

v1.5_User manual

ELTEX Cloud Configuration Manager
ECCM Installation manual
Firmware version 1.5.0

Introduction

ECCM (ELTEX Cloud Configuration Manager) is a centralized network equipment management system. The system is managed using a web interface, which provides convenient tools for configuring the system and network equipment for the needs of the user. This manual contains a description of the user interface and its basic working methods.

Access to the user interface

To connect to the user interface, enter the **http://<ECCM_ADDRESS>:80/<ECCM_ADDRESS>** link in the browser address bar, where **<ECCM_ADDRESS>** is the address of the ECCM server in your network (it can be an IP address or a domain name if your DNS is configured).

A page with an authorization form will open in the browser window. Enter **eccm** login and **eccm** password into the corresponding fields and click "Enter."

Management system interface

The user interface is a single-page web application that consists of several main parts:

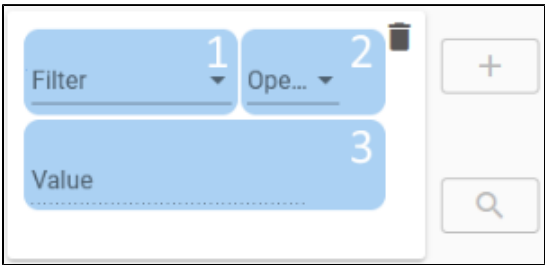
1. Section navigation panel.
2. Interface language selection.
3. Account information and a link to the user's Personal Page.
4. System log out button. When clicking, the session will be terminated.
5. The workspace. Depending on the selected section, various widgets will be presented here.
6. Navigation bar minimizing button (to expand the workspace).

Personal page

Section with user account information, reflecting the user role and the groups in which the user is a member:

Filters in tables

The filter component allows flexible operation with tables, displaying data selected according to a certain condition set by the user. Filters are presented in the form of cards with three main fields:



1. A drop-down list with table fields available for filtering.
2. A drop-down list with a list of operations available for this type of filter.
3. A field for entering requests. This field can be represented as one or more user interface elements that support user input.

Buttons available for each filter:



1. Button to delete a custom filter.

2. Button to add a new filter.
3. Button to apply filters configured on the page.

The buttons for adding and applying filters are inactive by default until all the filters available on the page are filled in.

After loading the page, there is a place for filters above the table and one unfilled filter by default. In the new filter, only a drop-down list with table fields for filtering is available. The remaining fields are not available for input. After specifying the value for the table field in the filter card, it becomes possible to specify an operator and enter a query for searching or filtering. The filter can be used independently, as well as in combination with other filters.



All filter input fields should not be empty! Otherwise, buttons to add and remove a filter will be unavailable.

How to use filters

- Go to the page with the table. There is one blank filter there by default.
- In the filter card, click the "Filter" field and select the name of the table to filter.
- Next, select the operation in the "Operation". CONTAINS or EQ operators are selected by default.
- In the "Value" field, enter the value to search for.
- Click the "Apply Filter" button. Lines matching the desired value will be displayed on the page.
- To return to the original state, delete all existing filters on the page using the "Remove filter" button, and then click "Apply filter."

Example of MES3324 devices model lookup with UP status and preassigned IP address part

Filter Status	Operation =	Filter Model	Operation =	Filter IP	Operation +	+
Value UP		Value MES3324		Value 10.200.40		🔍

ID	Serial	IP	Hostname	MAC	Series	Group	Model	Version	Status
179	ES58003308	10.200.40.12	sw135-1	e8:28:c1:8e:59:00	MES23xx/MES33xx/MES35xx/MES36xx	ессм /.../3 этаж	MES3324	4.0.14.3 R1	UP
178	ES58003265	10.200.40.11	sw134-1	e8:28:c1:8e:4e:40	MES23xx/MES33xx/MES35xx/MES36xx	ессм /.../3 этаж	MES3324	4.0.14.3 R1	UP
175	ES58002921	10.200.40.13	sw123-1	e8:28:c1:8d:f8:40	MES23xx/MES33xx/MES35xx/MES36xx	ессм /.../2 этаж	MES3324	4.0.14.3 R1	UP
173	ES58002989	10.200.40.14	sw121-1	e8:28:c1:8e:09:40	MES23xx/MES33xx/MES35xx/MES36xx	ессм /.../1 этаж	MES3324	4.0.16 R2	UP

Items per page: 10 1 - 4 of 4 |< < > >|

Dashboard

This section displays information about the system state:

1. Common statistics - counters showing the ratio of unavailable devices to the total number of devices in the system, as well as the ratio of executed triggers (preset thresholds, the intersection of which requires special attention) to the total number of devices. Provides an insight into general problems in the network.
2. Unavailable device statistics by groups — counters of unavailable devices for each administrative group. If the group contains devices access to which has been lost, its frame is highlighted in color. If less than 5% is unavailable — pink, if more than 5% — red.
3. Unavailable devices — a list of devices access to which has been lost. The table shows the device name (in the form of an active link), time of the access loss and duration of the downtime.
4. Problems — list of executed triggers. The table shows the name of the device on which the trigger was executed (in the form of an active link), the trigger name, time of its execution and level of importance.

Data is automatically updated every minute. In case of problems with access to the server, the latest data is cached on the page and the time of the last successful update is displayed.

Network maps

This section contains information about network maps. A network map is a logical-graphical-schematic representation of the network devices interaction.

This section allows to determine the connection of devices within the same group and monitor the availability of devices on the map.



The section displays tools for managing network maps(1) and their list (2):

1. Map Management Tools:
 - Create — create a new network map.
 - Delete — delete selected maps from the list.
2. The list of maps available in the system:
 - Name — name of the map.
 - Group — a group of devices available for use on the map.

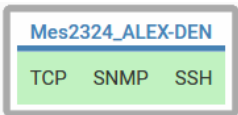
Viewing a network map

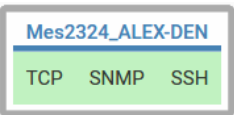
To view the network map, click its name in the list. The map editing button(1) and the network map itself (2) are displayed on the map page.


Network Map Elements

Network node —  (for routers) and  (for switches). Displays the network device and its status in the system:

Node color	Status description
Blue	The device is available for work in the system
Gray	The device is not synchronized yet
Dark gray	The device is unavailable or locked in the system
Red	The device is unavailable
Orange	Resource issues on the device



- Device Information — . Displays the device name (its hostname is used as the device name) and information about its availability statuses (network, monitoring, management).
- Link between nodes - displays the link between network devices to represent the network topology (devices interfaces through which they are connected are signed on the map).

 When clicking on the device name, you will be redirected to the "Device Information" page of the device you selected.

Creating a map

To create a new network map, click the "Create" button in the "Network Maps" section, then the network map editor will open.

Editing a map

To edit a network map, select the map in the section "Network Maps", go to the map view page and click "Edit". The network map editor will open:

Network Map editor controls:

1. Name — name of the network map being created.
2. Group — group of devices available for use in the editor (can only be set when creating a new map).
3. Add devices — button to open the list of devices from the selected group for adding them to the map.
4. Add cloud — button to add a cloud to the map.
5. Delete — button to delete the selected device from the map.
6. Create a submap — button to link to a submap object.
7. Save — button to save the network map data.
8. Return — button to return to the list of network maps (without saving changes/creating a new map).

Adding a device

To add a device, click the "Add Device" button in the network map editor, then the device selection window will open. The device is selected by clicking the flag in the corresponding line.

1. Management tools:
 - Select — adds the selected device to the map.
 - Cancel — closes the device selection window.
2. Device selection table filter.
3. A device table that displays data on the status of devices belonging to the selected group. It is worth paying attention to the following columns:
 - IP — IP address of the device. Displayed as a link that allows to go to the device management page.
 - Maintenance — the maintenance status of the device in the system. If marked as 'ENABLED', then the device is fully serviced by the system (availability polling, metrics, configuration backup, management). In other cases, the maintenance functions may be suspended.
 - Availability — the availability status of the device via TCP/ICMP, SNMP, SSH protocols.

After adding the device from the list, the device node will appear on the map. It can be moved to another location using the mouse cursor.

Removing a device

To remove a device, select it in the network map editor and click "Delete":

Confirm the action:

Adding a cloud

Cloud on the network map is used to indicate a junction with another provider, an unknown network segment, or to switch to another map by linking a submap to it.

To add a cloud, click the "Add cloud" button in the network editor and specify its name (additionally, you can specify the phone number if the cloud is used to indicate the junction with the provider).

Adding a link

To add a link between nodes, it is necessary that there are 2 or more devices on the map. Move the mouse cursor over the first node of the device.

Left-click on the point that appears on the node and move it to the second node of the device holding the mouse. After that, a window for selecting connection interfaces will open, where you need to select the interfaces through which the devices interact:

Creating a submap

Submaps are used to switch between network maps in the system during monitoring.

To create a submap in the map editor, select an object or several objects, click the "Create" button and select the map to which the submap will refer.

Deleting a link

To remove the link between network nodes, click the link between the nodes. Confirm the link deletion.

Deleting a submap

To delete a submap in the map editor, select the submap or the object to which the submap is linked and click "Delete". Confirm the submap deletion.



When deleting a sub-map, all objects to which it is linked will be deleted.

Automatic link creation via LLDP



Under the conditions that LLDP is enabled for devices added within the same group and ECCM services have managed to poll device data via SNMP-LLDP, connections between devices on the map will be drawn automatically along with the choice of interfaces for communication.

Groups

This section provides information about the system devices divided into administrative groups. The section allows to add and remove groups and devices in the system.

A breadcrumbs-style navigation chain is displayed at the top of the page. It displays the path to the current group and allows to quickly return to any of the parent groups. Depending on the group type, different information may be displayed in the group table.

For a group of the 'GROUPS' type, the following fields are displayed: a navigation chain, a button to add a new group and a table with a list of nested groups.

There are two types of groups: 'DEVICES' for devices and 'GROUPS' for groups. A group of the 'GROUPS' type displays nested groups of the 'DEVICE' type and counters that display the summary information for all nested groups.

Table displays the following information:

- Group name — active link to go to the group.
- Total devices — total number of devices in group or in child groups.
- Problem devices — total number of devices in group or in child groups in which executed triggers were detected.
- Unavailable devices — total number of devices in group or in child groups to which access from the management server was lost.

The 'DEVICES' type group displays a list of devices belonging to this group and tools for device management.

1. Navigation Chain
2. Device Management Tools:
 - a. Add devices.
 - b. Move — move the device to another group.
 - c. Delete — remove the device from the system.
 - d. Enable/Disable — in the "Disable" status the device stops being polled by the system, while all monitoring data and device configuration received earlier will be saved.
3. Device table filter.
4. A table with a list of devices that displays data on the status of devices belonging to the selected group:
 - IP — IP address of the device. Displayed as a link that allows to go to the device management page.

- Maintenance — the maintenance status of the device in the system. If marked as 'ENABLED', then the device is fully serviced by the system (availability polling, metrics, configuration backup, management). In other cases, the maintenance functions may be suspended.
- Availability — the device availability status via TCP/ICMP, SNMP, SSH protocols.
- The duration of the current status is the time elapsed after the device status change. Calculated every time the table is updated.
- Triggers — the ratio of prompted triggers to the total number of triggers.

Adding devices — manual addition

In the "Manual addition" tab you can add new devices to the system. Each device is displayed in separate line, in which its IP and model need to be specified. The system checks entered data and displays in the Status field whether it is possible to add the device to the system (status == OK), or there are any errors (for example, an incorrect IP address or lack of licenses for the selected model).

Interface elements:

1. IP - field for specifying the IP address of the new device. A list of addresses separated by space can be copied to this field. They will be automatically converted to multiple lines.
2. Model — name of the model is displayed in this field, and the number of devices that can be added according to the installed license is indicated in parentheses.
3. Status — result of checking the entered data. Possible statuses:
 - a. OK - the check was successful, this device can be added to the system.
 - b. INVALID_IP — the address failed validation: the format is incorrect, or there are extra characters.
 - c. NO_LICENSE — the limit of this model devices number in the license has been reached.
 - d. DUPLICATE_IP — there is already a device with the specified IP address in the system or in the list of devices to add.
4. A button to remove a device from the list.
5. A button to add an additional device to the list.
6. Control buttons:
 - Cancel - close the window without saving.
 - Add devices - add all devices that have passed validation (with the "OK" status).

Devices that have not passed validation will be ignored.

Adding devices — Detection

In the "Detection" tab it is possible to automatically add detectable devices by known range.

The following fields are available in the tab:

1. Range — field for specifying addresses range. Supports input in various formats. Examples:
 - 10.25.96.1-90
 - 10.25.96.1-10.25.96.90
 - 10.25.96.1/24



A limited number of devices will be processed from the range, the limit is set to 1024 devices by default.

2. snmp version — a drop-down list with the option to select the protocol version. The following protocols are supported:
 - a. V1 — for devices with an older version of SNMP.
 - b. V2C — fits most devices by default.
3. snmp port — 161 is most used, but a different value can be specified.
4. Communities — password for accessing snmp.
5. Search — button to perform a device search request after filling out the form.

As a result of the device search, a selection of devices to add to ECCM will be offered.

The search results are displayed in a table with the following fields:

- IP — IP address of the new device.
- Model — name of the model.
- Serial number — serial number of the device.
- MAC — MAC address of the device.
- Version — firmware version installed on the device.
- Status — status of the device in the ECCM system.

The following operations can be performed with the search results:

- Manually select individual devices to add (1). Some devices may not be available for selection due to the reasons reflected in the "Status" (2).
- Select a group of devices of a certain model by marking it entirely (3).
- Select all detected devices (4).

After the device selection is complete, click "Add Devices" (5).

Devices

In this section, all devices of the system are displayed with ability to filter the list of devices by inventory data.

The following information is displayed in the table:

- ID — sequence number of the device in the control system, assigned when the device is added to the system. Numbering starts from 100, each number is unique and cannot be reused.
- Serial number — combination of numbers and letters, which is read from the device via SNMP and stored in the database.
- IP — IP address of the device in the device management network (each device has a unique IP address). Displayed as a link that allows to go to the device management page.
- Hostname — host name, read from the device via SNMP and stored in the database.
- MAC — MAC address of the device, read from the device via SNMP and stored in the database.
- Series — the name of the model range, read from the device via SNMP and stored in the database.
- Group — group to which the device belongs.
- Model — name of the model, read from the device via SNMP and stored in the database.
- Version — number of the firmware installed on the device, read from the device via SNMP and stored in the database.
- Maintenance — maintenance status of the device in the system. If marked as 'ENABLED', then the device is fully serviced by the system (availability polling, metrics, configuration backup, management). In other cases, the maintenance functions may be suspended.
- Availability — device availability status via TCP/ICMP, SNMP, SSH protocols.

Device Page

Interface for operation with separate device.

Consists of the following elements:

1. Header — contains the name of the device and its IP address.
2. Tabbed menu:
 - Device Information;
 - Configurations;
 - Access;
 - Firmware Update;
 - Events;
 - Tasks;
 - Monitoring.

Device Information

This page displays collected inventory data about the device.

Configuration

Device configuration management functionality.

The configuration process is different for ESR and MES devices. ESR devices apply or reject the entire configuration, while MES apply individual changes at once. Due to this, when working with ESR, "**configuration drafts**" that contain the full device configuration are created, and for MES there are "macros" that contain only the necessary changes.

Controls:

1. Function block 1:
 - Reboot — send a command to reboot the device.
 - Synchronize — get the current configuration from the device. If it does not match the last configuration received from the device (RUNNING), it will be saved in the system as a new configuration.
2. Function block 2:
 - Create draft /Create macros — create new empty configuration.
 - Edit — open the configuration editor.
 - Download — get the selected configuration as a text file.
 - Apply /Run — apply the selected configuration to the device.
3. Configuration filter.
4. Configuration table — display a list of available configurations for the device.
5. Configuration preview — panel for the selected configuration display (the selection is made by clicking the configuration line (not the checkbox located opposite)).

Types of configurations

RUNNING — the last configuration received from the device.

DRAFT — configuration prepared for uploading to the device.

BACKUP — backup copy of the configuration from the device before applying the new configuration. If the current configuration is changed to a new one, it is assigned the BACKUP type, and the new one is RUNNING.

Configuration editor

Allows to create a copy (DRAFT) of the current configuration version. In this case, the existing configuration will remain in the database and will not be changed, leaving the opportunity to return to it.

1. Annotation - comment on the configuration. Specified when creating a new configuration, after that it is impossible to change the annotation.
2. Editing area — text editor that allows to work with large amount of information and provides highlighting of syntax and changes made.
3. Control buttons:
 - Cancel — close the window without saving.
 - Save — save changes by creating new configuration with the "DRAFT" type.
 - Save and Apply — save new configuration as a draft and immediately try to apply it to the device.

The editor provides tools for searching through the entire configuration. To use the search, place the cursor in the editing area and press the keyboard shortcut Ctrl+F.

Access

Configuring the Ansible adapter to perform operations on the device. For example, to apply configuration or to reboot.

By default, global parameters are used to access the device, which can be changed in the "Settings" -> ">Access". To configure individual device access parameters, set the flag "Individual". Enabling this option forces the system to use all the settings on this page instead of the global ones, so you need to configure all the parameters:

- usernames and passwords for accessing the device via SSH and SFTP* — access is required to manage devices and obtain configuration (*SFTP is supported only for ESR).
- snmp — SNMP settings are defined to check the availability of the device using this protocol. These parameters do not change the settings used to get metrics from the device (these parameters are determined only globally).
- network — settings for determining the device network availability. Verification can be performed using the ICMP protocol ("normal ping") and checking the TCP connection setup (a faster way). In the second case, it is additionally necessary to specify which port the connection will be established on.

Firmware upgrade

Interface for upgrading the device firmware. The table shows a list of firmware available on the server for this type of device (adding new firmware is performed in the firmwares section). If the server has firmware of the same version that installed on the device, it will be marked with red indicator (radiobutton) on the left.

To upgrade the device firmware version, set a flag next to the corresponding firmware. A confirmation message will be displayed.

If the server does not have the firmware currently installed on the device, a warning message will be displayed in the dialog box.

Events

The table shows a list of events that have occurred on the device. Important events that report problems are indicated in red.

Tasks

The table shows tasks created by the user for this device. System tasks, such as periodic synchronization, will be hidden.

- Status — current status of the task.
- Type — essence of the task.
- Description — parameters the task was started with.
- Create date — date and time the task was created.
- Start date — date and time when the task was launched into active operation. It may not match the date of creation, because the task may be in the handler queue.
- Stop date — the date and time when the task was completed. In this case, the task may be completed successfully or not successfully.
- Log — open the task execution log from Ansible.

Monitoring

Device monitoring data display.

1. Data type selection.
2. Sampling time range selection.
3. Graph.

Data Types

The complete list of collected data types depends on the specific device and its configurations, for example, on the number of available processor cores or configured entities. In addition, there are common metrics for all devices, such as ICMP availability.

All collected data is displayed in the drop-down list.

Sampling time range

Allows to set the time range in which the data of interest is located. The range from 00:00 of the current day is displayed by default.

For selecting the date and time relevant tools are provided.

Graph

The following elements are located in the graph display area.

1. A timeline with graph preview, which allows to set a specific time range for displaying data from a sample received from the server.
2. Interactive legend that allows to enable and disable individual graph lines.

Comparison

A section for comparing configurations with each other. Contains the following elements:

1. Tools for device selection and configuration.
2. Area for the configuration display.

Device and configuration selection

To compare device configurations, click "Select a device." Set the flag next to the required device.

Click "Select the configuration." Set the flag next to the required configuration.



Two configurations can also be compared in the "Devices" section by selecting two configurations on the tab "Configuration" of the required device and clicking the "Comparison" button.

Configuration display area

After two configurations were selected, they are compared with each other, and the differences are marked with color.

Firmware

Section that allows to add, delete and view devices firmwares.

The following elements are located in the workspace:

1. Buttons to add and delete firmware files.
2. Table of firmwares added to the system.

Add new firmware

When clicking the add new firmware button, a dialogue box with the following elements will open.

1. Select a firmware file — open a dialog box to select a file on the user's computer.
2. Version — firmware number in the vendor's accepted format. Format for ELTEX firmware: 'X.X.X build X'.
3. Series — devices series (model range).
4. Description — comment on the uploaded file.
5. Cancel — close the window without saving changes.
6. Upload — button to start uploading. Inactive until all required fields are filled in.



Before filling the "Series" and "Version" fields, click the "Select firmware file" button and select the file to download. Then the device series and version will be recognized automatically.



For the MES5448/MES7048 series, you must additionally add a loader and specify its version.

Upgrade Device Group

The interface is designed to create tasks for upgrading device group that can be performed according to the given schedule. The structure of the section is built in the form of a step-by-step wizard. In the figure below, the steps are highlighted with a frame, and there are buttons for navigation in the lower part.

Devices

At this step, a group of devices is selected, on which further actions will be performed. Two tables are used for this:

1. Table containing a list of all devices of this model.
2. Table of selected devices to be upgraded.

When selecting the first device in the top table (1), devices of other models are automatically filtered and become unavailable for selection. All selected devices are added to the lower table (2).

Firmware selection

At this step, select the firmware that will be uploaded to the previously selected devices by setting the flag next to it.

Setting a schedule

Allows to configure start and end time of the task execution.

Suggested options:

1. Start soon — put tasks in the scheduler queue immediately after creation. The start of execution will depend on the workload of the scheduler. Removing this flag allows to set the window start for the upgrade operation.
2. Do not start new subtasks after the specified time — allows to limit the upgrade operation window, prohibiting start of additional tasks. In this case, the performed operations will not be canceled, but the devices for which the upgrade was not started will remain without upgrading.
3. Strategy:
 - Parallel — simultaneous start using all available handlers.
 - Sequential — upgrades in order, using a single handler.

When selecting options "As soon as possible" and "Don't start subtasks after" the tools for selecting date and time of start and end of the upgrade are displayed.

Apply

At this step, all the previously specified parameters are displayed on the screen.

After clicking the "Apply" button a task will be created, the execution of which will begin at the specified time.

Group configuration

A section for creating and applying configuration templates to a group of devices. The interface contains two tabs:

- Start — to create a configuration application task for a group of devices.
- Templates — interface for creating and managing configuration templates.

Templates



Templates are a sequence of CLI commands for making changes to the hardware configuration. These commands will be applied to the hardware in the form and in the sequence in which they are written in the template.

For ESR and MES equipment lines, the transition to configuration mode is automatically performed before executing the template, followed by saving and confirming the configuration.

For the MES equipment line (ISS, ROS and FP), the automatic transition to configuration mode is not performed.

Meanwhile, repeated application of the same template to the equipment may cause undesirable configuration changes.

The interface for creating and editing configuration templates includes a list of configuration templates(1) and template editing area (2).

Template creation

To create a template, specify its name in the corresponding field.

After specifying the name, a new empty template will appear in the list of templates. In the editing area on the right, specify its contents.

After that, save the changes by clicking the "Save" button.

Start

This section is intended for creating a group configuration task. It is a sequence of 4 steps:

1. Device Selection
2. Template Selection
3. Setting a schedule
4. Apply

Device Selection

At this step, select which devices the configuration template will be applied to. The interface contains two tables: the upper one shows all devices available for management, the lower table shows devices selected for creating a task.

Template Selection

Section for configuration template selection. The left part displays a table of templates existing in the system (1), the right part displays the contents of the selected template (2).

Setting a schedule

Suggested options:

1. Start soon — put tasks in the scheduler queue immediately after creation. The start of execution will depend on the workload of the scheduler. Removing this flag allows to set the window start for the upgrade operation.
2. Do not start new subtasks after the specified time — allows to limit the upgrade operation window, prohibiting start of additional tasks. In this case, the performed operations will not be canceled, but the devices for which the upgrade was not started will remain without upgrading.
3. Strategy:
 - Parallel — simultaneous start using all available handlers.
 - Sequential — upgrades in order, using a single handler.

Apply

The interface summarizes previously configured schedule parameters, displays the selected template and a list of devices.

Device Initialization

Section for automatic devices upgrade and configuration (ZTP - Zero Touch Provisioning).

The interface contains three tabs:

1. DHCP Settings — to configure the DHCP server.
2. Bindings — to create an initialization binding — an entity that stores information about parameters of the expected device.
3. Initialization status — current initialization status of the device in the system and the log of previous states.

DHCP Settings

This tab contains the settings for configuring the DHCP server.

1. On/off DHCP servers.
2. Saving the on/off state (item 1).
3. IP range starting address of the DHCP pool.
4. IP range end address of the DHCP pool.
5. DHCP pool network prefix.
6. The default gateway that will be issued to the device that requests IP address from DHCP.
7. Saving the settings points 3 – 6.
8. Resetting the settings points 3 – 6.

Bindings

On this tab, you can see a list of all bindings, as well as create, edit or delete a binding.

When you click the **"Create"** or **"Edit"** button, the binding editing dialog box opens:

1. MAC address of the expected target device. When device with this MAC appears on the network, the automatic configuration procedure will start for it.
2. IP address that will be issued to this device.
3. Group where this device will be placed after addition to the system.
4. Device model.
5. Firmware version to which the device will be automatically upgraded.
6. Configuration that will be applied to the device.

Initialization status

This tab displays active bindings statuses (i.e. bindings, devices to which appeared on the network and began the process of automatic initialization):

1. A table with bindings and their **current statuses** displayed on the left side of the screen.
2. By clicking the binding from item 1, a log for this binding opens in the right part of the screen, where you can track the initialization process of the corresponding device step-by-step.

Tasks

The section displays a table with tasks performed in the system on behalf of the user. Periodic system tasks, such as device synchronization, are hidden by default. They can be displayed by clicking "Show" in the last column of the table.

The table consists of the following fields:

- Status — current status of the task.
- Type — essence of the task.

- Description — parameters with which the task was started.
- Create date — date and time the task was created.
- Start date — date and time when the task was launched into active operation. It may not match the date of creation, because the task may be in the handler queue.
- Stop date — the date and time when the task was completed. In this case, the task may be completed successfully or not successfully.
- Log — open the task execution log from
- Subtasks — tasks for working on each individual device. When displaying the task table, all subtasks are hidden, and only the parent task with the integral status is displayed. This button is used to display all subtasks for a group operation.

Events

Displays a list of events that have occurred in the system. Important events that report problems are highlighted in red, informational events are highlighted in green.

Settings

The section of general system settings. Contains tabs:

1. Access
2. Users
3. Roles
4. License
5. Backup
6. Devices status identification

Access

Interface for configuring default settings for accessing devices.

The settings are divided into four groups:

1. SSH and SFTP — used to manage devices and transfer files to devices. Login and password are available for configuration.
2. SNMP — used for monitoring devices and obtaining inventory data. Read community is available for configuration.
3. network — settings for determining the device network availability. Verification can be performed using the ICMP protocol ("normal ping") and checking the TCP connection setup (a faster way). In the second case, it is additionally necessary to specify which port the connection will be established on.
4. SNMP COMMUNITY-RO — defining community for collecting metrics from devices over SNMP. To do this, a separate polling mechanism is used, the settings of which are only possible globally for the entire system.

Users

A section for managing system user accounts.

1. Buttons to add and delete users.
2. User table.



To edit existing account, double-click the corresponding line with the left mouse button.

Creating a new account

When clicking the "Add" button, a dialog box will open in which you need to specify the parameters for new account:

1. Account attributes (required fields are marked with "*"):
 - Login and password — used for authorization in the system.
 - Role — defines a set of privileges available to user in the system.
 - Surname, Name, Patronymic — required to identify the person who owns the account.
 - E-mail — address for sending notifications to the user.
2. Devices groups and system objects to which the user will be granted access.
3. Cancel and save buttons.

Adding groups for the user Add group

Interface elements of add group window:

1. Navigation bar — displays currently selected group. Particularly this group will be saved to the user account after clicking the "Add" button.
2. Nested groups table — allows to select one of the child groups and move further down the tree.



To return to the parent group, click on its name in the navigation bar.

3. Cancel and save buttons.

Roles

Interface for managing system user roles.

- 1. Buttons to add and delete roles.
- 2. Roles table.

Preset roles set

There are three roles in the system by default:

- 1. **SuperAdmin** — role for managing the ECCM system. Privileges: user and roles management. Managing global device access settings. All the features available to other roles are also available.
- 2. **Administrator** — role for specialists who use the system to configure equipment. Privileges: hardware management (device commissioning /decommissioning, configuration, upgrade, reboot), device group management. The capabilities provided to the operator are also available.
- 3. **Operator** — role for monitoring equipment operation. Privileges: view monitoring data (device status, statistics, crashes, reports).

Creating a new role

- 1. Role name.
- 2. Description — brief explanation of who and what the role is intended for.
- 3. Set of privileges available to the user in this role. The user can apply his privileges to all devices and objects that are in his groups.
- 4. Cancel and save buttons.

Privilege table

Privilege name	Description
Configurations comparison	access to the functionality of comparing configurations of different versions and devices
Summary information	access to the section "Summary information" and information widgets
Devices - configuring adapters	access to the device adapter configuring page
Devices - configuration	access to the device configuration management page
Devices - firmware upgrade	access to the device firmware upgrade page
Devices - monitoring	access to the device metrics display page
Devices - View	access to the "Devices" section for viewing devices in a single list
Events	section for displaying events that occurred with devices
Firmware storage	section for managing the firmware stored in the system
Groups - management	access to the "Groups" section for managing groups and devices
Groups - monitoring	access to the "Groups" section to view information about devices divided into groups
Settings - access	device access settings section
Settings - backup	section for devices list import and export
Settings - license	section for license management
Settings - users	section for managing user accounts and roles
Tasks	section for displaying the results of tasks
Group device updates	section for starting mass device upgrade tasks

License

The licensing system is designed to limit the uncontrolled commercial use of ECCM. The license determines the number of devices of each model that will be serviced by the system. Licenses have several properties:

- 1. id — unique license number.
- 2. Publisher — name of the company or name of the employee who issued the license.
- 3. Recipient — name of the organization acquiring the license.
- 4. Publication date — date of license generation.
- 5. Expiration date — date after which the license is considered invalid. Past this date, access to device management will be restricted.

Interface Description

1. License Management Tools:
 - Upload — upload a new license file to the server.
 - Export — get the active license file.
2. Information about the license installed in the system: basic data and the total number of supported device models.
3. List of models and the number of equipment pieces of each model that are supported in the license.

Uploading new license

After clicking the "Upload" button, a system window will open in which you need to select a new license file and upload it to the server. After that, the ECCM will analyze the uploaded license and open a window to compare the new license with the active license.

Interface elements:

1. Name of the uploaded file.
2. Information about the active license.
3. Information about the new license.
4. Table for comparing the number of supported devices.
5. Cancel and apply buttons.

If the new license is outdated or does not support the operation of all devices added to the system, an error will be displayed when applying it.

Backup

The section is intended for creating copies (export) of the devices list from the system to a csv file, as well as for importing device lists into the system.

To export the list of devices, click "Device Export": The file will be downloaded by the browser.

Export/Import file format:

```
GROUP;IP;MODEL
eccm/group1/;172.24.0.8;ESR-1000
eccm/group1/;172.24.0.7;ESR-100
eccm/group1/;172.24.0.6;ESR-20
eccm/group1/;172.24.0.5;ESR-10
eccm/group1/;172.24.0.9;ESR-1200
```

where:

- GROUP — group where the device was located or where it should be placed;
- IP — IP address of the device;
- MODEL — model of the device.

The semicolon character ';' is used as a separator.

Devices import

To import devices, click "Import devices" and select the appropriate file to import. The file will be uploaded to the system and processed, then a dialog box for adding devices will open:

1. Device Counters — show how many total devices were extracted from the file and how many have problems in the description. If there are devices with problems in the list, adding the list will not be possible: it must be edited to correct/delete incorrect data .
2. Show only invalid (devices) — enable the device list filter to display incorrect entries.
3. The device list — device table that displays the data obtained from the imported file.
4. Cancel and save buttons.

Devices status identification

Section for configuring the function of checking devices availability status via TCP/ICMP, SNMP protocols.

Settings form contains the following fields:

- Polling interval — parameter that determines the frequency of device polling over TCP/ICMP and SNMP protocols;
- Request timeout — time to complete the polling;
- The number of repeated attempts — parameter that determines the number of repeated polling attempts.

Section control buttons:

- Save — apply settings to the ECCM;
- Reset — reset values to the previous saved state.