MedScan Enterprise — Installation & Connection Manual

Comprehensive Setup Guide for Windows Desktop Workstation & Mobile Scanner

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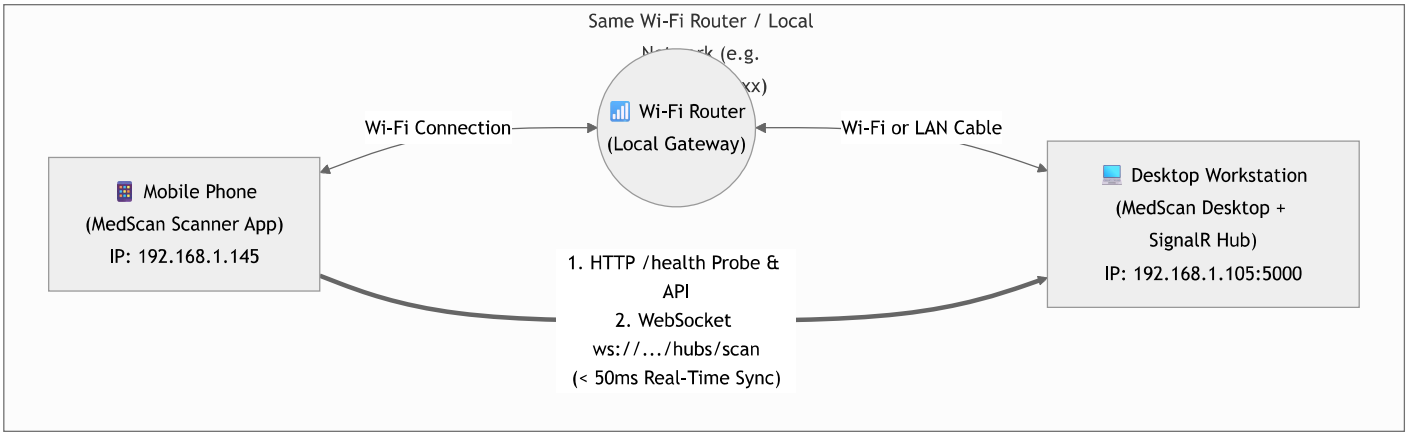
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1. System Overview & Architecture

MedScan operates as a high-speed, local-network edge AI ecosystem designed for pharmacies, hospital dispensaries, and warehouse distribution counters:

- **MedScan Mobile Scanner (Android / iOS):** Runs on-device optical character recognition (OCR) powered by a lightweight neural vision pipeline. It extracts **Batch No**, **MFG Date**, **EXP Date**, and **MRP** in under 350 ms.
- **MedScan Desktop Workstation (Windows 10/11):** Runs at the billing counter. It hosts the local real-time server (SignalR WebSocket hub & REST API on port `5000`) and displays live scanned items on the POS counter screen with expiry warnings, rack location lookups, and invoice exports.



2. Mandatory Prerequisites (Same Router & Network Setup)

Before installing or running either application, verify the following network conditions. **Failure to meet these prerequisites is the #1 cause of connection failures.**

> Important
>
> ## 1. Same Wi-Fi Router (Local Area Network)
>
> - Both the **Desktop Computer** and the **Mobile Phone** must be connected to the **exact same Wi-Fi router** or local network switch.
> - **Example Valid Setup:**
>   - Desktop PC connected via Ethernet cable or Wi-Fi to `Pharmacy_Store_5G`.
>   - Mobile phone connected via Wi-Fi to `Pharmacy_Store_5G`.
> - **Invalid Setup (Will NOT Connect):**
>   - Phone is on Mobile 4G/5G data while PC is on Wi-Fi.
>   - Phone is on a "Guest Wi-Fi" network that blocks access to private LAN devices.
>   - Phone is on 2.4 GHz Guest SSID and PC is on a separate isolated VLAN.

> Warning
>
> ## 2. Disable "AP Isolation" / "Client Isolation" on Router

> Many commercial and home routers have a security feature called **AP Isolation**, **Client Isolation**, or **Guest Mode Isolation**. When enabled, wireless devices cannot communicate with each other even on the same Wi-Fi.
>
> - Ensure **AP Isolation** is **DISABLED** in your router admin settings.

> Tip
>
> ### 3. Set Windows Network Profile to "Private"
>
> Windows Defender Firewall blocks inbound network traffic by default on "Public" networks:
>
> 1. On your Windows PC, click the **Wi-Fi / Ethernet** icon in the system tray.
> 2. Open **Network & Internet Settings -> Properties**.
> 3. Under **Network profile type**, select **Private network** (NOT Public).

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3. Part 1: Windows Desktop Workstation Installation

Step 1.1: Download the Desktop Installer

Download the verified official Windows installer(https://download.medocr.ginilytics.com/#downloads):

- **File Name:** `MedScan_Setup_v1.1.0.exe`
- **Supported OS:** Windows 10 / Windows 11 (64-bit)
- **File Size:** ~47.9 MB
- **Default Installation Path:** `C:\Program Files\MedScan Desktop`

Step 1.2: Run the Setup Wizard & SmartScreen Bypass

1. Navigate to your `Downloads` folder and double-click `MedScan_Setup_v1.1.0.exe` .
2. **If Windows Defender SmartScreen appears:**
   - Click "**More info**".
   - Click "**Run anyway**". *(This dialog appears because enterprise in-house executables are distributed directly without third-party store wrapping).*
3. Follow the on-screen installer prompts:

- Select destination folder (default: `C:\Program Files\MedScan Desktop`).
- Check the box "**Create Desktop Shortcut**".
- Click **Install**, then click **Finish** when completed.

Step 1.3: Allow Through Windows Firewall (Port 5000)

To allow the mobile phone to send scans to the desktop, Windows Firewall must allow incoming TCP traffic on port `5000`.

Option A: Automatic Windows Prompt (First Run)

- When you first launch MedScan Desktop, Windows Defender Firewall may display an alert asking to allow network access.
- Check "**Private networks, such as my home or work network**".
- Click "**Allow access**".

Option B: One-Click PowerShell Rule (Recommended for IT Admins) Open **PowerShell as Administrator** and execute:

```
New-NetFirewallRule -DisplayName "MedScan Desktop Hub (Port 5000)" -Direction Inbound -LocalPort 5000
```

Step 1.4: Launch MedScan Desktop & Note the Server IP

1. Double-click the **MedScan Desktop** icon on your desktop.
2. The application will start the local SignalR backend engine and display the **Counter Workstation Screen**.
3. Look at the top navigation bar or status banner on the desktop screen. It will show:

```
📡 Server Status: RUNNING
🌐 Host IP Address: 192.168.1.105
🔌 Port: 5000
🔗 Hub URL: http://192.168.1.105:5000/hubs/scan
```

4. **Write down the IP address shown on your desktop screen** (e.g. `192.168.1.105`). You will enter this on your phone.

(Alternative: You can also verify your PC's IP address anytime by opening Command Prompt and typing `ipconfig` -> look for `IPv4 Address` under your active Wi-Fi or Ethernet adapter).

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4. Part 2: Mobile Scanner App Installation (Android)

Step 2.1: Download the Mobile APK

- **Installation URL:** https://play.google.com/store/apps/details?id=com.ginilytics.med_ocr_app&pcampaignid=web_share
- **Supported OS:** Android 8.0 (Oreo) and above (ARM64 / ARMv7 / x86_64)
- **File Size:** ~105.4 MB (includes full on-device C++ OpenCV and neural OCR weights)
- Download the APK directly onto your Android phone via your browser or transfer it from your PC via USB cable.

Step 2.2: Enable "Install Unknown Apps"

1. Tap the downloaded `MedScanApp-release.apk` file in your browser's download manager or Files app.
2. If Android prompts *"For your security, your phone is not allowed to install unknown apps from this source"*:
   - Tap **Settings**.
   - Toggle **"Allow from this source"** to **ON**.
   - Tap the Back button.
3. Tap **Install** and wait for installation to complete.

Step 2.3: Launch & Grant Camera Permissions

1. Tap **Open** or launch **MedScan** from your phone's app launcher.
2. When prompted:
   - **Camera Permission:** Tap **"While using the app"** (Required for the 60 FPS live OCR scanner).
   - **Network Access:** Allow local network permissions if requested by Android.

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5. Part 3: Pairing Phone to Desktop (Adding Desktop IP)

Follow these exact steps to link your phone app to the desktop counter:

Step 5.1: Open Server Configuration on the Phone

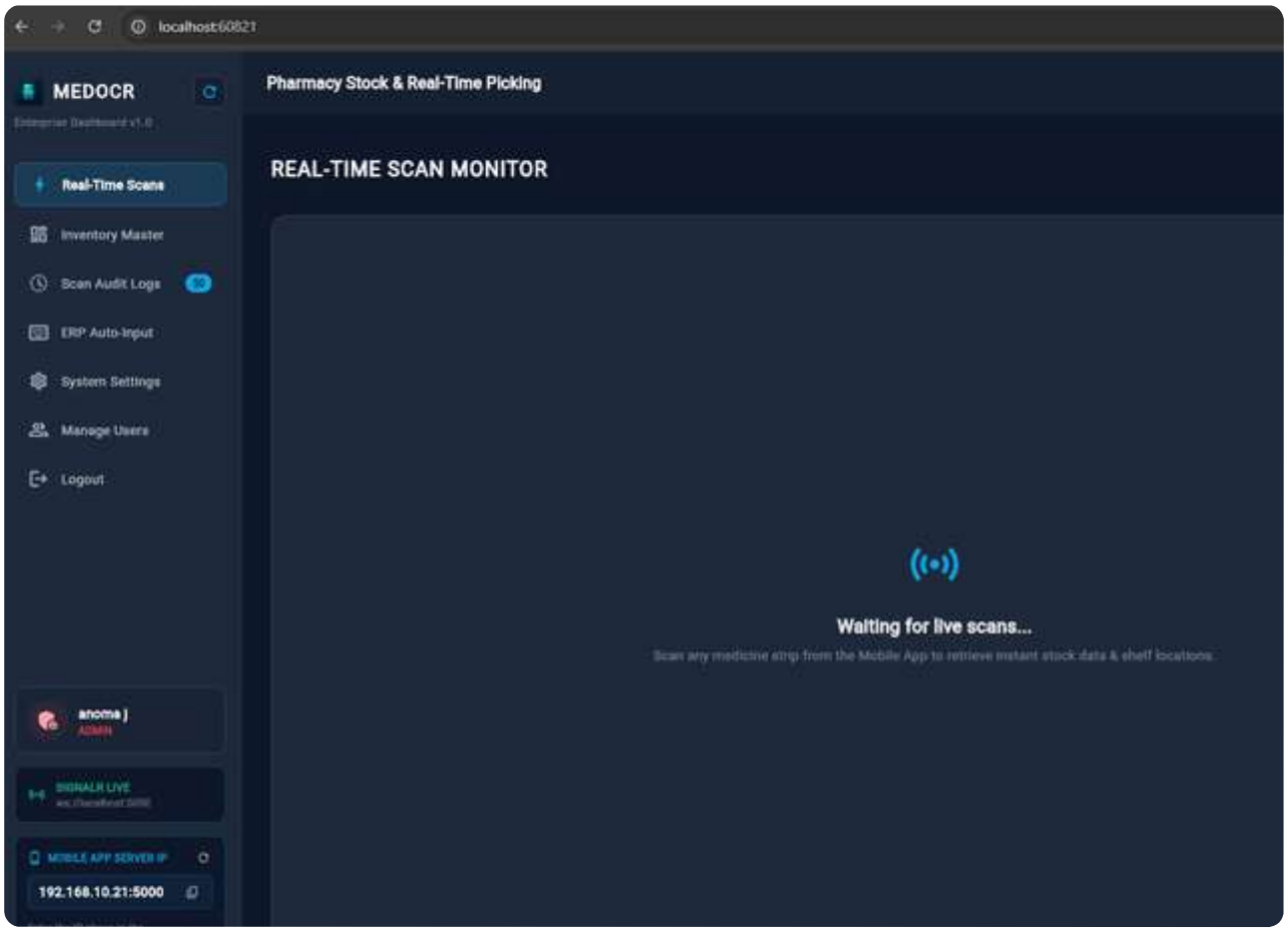
1. On the MedScan **Login Screen** on your phone, look at the **top-right corner**.
2. Tap the cyan **DNS / Server Config Icon** (`Icons.dns_rounded`).
3. A glassmorphic bottom sheet titled "**Server Configuration**" will slide up.





Step 5.2: Enter the Desktop IP Address

1. Tap the **Server IP Address** text box.
2. Type the exact **IPv4 address** that was displayed on your desktop app screen in Step 1.4 (for example: `192.168.1.105`).
    - Do **NOT** type `http://` or `:5000` . Only type the four-number IP address (e.g. `192.168.1.105`).



Step 5.3: Test the Connection

1. Tap the "**Test Connection**" button.
2. The app will immediately send an encrypted `/health` probe to `http://<IP>:5000/health`.
3. **Connection Verified:**
   - The status box turns **Green** with a checkmark:

     ```
     ✓ Connected — 18ms latency
     ```

   - This confirms the phone and desktop can communicate directly with sub-50ms ping!
4. *(If it fails, see Troubleshooting below).*

Step 5.4: Save the Configuration

1. Tap the "**Save IP Address**" button.
2. A green confirmation banner will appear:

```
Server IP saved — 192.168.1.105:5000
```

3. The bottom sheet will automatically close. The app will persist this IP in secure storage across future app restarts.
4. The background **SignalR WebSocket service** (`/hubs/scan`) will automatically initialize and connect to the desktop.

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6. Part 4: End-to-End Verification & First Live Scan

To verify that live streaming is active between the phone and desktop:

1. **Log in on Phone:** Enter your operator credentials on the Login screen and tap **Sign In**.
2. **Select Retailer:** Tap **Medicine Scanner**, select the customer or retailer (e.g., *MedLife Healthcare Chemist*).
3. **Align Packaging:** Position any medicine blister pack, strip, or bottle inside the dynamic green viewfinder box on your phone screen. Hold steady for ~300 ms.
4. **Instant Recognition:** The phone make a sound and locks on:
   - **Batch:** `BT9821`
   - **MFG:** `03/2026`
   - **EXP:** `02/2029`
   - **MRP:** `₹ 145.00`
5. **Inspect Desktop Screen:** Look at the **MedScan Desktop Workstation** monitor.
   - In less than **50 milliseconds**, a new entry will appear on the desktop table with the medicine name, batch number, expiry date, retailer name, and price.
   - If the batch is expired, the desktop flags it in bright red with an audio alert.
   - The desktop operator can click **"Add to Bill"** or export the batch log to **PDF / CSV**.

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7. Part 5: Troubleshooting & Network Diagnostics

If the phone displays **"Connection failed"** or cannot find the desktop, follow this step-by-step diagnostic checklist:

Symptom Matrix & Solutions

Symptom	Probable Cause	Action / Resolution
"Connection failed (Timed out)"	Phone and PC are on different Wi-Fi networks	Check Wi-Fi on both devices. Ensure phone is NOT on 4G/5G mobile data and both are on the same router SSID.
"Connection failed (Port 5000 unreachable)"	Windows Defender Firewall is blocking inbound connections	Open PowerShell as Admin and run the firewall command from Step 1.3.
"Unexpected response: HTTP 404"	Another service on the PC is occupying port 5000	Restart the MedScan Desktop app. Its built-in port discovery will automatically fail over to port 5001–5010.
"Failed host lookup / Invalid IP"	Typo in the IP address	Double-check the 4 numbers separated by dots (e.g. `192.168.1.105`). Avoid spaces or letters.
"Devices on same Wi-Fi cannot ping each other"	Router has "AP Isolation" or "Guest Mode" enabled	Log in to your Wi-Fi router admin page (`192.168.1.1`) and turn OFF **AP Isolation** / **Wireless Client Isolation**.
"Connection drops after restarting PC"	Router assigned a new local IP to the PC via DHCP	Reserve a static IP for your desktop in your router DHCP settings (see below).

Step-by-Step Diagnostic Test

You can test connectivity right from a web browser on your phone:

1. Open Google Chrome or Safari on your phone.
2. In the address bar, type:

   ```
   http://<YOUR_DESKTOP_IP>:5000/health
   ```

   (e.g., `http://192.168.1.105:5000/health`)
3. **Expected Result:** The browser will display:

   ```
   "MedScanBackend"
   ```

4. If this page loads in your phone browser, the connection between your phone and computer is 100% working, and the MedScan app will connect instantly.
5. If the page fails to load or spins endlessly, Windows Firewall or router AP Isolation is blocking the request.

Pro-Tip: How to Assign a Permanent IP to Your Desktop

By default, home and office routers may change your desktop's IP address every few days (DHCP renewal). To prevent having to update the IP in the phone app:

1. **Option A (In Windows):**
   - Go to Windows **Settings** -> **Network & Internet** -> **Wi-Fi / Ethernet**.
   - Under **IP assignment**, click **Edit** and switch from **Automatic (DHCP)** to **Manual**.
   - Set **IPv4** to ON and assign a static address outside your DHCP pool (e.g. `192.168.1.150`).
2. **Option B (In Router):**
   - Access your router's admin portal (typically `192.168.1.1` or `192.168.0.1`).
   - Go to **DHCP Server** -> **Address Reservation** (or **Static Leases**).
   - Bind your Desktop PC's MAC address to its current IP address (e.g. `192.168.1.105`).

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8. Quick Reference Sheet

Item	Details
Desktop App Installer	`MedScan_Setup_v1.1.0.exe` (~47.9 MB)
Mobile App Package	`MedScanApp-release.apk` (~105.4 MB)
Desktop Local Port	`5000` (auto-failover range: `5000` – `5010`)
Health Check URL	`http://<desktop-ip>:5000/health`
SignalR Streaming Hub	`ws://<desktop-ip>:5000/hubs/scan`
Mobile Config Location	Top-right **DNS icon** on Login Screen
Network Requirement	Same Wi-Fi router / subnet; AP Isolation disabled
Firewall Profile	Private Network (TCP Port 5000 Inbound Allowed)
Sync Latency	**< 50 ms** end-to-end over local Wi-Fi

MedScan Enterprise Platform — Designed & Distributed by GiniLytics IT Solutions.

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