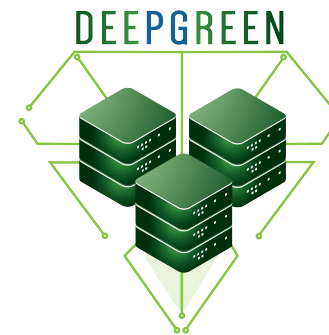


# The Ultimate Data Warehouse System

**Scale Out Flexibility, Massive Parallel Processing, Huge Data (No Limit)**



Deepgreen is a product of Vitesse Data Inc, proudly presented by Equnix Business Solutions, Pte Ltd.  
Deepgreen is a clustering database system especially made for Data Warehousing

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# Our Client and Partners: Financials



Bank Resona Perdania



PT. BANK PEMBANGUNAN DAERAH KALIMANTAN BARAT



FIFGROUP



member of ASTRA GROUP

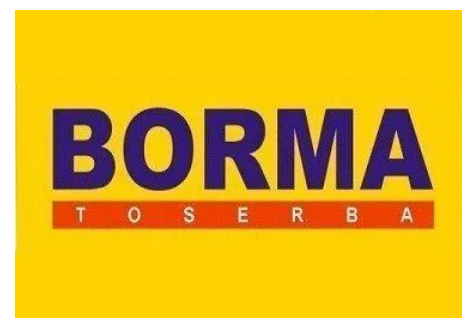




# Our Client and Partners: IT Companies

trusted • IT • company







MINISTRY OF TRADE



DINAS KOMUNIKASI, INFORMATIKA DAN PERSANDIAN ACEH

*Menuju Masyarakat Informasi*





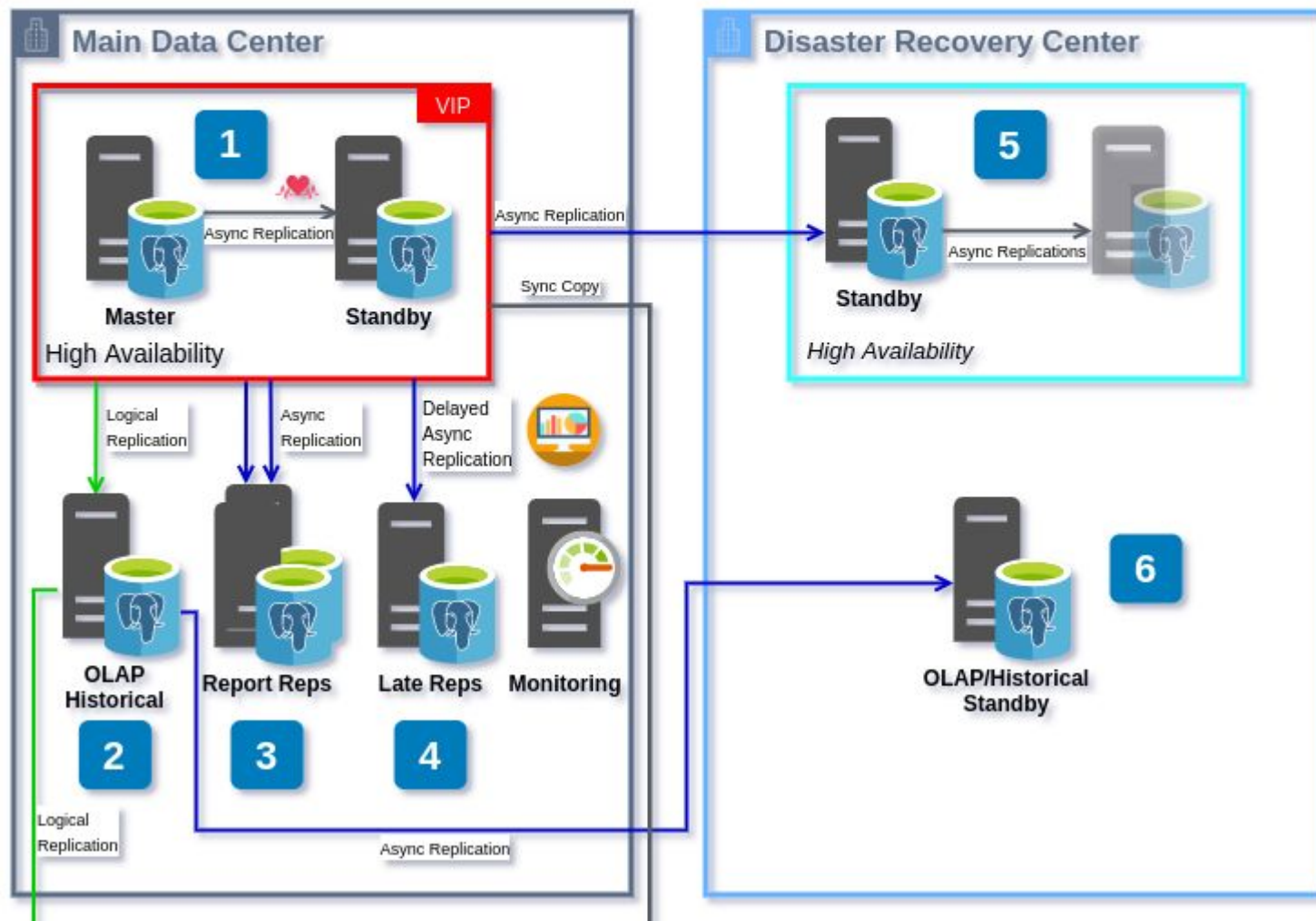




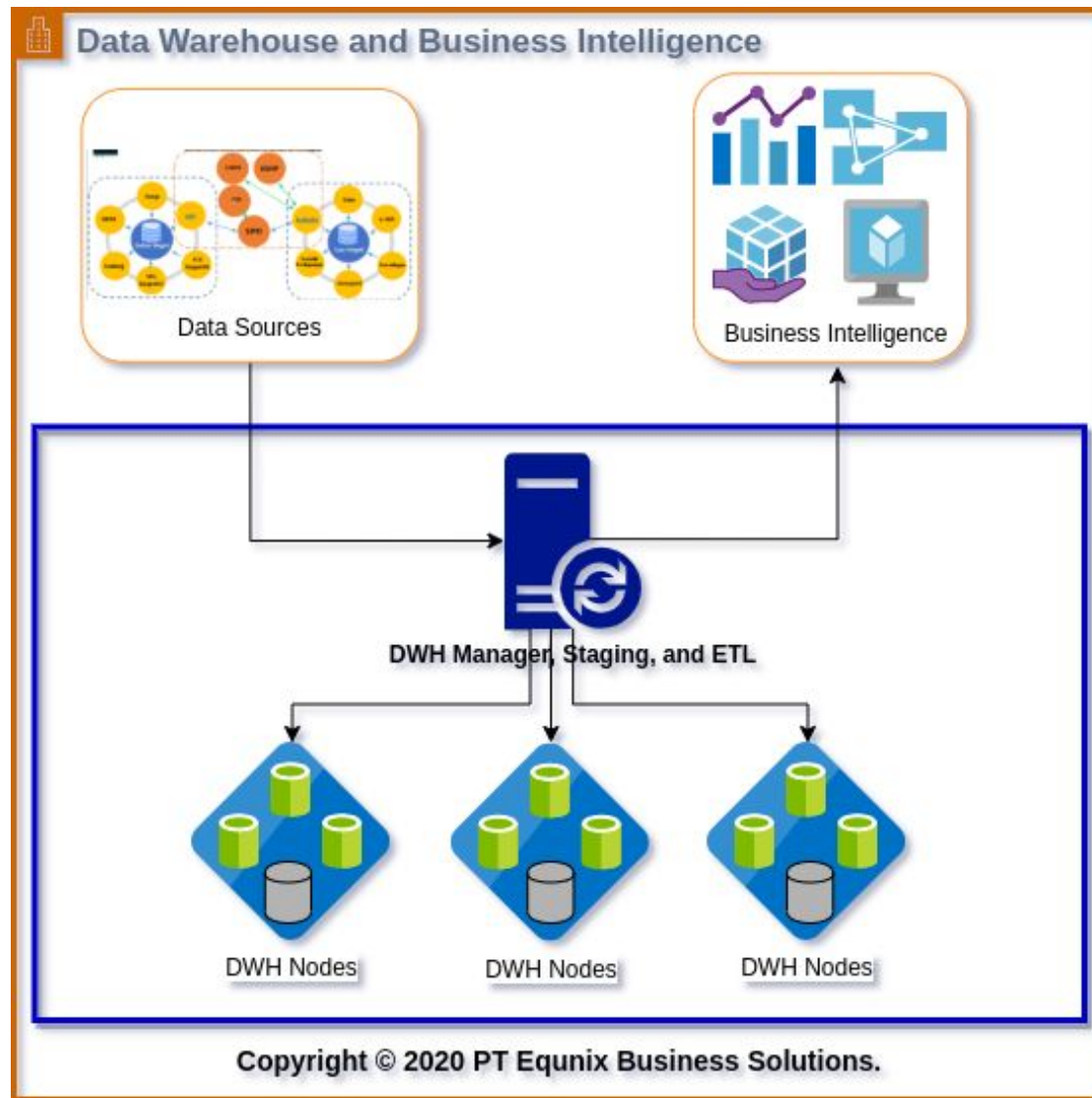
# Enterprise Production Database

Complete General Topology

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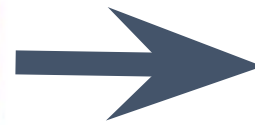
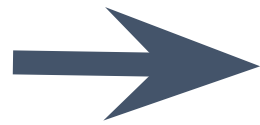
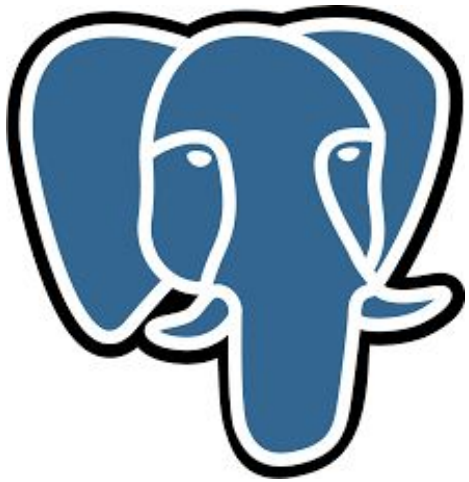
# What is Data Warehouse?



Now presenting to you..

# Deepgreen

A Data Warehouse Solution derived from PostgreSQL



# What is Deepgreen?

# DEEPPGREEN

- Scalable MPP Data Warehouse.
  - Better Join and Aggregation algorithms
    - New subsystem to handle spills and
- JIT-Compiled
  - Vectorized Scans, and
  - Data-path Optimization.

<https://equinix.asia/product/datawarehouse>





# Worldwide Deepgreen Customers & Partners

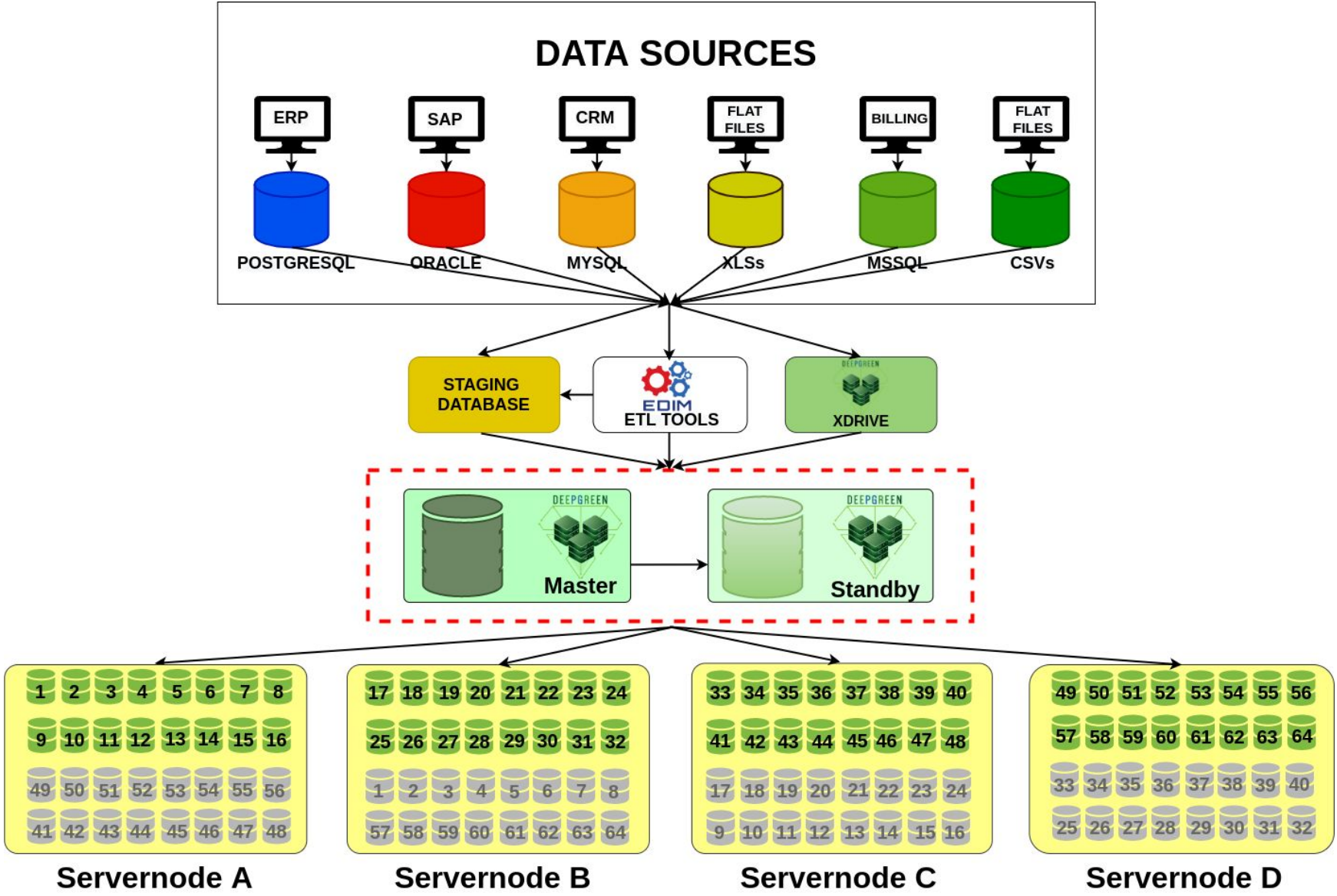


# Indonesian Deepgreen Customers & Leads



# Data Warehouse System Grand Design

1. Reliability
  - a. Secure
  - b. Stable
  - c. Low Maintenance
2. Availability and,
  - a. Backup and
  - b. Redundancy
3. Scalability
  - a. Load Balancing
  - b. Data expansion
  - c. Data redistribution
  - d. Huge database (PetaByte Ready)



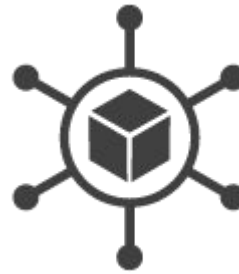
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# Why Deepgreen?



## More Speed

- 5X faster than Greenplum.
- comes with many OLAP specific optimizations.



## More Connected

- Connect effortlessly to cloud storage and data sources.
- Storing the fact tables on HDFS/S3.
- Fresh data can be queried dynamically.



## More Intelligent

- Tight integration with Tensorflow.



# What is Xdrive?

- Xdrive is a Deepgreen DB connectivity service that extends the reach of Deepgreen to external data sources through foreign drive.
- Deepgreen DB is able to read/write from/to a myriad of data management systems, including Amazon S3, HDFS, Oracle, and Elastic Search.

# Xdrive Characteristics

Using Xdrive, Deepgreen DB is able to scan external tables at tremendous speed due to these underlying architectural choices:

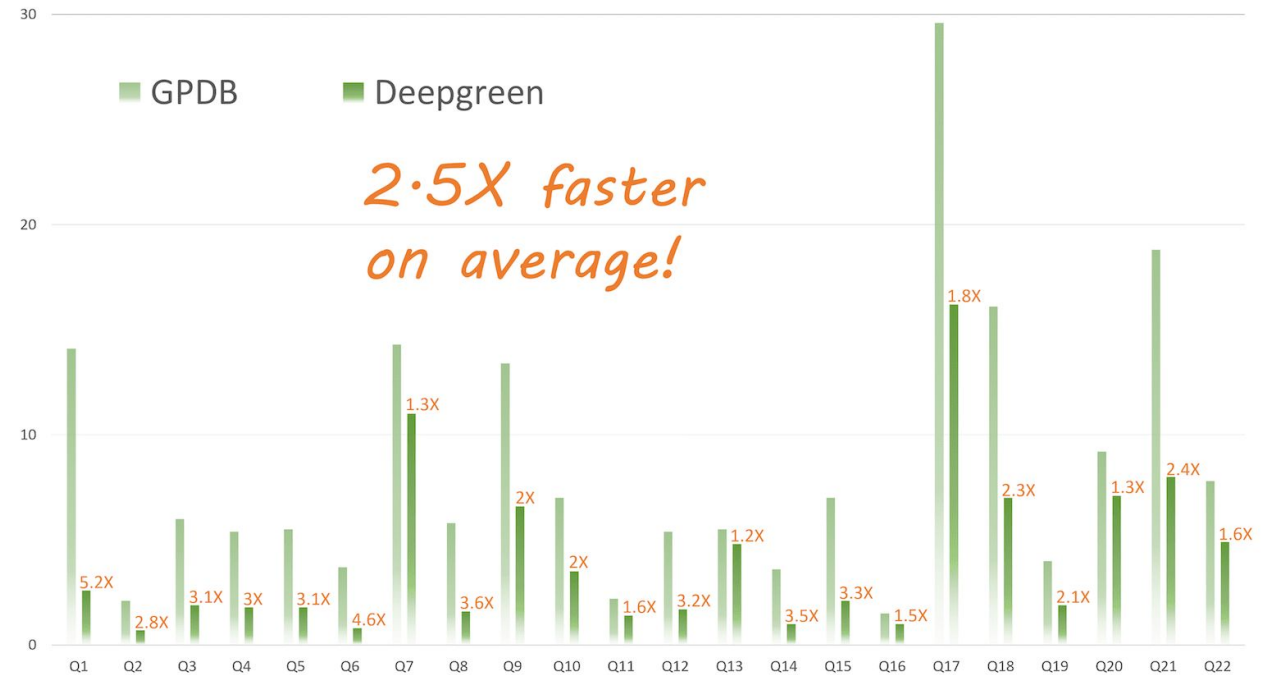
- **High Bandwidth**
- **Pushed-down Filters**
- **Elasticity**

# TPC-H 10G Results

All 22 queries of TPC-H are measured against Greenplum DB and Deepgreen DB. Q1 and Q5 are specifically graphed below for comparisons.

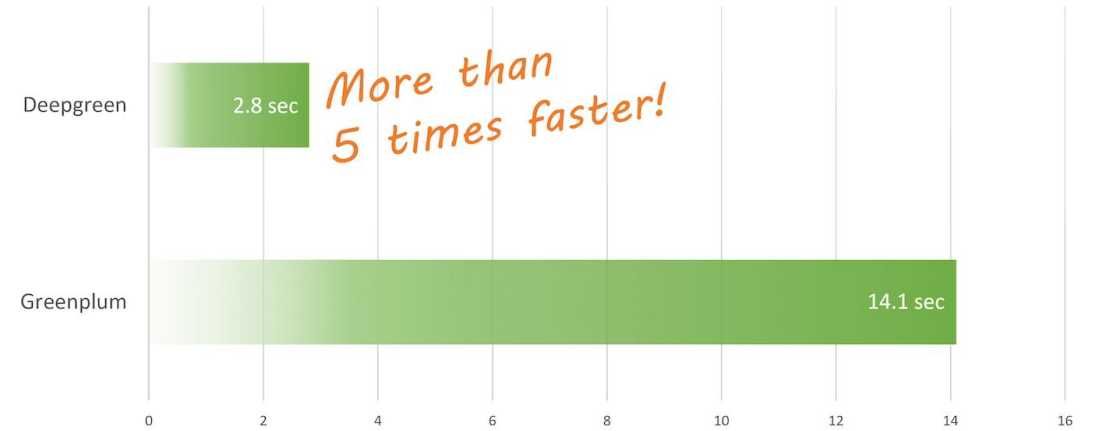
All Result

Raw result: Deepgreen DB vs Greenplum DB using Heap Tables



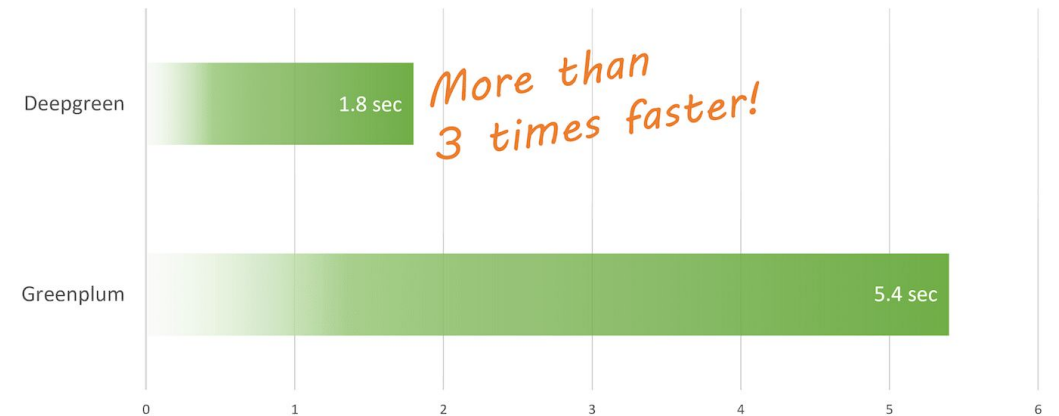
Q1: Scan and aggregate fact table

Q1 is a typical aggregate query running against the fact table.



Q5: 6-way-join

Q5 is an aggregate over a 6-way hashjoin that joins the fact table line item table against the orders and supplier tables, and subsequently against other dimension tables.





# Deepgreen Performance on XEON-2643

Reporting Queries Comparison					
No	Query Report Name	Oracle (in minutes)	Deepgreen (in minutes)	Speed Gain	Total Row Count
1	flat_price	85	2.8	<b>21500%</b>	663,034
2	sales_flyer_sli	25	2.4	<b>830%</b>	104
3	profit_mtd_lost	7.5	3.3	<b>2121%</b>	383,359
4	daily_lmi	120	10	<b>1200%</b>	154

# Deepgreen Hardware Specification

## XEON-2643

Deepgreen Server Hardware Specification	
Machine Type (HT)	Intel(R) Xeon(R) CPU E5-2643 @ 3.30GHz (16 HT)
RAM	64 GB
Disk	PCI SSD NVMe Samsung Pro 960 2 TB
Kernel Version	Linux 3.16.0-8-amd64
Operating System	Debian GNU/Linux 9 (stretch)

Oracle Data Source Server Hardware Specification	
Machine Type (HT)	Intel(R) Xeon(R) CPU E5-2650 v4 @ 2.20GHz (48 HT)
RAM	64 GB
Disk	SSD 2.7 TB
Kernel Version	Linux 3.10.0-514.10.2.el7.x86_64
Operating System	Centos 7.3

# Deepgreen Performance

Reporting Queries Comparison					
No	Query Report Name	Oracle (in seconds)	Deepgreen (in seconds)	Speed Gain	Total Row Count
1	stok_teknisi	37	4.8	<b>770%</b>	408,122
2	provisioning_v2	33	19.6	<b>173%</b>	233,291
3	kumulatif	2	0.4	<b>500%</b>	24,338
4	out_project	17	0.7	<b>2420%</b>	465,676

# Deepgreen Hardware Specification

## EPYC-7742

Deepgreen Server Hardware Specification	
<b>Machine Type (HT)</b>	AMD EPYC 7742 64-Core Processor (128 HT)
<b>RAM</b>	128 GB
<b>Disk</b>	PCI SSD NVMe Samsung Pro 960 2 TB
<b>Kernel Version</b>	Linux 4.19.0-10-amd64
<b>Operating System</b>	Debian GNU/Linux 10 (buster)