

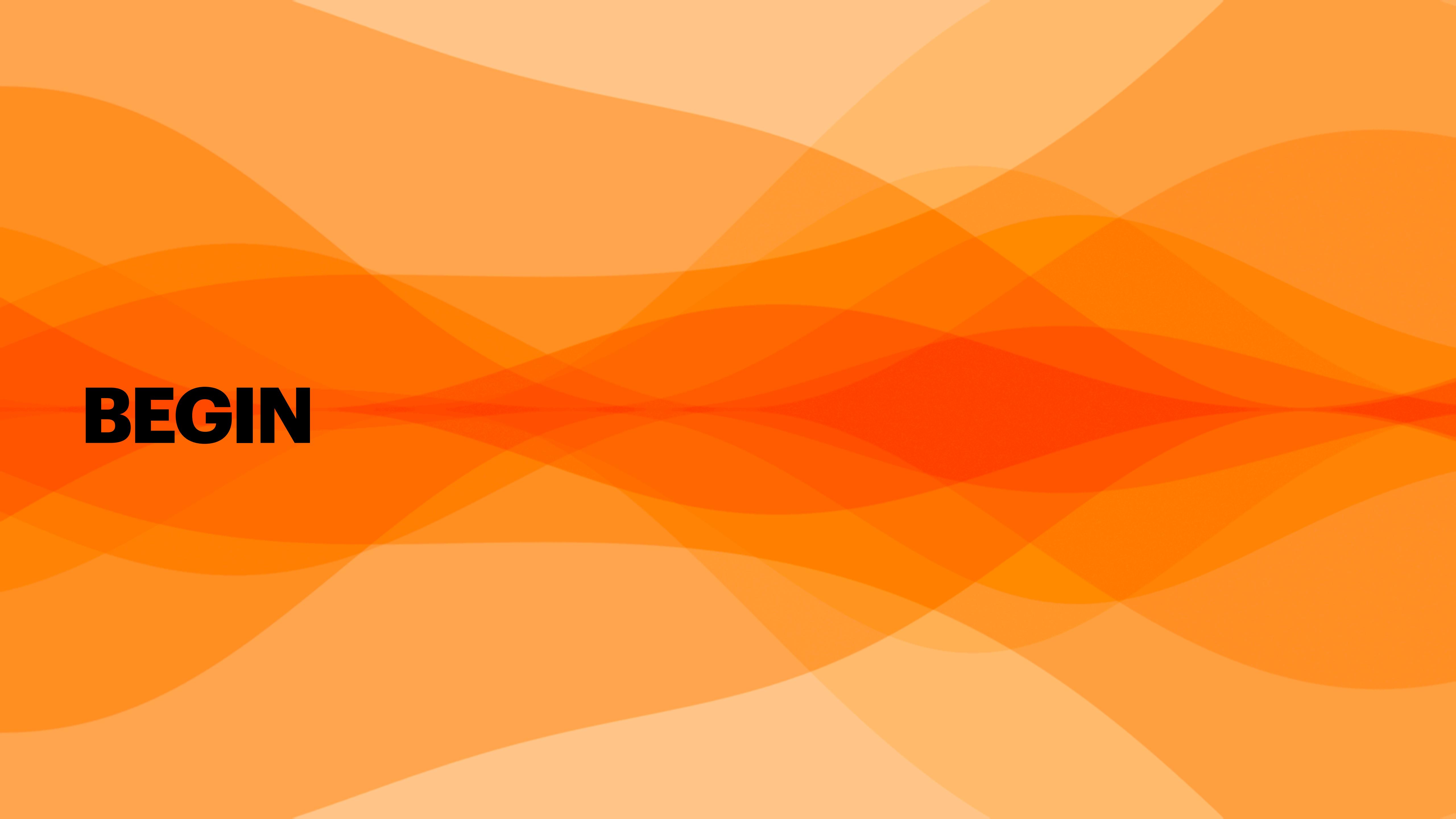


POSTGRESQL EXTENSION ECOSYSTEM SUMMIT EU

STATE OF THE POSTGRES EXTENSION ECOSYSTEM

PAST, PRESENT, AND FUTURE

David E. Wheeler
PGXN, Tembo
2024-11-22

The background consists of several overlapping, rounded bands of color. The colors transition from a pale yellow at the top to a bright orange in the center, and then to a darker orange at the bottom. The bands are slightly offset, creating a sense of depth and movement.

BEGIN

LEGACY

Long history of extensibility

Two approaches

shared_preload_libraries

Pure SQL (including PLs)

A few intrepid adopters

PostGIS

BioPostgres

PL/R

PL/Proxy

pgTAP

POSTGRES 9.1

Dimitri Fontaine adds extensions

Key features:

Compile and install

CREATE/UPDATE/DROP EXTENSION

pg_dump and pg_restore

The background features a dynamic, abstract design composed of overlapping circles in various shades of green and teal. These circles are layered and overlap each other, creating a sense of depth and movement across the entire frame.

OPPORTUNITY



PGXN

FEATURES

Distribution

Source Code

Registration

Namespacing

Discovery

Search

Documentation

Tags

Installation

CLI

Compile & install

PGXS or Configure



PGXN

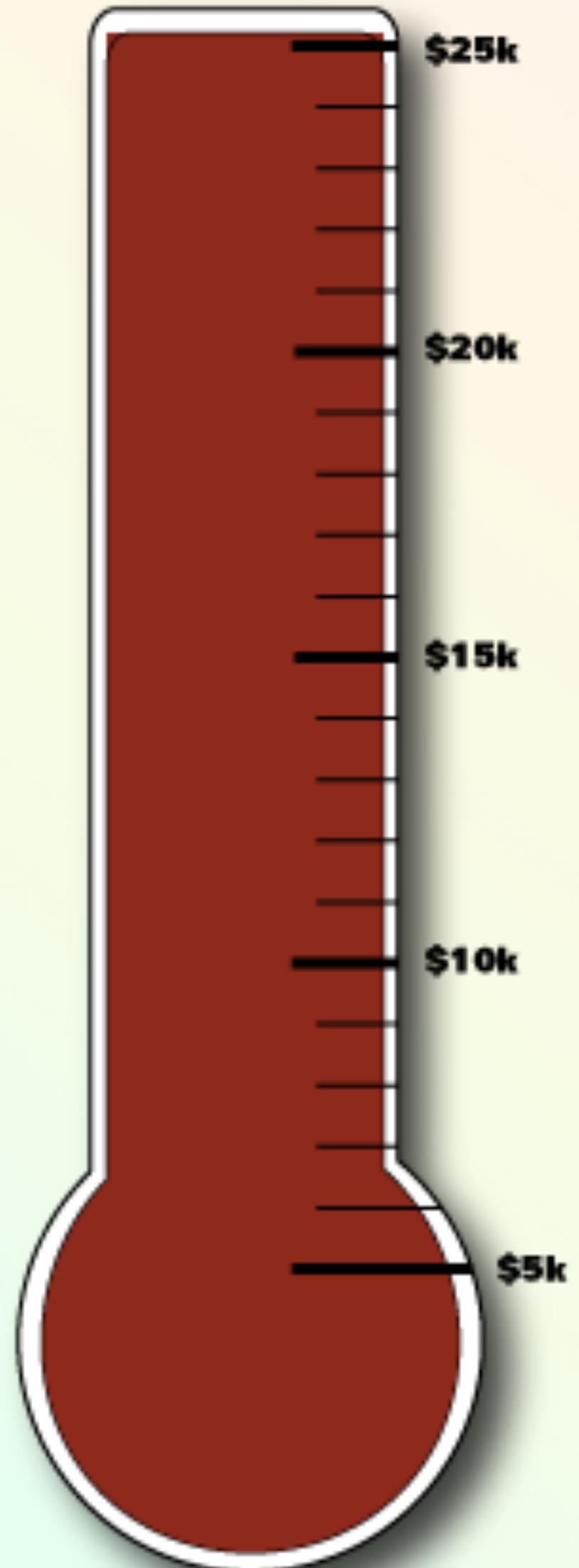
HISTORY

Funded December 2010

pgxn.org launched April 2011

Client by Daniele Varrazzo April 2011

Dev utils by Dickson S. Guedes June 2011





[users](#) [tags](#) [recent](#)

in [Distributions](#) [PGXN Search](#)

acl [administration](#) **aggregate** aggregate function
analytics arithmetic array [arrays](#) [audit](#) auditing **count**
custom background worker data type [datatype](#) dictionary
distinct [estimate](#) example [extension](#) external data
fdw **foreign data wrapper**
function **functions** hash hint index

PGXN, the PostgreSQL Extension network, is a central distribution system for open-source PostgreSQL extension libraries.

Recent Releases

[uint128 1.0.0](#)
Unsigned integer datatypes for PostgreSQL

[pg_reusage 0.0.1](#)
An extension to log all the relations used in SQL statements and functions

[vectorize 0.19.0](#)
The simplest way to do vector search

“In classic SDLC fashion, the PGXN POC shipped as an MVP and was neglected.”

ME, JUST NOW

INTERIM

CLOUDY DAYS

Non-Core Extension Counts:

Azure: 25

GCP 29

AWS: 48

PGXN: 377

[joelonsql/PostgreSQL-EXTENSIONS.md](#): 1,186



WHY?

LOST OPPORTUNITIES

POSTGRES EXTENSIONS:

Difficult to find and discover

Under-documented and difficult to understand

Maturity difficult to gauge

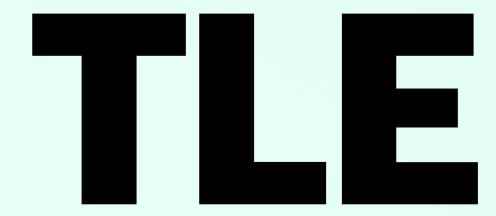
Hard to configure and install

No comprehensive binary packaging

Centralized source distribution insufficient

The background features a series of overlapping, wavy shapes in shades of teal and dark blue, creating a sense of depth and motion.

FILLING THE GAPS



TRUSTED LANGUAGE EXTENSIONS

Goal: Empower app developers

Easy install via SQL functions

Portable (no compilation)

Hooks into CREATE EXTENSION

Supports custom data types

Plans for FDWs, background workers

From AWS & Supabase

PGRX

Native Rust extensions

Build shared object libraries

Full access to Postgres features

Developer-friendly tooling

Lots of community excitement

Under active development

From ZomboDB & PgCentral Foundation



NEW REGISTRIES

EMPHASES

Ease of use

Platform neutrality

Stats

Curation

Architecture

x86-64 ⓘ

Operating system

Debian/Ubuntu ⓘ

Downloads

20 all time downloads

0 downloads in the last 30 days

1 download in the last 90 day

9 downloads in the last 180 days

```
> curl -sfL https://install.pgx.sh | sh
```

```
🎉 pgxman successfully installed
```

```
> pgxman install pgvector
```

The following Debian packages will be installed:
postgresql-14-pgxman-pgvector=0.5.1

```
> Do you want to continue? [Y/n] y
```

```
pgvector has been successfully installed
```

Featured

7

Analytics

13

Auditing / Logging

7

Change Data Capture

6

Connectors

27

Data / Transformations

49

Debugging

2

Index / Table Optimizations

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Machine Learning

4

Metrics

18

Orchestration

9

Procedural Languages

16

Query Optimizations

5

Search

11

Security

11

Tooling / Admin

14

STATE OF THE ECOSYSTEM

STATE OF AFFAIRS

Despite early promise...

No single source

Many incomplete attempts

Poor discovery

Difficult installation

Insufficient docs

Low adoption

But...

***“There sure has been a lot of
excitement around
extensions lately.”***

ME, AGAIN

OPPORTUNITIES (NEW)

PGXN V2

The New World Order

Started this year

Made possible by Tembo

Consider emerging patterns

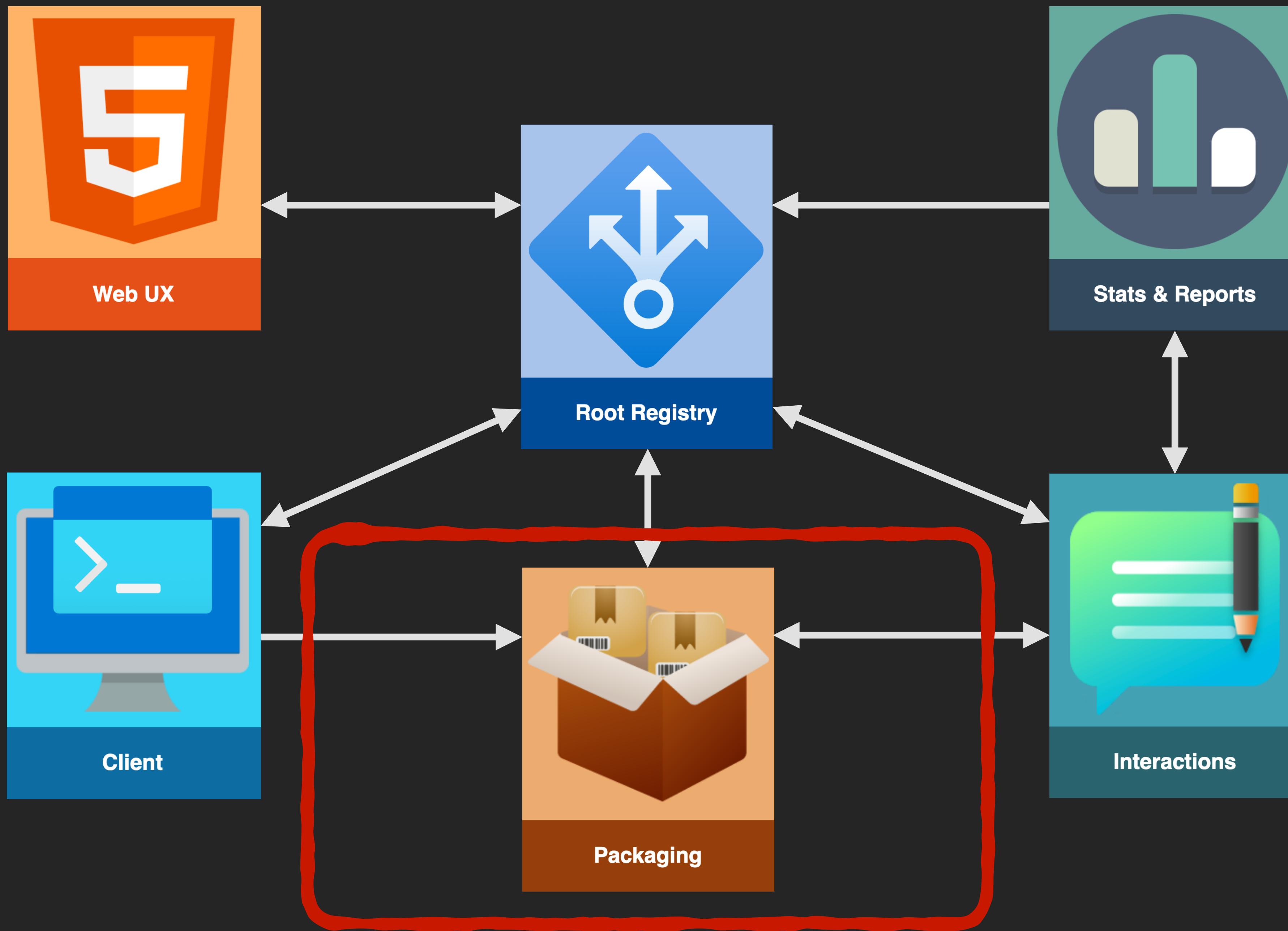
Meditate on deficiencies

Engage deeply with the community

Design and implement new architecture

Serve the community for next decade

ARCHITECTURE SKETCH



METADATA & PACKAGING RFCS

<https://github.com/pgxn/rfcs/pulls>

Started developing RFCs

Meta Spec v2

JWS Release Signing

Binary Distribution Format

Feedback appreciated!

Goals:

META.json-driven packaging

OCI distribution

TRUNK OCI DEMO

EOY 2024

JOIN US

https://wiki.postgresql.org/wiki/PGXN_v2



POSTGRESQL EXTENSION ECOSYSTEM SUMMIT EU

THANK YOU

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