

INVENTORY MANAGEMENT SYSTEM

**HYDRA INV**

INTEGRATION GUIDE

# Integration Guide

Commissioning every external connection step by step: POS, PMS, Hydra Admin, the mobile PWA and the barcode camera.

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# 1 Introduction

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This guide describes how to commission Hydra INV's integrations — the Hydra systems the inventory module connects to. Day-to-day stock management is covered in a separate document (the User Manual); here we focus solely on getting the POS, the PMS, Hydra Admin, the mobile PWA and the barcode camera connected correctly on the first attempt.

## 1.1 Who it is for

This guide is written for the venue's system administrator or the Hydra deployer — someone with access to the settings screens, the network, and the Hydra Admin activation details.

## 1.2 Notation

The following notations are used consistently so that screen labels, values and warnings are always distinguishable at a glance.

- **Bold** — an English term or an idea to emphasise.
- The Hungarian on-screen menu items, buttons and field labels appear in the text with their own Hungarian names (the application UI is Hungarian).
- `code` — a value to enter, a URL, port, header or field identifier.
- Block call-outs mark notes, tips and important warnings.

## 1.3 Two golden rules

These two principles underpin every integration in this guide. Learn them before you touch a single setting.

### IMPORTANT

**Order matters.** First complete the common settings in chapter 2 (license/activation, port and API key). Every integration builds on these: the POS and the PMS use the same `X-Api-Key` towards Hydra INV, and the mobile PWA is derived from the license identity (Admin URL + Hotel ID + license key).

### NOTE

**One site = one INV.** Each business gets its own Hydra INV installation, with its own item catalogue and recipes. The POS and the PMS always connect to the INV on the local network. A combined overview of several units is provided by the mobile PWA portfolio (see 5.3).

## 2 Prerequisites and common settings

For any integration to work, you must first activate the program and configure the built-in server's port and API key. This chapter establishes that common foundation — every later chapter assumes it is already in place.

### 2.1 Where to find the settings

The settings are reached from the bottom of the left-hand menu, under **Beállítások** (Settings). The tabs:

| Tab                 | Purpose   |
|---------------------|---|
| Általános (General) | Server port, API key, VAT rate, PMS URL and PMS API key |
| SMTP                | Outgoing mail for orders (chapter 7)                    |
| Admin               | License key, Hotel ID, Admin server URL, hotel name     |
| Mentés (Backup)     | Full backup and restore (8.4)                           |

### 2.2 License and activation

Open the **Settings > Admin** tab and fill in the activation details.

- 1 **Admin server URL** — the address of Hydra Admin (from your provider), e.g. `https://hydra-admin-production.up.railway.app`.
- 2 **License key** — the key received from Hydra Admin.
- 3 **Hotel ID** and **hotel name** — to identify the unit in Admin.
- 4 Save. The program validates the license; on success the interface unlocks. The license is checked at startup and periodically.

#### WARNING

Changing the **Hotel ID** binds the data to a new identity. Set it only at first commissioning and never change it afterwards.

### 2.3 The built-in server: port and API key

Hydra INV runs a built-in integration server through which the POS and the PMS reach it. On the **Settings > General** tab:

- 1 **Server port** — default `3002` (HTTP). The camera scanner runs at +1000, i.e. `4002`, over HTTPS (see 6.2).

- 2 **API key** — the server's authentication key. If left empty, the program **generates one automatically** at startup and prints it to the console (copy it). The same key must be entered on the POS and PMS side.
- 3 Save. The header shows the server status (green dot = running, and shows the port).

**IMPORTANT**

By default the built-in server **authenticates every endpoint** via the `X-Api-Key` header. There are only two exceptions: the camera scanner page ( `/scanner` ), which receives the key embedded) and the health endpoint ( `/api/health` ).

## 2.4 Network and firewall

- The POS, the PMS and the barcode devices reach the Hydra INV machine on the **local network** — same LAN, a static (fixed) IP is recommended.
- Allow inbound TCP on port `3002` (and `4002` for the camera) from the internal subnet.
- These ports are for the LAN — **never expose them to the internet**. Remote access is solved by the mobile PWA, over secure HTTPS, via Admin.

## 3 POS — Hydra till

On a sale, the Hydra POS notifies Hydra INV, which draws down the ingredients according to the **recipe** (or a direct item). Storno writes back, and the daily close draws down in aggregate. The connection is one-way: the POS calls INV's `:3002` API.

### 3.1 Preparation

- Hydra INV must be running, with the common settings from chapter 2 (port, API key) in place.
- The POS and the INV must be on the same LAN.

### 3.2 INV- and POS-side configuration

- 1 **INV:** on the **Settings** > **General** tab, note the port ( `3002` ) and the API key, plus the machine's IP address.
- 2 **POS:** in the POS module-connection settings, enter the Hydra INV address: `http://[INV-IP]:3002` and the same **API key**.
- 3 Save on both sides.

### 3.4 What the POS sends to INV

The POS calls the following endpoints on Hydra INV's `:3002` server. All require the `X-API-Key` header.

POS → INV endpoints

| Endpoint                                | Event       | Effect on stock                           |
|---|-------------|---|
| <b>POST</b> <code>/api/sale</code>      | Sale        | Deduct per recipe (or direct item)        |
| <b>POST</b> <code>/api/storno</code>    | Storno      | Write the deducted stock back             |
| <b>POST</b> <code>/api/pos-close</code> | Daily close | Aggregate deduction of the day's turnover |

#### NOTE

Hydra INV de-duplicates already-processed order IDs, so a repeated send **does not cause a double deduction**.

### 3.5 Recipes — the basis of deduction

The POS sells products; Hydra INV tracks ingredients. The two are linked by the **recipe** (see the User Manual). At commissioning, make sure that:

- every POS product has a recipe, or a one-to-one direct item (e.g. a bottled soft drink);
- the items referenced in the recipe exist and have stock.

**TIP**

If a sold product has neither a recipe nor a direct-item mapping, stock simply does not change — this is often the cause of the “I sell, but stock doesn't move” complaint.

### 3.6 Verification and common errors

- 1 Call from a browser: `http://[INV-IP]:3002/api/health` — it must respond (no key needed).
- 2 Sell a recipe-based product on the POS and check INV's **Mozgásnapló** (Movement log) — the sale must appear.
- 3 Storno it and verify the write-back.

#### Common errors

| Symptom                                 | Resolution  |
|---|---|
| 401 / “Unauthorized”                    | The API key does not match on the two sides             |
| Health responds, but stock doesn't move | Missing recipe or direct item                           |
| No connection                           | Wrong IP/port, or the firewall blocks <code>3002</code> |

## 4 PMS — hotel system

The Hydra PMS charges minibar consumption to Hydra INV's stock, and the two modules share partners (suppliers/customers). The minibar charge arrives from the PMS at INV's `:3002` API; for partner sync, the INV calls the PMS's `:3000` API.

### 4.1 Preparation

- The PMS and the INV must run on the same LAN, with chapter 2 already in place.
- Have the PMS-side API key (the PMS inbound key) ready for partner sync.

### 4.2 Minibar charge (PMS → INV)

When reception charges a minibar item to a guest's room, the PMS notifies the INV, which deducts the matching item. Storno writes back.

PMS → INV endpoint

| Endpoint                                     | Event          | Effect on stock                              |
|--|----------------|--|
| <b>POST</b> <code>/api/minibar-charge</code> | Minibar charge | Deduct the minibar item (storno writes back) |

### 4.3 Partner sync (INV ↔ PMS)

The INV can import suppliers from the PMS partner register, and also write a new partner back. On the **Szállítók** (Suppliers) page the **PMS szinkron** button starts it. Beforehand, on the **Settings > General** tab:

- 1 **PMS server URL** — `http://[PMS-IP]:3000`.
- 2 **PMS API key** — the PMS inbound API key (the INV authenticates to the PMS with it).

Partner and minibar endpoints on the PMS side (PMS on :3000)

| Endpoint                               | Direction | Content                  |
|--|-----------|--------------------------|
| <b>GET</b> <code>/api/partners</code>  | PMS → INV | Import the partner list  |
| <b>POST</b> <code>/api/partners</code> | INV → PMS | Write a new partner back |
| <b>GET</b> <code>/api/minibar</code>   | PMS → INV | Fetch minibar items      |

#### NOTE

The minibar charge is pushed by the PMS to the INV (4.2); the partner and minibar lists are pulled by the INV from the PMS. Both directions use the `X-Api-Key`.

## 4.5 Common errors

| Symptom                     | Resolution   |
|-----------------------------|--|
| PMS sync brings no partners | Wrong PMS URL/port, or an incorrect PMS API key                  |
| Minibar doesn't move        | No minibar mapping for the item, or the wrong INV key in the PMS |

## 5 Hydra Admin and the mobile PWA

Hydra Admin provides two things: the **license** (2.2) and the **cloud sync** for the mobile PWA. The INV periodically uploads a compact stock snapshot to Admin; the PWA reads from it — view-only.

### 5.1 Activation

Activation is done per 2.2 (Admin URL + Hotel ID + license key). The same identity also authenticates the snapshot upload — no separate setting is needed.

### 5.2 Stock snapshot upload

If the Admin URL, the Hotel ID and the license key are filled in, the INV uploads the snapshot automatically, at a throttled rate. The snapshot is **compact**: only what the PWA shows (summaries, low/critical items, expiries) — the full item data never leaves the machine.

INV → Admin endpoint

| Endpoint                      | Direction   | Content                                      |
|-------------------------------|-------------|--|
| <b>POST</b> /api/inv/snapshot | INV → Admin | hotel_id, license_key, hotel_name, ts, stats |

### 5.3 PWA: claim and portfolio

Opening the mobile PWA, the manager **claims** the site with a property ID and an access code, which yields a **read-only token**; the PWA uses it to fetch the snapshot.

PWA ↔ Admin endpoints

| Endpoint                      | Direction   | Content   |
|-------------------------------|-------------|---|
| <b>POST</b> /api/inv/claim    | PWA → Admin | property_id + access_code → token                       |
| <b>GET</b> /api/inv/inventory | PWA → Admin | The latest snapshot for the token's site (Bearer token) |

- 1 On the phone, open the PWA address and add it to the home screen (full-screen, native-app experience).
- 2 Claim the site with the property ID and the code.
- 3 With several units, the **portfolio view** shows the sites in a combined way — each unit has its own claim.

#### IMPORTANT

The PWA is **view-only**: it does not change stock and opens no path into the local network. Sales/storno always run over the local POS/PMS-INV connection.

## 6 Barcode scanner

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Hydra INV supports barcode work in three ways. It speeds up goods receipt and stocktaking.

### 6.1 USB / handheld scanner

Most USB readers act as a keyboard — no separate configuration. The scanned code recalls the matching item during goods receipt and stocktake.

### 6.2 Camera scanner (HTTPS, :4002)

You can also read with a phone/tablet camera. Browsers only allow the camera over a **secure connection**, so the INV serves the scanner page over HTTPS on port `4002` (port + 1000), with a built-in **self-signed certificate**.

- 1 On the phone, open: `https://[INV-IP]:4002/scanner` (same LAN).
- 2 Accept the browser's certificate warning (self-signed), then allow the camera.
- 3 The scanner page receives the key embedded, so it sends scanned codes to the `/api/scanner-code` endpoint without a separate login.

#### NOTE

During quantity entry (while the dialog is open) the camera pauses, so a stray code cannot disrupt the entry.

## 7 SMTP — order e-mail

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If you want to e-mail orders to suppliers, configure the outgoing mail server on the **Settings** > **SMTP** tab.

| Field                               | Purpose  |
|-------------------------------------|--|
| SMTP server + port                  | The address and port of the outgoing mail server |
| Email address (username) + password | Authentication for sending                       |
| From                                | The sender address of order e-mails              |

**TIP**

Many providers require a separate “app password” instead of the normal account password. If e-mail cannot be resolved, an order can always be saved as a **PDF** and forwarded manually — procurement works without it.

## 8 Administrator appendix

This chapter collects the low-level reference: the ports, the full API endpoint list, authentication and data storage.

### 8.1 Ports

The port is set on the **Settings** > **General** tab (the HTTPS port is this + 1000).

| Port | Service                              | Note                                 |
|------|--------------------------------------|--------------------------------------|
| 3002 | Integration REST API (HTTP, inbound) | POS, PMS, queries                    |
| 4002 | Camera scanner (HTTPS)               | port + 1000, self-signed certificate |

#### WARNING

Allow inbound TCP on 3002 and 4002 from the internal subnet. These are for the LAN only — never expose them to the internet.

### 8.2 API endpoints

The full endpoint list of the built-in integration server (default port 3002).

Hydra INV integration endpoints

| Method | Endpoint            | Function                              | Key  |
|--------|---------------------|---------------------------------------|------|
| GET    | /api/health         | Health check                          | —    |
| GET    | /api/inventory      | Full current stock                    | req. |
| GET    | /api/low-stock      | Low-stock items                       | req. |
| POST   | /api/sale           | POS sale (recipe-based deduction)     | req. |
| POST   | /api/storno         | Reverse a sale (write-back)           | req. |
| POST   | /api/minibar-charge | Deduct a PMS minibar charge           | req. |
| POST   | /api/pos-close      | POS daily close (aggregate deduction) | req. |
| GET    | /scanner            | Camera scanner page (HTTPS)           | —    |
| POST   | /api/scanner-code   | Receive a scanned code                | req. |

### 8.3 Authentication

Authentication uses the X-Api-Key HTTP header; its value is the API key on the **Settings** > **General** tab. The exceptions are /scanner (which receives the key embedded) and /api/health. If the API key is empty, the INV generates one automatically at startup and prints it to the console.

## 8.4 Data storage and backup

- All data is stored **locally** in the user data directory; writes are atomic and fsync-ed (power-cut safe).
- The program takes an **automatic daily backup** (rotated), and leaves a consistent file after every write.
- Full backup/restore is on the **Settings > Backup** tab. Keep an external copy too.

## 9 Troubleshooting and checklists

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Use this chapter as a commissioning script: perform the steps in the recommended order, then tick off each integration's checklist before declaring it done.

### 9.1 Commissioning order (recommended)

- 1 Activation (Admin URL + Hotel ID + license key → save, interface unlocked).
- 2 Built-in server (port `3002` + API key noted).
- 3 Item catalogue and **recipes** loaded (the basis of deduction).
- 4 Connect the POS (INV IP:port + shared API key → test sale).
- 5 Connect the PMS (minibar + partner sync).
- 6 Admin/PWA (snapshot upload → PWA claim).
- 7 Barcode camera (HTTPS `4002`) and SMTP (optional).

### 9.2 Per-integration checklist

#### Common foundation

- License active (the interface is not locked)
- Server port and API key set; the header shows a green dot
- `http://<INV-IP>:3002/api/health` responds

#### POS

- The POS has the same API key + the INV IP: `3002`
- Every POS product has a recipe or a direct item
- A test sale appears in INV's movement log; storno writes back

#### PMS

- PMS API key in the INV (shared with the POS for the minibar charge)
- PMS URL (`:3000`) + PMS API key set for partner sync
- PMS sync brings in the partners

#### Admin / PWA

- Admin URL + Hotel ID + license key filled in (the snapshot uses these)
- The PWA claim (property + code) succeeds; the stock is visible

### 9.3 General checks

- Firewall and same LAN for the local connections (POS, PMS, camera).

- The API key must **match** on the INV and the POS/PMS side.
- The camera needs HTTPS ( 4002 ), and the self-signed certificate must be accepted.
- The PWA is view-only; consumption is driven by the local connection.

# 10 Glossary

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**API key ( `X-Api-Key` )**

A secret authentication key that protects Hydra INV's built-in server. The POS and the PMS authenticate with it.

**Direct item**

A POS product that maps one-to-one to an item, without a recipe.

**FEFO**

First Expired, First Out — the earliest-expiring batch is consumed first.

**Health ( `/api/health` )**

An unauthenticated status endpoint for a quick connection check.

**Hotel ID**

The unit's identifier in Hydra Admin; tied to the license and the snapshot.

**INV**

Hydra INV — the stock/inventory application, on port `3002`.

**Minibar charge**

A minibar item charged by the PMS to a guest's room, which reduces INV's stock.

**PMS**

Property Management System — the Hydra hotel system ( `:3000` ).

**POS**

Point of Sale — the Hydra till / sales application.

**PWA**

Progressive Web App — an installable mobile web app for remote, read-only viewing of stock, via Admin.

**Snapshot**

A compact stock summary the INV sends to Admin for the PWA.

**Recipe**

The ingredient composition of a POS product; it drives deduction on sale.

**Storno**

Reversal of a sale; writes stock back.

**Token (claim)**

The read-only, site-scoped access key obtained when claiming the PWA.

