Database Index with Raspberry Pi

Arup Nanda

@ArupNanda

The system is down

Not performing well

The database must be to blame.

How is the database doing now?

The database is not fast …

… or slow

It goes at a constant pace

You slow down or go faster.

Why do you slow down?

Because you don't get stuff fast enough

Blocks don't come back in time

CPU isn't available to me

Not enough memory.

It boils down to …

Performance $\propto$ Load

Performance $\propto$ Load

How do we measure it?.

How do we measure it?

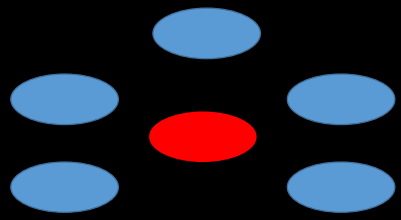
CPU
Memory
Parsing.

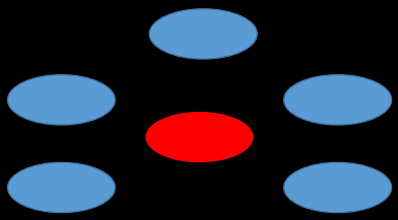
Subjective!

Grid Control?.

Must be Objective

A Number





Stock Market

Dow Jones Industrial Avg

Nasdaq Average.

Where do we get the data?

V$SYSSTAT

```
SQL> desc v$sysstat
 Name
 ----------------------
 STATISTIC#
 NAME
 CLASS
 VALUE
```

Metrics

CPU used by this session
physical read total bytes
physical write total bytes
recursive calls
redo size
redo writes
session logical reads
user calls
user commits
user rollbacks

Stressors

This is a cumulative

SQL> select value from v$sysstat where name = '…'

SQL> select value from v$sysstat where name = '…'

The difference between these values.

Metrics

STAT_NAME	AVG_VAL_PERSEC
CPU used by this session	1165
physical write total bytes	16634248
session logical reads	793187
user commits	159
redo size	2574964
physical read total bytes	172837899
recursive calls	9761
user calls	6842
redo writes	126
user rollbacks	8
session uga memory	95795466
session pga memory	96586

Metrics

STAT_NAME	Normalized
CPU used by this session	103
physical write total bytes	120
session logical reads	103
user commits	159
redo size	78
physical read total bytes	91
recursive calls	61
user calls	117
redo writes	126
user rollbacks	88
session uga memory	107
session pga memory	86

Average of all the Normalized Values

140

DB Index

Metrics

STAT_NAME	AVG_VAL_PERSEC
CPU used by this session	1165
physical write total bytes	16634248
session logical reads	793187
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physical read total bytes	172837899
recursive calls	9761
user calls	6842
redo writes	126
user rollbacks	8
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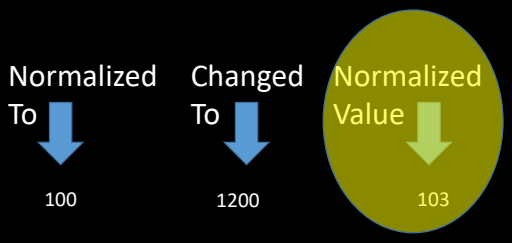


How do you get this Normalized Value?

Baselines

Actual Value	Baseline Value	Normalized Value
1,234	945	130
1,234,567	1,311,945	94

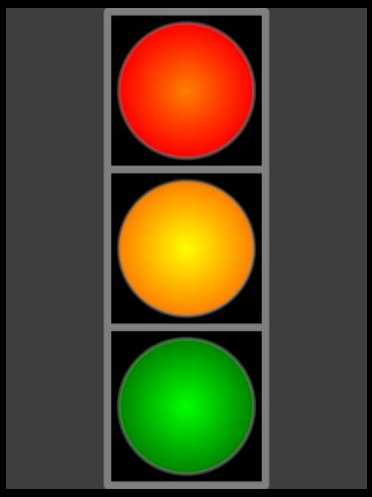
How do we get this baseline?

Actual Value	Baseline Value	Normalized Value
1,234	945	130
1,234,567	1,311,945	94

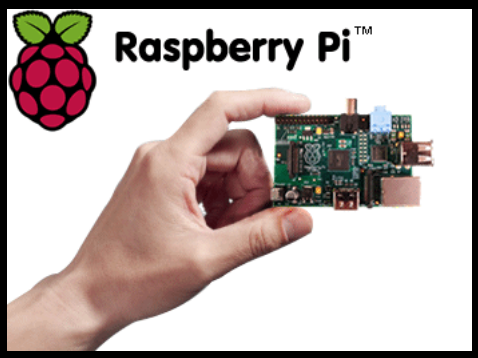
From AWR Repository

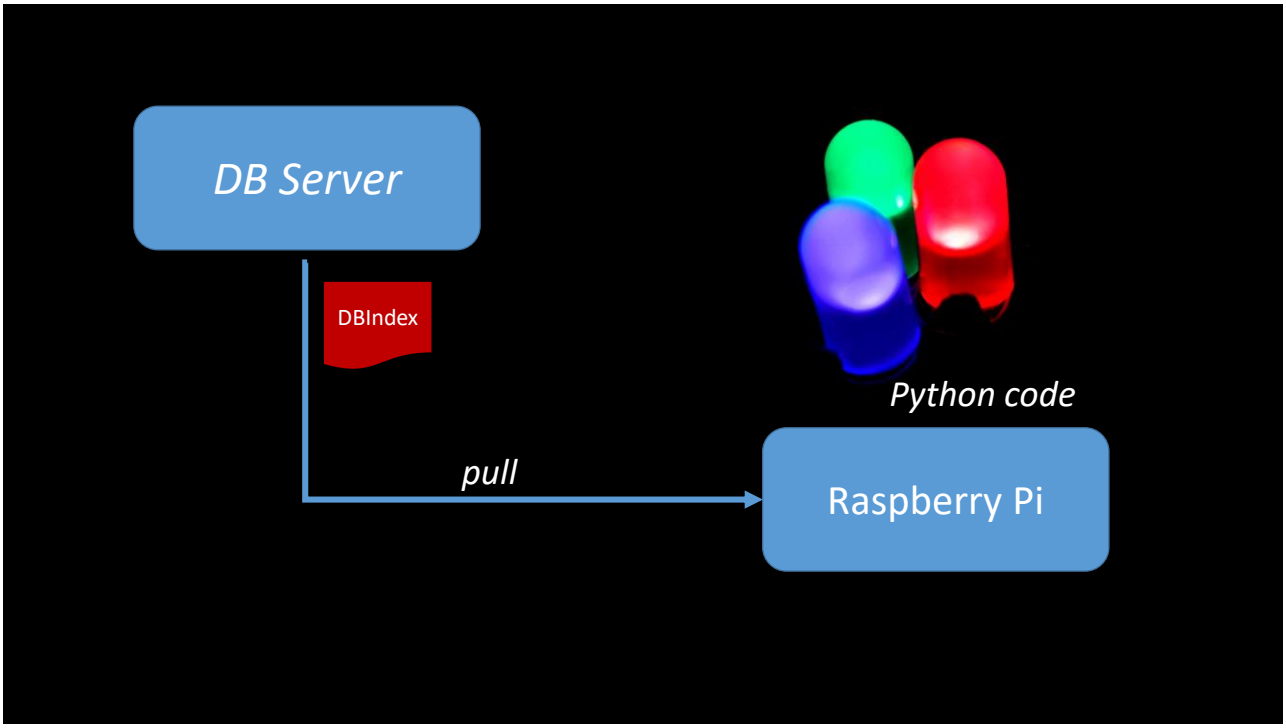
Demo

Creating a Visual Beacon



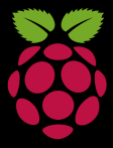
Enter
Raspberry Pi





Access by Non-DBAs

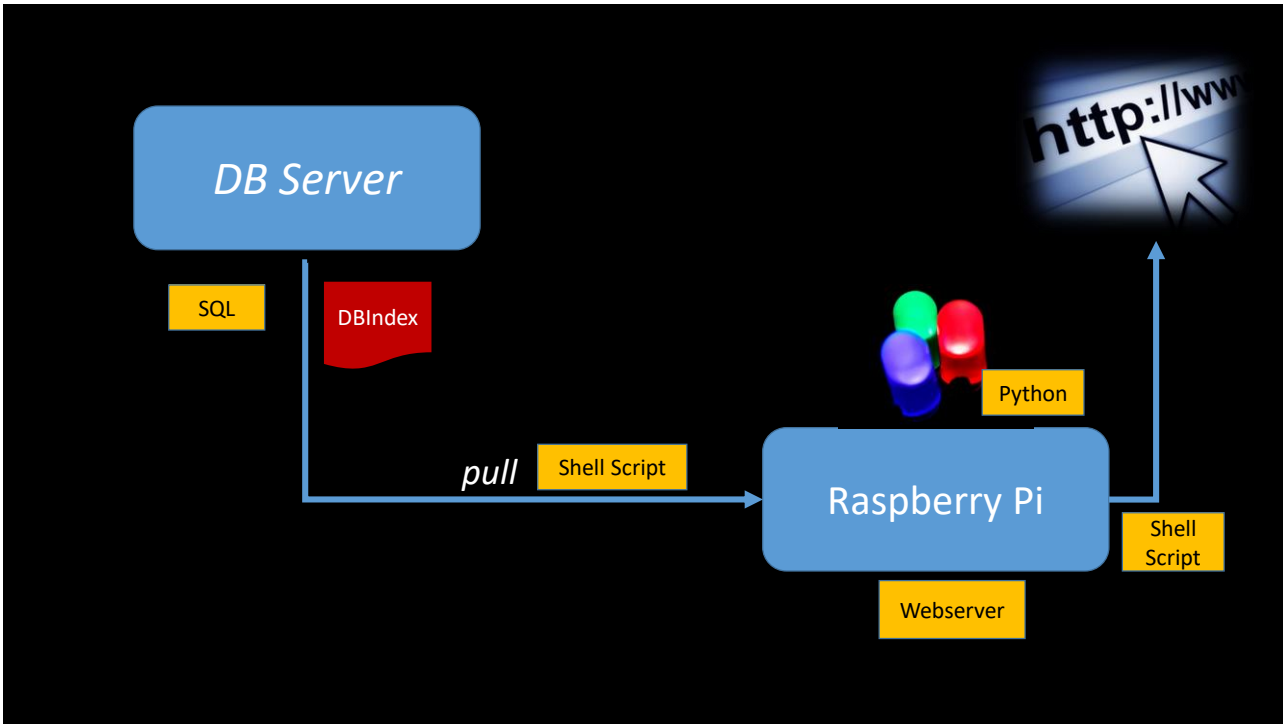
Raspberry Pi has a
Apache webserver

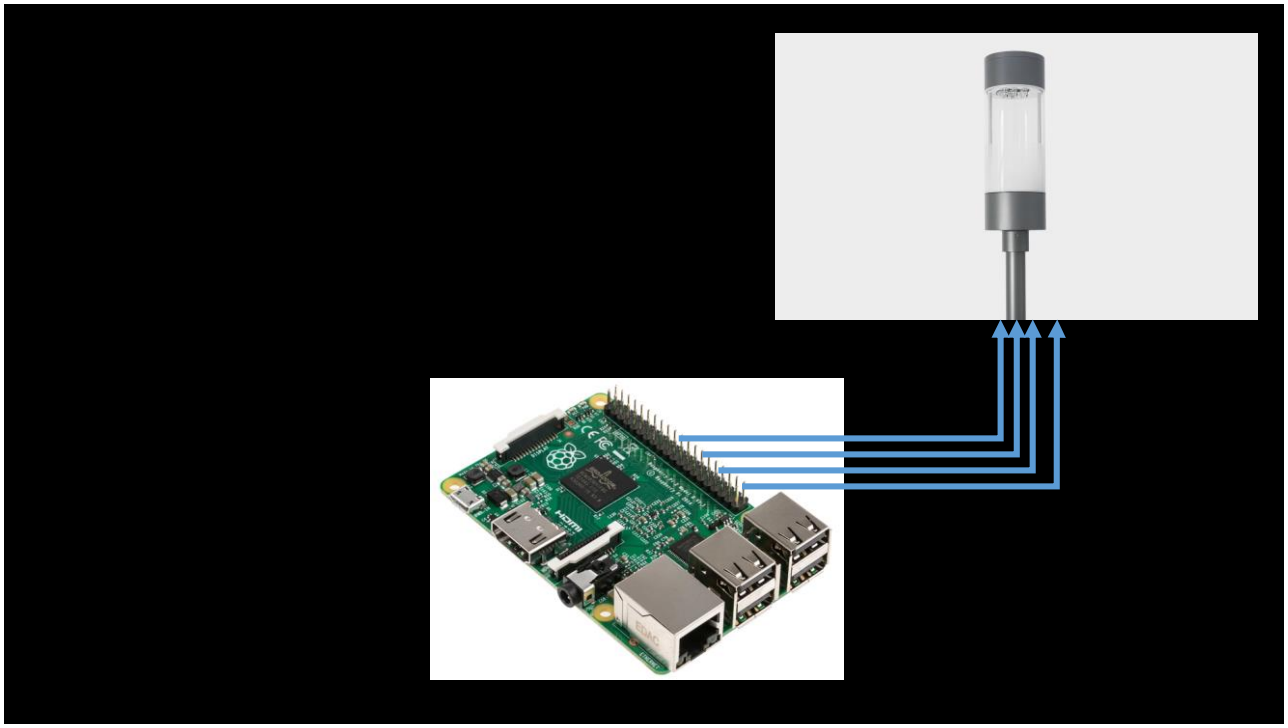


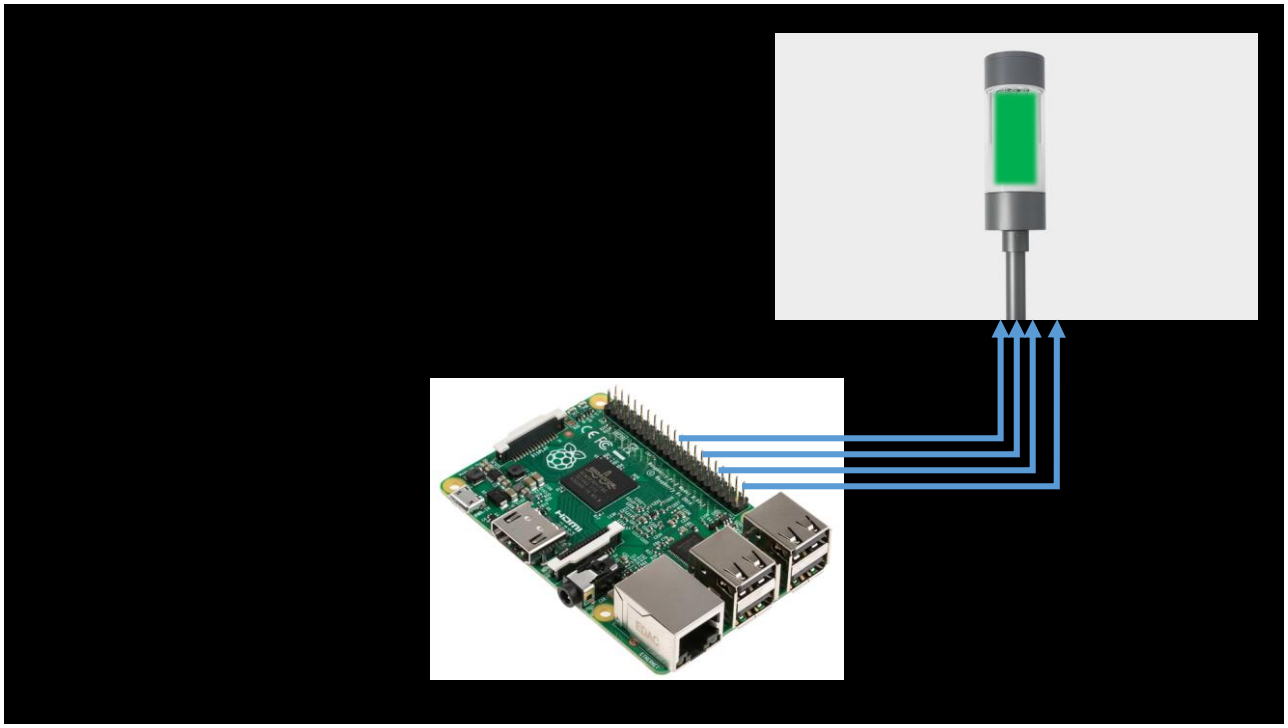
File /var/www/html/index.html

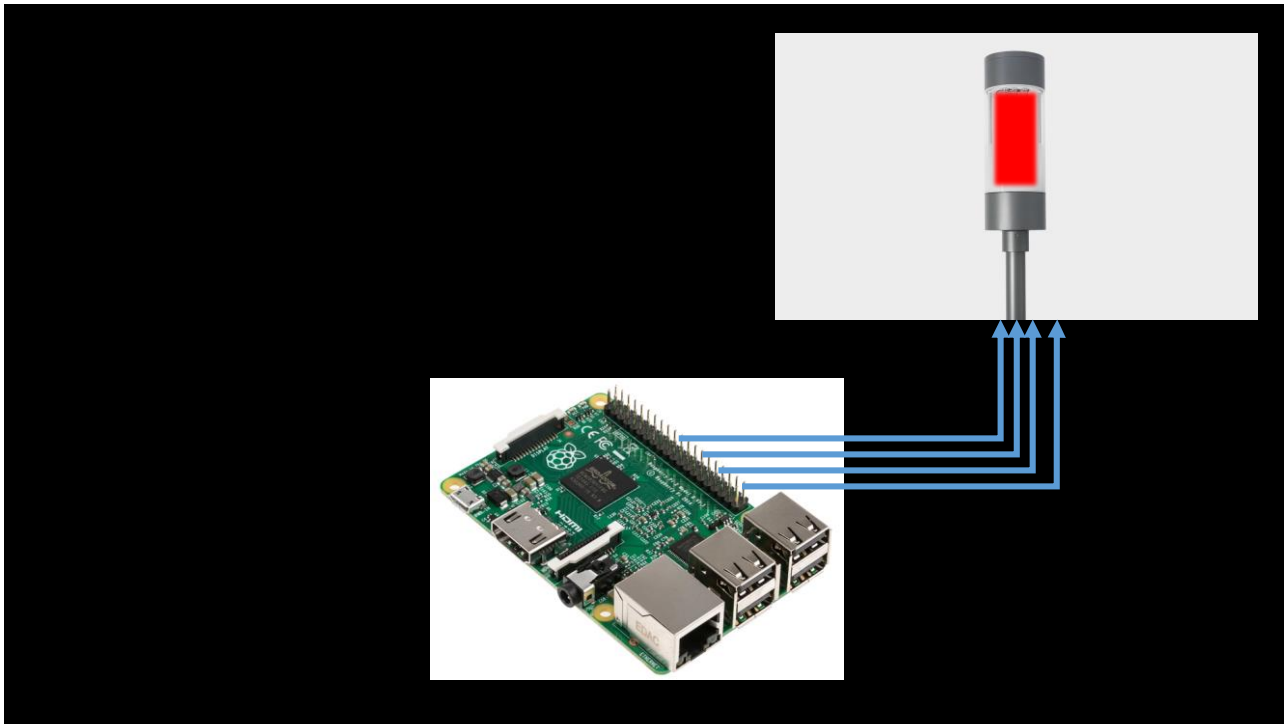
```
<body>
879
</body>
```

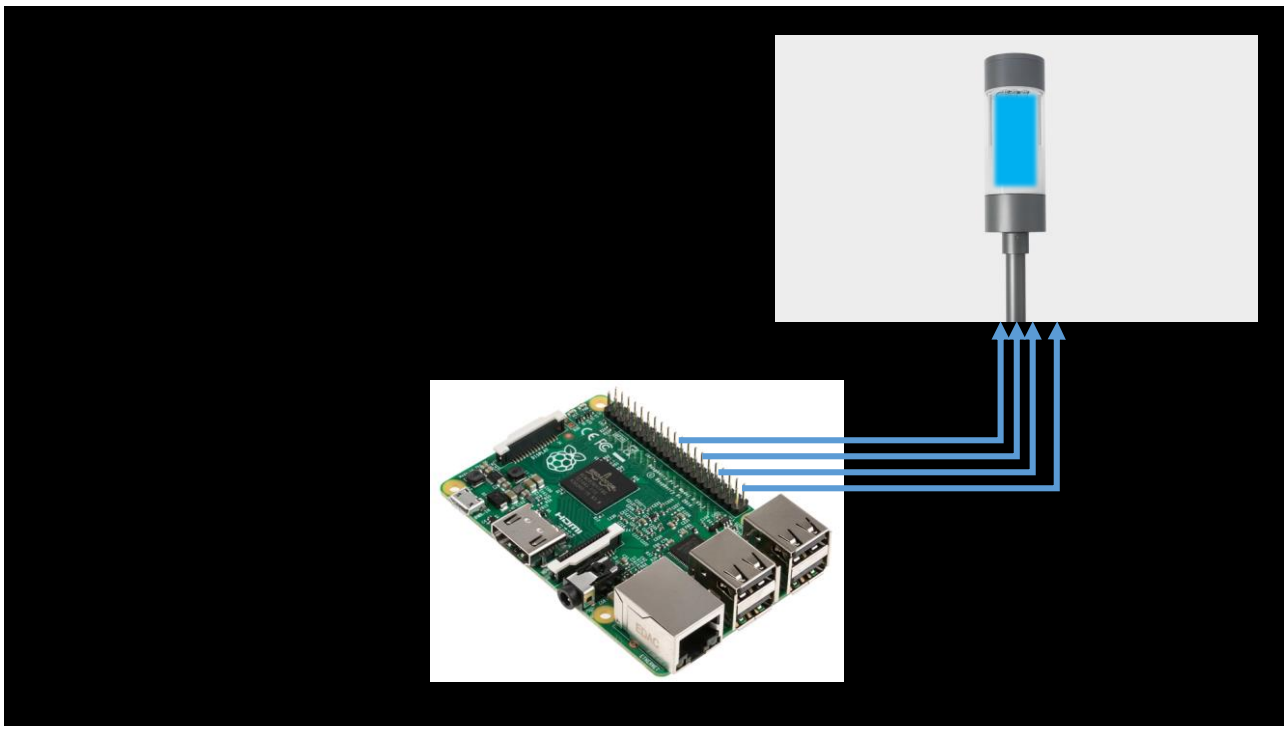
http://<IPAddressOfRaspberryPi>











Demo

Thank You!

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