



BULUTLAR
MOBİLYA-MÜHENDİSLİK

BULUTLAR HUB • FACTORY PC

Factory Agent — Setup & Daily Use

How to install the sync agent on the ADekoCAM computer, keep it running, and use it every day to move job sheets and CNC programs (.anc) between the workshop and the hub.

The screenshot displays the Bulutlar Mobilya - Management web interface. The left sidebar lists various modules: Dashboard, Products, Stock, Orders, Purchasing, Production (highlighted), CRM / B2B, Finance, Reports, Integrations, Settings, Floor Stations, Goods Receipt, Material Usage, Pack & Store, Stock Count, and Returns. The main content area shows the 'CAM-2026-002' draft work order. It includes a 'Job Sheet' button and a 'Mark as Sent to ADekoCAM' button. Below this is a table of work orders with columns for Work Order, Product, Qty, Boards, and Stage. The table shows one entry: 'W0-2026-0002' for 'TV Ünitesi Beyaz 180 cm Kulpsuz ...' with a quantity of 2, 1.1 boards, and a 'Planned' status. Below the table is a section for '.anc Archive' with a text input field for the file name, a 'Choose file' button, and an 'Upload & Archive .anc' button.

Work Order	Product	Qty	Boards	Stage
W0-2026-0002	TV Ünitesi Beyaz 180 cm Kulpsuz ... TVU-BEYAZ-180-NONE	2	1.1	Planned

Version 2.0 · September 2026

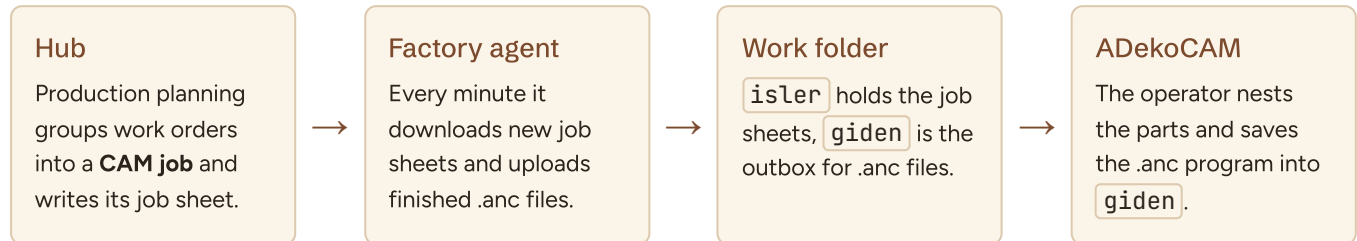
hub.bulutlarmobilya.com

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1 What the factory agent does

The factory agent is a small program that runs on the PC where ADeko and ADekoCAM are installed. It connects that PC to the Bulutlar Hub so nobody has to carry files around on a USB stick.



Every minute the agent

- downloads the job sheet of every open CAM job into `isler\<CAM-No>\is-foyu.json`,
- uploads every `.anc` file in `giden` whose name matches an open CAM job, then moves it to `gonderilen`,
- reports a heartbeat to the hub, so the office can see the agent is online and whether its last round had an error.

Tip The agent never changes anything in ADeko or ADekoCAM and never deletes files. It only copies job sheets in and moves uploaded .anc files into the history folder.

Who this guide is for

Reader	Chapters
IT / whoever installs the PC	2 – 6 and 11 – 13
CNC / CAM operator	7 – 10
Production planner in the office	7 and 8

2 What you need

Item	Details
Computer	The Windows 10 / 11 PC that runs ADekoCAM. It must stay switched on during working hours.
Internet	Any normal connection. The agent only makes outgoing HTTPS requests (port 443); no ports need opening.
Node.js	Version 18 or newer (the LTS version from nodejs.org). Chapter 3.

Item	Details
Agent files	The <code>tools/factory-agent</code> folder from the Bulutlar repository (the file <code>agent.mjs</code> is all it needs).
Hub address	<code>https://hub.bulutlarmobilya.com</code>
Agent token	A long secret code (64 characters) from the hub administrator. It works like a password for the PC.

Important The agent token is a password. Never send it by e-mail, WhatsApp or in a screenshot. If it leaks, the administrator creates a new one and the old one stops working immediately (chapter 12).

3 Install Node.js

Node.js is the free runtime the agent is written for. It is installed once.

- 1 Open **nodejs.org** in the browser and download the **LTS** version for Windows (the green button, a `.msi` file).
- 2 Run the installer and accept the defaults. The "Tools for native modules" option is **not** needed; leave it unticked.
- 3 When it finishes, open **Command Prompt** (Start → type `cmd` → Enter).
- 4 Type `node -v` and press Enter. It should print a version such as `v22.x.x`. If it says the command is unknown, restart the PC and try again.

4 Install the agent

- 1 Create the folder `C:\bulutlar\factory-agent` and copy `agent.mjs` (and `README.md`) from the repository's `tools/factory-agent` folder into it.
- 2 In that folder, create a text file called `baslat.bat` (Notepad → File → Save as → file type "All files"). Paste the content below.
- 3 Replace `<token from the hub administrator>` with the real token. Keep everything else as shown.
- 4 Save the file. Nothing else needs to be installed: the agent has no dependencies.

```
@echo off
title Bulutlar Fabrika Ajani
set HUB_URL=https://hub.bulutlarmobilya.com
set AGENT_TOKEN=<token from the hub administrator>
set AGENT_NAME=cnc-pc
set WORK_DIR=C:\bulutlar-cam
node agent.mjs
pause
```

Line	Meaning
<code>HUB_URL</code>	The hub's address. Always <code>https://hub.bulutlarmobilya.com</code> .
<code>AGENT_TOKEN</code>	The secret from the administrator. Must match the hub's value exactly.
<code>AGENT_NAME</code>	A name for this PC, shown on the hub (e.g. <code>cnc-pc</code>). Use a different name per PC if you ever run two.
<code>WORK_DIR</code>	Where the job and outbox folders live. <code>C:\bulutlar-cam</code> is recommended.
<code>pause</code>	Keeps the window open if the agent stops, so you can read the last message.

Tip The agent creates `C:\bulutlar-cam` and its three sub-folders by itself on first start.

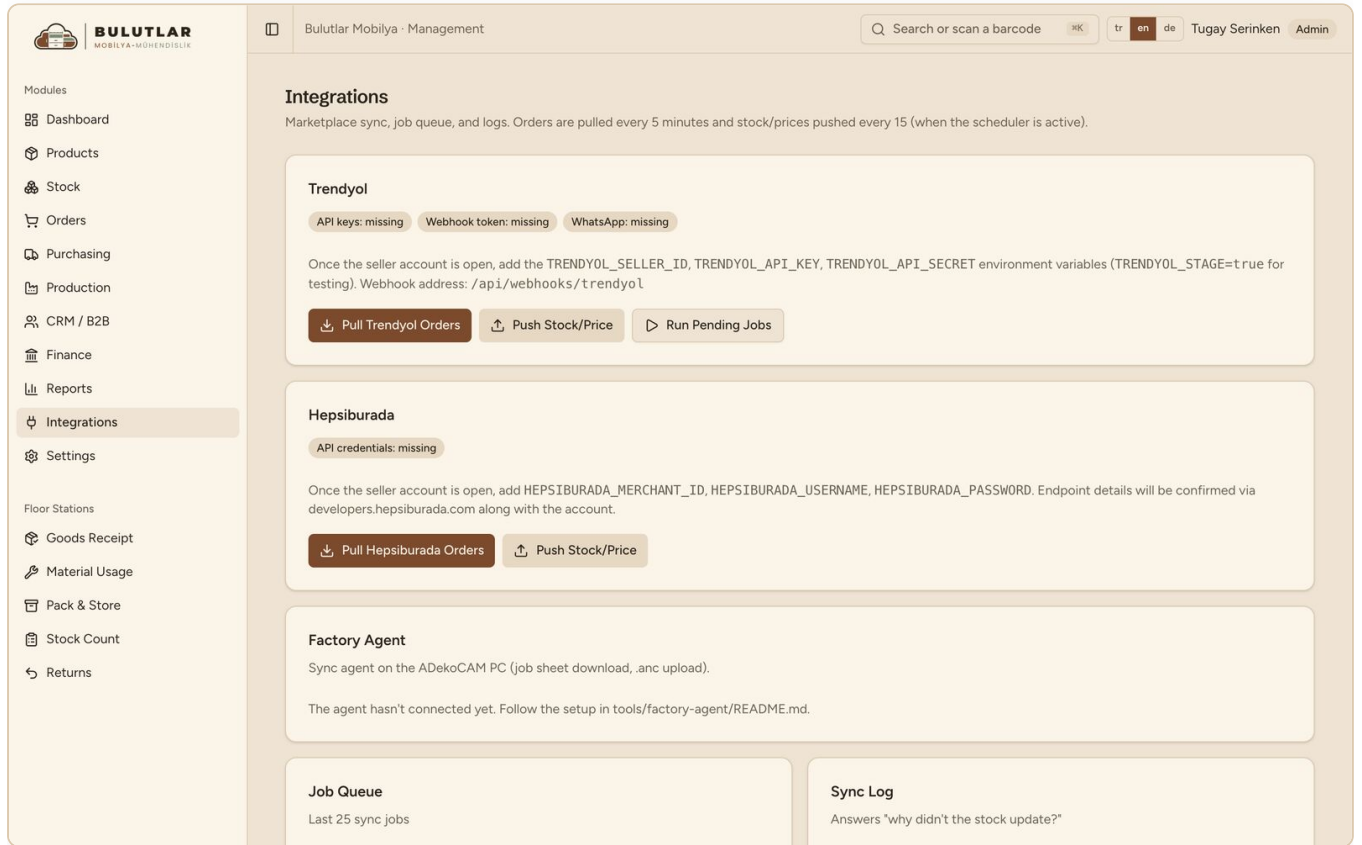
5 First start and check

- 1 Double-click `baslat.bat`. A black window opens.
- 2 The first line confirms the hub address, the work folder and the polling period. Within a few seconds job sheets of open CAM jobs are downloaded.
- 3 In the office, open **Hub** → **Integrations**. The **Factory Agent** card shows the PC as **Online**, with its computer name, agent version and — if something went wrong — the last error.

```
● ● ● baslat.bat — Bulutlar Fabrika Ajani

[09:12:03] Bulutlar fabrika ajanı v2.0.0 — hub: https://hub.bulutlarmobilya.com, klasör:
C:\bulutlar-cam, periyot: 60s
[09:12:05] İş föyü indirildi: CAM-2026-002 → C:\bulutlar-cam\isler\CAM-2026-002
[09:31:40] .anc arşivlendi: CAM-2026-002.anc
[09:45:10] .anc arşivlendi (önceki sürümün yerine): CAM-2026-002.anc
[10:02:16] ▲ deneme.anc: açık CAM işi bulunamadı (dosya adı CAM-YYYY-NNN.anc olmalı)
```

The agent writes its messages in Turkish. Chapter 10 explains each of them.



Hub → Integrations. The **Factory Agent** card turns **Online** once the PC checks in; it says **Offline** when no heartbeat arrived for 5 minutes.

Important If the hub card says **AGENT_TOKEN is not set**, the hub itself has no token configured — ask the administrator. If the agent window shows `cam-jobs HTTP 401`, the token in `baslat.bat` is wrong.

6 Start automatically with Windows

Option A — Startup folder (simplest)

- 1 Press **Windows + R**, type `shell:startup` and press Enter. A folder opens.
- 2 Right-click `baslat.bat` in `C:\bulutlar\factory-agent` → **Show more options** → **Create shortcut**, then move the shortcut into the startup folder.
- 3 From now on the agent starts every time the operator logs in. Leave its window open (it can be minimised).

Option B — Task Scheduler

Useful if several people use the PC. Run once in Command Prompt:

```
schtasks /Create /TN "Bulutlar Ajan" /TR "C:\bulutlar\factory-agent\baslat.bat" /SC ONLOGON /RL LIMITED
```

Stopping and restarting

- Press **Ctrl + C** in the agent window. It finishes the current round, prints `Ajan durdu.` and stops. Press **Ctrl + C** twice to stop immediately.
- To restart, double-click `baslat.bat` again.
- Updating the agent: stop it, replace `agent.mjs` with the new version, start it again. `baslat.bat` stays as it is.

7 The work folder

C:\bulutlar-cam\
├ isler\
│ └ CAM-2026-002\
│ └ is-foyü.json
├ giden\
└ gonderilen\

← job sheets the agent downloads (one folder per CAM job)

← OUTBOX: save ADekoCAM's .anc files here
← uploaded files are moved here (history)

Folder	Who writes	What happens
isler\<CAM-No>	Agent	One folder per CAM job with its job sheet is-foyü.json: work orders, product SKUs (and the .adcpf file names), quantities, priorities, due dates and the board sheets needed.
giden	Operator (ADekoCAM)	Save the finished .anc program here, named exactly like the CAM job: CAM-2026-002.anc.
gonderilen	Agent	After a successful upload the file is moved here. Older versions of the same job are kept with a timestamp in the name.

Tip

Pin C:\bulutlar-cam\giden to the Quick Access bar in Explorer and set it as ADekoCAM's default export folder — then saving there becomes a habit.

8 Daily workflow

1 • Office: plan and create the CAM job

In **Production**, the planner opens work orders for order lines that stock cannot cover. In the **Production Queue** they tick the work orders to cut together and click **Create CAM Job from Selection**. The hub numbers the job (**CAM-2026-002**) and writes its job sheet.

The screenshot shows the Bulutlar Mobilya Management interface. The left sidebar contains a menu with items: Dashboard, Products, Stock, Orders, Purchasing, Production (highlighted), CRM / B2B, Finance, Reports, Integrations, Settings, Floor Stations, Goods Receipt, Material Usage, Pack & Store, Stock Count, and Returns. The main content area is titled 'Production Planning' and includes a sub-header 'Production Demand' with the text 'Order lines that finished stock cannot cover'. Below this is a table with columns: Order, Product, Remaining, Due, and an Action button 'Create Work Order'. The table lists four orders: BM-2026-000005, BM-2026-000006, BM-2026-000007, and BM-2026-000008. Below the table is a section titled 'Production Queue' with the text 'Work orders scheduled against the daily board capacity — select work orders for a CAM job'. It shows two dates: 2026-08-16 and 2026-08-19. For each date, there is a table with columns: Work Order, Product, Qty, Boards, Stage, and Action. The 2026-08-16 table shows one work order: W0-2026-0002. The 2026-08-19 table shows one work order: W0-2026-0003.

Order	Product	Remaining	Due	Action
BM-2026-000005	TV Ünitesi 180cm Beyaz TVU-BEYAZ-180-STD	1	—	Create Work Order
BM-2026-000006	TV Ünitesi Meşe 140 cm Standart ... TVU-MESE-140-STD	1	—	Create Work Order
BM-2026-000007	TV Ünitesi Meşe 180 cm Standart ... TVU-MESE-180-STD	20	—	Create Work Order
BM-2026-000008	TV Ünitesi 180cm Beyaz TVU-BEYAZ-180-STD	1	—	Create Work Order

Work Order	Product	Qty	Boards	Stage	Action
☐ W0-2026-0002	TV Ünitesi Beyaz 180 cm Kulps... TVU-BEYAZ-180-NONE	2	1.1	Planned	→ ✓

Work Order	Product	Qty	Boards	Stage	Action
☐ W0-2026-0003	TV Ünitesi 180cm Beyaz TVU-BEYAZ-180-STD	1	0.55	Planned	→ ✓

Production → Production Queue and CAM Jobs (ADekoCAM). Select work orders, then create a CAM job.

2 • Agent: the job sheet arrives

Within a minute the agent saves the job sheet to **C:\bulutlar-cam\isler\CAM-2026-002\is-foyu.json** and logs **İş föyü indirildi**.

3 • Operator: nest and generate the program

- 1 Open the job sheet to see which products (SKUs), quantities and board sheets belong to the job.
- 2 In ADeko / ADekoCAM, nest the parts and generate the CNC program.
- 3 Save the **.anc** file into **C:\bulutlar-cam\giden** named **exactly** like the CAM job: **CAM-2026-002.anc** (upper or lower case does not matter).

4 • Agent: upload and archive

The agent waits until the file has not changed for 10 seconds — so a file ADekoCAM is still writing is never sent half-finished — then uploads it, moves it to **gonderilen** and logs **.anc arşivlendi**. On the hub the

CAM job's status becomes **.anc archived** and the file is downloadable from its **.anc Archive** section.

The screenshot shows the Bulutlar Mobilya Management interface. The sidebar on the left lists various modules: Dashboard, Products, Stock, Orders, Purchasing, Production (highlighted), CRM / B2B, Finance, Reports, Integrations, and Settings. The main content area displays the details for a CAM job, CAM-2026-002, which is in Draft status. It includes a 'Job Sheet' button and a 'Mark as Sent to ADekoCAM' button. Below these, there is a 'Work Orders' section showing a table with columns: Work Order, Product, Qty, Boards, and Stage. The table contains one entry: W0-2026-0002, TV Ünitesi Beyaz 180 cm Kulpsuz ..., 2, 1.1, and Planned. Below the table is a '.anc Archive' section with instructions to upload the .anc file produced by ADekoCAM for traceability. It includes a 'Choose file' button and an 'Upload & Archive .anc' button.

Hub → Production → CAM job. The .anc Archive shows the uploaded program; **Upload & Archive .anc** is the manual fallback.

5 • Office: continue production

Staff can mark the job as **Mark as Sent to ADekoCAM** when it goes to the machine. Work orders then move through their stages (Materials staged → Cutting → Edge banding → Drilling → Assembly → Packed) on the work order page.

9 Correcting a program

If a program was wrong, fix it in ADekoCAM and save it into **giden** again with the **same name**. As long as the CAM job is not completed, the new file **replaces** the one on the hub and the agent logs **.anc arşivlendi (önceki sürümün yerine)**.

- The earlier upload stays in the hub's audit log (event **.anc uploaded**, marked as a replacement).
- On the PC the earlier file stays in **gonderilen**, renamed with a timestamp, e.g. **CAM-2026-002_2026-09-27T09-31-40-512Z.anc**.
- A completed CAM job no longer accepts uploads (the agent logs HTTP 409). Ask the office to open a new CAM job instead.

10 Reading the agent window

Message	Meaning	What to do
Bulutlar fabrika ajanı v2.0.0 – hub: ...	Started, with address, folder and period.	Nothing.
İş föyü indirildi: CAM-... → ...	Job sheet downloaded.	Open the folder and start nesting.
.anc arşivlendi: CAM-...anc	Program uploaded and archived.	Nothing — done.
.anc arşivlendi (önceki sürümün yerine)	A corrected program replaced the earlier one.	Nothing.
⚠ ... açık CAM işi bulunamadı	The file name matches no open CAM job (typo, or job completed).	Rename to <code>CAM-YYYY-NNN.anc</code> with the correct number. Shown once per file.
⚠ ... yüklenemedi: HTTP 413	The file is larger than 20 MB.	Check the export; contact the administrator.
⚠ ... yüklenemedi: HTTP 409	The CAM job is already completed.	Ask the office for a new CAM job.
Hata: cam-jobs HTTP 401	The token is wrong or was changed.	Put the current token into <code>baslat.bat</code> , restart.
Hata: Hub zaman aşımı	The hub did not answer within 30 seconds.	Usually the internet; the agent retries automatically.
Hata: fetch failed	No connection at all.	Check the network cable / Wi-Fi.
AGENT_TOKEN ortam değişkeni gerekli.	<code>baslat.bat</code> has no token.	Fill in <code>AGENT_TOKEN</code> .
Durduruluyor... / Ajan durdu.	Stopped with Ctrl + C.	Restart with <code>baslat.bat</code> .

11 Troubleshooting

Symptom	Check
Hub shows the agent Offline	Is the PC on and the black window open? Does the window show errors? The card also shows the agent's last error.
The .anc stays in <code>giden</code>	Is the name exactly <code>CAM-YYYY-NNN.anc</code> ? Is the CAM job still open? Is ADekoCAM still writing it (wait 10–60 s)?

Symptom	Check
No job sheet appears	Was the CAM job created in the hub? Jobs appear in <code>isler</code> only while they are not completed.
<code>node</code> is not recognised	Node.js is not installed or the PC was not restarted after installing (chapter 3).
The window closes immediately	Open Command Prompt, <code>cd C:\bulutlar\factory-agent</code> , run <code>baslat.bat</code> there and read the message.
Two PCs run the agent	Give each its own <code>AGENT_NAME</code> . Only one of them should have ADekoCAM's outbox.

Tip Every upload is also recorded in Hub → Settings → Audit log with the file name — useful to prove when a program reached the hub.

12 Security and the token

- The token lets the PC read job sheets and upload .anc files — nothing else. It cannot see orders, prices or customers.
- Keep `baslat.bat` on the factory PC only. Windows users who do not need it should not have access to `C:\bulutlar`.
- If the token may have leaked, the administrator runs the token-rotation command on their computer, then puts the new token into `baslat.bat` and restarts the agent. The old token stops working at once.

```
cd ~/bulutlar-mobilya/apps/hub && T=$(openssl rand -hex 32) && vercel env rm AGENT_TOKEN
production --yes; printf "%s" "$T" | vercel env add AGENT_TOKEN production --sensitive &&
echo "AGENT_TOKEN for the factory PC: $T"
```

(Administrator only; after running it the hub must be redeployed.)

13 Settings reference

Setting	Default	Purpose
<code>HUB_URL</code>	<code>http://localhost:3000</code>	Hub address. Production: <code>https://hub.bulutlarmobilya.com</code> .
<code>AGENT_TOKEN</code>	— (required)	Secret shared with the hub.
<code>AGENT_NAME</code>	<code>fabrika</code>	Name shown on the hub's Factory Agent card.
<code>WORK_DIR</code>	<code><folder>\bulutlar-cam</code>	Work folder with <code>isler</code> , <code>giden</code> , <code>gonderilen</code> .
<code>POLL_SECONDS</code>	<code>60</code> (min. 10)	Seconds between rounds.
<code>STABLE_SECONDS</code>	<code>10</code> (min. 2)	How long an .anc must stay unchanged before upload.

Network: HTTPS to the hub only; request timeout 30 s, uploads 120 s; maximum .anc size 20 MB.