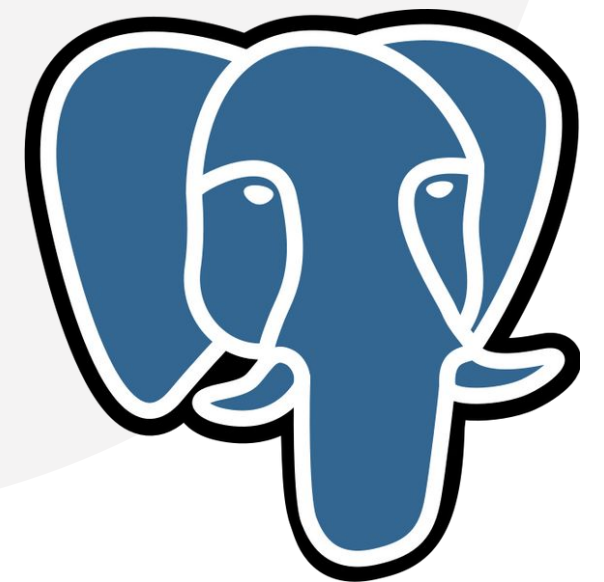# WHAT MAKES POSTGRESQL DIFFERENT FROM DATABASE ADMINISTRATORS POINT OF VIEW

28 AUG, 2025

Kim Saroyan

AGENDA OVERVIEW

DBA CORE RESPONSIBILITIES
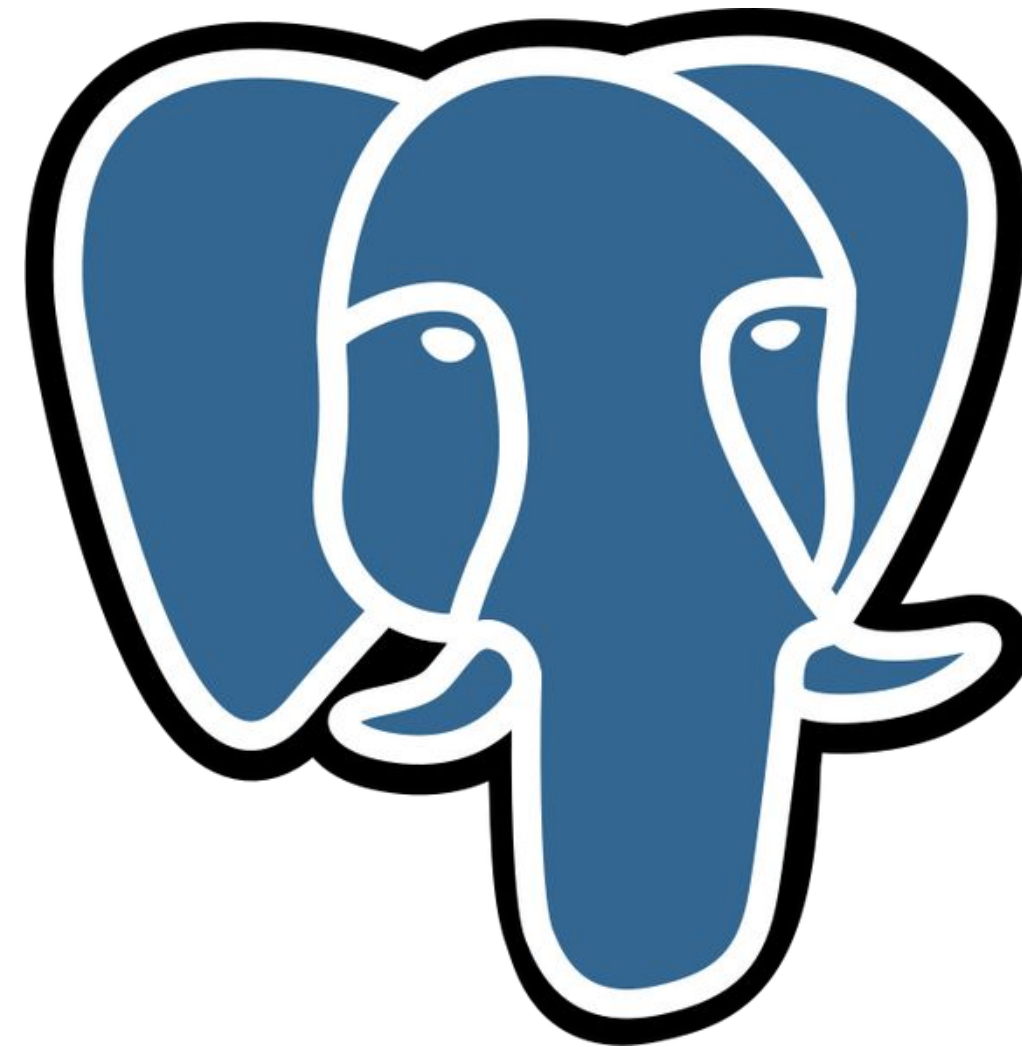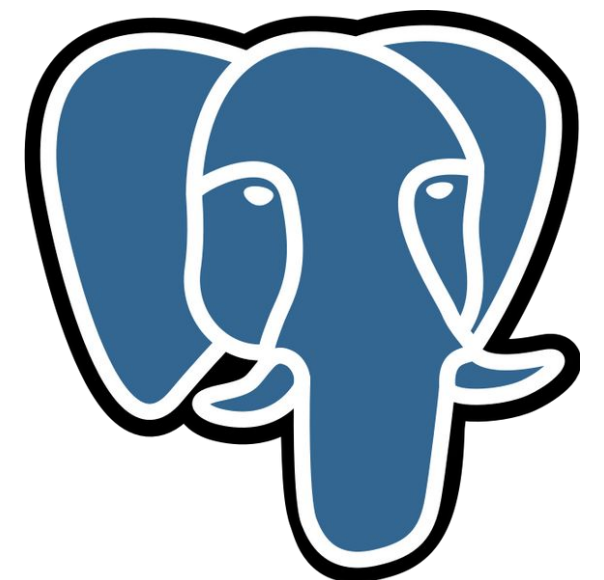
Installation & Configuration

Database Security & Compliance

Backup & Recovery

Performance Monitoring & Tuning

High Availability & Disaster Recovery

INSTALLATION & CONFIGURATION

SQL SERVER

- Mostly runs on Windows (Linux support since 2017, still not as mature).

- Installer-driven with integrated configuration.

- Only 15-20 configuration parameters

POSTGRESQL

- Natively cross-platform (Linux, BSD, macOS, Windows — but Windows is

rare in prod).

- Often installed via package managers (yum, apt).

- Configuration is file-based (editing postgresql.conf,pg_hba.conf), not GUI driven
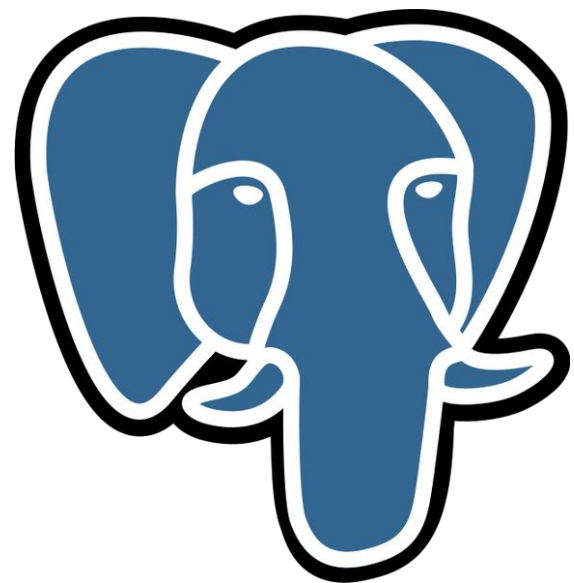
- Hundreds of configuration parameters

Impact for DBA: You'll need to be comfortable with Linux server administration for serious PostgreSQL work.
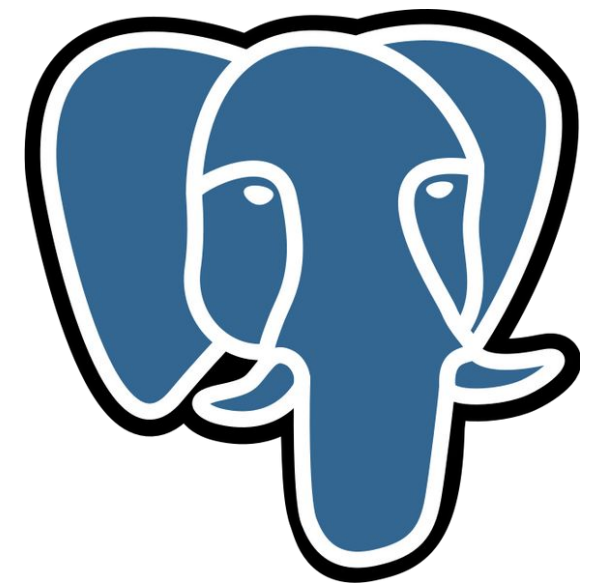
DATABASE SECURITY & COMPLIANCE

SQL SERVER

- Tight integration with Active Directory.

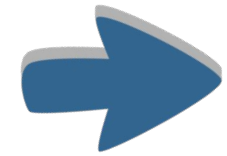- Logins/users/roles, granular securables.

POSTGRESQL

- Roles model (roles can be login-capable or not).

- Authentication via via pg_hba.conf: local socket, SCRAM, certificates, LDAP, Kerberos.

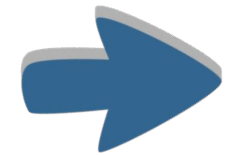- No AD integration out of the box, requires LDAP/Kerberos setup.

Impact for DBA: Security configuration is mostly file-based, not GUI-driven.

BACKUP & RECOVERY

➡️ POINT-IN-TIME RECOVERY (PITR) IS DONE VIA **WAL (WRITE AHEAD LOG) ARCHIVING**.

➡️ NATIVE TOOLS: PG_DUMP, PG_RESTORE, AND PG_BASEBACKUP.

➡️ NO BUILT-IN CENTRALIZED GUI TOOLS LIKE SQL SERVER MANAGEMENT STUDIO (SSMS).

➡️ 3RD-PARTY TOOLS (BARMAN, PGBACKREST, WAL-G) OFTEN USED IN PRODUCTION.

Impact for DBA: More scripting & tool integration required compared to SQL Server's built-in backup system.
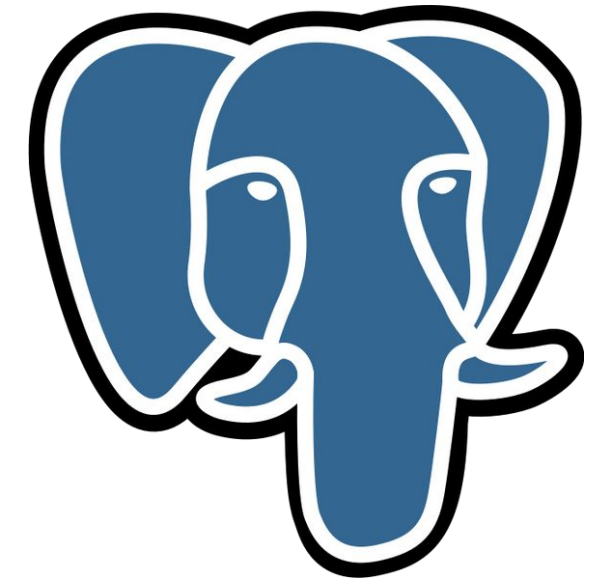
PERFORMANCE MONITORING & TUNING

PostgreSQL exposes rich system views (pg_stat_activity, pg_stat_statements, pg_locks, etc.)

Requires external tools (Prometheus + Grafana, pganalyze, pgBadger, etc.) for visualization.

No integrated performance dashboard like SQL Server's DMVs + SSMS Reports.

Impact for DBA: More reliance on open-source or 3rd-party tools, but visibility is very detailed.

HIGH AVAILABILITY & DISASTER RECOVERY

- Built-in streaming replication (physical).

- Logical replication added in v10 → more like SQL Server replication, but with fewer built-in monitoring tools.

- No native Always On / Failover Clustering; clustering is handled externally (e.g., Patroni, Replmanager,…).

Impact for DBA: You must architect HA/DR with external components — PostgreSQL provides building blocks, not full solutions.
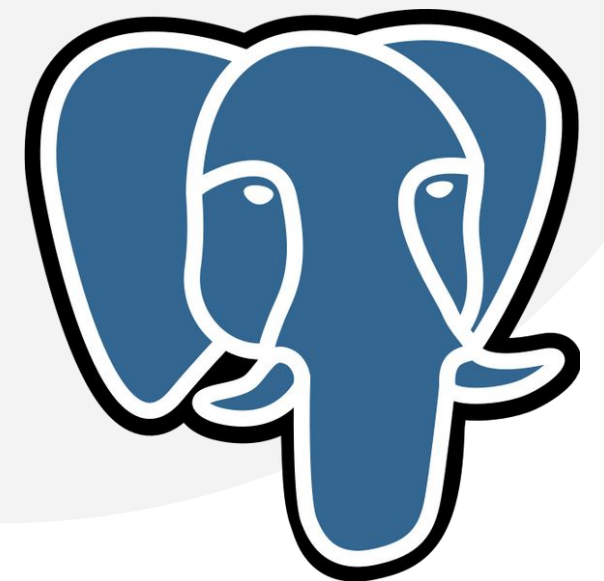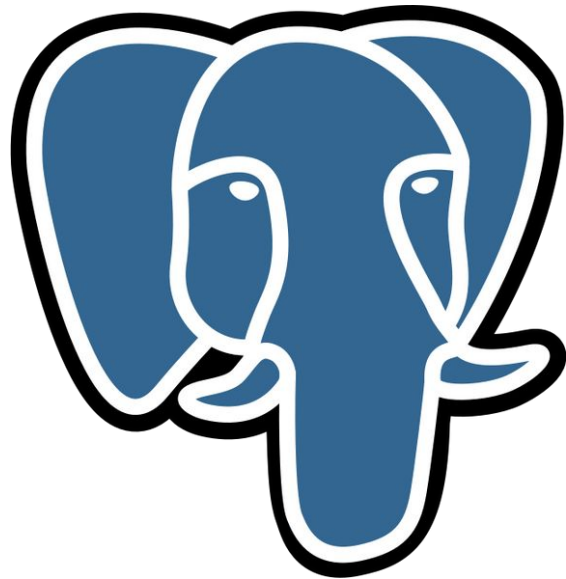
KEY DIFFERENCES

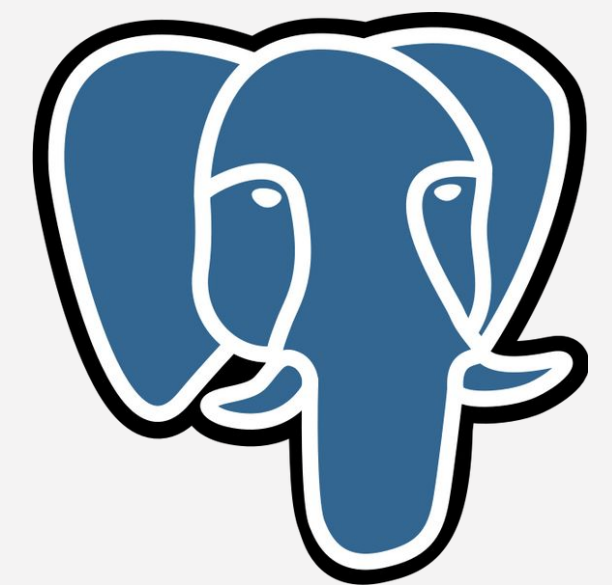| FEATURE	SQL SERVER	POSTGRESQL
LICENSING	PAID TIERS	FREE, ALL FEATURES
PLATFORM FOCUS	WINDOWS	LINUX-NATIVE
PROCESS MODEL	THREADED	MULTI-PROCESS
CONCURRENCY CONTROL	LOCKS + SNAPSHOT	ALWAYS MVCC
MAINTENANCE JOBS	SQL AGENT	EXTERNAL (CRON, PG_CRON)
BACKUPS	.BAK FORMAT	PG_DUMP, PG_BASEBACKUP
HA BUILT-IN	YES	NO (EXTERNAL TOOLS)
SECURITY INTEGRATION	AD NATIVE	CONFIG-BASED, LDAP/KERBEROS

SUMMARY

POSTGRESQL GIVES YOU:

•Freedom and flexibility (open-source, extensible,

portable)

•Responsibility (more manual tuning, vacuum

management, replication setup)

•Transparency (rich monitoring views, logs, extensible

tooling)

•Less vendor lock-in but also less out-of-the-box

automation than SQL Server or Oracle

LICENSE COST:

License Cost:

•MSSQL Server 2-core pack license $15,123.

•Oracle DB Per processor core license $47,500

(enterprise features need to be

 licensed separately).

•PostgreSQL Per processor

core license 0$ (Senior

DBA Salary)

THANK YOU

Q&A