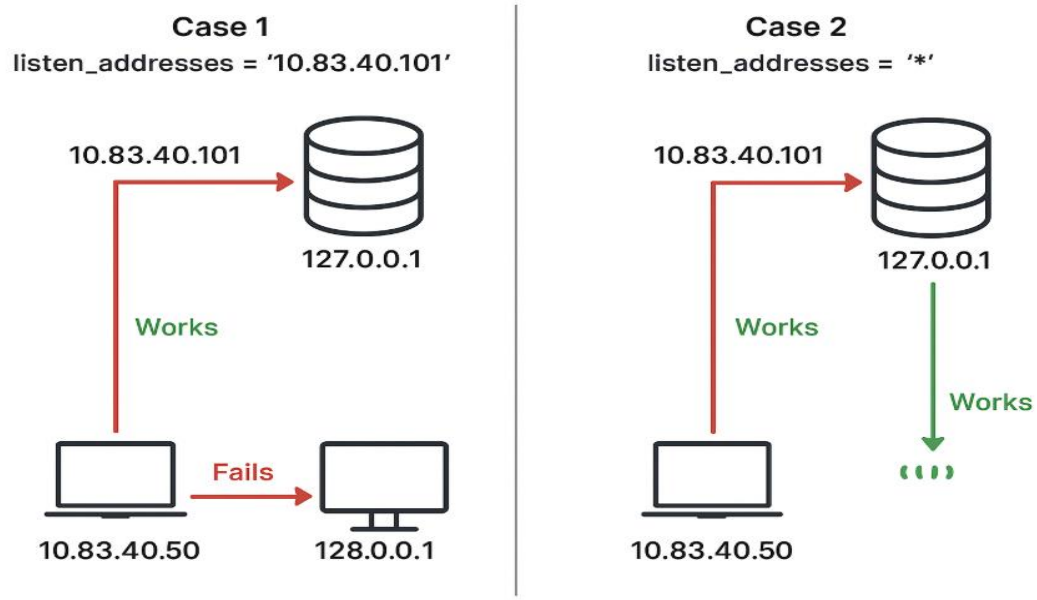
difference between listen_address=* and listen_address = 'own ip'



==========listen_address = 'own ip'==========

Example setup

--PostgreSQL server machine:

IP1 (localhost) = 127.0.0.1

IP2 (LAN) = 10.83.40.101

--Client machine (your local PC/laptop):

IP = 10.83.40.50

--PostgreSQL is running on port 5432

Case 1 – listen_addresses = '10.83.40.101'

PostgreSQL will only listen for connections on 10.83.40.101.

--On the PostgreSQL server:

1. # Try connecting locally using the LAN IP (works)
psql -h 10.83.40.101 -U postgres -d mydb

✅Works (PostgreSQL is listening there).

2. # Try connecting locally using localhost (fails)
psql -h 127.0.0.1 -U postgres -d mydb

❌Fails (could not connect to server: Connection refused).

3. From your client machine (10.83.40.50):

psql -h 10.83.40.101 -U postgres -d mydb

✅Works (if network + pg_hba.conf allow it).

psql -h 127.0.0.1 -U postgres -d mydb

❌Fails (your client's localhost is not the PostgreSQL server).

========== listen_address=*
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PostgreSQL will listen on all available IPs.

LAN IP
psql -h 10.83.40.101 -U postgres -d mydb
✅Works.

Localhost
psql -h 127.0.0.1 -U postgres -d mydb
✅Works.

From your client machine (10.83.40.50):

psql -h 10.83.40.101 -U postgres -d mydb

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Key difference

Setting	Listens on…	Can connect from server using localhost?	Can connect from client using LAN IP?
10.83.40.101	Only that specific IP	❌No	✅Yes
*	All interfaces (localhost + LAN)	✅Yes	✅Yes

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difference between pg_hba and listen_address

1. listen_addresses

- Purpose: Controls where PostgreSQL listens for connections.
- Think of it as: The door where PostgreSQL will accept connection requests.
- Set in: postgresql.conf
- Example:

listen_addresses = '10.83.40.101'

→ PostgreSQL only listens on IP 10.83.40.101.
If a request comes to a different IP, PostgreSQL won't even hear it.

2. pg_hba.conf

- Purpose: Controls who is allowed in and how they authenticate once the request reaches PostgreSQL.
- Think of it as: The security guard who checks ID and password at the door.
- Set in: pg_hba.conf file (Host-Based Authentication).
- Example:

host mydb postgres 10.83.40.50/32 md5

→ Allows user postgres from IP 10.83.40.50 to connect to database mydb using password authentication.

Key difference

Feature	listen_addresses	pg_hba.conf
What it does	Decides which IPs PostgreSQL listens on	Decides who can connect and how
When it acts	Before connection request is accepted	After the request reaches PostgreSQL
Analogy	The door that is open/closed	The guard checking credentials

Rule of thumb:

- If listen_addresses doesn't allow the IP → client can't even knock.
- If pg_hba.conf doesn't allow the IP/user → client knocks, door opens, but guard says "No entry."