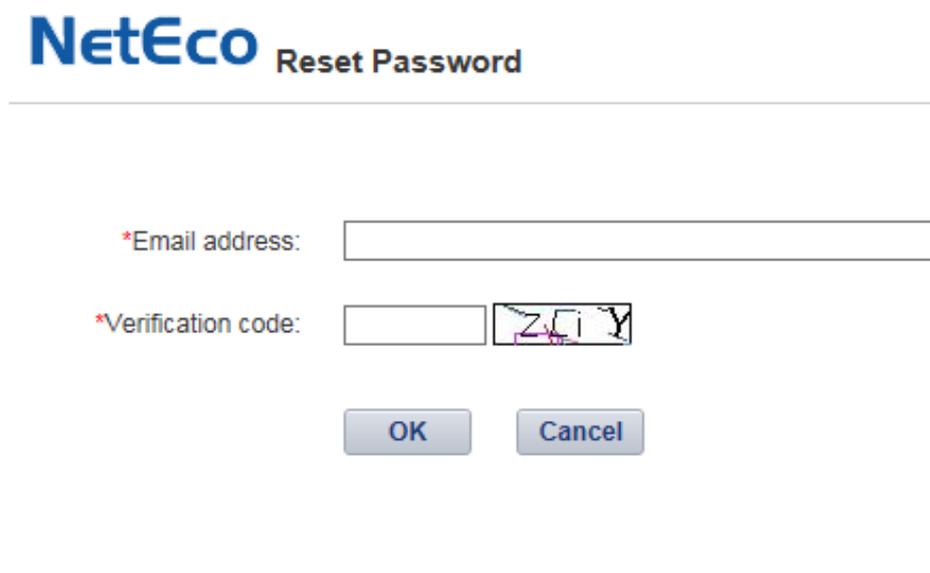
 **NOTICE**

- Ensure that the email server has been configured. Otherwise, the password cannot be reset. For details about how to configure the email server, see [5.2.6.3.1 Setting Parameters for the Email Server](#).
- This operation requires that the current user is an installer or customer.
- A user can reset the password three times a day at most.

- 
1. Click **Forget Password**.

The **Reset Password** page is displayed, as shown in [Figure 5-77](#).

**Figure 5-77** Reset Password



2. Enter the email address and verification code.
3. Click **OK**.  
The Operation succeeded. Confirm the initialization password within 5 minutes. Otherwise, the confirmation email will be invalid. prompt message is displayed.
4. Click **OK**.  
Check the email for retrieving the password and perform the operations specified in the email.

---

 **NOTICE**

If the link in the email cannot be accessed, check whether the IP address contained in the link is the same as the IP address of the NetEco 1000S server. If no, change the IP address contained in the link to the IP address of the NetEco 1000S server. Then, you can access the link successfully.

---

----End

## Exception Handling

When user B logs in to the client after user A logs in to it, the following problems may occur:

- After user B enters the login address in the address box of the browser, the login window for user A is displayed but that for user B is not displayed.
- After user B logs in to the client, user A's session window is automatically switched to user B's login window and user A is logged out.

The preceding problems are caused by the browser mechanism. They can be prevented using the following methods:

- When using the Internet Explorer, choose **File > New Session** from the menu bar.  
In the displayed session window, enter the login address. You can log in to the client as user B successfully.
- When using the Chrome, open the menu and choose **New incognito window**.  
In the displayed incognito window, enter the login address. You can log in to the client as user B successfully.

### 5.2.1.2 Logging Out of the NetEco 1000S

#### Procedure

**Step 1** Click  in the upper right corner from the main menu to log out. The **Login** page is displayed.

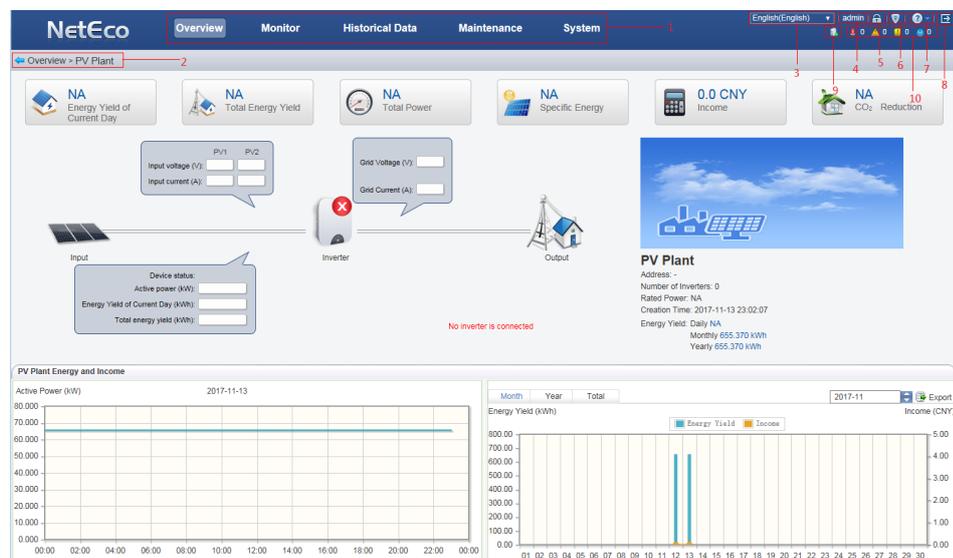
----End

### 5.2.1.3 Getting to Know the NetEco 1000S Home Page

This section describes the NetEco 1000S home page. Getting familiar with the NetEco 1000S home page helps you quickly find the entry for an operation and improve operation efficiency.

**Figure 5-78** shows the homepage of the NetEco 1000S client after the login. **Table 5-39** describes the items on the homepage.

**Figure 5-78** NetEco 1000S homepage



**Table 5-39** NetEco 1000S homepage

No.	Name	Description
1	Menu bar	Indicates the main menu of the system.
2	Operation display area	Displays the GUI of the selected function.
3		<p>You can click this icon to select a language to be used by the NetEco 1000S client.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>Chinese, English, Japanese, German, and French are supported. If you do not select a language, the language used during the NetEco 1000S client installation is used.</li> <li>The selected language takes effect only for the current user who has logged in using the current browser.</li> <li>After changing the language, only the static information (information not entered by users) is changed, such as the titles, menu names, and messages. Dynamically generated information such as operation logs are still recorded and displayed in the language used during the NetEco 1000S client installation. Information entered by users, such as the plant name, plant description, and device name, are displayed in the language in which the information is entered.</li> <li>After you select a language on the <b>Login</b> page or the home page, the browser will record the language information (for 30 days). If the browser cache is not cleared or disabled, the recorded language is used upon your next login.</li> </ul>
4	Current logged-in user	Displays the name of the current logged-in user.
5	Password changing icon	You can click this icon to change the current password.
6	User Authorization icon	You can click this icon to open the <b>User Authorization</b> page to view the Privacy Policy and Terms of Use.
7	Help icon	<p>You can click <b>Help</b> under this icon to open the online help.</p> <p><b>NOTE</b></p> <p>The customer cannot access the online help.</p> <p>You can click <b>About</b> under this icon to check the version information.</p>
8	Exit icon	You can click this icon to exit the client.
9	NetEco Alarm icon	<p>Displays whether the NetEco 1000S has generated alarms.</p> <ul style="list-style-type: none"> <li>: The NetEco 1000S has generated alarms. For details, see <a href="#">5.2.5.6 Querying NetEco Alarms</a>.</li> <li>: The NetEco 1000S generates no alarm.</li> </ul> <p><b>NOTE</b></p> <p>The customer cannot access the alarm information about the management system.</p>

No.	Name	Description
10	Alarm board icon	Displays the number of the current alarms. Alarms of different alarm severities are marked in different colors. You can click this icon to enter the <b>Alarms</b> window. <a href="#">Table 5-40</a> lists the icon meaning. <b>NOTE</b> The customer cannot access the alarm board information.

**Table 5-40** Alarm status images

Image	Status
	Critical
	Minor
	Major
	Warning

## 5.2.2 Managing the PV Plants

### 5.2.2.1 Viewing the Plant List

You can learn the overview of all plants connected to the NetEco 1000S by viewing the plant list.

#### Prerequisites

You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).

#### Context

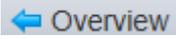
The plant list displayed on the **Plant List** page varies with the login users. The details are as follows:

- system administrator: Displays all PV plants connected to the NetEco 1000S.
- Installer or customer: Displays only PV plants that the current user can access.

#### Procedure

- If you log in to the NetEco 1000S as the system administrator or installer, you can view the plant list on the **Overview** and **Monitor** pages. For details, see [Table 5-41](#).
- If you log in to the NetEco 1000S as a customer, you can view the plant list only on the **Overview** page. For details, see [Table 5-41](#).

**Table 5-41** Procedure for viewing the plant list

Methods of Viewing the Plant List	Procedure
On the <b>Overview</b> page	<ol style="list-style-type: none"> <li>1. Choose <b>Overview</b> form the main menu.</li> <li>2. You can view the plant list on the <b>Overview</b> page, as shown in <a href="#">Figure 5-79</a>. For detailed parameters, see <a href="#">Table 5-42</a>. <ul style="list-style-type: none"> <li>● If the number of PV plants that you can access is 0 or greater than 1, the <b>Overview</b> page displays the plant list by default.</li> <li>● If you can access only one PV plant, the <b>Overview</b> page displays the PV plant overview by default. You need to click  in the upper left corner of the page to view the plant list.</li> </ul> </li> </ol>
On the <b>Monitor</b> page	<ol style="list-style-type: none"> <li>1. Choose <b>Monitor</b> from the main menu.</li> <li>2. In the navigation pane on the left, choose <b>PV System</b>.</li> <li>3. In the displayed operation area, choose <b>Plant List</b>. You can query the data about all plants in <b>Plant List</b>, as shown in <a href="#">Figure 5-80</a>. For details, see <a href="#">Table 5-42</a>.</li> </ol>

**Figure 5-79** plant list in overview



PV plant name	Status	Address	Rated Power(kW)	Specific Energy (kWh/kWp)	Total Power(kW)	Energy Yield of Current Day (kWh)	Total Energy Yield (kWh)	Income(CNY)	City
Plant-A	-	123	-	-	-	-	-	-	(UTC+08:00)PR

**Figure 5-80** plant list in monitor



PV plant name	Status	Address	Rated Power(kW)	Specific Energy (kWh/kWp)	Total Power(kW)	Energy Yield of Current Day (kWh)	Total Energy Yield (kWh)
Plant-A	-	123	-	-	-	-	-

**Table 5-42** Parameter description

Item	Description
PV plant	Name of a PV plant. <b>NOTE</b> Click the PV plant name. The <b>Details</b> page of the PV plant is displayed.
Status	Alarm with the highest severity in a PV plant. <b>NOTE</b> If no devices are connected in the current PV plant, - will be displayed.
Country	Country where a PV plant is located. Not displayed by default.

Item		Description
City		City where a PV plant is located. Not displayed by default.
Address		Address of a PV plant.
Zip code		Zip code of the address where a PV plant is located. Not displayed by default.
Rated Power		Total rated power of inverters connected to the PV plant
Specific Energy		Total equivalent power generation duration of a PV plant.
Total Power		Current total power of a PV plant.
Energy Yield of Current Day		Current-day energy yield
Total Energy Yield		Total energy yield of a PV plant.
Income		Total income of a PV plant. <b>NOTE</b> Currency of the total income of a PV plant is the standard currency selected when the NetEco 1000S is installed.
Time zone	City	Time zone where the PV plant is located.
	Enable daylight saving time	Indicating whether the daylight saving time is used in the time zone where the PV plant is located. If the daylight saving time is not used, - will be displayed.

 **NOTE**

- You can click  next to the **PV plant**, **Country**, **City**, **Address**, and **Zip code** column to sort PV plants by parameter in ascending or descending order.  
Parameters are sorted in Unicode mode. The priority of PV plants whose names contain hyphens (-), digits, uppercase letters, underscores (\_), lowercase letters, and Chinese characters decreases in sequence.
- You can click  next to the **Status** column to sort alarms by severity in ascending or descending order.

## Follow-up Procedure

 in the upper right corner provides the function of displaying only specified columns in the table on the **Plant List** tab page. To display specified columns, perform the following steps:

**Step 1** Click .

The **Select Column** dialog box is displayed.

**Step 2** Select the names of the columns that need to be displayed. Then, click **OK**.

----End

### 5.2.2.2 Creating a PV Plant

This section describes how to create a plant. After the NetEco 1000S is installed, a default plant is available. You can also create another plant as required.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- The IP address of the NetEco 1000S has been registered with the inverter, and the inverter has been successfully registered with the management system. For details about how to configure the IP address of the NetEco 1000S on the inverter, see the inverter *user manual*.
- You have obtained the device SN and registration code.

#### Procedure

**Step 1** Choose **Overview** from the main menu.

**Step 2** Click  **Create PV plant** in the upper left corner.

The **Create PV Plant** window is displayed, as shown in [Figure 5-81](#).

**Figure 5-81** create pv plant

**Step 3** Set plant parameters by referring to [Table 5-43](#).

**Table 5-43** PV Plant parameters

Item	Mandatory (Yes/No)	Description
PV plant name	Yes	Name of a PV plant.

Item	Mandatory (Yes/No)	Description
Country	Yes	Country where a PV plant is located.
City	Yes	City where a PV plant is located.
Address	Yes	Address of a PV plant.
Time Zone	Yes	Select the time zone for the plant from the drop-down list box. The time zone where the NetEco 1000S server is located, or the time zone of the country where the plant is located, is selected by default.  If the daylight saving time is used in the selected time zone, the <b>Enable daylight saving time</b> check box will be displayed. You can select the check box to enable daylight saving time.
Zip code	Yes	Zip code of the address where a PV plant is located.
Electricity price	Yes	Price of the power. Value range: 0.0000-99.9999
Currency	Yes	Price unit. You can set the unit in the <b>Income Settings</b> dialog box by choosing <b>System &gt; System Settings &gt; Income Settings</b> .
PV Plant Image	No	1. Click <b>Upload</b> . 2. Select a plant photo and click <b>Open</b> . <b>NOTE</b> The size of the photo must be less than 5 MB and in <b>.jpg</b> , <b>.png</b> , or <b>.gif</b> format. Otherwise, the upload will fail.
Device	Yes	1. Click  . 2. Specify the SN, registration code, and total string capacity (optional) of the SUN2000L inverter. After a PV plant is created on the NetEco 1000S, the SUN2000L inverter automatically mounts to the PV plant. <b>NOTE</b> If you are a registered user, the SN and registration code entered during the registration will be automatically linked and displayed.
PV plant description	No	Description of a PV plant. Enter utility information about the PV plant.

**Step 4** Click **Save**.

----**End**

## Other Operations



You can click  in the navigation tree on the left of the **Monitor** page to create a PV plant. The **Create PV Plant** window displayed here does not have **PV Plant Image**. For details about how to fill in other parameters, see [Table 5-43](#).

### 5.2.2.3 Obtaining an Overview of a PV Plant

You can learn the device status and PV plant running information by querying the overview of the PV plant.

#### Prerequisites

You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).

#### Procedure

- If you log in to the NetEco 1000S as the system administrator or installer, you can obtain an overview of the PV plant on the **Overview** and **Monitor** pages. For details, see [Table 5-44](#).
- If you log in to the NetEco 1000S as a customer, you can obtain an overview of the PV plant on the **Overview** page. For details, see [Table 5-44](#).

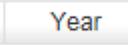
**Table 5-44** Procedure for obtaining an overview of the PV plant

Where to Obtain an Overview of the PV Plant	Procedure
On the <b>Overview</b> page	<ol style="list-style-type: none"> <li>1. Choose <b>Overview</b> from the main menu. The <b>Plant List</b> page is displayed. <b>NOTE</b> If you can only access one PV plant, the <b>Overview</b> page displays the plant list by default.</li> <li>2. Click a name in the plant list. The overview of the PV plant is displayed.</li> </ol>
On the <b>Monitor</b> page	<ol style="list-style-type: none"> <li>1. Choose <b>Monitor</b> from the main menu.</li> <li>2. In the navigation pane on the left, choose <b>PV System</b> or a user-defined PV plant.</li> <li>3. In the displayed operation area, choose the <b>Details</b> tab. The overview of the PV plant is displayed.</li> </ol>

#### Follow-up Procedure

- On the **Overview** page, the system administrator, installer, or customer can perform the following operations.

**Table 5-45**

Procedure	Step
View all indicators of the PV plant.	View <b>Energy Yield of Current Day, Total Energy Yield, Total Power, Specific Energy, Income, and CO<sub>2</sub> Reduction</b> on the <b>Overview</b> page.
View the inverter details.	View the details of inverters under the PV plant on the left of the <b>Overview</b> page.
View the PV plant information.	View the basic information about the PV plant on the right of the <b>Overview</b> page.
View the PV plant power curve.	<p>View the power curves of the PV plant in the lower left part of the <b>Overview</b> page.</p> <p>Meanings of the coordinates are as follows:</p> <ul style="list-style-type: none"> <li>● Vertical coordinate: Active power of the PV plant.</li> <li>● Horizontal coordinate: data collection period. The interval is two hours. For how to configure <b>Collection time</b>, please see <a href="#">5.2.2.6 Modifying the Information About a PV Plant</a>.</li> </ul> <p><b>NOTE</b></p> <p>The start time of the horizontal coordinate is an even number. If the data collection start time configured in <a href="#">5.2.2.6 Modifying the Information About a PV Plant</a> is an odd number, use the previous one even number as the start time of the horizontal coordinate. For example, if the start time for <b>Collection time</b> is set to <b>01:00</b>, the start time of the horizontal coordinate is <b>00:00</b>.</p>
View and export the historical data about the energy yields and incomes of the PV plant.	<ol style="list-style-type: none"> <li>1. View the historical data about the energy yields and incomes of the PV plant in the lower right part of the <b>Overview</b> page. Meanings of the coordinates are as follows: <ul style="list-style-type: none"> <li>● Vertical coordinate on the left: energy yields</li> <li>● Vertical coordinate on the right: incomes</li> </ul> Horizontal coordinate: time period. Click    to switch between the time periods. </li> <li>2. Click  <b>Export</b> to export the history information about the energy yields and incomes of the PV plant.</li> </ol>

- On the **Details** page under **Monitor**, the system administrator or installer can perform the following operations.

Operation	Procedure
<p>View details about <b>Energy Yield of Current Day</b>, <b>Total Energy Yield</b>, <b>Total Power</b>, <b>Specific Energy</b>, <b>Income</b>, and <b>CO<sub>2</sub> Reduction</b>.</p> <p><b>NOTE</b> You can view details about <b>Income</b> only on the <b>Details</b> page of the PV system.</p>	<p>The way of viewing the running information about all PV plants is the same. Viewing information about <b>Energy Yield of Current Day</b> is used as an example.</p> <ol style="list-style-type: none"> <li>1. Move the mouse pointer to the pane displaying the information about <b>Energy Yield of Current Day</b>. The <b>View Details</b> link is displayed.</li> </ol> <p><b>Figure 5-82</b> Viewing details</p>  <p><b>Figure 5-82</b> Viewing details</p> <ol style="list-style-type: none"> <li>2. Click <b>View Details</b>. Information about <b>Energy Yield of Current Day</b> for each device is displayed in the <b>Details</b> window.</li> </ol> <p><b>NOTE</b> In a PV system, information about <b>Energy Yield of Current Day</b> for each plant will be displayed.</p>
<p>View the information about the inverters connected to the PV plant</p> <p><b>NOTE</b> If the value of <b>Total string capacity</b> in inverter information is displayed in red, <b>Total string capacity</b> is not configured for the inverter. Configure it by following the instructions provided in <a href="#">5.2.3.4 Modifying the Information About a Device</a>.</p>	<ul style="list-style-type: none"> <li>● On the <b>Details</b> tab page of the PV system, you can view the icons of the inverters connected to all PV plants.</li> <li>● On the <b>Details</b> tab page of the PV plant, you can view the icons of all the inverters connected to the PV plant.</li> </ul> <p><b>NOTE</b></p>  <p>Icons of SUN2000L:</p>

Operation	Procedure
View the PV plant power curve.	<p>View the PV plant power curve in the <b>PV Plant Power Statistics</b> area.</p> <p>Each coordinate is defined as follows:</p> <ul style="list-style-type: none"> <li>● Vertical coordinate: PV plant power</li> <li>● Horizontal coordinate: data collection period. The interval is two hours. For how to configure <b>Collection time</b>, please see <a href="#">5.2.2.6 Modifying the Information About a PV Plant</a>.</li> </ul> <p><b>NOTE</b> The start time of the horizontal coordinate is an even number. If the data collection start time configured in <a href="#">5.2.2.6 Modifying the Information About a PV Plant</a> is an odd number, use the previous one even number as the start time of the horizontal coordinate. For example, if the start time for <b>Collection time</b> is set to <b>01:00</b>, the start time of the horizontal coordinate is <b>00:00</b>.</p>
Switch to the <b>Performance Data</b> page.	Click <b>MORE</b> on the right of <b>Details</b> .
Switch the mode for displaying power statistics.	<p>Click <b>Table</b> or <b>Graph</b> in the lower area of the <b>PV Plant Power Statistics</b> column.</p> <ul style="list-style-type: none"> <li>●   : The power statistics are displayed in a table.</li> <li>●   : The power statistics are displayed in a graph.</li> </ul> <p><b>NOTE</b> The power statistics are displayed in a graph by default.</p>

### 5.2.2.4 Browsing the Device List of a PV Plant

This section describes how to browse the device list of a plant to learn the devices in the plant.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose **PV System** or a user-defined plant in the navigation tree on the left.
- Step 3** Click the **Device List** tab in the operation display area.

Key information about all devices under the selected plant is displayed on the **Device List** tab page, as shown in [Figure 5-83](#).

**Figure 5-83** Overview of Device Information

Status	Device Name	Device Status	Device Type	Real-time Monitoring Status	PV Plant	Input Power(kW)	Active Power(kW)	Energy Yield of Current Day (kWh)	Total Energy Yield (kWh)
Major	SUN2000L_9	On-grid	SUN2000L	Start	cc	65.537	65.537	655.37	655.37

⚙ in the upper right corner provides the function of displaying only specified columns in the table on the **Device List** tab page. To display specified columns, perform the following steps:

1. Click ⚙.  
The **Select Column** dialog box is displayed.
2. Select the names of the columns that need to be displayed. Then, click **OK**.

----End

## Follow-up Procedure

System administrator and installers can also perform the following operations on the **Device List** tab page:

Operation	Steps
Start the real-time data collection task	<ol style="list-style-type: none"> <li>1. Select one or more devices for which you want to start the real-time data collection task.</li> <li>2. Click .</li> <li>3. In the displayed dialog box, click <b>OK</b>.</li> </ol>
Stop the real-time data collection task	<ol style="list-style-type: none"> <li>1. Select one or more devices for which you want to stop the real-time data collection task.</li> <li>2. Click .</li> <li>3. In the displayed dialog box, click <b>OK</b>.</li> </ol>

### 5.2.2.5 Browsing Alarm Information About a PV Plant

This section describes how to browse alarm information about a plant to learn about the current alarms for all devices under the plant.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Choose **PV System** or a user-defined plant in the navigation tree on the left.

**Step 3** Click the **Alarm** tab in the operation display area.

The current alarms for all devices under the selected plant is displayed on the **Alarm** tab page, as shown in [Figure 5-84](#).

**Figure 5-84** Overview of Alarm Information about a PV Plant

Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On
Major	System Fault	SUN2000	SUN2000_1734	--Inverter_NA	2106-02-07 06:28:15
Major	Abnormal Invert Circuit	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	Low Insulation Resistance	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	Cabinet Overtemperature	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	Abnormal Grid Frequency	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	Sting 1 Reverse	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	Abnormal DC Circuit	SUN2000	SUN2000_1730	--Inverter_NA	2106-02-07 06:28:15
Major	System Fault	SUN2000	SUN2000_1733	--Inverter_NA	2106-02-07 06:28:15
Major	System Fault	SUN2000	SUN2000_1735	--Inverter_NA	2106-02-07 06:28:15

**Step 4 Optional:** Click an alarm name in the **Alarm Name** column to view the details.

**NOTE**

Alarms that have not been browsed are highlighted in bold.

**Step 5 Optional:** Click **Export** to export the queried alarm information into a CSV file.

----End

## Follow-up Procedure

Click **Lock**. Alarms are no longer automatically updated on the **Alarm** page. In this way, you can view the alarms reported only before the lock. To enable the automatic update function again and view newly reported alarms, click **Scroll Unlock**.

**NOTE**

If excessive alarms are generated, these alarms are displayed on multiple pages. In this case, pages except the first one are locked and the **Scroll Unlock** button is unavailable for you to unlock those pages.

By default, the alarm lock function on the **Alarm** page is disabled.

### 5.2.2.6 Modifying the Information About a PV Plant

This section describes how to modify the information about a plant on the NetEco 1000S if the information is inconsistent with that about the actual plant.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the plant whose information is to be changed in the navigation tree on the left.

**Step 3** Click the **Settings** tab in the operation display area.

Information about the selected plant is displayed on the **Settings** tab page.

 **NOTE**

In **PV Plant Description** area, **Initialization time** indicates the creating time of the plant, and it is non-editable.

**Step 4** Click **Refresh** in the upper right corner to refresh the parameter information.

**Step 5** Modify the following information in **Table 5-46** about a plant as required.

**Table 5-46** Parameters of the PV plant

Parameter Type	Parameter	Description
PV Plant Description	PV plant name	Enter a PV plant name.
	Description	Enter the description of a PV plant.
	Country	Select the country where a PV plant is located.
	City	Enter the city where a PV plant is located.
	Address	Enter the PV plant address.
	Zip code	Zip code of the address where a PV plant is located.
Parameter Setting	Ratio threshold(%)	Set the ratio threshold as required.
	Electricity price	Set the electricity price as required. <b>NOTE</b> <ul style="list-style-type: none"> <li>● If you want to update the income within historical time segments (current day also included), change the electricity price, click <b>Update Income</b>, and select a historical time segment.</li> <li>● If you need the income to be calculated based on the new electricity price from current day on, click <b>Save</b> in the upper-right corner of the configuration page.</li> </ul>
	Currency	Set the currency as required.
	CO <sub>2</sub> emission reduction coefficient (kg/kWh)	Set the CO <sub>2</sub> emission reduction coefficient as required.

Parameter Type	Parameter	Description
	Reference Value Settings	<p>Incomplete historical energy yield data may lead to an inaccurate income value. You can set reference values to correct the income value.</p> <ol style="list-style-type: none"> <li>On the <b>Settings</b> page of PV plants, click <b>Reference Value Settings</b>. The <b>Reference Value Settings</b> dialog box is displayed.</li> <li>Click <b>Auto Calculate</b> or enter a total energy yield reference value, and specify the electricity price.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The default value is the electricity price set for the PV plant.</li> <li>The value of this parameter cannot be modified. It is automatically calculated by multiplying <b>Total energy yield reference value(kWh)</b> and <b>Electricity price</b>.</li> </ul> <ol style="list-style-type: none"> <li>Click <b>OK</b> to save the modification.</li> </ol>
	Time Zone Setting	<p>Change the time zone for the plant.</p> <ol style="list-style-type: none"> <li>Click <b>Time Zone Settings</b> on the <b>Settings</b> page of the plant. The <b>Time Zone Settings</b> dialog box is displayed.</li> <li>Select the time zone for the plant from the <b>City</b> drop-down list box.</li> <li>Enable or disable the daylight saving time from the <b>Enable daylight saving time</b> drop-down list box.</li> </ol> <p><b>NOTE</b></p> <p>You can set the parameter only if the selected time zone uses the daylight saving time.</p> <ol style="list-style-type: none"> <li>Click <b>OK</b> to save the setting.</li> </ol>
Communicate Parameter	Collection time	<b>Collection time</b> indicates that the inverter in the current plant needs to collect device performance data of this period on a day.
	Real-time data collection period	<b>Real-time data collection period</b> indicates that the inverter in the current plant needs to collect changed device performance data by this period in real time.
	Full synchronization period (minutes)	<b>Full synchronization period (minutes)</b> indicates that the inverter in the current plant needs to collect all device performance data by this period in real time.

Parameter Type	Parameter	Description
	Performance file collection period (minutes)	<b>Performance file collection period (minutes)</b> indicates that the inverter in the current plant needs to collect historical device performance data by this period.

**Step 6** Modify the plant image.

1. Click **Upload**.
2. Select a plant image and click **Open**.

 **NOTE**

The size of the plant image must be less than 5 MB, and the image can be saved only in **jpg**, **png**, or **gif** format. Otherwise, the image fails to be uploaded.

**Step 7 Optional:** Remotely control devices.

- Click  to synchronize time. The NetEco 1000S performs time synchronization to synchronize time from the NetEco 1000S server to devices in the current plant.

 **NOTE**

You can synchronize time only as system administrator.

- Power on or off inverters, see [5.2.3.6 Remotely Controlling an Inverter](#).

----End

### 5.2.2.7 Deleting a PV Plant

This section describes how to delete a plant that is created incorrectly or do not need to be managed after network adjustment from the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the plant to be deleted in the navigation tree on the left.

**Step 3** Click .

A confirmation dialog box containing the message **Are you sure you want to delete?** is displayed.

 **NOTE**

A plant can be deleted only when no device exists under it. Otherwise,  is dimmed.

**Step 4** Click **Yes**.

A dialog box containing the message **Deletion succeeded** is displayed.

**Step 5** Click **OK**.

----End

## 5.2.3 Managing Devices

### 5.2.3.1 Accessing the Inverter

This section describes how to enable the inverter to access the NetEco 1000S, helping manage and monitor devices through the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- The inverter to be accessed has accessed the NetEco 1000S in FE direct connection mode.
- You have set the IP address of NetEco 1000S on the inverter. For detailed operations, see Inverter *User Manual*.
- You have obtained the device SN and registration code.
- You have created the target plant. For detailed operations, see [5.2.2.2 Creating a PV Plant](#).

#### Context

The TLS protocol is used for the NetEco 1000S to communicate with the inverter.



#### NOTICE

The TLS protocol provides the following three versions:

- TLS1.0: This version has security risks.
- TLS1.1: This version is secure.
- TLS1.2: This version is secure.

In order to be compatible with the low version of the device, the NetEco 1000S supports all of the preceding protocol versions by default. TLS1.0 has security risks. For security purposes, you are advised to use TLS1.1 or TLS1.2.

The inverter may not support TLS1.1/1.2. You are advised to replace the inverter with the one supporting TLS1.1/1.2 or upgrade the inverter to the version supporting TLS1.1/1.2.

---

#### Procedure

- **If the inverter has accessed the NetEco 1000S, perform the following operations to add the inverter to the plant:**



This operation requires that the current user is the system administrator.

**Step 1** Choose **Maintenance**> **Device Access** from the main menu.

**Step 2** In the **Device Access** page, select the target inverter and click **Add to PV plant**.



The inverter and NetEco 1000S are connected through password authentication. **Authentication Status** may be any of the following values:

- **Successful**: indicates that the authentication passwords on both sides are the same. Then, perform **Step 3**.
- **Failed**: You can perform the following operations to reconfigure the authentication password:
  1. Click **Set Authentication Password**.
  2. Enter the authentication password same as the inverter side and click **OK**.  
The authentication passwords on the inverter and NetEco 1000S sides are `/EzFp+2%r6@IxSCv` by default.  
You are advised to change the password every three months. For details, see [5.2.3.7 Changing the Authentication Passwords of the SUN2000L inverter and NetEco 1000S](#).
  3. Click **Refresh** on the **Device Access** page. When **Authentication Status** changes to **Successful**, perform **Step 3**.
- **Not authenticated**: perform **Step 3**.
  - **Not authenticated**: It indicates the current version of inverter is too early and does not support authentication. When you perform the next step, a security risk may occur. To ensure connection security, you are advised to upgrade inverter to a version supporting authentication.
  - The NetEco 1000S allows you to set whether to allow the access of the inverter that does not support authentication. For details, see [5.2.6.4.3 Setting Communication Parameters](#).

**Step 3** On the **Select Power Station** page, select the target plant and click **OK**.

**Step 4** Click **OK** in the **Confirm** dialog box.

**Step 5** View operation results.

1. Choose **Monitor** from the main menu.
2. Select the target PV plant and expand to view the added inverter and devices mounted under it.

----End

- **If the inverter does not access the NetEco 1000S, perform the following operations to add the inverter to the plant:**



This operation requires that the current user is the system administrator or installer.

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the target plant in the navigation tree on the left.

**Step 3** Click the **Add Device** tab in the operation display area, and then click **Add Device** button.

**Step 4** Enter the SN, registration code, and total string capacity (optional) of the inverter, and click **OK**.

When the inverter added to the PV plant accesses the NetEco 1000S, the following prompt is displayed in the lower right corner of the NetEco 1000S.

**Figure 5-85** Device access prompt



**Step 5** Click **Refresh** in [Figure 5-85](#) or re-select the target PV plant in the navigation tree on the left to view the added inverter.

---End

### 5.2.3.2 Browsing the Details About a Device

On the **Monitor** tab page of the NetEco 1000S client, you can view the information about the inverter and optimizer. This section describes how to browse the details about a device to learn about its running status, such as the basic information and real-time performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

#### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Choose the target device in the navigation tree on the left.

**Step 3** Click the **Details** tab in the operation display area.

Basic information and real-time performance data of the selected device is displayed on the **Details** tab page.

---End

#### Follow-up Procedure

System administrator and installers can also perform the following operations on the device **Details** tab page:

##### NOTE

There is no **Start/Stop real-time monitoring** button on the **Details** tab page of optimizer.

Operation	Steps
<p>Start the real-time data collection task</p> <p><b>NOTE</b> You can start the real-time data collection task when its status is .</p>	<p>Click .</p>
<p>Stop the real-time data collection task</p> <p><b>NOTE</b> You can stop the real-time data collection task when its status is .</p>	<p>Click .</p>

### 5.2.3.3 Browsing Alarm Information About a Device

This section describes how to browse alarm information about an inverter to learn about the current alarms for the device.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

#### Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose the target device in the navigation tree on the left.
- Step 3** Click the **Alarm** tab in the operation display area.

The information about all the current alarms of the target device is displayed in the **Alarm** tab page. [Figure 5-86](#) shows the information about all the current alarms of an inverter.

**Figure 5-86** The information about all the current alarms of the target device



Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On
Major	<b>Abnormal Grid Frequency</b>	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15
Major	<b>Low Insulation Resistance</b>	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15
Major	<b>Cabinet Overtemperature</b>	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15
Major	<b>High DC Input Voltage</b>	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15
Major	<b>Abnormal Invert Circuit</b>	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15

- Step 4 Optional:** Click an alarm name in the **Alarm Name** column to view the details.

 **NOTE**

Alarms that have not been browsed are highlighted in bold.

**Step 5 Optional:** Click **Export** to export the queried alarm information into a CSV file.

---End

## Follow-up Procedure

Click **Lock**. Alarms are no longer automatically updated on the **Alarm** page. In this way, you can view the alarms reported only before the lock. To enable the automatic update function again and view newly reported alarms, click **Scroll Unlock**.

### NOTE

If excessive alarms are generated, these alarms are displayed on multiple pages. In this case, pages except the first one are locked and the **Scroll Unlock** button is unavailable for you to unlock those pages.

By default, the alarm lock function on the **Alarm** page is disabled.

## 5.2.3.4 Modifying the Information About a Device

On the **Monitor** tab page of the NetEco 1000S client, you can configure the information about the inverter and optimizer.

### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

### Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Choose the target device in the navigation tree on the left.

**Step 3** Click the **Settings** tab in the operation display area.

Device information about the selected device is displayed on the **Settings** tab page.

**Step 4** Modify configuration information about the selected device by referring to [Table 5-47](#).

**Table 5-47** Modifying device configuration information

Device Type	If You Need To...	Then...
Inverter	Synchronize the parameter values of the inverter to the NetEco 1000S	Click <b>Synchronize</b> on the page for the parameter values to be synchronized.

Device Type	If You Need To...	Then...
	Change the name and description of an Inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Enter the new name and description in the corresponding text boxes.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Device Information</b> page. After the device name and description are changed, the device name is delivered to the device.</li> </ol>
	Change the total string capacity of inverters	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Enter the target value in the <b>Total string capacity</b> text box. <b>NOTE</b> Click <b>Batch Apply</b> if you need to apply the configured value of <b>Total string capacity</b> to multiple inverters. Then select the target devices in the displayed dialog box and click <b>OK</b>.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Device Information</b> page.</li> </ol>
	Set string parameters of an inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Device Information</b> tab.</li> <li>2. Click <b>String Details Setup</b>. The <b>String Details Setup</b> page is displayed.</li> <li>3. Select the strings to be configured in the <b>String Setup</b> area.</li> <li>4. Set parameters for the strings in the <b>Panel Setup</b> area.</li> <li>5. Click <b>OK</b> to save the settings. <b>NOTE</b> If you need to apply the string configurations to multiple inverters, click <b>Batch Apply</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</li> </ol>

Device Type	If You Need To...	Then...
	Modify the power grid parameters, protection parameters, feature parameters, or power adjustment parameters	<p>The methods for changing power grid parameters, protection parameters, feature parameters, or power adjustment parameters are similar. The following describes how to change the power grid parameters.</p> <ol style="list-style-type: none"> <li>1. Choose the <b>Grid Parameters</b> tab.</li> <li>2. Set the parameters as required.</li> </ol> <p><b>NOTE</b> For details about the parameters, see <i>User Manual on the monitored device side</i>.</p> <ol style="list-style-type: none"> <li>3. Select the parameters to be modified.</li> <li>4. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b> If you need to apply the configurations to multiple inverters, click <b>Batch settings</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</p>
	Correct the total energy yield of the inverter	<ol style="list-style-type: none"> <li>1. Choose the <b>Adjust Total Energy Yield</b> tab.</li> <li>2. Set the value of the total energy yield as required.</li> <li>3. Select the parameters to be modified.</li> <li>4. Click <b>Submit</b>. After <b>Submitted successfully</b> is displayed in the <b>Information</b> column, the specified parameter is delivered to the device side.</li> </ol> <p><b>NOTE</b> If you need to apply the configurations to multiple inverters, click <b>Batch settings</b>. Then select the target devices in the displayed dialog box and click <b>OK</b>.</p>
Optimizer	Change the name and description of an Optimizer	<ol style="list-style-type: none"> <li>1. Click <b>Refresh</b> in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the Optimizer.</li> <li>2. Enter the new name and description in the corresponding text boxes.</li> <li>3. Click <b>Save</b> in the upper right corner of the <b>Settings</b> page.</li> </ol>

----End

### 5.2.3.5 Deleting Devices

This section describes how to delete devices that have been connected to the NetEco 1000S and that do not need to be managed or have been damaged from the NetEco 1000S.

## Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

## Procedure

- **Delete devices connecting to the plant:**

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Click  in the upper part of the navigation tree.

**Step 3** In the displayed **Delete Device** window, select the target devices and click **OK**.

**Step 4** Click **Yes** in the **Warning** dialog box.

The **Deletion succeeded** dialog box is displayed.

**Step 5** Click **OK**.

----End

- **Delete devices that have been connected to the NetEco 1000S but are not connected to a specific plant:**



This operation requires that the current user is the system administrator.

**Step 1** Choose **Maintenance > Device Access** from the main menu.

**Step 2** In the displayed Device Access page, select the check box corresponding to the inverter you want to delete and click **Delete**.

**Step 3** Click **Yes** in the **Warning** dialog box.

The **Deletion succeeded** dialog box is displayed.

**Step 4** Click **OK**.

----End

## 5.2.3.6 Remotely Controlling an Inverter

This section describes how to control an inverter that has been connected to the NetEco 1000S, including powering on and off the inverter, and restarting the inverter.

## Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

## Procedure

- **Control one inverter:**
  - a. Choose **Monitor** from the main menu.
  - b. Select the target inverter in the navigation tree on the left.
  - c. Click the **Details** tab in the operation display area.  
The page for inverter details is displayed.
  - d. Issue the control commands to the inverter according to [Table 5-48](#).

**Table 5-48** Controlling one inverter

If You Need To...	Then...
Power on the inverter	Click  .
Power off the inverter	Click  .
Restart the inverter	Click  .

- **Power on or off all inverters in the same plant in batches:**
  - a. Choose **Monitor** from the main menu.
  - b. Select the target plant in the navigation tree on the left.
  - c. Click the **Settings** tab in the operation display area.  
The page for setting the plant is displayed.
  - d. Issue the control commands to all inverters in the current plant according to [Table 5-49](#).

**Table 5-49** Controlling inverters in batches

If You Need To...	Then...
Power on all inverters	Click  .
Power off all inverters	Click  .

### 5.2.3.7 Changing the Authentication Passwords of the SUN2000L inverter and NetEco 1000S

The SUN2000L inverter and NetEco 1000S are connected through password authentication. To ensure connection security, you are advised to change the authentication passwords of the inverter and NetEco 1000S periodically (for example, every three months).

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).

- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

## Context

- The authentication passwords on the inverter and NetEco 1000S sides are **/EzFp+2%r6@IxSCv** by default.
- The password must comply with the following rules:  
The password cannot be the same as the account name.  
The password contains 16 characters, and it must contain four of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
  - special characters

## Procedure

**Step 1** Choose **Monitor** from the main menu.

**Step 2** Select the target plant in the navigation tree on the left.

**Step 3** Click the **Add Device** tab in the operation display area, and then click  in the **Operation** column of the SN.

The **Set Device Authentication Password** dialog box is displayed.

**Step 4** On the **Set Device Authentication Password** page, use the following methods to change the authentication password:

- If you want to change the authentication passwords on the inverter and NetEco 1000S sides at the same time to ensure connection security:

Select **Issue new authentication password to device**, reset **Password** and **Confirm Password**, and click **OK**.

- If the connection between the inverter and NetEco 1000S fails due to authentication password inconsistency, and if you only need to change the authentication password on the NetEco 1000S side:

Deselect **Issue new authentication password to device**, enter the password same as the inverter side, and click **OK**.

----End

## 5.2.4 Historical Data Query

### 5.2.4.1 Querying Alarm Logs

This section describes how to query alarm logs on the NetEco 1000S. You can set query criteria to obtain the required alarm logs.

## Prerequisites

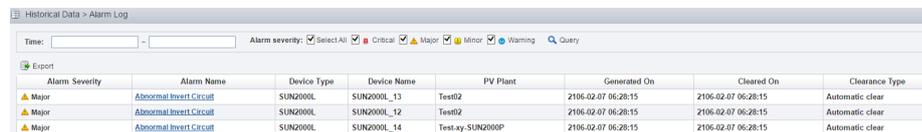
- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

## Procedure

- Step 1** Choose **Historical Data > Alarm Log** from the main menu.
- Step 2** Choose an target device to be queried in the navigation tree on the left.
- Step 3** Set query conditions in the operation display area, and then click **Query**.

All the alarm records that meet the query conditions are displayed in one or more pages, as shown in [Figure 5-87](#).

**Figure 5-87** Alarm Log



The screenshot shows the 'Historical Data > Alarm Log' window. It includes a search bar for 'Time' and 'Alarm severity' with filters for 'Select All', 'Critical', 'Major', 'Minor', and 'Warning'. Below the search bar is an 'Export' button and a table with the following columns: Alarm Severity, Alarm Name, Device Type, Device Name, PV Plant, Generated On, Cleared On, and Clearance Type. The table contains three rows of data for 'Abnormal Invert.Circuit' alarms.

Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On	Cleared On	Clearance Type
Major	Abnormal Invert.Circuit	SUN2000L	SUN2000L_13	Test02	2106-02-07 06:28:15	2106-02-07 06:28:15	Automatic clear
Major	Abnormal Invert.Circuit	SUN2000L	SUN2000L_12	Test02	2106-02-07 06:28:15	2106-02-07 06:28:15	Automatic clear
Major	Abnormal Invert.Circuit	SUN2000L	SUN2000L_14	Test.xy.SUN2000P	2106-02-07 06:28:15	2106-02-07 06:28:15	Automatic clear

**Clearance Type** includes **Automatic clear**, **NetEco recovery** and **Cleared by the system**.

Alarms corresponding to different clearance types are as follows:

- **Clearance Type:** The value of **Clearance Type** for an automatically cleared alarm on the device side is **Automatic clear**.
- **Cleared by the system:** When devices reports active alarms to the NetEco 1000S again after reporting 30,000 active alarms to the NetEco 1000S, the NetEco 1000S automatically clears the earliest 1000 alarms and **Clearance Type** of these cleared alarms is **Cleared by the system**.
- **NetEco recovery:** After you enable the automatic active alarm synchronization function, the NetEco 1000S automatically compares alarms reported from the device side with alarms cached in the NetEco 1000S. When an alarm is different from the cached alarm, the NetEco 1000S clears this alarm and considers it as the historical alarm, that is, alarm of the **NetEco recovery** type.

### NOTE

Alarms of the **NetEco recovery** type can be queried only when you enable the automatic active alarm synchronization function. The function enabling and disabling methods are as follows:

- Enable the function: Navigate to the **NetEco 1000S software installation path\WebRoot\WEB-INF\classes** directory and change the value of **isAutoActiveAlarm** in the **struts.properties** file to **1**. Then, restart the NetEco 1000S services.
- Disable the function: Change the value of **isAutoActiveAlarm** in the **struts.properties** file to **0** and restart the NetEco 1000S services.
- Set the synchronization start time: Modify **activeCurrentAlarm\_Time** in the **struts.properties** file and restart the NetEco 1000S services.

The default value of **activeCurrentAlarm\_Time** is **23:00** on the NetEco 1000S, indicating that active alarms are synchronized at 23:00 everyday.

The automatic active alarm synchronization function is enabled on the NetEco 1000S by default.

**Step 4 Optional:** Click **Export** to export the queried alarm records into a CSV file.

---End

## 5.2.4.2 Querying Performance Data

This section describes how to query performance data on the NetEco 1000S.

### 5.2.4.2.1 Querying the Performance Data of the PV System

This section describes how to query the performance data of the PV System. You can set query criteria to obtain the required performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

**Step 1** Choose **Historical Data > Performance Data** from the main menu.

**Step 2** Choose the **PV System** to be queried in the navigation tree on the left.

**Step 3** Set search criteria and click **Query** in the operation display area. The window shown in [Figure 5-88](#) is displayed.

#### NOTE

You can set search criteria to query performance data by **Day**, **Month**, **Year**, or **Total**.

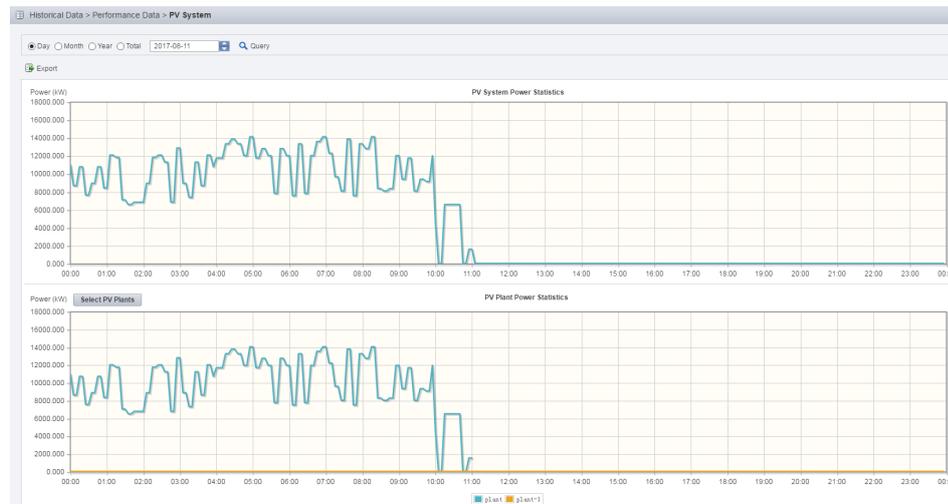
- You can view the accumulated power of all PV plants in the PV system in the **PV System Power Statistics** line chart.
- You can view power of five PV plants in the **PV Plant Power Statistics** line chart by default. To view the power of a specific PV plant, click **Select PV Plants** to select the target PV plant.

#### NOTE

When you query performance data by **Day**, queried data is displayed based on the following rules:

- Within one month: The line chart displays 5-minute data.
- Greater than one month and less than three years: The line chart displays 15-minute data.

**Figure 5-88** Power statistics line chart



**Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

---

----End

### 5.2.4.2.2 Querying the Performance Data of a PV Plant

This section describes how to query the performance data of a plant. You can set query criteria to obtain the required performance data.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

#### Procedure

- Step 1** Choose **Historical Data > Performance Data** from the main menu.
- Step 2** Choose a plant to be queried in the navigation tree on the left.
- Step 3** Set query conditions according to the following table and click **Query** in the operation display area.

**Table 5-50** Setting query conditions

Query Conditions	Queried Data
Select <b>Day</b> and set the query date.	<ul style="list-style-type: none"> <li>● The <b>PV Plant Power Statistics</b> line chart displays power of the selected PV plant.</li> <li>● The <b>Inverter Power Statistics in PV Plant</b> line chart displays power of five inverters in the selected PV plant by default. To view power of a specific inverter, click <b>Select Inverters</b> to select the target inverter.</li> </ul>
<ol style="list-style-type: none"> <li>1. Select <b>Month, Year, or Total</b>, and set the query month or query year separately.</li> <li>2. Select the query counter <b>Energy Yield, Specific Energy</b>.</li> </ol>	<ul style="list-style-type: none"> <li>● Statistics about energy yields of PV plants and inverters</li> <li>● Specific energy of PV plants and inverters</li> </ul> <p><b>NOTE</b> If the value of <b>Specific energy</b> cannot be queried, total string capacity may not be configured for inverters. To solve this problem, perform the following operations:</p> <ol style="list-style-type: none"> <li>1. Configure total string capacity for the target inverter. For details, see <a href="#">5.2.3.4 Modifying the Information About a Device</a>.</li> <li>2. Re-collect historical data of the latest 30 days for the target inverter. For details, see <a href="#">5.2.4.3 Synchronizing Historical Performance Data</a>.</li> <li>3. Query the value of <b>Specific energy</b> again.</li> </ol>

**Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.



## NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

### 5.2.4.2.3 Querying the Performance Data of a Device

This section describes how to query the performance data of a device. You can set query criteria to obtain the required performance data. The devices whose data can be queried include the inverter and optimizer.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.

## Procedure

- Step 1** Choose **Historical Data > Performance Data** from the main menu.
- Step 2** Choose a device to be queried in the navigation tree on the left.
- Step 3** Set query conditions in the operation display area, and then click **Query**.

All qualified performance data is displayed on one or more pages. [Figure 5-89](#) shows the inverter performance data.

**Figure 5-89** Querying the performance data of a device

Generated On	Device Status	Energy Yield of Current Day (kWh)	Inv. efficiency(%)	Total Energy Yield (kWh)	Input Power(kW)	Active Power(kW)	Reactive Power(kVar)	Power Factor	Grid Frequency
2017-11-02 01:50:00	On-grid	655.37	0.01	655.37	6553.700	65.537	65.537	0.001	0.01
2017-11-02 01:55:00	On-grid	655.37	0.01	655.37	6553.700	65.537	65.537	0.001	0.01
2017-11-02 02:00:00	On-grid	655.37	0.01	655.37	6553.700	65.537	65.537	0.001	0.01
2017-11-02 02:05:00	On-grid	655.37	0.01	655.37	6553.700	65.537	65.537	0.001	0.01
2017-11-02 02:10:00	On-grid	655.37	0.01	655.37	6553.700	65.537	65.537	0.001	0.01

- Step 4 Optional:** To export queried data to the PC for viewing, click **Export** and save the file to the PC.



### NOTICE

When a third-party editing tool is used to open the exported file, the tool should support UCS-2 Decoding Mode. Otherwise, data cannot be decoded.

----End

## Follow-up Procedure

You can also perform the following operations on the **Querying the performance data of a device** page:

Operation	Steps	Description
Display performance data in a line chart	In the operation display area, click <b>Graph</b> .	Display the queried performance data in a line chart.
Set the vertical coordinate of the line chart	<ol style="list-style-type: none"> <li>Click . The <b>Select Counters</b> dialog box is displayed.</li> <li>Enter the values for the Y1 and Y2 coordinates. <b>NOTE</b> The preceding two values must be different.</li> <li>Click <b>OK</b>.</li> </ol>	View the performance data based on different performance counters in the line chart by setting the vertical coordinate.

Operation	Steps	Description
Display daylight saving time (DST)	Select <b>Show DST</b> .	After DST starts, DST marks are displayed behind each time in the <b>Generated On</b> column. For example, 2013-09-17 09:40:00 DST.

### 5.2.4.3 Synchronizing Historical Performance Data

This section describes how to synchronize historical performance data from a device to the NetEco 1000S by creating a synchronization task on the NetEco 1000S. This solves the problem that historical performance data cannot be automatically synchronized to the NetEco 1000S after the device is disconnected from the NetEco 1000S for more than 6 hours.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

#### Context

- If the SUN2000L inverter is connected to the NetEco 1000S for the first time, and if it has been running before the connection and stores performance files, you can start the historical performance data synchronization task to synchronize historical performance data of the inverter before it is connected to the NetEco 1000S to the NetEco 1000S. The inverter SUN2000L saves historical performance data of the latest one year.
- If the optimizer connected to the SUN2000L inverter is connected to the NetEco 1000S, has been running before the connection, and stores performance files, you can start a historical performance data synchronization task to synchronize historical performance data of the device before it is connected to the NetEco 1000S to the NetEco 1000S. The optimizer saves historical performance data of the latest two days.
- The synchronization on the NetEco 1000S succeeds only when the SUN2000L inverter or the optimizer connected to the SUN2000L inverter stores historical performance data that needs to be synchronized.



#### NOTICE

When historical performance data is being synchronized on the device, if you create another synchronization task for the device, the creation fails.

---

#### Procedure

- Synchronize historical performance data of the SUN2000L inverter.

**Step 1** Choose **Historical Data > Synchronize Historical Data** from the main menu.

The **Synchronize Historical Data** page is displayed, as shown in **Figure 5-90**.

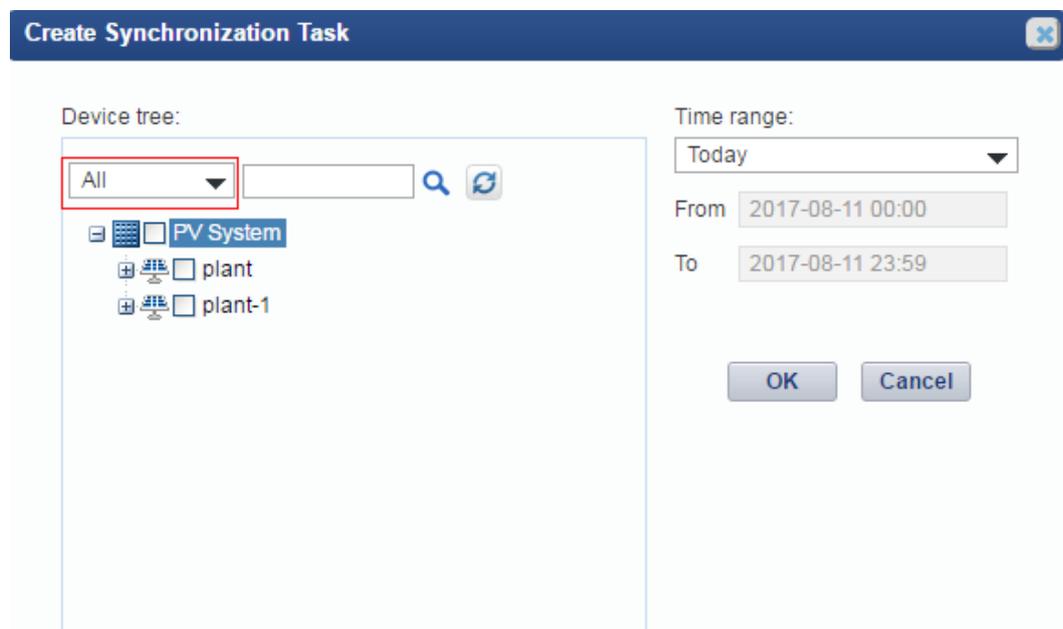
**Figure 5-90** Synchronizing historical data

Device Name	PV Plant	Start Time	End Time	Execution Status	Operation
SUN2000L_12	1#902	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	●
SUN2000L_13	1#902	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	●
SUN2000L_14	1#902-1#SUN2000P	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	●

**Step 2** On the **Data Synchronization** page, click **Create Synchronization Task**.

The **Create Synchronization Task** dialog box is displayed, as shown in **Figure 5-91**.

**Figure 5-91** Creating a synchronization task



**Step 3** Choose a device for which you want to create a supplementary collection task from the device navigation tree.

**NOTE**

By clicking the drop-down box in **Figure 5-91**, you can quickly filter device type.

**Step 4** Set the time range as required.

The time range can be set to **Today**, **Last three Days**, **Last seven Days**, **Last thirty Days**, or **Customize**.

**NOTE**

The time range of the **Customize** cannot exceed 30 days.

**Step 5** Click **OK**.

The supplementary collection task is performed automatically after the task is created.

**----End**

- Synchronize historical performance data of the optimizer connected to the SUN2000L inverter.

**Step 1** Choose **Historical Data > Synchronize Historical Data** from the main menu.

The **Synchronize Historical Data** page is displayed, as shown in **Figure 5-92**.

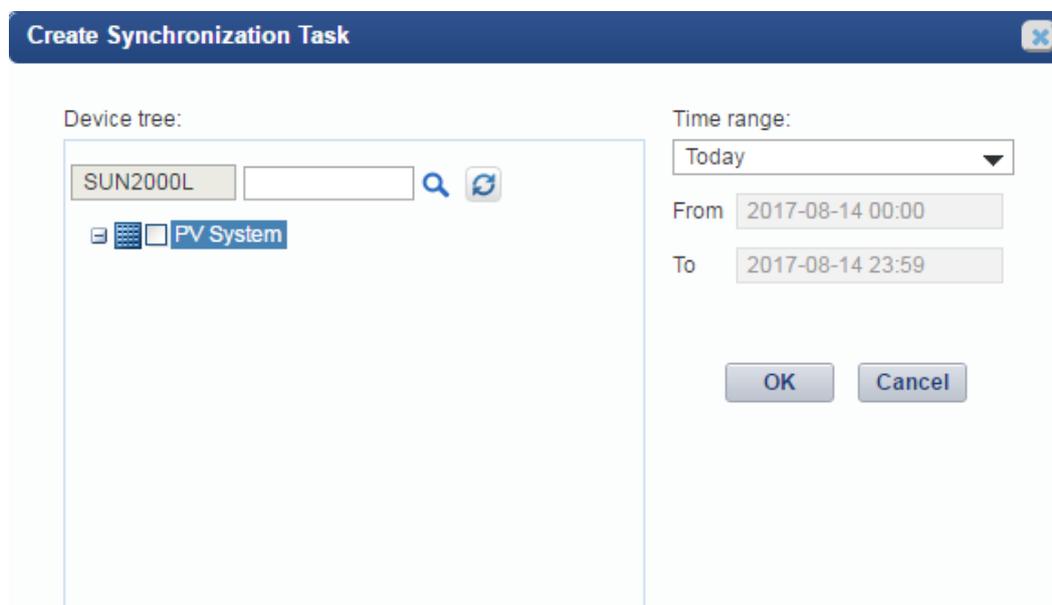
**Figure 5-92** Synchronizing historical data

Device Name	PV Plant	Start Time	End Time	Execution Status	Operation
SUN2000L_12	79402	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	
SUN2000L_13	79402	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	
SUN2000L_14	794-yy-SUN2000P	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	

**Step 2** Select **Optimizer Data Synchronization** tab, and click **Create Synchronization Task**.

The **Create Synchronization Task** dialog box is displayed, as shown in **Figure 5-93**.

**Figure 5-93** Creating a optimizer synchronization task



**Step 3** Choose a device for which you want to create a supplementary collection task from the device navigation tree.

**Step 4** Set the time range as required.

The time range can be set to **Today**, **Last three Days**, **Last seven Days**, or **Customize**.

**NOTE**

The time range of the **Customize** cannot exceed 7 days.

**Step 5** Click **OK**.

The supplementary collection task is performed automatically after the task is created.

----**End**

## Follow-up Procedure

If the supplementary collection task fails to be executed, click to execute the task again.

You can click to stop a synchronization task.

## 5.2.5 Device Maintenance

### 5.2.5.1 Upgrading a Device

This section describes how to upload a software package and remotely upgrade a device through the NetEco 1000S.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).
- You have contacted Huawei technical support engineers to obtain the software package required for device upgrade and have checked the integrity of the software package.

#### Procedure

**Step 1** Choose **Maintenance > Software Management** from the main menu.

**Step 2** Click the **Device Upgrade Management** or **Optimizer Upgrade Management** tab.

##### NOTE

- To upgrade the inverter, you can perform related operations on the **Device Upgrade Management** tab page.
- To upgrade the optimizer connected to the SUN2000L inverter, you can perform related operations on the **Optimizer Upgrade Management** tab page.

**Step 3** Upload the device software package to be upgraded.

1. Click **Software Package Management**.
2. Click **Upload** on the **Software Package Management** page.
3. Click **Browser** to select the software package, and then click **Upload**.

After the upload is complete, information about the new software package is displayed in the software package list.

##### NOTE

To delete the uploaded software package, select the software version in the software package list and click **Delete**.

4. Click **Close**.

**Step 4** Upgrade the software package of the device.

1. Select the devices to be upgraded in the device list.

##### NOTE

You can filter out the list of target devices by device name or plant name.

2. Click **Select Version**.

The **Select Target Version** dialog box is displayed, showing all upgrade software packages for the device type.

 **NOTE**

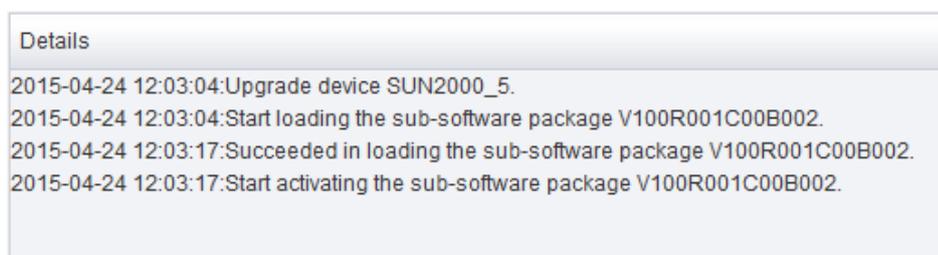
- If the selected target device is an inverter, the **Select Target Version** dialog box shows the software packages applicable to the protocol version of the selected inverter.
  - If the selected target device is an optimizer, the **Select Target Version** dialog box shows the software packages applicable to the protocol version of the selected optimizer.
3. Select the target version in the **Select Target Version** window and click **OK**.
  4. Click **Upgrade** above the device list.

The upgrade progress is displayed in the **Upgrade Progress** column of the device list.

When you upgrade multiple devices at the same time on the **Device Upgrade Management** tab, you can click **Stop Upgrade** to stop the upgrade task whose **Current Status** is **Waiting**.

Click **Details** under **Current Status**. Details about the inverter upgrade are displayed, as shown in **Figure 5-94**.

**Figure 5-94** Inverter upgrade details



 **NOTE**

When **Loading completed.** is displayed, the NetEco automatically activates the inverter, and **The inverter is going to activate automatically** is displayed. If the device does not meet activation requirements, the NetEco automatically activates the device after activation requirements are met. After the device is activated successfully, the NetEco displays the latest device version.

----End

## 5.2.5.2 Obtaining Device Logs

This section describes how to obtain device logs for device analysis and maintenance.

### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

### Context

Remotely obtaining device logs applies inverters, optimizer.

## Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Device Log**, or **Optimizer Log** tab.

The **Device Log**, or **Optimizer Log** window is displayed.

### NOTE

- To obtain optimizer logs, you can perform related operations on the **Optimizer Log** tab page.
- To obtain logs of inverter, you can perform related operations on the **Device Log** tab page.

**Step 3** Select a device in the device list, and click **Obtain**.

When **Finish** is displayed in the **Execution Status** column, device logs are synchronized to the NetEco 1000S.

### NOTE

- You can filter out the list of target devices by device name or plant name.
- You can click  in the **Operation** column to stop obtaining device logs.

**Step 4** Click **Download the log** or  in the **Log File** column to download the device log file to the local PC.

----End

## 5.2.5.3 Obtaining the Inverter Patrol Report

This section describes how to obtain the inverter patrol report to help technical support engineers learn the running counter values and state of health (SOH) of inverters and to provide reference for device maintenance and exception location.

## Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

## Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Inverter Patrol** tab.

The **Inverter Patrol** tab page is displayed.

### NOTE

You can filter out the list of target devices by device name or plant name.

**Step 3** Start the inverter patrol.

1. Select the target inverter in the device list and click **Start Patrolling** or  in the **Operation** column.

2. When the following information is displayed, click **OK**:

Are you sure you want to execute the task

 **NOTE**

You can click **Stop Patrolling** above the device list to stop the patrol task.

**Step 4** Obtain the inverter patrol report.

1. Select the target inverter for which a patrol report has been generated and click **Batch Download Report**.

A message asking you whether to open or save data is displayed at the bottom of the browser.

2. Click **Download the report** or  in the **Patrol report** column to download the patrol report to the local PC.

---End

### 5.2.5.4 Managing Device List

User can view and export the device version, SN, and communication address on the Device Management page, as well as modify device names in batches.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).

 **NOTE**

An installer can only view and export the device information about the plants to which the user has access, and batch modify device names for the plants to which the user has access.

#### Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Device Management** tab.

The **Device Management** window is displayed.

**Step 3** Set **Device name**, **Version No.**, **SN**, **PV plant name** or **Device type**, and click **Query**.

Target devices meeting the preset condition are filtered out.

**Step 4** Click **Export**.

You can export information about devices displayed on the page.

To modify device names in batches, go to the next step.

**Step 5** Change **Device Name** in the exported **.xls** file, and save the file.

**Step 6** In the **Device Management** window, click **Import Names**.

The **Import Names** dialog box is displayed.

**Step 7** Click **Browse**, and select the **.xls** file saved in **Step 5**.



Only **.xls** files can be imported. The file size must be less than 2 MB. The file must contain the **Device Name** and **SN** columns, and the columns must not be empty.

---

**Step 8** Click **Execution**.



During the Execution, the modification task will be stopped if you close the **Import Names** dialog box.

---

During the Execution, you can click **Stop** to stop unfinished modification task.

If modifying device names fails, **Details** in **Import Names** will provide the device whose name fails to be modified and the failure cause.

**Step 9** Click **Close**.

---End

### 5.2.5.5 Replacing a Device

This section describes how to replace a device. If the device connecting to the NetEco 1000S needs to be replaced due to a fault or aging, you can replace it with a new one. Devices supporting the replacement include the inverter, optimizer.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have added a device to the NetEco 1000S and the device state is normal. For detailed operations, see [5.2.3.1 Accessing the Inverter](#).
- The old device has been deleted or is disconnected from the NetEco 1000S.
- The new device and the old device are connected to the same PV Plant.

#### Procedure

**Step 1** Choose **Maintenance > Device Maintenance** from the main menu.

**Step 2** Click the **Device Maintenance** tab.

The **Device Management** page is displayed.

**Step 3** Click **Replace Device**.

The **Replace Device** dialog box is displayed.

- Step 4** Select a device type, and enter the **Old device SN**, **New device SN** and **Device name**. Then click **OK**.

 **NOTE**

**Device name** specified here is the name of the new device to be displayed in the NetEco 1000S. **Device name** must be different from the names of the existing devices in the same PV plant.

If you attempt to replace an optimizer, and the old and new devices are not connected to the same inverter, the following message is displayed.

Devices not connected to same inverter. Continue?

- Step 5** Click **OK**, and complete the device replacement as prompted.

 **NOTE**

If you want to cancel the replacement, click **Cancel**.

---End

## 5.2.5.6 Querying NetEco Alarms

If the NetEco 1000S certificate has expired, the license has expired, or remote notification emails fail to be sent, the NetEco 1000S will generate a corresponding NetEco alarm. You can query NetEco alarms to learn the NetEco alarm information for the NetEco 1000S and handle alarms accordingly.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

### Context

Check the NetEco alarm icon in the upper right of the home page of the NetEco 1000S client to determine whether a NetEco alarm exists. If a NetEco alarm exists, view the detailed alarm information on the **NetEco Alarm** page.

- : A NetEco alarm is generated on the NetEco 1000S.
- : No NetEco alarm is generated on the NetEco 1000S.

### Procedure

- Step 1** On the home page of the NetEco 1000S client, click the NetEco alarm icon .

The **NetEco Alarm** page is displayed.

- Step 2** Set **Time** and **Clear Status**, and click **Query**.

NetEco alarms that meet the conditions can be queried.

- Step 3** Click **Alarm Name** for a NetEco alarm record to view the detailed alarm information and troubleshooting advice.

 **NOTE**

NetEco alarms whose details are not queried will be highlighted in bold.

**Step 4 Optional:** Click **Export** to export the queried alarm information into a CSV file.

---End

## 5.2.5.7 Obtaining NetEco Logs

This section describes how to obtain NetEco logs. The logs help you learn the operating status of the NetEco 1000S and locate problems when the NetEco 1000S is not running properly.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

### Context

The NetEco records run logs automatically every day. When the system becomes abnormal, the system administrator quickly obtains the corresponding logs through the client to locate the problem.

### Procedure

**Step 1** Choose **Maintenance > NetEco Maintenance** from the main menu.

The **NetEco Maintenance** page is displayed.

**Step 2** Obtain the trace log.

The trace log records the system run log. When the system becomes abnormal, you can obtain the trace log to locate the problem.

1. Click the **Trace Log** tab.
2. Click **Refresh**. The latest log information is displayed.
3. Select the log to be obtained.

#### NOTE

You can enter the log name keyword, such as the date, in the **File Name** text box and click **Search** to search for all logs whose names contain this keyword.

4. Click **Download**.

A message asking you whether to open or save the log is displayed at the bottom of the browser. You can open or save the log as required.

**Step 3** Obtain other logs.

Other logs record all logs except the trace log. These logs include database error logs, configuration file modification logs, attack logs, FTP logs, and script logs. When problems cannot be located using the trace log, you can obtain other logs to facilitate problem location.

1. Click the **Other Logs** tab.
2. Click **Refresh**. The latest log information is displayed.
3. Select the log to be obtained.



You can enter the log name keyword, such as the date, in the **File Name** text box and click **Search** to search for all logs whose names contain this keyword.

4. Click **Download**.

A message asking you whether to open or save the log is displayed at the bottom of the browser. You can open or save the log as required.

----End

## 5.2.6 System Management

### 5.2.6.1 Managing User Information

This section describes how to manage user information. The user management function allows you to manage the information about and operation rights of users.

#### 5.2.6.1.1 User Categories

This section describes user categories. You need to familiarize yourself with these user categories before managing users.

Software users: system administrator, installers, and customers.

Third-party user: OpenAPI users.

Operation permissions vary by user. [Table 5-51](#) lists the software users and their operation permissions.

**Table 5-51** User operation permissions

User Category	Operation Permissions
<p>System administrator</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The system administrator cannot be deleted or modified.</li> <li>To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.</li> </ul>	<p>The system administrator has all the operation permissions, including:</p> <ul style="list-style-type: none"> <li>PV plant management: creates, modifies, and deletes PV plants; sets information of PV plants, and browses information about PV plants, device lists, and current alarms.</li> <li>Device management: manually and automatically connects devices, searches, modifies, and deletes devices, sets information of devices, browses information about devices and current alarms.</li> <li>Historical data: queries alarm logs and performance data, synchronizes historical performance data.</li> <li>Device maintenance: upgrades devices, replaces devices, manages devices, patrol to the inverter, obtains NetEco logs and device logs.</li> <li>System management: manages users, sets remote notification, queries user logs, has license management, and sets the system parameters.</li> </ul>

User Category	Operation Permissions
Installers	<ul style="list-style-type: none"><li>● PV plant management: creates, modifies, and deletes PV plants, sets information of PV plants, and browses information about PV plants, device lists, and current alarms.</li><li>● Device management: automatically connects devices, modifies and deletes devices, sets information of devices, browses information about devices and current alarms.</li><li>● Historical data: queries alarm logs and performance data, synchronizes historical performance data.</li><li>● Device maintenance: patrol to the inverter, manages devices, and obtains device logs.</li><li>● System management: manages users and sets remote notification rules.</li></ul>
Customers	You can visit the <b>Overview</b> page to query the overview of the plant.
OpenAPI users <b>NOTE</b> <ul style="list-style-type: none"><li>● The OpenAPI users can only be created by the system administrator.</li><li>● The OpenAPI users do not have permission to access the NetEco 1000S or query other user information in the NetEco 1000S.</li><li>● For account security purposes, you are advised to change the user password periodically (for example, at an interval of 3 months) to avoid security risks, such as violent key cracking. Only the system administrator can reset the password for OpenAPI users.</li></ul>	You can access the data query interface to query the following data: <ul style="list-style-type: none"><li>● PV plant list;</li><li>● Device list (only inverter data included);</li><li>● Real-time monitoring data of a specific PV plant;</li><li>● Real-time monitoring data of a device under a specific PV plant (only inverter data included);</li><li>● Yearly, monthly, and daily performance data of a specific PV plant as well as its total performance data.</li></ul>

### 5.2.6.1.2 Adding a User

This section describes how to add a user on the NetEco 1000S. You can add users as required. The operation permissions of users vary according to user categories.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as a system administrator or installer.

## Procedure

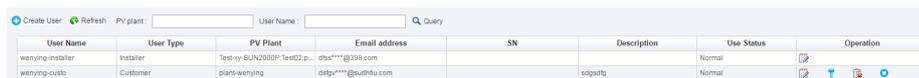
**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 5-95](#).

**Figure 5-95** User



User Name	User Type	PV Plant	Email address	SN	Description	Use Status	Operation
wanying-installer	Installer	Test-ry-SUN2000P-Test02.p	dfs***@398.com			Normal	
wanying-custo	Customer	plant-wanying	dsfy***@suidifu.com		sdpsdfg	Normal	

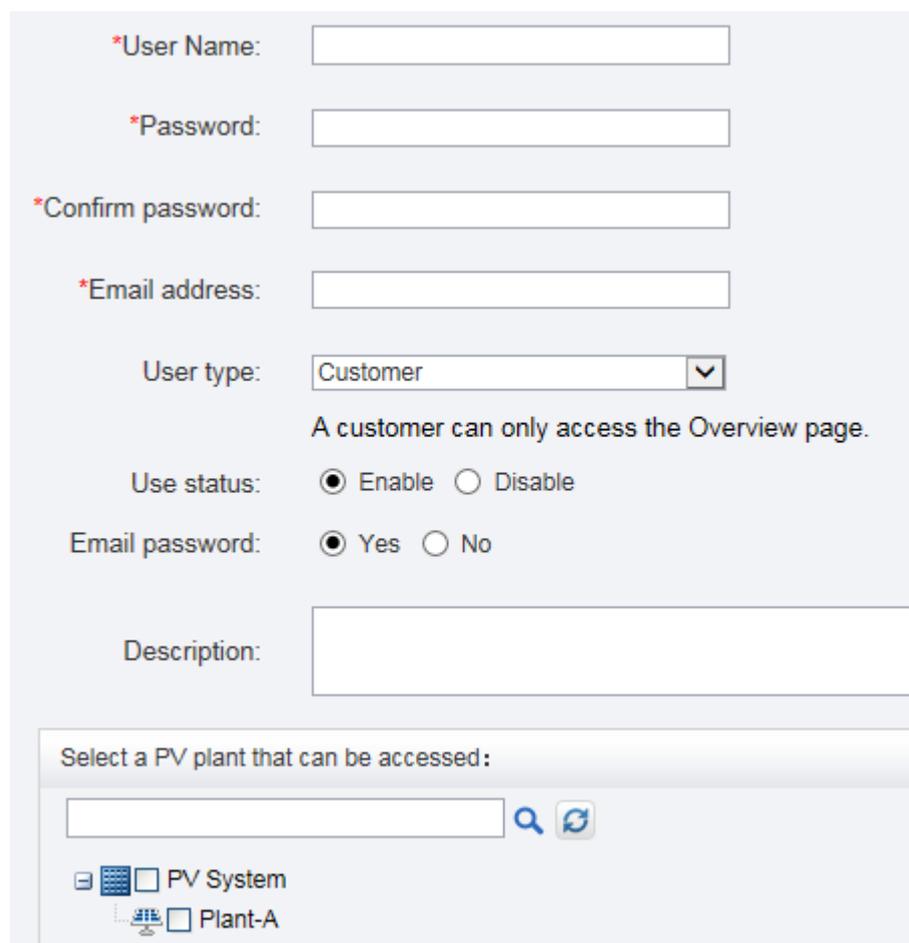
### NOTE

Installers can only see their own information and information about customers they have created.

**Step 3** Click **Create User**.

The **Create User** window is displayed, as shown in [Figure 5-96](#).

**Figure 5-96** Create user



\*User Name:

\*Password:

\*Confirm password:

\*Email address:

User type:

A customer can only access the Overview page.

Use status:  Enable  Disable

Email password:  Yes  No

Description:

Select a PV plant that can be accessed:

PV System

Plant-A

**Step 4** Set the user parameters according to [Table 5-52](#) and then click **OK**.

**Table 5-52** Parameter description

Parameter	Description
User name	<p>Name of the new user.</p> <p>The user name can only contain English characters (A to Z and a to z), digits, hyphens, or underlines.</p> <p><b>NOTE</b></p> <p>The user name cannot be <b>null</b> or <b>NULL</b>.</p> <ul style="list-style-type: none"> <li>● Installers can only create customers and bind PV Plant with customers. After the login, customers can only manage PV Plants bound with them.</li> <li>● When the system administrator adds the permission of a device for the customers created by the installer, the installer has no permission of this device.</li> <li>● When the system administrator cancels the permission of a device managed by the installers, customers created by the installer still have the permission of this device.</li> </ul> <p>See <a href="#">5.2.6.1.7 Setting an Account Policy</a> to set the user name length.</p>
Password	<p>Password of the new user. The password must comply with the following rules:</p> <ul style="list-style-type: none"> <li>● The password cannot be the same as the user name or the user name in a reversed order.</li> <li>● The password contains 8 to 32 characters.</li> <li>● The password contains three of the following: <ul style="list-style-type: none"> <li>- Lowercase letters</li> <li>- Uppercase letters</li> <li>- Digits</li> </ul> </li> </ul> <p>The password is advised to contain special characters, which include !"#%&amp;'()*+,-./:;&lt;=&gt;?@[\\]^`{ }~ and space.</p> <p><b>NOTE</b></p> <p>The system administrator can set the password complexity policy on the NetEco 1000S client. For details, see <a href="#">5.2.6.1.8 Setting a Password Policy</a>.</p>
Email address	Email address of the user.
User type	Type of the user. The type can be <b>Installer</b> , <b>Customer</b> , or <b>OpenAPI User</b> .
User status	<p>Status of the user. The status includes:</p> <ul style="list-style-type: none"> <li>● Disable: The user is disabled and cannot log in to the NetEco 1000S.</li> <li>● Enable: The user can log in to the NetEco 1000S.</li> </ul>

Parameter	Description
Email password	When the created user is customer, there will be this option. The status includes: <ul style="list-style-type: none"> <li>● Yes: The customer will receive an email informing customer of the login account and password.</li> <li>● No: The customer will not receive an email informing customer of the login account and password.</li> </ul>
Description	Description of the user. The description cannot contain more than 255 characters.
Select a PV plant that can be accessed	Permission for the user to access the PV plant.

The added user is displayed in the user list in the **User Management** window.

----End

### 5.2.6.1.3 Registering an Installer Yourself

You can register yourself as an installer on the NetEco 1000S as required.

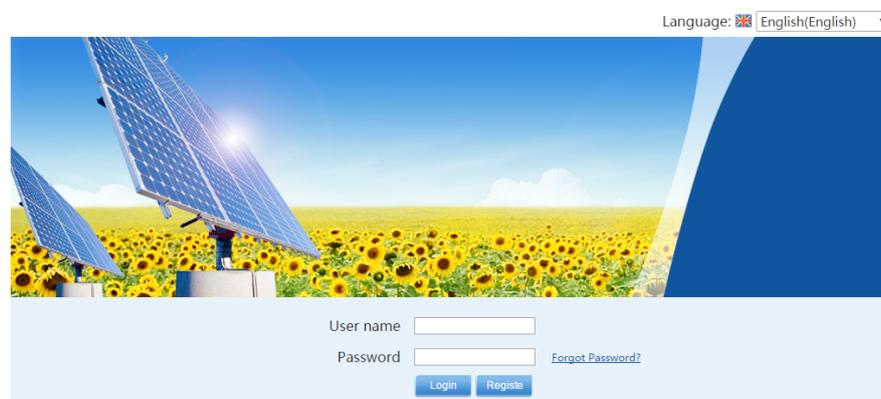
#### Prerequisites

- You have obtained the device SN and registration code.
- The IP address of the NetEco 1000S has been registered with the inverter, and the inverter has been successfully registered with the management system. For details about how to configure the IP address of the NetEco 1000S on the inverter, see the inverter *user manual*.

#### Procedure

**Step 1** Enter the login page, as shown in [Figure 5-97](#).

**Figure 5-97** Login page



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**Step 2** Click **Register** on [Figure 5-97](#).

The **Register** page is displayed, as shown in [Figure 5-98](#).

**Figure 5-98** Registration

**NetEco** User Registration

\*User Name:

\*Password:

\*Confirm password:

\*Email address:

Company:

\*SN:

\*Registration code:

\*Verification code:

\*User Authorization:  [Agree to the Privacy Policy](#)  
 [Agree to the Terms of Use](#)

**Step 3** Set the parameters by referring to [Table 5-53](#), and click **Register**.

**NOTE**

Parameters marked with \* in [Figure 5-98](#) are required.

**Table 5-53** Parameters

Item	Description
User name	Name of the new installer. Only letters (A–Z, a–z), digits, hyphens, and underscores are allowed in the installer name. <b>NOTE</b> The installer name cannot be <b>null</b> or <b>NULL</b> . For the length of the user name, see <a href="#">5.2.6.1.7 Setting an Account Policy</a> .

Item	Description
Password	<p>Password of the new user. The password rules are as follows:</p> <ul style="list-style-type: none"><li>● The password must be different from the user name or its reverse.</li><li>● The password must contain 8 to 32 characters.</li><li>● The password must contain three types of the following characters:<ul style="list-style-type: none"><li>- Lowercase letters</li><li>- Uppercase letters</li><li>- Digits</li></ul></li><li>● The password is advised to contain at least one special character. Special characters include `~!@#\$%^&amp;*()-_ =+ [{}];:","&lt;.&gt;/? and spaces.</li></ul> <p><b>NOTE</b> The system administrator can set the password complexity policy on the NetEco 1000S client. For details, see <a href="#">5.2.6.1.8 Setting a Password Policy</a>.</p>
Email address	Email address you bound
Company	Company you work at
SN	SN of inverter
Registration code	Registration code corresponding to the SN
Verification code	Specify the verification code as prompted.
User Authorization	You can view the Privacy Policy and and Terms of Use. You must select <b>Agree to the Privacy Policy</b> and <b>Agree to the Terms of Use</b> for successful registration.

The registered installer logs in to the NetEco 1000S client automatically. The NetEco 1000S home page is displayed.

---End

#### 5.2.6.1.4 Modifying User Information

This section describes how to modify user information. If information about a user needs to be changed, the password of the user is forgotten or the account is locked, you can modify information about the user as an administrator or an installer.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as a system administrator or installer.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in **Figure 5-99**.

**Figure 5-99** User

User Name	User Type	PV Plant	Email address	SN	Description	Use Status	Operation
wanying-installer	Installer	test-y-SUN2000P-test02.p	dfu***@398.com			Normal	
wanying-custo	Customer	plant-wanying	dsfy***@sdfthfu.com		sdpsdfg	Normal	

**NOTE**

Installers can only see their own information and information about customers they have created.

**Step 3** In the **User** page, you can do the following operations in **Table 5-54**.

**NOTE**

- The system administrator can manage all users.
- The installers can manage only users created by them.

**Table 5-54** operations

Operations	Description
Enable	If the <b>Use Status</b> is <b>invalid</b> , you can click  to enable the account.
Disable	If the <b>Use Status</b> is <b>normal</b> , you can click  to disable the account.
Unlock	If the <b>Use Status</b> is <b>lock</b> , you can click  to unlock the account.
Edit	Click  to modify the Email address, use status, description and control permission of an account.

Operations	Description
Password reset	<p>When a user forgets the password for logging in to the NetEco 1000S, the user can reset the password, and then use the new password to log in to the NetEco 1000S.</p> <p><b>NOTE</b></p> <p>The password of the system administrator cannot be reset. Therefore, you have to remember the password of this user.</p> <ul style="list-style-type: none"> <li>● The password cannot be the same as the user name or the user name in a reversed order.</li> <li>● The password contains 8 to 32 characters.</li> <li>● The password contains three of the following: <ul style="list-style-type: none"> <li>– Lowercase letters</li> <li>– Uppercase letters</li> <li>– Digits</li> </ul> </li> <li>● The password is advised to contain special characters, which include !"#%&amp;'()*+,-./:;&lt;=&gt;?@[\\]^`{ }~ and space.</li> </ul> <ol style="list-style-type: none"> <li>1. Click .</li> <li>2. In the displayed window, set <b>New password</b> and <b>Confirm password</b>.</li> <li>3. Click <b>OK</b>.</li> </ol>
Delete	<p>Click . In the displayed window, click <b>OK</b> to delete the account.</p>

---End

## Other operations

In the **User** page, the description of all parameter is as shown in [Table 5-55](#).

**Table 5-55** Parameters

Parameter	Description
User Name	Displays names of all accounts in the system.
User Type	Displays the type of an account. The type includes <b>Administrator</b> , <b>Installer</b> , <b>Customer</b> , and <b>OpenAPI User</b> .
PV Plant	Displays the PV plant(s) to which the user belongs
Email address	Email address of the user.
SN	Device SN which is entered while registering.
Description	Displays the description of an account.

Parameter	Description
Use Status	<p>Displays the status of an account. The status includes:</p> <ul style="list-style-type: none"> <li>● normal: indicates that the account is properly used.</li> <li>● invalid: indicates that the account is currently not used.</li> <li>● lock: indicates that the account is automatically locked by the system after the user enters the incorrect password for multiple times or disobeys the password policy.</li> </ul>

### 5.2.6.1.5 Querying PV Plants to Which a User Belongs

This section describes how to query PV plants to which a user belongs. This helps learn the PV plants that the user can operate and user information recorded in the PV plants, facilitating the PV plant administrator's management operation.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as a system administrator or installer.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed.

**Step 2** Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 5-100](#).

**Figure 5-100** User

User Name	User Type	PV Plant	Email address	SN	Description	Use Status	Operation
wenying-installer	Installer	Test-ry-SUN2000P-Test02.p...	dfs****@398.com			Normal	[Edit] [Delete]
wenymg-custb	Customer	plant-wenying	dsfy****@suidifu.com		sdpsdfg	Normal	[Edit] [Delete] [Refresh] [Add]

#### NOTE

Installers can only see their own information and information about customers they have created.

**Step 3** Set search criteria.

- **PV plant:** Enter the name of the to-be-queried PV plant. You can enter names of multiple PV plants and separate them by semicolon (;).
- **User Name:** Enter the to-be-queried user name.

#### NOTE

You can set **PV plant** or **User Name** as required.

**Step 4** Click **Query**.

----End

### 5.2.6.1.6 Modifying the Password of the Current User

This section describes how to modify the password of the current user. You are advised to modify user password regularly to ensure system security.

#### Prerequisites

You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).

#### Procedure

**Step 1** Click  from the main menu.

The **Modify Password** dialog box is displayed, as shown in [Figure 5-101](#).



To improve system security, you are advised to change the initial keys set before product delivery in a timely manner and periodically (at an interval of 3 months) change the user key to avoid security risks, such as violent key cracking.

---

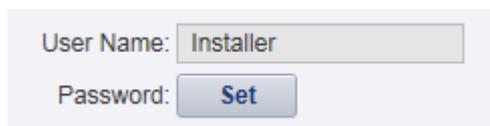
**Figure 5-101** Modify Password



**Step 2 Optional:** The current user who is the system administrator or installer can change the password in the following way.

1. Choose **System > User Management** from the main menu;
2. The **User Management** dialog box is displayed, Choose **Modify Password** from the menu bar on the left, as shown in [Figure 5-102](#);
3. Click **Set** in [Figure 5-102](#), The **Modify Password** dialog box is displayed, as shown in [Figure 5-101](#).

**Figure 5-102** set



User Name:

Password:

**Step 3** Enter the **Old password**, **New password** and **Confirm password**.

 **NOTE**

- The password cannot be the same as the user name or the user name in a reversed order.
- The password contains 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#\$%&'()\*+,-./:;<=>?@[\]^\_{|}~ and space.

**Step 4** Click **OK**.

----End

### 5.2.6.1.7 Setting an Account Policy

This topic describes how to set an account policy to improve access security of the NetEco. The account policy settings include the length of the user name and the policies related to user login.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Context

- The account policy applies to the following users after the account policy is successfully set:
  - New users.
  - Users whose information is modified.
- Account policies apply to all accounts except system administrator.
- The NetEco provides the default account policy, and you can modify it as required.

The current login account will be locked if the number of consecutive failed login attempts exceeds the preset value within a certain period. The locking policy is as follows:

- system administrator: The current login IP address will be locked. You can use another IP address to log in to the NetEco 1000S.
- installers or customers: The current login account will be locked. For details about how to unlock the account, see [5.2.6.1.4 Modifying User Information](#).

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** In the navigation tree on the left, choose **Account Policy**.

- installers or customers: The current login account will be locked if the number of consecutive failed login attempts exceeds the preset value within a certain period. For details about how to unlock the account, see [5.2.6.1.4 Modifying User Information](#).
- system administrator: The current login IP address will be locked 5 minutes if the number of consecutive failed login attempts more than 5 within 10 minutes.



### NOTICE

Restart the service will make the lock failed, please use caution.

---

**i** Account policies apply to all accounts except admin.

Min. user name length:

Account disabling policy

The account has not been used for (consecutive days):

Enable account lock policy

Auto-lock Conditions

Allowed duration (min):

Consecutive failed login attempts:

Account Lock Duration

Lock duration (min):

Permanent lock

**Apply**

**Step 3** On the **Account Policy** page, set the account policy as required.

When **Account disabling policy** is selected, this policy is applicable to all users except the system administrator. If a user has not logged in for a consecutive period longer than the period specified in **The account has not been used for (consecutive days)**, the account will be disabled.

To enable a disabled account, see [5.2.6.1.4 Modifying User Information](#) and perform the required operations.

**Step 4** Click **Apply**.

----End

### 5.2.6.1.8 Setting a Password Policy

You can set a password policy to improve access security of the NetEco. The password policy settings include the user password complexity rules, password change interval, and character restriction.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Context

- A password policy applies to all users once it is configured. After the minimum length of the user password is specified and validated, if an online user wants to change the password, the user needs to set the new password based on the specified minimum password length requirements.
- You need to set a password based on the password policy when you create a user.
- A new password policy does not affect the configured password.
- The NetEco provides the default password policy, and you can modify it as required.



#### NOTICE

Disabling the functions of password strength policies and password change intervals will lower account security. You are advised to enable all password security policies provided by the NetEco.

---

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Password Policy** from the menu bar on the left, as shown in [Figure 5-103](#).

**Figure 5-103** Password Policy

The screenshot shows a configuration window for Password Policy. At the top, there is an information icon and a message: "The new password policies do not affect the existing passwords." Below this, there are several settings:

- Min. password length: 8 (with a dropdown arrow)
- Min. interval between password change operations (min): 5 (with a dropdown arrow)
- Require at least one of the following special characters: space!#\$%&()\*+,-./:;<=>?@[\*\\_{}]
- Max. times a character can occur: 2 (with a dropdown arrow)
- Enforce password expiration:
- Password validity period (days): 90 (with a dropdown arrow)
- Number of reminding days prior to password expiration: 7 (with a dropdown arrow)

An "Apply" button is located at the bottom right of the window.

**Step 2** In the window shown in [Figure 5-103](#), set **Password Policy** as required.

 **NOTE**

When you change the passwords of other users as system administrator, the value of **Enable account lock policy** has no impact on the change. That is, the password change interval is not limited when you change the passwords of other users as system administrator.

**Step 3** Click **Apply**.

----End

### 5.2.6.1.9 Managing the Online Users

You can view online user to find unauthorized login users and log out these users, which prevents unauthorized operations performed on the NetEco 1000S client.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** In the navigation tree on the left, choose **View Online User**.

**Step 3** On the **View Online User** page, view online users, and their login time, login IP addresses, and roles to which they belong. In addition, you can perform the following operations:

Task	Procedure
Update online user information	Click <b>Refresh</b> to update the online user information.
Force a user to log out	<p>When viewing online users, you can force an unauthorized user to log out. This prevents the unauthorized user from performing unauthorized operations on the NetEco 1000S client.</p> <ol style="list-style-type: none"> <li>1. On the <b>View Online User</b> page, click  in the <b>Operation</b> column where the required user information is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li> </ol> <p><b>NOTE</b> You are advised to view the online users at regular time, force the unauthorized users to log out in time.</p>

Task	Procedure
Enter Single session Mode	<p>Users can enter the single-session mode to prevent the interference from other users' operations.</p> <ol style="list-style-type: none"><li>1. Select <b>Single session Mode</b>.</li><li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li></ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>● After entering the single-session mode, users can log in to the NetEco 1000S only on one terminal.</li><li>● After entering the single-session mode, the logged-in users are not affected.</li><li>● Single-session is a safe mode, recommended for use.</li></ul>
Exit Single session Mode	<ol style="list-style-type: none"><li>1. Deselect <b>Single Session Mode</b> .</li><li>2. In the <b>Warning</b> dialog box, click <b>OK</b>.</li></ol> <p><b>NOTE</b></p> <p>After exiting the single-session mode, users can re-log in to the NetEco 1000S on multiple terminals.</p>

---End

### 5.2.6.1.10 Setting the Idle Logout Time

This topic describes how to set the client to be logged out automatically. To prevent other users from performing unauthorized operations, the NetEco 1000S allows you to set related idle parameters. The client is automatically logged out after being left idle for a specified period of time.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Context

This operation applies to the system administrator, installers, and customers. For OpenAPI users, the idle logout time is 20 minutes and cannot be modified.

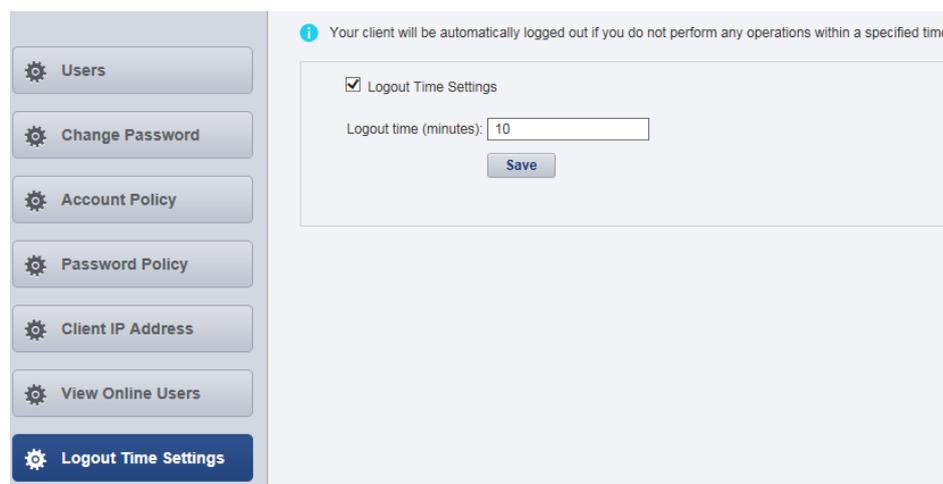
#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

**Step 2** Choose **Logout Time Setting** on the left.

The **Logout Time Setting** page is displayed, as shown in [Figure 5-104](#).

**Figure 5-104** Logout Time Setting



**Step 3** Set the value of **Logout time (minutes)**.

By default, NetEco 1000S enables the function of logging out users after timeout. To disable this function, clear **Logout Time Settings**.

 **NOTE**

The logout time ranges from 1 to 1440 minutes. Setting the logout time within 3 minutes is advised.

**Step 4** Click **Save**.

----End

## Follow-up Procedure

After the client is automatically logged out, the current user needs to log in to the NetEco 1000S again.

### 5.2.6.1.11 Setting an IP Access Control Policy

This section describes how to set an access control policy. In this way, users can only use the specified IP address to log in to the NetEco, ensuring the access security of the NetEco.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

## Context

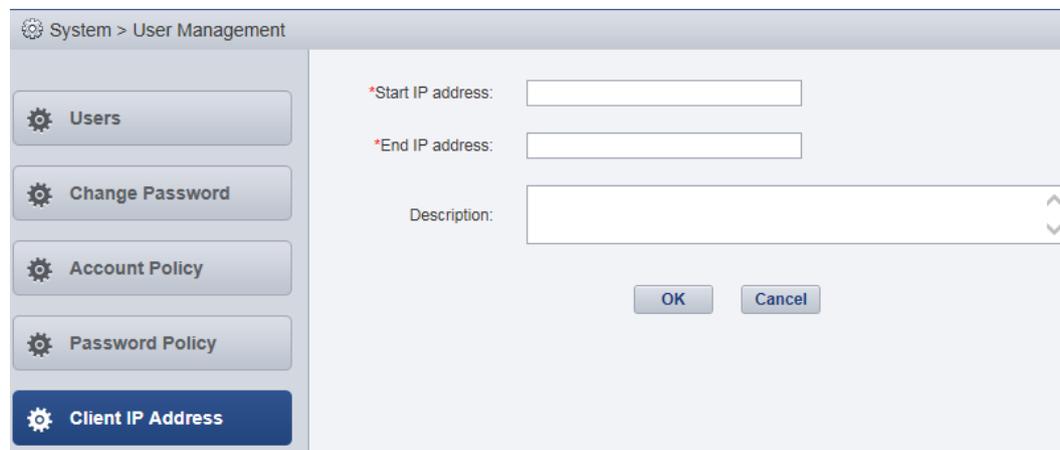
To ensure the access security of the NetEco, you are advised to set an access control policy.

## Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Client IP Address** from the menu bar on the left. In the displayed **Client IP Address** window, click **Create**, as shown in [Figure 5-105](#).

**Figure 5-105** Client IP Address



**Step 2** Set **Start IP address**, **End IP address**, and **Description** for accessing the client and click **OK**.

----End

#### 5.2.6.1.12 Setting Login Time Control Policies

After the login time control policies are set, users other than system administrator can log in to the NetEco 1000S only at the specified control time, which ensures NetEco 1000S access security.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Context

If system administrator wants to control the time segment on which other users can access the NetEco 1000S, login time control policies need to be set. After the login time control policies are enabled, the following functions can be implemented:

- Users other than system administrator can log in to the NetEco 1000S only on the control time segment.
- The logged-in user will be forcibly logged out if the valid access time expires.

#### Procedure

**Step 1** Choose **System > User Management > Login Time Control** from the main menu

The **Login Time Control** page is displayed, as shown in [Figure 5-106](#).

**Figure 5-106** Login Time Control

**i** Daily start and end time setting notes: By default, the second of the start time is 00, and the second of the end time is 59. For example, if the start and end time is set to 02:00~02:59, the actual time period is 02:00:00~02:59:59.

Enable login time control

\* Start date: 2016-06-15 End date: 2016-06-15

\* Start time: 00 : 00 End time: 00 : 00

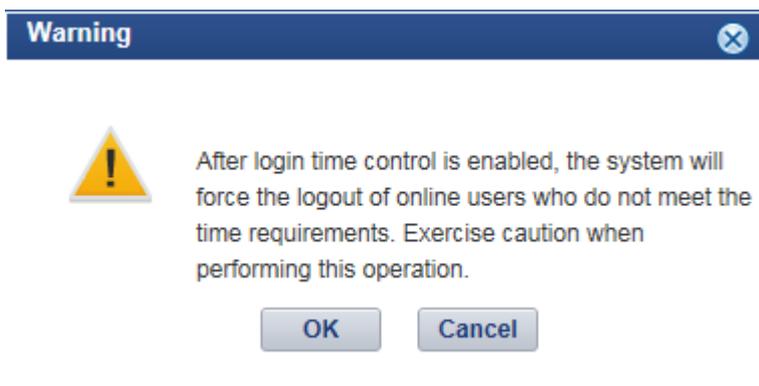
Description:

Apply

**Step 2** Select **Enable login time control**.

Information shown in **Figure 5-107** is displayed.

**Figure 5-107** Login time control enabling prompt



**Step 3** Set login time control policies according to **Table 5-56**.

**Table 5-56** Setting login time control policies

Parameter	Configuration Method
Start date	Select the start date for the login from the drop-down list.
End date	Select the end date for the login from the drop-down list. The end date must be later than or equal to the start date.

Parameter	Configuration Method
Start time	Select the start time for the login from the drop-down list. Other users are allowed to access the NetEco 1000S since the start time.
End time	Select the end time for the login from the drop-down list. Other users are not allowed to access the NetEco 1000S after the end time. The end time must be later than or equal to the start time.
Description	(Optional) Enter the description information about the login time control policy. A maximum of 255 characters are allowed.

----End

### 5.2.6.1.13 Setting Access Control Policies for Mobile Terminals

This section describes how to set access control policies for mobile terminals. In this way, users can log in to the NetEco only from the specified mobile terminal, ensuring the access security of the NetEco.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- You have obtained the identification number of the mobile terminal.

#### NOTE

Identification number of the iOS mobile terminal is the IDFV identifier. Identification numbers of other mobile terminals are IMEIs/MEIDs of mobile phones or MAC addresses of tablets.

#### Context

To ensure the access security of the NetEco, enable the access control policies for mobile terminals is advised.

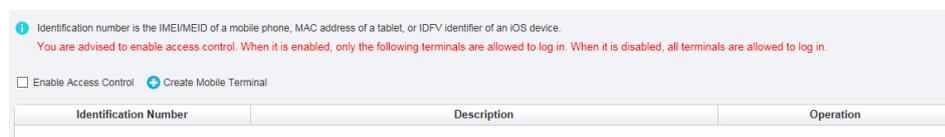
The identification number of the mobile terminal has been anonymized on the NetEco 1000S WebUI to protect user's privacy.

#### Procedure

**Step 1** Choose **System > User Management** from the main menu.

The **User Management** window is displayed. Choose **Mobile Terminal Access Control** from the menu bar on the left, as shown in [Figure 5-108](#).

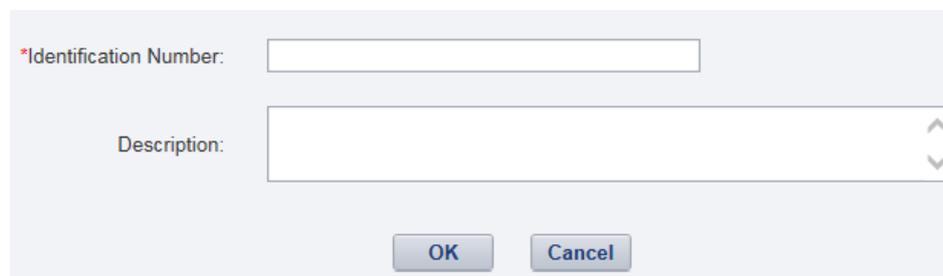
**Figure 5-108** Mobile Terminal Access Control



**Step 2** In the displayed **Mobile Terminal Access Control** window, click **Create Mobile Terminal**.

The **Create Mobile Terminal** page is displayed, as shown in **Figure 5-109**

**Figure 5-109** Mobile terminal access setting



\*Identification Number:

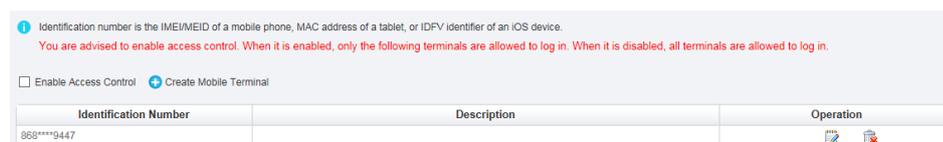
Description:

OK Cancel

**Step 3** Enter the identification number of the mobile terminal that is allowed to access the NetEco, set **Description**, and click **OK**.

After the access control policies are set, the page similar to **Figure 5-110** is displayed.

**Figure 5-110** Access Control Policy



Information: Identification number is the IMEI/MEID of a mobile phone, MAC address of a tablet, or IDFV identifier of an iOS device.  
You are advised to enable access control. When it is enabled, only the following terminals are allowed to log in. When it is disabled, all terminals are allowed to log in.

Enable Access Control  Create Mobile Terminal

Identification Number	Description	Operation
868****9447		 

**Step 4** Perform the following operations in the **Figure 5-108** window.

- Select **Enable Access Control**: The access control policy for the mobile terminal is enabled, and users can log in to the NetEco only from the specified mobile terminal.
- Deselect **Enable Access Control**: The access control policy for the mobile terminal is disabled, and users can log in to the NetEco from any mobile terminals.

----End

## Follow-up Procedure

- You can click  under **Operation** in **Figure 5-110** to modify the specified mobile terminal.
- You can click  under **Operation** in **Figure 5-110** to delete the specified mobile terminal.

## 5.2.6.2 Querying User Operation Logs

This section describes how to query user operation logs to know the operations performed by users.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see **5.2.1.1 Logging In to the NetEco 1000S**.
- You have logged in as system administrator.

## Context

The NetEco 1000S checks whether the operation log is out of the life cycle, or whether the number of user operation logs exceeds the preset threshold, at the specified time every day. If the operation log is out of the life cycle, the NetEco 1000S automatically deletes the exceeding logs. If the number exceeds the threshold, the NetEco 1000S automatically deletes 20% of the operation logs.

- Check time: 01:00 every day.
- Life cycle: half a year by default.
- Threshold: 100,000.

### NOTE

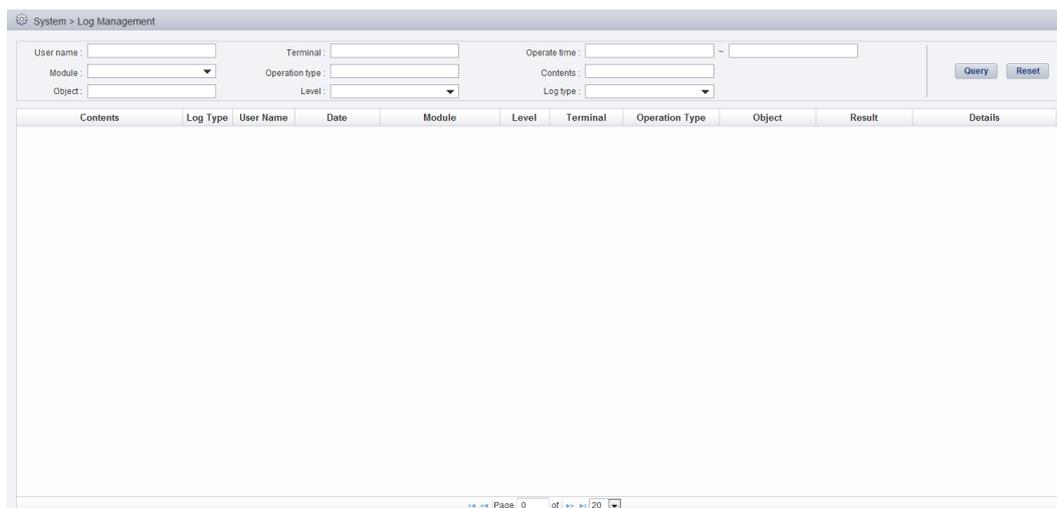
The user operation logs about user authorization will not be deleted, unless this user is deleted.

## Procedure

**Step 1** Choose **System > Log Management** from the main menu.

The **Log Management** window is displayed.

**Figure 5-111** Log Management



**Step 2 Optional:** Set the query criteria by referring to [Table 5-57](#).

**Table 5-57** Query criteria parameters

Parameter	Description
User name	Name of a user.

Parameter	Description
Module	<p>Module in which an operation is performed, including:</p> <ul style="list-style-type: none"> <li>● Device management: involves plant creation, modification, and deletion, device search, device access, and device deletion.</li> <li>● Configuration management: involves device information modification and control command delivery.</li> <li>● Security management: involves user login and logout, and user creation, user information modification, and user deletion.</li> <li>● Software management: involves software package upload, device upgrade, and software package deletion.</li> <li>● Performance management: involves historical performance data synchronization.</li> <li>● Device log: involves the obtaining of device logs.</li> <li>● Remote notification: involves email server parameter and SMS message server parameter modification, and remote notification rules creation, modification, deletion, enabling, and disabling.</li> </ul> <p><b>NOTE</b></p> <p>The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.</p> <p>Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.</p> <ul style="list-style-type: none"> <li>● License management: involves querying License Information, importing or revoking a License and obtaining an ESN.</li> <li>● System settings: involves the clock synchronization, baud rate modification, alarm resetting, benefit setting, and collection period setting.</li> </ul>
Object	<p>Object on which an operation is performed, including:</p> <ul style="list-style-type: none"> <li>● Local NetEco</li> <li>● NetEco 1000S user</li> <li>● plant</li> <li>● Device</li> </ul>
Client IP address	<p>IP address of the PC client or identification number of the mobile client used for the login.</p>

Parameter	Description
Operation type	Type of operation a user has performed, including: <ul style="list-style-type: none"><li>● System login</li><li>● System logout</li><li>● Search</li><li>● Add</li><li>● Synchronize</li><li>● Upgrade</li><li>● Modify</li><li>● Delete</li><li>● Reset</li></ul>
Operation time	The value must be a time segment. The start time must be earlier than or equal to the end time.
Contents	Operation performed by a certain user.
Level	Log level, including: <ul style="list-style-type: none"><li>● Risk</li><li>● Minor</li><li>● Warning</li></ul>
Log type	Log type, including: <ul style="list-style-type: none"><li>● System Logs: record NetEco 1000S running exceptions, network faults, and NetEco 1000S attacks.</li><li>● Operation Logs: record device addition and deletion.</li><li>● Security Logs: record NetEco 1000S security operation information, such as logging in to the client, changing the password, creating a user, and exiting the client.</li></ul>

**Step 3** Click **Query**.

----End

### 5.2.6.3 Setting Remote Notification

This section describes how to set remote notification. The NetEco 1000S notifies users of information about alarms or generated power remotely based on remote notification rules.

#### 5.2.6.3.1 Setting Parameters for the Email Server

This section describes how to set parameters for the email server for sending emails to users.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).

- You have logged in as system administrator.

 **NOTE**

You need to disable the mail filtering function of the antivirus software for the operating system.

- The PC on where the NetEco 1000S software is installed is properly connected to the email server, and you have obtained the email server's IP address (or domain name) and port number that are used for email transmission from the email server OM personnel.

---

 **NOTICE**

TLS communication protocols include TLS1.0, TLS1.1, and TLS1.2. The NetEco supports TLS1.1, and TLS1.2 protocols. TLS1.0 has security risks. The NetEco uses TLS1.2 by default.

---

If an email server supports only TLS1.0, the communication connection may be insecure. In this case, replace the email server with one supporting TLS1.1 or TLS1.2.

 **NOTE**

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.

Personal data such as phone numbers and email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Choose **Email Server**.

The **Setting parameters for email server** window is displayed, as shown in [Figure 5-112](#).

**Figure 5-112** Setting parameters for email server

\*Email sending server:   
Enter an email sending server IP address or domain name(XXX.XXX.COM).

\*Email sending port No.:   
Enter an email sending server port number.

\*Sender email address:   
Enter a senders email address.

Check permission  Enable SSL

\*User name:   
Enter a senders email account.

\*Password:   
Enter a senders email password.

**Step 3** Setting parameters for email server by referring to [Table 5-58](#).

**Table 5-58** Setting parameters for email server

Parameters	Description
Email sending server	<p>Enter the IP address or domain name of the SMTP email server.</p> <p>If the domain name of a website is <b>www.yourdomain.com</b>, the domain name of the SMTP email server for this website may be one of the following:</p> <ul style="list-style-type: none"><li>● smtp.yourdomain.com</li><li>● mail.yourdomain.com</li><li>● smtp.mail.yourdomain.com</li></ul> <p>For example, the domain name of the SMTP email server for <b>email@126.com</b> is <b>smtp.126.com</b>.</p> <p>If the domain name of the SMTP email server obtained based on the preceding domain naming rule is invalid and email-based remote notification fails to be enabled, contact the email service provider to obtain the valid domain name of the SMTP email server.</p> <p>The domain names of the SMTP email servers for some frequently used email boxes are as follows:</p> <ul style="list-style-type: none"><li>● <b>126.com</b>: <b>smtp.126.com</b>.</li><li>● <b>gmail(google.com)</b>: <b>smtp.gmail.com</b>.</li><li>● <b>21cn.com</b>: <b>smtp.21cn.com</b>.</li><li>● <b>163.com</b>: <b>smtp.163.com</b>.</li><li>● <b>sohu.com</b>: <b>smtp.sohu.com</b>.</li><li>● <b>yahoo.com</b>: <b>smtp.mail.yahoo.com</b>.</li></ul>
Email sending port No.	<p>Port of email server</p> <p><b>NOTE</b></p> <p>Select the <b>Enable SSL</b>, the SMTPS protocol is used, the default port is <b>465</b>. Clear the <b>Enable SSL</b> check box, the SMTP protocol is used, the default port is <b>25</b>. Ensure that the server port is correct for successful email transmission.</p>
Sender email address	Enter the email address of the sender.
Check permission	If the SMTP email server requires authentication, select <b>Check permission</b> , and set the user name and password for connecting to the SMTP email server.
Enable SSL	<p>Select the <b>Enable SSL</b>, the SMTPS protocol is used. Clear the <b>Enable SSL</b> check box, the SMTP protocol is used.</p> <p>Use the SMTPS protocol to send email is advised.</p> <p><b>NOTE</b></p> <p>If <b>Enable SSL</b> is selected, you must verify that the email server supports the SMTPS. Otherwise, email sending will fail.</p>

**Step 4 Optional:** Test that parameters for the email server are set correctly.

1. Click **Test** in the **Setting parameters for email server** page.

2. Enter the **Recipient email address** in the **Test Email** text box.
3. Click **OK**.

**Step 5** Click **Save**.

---End

## Exception Handling

If **The test email has been sent. Please check.** is displayed on the NetEco 1000S during testing whether the parameters configured for the email server are correct, but the test mail is not received, check the following items:

- Select **Check permission**.
- **Sender email address** and **User name** are the same.

### 5.2.6.3.2 Setting Alarm Sending Rules

This section describes how to set alarm sending rules. Based on the preset alarm sending rules, the NetEco 1000S sends emails to notify users of alarm information.

## Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have set the email server. For details, see [5.2.6.3.1 Setting Parameters for the Email Server](#).

## Context

The NetEco 1000S notifies users of alarm information by email: After the NetEco 1000S receives an alarm reported by a device, the NetEco 1000S waits for 3 minutes, and then sends all alarm information received within 3 minutes to users using one email.

### NOTE

**Alarm send delay time** specifies the time that the NetEco 1000S waits before sending alarms. The default value of **Alarm send delay time** is 180s, that is, 3 minutes. After the value of **Alarm send delay time** is changed, the waiting period changes accordingly.

## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Click **Alarm Send Settings**.

### NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.
- Personal data such as email addresses are masked in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

**Step 3** In the **Setting Alarm Sending Rules** page, you can perform the following operations.

Setting Alarm Sending Rules	Operation Method
<b>Create alarm sending rules</b>	<p>A alarm notification rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> <li>1. Click <b>Create</b>.</li> <li>2. On the <b>Create Rule</b> page, set parameters and click <b>Save</b>.</li> </ol> <p><b>NOTE</b></p> <p>You can select the alarm email language by setting <b>Mail language</b>.</p> <ul style="list-style-type: none"> <li>– Available languages include: Chinese, English, Japanese, French, and German.</li> <li>– The <b>Mail language</b> uses the display language on the NetEco 1000S by default.</li> </ul>
<b>Enable alarm sending rules</b>	<p>Enable a disabled alarm notification rule.</p> <p>Select one or more alarm sending rules and click <b>Enable</b> to enable the alarm sending rules.</p>
<b>Disable alarm sending rules</b>	<p>Disable a alarm notification rule that is not used currently.</p> <p>Select one or more alarm sending rules and click <b>Disable</b> to disable the alarm sending rules.</p>
<b>Modify alarm sending rules</b>	<p>Modify a alarm notification rule to meet management requirements.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required alarm notification rule is located.</li> <li>2. On the <b>Modify Rule</b> page, modify the alarm notification rule information.</li> </ol>
<b>Delete alarm sending rules</b>	<p>Delete an unused alarm notification rule to ensure sufficient memory and proper running of tasks on the server.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required alarm notification rule is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>Yes</b>.</li> </ol>

----End

### 5.2.6.3.3 Setting Report Sending Rules

This section describes how to set report sending rules. The NetEco 1000S sends emails to users each day to notify users of day energy, income and total energy generated by the plant based on rules.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For details, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as the system administrator or installer.
- You have set the email server. For details, see [5.2.6.3.1 Setting Parameters for the Email Server](#).

## Procedure

**Step 1** Choose **System > Remote Notification** from the main menu.

**Step 2** Choose **Report Send Settings**.

 **NOTE**

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.
- Personal data such as email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

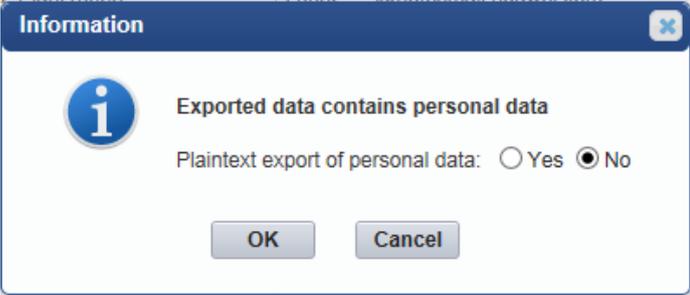
Enter search criteria in **Recipient email address** or **PV plant** text box, and click **Query**. Target reports sending rules meeting the preset condition are filtered out.

**Figure 5-113** Report Send Settings



**Step 3** In the **Report Send Settings** page, you can perform the following operations.

Setting Report Sending Rules	Operation Method
<b>Create report sending rules</b>	<p>Based on the created report sending rules, the NetEco 1000S sends emails to users each day to notify users of day energy and total energy generated by the plant. This helps maintenance personnel that are not onsite to learn the day energy and total energy generated by the plant on the NetEco 1000S in time.</p> <p>A report sending rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> <li>1. Click <b>Create</b>.</li> <li>2. Set <b>Rule name</b>, <b>Mail language</b>, <b>Mail subject</b>, <b>PV plant</b>, <b>Daily send time</b>, and <b>Recipient email address</b> on the <b>Create Rule</b> page.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>– Available mail languages include: Chinese, English, Japanese, French, and German. The <b>Mail language</b> uses the display language on the NetEco 1000S by default.</li> <li>– The NetEco 1000S has a mail subject by default. The language of the mail subject is the display language and changes with the <b>Mail language</b> settings.</li> <li>– The NetEco 1000S sends day energy and total energy generated by the PV Plant from 00:00 of the current day to <b>Daily send time</b>.</li> </ul> <ol style="list-style-type: none"> <li>3. Click <b>Save</b>.</li> </ol>
<b>Enable report sending rules</b>	<p>Enable a disabled report sending rule.</p> <p>Select one or more report sending rules and click <b>Enable</b> to enable the report sending rules.</p>

Setting Report Sending Rules	Operation Method
<b>Disable report sending rules</b>	<p>Disable a report sending rule that is not used currently.</p> <p>Select one or more report sending rules and click <b>Disable</b> to disable the report sending rules.</p>
<b>Modify report sending rules</b>	<p>Modify a report sending rule to meet management requirements.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required report sending rule is located.</li> <li>2. On the <b>Modify Rule</b> page, modify the report sending rule information.</li> </ol>
<b>Delete report sending rules</b>	<p>Delete an unused report sending rule to ensure sufficient memory and proper running of tasks on the server.</p> <ol style="list-style-type: none"> <li>1. Click  in the <b>Operation</b> column where the required report sending rule is located.</li> <li>2. In the <b>Warning</b> dialog box, click <b>Yes</b>.</li> </ol>
<b>Export report sending rules</b>	<ol style="list-style-type: none"> <li>1. Click <b>Export</b> drop-down list box. <ul style="list-style-type: none"> <li>- Select <b>Export All</b> from the <b>Export</b> drop-down list box and save all the report sending rules that are queried to the PC.</li> <li>- Select the target device in the displayed operation area. Select <b>Export Selected</b> from the <b>Export</b> drop-down list box and save the selected report sending rules to the PC.</li> </ul> <p>The message shown in <a href="#">Figure 5-114</a> is displayed.</p> <p><b>Figure 5-114</b> Message for rule export</p>  </li> <li>2. Select whether to export personal data in plaintext format, and click <b>OK</b>. Personal data refers to the email information about recipients.</li> </ol>

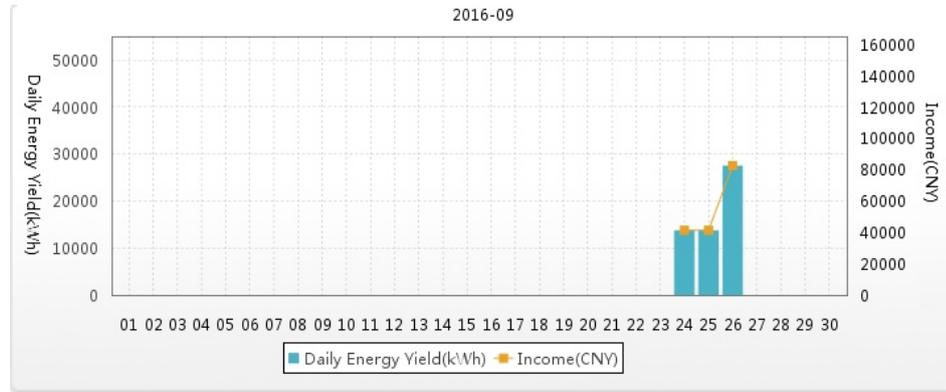
----End

## Result

After the report sending rules are set, the NetEco 1000S automatically sends a report email to the specified mailbox.

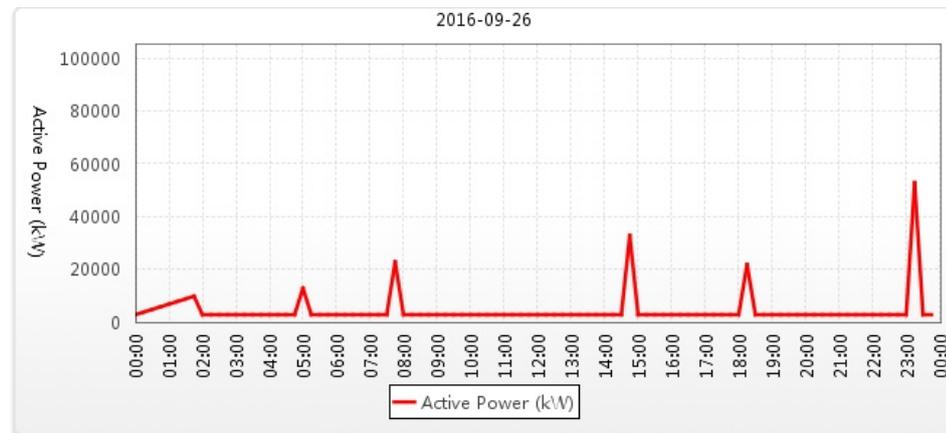
The contents of a report email include the plant and inverter parameters as well as the **Daily Energy Yield** bar graph, **Income** chart, and **Active Power** line chart. The energy **Daily Energy Yield** graph and **Income** chart provide the energy yield and income of every day in the current month, as shown in **Figure 5-115**.

**Figure 5-115** Energy yield and income



The **Active Power** line chart provides the active power of every hour on the current day, as shown in **Figure 5-116**.

**Figure 5-116** Active power



**Table 5-59** describes the descriptions of parameters in the report email.

**Table 5-59** Report email

Type	Parameter	Description
Total	Daily Energy Yield	Total energy yield of PV plants on the current day.
	Total Energy Yield	Total energy yield of PV plants.

Type	Parameter	Description
NOTE Total data indicates data of all PV plants selected when you set the report sending rules.	Total income	Total income generated by PV plants.
Detailed PV plant parameter	PV plant name	Name of a PV plant selected when you set the report sending rules.
	Total string capacity	Total string capacity of inverters under the PV plant. If this parameter is not set, - is displayed.
	Total Energy Yield	Total energy yield of the PV plant.
	Daily Energy Yield	Energy yield of the PV plant on the current day.
	Day Performance Ratio	Performance ratio of the PV plant on the current day.
	Daily income	Income of the PV plant on the current day.
	Total income	Total income generated by the PV plant.
Inverter parameter	Number of Inverters	Number of inverters connected to the PV plant.
	Inverter specific energy mean value	Average equivalent energy generation duration of inverters under the PV plant.
	Specific energy maximum value	Maximum equivalent energy generation duration of inverters under the PV plant.
	Specific energy minimum value	Minimum equivalent energy generation duration of inverters under the PV plant.
	Ratio threshold	Ratio threshold of the PV plant. If this parameter is not set, - is displayed.
	Number of inverters with lower mean value ratio	Number of inverters whose ratio is lower than the average value.

 **NOTE**

The table below inverter data lists **Total Energy Yield**, **Daily Energy Yield**, **Specific Energy**, and **Mean Value Ratio** of each inverter. **Mean Value Ratio** is the ratio of **Specific Energy** to **Inverter specific energy mean value** of an inverter. When the ratio is smaller than **Ratio threshold**, it is displayed in red. In this case, you need to check the inverter to ensure that related functions are available.

## 5.2.6.4 Setting System Parameters

This section describes how to set system parameters to modify communication parameters, reset alarms, synchronize the clock time, and set the income unit.

### 5.2.6.4.1 Resetting Alarms

This section describes how to reset alarms. When the target device restores its factory defaults or changes its connection mode, you must reset alarms for the target device on the NetEco 1000S. In this case, all the existing alarm records for the target device will be deleted, and alarms are synchronized from the target device to the NetEco 1000S again.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Reset Alarm**.

The **Reset Alarm** window is displayed, as shown in [Figure 5-117](#).

**Figure 5-117** Reset Alarm



**Step 3** Select the devices for which you want to reset alarms and click **Reset Alarm**.

The **Warning** dialog box is displayed.

**Step 4** Click **OK**.

After alarms are reset, alarm records on the NetEco 1000S will be deleted. However, all alarms of the device still exist on the device side.

----End

### 5.2.6.4.2 Clock Synchronization

This section describes how to synchronize the time on the monitoring PC on which the NetEco 1000S is installed to devices. This ensures time consistency between the devices and the NetEco 1000S.

### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

### Context

By default, the time synchronization function is not started.

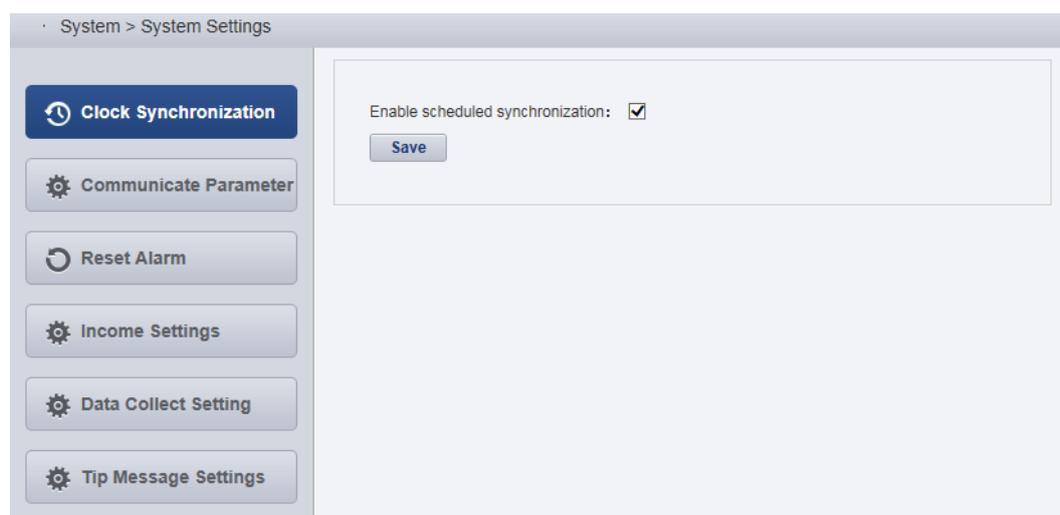
If the time synchronization function is started, the NetEco 1000S performs time synchronization per hour to synchronize time from the NetEco 1000S server to devices mounted to the plant.

### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Clock Synchronization**.

**Figure 5-118** Clock Synchronization



**Step 3** Select this check box, and click **Save**.

The message Are you sure you want to issue the command? is displayed.

**Step 4** Click **OK**.

The message The synchronization command has been issued is displayed.

**Step 5** Click **OK**.

---End

### 5.2.6.4.3 Setting Communication Parameters

This section describes how to set communication parameters. If a device is connected to the monitoring PC using a serial port, the baud rate of the device must be the same as that set on the NetEco 1000S. Otherwise, the device communicates with the monitoring PC improperly. By default, the baud rates of the device and NetEco 1000S are 9600. In normal cases, you can retain the default settings unless the actual transmission rate is insufficient. After the baud rate is changed, you need to restart the NetEco 1000S for the setting to take effect.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Click **Communicate Parameter**.

The **Communicate Parameter** window is displayed.

**Step 3** Changing Baud rate

1. Select a baud rate from the **Baud rate** drop-down list and click **Save**.

The message To change the baud rate, you need to restart the NetEco service. Do you want to continue? is displayed.

2. Click **Yes**.

The message Modification succeeded. Please restart the NetEco service. is displayed.

3. Click **OK**.

4. See [5.2.1.2 Logging Out of the NetEco 1000S](#) and [5.2.1.1 Logging In to the NetEco 1000S](#) to restart NetEco 1000S service.

**Step 4** Set whether the SUN2000L inverter supporting only SSL authentication is allowed to access the NetEco 1000S.

The SUN2000L inverter and NetEco 1000S use the following two authentication modes by default: SSL authentication and user name/password authentication. The NetEco 1000S can be compatible with the SUN2000L inverter supporting only SSL authentication, which has security risks. It is recommended that such SUN2000L inverter be replaced with the SUN2000L inverter supporting both authentication modes or the SUN2000L inverter be upgraded to the version supporting both authentication modes.

- Select **Compatible Access only supports SSL authentication NEs**: The SUN2000L inverter supporting only SSL authentication is allowed to access the NetEco 1000S, and the device connection is normal.

- Deselect **Compatible Access only supports SSL authentication NEs**: The SUN2000L inverter supporting only SSL authentication is allowed to access the NetEco 1000S, but the device is disconnected. To ensure the access security of the NetEco 1000S, you are advised to deselect **Compatible Access only supports SSL authentication NEs**.

 **NOTE**

After installing and upgrading NetEco 1000S, **Compatible Access only supports SSL authentication NEs** is selected by default.

----End

#### 5.2.6.4.4 Setting Income

NetEco 1000S uses **Standard currency** selected during the installation for income statistics. You can set exchange rates between different types of currency and **Standard currency** to collect statistics on the income of all PV plants.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

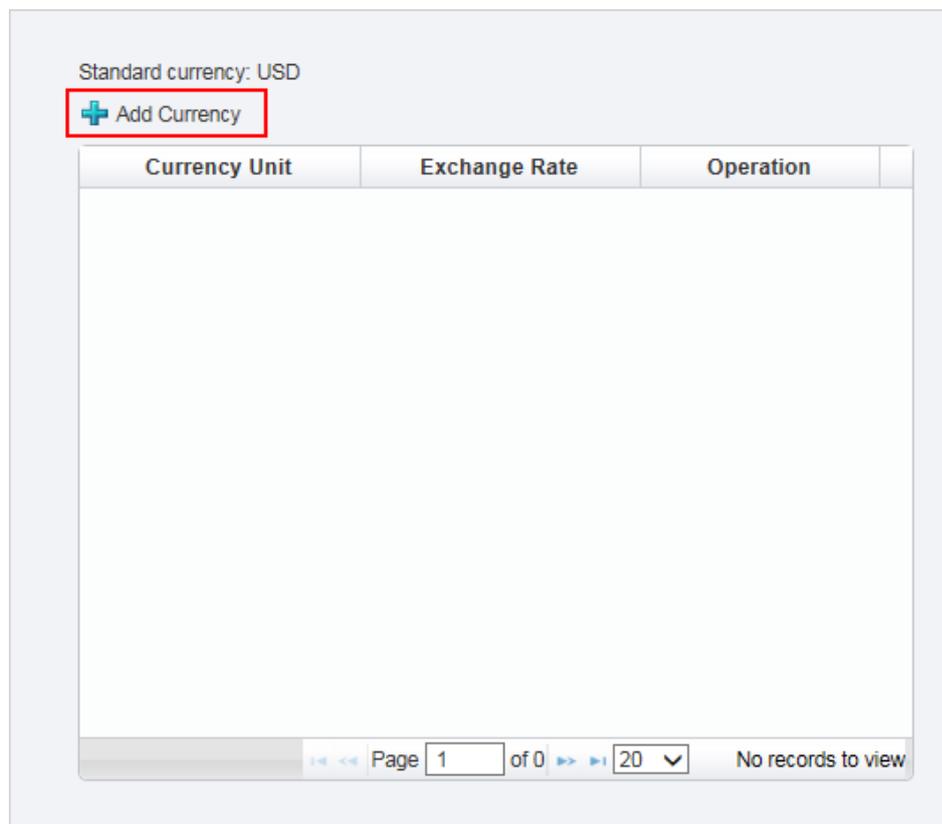
#### Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Choose **Income Settings**.

The page as shown in [Figure 5-119](#) is displayed.

Figure 5-119 Income Setting



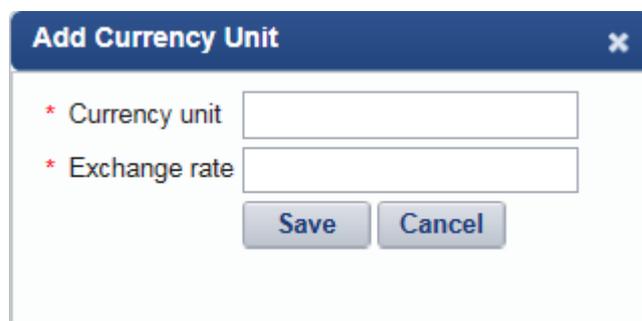
 **NOTE**

NetEco 1000S uses **Standard currency** for income statistics. **Standard currency** indicates the currency type selected when you set currency parameters.

**Step 3** Click **Add Currency**.

The **Add Currency Unit** dialog box is displayed, as shown in [Figure 5-120](#).

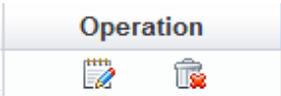
Figure 5-120 Add currency unit



**Step 4** Set the currency used for the PV plant and the exchange rate of the currency against **Standard currency**, and save the setting.

----End

## Follow-up Procedure

- 
- In the **Operation** area of the **Add Currency Unit** dialog box, edit or delete the currency.

### 5.2.6.4.5 Setting Prompt Information

This section describes how to set whether to enable the prompt information displayed after you log in to the client, access devices, and create a PV plant on the NetEco 1000S client.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.

## Context

After you log in to the NetEco 1000S, access devices, or create a PV plant, the prompt information is displayed in the lower right corner of the NetEco 1000S client.

You can enable or disable the prompt information as required.

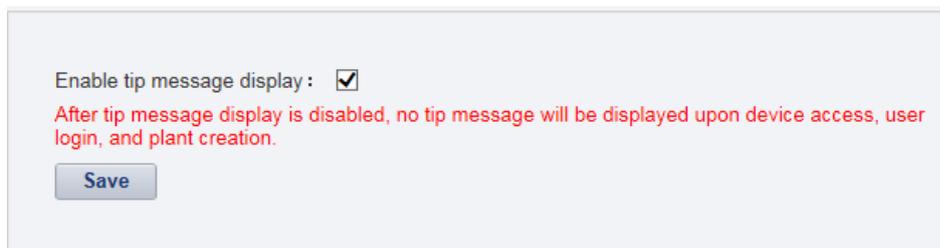
## Procedure

**Step 1** Choose **System > System Settings** from the main menu.

**Step 2** Choose **Tip Message Settings**.

The **Tip Message Settings** page is displayed, as shown in [Figure 5-121](#).

**Figure 5-121** Tip Message Settings



**Step 3** Set whether to enable the prompt information.

- Enable the prompt information: select **Enable tip message display**.
- Disable the prompt information: deselect **Enable tip message display**.

Prompt information is enabled on the NetEco 1000S by default.

**Step 4** Click **Save**.

----End

## 5.2.6.5 License Management

License management includes querying license information, obtaining an ESN, importing a license, and revoking a license. Manage the license to ensure that the NetEco 1000S can be used normally.

### 5.2.6.5.1 License Usage Description

The license is used to enable or disable the inverter management function. After the NetEco 1000S is installed, there is a license trial period of 90 days by default. During the trial period, a license file needs to be imported so that all the functions of the NetEco 1000S can be used.

If a license file is not imported when the trial period expires, login to the NetEco 1000S client will be limited. After login is limited, installers and customers will not be able to visit the client. Only the system administrator can visit the client. After login, the page requiring license import is displayed.

To ensure that you can use all the functions of the NetEco 1000S, check and import a license file periodically.

## How to Obtain a License

Obtain the ESN of the NetEco 1000S server or the license revocation code, and then contact Huawei technical support to apply for a new license.

### 5.2.6.5.2 Querying License Information About the NetEco

Query the expiration date and function control of the current License routinely to check whether the License is about to expire, and solve the problems in a timely manner. In this way, the NetEco 1000S function can be used normally.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- The License has been imported to NetEco 1000S. If it has not been imported, import it by referring to [5.2.6.5.3 Importing a License File](#).

## Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **License Information**.

The **License Information** page is displayed.

On the **License Information** page, check the basic information, function control information, and ESN information about the License. For details, see [Table 5-60](#).

**Table 5-60** License information

Item	Attribute	Description
Basic License Information	Expired on	The License is valid until 03:00 this date.
Function Control	Function Name	Functions provided by the NetEco 1000S.
	Supported or Not	Whether the function is supported by the License file.
ESN Information	ESN list	ESNs of all the NICs managed by the License. Each ESN is separated by a comma (,).
	ESN quantity	The number of ESNs of all the NICs managed by the License.

 **NOTE**

When the License is about to expire, a prompt will be displayed at the upper part of the **License Information** page. Handle the problem by following the prompt.

----End

### 5.2.6.5.3 Importing a License File

When a License is not imported in NetEco 1000S, or NetEco 1000S License is expires, or cannot meet network management requirements, you must import a new License to the NetEco 1000S to ensure normal services of the NetEco.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- A new License is obtained.

#### Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **Import License**.

The **Import License** page is displayed.

**Step 3** Click **Browse** and select a License file.

The License file must be less than 1 MB and the file format should be **.dat**.

**Step 4** Click **Upload**.

A dialog box for activating the License is displayed.

**Step 5** Click **Yes**.

----End

#### 5.2.6.5.4 Revoking a License

If the NIC is faulty or a new NIC needs to be used, revoke the current license to generate a revocation code which is used to apply for a new license file for free.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- License usage is normal in the current environment.

#### Context

If a NIC is found faulty or the existing NIC needs to be replaced, revoke the existing license to generate a revocation code that can be used for applying for a new license file.

After NIC replacement, import the new license file to NetEco 1000S. After that, the NetEco 1000S functions can be used properly. For details about how to import a license file, see [5.2.6.5.6 Importing a License on the Page Requiring License Import](#).

#### Procedure

**Step 1** Choose **System > License Management** from the main menu.

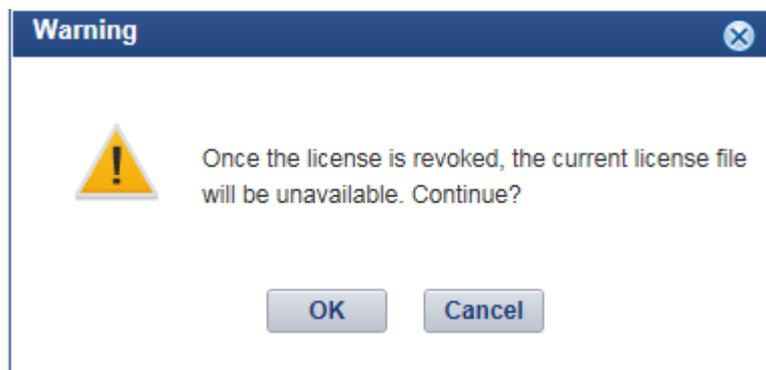
**Step 2** Choose **Revoke License**.

The **Revoke License** page is displayed.

**Step 3** Click **Revoke**.

A warning is displayed, as shown in [Figure 5-122](#).

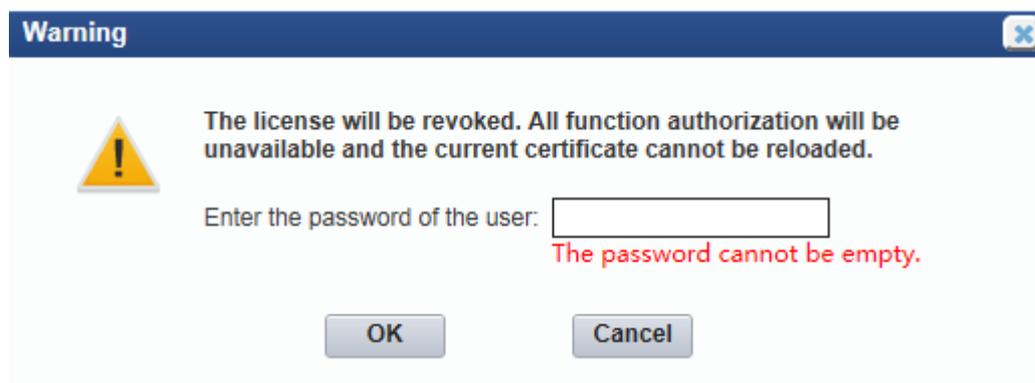
**Figure 5-122** Revocation warning



**Step 4** Click **OK**.

A dialog box is displayed, as shown in [Figure 5-123](#).

Figure 5-123 Password confirming



**Step 5** Enter the password of the user and click **OK**.

The generated revocation code will be displayed beside the **Revocation code** parameter.

If the revocation code is not generated, contact Huawei technical support.

---End

### 5.2.6.5.5 Obtaining an ESN

If no license is available for the NetEco 1000S, obtain the equipment serial number (ESN) of the NetEco 1000S server to apply for a license.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- You have obtained the Media Access Control (MAC) address of the NetEco server.
- No license is available or the license has expired.

#### Context

If no license file is found or the license has expired after the NetEco 1000S is installed, obtain the ESN to apply for a new license.

#### Procedure

**Step 1** Choose **System > License Management** from the main menu.

**Step 2** Choose **Obtain ESN**.

The **Obtain ESN** page is displayed.

**Step 3** Obtain the ESN.

- Obtain the ESN of the current logged-in server only.

#### NOTE

You can use this method to obtain the ESN of the current logged-in server only. Obtain the ESNs of other servers by entering their MAC addresses.

1. Click **Choose MAC address**. In the drop-down list, select a MAC address to generate an ESN.

The MAC addresses provided in the drop-down list are the MAC addresses of the NetEco 1000S servers.

---

**NOTICE**

If there are multiple options, select each MAC address one by one and obtain the ESN for each MAC address.

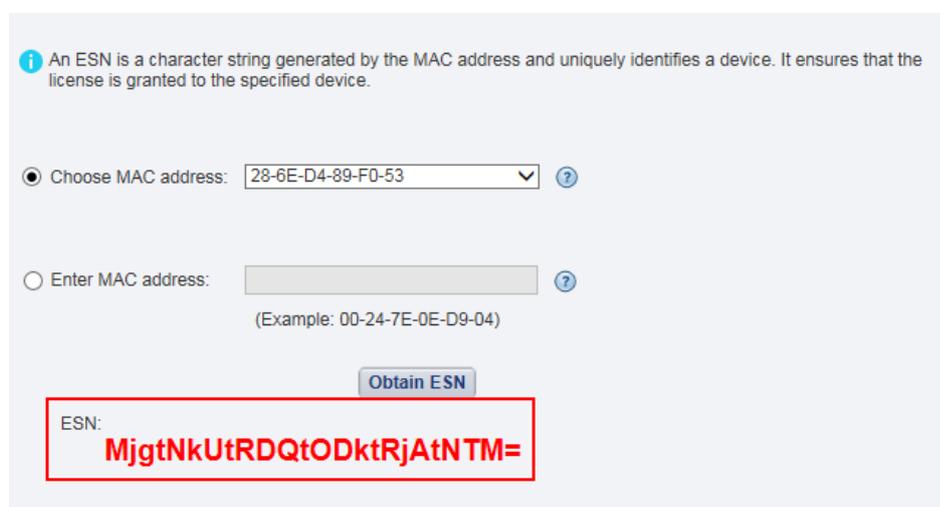
---

2. Click **Obtain ESN**.
  - Obtain the ESNs of other servers by entering their MAC addresses.
    - a. Click **Enter a MAC address**, and enter a MAC address of the NetEco server.

A maximum of 20 MAC addresses can be entered. Separate two MAC addresses with a comma (,).
    - b. Click **Obtain ESN**.

The generated ESN is displayed at the lower part of the page, as shown in [Figure 5-124](#).

**Figure 5-124** Generating an ESN



**i** An ESN is a character string generated by the MAC address and uniquely identifies a device. It ensures that the license is granted to the specified device.

Choose MAC address: 28-6E-D4-89-F0-53 ?

Enter MAC address:  ?  
(Example: 00-24-7E-0E-D9-04)

**Obtain ESN**

ESN:  
**MjgtNkUtRDQtODktRjAtNTM=**

----End

## Follow-up Procedure

When you need to apply for a new license file, contact Huawei technical support and use the obtained ESN to apply for a new license file.

After the new license is issued, import the license to the NetEco 1000S. For details, see [5.2.6.5.6 Importing a License on the Page Requiring License Import](#).

### 5.2.6.5.6 Importing a License on the Page Requiring License Import

If the license has expired or is invalid, import a new license file or obtain the ESN of the NetEco 1000S on the page requiring license import.

#### Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.2.1.1 Logging In to the NetEco 1000S](#).
- You have logged in as system administrator.
- The trial period of the NetEco 1000S has expired, or the license has expired or is invalid.

#### Context

If The trial period of the NetEco 1000S has expired, or the license has expired or is invalid, log in to the NetEco 1000S client as the system administrator. The page requiring license import is displayed.

Import a new license file.



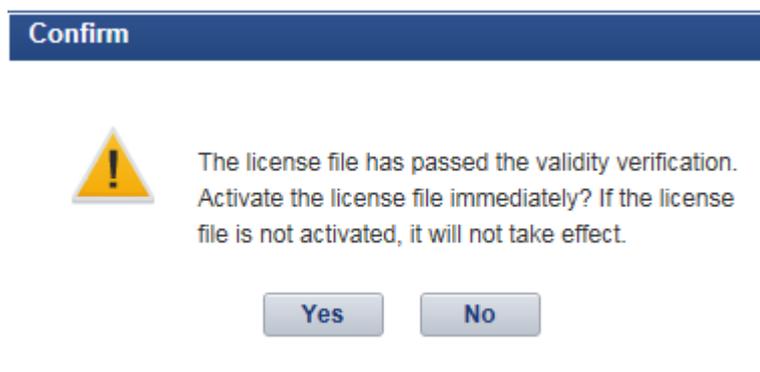
If you perform an operation after more than 10 minutes elapse since the page requiring license import is displayed, the login page will be displayed again. To ensure that you can perform operations successfully, perform the following steps within 10 minutes after the page requiring license import is displayed.

---

#### Procedure

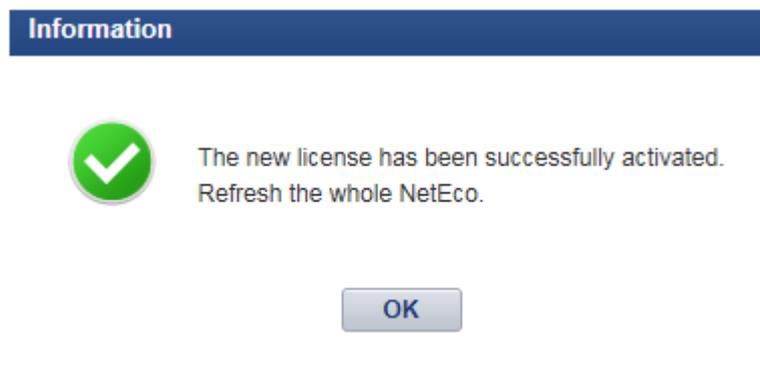
- If you have obtained a new license, perform the following operations:
  - a. Click **Browse** on the right of **License File**.  
A dialog box for selecting a file is displayed.
  - b. Select the license file to be imported and click **OK**.
  - c. Click **Upload**.  
The dialog box shown in [Figure 5-125](#) is displayed.

**Figure 5-125** Confirm



- d. Click **Yes**.  
The dialog box shown in **Figure 5-126** is displayed.

**Figure 5-126** Information



- e. Click **OK**.
- f. Click **Return** on the right of **License File**.  
The NetEco 1000S login page is displayed.
- If no license file is available, perform the following operations to obtain the ESN of the NetEco 1000S so that you can use the ESN to apply for a new license.
  - a. Obtain the ESN.
    - Obtain the ESN of the current logged-in server only:  
Click **Choose MAC address**, in the drop-down list, select a MAC address to generate an ESN.  
The MAC addresses provided in the drop-down list are the MAC addresses of the NetEco servers.

---

## NOTICE

If there are multiple options, select each MAC address one by one and obtain the ESN for each MAC address.

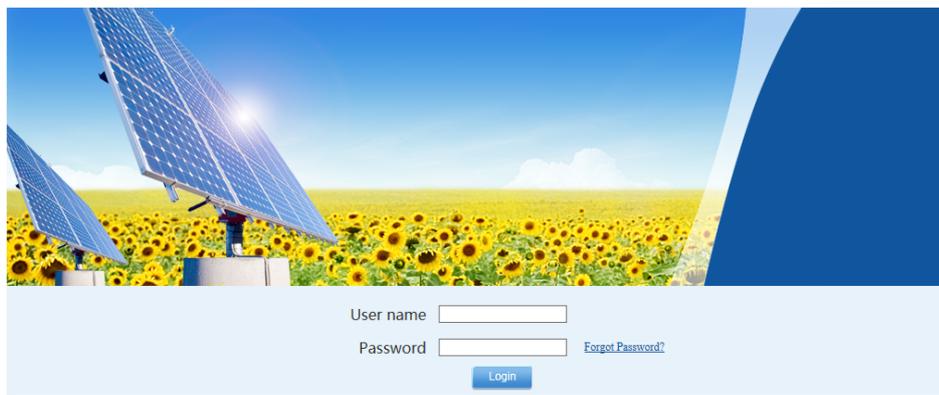
- 
- Obtain the ESNs of other servers by entering their MAC addresses:  
Click **Enter a MAC address**, and enter a MAC address of the NetEco server.  
A maximum of 20 MAC addresses can be entered. Separate two MAC addresses with a comma (,).
  - b. Click **Generate ESN**.  
The generated ESN is displayed at the lower part of the page.  
Contact Huawei technical support engineers to apply for a new license using the obtained ESN, and **a**.

## 5.2.7 FAQs

## 5.2.7.1 What Do I Do When the Internet Explorer Browser Displays a Message Asking Me to Close the Compatibility View on to the Login Page?

### Symptom

**Figure 5-127** Message indicating that the compatibility view needs to be closed



Please disable the Microsoft Internet Explorer compatibility view ([Help](#))

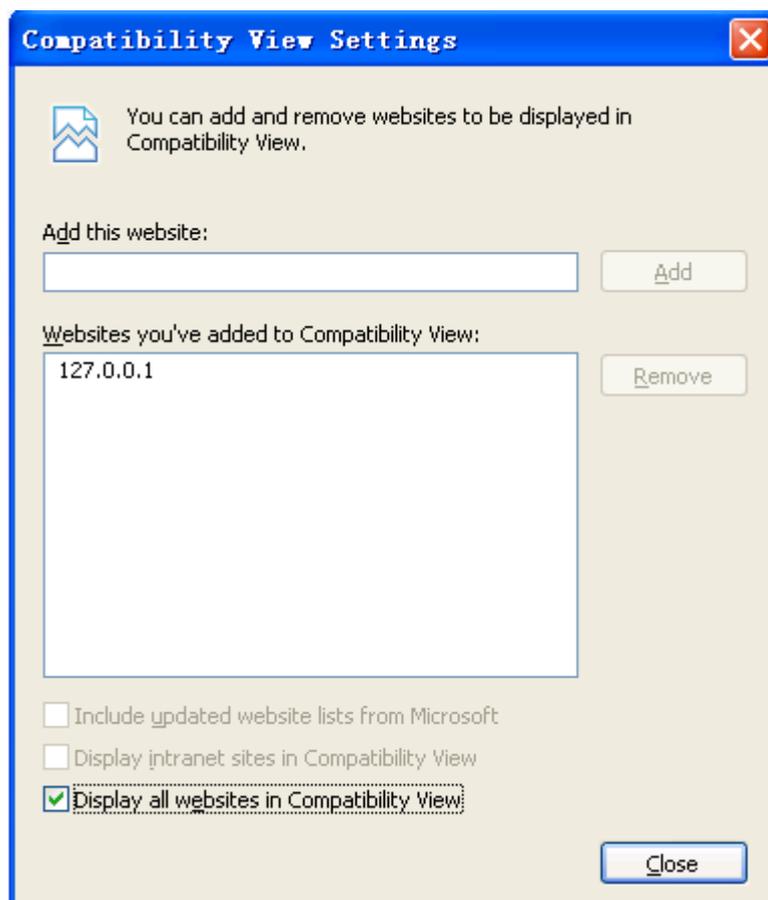
### Possible Causes

You have enabled the compatibility view of the Internet Explorer browser.

### Procedure

- Step 1** Choose **Tools > Compatibility View Settings** on the Internet Explorer menu bar.
- Step 2** Clear the check box for **Display all websites in Compatibility View**.

**Figure 5-128** Compatibility View Settings



---End

### 5.2.7.2 What Do I Do When Characters in a CSV File Are Displayed in Disorder?

#### Symptom

When users open a CSV file exported from the NetEco 1000S, the characters in the file are displayed in disorder.

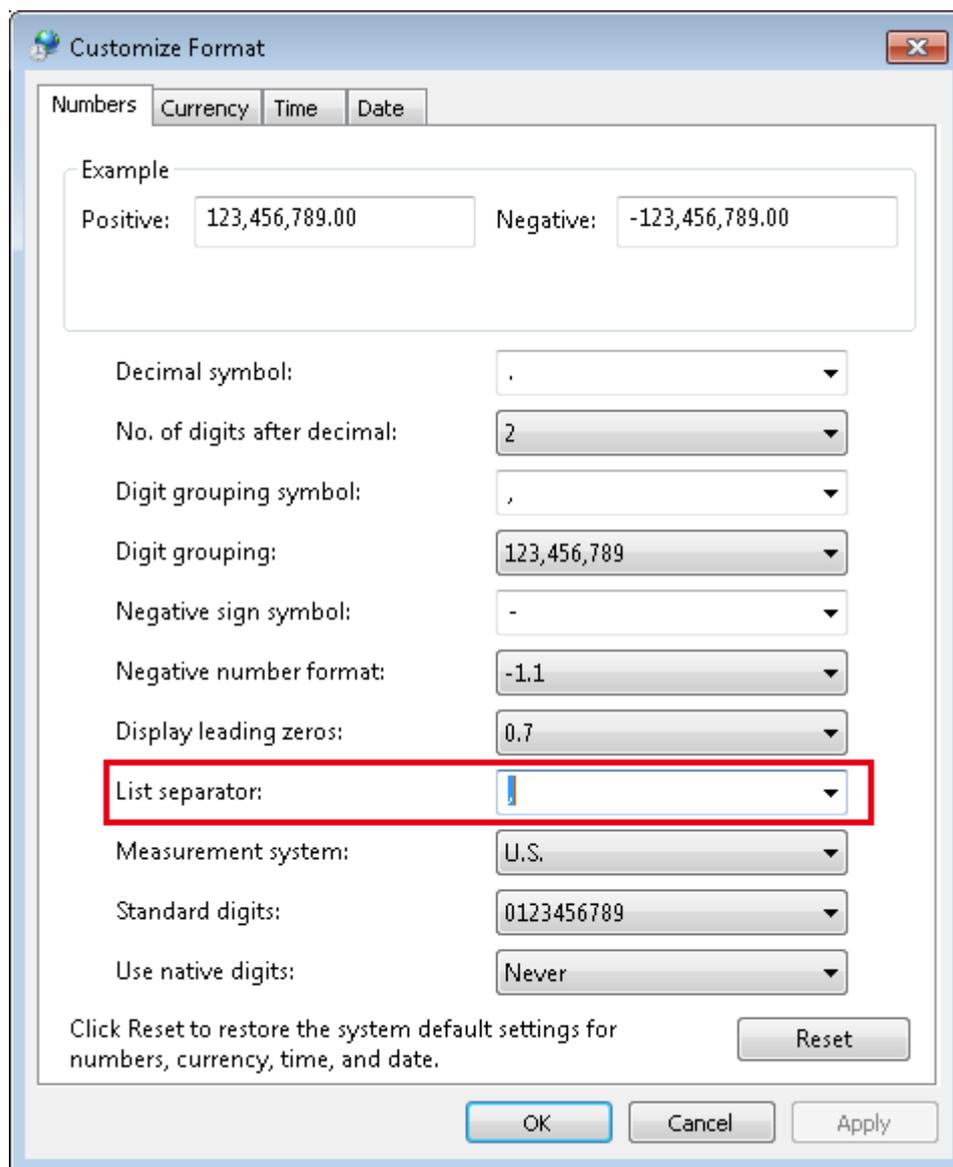
#### Possible Causes

When data in a list is exported to a CSV file, the default separator used by the operating system is not comma (.).

#### Procedure

- Step 1** Choose **Start > Control Panel**.
- Step 2** In the displayed **Control Panel** window, click **Region and Language**.
- Step 3** In the displayed **Region and Language** window, click the **Formats** tab.
- Step 4** Click **Additional settings**.

**Step 5** In the displayed dialog box, set **List separator** to comma (,) on the **Numbers** tab page.



**Step 6** Click **OK**.

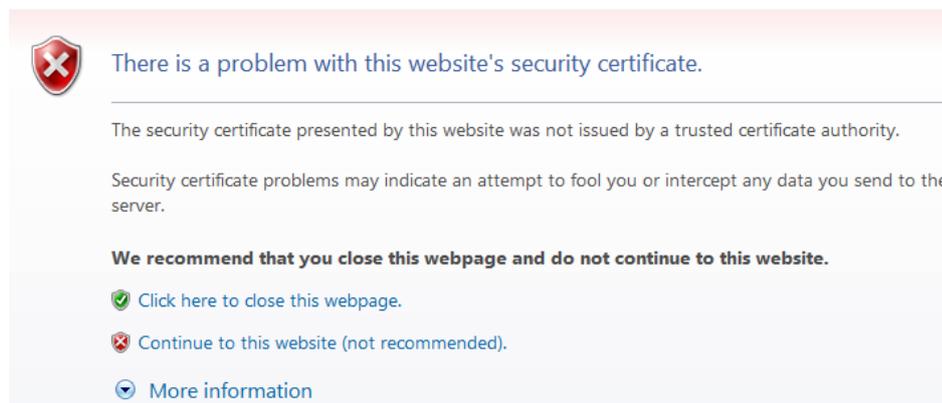
----End

### 5.2.7.3 What Do I Do If a Certificate Error Message or a Security Alarm Is Displayed on Internet Explorer?

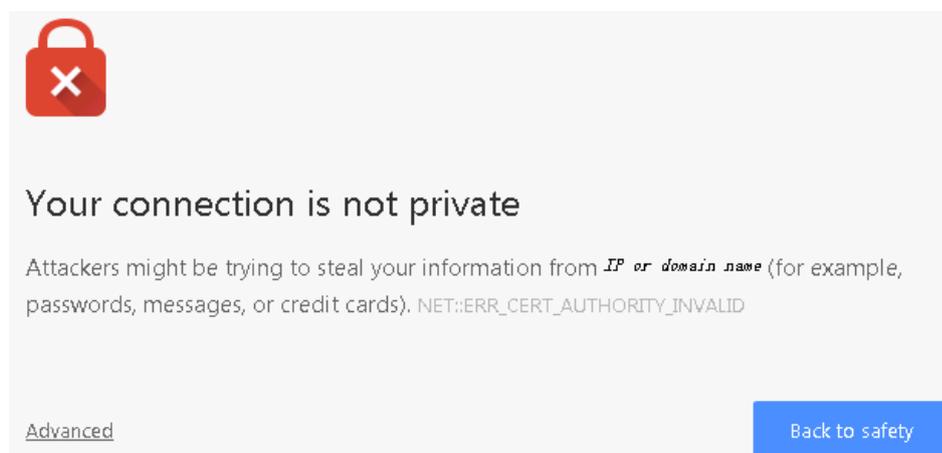
#### Symptom

When log in to NetEco 1000S using Internet Explorer or Chrome, Internet Explorer or Chrome displays a certificate error message similar to that shown in [Figure 5-129](#) or [Figure 5-130](#).

**Figure 5-129** Certificate error message



**Figure 5-130** Website Security Certificate window (Chrome 50)



## Possible Causes

Trusted certificate has not been loaded in the browser.

## Procedure

**Step 1** Log in to a PC as a user in the Administrators user group.

After the certificate is replaced on Internet Explorer, the certificate is also replaced on Chrome. This section mainly describes how to replace the certificate on Internet Explorer.

### NOTE

If you install only Chrome, choose **Manage Certificate > Trusted Root Certification Authorities > Import** in the setting window of the Chrome browser and import the certificate as prompted.

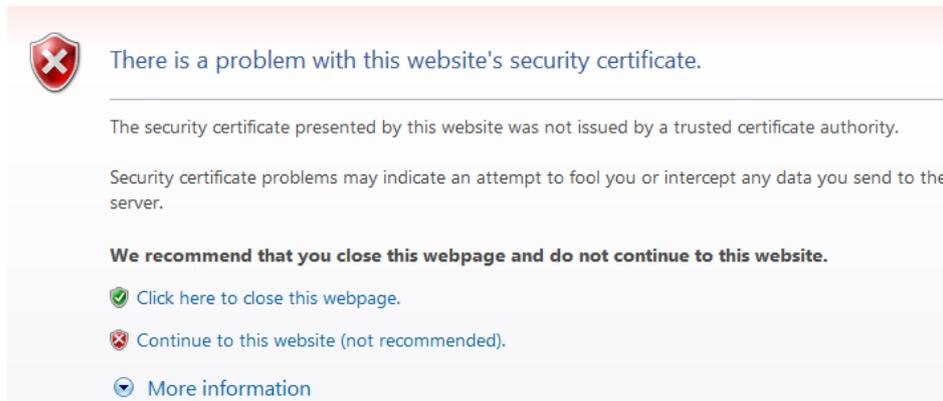
If you start Internet Explorer 11 in the Windows 7 operating system, you need to log in a PC as a user in the Administrators user group and then start Internet Explorer as user Administrator. Otherwise, you cannot properly set Internet Explorer:

1. Choose **Start > Internet Explorer**.
2. In the displayed shortcut menu, choose **Run as Administrator**.

**Step 2** View the certificate.

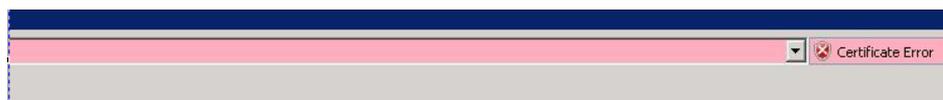
1. When the Internet Explorer displays the security certificate message as shown in **Figure 5-131**, click **Continue to this website**.

**Figure 5-131** Security certificate



2. As shown in **Figure 5-132**, click **Certificate Error**.

**Figure 5-132** Certificate Error



3. In the displayed dialog box, click **View Certificate**.

**Step 3** In the displayed root certificate dialog box as shown in **Figure 5-133**, click **Install Certificate**.

**Figure 5-133** Installing the root certificate



**Step 4** In the displayed **Certificate Import Wizard** dialog box, click **Next**.

**Step 5** Set the certificate store to **Trusted Root Certification Authorities**, as shown in [Figure 5-134](#).

Figure 5-134 Setting the certificate store



- Step 6** Click **Next**.
  - Step 7** After confirming the certificate import information, click **Finish**.
  - Step 8** If the system displays the **Security Warning** dialog box asking you whether to install the certificate, click **Yes**. Otherwise, skip this step.
  - Step 9** In the displayed dialog box indicating the import is successful, click **OK**.
  - Step 10** Click **OK** to close the **Certificate** dialog box.
  - Step 11** In the window of Internet Explorer, choose **Tools > Internet Options**.
  - Step 12** In the displayed **Internet Options** dialog box, click **Advanced**.
  - Step 13** In the **Settings** group box, clear **Warn about certificate address** mismatch under **Security**.
  - Step 14** Click **OK** to close the **Internet Options** dialog box.
  - Step 15** Restart the web browser and log in to NetEco 1000S again.
- End

#### 5.2.7.4 What Do I Do If the Email Server Fails to Send an Email?

This section describes how to solve the problem that the email server fails to send an email.

## Possible Causes

The possible causes of the failure are as follows:

- Incorrect network configuration
- Incorrect IP address or domain name of the email sending server
- Incorrect port number for email sending
- Incorrect user name or password
- Incorrect sender or recipient email address

## Procedure

**Step 1** Check the network configuration.

1. Choose **Start > Control Panel > Network and Internet > Network and Sharing Center > Network Connections** in the operating system.

 **NOTE**

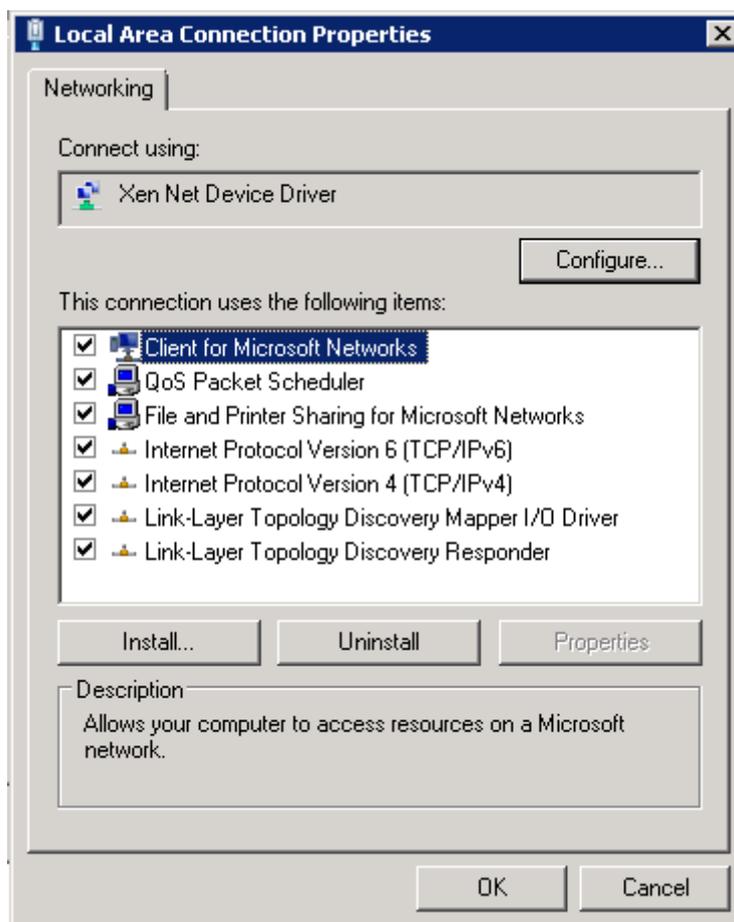
The navigation path of **Network Connections** on the **Control Panel** may vary depending on the OS version. Choose the corresponding path as required.

The **Network Connections** dialog box is displayed.

2. Click **Properties**.

The **Local Area Connection Properties** dialog box is displayed, as shown in [Figure 5-135](#).

**Figure 5-135** Local area connection properties



3. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**, and click **OK**.
5. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 2** Check **Email sending server**.

1. Check whether the IP address or domain name configured for **Email sending server** is correct.

If the configuration is correct, go to the next step. Otherwise, configure the correct IP address or domain name by referring to [5.2.6.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 3** Check **Email sending port No.**

1. Check whether the setting of **Email sending port No** is correct.

If the configuration is correct, go to the next step. Otherwise, configure the correct port number by referring to [5.2.6.3.1 Setting Parameters for the Email Server](#).

2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 4** Check **User name** and **Password**.

1. Check whether **User name** and **Password** are correctly configured.  
If the configuration is correct, go to the next step. Otherwise, configure the correct user name and password by referring to [5.2.6.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 5** Check **Sender email address** and **Recipient email address**.

1. Check whether **Sender email address** and **Recipient email address** are correctly configured.  
If the configuration is correct, go to the next step. Otherwise, configure the correct email address by referring to [5.2.6.3.1 Setting Parameters for the Email Server](#).
2. Check whether the problem has been resolved.
  - If the problem has been resolved, no further operation is required.
  - If the problem persists, go to the next step.

**Step 6** If the problem persists after the preceding possible causes are ruled out, contact Huawei technical support engineers.

----End

## 5.2.7.5 Failure to Receive Emails

### Symptom

After the alarm or report sending rules are configured on the NetEco 1000S client, no alarm or report emails are received.

### Possible Causes

- Reasons related to the sender's server: The sender's server categorizes the emails as junk emails and therefore does not send the emails.

An email may be categorized as a junk email for the following reasons:

- The number of emails sent in a day exceeds the limit.
- The content of the email is the same as or similar to that of another email.

- Reasons related to the recipient's server:

- The emails are categorized as junk emails and therefore cannot be received.
- In Windows Server 2012, the email server is used for email receiving by default. The cause may be that the default host name or domain name of the email server is not recognized. As a result, the emails fail to be received.

This problem may occur if customers use the email server installed by themselves.

## Procedure

**Step 1** Check the sender's email server.

- In Windows Server 2012, enable the SMTP server for email sending.
- In Windows 7 or Windows 10, upgrade the mailbox to a VIP mailbox for email sending. For detailed operations, contact Huawei technical support engineers.

**Step 2** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, go to the next step.

**Step 3** Check the recipient's mailbox.

Check whether junk emails contain emails from the NetEco 1000S. If yes, set the mailbox so that emails from the NetEco 1000S are not categorized as junk emails.

**Step 4** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, go to the next step.

**Step 5** If the operating system is Windows Server 2012, change the email server attribute.

Set the host name or domain name of the email server to a value in the `****.****.****` format, such as **mail.neteco.com**.

**Step 6** Check whether the problem has been resolved.

- If the problem has been resolved, no further operation is required.
- If the problem persists, contact Huawei technical support.

---End

### 5.2.7.6 What Do I Do If the Client Does Not Display the Language Selected During Last Access After Access to the NetEco 1000S Using a Web Browser?

#### Symptom

When a user accesses the NetEco 1000S using a web browser again, the client does not display the language selected during last access.

#### Possible Causes

- The browser has been configured to delete browsing history on exit.
- Cookies have been disabled for the browser.
- The URL entered in the address box of the browser for accessing the client carries a language attribute.

#### Procedure

**Step 1** Cancel browsing history deletion upon exit for the browser.

1. Choose **Tools > Internet Options** from the main menu of the browser.
2. On the **General** tab page, clear **Delete browsing history on exit**.

**Step 2** Allow cookies.

1. Choose **Tools > Internet Options** from the main menu of the browser.
2. On the **Privacy** tab page, click **Advanced**.  
The **Advanced Privacy Settings** dialog box is displayed.
3. Select **Override automatic cookie handling**, select **Accept** under **First-party Cookies** and **Third-party Cookies**, select **Always allow session cookies**, and click **OK**.

**Step 3** Delete the language attribute (**webLang=xxx**) carried in the client access URL.

For example, if the client access URL is **https://IP address:8443/index.action?webLang=zh\_CN**, delete the language attribute from the URL. That is, use **https://IP address:8443/index.action** to access the client.

----End

### 5.2.7.7 What Do I Do to Switch to the Residential NetEco 1000S System

The NetEco 1000S of V100R002C70 or a later version will be a commercial system by default. To switch it to a residential system, modify the **fusionHomeMg.properties** file.

#### Procedure

**Step 1** Navigate to the following directory:

*NetEco 1000S installation directory*\WebRoot\WEB-INF\classes

**Step 2** Open the **fusionHomeMg.properties** file, change the value of **isFusionHome** to **1**, and save the change result.

**Step 3** Restart the NetEco 1000S services and log in to the NetEco 1000S client.

The NetEco 1000S is now a residential system.

----End

#### Follow-up Procedure

In the residential NetEco 1000S system, the Privacy Policy and Terms of Use must be enabled at the same time for user authorization. For details, see [5.2.7.8 What Do I Do to Control the User Authorization upon First Login?](#)

### 5.2.7.8 What Do I Do to Control the User Authorization upon First Login?

For the NetEco 1000S of V100R002C70 or a later version, no user authorization is required upon first login by default. However, you can modify the **userManagement.properties** file to change the system configuration so that user authorization will be required upon first login.

#### Prerequisites

The NetEco 1000S is of V100R002C70 or a later version.

#### Procedure

**Step 1** Update the **Privacy Policy** and **Terms of Use** in compliance with local laws and regulations.

The methods of updating the **Privacy Policy** or **Terms of Use** are similar. The following describes how to update **Privacy Policy**.

1. Navigate to *NetEco 1000S installation directory*\tools\userPrivacy\template to obtain **userPrivacy.xml**:



To update **Terms of Use**, please navigate to *NetEco 1000S installation directory*\tools\UseOfTerms\template to obtain **UseOfTerms.xml**.

2. Store **userPrivacy.xml** under *NetEco 1000S installation directory*\tools\userPrivacy, open the file in text mode, and edit it.



To update **Terms of Use**, please store **UseOfTerms.xml** under *NetEco 1000S installation directory*\tools\UseOfTerms.

---

## NOTICE

- The file under *NetEco 1000S installation directory*\tools\userPrivacy must be named as **userPrivacy.xml**. If not, modify it.
- The file under *NetEco 1000S installation directory*\tools\UseOfTerms must be named as **UseOfTerms.xml**. If not, modify it.

3. Update the version and time for the Privacy Policy.  
Modify the tag content based on [Table 5-61](#) and actual conditions.

**Table 5-61** Updating the version and time

Pair	Description
<pre>&lt;version&gt; 1.0 &lt;/version&gt;</pre>	<p>Version of the <b>Privacy Policy</b>.</p> <p>Modify the version when the <b>Privacy Policy</b> is updated. The first issue is version 1.0, the second issue version 2.0, and so forth.</p>
<pre>&lt;updateTime &gt; 2017-07-06 &lt;/updateTime&gt;</pre>	<p>Update time of the <b>Privacy Policy</b>.</p> <p>Modify the time when the Privacy Policy is updated. The time format is as 2017-07-06.</p>

4. Update the Privacy Policy in Chinese, English, Japanese, French, and German based on [Table 5-62](#) and actual conditions, and save the updates.

**Table 5-62** Five language environments

Pair	Description
<pre>&lt;country name="zh_CN"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in Chinese environment.
<pre>&lt;country name="en_US"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in English environment.
<pre>&lt;country name="ja_JP"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in Japanese environment.
<pre>&lt;country name="fr_FR"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in French environment.
<pre>&lt;country name="de_DE"&gt; &lt;detail&gt; <i>Details of Privacy Policy.</i> &lt;/detail&gt; &lt;/country&gt;</pre>	The Privacy Policy displayed in German environment.

**Step 2** Navigate to *NetEco 1000S software installation directory\tools*, and run the **UserTools.bat** script.

The following information is displayed:

```
1 Update userPrivacy file.
2 Update UseOfTerms file.
3 Change life cycle of operatelog<1~3650>.
4 Exit.
Please Choose:
```

**Step 3** Enter 1 and press **Enter**.

 **NOTE**

To updated **Terms of Use** to the NetEco 1000S, enter 2 and press **Enter**.

The **Privacy Policy** is updated successfully.

**Step 4** Navigate to the following directory:

*NetEco 1000S installation directory*\WebRoot\WEB-INF\classes

**Step 5** Open the **userManagement.properties** file, change the value of **PrivacyStatementType** and **isShowUseTerms** to **1**, and save the change result.

 **NOTE**

The Privacy Policy and Terms of Use must be enabled at the same time in the residential NetEco 1000S system.

**Step 6** Restart the NetEco 1000S.

The settings become valid.

The **User Authorization** page is displayed upon the first login, you need to view the Privacy Policy and Terms of Use and select **Agree to the Privacy Policy** and **Agree to the Terms of Use** before clicking **OK** to continue the operations.

----End

## Follow-up Procedure

- If the Privacy Policy and Terms of Use are updated, you can run the **UserTools.bat** script to synchronize the updated Privacy Policy and Terms of Use to the NetEco 1000S. For details, refer to [Step 1](#), [Step 2](#), and [Step 3](#) in [Procedure](#).



## NOTICE

The NetEco 1000S automatically detects the version of Privacy Policy or Terms of Use (when the Terms of Use is set to be displayed on User Authorization page) at 00:00:00 every day. If a version change is detected, you will be forcibly logged out of both the NetEco 1000S client and the NetEco 1000S app. You need to select **Agree to the Privacy Policy** and **Agree to the Terms of Use** on the NetEco 1000S client before using the NetEco 1000S.

- 
- You can also run the **UserTools.bat** script to change the life cycle of operation logs.

 **NOTE**

- The life cycle of operation logs is half a year by default.
  - This function is irrelevant to updating Privacy Policy and Terms of Use.
- a. Go to *NetEco 1000S software installation directory*\tools, and run the **UserTools.bat** script.

The following information is displayed:

```
1 Update userPrivacy file.  
2 Update UseOfTerms file.  
3 Change life cycle of operatelog<1~3650>.  
4 Exit.  
Please Choose:
```

- b. Enter 3 and press **Enter**.

The following information is displayed:

```
Please input the life cycle of operatelog:
```

- c. Enter the number of days as required and press **Enter**.

User-defined life cycle of operation logs ranges from 1 to 3650, indicating 1 – 3650 days.

- d. Restart the NetEco 1000S to validate the settings.

## 5.3 NetEco 1000S APP Operation

This section describes how to access the NetEco 1000S system through the NetEco 1000S APP and how to perform related operations on the NetEco 1000S APP.

### 5.3.1 Logging In to the NetEco 1000S APP

After installing the NetEco 1000S APP on the mobile terminal, you can access the NetEco 1000S server through the NetEco 1000S APP.

#### Prerequisites

- You have added the identification number of the mobile terminal in the NetEco 1000S system. For details, see [4.2.3 Security Configuration for NetEco 1000S APP](#).
- You have installed the NetEco 1000S APP software on the mobile terminal. For detailed operations, see [4.2.2 Installing the NetEco 1000S APP Software](#).
- You have obtained the user Account/Email and password for logging in to NetEco 1000S APP.
- The mobile terminal has been connected to the network.

#### Context

The NetEco 1000S APP can be installed on mobile terminals running iOS6.0, Android4.0, and later versions. Different Android versions support different communication protocols.

- Versions earlier than Android4.4: supports TLSv1.
- Android4.4 and later: support TLSv1, TLSv1.1, and TLSv1.2.

The NetEco 1000S APP supports the TLSv1, TLSv1.1, and TLSv1.2 by default. The TLSv1 has security risks. You are advised to upgrade the Android. For mobile terminals running Android4.4 or later, disable the TLSv1 by following the instructions provided in [5.3.4 How Do I Disable the TLSv1?](#)

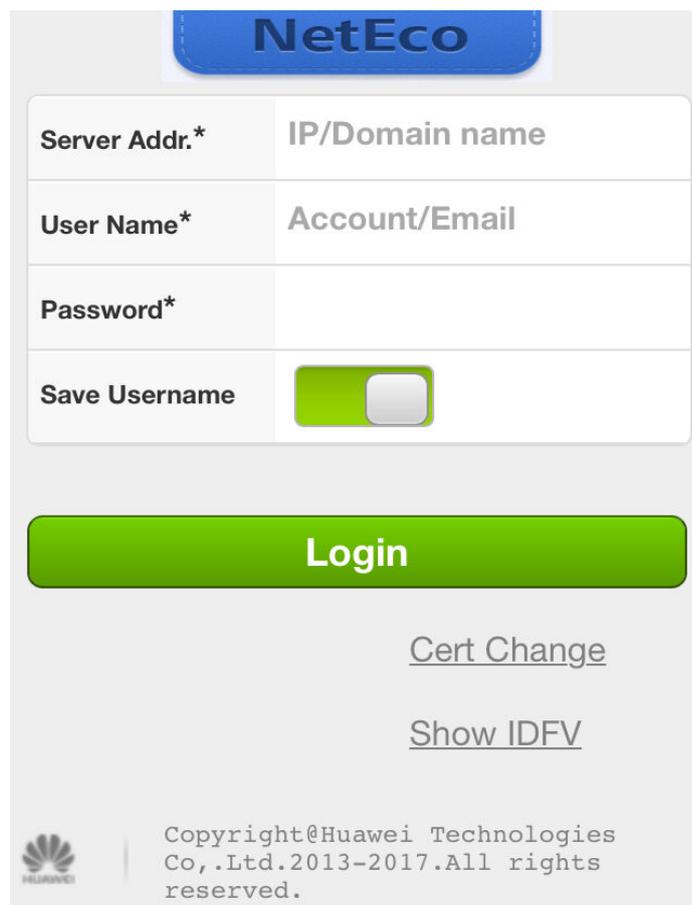
#### Procedure

**Step 1** Click the NetEco 1000S APP icon on the desktop of the mobile terminal to open the login page.

**Step 2** **Optional:** Set the server address of the NetEco 1000S server if this is the first time that you log in to the NetEco 1000S APP.

**Server Addr.** indicates the IP address of the NetEco 1000S server. Specify the IP address or domain name of the server as required.

Figure 5-136 Setting the server address



The image shows a login interface for NetEco. At the top is a blue header with the 'NetEco' logo. Below it is a form with four rows: 'Server Addr.\*' with a placeholder 'IP/Domain name', 'User Name\*' with a placeholder 'Account/Email', 'Password\*', and 'Save Username' with a green toggle switch. A large green 'Login' button is centered below the form. Underneath the button are two links: 'Cert Change' and 'Show IDFV'. At the bottom left is the Huawei logo, and at the bottom right is the copyright notice: 'Copyright@Huawei Technologies Co., Ltd.2013-2017.All rights reserved.'

**Step 3** Enter **Account/Email** and **password**.

**Step 4** Click **Log In**.

---

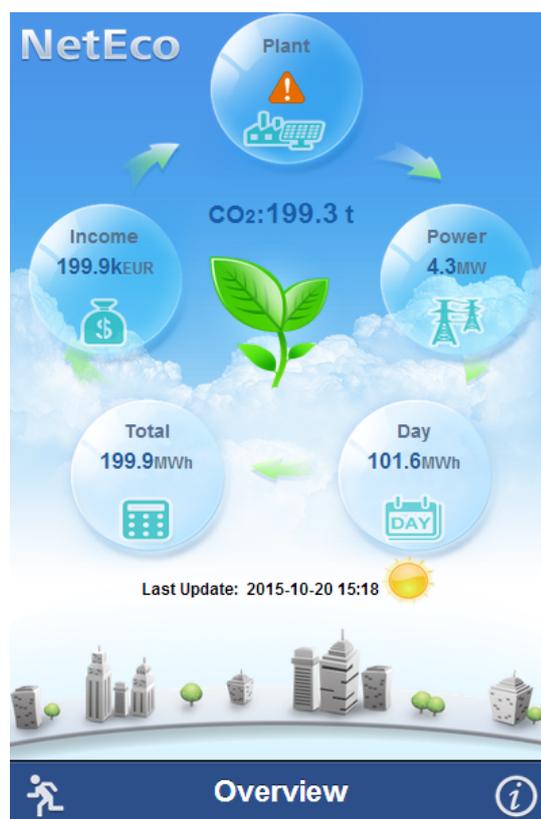
 **NOTICE**

If the message **The Privacy Policy is updated. Log in to read and agree the Privacy Policy on WebUI.** is displayed, log in to the NetEco 1000S client and agree the Privacy Policy before logging in to the NetEco 1000S app to continue the operations. For details, see [5.1.8.22 What Do I Do to Control the User Authorization upon First Login?](#).

---

After you successfully log in to the NetEco 1000S service, the **Overview** window is displayed, as shown in [Figure 5-137](#).

Figure 5-137 Summary window



NOTE

- You can click to view the version of the NetEco 1000S APP.

- You can click to deregister an application.

- You can click to update data on the overview page.

---End

## 5.3.2 Viewing PV Plant and Inverter Information

You can view information about the PV plants and about the inverters accessed each PV plant on the NetEco 1000S APP to learn the operating status of the PV plants and inverters.

### Prerequisites

You have logged in to the NetEco 1000S APP. For detailed operations, see [5.3.1 Logging In to the NetEco 1000S APP](#).

## Context

- Click  on the page to return to the previous page.
- Click  on the page to return to the **Overview** page.

## Procedure



- Step 1** Click  on the **Overview** page. The **Plant List** page is displayed, as is shown in [Figure 5-79](#).

**Figure 5-138** Plant list



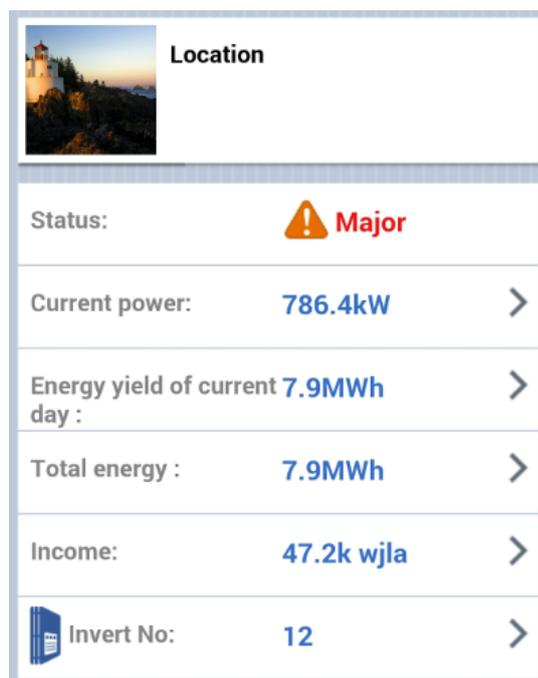
- Step 2** Select the PV plant to be viewed on the Plant List page. The PV plant details page is displayed, as shown in [Figure 5-139](#).

you can view Status, Current power, Energy yield of current day, Total energy, Income, the number of inverters, Total Radiation, Temperature, CO<sub>2</sub> emission reduction, and Rated Power of the selected PV plant.

 **NOTE**

There is no Total Radiation and Temperature information in the residential NetEco 1000S system.

**Figure 5-139** PV plant details page



**Step 3** On the PV plant details page, the system administrator, operator, guest user who has obtained the historical data query permissions in the commercial NetEco 1000S system, or the system administrator, installer in the residential NetEco 1000S system can perform the following operations.

If You Need To...	Then...
Replace the image of the current PV plant	Click the PV plant icon in <a href="#">Figure 5-139</a> .
View the alarm list of a PV plant	Click <b>Status</b> in <a href="#">Figure 5-139</a> or  corresponding to the target PV plant in <a href="#">Figure 5-138</a> . The <b>Alarm List</b> page of the PV plant is displayed.  To view alarm details, click  corresponding to the target alarm on the <b>Alarm List</b> page.
Display Current power, Energy yield of current day, Total energy, and Income of a PV plant in charts	Click  in <a href="#">Figure 5-139</a> separately.

If You Need To...	Then...
View information about the inverters in a PV plant	<p>Click  corresponding to <b>Inverter NO.</b> in <b>Figure 5-139</b>. The <b>Inverter List</b> page is displayed.</p> <ul style="list-style-type: none"> <li>● <b>To view Current power, Energy yield of current day, Total energy, Inverter status, PV input current and input voltage, and Rated power of an inverter:</b> click the line corresponding to the target inverter on the <b>Inverter List</b> page.</li> <li>● <b>To view all alarms of an inverter:</b> <ol style="list-style-type: none"> <li>1. Click  corresponding to the target inverter on the <b>Inverter List</b> page. The <b>Alarm List</b> page of the inverter is displayed.</li> <li>2. Click  corresponding to the target alarm on the <b>Alarm List</b> page. The alarm details are displayed.</li> </ol> </li> </ul>

---End

### 5.3.3 Viewing the Electric Energy Yield and Total Benefits

You can view the daily yield, monthly yield, yearly yield, and total benefits of PV plants on the NetEco 1000S APP.

#### Prerequisites

- You have logged in to the NetEco 1000S APP. For detailed operations, see [5.3.1 Logging In to the NetEco 1000S APP](#).
- You have logged in as the system administrator, operator, guest user who has obtained the historical data query permissions in the commercial NetEco 1000S system, or the system administrator, installer in the residential NetEco 1000S system.

#### Context

- Click  on the page to return to the previous page.
- Click  on the page to return to the **Overview** page.

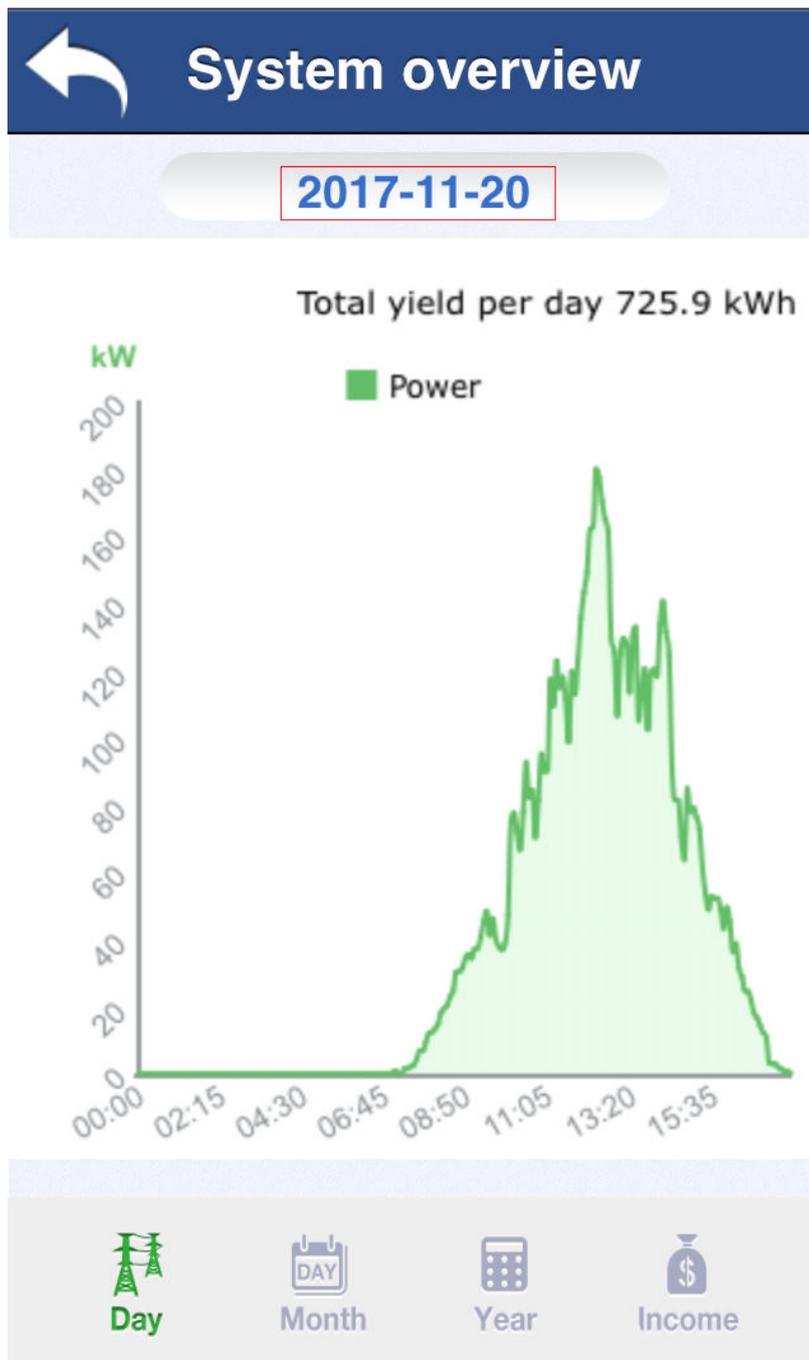
#### Procedure

- **View the daily yield:**



- a. Click  on the **Overview** page. The **Total yield per day** page is displayed, as shown in **Figure 5-140**.

**Figure 5-140 Total yield per day page**

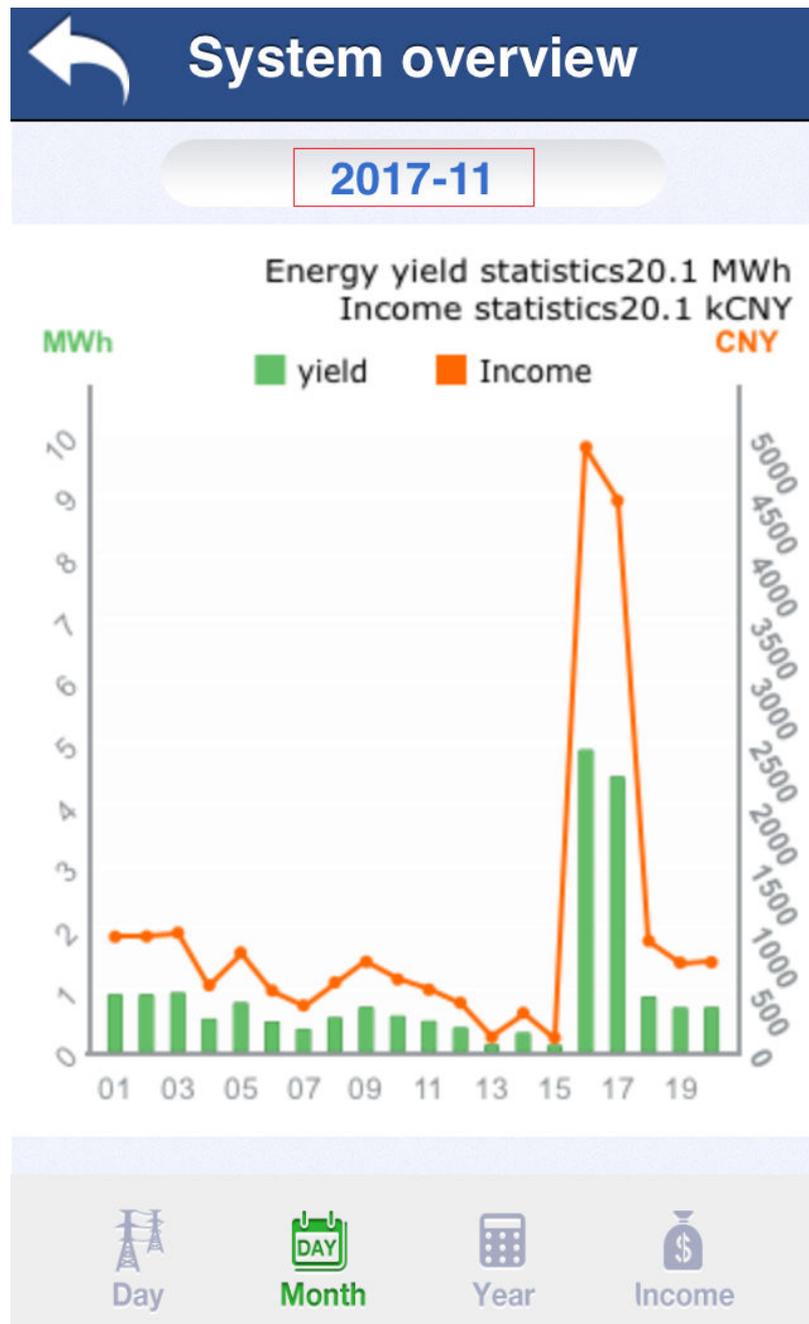


- b. On the **Total yield per day** page, click the date in the red box to choose to view the electric energy yield of any day.
- **View the monthly yield and monthly income:**



- a. Click on the Overview page. The Total yield per month page is displayed, as shown in Figure 5-141.

Figure 5-141 Total yield per month page

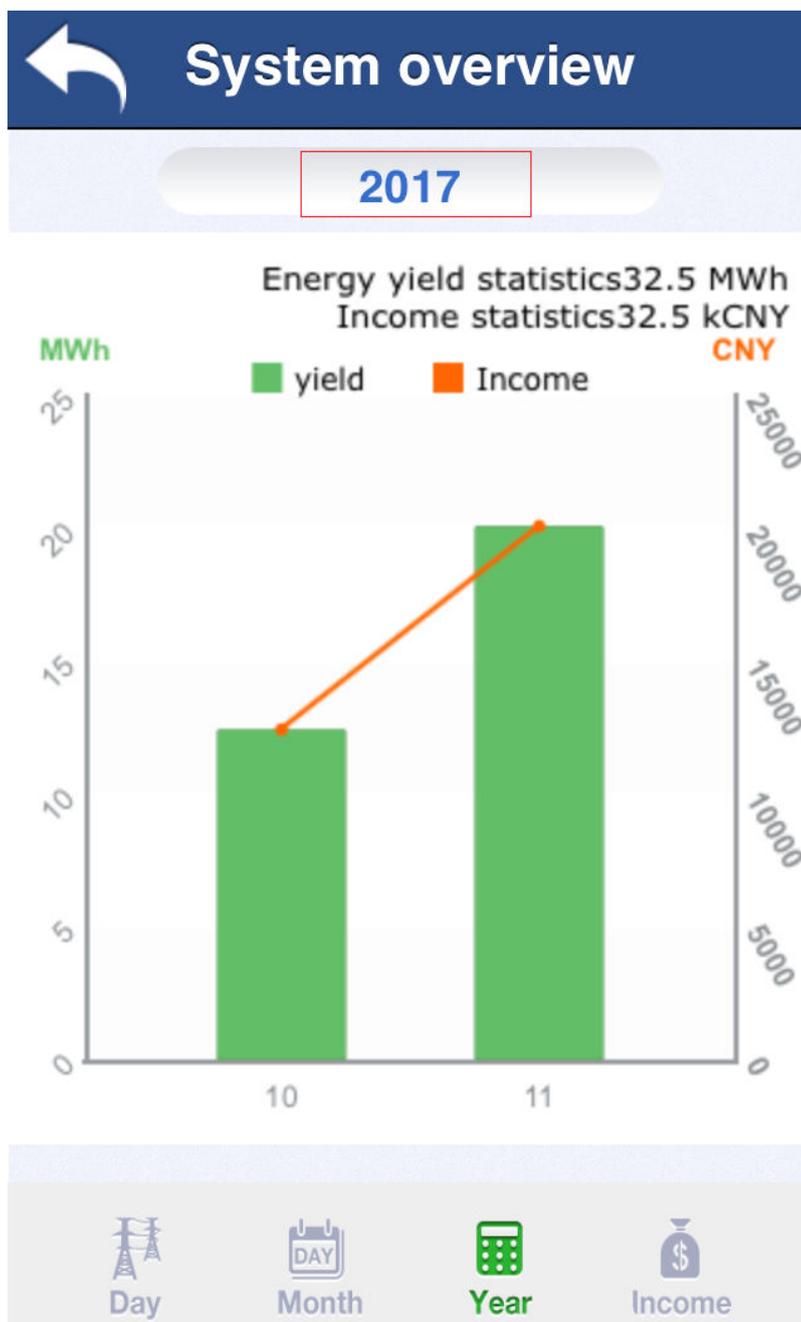


- b. On the Total yield per month page, click the date in the red box to choose to view the electric energy yield and income of any month.
- View the yearly yield and yearly income:



- a. Click  on the **Overview** page. The **Total yield per year** page is displayed, as shown in [Figure 5-142](#).

**Figure 5-142 Total yield per year page**

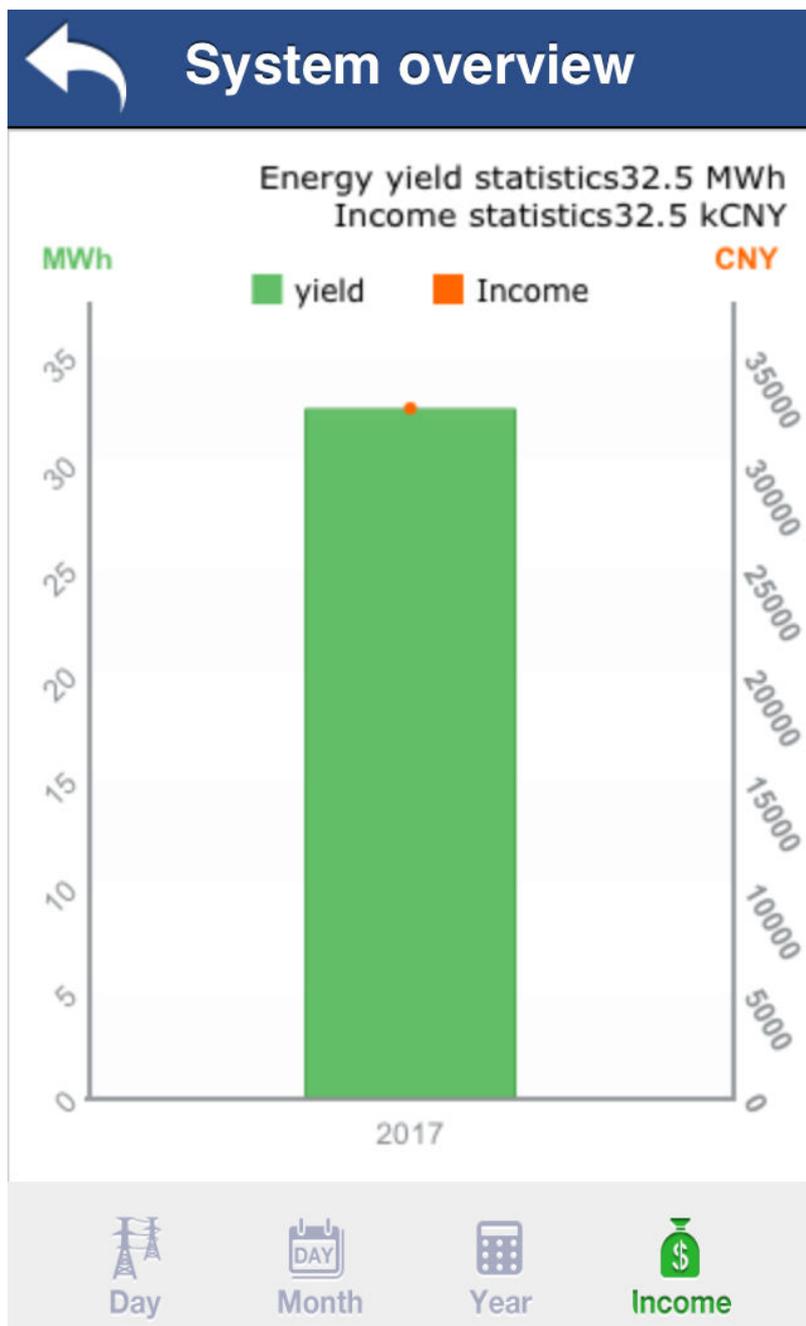


- b. On the **Total yield per year** page, click the year in the red box to choose to view the electric energy yield and income of any year.
- **View the total benefits:**



- a. Click  on the **Overview** page. The **Income** page is displayed, as shown in [Figure 5-143](#).

Figure 5-143 Income page



- b. View the total energy yield of all PV plants and total benefits.

## 5.3.4 How Do I Disable the TLSv1?

### Question

This section describes how to disable the TLSv1 to ensure the security of mobile terminals running Android4.4 or later. The TLSv1 has security risks.

### Answer

You can perform the following operations to disable the TLSv1.

**Step 1** Open the following file on the server where the NetEco 1000S is installed.

*NetEco 1000S software installation directory*\WebRoot\WEB-INF\classes  
\struts.properties

**Step 2** Change the value of `appSslTLSJetty` to `TLSv1.1,TLSv1.2` and save the change result.

**Step 3** Restart NetEco 1000S services for the change to take effect.

----End

## 5.4 NetEco 1000S Maintenance

This section describes how to manage NetEco 1000S users and logs.

### 5.4.1 Managing Users

This section describes how to manage the NetEco 1000S users, which involve MySQL users and NetEco 1000S users. You can manage the accounts and authority of these users and monitor user operations.

#### 5.4.1.1 Managing MySQL Users

This section describes the MySQL users that are required for the NetEco 1000S and how to change the password of the MySQL administrator.

##### 5.4.1.1.1 MySQL Users and User Authority

This section describes the MySQL users used by the NetEco 1000S and the related authority.

Only the MySQL user is authorized to use the MySQL database. After the MySQL database is installed, the system Create the default user **administrator** and **dbuser**.

For details about the MySQL user accounts, see [Table 5-63](#).

**Table 5-63** MySQL user accounts

User	Function	Authority
administrator	Management user of the MySQL database.	User <b>administrator</b> has the highest authority of the database.

User	Function	Authority
dbuser	Operation user of the MySQL database.	User <b>dbuser</b> has the permission to the database.

### 5.4.1.1.2 Changing the Passwords of MySQL Users

Change the user passwords of the databases during routine maintenance, which ensures database user password security.

#### Prerequisites

- The old password of the MySQL user is available.
- The new password of the MySQL user is available.
- You have started the NetEco 1000S services. For details about how to start the services, see [5.1.1.1.1 Starting NetEco 1000S Services](#).

#### Context

To ensure user password security, plan user passwords that meet password policy and change passwords periodically.

#### NOTE

- The password cannot be the same as the user name or the user name in a reversed order.
- The password contains 8 to 32 characters.
- The password contains three of the following:
  - Lowercase letters
  - Uppercase letters
  - Digits
- The password is advised to contain special characters, which include !"#\$%&'()\*+,-./:;<=>?@[\\]^\_{|}~ and space.

#### Procedure

**Step 1** Changing the passwords of MySQL users: Run the script **NetEco software installation\tools\ConfigTools.bat**, When the following information is displayed, enter **2** and press **Enter**.

```
1) Change FTPServer password
2) Change database password
3) Change Modbus SSL config
4) Change FTFS SSL config
5) Change external IP of the NetEco
6) Change local IP of the NetEco
7) Exit
```

Please choose 1-7:

**Step 2** When the following information is displayed, enter **database username** and press **Enter**.

**Please input database username :***database username*

**Step 3** When the following information is displayed, enter **password of the database user** and press **Enter**.

**Please input old database password :***password of the database user*

**Step 4** When the following information is displayed, enter **new password of the database user** and press **Enter**.

**Please input new database password :***new password of the database user*

**Step 5** When the following information is displayed, enter **new password of the database user** again and press **Enter**.

**Please confirm new database password:***new password of the database user*

**Step 6** When the following information is displayed, the password is changed successfully.

**Change succeeded.**

**Step 7** Restart the NetEco 1000S services.

When the password is changed successful, you must restart the NetEco 1000S services. Otherwise, an exception may occur.

---End

### 5.4.1.2 Managing NetEco 1000S Users

This section describes the roles of NetEco 1000S users and the related authority.

- For details about users in the commercial NetEco 1000S and the related authority, see [5.1.7.1 Managing User Information](#).
- For details about users in the residential NetEco 1000S and the related authority, see [5.2.6.1 Managing User Information](#).

## 5.4.2 Management Logs

This section describes management logs. You can learn about the NetEco 1000S running status and operations through management logs.

### 5.4.2.1 NetEco 1000S Log Types

NetEco 1000S logs record important user operations. You can view the log list or details about a log, or export operation logs, operation logs, or system logs. The NetEco 1000S provides information about logs with three levels (warning, minor, and critical).

#### Security Log

Security logs record the security operations that are performed on the eSight client, such as logging in to the client, changing the password, creating a user, and exiting the client.

You can query security logs to understand the information about NetEco 1000S security operations.

#### System Log

System logs record the events that occur on the NetEco 1000S. For example, NetEco 1000S running exceptions, network faults, and NetEco 1000S attacks. System logs help analyze the operating status of the NetEco 1000S and rectify faults.

You can query system logs to understand the information about NetEco 1000S system operations.

## Operation Log

Operation logs record the operations that are performed on the NetEco 1000S, such as device addition and deletion.

You can query operation logs to understand the information about user operations.

### 5.4.2.2 Managing the Binary Log of the Database

The binary log of the database records the ciphertext information about database password changing, which may introduce security risks.

#### NOTE

The binary log of the MySQL database is a function of the MySQL database. It is used for storing data for database backup. For details, see the official website of the MySQL database <http://www.mysql.com/>.

### Enabling the Binary Log of the Database

If you enable the binary log of the database, the system records the ciphertext information generated when you change the database password, which may introduce security risks. If the ciphertext information does not need to be recorded, you are advised to disable the binary log of the database.

- Use the Notepad to open the **NetEco 1000S installation directory\mysql\oms\_mysql\my.ini** file.
- In the opened file, find the **log-bin** field, delete # before this field, and save and close the file. Then, restart the service.

#### NOTE

Press **Ctrl+F** to quickly locate the **log-bin** field.

### Disabling the Binary Log of the Database

If you disable the binary log of the database, the system disables the function of saving the binary log. As a result, you cannot use the binary log to back up data.

- Use the Notepad to open the **NetEco 1000S installation directory\mysql\oms\_mysql\my.ini** file.
- In the opened file, find the **log-bin** field, add # before this field, and save and close the file. Then, restart the service.

## 5.4.3 Replacing Certificate of the NetEco 1000S System

The NetEco 1000S system provides the default Huawei-preconfigured certificate for security connection. This certificate applies only to the commissioning scenario. Huawei-preconfigured certificate cannot ensure the information transmission security. When users need to ensure information security, they must apply for a legal and valid certificate from the CA and replace the preconfigured certificate with the applied one. The certificate cracking possibility increases if one certificate is used for a long period. Therefore, replace the certificate periodically.

### 5.4.3.1 Viewing Certificates

#### Prerequisites

JavaKeysotre (JKS) certificates have been obtained.

You are authorized to access the NetEco 1000S installation directory.

#### Context

The Keytool provided by Java can be used to view JKS certificate information.

Check the validity period of the certificate and ensure that the certificate is used in the period of validity.

#### Procedure

**Step 1** Copy the certificate **neteco.jks** to **NetEco 1000S installation directory\uninstall\jre\jre\_win\bin**.

 **NOTE**

By default, after the NetEco 1000S is installed, the preconfigured certificates neteco.jks are saved in the software installation directory\WebRoot\WEB-INF\workspace directory.

The certificate password provided by the NetEco 1000S by default is **Changeme\_123**.

**Step 2** Open the DOS command interface and run the following commands to navigate to the keytool installation directory. Assume that the software is installed in the **D:\NetEco1000S** directory.

```
C:\Users>D:
```

```
D:>cd NetEco1000S\uninstall\jre\jre_win\bin
```

**Step 3** Run the following command to view the certificate information:

```
keytool -v -list -keystore neteco.jks -storepass Changeme_123 -storetype jks
```

----End

### 5.4.3.2 Replacing a Certificate for the NetEco 1000S Client Communicating with the Server

This section describes how to replace the HTTPS protocol certificate preconfigured for the web-based NetEco 1000S client communicating with the server.

#### Prerequisites

- You have installed the NetEco 1000S.
- You are authorized to access the NetEco 1000S installation directory.
- You have applied for a new digital certificate from the Certificate Authority (CA).

 **NOTE**

The name of a certificate applied for from the CA may be different from the following certificate name. Change the certificate name to be the same as the following certificate name.

- Device certificate: **NetEco.cer**
- Private key of the device certificate: **NetEco\_Key.pem**

If a password has been configured for the private key of the device certificate, the password must also be obtained.

- Certificate issued by a subordinate CA: **NEPL\_PKI.cer** (there may be multiple or no such certificates)
- Root CA certificate: **Huawei\_Equipment\_CA.cer**

 **NOTE**

If the certificate is a **.p7b** file, you must export the certificate. This section uses the operations of **user.p7b** as an example.

1. Double-click the **user.p7b** to open the certificate.
2. Select the **Certificates** folder from the **Certificates - Current User** drop-down list to expand the folder.
3. Right-click the certificate and choose **All Tasks > Export** from the shortcut menu. Click **Next** in the prompt dialog.
4. Select **Base64 encoded X.509(.CER)**, and click **Next**.
5. Click **Browse**, type the certificate file name and the export directory. Click **Save**. Click **Next**.
6. Click **Finish**.

## Context

- By default, after the NetEco 1000S is installed, the preconfigured certificate **neteco.jks** is saved in the *NetEco 1000S software installation directory*\WebRoot\WEB-INF\workspace directory.

 **NOTE**

The certificate for enabling SSL has been incorporated to the **neteco.jks** certificate. When you enable SSL on the [5.1.7.3.1 Setting Parameters for the Email Server](#), you do not need to replace the SSL certificate.

- To replace the digital certificates, you must manually prepare digital certificates, replace Huawei certificates with these certificates.
- The password of certificates must be set according to the following requirements:
  - The password contains 8 to 32 characters.
  - The password contains three of the following:
    - Lowercase letters
    - Uppercase letters
    - Digits
  - The password is advised to contain special characters, which include `!"#$%&'()*+,-./:;<=>?@[^\]^_{|}~` and space.

## Procedure

**Step 1** Copy the certificates.

Copy the new digital certificates to the *NetEco 1000S software installation directory*\tools\bin\generateCer\certificate directory.

**Step 2** Prepare new certificates.

1. Copy the contents of **NEPL\_PKI.cer** and **Huawei\_Equipment\_CA.cer** to **NetEco.cer**.



You can open **NEPL\_PKI.cer**, **Huawei\_Equipment\_CA.cer**, and **NetEco.cer** in text mode to copy their contents.

2. Generate the certificate file **neteco.jks**.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**. When the following information is displayed, enter **1** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```

- b. When the following information is displayed, enter **1** and press **Enter**.

```
1)Generate Jetty Certificate
2)Generate Modbus/TCP<port:16100>, FTPs Certificate
3)Generate Modbus/TCP<port:27250>, Certificate
4)Generate Email Certificate
5)Generate APP Certificate
Please choose:
```

- c. When the following information is displayed, enter the obtained private key password and press **Enter**.

**Enter pass phrase for .\tools\bin\generateCer\certificate**  
**\NetEco\_Key.pem:obtained password of the private key**

- d. When the following information is displayed, enter the password of the new certificate and press **Enter**.

**Enter Export Password:password of the new certificate**

- e. When the following information is displayed, enter the password of the new certificate again and press **Enter**.

**Verifying - Enter Export Password:confirm the password of the new certificate**

- f. When the following information is displayed, enter the password of the new certificate and press **Enter**.

**Enter pass phrase for .\tools\bin\generateCer\keystore\neteco.p12:password of the new certificate**

- g. When the following information is displayed, the certificate file **neteco.jks** is successfully created.

**Create keystore file success.**

3. Replacing the certificate.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**. When the following information is displayed, enter **2** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```

- b. When the following information is displayed, enter **1** and press **Enter**.

```
1)Update Jetty Certificate
2)Update Modbus/TCP<port:16100>, FTPs Certificate
3)Update Modbus/TCP<port:27250>, Certificate
4)Update Email Certificate
5)Update APP Certificate
Please choose:
```

- c. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:***password of the current certificate*

 **NOTE**

The certificate password provided by the NetEco 1000S by default is Changeme\_123.

- d. When the following information is displayed, the certificate is successfully replaced.

```
Update certificate success.
The old keystore file was backed up in folder
.\tools\bin\generateCer\backup
```

 **NOTE**

After the certificate is successfully replaced, the old certificate was backed up in folder **NetEco 1000S** software installation directory\tools\bin\generateCer\backup.

4. Effective the new certificate password.
- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **3** and press **Enter**.
- ```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
- b. When the following information is displayed, enter **1** and press **Enter**.
- ```
1)Change Jetty Certificate Key In Config
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config
3)Change Modbus/TCP<port:27250>,Certificate Key In Config
4)Change Email Certificate Key In Config
5)Change APP Certificate Key In Config
Please choose:
```
- c. When the following information is displayed, enter the password of the old certificate and press **Enter**.
- Please input old ssl key password:***password of the old certificate*
- d. When the following information is displayed, enter the new password of the certificate and press **Enter**.
- Please input new ssl key password:***new password of the certificate*
- e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.
- Please confirm the new ssl key password:***new password of the certificate*
- f. When the following information is displayed, the password is changed successfully.
- ```
Modification success, please restart the service to take effect.
```

**Step 3 Optional:** Restore the certificate.

When an exception occurs in the new certificate or the old certificate is required, you can run the following command to restore the certificate to the last status.

1. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **4** and press **Enter**.
- ```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
2. When the following information is displayed, enter **1** and press **Enter**.
- ```
1)Restore Jetty Certificate
2)Restore Modbus/TCP<port:16100>, FTPs Certificate
3)Restore Modbus/TCP<port:27250>,Certificate
4)Restore Email Certificate
```

```
5)Restore APP Certificate  
Please choose:
```

3. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:***password of the current certificate*

4. When the following information is displayed, the certificate is successfully restored.

```
Restore certificate success!
```

5. Restore the password of the old certificate.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**. When the following information is displayed, enter **3** and press **Enter**.

```
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
```

- b. When the following information is displayed, enter **1** and press **Enter**.

```
1)Change Jetty Certificate Key In Config  
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config  
3)Change Modbus/TCP<port:27250>,Certificate Key In Config  
4)Change Email Certificate Key In Config  
5)Change APP Certificate Key In Config  
Please choose:
```

- c. When the following information is displayed, enter the password of the old certificate and press **Enter**.

**Please input old ssl key password:***password of the old certificate*

- d. When the following information is displayed, enter the new password of the certificate and press **Enter**.

**Please input new ssl key password:***new password of the certificate*

- e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.

**Please confirm the new ssl key password:***new password of the certificate*

- f. When the following information is displayed, the password is changed successfully.

```
Modification success, please restart the service to take effect.
```

**Step 4** Restart the NetEco 1000S for the settings to take effect.

If you can access NetEco 1000S services properly, the security certificate is replaced successfully. Otherwise, contact Huawei technical support.

----End

### 5.4.3.3 Replacing a Certificate for the NE Communicating with the Server

This section describes how to replace the Modbus/TCP protocol certificates preconfigured for the NE communicating with the server.

#### Prerequisites

- You have installed the NetEco 1000S.
- You are authorized to access the NetEco 1000S installation directory.
- You have applied for a new digital certificate from the Certificate Authority (CA).

 **NOTE**

The name of a certificate applied for from the CA may be different from the following certificate name. Change the certificate name to be the same as the following certificate name.

- Device certificate: **NetEco.cer**
- Private key of the device certificate: **NetEco\_Key.pem**

If a password has been configured for the private key of the device certificate, the password must also be obtained.

- Certificate issued by a subordinate CA: **NEPL\_PKI.cer** (there may be multiple or no such certificates)
- Root CA certificate: **Huawei\_Equipment\_CA.cer**

 **NOTE**

If the certificate is a **.p7b** file, you must export the certificate. This section uses the operations of **user.p7b** as an example.

1. Double-click the **user.p7b** to open the certificate.
2. Select the **Certificates** folder from the **Certificates - Current User** drop-down list to expand the folder.
3. Right-click the certificate and choose **All Tasks > Export** from the shortcut menu. Click **Next** in the prompt dialog.
4. Select **Base64 encoded X.509(.CER)**, and click **Next**.
5. Click **Browse**, type the certificate file name and the export directory. Click **Save**. Click **Next**.
6. Click **Finish**.

## Context

- By default, after the NetEco 1000S is installed, the preconfigured certificates **server\_keystore.jks** and **HX\_server\_keystore.jks** are saved in the **NetEco 1000S software installation directory\WebRoot\WEB-INF\workspace\neCert** directory.

 **NOTE**

**HX\_server\_keystore.jks** is a preconfigured certificate especially for SUN2000L inverters.

- To replace the digital certificates, you must manually prepare digital certificates, replace Huawei certificates with these certificates.
- The password of certificates must be set according to the following requirements:
  - The password contains 8 to 32 characters.
  - The password contains three of the following:
    - Lowercase letters
    - Uppercase letters
    - Digits
  - The password is advised to contain special characters, which include **!"#\$%&'()\*+,-./:;<=>?@[^\]^\_{|}~** and space.

## Procedure

### Step 1 Copy the certificates.

Copy the new digital certificates to the **NetEco 1000S software installation directory\tools\bin\generateCer\certificate** directory.

**Step 2** Prepare new certificates.

1. Copy the contents of **NEPL\_PKI.cer** and **Huawei\_Equipment\_CA.cer** to **NetEco.cer**.

 **NOTE**

You can open **NEPL\_PKI.cer**, **Huawei\_Equipment\_CA.cer**, and **NetEco.cer** in text mode to copy their contents.

2. Generate the certificate file **neteco\_server.jks** or **HX\_server\_keystore.jks**.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**. When the following information is displayed, enter **1** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```

- b. When the following information is displayed, enter **2** or **3** and press **Enter**.

 **NOTE**

- Enter **2**, and the certificate file generated is **neteco\_server.jks**.
- Enter **3**, and the certificate file generated is **HX\_server\_keystore.jks**.

```
1)Generate Jetty Certificate
2)Generate Modbus/TCP<port:16100>, FTPs Certificate
3)Generate Modbus/TCP<port:27250>, Certificate
4)Generate Email Certificate
5)Generate APP Certificate
Please choose:
```

- c. When the following information is displayed, enter the obtained private key password and press **Enter**.

**Enter pass phrase for .\tools\bin\generateCer\certificate**  
**\NetEco\_Key.pem:obtained password of the private key**

- d. When the following information is displayed, enter the password of the new certificate and press **Enter**.

**Enter Export Password:password of the new certificate**

- e. When the following information is displayed, enter the password of the new certificate again and press **Enter**.

**Verifying - Enter Export Password:confirm the password of the new certificate**

- f. When the following information is displayed, enter the password of the new certificate and press **Enter**.

**Enter pass phrase for .\tools\bin\generateCer\keystore\neteco.p12:password of the new certificate**

- g. When the following information is displayed, enter **Y** and adding the certificate to keystore.

**Trust this certificate? [no]:**

- h. When the following information is displayed, the certificate was added to keystore successfully.

**Certificate was added to keystore**

- i. When the following information is displayed, enter **Y** and press **Enter**.

**Trust this certificate? [no]:**

- j. When the following information is displayed, the certificate file **server\_keystore.jks** is successfully created.

**Create keystore file success.**

3. Replace the certificates.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **2** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```

- b. When the following information is displayed, enter **2** or **3** and press **Enter**.

```
1)Update Jetty Certificate
2)Update Modbus/TCP<port:16100>, FTPs Certificate
3)Update Modbus/TCP<port:27250>, Certificate
4)Update Email Certificate
5)Update APP Certificate
Please choose:
```

- c. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:***password of the current certificate*

 **NOTE**

The password of the old certificate is the password of the certificate to be replaced. The certificate password provided by the NetEco 1000S by default is NetEco123.

- d. When the following information is displayed, the certificate is successfully replaced.

```
Update certificate success.
The old keystore file was backed up in folder
.\tools\bin\generateCer\backup
```

 **NOTE**

After the certificate is successfully replaced, the old certificate was backed up in folder **NetEco 1000S software installation directory\tools\bin\generateCer\backup**.

4. Effective the new certificate password.

- a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **3** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```

- b. When the following information is displayed, enter **2** or **3**, and press **Enter**.

```
1)Change Jetty Certificate Key In Config
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config
3)Change Modbus/TCP<port:27250>,Certificate Key In Config
4)Change Email Certificate Key In Config
5)Change APP Certificate Key In Config
Please choose:
```

- c. When the following information is displayed, enter the password of the old certificate and press **Enter**.

**Please input old ssl key password:***password of the old certificate*

- d. When the following information is displayed, enter the new password of the certificate and press **Enter**.

**Please input new ssl key password:***new password of the certificate*

- e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.

**Please confirm the new ssl key password:***new password of the certificate*

- f. When the following information is displayed, the password is changed successfully.  
Modification success, please restart the service to take effect.

### Step 3 Optional: Restore the certificate.

When an exception occurs in the new certificate or the old certificate is required, you can run the following command to restore the certificate to the last status.

1. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**,  
When the following information is displayed, enter **4** and press **Enter**.  
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
2. When the following information is displayed, enter **2** and press **Enter**.  
1)Restore Jetty Certificate  
2)Restore Modbus/TCP<port:16100>, FTPs Certificate  
3)Restore Modbus/TCP<port:27250>,Certificate  
4)Restore Email Certificate  
5)Restore APP Certificate  
Please choose:
3. When the following information is displayed, enter the password of the current certificate and press **Enter**.  
**Please input current ssl key password:***password of the current certificate*
4. When the following information is displayed, the certificate is successfully restored.  
Restore certificate success!
5. Restore the password of the old certificate.
  - a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**,  
When the following information is displayed, enter **3** and press **Enter**.  
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
  - b. When the following information is displayed, enter **2** or **3** and press **Enter**.  
1)Change Jetty Certificate Key In Config  
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config  
3)Change Modbus/TCP<port:27250>,Certificate Key In Config  
4)Change Email Certificate Key In Config  
5)Change APP Certificate Key In Config  
Please choose:
  - c. When the following information is displayed, enter the password of the old certificate and press **Enter**.  
**Please input old ssl key password:***password of the old certificate*
  - d. When the following information is displayed, enter the new password of the certificate and press **Enter**.  
**Please input new ssl key password:***new password of the certificate*
  - e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.  
**Please confirm the new ssl key password:***new password of the certificate*
  - f. When the following information is displayed, the password is changed successfully.  
Modification success, please restart the service to take effect.

### Step 4 Restart the NetEco 1000S for the settings to take effect.

If you can access NetEco 1000S services properly, the security certificate is replaced successfully. Otherwise, contact Huawei technical support.

---End

### 5.4.3.4 Replacing a Certificate for the Email Server

This section describes how to replace the certificates for NetEco 1000S email server.

#### Prerequisites

- You have installed the NetEco 1000S.
- You are authorized to access the NetEco 1000S installation directory.
- You have set the email server, and select **Enable SSL**. For details, see [5.1.7.3.1 Setting Parameters for the Email Server](#).
- You have applied for a new digital certificate from the Certificate Authority (CA).

Device certificate: **EmailServerTrustKeystore.cer**

#### NOTE

The name of a certificate applied for from the CA may be different from the preceding certificate name. Change the certificate name to be the same as the preceding certificate name.

#### Context

- By default, after the NetEco 1000S is installed, the preconfigured certificates **EmailServerTrustKeystore.jks** are saved in the **software installation directory** `\WebRoot\WEB-INF\workspace\neCert\email` directory.

#### NOTE

The certificate for enabling SSL has been incorporated to the **EmailServerTrustKeystore.jks** certificate. When you enable SSL on the [5.1.7.3.1 Setting Parameters for the Email Server](#), you do not need to replace the SSL certificate.

- To replace the digital certificates, you must manually prepare digital certificates, replace Huawei certificates with these certificates.
- The password of certificates must be set according to the following requirements:
  - The password contains 8 to 32 characters.
  - The password contains three of the following:
    - Lowercase letters
    - Uppercase letters
    - Digits
  - The password is advised to contain special characters, which include `!"#$%&'()*+,-./:;<=>?@[\\]^`{_|}~` and space.

#### Procedure

**Step 1** Copy the certificates.

Copy the new digital certificates to the **NetEco software installation directory** `\tools\bin\generateCer\certificate` directory.

**Step 2** Prepare new certificates.

1. Generate the certificate file **EmailServerTrustKeystore.jks**.
  - a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **1** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
  - b. When the following information is displayed, enter **4** and press **Enter**.

```
1)Generate Jetty Certificate
2)Generate Modbus/TCP<port:16100>, FTPs Certificate
3)Generate Modbus/TCP<port:27250>, Certificate
4)Generate Email Certificate
5)Generate APP Certificate
Please choose:
```
  - c. When the following information is displayed, enter the password of the new certificate and press **Enter**.

**Please set a new password for .\tools\bin\generateCer\certificate\EmailServerTrustKeystore.cer:password of the new certificate**
  - d. When the following information is displayed, enter the password of the new certificate again and press **Enter**.

**Please confirm the password for .\tools\bin\generateCer\certificate\EmailServerTrustKeystore.cer:confirm the password of the new certificate**
  - e. When the following information is displayed, enter **Y** and adding the certificate to keystore.

**Trust this certificate? [no]:**
  - f. When the following information is displayed, the certificate file **EmailServerTrustKeystore.jks** is successfully created.

**Create keystore file success.**
2. Replacing the certificate.
  - a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **2** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
  - b. When the following information is displayed, enter **4** and press **Enter**.

```
1)Update Jetty Certificate
2)Update Modbus/TCP<port:16100>, FTPs Certificate
3)Update Modbus/TCP<port:27250>, Certificate
4)Update Email Certificate
5)Update APP Certificate
Please choose:
```
  - c. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:password of the current certificate**

 **NOTE**

The certificate password provided by the NetEco 1000S by default is Changeme\_123.
  - d. When the following information is displayed, the certificate is successfully replaced.

```
Update certificate success.  
The old keystore file was backed up in folder  
.\tools\bin\generateCer\backup
```

 **NOTE**

After the certificate is successfully replaced, the old certificate was backed up in folder **NetEco 1000S** software installation directory\tools\bin\generateCer\backup.

3. Effective the new certificate password.
  - a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **3** and press **Enter**.

```
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
```
  - b. When the following information is displayed, enter **4** and press **Enter**.

```
1)Change Jetty Certificate Key In Config  
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config  
3)Change Modbus/TCP<port:27250>,Certificate Key In Config  
4)Change Email Certificate Key In Config  
5)Change APP Certificate Key In Config  
Please choose:
```
  - c. When the following information is displayed, enter the password of the old certificate and press **Enter**.

**Please input old ssl key password:***password of the old certificate*
  - d. When the following information is displayed, enter the new password of the certificate and press **Enter**.

**Please input new ssl key password:***new password of the certificate*
  - e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.

**Please confirm the new ssl key password:***new password of the certificate*
  - f. When the following information is displayed, the password is changed successfully. Modification success, please restart the service to take effect.

**Step 3 Optional:** Restore the certificate.

When an exception occurs in the new certificate or the old certificate is required, you can run the following command to restore the certificate to the last status.

1. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **4** and press **Enter**.

```
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
```
2. When the following information is displayed, enter **4** and press **Enter**.

```
1)Restore Jetty Certificate  
2)Restore Modbus/TCP<port:16100>, FTPs Certificate  
3)Restore Modbus/TCP<port:27250>,Certificate  
4)Restore Email Certificate  
5)Restore APP Certificate  
Please choose:
```
3. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:***password of the current certificate*

4. When the following information is displayed, the certificate is successfully restored.  
Restore certificate success!
5. Restore the password of the old certificate.
  - a. Run the script **NetEco 1000S software installation directory\tools\SSLTools.bat**, When the following information is displayed, enter **3** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
  - b. When the following information is displayed, enter **4** and press **Enter**.

```
1)Change Jetty Certificate Key In Config
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config
3)Change Modbus/TCP<port:27250>,Certificate Key In Config
4)Change Email Certificate Key In Config
5)Change APP Certificate Key In Config
Please choose:
```
  - c. When the following information is displayed, enter the password of the old certificate and press **Enter**.  
**Please input old ssl key password:***password of the old certificate*
  - d. When the following information is displayed, enter the new password of the certificate and press **Enter**.  
**Please input new ssl key password:***new password of the certificate*
  - e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.  
**Please confirm the new ssl key password:***new password of the certificate*
  - f. When the following information is displayed, the password is changed successfully.  
Modification success, please restart the service to take effect.

**Step 4** Restart the NetEco 1000S for the settings to take effect.

----End

### 5.4.3.5 Replacing a Certificate for the NetEco 1000S APP Communicating with the Server

This section describes how to replace the HTTPS protocol certificates preconfigured for the NetEco 1000S APP communicating with the server.

#### Prerequisites

- You have installed the NetEco 1000S.
- You are authorized to access the NetEco 1000S installation directory.
- You have applied for a new digital certificate from the Certificate Authority (CA).

#### NOTE

The name of a certificate applied for from the CA may be different from the following certificate name. Change the certificate name to be the same as the following certificate name.

- Device certificate: **NetEco.cer**
- Private key of the device certificate: **NetEco\_Key.pem**

If a password has been configured for the private key of the device certificate, the password must also be obtained.

- Certificate issued by a subordinate CA: **NEPL\_PKI.cer** (there may be multiple or no such certificates)
- Root CA certificate: **Huawei\_Equipment\_CA.cer**

 **NOTE**

If the certificate is a **.p7b** file, you must export the certificate. This section uses the operations of **user.p7b** as an example.

1. Double-click the **user.p7b** to open the certificate.
2. Select the **Certificates** folder from the **Certificates - Current User** drop-down list to expand the folder.
3. Right-click the certificate and choose **All Tasks > Export** from the shortcut menu. Click **Next** in the prompt dialog.
4. Select **Base64 encoded X.509(.CER)**, and click **Next**.
5. Click **Browse**, type the certificate file name and the export directory. Click **Save**. Click **Next**.
6. Click **Finish**.

## Context

- By default, after the NetEco 1000S is installed, the preconfigured certificate **app.jks** is saved in the **software installation directory\WebRoot\WEB-INF\workspace** directory.

 **NOTE**

The certificate for enabling SSL has been incorporated to the **app.jks** certificate. When you enable SSL on the [5.1.7.3.1 Setting Parameters for the Email Server](#), you do not need to replace the SSL certificate.

- To replace the digital certificates, you must manually prepare digital certificates, and replace Huawei certificates with these certificates.
- The password of certificates must be set according to the following requirements:
  - The password contains 8 to 32 characters.
  - The password contains three of the following:
    - Lowercase letters
    - Uppercase letters
    - Digits
  - The password is advised to contain special characters, which include `!"#$%&'()*+,-./:;<=>?@[\\]^`{~` and space.`

## Procedure

### Step 1 Copy the certificates.

Copy the new digital certificates to the *NetEco software installation directory\tools\bin\generateCer\certificate* directory.

### Step 2 Prepare new certificates.

1. Copy the contents of **NEPL\_PKI.cer** and **Huawei\_Equipment\_CA.cer** to **NetEco.cer**.

 **NOTE**

You can open **NEPL\_PKI.cer**, **Huawei\_Equipment\_CA.cer**, and **NetEco.cer** in text mode to copy their contents.

2. Generate the certificate file **app.jks**.

- a. Run the script *NetEco software installation directory\tools\SSLTools.bat*, When the following information is displayed, enter **1** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
  - b. When the following information is displayed, enter **5** and press **Enter**.

```
1)Generate Jetty Certificate
2)Generate Modbus/TCP<port:16100>, FTPs Certificate
3)Generate Modbus/TCP<port:27250>, Certificate
4)Generate Email Certificate
5)Generate APP Certificate
Please choose:
```
  - c. When the following information is displayed, enter the obtained private key password and press **Enter**.  
**Enter pass phrase for .\tools\bin\generateCer\certificate  
\NetEco\_Key.pem:obtained password of the private key**
  - d. When the following information is displayed, enter the password of the new certificate and press **Enter**.  
**Enter Export Password:password of the new certificate**
  - e. When the following information is displayed, enter the password of the new certificate again and press **Enter**.  
**Verifying - Enter Export Password:confirm the password of the new certificate**
  - f. When the following information is displayed, enter the password of the new certificate and press **Enter**.  
**Enter pass phrase for .\tools\bin\generateCer\keystore\neteco.p12:password of the new certificate**
  - g. When the following information is displayed, the certificate file **app.jks** is successfully created.  
**Create keystore file success.**
3. Replacing the certificate.
- a. Run the script *NetEco 1000S software installation directory\tools\SSLTools.bat*, When the following information is displayed, enter **2** and press **Enter**.

```
1)Generate SSL certificate
2)Update SSL certificate
3)Change SSL certificate password
4)Restore SSL certificate
Please choose:
```
  - b. When the following information is displayed, enter **5** and press **Enter**.

```
1)Update Jetty Certificate
2)Update Modbus/TCP<port:16100>, FTPs Certificate
3)Update Modbus/TCP<port:27250>, Certificate
4)Update Email Certificate
5)Update APP Certificate
Please choose:
```
  - c. When the following information is displayed, enter the password of the current certificate and press **Enter**.  
**Please input current ssl key password:password of the current certificate**
-  **NOTE**
- The certificate password provided by the NetEco 1000S by default is **Changeme\_123**.
- d. When the following information is displayed, the certificate is successfully replaced.

```
Update certificate success.  
The old keystore file was backed up in folder  
.\tools\bin\generateCer\backup
```

 **NOTE**

After the certificate is successfully replaced, the old certificate was backed up in folder *NetEco 1000S software installation directory*\tools\bin\generateCer\backup.

4. Effective the new certificate password.
  - a. Run the script *NetEco 1000S software installation directory*\tools\SSLTools.bat, When the following information is displayed, enter **3** and press **Enter**.

```
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
```
  - b. When the following information is displayed, enter **5** and press **Enter**.

```
1)Change Jetty Certificate Key In Config  
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config  
3)Change Modbus/TCP<port:27250>,Certificate Key In Config  
4)Change Email Certificate Key In Config  
5)Change APP Certificate Key In Config  
Please choose:
```
  - c. When the following information is displayed, enter the password of the old certificate and press **Enter**.

**Please input old ssl key password:***password of the old certificate*
  - d. When the following information is displayed, enter the new password of the certificate and press **Enter**.

**Please input new ssl key password:***new password of the certificate*
  - e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.

**Please confirm the new ssl key password:***new password of the certificate*
  - f. When the following information is displayed, the password is changed successfully. Modification success, please restart the service to take effect.

**Step 3 Optional:** Restore the certificate.

When an exception occurs in the new certificate or the old certificate is required, you can run the following command to restore the certificate to the last status.

1. Run the script *NetEco 1000S software installation directory*\tools\SSLTools.bat, When the following information is displayed, enter **4** and press **Enter**.

```
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
```
2. When the following information is displayed, enter **5** and press **Enter**.

```
1)Restore Jetty Certificate  
2)Restore Modbus/TCP<port:16100>, FTPs Certificate  
3)Restore Modbus/TCP<port:27250>,Certificate  
4)Restore Email Certificate  
5)Restore APP Certificate  
Please choose:
```
3. When the following information is displayed, enter the password of the current certificate and press **Enter**.

**Please input current ssl key password:***password of the current certificate*

4. When the following information is displayed, the certificate is successfully restored.  
Restore certificate success!
5. Restore the password of the old certificate.
  - a. Run the script *NetEco 1000S software installation directory\tools\SSLTools.bat*, When the following information is displayed, enter **3** and press **Enter**.  
1)Generate SSL certificate  
2)Update SSL certificate  
3)Change SSL certificate password  
4)Restore SSL certificate  
Please choose:
  - b. When the following information is displayed, enter **5** and press **Enter**.  
1)Change Jetty Certificate Key In Config  
2)Change Modbus/TCP<port:16100>, FTPs Certificate Key In Config  
3)Change Modbus/TCP<port:27250>,Certificate Key In Config  
4)Change Email Certificate Key In Config  
5)Change APP Certificate Key In Config  
Please choose:
  - c. When the following information is displayed, enter the password of the old certificate and press **Enter**.  
**Please input old ssl key password:***password of the old certificate*
  - d. When the following information is displayed, enter the new password of the certificate and press **Enter**.  
**Please input new ssl key password:***new password of the certificate*
  - e. When the following information is displayed, enter the new password of the certificate again and press **Enter**.  
**Please confirm the new ssl key password:***new password of the certificate*
  - f. When the following information is displayed, the password is changed successfully.  
Modification success, please restart the service to take effect.

**Step 4** Restart the NetEco 1000S for the settings to take effect.

**Step 5** Replace the certificate of the NetEco 1000S APP in the iOS/Android system. For detailed operations, see [5.4.4 Replacing APP Secure Certificates](#).

---End

## 5.4.4 Replacing APP Secure Certificates

The APP Server and APP provides the default Huawei-preconfigured certificate for security connection. This certificate applies only to the commissioning scenario. Huawei-preconfigured certificate cannot ensure the information transmission security. When users need to ensure information security, they must apply for a legal and valid certificate from the CA and replace the preconfigured certificate with the applied one. The certificate cracking possibility increases if one certificate is used for a long period. Therefore, replace the certificate periodically.

### 5.4.4.1 Updating an APP Certificate (iOS)

This section describes how to replace the preconfigured certificate of the NetEco 1000S APP in the iOS system.

#### Prerequisites

- The NetEco 1000S APP has been installed on your mobile device.

- You have obtained the new digital certificate that is manually prepared.
- You have replaced the APP Server certificate in the NetEco 1000S System, which matches with the new certificate in the NetEco 1000S APP. For detailed operations, see [5.4.3.5 Replacing a Certificate for the NetEco 1000S APP Communicating with the Server](#).

## Context

After the NetEco 1000S APP is installed, the preconfigured Huawei digital certificate is used by default. If you do not want to use the preconfigured certificate, manually replace it with a required certificate.

## Procedure

**Step 1** Name the obtained new certificate **client.cer**.

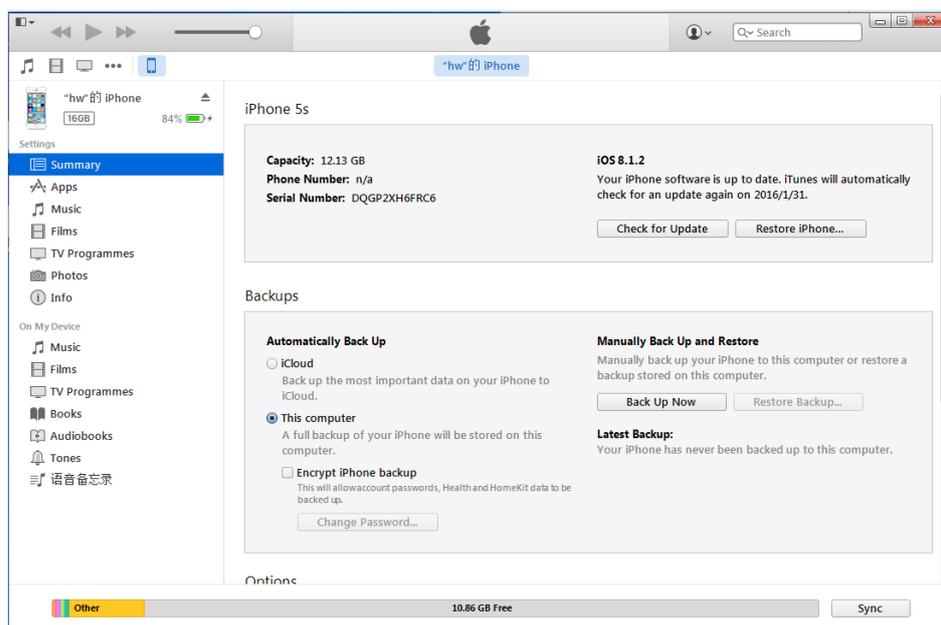
**Step 2** Import **client.cer** to the NetEco 1000S using iTunes.

The operations on an iPhone and iPad are similar. This section uses the operations on an iPhone as an example.

1. On your PC, connect the mobile device to iTunes.

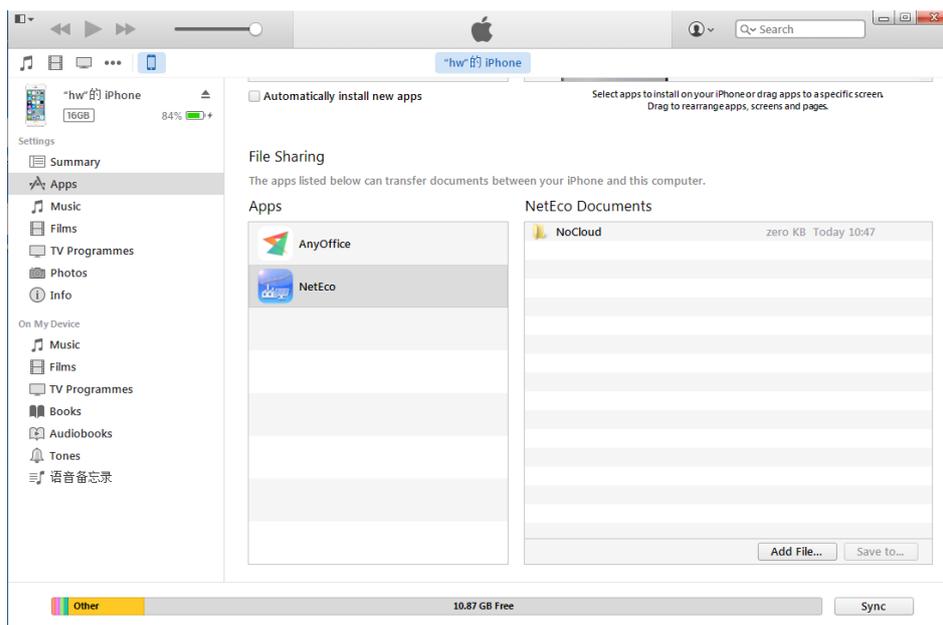
[Figure 5-144](#) shows the iTunes GUI after the connection.

**Figure 5-144** iTunes GUI



2. In the left navigation tree, choose **APPS**.  
The **APPS** page is displayed.
3. Select **NetEco** in the **File sharing** area of the **APPS** page, as shown in [Figure 5-145](#).

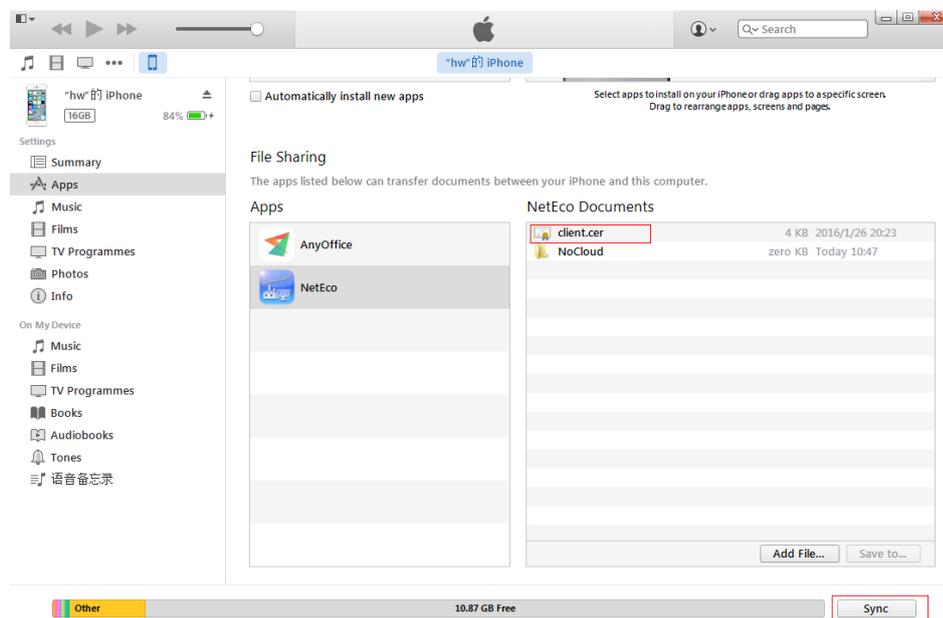
**Figure 5-145** File sharing



4. Click **Add file** in the **NetEco Documents** area, and add the **client.cer** certificate of the **Step 1**.

The **client.cer** certificate has been imported into the iTunes, as shown in **Figure 5-146**.

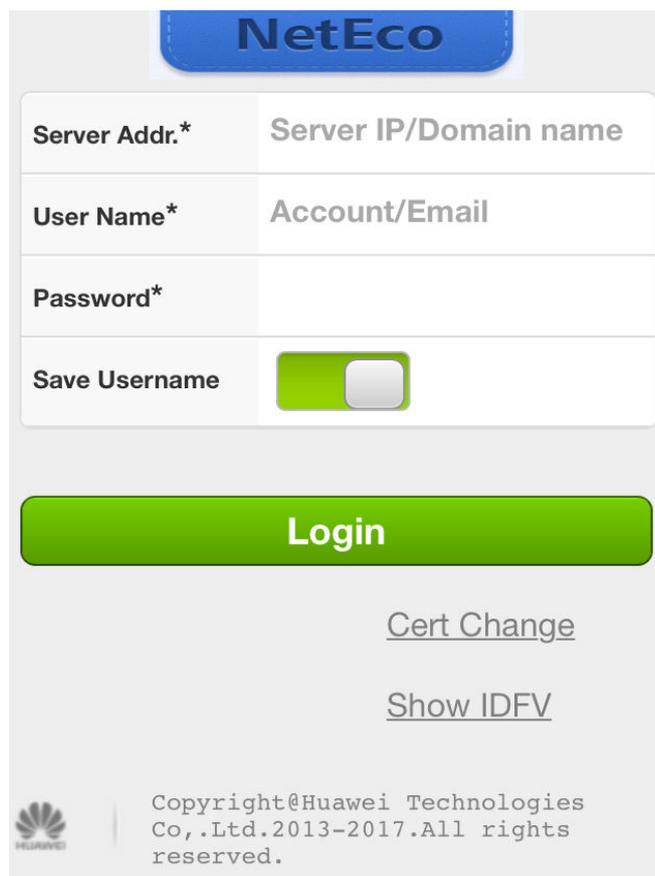
**Figure 5-146** Importing a new certificate



- Step 3** Click the NetEco icon on the mobile client.

The NetEco 1000S APP login window is displayed, as shown in **Figure 5-147**.

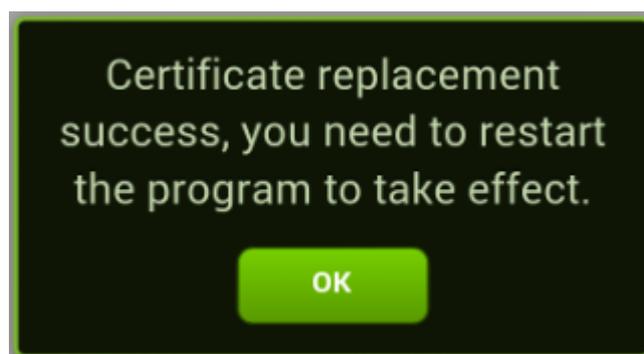
**Figure 5-147** NetEco 1000S APP login window



**Step 4** Click **Cert Change**.

If information as shown in [Figure 5-148](#) is displayed, the certificate has been replaced.

**Figure 5-148** Successful certificate replacement



**Step 5** Restart the NetEco 1000S APP to make the new certificate take effect.

----End

#### 5.4.4.2 Updating an APP Certificate (Android)

This section describes how to replace the preconfigured certificate of the NetEco 1000S APP in the Android system.

## Prerequisites

- The NetEco 1000S APP has been installed on your mobile device.
- You have obtained the new digital certificate that is manually prepared.
- You have replaced the APP Server certificate in the NetEco 1000S System, which matches with the new certificate in the NetEco 1000S APP. For detailed operations, see [5.4.3.5 Replacing a Certificate for the NetEco 1000S APP Communicating with the Server](#).

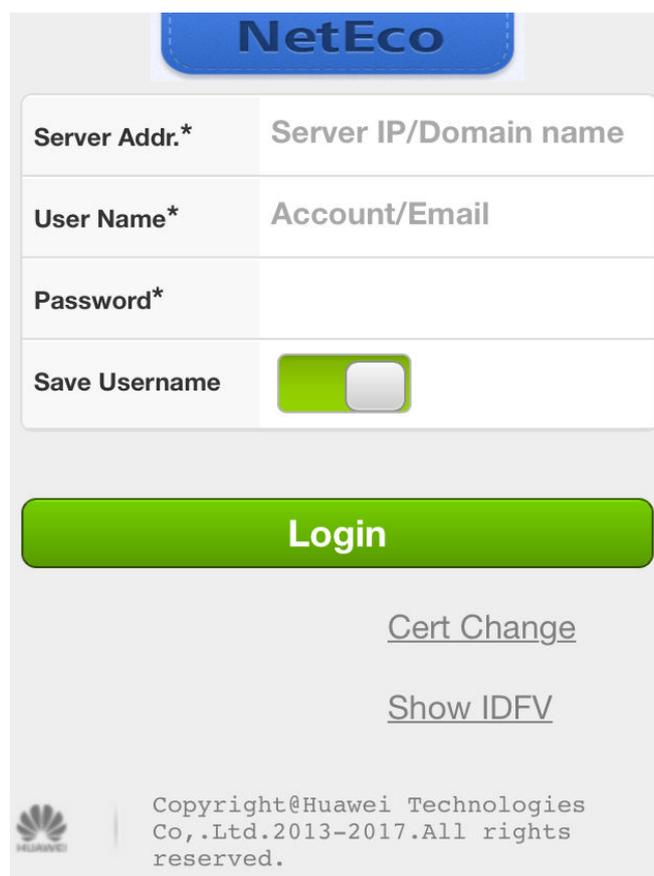
## Procedure

**Step 1** Connect the mobile device to your PC, and save the obtained new certificate to the mobile device.

**Step 2** Click the NetEco 1000S APP icon on the mobile client.

The NetEco 1000S APP login window is displayed, as shown in [Figure 5-149](#).

**Figure 5-149** NetEco 1000S APP login window



**Step 3** Click **Cert Change**.

The page for replacing a certificate is displayed.

**Step 4** Select the new certificate. In the displayed dialog box, click **Confirm** to complete the certificate replacement.

**Step 5** Restart the NetEco 1000S APP to make the new certificate take effect.

----End

## 5.4.5 Data backup and restoration

**dataBase\_backup.bat** script is executed by the NetEco 1000S automatically to back up databases and *NetEco 1000S software installation directory*\WebRoot directory at 04:00 every day. When NetEco 1000S data becomes abnormal, you can manually restore the backup file.

### Backup

**Table 5-64** lists the backup content, backup mode, backup file name, and backup file save path of the NetEco 1000S data.



### NOTICE

You are obligated to take measures, in compliance with the laws of the countries concerned and the user privacy policies of your company, to ensure that the personal data of users is fully protected.

**Table 5-64** Description of MySQL database backup

| Item                  | Description                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Backup content        | <ul style="list-style-type: none"> <li>All data in the MySQL database.</li> <li><i>NetEco 1000S software installation directory</i>\WebRoot folder.</li> </ul>                                                                                                                                                                                                                                             |
| Backup mode           | <p>Automatic backup: <b>dataBase_backup.bat</b> script is executed by the NetEco 1000S automatically to back up databases and <i>NetEco 1000S software installation directory</i>\WebRoot directory at 04:00 every day.</p> <p>After the automatic backup, only two copies of the backup file in the backup directory are saved. When more than two copies exist, the earliest copies will be deleted.</p> |
| Backup file name      | <p>YYYY-MM-DD.zip</p> <p>YYYY-MM-DD is the backup time, for example, <b>2015-09-16.zip</b>.</p>                                                                                                                                                                                                                                                                                                            |
| Backup file save path | <p>The automatic backup files are saved in the following directories:</p> <ul style="list-style-type: none"> <li>MySQL database: <i>NetEco 1000S software installation directory</i>\backup\mysqlBackUp\data directory.</li> <li>WebRoot folder: <i>NetEco 1000S software installation directory</i>\backup\mysqlBackUp\WebRoot directory.</li> </ul>                                                      |

## Restoration

When NetEco 1000S data becomes abnormal, you can perform the following operations to restore the backup file to restore the NetEco 1000S data to the status upon system backup:

### NOTE

The restoration is recommended only when data is abnormal.

1. Stop NetEco 1000S services.

Right-click the NetEco 1000S service icon in the lower right corner of the taskbar of the desktop and choose **Exit** from the shortcut menu.

2. Navigate to the *NetEco 1000S software installation directory*\backup\mysqlBackUp directory and decompress the backup file to be restored.

The automatic backup files are named as **YYYY-MM-DD.zip**, *YYYY-MM-DD* is the backup time. The automatic backup files are saved in *the software installation directory* \backup\mysqlBackUp directory. The **WebRoot** and **data** folders are generated after the decompression.

### NOTE

- The **WebRoot** folder contains data in the *NetEco 1000S software installation directory* \WebRoot directory.
  - The **data** folder contains MySQL database data.
3. Restore the backup file.
    - Restore the **WebRoot** file: Delete all files from the **NetEco 1000S software installation directory**\WebRoot directory and copy the files from the **WebRoot** folder generated after the decompression in **2** to the **NetEco 1000S software installation directory**\WebRoot directory.
    - Restore database data: Delete all files from the **NetEco 1000S software installation directory**\mysql\oms\_mysql\data directory and copy the files from the **data** folder generated after the decompression in **2** to the **NetEco 1000S software installation directory**\mysql\oms\_mysql\data directory.
  4. Start NetEco 1000S services.

## 5.4.6 Command Reference

This section describes commands for installing, running, and maintaining the NetEco 1000S system.

### NOTE

For details about the functions of the commands in the third-party component **MySQL database**, **Java** and **Openssl** used in the NetEco 1000S system, see the corresponding official websites.

**Command names, addresses, and functions of the NetEco 1000S system, as shown in Table 5-65, Table 5-66 and Table 5-67.**

**Table 5-65 Command reference (Software Installation)**

| Command Name | Command Address                                 | Command Function                  |
|--------------|-------------------------------------------------|-----------------------------------|
| setup.bat    | <i>NetEco 1000S Package Contents</i> \setup.bat | Used for installing the software. |

| Command Name      | Command Address                                                      | Command Function                                      |
|-------------------|----------------------------------------------------------------------|-------------------------------------------------------|
| setup_install.bat | <i>NetEco 1000S Package Contents</i> \scripts\<br>\setup_install.bat | Used for installing the software (system invocation). |

**Table 5-66 Command reference (manual execution is allowed)**

| Command Name     | Command Address                                                                         | Command Function                                                                                       |
|------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| ConfigTools.bat  | <i>NetEco 1000S software installation directory</i> \tools\ConfigTools.bat              | Used for changing the database password or binding the IP of the server.                               |
| SSLTools.bat     | <i>NetEco 1000S software installation directory</i> \tools\SSLTools.bat                 | Used for operating a certificate.                                                                      |
| KeysTools.bat    | <i>NetEco 1000S software installation directory</i> \tools\KeysTools.bat                | Used for replacing keys.                                                                               |
| Client.bat       | <i>NetEco 1000S software installation directory</i> \Client.bat                         | Used for starting the NetEco 1000S client.                                                             |
| startup.bat      | <i>NetEco 1000S software installation directory</i> \startup.bat                        | Used for starting all the service and system processes.                                                |
| autoRecovery.bat | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\autoRecovery.bat | Used for executing backup files for recovery after upgrading the NetEco 1000S fails.                   |
| UserTools.bat    | <i>NetEco 1000S software installation directory</i> \tools\UserTools.bat                | Used for updating the Privacy Policy and Terms of Use, and changing the life cycle of operation logs . |

**Table 5-67 Command reference (system invocation)**

| Command Name                        | Command Address                                                                                    | Command Function                               |
|-------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------|
| UninstallForWindowsControlPanel.bat | <i>NetEco 1000S software installation directory</i> \uninstall\UninstallForWindowsControlPanel.bat | Used for invoking the software uninstallation. |

| Command Name           | Command Address                                                                              | Command Function                                                                                             |
|------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| uninstall.bat          | <i>NetEco 1000S software installation directory</i> \uninstall\uninstall.bat                 | Used for uninstalling the software.                                                                          |
| setup_uninstall.bat    | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\setup_uninstall.bat   |                                                                                                              |
| uninstallall.bat       | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\uninstallall.bat      |                                                                                                              |
| startup.bat            | <i>NetEco 1000S software installation directory</i> \bin\startup.bat                         | Used for checking if there is an administrative authority, then invoking the <b>startup_NetEcoTray.bat</b> . |
| ClientInfo.exe         | <i>NetEco 1000S software installation directory</i> \bin\ClientInfo.exe                      | Used for discovering the IP address of the remote execution of scripts.                                      |
| NetEcoUPSService.exe   | <i>NetEco 1000S software installation directory</i> \bin\NetEcoSUNService.exe                | Used for starting the service-related .exe file.                                                             |
| startup_NetEcoTray.bat | <i>NetEco 1000S software installation directory</i> \bin\startup_NetEcoTray.bat              | Used for starting the NetEcoTray service and the database service.                                           |
| log4operation.bat      | <i>NetEco 1000S software installation directory</i> \tools\bin\log4operation.bat             | Used for recording logs.                                                                                     |
| 7za.exe                | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\7za.exe               | Used for compressing and decompressing files in .7z and .tar formats.                                        |
| alluninstallInner.bat  | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\alluninstallInner.bat | Used for uninstalling all products.                                                                          |
| copy_uninstallall.bat  | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\copy_uninstallall.bat | Used for copying scripts for one-click uninstallation to the software installation directory.                |

| Command Name             | Command Address                                                                           | Command Function                                                                                                                                  |
|--------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| copyCompInsEnv.bat       | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\copyCompInsEnv.bat | Used for copying extension packages to an extension repository and copying an installation disk framework to the software installation directory. |
| delete_files.bat         | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\delete_files.bat   | Used for deleting unnecessary files after the software is installed.                                                                              |
| delete_service.bat       | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\delete_service.bat | Used for deleting the NetEco 1000S and database services and the shortcut icon generated when installing or upgrading the NetEco 1000S.           |
| prebackupfile.bat        | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\prebackupfile.bat  | Used for copying source files to a target location.                                                                                               |
| process.bat              | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\process.bat        | Used for checking whether any application is in use under the target installation directory.                                                      |
| setup_install.bat        | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\setup_install.bat  | Used for installing the software (upgrade scene).                                                                                                 |
| ChangeCerKeyPassword.bat | <i>NetEco 1000S software installation directory</i> \tools\bin\ChangeCerKeyPassword.bat   | Used for changing the password of a certificate.                                                                                                  |
| generateCer.bat          | <i>NetEco 1000S software installation directory</i> \tools\bin\generateCer.bat            | Used for generating a new certificate.                                                                                                            |
| restoreCer.bat           | <i>NetEco 1000S software installation directory</i> \tools\bin\restoreCer.bat             | Used for restoring a certificate.                                                                                                                 |
| updateCer.bat            | <i>NetEco 1000S software installation directory</i> \tools\bin\updateCer.bat              | Used for replacing a certificate.                                                                                                                 |

| Command Name          | Command Address                                                                                  | Command Function                                                                                                               |
|-----------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| run.vbs               | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\run.vbs                   | Used for obtaining more Windows 2008 rights.                                                                                   |
| NetEco1000S.exe       | <i>NetEco 1000S software installation directory</i> \uninstall\jre\jre_win\bin\NetEco1000S.exe   | Used for starting the NetEco 1000S process.                                                                                    |
| NetEcoSUNTray.exe     | <i>NetEco 1000S software installation directory</i> \uninstall\jre\jre_win\bin\NetEcoSUNTray.exe | Used for starting the system tray.                                                                                             |
| hiddenKey.bat         | <i>NetEco 1000S software installation directory</i> \tools\bin\hiddenKey.bat                     | Used for not showing passwords.                                                                                                |
| hiddenKey.exe         | <i>NetEco 1000S software installation directory</i> \tools\bin\hiddenKey.exe                     | Used for not showing passwords. <b>hiddenKey.exe</b> is generated only after you manually execute <b>SSLTools.bat</b> .        |
| delete_shortcut.vbs   | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\delete_shortcut.vbs       | Invoked by the <b>delete_service.bat</b> script automatically to delete the shortcut icon after uninstalling the NetEco 1000S. |
| installNetEcoPost.bat | <i>NetEco 1000S software installation directory</i> \uninstall\scripts\installNetEcoPost.bat     | Invoked by the system automatically to initialize databases after installing or upgrading the NetEco 1000S.                    |

| Command Name        | Command Address                                                         | Command Function                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dataBase_backup.bat | <i>NetEco 1000S software installation directory\bin</i>                 | <p><b>dataBase_backup.bat</b> script is executed by the NetEco 1000S automatically to back up databases and <b>NetEco 1000S software installation directory\WebRoot</b> directory at 04:00 every day.</p> <p>The automatic backup files are named as <b>YYYY-MM-DD.zip</b>, <b>YYYY-MM-DD</b> is the backup time. The automatic backup files are saved in <b>the software installation directory\backup\mysqlBackUp</b> directory.</p> |
| fix_mysql.bat       | <i>NetEco 1000S software installation directory\mysql\oms_mysql\bin</i> | Used for fixing database table index problems.                                                                                                                                                                                                                                                                                                                                                                                         |

## 5.4.7 Performance Specifications

**Table 5-68** Performance Specifications

| Module              | Function Description | Performance Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                            | Specification Description |
|---------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Installation CD-ROM | Management capacity  | <ul style="list-style-type: none"> <li>● Number of devices: 1860                             <ul style="list-style-type: none"> <li>- Inverter: 1500</li> <li>- SmartLogger: 300</li> <li>- EMI and Meter: 30</li> <li>- PID: 30</li> </ul> </li> <li>● Number of PV plants: 300<br/>For each PV plant, the total number of connected SmartLoggers and inverters directly connected to the FE cannot exceed 25.</li> </ul>                                            | Standard edition          |
|                     |                      | <p>Commercial NetEco 1000S system:</p> <ul style="list-style-type: none"> <li>● Number of devices: 7200                             <ul style="list-style-type: none"> <li>- Inverter: 6000</li> <li>- SmartLogger: 1000</li> <li>- EMI and Meter: 100</li> <li>- PID: 100</li> </ul> </li> <li>● Number of PV plants: 1000<br/>For each PV plant, the total number of connected SmartLoggers and inverters directly connected to the FE cannot exceed 25.</li> </ul> | Enterprise edition        |
|                     |                      | <p>Residential NetEco 1000S system:</p> <ul style="list-style-type: none"> <li>● Number of devices: 12000                             <ul style="list-style-type: none"> <li>- Inverter: 10000</li> <li>- Optimizer: 2000</li> </ul> </li> <li>● Number of PV plants: 10000</li> </ul>                                                                                                                                                                                |                           |

| Module   | Function Description     | Performance Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Specification Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Database | Performance data storage | <p>The maximum number of devices whose data can be collected is as follows:</p> <ul style="list-style-type: none"> <li>● Standard edition: 1860                             <ul style="list-style-type: none"> <li>- Inverter: 1500</li> <li>- SmartLogger: 300</li> <li>- EMI and Meter: 30</li> <li>- PID: 30</li> </ul> </li> <li>● Enterprise edition (commercial NetEco 1000S system): 7200                             <ul style="list-style-type: none"> <li>- Inverter: 6000</li> <li>- SmartLogger: 1000</li> <li>- EMI and Meter: 100</li> <li>- PID: 100</li> </ul> </li> <li>● Enterprise edition (residential NetEco 1000S system): 12000                             <ul style="list-style-type: none"> <li>- Inverter: 10000</li> <li>- Optimizer: 2000</li> </ul> </li> </ul> <p>The relationships between collection period and data storage durations are as follows:</p> <ul style="list-style-type: none"> <li>● 5-minute data of the EMIs is saved for one year. 5-minute data of other devices is saved for one month.</li> <li>● Data collected on a 15-minute basis is saved for two years.</li> <li>● Data collected by day, month, or year is saved for 20 years.</li> </ul> | <p>Size of a daily dumped file for each device: 10 KB</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● The dumped file for 5-minute performance data of PV plants is saved to <i>NetEco 1000S</i> software installation directory \backup \PowerdataTransfer. The file is named <b>Plantdaydata_timestamp.zip</b>.</li> <li>● The dumped files for 5-minute performance data of inverters are saved to <i>NetEco 1000S</i> software installation directory \backup \PowerdataTransfer and <i>NetEco 1000S</i> software installation directory \backup \PMDDataTransfer. The files are named <b>Powerdaydata_timesamp.zip</b> and <b>InveterPmdata_time stamp.zip</b>.</li> <li>● The dumped file for 5-minute performance data of other devices is saved to <i>NetEco 1000S</i> software installation directory \backup \PMDDataTransfer. The file is named <b>device typePmdata_timestamp.zip</b>.</li> </ul> |

| Module | Function Description           | Performance Specifications                                                                                                                                                                      | Specification Description                                                                                                                                                                            |
|--------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | Alarm data storage             | Historical alarm log storage specification: 1,000,000 logs                                                                                                                                      | The system checks data every early morning. If the number of data records reaches 1,000,000, the database will dump the earliest 50,000 records. The dumped records cannot be queried on the client. |
|        |                                | Active alarm storage specification: 30,000 logs                                                                                                                                                 | The system checks alarms upon the reporting. If the number of alarms reaches the upper limit, the earliest 1000 alarms will be automatically cleared.                                                |
|        | Audit log storage              | Logs in the latest six months are stored by default. You can change the configuration in the background.                                                                                        | Logs over six months earlier will be deleted automatically.                                                                                                                                          |
|        | Number of database connections | <ul style="list-style-type: none"> <li>● Performance module: 32</li> <li>● Log module: 16</li> <li>● Configuration module: 8</li> <li>● Common module: 8</li> <li>● Alarm module: 16</li> </ul> | It indicates the maximum number of databases that can be connected with each module.                                                                                                                 |

| Module             | Function Description                           | Performance Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Specification Description                                           |
|--------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|                    | User management                                | <ul style="list-style-type: none"> <li>● Commercial NetEco 1000S system                             <ul style="list-style-type: none"> <li>- Maximum number of users: 2000</li> <li>- Maximum number of concurrent online users: 250</li> </ul> </li> <li>● Residential NetEco 1000S system                             <ul style="list-style-type: none"> <li>- Maximum number of users: 5000</li> <li>- Maximum number of concurrent online users: 1050</li> </ul> </li> </ul> <p><b>NOTE</b><br/>If multiple users need to log in to the client, you are advised to use the following mode of the browser for login. Otherwise, an error may occur.</p> <ul style="list-style-type: none"> <li>● Internet Explorer: Create a session.</li> <li>● Chrome 50: Open a new incognito window.</li> <li>● Number of IP address whitelists: 500</li> </ul> | -                                                                   |
| Browser            | Browser of the following version is supported: | <ul style="list-style-type: none"> <li>● Internet Explorer 11</li> <li>● Chrome 50</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -                                                                   |
| Monitor resolution | Optimal resolution                             | 1280*1024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The display effect is the best in this resolution.                  |
|                    | Minimum resolution                             | 1024*768                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | All functions are available in the resolution higher than this one. |

## 5.4.8 Customizing the Logo on the Home Page of the NetEco 1000S Client

This section describes how to customize the logo on the home page of the NetEco 1000S client based on the actual project information.

## Prerequisites

- You have logged in to the NetEco 1000S client. For detailed operations, see [5.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have the permission to read and write **NetEco 1000S installation path** on the NetEco 1000S server host.
- You have prepared the customized logo.

## Context

The logo in the red box in [Figure 5-150](#) is the default logo on the home page of the NetEco 1000S. You can customize a new logo as required.

**Figure 5-150** Default logo



## Procedure

- Step 1** Archive the customized logo picture to the **NetEco 1000S software installation path** `\WebRoot\common\userLogo` directory.

### NOTE

The logo picture customized for the NetEco 1000S must meet the following requirements:

- The pixel is 234 x 60.
- The size of the logo picture cannot exceed 5 MB.
- The logo picture supports only the **jpg**, **jpeg**, **png**, and **gif** formats. You can archive at most one picture in each format, and the four formats are sorted by priority in descending order. For example, when the logo pictures in **jpeg** and **png** formats are archived at the same time, replace the logo in **jpeg** format preferentially.

- Step 2** Rename the file archived in the [Step 1 LOGO](#).

The **jpeg** file is used as an example. The new name of the customized picture is **LOGO.jpeg**.

- Step 3** Refresh the NetEco 1000S client and observe whether the logo in the upper-left corner is updated.

----End

# 6 Abbreviations

| <b>F</b> |                                    |
|----------|------------------------------------|
| FE       | Fast Ethernet                      |
| FTPS     | File Transfer Protocol over SSL    |
| <b>H</b> |                                    |
| HTTP     | Hypertext Transfer Protocol        |
| HTTPS    | Hypertext Transfer Protocol Secure |
| <b>K</b> |                                    |
| KPI      | Key Performance Indicator          |
| <b>N</b> |                                    |
| NMS      | Network Management System          |
| <b>R</b> |                                    |
| RSA      | Revist-Shamir-Adleman Algorithm    |
| <b>S</b> |                                    |
| SMTP     | Simple Mail Transfer Protocol      |
| SSH      | Secure Shell                       |
| SSL      | Secure Sockets Layer               |
| SFTP     | Secure File Transfer Protocol      |
| <b>T</b> |                                    |
| TLS      | Transport Layer Security           |
| TCP      | Transmission Control Protocol      |
| <b>V</b> |                                    |
| VLAN     | Virtual Local Area Network         |