

**iManager NetEco 1000S
V100R003C00**

User Manual

Issue 02
Date 2019-12-30



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Preface

Purpose

This document describes the installation, function, maintenance, and troubleshooting methods of the iManager NetEco 1000S V100R003C00 monitoring software.

Intended Audience

This document is intended for:

- Inverter maintenance personnels
- Electronic technicians with related aptitude

Product Models

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

- SUN2000
- SUN8000

Symbol Conventions

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

Symbol	Description
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Symbol	Description
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

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

02 (2019-12-30)

This issue is the second official release for the iManager NetEco 1000S V100R003C00. Compared with 01(2019-06-30), this issue includes the following changes.

Navigation Tree	Change Description
Operation and Maintenance > NetEco 1000S Web Client Operation	For details, see 4.1 NetEco 1000S Web Client Operation .

01 (2019-06-30)

This issue is the first official release for the iManager NetEco 1000S V100R003C00.

Draft C (2018-12-20)

This issue is the third release of the iManager NetEco 1000S V100R003C00 beta version. Compared with Draft B(2018-09-20), this issue includes the following changes.

Modified

Navigation Tree	Change Description
Operation and Maintenance > NetEco 1000S Web Client Operation > Managing Devices	For details, see 4.1.4.6 Remotely Controlling an Inverter .
Operation and Maintenance > NetEco 1000S Web Client Operation > Managing Devices	For details, see 4.1.4.8 Remotely Controlling a PID Device .

New

Navigation Tree	Change Description
Operation and Maintenance > NetEco 1000S Web Client Operation > FAQs	See 4.1.9.24 How Do I Disable the Display of the Remote Control Function? .

Draft B (2018-09-20)

This issue is the second release of the iManager NetEco 1000S V100R003C00 beta version. Compared with Draft A (2018-05-30), this issue includes the following changes.

Modified

Navigation Tree	Change Description
SubscriberPersonal Data	For details, see 1 SubscriberPersonal Data .
Installation and Commissioning > NetEco 1000S Installation and Commissioning	For details, see 3.1.5 Logging Out of the NetEco 1000S Client .
Installation and Commissioning > NetEco 1000S App Installation and Commissioning	For details, see 3.2.4 Logging In to the NetEco 1000S App .
Operation and Maintenance > NetEco 1000S Web Client Operation > Getting Started > Logging Out of the NetEco 1000S	For details, see 4.1.1.2.1 Logging Out of the NetEco 1000S Client .
Operation and Maintenance > NetEco 1000S Web Client Operation > Historical Data Query	For details, see 4.1.6.1 Querying Alarm Logs .

Navigation Tree	Change Description
Operation and Maintenance > NetEco 1000S Web Client Operation > System Management	<ul style="list-style-type: none"> • For details, see 4.1.8.1.1 User Categories. • For details, see 4.1.8.1.2 Registering a User. • For details, see 4.1.8.1.3 Adding a User.
Operation and Maintenance > NetEco 1000S App Operation	<ul style="list-style-type: none"> • For details, see 4.2.1 Registering a User. • For details, see 4.2.2 Logging In to the NetEco 1000S App. • For details, see 4.2.3 Creating a PV Plant. • For details, see 4.2.4 Connecting Devices.

Deleted

Navigation Tree	Change Description
Operation and Maintenance > NetEco 1000S App Operation	Deleted chapter How Do I Disable the TLSv1? , since TLSV1 is disabled in the NetEco 1000S APP.

Draft A (2018-05-30)

This issue is the first release of the iManager NetEco 1000S V100R003C00 beta version.

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1 SubscriberPersonal Data

This section describes the content involved in subscriber personal data, as well as the principles and methods of collecting and using the data.

Definition of Subscriber Personal Data

Subscriber personal data is the data that can be used alone or together with other information to identify subscriber entities.

Declaration on Use of Subscriber Personal Data

The NetEco 1000S inevitably uses subscriber personal data, such as the user account, the email address, mobile number, company information, access IP address, the IMEI/MEID of a mobile phone, MAC address of a tablet, IDFV identifier of an iOS device as well as login and operation logs. You are obligated to take considerable measures, in compliance with applicable laws, regulations, and subscriber privacy policies of the countries concerned, to ensure full protection for subscriber personal data.

Principles for Collecting Subscriber Personal Data

Abide by the following principles when using the NetEco 1000S to collect subscriber personal data:

- Minimize service data you want to collect, and do not collect service-irrelevant data.
- Do not collect communication content-related data, such as short messages, multimedia messages, emails, and voice calls.
- Obtain an authorization in written form from the customer before the data collection. A standard authorization includes the name of the product or operation requiring authorization, as well as the purpose, content, scope, validity period, and other conventions of the authorization.
- After the involved task is complete, delete raw data in a timely manner. Do not save the raw data or dump the data into the database through database backup.

Principle for Using Subscriber Personal Data

NOTICE

- Use the collected subscriber personal data within the scope and validity period of the authorization. Only authorized users can use the data, and logs must be maintained for future query.
- The original network data cannot be transferred out of the network in a sensitive country and must not be transferred out of the country or region where the server is located.

Personal data is stored on the NetEco 1000S server. If the NetEco 1000S server that a user accesses is not in the country or region where the user is located, the user's personal data will be transferred out of the country or region where the server is located. Inform the user of the location of the NetEco 1000S server so that the user selects the correct NetEco 1000S server, avoiding transferring personal data out of the country or region where the server is located.

Abide by the following principles when using the U2000 to process subscriber personal data:

- Minimal use
Do not use communication content or service-irrelevant personal data.
- Clear purpose
Use personal data only for network optimization and quality guarantee.
- Secure protection
Access to personal data is controlled, and sensitive personal data is encrypted for storage.

Subscriber Personal Data Used by the NetEco 1000S

Due to reasons, such as problem locating, the NetEco 1000S may collect, or require subscribers to set, certain subscriber personal data to provide support for problem analysis. Different functions require different data that will be processed in different ways. For details, see [Table 1-1](#).

NOTICE

To ensure the full implementation of the product functions, perform operations according to the instructions in the product. Because laws and regulations in different countries have different requirements on privacy protection, the personal data list may not cover all the information contained in the privacy statement required by laws and regulations of your country.

Table 1-1 Subscriber personal data

Usag e Scenario	Collecte d Personal Data	Collecting Source and Method	Purpose and Security Protection Measure	Retention Period and Strategy	Destructi on Measure	Export Method (Interface, Command, etc.) and Implementation Plan (Anonymizat ion, Pseudonymiz ation, etc.)	Export Guide
Regis terin g or creati ng an accou nt or modi fying accou nt infor mati on	User name, email address, and compan y informat ion	When a user registers or creates an account or modifies account informat ion, the data is entered on the web user interface (WebUI) or app (the email address cannot be modified).	Used to register or create an account or to retrieve a password. The data is sent to the NetEco server over HTTPS. The data is encrypted in AES128-CBC mode and saved in the database. The system administrator or a user who has the permission to manage the account can access the data. Some information is anonymized on the UI.	The data is retained until the system administrator or a user who has the permission to manage the account deletes the account.	The user name, email address, and company informat ion are deleted when the account is deleted.	The user name, email address, and company information are deleted when the account is deleted. The personal data is exported in plaintext.	On the user management page, click Export to export the personal data of the target account.

Use Scenario	Collected Personal Data	Collecting Source and Method	Purpose and Security Protection Measure	Retention Period and Strategy	Destruction Measure	Export Method (Interface, Command, etc.) and Implementation Plan (Anonymization, Pseudonymization, etc.)	Export Guide
Creating a PV plant	Country, city, address, zip code, and PV plant picture	When creating or modifying PV plant information, a user enters the data on the WebUI or app.	Used to maintain PV plant information. The data is sent to the NetEco server over HTTPS. The data is encrypted in AES128-CBC mode and saved in the database. The system administrator or a user who has the permission to manage the PV plant can access the data.	The data is retained until the system administrator or a user who has the permission to manage the PV plant deletes the PV plant.	The country, city, address, zip code, and PV plant picture are deleted when the PV plant is deleted.	The personal data is exported in plaintext.	On the Basic Information tab page, click Export to export the PV plant personal data.

Usage Scenario	Collected Personal Data	Collecting Source and Method	Purpose and Security Protection Measure	Retention Period and Strategy	Destruction Measure	Export Method (Interface, Command, etc.) and Implementation Plan (Anonymization, Pseudonymization, etc.)	Export Guide
Querying logs	User name and IP address	The data is collected from the user equipment .	Used to identify the user equipment used to perform an operation. The data is uploaded to the log server over HTTPS. The logs are stored in plaintext and can be viewed by security audit personnel.	The retention period of the personal data is the same as that of logs. The personal data is deleted together with the logs.	The user name and IP address are deleted when logs are deleted.	The personal data is exported in plaintext.	On the log management page, click Export to export the personal data in the queried user logs.
Setting the notification server	User name, mobile number, and email address	Users enter the data on the page for setting email server and SMS server parameters.	Used to send notifications by email or SMS. The data is used to maintain PV plant information. The data is sent to the NetEco server over HTTPS. The data is encrypted in AES128-CBC mode and saved in the database. The system administrator can access the data.	The data is retained until a user resets the email server and SMS server parameters.	The data is deleted from the database when a user resets the email server and SMS server parameters.	Export is not supported.	N/A

Use Scenario	Collected Personal Data	Collecting Source and Method	Purpose and Security Protection Measure	Retention Period and Strategy	Destruction Measure	Export Method (Interface, Command, etc.) and Implementation Plan (Anonymization, Pseudonymization, etc.)	Export Guide
Setting remote notification rules for alarms and reports	Recipients' email addresses and mobile numbers	Users enter the data on the WebUI when creating a remote notification rule.	Used for receiving alarm and report information. The data is sent to the NetEco server over HTTPS. The data is encrypted in AES128-CBC mode and saved in the database. The system administrator or a user who has the permission to manage the rule can access the data. Some information is anonymized on the UI.	The data is retained until the system administrator or a user who has the permission to manage the remote notification rule deletes the rule.	The recipients' email addresses and mobile numbers are deleted when the remote notification rule is deleted.	You can select whether to export the data in plaintext.	On the alarm or report page, click Export to export a target remote notification rule.

Use Scenario	Collected Personal Data	Collecting Source and Method	Purpose and Security Protection Measure	Retention Period and Strategy	Destruction Measure	Export Method (Interface, Command, etc.) and Implementation Plan (Anonymization, Pseudonymization, etc.)	Export Guide
Setting access control policies for mobile terminals	Identification code of a mobile terminal : IDfV identifier of an iOS mobile terminal , IMEI/MEID of a mobile phone, or MAC address of a tablet	The data is recorded in the system by a user or collected from a user's app device.	The data is a service configuration parameter used to control the access rights of mobile terminals. The data is sent to the NetEco server over HTTPS. The data is encrypted in AES128-CBC mode and saved in the database. The system administrator can access the data. Some information is anonymized on the UI.	The data is retained until the system administrator deletes a mobile terminal access control policy on the mobile terminal access control page.	The identification code of the mobile terminal is deleted when the access control policy of the mobile terminal is deleted.	The personal data is exported in plaintext.	On the mobile terminal access control page, click Export to export the identification code of a target mobile terminal.

2 Description

[2.1 Product Description](#)

[2.2 Security Management Description](#)

2.1 Product Description

For details, see *iManager NetEco 1000S V100R003C00 Product Description.pdf*.

2.2 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.

2.2.1 Networking Security

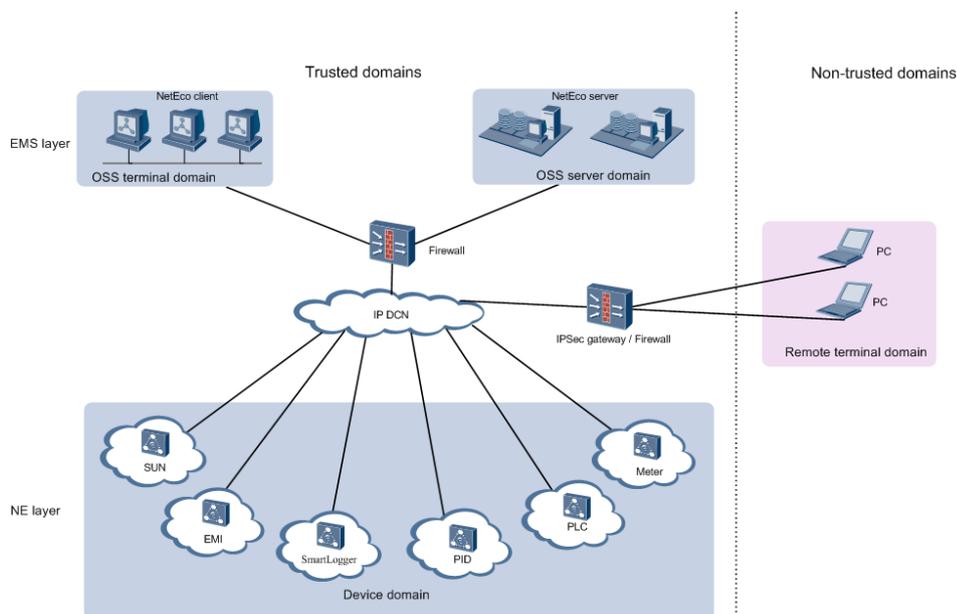
Networking security provides policies such as security domain division and firewall isolation to protect the OSS network.

2.2.1.1 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 2-1 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 2-1 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, Optimizer, 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.

2.2.1.2 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

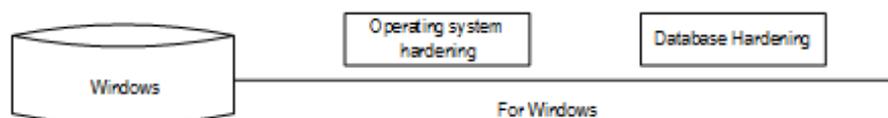
Policies for deploying firewalls contains: configuring the firewall port and configuring the IP access.

2.2.2 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 2-2](#) describes the security policies for operating systems and databases.

Figure 2-2 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 [2.2.2.1 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 [2.2.2.1 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.

2.2.2.1 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 [2.2.2.2 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 V100R003C00 upon factory delivery.

2.2.2.2 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.

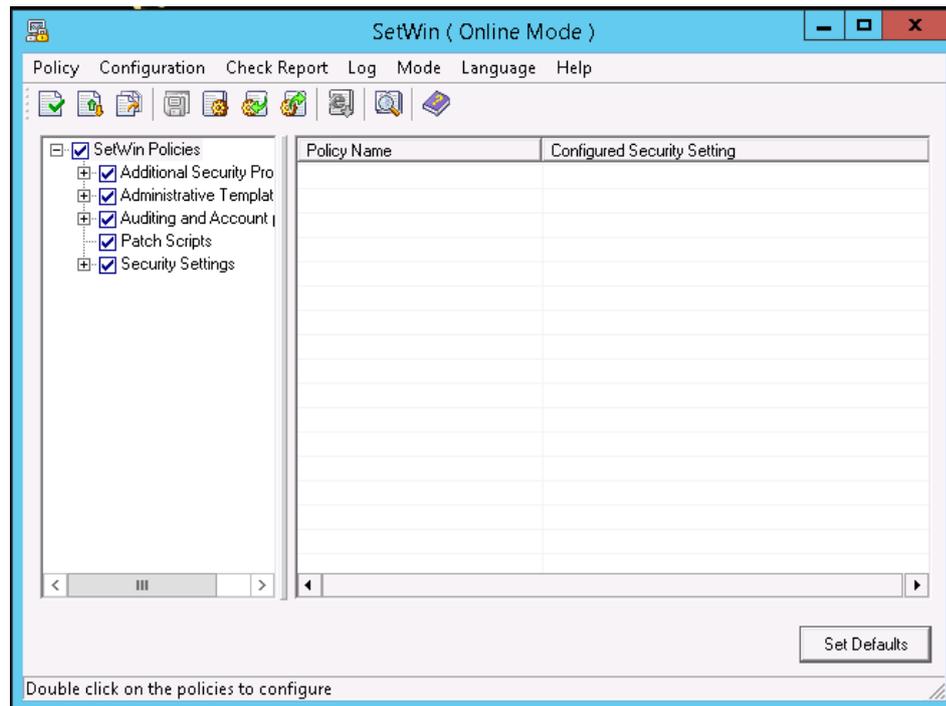
This section describes how to perform security hardening for the Windows Server 2012 OS. To learn the detailed security hardening policy for Windows 7 and Windows 10, see ***Windows OS Security Hardening Policy.pdf***.

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 2-3](#).

Figure 2-3 SetWin home page



Step 4 Click **Language** on the menu bar.

The tool supports Chinese and English (default). After changing the language, restart the tool for the change to take effect.

Step 5 Choose **Configuration > Import Configuration File**.

In the displayed **Open File to import** dialog box, select the **SetWin_2K12R2_CIS_V1.1.0.inf** file saved in [Step 1](#).

Step 6 When the "Import successful" message is displayed, click **OK**.

Step 7 Back up the OS.

1. Choose **Policy > Roll back**.

A message is displayed, prompting you to confirm that the user password meets the requirements.

2. Click **Yes**.

A dialog box is displayed for you to save the backup file.

3. Set a name for the backup file and click **Save**.

It is recommended that the backup file be named after the current date.

Step 8 Optional: Configure the security hardening policy.

Set security hardening items in the left navigation tree on the **Policy** tab page.

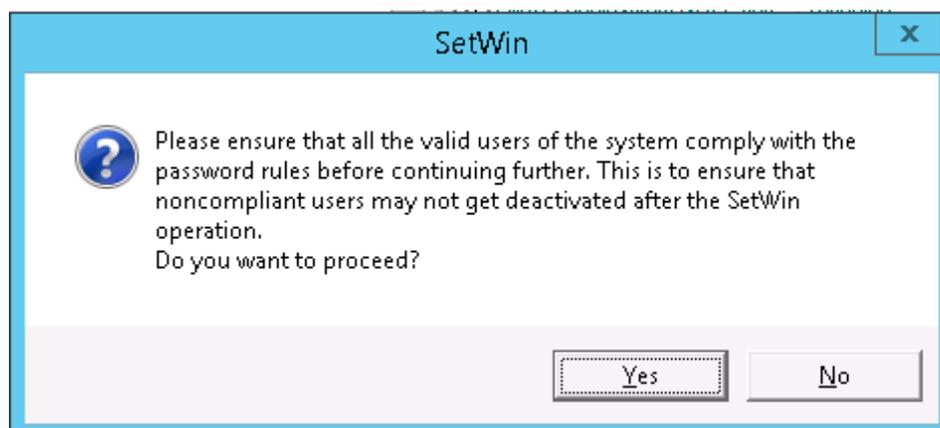
NOTICE

- 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 2-4](#) is displayed.

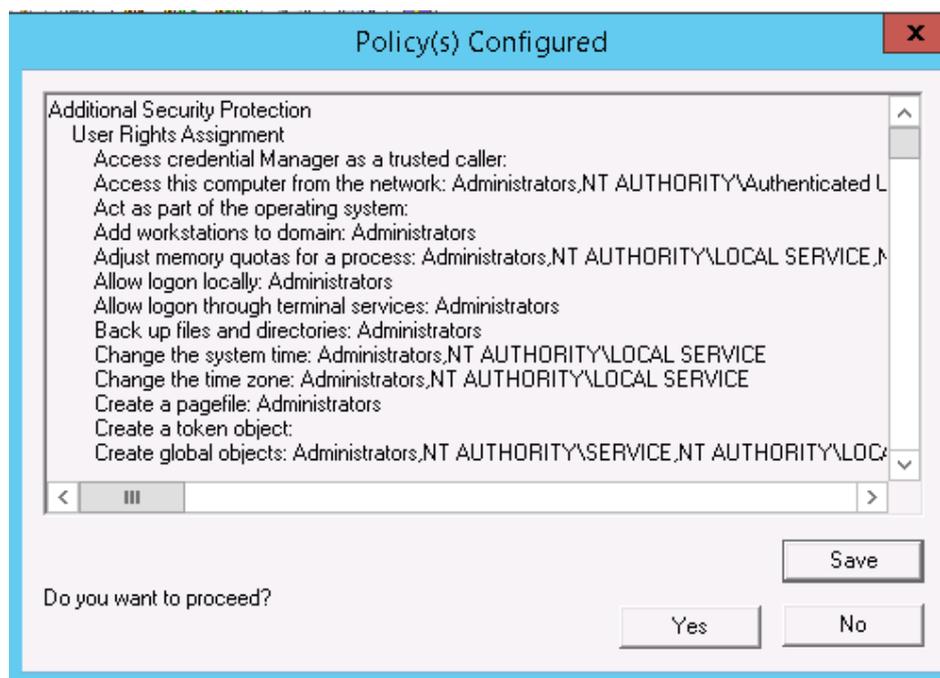
Figure 2-4 Confirming password complexity



Step 10 Click **Yes**.

The message shown in [Figure 2-5](#) is displayed.

Figure 2-5 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 **8010,80,8443,443,27200,33000,16100,27250,11000-11500,2121** 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

2.2.2.3 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.

2.2.3 Application Security

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

2.2.3.1 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 NetEco 1000S system provides six types of roles: system administrator, managers, installers, guest users, 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, please see [4.1.8.1.8 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

Five types of roles provided by the NetEco 1000S system have different rights. You can set user rights by specifying roles for users. For details about the role rights, please see [4.1.8.1.1 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.

2.2.3.2 Log Auditing

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

3 Installation and Commissioning

- [3.1 NetEco 1000S Installation and Commissioning](#)
- [3.2 NetEco 1000S App Installation and Commissioning](#)
- [3.3 Planning Operating System Users and Their Initial Passwords](#)
- [3.4 Communication Matrix](#)

3.1 NetEco 1000S Installation and Commissioning

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

3.1.1 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 for 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 for 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 for 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.
- 4G distributed: Inverters that support the 4G module can connect to the NetEco 1000S through the 4G network.

3.1.2 Installing the NetEco 1000S Software

Preinstallation Check

Before installing the NetEco 1000S software, check whether the PC meets the requirements listed in [Table 3-1](#).

Table 3-1 Preinstallation check item

Check Item	Description
Software package	<p>Contacted Huawei technical support engineers to obtain the software package iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip or iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip. Contact the Huawei technical support engineers and obtain the signature files iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip.asc or iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip.asc</p> <ul style="list-style-type: none"> • For carriers: To obtain the software package, Huawei technical support engineers can choose Support > Software > Network Energy > PV Inverter > Smart PV Plant System > iManager NetEco 1000S > V100R003C00 at http://support.huawei.com/carrier/. • For enterprises: To obtain the software package, Huawei technical support engineers can choose SUPPORT > Network Energy > Energy Common > iManager NetEco 1000S at http://support.huawei.com/enterprise. <p>NOTE</p> <ul style="list-style-type: none"> • If the Windows Server 2012 OS is used, obtain the iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip installation package and iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip.asc digital signature file. • If the Windows 7 or Windows 10 OS is used, obtain the iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip installation package and iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip.asc digital signature file. <p>You can check the integrity of the software package by referring to 4.1.9.7 Verifying OpenPGP Signature.</p> <p>NOTE 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"> • Standard edition: CPU: 1*quad-core 2.4 GHz; memory: 4 GB; hard disk: 250 GB • Enterprise edition: CPU: 1*octa-core 2.4 GHz; memory: 12 GB; hard disk: 600GB

Check Item	Description
	<p>Recommended configuration:</p> <ul style="list-style-type: none"> Standard edition: CPU: 1*quad-core 3.6 GHz; memory: 4 GB; hard disk: 500 GB or above Enterprise edition: CPU: 2*octa-core 3.6 GHz; memory: 16 GB; hard disk: 2TB or above
Software	<p>Operating system:</p> <ul style="list-style-type: none"> Standard edition: Windows 7 professional edition, Windows 7 enterprise edition, Windows 10 professional edition, or Windows 10 enterprise edition Enterprise edition: Windows Server 2012 standard edition <p>NOTE 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> <ul style="list-style-type: none"> The antivirus software that can be updated properly must be installed on the PC. <p>NOTE For some antivirus software in the market such as 360, ensure that the installation path of the NetEco 1000S is added to the whitelist of the antivirus software. Otherwise, the NetEco 1000S functions may be affected. You are not advised to install other applications. You are not allowed to install the MySQL database. Services that are unnecessary or have potential security risks must be disabled. Operating system patches must be updated in a timely manner. <p>Only users in the system administrator group can install the NetEco 1000S.</p> <p>NOTICE 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. 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> </p>

Procedure

NOTICE

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

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

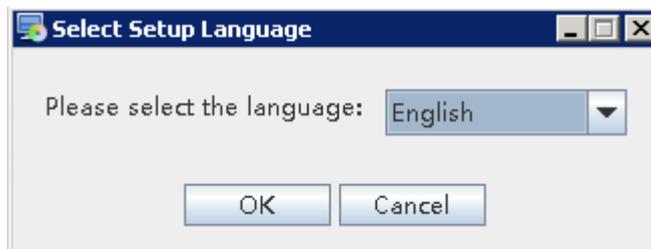
NOTE

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 Setup Language** window is displayed.

Figure 3-1 Select Setup Language



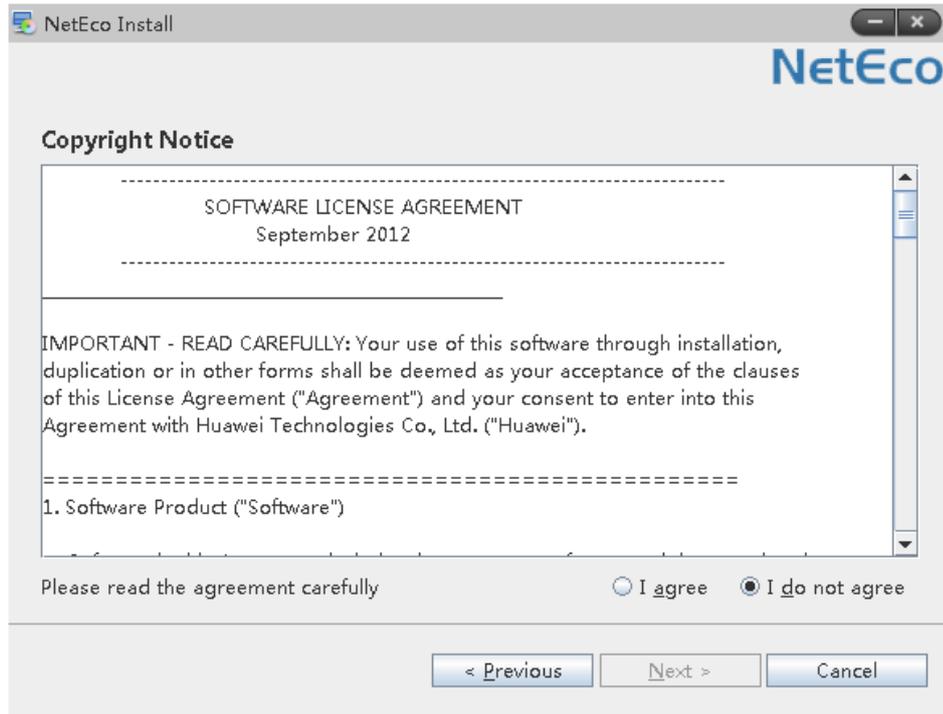
Step 2 Choose **English**, and click **OK**.

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.

Figure 3-2 Copyright Notice

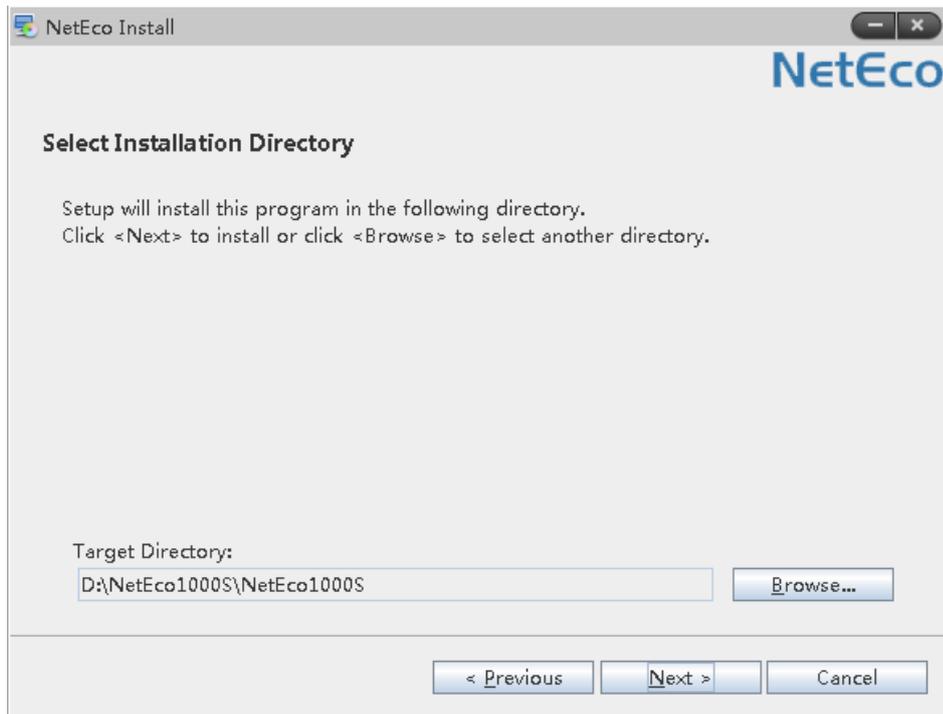


Step 4 Select **I agree**, and click **Next**.

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

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

Figure 3-3 Select Installation Directory



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

NOTE

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

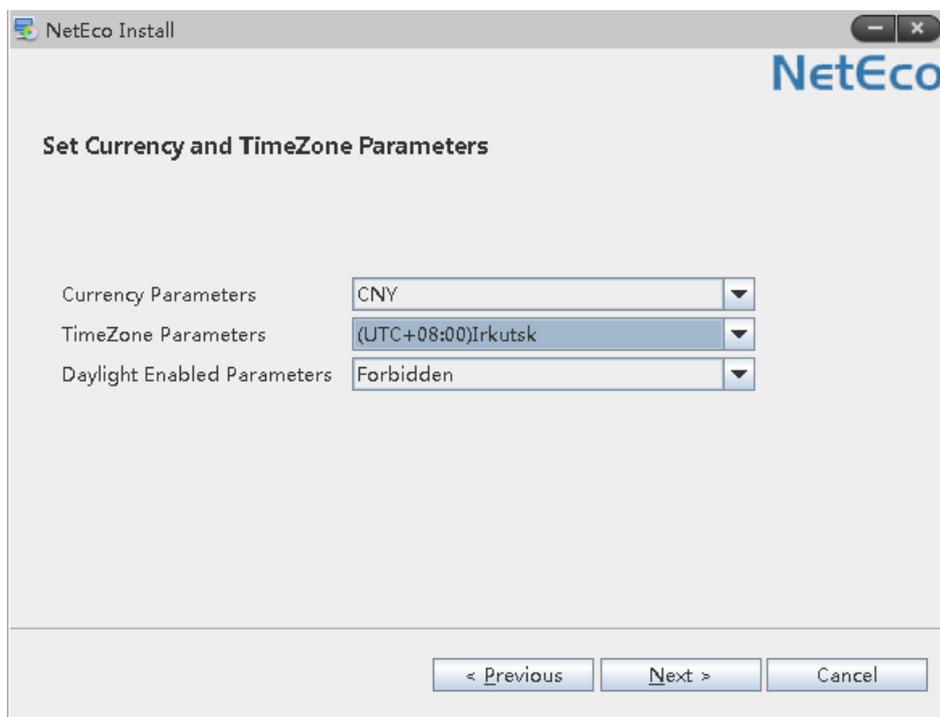
If the specified installation directory does not exist, the following information is displayed.

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

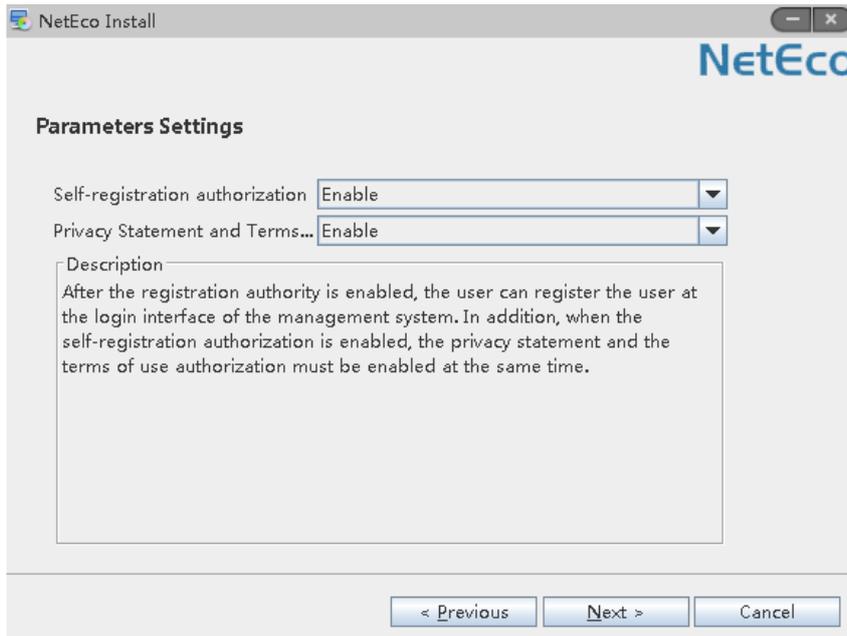
Figure 3-4 Set Currency and TimeZone Parameters



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

The **Parameters Settings** window is displayed.

Figure 3-5 Parameters Settings



Step 7 Select whether to enable the **Self-registration account** and **User authorization**, and click **Next**.

Table 3-2 lists the parameter details.

Table 3-2 Installation parameter details

Parameter	Description
Self-registration authorization	<p>Two options are available:</p> <ul style="list-style-type: none"> ● Enable: After the self-registration account is enabled, users can register on the login screen of the management system. User authorization must be enabled when the self-registration account is enabled. ● Disable: After self-registration account is disabled, the Register button is no longer displayed on the login page of the management system. If you need to enable the self-registration account function, enable self-registration authorization according to 4.1.8.4.9 Setting Self-Registration Account.
User authorization	<p>Two options are available:</p> <ul style="list-style-type: none"> ● Enable ● Disable <p>After user authorization is enabled, the Privacy Policy and Terms of Use will be displayed upon the user's first login. The user needs to read and agree to them before the user continues accessing the management system.</p>

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

Step 8 Select **NetEco 1000S** for installation and click **Next**.

The **Confirm Installation** window is displayed.

Step 9 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 10 Click **Finish**.

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

----End

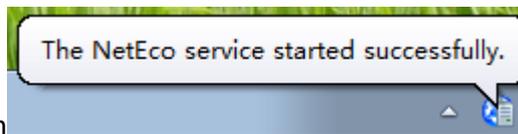
3.1.3 Starting NetEco 1000S Services

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.

3.1.4 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 [3.1.3 Starting NetEco 1000S Services](#).

- You have obtained the user Account/Email and password for logging in to the NetEco 1000S.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

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 **IP/domain name** in the address bar, and press **Enter**.

A page similar to [Figure 3-6](#) or [Figure 3-7](#) that warns you of the risks will be displayed when you try to access the NetEco 1000S login page.

Figure 3-6 Website Security Certificate window (Internet Explorer)

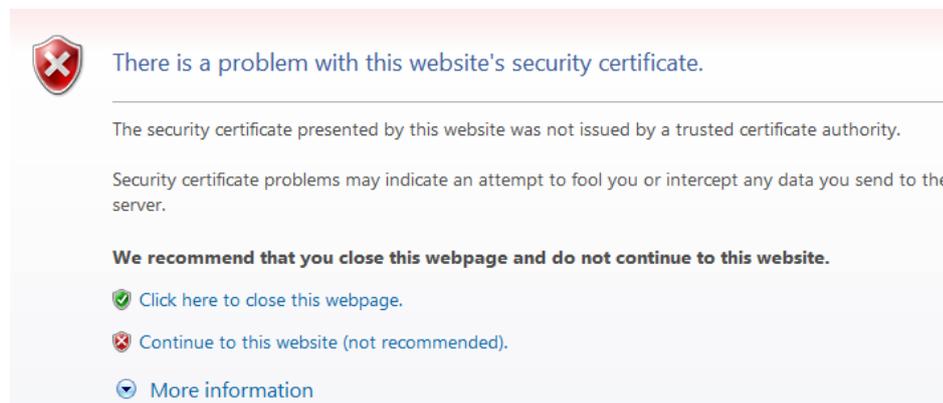
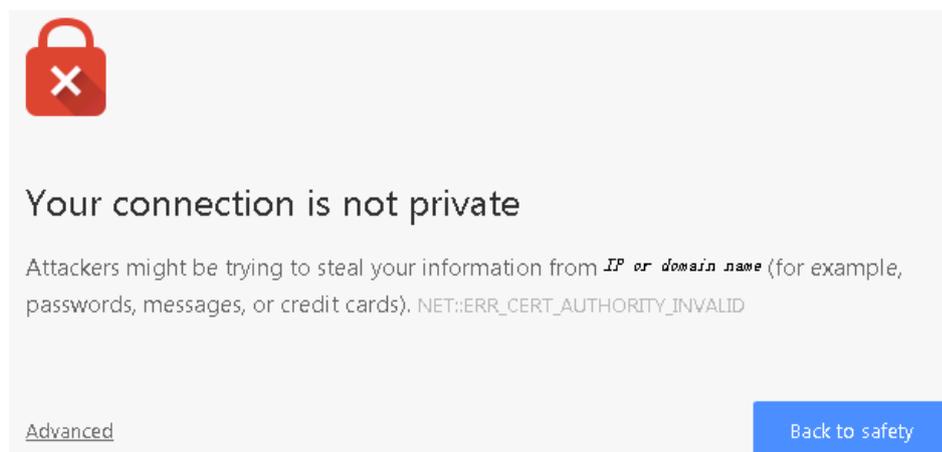


Figure 3-7 Website Security Certificate window (Chrome 50)



- When using the Internet Explorer, click **Continue to this website (not recommended)** in **Figure 3-6**.
- When using the Chrome, choose **Advanced > Proceed to IP or domain name (unsafe)** in **Figure 3-7**.

The **Login** window is displayed, as shown in **Figure 3-8**.

Figure 3-8 Login



Step 3 On the **Login** page, select a language to be used by the NetEco 1000S from the drop-down list box.

Step 4 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 using the new password.

NOTICE

- To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.
- 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.

----End

3.1.5 Logging Out of the NetEco 1000S Client

Procedure

Click **Logout** in the user name drop-down list from the main menu to log out. The **Login** page is displayed.

3.1.6 Logging Out of the NetEco 1000S Services

Prerequisites

You have logged out of the NetEco 1000S client. For detailed operations, see [3.1.5 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

3.1.7 Remove the NetEco 1000S Software

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

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

3.2 NetEco 1000S App Installation and Commissioning

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

3.2.1 NetEco 1000S App Networking

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

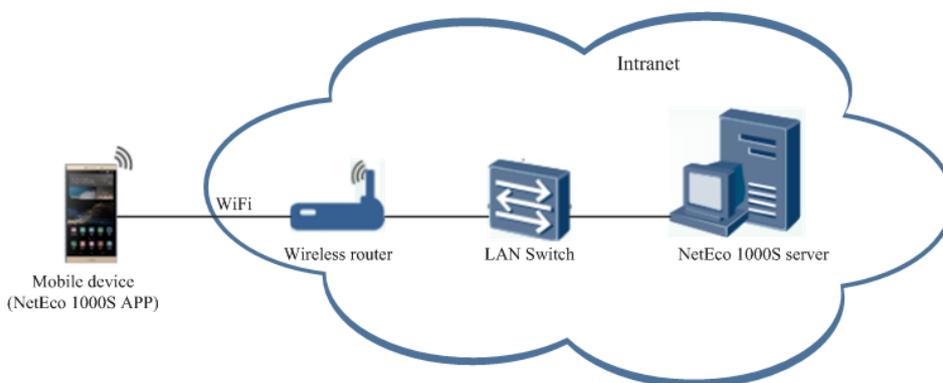
The mobile device supports the following two typical networking schemes when the NetEco 1000S app is used on the mobile device:

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 3-9** shows the networking diagram.

Figure 3-9 Mobile device connecting to the internal network of the NetEco 1000S directly

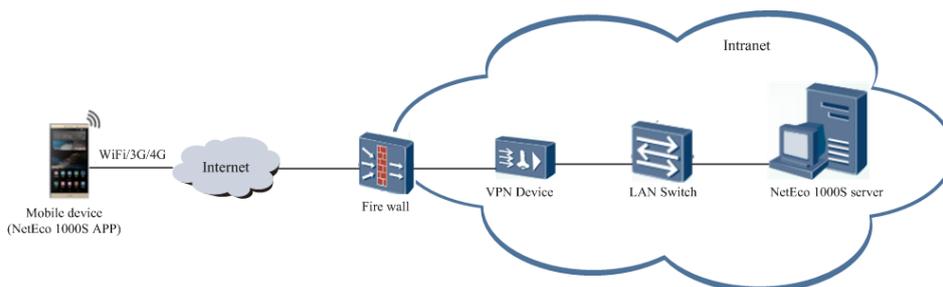


NOTICE

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 3-10** shows the networking diagram.

Figure 3-10 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.

3.2.2 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 3-3](#).

Table 3-3 Check items

Check Item	Description
Operating environment	<p>When the NetEco 1000S app runs on a mobile device, the mobile device must meet the following requirements:</p> <ul style="list-style-type: none"> • The mobile device must run the following OSs: <ul style="list-style-type: none"> - Mobile phone or Pad running the OS later than Android 5.0 - Mobile phone or iPad running the OS later than iOS 6.0 • The mobile device is connected to the Internet properly. The rate is 500 kbit/s and higher. • There are sufficient space and power on the mobile device so that new apps can be installed.
Software package	<p>The NetEco 1000S app software package has been obtained. If it is not obtained, download it using the following methods:</p> <ul style="list-style-type: none"> • Mobile device running Android: Search for neteco on the Google Play or Huawei AppGallery. • Mobile device running IOS: Search for neteco on the APP Store.

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.

3.2.3 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.

NOTE

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

3.2.4 Logging In to the NetEco 1000S App

Before using the NetEco 1000S app, you must log in to it.

Prerequisites

- You have added the identification number of the mobile terminal in the NetEco 1000S system. For details, see [3.2.3 Security Configuration for NetEco 1000S App](#).
- You have installed the NetEco 1000S app software on the mobile terminal. For details, see [3.2.2 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.

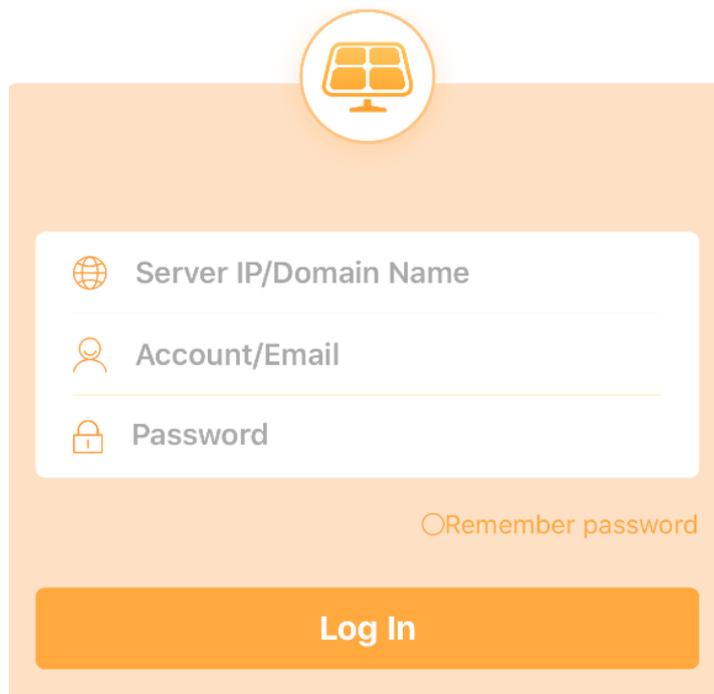
Context

The NetEco 1000S app can be installed on mobile terminals running IOS 6.0, Android 5.0, and later versions. The NetEco 1000S app supports the TLSv2 communication protocol.

Procedure

- Step 1** Tap the NetEco 1000S app icon on the desktop of the mobile terminal to open the login screen, as shown in [Figure 3-11](#).

Figure 3-11 Login screen



- Step 2 Optional:** Specify the IP address or domain name of the NetEco 1000S server if this is the first time that you log in to the NetEco 1000S app.

- Step 3** Enter the user's **Account/Email** and password.

NOTE

If you select **Remember password**, you can log in to the home page of the app next time simply by tapping **Login**.

Step 4 Tap Login.

NOTICE

If you are redirected to the **User Authorization** page, you need to select **I have read and agree to the Privacy Policy and Terms of Use** before tapping **OK** to proceed to the next step. To decide whether to enable the User authorization, see [3.1.2 Installing the NetEco 1000S Software](#) for details.

After the login is successful, the home page of the NetEco 1000S app is displayed.

----End

3.3 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 3-4](#) lists the user names and initial passwords required during the installation and operation of the NetEco 1000S system, and their creation time.

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

Table 3-4 Planning of user names and passwords

System or Device	User Name	Initial User Password	Description	How to Change the Password
MySQL	adminis trator	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 4.3.1.1.2 Changing

System or Device	User Name	Initial User Password	Description	How to Change the Password
	dbuser	NetEco_123	User used for NetEco 1000S system access the MySQL database.	the Passwords of MySQL Users.
NetEco 1000S	admin	Change me123	User who operates and maintains the NetEco 1000S system. You can manage the NetEco 1000S users by creating users. NOTE 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 4.1.8.1.6 Modifying the Password of the Current User.
	emscomm	/EzFp+2%r6@lxSCv	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 4.1.4.9 Changing the Authentication Passwords of the SmartLogger and NetEco 1000S.
	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 4.1.9.13 How Do I Change the Password of the ftpuser user?

System or Device	User Name	Initial User Password	Description	How to Change the Password
	plantcontroller	Modifyme123	User used for the Plant Controller devices to transfer files to the NetEco 1000S.	<p>You are advised to change the password after you install the NetEco 1000S for the first time, and change the password every three months.</p> <p>For details, see 4.1.9.17 How Do I Change the Password of the plantcontroller user?.</p>

3.4 Communication Matrix

For details, see *iManager NetEco 1000S V100R003C00 Communication Matrix.xls*.

4 Operation and Maintenance

[4.1 NetEco 1000S Web Client Operation](#)

[4.2 NetEco 1000S App Operation](#)

[4.3 NetEco 1000S Maintenance](#)

4.1 NetEco 1000S Web Client Operation

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.

CAUTION

Delivering a reset, shutdown, or upgrade command to the solar inverters or pid device may cause power grid connection failure, which affects the energy yield.

Only professionals are allowed to set the grid parameters, protection parameters, feature parameters, and power adjustment parameters of the solar inverters or pid device. If the grid parameters, protection parameters, and feature parameters are incorrectly set, the solar inverters or pid device may not connect to the power grid. If the power adjustment parameters are incorrectly set, the solar inverters or pid device may not connect to the power grid as required. In these cases, the energy yield will be affected.

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 [4.1.1.2 Logging Out of the NetEco 1000S](#).

4.1.1 Getting Started

4.1.1.1 Logging In to the NetEco 1000S

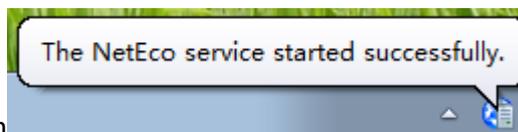
4.1.1.1.1 Starting NetEco 1000S Services

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.

4.1.1.1.2 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 obtained the user Account/Email and password for logging in to the NetEco 1000S.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

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 **IP/domain name** in the address bar, and press **Enter**.

A page similar to **Figure 4-1** or **Figure 4-2** that warns you of the risks will be displayed when you try to access the NetEco 1000S login page.

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

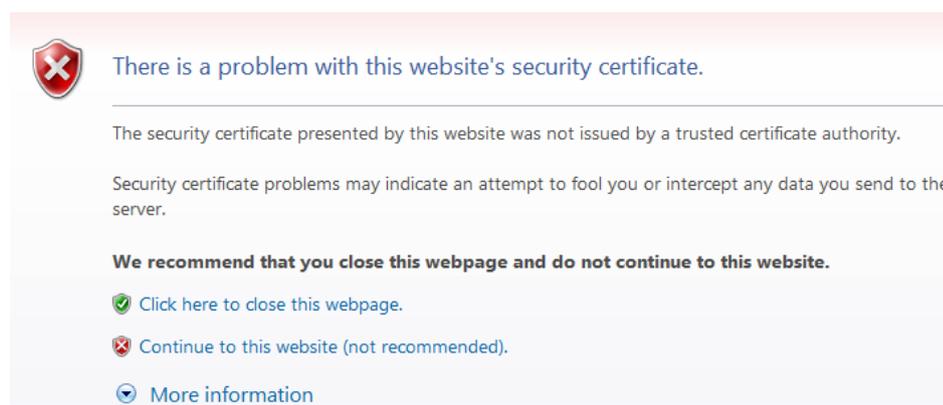
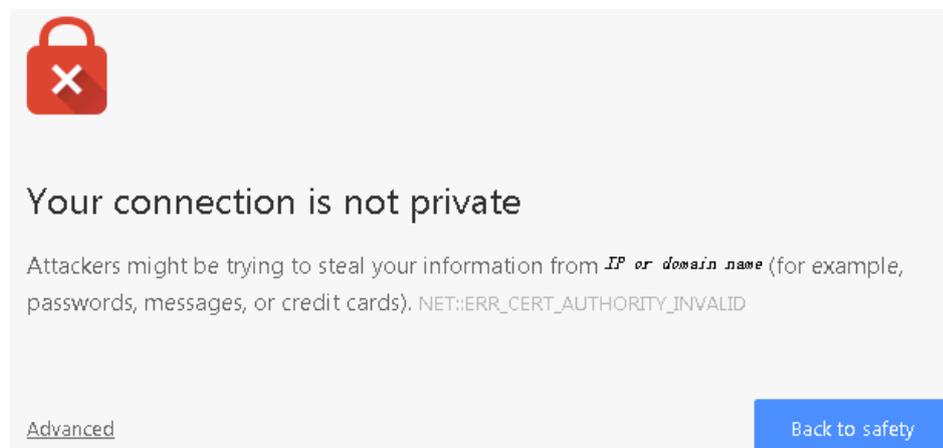


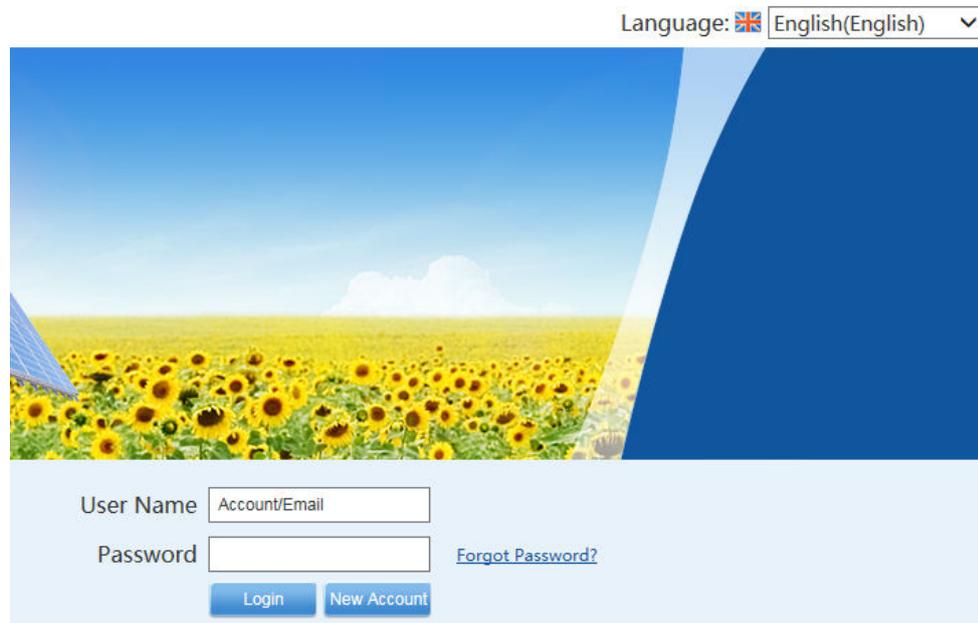
Figure 4-2 Website Security Certificate window (Chrome 50)



- 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



Language:  English(English) ▾

User Name

Password [Forgot Password?](#)

Step 3 On the **Login** page, select a language to be used by the NetEco 1000S from the drop-down list box.

Step 4 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 using the new password.

NOTICE

- To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.
- 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.

----End

4.1.1.2 Logging Out of the NetEco 1000S

4.1.1.2.1 Logging Out of the NetEco 1000S Client

Procedure

Click **Logout** in the user name drop-down list from the main menu to log out. The **Login** page is displayed.

4.1.1.2.2 Logging Out of the NetEco 1000S Services

Prerequisites

You have logged out of the NetEco 1000S client. For detailed operations, see [4.1.1.2.1 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

4.1.1.3 Getting to Know the NetEco 1000S Home Page

Figure 4-4 shows the home page of the NetEco 1000S client after the login. Table 4-1 describes items on the home page.

Figure 4-4 NetEco 1000S homepage

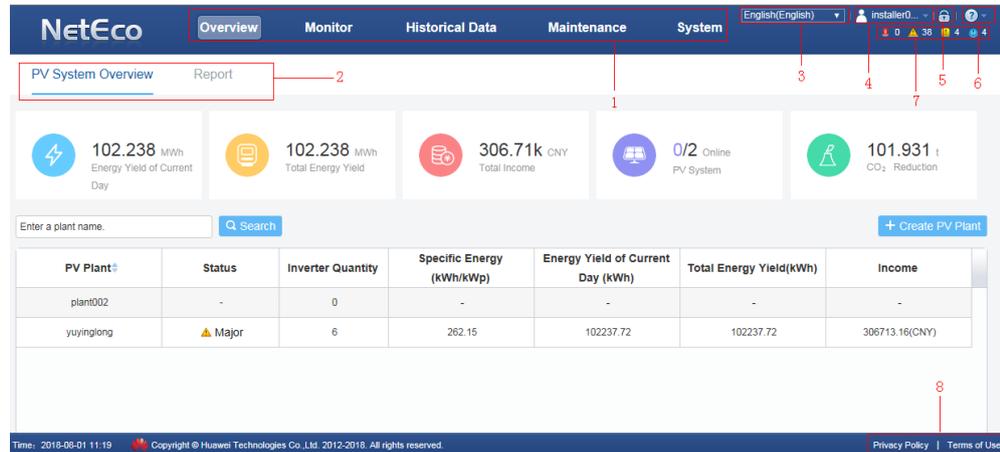


Table 4-1 NetEco 1000S homepage

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	English(English)	You can click this icon to select a language to be used by the NetEco 1000S client.
4	Current logged-in user	<p>Displays the name of the current logged-in user.</p> <ul style="list-style-type: none"> Click Basic Settings in the user name drop-down list and change the user name and description on the Basic Settings tab page. The installer and customer can modify the upper-level administrator account. Click Plant List in the user name drop-down list and choose whether to display PV plant information on the Plant List tab page. Click Currency unit in the user name drop-down list and set the currency for the PV system and the exchange rate for each PV plant on the Currency unit tab page Click Logout in the user name drop-down list to log out of the NetEco 1000S.
5	Password changing icon	You can click this icon to change the current password.

No.	Name	Description
6	Help icon	<ul style="list-style-type: none"> You can click Help under this icon to open the online help. <p>NOTE The customer cannot access the online help.</p> <ul style="list-style-type: none"> You can click About under this icon to check the version information.
7	Alarm board icon	<p>Displays the number of the current alarms. Alarms of different alarm severities are marked in different colors.</p> <p>You can click this icon to enter the Alarm window. Table 4-2 lists the icon meaning.</p> <p>NOTE The customer cannot access the alarm board information.</p>
8	User Authorization icon	<p>You can click this icon to open the User Authorization page to view the Privacy Policy and Terms of Use.</p> <p>NOTE If the User authorization is disabled during the installation of the NetEco 1000S, this icon will not be displayed.</p>

Table 4-2 Alarm status images

Image	Status
	Critical
	Minor
	Major
	Warning

4.1.2 Overview Management

4.1.2.1 Obtaining an Overview of the PV System

You can browse the PV system overview to have the general knowledge of all PV plants on the NetEco 1000S

Prerequisites

You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

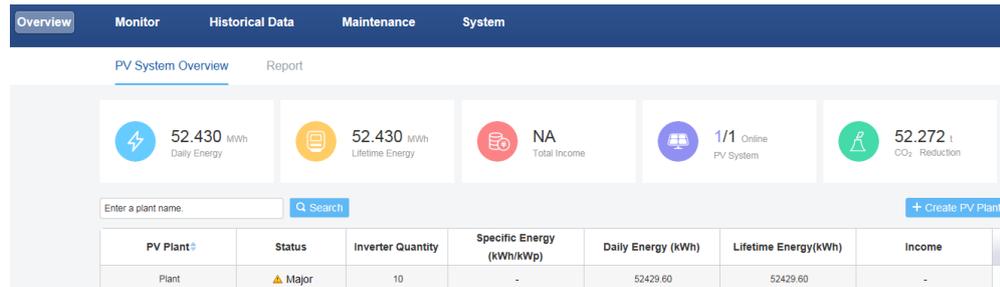
Procedure

Step 1 Choose **Overview** from the main menu, as shown in **Figure 4-5**.

NOTE

If you can access only one PV plant, the **Overview** page displays the **Overview** tab page of the PV plant by default. You need to click **PV System Overview** > to view the overview of the PV system.

Figure 4-5 overview



Step 2 Perform the following operations on the **Overview** page.

If You Need To...	Then...
View PV system KPIs.	View the Daily Energy, Lifetime Energy, Total Income, Number of Online PV Plant in the PV System and CO₂ Reduction of the PV system in the upper part of the PV System Overview tab page. NOTE If Set the exchange rate is displayed in the Total Income pane, set the exchange rates for the PV plants by referring to 4.1.3.3 Setting the PV System Currency .
View the PV plant list.	View the PV plant list in the lower part of the PV System Overview tab page. NOTE Click any position of the target line on the PV plant list to go to the Overview tab page of the target PV plant.

If You Need To...	Then...
<p>Create a new PV plant.</p> <p>NOTE This operation requires that the current user is the installer or customer.</p>	<ol style="list-style-type: none"> 1. Click Create PV Plant. 2. Set plant parameters. <p>NOTE</p> <ul style="list-style-type: none"> - The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations. - To set Device, you need to click , and then enter the device SN and the total string capacity of the directly connected inverter. - The size of the photo in PV Plant Image must be less than 5 MB and in .jpg, .png, or .gif format. Otherwise, the upload will fail. 3. Click Save.
<p>Set the PV system currency.</p>	<ol style="list-style-type: none"> 1. Click the icon or total income value in the Total Income pane. The Currency unit tab page is displayed. 2. Set the currency for the PV system and the exchange rates for the PV plants, and click Save.

----End

4.1.2.2 Exporting Report

You can create report export rules on the NetEco 1000S to export a customized historical data report.

Prerequisites

You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

Context

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.

Procedure

Step 1 Choose **Overview > Report**.

Figure 4-6 Report tab page

Report name	Type of data	Start Time	End Time	Progress State of Task	Operation
fadefadfas	Detailed data	2018-05-21	2018-05-21		  
fdafafaf	Detailed data	2018-05-21	2018-05-21		  

Step 2 Click **Create Report** on the **Report** tab page.

Step 3 Set parameters and click **OK**.

Step 4 Click  in the **Operation** column to execute the report export rules to export the corresponding report.

When the execution progress is 100%, you can choose to open or save the exported report at the bottom of the browser.

----End

Follow-up Procedure

- Click  in the **Operation** column to edit the report export rules to meet the latest management requirements.
- Click  in the **Operation** column to delete the redundant report export rules to ensure that the server has sufficient memory and runs properly.

4.1.2.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

Procedure

Step 1 Choose **Overview > PV System Overview**.

NOTE

If you can only access one PV plant, the **Overview** page displays the **Overview** tab page of the PV plant by default.

Step 2 Click any position of the target line on the PV plant list. The **Overview** tab page of the target PV plant is displayed.

Step 3 On the **Overview** tab page of the PV plant, you can view the overview information about the plant.

If You Need To...	Then...
View all indicators of the PV plant.	View the indicators of the PV plant on the Overview tab page, such as Daily Energy, Lifetime Energy, Current Power, Specific Energy, Income, and CO₂ Reduction.
View the device energy flow diagram.	View the details of devices in the PV plant in the left part of the Overview page. <ul style="list-style-type: none"> • Click  to view the inverter details and inverter list. • If optimizers are connected to the inverter, click  to view the optimizer list. • If a battery is connected to the inverter, click  to view the battery details. • If a power meter is connected to the inverter, click  to view the meter details.
View the PV plant information.	View the basic information about the PV plant on the right of the Overview page.
View the current-day power curve chart of the PV plant.	View the power curves of the PV plant in the lower left part of the Overview page.
View the bar chart of PV plant energy yield comparison.	View the historical data about the energy yields and incomes of the PV plant in the lower right part of the Overview page.

----End

4.1.2.4 Querying Index Values of Devices

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

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer, guest user who has been assigned the historical data query permissions, or customer.

Procedure

Step 1 Choose **Overview > PV System Overview**.

 **NOTE**

If you can only access one PV plant, the **Overview** page displays the **Overview** tab page of the PV plant by default.

Step 2 Click any position of the target line on the PV plant list. The **Overview** tab page of the target PV plant is displayed.

Step 3 Choose the **Analysis** tab page.

Step 4 Select devices and indexes, set the query time, and click **Query**.

Step 5 The line chart of indexes for each inverter is displayed. You can also view the index details of each inverter in the **Indicator details** area.

 **NOTE**

After clicking **Query**, you need to place the cursor on the line chart to view the index details of each device in the **Indicator details** area on the right.

----End

4.1.2.5 Configuring PV Plant Information

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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or customer.

Procedure

Step 1 Choose **Overview > PV System Overview**.

 **NOTE**

If you can only access one PV plant, the **Overview** page displays the **Overview** tab page of the PV plant by default.

Step 2 Click any position of the target line on the PV plant list. The **Overview** tab page of the target PV plant is displayed.

Step 3 Choose the **Settings** tab.

Step 4 Modify PV plant information on the corresponding tab page. See [Table 4-3](#).

Table 4-3 Modifying PV plant information under the main menu Overview

If You Need To...		Then...
Modify the plant name, country, city, postal code, time zone, address, or CO ₂ emission reduction coefficient.		<ol style="list-style-type: none"> 1. Choose the Basic Information tab. 2. Click Refresh to refresh the parameter information. 3. Modify related information and click Save. <p>NOTE You can click Export to export the PV plant personal data.</p>
Modify the plant image.		<ol style="list-style-type: none"> 1. Choose the Image tab. 2. Click Upload.
Modify data collection time.		<ol style="list-style-type: none"> 1. Choose the Data collection tab. 2. Click Refresh to refresh the parameter information. 3. Modify related information and click Save.
Income setting	Modify the electricity price or currency.	<ol style="list-style-type: none"> 1. Choose the Income tab. 2. Modify Electricity price or Currency and click Save. <p>NOTE</p> <ul style="list-style-type: none"> • If you want to update the income within historical time segments (current day also included), change the electricity price, click Update Income, and select a historical time segment. • If you need the income to be calculated based on the new electricity price from current day on, click Save.
	Set the reference values.	<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"> 1. Choose the Income tab. 2. Click Auto Calculate or manually enter Total energy yield reference value and Electricity price. 3. Click Save.
Permission setting NOTE Only the plant creator, or plant owner has permission to share the plant or change the plant owner.	Share the plant.	<ol style="list-style-type: none"> 1. Choose the Permissions tab. 2. Click Share Power Station. 3. Enter the email address of the target user in the Email address text box and click Confirm.
	Change the plant owner.	<ol style="list-style-type: none"> 1. Choose the Permissions tab. 2. Click Modify owner. 3. Enter the email address of the target user in the text box and click Confirm.

If You Need To...		Then...
	Delete the plant.	<ol style="list-style-type: none"> 1. Choose the Permissions tab. 2. Click Delete PV plant. 3. Click Yes in the displayed Warning dialog box.
Plant device list management	Export the device list.	<ol style="list-style-type: none"> 1. Choose the Device tab. 2. Optional: Set Device name, Version, SN or Device type, and click Query. Target devices meeting the preset condition are filtered out. 3. Click Export to export the target device list queried.
	Change a device name.	<ol style="list-style-type: none"> 1. Change Device Name in the exported .xls file, and save the file. 2. Click Import Names in the Device tab. The Import Names dialog box is displayed. NOTICE Only .xls files can be imported. The file size must be less than 2 MB. The file must contain the Device Name and ESN columns, and the columns must not be empty. 3. Click Browse, and select the .xls file saved in Step 4.1. NOTICE During the Execution, the modification task will be stopped if you close the Import Names dialog box. 4. Click Execution. <ul style="list-style-type: none"> - 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. 5. Click Close.
	Replace a device	<ol style="list-style-type: none"> 1. Choose the Device tab. 2. Click Replace Device. The Replace Device dialog box is displayed. 3. 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. 4. Click OK, and complete the device replacement as prompted.

If You Need To...		Then...
	Add a device	<ol style="list-style-type: none"> 1. Choose the Device tab. 2. Click Add Device. 3. Specify the device SN, and click OK. The device automatically connects to the plant.
	Delete devices	<ol style="list-style-type: none"> 1. Choose the Device tab. 2. Select the target devices and click Delete Device. 3. Click Yes in the Warning dialog box. The Deletion succeeded dialog box is displayed. 4. Click OK.

----End

4.1.3 Managing the PV Plants

4.1.3.1 Creating a PV Plant

Create a PV plant in the NetEco 1000S before connecting the devices.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.

Context

NOTE

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.

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, as shown in [Figure 4-7](#).

Figure 4-7 create PV plant

The screenshot shows a web form titled "Create PV Plant". It contains several input fields and a table. The fields include: "PV Plant Name" (text input), "Country" (dropdown), "City" (text input), "Time Zone" (dropdown, set to "(UTC+08:00)Perth"), "Enable daylight saving time" (checkbox, checked), "Address" (text input), "Currency" (dropdown, set to "CNY"), "Zip Code" (text input), "Electricity Price" (text input, with a range "0.0000-99.9999" next to it), and "PV Plant Image" (text input with an "Upload" button). Below these fields is an information icon and the text "Ensure that the case-sensitive SN is correct." There is a "Device:" label with a plus icon and a table with four columns: "SN", "Device Type", "Total String Capacity (Wp)", and "Operation". At the bottom of the form are "Save" and "Cancel" buttons.

Step 3 Set plant parameters.

NOTE

- To set **Device**, you need to click , and then enter the device SN and the total string capacity of the directly connected inverter.
After the PV plant is created, the device automatically connects to the plant.
- The size of the photo in **PV Plant Image** must be less than 5 MB and in **.jpg**, **.png**, or **.gif** format. Otherwise, the upload will fail.

Step 4 Click **Save**.

----End

4.1.3.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.

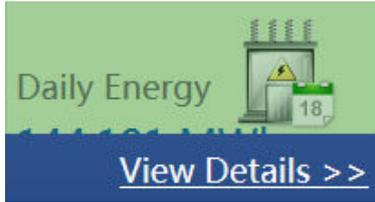
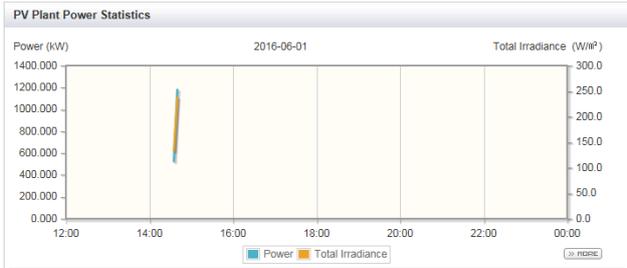
Procedure

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

Step 2 In the navigation pane on the left, choose **PV System** or a user-defined PV plant.

Step 3 In the displayed operation area, choose the **Details** tab.

Step 4 The overview of the PV plant is displayed.

If You Need To...	Then...
<p>View details about Daily Energy, Lifetime Energy Yield, Performance Ratio, CO₂ Reduction, Current Power, Specific Energy, Income, and Total Irradiance.</p> <p>NOTE You can view details about Income only on the Details page of the PV system. If Set the exchange rate is displayed in the Income pane, set the exchange rates for the PV plants by referring to 4.1.3.3 Setting the PV System Currency.</p>	<p>The way of viewing each running information about a plant is the same. Viewing information about Daily Energy is used as an example:</p> <ol style="list-style-type: none"> 1. Move the mouse pointer to the pane displaying the information about Daily Energy. The View Details link is displayed. <p>Figure 4-8 View Details</p>  <ol style="list-style-type: none"> 2. Click View Details. Information about Daily Energy for each device is displayed in the Details window.
<p>View the information about inverters accessed in PV plant.</p> <p>NOTE If the value of Total string capacity in inverter information is displayed in red, Total string capacity is not configured for the inverter. Configure it by following the instructions provided in 4.1.4.4 Modifying the Information About a Device.</p>	<p>On the Details tab page of the PV plant, you can view the information about all the inverters connected to the PV plant.</p>
<p>View the PV plant power and total irradiance curve.</p>	<p>View the PV plant power and total irradiance curve in the PV Plant Power Statistics area, as shown in Figure 4-9.</p> <p>Figure 4-9 PV plant power and total irradiance curve</p> 

If You Need To...	Then...
Switch to the Performance Data page.	Click MORE on the right of Details .
Switch the mode for displaying power statistics.	Click Table or Graph in the lower area of the PV Plant Power Statistics column. <ul style="list-style-type: none"> ●   : The power statistics are displayed in a table. ●   : The power statistics are displayed in a line chart.

----End

4.1.3.3 Setting the PV System Currency

You can set the PV system currency as required.

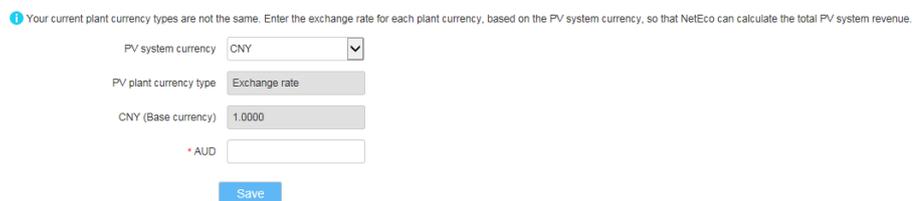
Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.

Procedure

- Step 1** Choose **Monitor** from the main menu.
- Step 2** Choose **PV System** in the navigation tree on the left.
- Step 3** Click the **Details** tab in the operation display area.
 - The link **Set the exchange rate** is displayed in the **Income** pane.
 - a. Click **Set the exchange rate**.
The **Currency unit** tab page is displayed, as shown in [Figure 4-10](#).

Figure 4-10 Currency unit



- b. Set the currency for the PV system and the exchange rates for the PV plants as required, and click **Save**.
- The **Income** pane displays the income of the PV system.
 - a. Place the cursor over the **Income** pane, and click the **View Details** link.
The **Details** dialog box is displayed.

- b. Click **PV System Currency Settings** in the upper right corner. The **Currency unit** tab page is displayed, as shown in **Figure 4-11**.

Figure 4-11 Currency unit

i Your current plant currency types are not the same. Enter the exchange rate for each plant currency, based on the PV system currency, so that NetEco can calculate the total PV system revenue.

PV system currency: CNY

PV plant currency type: Exchange rate

CNY (Base currency): 1.0000

* USD: 1.0000

Save

- c. Set the currency for the PV system and the exchange rates for the PV plants as required, and click **Save**.

----End

4.1.3.4 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. For details, see **4.1.1.1.2 Logging In to the NetEco 1000S Client**.
- You have logged in as the installer or guest user.

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 4-12**.

Figure 4-12 Overview of Device Information

Status	Device Name	Device Status	Power Status	Device Type	Version No.	SN	PV Plant	Device Address	Connection Mode	Input Power(kW)	Active Power(kW)	Reactive Power(kVar)	Es Curr
▲ Major	SUN2000_276	On-grid	Active + Reactive	SUN2000	V200R001C00...	15uyun4gd...	Test-xy-4GDongle-2	Device address 10...	Connection over TC...	65.537	65.537	65.537	655.3
▲ Major	SUN2000_277	On-grid	Active + Reactive	SUN2000	V200R001C00...	15uyun4gd...	Test-xy-4GDongle-2	Device address 10...	Connection over TC...	65.537	65.537	65.537	655.3
▲ Major	SUN2000_278	On-grid	Active + Reactive	SUN2000	V200R001C00...	15uyun4gd...	Test-xy-4GDongle-2	Device address 10...	Connection over TC...	65.537	65.537	65.537	655.3
▲ Major	SUN2000_279	On-grid	Active + Reactive	SUN2000	V200R001C00...	15uyun4gd...	Test-xy-4GDongle-2	Device address 10...	Connection over TC...	65.537	65.537	65.537	655.3

----End

4.1.3.5 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.

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 4-13](#).

Figure 4-13 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	String 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.

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

----End

4.1.3.6 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.

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 PV plant information.

If You Need To...		Then...	The User Should Be...
Modify the plant description.	Modify the plant name, description, country, city, address, or postal code.	Modify related information and click Save .	installer or guest user
	Report Settings	<p>You can configure the basic information about the PV plant in the exported smart I-V diagnosis report as required.</p> <ol style="list-style-type: none"> 1. Click Report Settings. The Report Settings dialog box is displayed. 2. Configure the basic information about the PV plant as required. 3. Click OK. After the setting succeeds, the modified basic information is displayed in the consequent exported reports. 	installer
Parameter settings	Modify the ratio threshold, electricity price, currency, or CO ₂ emission reduction coefficient.	<p>Modify related information and click Save.</p> <p>NOTE</p> <ul style="list-style-type: none"> • If you want to update the income within historical time segments (current day also included), change the electricity price, click Update Income, and select a historical time segment. • If you need the income to be calculated based on the new electricity price from current day on, click Save in the upper-right corner of the configuration page. 	installer or guest user

If You Need To...		Then...	The User Should Be...
	Set the reference values.	<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"> 1. Click Reference Value Settings. The Reference Value Settings dialog box is displayed. 2. Click Auto Calculate or enter a total energy yield reference value, and specify the electricity price. <p>NOTE</p> <ul style="list-style-type: none"> - The default value is the electricity price set for the PV plant. - The value of this parameter cannot be modified. It is automatically calculated by multiplying Total energy yield reference value and Electricity price. <ol style="list-style-type: none"> 3. Click OK to save the modification. 	installer
	Set the time zone.	<p>Change the time zone for the plant.</p> <ol style="list-style-type: none"> 1. Click Time Zone Settings on the Settings page of the plant. The Time Zone Settings dialog box is displayed. 2. Select the time zone for the plant from the City drop-down list box. 3. Enable or disable the daylight saving time from the Enable daylight saving time drop-down list box. <p>NOTE</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"> 4. Click OK to save the setting. 	
Performance ratio configuration	Modify the line loss or module peak power temperature coefficient.	Modify related information and click Save .	

If You Need To...		Then...	The User Should Be...
	Select an EMI.	Data from EMI selected here is used to calculate the values of Performance Ratio and Availability , as well as the EMI values of PV Plant Overview , PV Plant Analysis , and Data Export . <ol style="list-style-type: none"> 1. Click Select EMI. The Select EMI dialog box is displayed. 2. Select a target EMI. 3. Click OK. 	
	Update the historical performance ratio.	<ol style="list-style-type: none"> 1. Click Update Historical PR. The Update Historical PR dialog box is displayed. 2. Specify Start time and End time. 3. Click OK. Specific Energy, Performance Ratio, and Availability, as well as EMI values of the PV Plant Overview, PV Plant Analysis, and Data Export of the PV plant within the time segments selected are calculated based on the latest parameters. 	
Availability configuration	Modify the PR value range, Minimum irradiance, or Downtime rate threshold.	Modify related information and click Save . NOTE <ul style="list-style-type: none"> • Availability is not calculated for the period when the PR value is outside the configured range. • Availability is not calculated for the period when the downtime rate exceeds the configured threshold. 	
	Update historical availability.	<ol style="list-style-type: none"> 1. Click Update Historical Availability. The Update Historical Availability dialog box is displayed. 2. Set Start time and End time. 3. Click OK. 	
Modify communications parameters.		Modify related information and click Save .	

If You Need To...		Then...	The User Should Be...
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.	installer or guest user
Remotely control devices.	Power on or off inverters	For details, please see 4.1.4.6 Remotely Controlling an Inverter .	installer who has been assigned the device remote control permissions

----End

4.1.3.7 Deleting a PV Plant

This section describes how to delete a PV 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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

4.1.4 Managing Devices

4.1.4.1 Connecting Devices

This section describes how to connect the device to the PV plant in NetEco 1000S, helping manage and monitor devices through the NetEco 1000S.

Context

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

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

4.1.4.1.1 Connecting Devices After Quick Setting for a Residential Inverter

After you use the FusionHome app to perform quick setting, you can log in to the NetEco 1000S and connect the corresponding device to the target PV plant so that you can manage and monitor the device on the NetEco 1000S.

Prerequisites

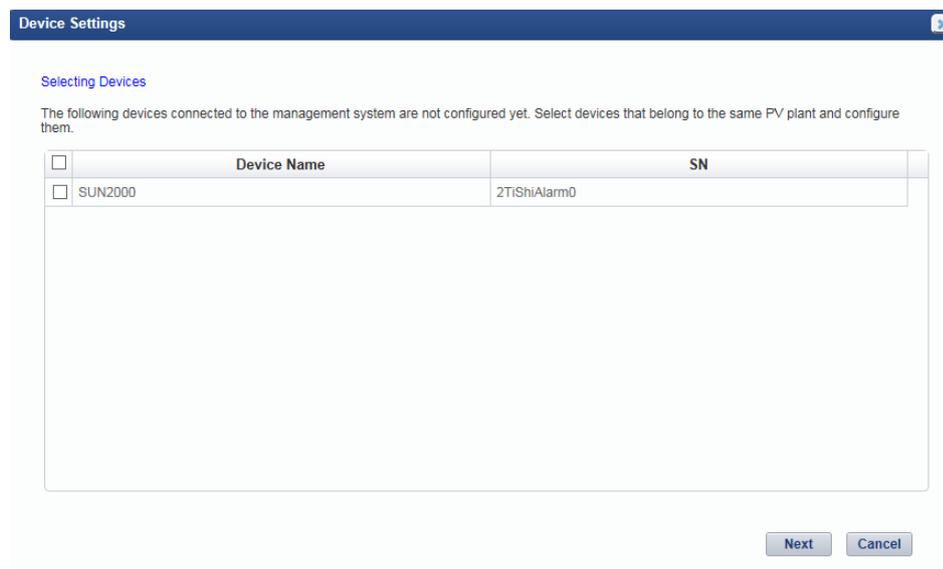
- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- The IP address of the NetEco 1000S has been registered with the device, and the device has been successfully registered with the management system. For details, see the FusionHome app *user manual*.

Procedure

Step 1 Log in to NetEco 1000S.

The **Device Settings > Selecting Devices** page is displayed, as shown in **Figure 4-14**.

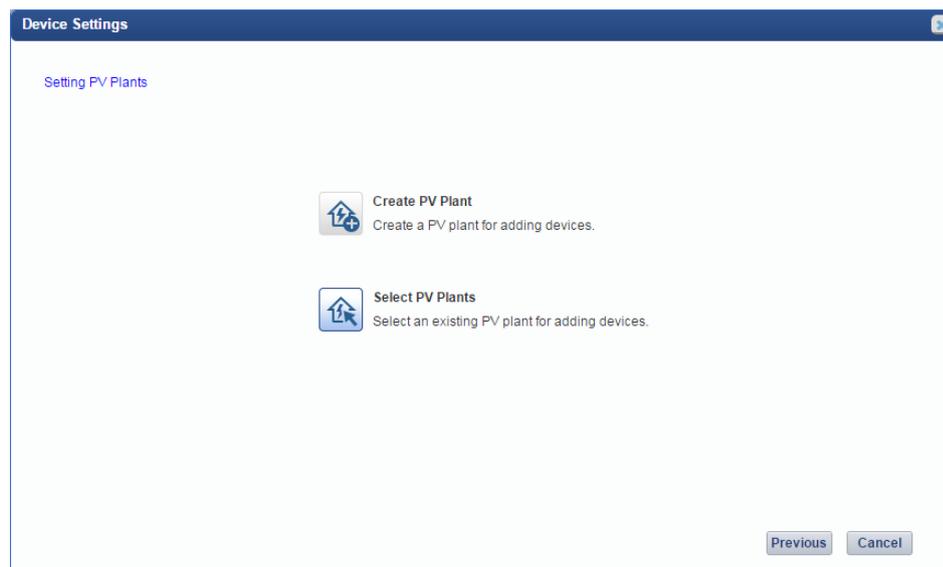
Figure 4-14 Selecting Devices



Step 2 Select the devices as required, and click **Next**.

The **Device Settings > Setting PV Plants** page is displayed, as shown in **Figure 4-15**.

Figure 4-15 Setting PV Plants



Step 3 Set the PV plants.

- Create PV plant.

- a. Click **Create PV Plant**.
The **Device Settings > Create PV Plant** page is displayed, as shown in [Figure 4-16](#).

Figure 4-16 Create PV Plant

The screenshot shows a web form titled "Create PV Plant" within a "Device Settings" window. The form contains the following fields and controls:

- PV plant name:** A text input field with a clear (x) button.
- Country:** A dropdown menu.
- City:** A text input field.
- Time Zone:** A dropdown menu showing "(UTC+08:00)Irkutsk".
- Enable daylight saving time:** An unchecked checkbox.
- Address:** A text input field.
- Currency:** A dropdown menu showing "CNY".
- Zip Code:** A text input field.
- Electricity Price:** A text input field with a value of "0.0000-99.9999".
- PV Plant Image:** A text input field with an "Upload" button to its right.
- PV plant description:** A large text area with scrollbars.

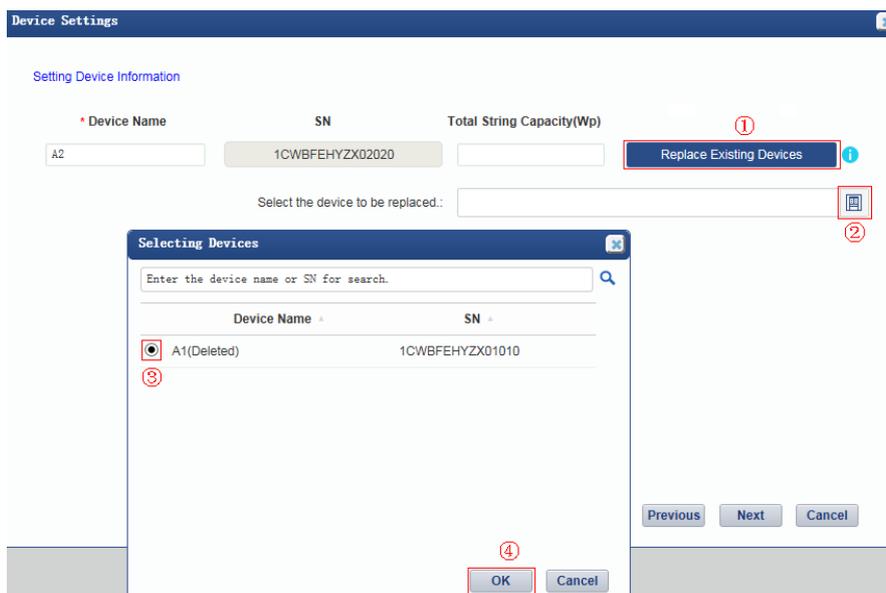
At the bottom right of the form, there are three buttons: "Previous", "Next", and "Cancel".

- b. Set PV plant parameters, and click **Next**.
The **Device Settings > Setting Device Information** page is displayed.
 - c. Set the device information, and click **Next**.
The **Device Settings > Configuration Successful** page is displayed.
 - d. Click **Finish**.
- Select PV plant.
 - a. Click **Select PV Plant**.
The **Device Settings > Selecting Existing PV Plants** page is displayed.
 - b. Select the target plant, and click **Next**.
The **Device Settings > Setting Device Information** page is displayed.
 - c. Set the device information, and click **Next**.
 - i. Set the device information.
 - ii. **Optional:** Replace the existing device by referring to [Figure 4-17](#).

NOTE

The old device has been deleted or is disconnected from the NetEco 1000S.

Figure 4-17 replace device



iii. Click **Next**

The **Device Settings > Configuration Successful** page is displayed.

d. Click **Finish**.

----End

4.1.4.1.2 Connecting Devices Through the SmartLogger

This section describes how to connect the device to the PV plant in NetEco 1000S through the SmartLogger, helping manage and monitor devices through the NetEco 1000S.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- 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 [4.1.4.4 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 [4.1.3.1 Creating a PV Plant](#).

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 **Add Device** button.
- Step 4** Enter the device SN and total string capacity (optional) of the inverter, and click **OK**.

 **NOTE**

The SmartLogger and NetEco 1000S are connected through password authentication. 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.

1. In the **Add Device** tab, click  in the **Operation** column of the SN.
The **Set Device Authentication Password** dialog box is displayed.
2. 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 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 SmartLogger side, and click **OK**.

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 4-18 Device access prompt



- Step 5** Click **Refresh** in **Figure 4-18** or re-select the target PV plant in the navigation tree on the left to view the added SmartLogger and devices connected to it.
- End

4.1.4.1.3 Connecting the Directly Connected Inverter

This section describes how to connect the device to the PV plant in NetEco 1000S, helping manage and monitor devices through the NetEco 1000S.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as the installer.
- The IP address of the NetEco 1000S has been registered with the device, and the device has been successfully registered with the management system. For details, see the device *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 [4.1.3.1 Creating a PV Plant](#).

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 **Add Device** button.

Step 4 Enter the SN and total string capacity (optional) of the inverter, and click **OK**.

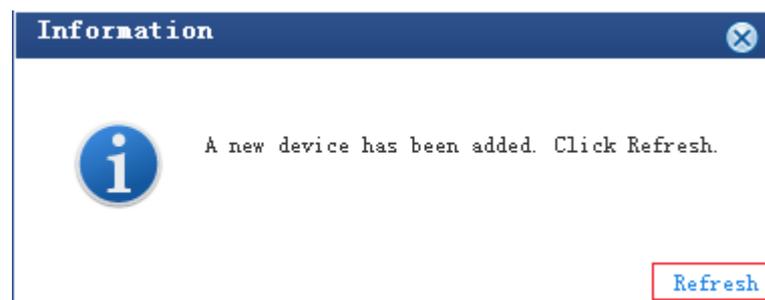
NOTE

The inverter and NetEco 1000S are connected through password authentication. 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.

1. In the **Add Device** tab, click  in the **Operation** column of the SN.
The **Set Device Authentication Password** dialog box is displayed.
2. 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**.

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 4-19 Device access prompt



- Step 5** Click **Refresh** in [Figure 4-19](#) or re-select the target PV plant in the navigation tree on the left to view the added inverter.

----End

4.1.4.1.4 Searching for Devices Based on Serial Port Addresses

This section describes how to search for 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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*.
- You have created the target plant. For detailed operations, see [4.1.3.1 Creating a PV Plant](#).

Context

If one of the following changes occurs on a device that has been added to the NetEco 1000S, you need to search for 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 [4.1.4.1.2 Connecting Devices Through the SmartLogger](#) or [4.1.4.1.3 Connecting 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 4-4](#).

Table 4-4 Parameters for searching for 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 RS485 Com Address .
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.

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.

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.

----End

4.1.4.2 Browsing the Details About a Device

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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 a battery or meter is connected to the residential inverter, you can click the battery or meter icon to view its details.

----End

4.1.4.3 Browsing Alarm Information About a Device

This section describes how to browse alarm information about a device to learn about the current alarms for the device.

Prerequisites

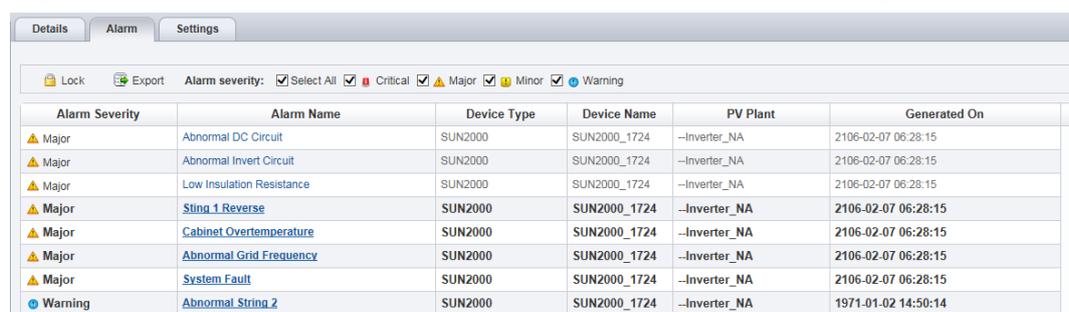
- You have logged in to the NetEco 1000S. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 4-20](#) shows the information about all the current alarms of an inverter.

Figure 4-20 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

4.1.4.4 Modifying the Information About a Device

On the **Monitor** tab page of the NetEco 1000S, you can configure the information about the devices.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

Procedure

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

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

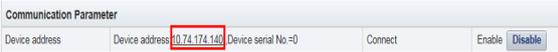
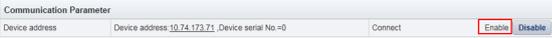
Step 3 Click the **Settings** tab in the operation display area.

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 4-5](#).

Table 4-5 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"> 1. Choose the Device Information tab. 2. Click Refresh in the upper right corner of the page. The latest parameter values will be displayed on the NetEco 1000S for the SmartLogger. 3. Enter the new name and description in the corresponding text boxes. 4. Click Save in the upper right corner of the Settings page.

Device Type	If You Need To...	Then...
	Switch to the SmartLogger web client	<p>1. Choose the Device Information tab.</p> <p>2. Click the Device address link under Communication Parameter, as shown in Figure 4-21.</p> <p>Switch to the web client of the SmartLogger.</p> <p>Figure 4-21 Device Address</p>  <p>NOTE The switch to the web client is successful only when the PC can be used to access the SmartLogger web client directly.</p>
	Enable or disable the SmartLogger	<p>Choose the Device Information tab.</p> <p>The value of Connect indicates the status of the SmartLogger. According to Figure 4-22, the SmartLogger has started.</p> <p>Figure 4-22 SmartLogger connection status</p>  <ul style="list-style-type: none"> To disable the SmartLogger: <ol style="list-style-type: none"> Click Disable. The message "After connection is disabled, NetEco will disconnect and forbid SmartLogger connection" is displayed. Click OK. The SmartLogger is disabled, and the value of Connect changes to the value shown in Figure 4-23. <p>Figure 4-23 SmartLogger connection status</p>  <ul style="list-style-type: none"> To restore the connection between the SmartLogger and NetEco 1000S, click Enable.
	Control an inverter remotely	For details, see Power on or off all inverters in the same plant or SmartLogger in batches in 4.1.4.6 Remotely Controlling an Inverter .

Device Type	If You Need To...	Then...
	Modify the time zone parameters, power control parameters, NetEco communications parameters, or CO ₂ emission reduction coefficient of the SmartLogger	The methods for modifying time zone, active power control, reactive power control, or NetEco communications parameters, and CO ₂ emission reduction coefficient are similar. The following describes how to change the time zone parameter. <ol style="list-style-type: none"> 1. Choose the Time Zone Parameter tab. 2. Set the value of City as required. 3. Click Submit. After Submitted successfully is displayed in the Information column, the specified parameter is delivered to the device side. <p>NOTE Click Synchronize to synchronize the parameter values configured on the SmartLogger to the NetEco 1000S.</p>
Inverter	Synchronize the parameter values of the inverter to the NetEco 1000S	Click Synchronize on the page for the parameter values to be synchronized.
	Change the name and description of an Inverter	<ol style="list-style-type: none"> 1. Choose the Device Information tab. 2. Enter the new name and description in the corresponding text boxes. 3. Click Save in the upper right corner of the Device Information page. After the device name and description are changed, the device name is delivered to the device.
	Change the total string capacity of inverters	<ol style="list-style-type: none"> 1. Choose the Device Information tab. 2. Enter the target value in the Total string capacity text box. NOTE Click Batch Apply if you need to apply the configured value of Total string capacity to multiple inverters. Then select the target devices in the displayed dialog box and click OK. 3. Click Save in the upper right corner of the Device Information page.

Device Type	If You Need To...	Then...
	Set string parameters of an inverter	<ol style="list-style-type: none"> 1. Choose the Device Information tab. 2. Click String Details Setup. The String Details Setup page is displayed. 3. Select the strings to be configured in the String Setup area. 4. Set parameters for the strings in the Panel Setup area. 5. Click OK to save the settings. <p>NOTE If you need to apply the string configurations to multiple inverters, click Batch Apply. Then select the target devices in the displayed dialog box and click OK.</p>
	Search for devices	<p>This button only exists on the configuration tab of the host in the 4G distributed networking. When the host is connected to the PV plant, you can perform the following operations to add slave devices to the target PV plant.</p> <ol style="list-style-type: none"> 1. Choose the Device Information tab. 2. Click Search for Device. 3. Click OK in the displayed dialog box. 4. After a while, click  in the upper left corner to refresh the device navigation area. Slave devices in the 4G distributed networking are successfully added to the PV plant.

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

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

----End

4.1.4.5 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

Procedure

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

4.1.4.6 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, restarting the inverter and starting the arc-fault circuit interrupter (AFCI) self-check.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer who has been assigned the device remote control permissions.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 4-6](#).

Table 4-6 Controlling one inverter

If You Need To...	Then...
Power on the inverter	Click  . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.
Power off the inverter	Click  . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.
Start the AFCI self-check	Click  . NOTE <ul style="list-style-type: none"> If the AFCI controller ID on the inverter side is set to 0, this button is not displayed in the Details window. Only the inverter SUN2000 V2 supports the AFCI self-check function.
Restart the inverter	Click  . NOTE The inverter SUN2000 of some versions supports the restart function.

- **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 4-7](#).

 **NOTE**

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

Table 4-7 Controlling inverters in batches

If You Need To...	Then...
Power on all inverters	Click  Start Inverters in Batches . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.
Power off all inverters	Click  Shut Down Inverters in Batches . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.

4.1.4.7 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. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer who has been assigned the device remote control permissions.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 4-8](#).

Table 4-8 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

4.1.4.8 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer who has been assigned the device remote control permissions.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 4-9](#).

Table 4-9 Controlling the PID device

If You Need To...	Then...
Power on the PID device	Click  . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.
Power off the PID device	Click  . NOTE The NetEco 1000S is of V100R003C00CP1104 or a later version. The system supports the function of disabling the remote switch function. For details see How Do I Disable the Display of the Remote Control Function? in User Manual.

 **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

4.1.4.9 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. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 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.

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

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

4.1.5 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.

4.1.5.1 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

4.1.5.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- You have enabled the Other Device Access menu. For details, see [4.1.5.1 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 4-10](#).

 **NOTE**

Before adding the Plant Controller, ensure that you have created a target PV plant, for detailed operations, see [4.1.3.1 Creating a PV Plant](#).

Table 4-10 Plant Controller parameters

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

- To add the Electricity Meter or Power Meter, set related parameters according to [Table 4-11](#).

 **NOTE**

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

Table 4-11 Electricity Meter or Power Meter parameters

Parameter	Description
Device Type	Set this parameter to ElectricityMeter or PowerMeter .
Device Name	Set this parameter as required. The specified name is displayed in the Other Device Access page.
Plant Controller	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 4-24](#) is displayed after the setting is saved.

Figure 4-24 Device list



Perform the following operations in the [Figure 4-24](#) as required.

If You Need To...	Then...
Change the name, mark, or description of a device. NOTE 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.**

4.1.6 Historical Data Query

4.1.6.1 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. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 a 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 4-25](#).

Figure 4-25 Alarm Log

Alarm Severity	Alarm Name	Device Type	Device Name	PV Plant	Generated On	Cleared On	Clearance Type
Minor	Communication Fault	Smart Logger	SmartLogger_2014	zfb-new.004111111111	2018.05.20 09:39:45	2018.05.20 09:43:05	Automatic clear
Minor	Communication Fault	Smart Logger	SmartLogger_2155	zfb-new.004111111111	2018.05.19 16:47:27	2018.05.19 16:50:22	Automatic clear
Minor	Communication Fault	Smart Logger	SmartLogger_2014	zfb-new.004111111111	2018.05.18 17:53:06	2018.05.18 17:53:43	Automatic clear
Minor	Communication Fault	Smart Logger	SmartLogger_2014	zfb-new.004111111111	2018.05.18 16:48:59	2018.05.18 16:50:32	Automatic clear
Minor	Communication Fault	Smart Logger	SmartLogger_2024	zfb-new.004111111111	2018.05.18 16:46:48	2018.05.18 16:48:13	Automatic clear
Minor	Communication Fault	Smart Logger	SmartLogger_2014	zfb-new.004111111111	2018.05.18 16:46:44	2018.05.18 16:47:49	Automatic clear
Major	High DC Input Voltage	SUN2000	SUN2000_201611222122	zfb-new.004111111111	1971.01.02 14:50:14	2106.02.07 06:28:15	Automatic clear
Warning	Abnormal String 2	SUN2000	SUN2000_201611222122	zfb-new.004111111111	1971.01.02 14:50:14	2018.05.18 23:00:04	NetEco overflow
Major	High DC Input Voltage	SUN2000	SUN2000_2018111111	zfb-new.004111111111	1971.01.02 14:50:14	2106.02.07 06:28:15	Automatic clear
Warning	Abnormal String 2	SUN2000	SUN2000_2018111111	zfb-new.004111111111	1971.01.02 14:50:14	2018.05.18 23:00:04	NetEco overflow

Clearance Type includes Automatic clear, NetEco overflow and NetEco recovery.

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

----End

4.1.6.2 Querying Performance Data

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

4.1.6.2.1 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.

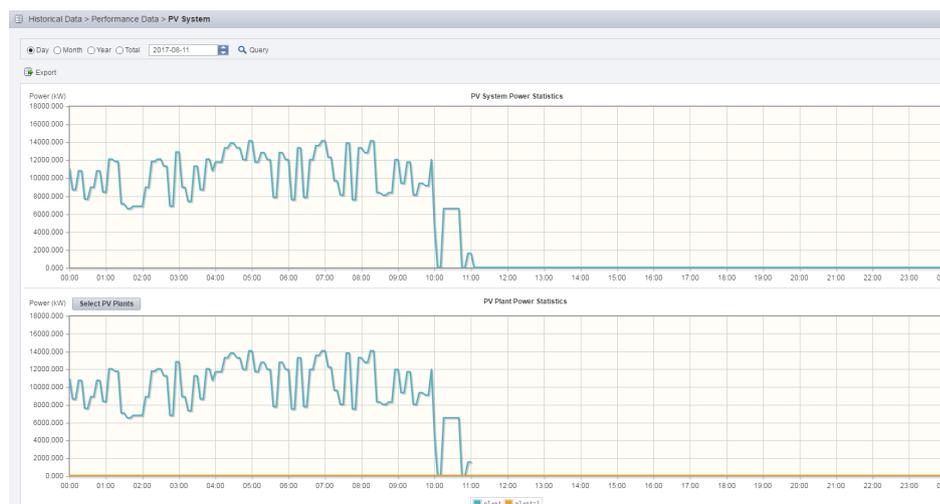
Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 4-26](#) is displayed.

Figure 4-26 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

4.1.6.2.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 4-12 Setting query conditions

Query Conditions	Queried Data
Select Day and set the query date.	<ul style="list-style-type: none"> The PV Plant Power Statistics line chart displays power of the selected PV plant. The Inverter Power Statistics in PV Plant line chart displays power of five inverters in the selected PV plant by default. To view power of a specific inverter, click Select Inverters to select the target inverter.
<ol style="list-style-type: none"> Select Month, Year, or Total, and set the query month or query year separately. Select the query counter Energy yield, Specific Energy, Performance ratio or Meter Measurement. 	<ul style="list-style-type: none"> PV plant power generation statistics and inverter power generation statistics PV plant equivalent power generation duration and inverter equivalent power generation duration PV plant Performance ratio and inverter Performance ratio Generated power in a electric meter of a PV plant and Meter Statistics Performance Ratio

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

4.1.6.2.3 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.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 4-27** shows the inverter performance data.

Figure 4-27 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 (Hz)
2018-01-03 10:35:00	NA	5898.33	0.09	5898.33	65.545	589.833	589.833	0.009	0.09
2018-01-03 10:40:00	NA	5898.33	0.09	5898.33	65.545	589.833	589.833	0.009	0.09

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 performance data page of a device.

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

4.1.6.3 Querying Report Data

You can query the energy yield of the PV plant, energy yield performance ratio of the PV plant, income of the PV plant, plant or inverter availability, and the index values of inverters in the NetEco 1000S system for data analysis.

Context

Report data can be emailed to users. For details about the sending rules, see [4.1.8.3.4 Setting Report Sending Rules](#).

4.1.6.3.1 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 and click **Query**.

Step 5 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

4.1.6.3.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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.

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 and click **Query**.

Step 5 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

4.1.6.3.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 and click **Query**.

Step 5 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

4.1.6.3.4 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer 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 [4.1.4.1 Connecting Devices](#).
- **Total string capacity** has been configured for inverters. For details, see [4.1.4.4 Modifying the Information About a Device](#).
- An environmental monitoring instrument (EMI) is connected to a plant.
- Availability parameters have been configured for a plant. For details, see [4.1.3.6 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.

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 5 plants can be selected.

- d. Set query conditions and click **Query**.
- e. **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 and click **Query**.
- e. **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.

4.1.6.3.5 Querying Index Values of 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.

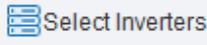
Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer or guest user who has been assigned the historical data query permissions.

Procedure

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

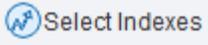
Step 2 Choose **Inverter Analysis > Comparative Analysis** in the navigation tree on the left.

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 and click **Query**.

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.

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

4.1.6.4 Synchronizing Historical Performance Data

If there is no performance data of a device on the NetEco1000S because the device is disconnected for more than 6 hours and historical performance data cannot be automatically synchronized or the device logs have been obtained on the WebUI of the SmartLogger, you can create a synchronization task on the NetEco 1000S to synchronize the historical performance data of the device to the NetEco 1000S.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.

- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).
- If a device is connected to the NetEco 1000S through the SmartLogger, the SmartLogger version must be SmartLogger1000 V100R001C91 or later.

Context

- The SmartLogger saves historical performance data of the latest one month.
- The inverter saves historical performance data of the latest one year.
- The optimizer saves historical performance data of the latest two days.

The synchronization on the NetEco 1000S succeeds only when the SmartLogger, the inverter directly connected to the NetEco 1000S, or the optimizer 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 inverter.
 - a. Choose **Historical Data > Synchronize Historical Data > Data Synchronization** tab page, as shown in [Figure 4-28](#).

Figure 4-28 Synchronizing historical data

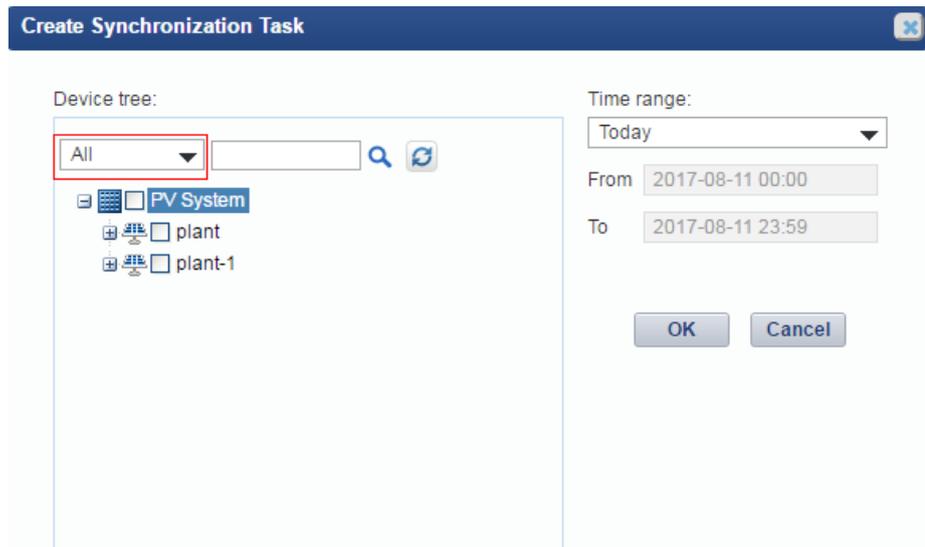


Device Name	PV Plant	Start Time	End Time	Execution Status	Operation
SUN2000L_12	Test02	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	
SUN2000L_13	Test02	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	
SUN2000L_14	Test-xy-SUN2000P	2017-10-01 17:14:00	2017-10-07 17:14:00	Completed	

- b. On the **Data Synchronization** tab page, click **Create Synchronization Task**.

The **Create Synchronization Task** dialog box is displayed, as shown in [Figure 4-29](#).

Figure 4-29 Creating a synchronization task



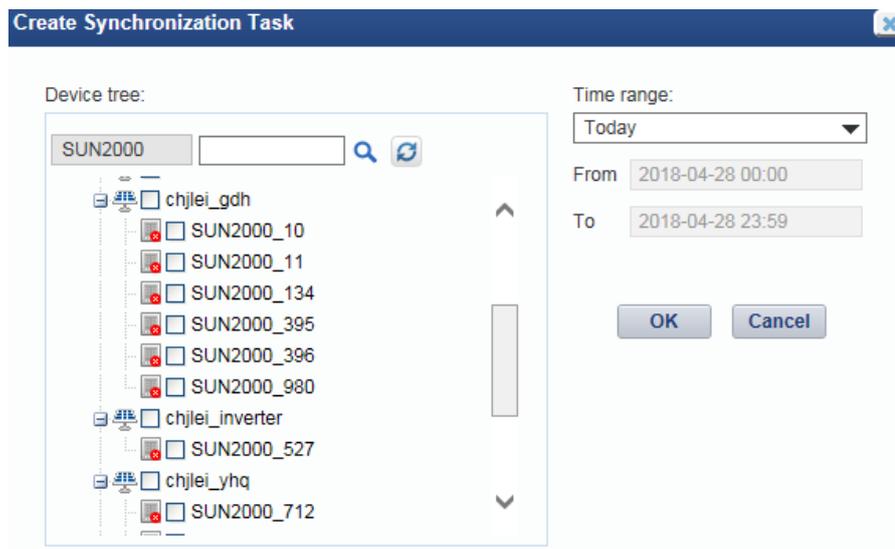
- c. Choose a device for which you want to create a supplementary collection task from the device navigation tree.
 - d. Set the time range as required.
The time range can be set to **Today**, **Last three Days**, **Last seven Days**, **Last thirty Days**, or **Customize**.
 - e. Click **OK**.
The supplementary collection task is performed automatically after the task is created.
- Synchronize historical performance data of the optimizer connected to the inverter.
 - a. Choose **Historical Data > Synchronize Historical Data > Optimizer Data Synchronization** tab page, as shown in [Figure 4-30](#).

Figure 4-30 Optimizer Data Synchronization



- b. On the **Optimizer Data Synchronization** tab, click **Create Synchronization Task**.
The **Create Synchronization Task** dialog box is displayed, as shown in [Figure 4-31](#).

Figure 4-31 Creating a optimizer synchronization task



- c. Choose a device for which you want to create a supplementary collection task from the device navigation tree.
- d. Set the time range as required.
The time range can be set to **Today**, **Last three Days**, **Last seven Days**, or **Customize**.
- e. Click OK.
The supplementary collection task is performed automatically after the task is created.

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.

4.1.7 Device Maintenance

4.1.7.1 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

- 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 [4.1.9.7 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**, **Optimizer Upgrade Management**, **Shutdown Box Upgrade Management**, or **Batch 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 inverter, you can perform related operations on the **Optimizer Upgrade Management** tab page.
- To upgrade the shutdown box connected to the inverter, you can perform related operations on the **Shutdown Box 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.

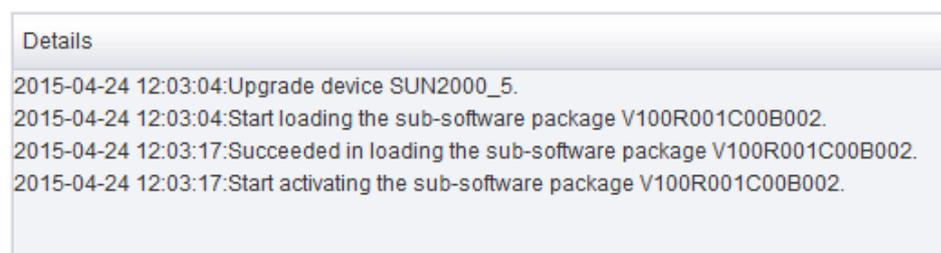
 **NOTE**

- You can filter out the list of target devices by device name or plant name.
 - On the **Batch Upgrade Management** tab page:
 - n 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.
 - n 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 an optimizer, the **Select Target Version** dialog box shows the software packages applicable to the register address of the selected optimizer.
 - If the selected target device is a shutdown box, the **Select Target Version** dialog box shows the software packages applicable to the register address of the selected shutdown box.
 - 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 4-32](#).

Figure 4-32 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

4.1.7.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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.

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

4.1.7.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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

4.1.7.4 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

Procedure

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

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

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

Target devices meeting the preset condition are filtered out.

Step 4 You can perform the following operations in the **Device Management** tab.

If You Need To...	Then...
Export the device list	Click Export to export the target device list queried.
Modify device names	<ol style="list-style-type: none"> 1. Change Device Name in the exported .xls file, and save the file. 2. In the Device Management window, click Import Names. The Import Names dialog box is displayed. NOTICE Only .xls files can be imported. The file size must be less than 2 MB. The file must contain the Device Name and ESN columns, and the columns must not be empty. 3. Click Browse, and select the .xls file saved in Step 4.1. NOTICE During the Execution, the modification task will be stopped if you close the Import Names dialog box. 4. Click Execution. <ul style="list-style-type: none"> - 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. 5. Click Close.
Switch to the web client of the SmartLogger	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.

----End

4.1.7.5 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, optimizer, and SmartLogger.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).
- 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?
- 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

4.1.7.6 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. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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

4.1.7.7 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.

Step 2 Choose **Trace Log** tab or **Other Logs** tab.

 **NOTE**

- To obtain the trace log, you can perform related operations on the **Trace Log** tab page. The trace log records the system run log. When the system becomes abnormal, you can obtain the trace log to locate the problem.
- To obtain other logs, you can perform related operations on the **Other Logs** tab page. 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 **Refresh**. The latest log information is displayed.
2. 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.

3. 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

4.1.7.8 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

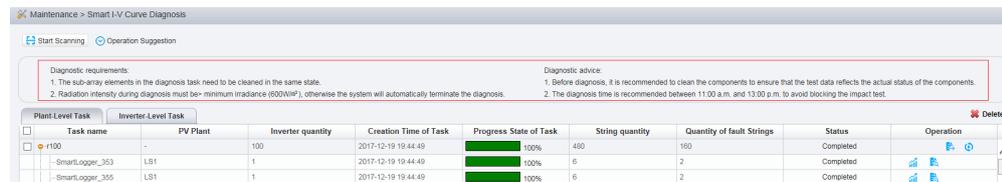
- You have logged in to the NetEco 1000S. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).
- String parameters have been configured for inverters. For details about how to configure the parameters, see [4.1.4.4 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 [4.1.7.9 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 4-33](#).

Figure 4-33 Smart I-V Curve Diagnosis

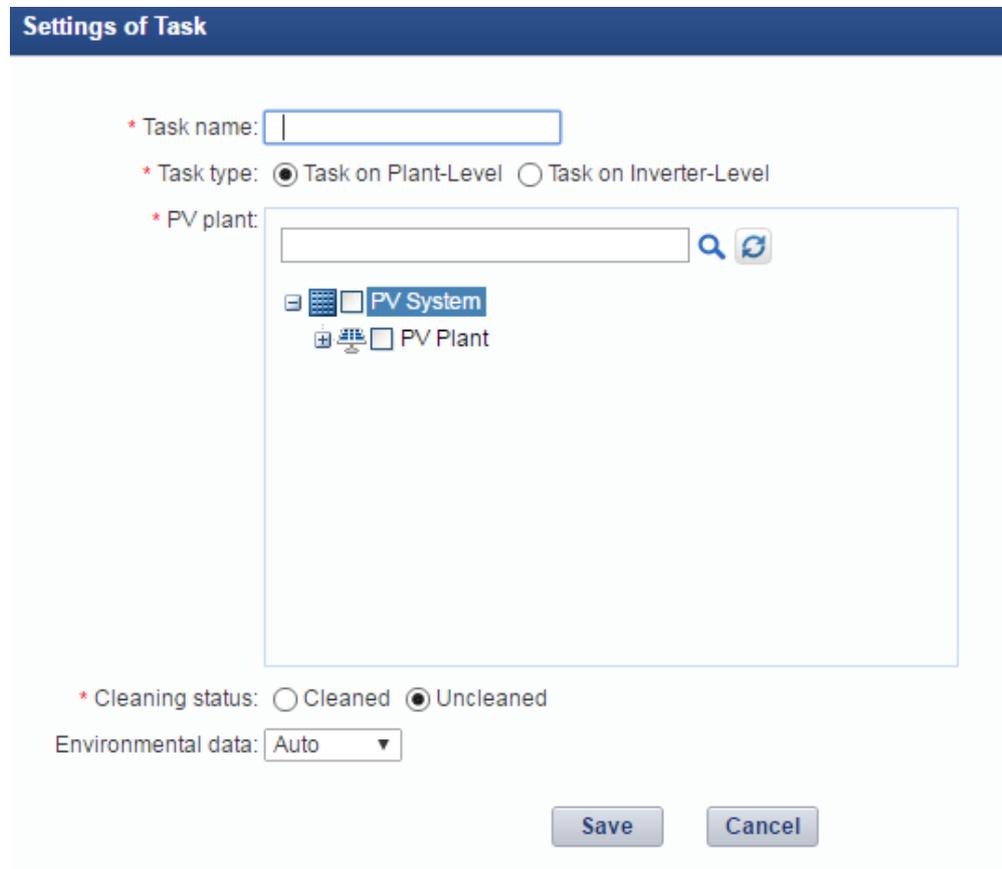


The content in the red frame in **Figure 4-33** is the conditions and suggestions for smart I-V curve diagnosis. Read the content carefully and ensure that the conditions are met. To minimize the content, click **Operation Suggestion**.

Step 2 Click **Start Scanning**.

The **Settings of Task** page is displayed, as shown in **Figure 4-34**.

Figure 4-34 Task Settings



Step 3 Set the I-V diagnosis task.

1. Set I-V diagnosis parameters, as described in **Table 4-13**.

Table 4-13 Description of I-V diagnosis parameters

Parameter	Description
Task name	Set this parameter to a string of a maximum of 64 characters.

Parameter	Description
Task type	Value: <ul style="list-style-type: none"> - Task On Plant-Level: The health check applies to strings for all inverters connected to a PV plant. - Task On Inverter-Level: The health check applies to all strings for an inverter.
PV plant	In the PV plant area, select the SmartLoggers or inverters to be scanned. <ul style="list-style-type: none"> - An unlimited number of SmartLoggers can be scanned simultaneously. - A maximum of 100 inverters can be scanned simultaneously.
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"> - Auto: The system will automatically calculate the values of Irradiance and Temperature of panel. - Manually: You need to manually enter the values of Irradiance and Temperature of panel.
Irradiance	This parameter is displayed only if Environmental data is set to Manually .
Temperature Of Panel	This parameter is displayed only if Environmental data is set to Manually .

2. Click **Save**.

After a task is set, smart I-V curve diagnosis starts immediately, as shown in [Figure 4-35](#).

Figure 4-35 Executing a diagnosis task

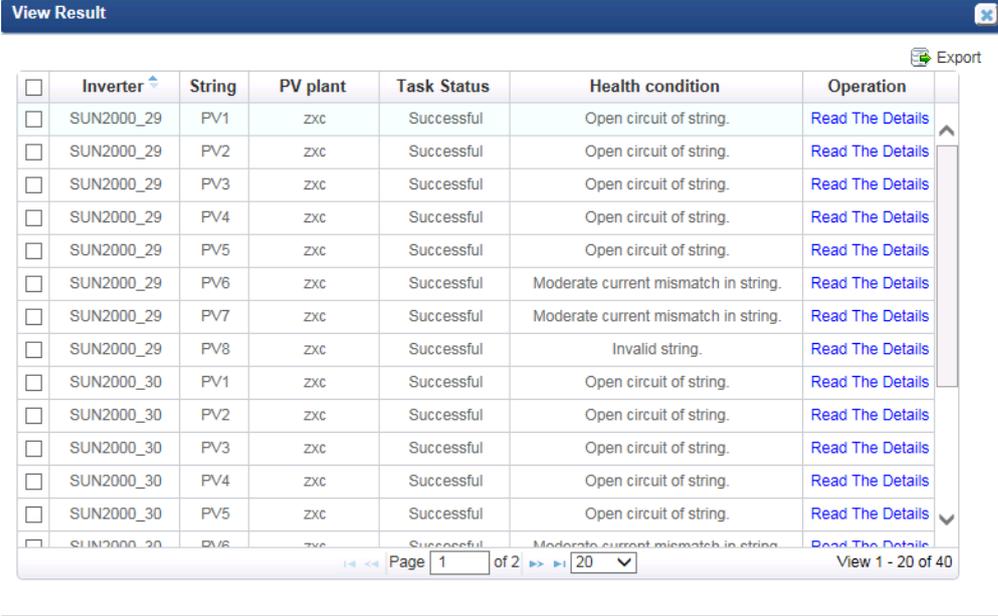
Task name	PV Plant	Inverter quantity	Creation Time of Task	Progress State of Task	String quantity	Quantity of fault Strings	Status	Operation
test1	-	53	2017-12-21 11:20:51	35%	0	-	In progress	Operation
SmartLogger_22	wy	53	2017-12-21 11:20:51	35%	0	-	In progress	Operation

- 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 a diagnosis task is stopped or the string diagnosis scanning is complete, and the Status of the task is **Partially completed**, **Failed**, or **Terminated**, you can click  to restart the unfinished or failed task.

Step 4 View the diagnosis result and diagnosis details.

1. Click  under **Operation** column in [Figure 4-35](#).
The diagnosis task execution result is displayed, as shown in [Figure 4-36](#).

Figure 4-36 Diagnosis result



<input type="checkbox"/>	Inverter	String	PV plant	Task Status	Health condition	Operation
<input type="checkbox"/>	SUN2000_29	PV1	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV2	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV3	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV4	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV5	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV6	zxc	Successful	Moderate current mismatch in string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV7	zxc	Successful	Moderate current mismatch in string.	Read The Details
<input type="checkbox"/>	SUN2000_29	PV8	zxc	Successful	Invalid string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV1	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV2	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV3	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV4	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV5	zxc	Successful	Open circuit of string.	Read The Details
<input type="checkbox"/>	SUN2000_30	PV6	zxc	Successful	Moderate current mismatch in string.	Read The Details

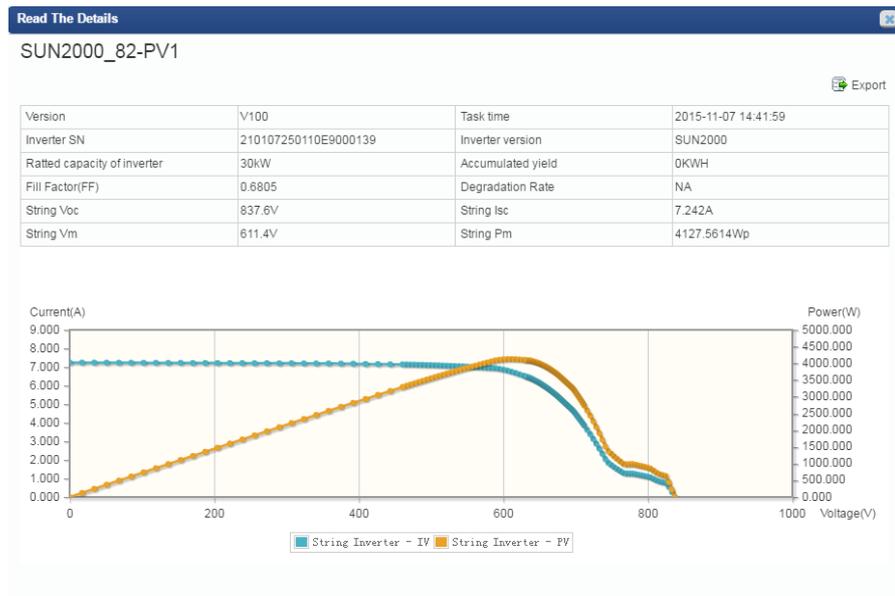
[Table 4-14](#) describes the parameters in the diagnosis result.

Table 4-14 Description of diagnosis parameters

Parameter	Description
Task Status	Status of the I-V diagnosis task
Health condition	Health status of strings
Operation	<ul style="list-style-type: none"> - Export the diagnosis details: Select the string whose diagnosis details are to be exported and click Export to export the diagnosis details in batches. - View the diagnosis details. For details, see Step 4.2.

2. View the diagnosis details.
 - a. Click **Read The Details**.
The diagnosis details are displayed, as shown in [Figure 4-37](#).

Figure 4-37 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 4-35**.

The **Diagnostic Report** page is displayed.

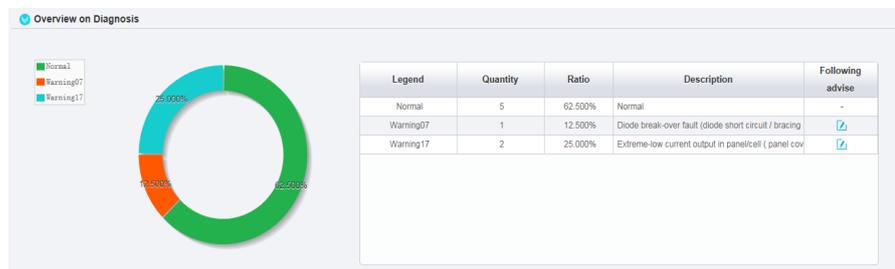
- Query **Information of Task**.

The basic information of the string diagnosis task is displayed.

- Query **Overview on Diagnosis**.

The pie chart and detailed information of the diagnosis result are displayed, as shown in **Figure 4-38**.

Figure 4-38 PV string diagnosis overview



For the overview parameter description, see **Table 4-15**.

Table 4-15 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.

- Query **List Of Defective Strings**. Information of all defective strings is displayed, as shown in **Figure 4-39**.

Figure 4-39 Defective string list

Comparison	NO.	Defective type	Inverter	String	Voc[V]	Isc[A]	FF	Vm[V]	Im[A]	Vm/Voc	Im/Isc	Pm[Wp]
<input type="checkbox"/>	1	Warning17	SUN2000_82	PV1	837.6000	7.2420	0.6805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	2	Warning17	SUN2000_82	PV2	837.6000	7.2620	0.6768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	3	Warning07	SUN2000_82	PV8	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866
<input type="checkbox"/>	4	Warning17	SUN2000_83	PV1	837.6000	7.2420	0.6805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	5	Warning17	SUN2000_83	PV2	837.6000	7.2620	0.6768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	6	Warning07	SUN2000_83	PV8	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866
<input type="checkbox"/>	7	Warning17	SUN2000_84	PV1	837.6000	7.2420	0.6805	611.4000	6.7510	0.7299	0.9322	4127.5614
<input type="checkbox"/>	8	Warning17	SUN2000_84	PV2	837.6000	7.2620	0.6768	611.4000	6.7330	0.7299	0.9272	4116.5562
<input type="checkbox"/>	9	Warning07	SUN2000_84	PV8	832.7000	7.2110	0.7481	666.2000	6.7430	0.8000	0.9351	4492.1866

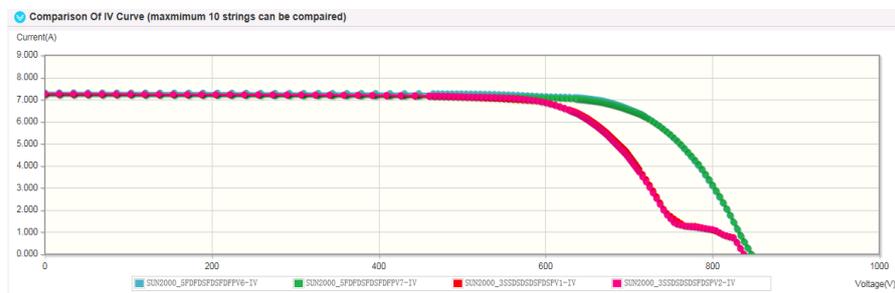
Description	Defective type	Inverter	String	Voc[V]	Isc[A]	FF	Vm[V]	Im[A]	Vm/Voc	Im/Isc	Pm[Wp]
best string	Normal	SUN2000_84	PV6	846.1000	7.3160	0.7510	679.0000	6.8460	0.8025	0.9358	4648.4340
Medium string	Normal	SUN2000_84	PV7	846.9000	7.2100	0.7527	677.5000	6.7840	0.8030	0.9409	4596.1630
Average	Normal	-	-	846.0766	7.2056	0.7514	678.0766	6.7549	0.8014	0.9375	4593.3274

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.

2. **Optional:** Select a string under the **Comparison** column to display the I-V curve comparison analysis diagram of the corresponding string, as shown in **Figure 4-40**.

Figure 4-40 String I-V curve comparison analysis diagram



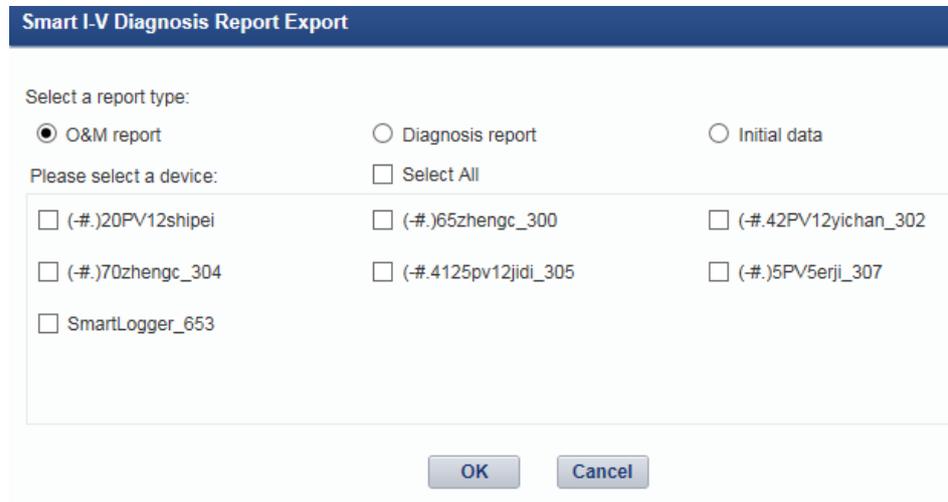
3. Click **Return** in the upper left corner of the page. The **Smart I-V Curve Diagnosis** page is displayed.

Step 6 Optional: Export the smart I-V diagnosis report.

1. Click  under **Operation** column in **Figure 4-33**.

The **Smart I-V Diagnosis Report Export** dialog box is displayed, as shown in [Figure 4-41](#).

Figure 4-41 Smart I-V Diagnosis Report Export



2. Select the reports to be exported as required, and click **OK**.

----End

4.1.7.9 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have added a device to the NetEco 1000S and the device state is normal. For details, see [4.1.4.1 Connecting Devices](#).

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 4-16](#).

Table 4-16 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 License Details to view the license information of the target device.</p> <ol style="list-style-type: none"> 1. Select the target device and click Refresh. The license information is refreshed. 2. Click Device Name 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 Figure 4-42. <p>Figure 4-42 Function control information</p>  <p>The screenshot shows a window titled 'Details SUN2000L_11' with a sub-section 'License Details'. Below this is 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"> 3. Optional: Export license details. <ul style="list-style-type: none"> - To save the license information about all devices queried to the local PC, select Export All from the Export Details drop-down list box. - To save the license information about a specific device queried to the local PC, select the target device in the displayed operation area, and select Export Selected from the Export details drop-down list box. <p>NOTE The license information file is saved as a .csv 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 License Application page.	<ol style="list-style-type: none"> 1. Choose License Application. 2. Export the license application file. <ul style="list-style-type: none"> - To save the license application file of all devices queried to the local PC, select Export All from the Export License Application File drop-down list box. - To save the license application file of a specific device queried to the local PC, select the target device in the displayed operation area, and select Export Selected from the Export License Application File drop-down list box. <p>NOTE The license application file is saved as an .xls 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"> 1. Choose License Loading. 2. Click Upload License. The Upload License dialog box is displayed. 3. Click Browse and select the license to be imported. The License file format should be either .dat or .zip. The number of license file in .zip file cannot exceed 6000. 4. Click Upload. The license file is uploaded. 5. Load the license. <ul style="list-style-type: none"> - To import the loaded license file to all the devices queried, select Load All from the Load License drop-down list box. - To import the loaded license file to a specific device queried, select the target device in the displayed operation area, and select Load Selected from the Load License drop-down list box.
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"> 1. Choose License Revocation. 2. Select the device whose license needs to be revoked. 3. Click Revoke License. 4. In the displayed Warning dialog box, enter the password of the user and click OK. 5. Optional: Export the revocation code file. <ul style="list-style-type: none"> - To save the revocation code file of all devices queried to the local PC, select Export All from the Export Revocation Code File drop-down list box. - To save the revocation code file of a specific device queried to the local PC, select the target device in the displayed operation area, and select Export Selected from the Export Revocation Code File drop-down list box. <p>NOTE The revocation code file is saved as an .csv file.</p>

----End

4.1.8 System Management

4.1.8.1 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.

4.1.8.1.1 User Categories

This section describes user categories. You need to familiarize yourself with these user categories before managing users.

Software users: installers, guest users, and customers.

Third-party user: OpenAPI users.

Operation permissions vary by user. [Table 4-17](#) lists the software users and their operation permissions.

Table 4-17 User operation permissions

User Category	Operation Permissions
Installers	<ul style="list-style-type: none">• PV plant management: Allows you to create and delete PV plants, set information of PV plants, and view information about PV plants, device lists, and current alarms.• Device management: Allows you to automatically connect devices, delete devices, set information of devices, view device details and current alarms, and remotely control an inverter, SmartLogger and PID.• Historical data: Allows you to query alarm logs, performance data, and data analysis, synchronize historical performance data, and export data.• Device maintenance: Allows you to obtain device logs, patrol to the inverter, replace devices, manage device list, perform smart I-V curve diagnosis, and manage device licenses.• System management: Allows you to manage users and set remote notifications.

User Category	Operation Permissions
Guest users	<ul style="list-style-type: none"> ● PV plant management: Allows you to modify descriptions and parameters of PV plants, upload and delete PV plant images, and view information about PV plants, device lists, and current alarms. ● Device management: Allows you to view device details, device settings, and current alarms. ● Historical data: Allows you to query alarm logs, performance data, and data analysis, and export data. <p>NOTE</p> <ul style="list-style-type: none"> ● Historical data query permissions need to be assigned by the installer to the guest user. ● After the installer modifies the permissions of the guest user, the guest user needs to log in to the NetEco 1000S again to refresh the permissions.
Customers	<p>Allows you to visit the Overview page to query the overview of the plant.</p> <ul style="list-style-type: none"> ● PV plant management: Allows you to create PV plants, set information of PV plants, and view information about PV plants and device lists. ● Historical data: Allows you to export data and query data analysis.

User Category	Operation Permissions
<p>OpenAPI users</p> <p>NOTE</p> <ul style="list-style-type: none"> • The OpenAPI users can only be created by the installer. • The OpenAPI users do not have permission to access the NetEco 1000S or query other user information in the NetEco 1000S. • To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred. • 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. If an installer creates the OpenAPI user, only the installer can reset the password. 	<p>You can access the data query interface to query the following data:</p> <ul style="list-style-type: none"> • PV plant list; • Device list (only inverter and EMI data included); • Real-time monitoring data of a specific PV plant; • Real-time monitoring data of a device under a specific PV plant (only inverter and EMI data included); • Yearly, monthly, and daily performance data of a specific PV plant as well as its total performance data.

4.1.8.1.2 Registering a User

You can register yourself as an installer or customer on the NetEco 1000S.

Prerequisites

- You have set the email server.
- You have enabled the self-registration account on the NetEco 1000S.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

Procedure

Step 1 Enter the login page, as shown in **Figure 4-43**.

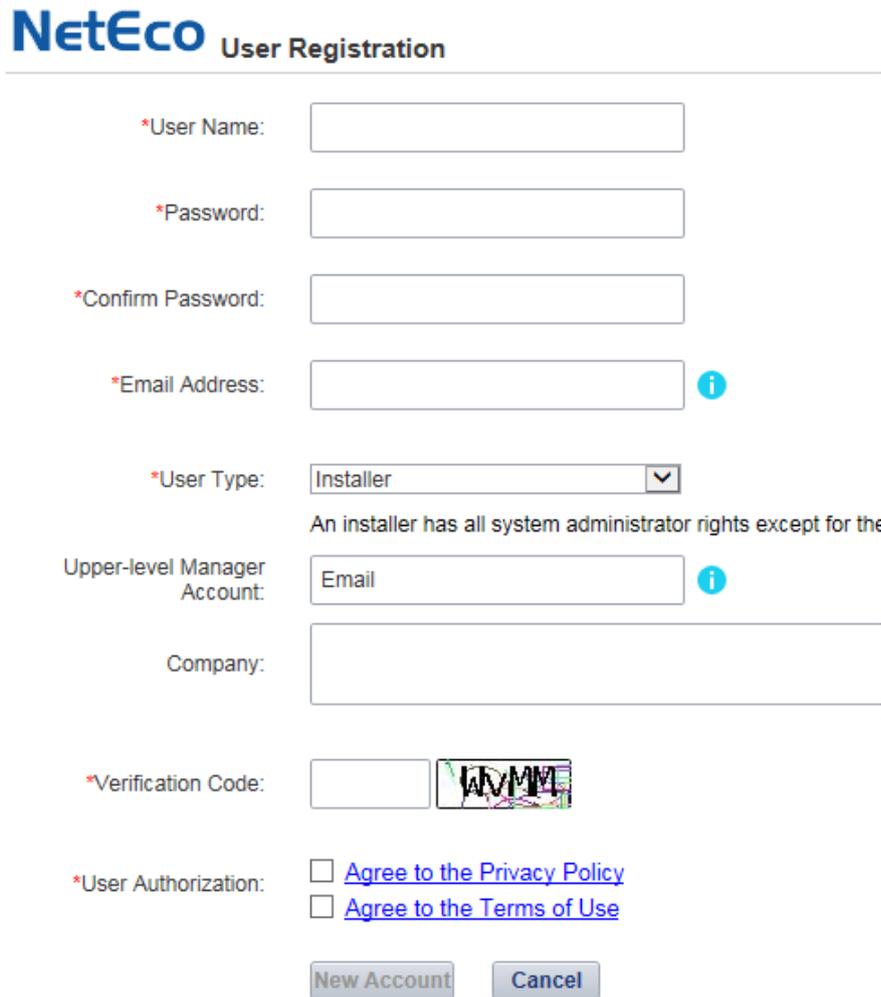
Figure 4-43 Login page



Step 2 Click **New Account** on **Figure 4-43**.

The **User Registration** page is displayed, as shown in **Figure 4-44**.

Figure 4-44 Registration



NetEco User Registration

*User Name:

*Password:

*Confirm Password:

*Email Address: i

*User Type: v
An installer has all system administrator rights except for the

Upper-level Manager Account: i

Company:

*Verification Code: 

*User Authorization: [Agree to the Privacy Policy](#)
 [Agree to the Terms of Use](#)

Step 3 Set the parameters, and click **New Account**.

 **NOTE**

The senior manager can manage the PV plant created by the registered user.

- If the registered user is **Installer**, enter the email address of an existing manager in the system.
- If the registered user is **Customer**, enter the email address of an existing manager or installer in the system.

A dialog box is displayed, reminding you to activate the registered account in your mailbox.

NOTICE

- The activation link in the mailbox is valid for 24 hours. If the account is not activated within 24 hours, you need to register a user again.
 - The validity period of the activation link can be modified by changing the configuration file.
-

Step 4 Go to the mailbox and click the activation link to activate the NetEco 1000S account.

After the account is activated, the login page is displayed, where you can log in with the registered account name and password.

----End

4.1.8.1.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

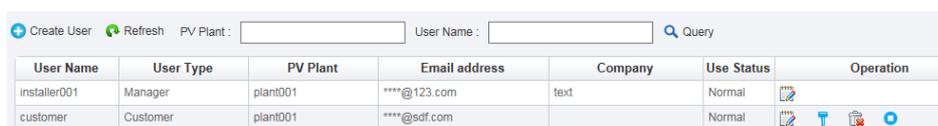
Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 4-45](#).

Figure 4-45 User



User Name	User Type	PV Plant	Email address	Company	Use Status	Operation
installer001	Manager	plant001	****@123.com	text	Normal	
customer	Customer	plant001	****@sdf.com		Normal	   

Step 3 Click **Create User**.

The **Create User** page is displayed.

Step 4 Set the user parameters according to [Table 4-18](#).

Table 4-18 Parameter description

Parameter	Description
User Name	Name of the new user. The user name can only contain English characters (A to Z and a to z), digits, hyphens, or underlines. NOTE The user name cannot be null or NULL .
Password	Password of the new user. The password must comply with the following rules: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> - Lowercase letters - Uppercase letters - Digits • The password is advised to contain special characters, which include !"#\$%&'()*+,-./:;<=>?@[\\]^`{ }~ and space.
Email Address	Email address of the user.
User Type	Type of the user. <ul style="list-style-type: none"> • Guest • Customer • OpenAPI User.
User Status	Status of the user. The status includes: <ul style="list-style-type: none"> • Enable: The user can log in to the NetEco 1000S. • Disable: The user is disabled and cannot log in to the NetEco 1000S.
Optional Permissions NOTE This parameter would be displayed only when the created user is a guest user.	The installer can assign the historical data query permissions to the guest user. <ul style="list-style-type: none"> • Select Query historical data: indicating that the guest user has the historical data query permissions. • Clear Query historical data: indicating that the guest user does not have the historical data query permissions.
Email password NOTE This parameter would be displayed only when the created user is a customer.	The status includes: <ul style="list-style-type: none"> • Yes: The customer will receive an email informing customer of the login account and password. • No: The customer will not receive an email informing customer of the login account and password.

Parameter	Description
Company	Company description of the user.
Select a PV plant that can be accessed	Permission for the user to access the PV plant.

Step 5 Click **OK**

The added user is displayed in the user list in the **User** page.

----End

4.1.8.1.4 Modifying User Information

If user information changes, the user password is forgotten, or the account status needs to be changed, the user information can be modified.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.

Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 4-46](#).

Figure 4-46 User

User Name	User Type	PV Plant	Email address	Company	Use Status	Operation
installer001	Manager	plant001	***@123.com	text	Normal	
customer	Customer	plant001	***@sdf.com		Normal	

Step 3 In the **User** page, you can do the following operations in [Table 4-19](#).

Table 4-19 operations

Operations	Description
Enable	If the Use Status is invalid , you can click to enable the account.
Disable	If the Use Status is normal , you can click to disable the account.
Unlock	If the Use Status is lock , you can click to unlock the account.

Operations	Description
Edit	Click  to modify the user name, use status, guest users' permissions on optional functions, company information, and PV plant permissions.
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>NOTE</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Lowercase letters Uppercase letters Digits The password is advised to contain special characters, which include !"#\$%&'()*+,-./:;<=>?@[\\]^`{ }~ and space. <ol style="list-style-type: none"> Click . In the displayed window, set New password and Confirm password. Click OK.
Delete	<ol style="list-style-type: none"> Click . In the displayed window, click OK to delete the account.

----End

Follow-up Procedure

In the **User** page, you can view the use list. The description of all parameter is as shown in [Table 4-20](#).

Table 4-20 GUI parameters

Parameter	Description
User Name	Displays names of all accounts in the system.
User Type	Displays the type of an account. The type includes Installer , Guest , Customer , and OpenAPI User .
PV Plant	Displays the PV plant(s) to which the user belongs
Email address	Email address of the user.

Parameter	Description
Company	Displays the company description of an account.
Status	<p>Displays the status of an account. The status includes:</p> <ul style="list-style-type: none"> • normal: indicates that the account is properly used. • invalid: indicates that the account is currently not used. • 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. • Freeze: indicates that the account currently cannot be used. You cannot log in to the NetEco 1000S. The state of the remote notification rule you created is Freeze. You cannot receive any emails or SMS notifications from the NetEco 1000S.

4.1.8.1.5 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.

Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 Choose **User** from the menu bar on the left.

The **User** page is displayed, as shown in [Figure 4-47](#).

Figure 4-47 User

The screenshot shows a web interface for user management. At the top, there are buttons for 'Create User', 'Refresh', and a search bar labeled 'Query'. Below the search bar are two input fields: 'PV Plant :' and 'User Name :'. The main part of the interface is a table with the following data:

User Name	User Type	PV Plant	Email address	Company	Use Status	Operation
installer001	Manager	plant001	***@123.com	text	Normal	
customer	Customer	plant001	***@sdf.com		Normal	

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

4.1.8.1.6 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

Procedure

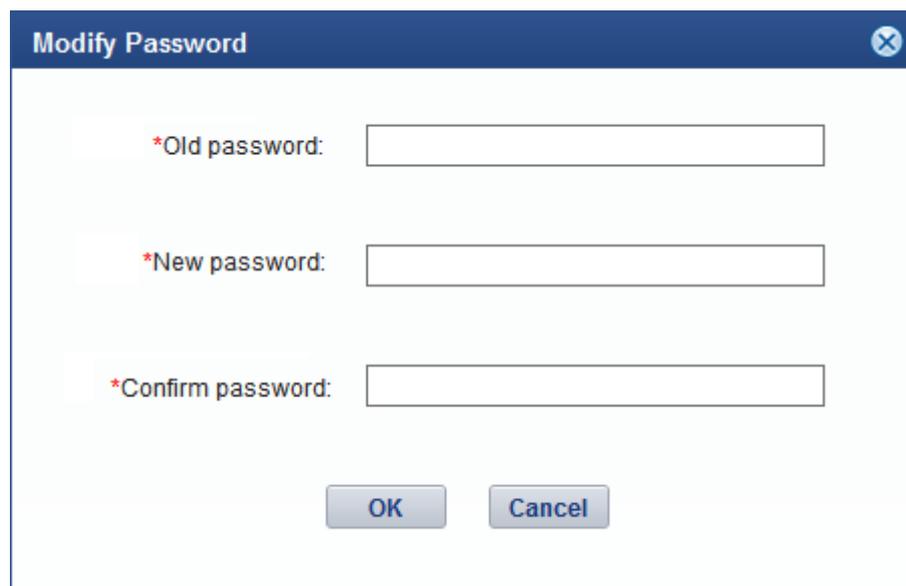
Step 1 Click  from the main menu.

The **Modify Password** dialog box is displayed, as shown in [Figure 4-48](#).

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

Figure 4-48 Modify Password



The screenshot shows a dialog box titled "Modify Password". It has a dark blue header bar with the title and a close button (X). The main area is white and contains three text input fields, each preceded by a red asterisk: "*Old password:", "*New password:", and "*Confirm password:". Below the input fields are two buttons: "OK" and "Cancel".

Step 2 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 3 Click **OK**.

----End

4.1.8.1.7 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.

Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 In the navigation tree on the left, choose **Account Policy**.

- a manager, installer, guest user, or customer: 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 [4.1.8.1.4 Modifying User Information](#).
- the 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: 6

Account disabling policy

The account has not been used for (consecutive days): 90

Enable account lock policy

Auto-lock Conditions

Allowed duration (min): 10

Consecutive failed login attempts: 5

Account Lock Duration

Lock duration (min): 5

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 [4.1.8.1.4 Modifying User Information](#) and perform the required operations.

Step 4 Click **Apply**.

----End

4.1.8.1.8 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.

Step 2 Choose **Password Policy** from the menu bar on the left, as shown in [Figure 4-49](#).

Figure 4-49 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
- Min. interval between password change operations (min): 5
- Require at least one of the following special characters: :space!"#\$%&()*+,-./:;<=>?@[^_`{|}~
- Max. times a character can occur: 2
- Enforce password expiration:
- Password validity period (days): 90
- Number of reminding days prior to password expiration: 7

An "Apply" button is located at the bottom right of the window.

Step 3 In the window shown in [Figure 4-49](#), 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 4 Click **Apply**.

----End

4.1.8.1.9 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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 Refresh 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">1. On the View Online User page, click  in the Operation column where the required user information is located.2. In the Warning dialog box, click OK. <p>NOTE 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">1. Select Single session Mode.2. In the Warning dialog box, click OK. <p>NOTE</p> <ul style="list-style-type: none">• After entering the single-session mode, users can log in to the NetEco 1000S only on one terminal.• After entering the single-session mode, the logged-in users are not affected.• Single-session is a safe mode, recommended for use.

Task	Procedure
Exit Single session Mode	1. Deselect Single Session Mode . 2. In the Warning dialog box, click OK . NOTE After exiting the single-session mode, users can re-log in to the NetEco 1000S on multiple terminals.

----End

4.1.8.1.10 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

Context

This operation applies to the system administrator, managers, installers, guest users and customers. For OpenAPI users, the idle logout time is 20 minutes and cannot be modified.

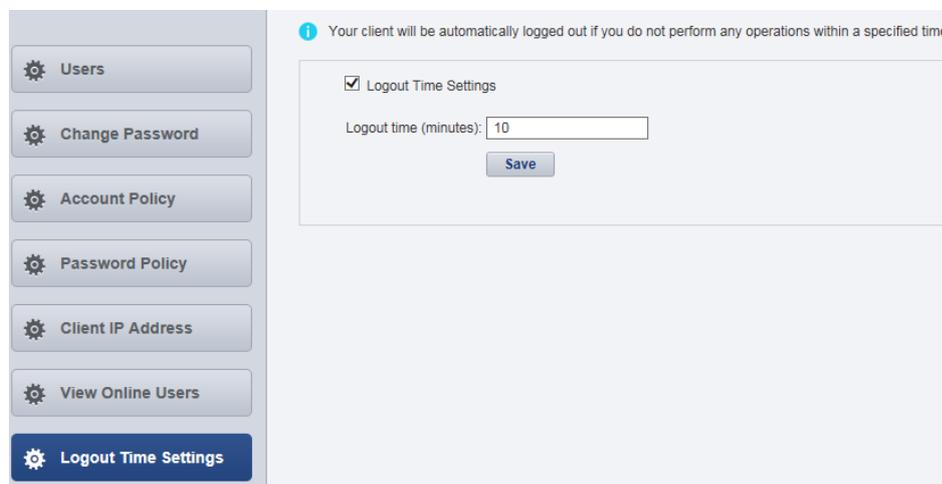
Procedure

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 4-50](#).

Figure 4-50 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.

4.1.8.1.11 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

Context

To ensure the access security of the NetEco, you are advised to set an access control policy.

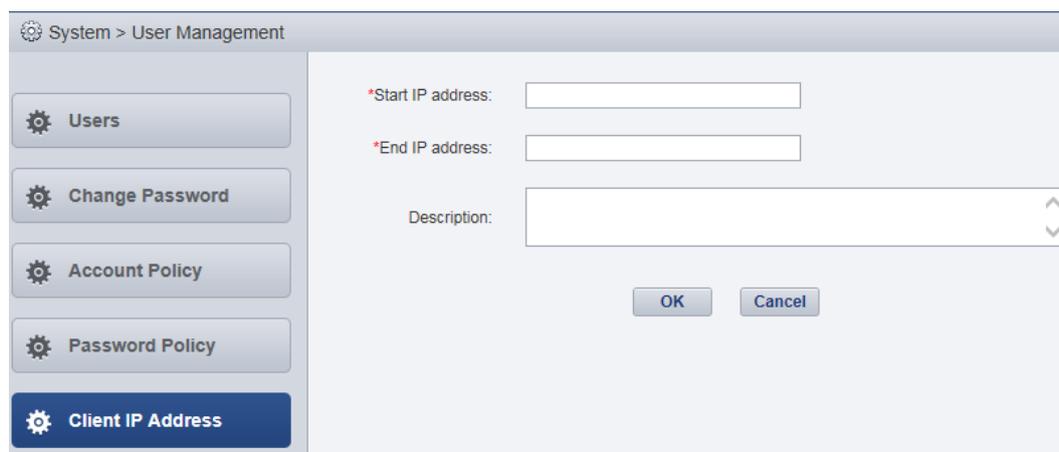
Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 Choose **Client IP Address** from the menu bar on the left.

Step 3 In the displayed **Client IP Address** window, click **Create**, as shown in [Figure 4-51](#).

Figure 4-51 Client IP Address



Step 4 Set **Start IP address**, **End IP address**, and **Description** for accessing the client and click **OK**.

----End

4.1.8.1.12 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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** from the main menu.

Step 2 Choose **Login Time Control** from the menu bar on the left.

The **Login Time Control** page is displayed, as shown in [Figure 4-52](#).

Figure 4-52 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

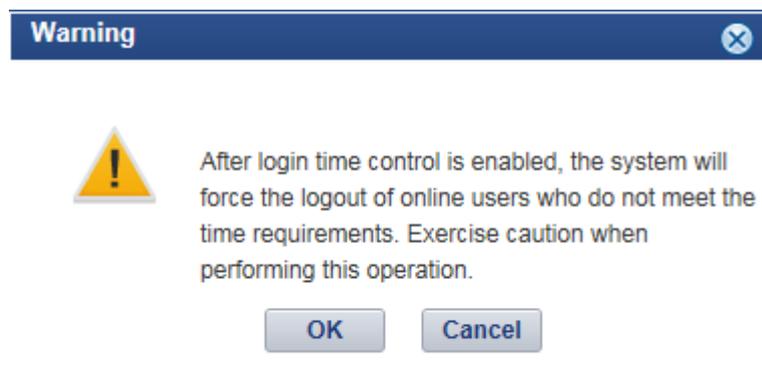
Description:

Apply

Step 3 Select **Enable login time control**.

Information shown in [Figure 4-53](#) is displayed.

Figure 4-53 Login time control enabling prompt



Step 4 Set login time control policies according to [Table 4-21](#).

Table 4-21 Setting login time control policies

Parameter	Configuration Method
Start date	Select the start date for the login from the drop-down list.

Parameter	Configuration Method
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

4.1.8.1.13 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.

Step 2 Choose **Mobile Terminal** from the menu bar on the left.

Step 3 In the displayed **Mobile Terminal** page, click **Create Mobile Terminal**.

The **Create Mobile Terminal** page is displayed, as shown in [Figure 4-54](#).

Figure 4-54 Mobile terminal access setting

Step 4 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 4-55](#) is displayed.

Figure 4-55 Access Control Policy

! 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
225****4355	AAA	
551****5241	test	

Step 5 Perform the following operations in the [Figure 4-55](#) 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 in **Operation** column to modify the specified mobile terminal.
- You can click in **Operation** column to delete the specified mobile terminal.
- You can click in **Operation** column to export the specified mobile terminal information.

4.1.8.1.14 Changing the Privacy Policy and Terms of Use

The Privacy Policy and Terms of Use will be changed in compliance with local laws and conditions. The NetEco 1000S provides the function of changing Privacy Policy

and Terms of Use online. The system administrator is entitled to change the Privacy Policy or Terms of Use file of any language on the Privacy Policy and Terms of Use page as required.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- You have enabled the Privacy Policy or Terms of Use while installing the NetEco 1000S.

Procedure

Step 1 Choose **System > User Management** from the main menu.

Step 2 Choose **Privacy Policy and Terms of Use** from the menu bar on the left.

The **Privacy Policy and Terms of Use** window is displayed.

Figure 4-56 Changing the Privacy Policy and Terms of Use

Step 3 Upload the Privacy Policy or Terms of Use file of the corresponding language as required.

A message indicating that the file has been uploaded successfully is displayed on the NetEco 1000S.

Step 4 Click **Release**.

The message **The release will forcibly log out all online users. Continue?** is displayed on the NetEco 1000S.

- Click **OK**. All online users will be forcibly logged out of both the NetEco 1000S client and the NetEco 1000S app. You must be authorized again on the NetEco 1000S client upon re-login before you can continue using the NetEco 1000S.
- Click **Cancel**. Cancel the release.

----End

4.1.8.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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 [4.1.9.23 What Do I Do to Change the Life Cycle of Operation Logs?](#).
- Threshold: 100,000.

NOTE

- The user operation logs about user authorization will not be deleted, unless this user is deleted.
- 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.

Procedure

Step 1 Choose **System > Log Management** from the main menu.

The **Log Management** window is displayed.

Figure 4-57 Log Management



Step 2 Optional: Set the query criteria by referring to [Table 4-22](#).

Table 4-22 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"> ● Device Management: involves plant creation, modification, and deletion, device search, device access, and device deletion. ● Configuration Management: involves device information modification and control command delivery. ● Security Management: involves user login and logout, and user creation, user information modification, and user deletion. ● Software Management: involves software package upload, device upgrade, and software package deletion. ● Device Maintenance: involves the obtaining of the inverter patrol report, device name modification in batch, device replacement. ● Device log: involves the obtaining of device logs. ● Remote Notification: involves email server parameter and SMS message server parameter modification, and remote notification rules creation, modification, deletion, enabling, and disabling. ● System Settings: involves the clock synchronization, baud rate modification, alarm resetting, benefit setting, and collection period setting. ● Performance Management: involves historical performance data synchronization. ● Smart I-V Curve Diagnosis: involves the start, execution, and stop of smart I-V curve diagnosis tasks and export of diagnosis reports. ● License Management: involves querying license Information, importing or revoking a license and obtaining an ESN. ● Device License Management: involves exporting, loading, and revoking device license. ● Alarm Management: involves exporting historical alarm information.
Object	<p>Object on which an operation is performed, including:</p> <ul style="list-style-type: none"> ● Local NetEco ● NetEco 1000S user ● plant ● Device
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"> • System login • System logout • Search • Add • Synchronize • Upgrade • Modify • Delete • Reset • String scanning
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"> • Risk • Minor • Warning
Log type	Log type, including: <ul style="list-style-type: none"> • System Logs: record NetEco 1000S running exceptions, network faults, and NetEco 1000S attacks. • Operation Logs: record device addition and deletion. • 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.

Step 3 Click **Query**.

----End

Follow-up Procedure

You can click  **Export** in the upper right corner to export the personal data in the queried user operation logs.

4.1.8.3 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.

4.1.8.3.1 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- 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.
-
- The mail filtering function of the antivirus software has been disabled for the operating system.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized 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 4-58](#).

Figure 4-58 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.

Encryption : Check permission

*User name:
Enter a senders email account.

*Password:
Enter a senders email password.

Step 3 Setting parameters for email server by referring to [Table 4-23](#).

Table 4-23 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 www.yourdomain.com, the domain name of the SMTP email server for this website may be one of the following:</p> <ul style="list-style-type: none"> • smtp.yourdomain.com • mail.yourdomain.com • smtp.mail.yourdomain.com <p>For example, the domain name of the SMTP email server for email@126.com is smtp.126.com.</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"> • 126.com: smtp.126.com. • gmail(google.com): smtp.gmail.com. • 21cn.com: smtp.21cn.com. • 163.com: smtp.163.com. • sohu.com: smtp.sohu.com. • yahoo.com: smtp.mail.yahoo.com.

Parameters	Description
Email sending port No.	Port of email server NOTE <ul style="list-style-type: none">• Select SSL, the default port is 465.• Select SSL, the default port is 587.• Select SSL, the default port is 25.
Sender email address	Enter the email address of the sender.
Check permission	If the SMTP email server requires authentication, select Check permission , and set the user name and password for connecting to the SMTP email server.
Encryption	<ul style="list-style-type: none">• If SSL or TLS is selected, the email is sent in an encrypted manner.• If Closed is selected, the email is sent in a non-encrypted manner. The encrypted transmission is recommended.

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.

4.1.8.3.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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 need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

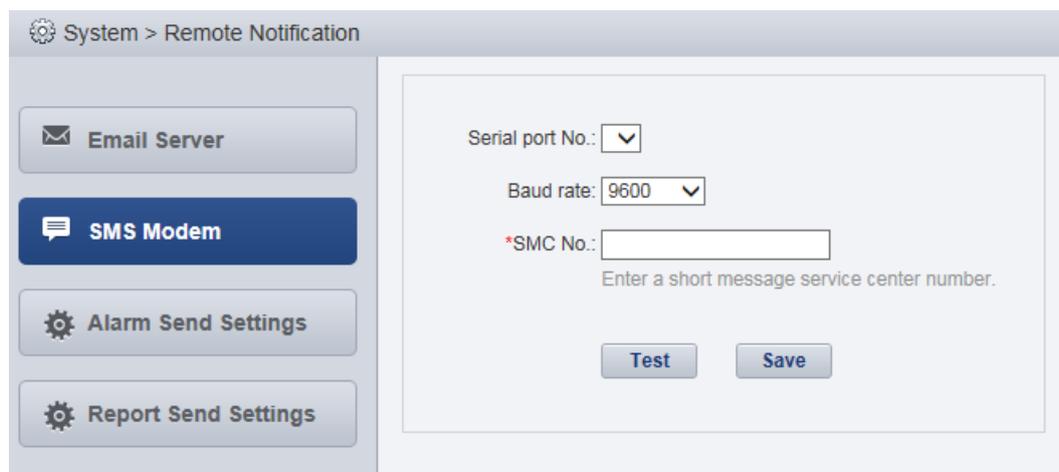
Procedure

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 4-59](#).

Figure 4-59 Setting parameters for SMS modem



Step 3 Setting parameters for SMS modem by referring to [Table 4-24](#).

Table 4-24 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>NOTE</p> <p>SMC No. must be set according to the following requirements:</p> <ul style="list-style-type: none"> • 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: <i>+86Calling number</i>. • If short messages are successfully sent but the subscriber does not receive the short messages, you need to remove the country code.

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

4.1.8.3.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have set the email server.
- In the NetEco 1000S standard system, to send SMS messages, the GSM modem must be set beforehand.

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 need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

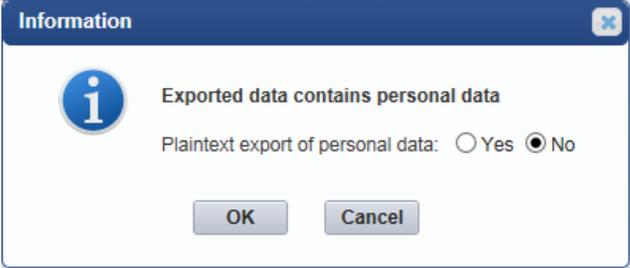
Procedure

Step 1 Choose **System > Remote Notification** from the main menu.

Step 2 Click **Alarm Send Settings**.

Step 3 In the **Alarm Send Settings** page, you can perform the following operations.

If You Need To...	Then...
Create alarm sending rules	<p>An alarm notification rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> 1. Click Create. 2. On the Create Rule page, set parameters and click Save. <p>NOTE</p> <ul style="list-style-type: none"> • You can select the alarm email and SMS language by setting Mail language. <ul style="list-style-type: none"> – Available languages include: Chinese, English, Japanese, French, German, and Italian. – The Mail language uses the display language on the NetEco 1000S by default. • In the NetEco 1000S standard system, at least one of parameters Recipient email address and Recipient phone No. must be set.
Enable alarm sending rules	<p>Enable a disabled alarm notification rule.</p> <p>Select one or more alarm sending rules and click Enable to enable the alarm sending rules.</p>
Disable alarm sending rules	<p>Disable an alarm notification rule that is not used currently.</p> <p>Select one or more alarm sending rules and click Disable to disable the alarm sending rules.</p>
Modify alarm sending rules	<p>Modify an alarm notification rule to meet management requirements.</p> <ol style="list-style-type: none"> 1. Click  in the Operation column where the required alarm notification rule is located. 2. On the Modify Rule page, modify the alarm notification rule information.
Delete alarm sending rules	<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"> 1. Click  in the Operation column where the required alarm notification rule is located. 2. In the Warning dialog box, click Yes.

If You Need To...	Then...
Export alarm sending rules	<p>1. Click Export drop-down list box.</p> <ul style="list-style-type: none"> - Select Export All from the Export drop-down list box and save all the alarm notification rule to the PC. - Select the target alarm notification rule in the displayed operation area. Select Export Selected from the Export drop-down list box and save the selected alarm notification rule to the PC. <p>The message shown in Figure 4-60 is displayed.</p> <p>Figure 4-60 Message for rule export</p>  <p>2. Select whether to export personal data in plaintext format, and click OK. Personal data refers to the email information or phone number about recipients.</p>

----End

4.1.8.3.4 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the installer.
- You have set the email server.

Context

NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized 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 **Report Send Settings**.

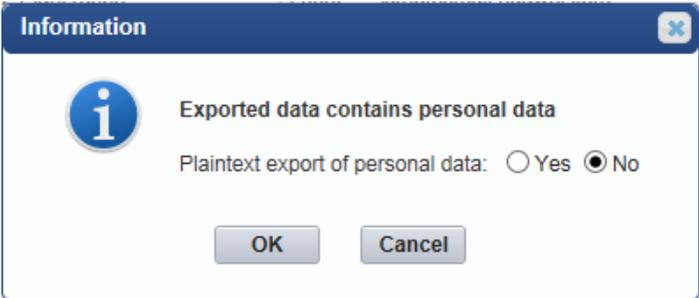
Enter search criteria in **Recipient email address** or **PV plant** text box, and click **Query**. Target reports sending rules meeting the preset condition are filtered out.

Figure 4-61 Report Send Settings



Step 3 In the **Report Send Settings** page, you can perform the following operations.

If You Need To...	Then...
Create report sending rules	<p>A report sending rule is enabled by default once it is created.</p> <ol style="list-style-type: none"> Click Create. Set Rule name, Mail language, Mail subject, PV plant, Daily send time, and Recipient email address on the Create Rule page. <p>NOTE</p> <ul style="list-style-type: none"> Available mail languages include: Chinese, English, Japanese, French, German, and Italian. The Mail language uses the display language on the NetEco 1000S by default. The NetEco 1000S has a mail subject by default. The language of the mail subject is the display language and changes with the Mail language settings. The NetEco 1000S sends day energy and total energy generated by the PV Plant from 00:00 of the current day to Daily send time. <ol style="list-style-type: none"> Click Save.
Enable report sending rules	<p>Enable a disabled report sending rule.</p> <p>Select one or more report sending rules and click Enable to enable the report sending rules.</p>
Disable report sending rules	<p>Disable a report sending rule that is not used currently.</p> <p>Select one or more report sending rules and click Disable to disable the report sending rules.</p>
Modify report sending rules	<p>Modify a report sending rule to meet management requirements.</p> <ol style="list-style-type: none"> Click in the Operation column where the required report sending rule is located. On the Modify Rule page, modify the report sending rule information.

If You Need To...	Then...
Delete report sending rules	<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"> 1. Click  in the Operation column where the required report sending rule is located. 2. In the Warning dialog box, click Yes.
Export report sending rules	<p>Export report sending rules</p> <ol style="list-style-type: none"> 1. Click Export drop-down list box. <ul style="list-style-type: none"> - Select Export All from the Export drop-down list box and save all the report sending rules that are queried to the PC. - Select the target device in the displayed operation area. Select Export Selected from the Export drop-down list box and save the selected report sending rules to the PC. <p>The message shown in Figure 4-62 is displayed.</p> <p>Figure 4-62 Message for rule export</p>  2. Select whether to export personal data in plaintext format, and click OK. Personal data refers to the email information about recipients.

----End

4.1.8.4 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.

4.1.8.4.1 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

Context

By default, the time synchronization function is not started.

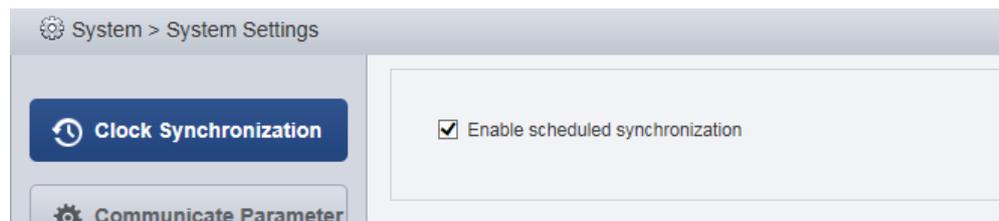
If the time synchronization function is started, the NetEco 1000S performs time synchronization per hour to synchronize time from the NetEco 1000S server to devices mounted to the plant.

Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Click **Clock Synchronization**.

Figure 4-63 Clock Synchronization



Step 3 Select **Enable scheduled synchronization**.

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

4.1.8.4.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as the 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 [4.1.1.2 Logging Out of the NetEco 1000S](#) and [4.1.1.1 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

4.1.8.4.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

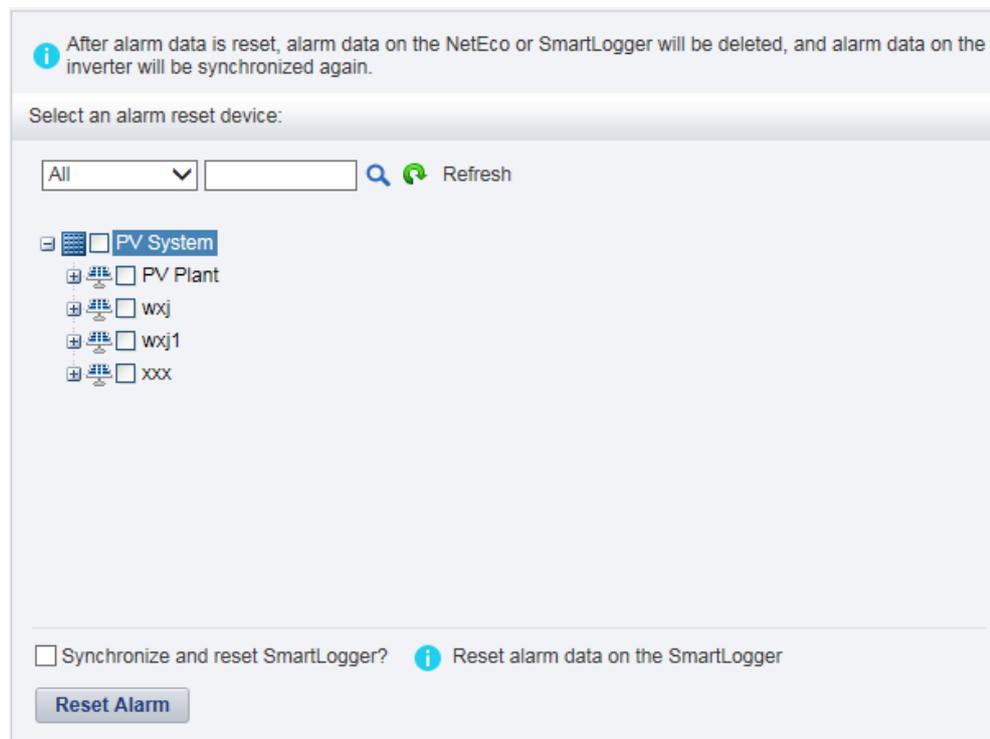
Procedure

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 4-64](#).

Figure 4-64 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

4.1.8.4.4 Setting Income

You can add the currency to collect statistics on the income of PV System or PV plant.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

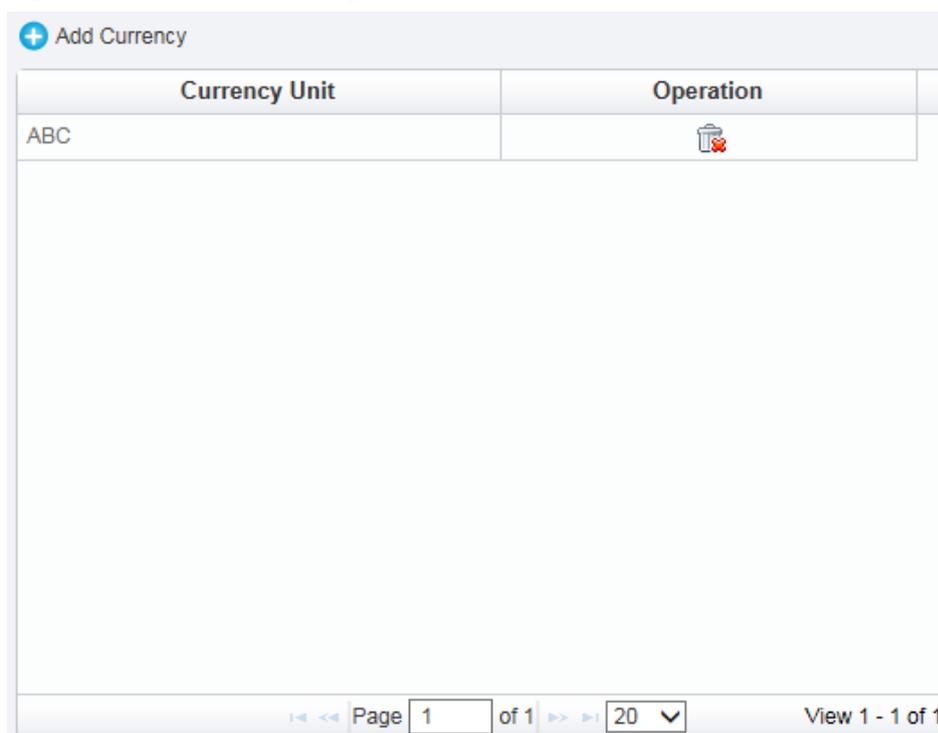
Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Choose **Income Settings**.

The page as shown in [Figure 4-65](#) is displayed.

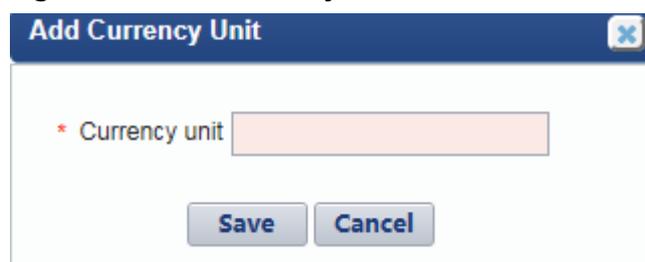
Figure 4-65 Income Setting



Step 3 Click **Add Currency**.

The **Add Currency Unit** dialog box is displayed, as shown in [Figure 4-66](#).

Figure 4-66 Add currency unit



Step 4 Add the currency, and save the setting.

----End

Follow-up Procedure

In the **Operation** column of the **Add Currency Unit** dialog box, delete the currency.

4.1.8.4.5 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.

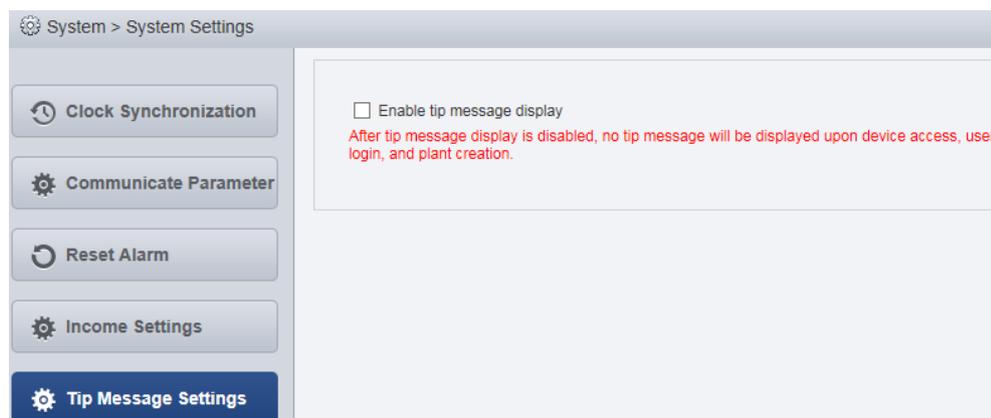
Procedure

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 4-67](#).

Figure 4-67 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.

----End

4.1.8.4.6 Setting Maintenance Notifications

Set the maintenance notification to notify the users involved of the plant maintenance in advance so that they can prepare for it.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

Context

- After the maintenance notifications take effect, a maintenance notification dialog box will be displayed in the lower right corner of the NetEco 1000S client.
- The dialog box will not disappear until the user clicks **I see**.

Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Choose **Maint. Notif** to access the **Maint. Notif** page.

Step 3 You can perform the following operations on the **Maint. Notif** page.

If You Need To...	Then...
Creating Maintenance Notifications	<ol style="list-style-type: none"> 1. Click Create. 2. Set Rule Name, Start time, End time, Content, Status and Select plant or Select user. <p>NOTE You can query the list of the target object by plant name or user name.</p> <ol style="list-style-type: none"> 3. Click OK.
Enabling Maintenance Notifications	<p>Enable the disabled maintenance notification to resume using it.</p> <p>Click  in the Operation column of the target maintenance notification to enable it.</p>
Disabling Maintenance Notifications	<p>Disable the maintenance notification to stop using it.</p> <p>Click  in the Operation column of the target maintenance notification to disable it.</p>
Modifying Maintenance Notifications	<p>Modify maintenance notifications to meet the latest management requirements.</p> <ol style="list-style-type: none"> 1. Click  in the Operation column of the target maintenance notification. 2. Modify the maintenance notification. 3. Click OK.
Deleting Maintenance Notifications	<p>Delete redundant maintenance notifications to ensure that the server has sufficient space and runs smoothly.</p> <ol style="list-style-type: none"> 1. Click  in the Operation column of the target maintenance notification. 2. In the displayed Information dialog box, click OK.

----End

4.1.8.4.7 Setting Maintenance Emails

Set the maintenance notification to notify the users involved of the plant maintenance by emails in advance so that they can prepare for it.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- You have set the email server.

Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Choose **Maint. Email** to access the **Maint. Email** page, as shown in [Figure 4-68](#).

Figure 4-68 Maint. Email page

Name	Mail Subject	Progress State of Task	Operation
dsafAS	SDGVZSDGRD	100% Read The Details	

Step 3 You can perform the following operations on the **Maint. Email** page.

If You Need To...	Then...
Creating Maintenance Emails	<p>By default, the status of maintenance emails is enabled after maintenance emails are created.</p> <ol style="list-style-type: none"> Click Create. Set Rule Name, Mail subject, Content, and Select plant or Select user. <p>NOTE You can query the list of the target object by plant name or user name.</p> <ol style="list-style-type: none"> Click OK. The Send now? dialog box is displayed. <ul style="list-style-type: none"> If the email needs to be sent promptly, click OK. If the email does not need to be sent promptly, click Cancel. The email will be saved.
Sending Maintenance Emails	<ul style="list-style-type: none"> Click in the Operation column of the target maintenance email to send it. While sending, click in the Operation column of the target maintenance email to cancel sending it. <p>NOTE You can click Read the Details in the Progress State of Task column to query the sending details of maintenance emails.</p>
Modifying Maintenance Emails	<p>Modify maintenance emails to meet the latest management requirements.</p> <ol style="list-style-type: none"> Click in the Operation column of the target maintenance email. Modify the maintenance email. Click OK.

If You Need To...	Then...
Deleting Maintenance Emails	Delete redundant maintenance emails to ensure that the server has sufficient space and runs smoothly. <ol style="list-style-type: none"> 1. Click  in the Operation column of the target maintenance email. 2. In the displayed Information dialog box, click OK.

----End

4.1.8.4.8 Setting IP Address

This section describes how to set IP address. Ensure that the user receives the reset password or the link in the self-registration activation email matches the IP address or domain name of the NetEco 1000S server.

Prerequisites

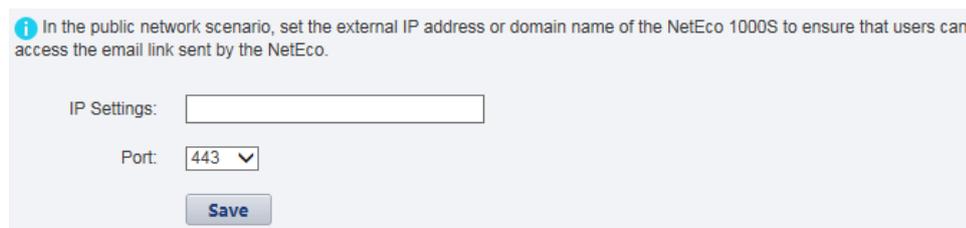
- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.

Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Choose **IP Setting** from the menu bar on the left, as shown in [Figure 4-69](#).

Figure 4-69 IP setting



Step 3 Set the IP/domain name and port number of the NetEco 1000S server, and click **Save**.

----End

4.1.8.4.9 Setting Self-Registration Account

After self-registration authorization is enabled, you can register an account on the NetEco 1000S login page.

Prerequisites

- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).

- You have logged in as the system administrator.

Procedure

Step 1 Choose **System > System Settings** from the main menu.

Step 2 Choose **Self-Registration Account Settings** from the menu bar on the left, as shown in **Figure 4-70**.

Figure 4-70 Self-registration account settings



Step 3 Select **Enable self-registration account** to enable the self-registration account function.

After the self-registration account function is enabled, the user authorization is also enabled.

----End

4.1.8.5 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.

4.1.8.5.1 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, managers, installers, guest users, 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.

4.1.8.5.2 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the system administrator.
- The License has been imported to NetEco 1000S. If it has not been imported, import it by referring to [4.1.8.5.3 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 4-25](#).

Table 4-25 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

4.1.8.5.3 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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

4.1.8.5.4 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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 [4.1.8.5.6 Importing a License on the Page Requiring License Import](#).

Procedure

Step 1 Choose **System > License Management** from the main menu.

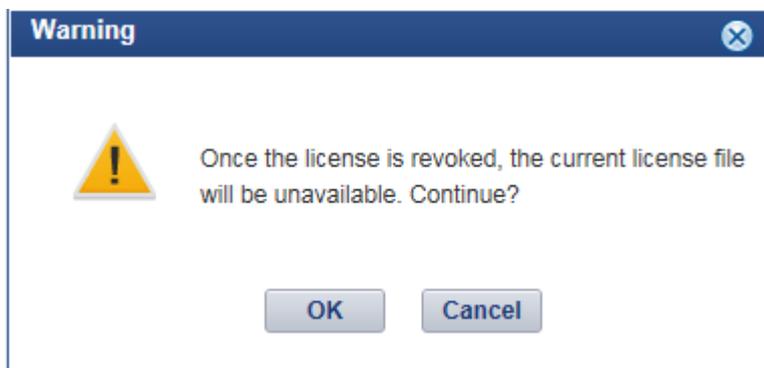
Step 2 Choose **Revoke License**.

The **Revoke License** page is displayed.

Step 3 Click **Revoke**.

A warning is displayed, as shown in [Figure 4-71](#).

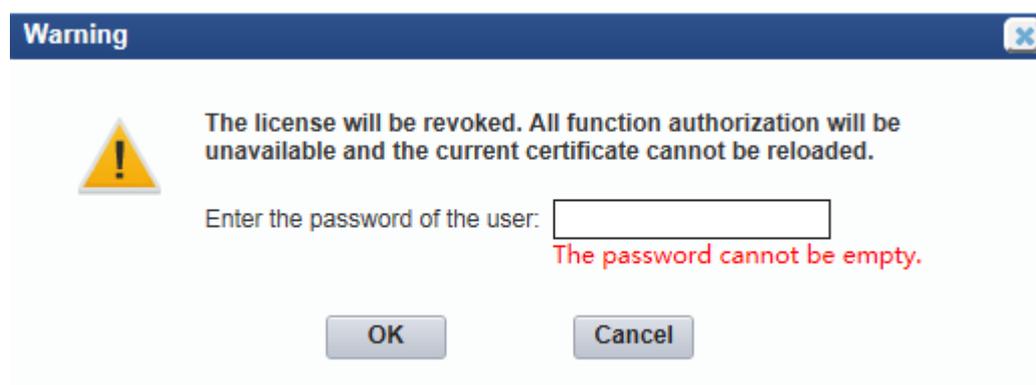
Figure 4-71 Revocation warning



Step 4 Click **OK**.

A dialog box is displayed, as shown in [Figure 4-72](#).

Figure 4-72 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

4.1.8.5.5 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. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- You have logged in as the 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.
 - a. 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.

- b. 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 4-73](#).

Figure 4-73 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 [4.1.8.5.6 Importing a License on the Page Requiring License Import](#).

4.1.8.5.6 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 as the system administrator.
- You have logged in to the NetEco 1000S. For details, see [4.1.1.1.2 Logging In to the NetEco 1000S Client](#).
- 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 a 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

Step 1 Please check whether you have obtained a new license and perform appropriate operations.

- If you have obtained a new license, perform **Step 4** through **Step 9**.
- If no license file is available, perform **Step 2** through **Step 9**.

Step 2 Obtain the ESN of the NetEco 1000S so that you can use the ESN to apply for a new license.

- Obtain the ESN of the current logged-in server only.
 - a. 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.

- b. Click **Obtain ESN**. The generated ESN is displayed at the lower part of the page.
- 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.

Step 3 Contact Huawei technical support engineers to apply for a new license using the obtained ESN.

Step 4 Click **Browse** on the right of **License File**.

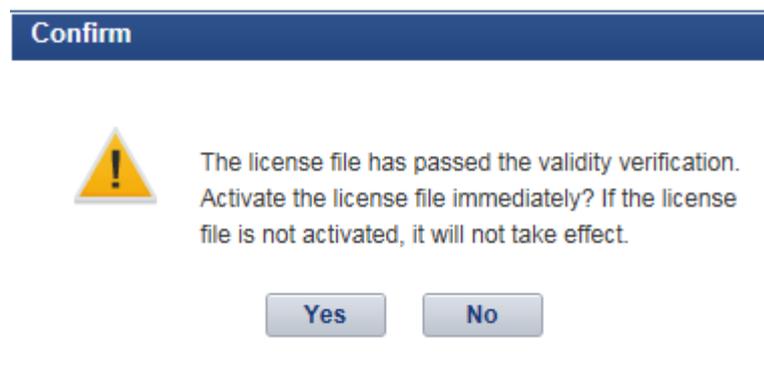
A dialog box for selecting a file is displayed.

Step 5 Select the license file to be imported and click **OK**.

Step 6 Click **Upload**.

The dialog box shown in **Figure 4-74** is displayed.

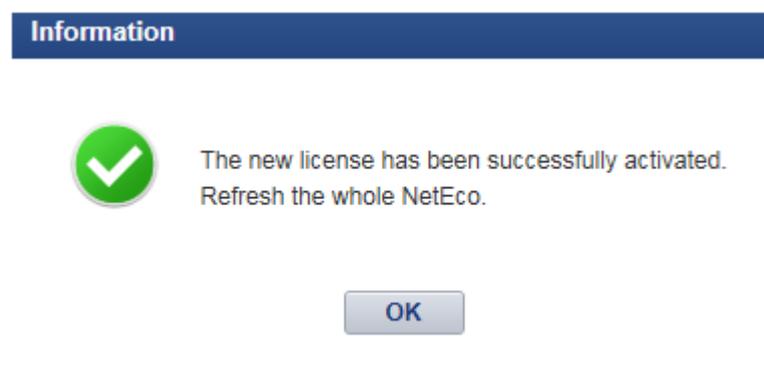
Figure 4-74 Confirm



Step 7 Click **Yes**.

The dialog box shown in [Figure 4-75](#) is displayed.

Figure 4-75 Information



Step 8 Click **OK**.

Step 9 Click **Return** on the right of **License File**.

The NetEco 1000S login page is displayed.

----End

4.1.9 FAQs

4.1.9.1 What Do I Do When Characters in a CSV File Are Displayed in Disorder?

Symptom

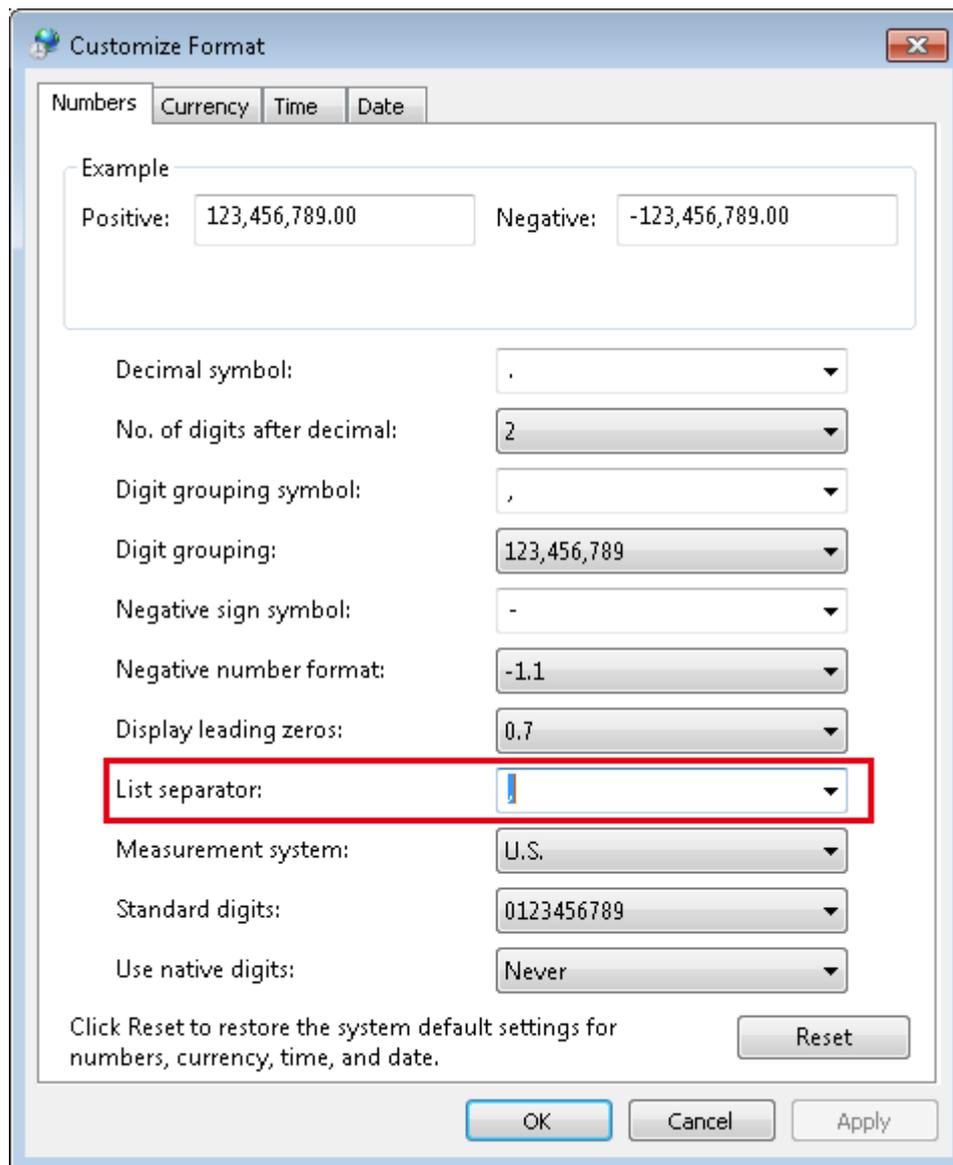
When users open a CSV file exported from the NetEco 1000S, the characters in the file are displayed in disorder.

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

4.1.9.2 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

4.1.9.3 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.

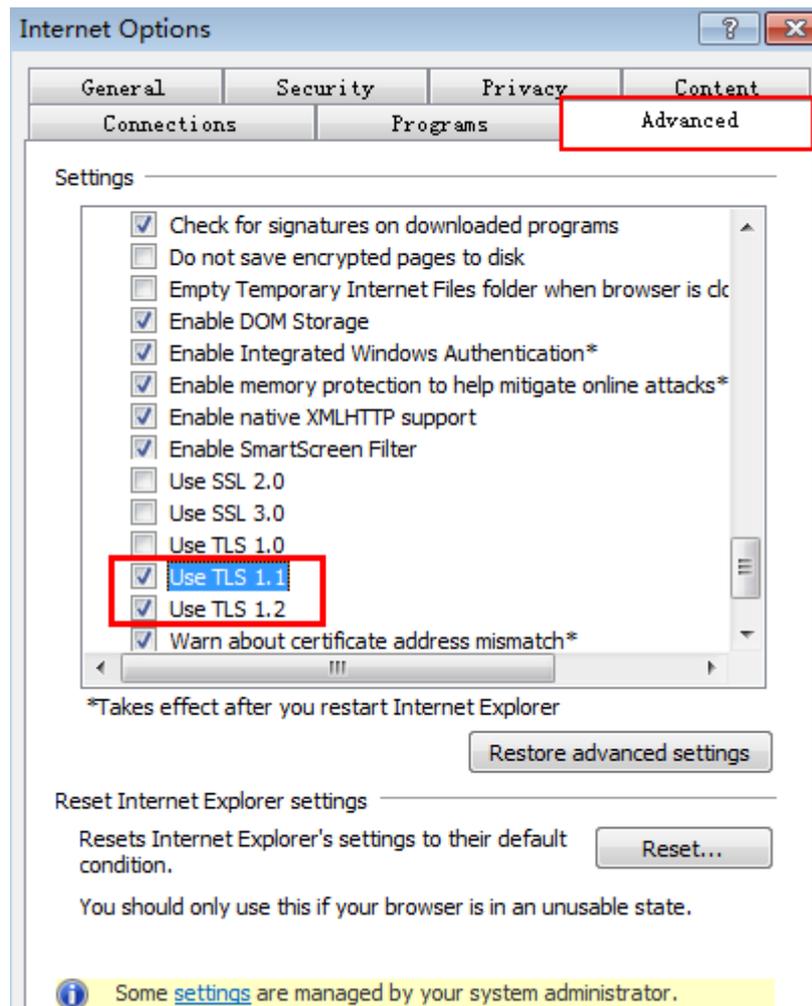
Possible Causes

- 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 1000Sservice.

- 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, please see [4.1.9.5 What Do I Do If the NetEco 1000S Service Is Successfully Started Yet Its Login Page Cannot Be Accessed?](#).

----End

4.1.9.4 What Do I Do If It Is Prompted that Port 443 or Port 8443 Is Occupied When I Try to Start the NetEco 1000S Service?

Symptom

When you try to start the NetEco 1000S service, either of the following messages is displayed on the server interface:

- Failed to start the NetEco service as port 443 has been occupied. Solve the problem by referring to the user manual, and then restart the NetEco service.
- Failed to start the NetEco service as port 8443 has been occupied. Solve the problem by referring to the user manual, and then restart the NetEco service.

Possible Causes

- Port 443 is occupied.
- Port 8443 is occupied.

Procedure

There are two solutions to the port occupation problem.

- Modify the port number in the system configuration file.
 - a. Access the *NetEco 1000S software installation directory*\WebRoot\WEB-INF\classes directory.
 - b. Open the **sslCertificate.properties** file. Modify the occupied port number to one that is available for the operating system, and save the modification.
 - c. Restart the NetEco 1000S service.
- Release the occupied port number. For details, contact Huawei technical support.

4.1.9.5 What Do I Do If the NetEco 1000S Service Is Successfully Started Yet Its Login Page Cannot Be Accessed?

Symptom

The NetEco 1000S service is successfully started, yet its login page cannot be accessed.

Possible Causes

- Port 80 or port 8010 is occupied.
- Port 443, port 8443, port 80, or port 8010 is disabled by the operating system because of the security policy.

Context

You can use any of the following methods to access the NetEco 1000S login page:

- *IP address or domain name* (recommended)
- `https://IP address or domain name`
- `https://IP address or domain name:443`
- `https://IP address or domain name:8443`
- `http://IP address or domain name`
- `http://IP address or domain name:80`
- `http://IP address or domain name:8010`

Procedure

- Step 1** Determine using which of the following methods you cannot access the NetEco 1000S login page.
- `https://IP address or domain name:8443`. Port 8443 is disabled. Go to [Step 5](#).
 - `http://IP address or domain name`. Go to [Step 2](#).
 - `http://IP address or domain name:80`. Go to [Step 2](#).
 - `http://IP address or domain name:8010`. Go to [Step 3](#).
 - Any other methods in Context. Port 443 is disabled. Go to [Step 5](#).
- Step 2** Check whether port 80 is occupied.
- If so, go to [Step 4](#).
 - If not, port 80 is disabled. Go to [Step 5](#).
- Step 3** Check whether port 8010 is occupied.
- If so, go to [Step 4](#).
 - If not, port 8010 is disabled. Go to [Step 5](#).
- Step 4** There are two solutions to the port occupation problem.
- Modify the port number in the system configuration file.
 - a. Access the *NetEco 1000S software installation directory*\WebRoot\WEB-INF\classes directory.

- b. Open the **sslCertificate.properties** file. Modify the occupied port number to one that is available for the operating system, and save the modification.
- c. Restart the NetEco 1000S service and log in to the NetEco 1000S client.
- Release the occupied port number. For details, contact Huawei technical support.

Step 5 Enable the port in the security policy of the operating system if the port is disabled by the security policy.

----End

4.1.9.6 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

4.1.9.7 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> (for carriers) or <http://support.huawei.com/enterprise/en/tool/software-digital-signature-validation-tool--pgp-verify--TL1000000054> (for enterprises) 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\NetEco1000SV100R003C00SPCXXX_win7_standard.zip.asc

NOTE

- *C:\Users* indicates the path of the signature file. You need to change it based on site conditions.
- **iManagerNetEco1000S_V100R003C00SPCXXX_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_V100R003C00SPCXXX_win7_standard.zip.asc** or **iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip.asc**.
 - For carriers: To obtain the software package, Huawei technical support engineers can choose **Support > Software > Network Energy > PV Inverter > Smart PV Plant System > iManager NetEco 1000S > V100R003C00** at <http://support.huawei.com/carrier/>.
 - For enterprises: To obtain the software package, Huawei technical support engineers can choose **SUPPORT > Network Energy > Energy Common > iManager NetEco 1000S** at <http://support.huawei.com/enterprise>.
 - If the Windows Server 2012 OS is used, obtain the **iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip** installation package and **iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip.asc** digital signature file.
 - If the Windows 7 or Windows 10 OS is used, obtain the **iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip** installation package and **iManagerNetEco1000S_V100R003C00SPCXXX_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 4-26 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

Verification Result Scenario	Output Information Example	Verification Result
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
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

4.1.9.8 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.
- For carriers: To obtain the software package, Huawei technical support engineers can choose **Support > Software > Network Energy > PV Inverter > Smart PV Plant System > iManager NetEco 1000S > V100R003C00** at <http://support.huawei.com/carrier/>.
 - For enterprises: To obtain the software package, Huawei technical support engineers can choose **SUPPORT > Network Energy > Energy Common > iManager NetEco 1000S** at <http://support.huawei.com/enterprise>.

 NOTE

- If the Windows Server 2012 OS is used, obtain the **iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip** installation package and **iManagerNetEco1000S_V100R003C00SPCXXX_win2012_enterprise.zip.asc** digital signature file.
- If the Windows 7 or Windows 10 OS is used, obtain the **iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip** installation package and **iManagerNetEco1000S_V100R003C00SPCXXX_win7_standard.zip.asc** digital signature file.

You can check the integrity of the software package by referring to [4.1.9.7 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 V100R003C00 Upgrade Guide*.

----End

4.1.9.9 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 4-76](#) or [Figure 4-77](#).

Figure 4-76 Certificate error message

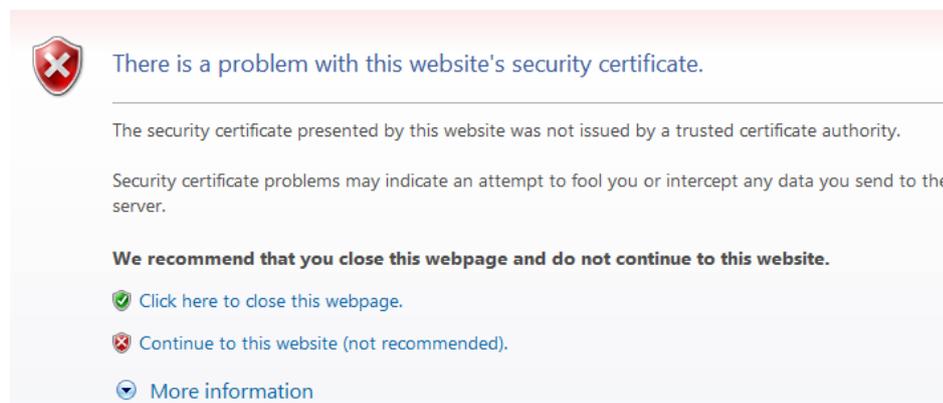
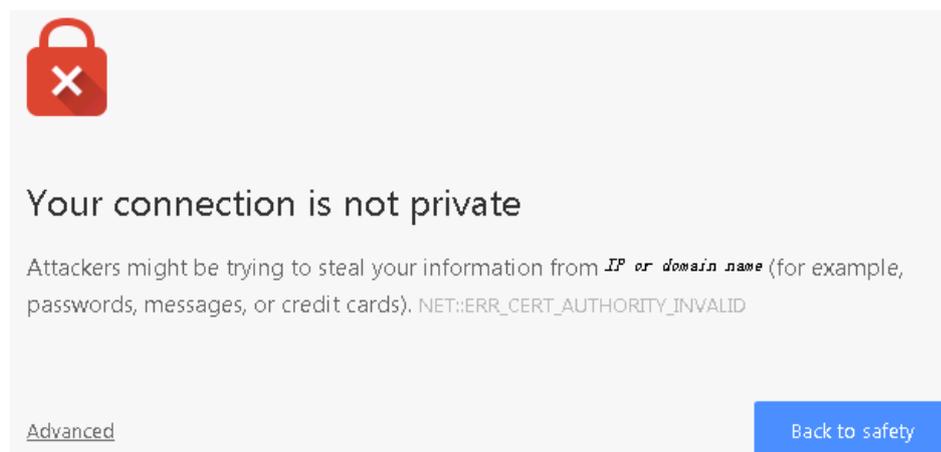


Figure 4-77 Website Security Certificate window (Chrome 50)



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.

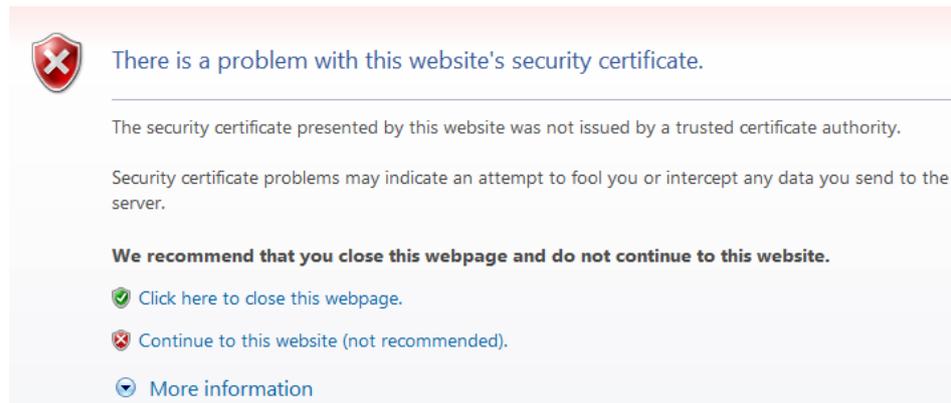
If you start Internet Explorer 11 in the Windows 7 operating system, you need to log in a PC as a user in the Administrators user group and then start Internet Explorer as user Administrator. Otherwise, you cannot properly set Internet Explorer:

1. Choose **Start > Internet Explorer**.
2. In the displayed shortcut menu, choose **Run as Administrator**.

Step 2 View the certificate.

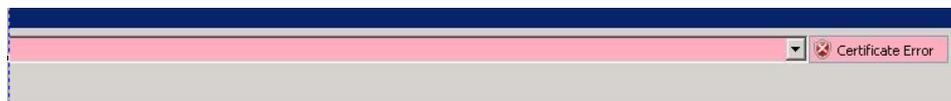
1. When the Internet Explorer displays the security certificate message as shown in [Figure 4-78](#), click **Continue to this website**.

Figure 4-78 Security certificate



2. As shown in **Figure 4-79**, click **Certificate Error**.

Figure 4-79 Certificate Error



3. In the displayed dialog box, click **View Certificate**.

Step 3 In the displayed root certificate dialog box as shown in **Figure 4-80**, click **Install Certificate**.

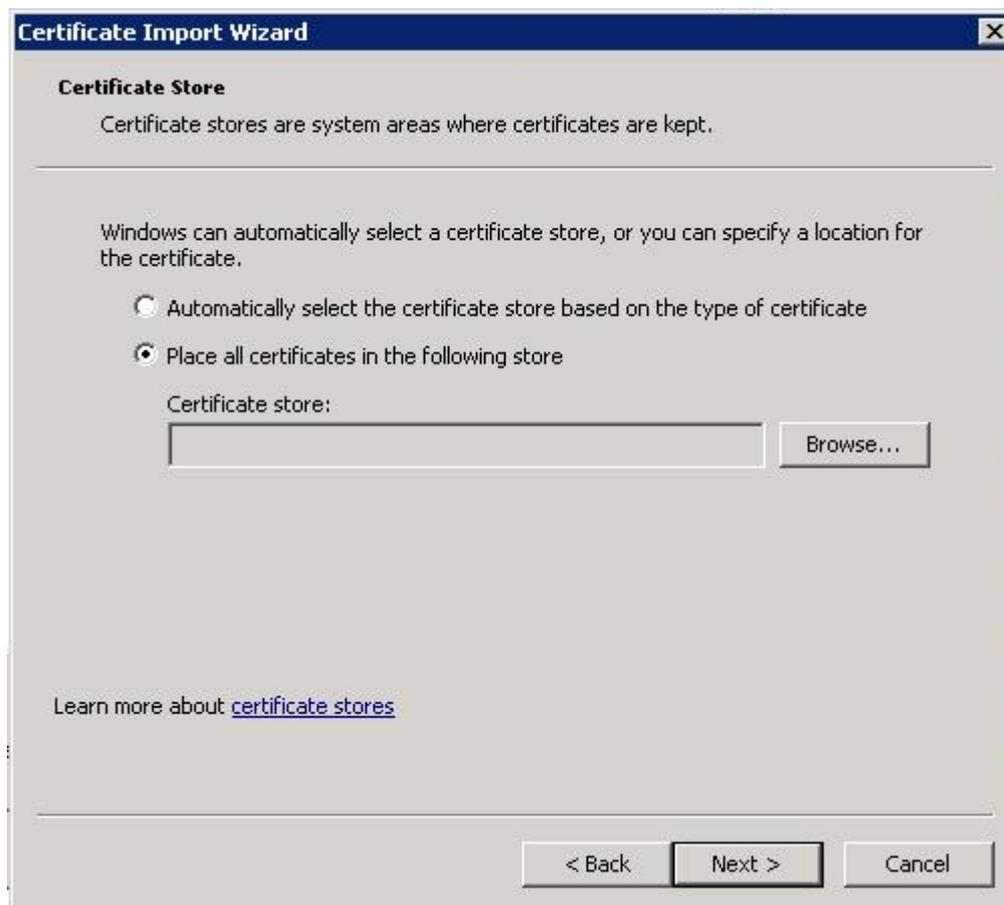
Figure 4-80 Installing the root certificate



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 4-81](#).

Figure 4-81 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

4.1.9.10 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.

4.1.9.11 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.

NOTICE

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

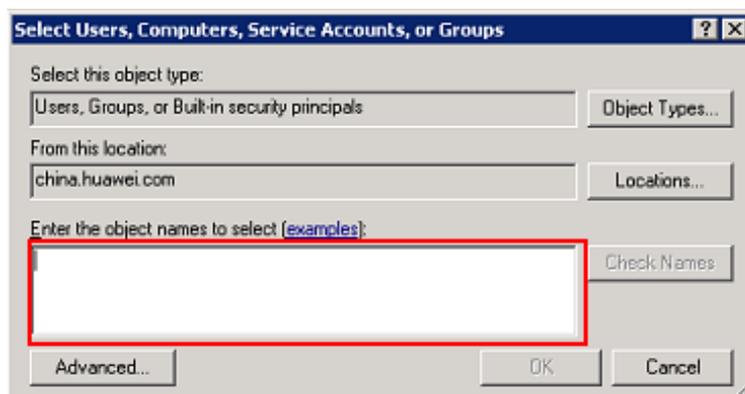
When you share the NetEco 1000S software installation directory with other users, the NetEco 1000S software deletes user **NETWORK SERVICE** that is automatically generated during software installation and is used for accessing the NetEco 1000S software installation directory to ensure security, causing 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 4-82](#) is displayed.

Figure 4-82 Adding a user



4. Enter **NETWORK SERVICE** in [Figure 4-82](#) 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

4.1.9.12 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 [4.1.8.4.2 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

4.1.9.13 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 [4.1.1.1 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

4.1.9.14 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 the directly connected inverters.

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 the directly connected inverters does not support TLSv1.1/1.2, the SmartLogger or the directly connected inverters 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 [4.1.1.2.2 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 FTPS 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.

n **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.
```

n **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.
```

- n **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.

- n **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.
```

- n **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.
```

- n **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

4.1.9.15 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

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

Step 1 Logging Out of the NetEco 1000S services, for detailed operations, see [4.1.1.2.2 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 FTPS 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

4.1.9.16 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 [4.1.1.1.1 Starting NetEco 1000S Services](#).

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 [4.1.1.2.2 Logging Out of the NetEco 1000S Services](#).

Step 2 Run the script *NetEco 1000S 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
```

NOTICE

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

4.1.9.17 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 [4.1.1.1.1 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

4.1.9.18 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

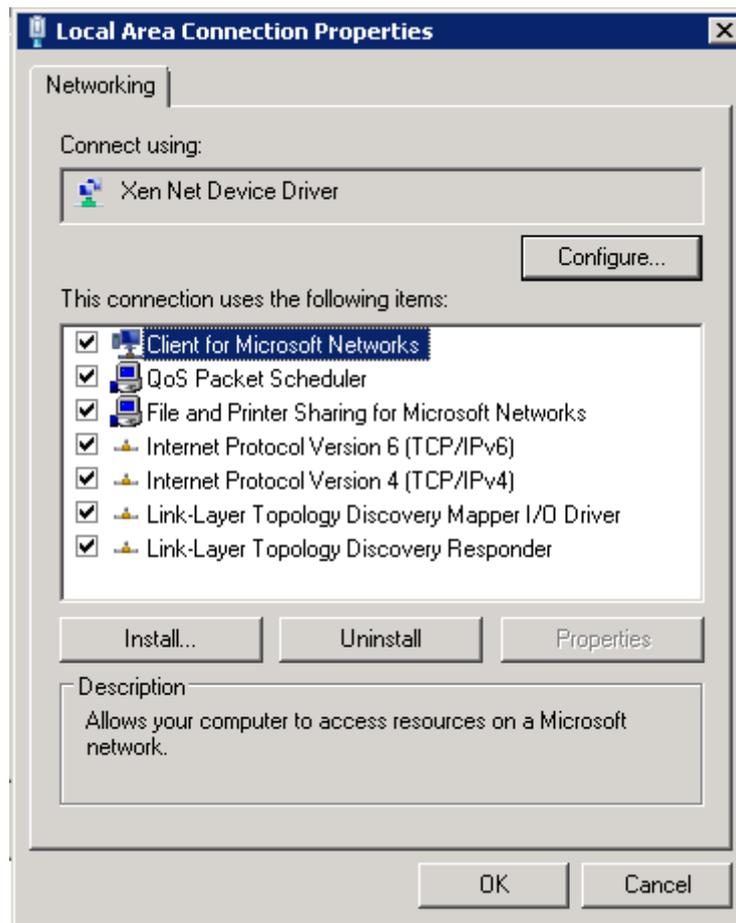
The navigation path of **Network Connections** on the **Control Panel** may vary depending on the OS version. Choose the corresponding path as required.

The **Network Connections** dialog box is displayed.

2. Click **Properties**.

The **Local Area Connection Properties** dialog box is displayed, as shown in [Figure 4-83](#).

Figure 4-83 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 [4.1.8.3.1 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 [4.1.8.3.1 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 [4.1.8.3.1 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 [4.1.8.3.1 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

4.1.9.19 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

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

Step 1 Check whether total component capacity is configured for all inverters.

1. Log in to the NetEco 1000S client as the system administrator, a manager, or an installer.
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

4.1.9.20 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

4.1.9.21 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/index.action?webLang=zh_CN**, delete the language attribute from the URL. That is, use **https://IP address/index.action** to access the client.

----End

4.1.9.22 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

4.1.9.23 What Do I Do to Change the Life Cycle of Operation Logs?

The life cycle of operation logs is half a year by default. You can run the **LogTools.bat** script to change the life cycle of operation logs.

Prerequisites

The NetEco 1000S is of V100R002C70 or a later version.

Procedure

- Step 1** Go to **NetEco 1000S software installation directory\tools**, and run the **LogTools.bat** script.

The following information is displayed:

```
1 Change life cycle of operatelog<1~3650>.
2 Exit.
Please Choose:
```

- Step 2** Enter 1 and press **Enter**.

The following information is displayed:

```
Please input the life cycle of operatelog:
```

- Step 3** 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.

- Step 4** Restart the NetEco 1000S to validate the settings.

----End

4.1.9.24 How Do I Disable the Display of the Remote Control Function?

To disable the display of the remote control function, modify the **userManagement.properties** file as required.

Prerequisites

The NetEco 1000S is of V100R003C00CP1104 or a later version.

Procedure

- Step 1** Go to **NetEco 1000S software installation directory\WebRoot\WEB-INF\classes**, and open the **userManagement.properties** file.

The following information is displayed:

```
loginErrorMaxNum=5
loginErrorLockTime=5
NetEcoIP=
isShowThirdEquipment=0
isStartCom=0
queryNum=15
blockedIP=
PrivacyStatementType=1
isShowUseTerms=1
selfRegister=1
isShowFusion=0
publicNetworkIP=
#0: Not display 1: Display
remoteControlSwitch=1
```

Step 2 Change the value of **remoteControlSwitch** to 0 and save the modification.

Step 3 Restart the NetEco 1000S to validate the settings.

----End

4.2 NetEco 1000S App Operation

4.2.1 Registering a User

You can register yourself as an installer or customer on the NetEco 1000S app.

Prerequisites

- You have added the identification number of the mobile terminal in the NetEco 1000S system. For details, see [3.2.3 Security Configuration for NetEco 1000S App](#).
- You have installed the NetEco 1000S app software on the mobile terminal. For details, see [3.2.2 Installing the NetEco 1000S App Software](#).
- You have set the email server.
- You have enabled the self-registration account on the NetEco 1000S. For details, see [3.1.2 Installing the NetEco 1000S Software](#) or [4.1.8.4.9 Setting Self-Registration Account](#).

Context

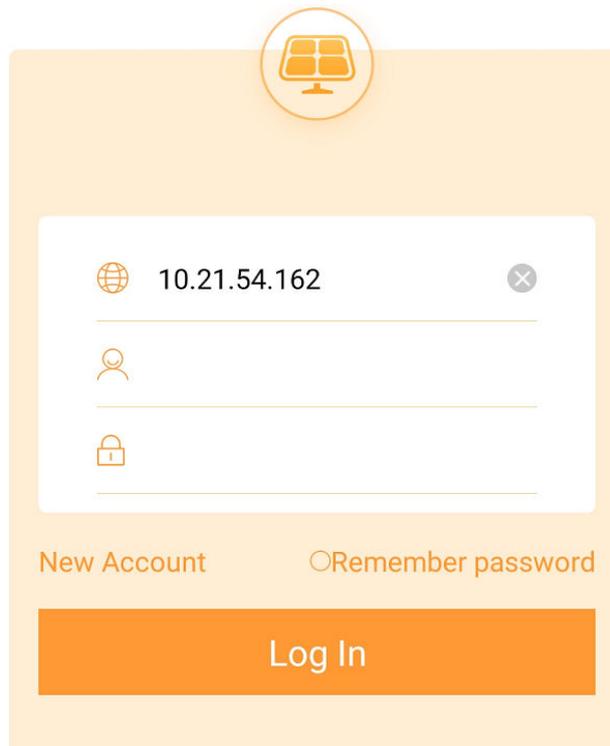
NOTE

- The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.
- Personal data such as phone numbers and email addresses are anonymized in the NetEco GUI and encrypted in the NetEco during batch data transmission to ensure data security.

Procedure

Step 1 Tap the NetEco 1000S app icon on the desktop of the mobile terminal to open the login screen, as shown in [Figure 4-84](#).

Figure 4-84 Login screen



Step 2 Specify the IP address or domain name of the NetEco 1000S server.

NOTE

- Before **Server IP/Domain Name** is set, **New Account** is not displayed.
- If **New Account** is not displayed after you set **Server IP/Domain Name**, the self-registration account is not enabled for NetEco 1000S. In this case, enable the self-registration account function on the WebUI. For details, see [4.1.8.4.9 Setting Self-Registration Account](#).

Step 3 On the screen shown in [Figure 4-84](#), tap **New Account**.

The **New Account** screen is displayed, as shown in [Figure 4-85](#).

Figure 4-85 Registration

< Back New Account

* User name

* Password

* Confirm password

* Email Address

Company

Installer >

Senior manager account

Verify code 

I have read and agree to the [Terms of Use](#) and [Privacy Policy](#)

New Account

Step 4 Set the parameters, and click **New Account**.

NOTE

- The senior manager can manage the PV plant created by the registered user.
- If the registered user is **installer**, enter the email address of an existing manager in the system.
 - If the registered user is **customer**, enter the email address of an existing manager or installer in the system.

A dialog box is displayed, asking you to go to the mailbox to activate the registered account.

NOTICE

- The default validity period of the activation link in the mailbox is 24 hours. If the account is not activated within 24 hours, register the user again.
- You can modify the validity period of the activation link by modifying the configuration file.

Step 5 Go to the mailbox and tap the activation link to activate the NetEco 1000S account.

Once activated, the registered account can be used to log in to the NetEco 1000S app.

----End

4.2.2 Logging In to the NetEco 1000S App

Before using the NetEco 1000S app, you must log in to it.

Prerequisites

- You have added the identification number of the mobile terminal in the NetEco 1000S system. For details, see [3.2.3 Security Configuration for NetEco 1000S App](#).
- You have installed the NetEco 1000S app software on the mobile terminal. For details, see [3.2.2 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.

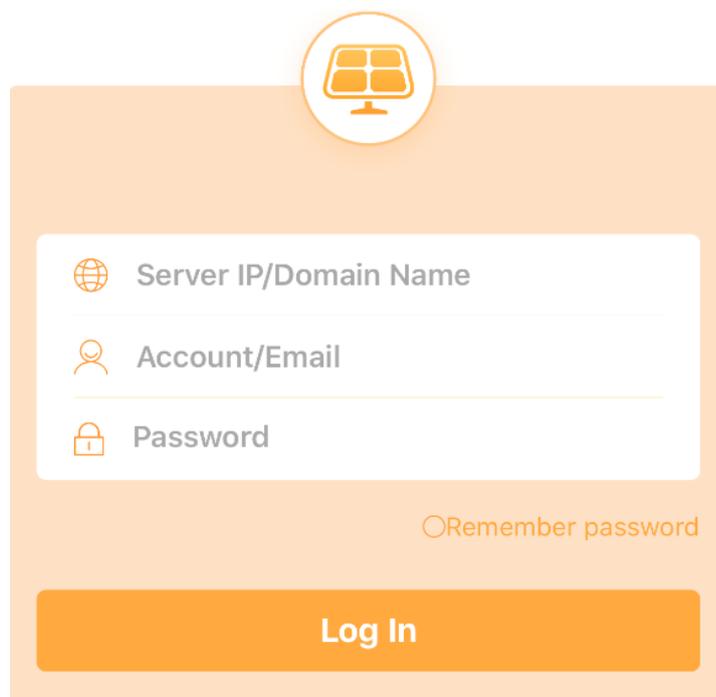
Context

The NetEco 1000S app can be installed on mobile terminals running IOS 6.0, Android 5.0, and later versions. The NetEco 1000S app supports the TLSv2 communication protocol.

Procedure

- Step 1** Tap the NetEco 1000S app icon on the desktop of the mobile terminal to open the login screen, as shown in [Figure 4-86](#).

Figure 4-86 Login screen



Step 2 Optional: Specify the IP address or domain name of the NetEco 1000S server if this is the first time that you log in to the NetEco 1000S app.

Step 3 Enter the user's **Account/Email** and password.

 **NOTE**

If you select **Remember password**, you can log in to the home page of the app next time simply by tapping **Login**.

Step 4 Tap **Login**.

NOTICE

If you are redirected to the **User Authorization** page, you need to select **I have read and agree to the Privacy Policy and Terms of Use** before tapping **OK** to proceed to the next step. To decide whether to enable the User authorization, see [3.1.2 Installing the NetEco 1000S Software](#) for details.

After the login is successful, the home page of the NetEco 1000S app is displayed.

----End

4.2.3 Creating a PV Plant

You can create a PV plant in the NetEco 1000S app and connect to the residential inverter that has been registered in the FusionHome app.

Prerequisites

- You have logged in to the NetEco 1000S app. For details, see [4.2.2 Logging In to the NetEco 1000S App](#).
- You have logged in as the system administrator, manager, installer, or guest user.
- The IP address of the NetEco 1000S has been registered with the device, and the device has been successfully registered with the management system. For details, see the device *user manual*.

Context

 **NOTE**

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.

Procedure

Step 1 On the home page, tap the **Set** tab.

Step 2 On the **Set** page, tap **New PV Plant**.

Step 3 On the **New PV Plant** page, set parameters and tap **Next**.

Step 4 Perform operations based on the actual scenario.

- To connect a device to a new PV plant, performs [Step 5~Step 6](#).
- If you need only to create a PV plant, go to [Step 7](#).

Step 5 Perform the following operations on the **Selecte Device** page and click **Next**:

- Select a target device in the device list.
- Enter the SN and name of the target device and click **Add**.
- Click  to scan the QR code on the device to identify the device.

Step 6 Set device information and tap **Next**. The device will be connected to the new PV plant.

Step 7 On the **Selecte Device** page, tap **Skip** to finish creating the PV plant.

----End

4.2.4 Connecting Devices

In the NetEco 1000S app, you can connect the residential inverter registered in the FusionHome app to the existing PV plant.

Prerequisites

- You have logged in to the NetEco 1000S app. For details, see [4.2.2 Logging In to the NetEco 1000S App](#).
- You have logged in as the system administrator, manager, installer, or guest user.
- The IP address of the NetEco 1000S has been registered with the device, and the device has been successfully registered with the management system. For details, see the device *user manual*.

Context

NOTE

The product feature you have purchased may use personal information of users when providing services or maintenance. Therefore, you need to configure such information in accordance with the requirements on personal data in local laws and regulations.

Procedure

Step 1 On the home page, tap the **Set** tab.

NOTE

After you use the FusionHome app to perform quick setting, you can click the icon in the upper right corner of the app home page to enter into the **Selecte Device** page.

Step 2 On the **Set** page, tap **Device Access**.

Step 3 Perform the following operations on the **Selecte Device** page and click **Next**:

- Select a target device in the device list.
- Enter the SN and name of the target device and click **Add**.
- Click  to scan the QR code on the device to identify the device.

Step 4 Set device information.

Step 5 Perform operations based on the actual scenario.

- To connect a device to an existing PV plant, performs [Step 6~Step 8](#).
- To connect a device to a new PV plant, performs [Step 9~Step 11](#).

Step 6 Tap **Add to Existing PV Plant**.

Step 7 Select the target plant, and tap **Next**.

The **Configuration Successful** page is displayed.

Step 8 Click **Finish**.

Step 9 Tap **Add to New PV Plant**.

Step 10 Set PV plant parameters and tap **Next**.

The **Configuration Successful** page is displayed.

Step 11 Click **Finish**.

----End

4.2.5 Viewing the Overview of the PV System

You can view the PV system overview on the **Overview** page of the NetEco 1000S app.

Prerequisites

You have logged in to the NetEco 1000S app. For details, see [4.2.2 Logging In to the NetEco 1000S App](#).

Procedure

Step 1 On the home page, tap the **Overview** tab. The PV System Overview page is displayed.

Figure 4-87 PV System Overview page



Step 2 On the PV System Overview page, you can perform the following operations.

If You Need To...	Then...
View PV system KPIs.	On the upper part of the PV System Overview page, view KPIs such as Income and Daily Energy . NOTE If the Income pane displays Set the exchange rate , perform the following operations: <ol style="list-style-type: none"> 1. Tap Set the exchange rate link. The PV System Currency Settings page is displayed. 2. Set the currency for the PV system and the exchange rates for the PV plants as required, and click Save.
View the energy yield and revenue report of the PV system.	View the energy yield and revenue report of the PV system in the lower part of the PV System Overview page. Meanings of the coordinates are as follows: <ul style="list-style-type: none"> • Left vertical coordinate: Energy yield statistics • Right vertical coordinate: Income statistics • Horizontal coordinate: data collection period. Tap    to switch between the time periods.

If You Need To...	Then...
View the PV plant list.	Tap > next to the Total number of PV plants... The PV Plant List page is displayed.

----End

4.2.6 Viewing Plant and Device Details

You can view the information about each PV plant and devices connected to the plant in the NetEco 1000S app. You can learn about the running status of the PV plant and devices.

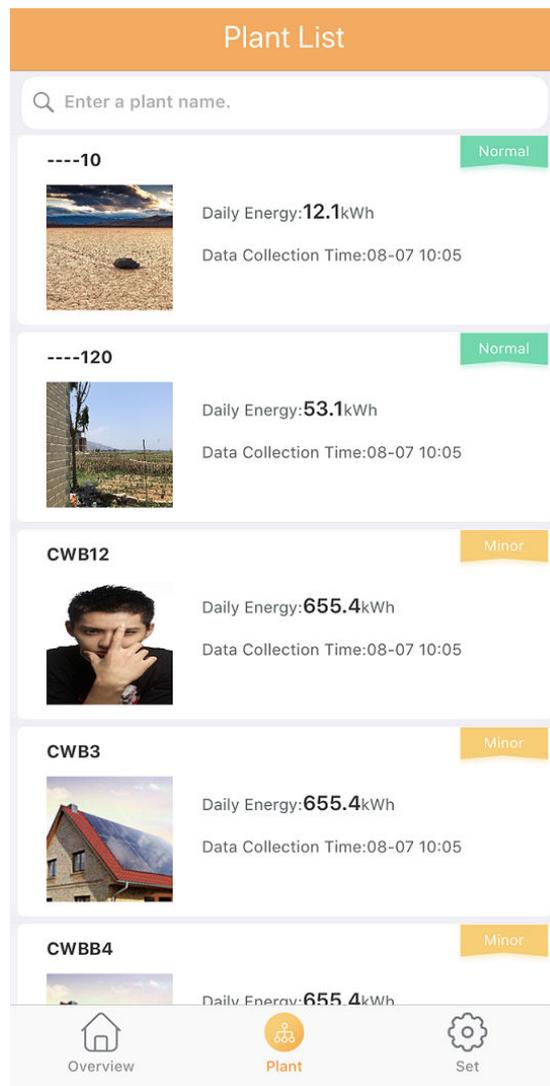
Prerequisites

You have logged in to the NetEco 1000S app. For details, see [4.2.2 Logging In to the NetEco 1000S App](#).

Procedure

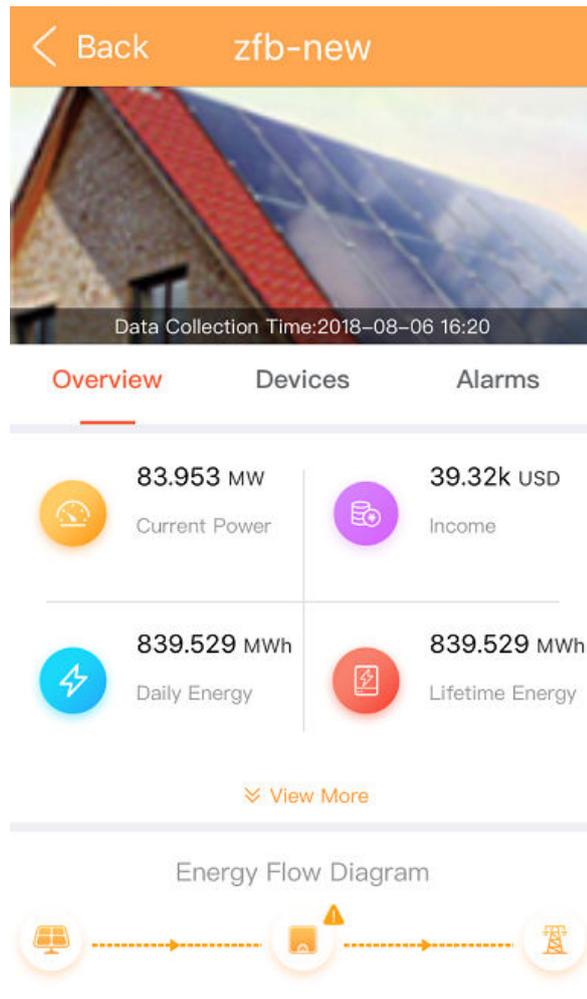
- Step 1** Tap the **Plant** tab in the lower part of the home page to view the PV plant list. See [Figure 4-88](#).

Figure 4-88 PV plant list



Step 2 Tap the target PV plant. The PV Plant Overview page is displayed. See [Figure 4-89](#).

Figure 4-89 PV plant overview



Step 3 You can perform the following operations on the PV Plant Overview page.

If You Need To...	Then...
View all KPIs of the PV plant.	On the upper part of the PV Plant Overview page, view KPIs such as Income and Daily Energy . Tap View More to view more KPIs.
View the device energy flow diagram.	<ul style="list-style-type: none"> You can view the device energy flow diagram of the plant in the middle of the PV Plant Overview page. If a battery or meter is connected to the residential inverter, you can click the battery or meter icon to view its details.

If You Need To...	Then...
View the energy yield and revenue report of the PV plant.	<p>In the lower part of the PV Plant Overview page, view the energy yield and revenue report of the plant.</p> <ul style="list-style-type: none"> • When the time dimension is day, the vertical coordinate displays only the power. • When the time dimension is month, year, or total, the vertical coordinate is on the left and right sides. <ul style="list-style-type: none"> – Left vertical coordinate: Energy yield statistics – Right vertical coordinate: Income statistics • Horizontal coordinate: data collection period. Tap     to switch between the time periods.
View the device list.	<ul style="list-style-type: none"> • On the PV Plant Devices page, you can view the device list of the plant. • Tap the target device. The Device Overview page is displayed. On the Device Overview and Alarms pages, you can view device details and alarm information.
View the PV plant alarm list.	On the PV Plant Alarms page, you can view the alarm information of the PV plant.

----End

4.2.7 Basic Settings

On the **Set** page, you can set the NetEco 1000S app and view the basic information about the NetEco 1000S app.

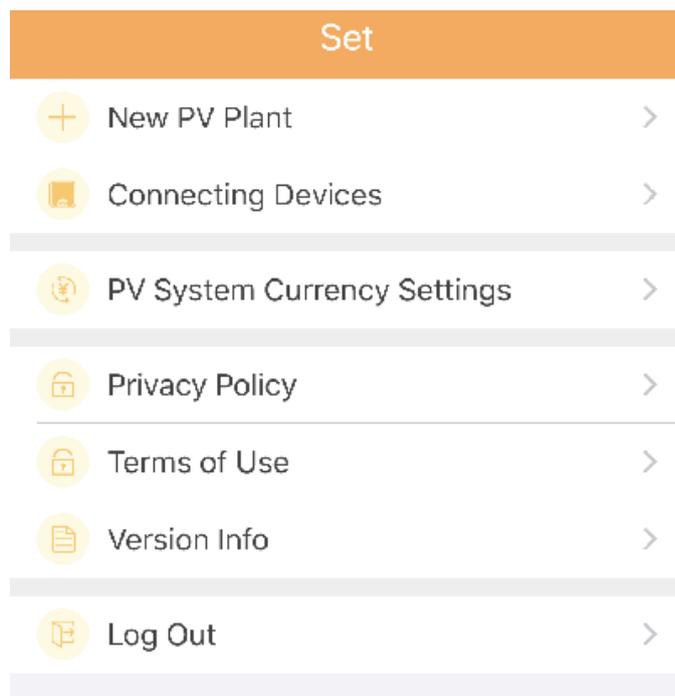
Prerequisites

You have logged in to the NetEco 1000S app. For details, see [4.2.2 Logging In to the NetEco 1000S App](#).

Procedure

- Step 1** Tap the **Set** tab in the lower part of the home page. The **Set** page is displayed, as shown in [Figure 4-90](#).

Figure 4-90 settings



Step 2 On the **Set** page, you can perform the following operations.

If You Need To...	Then...
Create a PV plant.	For details, see 4.2.3 Creating a PV Plant .
Connect devices.	For details, see 4.2.4 Connecting Devices .
Set the PV system currency.	<ol style="list-style-type: none"> 1. Tap PV System Currency Settings. The PV System Currency Settings page is displayed. 2. Set the currency for the PV system and the exchange rates for the PV plants as required, and click Save.
View the privacy policy, terms of use, or version information.	Tap the related content to view the privacy policy, terms of use, or version information.
Log out.	You can tap Log Out to exit the NetEco 1000S app.

----End

4.3 NetEco 1000S Maintenance

This section describes how to manage NetEco 1000S users and logs.

4.3.1 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.

4.3.1.1 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.

4.3.1.1.1 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 4-27](#).

Table 4-27 MySQL user accounts

User	Function	Authority
administra tor	Management user of the MySQL database.	User administrator has the highest authority of the database.
dbuser	Operation user of the MySQL database.	User dbuser has the permission to the database.

4.3.1.1.2 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, see [3.1.3 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

NOTICE

To improve system security and prevent security risks (for example, violent password cracking), change the initial password set upon device delivery in a timely manner and change the user password periodically (for example, every six months). If the password is lost, stolen, or cracked, the user shall be liable for any loss incurred.

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 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 **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 successfully, you must restart the NetEco 1000S services. Otherwise, an exception may occur.

----End

4.3.1.2 Managing NetEco 1000S Users

This section describes the roles of NetEco 1000S users and the related authority. For details about users and the related authority, see [4.1.8.1 Managing User Information](#).

4.3.2 Management Logs

This section describes management logs. You can learn about the NetEco 1000S running status and operations through management logs.

4.3.2.1 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.

4.3.2.2 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.

4.3.3 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.

4.3.3.1 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 **NetEco 1000S software installation directory\WebRoot\WEB-INF\workspace**.

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
```

4.3.3.2 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\Certificate** directory.

NOTE

The certificate for enabling SSL has been incorporated to the **neteco.jks** certificate. When you enable SSL on the [4.1.8.3.1 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:
 - n Lowercase letters
 - n Uppercase letters
 - n 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.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**.

```
0)Quit
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
6)Generate openAPI 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**.

```
0)Quit
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
6)Update openAPI 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**.

```
0)Quit  
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  
6)Change openAPI Certificate  
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**.
0)Quit
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
6)Restore openAPI 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!

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

4.3.3.3 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\Certificate** directory.

NOTE

HX_server_keystore.jks is a preconfigured certificate especially for residential 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:
 - n Lowercase letters
 - n Uppercase letters
 - n 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 **server_keystore.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**

- n Enter **2**, and the certificate file generated is **server_keystore.jks**.
- n Enter **3**, and the certificate file generated is **HX_server_keystore.jks**.

```
0)Quit
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
6)Generate openAPI 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** or **HX_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**.

```
0)Quit
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
6)Update openAPI 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**.

```
0)Quit
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
6)Change openAPI Certificate
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** or **3** and press **Enter**.

```
0)Quit
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
6)Restore openAPI 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!
```

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

4.3.3.4 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 [4.1.8.3.1 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 **email.jks** are saved in the *NetEco 1000S software installation directory* `\WebRoot\WEB-INF\workspace\Certificate` directory.

 **NOTE**

The certificate for enabling SSL has been incorporated to the **email.jks** certificate. When you enable SSL on the [4.1.8.3.1 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:
 - n Lowercase letters
 - n Uppercase letters
 - n 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. Generate the certificate file **email.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**.
0)Quit
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
6)Generate openAPI 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 **email.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**.
0)Quit
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
6)Update openAPI 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**.

```
0)Quit
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
6)Change openAPI Certificate
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**.

```
0)Quit
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
6)Restore openAPI 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!

Step 4 Restart the NetEco 1000S for the settings to take effect.

----End

4.3.3.5 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 *NetEco 1000S software installation directory* `\WebRoot\WEB-INF\workspace\Certificate` directory.

NOTE

The certificate for enabling SSL has been incorporated to the **app.jks** certificate. When you enable SSL on the [4.1.8.3.1 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:
 - n Lowercase letters
 - n Uppercase letters
 - n 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 **app.jks**.
 - a. Run the script *NetEco 1000S software installation directory* `\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**.

```
0)Quit
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
6)Generate openAPI 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**.
0)Quit
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
6)Update openAPI 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**.


```
0)Quit
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
6)Change openAPI Certificate
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**.


```
0)Quit
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
6)Restore openAPI 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!

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 [4.3.4 Replacing App Secure Certificates](#).

----End

4.3.3.6 Replacing a Certificate for the OpenAPI User Communicating with the Server

This section describes how to replace the HTTPS protocol certificates preconfigured for the OpenAPI User 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 **openapi.jks** is saved in the **NetEco 1000S software installation directory \WebRoot\WEB-INF\workspace\Certificate** directory.

NOTE

The certificate for enabling SSL has been incorporated to the **openapi.jks** certificate. When you enable SSL on the [4.1.8.3.1 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:
 - n Lowercase letters
 - n Uppercase letters
 - n 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 **openapi.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 **6** and press **Enter**.

```
0)Quit
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
6)Generate openAPI 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 **openapi.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 **6** and press **Enter**.

0)Quit
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
6)Update openAPI 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 **6** and press **Enter**.

```
0)Quit
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
6)Change openAPI Certificate
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 **6** and press **Enter**.

```
0)Quit
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
6)Restore openAPI 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!

Step 4 Restart the NetEco 1000S for the settings to take effect.

----End

4.3.4 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.

4.3.4.1 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 [4.3.3.5 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**.

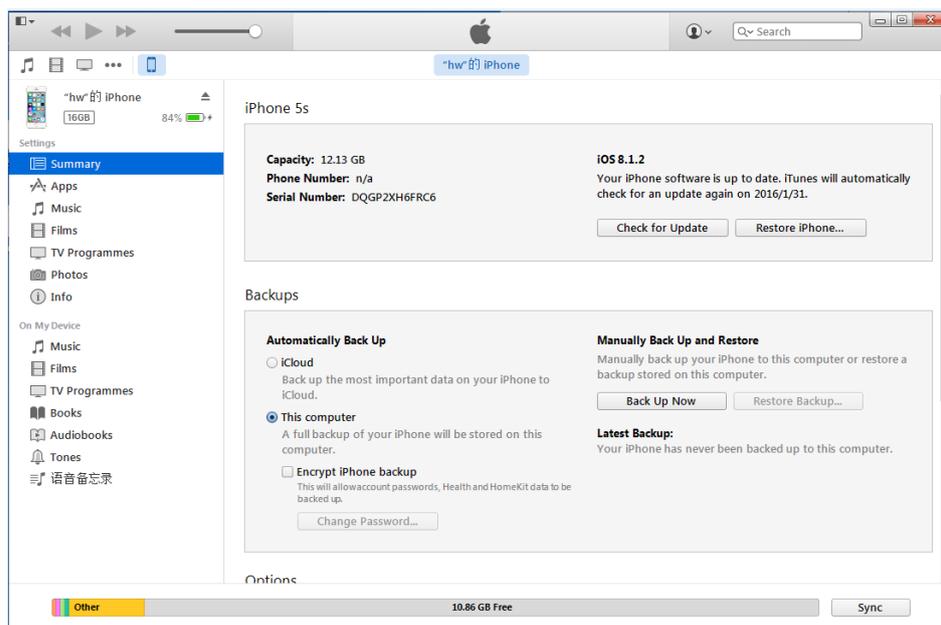
Step 2 Import **client.cer** to the NetEco 1000S using iTunes.

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.

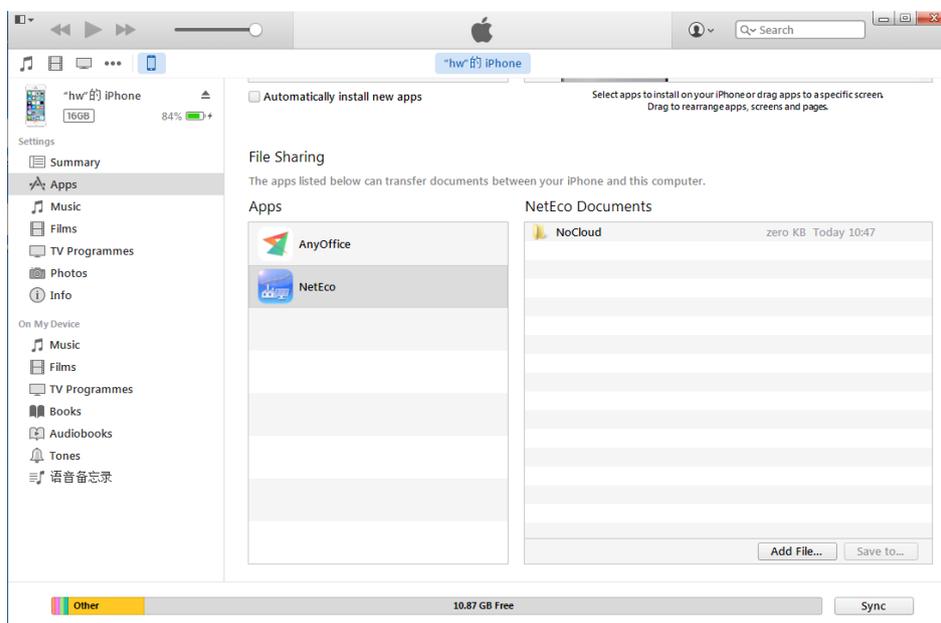
Figure 4-91 shows the iTunes GUI after the connection.

Figure 4-91 iTunes GUI



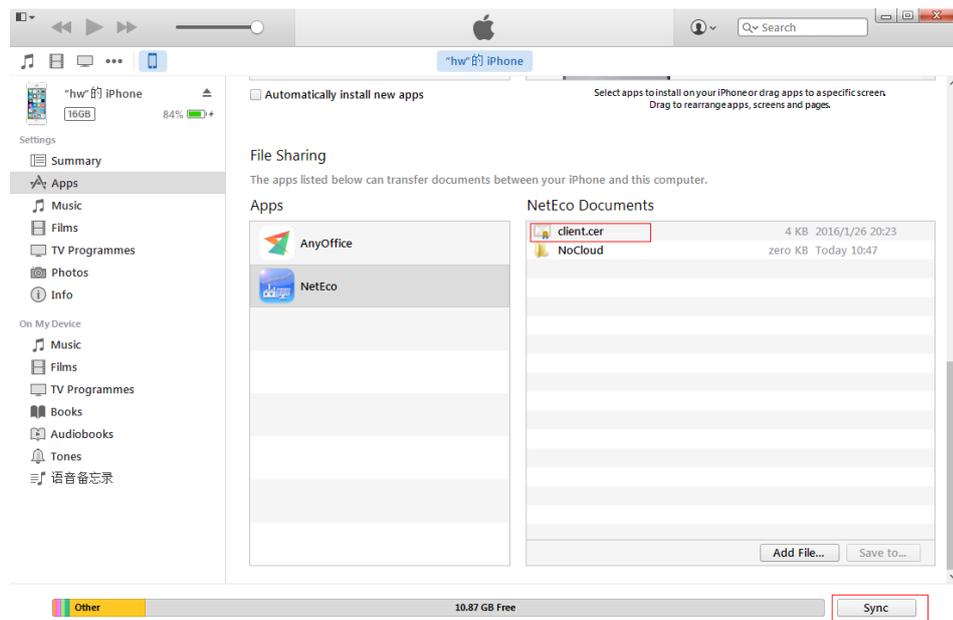
2. In the left navigation tree, choose **APPS**.
The **APPS** page is displayed.
3. Select **NetEco** in the **File sharing** area of the **APPS** page, as shown in [Figure 4-92](#).

Figure 4-92 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 4-93](#).

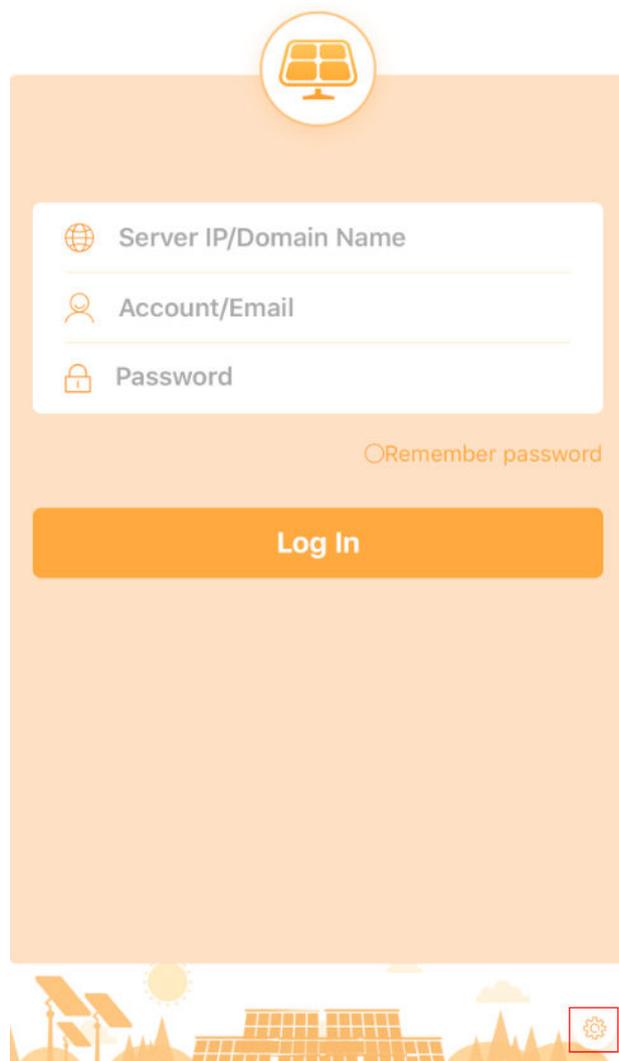
Figure 4-93 Importing a new certificate



Step 3 Tap the NetEco icon on the mobile client.

The NetEco 1000S app login window is displayed, as shown in [Figure 4-94](#).

Figure 4-94 NetEco 1000S app login window



Step 4 Click the **Set** button in the lower right corner of the page to enter the set page.

Step 5 Click **Cert Change**.

If information showing the certificate replacement success is displayed, the certificate has been replaced.

Step 6 Restart the NetEco 1000S app to make the new certificate take effect.

----End

4.3.4.2 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 [4.3.3.5 Replacing a Certificate for the NetEco 1000S App Communicating with the Server](#).

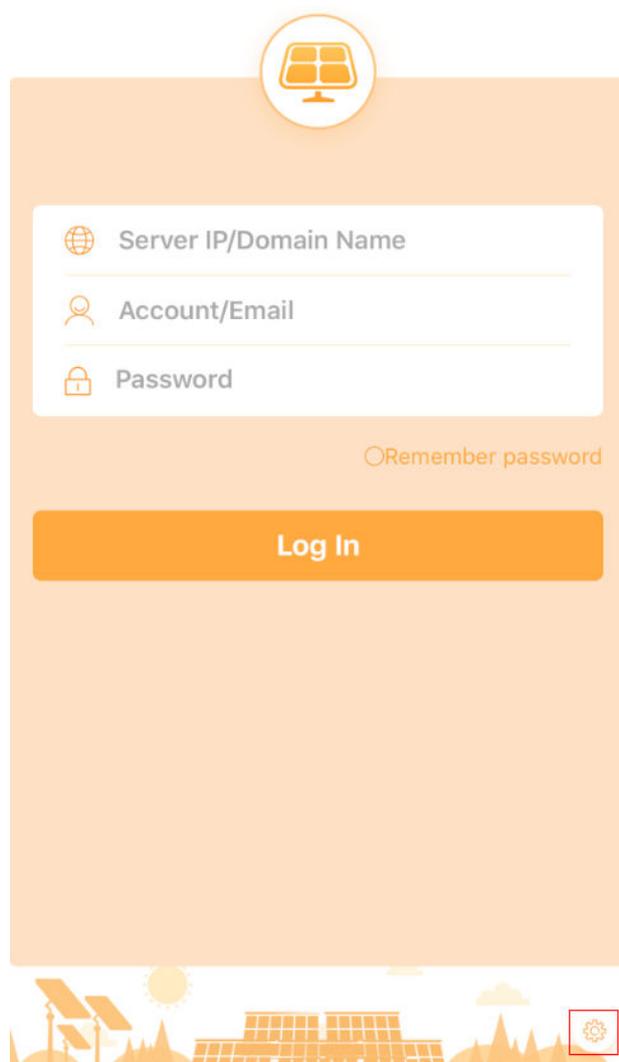
Procedure

Step 1 Connect the mobile device to your PC, and save the obtained new certificate to the mobile device.

Step 2 Tap the NetEco 1000S app icon on the mobile client.

The NetEco 1000S app login window is displayed, as shown in [Figure 4-95](#).

Figure 4-95 NetEco 1000S app login window



Step 3 Click the **Set** button in the lower right corner of the page to enter the set page.

Step 4 Click **Cert Change**.

The page for replacing a certificate is displayed.

Step 5 Select the new certificate. In the displayed dialog box, click **Confirm** to complete the certificate replacement.

Step 6 Restart the NetEco 1000S app to make the new certificate take effect.

----End

4.3.5 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 4-28 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 4-28 Description of MySQL database backup

Item	Description
Backup content	<ul style="list-style-type: none"> All data in the MySQL database. <i>NetEco 1000S software installation directory</i> \WebRoot folder.
Backup mode	<p>Automatic backup: dataBase_backup.bat 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, 2015-09-16.zip.</p>

Item	Description
Backup file save path	<p>The automatic backup files are saved in the following directories:</p> <ul style="list-style-type: none"> • MySQL database: <i>NetEco 1000S software installation directory\backup\mysqlBackUp\Backup file name\data</i> directory. • WebRoot folder: <i>NetEco 1000S software installation directory\backup\mysqlBackUp\Backup file name\WebRoot</i> directory.

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 *NetEco 1000S 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.

4.3.6 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 4-29](#), [Table 4-30](#) and [Table 4-31](#).

Table 4-29 Command reference (Software Installation)

Command Name	Command Address	Command Function
setup.bat	<i>NetEco 1000S software installation directory</i> \setup.bat	Used for installing the software.
setup_install.bat	<i>NetEco 1000S software installation directory</i> \scripts\setup_install.bat	Used for installing the software (system invocation).

Table 4-30 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.

Command Name	Command Address	Command Function
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.
LogTools.bat	<i>NetEco 1000S software installation directory</i> \tools\LogTools.bat	Used for changing the life cycle of operation logs .

Table 4-31 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.
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 startup_NetEcoTray.bat .
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.

Command Name	Command Address	Command Function
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.
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.

Command Name	Command Address	Command Function
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.
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. hiddenKey.exe is generated only after you manually execute SSLTools.bat .

Command Name	Command Address	Command Function
delete_shortcut.vbs	<i>NetEco 1000S software installation directory</i> \uninstall\scripts\delete_shortcut.vbs	Invoked by the delete_service.bat 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.
dataBase_backup.bat	<i>NetEco 1000S software installation directory</i> \bin\dataBase_backup.bat	dataBase_backup.bat 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. The automatic backup files are named as YYYY-MM-DD.zip , <i>YYYY-MM-DD</i> is the backup time. The automatic backup files are saved in <i>NetEco 1000S software installation directory</i> \backup\mysqlBackUp directory.
fix_mysql.bat	<i>NetEco 1000S software installation directory</i> \mysql\oms_mysql\bin\fix_mysql.bat	Used for fixing database table index problems.

Command Name	Command Address	Command Function
zip_licenseFile.bat	<i>NetEco 1000S software installation directory</i> \bin\zip_licenseFile.bat	Used for loading the device license.

4.3.7 Performance Specifications

Table 4-32 Performance Specifications

Module	Function Description	Performance Specifications	Specification Description
Installation CD-ROM	NetEco 1000S inverters management capacity	<ul style="list-style-type: none"> ● Number of devices: 1860 <ul style="list-style-type: none"> - Inverter: 1500 - SmartLogger: 300 - EMI and Meter: 30 - PID: 30 ● Number of PV plants: 300 For each PV plant, the total number of devices directly connected to the NetEco 1000S cannot exceed 25. 	Standard edition
		<ul style="list-style-type: none"> ● Number of devices: 12000 <ul style="list-style-type: none"> - Inverter: 10000 - Optimizer: 2000 ● Number of PV plants: 10000 	Enterprise edition

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"> ● Standard edition: 1860 <ul style="list-style-type: none"> – Inverter: 1500 – SmartLogger: 300 – EMI and Meter: 30 – PID: 30 ● Enterprise edition : 13200 ● Inverter: 10000 ● Optimizer: 2000 ● SmartLogger: 1000 ● EMI and Meter: 100 ● PID: 100 <p>The relationships between collection period and data storage durations are as follows:</p> <ul style="list-style-type: none"> ● 5-minute data of the EMIs is saved for one year. 5-minute data of other devices is saved for one month. ● Data collected on a 15-minute basis is saved for two years. ● Data collected by day, month, or year is saved for 20 years. 	<p>Size of a daily dumped file for each device: 10 KB</p> <p>NOTE</p> <ul style="list-style-type: none"> ● The dumped file for 5-minute performance data of PV plants is saved to NetEco 1000S software installation directory\backup\PowerdataTransfer. The file is named Plantdaydata_time stamp.zip. ● The dumped files for 5-minute performance data of inverters are saved to NetEco 1000S software installation directory\backup\PowerdataTransfer and NetEco 1000S software installation directory\backup\PMDataTransfer. The files are named Powerdaydata_timestamp.zip and InveterPmdata_timestamp.zip. ● The dumped file for 5-minute performance data of other devices is saved to NetEco 1000S software installation directory\backup\PMDataTransfer. The file is named device typePmdata_timestamp.zip.

Module	Function Description	Performance Specifications	Specification Description
	Alarm data storage	Historical alarm log storage specification: 3,000,000 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"> ● Performance module: 32 ● Log module: 16 ● Configuration module: 8 ● Common module: 8 ● Alarm module: 16 	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"> Maximum number of users: 5000 Maximum number of concurrent online users: 3000 <p>NOTE 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"> Internet Explorer: Create a session. Chrome 50: Open a new incognito window. Number of IP address whitelists: 500 	-
Browser	Browser of the following version is supported:	<ul style="list-style-type: none"> Internet Explorer 11 Chrome 50 	-
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.

4.3.8 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 [3.1.4 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 4-96](#) is the default logo on the home page of the NetEco 1000S. You can customize a new logo as required.

Figure 4-96 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

A Abbreviations

F

FE	Fast Ethernet
FTPS	File Transfer Protocol over SSL

H

HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure

K

KPI	Key Performance Indicator
-----	---------------------------

N

NMS	Network Management System
-----	---------------------------

R

RSA	Revist-Shamir-Adleman Algorithm
-----	---------------------------------

S

SMTP	Simple Mail Transfer Protocol
SSH	Secure Shell
SSL	Secure Sockets Layer
SFTP	Secure File Transfer Protocol

T

TLS	Transport Layer Security
TCP	Transmission Control Protocol

V

VLAN	Virtual Local Area Network
------	----------------------------