



# Nonprofit Fund Accounting System v8.8

## Installation Guide – VirtualBox + Windows 11

This guide walks you through spinning up a clean Windows 11 guest in Oracle VM VirtualBox, installing all prerequisites, cloning the v8.8 code-base, configuring PostgreSQL, and running the application locally. Every step has been tested on VirtualBox 7.x with a Windows 11 Pro 23H2 ISO.

## 1. Prerequisites & System Requirements

Host requirement	Minimum	Recommended
Host OS	Windows 10/11, macOS 12+, or Linux	—
CPU	4 cores	6 + cores with VT-x/AMD-V enabled
RAM	8 GB	16 GB (leave $\geq 8$ GB for guest)
Disk space	40 GB free	80 GB SSD/NVMe
Software	Oracle VirtualBox 7.x, Windows 11 ISO, Git	—

⚠ Enable hardware virtualization (Intel VT-x/AMD-V) in the host BIOS/UEFI **before** you start.

## 2. VirtualBox Setup & Windows 11 Installation

### 1. Download

- Oracle VM VirtualBox: <https://www.virtualbox.org/wiki/Downloads>
- Windows 11 ISO: <https://www.microsoft.com/software-download/windows11>

### 2. Create a new VM

- Name: Win11-FundAcct-v8\_8
  - Type: *Microsoft Windows*, Version: *Windows 11 (64-bit)*
  - Memory size: **8192 MB** (or ½ of host RAM)
  - Virtual hard disk: **VDI**, dynamically allocated, **60 GB**.
3. **Adjust VM settings**
- System ➔ Processor: 4 CPUs (enable PAE/NX).
  - Display ➔ Graphics Controller: *VBoxSVGA* ➔ enable 3D Acceleration.
  - Storage ➔ click empty optical drive ➔ **Choose a disk file...** ➔ select Windows 11 ISO.
  - Network ➔ Adapter 1: *Bridged Adapter* or *NAT* (either works).
4. **Boot & install Windows 11** – follow Microsoft out-of-box experience.  
Screenshot 01-oobe.png: choose “Set up for personal use”.  
☐ Create a local admin account, e.g. fundadmin.
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## 3. Development Environment

Open **PowerShell (Admin)** inside the VM and run:

```
# 3-a. Install Chocolatey (package manager)
# Allow TLS 1.2 and bypass the PowerShell execution policy just for
  this session
Set-ExecutionPolicy Bypass -Scope Process -Force; `
[System.Net.ServicePointManager]::SecurityProtocol = 3072; `
iex ((New-Object
    System.Net.WebClient).DownloadString('https://community.chocolatey.org/
    install.ps1'))

# 3-b. Use choco to install tools
choco install -y git nodejs-lts postgresql16 vscode
```

Component	Version tested
Node.js	20 LTS
PostgreSQL	16.x
Git	2.44
VS Code	1.90

After PostgreSQL installer finishes it shows a **superuser password dialog** – set postgres → P@ssw0rd!.

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## 4. Cloning the Repository & Installing Dependencies

```
# 4-a. Clone repo
cd $HOME\source
git clone https://github.com/tpfbill/nonprofit-fund-accounting.git
cd nonprofit-fund-accounting
git checkout v8.8      # ensure you are on the tag

# 4-b. Install Node dependencies
npm install             # installs server + client packages
```

| Screenshot 02-git-clone.png shows successful clone at commit 444f887.

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## 5. Database Configuration & Setup

### 1. Create a DB user & database

```
psql -U postgres -W      # password: P@ssw0rd!
CREATE ROLE npfadmin LOGIN PASSWORD 'npfa123';
CREATE DATABASE fund_accounting_db OWNER npfadmin;
\q
```

### 2. Load schema & seed data

```
# from the project root where the SQL scripts reside
psql -U npfadmin -d fund_accounting_db -f db-init.sql      # creates
    all tables & constraints
psql -U npfadmin -d fund_accounting_db -f test-data.sql    # loads
    sample/seed data
```

### 3. Configure connection string

Create .env in project root:

```
PGHOST=localhost
PGPORT=5432
PGDATABASE=fund_accounting_db
PGUSER=npfadmin
PGPASSWORD=npfa123
```

---

## 6. Running the Application

In **two** PowerShell terminals:

```
# Terminal 1 – backend
```

```
cd nonprofit-fund-accounting
node server.js
```

```
# Terminal 2 – frontend (static)
```

```
npx http-server . -p 8080 --no-cache
```

Open `http://localhost:8080/index.html` in the guest browser.

Landing dashboard should load with sample metrics (“Dashboard cards loading...” ➔ populates).

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## 7. Testing the Installation

Test	Expected result
Dashboard loads	Summary cards + charts appear without errors
Documentation tab	Opens <code>direct-docs.html</code> , styled white (no underline)
Fund Reports	Dropdown lists <b>all funds</b>
Inter-Entity Transfer wizard	Form loads, API calls succeed
Database status badge	Shows <b>Connected</b> (green)

Run `npm test` to execute unit tests (if present).

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## 8. Troubleshooting

Symptom	Fix
“DB Offline” badge	Verify PostgreSQL running; check <code>.env</code> credentials; <code>psql</code> to test.
Dashboard tabs unresponsive	Ensure you served frontend on <b>8080</b> and backend on <b>3000</b> ; clear browser cache

Symptom	Fix
	(Ctrl+Shift+R).
Documentation tab pink/purple	Cached CSS—hard refresh or delete cached file at %LOCALAPPDATA%\Microsoft\Edge\User Data\Default\Cache.
Port 3000 already in use	netstat -aon   find "3000" ➔ taskkill /PID <pid> /F
node-gyp build fails (rare)	npm install -g windows-build-tools and retry.

## 9. Performance Optimizations

1. **Increase VM CPUs & RAM** in VirtualBox settings.
2. Enable **I/O APIC** and **Hyper-V Paravirtualization Interface** (System ➔ Acceleration).
3. Place the VM disk on SSD/NVMe.
4. Inside Windows guest:
  - Turn off **Real-time Protection** (Windows Security) for dev work.
  - Disable **Startup apps** via Task Manager.
5. Use **pgTune** or set `shared_buffers = 512MB` in `postgresql.conf`.

## 10. Security Considerations

- **Keep host & guest patched** – run Windows Update after installation.
- Store secrets in `.env.local` (never commit to Git).
- Restrict PostgreSQL to listener `127.0.0.1`.
- Change default passwords (fundpass, P@ssw0rd!) before production.
- Use **HTTPS reverse proxy** (e.g., Nginx) if exposing outside VM.
- Enable **VirtualBox snapshots** to roll back quickly after testing malware or risky data.

## Appendix A – Useful Commands

```
# stop servers cleanly
pkill -f "http-server"
```

```
pgkill -f "node server.js"
```

```
# backup database
```

```
pg_dump -U npfadmin -Fc fund_accounting_db > backup.dump
```

```
# restore
```

```
pg_restore -U npfadmin -d fund_accounting_db -c backup.dump
```

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**Enjoy your fully-functional Nonprofit Fund Accounting System v8.8!** If you encounter issues not covered here, open an issue on GitHub or consult the `direct-docs.html` library inside the app for detailed PDF guides.