



RAS AutoBackup

User Manual

Automatic, scheduled backups for your robot controllers.

RAS Otomasyon — RAS AutoBackup v1.0

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Chapter 1

Introduction

1.1 What is RAS AutoBackup?

RAS AutoBackup is a program that backs up the robot controllers in your plant for you, regularly and on its own. It is installed on a Windows computer, runs quietly in the background, visits your robots one by one over the network, and saves their programs, settings and system files to a folder on that computer. You configure it once; after that it runs by itself.

You do not need to install a separate application to manage it. Everything is done from a **web page**: just open a browser on the computer and type `http://localhost:8080` in the address bar. If you allow it, you can open the same page from another computer on the network too.

It supports these four robot brands (KUKA is covered in two generations):

- **ABB** (IRC5 and OmniCore controllers)
- **KUKA** (KRC4 and KRC5 controllers; on the KRC5, the Windows-based version)
- **KUKA iiQKA.OS2** (controllers running the iiQKA.OS2 operating system; shown in the program under the separate label **KUKA-IIQ**)
- **FANUC**
- **YASKAWA**

You manage all four brands in the same list, from the same screen. It makes no difference how many robots you have of each brand.

1.2 Why should I back up my robots?

A robot controller is a computer too: its disk can fail, its battery can run flat, someone can delete the wrong program, or settings can be lost during an update. The programs and settings inside a robot are often the product of months of work. Without a backup, rebuilding them from scratch can mean days of lost production; with a backup, the same job takes an hour or two.

Taking backups is a well-known good habit, but in practice it gets put off with "we'll do it sometime". RAS AutoBackup does not leave this job to human memory:

- Every night (or at whatever interval you choose) it backs up all of your robots.
- When a new robot is connected to the network, it notices it by itself and takes its first backup right away.
- It stores backups in tidy folders organized by date and robot name, and deletes old backups after the retention period you set.
- When needed, you can restore a backup to a robot with a single click.

1.3 Who is this manual for?

This manual is for everyone who will install, manage or use the program in their daily work: maintenance engineers, automation technicians and IT staff. It is written on the assumption that you have never seen the program before. We assume you know the robot brands' own interfaces (for example, having worked with a FlexPendant or a KUKA smartPAD is enough), but no software or networking knowledge is required.

The manual proceeds as follows: first installation and the first backup (Chapters 3 and 4), then a walkthrough of each screen (Chapters 5–9), then the details for each brand (Chapter 10), restoring (Chapter 11) and troubleshooting (Chapter 13). If you are in a hurry, you can read Chapters 3 and 4, get started, and come back to the rest as you need it.

1.4 How does it work? (In brief)

The program runs on the computer as a **Windows service**. The service starts by itself when the computer boots, even if nobody is logged in. If a problem occurs and the service shuts down, Windows restarts it within a few seconds.

When it is time for a backup, the program does the following in order:

1. It visits the robots in the list (except the ones you have excluded), one at a time or several at once.
2. It connects to each robot using that brand's own method and pulls the backup.
3. It first writes the backup to a temporary folder; only if everything has arrived completely does it rename the folder to its final name. This way you never mistake a half-finished, corrupt backup for a good one.
4. It records the result in the history: whether it succeeded, how many files, how many MB, and how long it took.
5. Finally, it deletes old backup folders that have exceeded the retention period.

1.5 Supported brands and key differences

Brand	Controller	How is the robot found?	How is the backup taken?
ABB	IRC5, OmniCore	Discovered automatically on the network; IP range scan is also available	The controller's own backup function is run and the result is downloaded to the computer
KUKA	KRC4 (KSS 8.x), KRC5 (Windows version)	Discovered automatically on the network; IP range scan is also available	A full system archive (ZIP) and a project backup are taken
KUKA-IIQ	KUKA controllers running iiQKA.OS2	Discovered automatically on the network (multicast announcements); IP range scan is also available	The controller creates a backup for each of its instances; the backup file is downloaded to the computer
FANUC	FANUC controllers with an FTP server	Not discovered automatically; add manually or scan an IP range	Files are downloaded from the robot's FTP server

Brand	Controller	How is the robot found?	How is the backup taken?
YASKAWA	Controllers that support HSE (High Speed Ethernet)	Not discovered automatically; add manually or scan an IP range	Files are downloaded using the robot's High Speed Ethernet (HSE) function

The details for each brand are covered in Chapter 10.

1.6 The boxes in this manual

You will see three kinds of colored boxes in the text:

Tip: **Tip** boxes are suggestions that make the job easier or save time.

Note: **Note** boxes contain details that are good to know but not mandatory.

Caution: **Warning** boxes mark points that, if skipped, could lead to data loss or leave a robot unable to run. Be sure to read them.

Chapter 2

System requirements

2.1 Computer

The computer on which you install RAS AutoBackup should be one that **is never switched off**, because backups run continuously; ideally a server or an always-on PC on the plant network. The requirements are modest:

Component	Requirement
Operating system	Windows 10 or Windows 11 (64-bit); Windows Server 2016 and later
Processor / memory	An ordinary office PC is enough; 4 GB of memory and a dual-core processor are comfortable
Disk	A few hundred MB for the program (a bit more if the ABB PC SDK will be installed); additional space is needed for the backups (see below)
Permissions	Administrator rights are required during installation; not needed for later use
Additional software	Only for ABB robots: the ABB PC SDK (it comes with the installation package and is installed automatically during setup)

You also do not need to install a runtime environment such as .NET; the program brings everything it needs with it.

How much space do backups take?

Backup size varies with the brand and the contents of the robot. To give you an idea from real examples: a full backup of a KUKA KRC4 is typically between 3 and 10 MB, an ABB controller backup is a few tens of MB, and FANUC and YASKAWA backups are usually a few MB. For example, if you have 20 robots, take a backup every day and keep them for 30 days, calculate roughly $20 \times 30 \times 10 \text{ MB} = 6 \text{ GB}$; to be comfortable, reserve twice that amount in free space.

Note: If less than **200 MB of free space** remains on the target disk, the program does not start a new backup and reports the error "Hedef diskte yeterli boş alan yok" (insufficient free space on the target disk). This message appears in Turkish; see Chapter 13.

2.2 Network

- The computer must be on the **same network** as the robots (or on a network that has routing to the robot network). You must be able to reach the robots' IP addresses from the computer. The easiest way to test this is to type `ping 192.168.0.10` (your own robot's address) at the command prompt.
- Robots must use **fixed IP addresses**. Robots whose IP keeps changing (DHCP) will seem to "disappear" from the list.

- Because automatic discovery (for ABB, KUKA and KUKA-IIQ) relies on **broadcast / multicast** packets, robots may not be found automatically if there is a router between the robot and the computer. In that case you add the robot manually or use the IP range scan.
- Windows Firewall: the installation script adds the necessary rules itself. If you use other security software (a corporate firewall, antivirus), you may need to add the program to its allow list there as well.

2.3 Robot side

For robots to allow backups, small preparations are needed depending on the brand. The details are in Chapter 10; in summary:

- **ABB:** It is enough for the controller to be connected to the network. Enter a user account if one is required.
- **KUKA:** The KRC4 or KRC5 must be connected to the network and switched on; no extra settings are usually needed.
- **FANUC:** The robot's FTP server must be running; if necessary, enter the FTP user name and password.
- **YASKAWA:** The HSE (High Speed Ethernet) server function must be enabled on the controller.

2.4 Browser

The interface works with a current web browser (Microsoft Edge, Google Chrome, Mozilla Firefox). No separate plug-in is needed. The interface is available in Turkish, English and German; the screenshots in this manual are also provided in all three languages.

Chapter 3

Installation

3.1 What is in the installation package

RAS Otomasyon supplies you with a **Publish** folder (or a ZIP file). It mainly contains the following:

File / folder	What it is for
RasAutoBackup.Service.exe	The program itself
install.cmd	The installation script (run as administrator)
uninstall.cmd	The uninstall script
prereq\	The ABB PC SDK installer (needed if you will use ABB robots)
ensure-abb-prereq.ps1	A helper script that installs the ABB PC SDK silently
README.md	A short information note

Caution: Do not copy the folder to a **permanent location** on the computer and run it from there. The installation script places the files in the right location itself. In other words, the **Publish** folder is only the installation source; once installation is finished you can delete it or keep it.

3.2 Installation steps

1. **Copy the Publish folder to the target computer.** You can transfer it by USB stick, network share or ZIP. If you received a ZIP, first extract it to a folder with "Extract All".
2. Open the folder, **right-click** `install.cmd` and choose **"Run as administrator"**. If Windows asks "Do you want to allow this app to make changes to your device?", click **Yes**.
3. A black command window opens and prints the installation steps one after another. You do not need to do anything; just wait. The window shows, in order: copying the files, checking the ABB PC SDK, creating the service, failure-recovery settings, firewall rules and starting the service.
4. When the process finishes, the window says **"RAS AutoBackup kuruldu ve calisiyor."** (RAS AutoBackup is installed and running) and shows the web address. Press a key to close the window.
5. Open your browser and go to `http://localhost:8080` . The RAS AutoBackup screen appears.

When installation is finished, the following are in place:

- A Windows service named **RAS AutoBackup** (it starts automatically at boot with a delay).
- A **failure-recovery** setting that restarts the service by itself after 5 s, 5 s and 30 s if it crashes for any reason.
- The **firewall rules** the program needs in order to accept incoming connections from the network.
- The default installation folder: `C:\Program Files\RAS Otomasyon\RasAutoBackup` . The configuration files are in the **Config** folder beneath it, and the logs are in the **Logs** folder.

Installation options

`install.cmd` can also be run from the command line with extra options:

```
install.cmd [target-folder] [/port 8080] [/nostart]
```

Option	Meaning
<code>target-folder</code>	Installs the program to a folder other than the default (for example <code>D:\RasAutoBackup</code>)
<code>/port 9090</code>	On first installation, sets the web interface port to 9090 instead of 8080
<code>/nostart</code>	Performs the installation but does not start the service

Tip: If another program is using port 8080, you can install with a different port, such as `install.cmd /port 9090` . The port can also be changed later from the interface (Chapter 9).

3.3 ABB PC SDK (only if you have ABB robots)

To talk to ABB controllers, the **ABB PC SDK** must be installed on the computer. This is ABB's own software; RAS AutoBackup brings it inside the installation package and `install.cmd` **installs it for you**:

- If the PC SDK is not on the computer, it is installed silently.
- If it is installed but its version differs from the version in the package, the package version is installed.
- If the same version is already installed, it is left untouched.

During this step a Windows confirmation window (UAC) may appear briefly; click **Yes**. The installation log is written to the file `prereq-install.log` in the `prereq` folder. If you have no ABB robots, this step does not concern you.

Note: After the PC SDK is installed, two ABB Windows services (`RobComCtrlServer` and `RobNetScanHost`) must be running. If they are not, RAS AutoBackup shows a yellow warning at the top of the screen (Chapter 5 and Chapter 13).

3.4 First run and testing

When `http://localhost:8080` opens in the browser, you should see the green **"Service running"** indicator in the top bar. It tells you that everything is fine. At the top right you will see **"Trial: 30 days"**; if you have not entered a license yet, the program runs with full features for 30 days.

If you want to open it from another computer on the network rather than from the local computer, type the server's IP address in the address bar, for example `http://192.168.1.50:8080` . In that case the login screen greets you (see Chapter 4.1).

3.5 Running in console mode (testing and troubleshooting)

Instead of using the service, you can also run the program in a command window; because it prints what it is doing in real time, this is useful when troubleshooting. First stop the service, then start the program:

```
sc stop RasAutoBackup
"C:\Program Files\RAS Otomasyon\RasAutoBackup\RasAutoBackup.Service.exe"
```

To run it temporarily on a different port:

```
RasAutoBackup.Service.exe --port 9090
```

When you are done, stop it with `Ctrl+C` and start the service again: `sc start RasAutoBackup` .

3.6 Updating

When you receive a new version, what you do is repeat the same steps over the existing installation: copy the new `Publish` folder and run `install.cmd` as administrator. The script first stops the running service, refreshes the files and restarts the service. **Your settings, robot list, license and backups are preserved.**

3.7 Uninstalling

To remove the program, run `uninstall.cmd` in the installation folder as administrator. The service is stopped and deleted, the firewall rules are removed, and the program files are deleted.

- By default, **your settings (robot list, license, users)** are kept; if you reinstall the program later, everything is where you left it.
- If you want to delete everything, use the command `uninstall.cmd /purge` .
- **The backups you have taken are never deleted under any circumstances.**

3.8 Changing the port and access from other computers

The default port is 8080. You can set a different port in one of three ways: the `/port` option during installation, the **Settings > Web access** section while the program is running (takes effect when the service restarts), or `--port` in console mode.

To be able to access it from another computer on the network, the following must be in place:

- The **Listen address** setting must be `*` (all network adapters). If it is set to `localhost` , the program is accessible only from this computer.
- The port must be open in the firewall (the installation does this for you, and it stays valid even if you change the port).
- You must log in; the default user is `admin` and the password is `admin` , and you are asked to change the password at first login.

Chapter 4

First steps

This chapter shows the shortest path to taking the backup of your first robot right after installing the program. The details of each step are explained in the following chapters.

4.1 Login and password

When you connect to the program **from the computer it is installed on**, by default no login is requested; the main screen opens directly. When you connect from **another computer on the network**, the login screen appears:

1. Type `admin` in the user name field and `admin` in the password field.
2. The program immediately asks you to set a **new password**. The password must be at least **6 characters** long and must not be `admin`.
3. Enter the new password twice and save. You are then taken to the main screen.

The session stays open for the period set in **Settings** (12 hours by default). If you want a login to be requested on the installation computer as well, tick the **"Require login on this PC too"** option in Settings.

Caution: Be sure to change the default password. If everyone on the same network knows the web address, they can reach your backups and your robots. The restore function can change the contents of a robot, so keep access restricted.

4.2 Language and theme

The two small controls at the top right change the look of the interface:

- The moon icon switches between the **dark / light theme**.
- The drop-down list next to it changes the **language**: Türkçe, English, Deutsch. Your choice is remembered in the browser.

4.3 License

After installation the program runs for **30 days, unlicensed, with full features**. The orange label at the top right shows the remaining days. To get a permanent license:

1. Open **License** from the left menu.
2. Copy the **Machine ID** shown on the screen with **Copy** and send it to RAS Otomasyon.
3. Paste the **license key** you are sent into the box and click **Activate**.

The license is perpetual and tied only to that computer. No internet connection is needed for validation. Details are in Chapter 12.

4.4 Add your first robot

You get robots into the list in two ways: you **wait for them to be discovered automatically**, or you **add them manually**.

- If your ABB, KUKA and iiQKA.OS2 robots are on the same network, the program finds them and adds them to the list by itself a few seconds after it starts. If you do not want to wait, click the **"Auto-discover (ABB/KUKA)"** button.
- FANUC and YASKAWA robots are not discovered automatically. Add them with **" + Add robot"** by entering the brand and IP address, or find the robots in an address range with **"Scan IP range"**.

When a robot enters the list, you see a green dot next to it and its model/version information. This means the robot has been reached.

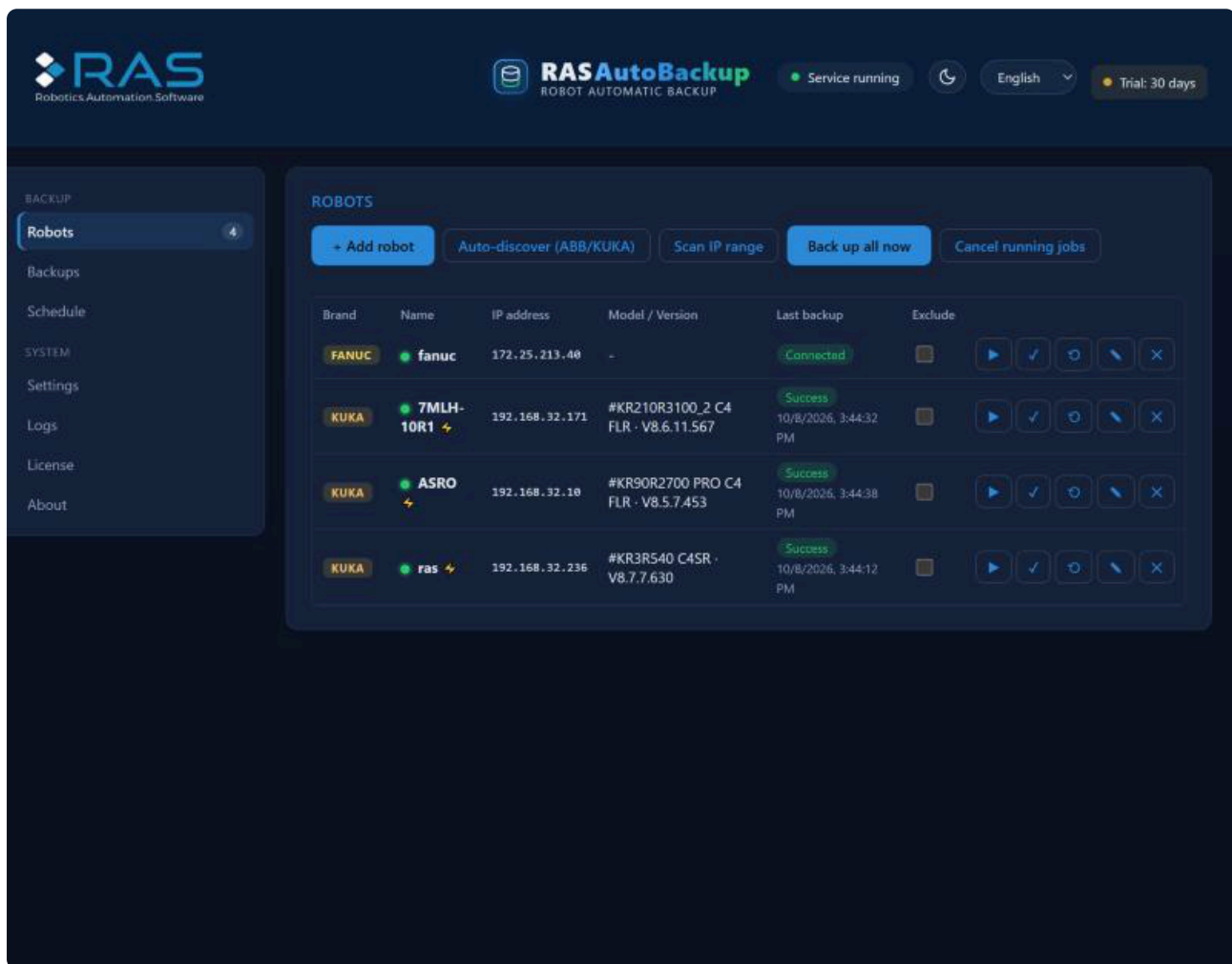


Figure 1: The Robots page: the robot list with brand, name, IP address and last backup status.

4.5 Take the first backup

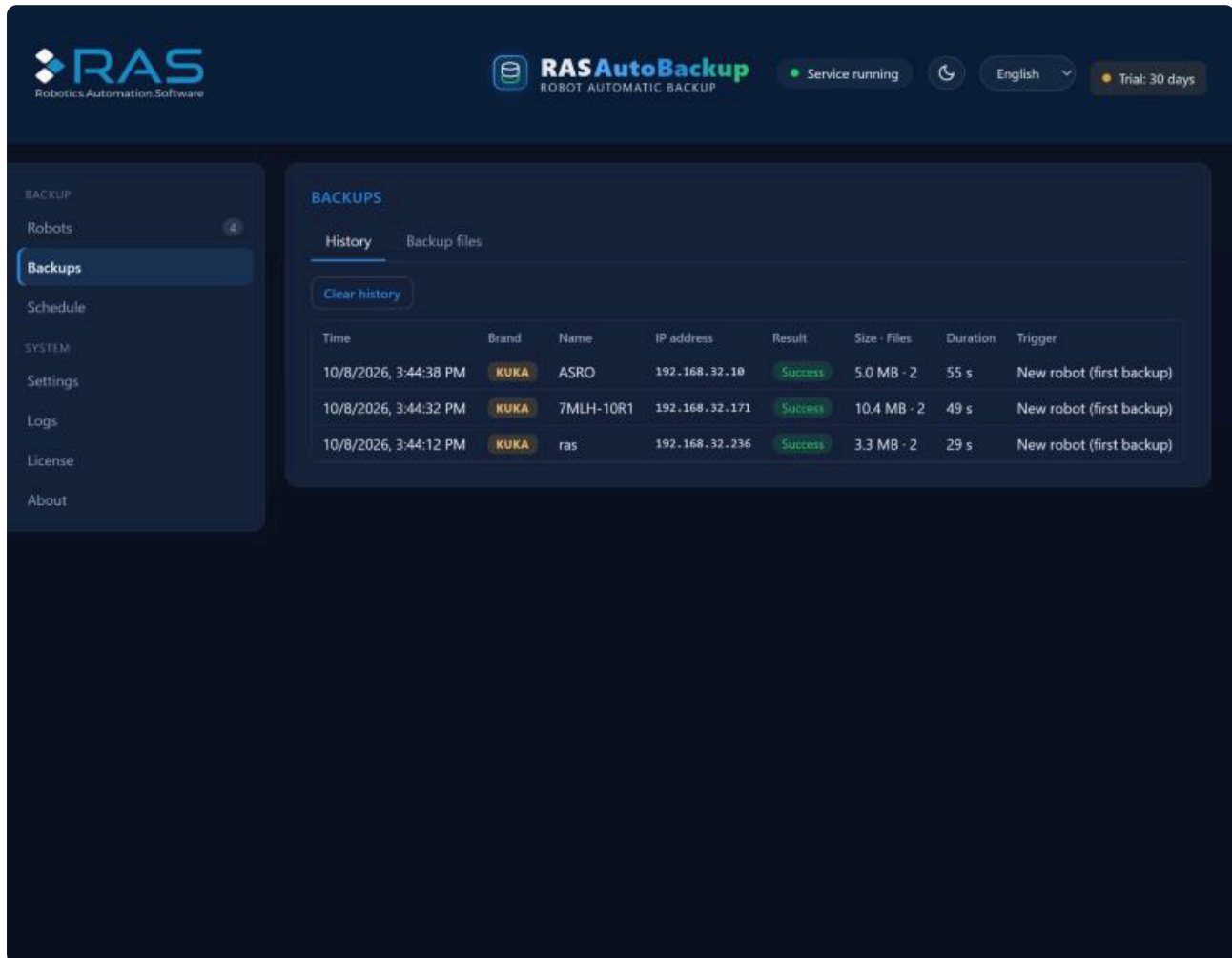
Click the ► button at the end of the robot's row. The program connects to the robot and starts pulling the backup; the row shows "Running". Depending on the brand, this can take anywhere from half a minute to a few minutes. When it finishes, the status becomes **Success** and the time appears next to it.

To back up all robots at once, use the **"Back up all now"** button at the top of the page.

Tip: On first installation, take a manual backup once with "Back up all now" and check the result on the **Backups** page. If everything is fine, you can set the schedule and forget about it.

4.6 Check the result

Go to **Backups** in the left menu. On the **History** tab you see the list of the backups you have made: time, brand, robot name, result, size and file count, duration, and who started the backup.



The screenshot shows the RAS AutoBackup web interface. The left sidebar contains a menu with 'Backups' selected. The main area displays the 'BACKUPS' section with a 'History' tab active. A table lists the backup history with columns: Time, Brand, Name, IP address, Result, Size - Files, Duration, and Trigger. The table contains three rows of backup data, all marked as 'Success'.

Time	Brand	Name	IP address	Result	Size - Files	Duration	Trigger
10/8/2026, 3:44:38 PM	KUKA	ASRO	192.168.32.10	Success	5.0 MB - 2	55 s	New robot (first backup)
10/8/2026, 3:44:32 PM	KUKA	7MLH-10R1	192.168.32.171	Success	10.4 MB - 2	49 s	New robot (first backup)
10/8/2026, 3:44:12 PM	KUKA	ras	192.168.32.236	Success	3.3 MB - 2	29 s	New robot (first backup)

Figure 2: Backup history: every backup is one row.

On the **Backup files** tab you can browse the actual folders of the backups on the computer. Folders are arranged in the order `Date > Brand > Robot name > Robot name_date_time` (Chapter 7).

4.7 Set up the schedule

Finally, use the **Schedule** page to set how often and at what time backups are taken. The default setting is "every day at 02:00", which suits most workplaces. You also choose the backup folder here (Chapter 8).

Chapter 5

Interface tour

When you open the program, the screen consists of three areas: the information bar at the top, the menu on the left, and the work area on the right. This chapter only introduces the general layout of the pages; the details of each page are in the following chapters.

5.1 Top bar

The top bar is visible on every page and contains the following, from left to right:

- **The RAS logo and the "RAS AutoBackup" title.**
- **Service status.** A green dot and the text "Service running" show that the browser is talking to the background service. If the label turns red and says "No connection to service", the service has stopped or access to the computer has been lost. While this is the case, the message "Connection to the service lost. Reconnecting..." appears at the top of the screen and disappears by itself when the connection returns. If a backup is running, the label changes to "Backing up N robot(s)".
- **Theme button** (moon/sun) switches between the dark and light appearance.
- **Language selector.** Türkçe, English and Deutsch.
- **License label.** It shows the status, such as "Trial: 30 days", "Licensed" or "License required". If you click it, the License page opens.

5.2 Left menu

The menu is divided into two groups:

Group	Page	What is it used for?
Backup	Robots	The robot list, adding robots, scanning, manual backup and restore
Backup	Backups	Backup history, and browsing, downloading and deleting backup files
Backup	Schedule	Automatic backup frequency, backup folder, retention period
System	Settings	Web access, scanning behavior, brand settings
System	Logs	The program's operation log
System	License	License status and key entry
System	About	Version and system information

The small number next to the Robots menu item shows the number of robots in the list.

5.3 Warning banners

In some situations a colored warning banner appears at the top of the page:

- **Yellow ABB banner:** "WARNING: ABB services are not running — ABB robots will NOT work (scan, connect, backup)." It appears if there are ABB robots in your list and one of the two ABB services has stopped. The solution is explained in Chapter 10.1 and Chapter 13.
- **Red connection banner:** It appears when the connection to the service is lost.

Chapter 6

Robots page

The Robots page is the main screen of the program; you do most of your work here.

6.1 Robot list

Each robot is one row in the table. The columns are:

Column	Meaning
Brand	ABB, KUKA, KUKA-IIQ, FANUC or YASKAWA; each brand has its own colored label
Name	The robot's name. The dot to the left of the name shows the robot's network status (see below). The ⚡ mark next to the name indicates that the robot was not added manually but was found automatically by a scan
IP address	The robot's network address
Model / Version	The model and software version read from the robot (for example <code>#KR90R2700 PRO C4 FLR · V8.5.7.453</code>). For FANUC robots this information sometimes stays as "-"
Last backup	The result and time of the last backup (see below)
Exclude	If ticked, the robot is not included in scheduled backups
Buttons	▶ Back up now, ✓ Test connection, ↺ Restore, ✎ Edit, ✕ Delete

Status dot

The small dot to the left of the name shows whether the robot is on the network. The program monitors this in two ways: ABB, KUKA and KUKA-IIQ robots announce themselves when they join or leave the network, and in addition the program polls the robots every 30 seconds. A robot that fails to respond in two consecutive polls is considered offline.

- **Green dot:** Online.
- **Red/empty dot:** Offline, or the status is not yet known. If you hold the mouse pointer over the dot, it tells you what the state is and since when.

Labels in the "Last backup" column

Label	Meaning
Success (green) + time	The last backup completed without problems
Failed (red) + time	The last backup could not be taken. Hover over the label to see the reason
Running (blue)	A backup is being taken right now; a ■ cancel button appears next to it
Connected (green)	The robot was reached but no backup has been taken yet

Label	Meaning
Connecting...	The program is trying to connect to the newly added robot
Not reachable · retry in 5 min (red)	The robot could not be reached; the program retries every 5 minutes until it succeeds
Offline (red)	The robot has disappeared from the network; the time of the last backup, if any, appears next to it
Never	No backup has been taken yet

6.2 Adding a robot

You add robots that are not discovered automatically (FANUC, YASKAWA), or ABB/KUKA/KUKA-IIQ robots that could not be discovered automatically, by hand:

1. Click the **" + Add robot "** button.
2. Choose the brand from the **Brand** list.
3. In the **Name** field, type a name by which you will recognize the robot. If you leave it empty, the program reads and uses the robot's own name. If it cannot read it, it generates a name from the brand and IP address.
4. In the **IP address** field, type the robot's address (for example `192.168.0.10`). A host name can also be entered.
5. If needed, enter a **user name** and **password** (see below).
6. Click **Save**.

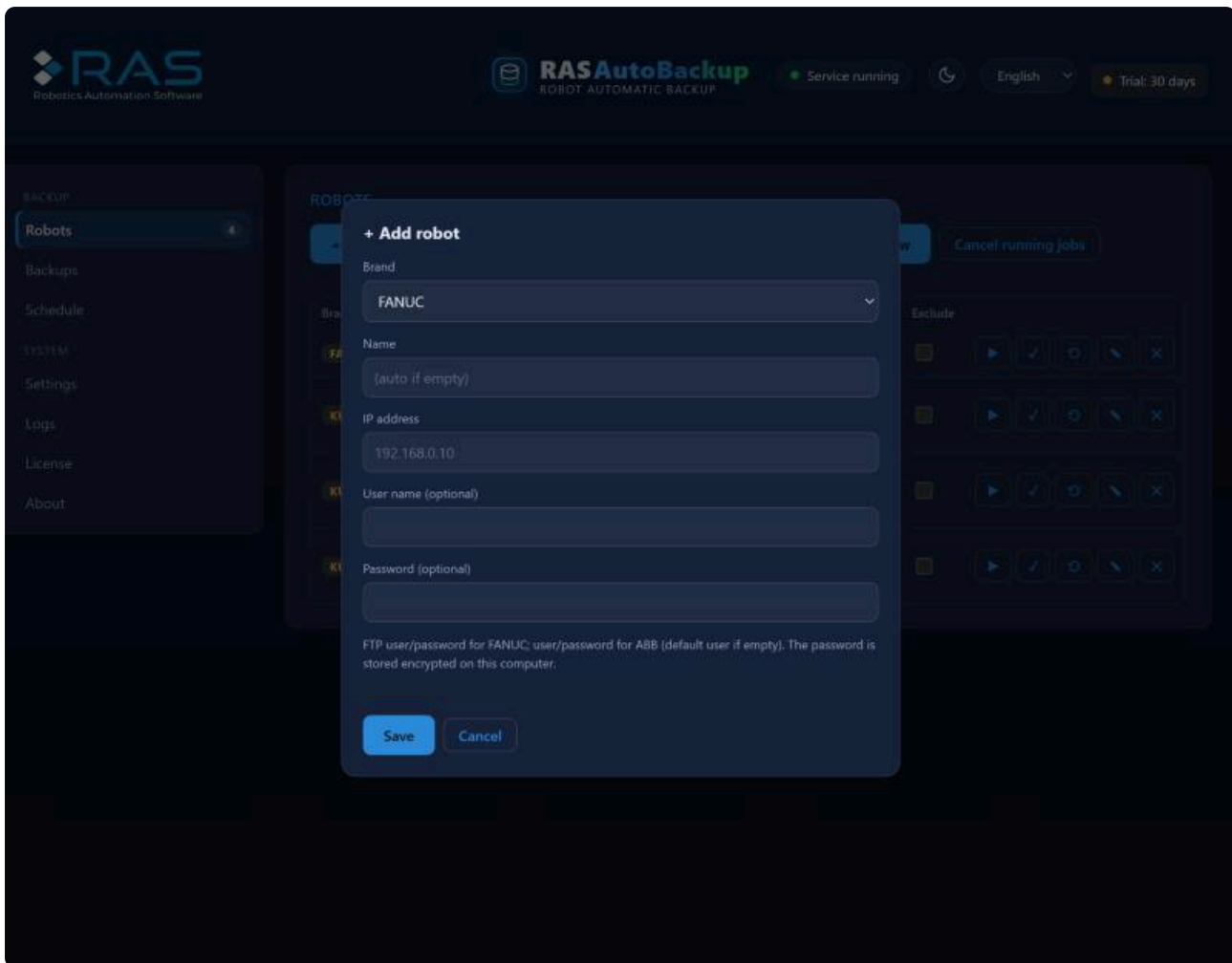


Figure 3: The Add robot window.

As soon as the robot is saved, the program tries to connect to it. If it connects, the model and version information is written into the row. If it cannot connect, the row shows "Not reachable · retry in 5 min" and the program retries every 5 minutes until it succeeds; even if you added the robot without plugging in the network cable, it completes by itself later.

When are a user name and password needed?

Brand	User name / password
ABB	Enter them if user authorization is enabled on the controller. If left empty, "Default User" is used
KUKA	Not needed
KUKA-IIQ	The controller's user name and password. If left empty, the controller's factory-default account is used. If you changed the password on the controller, enter it here
FANUC	The robot's FTP user name and password. If empty, the program tries anonymous login by default
YASKAWA	Not needed

The password you enter is stored **encrypted** on this computer and is never shown on screen again. If the password field is left empty while editing, the existing password is kept; to change it, type a new one.

6.3 Editing, testing the connection, deleting and excluding a robot

-  **Edit:** Changes the name, IP address and credentials. The brand cannot be changed afterwards; if you chose the wrong brand, delete the robot and add it again. When you change the IP address, the program immediately tries to connect to the new address.
-  **Test connection:** Immediately checks whether the robot can be reached and writes the result at the top of the page. For example, "ASRO: connection OK (KR90R2700 PRO, version V8.5.7.453)." It is handy for making sure before taking a backup, or for verifying the settings of a new robot.
-  **Delete:** Removes the robot **from the list**. The backups you have taken are not deleted. A confirmation is requested before deleting.
- **Exclude box:** Ticked robots do not take part in scheduled backups, but you can still take a backup manually with ►. It is ideal for robots that are in maintenance or temporarily switched off.

6.4 Scanning the network

Instead of adding robots one by one, you can scan the network. There are two methods:

Auto-discover (ABB/KUKA)

The "**Auto-discover (ABB/KUKA)**" button finds the ABB, KUKA and KUKA-IIQ (iiQKA.OS2) controllers on the network using their own discovery methods. You do not need to know any IPs. Every robot found is added to the list; a robot that is already in the list is not added a second time. The result is written at the top of the page in the form "Scan finished: 3 robot(s) found, 1 newly added."

Scan IP range

FANUC and YASKAWA have no network discovery, so the **IP range** scan is used for these robots; it also works for ABB, KUKA and KUKA-IIQ.

1. Click the "**Scan IP range**" button; the scan panel opens.
2. In the **Start IP** and **End IP** fields, type the range to be scanned (for example 192.168.0.1 – 192.168.0.254).
3. Tick the **brands** to look for. Turning off the ones you do not need speeds up the scan.
4. Click the "**Start scan**" button. A progress bar and the number of robots found are shown. To abort, click **Cancel**.

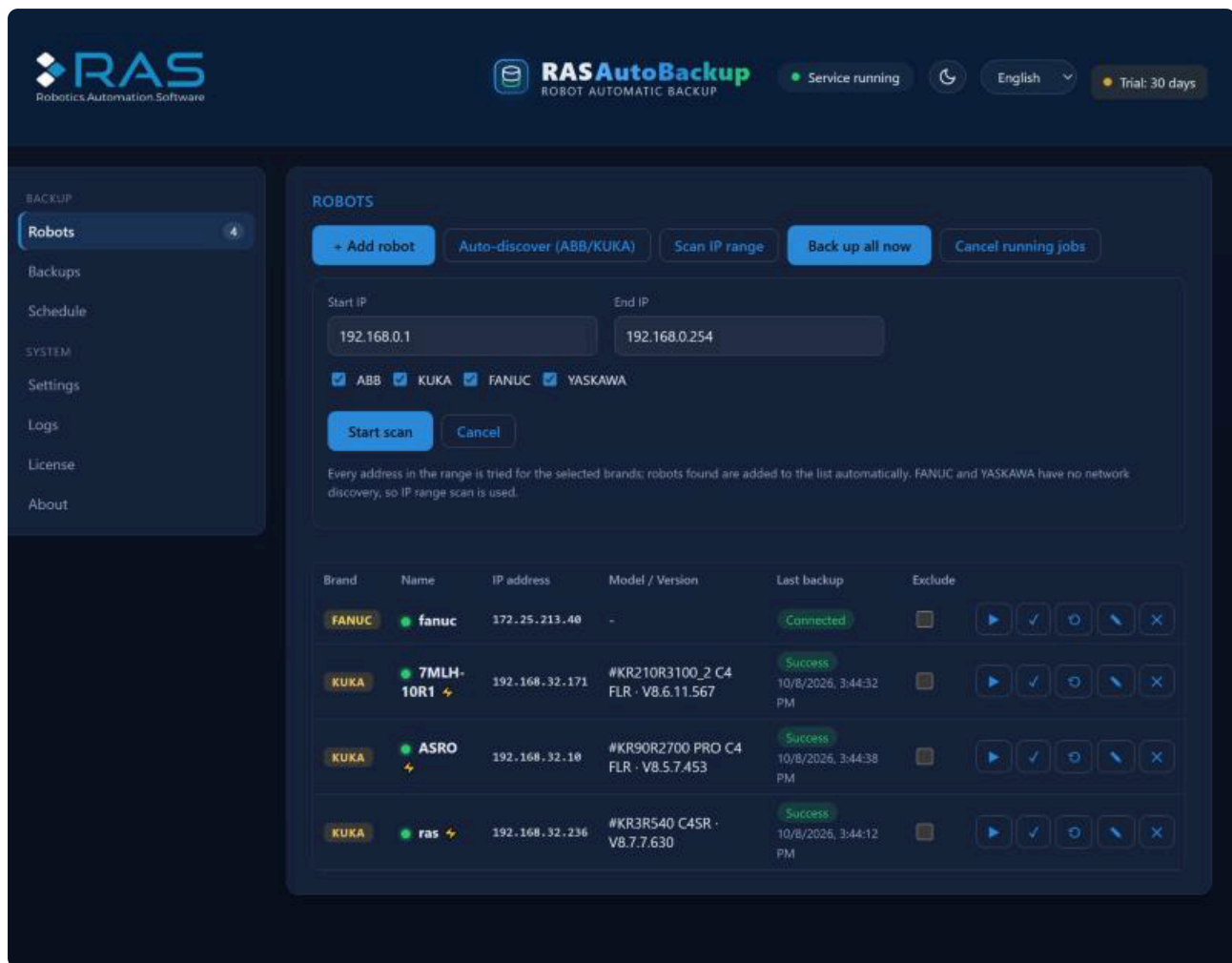


Figure 4: The IP range scan panel.

The program tries to connect to every address in the range using the protocols of the selected brands; the addresses where a robot is found are added to the list automatically. Large ranges (for example 1000 addresses) can take a few minutes.

Tip: Keep the scan as narrow as possible. If your robots' IPs are between 10.0.5.10 and 10.0.5.40, scan only that range and tick only the relevant brand.

6.5 Automatic discovery and the first backup

The program also watches the network without your doing anything. You manage this behavior in the **Scanning** section of the Settings page (Chapter 9.2):

- **Discover the network at start and before each scheduled backup (ABB/KUKA):** The network is scanned when the service starts and right before each automatic backup, so new robots are included in the backup.
- **Add new robots instantly when they join the network:** When ABB, KUKA and KUKA-IIQ robots connect to the network, the program is notified immediately and adds the robot to the list (no waiting). When a robot leaves the network, its status also becomes offline.

- **Background auto-discovery interval (min, 0 = off):** The program quietly rescans every number of minutes you set (15 by default).
- **Back up robots found by scan right away if they have no successful backup yet:** If a newly found robot has no successful backup, the program takes one immediately instead of waiting for the next nightly backup. If the first attempt fails, it tries again after 30 minutes. In the history, the "Trigger" column of these backups reads "**New robot (first backup)**".

Note: The fast first backup is only for robots **found automatically**. For robots you add manually, the program does not take the first backup by itself; it waits for the schedule, or you start it with ►.

6.6 Taking and canceling backups

- **► (row button):** Starts the backup of that robot immediately.
- **Back up all now:** Queues all robots in the list that are not ticked as "Exclude". At most as many robots as the **Parallel backups** setting on the Schedule page run at the same time (4 by default); the others wait their turn.
- **■ (on a running row) and "Cancel running jobs":** Stops the running backup or all running ones. A canceled backup is recorded as "Failed" with the reason "Kullanıcı tarafından iptal edildi" (canceled by the user), and no partial files are left behind.

If a backup is already in progress for the same robot, a second one is not started ("A backup for this robot is already running.").

6.7 Restore

The 🔄 button in the row is for restoring a backup to the robot. This operation is very important and demands care; it is explained in detail in a separate chapter (Chapter 11).

Note: Restoring to KUKA iiQKA.OS2 (KUKA-IIQ) robots is not supported by the program in this version. Load the backup file onto the robot with iiQWorks Cockpit.

Chapter 7

Backups page

This page consists of two tabs: **History** and **Backup files**.

7.1 History

The History tab lists, in chronological order, every backup and restore operation the program has performed.

Column	Meaning
Time	The moment the operation finished
Brand, Name, IP address	Which robot
Result	Success or Failed. If it failed, hover over it to see the reason for the error
Size · Files	The total size of the backup and the number of files in it
Duration	How many seconds the operation took
Trigger	Who started the operation: Manual (all) , Manual , Scheduled , New robot (first backup) or Restore

The "**Clear history**" button deletes this list; it **does not touch the backup files**.

7.2 Backup files

This tab lets you browse the folder structure of the backups on disk; you can look inside a backup without going to Windows Explorer. In the path bar (breadcrumb) at the top you see where you are, and you go back by clicking a parent folder.

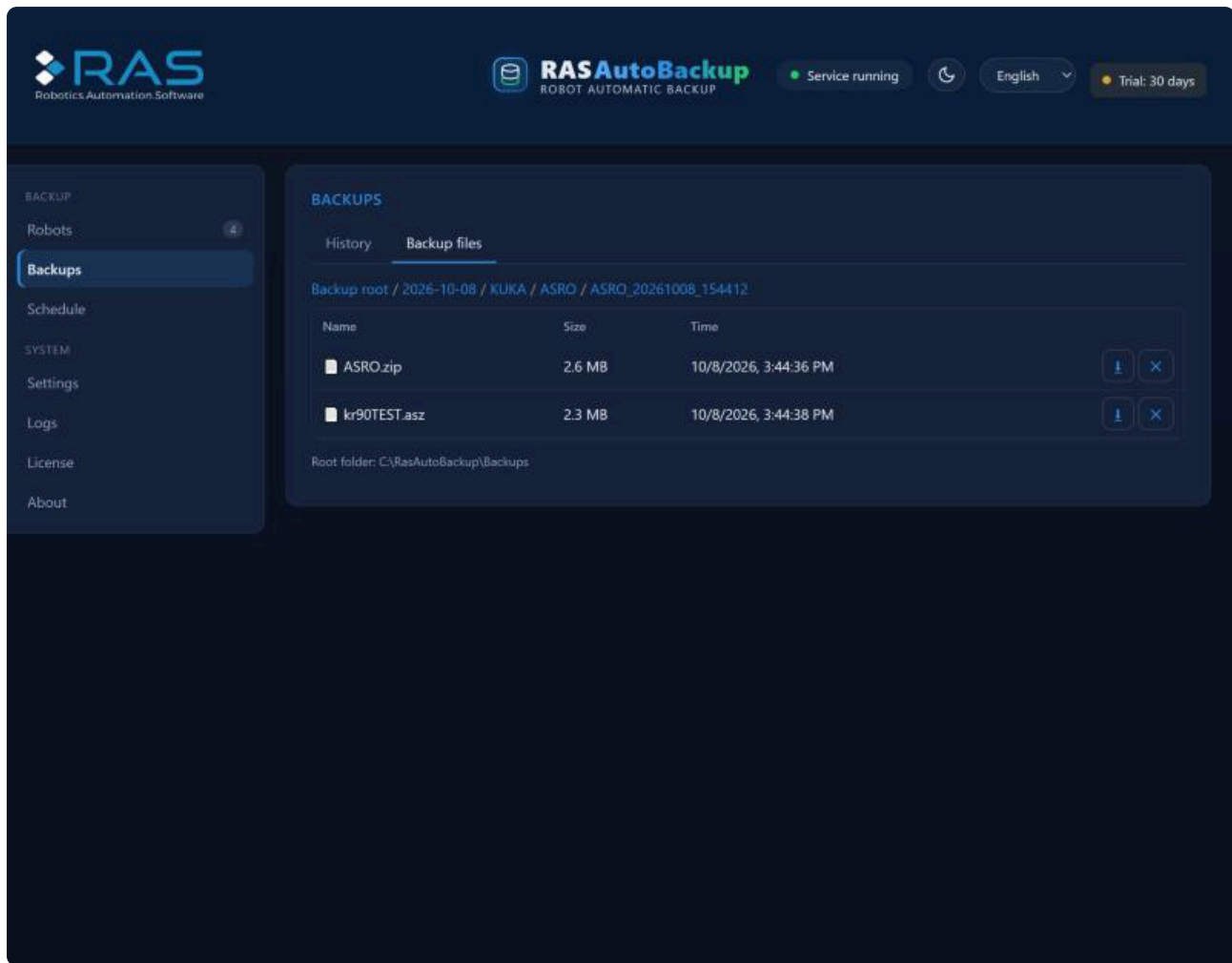


Figure 5: Backup files: date > brand > robot > backup folder and the files inside it.

The buttons next to folders and files:

- **↓ Download:** Downloads the file directly. If you click it on a folder, it downloads the folder as a **ZIP**; this is useful for moving a backup to another computer.
- **↺ Restore:** Appears next to a **backup folder** (the folder with the robot name and timestamp); it is used to restore that backup to the robot.
- **✕ Delete:** Deletes the file or folder **permanently**. A confirmation is asked and it cannot be undone.

At the bottom of the page, the root folder of the backups is shown (by default `C:\RasAutoBackup\Backups`).

7.3 Folder layout

Backups are stored in the following layout:

```

<Backup folder>
├── 2026-10-08                                ← the day the backup was taken
│   ├── ABB
│   │   ├── System1                            ← the robot's name
│   │   │   ├── System1_20261008_143424        ← robot name + date_time
│   │   │   │   └── (backup files)
│   │   ├── KUKA
│   │   │   ├── ASRO
│   │   │   │   ├── ASRO_20261008_154438
│   │   │   │   │   ├── ASRO.zip
│   │   │   │   │   └── kr90TEST.asz
│   │   ├── KUKA-IIQ
│   │   │   ├── RAS
│   │   │   │   ├── RAS_20261009_150748
│   │   │   │   │   ├── (the controller's backup file)
│   │   │   │   │   └── (the same name) .info.txt
│   │   ├── FANUC
│   │   └── YASKAWA

```

The benefit of this layout is that to find a robot's backup you first pick the day, then the brand, then the robot's name. Inside a backup there are **no extra nested folders**; the files are directly inside the timestamped folder. Folder names do not contain the IP address, only the robot's name.

Note: If the same robot is backed up twice in the same second (very rare), `_2` is appended to the end of the second folder; the first one is not overwritten.

7.4 Retention period

To keep the disk from filling up, the program automatically deletes old backups. The **Retention (days)** field on the **Schedule** page determines this (30 by default). After each backup round, **date folders** older than this period (for example `2026-09-01`, older than 30 days) are deleted completely. If you type `0`, nothing is deleted.

Caution: Deletion works on a **date folder** basis and cannot be undone. If you have a backup you need to keep for a long time, **download it as a ZIP** and put it somewhere else (a network drive, an external disk), or keep the retention period long enough.

Chapter 8

Schedule

The Schedule page determines when backups are taken automatically and where they are saved.

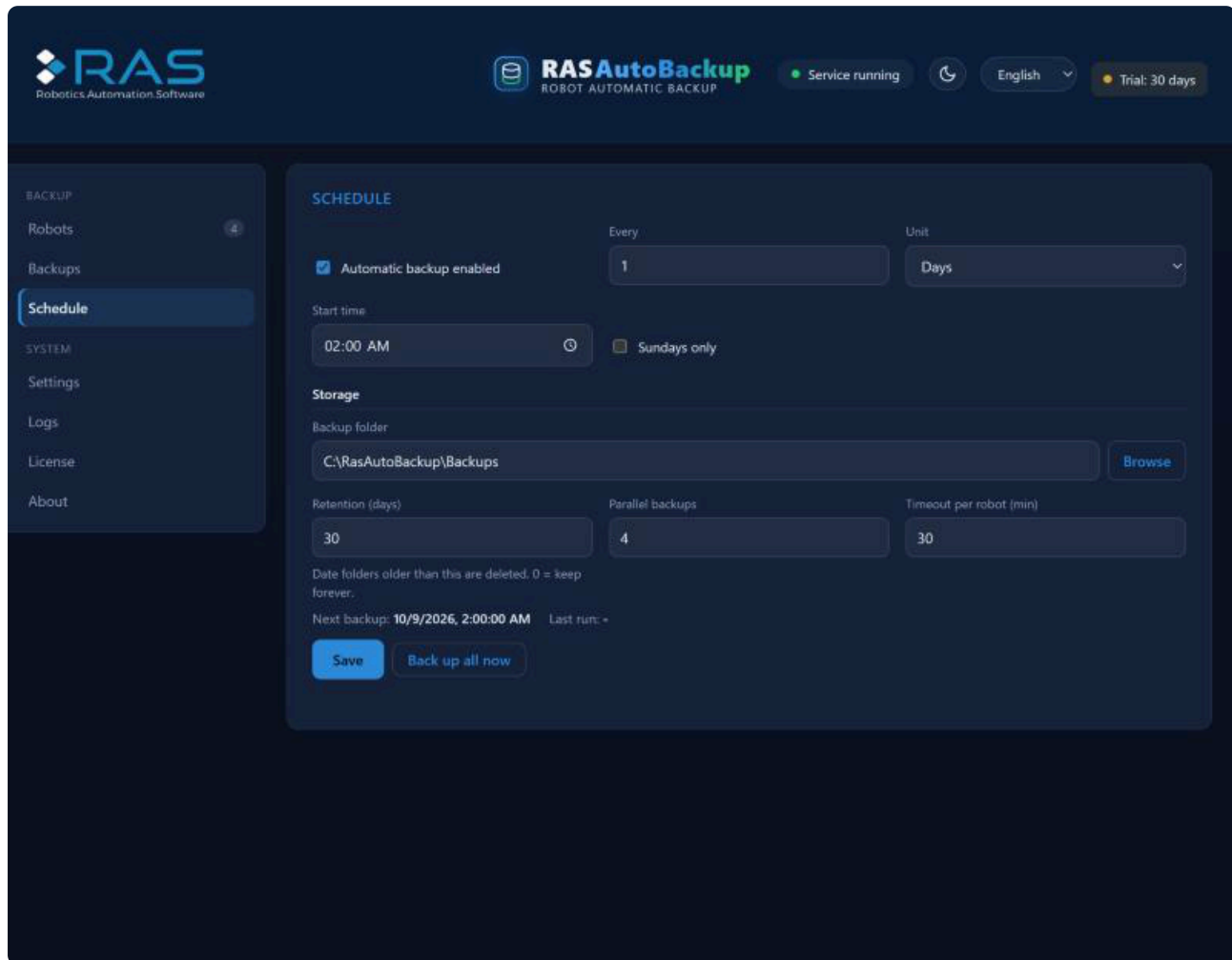


Figure 6: The Schedule page.

8.1 Automatic backup

Field	What it does
Automatic backup enabled	If off, the program takes no backups on its own (manual backups are still possible)
Every ... Unit	Sets the backup frequency: "Every 1 Days", "Every 6 Hours", "Every 2 Weeks", "Every 1 Months", "Every 1 Years" and so on. The unit is chosen from Hours, Days, Weeks, Months or Years
Start time	For day, week, month and year periods, the time at which the backup starts (02:00 by default). Not used for the hour period
Sundays only	If ticked, the backup is postponed to the next Sunday , whatever the calculated day is

A few examples

What you want	Setting
Every night at 02:00	Every 1 Days , start time 02:00
Every 4 hours	Every 4 Hours
Once a week, Sunday morning at 03:30	Every 1 Weeks , start time 03:30 , "Sundays only" ticked
Once a month	Every 1 Months , start time the hour you want
No production on weekends, only Sundays	Every 1 Days + "Sundays only"

Below, the **Next backup** and **Last run** fields show when the next backup will start and when it last ran. When you save the setting, "Next backup" is recalculated according to the new setting.

Note: In the hour period (for example every 4 hours), the next backup is calculated from **the moment the previous backup started**. The first time you run it, the next 02:00 is awaited.

8.2 Storage

Field	What it does
Backup folder	The root folder the backups are written to. It must be a full path (for example <code>D:\Backup</code>). You can type it or choose it with Browse
Retention (days)	Date folders older than this many days are deleted; 0 = delete nothing
Parallel backups	How many robots are backed up at the same time (4 by default). Reduce it if the network or disk is slow
Timeout per robot (min)	If a robot's backup exceeds this time, it is canceled and counted as failed with "Zaman aşımı" (timeout) (30 by default)

Folder picker

The **Browse** button opens a window that shows the drives and folders on the computer. Click a folder to enter it, and use the `..` row to go up one level. If you type a name in the box below and click **Create folder**, a new folder is created. When you are in the right folder, click **"Select this folder"**.

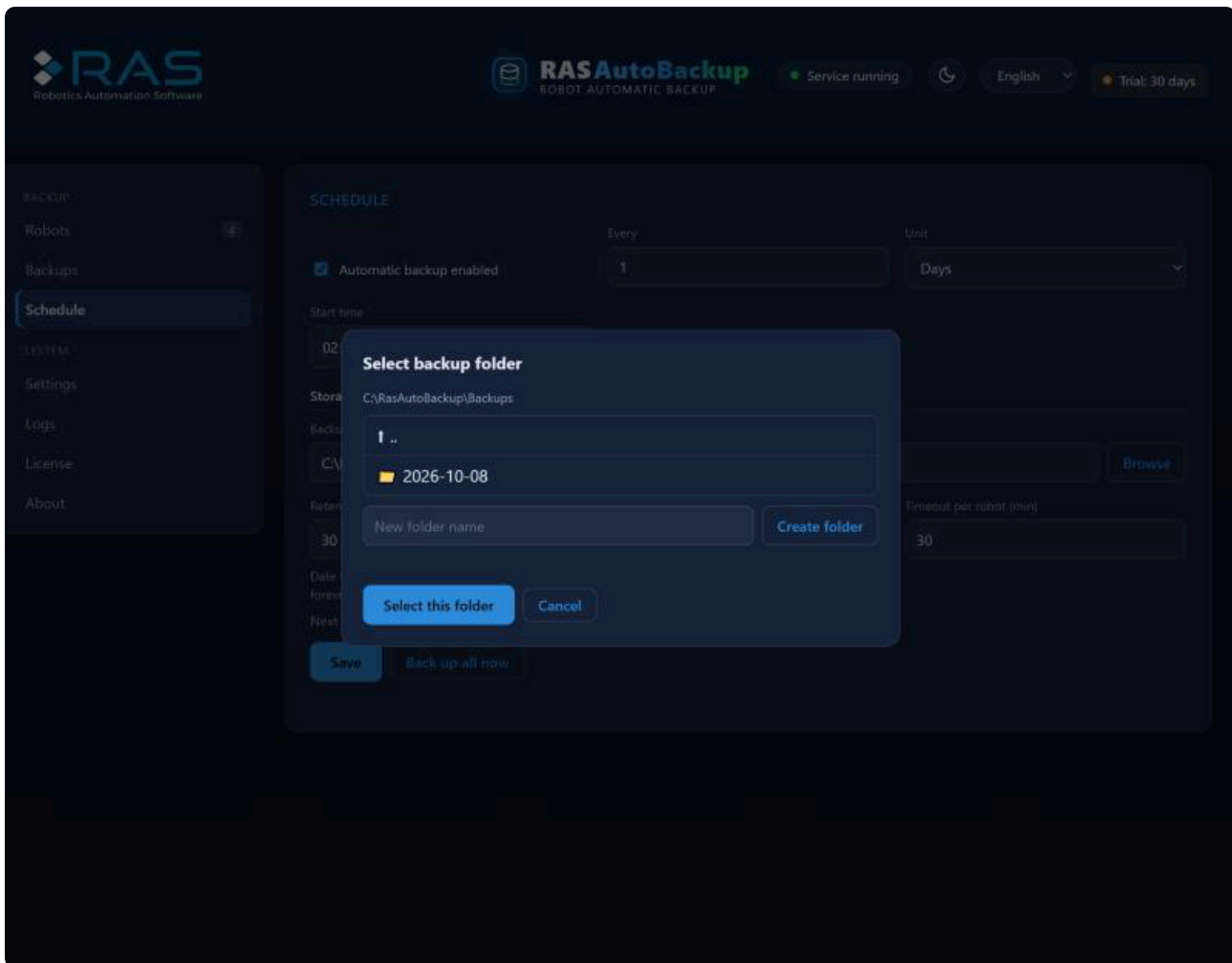


Figure 7: The backup folder picker.

Caution: Because the program runs as a Windows service, **choosing a network share (\\server\share) or a mapped drive letter (for example Z:) as the backup folder often does not work:** the service cannot see the network drives you see when you log in, and it has no permission to write to the network share. It is safer to take the backups onto the computer's own disk and then copy them to a network drive, or to change the account the service runs under, in the Windows service settings, to one that has access to the network share.

Save and "Back up all now"

Changes take effect when you click **Save**; if you go to another page without clicking it, they are lost. The **"Back up all now"** button does the same job as the one on the Robots page: it starts the backup of all robots without waiting for the schedule.

Chapter 9

Settings

The Settings page determines how the program behaves. In most installations you do not need to change anything; but reading this chapter helps you understand what causes what.

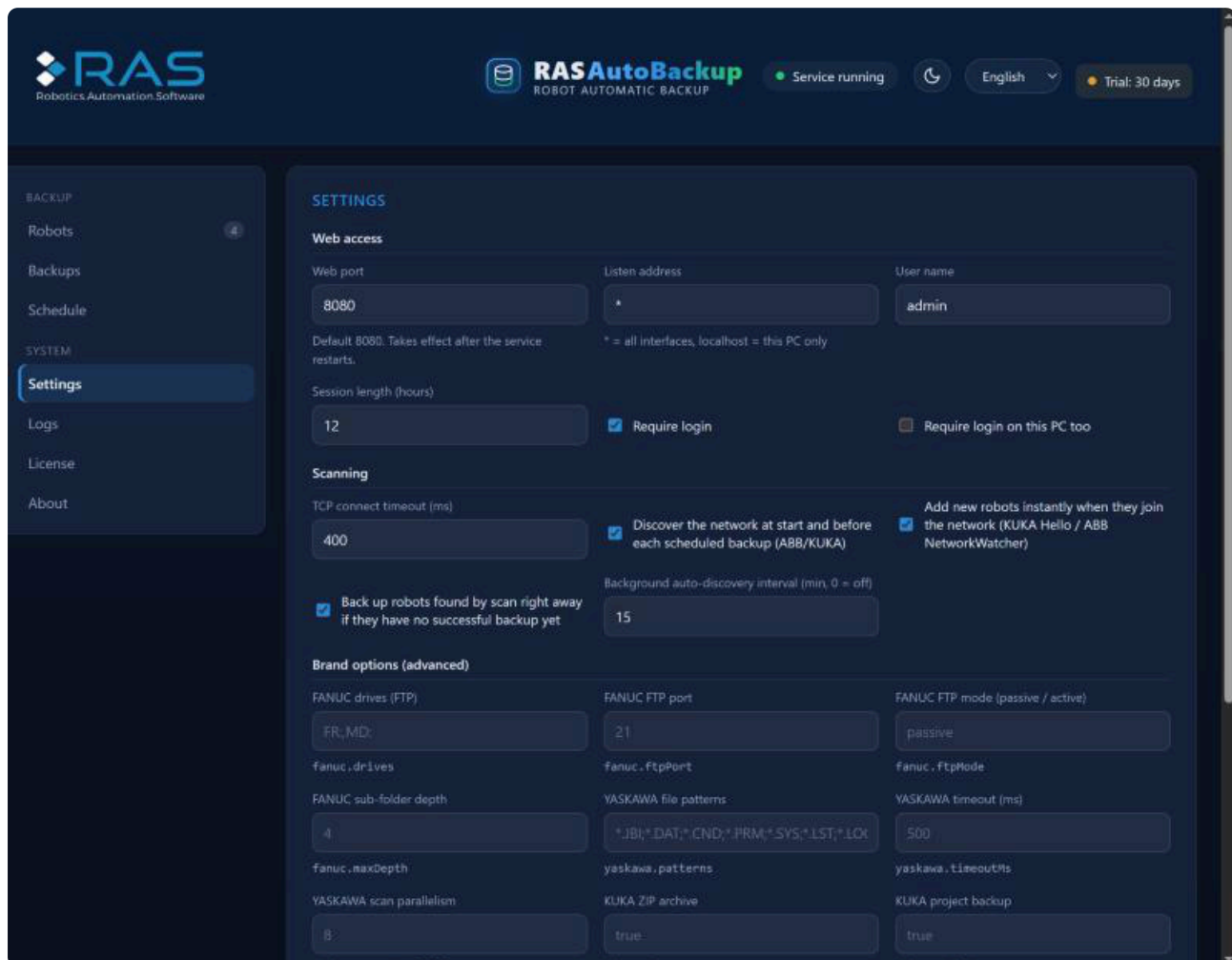


Figure 8: The Settings page: web access, scanning and brand options.

9.1 Web access

Setting	Meaning
Web port	The port on which the interface is served (default 8080). A change takes effect when the service restarts
Listen address	= access from all network adapters on the computer; <code>localhost</code> = from this computer only; or a specific IP. If you want access from other computers, leave it as
User name	The user name for login (default <code>admin</code>). The password is set at first login

Setting	Meaning
Session length (hours)	How long the session stays open after logging in (default 12)
Require login	If you turn it off, login is requested from nowhere. Not recommended for security reasons
Require login on this PC too	While off, no password is asked when logging in from the computer the program is installed on; if you turn it on, it is asked here too

9.2 Scanning

Setting	Meaning
TCP connect timeout (ms)	How long to wait when connecting to each address during an IP range scan (default 400 ms). Increase it on slow networks; if your network is fast, lowering it speeds up the scan
Discover the network at start and before each scheduled backup (ABB/KUKA)	Finds new robots before backups start
Add new robots instantly when they join the network	Adds ABB, KUKA and KUKA-IIQ robots to the list the moment they join the network
Back up robots found by scan right away if they have no successful backup yet	Takes the first backup of new robots without waiting
Background auto-discovery interval (min, 0 = off)	Quiet scanning at set intervals (default 15 min)

9.3 Brand options (advanced)

The boxes in this section appear **light gray**, because the value in the box is the **default value** and is used if you type nothing. To change a setting, type the new value in the box and click **Save**; to return to the default, empty the box. Under each box, the setting's internal name is written in small letters (for example `fanuc.drives`); giving this name when asking for support makes our work easier.

Setting	Default	What it is for
FANUC drives (FTP) <code>fanuc.drives</code>	FR:,MD:	Which of the robot's drives are backed up. <code>FR:</code> is the robot's flash memory and <code>MD:</code> is the memory device; they are separated by commas
FANUC FTP port <code>fanuc.ftpPort</code>	21	The robot's FTP port. It is 21 unless it has been changed
FANUC FTP mode (passive / active) <code>fanuc.ftpMode</code>	passive	<code>passive</code> or <code>active</code> . If you have connection problems, try the other one

Setting	Default	What it is for
FANUC sub-folder depth fanuc.maxDepth	4	How many folder levels deep to go within the drives
YASKAWA file patterns yaskawa.patterns	.JBI; .DAT; .CND; .PRM; .SYS; .LST;*.*LOG	Which files are taken from the robot; file patterns separated by semicolons
YASKAWA timeout (ms) yaskawa.timeoutMs	500	How long to wait in a single communication with the robot
YASKAWA scan parallelism yaskawa.scanParallel	8	How many addresses are tried at the same time during an IP range scan
KUKA ZIP archive kuka.zip	true	Whether to take the full system archive (ZIP)
KUKA project backup kuka.project	true	Whether to back up the WorkVisual project file (.asz)
KUKA scan time (s) kuka.scanSeconds	8	How long to listen for KUKA robots during automatic scanning
KUKA parallel backups kuka.parallel	2	The maximum number of KUKA backups at the same time (a separate limit from the general parallel count)
KUKA-IIQ user name kdm.user	(empty)	User name used to sign in to iiQKA.OS2 controllers. If empty, the controller's factory-default account is used
KUKA-IIQ password kdm.password	(empty)	Password for the user above
KUKA-IIQ instances kdm.instances	(empty)	Which controller instances are backed up (comma-separated). Empty means all instances
KUKA-IIQ include KIP kdm.includeKip	true	Include the KIP part in the backup
KUKA-IIQ include KOP kdm.includeKop	true	Include the KOP part in the backup
KUKA-IIQ include logs kdm.includeLogs	false	Include the controller's log files (makes the backup larger)
KUKA-IIQ include system software kdm.includeSystemSoftware	false	Include the system software (makes the backup much larger)
KUKA-IIQ delete from controller kdm.deleteRemote	true	After the backup has been downloaded successfully, delete the temporary copy from the controller
KUKA-IIQ parallel backups kuka-iiq.parallel	2	The maximum number of KUKA-IIQ backups at the same time

Setting	Default	What it is for
ABB backup timeout (min) <code>abb.timeoutMinutes</code>	30	The longest time to wait for one ABB backup

Tip: At least one of the **KUKA ZIP archive** and **KUKA project backup** options must be on. When both are on, the program takes the first as a full system backup and the second as a WorkVisual project; a project backup (`.asz`) is required for **restoring** to KUKA (Chapter 11).

9.4 Saving and restarting the service

The **Save** button applies the settings immediately; only changes to the **web port** and the **listen address** require the service to restart. If you changed the port, the program asks "Port changed to 9090. Restart the service now?". If you say yes, the service restarts and the page refreshes itself at the new address within a few seconds.

The **"Restart service"** button restarts the service manually. If a backup is running it is interrupted; for this reason the program asks for confirmation first ("Restart the service? Running backups will be interrupted.").

Figure 9: The lower part of the Settings page: brand options and robot modules.

9.5 Robot modules

At the bottom of the page you see the module status of each brand (ABB, KUKA, KUKA-IIQ, FANUC, YASKAWA). Normally all of them say **"ready"**. If it says **"module missing"** or **"license required"** for a brand, the robots of that brand cannot be backed up: in the first case the package was installed incompletely (reinstall the program), and in the second the license period has expired (Chapter 12).

Chapter 10

Brand guides

All four brands are managed from the same screen, but things work differently inside the robots: each brand has its own backup method, its own prerequisites and its own places where things can go wrong. In this chapter we follow the same order for every brand: **what is backed up, how the robot is found, what is needed, which settings have an effect, what the result looks like, restoring, and common problems.**

10.1 ABB

What is backed up?

ABB's own backup function is used; that is, the result is the same backup you get when you choose *Backup Current System* on the FlexPendant: RAPID programs and modules, system parameters (EIO, SYS, MOC, PROC, SIO, MMC), the HOME folder and the system's identity information (files such as `system.xml` and `backupinfo.txt`). The backup is saved in ABB's standard structure, so it can also be opened with RobotStudio or the FlexPendant.

The output folder is named after the robot's own **controller name**. If your controller's name is `System1`, the backup is created at this path:

```
C:\RasAutoBackup\Backups\2026-10-08\ABB\System1\System1_20261008_143424\
```

How is the robot found?

ABB robots are **discovered automatically** on the network: the program listens for IRC5 and OmniCore controllers on the network; as soon as a new one appears, it adds it to the list and (if the setting is on) takes its first backup. A robot that disappears becomes "Offline", and when it comes back it shows as "Online" again. Adding robots manually is also possible (Chapter 6).

Prerequisites

1. The **ABB PC SDK** must be installed on this computer. The installation package installs it silently for you (Chapter 3). Even so, if you see an error like "ABB component not found" while taking a backup, see the Troubleshooting chapter.
2. Two ABB services must be running: **RobComCtrlServer** and **RobNetScanHost**. If they are not running, the program shows a **yellow warning banner** at the top of the page: ABB robots do not work in this state (no scanning, no connection, no backup). Start the services from the Windows *Services* window (`services.msc`) or install the ABB PC SDK.
3. The computer and the controller must be able to see each other on the network (service port or network connection). If a firewall blocks ABB's communication, the robot will not be visible.
4. If user authorization (UAS) is enabled on the controller, enter a user name and password that is allowed to take backups in the Add robot window. If you leave them empty, "Default User" is used.

ABB-specific setting

Setting	Default	Description
ABB backup timeout (min) <code>abb.timeoutMinutes</code>	30	If a backup does not finish within this time, the operation is stopped and recorded as "Zaman aşımı" (timeout). Increase it for very large systems

The general settings on the Schedule page (frequency, time, retention period, parallel backups) apply to ABB just as they do to all brands.

Restore

It is explained in detail in Chapter 11. In short: the controller must be in **manual mode**; the program uploads the backup to the robot, asks for an **access approval** on the FlexPendant, and after your approval the controller **restarts**.

Common situations with ABB

- **The robot does not appear in the list at all.** Check the ABB services and the network connection; make sure the computer is on the same subnet as the robot. You can also try adding it manually by IP.
- **The backup ends with "Zaman aşımı" (timeout).** The network may be slow or the system very large; increase the timeout.
- **Another party is backing up the robot while a backup is taken.** If another tool (for example RobotStudio) is taking a backup at the same time, the program says "Denetleyicide başka bir yedekleme sürüyor" (another backup is in progress on the controller); try again after a short while.

10.2 KUKA

What is backed up?

Two separate backup types can be taken for KUKA, and both are switched on and off on the **Settings** page:

- **Full system archive (ZIP).** Produced with KUKA's "Archive all" function; it contains the robot's programs, machine data and configuration. In a disaster situation, this is the main source for rebuilding the robot's contents.
- **Project backup (.asz).** This is the WorkVisual project file. **Restoring** to a KUKA robot is done with this file; so if you are thinking of restoring, leave this option on.

The output folder looks like this:

```
...\2026-10-08\KUKA\ASR0\ASR0_20261008_154412\
```

How is the robot found?

KUKA controllers announce themselves on the network (a "Hello" broadcast). The program listens to this broadcast and **discovers the robots automatically**. The listening time is determined by the **KUKA scan time (s)** setting (8 s by default). Robots that do not hear the broadcast can be added manually by IP.

Prerequisites

- KUKA robots must be **KRC4** or **KRC5**. On the KRC5 only the **Windows-based version** is supported; controllers running **iiQKA.OS2** are handled by the separate **KUKA-IIQ** module (Section 10.5).
- The computer and the robot must be on the same network and be able to reach each other.
- No user name or password is needed.
- If another program that shares the robot's connection (for example another backup tool or WorkVisual) is taking an archive at the same time, the backup waits its turn.

KUKA-specific settings

Setting	Default	Description
KUKA ZIP archive <code>kuka.zip</code>	on	The full system archive is taken
KUKA project backup <code>kuka.project</code>	on	The WorkVisual project file (.asz) is taken
KUKA scan time (s) <code>kuka.scanSeconds</code>	8	How long to listen for robots during automatic scanning
KUKA parallel backups <code>kuka.parallel</code>	2	How many KUKA backups can be taken at the same time

If you have many KUKA robots and the network is busy, **reduce** the number of parallel backups; KUKA archives can be large, and many archives at once slow down the robot's controller.

Restore

The program uploads the project file from the backup to the robot's

`C:\KRC\USER\ProjectRoot\AutoRestore` folder. **You complete the step of activating the project yourself from the robot's own screen** (Chapter 11). This is a deliberate safety measure: putting a new project into service on a KUKA should be an operator decision.

Common situations with KUKA

- **The robot does not appear in the list.** Make sure you are on the same network; if the robot is on a different subnet, the broadcast does not pass. Add it manually by IP.
- **The backup takes very long.** Because the archive is produced from the robot's disk, it can take minutes. Rather than canceling the operation, wait; the timeout is determined by the general value on the Schedule page (30 min by default).
- **On restore: "Yedekte proje dosyası (.asz / .wvs) bulunamadı" (no project file (.asz / .wvs) found in the backup).** The *KUKA project backup* option was off when the backup was taken. Turn the option on in Settings and take a new backup.

10.3 FANUC

What is backed up?

On FANUC robots, the backup is taken by copying files through the robot's **FTP server**. By default, two of the robot's drives are backed up:

- **FR:** the robot's flash memory (TP programs, system variables, setting files)

- **MD:** the memory device

Each drive is copied to a subfolder of the same name in the backup folder (**FR** , **MD**). Subfolders are descended into at most as deep as the **sub-folder depth** setting.

```
...\\2026-10-08\\FANUC\\R1\\R1_20261008_020012\\FR\\...
                        \\MD\\...
```

How is the robot added?

There is no network discovery for FANUC robots; you add the robot **manually** or with an **IP range scan** (Chapter 6). The IP range scan finds FANUC controllers whose FTP port is open.

Prerequisites

1. The **FTP server** must be enabled on the robot (the FTP service must be turned on in the robot's network settings).
2. If an FTP user is defined on the robot, the user name and password must be entered in the Add robot window. If no credentials are defined, the program tries anonymous login.
3. FTP port 21 (or the robot's own port, if you changed it) must be open between the computer and the robot.

FANUC-specific settings

Setting	Default	Description
FANUC drives (FTP) <code>fanuc.drives</code>	FR: ,MD :	Which drives will be backed up (separated by commas). If your robot uses another drive, add it
FANUC FTP port <code>fanuc.ftpPort</code>	21	The robot's FTP port
FANUC FTP mode (passive / active) <code>fanuc.ftpMode</code>	passive	If a connection cannot be established, try <code>active</code>
FANUC sub-folder depth <code>fanuc.maxDepth</code>	4	How many folder levels to descend within a drive

Restore

The FR: and MD: files from the backup are **written** to the robot over FTP; **files with the same name are overwritten**. The robot may refuse write-protected files or a running program; the number of refused files is shown in the result. The details are in Chapter 11.

Common situations with FANUC

- **"FTP ile hiç dosya alınamadı" (no files could be retrieved over FTP).** The user name/password may be wrong, FTP may be off, or the wrong mode may be selected. First verify the connection with Test connection (✓), then change the FTP mode.
- **The backup seems incomplete.** The drive your robot uses is not in the drive list, or the folder depth is insufficient.

- **The robot does not respond, the connection drops.** FANUC controllers allow only a limited number of FTP connections at the same time; if another program that connects to the robot over FTP is open, close it.

10.4 YASKAWA

What is backed up?

From YASKAWA controllers (such as YRC1000, DX200, FS100), job files and setting files are retrieved using the **HSE (High Speed Ethernet)** protocol. Which files are retrieved is determined by **file patterns**; by default the following are taken:

`.JBI` (*jobs*),

- `.DAT` (data), `.CND` (*condition files*),
- `.PRM` (parameters), `.SYS` (*system*),
- `.LST` (lists), `*.LOG` (logs)

The files are saved in a single folder, in a flat structure:

```
...\2026-10-08\YASKAWA\YRC1000-01\YRC1000-01_20261008_020045\
```

How is the robot added?

There is no network discovery for YASKAWA robots either; they are added **manually** or with an **IP range scan**. For this brand, the number of addresses tried at the same time during a scan is determined by **YASKAWA scan parallelism**.

Prerequisites

- The **HSE (Ethernet server) function** must be enabled on the controller.
- No user name or password is needed; however, the robot must be in a mode that allows remote reading.
- The firewall on the computer must not block UDP communication with the robot.

YASKAWA-specific settings

Setting	Default	Description
YASKAWA file patterns <code>yaskawa.patterns</code>	<code>.JBI; .DAT; .CND; .PRM; .SYS; .LST;*.LOG</code>	The files to retrieve from the robot; separated by semicolons
YASKAWA timeout (ms) <code>yaskawa.timeoutMs</code>	500	How long to wait for one communication with the robot. Increase it on slow networks
YASKAWA scan parallelism <code>yaskawa.scanParallel</code>	8	The number of addresses tried at the same time during an IP range scan

Restore

The files from the backup are **written** to the robot over HSE; **files with the same name are overwritten**. The robot must be in a suitable mode (for example TEACH, or open to remote writing). The details are in Chapter 11.

Common situations with YASKAWA

- **The scan cannot find the robot.** Raise the timeout to 1000 ms; network switches sometimes delay the first packet.
- **Some files are missing from the backup.** That extension is not in the file patterns; add the pattern and repeat the backup.
- **The backup is very quick and contains only a few files.** This is normal; YASKAWA backups are small.

10.5 KUKA iiQKA.OS2 (KUKA-IIQ)

What is backed up?

An iiQKA.OS2 controller can hold one or more **instances** (for example a `KSS_9.3.3` controller instance). For each instance, the program asks the controller to create a backup, downloads the backup file to the computer and, once the download has been verified, deletes the temporary copy from the controller (this can be switched off). By default the KIP and KOP parts are included; logs and system software are left out because they make the backup much larger.

The output folder looks like this:

```
...\2026-10-09\KUKA-IIQ\RAS\RAS_20261009_150748\
```

The backup files are written **directly into the timestamped folder**; no sub-folder is created for the instance. Next to every backup file the program writes a small `.info.txt` file with the instance name, size and time.

How is the robot found?

iiQKA.OS2 controllers announce themselves on the network (multicast). The program listens to these announcements and **discovers the robots automatically**; a newly appearing controller is added to the list a short time after it joins. In addition, the program tries the well-known addresses and the subnets of the computer when you click the auto-discover button. Controllers that are not found can be added manually by IP or found with an IP range scan.

Prerequisites

- The controller must be running **iiQKA.OS2** and be reachable from the computer on the network (the controller's device-management port, 5018 or 5017, must not be blocked by a firewall).
- A user name and password are normally not required: if you leave them empty, the controller's factory-default account is used. If the password was changed on the controller, enter the user name and password in the robot's **Edit** window, or in the *KUKA-IIQ* settings of Section 9.3.
- If another tool (for example iiQWorks Cockpit) is using the controller exclusively at that moment, the program requests the permission itself and tries again once.

KUKA-IIQ-specific settings

Setting	Default	Description
KUKA-IIQ user name / password <code>kdm.user</code> <code>kdm.password</code>	empty	Credentials for the controller (factory-default account if empty)
KUKA-IIQ instances <code>kdm.instances</code>	empty (all)	Limit the backup to named instances
Include KIP / KOP <code>kdm.includeKip</code> <code>kdm.includeKop</code>	on / on	Which parts of the instance are backed up
Include logs / system software <code>kdm.includeLogs</code> <code>kdm.includeSystemSoftware</code>	off / off	Optional, large parts
Delete from controller <code>kdm.deleteRemote</code>	on	Remove the temporary backup from the controller after download
KUKA-IIQ parallel backups <code>kuka-iiq.parallel</code>	2	How many KUKA-IIQ backups run at the same time

Restore

Restoring to iiQKA.OS2 robots is **not supported by the program in this version**. To restore, load the backup file onto the robot with iiQWorks Cockpit.

Common situations with KUKA-IIQ

- **The robot is found but the test or backup fails with a login error.** The user name or password is wrong. Edit the robot and enter the controller's credentials.
- **Only some instances were backed up.** The backup counts as successful if at least one instance was backed up; the message in the history lists the instances that failed, together with the reason. Take the backup again after fixing the cause.
- **The backup takes a long time or is very large.** Switch off *include logs* and *include system software* unless you need them.
- **The controller's storage fills up.** If *Delete from controller* was switched off, every backup stays on the controller. Switch it on again, or clean up the controller by hand.

Chapter 11

Restore

Restoring means **putting a previously taken backup back onto the robot**. It is the program's most powerful function, but also the one that demands the most care: it changes the robot's current programs and settings. For this reason there are several confirmation steps on screen, and the way it works differs a little for each brand.

Caution: Restoring should only be done by **authorized maintenance personnel** and under **safe conditions**: the robot's work area must be clear, the emergency stop must be accessible, and the line must not be in production during the operation. The restore flows in this manual should always be tried first on a **non-production robot** before being used on real robots.

11.1 Checklist before you start

- Make sure you are restoring to the right robot. The program already accepts only a backup taken from the **same brand**, but it is possible to mix up the backups of two different robots of the same brand.
- The backup to be restored must be **successful**; failed backups do not appear in the list.
- The robot's **mode** must be suitable: manual for ABB, open to remote writing (TEACH) for YASKAWA, and a mode with write permission for FANUC.
- If the robot is not in production and it is possible, also take a **current backup of the robot** before restoring. That way, if the restore does not give the result you wanted, you can return to the previous state.

11.2 Step by step

1. On the **Robots** page, click the  button in the row of the robot you want to restore to. (Alternative: while browsing backup files on the **Backups** page, the  button next to the backup folder.)
2. In the window that opens, the robot's name and address appear in the **Robot** field. From the **Backup** list, select the backup you want to restore; the list runs from the newest backup to the oldest and shows the date/time and the folder name.
3. Read the red warning and the brand-specific explanation (what each brand will do is described below).
4. In the confirmation box, **type the robot's name exactly**. This is the last safety step against clicking the wrong robot; if the name does not match, the **Restore** button does not work.
5. Click **Restore**. The robot row switches to the "Restoring" state and the operation runs in the background; you can follow the progress from the status text under the row and on the **Logs** page.

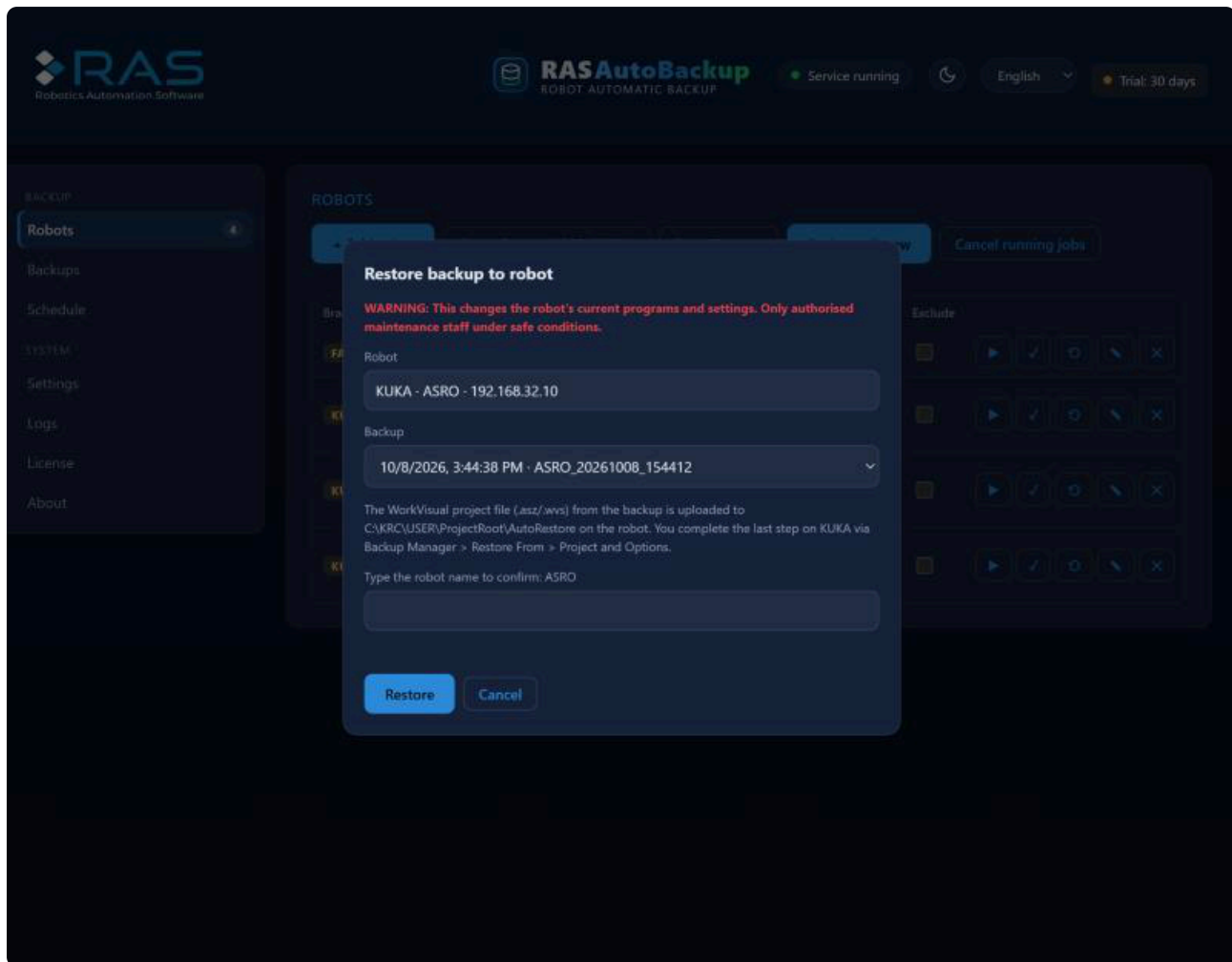


Figure 10: The Restore window. The robot, the backup and the confirmation name are chosen in this window.

11.3 What happens for each brand?

Brand	What the program does	What you need to do
ABB	Uploads the backup to the controller, requests FullAccess approval on the FlexPendant, and starts the restore once approved. The controller restarts	Put the controller in manual mode . Stay at the FlexPendant and approve the access request within 3 minutes . Wait for the restart
KUKA	Uploads the project file (.asz/.wvs) from the backup to the <code>C:\KRC\USER\ProjectRoot\AutoRestore</code> folder on the robot	You put the project into service yourself in KUKA with Backup Manager > Restore From > Project and Options
KUKA-IIQ	Not supported in this version	Load the backup file onto the robot with iiQWorks Cockpit
FANUC	Writes the FR: and MD: files to the robot over FTP; overwrites files with the same name	Make sure the robot is in a suitable mode and FTP write permission is on. Afterwards, restarting the robot with a controlled start is recommended

Brand	What the program does	What you need to do
YASKAWA	Writes the files from the backup (JBI, DAT, CND, PRM...) to the robot over HSE; overwrites files with the same name	Keep the robot in a suitable mode (TEACH, or open to remote writing). Afterwards, check the jobs and parameters on the robot's own screen

Note: On ABB, the program uploads the backup to the robot as a **temporary folder** and, when the operation ends (successful or not), deletes that temporary folder; no leftover files remain on the robot's disk.

11.4 Safety measures

The program is designed to make it hard for you to start a restore by accident:

- You must confirm by typing the robot's name.
- If the backup and the robot are not the **same brand**, the operation is rejected ("This backup belongs to a different brand and cannot be restored to this robot.").
- Only backups inside the program's own backup folder can be selected; folders elsewhere are not accepted.
- If a backup or restore is already in progress for the same robot, the second one does not start.
- On ABB, if the controller is in **Auto** mode, the operation does not start at all ("Denetleyici Auto modda. Manuel moda alip tekrar deneyin" — the controller is in Auto mode; switch to manual mode and try again).

11.5 Canceling and the result

You can cancel a running restore with the ■ button in the row; however, a canceled operation **may be left half-done**: on FANUC and YASKAWA, the files written up to that moment stay on the robot. Rather than canceling, waiting for the operation to finish is often safer.

When the operation finishes, an entry with the "Restore" trigger is added to the **Backups > History** list; the size and file count are written. If some files could not be written on FANUC and YASKAWA, you see a note such as "N dosya yüklenemedi" (N files could not be uploaded) in the entry; which files were rejected is shown on the **Logs** page.

11.6 Good practices

- Do the restore planned, during robot maintenance or a production stop.
- First check on the **Backups** page that the backup really is from the date you want.
- Take a backup **before** important changes; the best restore is the one you never need.
- After a restore, before putting the robot back into production, try the reference points and critical programs **at low speed**.

- Regularly copy the backups themselves to another disk or a network drive; restoring only helps if the backup is still there.

Chapter 12

Logs, License and About

12.1 Logs

The **Logs** page in the left menu shows what the program is doing as a **log**: the service starting, robots found, connection attempts, backups starting and finishing, and errors. It is the first place to look when something does not work the way you expect.

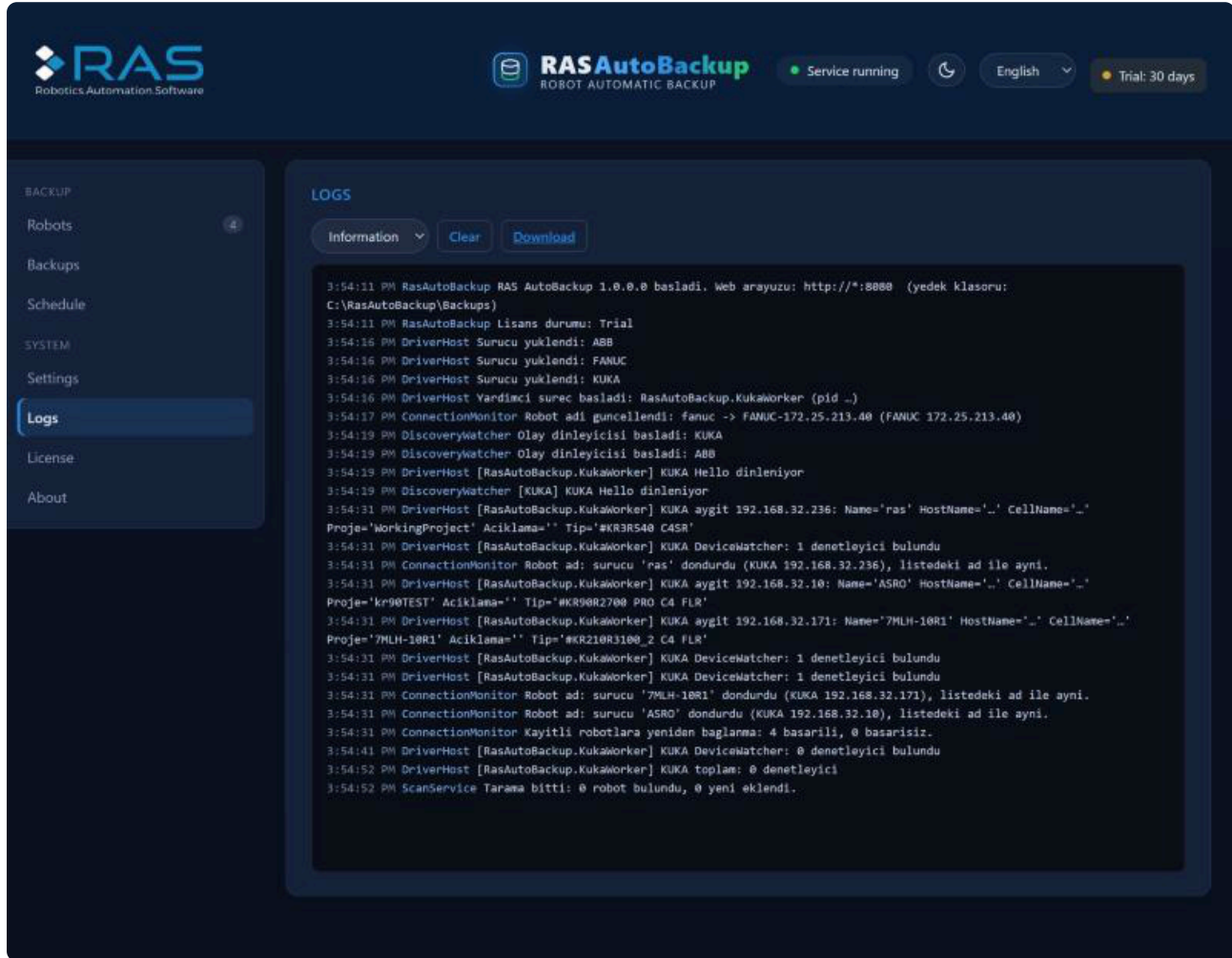


Figure 11: The Logs page.

- The **level** list at the top selects which importance of lines is shown: *Information* (general flow), *Warning* (warnings), *Error* (errors) and *Debug* (detailed record). When troubleshooting, it is easiest to choose *Information* and see the whole flow.
- **Clear** empties the list on screen; it does not delete the records in the file.
- **Download** saves the log file to your computer. When asking for support, sending us this file speeds up the solution.
- **Note:** Log lines are currently written in **Turkish**; the log text does not change even if you change the interface language. In Chapter 13, a table gives the English meanings of the most common messages.

12.2 License

When first installed, the program runs as a **30-day trial** version; all features are available. When the trial ends, backups stop and the badge at the top of the page becomes "License required". Your robots, your settings and your old backups are **not deleted**; as soon as you enter a license, everything continues where it left off.

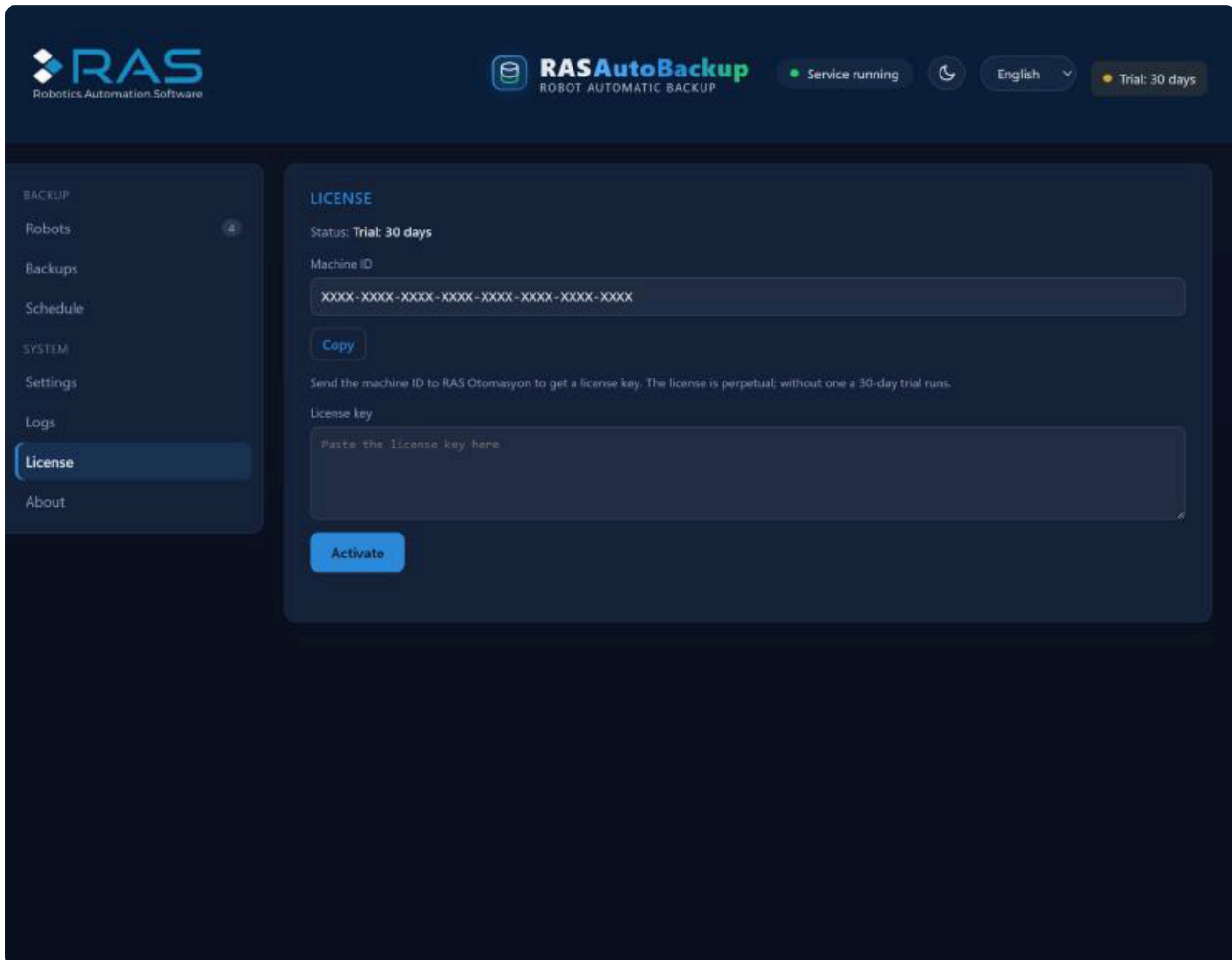


Figure 12: The License page. (The Machine ID is hidden in this manual.)

The license is **perpetual** and tied to **a single computer**. To obtain it:

1. Open the **License** page and copy the **Machine ID** value.
2. Send this ID to RAS Otomasyon; you will be sent a **license key**.
3. Paste the key into the **License key** box and click **Activate**. You will see the message "License activated."

The status badge can take the following values:

Badge	Meaning
Licensed	The license is valid
Trial: N days	The trial is running, N days remain

Badge	Meaning
License required	The trial period has ended or the license is invalid
License belongs to another computer	The key was not generated for this computer. If the computer's network card or hardware has changed, request a new key
System clock was set back	The computer's clock appears to have been set back. Correct the clock

If you change computers, click the **Remove license** button on the old computer and tell us your machine ID together with the new one; a new key will be generated.

12.3 About

The **About** page shows the product version, the manufacturer and short information about the computer it runs on (operating system, computer name). When asking for support, it is enough to give the version number on this page and the machine ID.

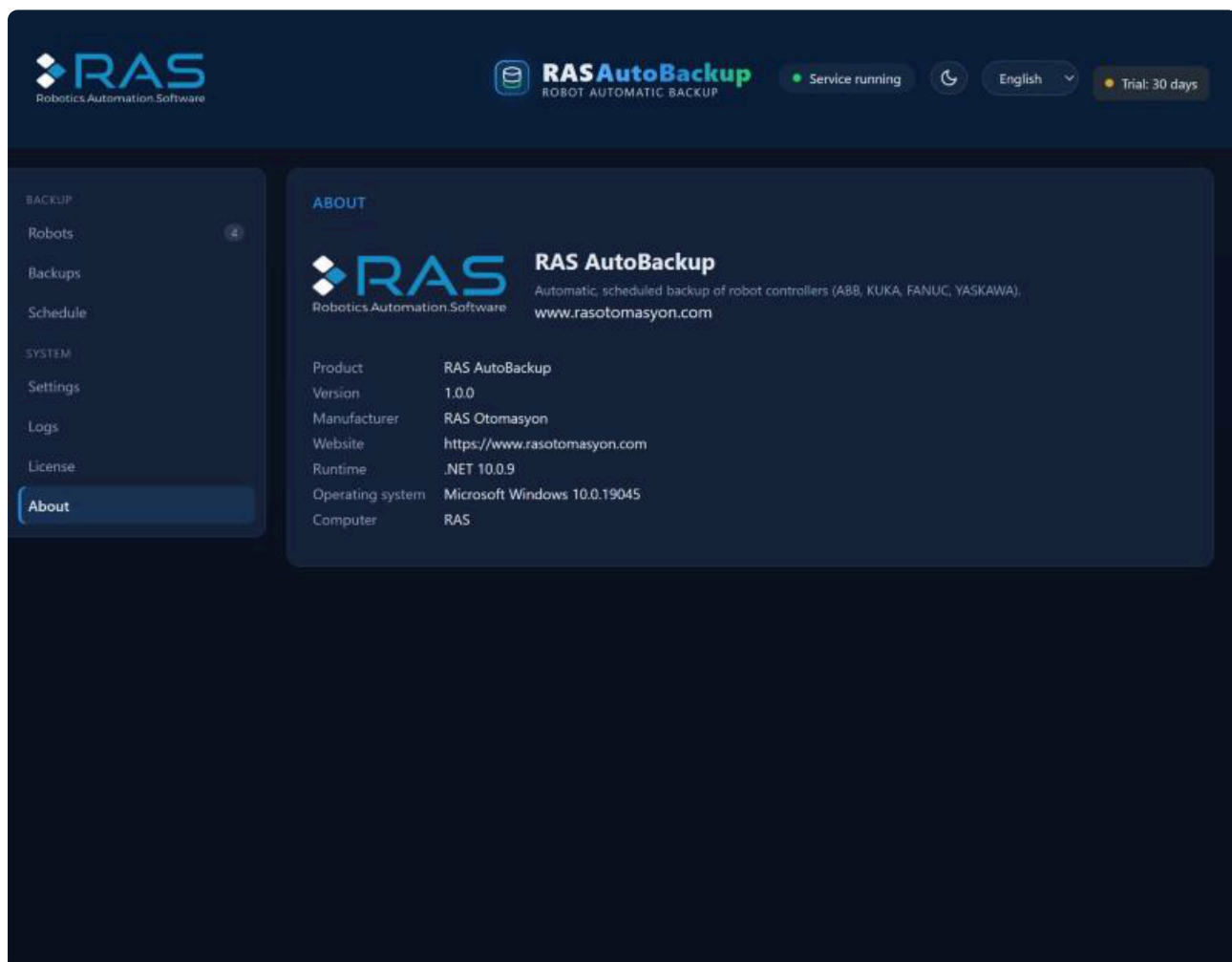


Figure 13: The About page.

Chapter 13

Troubleshooting

Don't panic when something does not go as you expect; the vast majority of problems fit one of the headings below. First look at the **Logs** page: the program often says clearly what did not work and why. The tables below put the symptom, the likely cause and the fix side by side.

Note: The program's log lines and some of its error messages are always displayed in **Turkish**, whatever interface language you choose. In the tables below, such messages are quoted exactly as they appear on screen, followed by their English meaning in parentheses, so that you can match them with what you see.

13.1 Installation and service

Symptom	Likely cause	What to do
<code>install.cmd</code> says "Yönetici olarak çalıştırın" (run as administrator) or closes immediately	It was not opened with administrator rights	Right-click the file and choose "Run as administrator" ; do not double-click it
Installation finished but <code>http://localhost:8080</code> does not open	The service did not start, or the port is used by another program	In the Windows <i>Services</i> window (<code>services.msc</code>), check that the RAS AutoBackup service is "Running". If it is not, start it. If the port is taken, uninstall and reinstall with <code>install.cmd /port 9090</code> , or try a different port in console mode (Chapter 3)
The page opens only on this computer, not from other computers	The listen address is local only, or the firewall is blocking it	Allow access from the whole network under Settings > Web access ; make sure the port you chose is open in the corporate firewall
The service shuts down by itself	Installation files are missing or corrupt	Reinstall the program; run it in console mode and read the error message that appears in the window
In the browser: "Connection to the service lost. Reconnecting..."	The service is restarting or has stopped	Wait a few seconds. If it does not come back, check that the service is running
Worried that my settings are gone after an update	—	When <code>install.cmd</code> is run again, settings, the robot list and the license are preserved ; only the program files are refreshed
Windows SmartScreen / antivirus blocks <code>install.cmd</code> or the program files	An unrecognized-software warning	After verifying that the installation package came from RAS Otomasyon, choose "Run anyway", or ask your antivirus administrator for permission

13.2 Login and access

Symptom	What to do
User name <code>admin</code> , password <code>admin</code> does not work	You have probably changed the password before. Use the new password
I forgot my password	Please contact the RAS Otomasyon support team to recover access
It asks me to log in again after a few hours	The session length has expired (12 hours by default). You can extend it in Settings
"Cannot connect" from another computer	Check the firewall, the port and the access option in Settings

13.3 Finding robots and connecting

Symptom	Likely cause and fix
ABB robots do not appear at all	Is there a yellow warning banner at the top of the page? If the ABB services are not running, start them from Services or install the ABB PC SDK. Make sure the computer and the robot are on the same network
KUKA robots do not appear	The robot is on a different subnet; the broadcast does not pass. Add it manually by IP. You can also try increasing the scan time (8 s by default)
The scan cannot find the FANUC / YASKAWA robot	For these brands the scan works only over an IP range; check that the range is correct and that FTP (FANUC) or HSE (YASKAWA) is enabled on the robot. Increase the scan timeout
The robot row shows "Not reachable · retry in 5 min"	The robot may be off, a cable may be unplugged, or the IP may have changed. The program retries by itself every 5 minutes; if the IP changed, edit the robot
The robot shows Offline but is switched on	The program polls the robot every 30 seconds and counts it as offline if there is no response twice in a row. A network outage, a firewall, or the robot being busy may be the cause. Verify with Test connection (✓)
Test connection succeeds but the backup fails	The connection and the backup use different ports and permissions; look at the backup's error message in Logs. Check the user name/password and the robot's mode
A robot on the network is not added automatically	In Settings > Scanning , check the options <i>Discover the network at start and before each scheduled backup (ABB/KUKA)</i> , <i>Add new robots instantly when they join the network</i> and <i>Back up robots found by scan right away if they have no successful backup yet</i>
A KUKA-IIQ robot is found but the connection fails with a login error	The user name/password is wrong. Edit the robot and enter the controller's credentials
The KUKA-IIQ backup is only partly successful	At least one instance failed; the message in the history names the instance and the reason. Check the instance's state on the controller and take the backup again

13.4 Taking backups

Symptom	Likely cause and fix
"Hedef diskte yeterli boş alan yok" (insufficient free space on the target disk)	There is less than 200 MB free on the target disk. Clean up the disk or move the backup folder to a larger disk; shorten the retention period
"Zaman aşımı" (timeout)	The backup did not finish within the set time. Increase the timeout on the Schedule page (and the ABB backup timeout for ABB); check the network
"Kullanıcı tarafından iptal edildi" (canceled by the user)	Someone clicked the  button, or the service was restarted. Start it again
"A backup for this robot is already running."	A backup is already in progress for the same robot; wait for it to finish
"Denetleyicide başka bir yedekleme sürüyor" (another backup is in progress on the controller) (ABB)	Another tool is taking a backup. Wait a few minutes and try again
FANUC: "FTP ile hiç dosya alınamadı" (no files could be retrieved over FTP)	FTP is off, or the user/password or mode is wrong. Try switching the FTP mode between active and passive ; check the user name and password
A scheduled backup never started	The schedule may be off, the time/frequency may be wrong, the robot may be ticked "Exclude", the license may have expired, or the service was down at that time. Look at the "Next backup" information on the Schedule page and at Logs
The backup folder is on a network share and I get errors	The service cannot see network drives. Take the backups onto the computer's own disk; if necessary, copy them to the network drive as well (Chapter 8)
Backups take up a lot of space	Shorten the retention period, reduce the backup frequency, and for KUKA leave on only the option you need
Old backups disappeared one day	They may have been deleted because the retention period ran out. Download backups that must be kept long-term as ZIP and put them elsewhere
There is a file/folder with a .partial extension in the backup folder	A backup was left unfinished (the service shut down or the power went off). You can safely delete it; the program tries again at the next backup

13.5 Restore

Symptom	Likely cause and fix
The  button is not visible	The robot has no successful backup; take a backup first
"Robot name not confirmed; type the name exactly."	Type the robot's name in the confirmation box exactly , including upper/lower case

Symptom	Likely cause and fix
"This backup belongs to a different brand and cannot be restored to this robot."	The wrong robot or the wrong backup was selected
"Denetleyici Auto modda. Manuel moda alıp tekrar deneyin" (the controller is in Auto mode; switch to manual mode and try again) (ABB)	Put the controller in manual mode
"FlexPendant erişim onayı zaman aşımı" (FlexPendant access approval timed out) (ABB)	You did not approve the access request on the FlexPendant within 3 minutes. Start again and wait at the FlexPendant
"Hiç dosya yüklenemedi" (no files could be uploaded) (FANUC/YASKAWA)	The robot's write permission or mode is not suitable. Check FTP write permission on FANUC and remote write permission on YASKAWA
On KUKA the restore is done but the robot did not change	This is normal: on KUKA you perform the last step yourself on the robot's screen (Backup Manager)

13.6 License

Symptom	Solution
"License required"	The trial has ended; get a key by following the steps in Chapter 12
"License belongs to another computer"	The key was not generated for this computer. Send the machine ID to RAS Otomasyon
"System clock was set back"	Set the computer's clock to the correct value (turn on automatic time synchronization)

13.7 What the log messages mean

Because log lines and some error messages are written in **Turkish**, you can use this table when working from a foreign-language manual. The most frequently encountered ones are listed below.

Message (as displayed, in Turkish)	Meaning
Hedef diskte yeterli boş alan yok (<200 MB)	Insufficient free space on the target disk (less than 200 MB): the disk is full
Kullanıcı tarafından iptal edildi	Canceled by the user: the backup was stopped manually
Zaman aşımı	Timeout: the time limit was reached
Denetleyici Auto modda. Manuel moda alıp tekrar deneyin	The controller is in Auto mode; switch to manual mode and try again: ABB needs manual mode for restore
FlexPendant erişim onayı zaman aşımı	FlexPendant access approval timed out: approval was not given during an ABB restore

Message (as displayed, in Turkish)	Meaning
FTP ile hiç dosya alınamadı	No files could be retrieved over FTP: a FANUC connection/permission problem
Denetleyicide başka bir yedekleme sürüyor	Another backup is in progress on the controller: ABB is busy with another tool
Kayıtlı robotlara yeniden bağlanma: N başarılı, M başarısız	Reconnecting to registered robots: N successful, M failed: the 5-minute retry of the connection monitor
Tarama bitti: N robot bulundu, M yeni eklendi	Scan finished: N robot(s) found, M newly added: the scan result

13.8 Before asking for support

If you collect the following and send it to us, we can solve the problem much faster:

1. The version number and machine ID on the **About** page
2. The **robot brand, model** and controller version where the problem occurs
3. The log file you downloaded from the **Logs** page
4. A short note describing what you did and what you expected to happen (a screenshot is very helpful)

Appendix A

Folder layout

Backups are stored under the backup folder in the following structure:

```
<Backup folder>\
  2026-10-08\
    ABB\
      System1\
        System1_20261008_143424\
          ... backup files ...
      KUKA\ ...
      KUKA-IIQ\ ...
      FANUC\ ...
      YASKAWA\ ...
```

← day
← brand
← robot name
← this robot's backup (date_time)

- **Day folder:** yyyy-MM-dd
- **Backup folder:** RobotName_yyyyMMdd_HH:mm:ss
- A backup in progress is written with a .partial extension and takes its final name when it finishes.
- A second backup in the same second is distinguished by a _2 suffix.

Appendix B

Settings summary

Section	Setting	Default
Schedule	Automatic backup	On
	Frequency	1 day
	Time	02:00
	Retention	30 days
	Parallel backups	4
	Backup timeout	30 min
	Backup folder	C:\RasAutoBackup\Backups
Scanning	Timeout	400 ms
	Discover the network at start	On
	Add new robots instantly	On
	Back up robots found by scan	On
	Auto-discovery interval	15 min
Web	Port	8080
	Require login on this PC too	Off
	Session length	12 hours
FANUC	Drives / FTP port / mode / depth	FR: ,MD: / 21 / passive / 4
YASKAWA	Patterns / timeout / parallelism	.JBI; .DAT; .CND; .PRM; .SYS; .LST;* .LOG / 500 ms / 8
KUKA	ZIP / project / scan time / parallel	on / on / 8 s / 2
KUKA-IIQ	User / password / instances / KIP / KOP / logs / system software / delete from controller / parallel	empty / empty / all / on / on / off / off / on / 2
ABB	Timeout	30 min

Appendix C

Command line and files

```
install.cmd [target-folder] [/port N] [/nostart]
uninstall.cmd [/purge]
```

- `install.cmd` : installs or updates. Settings are preserved.
- `uninstall.cmd` : removes the service, the firewall rules and the program files; **settings (robot list, license, users) are kept**. If `/purge` is added, the settings are deleted too. **Your existing backups are never deleted under any circumstances**.
- Console mode: you can start the program by hand for testing by running the program file with `--port 9090` or `--urls http://*:9090` .

Under the program files there are two folders: `Config` (settings, robot list, license, history) and `Logs` (log files).

Appendix D

Frequently asked questions

Is it safe to take a backup while the robot is running? Yes. Taking a backup does not stop the robot's program; it only reads files. On very old or very slow controllers, we recommend taking backups at night rather than during the busiest production hours.

Does it back up several robots at the same time? Yes; the number is limited by *Parallel backups* on the Schedule page.

What happens if I shut the program down? Backups are taken only while the service is running. If the computer is off, the backup at that time is skipped and the next schedule is awaited.

Can I move my backups to another computer? Yes, just copy the folders. Backups are plain files, independent of the program.

Is an internet connection required? No. The program works entirely on the local network.

Is the backup deleted from the controller after it has been downloaded (iiQKA.OS2)? By default, yes: only the temporary copy that the controller created for the download is removed, after the file has been downloaded and its size verified. Your copy on the computer is not affected. If you want the copy to stay on the controller, set `kdm.deleteRemote` to `false`.

Can I transfer the license to another computer? Yes, you can get a new key by contacting RAS Otomasyon.

Appendix E

Glossary

Term	Meaning
Controller	The cabinet that forms the robot's brain (ABB IRC5/OmniCore, KUKA KRC4/KRC5 and iiQKA.OS2, FANUC R-30iB, YASKAWA YRC1000...)
Backup	A copy of the robot's programs and settings
Restore	Writing a backup back to the robot
Retention period	The number of days backups are kept before being deleted
Service	A program that runs continuously in the background in Windows
FlexPendant / smartPAD	The ABB / KUKA handheld teach pendant
FTP	File transfer protocol (used for FANUC)
HSE	YASKAWA's Ethernet-based file communication
WorkVisual	KUKA's project and configuration software
iiQKA.OS2	KUKA's newer controller operating system; its robots appear in the program as KUKA-IIQ
Instance	A controller instance on an iiQKA.OS2 controller (for example KSS_9.3.3); one backup is taken per instance
iiQWorks Cockpit	KUKA's tool for iiQKA.OS2 controllers; used for restoring KUKA-IIQ backups
PC SDK	ABB's software package for communication between the robot and a computer