EPSON

Epson Robot Management System

User's Guide

Rev.1 EM202S4229F

Epson Robot Management System　User's Guide　Rev.1

Epson Robot Management System

User's Guide

Rev.1

PREFACE

FOREWORD

Thank you for purchasing our product.
This manual contains the information necessary for the correct use of the product.
Please carefully read this manual and other related manuals before installing the product.
Keep this manual handy for easy access at all times.

WARRANTY

Product malfunctions resulting from normal handling or operation will be repaired free of charge during the normal warranty period. (Please contact the supplier of your region for warranty period information.)

However, customers will be charged for repairs in the following cases (even if they occur during the warranty period):

1. Damage or malfunction caused by improper use which is not described in the manual, or careless use.
2. Malfunctions caused by customers' unauthorized disassembly.
3. Damage due to improper adjustments or unauthorized repair attempts.
4. Damage caused by natural disasters such as earthquake, flood, etc.

Warnings, Cautions, Usage:

1. If this product, robot, or associated equipment is used outside of the usage conditions and product specifications described in the manuals, this warranty is void.
2. If you do not follow the WARNINGS and CAUTIONS in this manual, we cannot be responsible for any malfunction or accident, even if the result is injury or death.
3. We cannot foresee all possible dangers and consequences. Therefore, this manual cannot warn the user of all possible hazards.

TRADEMARKS

Microsoft, Windows, Windows logo, Visual Basic, and Visual C+ are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
Pentium is a trademark of Intel Corporation.
XVL is a registered trademark of Lattice Technology, Co., Ltd.
Other brand and product names are trademarks or registered trademarks of the respective holders.

TRADEMARK NOTATION IN THIS MANUAL

Throughout this manual, [Windows 10] - [Windows Server 2019] - [Windows Server 2016], and [Windows Server 2012 R2] refer to the following respective OS (operating systems). In some cases, Windows refers generically to [Windows 10] - [Windows Server 2019] - [Windows Server 2016], and [Windows Server 2012 R2].

- Microsoft® Windows® 10 operating system
- Microsoft® Windows Server® 2019 operating system
- Microsoft® Windows Server® 2016 operating system
- Microsoft® Windows Server® 2012 R2 operating system

NOTICE

No part of this manual may be copied or reproduced without authorization.
The contents of this manual are subject to change without notice.

Please notify us if you should find any errors in this manual or if you have any comments regarding its contents.

MANUFACTURER

SEIKO EPSON CORPORATION

CONTACT INFORMATION

Contact information is described in the first pages of the following manual:

Robot System Safety and Installation Read this manual first - SUPPLIERS

How to Read Manual

Symbol Notation

Caution

This symbol indicates that a danger of possible harm to people or physical damage to properties exists if the associated instructions are not followed properly.

Important

This symbol indicates the contents that must be observed. If the associated instructions are not followed properly, it may result in malfunction of this product or system failure.

Note

This symbol indicates additional or reference information.

☞Related Information

Jump to the related page.

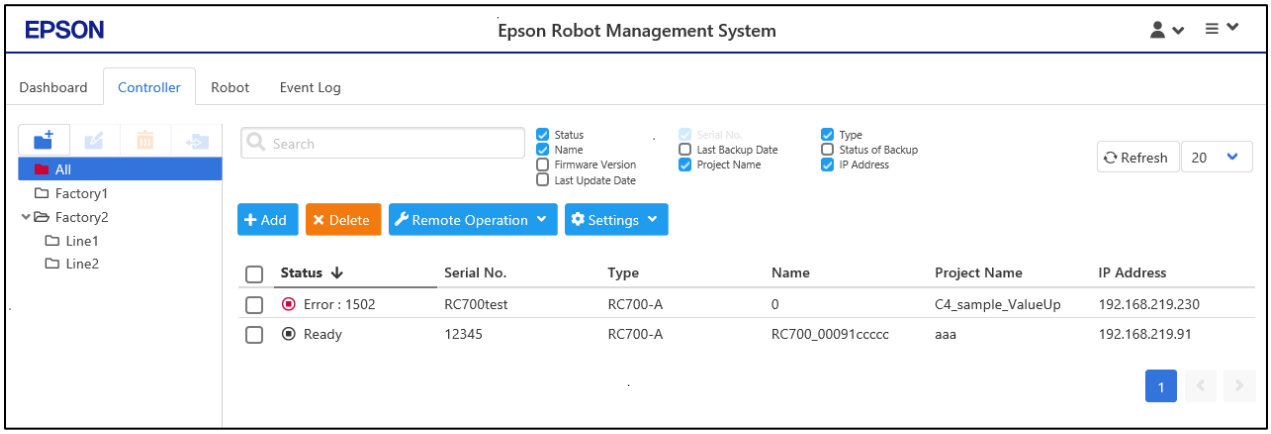
Screen

Screens under development are used in this manual. Therefore, screens may differ from the actual product.

Features of Epson Robot Management System

Main Features

Epson Robot Management System is an application that allows you to set, manage, and monitor the settings for Controllers and robots. See below for the outlines of the main features.



- **Monitoring Controller**

  Regularly acquires the Controller status and its detailed information from Controllers on the network.

- **Monitoring Robot**

  Regularly acquires the robot status and parts lifetime data (robot maintenance) from the robot connected to the Controller on the network.

- **Managing Event Log**

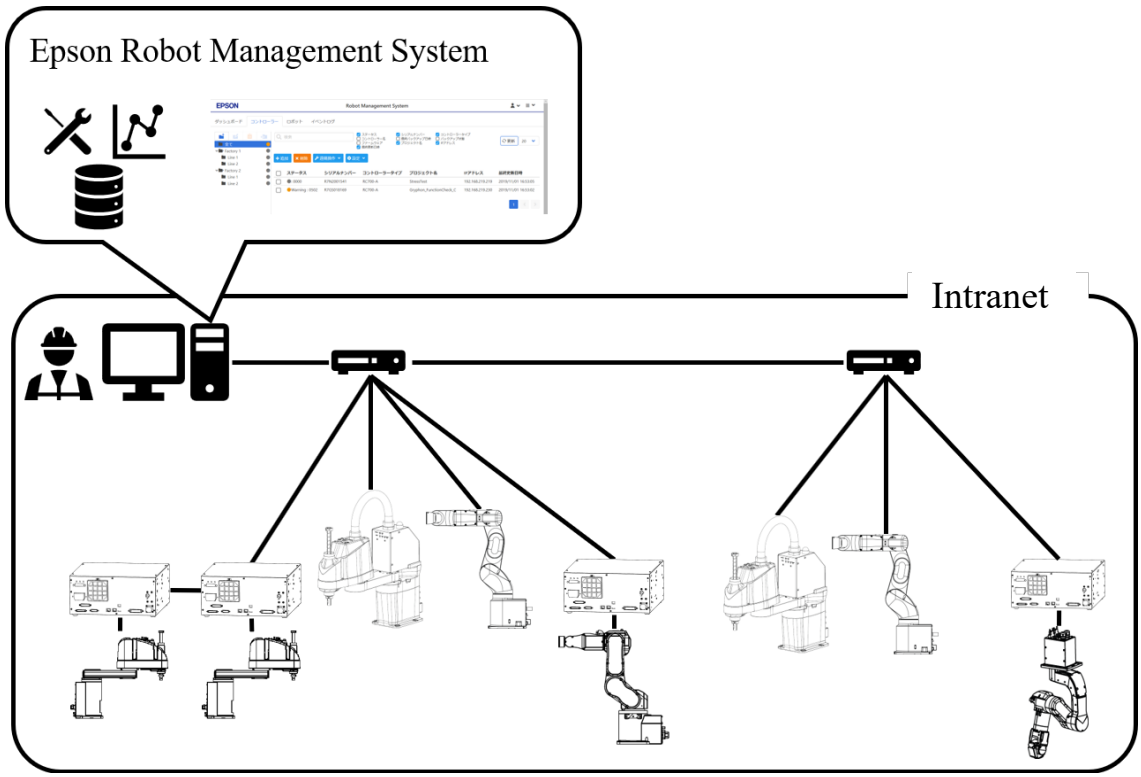
  Monitors alerts such as errors, warnings, and opening safeguard. If the conditions are set in advance, this application automatically sends notification emails to the administrator.

- **Setting Controllers**

  Configures Environment setting, adjust time setting, and update firmware for Controllers on the network.

Configuring the System

This application manages Controllers and robots by setting up the following system.



- **Epson Robot Management System**
  This is an application installed for administrator of Controller.

Epson Robot Management System (hereinafter referred to as "this application") consists of the following Windows service:

- **RMS_Frontend (nginx service)**
  Web server that provides User Interface of this application.
- **DMP_Agent (Epson.DMP.Agent service)**
  Operates a service as part of system. Communicates with Controllers on a network and regularly acquires data and manages the Controllers.
- **DMP_Backend (Epson.DMP.Server service)**
  This is a database that records information.

Languages

This application supports the following languages.

English, Japanese, Chinese (traditional), Chinese (simplified)

Table of Contents

Checking the Status of Controller and Robot

Startup and Login

- **Start up**

  Start up Web browser and type the following address in the address bar.

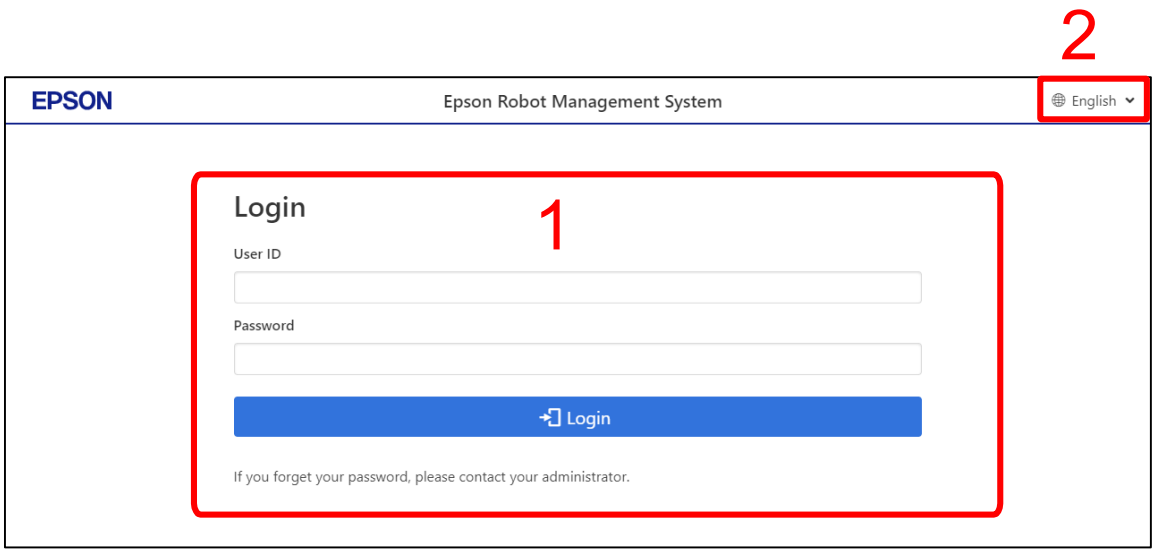
  http://xxx.xxx.xxx.xxx:8080

> - "xxx.xxx.xxx.xxx" is IP address of the computer which this application is installed.
> - "8080" is PortNo. of WebUI.
>
> If the Port No. was changed during installation, type the changed Port No.

- **Close**

  Close Web browser.

Login Screen



Login screen of this application consists of the following items.

No.	Item	Description
1	Login	Enters User ID and Password to log in. If the registered user log in this application for the first time, Password is same as the User ID. Be sure to change the password on the screen displayed after logging in this application.
2	Select Languages	Clicks 🌐 to select the language.

Operation Screen

Switching Screen by Tabs

Change the screen by selecting the tabs.

- **<Dashboard> Tab**

  Displays the errors of Controller and Robot Lifetime Data information as a list and a graph. You can check the status at a glance.
  ☞ <Dashboard> Tab

- **<Controller> Tab**

  Manages (register and delete) Controllers. Environment setting, Adjust Clock setting and Update Firmware for registered Controllers can be configured here.
  ☞ <Controller> Tab

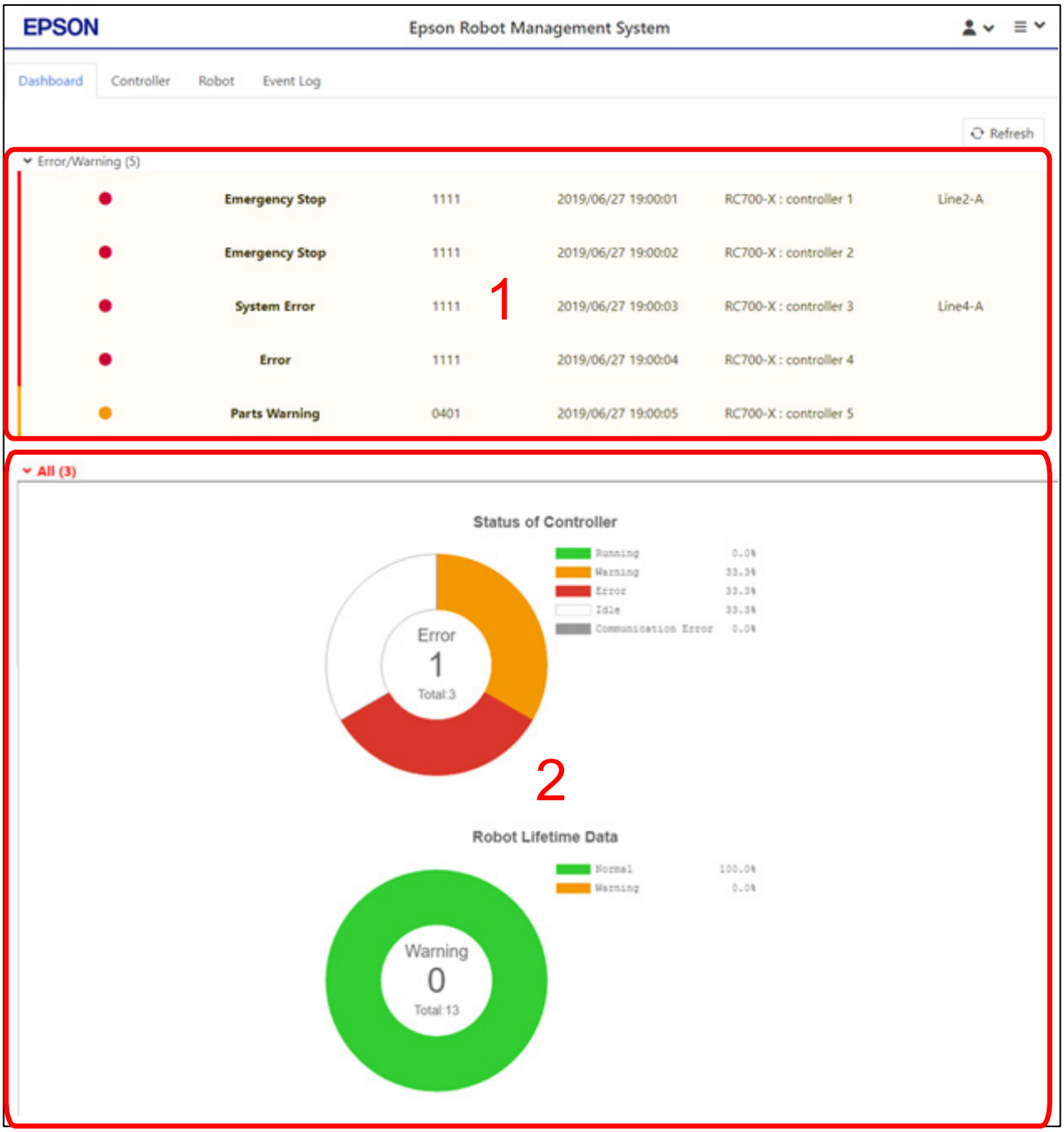
- **<Robot> Tab**

  Manages robots. Shows each robot name, model name, status information of parts lifetime data. All robots connected to Controllers that are added to the Controller list of the <Controller> tab are displayed.
  ☞ <Robot> Tab

- **<Event Log> Tab**

  Displays the history of errors and warnings of Controllers. All Controllers that are added to the Controller list of the <Controller> tab are displayed.
  ☞ <Event Log> Tab

<Dashboard> Tab



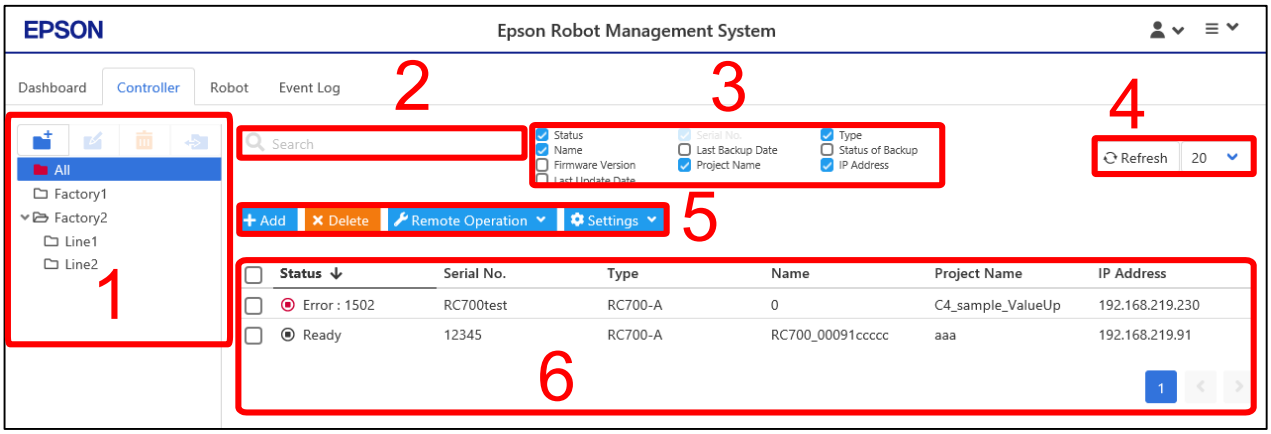
- Checking the Status of Controller and Robot -

Select the <Dashboard> tab to display the dashboard screen.

The Dashboard screen consists of the following items.

No.	Item	Description
1	Event log view	Displays the history of errors and warnings of Controllers on a network. (up to the latest five items)
2	Status statistics view	Status of Controller and Robot Lifetime Data based on set groups are displayed in a pie chart. ・ **Status of Controller** Displays the Controller status in the group. The number shown inside the pie chart indicates the number of Controller(s) in error status. ・ **Robot Lifetime Data** Indicates parts lifetime data of the robots connected to the Controller in the group. The number shown inside the pie chart indicates the number of robot(s) in warning status.

<Controller> Tab



Select the <Controller> tab to display the Controller management screen.
The Controller management screen consists of the following items.
Please see below for operations using the Controller management screen.

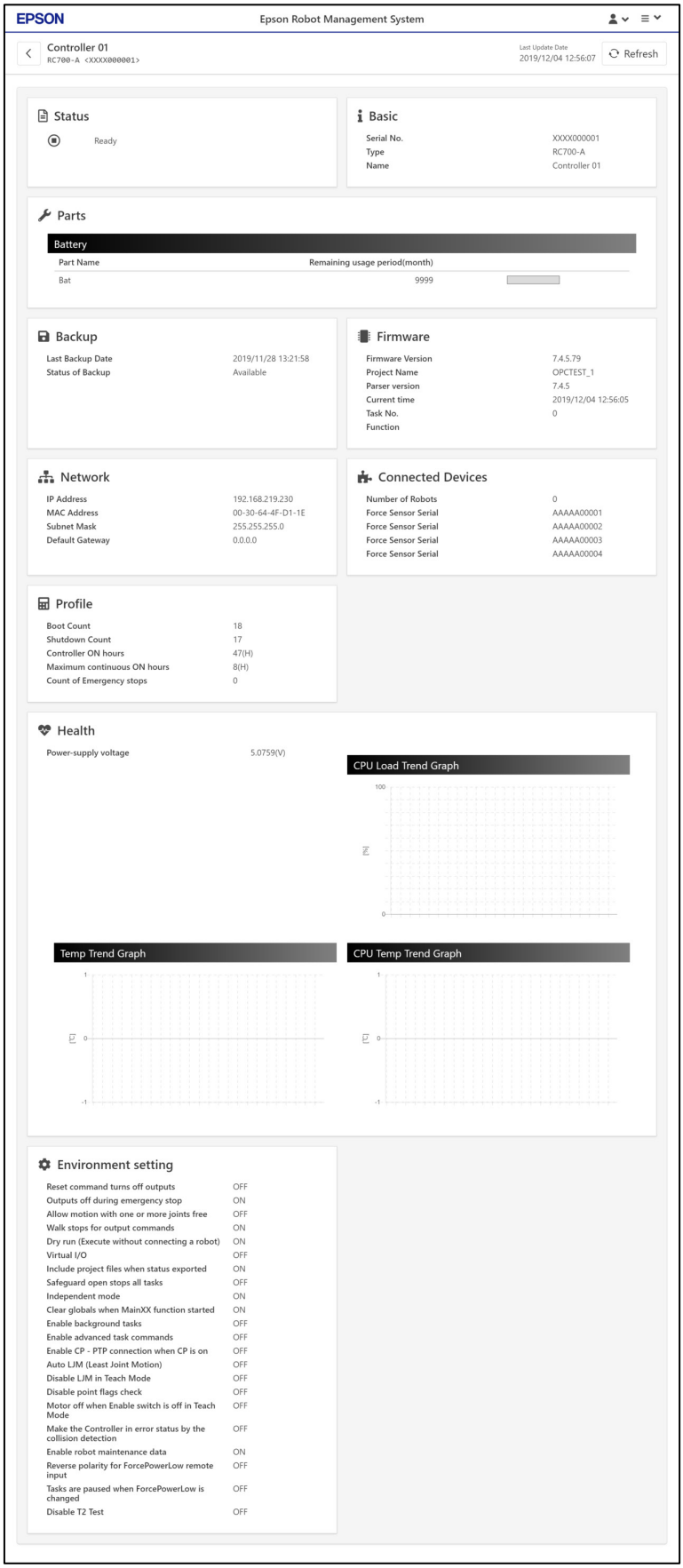
☞ Managing Controllers

No.	Item	Description
1	Tree view	The set groups are displayed in the tree form. Adds or deletes a group, and edits the group name. Status of the Controllers in the group is displayed in color. ・**Red** There is a Controller in Error status in the group. ・**Yellow** There is a Controller in Warning status in the group. ・**Green** There is a Controller in Running status in the group. ・**Black** There is a Controller in Ready status in the group. ・**White** There is no Controller in the group. ・**Gray** All Controllers in the groups are in communication disabled status. If there are Controllers in different status in the group, the color of high-priority is displayed. Priority order: Error > Warning > Running > Ready
2	Search box	Searches the Controller by entering Controller name or serial number.
3	Check boxes to select what to display	Selects the items to display in the Controller list.
4	<Refresh> button	Refreshes and displays the latest information on the screen.
	Display in one screen page	Selects the number of Controllers displayed in one screen page.

- Checking the Status of Controller and Robot -

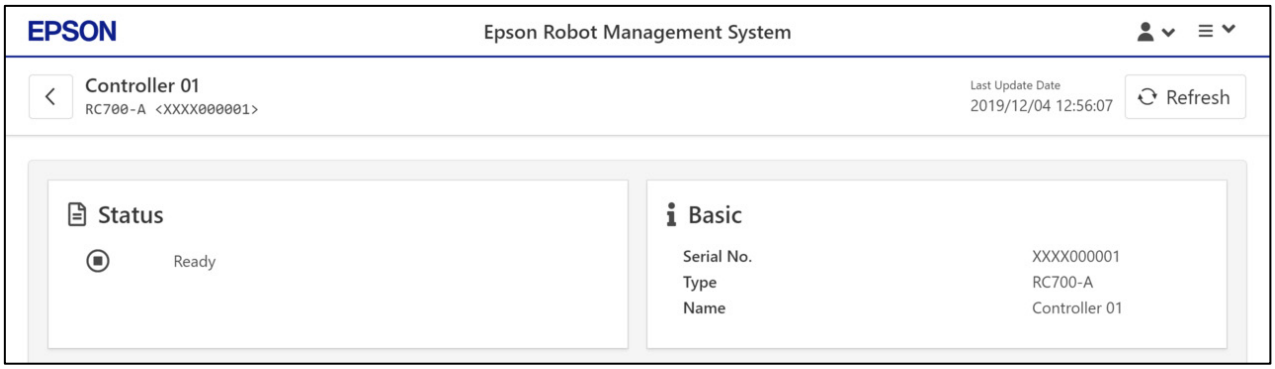
No.	Item	Description
5	Operation menu	Performs the operations related to Controllers. ・ **<Add> button** Add a Controller to Controller list. ・ **<Delete> button** Delete a Controller from Controller list. ・ **<Remote Operation> button - [Backup]** Perform the Controller backup. ・ **<Remote Operation> button - [Firmware Update]** Update the Controller firmware. ・ **<Settings> button - [Controller Settings]** Configure the Environment setting of the Controller. ・ **<Settings> button - [Update SPEL+ Project]** Send SPEL+ project to Controller. ・ **<Settings> button - [Event Backup Settings]** Configure the event backup of the Controller. ・ **<Settings> button - [Adjust Clock]** Adjust the clock of the Controller.
6	Controller list	Displays the list of registered Controllers. Controllers information and status can be checked here. Detailed information of the Controller can be checked by clicking on the list row. ☞ Detailed Screen of Controller

Detailed Screen of Controller



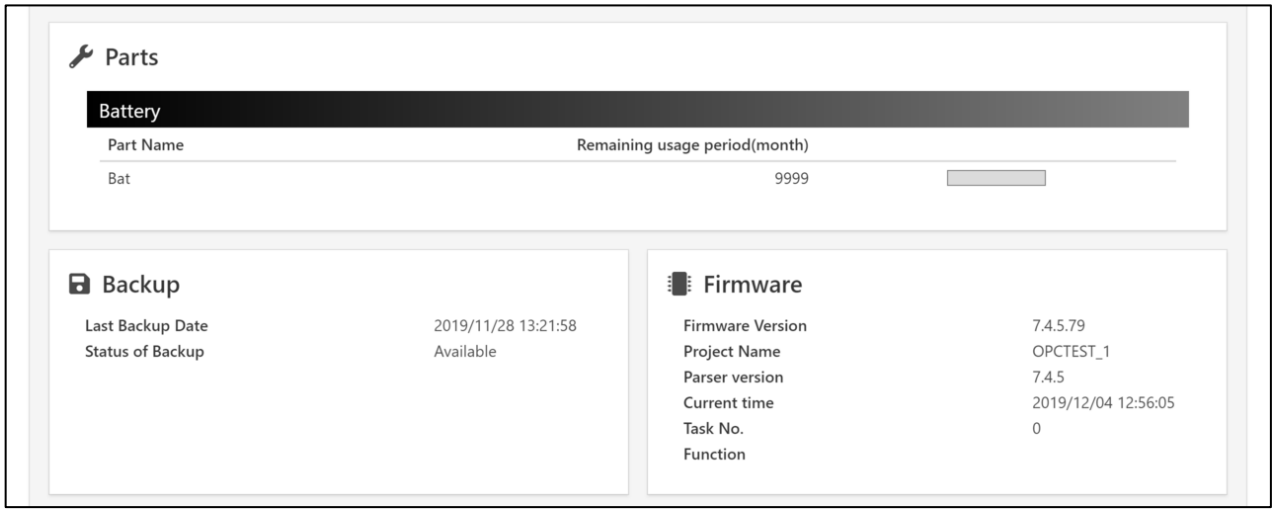
- Checking the Status of Controller and Robot -

See below for details of each item.



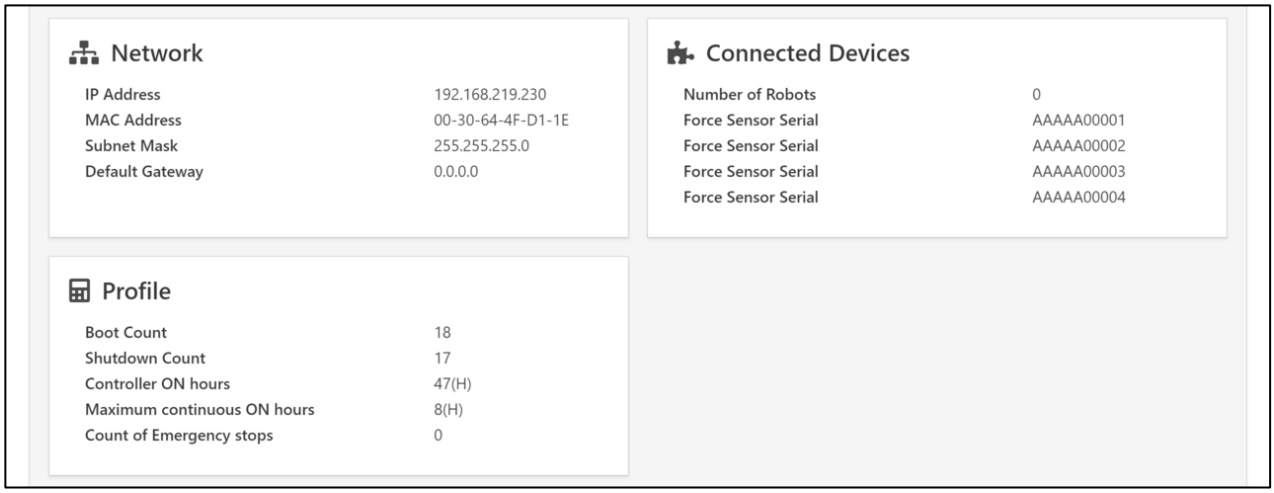
Item	Description
Header	• **<[‹]> button** Click this button to return previous screen. • **Controller name, Controller model, and serial No.** • **Last Update Date** • **<Refresh> button** Click this button to update to the latest information.
Status	Displays Controller status. • **Communication Error** ⊘ • **Run** ▶ (Error), ▶ (Warning), ▶ (Operating), ▶ (Stop) • **Pause** ⏸ (Error), ⏸ (Warning), ⏸ (Operating), ⏸ (Stop) • **Ready** ■ (Error), ■ (Warning), ■ (Operating), ■ (Stop) If the Controller error is either of Warning, System Error, Safeguard, or Emergency Stop, an error code is also displayed. For details of the error code, refer to the Controller manual.
Basic	Basic information of Controller. • **Serial No.** Serial No. of Controller • **Type** Controller model name • **Name** Controller name set by EPSON RC+

- Checking the Status of Controller and Robot -

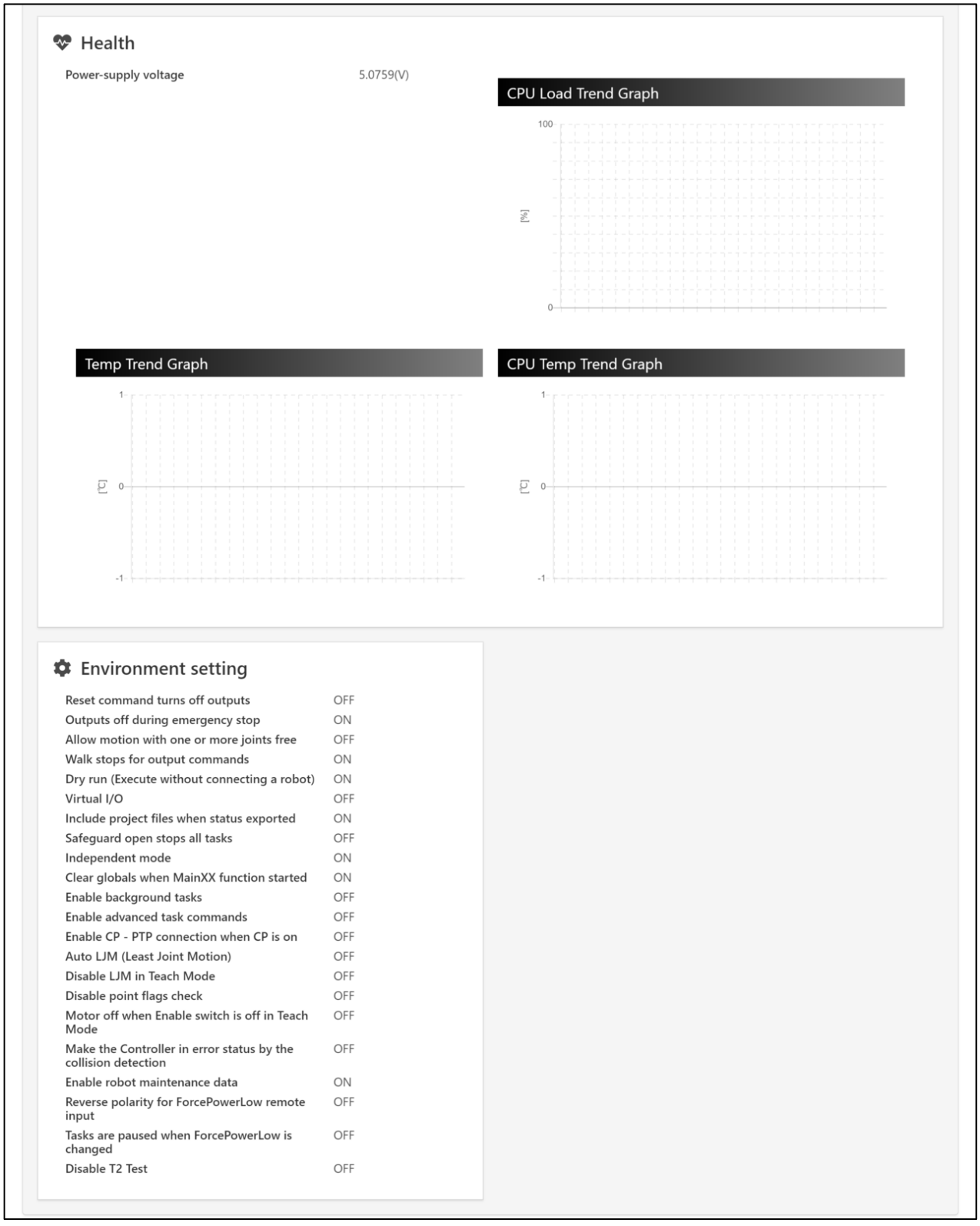


Item	Description
Parts	Parts lifetime information of Controller. Note: if the [Enable robot maintenance data] check box is not selected in EPSON RC+, Remaining usage period (month) and Degree of consumption will not be displayed. • **Battery** • **Parts Name** Fixed character string indicating battery • **Remaining usage period (month)** Number of remaining months until replacement • **Degree of battery consumption** Green colored gauge increases when the degree of battery consumption becomes high. When the degree of battery consumption becomes 100%, the gauge color changes to red
Backup	Backup information of Controller. • **Last Backup Date** Date when last backup is acquired • **Status of Backup** [Available] or [Waiting]
Firmware	Firmware and project information of Controller. • **Firmware Version** • **Project Name** Name of SPEL+ project that is currently loaded in Controller • **Parser version** • **Current time** Date and time information of Controller when the data was acquired • **Task No.** Number of task(s) that was executed by Controller • **Function Name** Function name of SPEL+ project that was executed when the data was acquired

- Checking the Status of Controller and Robot -



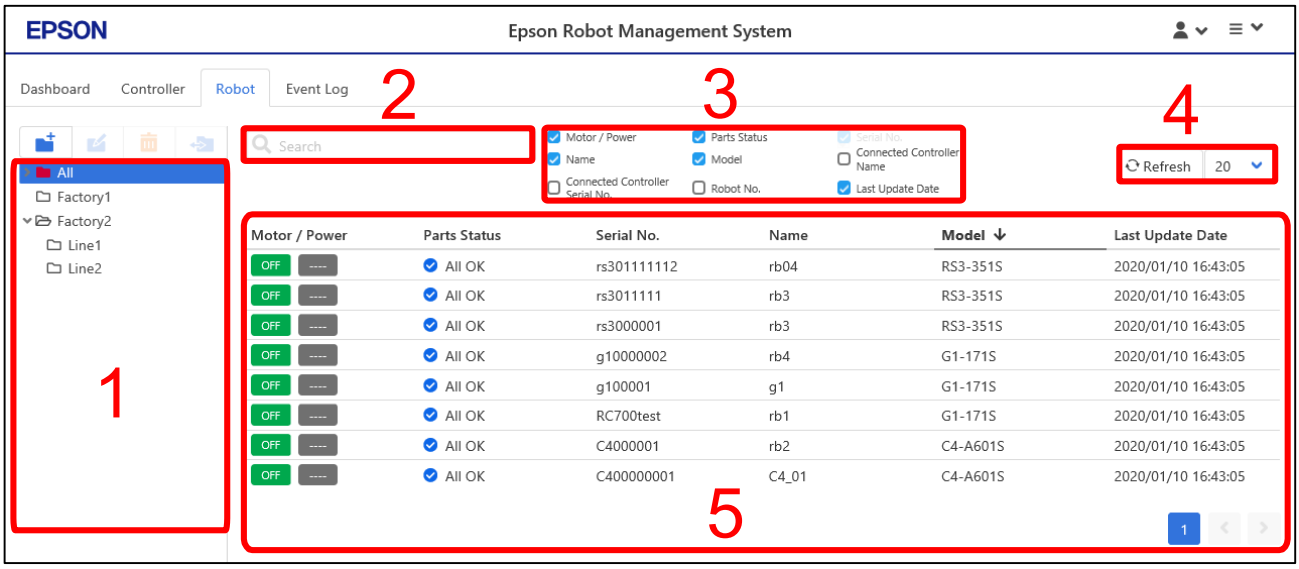
Item	Description
Network	Network setting information of Controller.
Connected Devices	Information of device(s) connected to Controller. ・ **Number of Robots** Number of connected robots ・ **Force Sensor Serial** Serial No. of Force Sensor (Available only when Force Sensor is connected)
Profile	Total operation data of Controller.
Error (This is only displayed when an error occurs)	Detailed information of errors or warnings of Controller. ・ **Date/Time** ・ **Task No.** ・ **Function** ・ **Executing line No.** ・ **Robot No.**


Health
Power-supply voltage
5.0759(V)
CPU Load Trend Graph
100
[%]
0
Temp Trend Graph
1
[℃]
0
-1
CPU Temp Trend Graph
1
[℃]
0
-1
Environment setting
Reset command turns off outputs OFF
Outputs off during emergency stop ON
Allow motion with one or more joints free OFF
Walk stops for output commands ON
Dry run (Execute without connecting a robot) ON
Virtual I/O OFF
Include project files when status exported ON
Safeguard open stops all tasks OFF
Independent mode ON
Clear globals when MainXX function started ON
Enable background tasks OFF
Enable advanced task commands OFF
Enable CP - PTP connection when CP is on OFF
Auto LJM (Least Joint Motion) OFF
Disable LJM in Teach Mode OFF
Disable point flags check OFF
Motor off when Enable switch is off in Teach Mode OFF
Make the Controller in error status by the collision detection OFF
Enable robot maintenance data ON
Reverse polarity for ForcePowerLow remote input OFF
Tasks are paused when ForcePowerLow is changed OFF
Disable T2 Test OFF

- Checking the Status of Controller and Robot -

Item	Description
Health	Displays information for stable operation of Controller. • **Power-supply voltage** Voltage of 5V power supply for main CPU. • **CPU Load Trend Graph** Changes in load factor of Controller's main CPU (for the past 24 hours) Vertical axis: load factor, Horizontal axis: time (one scale: one hour) • **Temp Trend Graph** Changes in temperature measured by temperature sensor (for the past 24 hours) Vertical axis: temperature (0 to 200℃), Horizontal axis: time (one scale: one hour) • **CPU Temp Trend Graph** Changes in temperature of Controller's main CPU (for the past 24 hours) Vertical axis: temperature (0 to 200℃), Horizontal axis: time (one scale: one hour)
Environment setting	This is the Environment setting of Controllers. For more details, refer to the following manual. *EPSON RC+ 7.0 User's Guide*

<Robot> Tab



Select the <Robot> tab to display the robot management screen.
The robot management screen consists of the following items.

Please see below for operations using the robot management screen.

☞ Managing Controllers

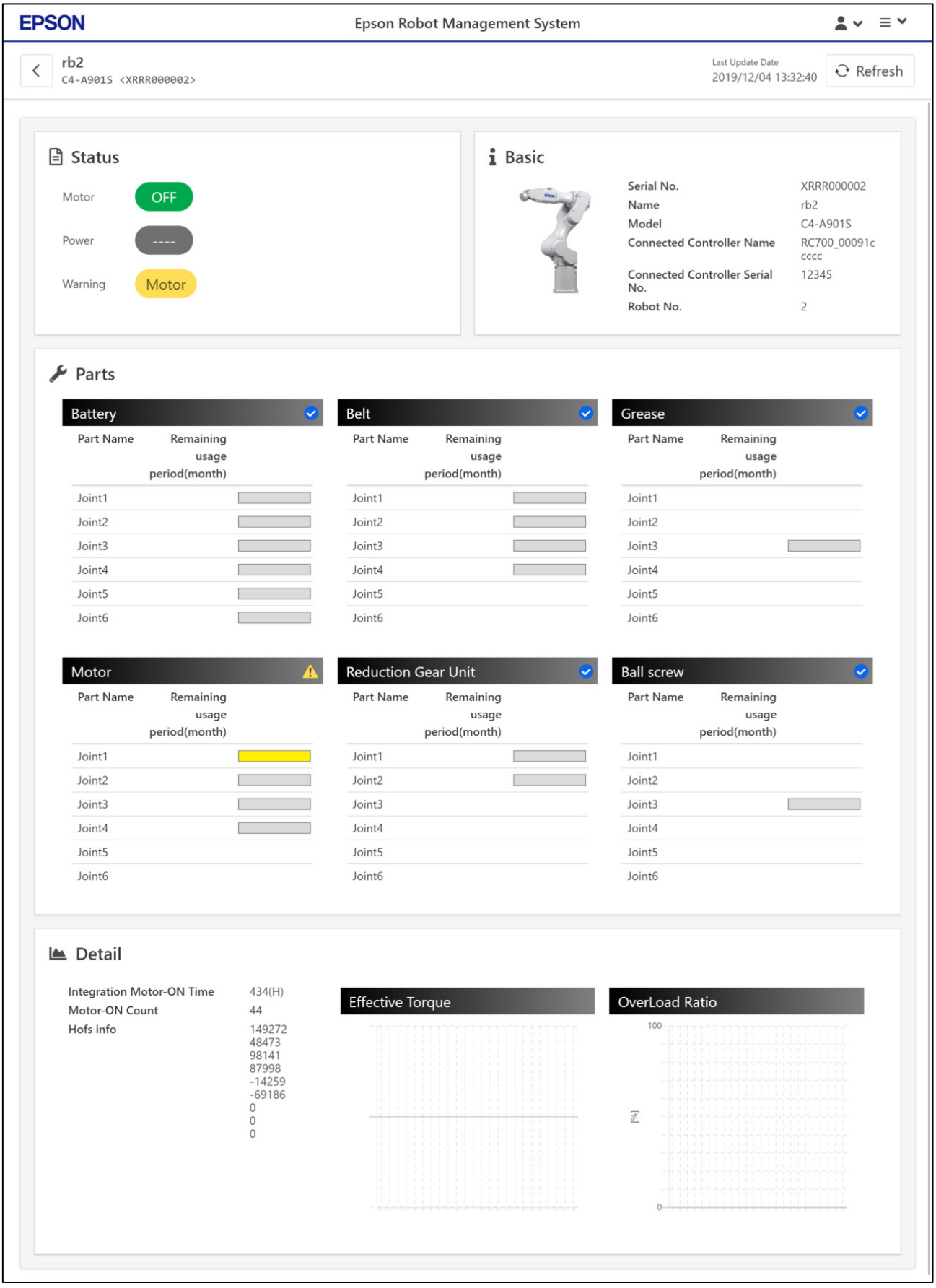
☞ Management of Controller List and Robot List

No.	Item	Description
1	Tree view	The set groups are displayed in the tree form. Adds or deletes a group, and edits the group name. Status of parts lifetime data of the robots connected to the Controller in the group is displayed in color. • **Red** There is a Controller in Error status in the group. • **Yellow** There is a Controller in Warning status in the group. • **Green** There is a Controller in Running status in the group. • **Black** There is a Controller in Ready status in the group. • **White** There is no Controller in the group. • **Gray** All Controllers in the groups are in communication disabled status. If there are Controllers in different status in the group, the color of high-priority is displayed. Priority order: Error > Warning > Running > Ready
2	Search box	Searches the robot by entering robot name or serial number.

- Checking the Status of Controller and Robot -

No.	Item	Description
3	Check boxes to select what to display	Selects the items to display in the Robot list.
4	<Refresh> button	Refreshes and displays the latest information on the screen.
	Display in one screen page	Selects the number of robots displayed in one screen page.
5	Robot list	Displays the list of robots connected to the registered Controllers. Robot information and status can be checked here. Detailed information of the robots can be checked by clicking on the list row. ☞ Detailed Screen of Robot

Detailed Screen of Robot



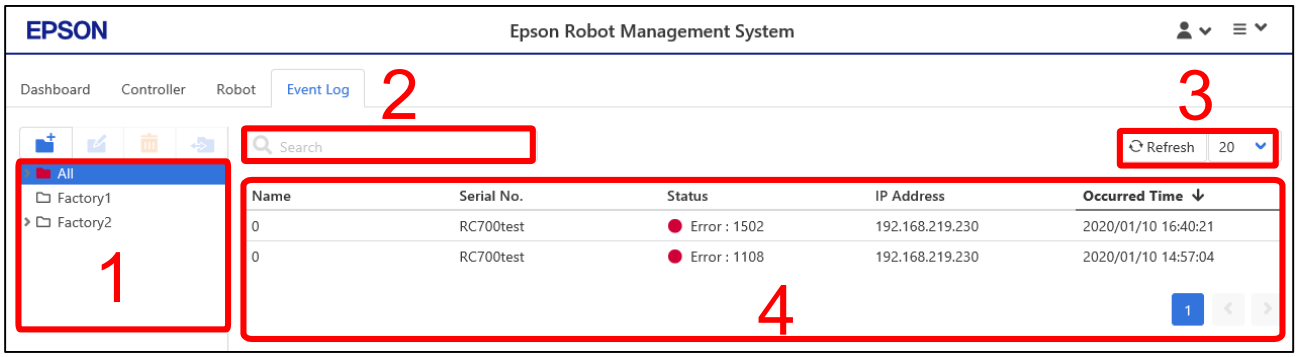
- Checking the Status of Controller and Robot -

Item	Description
Header	• <‹> button Clicks this button to return previous screen. • **Robot name, robot model, and serial No.** • **Last Update Date** • **<Refresh> button** Clicks this button to update to the latest information.
Status	Displays robot status. • **Motor** ON (Motor ON), OFF (Motor OFF) • **Power** ---- (Motor OFF), Low (Low Power Status), High (High Power Status) • **Warning** Display the parts in warning status of the following items. Battery Belt Grease Motor Reduction Gear Unit Ball screw
Basic	Basic information of robot. • **Product image** Picture image of the robot • **Serial No.** Serial No. of the robot • **Name** Name that is set to the robot • **Model** Robot model name • **Connected Controller Name** Controller name that the robot is connected • **Connected Controller Serial No.** Serial No. of the Controller that the robot is connected • **Robot No.** This indicates the number of the connected robot(s) in Controller.
Parts	Parts lifetime information of robot. Displayed parts lifetime information differs depending on robot model. • **Kinds of parts** Battery, Belt, Grease, Motor, Reduction Gear Unit, Ball screw • **Information items** Part Name : Character string corresponding to each joint Remaining usage period (month) : Number of remaining months until replacement Degree of consumption : Green colored gauge increases when the degree of consumption becomes high. When the degree of consumption becomes 100%, the gauge color changes to yellow.

- Checking the Status of Controller and Robot -

Item	Description
Detail	Detailed information of robot. • **Integration Motor-ON Time** Total Motor ON time • **Motor-ON Count** Number of times the motor is turned ON • **Hofs info** Displays the offset pulses between Joint #1 and Joint #9 (differs depending on the robot). • **Effective Torque** Changes in torque on each joint of robot (for the past 24 hours) Vertical axis: torque, Horizontal axis: time (one scale: one hour) Click the legend for each joint at the top of graph area to display or hide the selected joint chart. • **Overload Ratio** Changes in overload ratio on each joint of robot (for the past 24 hours) Vertical axis: overload ratio, Horizontal axis: time (one scale: one hour) Click the legend for each joint at the top of graph area to display or hide the selected joint chart.

<Event Log> Tab



Select the <Event Log> tab to display the Event Log list screen.
Event Log list screen consists of the following items.
Please see below for operations using the Event Log list screen.
☞ Management of Event Log List

No.	Item	Description
1	Tree view	The set groups are displayed in the tree form. • **Red** There is a Controller in Error status in the group. • **Yellow** There is a Controller in Warning status in the group. • **Green** There is a Controller in Running status in the group. • **Black** There is a Controller in Ready status in the group. • **White** There is no Controller in the group. • **Gray** All Controllers in the groups are in communication disabled status. If there are Controllers in different status in the group, the color of high-priority is displayed. Priority order: Error > Warning > Running > Ready
2	Search box	Searches the Event Log by entering Controller name or serial number.
3	<Refresh> button	Refreshes and displays the latest information on the screen.
	Display in one screen page	Selects the number of logs displayed in one screen page.
4	Event log list	Displays the Event log list of registered Controllers.

List Settings

The displays of Controller list, Robot list, and Event Log list can be customized. Refreshes the latest data on the displayed contents anytime.

- **Display Setting**

  Customizes the display setting of the screen to improve browsability.

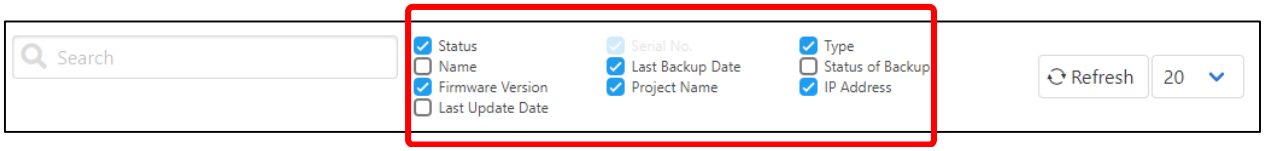
- **Refresh**

  Clicks the <Refresh> button on the screen to update the contents to the latest device data.

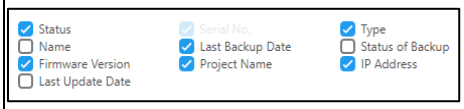
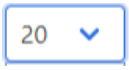
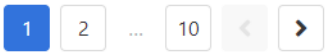
- **Search**

  Filters the displayed columns with any character string to search for applicable devices.

Display Setting



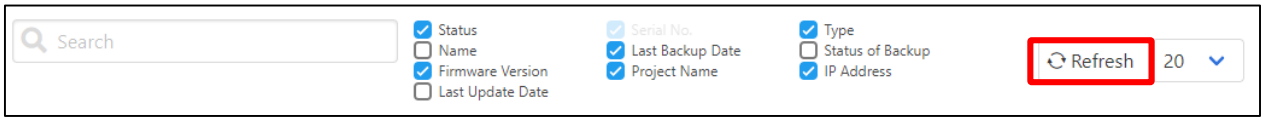
Each list has the following functions and the display can be customized.

Function	Description
Sort 	When clicking the headline of each column, set the value of the column as a key and sort the display order of Controller, Robot, and Event Log. Click the same column again to sort ascending order and descending order.
Switching displayed columns 	Switches the displayed columns by selecting the check box. The [Serial No.] column cannot be selected.
Items displayed in one page 	Selects the number of items displayed in one page from the list. (10/20 (default value)/50/100)
Paging 	When the number of displayed Controllers, robots, Event Log exceeds the items displayed in one page, the buttons shown on the left appears to switch the display to the other pages.

The contents set in the above functions are saved on the browser even if the screen is closed. Next time the list screen is opened on the same browser, it will be displayed with the set contents.

Refresh

When clicking the <Refresh> button at the top of each list, gather information of Controller list, Robot list, and Event Log list on real time separately from regular data gathering and display on the screen.

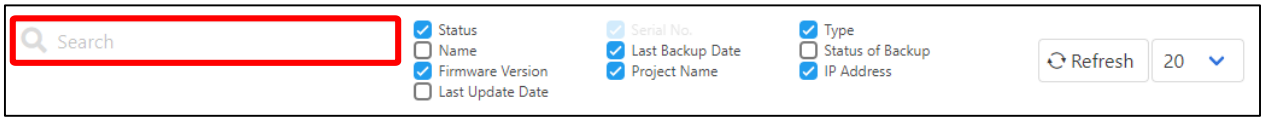


- When the <Refresh> button is clicked while regular data gathering is in progress (cannot confirmed on the browser screen), the operation of <Refresh> may be canceled. After regular data gathering finishes, the screen is refreshed to the latest data.
- The time taken to gather information and Refresh differs depending on the number of Controllers, their operating status, and network communication status.

Search

When any keyword is entered in [Search] at the top of each list, the character string that matches the keyword of displayed Robot, Controller, and Event Log will be displayed.

Enter the keyword within 20 characters. The keyword is case-insensitive. To cancel the filter, delete the keywords entered in [Search].



Browsing from Tablet or Smart Phone

This section describes how to browse the information of Controllers and robots from a tablet and a smart phone.

You can browse the screens of this application from a Web browser of a tablet or smart phone connected to the network.

1. **Set up a Wi-Fi environment and connect to a Wi-Fi router via tablet or smart phone.**

   For connection to a Wi-Fi router, refer to the manual of your Wi-Fi router, tablet, or smart phone.

2. **Start up the Web browser on the tablet or smart phone and type the following address in the address bar.**

   http://xxx.xxx.xxx.xxx:8080

- "xxx.xxx.xxx.xxx" is IP address of the computer which this application is installed.
- "8080" is PortNo. of WebUI.
  If the Port No. was changed during installation, type the changed Port No.

3. **When the Login screen is displayed, enter your User ID and password to log in.**

Installation

System Requirement

The application can be installed to the computer which satisfies the following system requirements.

⚠ Be careful for the following items when using this application.

- Disable your computer's sleep function, otherwise this application will not operate properly.
- This application only supports IPv4.
- To operate this application 24 hours using a server OS is recommended.
- This application is not available if Controller's Remote Ethernet function is already used for other purposes.

Hardware

Minimum System Requirements

- CPU: 2.0 GHz or faster x64 processor
- Memory: 4 GB or more
- Hard disk: 500 MB or more free space (except Database usage)
- Display: 1024×768 or higher monitor resolution

Recommended System Requirements

- CPU: 2.8 GHz or faster x64 processor
- Memory: 8 GB or more
- Hard disk: 500 MB or more free space (except Database usage)
- Display: 1920×1080 or higher monitor resolution

Software

Recommended Software

- **OS (Operating System)**

  Windows 10, Windows Server 2019, Windows Server 2016, Windows Server 2012 R2

- **Web browser**

  Internet Explorer 11 or later, Chrome, Safari 10 or later

Ports

This application uses the following ports. Those ports must be opened.

Port No.	Usage
5002	Used for internal module.
5003	Used for internal module.
5100	Used for internal module.
8080	Used for Web server.

Windows Services

This application registers the following as Windows services during installation.

- Epson DMP Agent
- Epson DMP Server
- nginx

Robot Controllers

Supported Controllers

This application supports the following Robot Controllers.

Robot Controller	Firmware version
RC90	Ver.7.4.7.2 or later
RC90-B	Ver.7.4.7.2 or later
RC700	Ver.7.4.7.2 or later
RC700-A	Ver.7.4.7.2 or later
T series	Ver.7.4.57.4 or later
VT series	Ver.7.4.57.4 or later

Though there are some restrictions, this application is available in previous firmware version.

Controller Settings

This application uses Controller's Remote Ethernet function. Configures the setting as follows and enable Remote Ethernet function.

Item	Setting
TCP/IP port No.	5000 (default)
Terminator	CRLF (default)
Timeout	60.00 seconds (default)
Use for status monitoring	ON

For more details on the settings of Remote Ethernet, refer to the following manual.

EPSON RC+ 7.0 User's Guide 12.2 Remote Ethernet

Installation and Log in

How to Install

> Log in to the computer by using an administrator account.

1. Run Setup.exe.

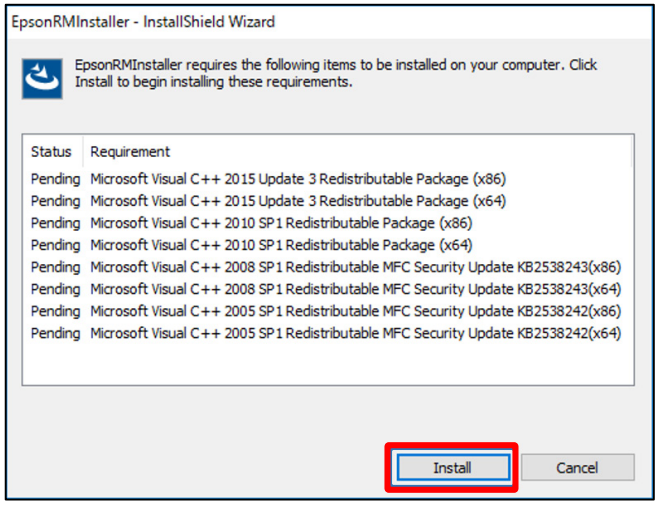
The Setup wizard starts.

> If the user account control screen is displayed, click the <Yes> button to allow installation.

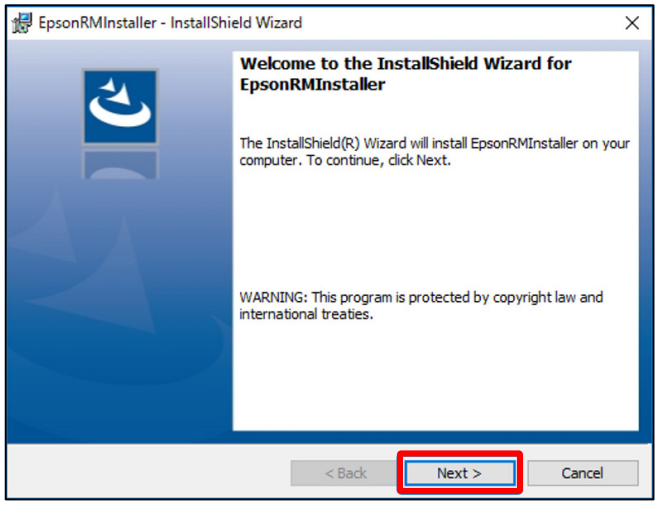
2. Click the <Install> button.

Install Microsoft VC+ Redistributable Package.

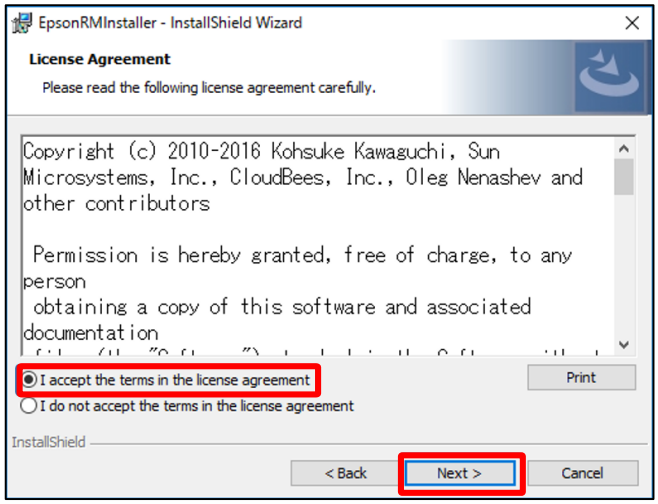
> If Microsoft VC+ Redistributable Package has already installed, this step is skipped.



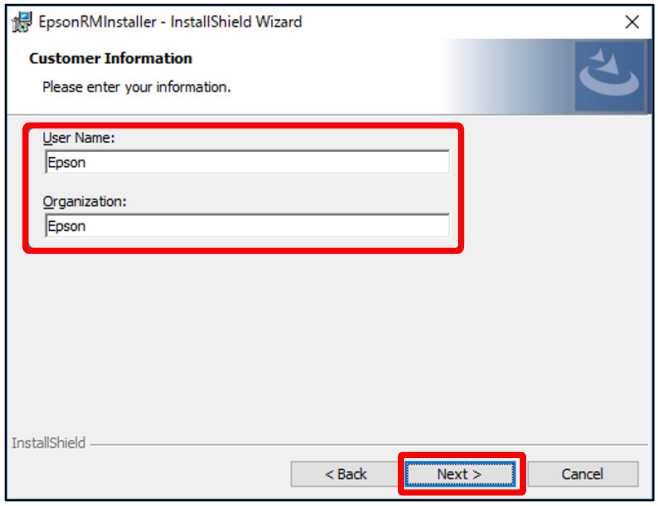
3. **Click the <Next> button.**



4. **Confirm the license agreement and select "I accept the terms in the license agreement", then click the <Next> button.**



5. **Enter User Name and Organization, then click the <Next> button.**

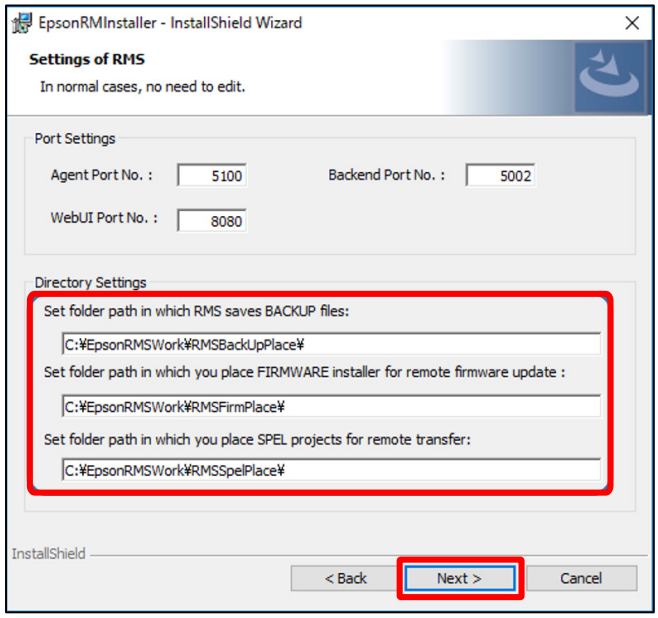


6. Confirm the contents of the screen, then Click the <Next> button.

[Port Settings]
If the default port number is already used for other application, change to a Port No. not in use.

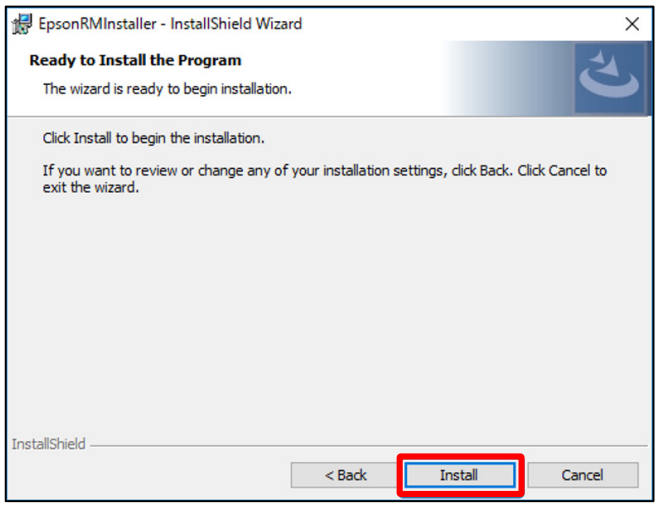
[Directory Settings]
The folders are selected by default. Change them as necessary.

- **Set folder path in which RMS saves BACKUP files**
  If backup is performed, the backup file is saved in this folder.
- **Set folder path in which you place FIRMWARE installer for remote firmware update**
  Firmware is updated using the firmware installer placed in this folder.
- **Set folder path in which you place SPEL+ projects for remote transfer**
  SPEL+ projects placed in this folder are sent to the Controller(s).

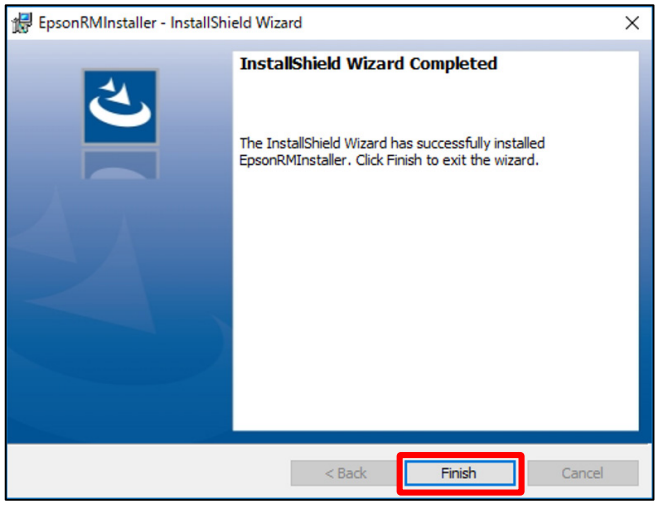


7. Click the <Install> button.

Installation starts.



8. **When the installation complete screen is displayed, click the <Finish> button.**



9. **Restart the computer.**

Startup and Initial Log in

- **Start up**

  Start up Web browser and type the following address in the address bar.

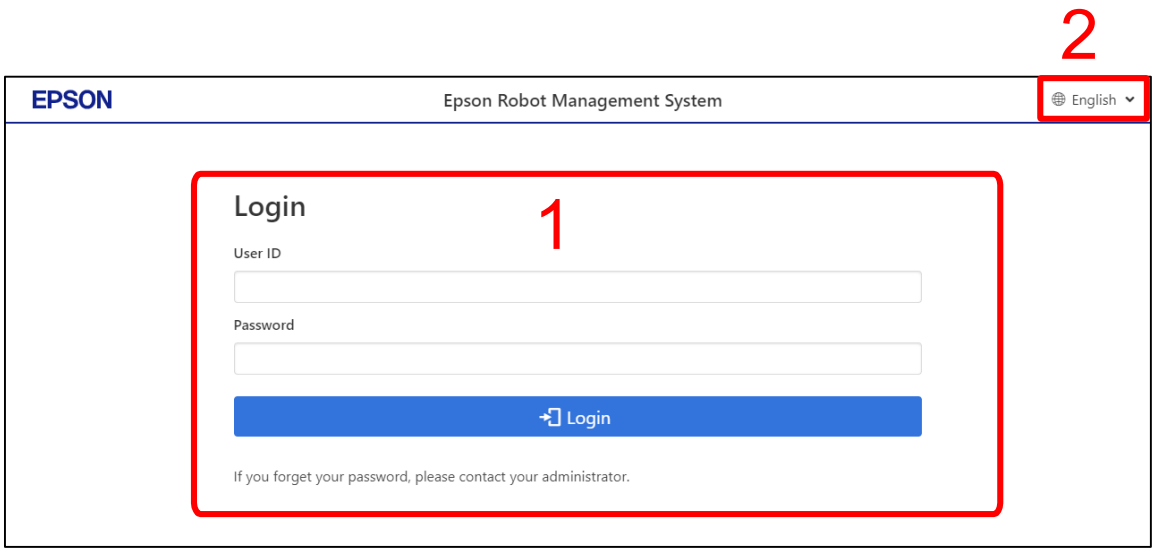
  http://xxx.xxx.xxx.xxx:8080

> - "xxx.xxx.xxx.xxx" is IP address of the computer which this application is installed.
> - "8080" is PortNo. of WebUI.
>
> If the Port No. was changed during installation, type the changed Port No.

- **Close**

  Close Web browser.

Login Screen



Login screen of this application consists of the following items.

No.	Item	Description
1	Login	Enter User ID and Password to log in. If the registered user log in this application for the first time, Password is same as the User ID. Be sure to change the password on the screen displayed after logging in this application.
2	Select Languages	Click to select the language.

Login when Starting this Application for the First Time

When logging in this application for the first time after installation, use the following User ID and password. Be sure to change the password on the screen that is displayed after logging in this application.

User ID: Administrator
Password: administrator

Registration for the Controllers is required. Refer to the following section for the registration method:

☞ Registration for Controller List

Settings Required for Management

Refer to the following section for Email settings and application settings required to manage this application.

☞ Management and Settings

Information which Remains on Update

When this application is updated to the latest version the following configuration information will remain stored.

- Information on acquired Controllers
- Backup files acquired from Controllers
- Database files
- Login account information
- Activation information

Even if the application is uninstalled the configuration information will remain stored in the host file system.

Uninstallation

Uninstall this application from Windows Start menu.

1. **Open Windows start menu.**
2. **Click [EPSON_RMS] - [Uninstall Epson Robot Management System].**
3. **When the Uninstallation screen is displayed, click the <Yes> button.**
   The confirmation screen is displayed.
4. **Click the <Yes> button.**
5. **Restart the computer.**

Management and Settings

This chapter describes the settings for using each function.

Managing Controllers

This section describes various items that can be managed by Controllers.
The following items can be managed by Controllers.

- **Change the Environment setting of Controllers**
  ☞ Setting Controllers
- **Update SPEL+ projects**
  ☞ Updating SPEL+ Projects
- **Set the condition of event backup**
  ☞ Event Backup Setting
- **Adjust clock**
  ☞ Adjusting Clock
- **Acquire backup files**
  ☞ Acquiring Backup Files
- **Update Controller firmware**
  ☞ Updating Controller Firmware

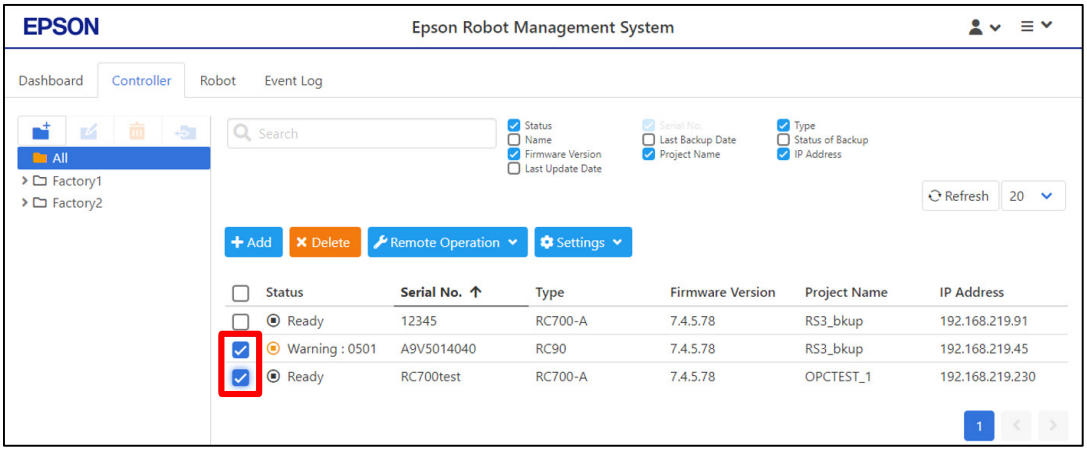
Setting Controllers

Changes the Environment setting of Controllers.

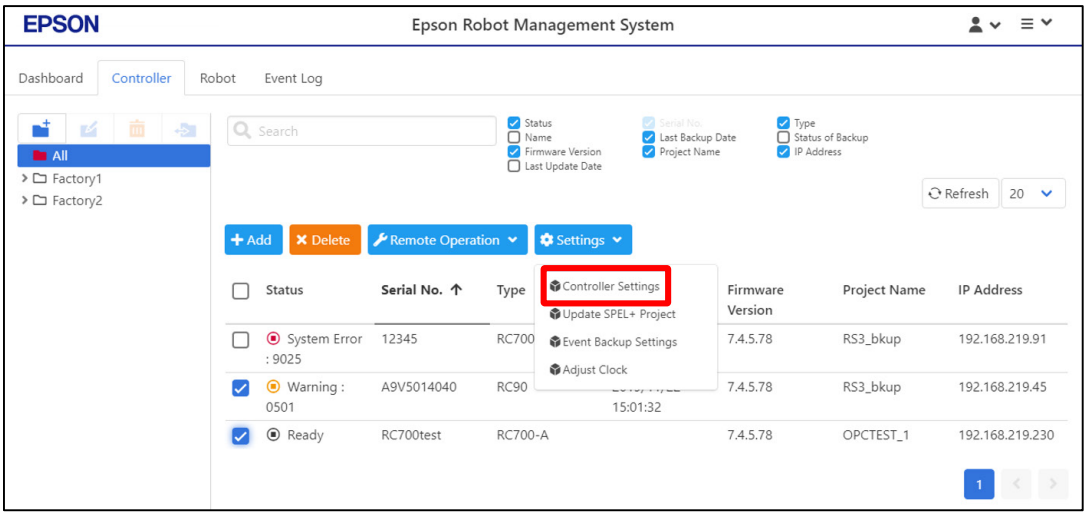
> ⚠
>
> - Be sure to perform operations after understanding Environment setting items of Controllers. For more details, refer to the following manual.
>
>   *EPSON RC+ 7.0 User's Guide*
>
>   *5.12.2 [System Configuration] Command (Setup Menu)*
> - Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.
> - If a program is executed after rebooting the Controller, be sure to secure safety and execute it in the presence of the operator.

Changing the Setting Items

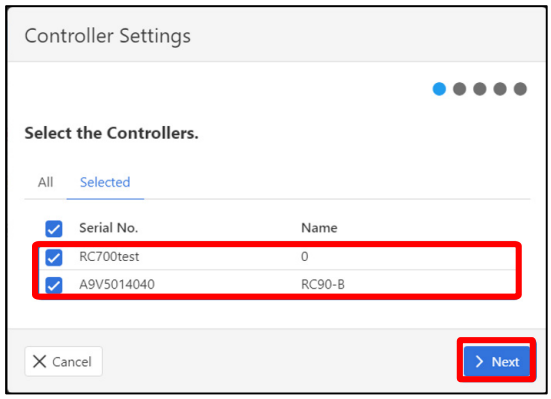
1. **Click the <Controller> tab.**
2. **Select the check box of target Controller(s) in the Controller list.**



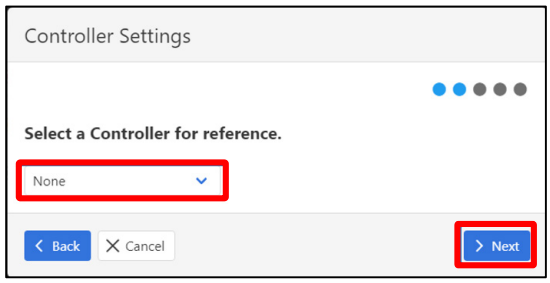
3. **Click [Settings] - [Controller Settings].**



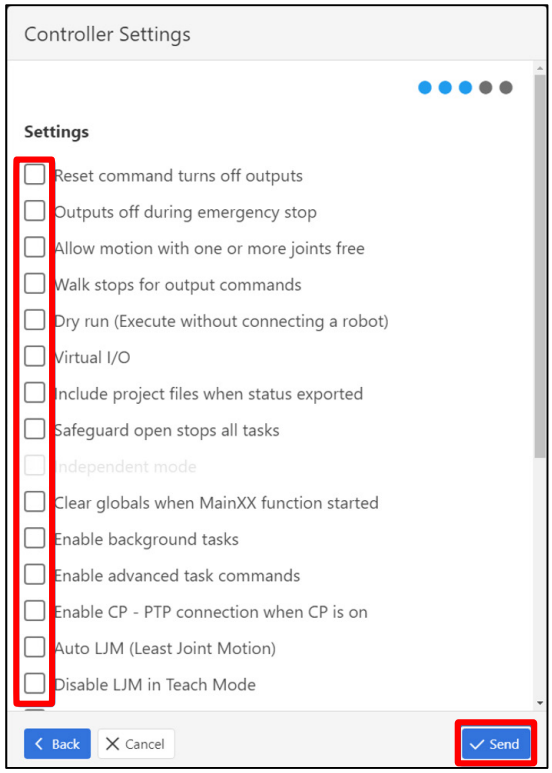
4. **Make sure that the target Controllers are selected correctly and click the <Next> button.**



5. **Select "None" and click the <Next> button.**



6. **Select the item(s) to be set and click the <Send> button.**

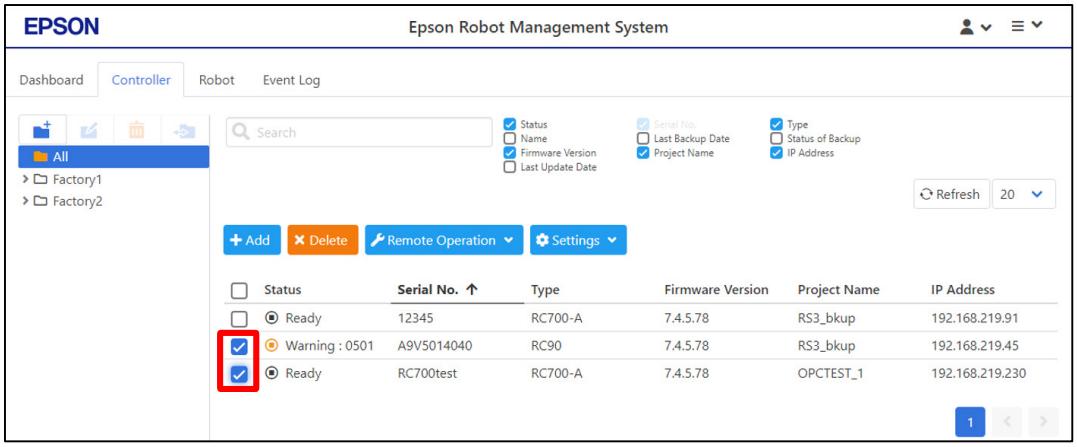


7. **When the completion screen is displayed, reboot the Controller.**

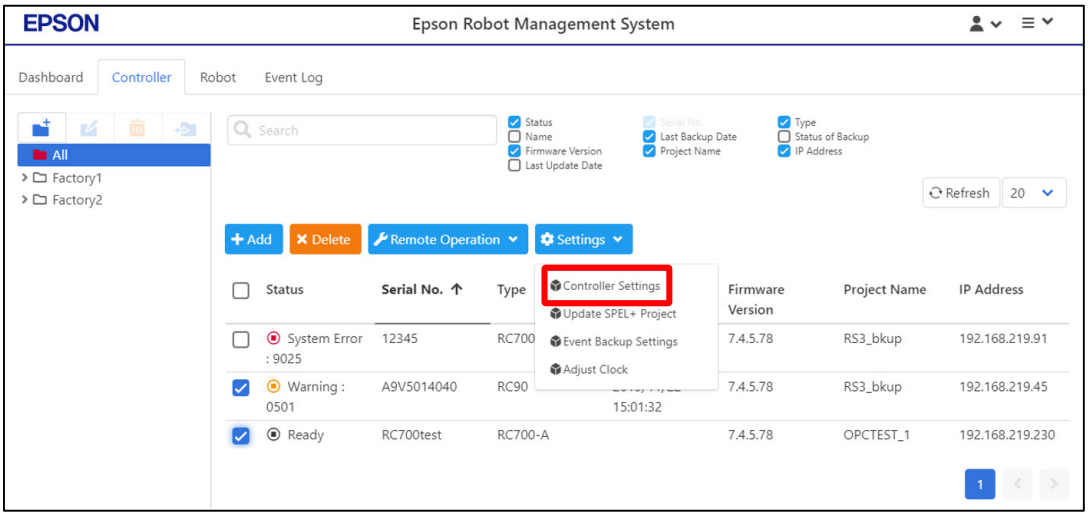
Using the Setting of Other Controllers

Uses the settings of other Controllers to change the settings of the target Controller.

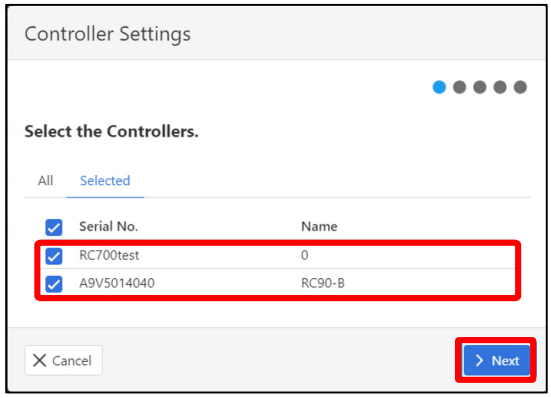
1. **Click the <Controller> tab.**
2. **Select the check box of target Controller(s) in the Controller list.**



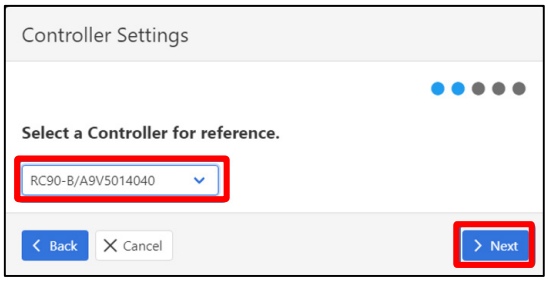
3. **Click [Settings] - [Controller Settings].**



4. **Make sure that the target Controllers are selected correctly and click the <Next> button.**

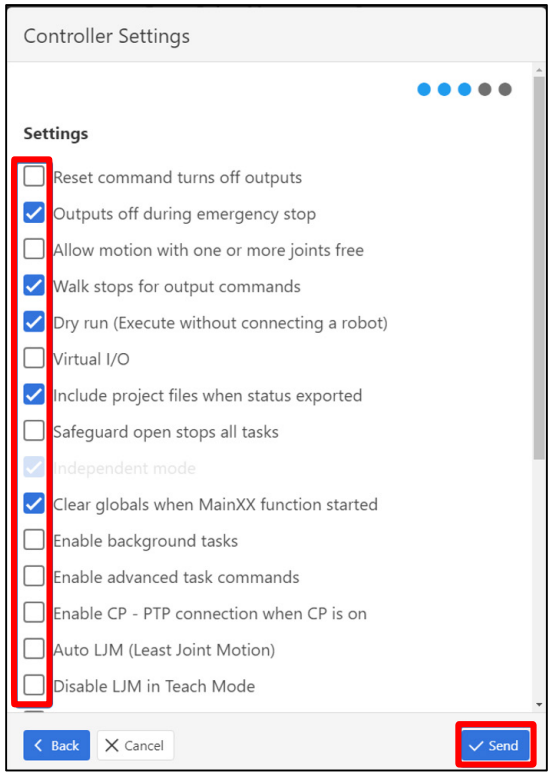


5. Select the Controller that you want to refer the settings and click the <Next> button.



6. Check the item(s) to be set and click the <Send> button.

To change the items to be set, select or deselect the check box of the item.



7. When the completion screen is displayed, reboot the Controller.

Updating SPEL+ Projects

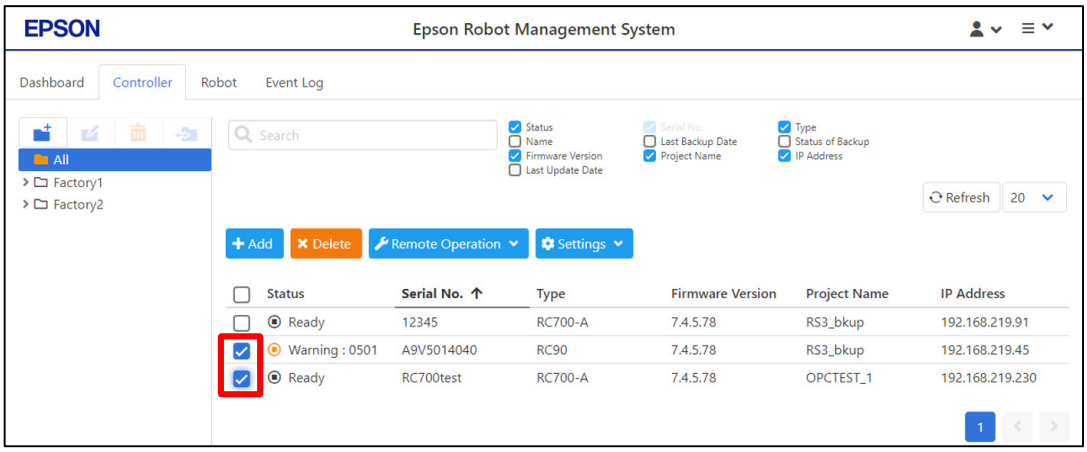
Sends SPEL+ projects to Controller and updates it.

- Update of SPEL+ projects can only be performed by the computer that this application is installed. We do not guarantee the operations if SPEL+ projects are updated from a browsing computer or tablet.
- Make sure that SPEL+ projects to be sent match the target Controller and the configuration of the robot. Sending the wrong SPEL+ projects may cause an unexpected accident.
- Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.
- If a program is executed after updating SPEL+ projects, be sure to secure safety and execute it in the presence of the operator.

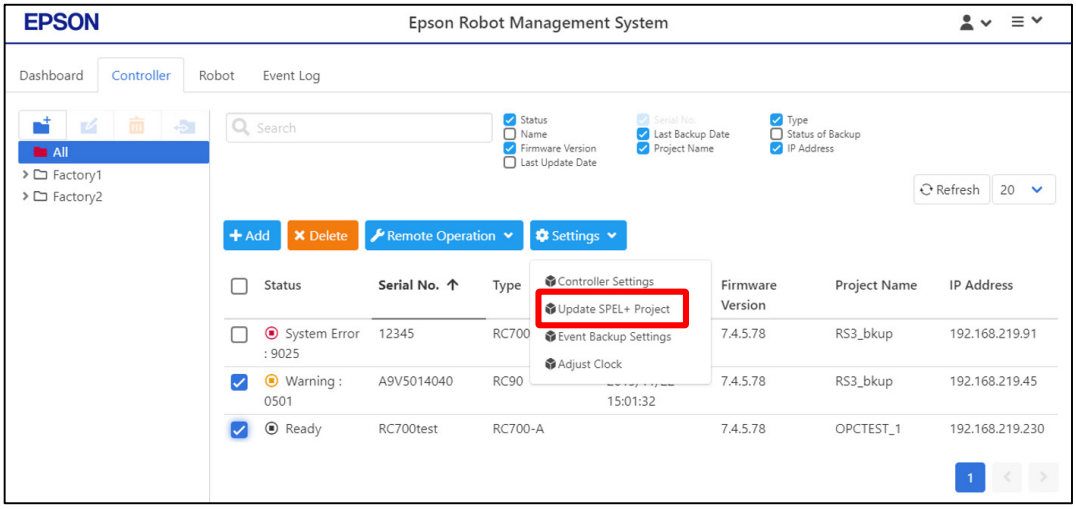
1. **Rebuild the SPEL+ project by EPSON RC+.**
   For more details, refer to the following manual.
   EPSON RC+ 7.0 User's Guide - 5.9.14 [Rebuild] Command (Project Menu)
2. **Copy the folder of the rebuilt SPEL+ project to the folder of the computer that this application is installed.**
   C:\EpsonRMSWork\RMSSpelPlace\

   If the folder is changed during installation, copy to the changed folder.

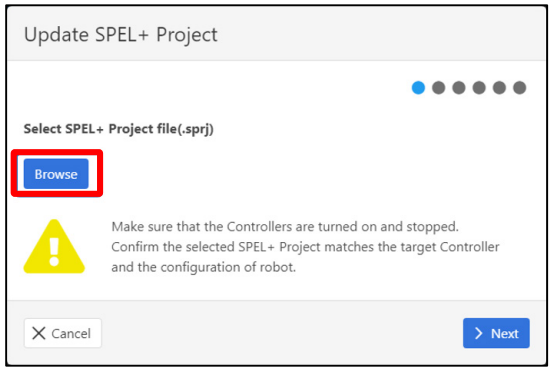
3. **Click the <Controller> tab.**
4. **Select the check box of target Controller(s) in the Controller list.**



5. Click [Settings] - [Update SPEL+ Project].

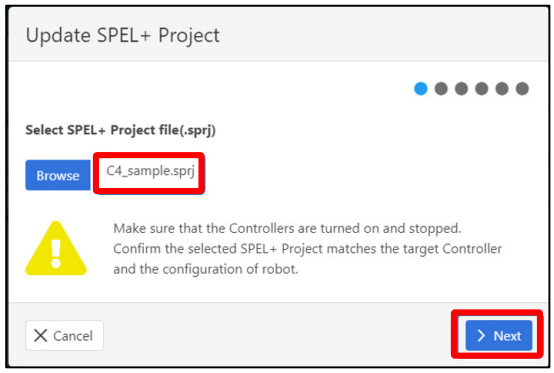


6. Click the <Browse> button.

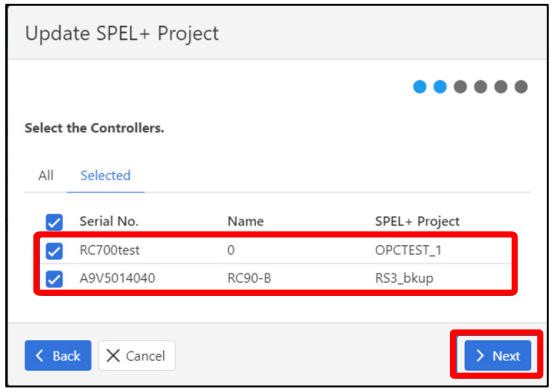


7. Select Project file(project name.sprj).

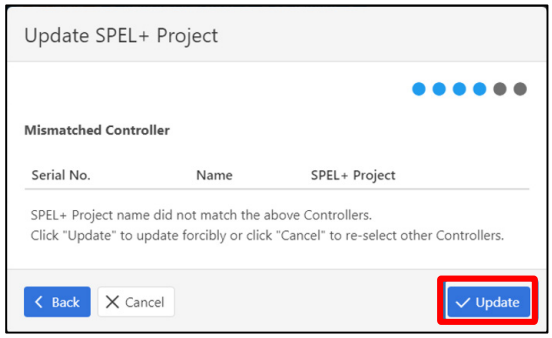
The project file is the one prepared in step 1 to 2.



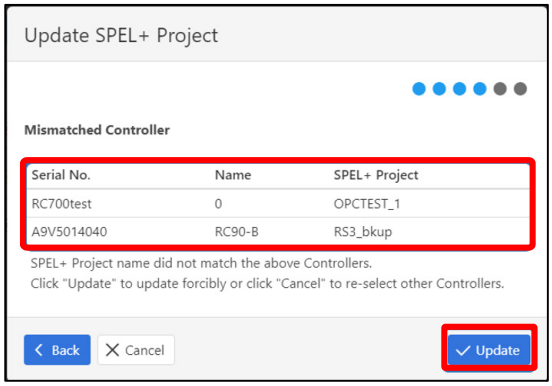
8. Make sure that the target Controllers are selected correctly and click the <Next> button.



9. Confirm that there is no mismatched Controller, then click the <Update> button.



⚠ If there are mismatched Controllers as shown below, make sure that the correct SPEL+ project is selected before updating the SPEL+ project.

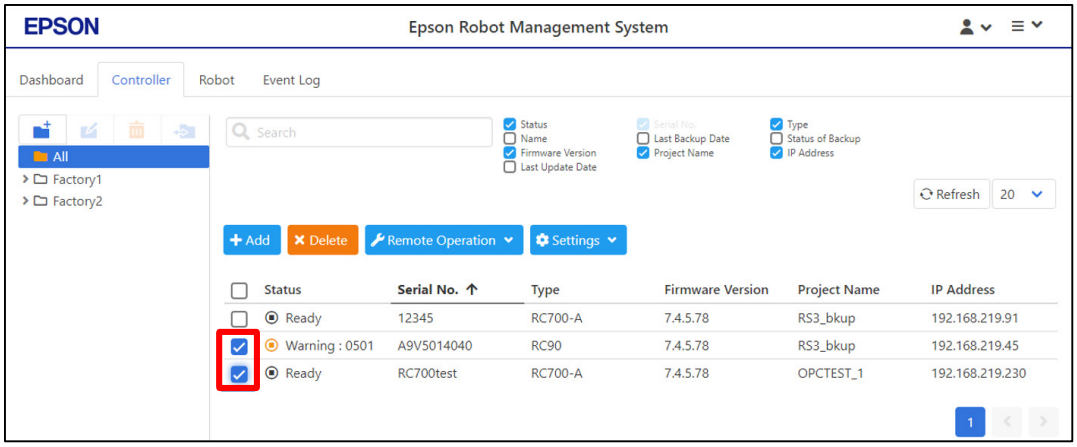


Event Backup Setting

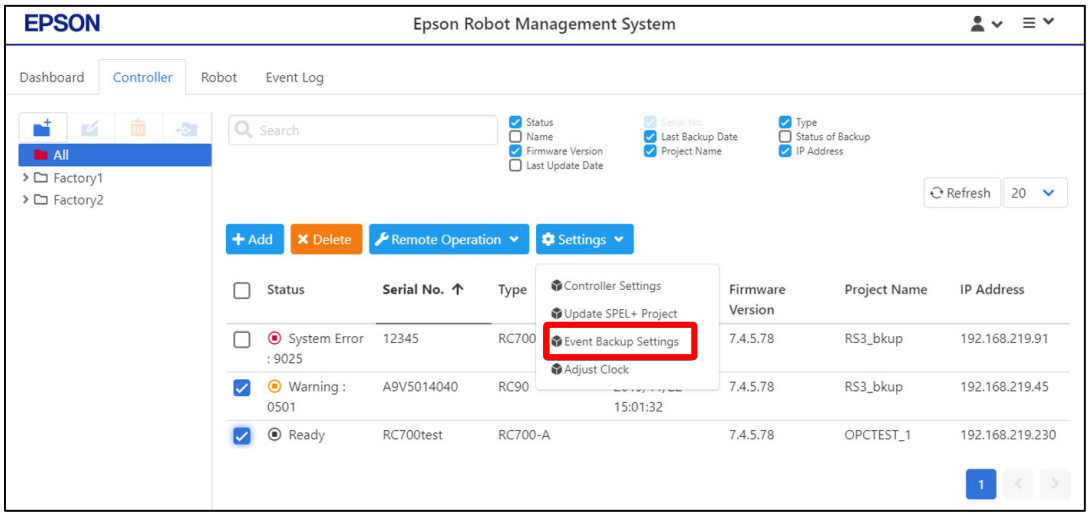
Sets event backup. Backup can be automatically acquired at any date and time. Also, emergency stop and errors can be used as triggers for backup.

> ⚠
>
> - For backup date and time, be sure to set the date and time when the robot is not operating. If performing backup while the robot is operating, the robot motion becomes slower and may cause an unexpected accidents.
> - Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.
> - If a program is executed after rebooting the Controller, be sure to secure safety and execute it in the presence of the operator.

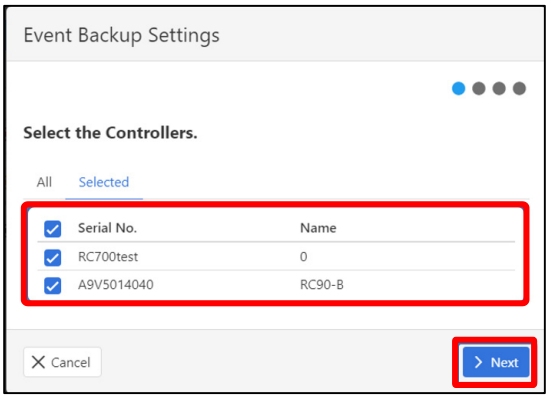
1. **Click the <Controller> tab.**
2. **Select the check box of target Controller(s) in the Controller list.**



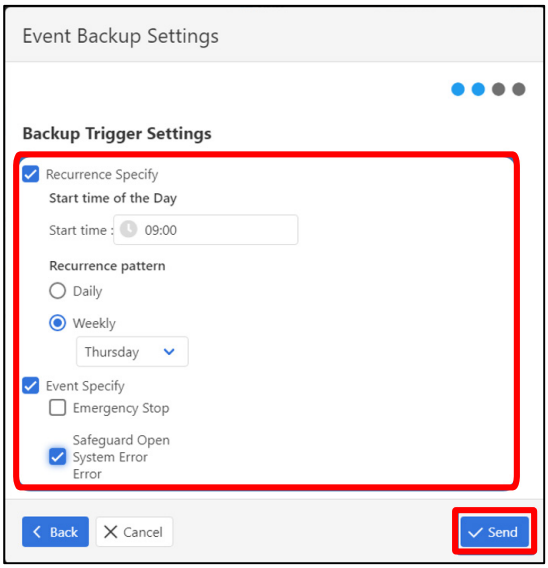
3. **Click [Settings] - [Event Backup Settings].**



4. **Make sure that the target Controllers are selected correctly and click the <Next> button.**



5. **Set the backup triggers and click the <Send> button.**
Recurrence Specify: Backup is performed on the specified time. Set Daily or Weekly.
Event Specify: Backup is performed when an emergency stop switch is pressed or an error occurred.



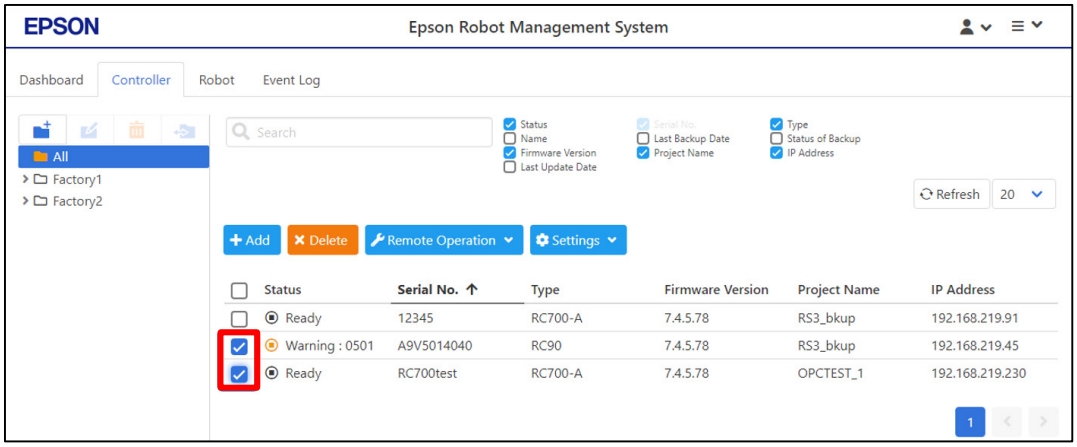
6. **When the completion screen is displayed, reboot the Controller.**

Adjusting Clock

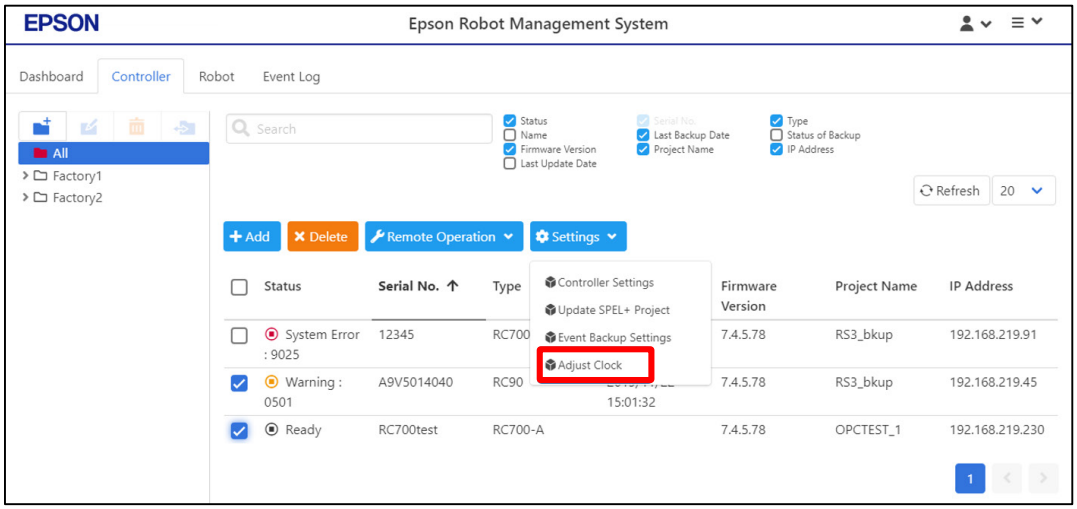
Adjusts the clock setting of Controllers. The clock can be synchronized to the time (system clock) of the computer that this application is installed.

> ⚠
>
> - Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.
> - When synchronizing to the system clock, make sure that the time of the computer that this application installed is accurate.

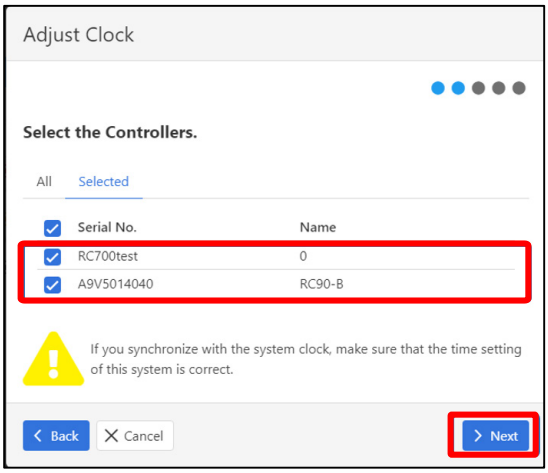
1. **Click the <Controller> tab.**
2. **Select the check box of target Controller(s) in the Controller list.**



3. **Click [Settings] - [Adjust Clock].**



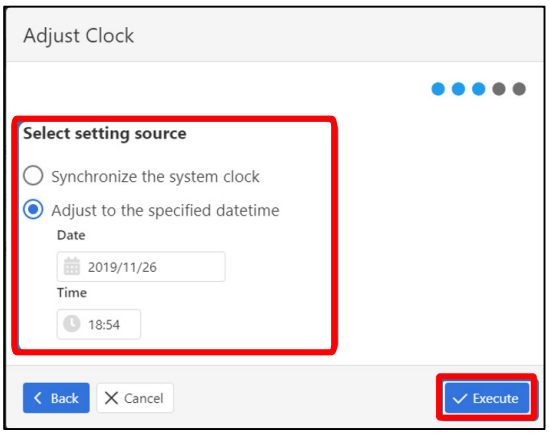
4. Make sure that the target Controllers are selected correctly and click the <Next> button.



5. Select the method to adjust the clock and click the <Execute> button.

Synchronize the system clock:
Set the time of the computer that this application is installed.

Adjust to the specified datetime:
Set the time to the entered date and time.

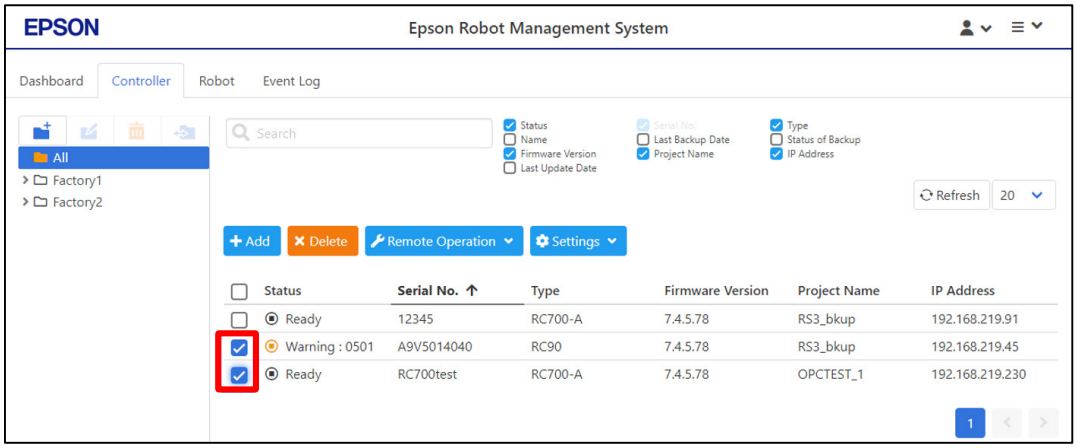


Acquiring Backup Files

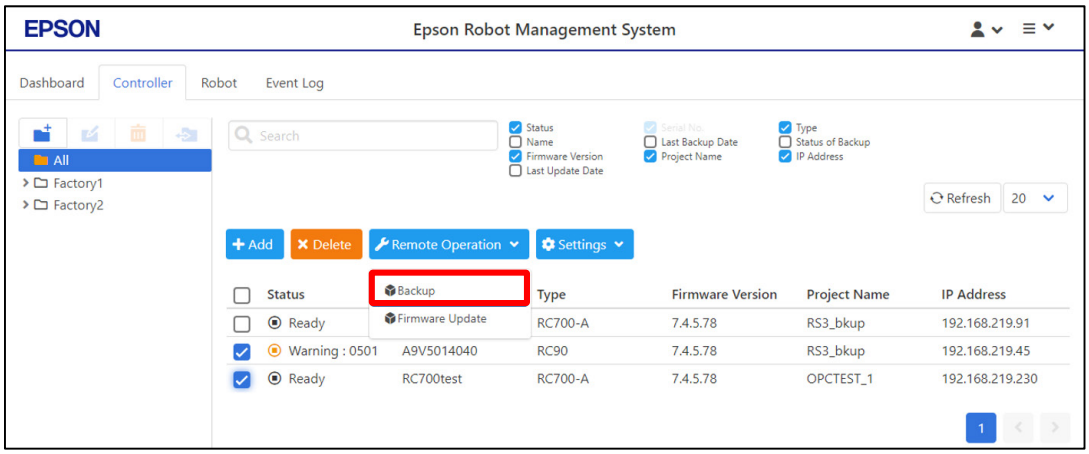
Performs Controller backup and save the result in a file.

> ⚠ Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.

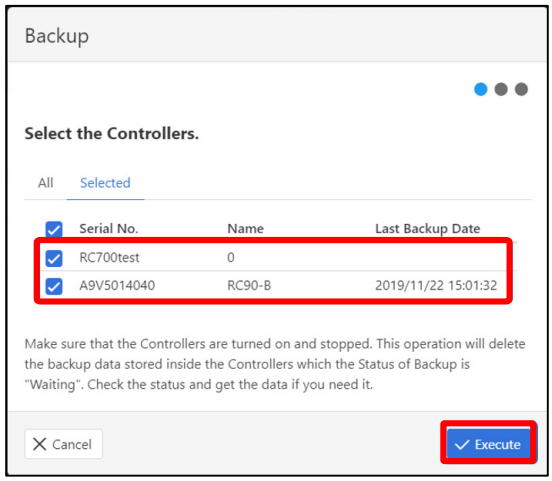
1. **Click the <Controller> tab.**
2. **Select the check box of target Controller(s) in the Controller list.**



3. **Click [Remote Operation] - [Backup].**



4. **Make sure that the target Controllers are selected correctly and click the <Execute> button.**



5. **The backup file is saved in the following folder of the computer that this application is installed.**

   C:\EpsonRMSWork\RMSBackUpPlace\

> If the folder is changed during installation, the backup data is saved in the changed folder.

Updating Controller Firmware

Updates the Controller firmware. In this application, only upgrade installation is available.

> ⚠
> - Before starting operation, make sure that the Controllers are turned ON and all tasks are stopped.
> - If a program is executed after updating Controller firmware, be sure to secure safety and execute it in the presence of the operator.

1. Copy the folder of firmware installer to the following folder.

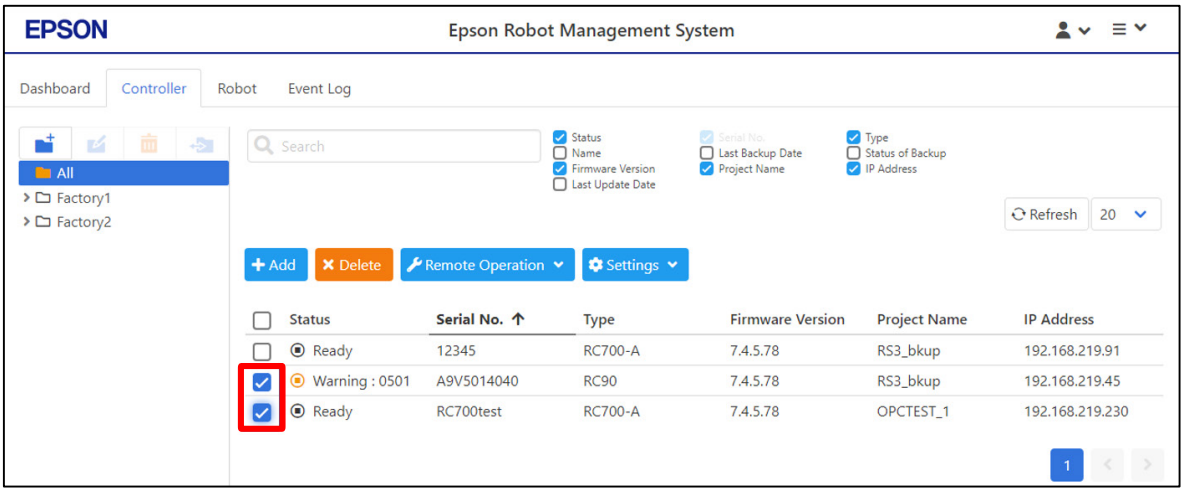
C:\EpsonRMSWork\RMSFirmPlace\

> - Folder name of the firmware installer contains the date and the version information.
>
> FirmyymmddVerx_x_x_x
>
> yy: Year, mm: Month, dd: Date, Verx_x_x_x: Version information
> - If there are several firmware installers, the installer with the latest yy/mm/dd is installed.
> - If the folder is changed during installation, copy to the changed folder.

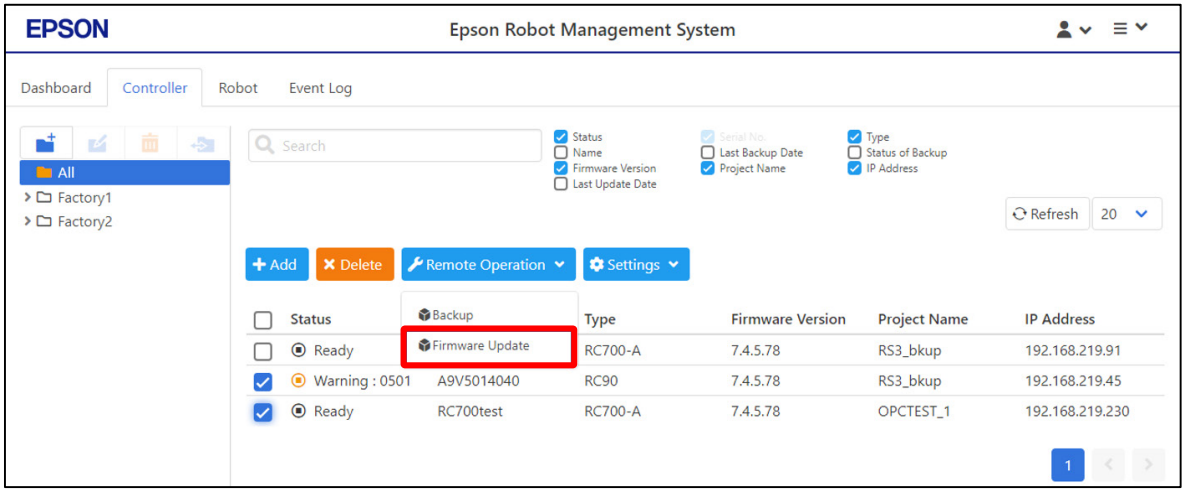
2. Click the <Controller> tab.

3. Select the check box of target Controller(s) in the Controller list.

More than one Controllers can be selected.

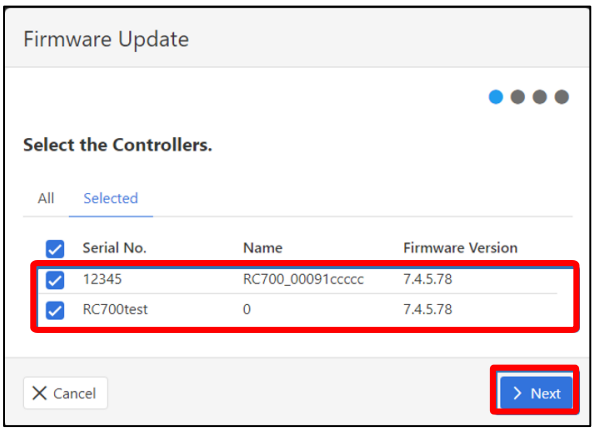


4. **Click [Remote Operation] - [Firmware Update].**



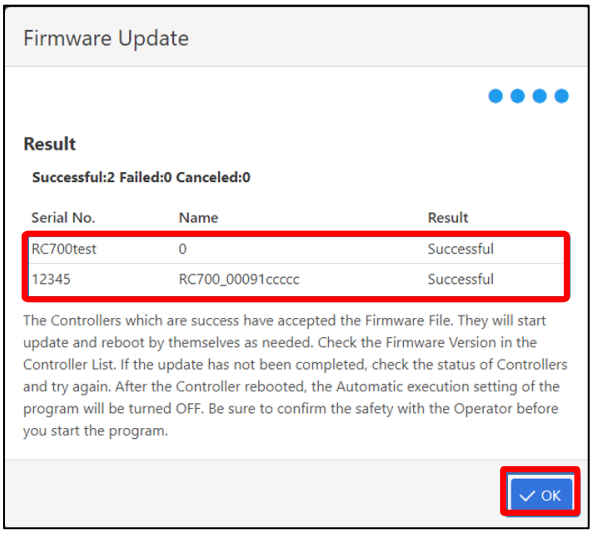
5. **Make sure that the target Controllers are selected correctly and click the <Next> button.**

   The firmware data is transferred to the Controller.



6. **When data transfer is completed, click the <OK> button.**

   Controller reboots automatically.



7. **When the Controller rebooted, confirm whether the firmware can be updated correctly.**

   Click the <Controller> tab to check the version of the specified Controller and firmware.

   Updating firmware may take some time. If the version has not updated, please wait for a while and check again.

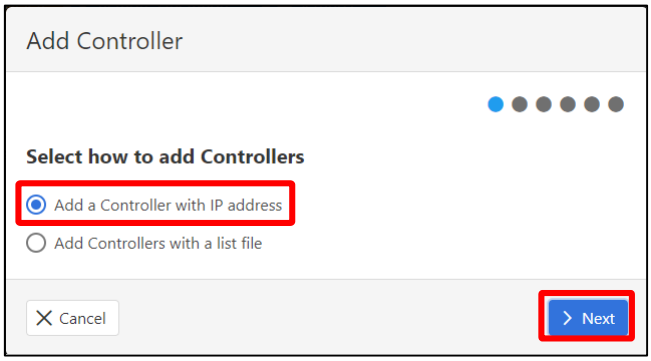
Registration for Controller List

There are two methods to register for Controller list.

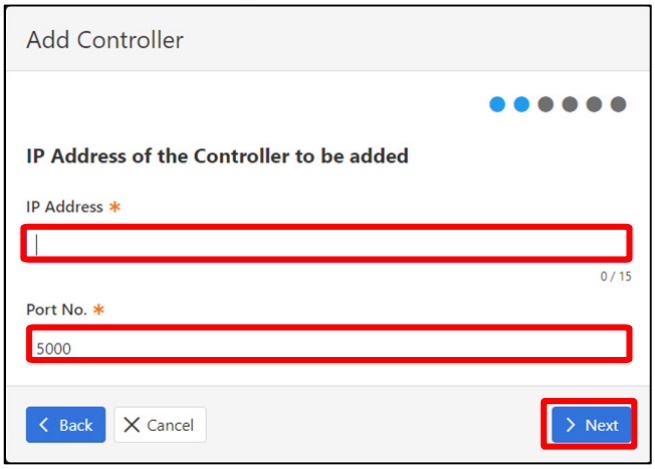
- **Add a Controller with IP address**
  Register the Controller by specifying IP address that is set for Controller. (register one by one)
- **Add a Controller with a list file**
  Register more than one Controllers collectively using CSV file in which IP address and Port No. are entered. (block registration)

Adding a Controller with IP address

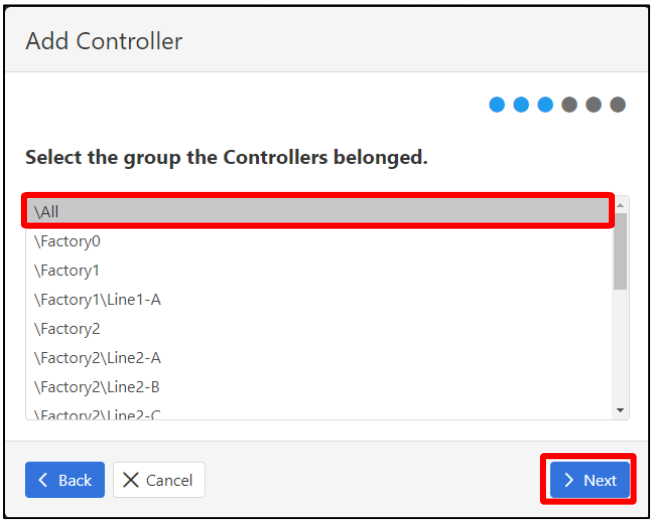
1. **Select the <Controller> tab.**
2. **Click the <Add> button.**
3. **Select "Add a Controller with IP address" on the [Add Controller] screen, then click the <Next> button.**



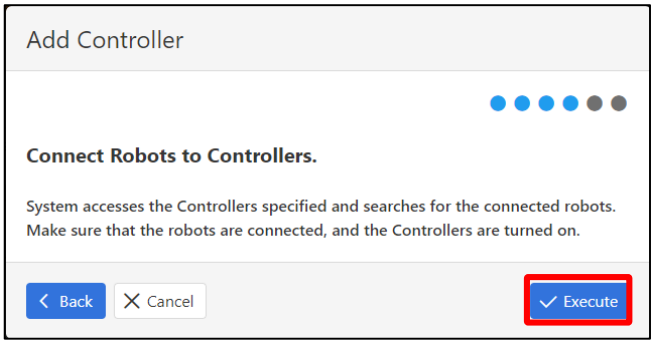
4. **Set [IP Address] of Controller and [Port No.] (default: 5000) and click the <Next> button.**



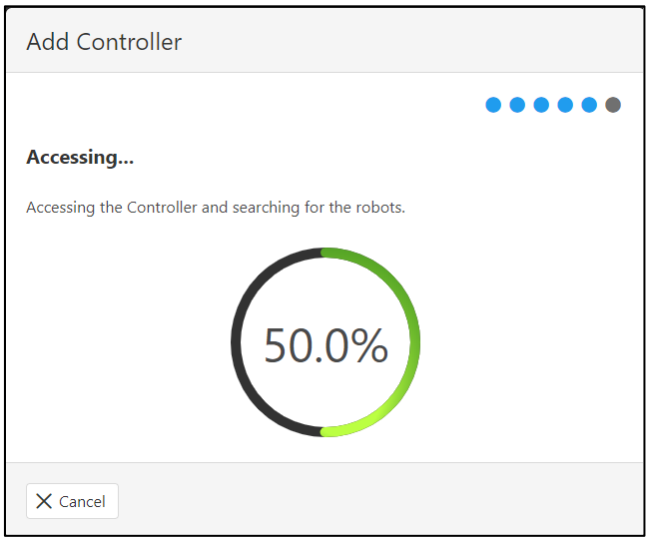
5. **Select the group the Controllers belonged and click the <Next> button.**



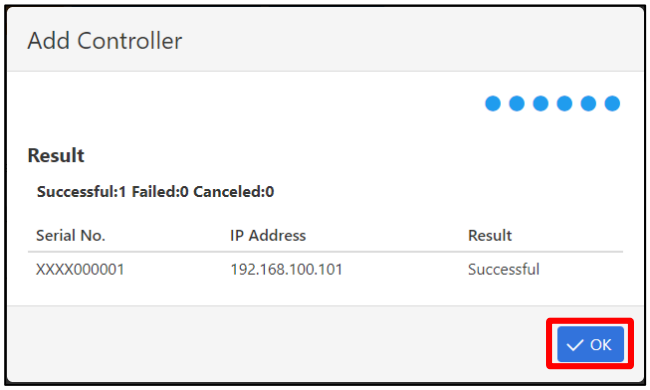
6. **Make sure that the robots are connected to the Controllers to be registered.**
7. **Make sure that the Controllers are turned ON, then click the <Execute> button.**



8. **Registration is in progress. When the percentage indicating progress status becomes 100%, the screen automatically proceeds to the next.**



9. **Check the registration result and click the <OK> button.**



Adding Controllers with a List File

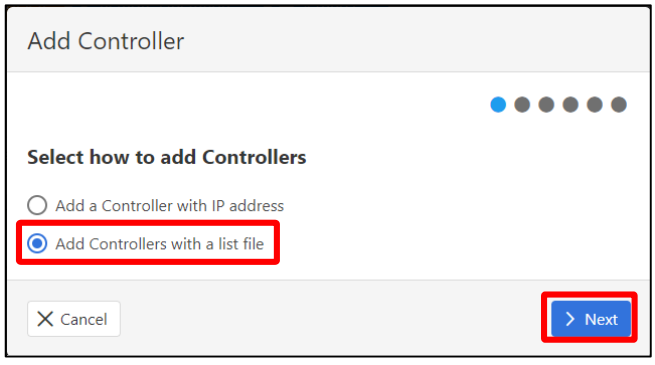
1. **Create a CSV file that contains the information of Controllers to be added.**

   CSV (Comma Separated Value) contains IP address and Port No. of a Controller to be added in a row and each row is delimited by a line break (CR+LF). Enter IP address and Port No. using single byte number and symbols.

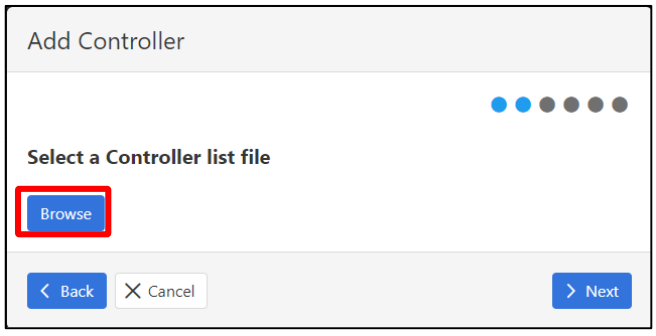
   This is an example of CSV file.

```
192.168.100.100,5000
192.168.100.101,5000
192.168.100.102,5000
192.168.100.103,5000
```

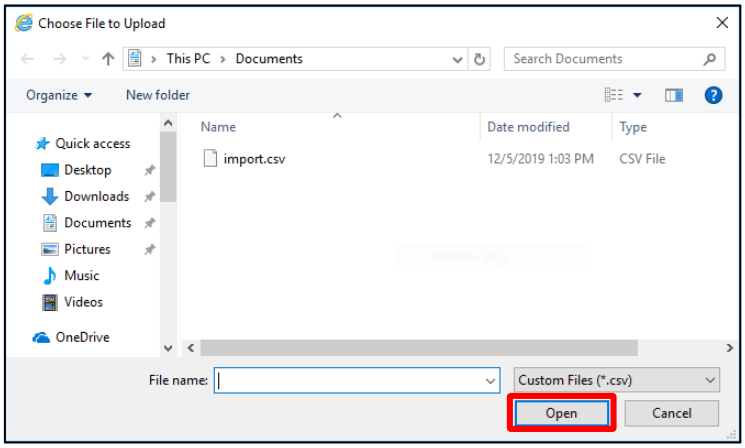
2. **Select the <Controller> tab.**
3. **Click the <Add> button.**
4. **Select "Add Controllers with IP a list file" on the [Add Controller] screen, then click the <Next> button.**



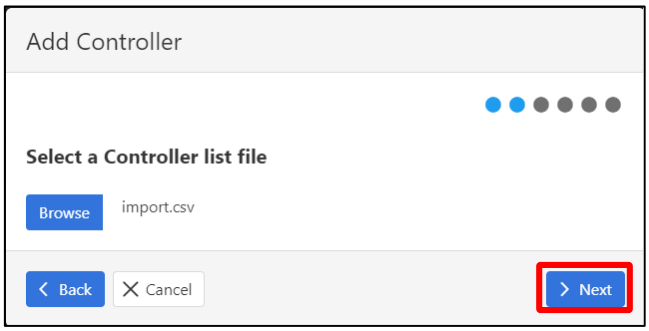
5. **Click the <Browse> button.**



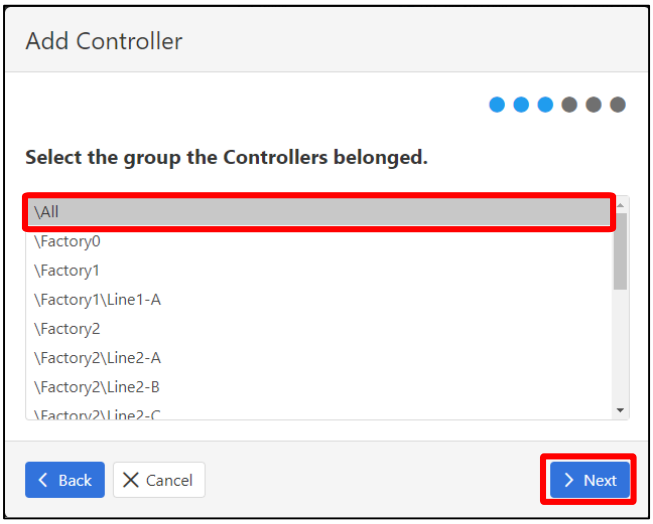
6. **Select the created CSV file and click the <Open> button.**



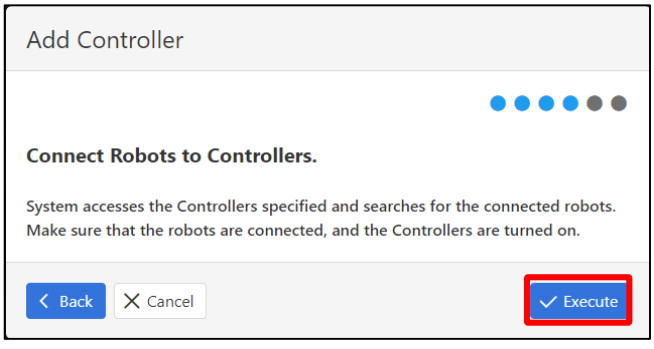
7. **Click the <Next> button.**



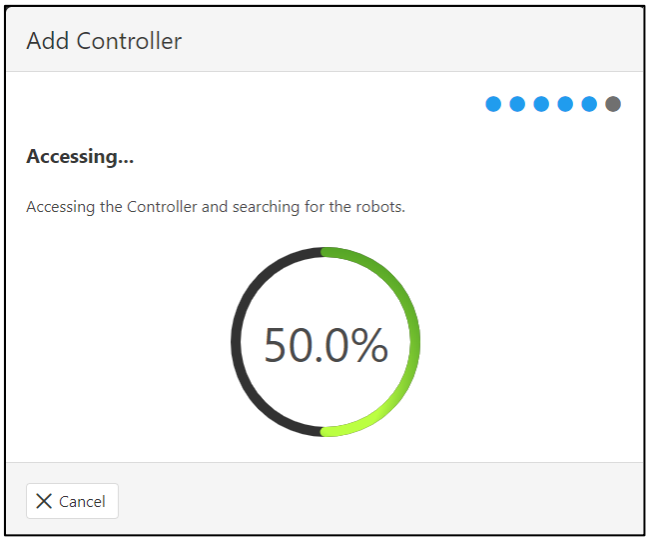
8. **Select the group the Controllers belonged and click the <Next> button.**



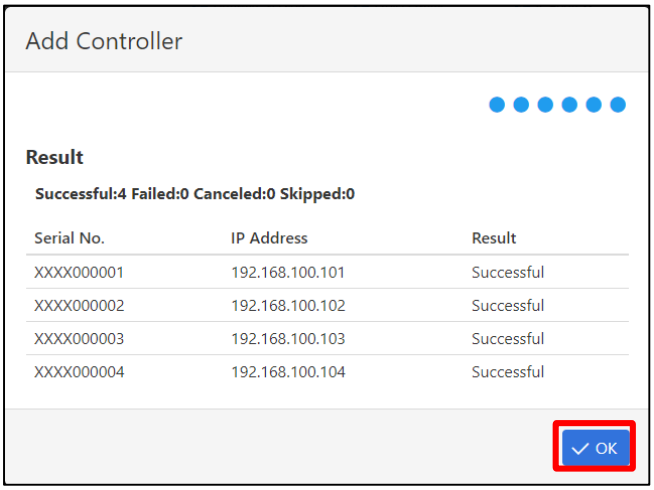
9. **Make sure that the robots are connected to the Controllers to be registered.**
10. **Make sure that the Controllers are turned ON, then click the <Execute> button.**



11. Registration is in progress. When the percentage indicating progress status becomes 100%, the screen automatically proceeds to the next.



12. Check the registration result and click the <OK> button.

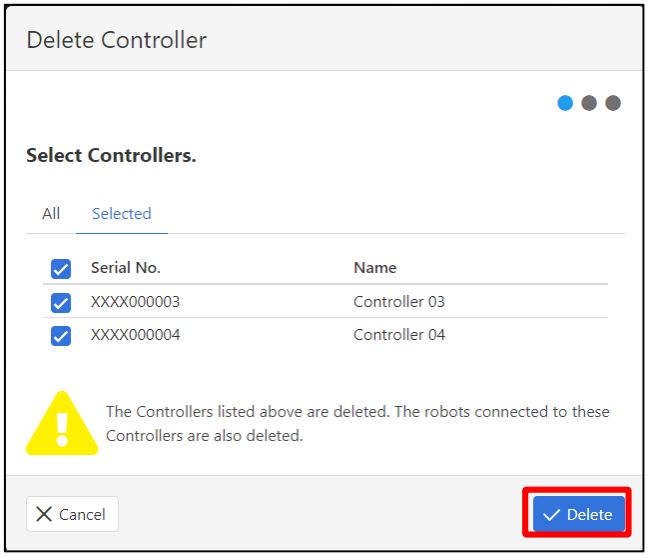


Deleting from Controller List

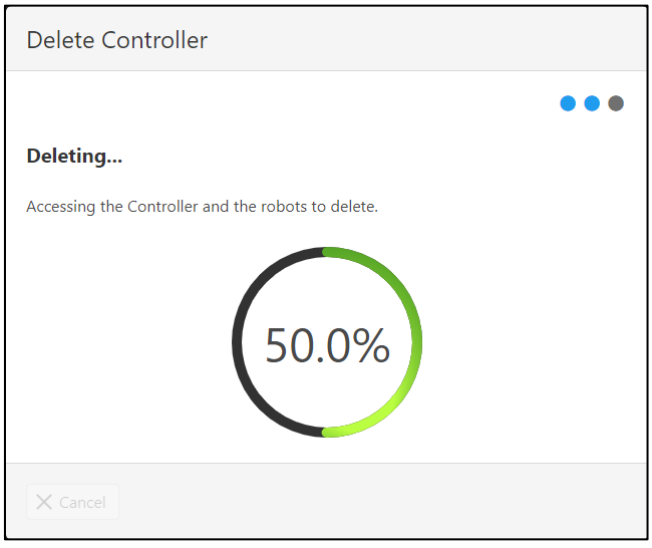
To exclude the Controller from the management of this application, delete it from the Controller list.

1. **Select the <Controller> tab.**
2. **Select the Controller that you want to delete and click the <Delete> button.**
3. **In the following screen, confirm whether the Controllers to be deleted are correct and click the <Delete> button.**

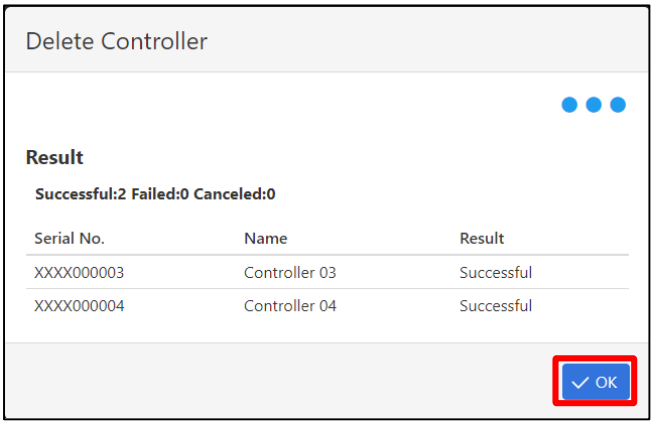
   Select the check boxes next to [Serial No.] to re-select/deselect the Controller.



4. **Deletion is in progress. When the percentage indicating progress status becomes 100%, the screen automatically proceeds to the next.**



5. Check the result and click the <OK> button.



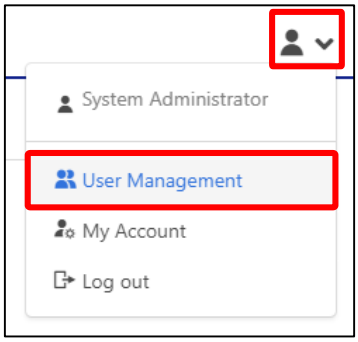
To completely delete the data, click [Device Data Cleanup]-[Clean up All invalid device data].

User Management

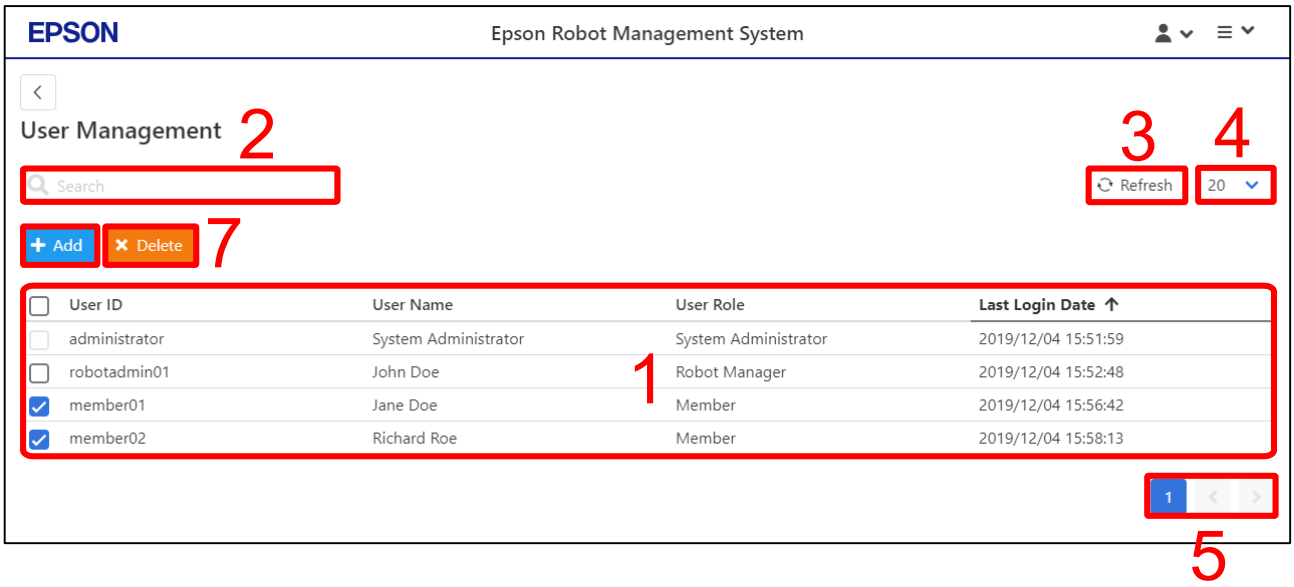
Manages the user who uses this application.

To display User Management screen, click the menu button and select [User Management].

[User Management] is not displayed for users other than the System Administrator.



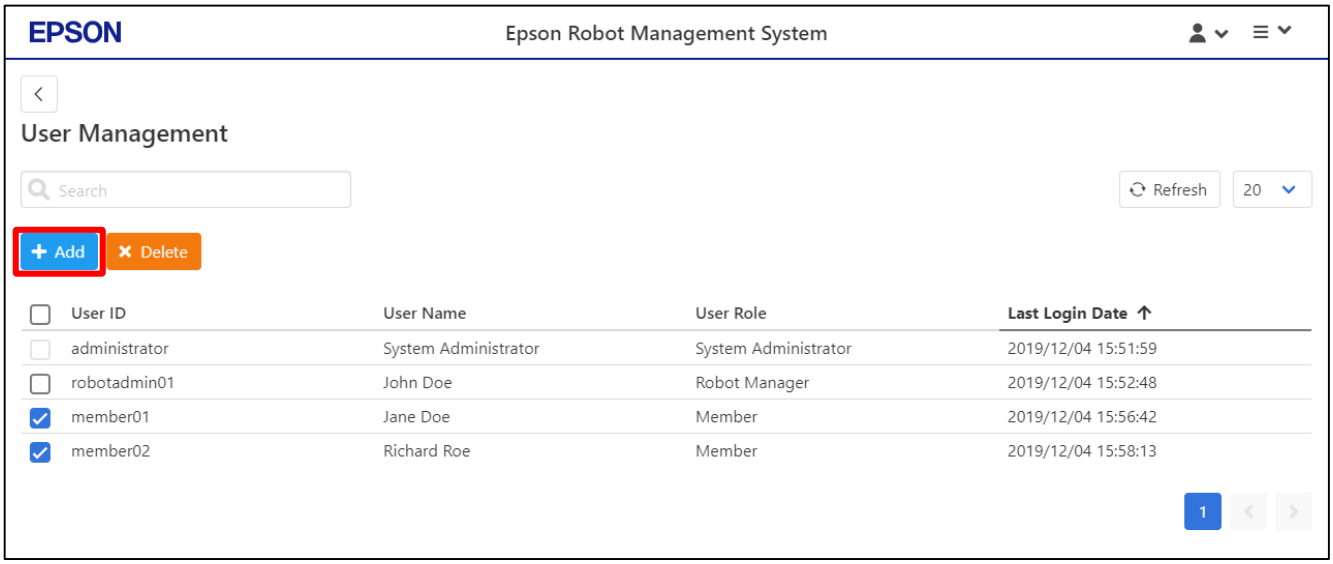
User Management Screen



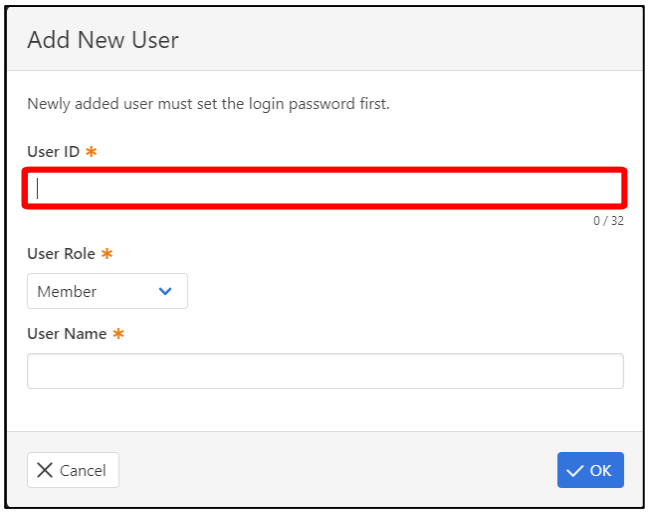
No.	Item		Description
1	User list		Displays the information of registered users.
		Selection check box	Selects to delete a user.
		User ID	User ID to be entered when logging in this application.
		User Name	Name of registered users.
		User Role	Role assigned to users. Either of [System Administrator], [Robot Manager], or [Member].
		Last Login Date	Displays the date when the user log in last time.
2	Search		All character strings displayed in the User list are the target. Only the user(s) whose character string entered here matches is displayed in the User list. Up to 20 characters can be entered. The keyword is case-insensitive.
3	Refresh		Refreshes and displays the latest information on the screen.
4	Display in one screen page		Selects the maximum number of users displayed in a screen.
5	Paging		When the number of users exceeds the limit of displayed items in one page, the display can be switched to the next page(s).
6	Add		Clicks this button to add a user.
7	Delete		Clicks this button to delete a user. All users selected in selection check box of User list are the target. This button is enabled when more than one users are selected.

Adding a User

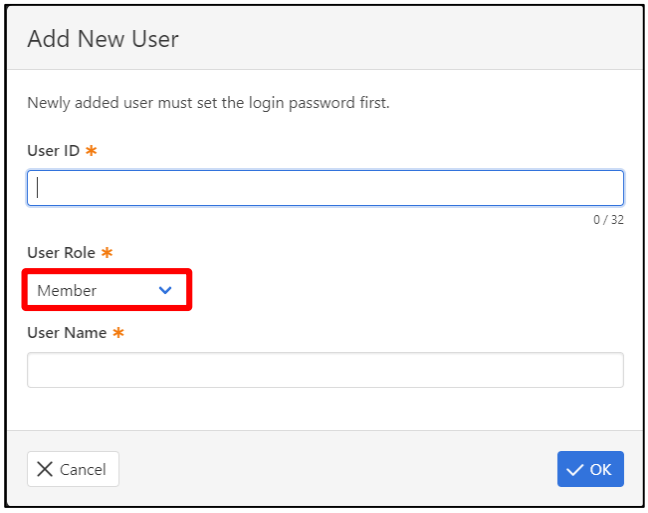
1. **Click the menu button on the upper right of screen and select [User Management].**
2. **Click the <Add> button.**



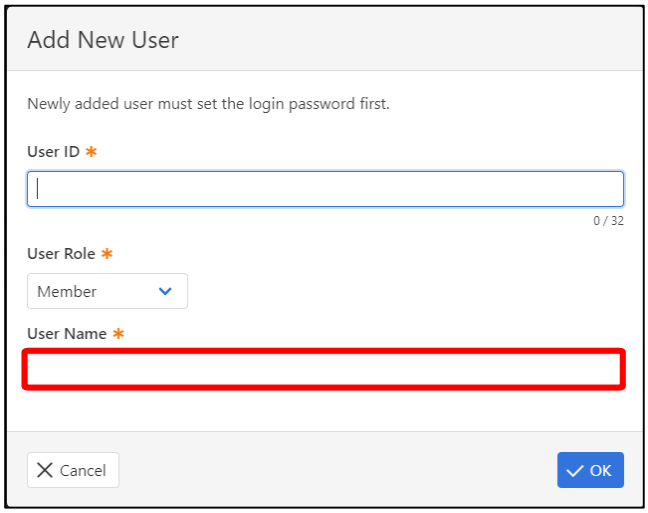
3. **Enter [User ID] with alphanumeric characters up to 1 to 32.**



4. Select [User Role].



5. Enter [User Name] within 1 to 32 characters.



6. When the settings are completed, click the <OK> button.

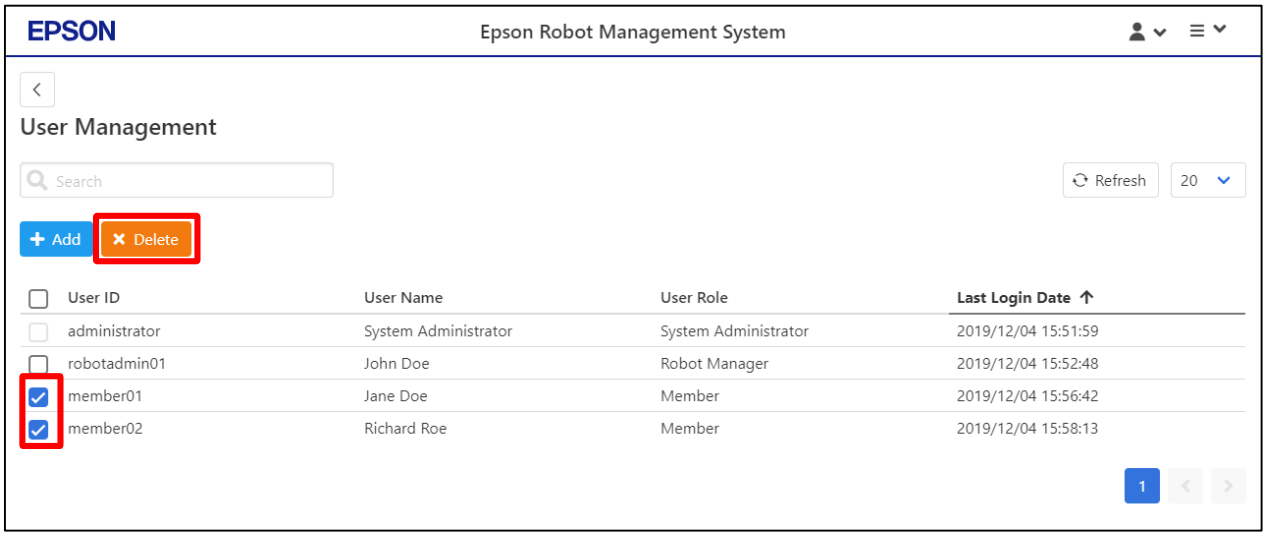
To cancel the operation, click the <Cancel> button to return to User Management screen.

If the added user log in this application for the first time, Password is same as the User ID. Be sure to change the password on the screen displayed after logging in this application.

Deleting a User

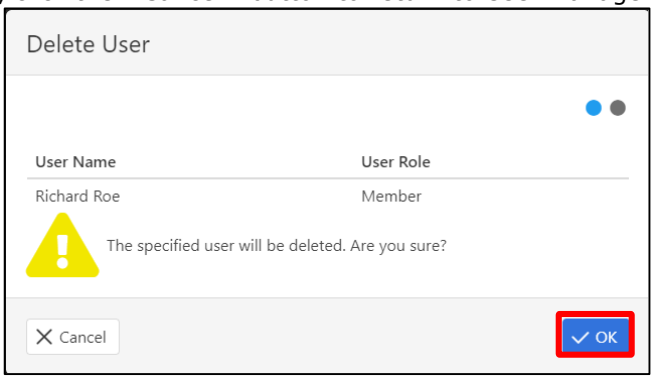
1. **Click the menu button on the upper right of screen and select [User Management].**
2. **Select the user to be deleted and click the <Delete> button.**

   To delete more than one users at once, select the check boxes and click the <Delete> button.



3. **Confirm the displayed contents in screen. If you are sure to delete it, click the <OK> button.**

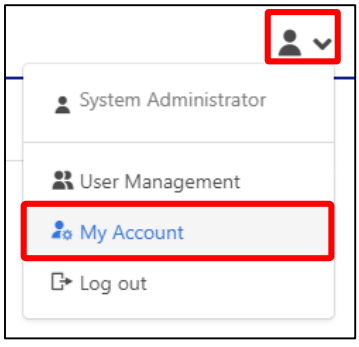
   To cancel the deletion, click the <Cancel> button to return to User Management screen.



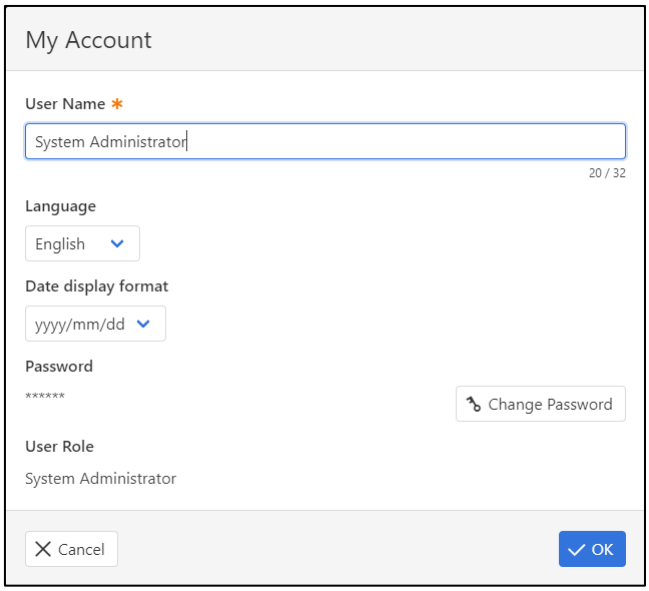
Checking and Changing User Information

Checks the current user information. Also, User ID and the password can be changed.

To display User Management screen, click the button on the upper right of screen and select [My Account].



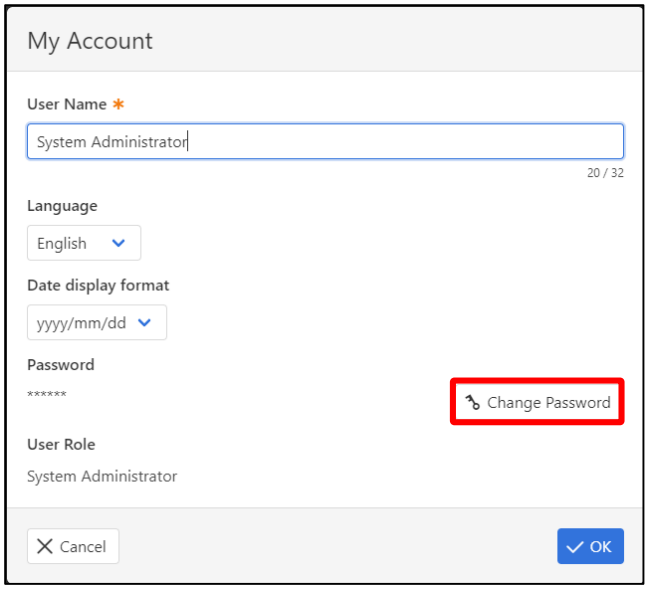
My Account Screen



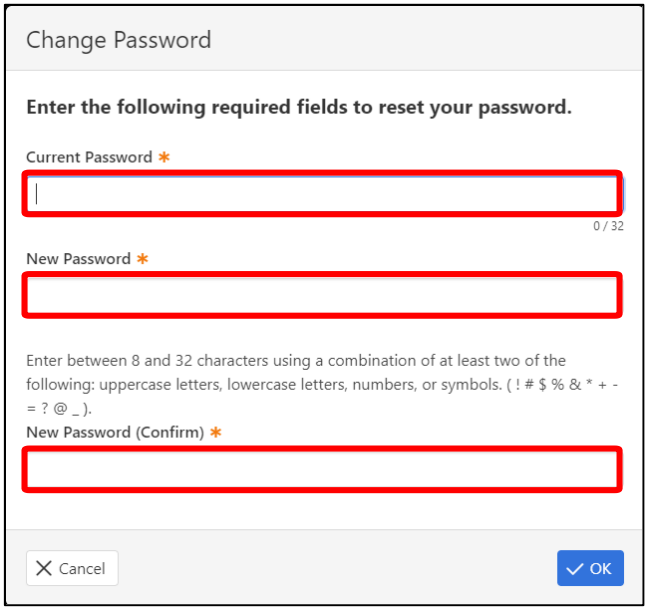
Item	Description
User Name	Displays User Name that has been set. To change the User Name, enter within 1 to 32 characters.
Language	Changes the language to be displayed. Available languages are "English", "日本語", "繁体中文", and "简体中文".
Date display format	Changes the date format displayed on each screen. Available formats are "mm/dd/yyyy", "dd/mm/yyyy", or "yyyy/mm/dd".
Password	Displays the password that has been set.
Change Password	Clicks the button to change the password.
User Role	Displays the role assigned to the user.

Changing Password

1. **Click the menu button on the upper right of screen and select [My Account].**
2. **Click the <Change Password> button.**



3. **Follow the instructions on the screen to change the password.**



4. **Click the <OK> button.**

Management of a List

This section describes the preparations for daily management. The device information is automatically gathered and recorded based on the setting of [Status update interval].

If [Event Log trigger] has been set, Event Log is recorded when the managed device became the same condition as the selected check box.

Management of Controller List and Robot List

Status update interval, Communication timeout, Simultaneously communication number

- **Status update interval**

  Sets the time interval for gathering device information regularly. When the Controller list is opened in browser, the device information is updated in the interval that has been set here.

  Available interval time is 1 minute, 5 minutes (default), 10 minutes, and 30 minutes.

  > Timing for gathering of device information and screen refreshing in browser are not linked. Therefore, the latest information of device may not be updated in browser.

- **Communication timeout**

  Sets the maximum number of seconds that this application waits for a response when communicating with a Controller.

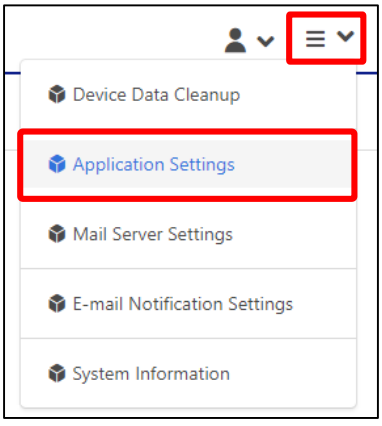
  Available time is 5 seconds, 10 seconds, 20 seconds (default).

- **Simultaneously communication number**

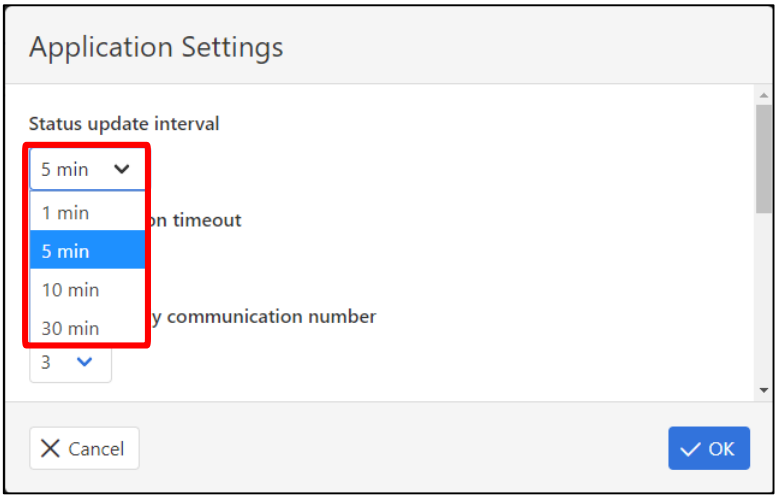
  Sets the maximum number of Controllers that are connected simultaneously when this application communicates with multiple Controllers.

  Available number is 3 (default), 5, and 10.

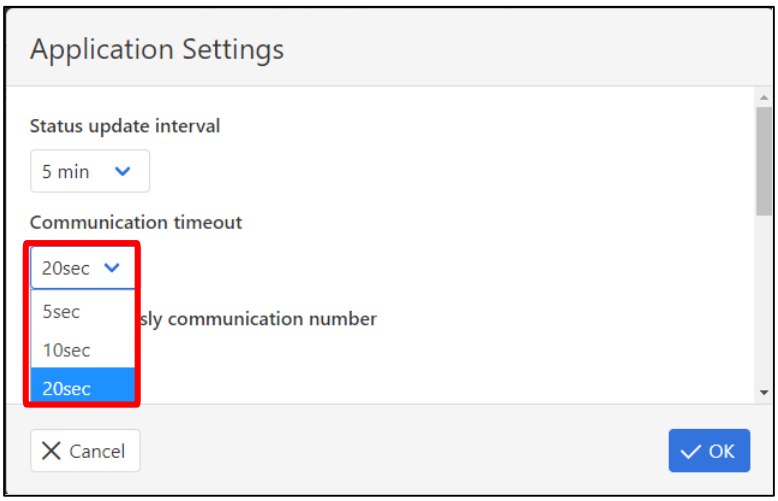
1. **Click the menu button ☰ on the upper right of screen and select [Application Settings].**



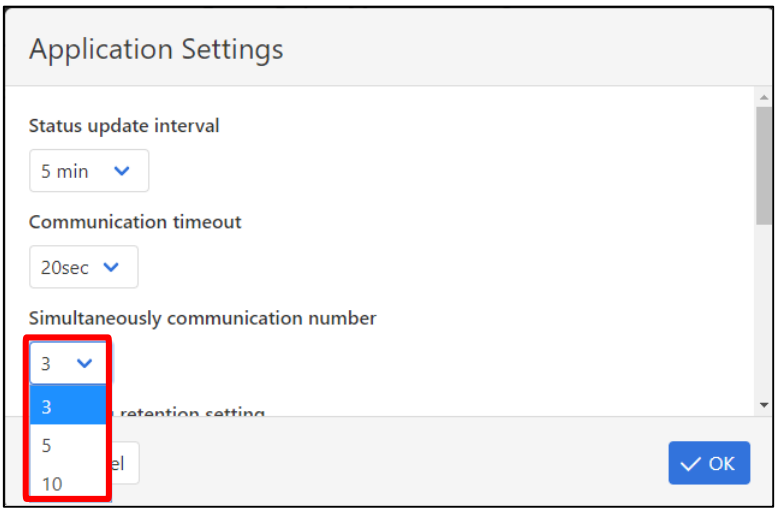
2. **Select the update interval in [Status update interval].**



3. **Select the timeout in [Communication timeout].**



4. **Select the number of Controllers that this application can communicate simultaneously with [Simultaneously communication number].**



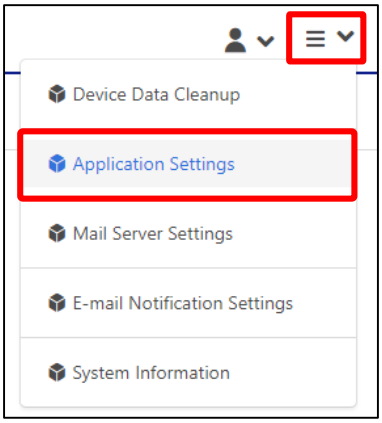
5. **Click the <OK> button.**

Management of Event Log List

In Event Log list, a log is registered when an event selected in [Event Log trigger] occurs in a device. No [Event Log trigger] is selected at the initial status. Select the triggers as necessary. Event Log list displays the recorded event logs in a list.

Settings of Event Log retention setting and Event Log trigger

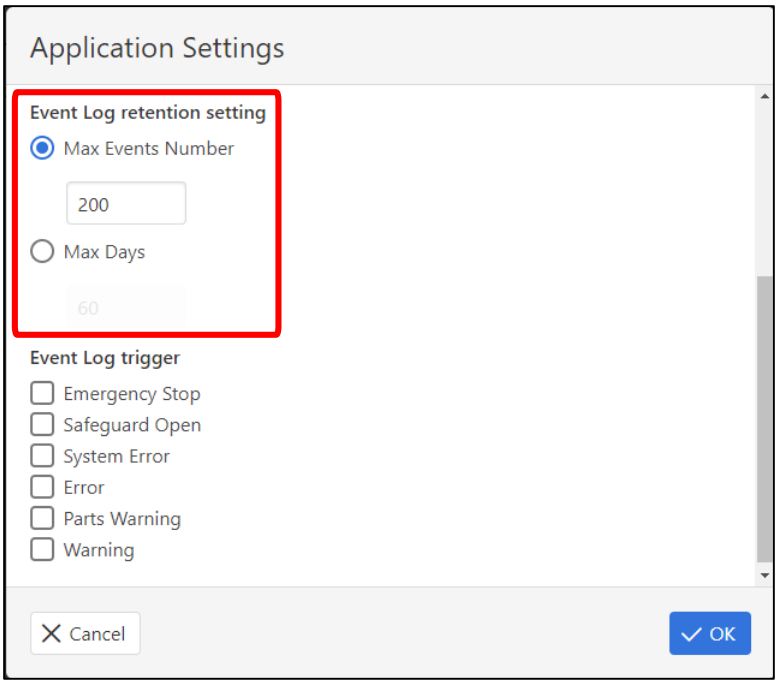
1. **Click the menu button on the upper right of screen and select [Application Settings].**



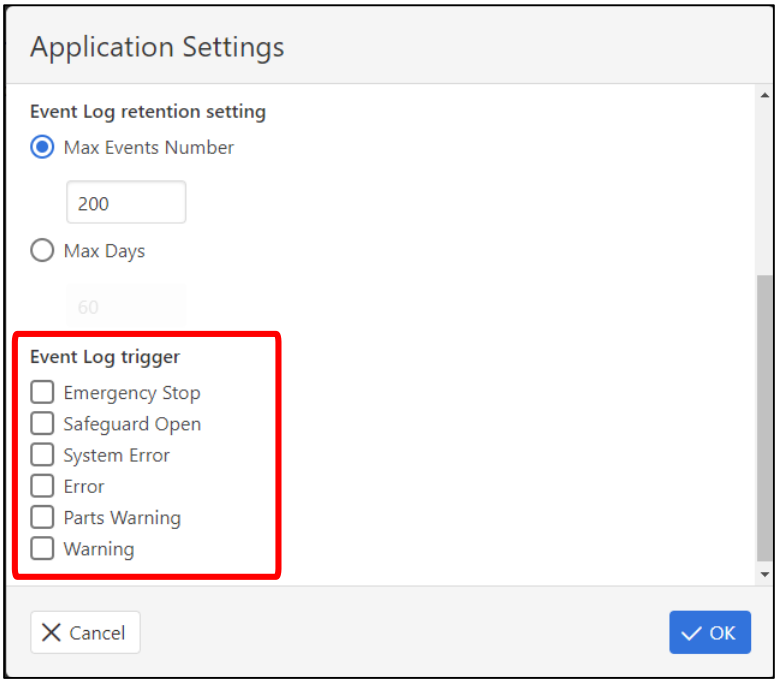
2. **In [Event Log retention setting], set the log to be saved as either of "Max Events Number" (1 to 200 logs) or "Max Days" (1 to 1095 days).**

   Default is "Max Events Number" (200 logs).

> Though the number greater than 200 can be typed in “Max Events Number”, up to 200 logs will be displayed.



3. **Select the check box of the event that you want to record in [Event Log trigger].**



4. **When the settings are complete, Click the <OK> button.**

Mail Setting

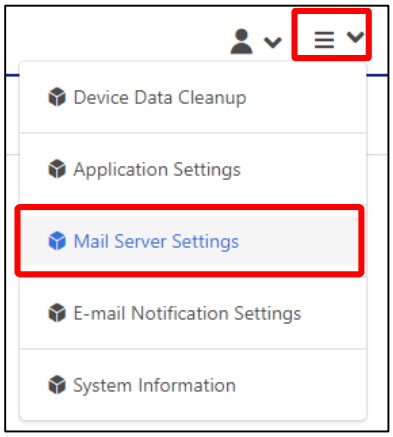
Mail Server Settings

When using the E-mail Notification function, the mail server setting is required. The E-mail Notification function is a function to automatically send an e-mail to a specified e-mail address when an event occurs in the Controller to be managed.

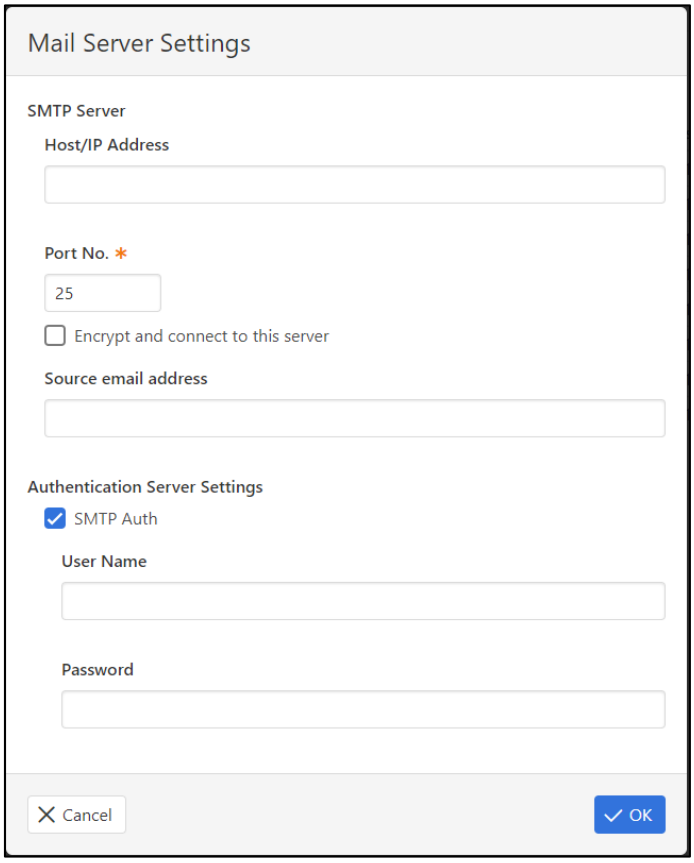
This setting can be configured by System Administrator or user who has the authority of Robot Manager.

Preparation of a E-mail server is required.

1. **Click the menu button on the upper right of screen and select [Mail Server Settings].**



2. **Enter the required items.**



Item	Description
Host/IP Address	Enters host name or IP address of SMTP server. Host name must contain alphanumeric characters (e.g. a-z, 0 to 9, -, _) and within 63 characters. Enters IP address in IPv4 format using integer number and " . ".
Port Number	Enters Port No. of SMTP server between 1 to 65535.
Encrypt and connect to this server	If this check box is selected, connection with SMTP server is encrypted.
Source email address	Enters the source email address within 255 characters. This is displayed in the header of an email sent from this application.
Authentication Server Settings	Selects the check box if the server requires authentication for sending emails.
User Name Password	Enters User Name and Password to log in SMTP server within 255 ASCII codes.

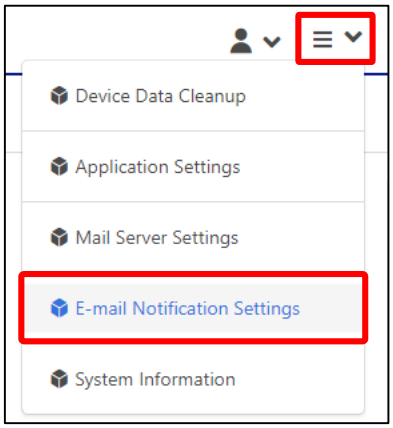
3. Click the [OK] button.

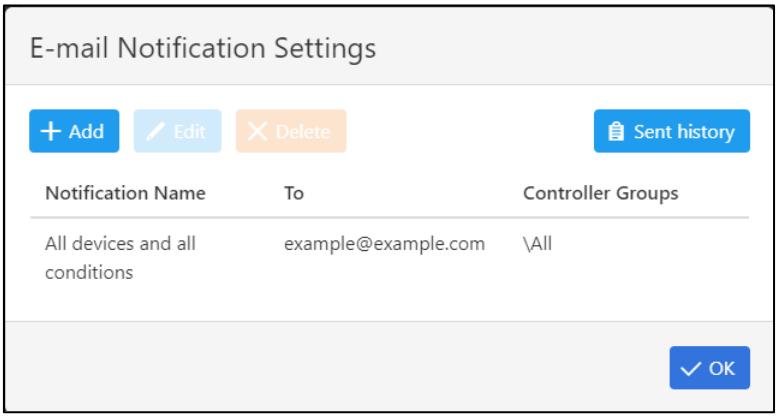
E-mail Notification Settings

When any event occurs in Controller or robot, automatically send an e-mail to a specified e-mail address.

> E-mail notification is set in groups. It is recommended that you create a group for each unit to manage using the group management function, and register Controllers in that group.

Click the menu button ☰ on the upper right of screen and select [E-mail Notification Settings] to display the [E-mail Notification Settings] dialog box.





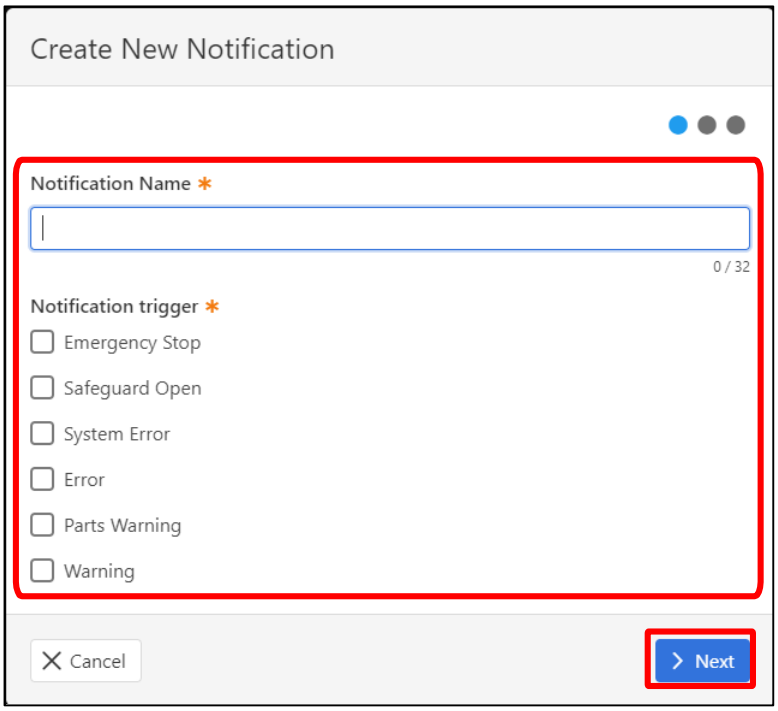
Item	Description
List of E-mail Notification Settings	Displays the registered list of E-mail Notification Settings. ・ **Notification Name** Name that is set as the E-mail Notification Settings. ・ **To** Displays the set address (To). ・ **Controller Groups** Displays the Controller group(s) registered as Target Group in Email Notification Settings.
Add	Adds E-mail Notification Settings.
Edit	Edits the selected E-mail Notification Settings.
Delete	Deletes the selected E-mail Notification Settings.
Sent history	Checks the mail history that has been sent.

Adding E-mail Notification Settings

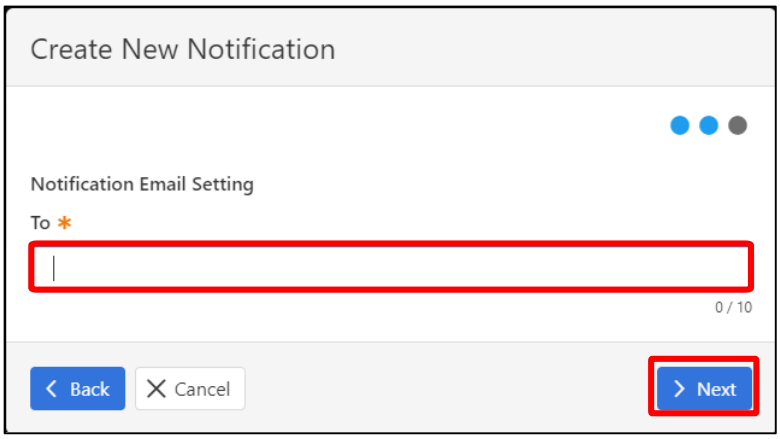
1. **Click the menu button on the upper right of screen and select [E-mail Notification Settings].**
2. **Click the <Add> button.**
3. **Set [Notification Name] and [Notification trigger] and click the <Next> button.**

   [Notification Name]: Enters within 1 to 32 characters.

   [Notification trigger]: Selects the trigger that you want to receive notification.

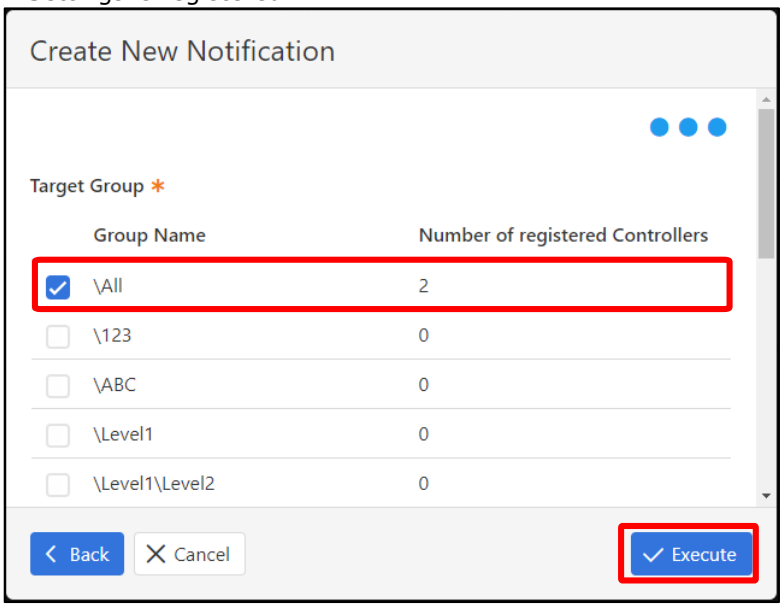


4. **Enter Notification Email address (up to 10 addresses) and click the <Next> button.**



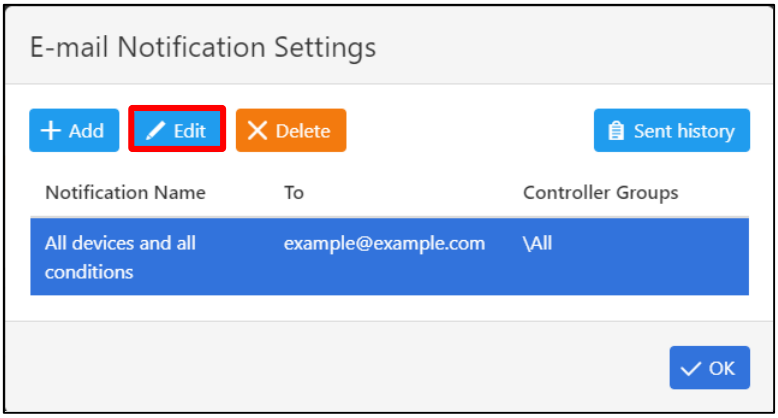
5. Select the group to send Email notification and click the <Execute> button.

E-mail Notification Settings is registered.

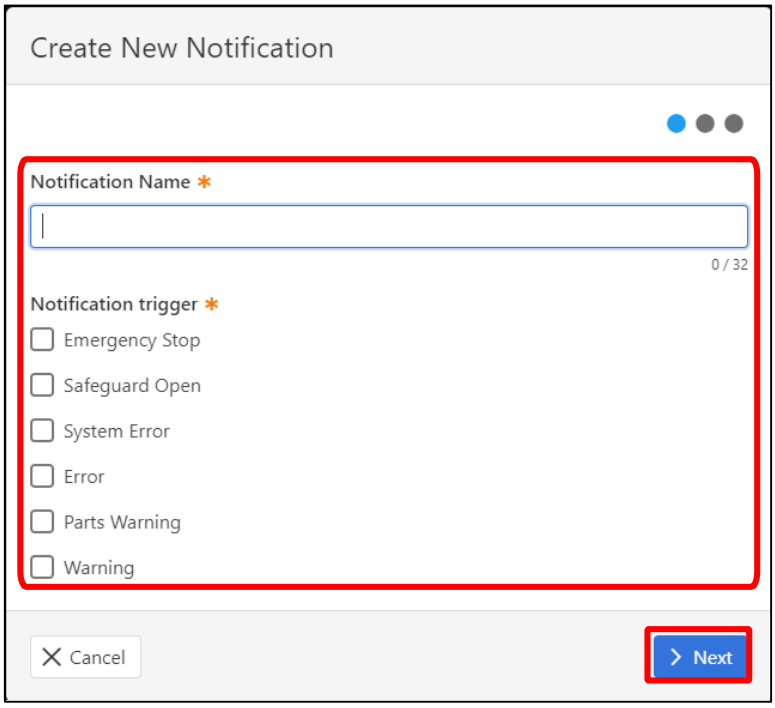


Editing E-mail Notification Settings

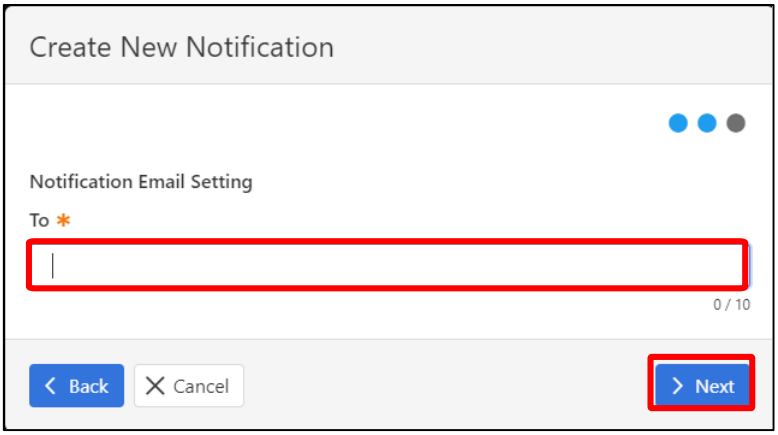
1. **Click the menu button on the upper right of screen and select [E-mail Notification Settings].**
2. **Select the E-mail Notification Settings that you want to edit and click the <Edit> button.**



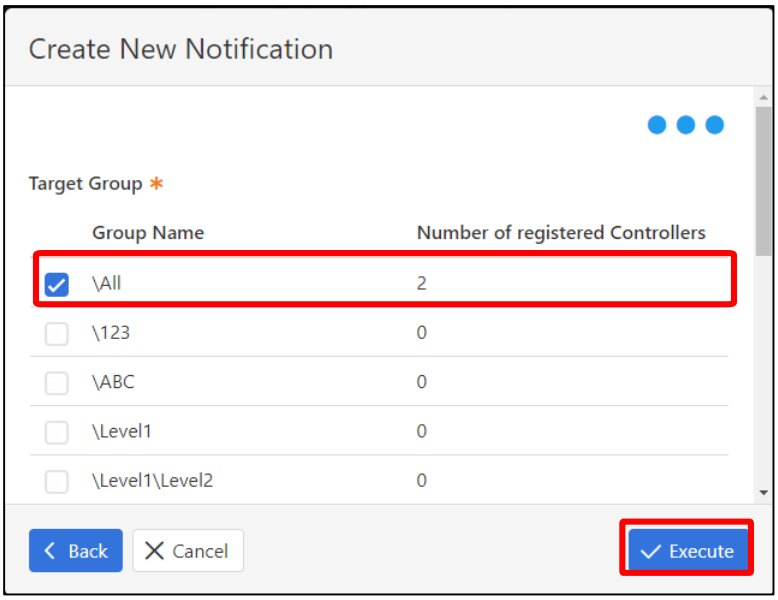
3. **Edit [Notification Name] and [Notification trigger] as necessary and click the <Next> button.**



4. **Change the address (To) as necessary and click the <Next> button.**



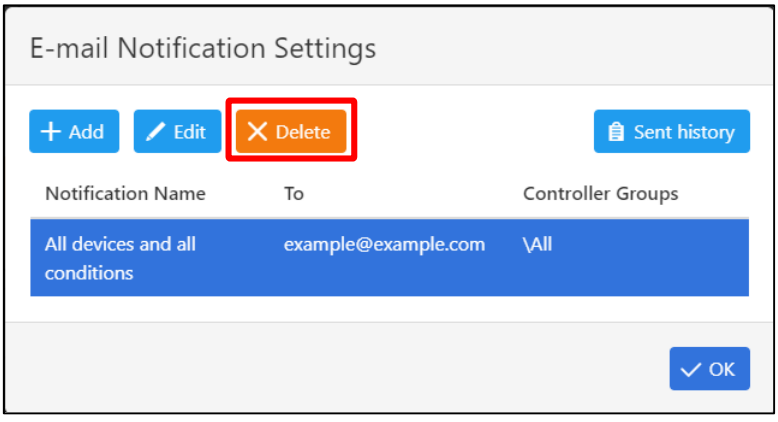
5. **Change the group to send Email notification as necessary and click the <Execute> button.**



Deleting an E-mail Notification Settings

1. **Click the menu button ☰ on the upper right of screen and select [E-mail Notification Settings].**
2. **Select the E-mail Notification Settings that you want to delete and click the <Delete> button.**

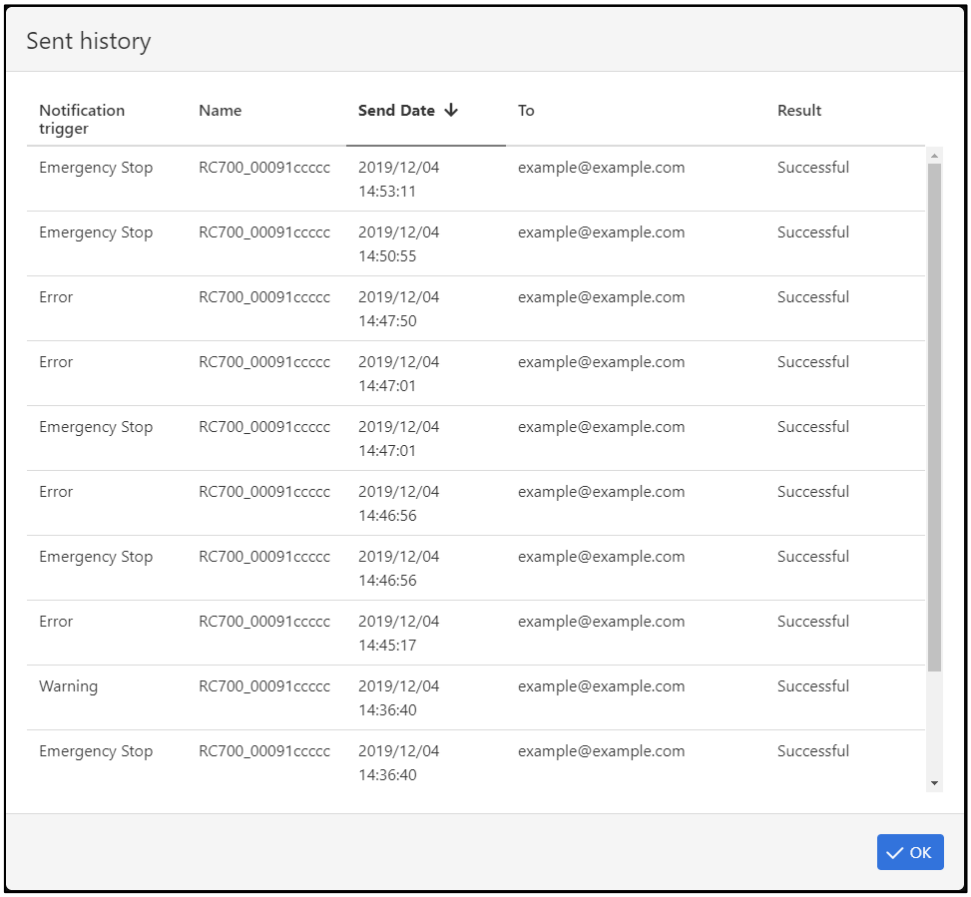
   E-mail Notification Settings is deleted.



Checking Sent History

When clicking the <Sent history> button on E-mail Notification Settings screen, the history of the latest 200 emails that have been sent by E-mail Notification function can be checked.

Click the titles of each row to switch the display order (ascending order and descending order).



Item	Description
Notification trigger	Displays the trigger of sent email.
Name	Displays the Controller name that the notification trigger occurred.
Send Date	Displays the date when the email is sent.
To	Displays the all addresses.
Result	Displays the result of sending an email.

Management of Groups

Groups and manages Controllers registered in Controller list.

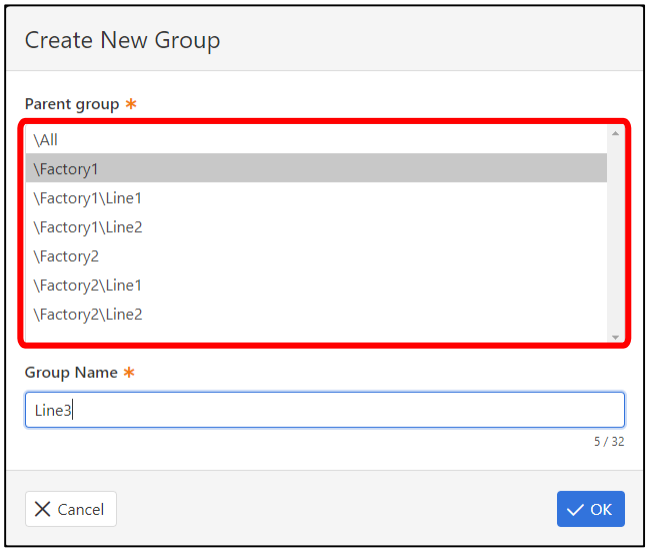
Controllers can be managed in groups by creating any group.
For example, Controller's installation location or production line name, processes such as assembly and inspection, or manufacturing products to manage Controllers.

Adding Controllers by Creating a Group

Creates a group and registers Controllers to the group.

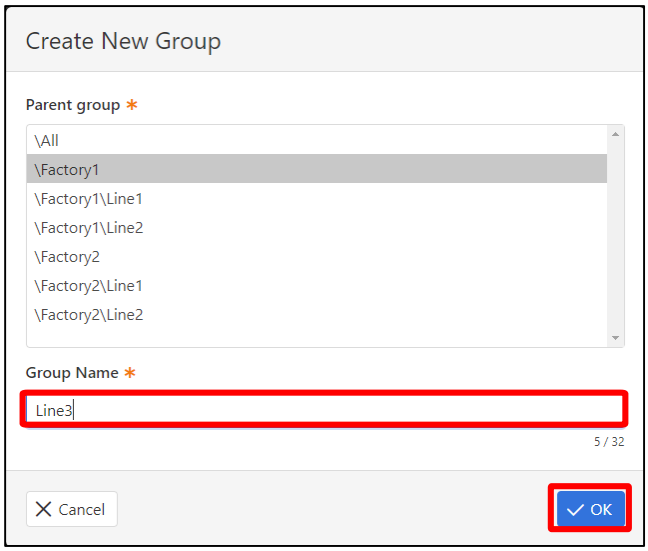
1. **Click the <Controller> tab.**
2. **Click  on the Tree view.**
3. **Select the parent group.**

   When creating a group for the first time, it is created in the first level. Group can be created up to eighth level.



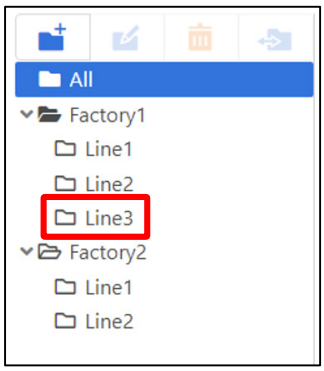
4. **Enter the group name and click the <OK> button.**

   Enters the group name using characters that can be expressed in Unicode (up to 32 characters).
   Note: [¥], [,], and [" "] cannot be used.

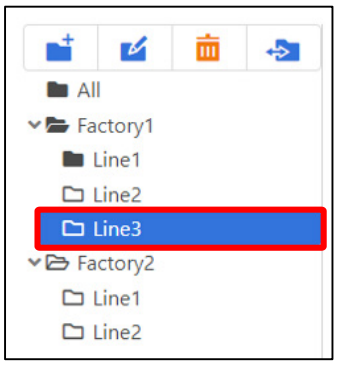


5. Click the <OK> button.

The changes are reflected in Tree view.



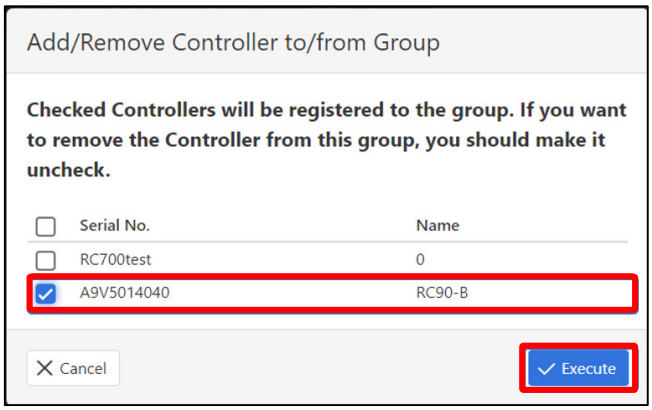
6. Select the group to be added in Controller.



7. Click  in Tree view.

8. Select the Controller to be registered and click the <Execute> button.

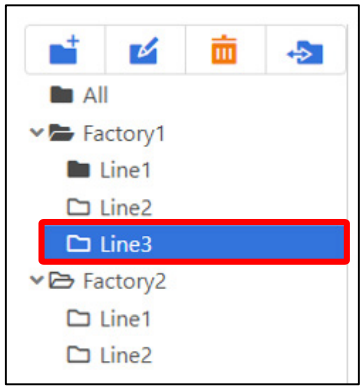
> Deselect the check box to delete from the group.



Editing Group

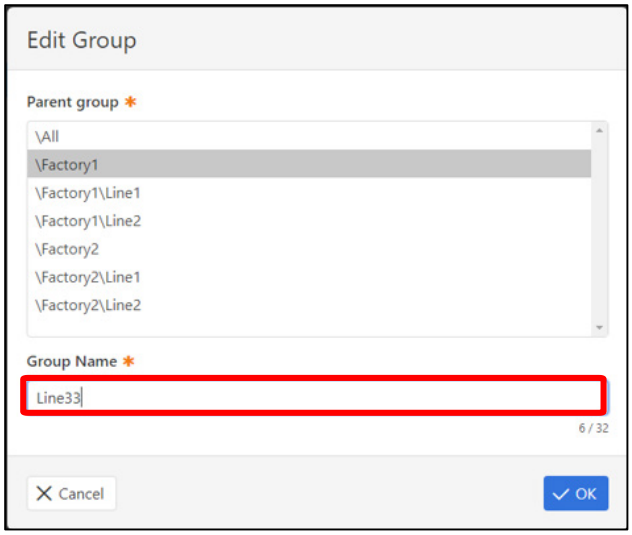
Changes the created group name and the parent group in upper-level.

1. **Select the group to be edited.**

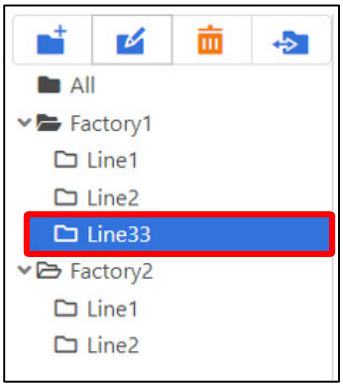


2. **Click**  **in Tree view.**

3. **Change the Group Name.**
   To change the parent group, select in the Parent group field.

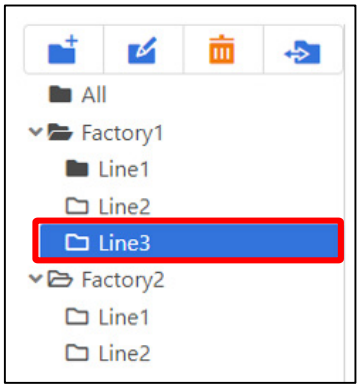


4. **Click the <OK> button.**
   The changes are reflected in Tree view.

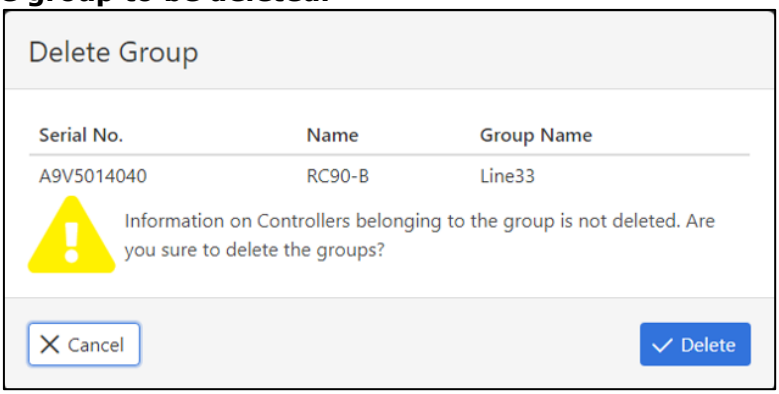


Deleting Group

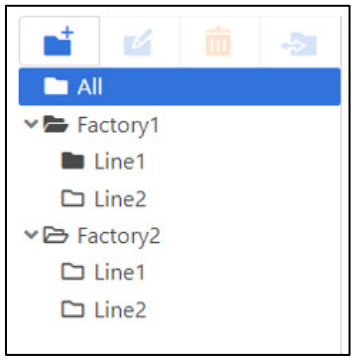
1. **Select the group to be deleted in Tree view.**



2. **Click**  **on the Tree view.**
3. **Confirm the group to be deleted.**



4. **Click the <Delete> button.**
   The changes are reflected in Tree view.
   Controllers belong to the deleted group only will be displayed in [All].



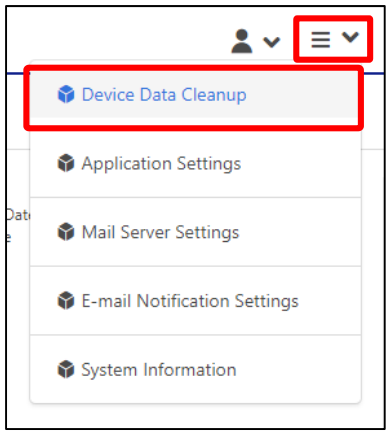
Maintenance

Device Data Cleanup

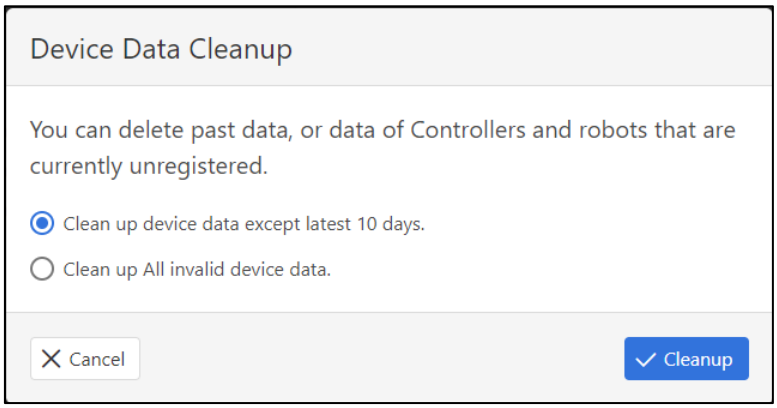
Through the operation of this application, a lot of data is accumulated in the database.
The default setting has the function to delete the data automatically after 90 days, however, the unnecessary data can be deleted anytime.

- **Clean up device data except latest 10 days**
  Deletes the device data before the latest 10 days. This is for all Controllers and robots.
- **Clean up All invalid device data**
  Completely delete the data of Controllers and robots that is remaining in the database that have been deleted from this application and are no longer listed.

1. **Click the menu button on the upper right of screen and select [Device Data Cleanup].**



2. **Select the target data to cleanup.**



3. **Click the <Cleanup> button to delete the target data.**

Activation

This section describes software license management of this application.

Activation means purchasing the license for this application and using a paid license.
If this application has not activated, registration number of Controllers is limited to three.
To register more than four Controllers, activation is required.

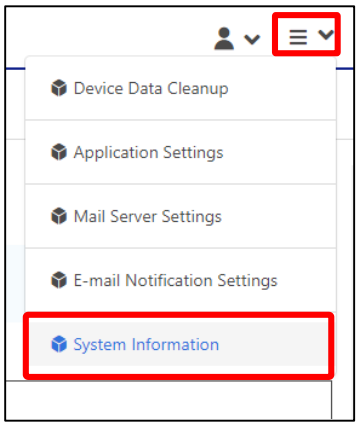
- Only the computer that was applied at the time of purchase can activate this application. To activate this application by another computer, please contact to the supplier of your region.
- No Internet connection is required for activation.

Checking Activation Information

Activation status can be checked in this application.

1. **Make sure that the system managed by this application is set up.**
2. **Make sure that computers and Controllers are turned ON.**
3. **Log in to this application as [System Administrator] or [Robot Manager].**
4. **Click the menu button on the upper right of screen and select [System Information].**

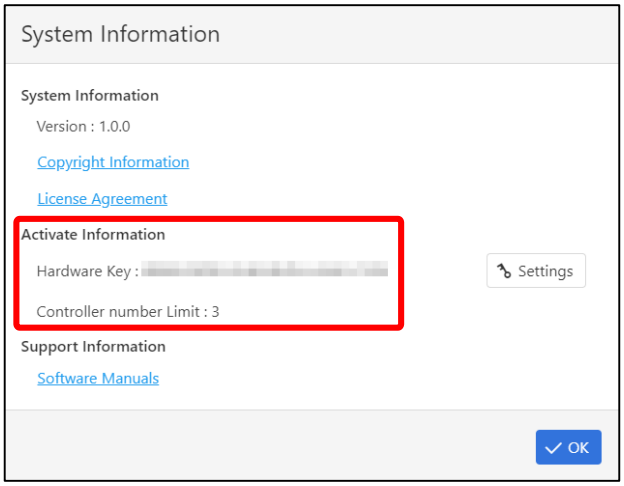
   [System Information] dialog box is displayed.



5. Check [Activate Information].

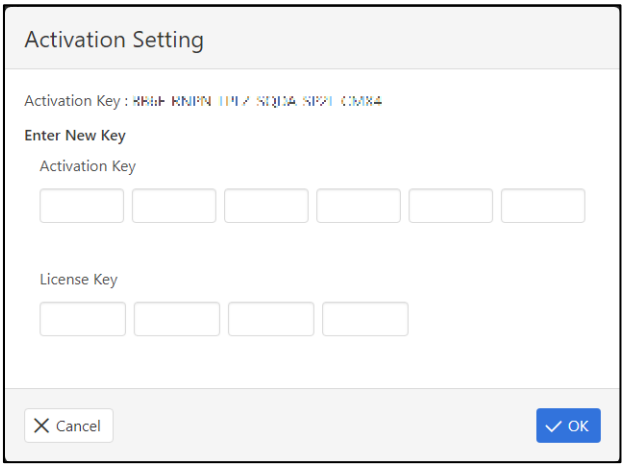
Hardware key:
It is computer specific values in 24 characters. Hardware key is required when purchasing a new or additional license or reissuing a key.

Controller number Limit:
It is a number of Controllers that can be connected with the current license.



6. When the <Settings> button is clicked, Activation Setting dialog box is displayed.

Valid activation key will be displayed.
If this application has not activated, [None] is displayed.



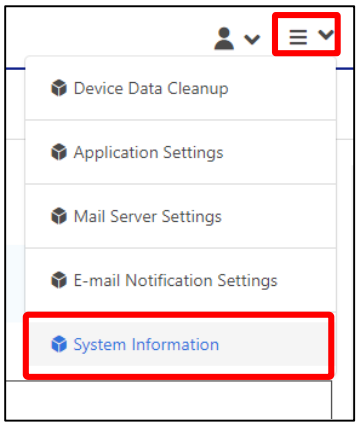
How to Activate this Application

Follow the steps below to activate this application.

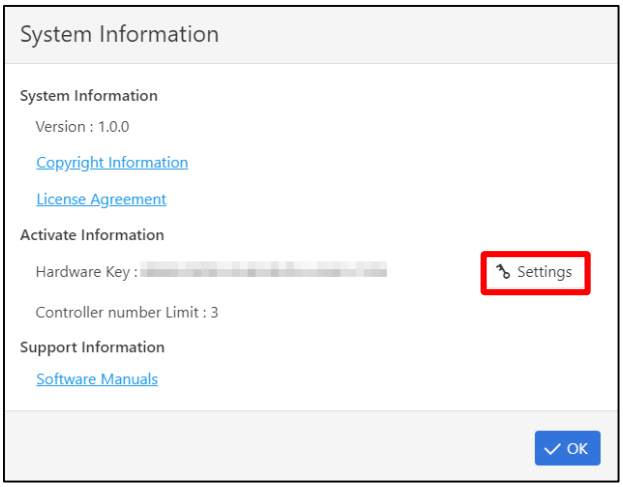
1. **Purchase a paid license of this application.**

☞ Purchasing License

2. **Make sure that the system managed by this application is set up.**
3. **Make sure that computers and Controllers are turned ON.**
4. **Log in to this application as [System Administrator] or [Robot Manager].**
5. **Click the menu button ☰ on the upper right of screen and select [System Information].**

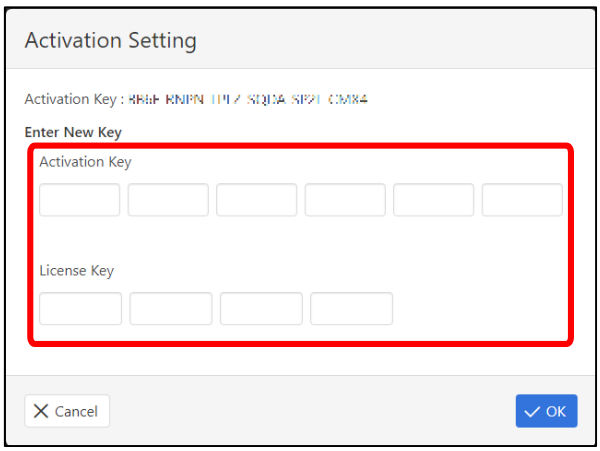


6. **Click the <Settings> button on System Information dialog box.**



7. Type issued keys to [Activation Key] and [License Key] in Enter New Key.

Type four characters in each box.
Activation Key: Type 24 alphanumeric characters.
License Key: Type 16 alphanumeric characters.



8. Click the <OK> button.

When [Activation Success] is displayed, activation is completed.

Check the activation information and make sure that the number of Controllers matches the contents of purchased license.

Updating Activation

To increase the number of Controllers, activation must be updated since the contents of the paid license is changed. Update the reissued activation key and the original license key.

☞ How to Activate this Application

Purchasing License

To purchase the paid license of this application, please contact any of the following suppliers.

- **Suppliers of your region**
  (*Robot System Safety and Installation Read this manual first - SUPPLIERS*)
- **System Integrators**
- **Distributor**

When you contact the supplier, please let them know the required information depending on the following situation 1, 2, or 3.

- The license key is described in the license certificate sheet which is provided by supplier of Epson Robot after purchasing the license. The information is necessary when purchasing additional license or replacing computer. Be careful not to lose the sheet.
- If you lose the license sheet, please tell your Hardware key to the supplier.

1. New Purchase

- **Desired number of Controllers to be connected**
- **Hardware key acquired in *[Checking Activation information]***
  ☞ Checking Activation Information

2. Additional Purchase

- **Desired additional number of Controllers to be connected**
- **Hardware key acquired in *[Checking Activation information]***
  ☞ Checking Activation Information
- **License key**

3. Replacing Using Computer (Hardware)

- **Hardware key used on the computer before replacement**
- **Hardware key acquired in *[Checking Activation information]* of replaced computer.**
  ☞ Checking Activation Information
- **License key used on the computer before replacement**

Troubleshooting

Expected troubles and countermeasures for this application are as follows.

Installation

Trouble	Countermeasure
Login screen is not displayed.	**Restarts the computer.**
	Checks whether the address in Login screen is correct. Normally, the correct address is as follows: http://xxx.xxx.xxx.xxx:8080 • "xxx.xxx.xxx.xxx" is IP address of the computer which this application is installed. • "8080" is PortNo. of WebUI. If the Port No. was changed during installation, type the changed Port No.
	Checks whether nginx service is operating in Task Manager in Windows.
	When nginx service is not operating: **Enters unused Port No. in [WebUI Port No.] and restarts the computer after re-installing this application.** 1. Open Task Manager in Windows and make sure that nginx service is not operating. 2. Uninstall this application. 3. Open Command Prompt in Windows. 4. Type the following letters and check whether TCP port 8080 is used (no space required). netstat-oa If there is [TCP 0.0.0.0: 8080], the port 8080 may already in use. 5. Check the unused Port No. to use it for re-installation. 6. Re-install this application. 7. Change [WebUI Port No.] to unused Port No. in the dialog box during installation. 8. After installation, restart the computer.

Trouble	Countermeasure
Cannot log in this application.	**Enters unused Port No. in [Background Port No.] and restarts the computer after re-installing this application.** 1. Uninstall this application. 2. Open Command Prompt in Windows. 3. Type the following letters and check whether TCP port 5002 is used (no space required). netstat-an|find"LISTEN" If there is [TCP 127.0.0.1 : 5002], the port 5002 may already in use. 4. Check the unused Port No. to use it for re-installation. 5. Re-install this application. 6. Change [Background Port No.] to unused Port No. in the dialog box during installation. 7. After installation, restart the computer.
After installation, a device cannot be registered or Application Settings screen is not displayed.	**Enters unused Port No. in [Agent Port No.] and restarts the computer after re-installing this application.** 1. Uninstall this application. 2. Open Command Prompt in Windows. 3. Type the following letters and check whether TCP port 5100 is used (no space required). netstat-an|find"LISTEN" If there is [TCP 0.0.0.0: 5100], the port 5100 may already in use. 4. Check the unused Port No. to use it for re-installation. 5. Re-install this application. 6. Change [Agent Port No.] to unused Port No. in the dialog box during installation. 7. After installation, restart the computer.

- Troubleshooting -

Trouble	Countermeasure
Cannot access to the computer installed this application from other terminals via Web browser.	**Checks Windows firewall settings under directions of network administrator.** Turn OFF any of the following firewall settings. ・ Domain ・ Private ・ Public If you still cannot assess to the computer, change the network setting according to the following steps. 1. Open Windows Defender Security Center. 2. Select [Firewall & network protection] - [Allow an app through firewall]. 3. Click [Change settings] - [Allow another app] - [Network types] and select "Private" and "Public" check boxes, then click the <OK> button. 4. Click the <Browse> button and specify nginx.exe. 5. Click the <Add> button. 6. Click the <OK> button.
	Checks that hubs and cables connected properly. When the link lamp of the port connected to the hubs and devices turns ON or blinks, the operation is normal. If the link lamp is OFF, try the following countermeasures. ・ Connect to another port ・ Connect to another hub ・ Replace LAN cable ・ Check the network setting of the using terminal
	Checks whether the settings of network interface is correct. If communication is not possible, the settings of network interface may not be correct. Please check the manual of using terminal.
	Checks whether IP address is valid.
	Changes the security settings. If selecting the <Block> or <Cancel> button on [Windows System Security Alert] or other screen displaying by commercially available security software, the communication will not be possible. To communicate, register this application as an exception in Windows Firewall or commercially available security software. If communication is still not available (only for commercially available security software): Exit the commercially available security software, and then use this application. After using this application, enable the commercially available security software.

Controller List

Trouble	Countermeasure
"Communication Error" is displayed and information has not updated.	**Clicks [Application Settings] - [Communication timeout] to adjust the set time longer.**
	Checks that network connected properly.
	Checks that hubs and cables connected properly.
	Reboots the Controller.

Controller Management

Trouble	Countermeasure
Controller Settings are not reflected.	**Reboots the Controller.** Reboot the Controller to reflect the setting changes.
	Checks whether the Controller status is normal. When the Controller is in the following status, the settings cannot be configured. Please check the status and take countermeasures before re-configuring the settings. ・ Status is in Running ・ LEDs other than AUTO are turned ON ・ Network connection is not available ・ Controller power is OFF
	When RC+ is connected in Program mode, selects Offline mode.
Update of SPEL+ projects is not reflected.	**Displays the detailed screen of the target Controller, then update SPEL+ project again.**
	Places SPEL+ project in the work folder Check whether SPEL+ project is placed in the work folder of this application. Only the data placed in the work folder can transmit to SPEL+ project. Work folder: C:\EpsonRMSWork\RMSSpelPlace\
	Build the projects to be updated in RC+.
	Checks whether Controller status is normal. When the Controller is in the following status, SPEL+ project cannot be updated. Please check the status and take countermeasures before updating SPEL+ project. ・ Status is in Running ・ LEDs other than AUTO are turned ON ・ Network connection is not available ・ Controller power is OFF

Trouble	Countermeasure
The setting of Adjust Clock is not reflected.	**Checks whether Controller status is normal.** When the Controller is in the following status, the settings of Adjust Clock cannot be configured. Please check the status and take countermeasures before re-configuring the settings. ・ Status is in Running ・ LEDs other than AUTO are turned ON ・ Network connection is not available ・ Controller power is OFF
Cannot create a backup data.	**Checks the work folder.** Check whether the backup folder is created in the work folder of this application. If another folder is set during installation, a backup file is created in that folder. Work folder: C:\EpsonRMSWork\RMSBackUpPlace\
	Checks whether Controller status is normal. When the Controller is in the following status, a backup file cannot be created. Please check the status and take countermeasures before retrying backup. ・ Status is in Running ・ LEDs other than AUTO are turned ON ・ Network connection is not available ・ Controller power is OFF
Cannot execute Event backup.	**Clicks the <Refresh> button.** Backup data is not immediately reflected to this application after an event occurs. Click the <Refresh> button or wait for a while. After updating data several times, the backup data is created.
	Reboots Controller. Reboot the Controller to reflect the setting changes after changing the backup settings.
	For the following cases, sets Event Backup again. ・ Event Backup is not set ・ Change the [Backup Trigger Settings]

Trouble	Countermeasure
Cannot update Controller firmware.	**Places the firmware in the work folder.** Check that the firmware folder (file name: FirmyymmddVerx_x_x_x) is placed in the work folder. If more than one firmware is placed in the folder, update is not available. Work folder: C:\EpsonRMSWork\RMSFirmPlace\
	Uses the firmware that supports Controller.
	Uses the latest firmware. Make sure that the firmware version to be updated is newer than the firmware already installed. If the firmware version is old, update will be canceled.
	Checks whether Controller status is normal. When the Controller is in the following status, the firmware cannot be updated. Please check the status and take countermeasures before updating the firmware. ・ Status is in Running ・ LEDs other than AUTO are turned ON ・ Network connection is not available ・ Controller power is OFF

Software License

License Agreement of this Application

IMPORTANT! READ “SOFTWARE LICENSE AGREEMENT” DESCRIBED IN <Directory where this application is installed>\Docs\EPSON END USER SOFTWARE LICENSE AGREEMENT.rtf CAREFULLY BEFORE INSTALLING OR USING THIS APPLICATION.

<Directory where this application is installed> is depending on your installation environment. Default is C:\Program Files(x86)\Epson RMS.

Open Source Software

The product includes open source software according to the license terms of each open source software program.

The license agreement, copyright notice, and license information of each open source software programs are included in the installed Epson Robot Management System and can be confirmed in the following files.

- <Directory where this application is installed>\DMP_Backend\LICENSE.txt
- <Directory where this application is installed>\DMP_Agent\LICENSE.txt
- <Directory where this application is installed>\DMP_Agent\Plugins\LICENSE.txt
- <Directory where this application is installed>\RMS_Frontend\nginx\doc\LICENSES
- <Directory where this application is installed>\RMS_Frontend\nginx\html_nuxt\LICENSES

<Directory where this application is installed> is depending on your installation environment. Default is C:\Program Files(x86)\Epson RMS.

Appendix

Restrictions in the Previous Version of Controller Firmware

This application is available in the previous version of the firmware, however, the following functions are restricted.

Previous Version

- **RC700/90**

  Ver.7.4.7.1 or before

- **T/VT series**

  Ver.7.4.57.3 or before

Restrictions for Settings and Remote Operation

Settings

- **Controller Settings**
- **Updating SPEL+ Projects**
- **Event Backup Setting**

Remote Operation

- **Firmware Update**

Restrictions for Gathering Information of Controllers and Robots

Controller List / Detailed information screen

- **Controller type**
- **Parts information**
- **Backup information**
- **MAC address**
- **Default gateway**
- **Information of firmware**
- **Information of connected Devices**
- **Number of startup/end Controllers**
- **Maximum motor ON time**
- **Information of Health**
- **Environment setting**

Robot List / Detailed information screen

- **Motor status (ON/OFF, Power High/Low)**
- **Serial No.**
- **Robot name**
- **Parts information**
- **Detailed information**