facebook

The osquery File Carver

Nick Anderson

Security Engineer

C:\> Get-Host

- Nick Anderson
  - Security Engineer at Facebook
- thor@fb.com
  - Super legit, not an alias
- Github - github.com/muffins
- Twitter - twitter.com/poppyseedplehzr
- Slack - thor

A quick story

Analyst

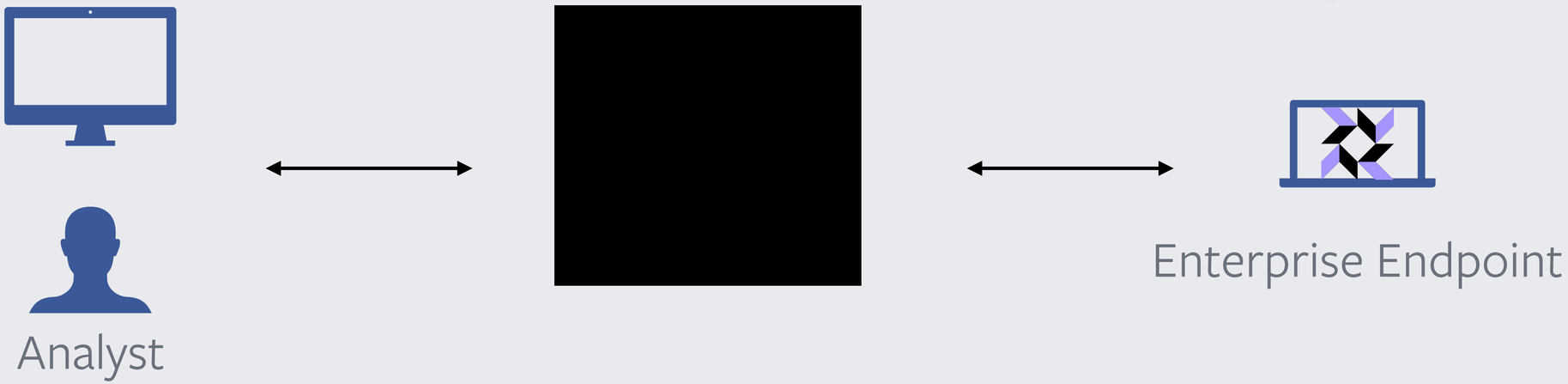
Enterprise Endpoint

/tmp/evil

Analyst

Enterprise Endpoint

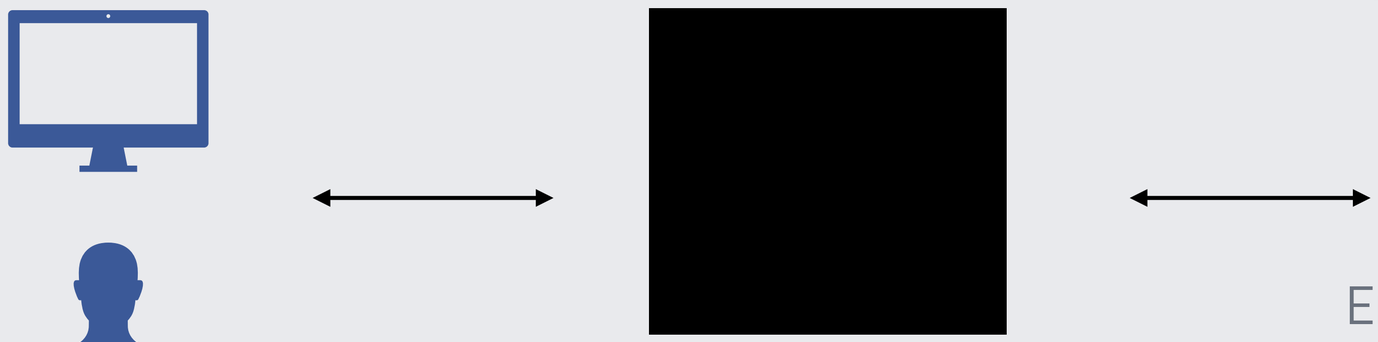
/tmp/evil



Analyst

Enterprise Endpoint

/tmp/evil



Analyst

Enterprise Endpoint

```
#!/bin/bash
nc -l -p 1337
```

/tmp/evil


```
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What is osquery?

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- FOSS host based IDS

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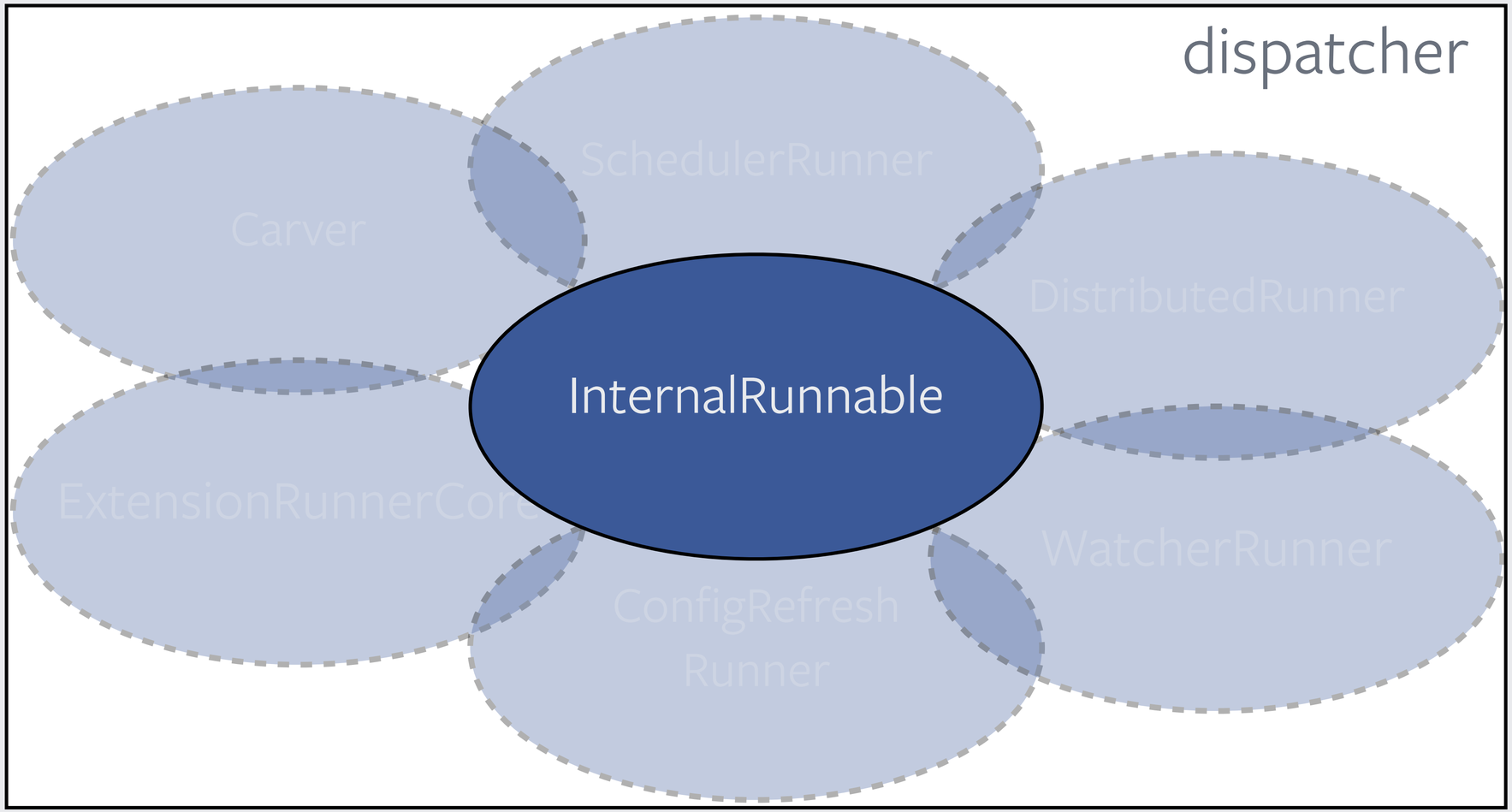
- Extensible

What is osquery?

- FOSS host based IDS
- Cross-platform
- Abstracts OS as SQLite tables
- Performant
- Extensible
- https://osquery.io

osquery architecture

How does osquery work?



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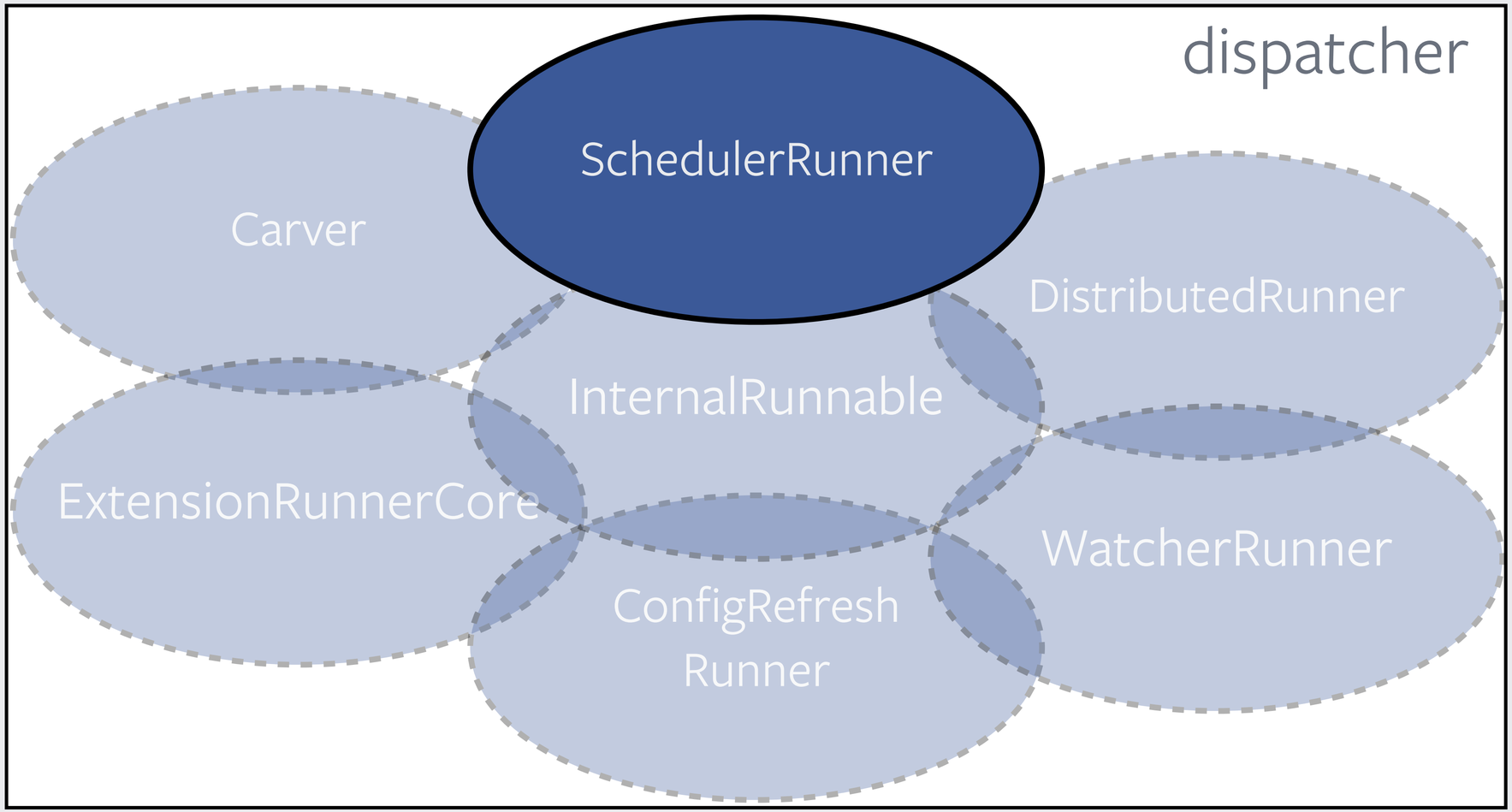

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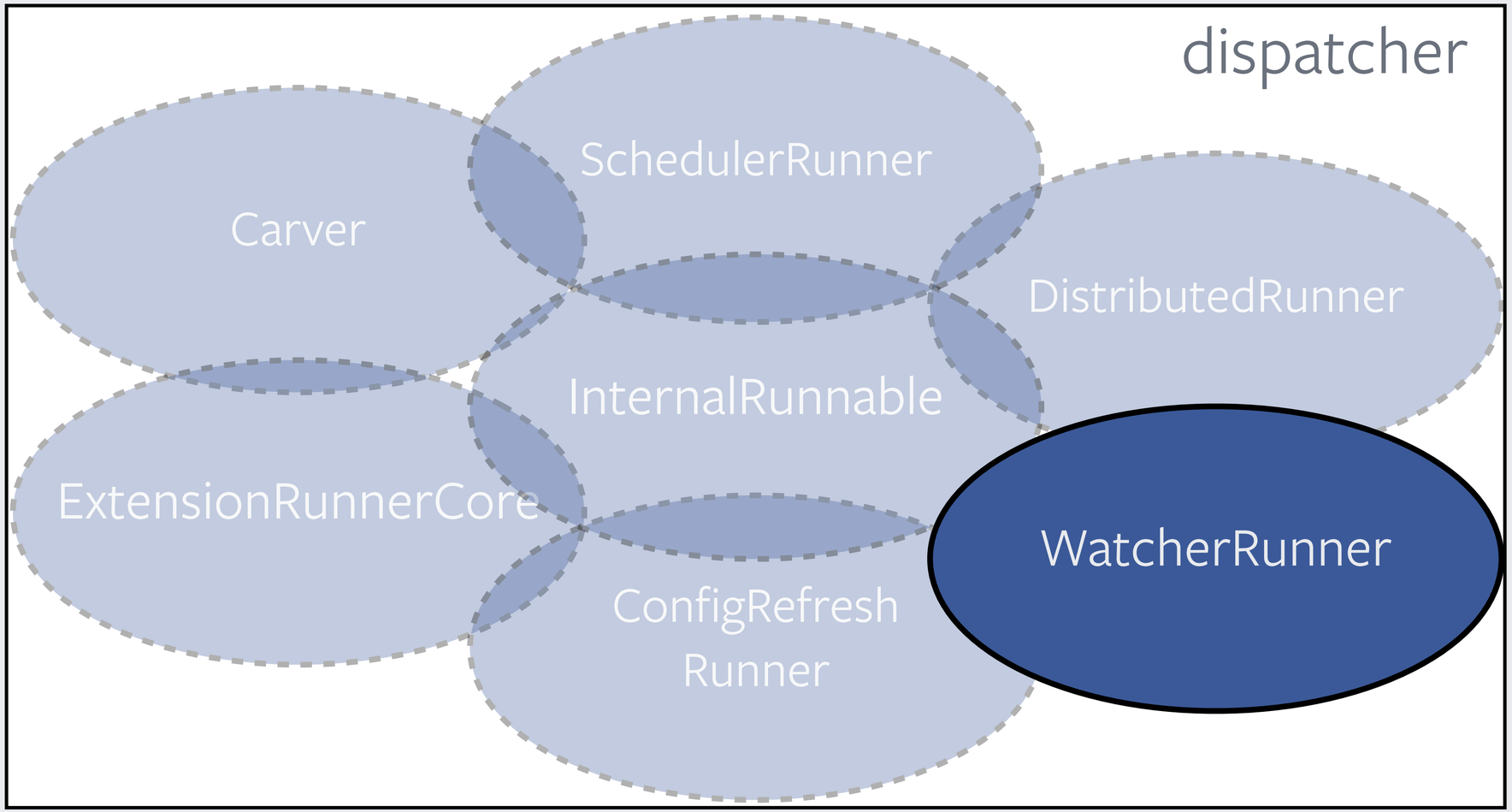
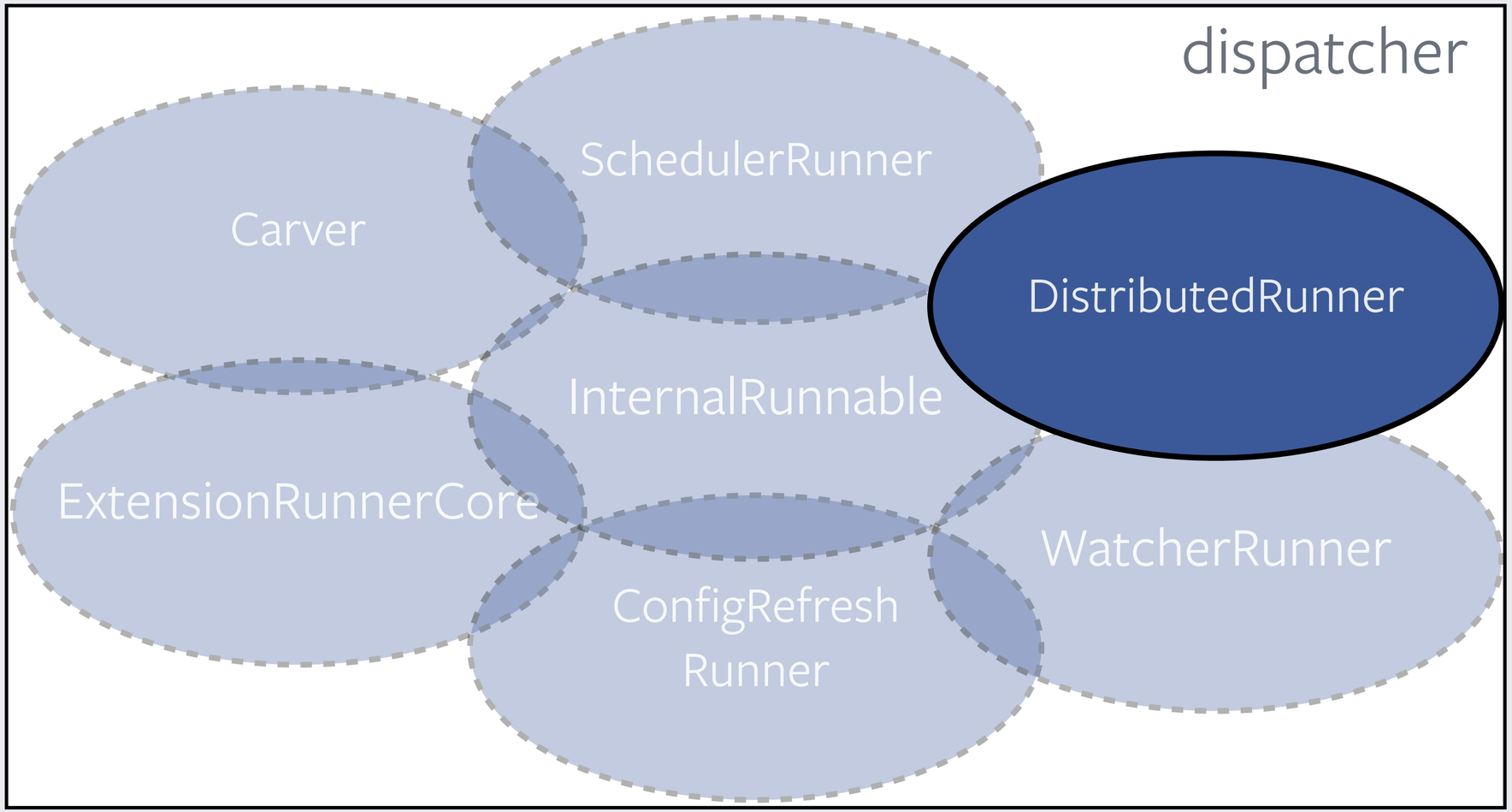
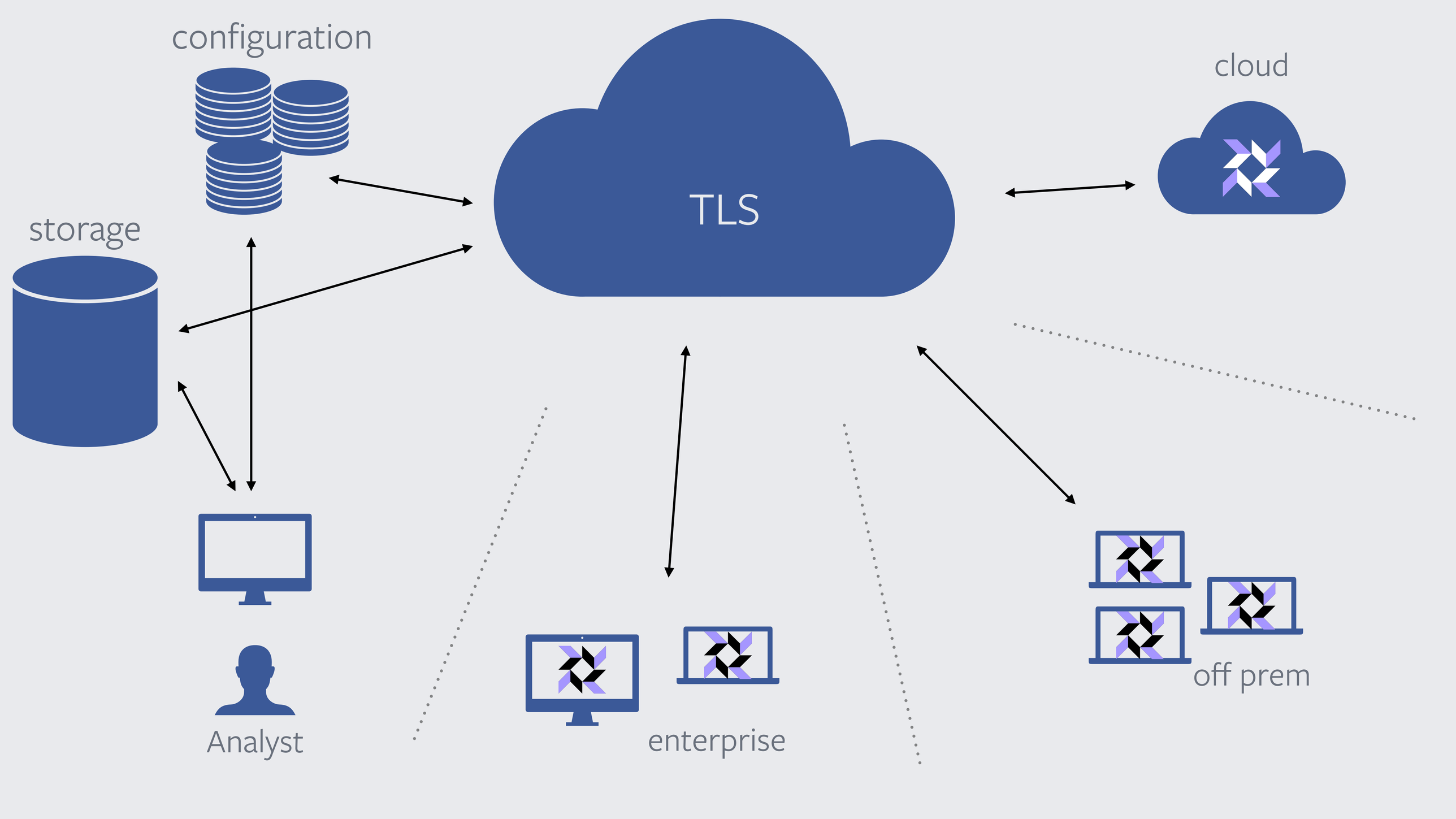


How does osquery work?



~~ad-hoc~~ ~~distributed~~ ~~live~~
on-demand deployment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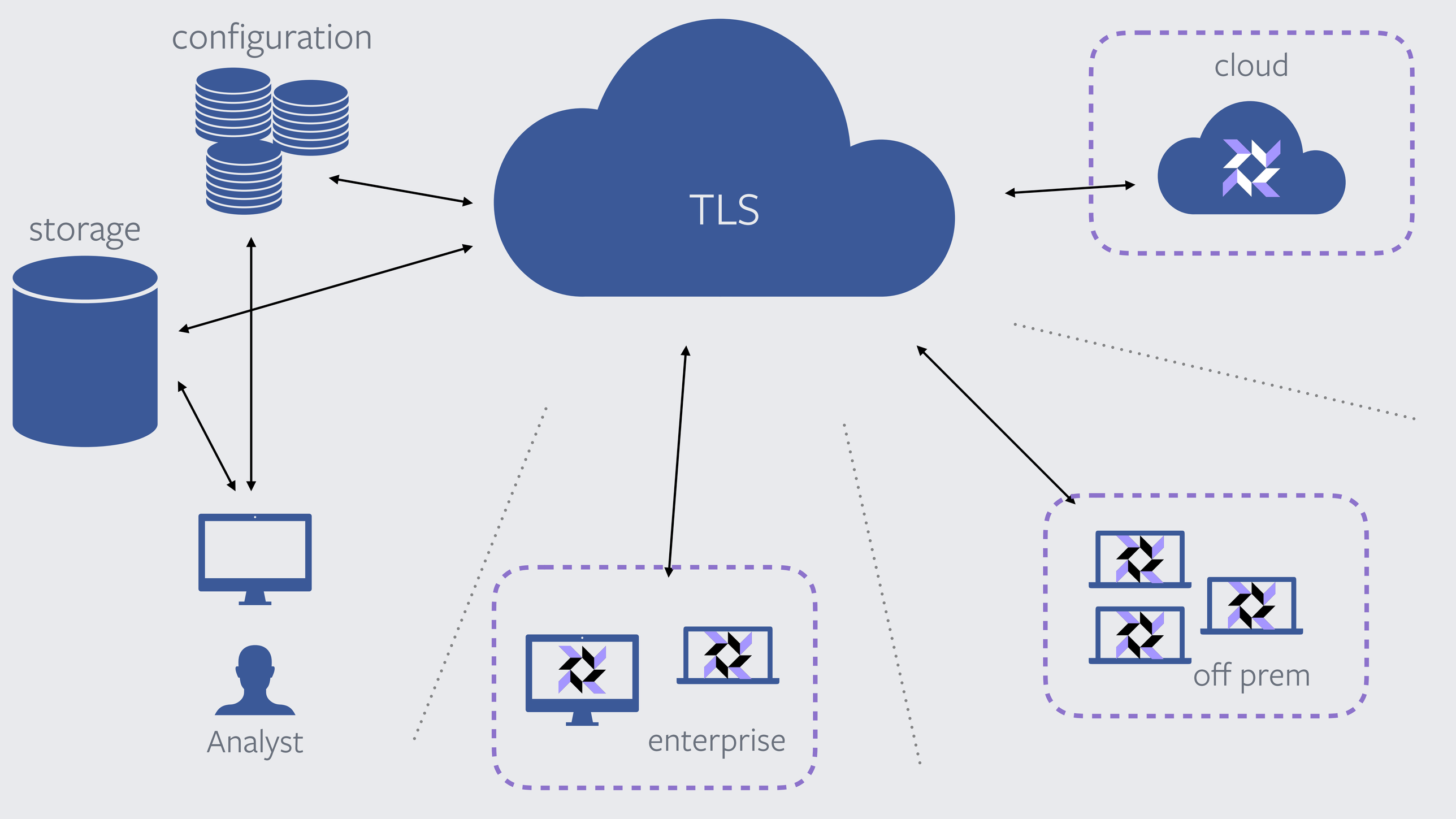
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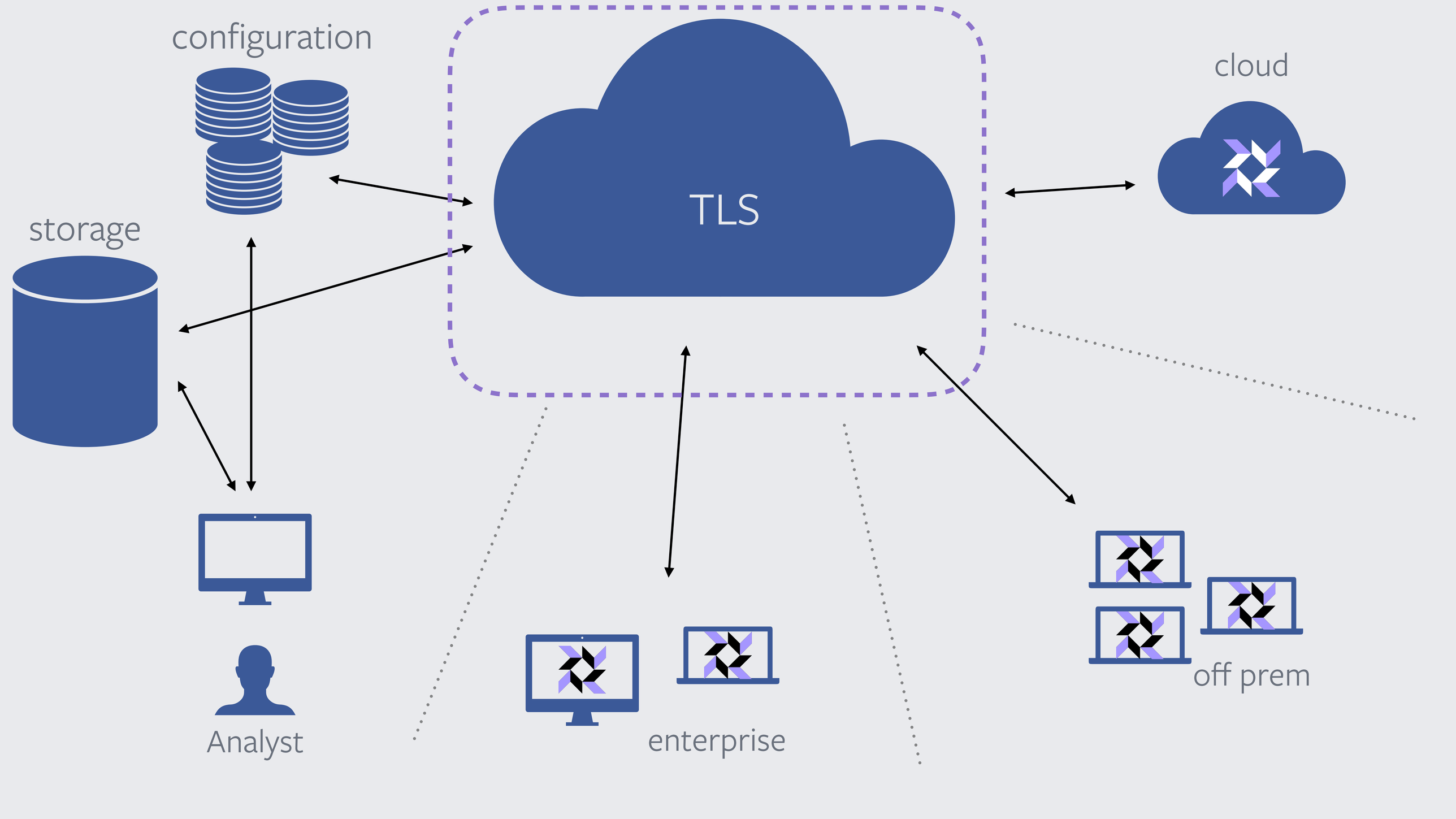
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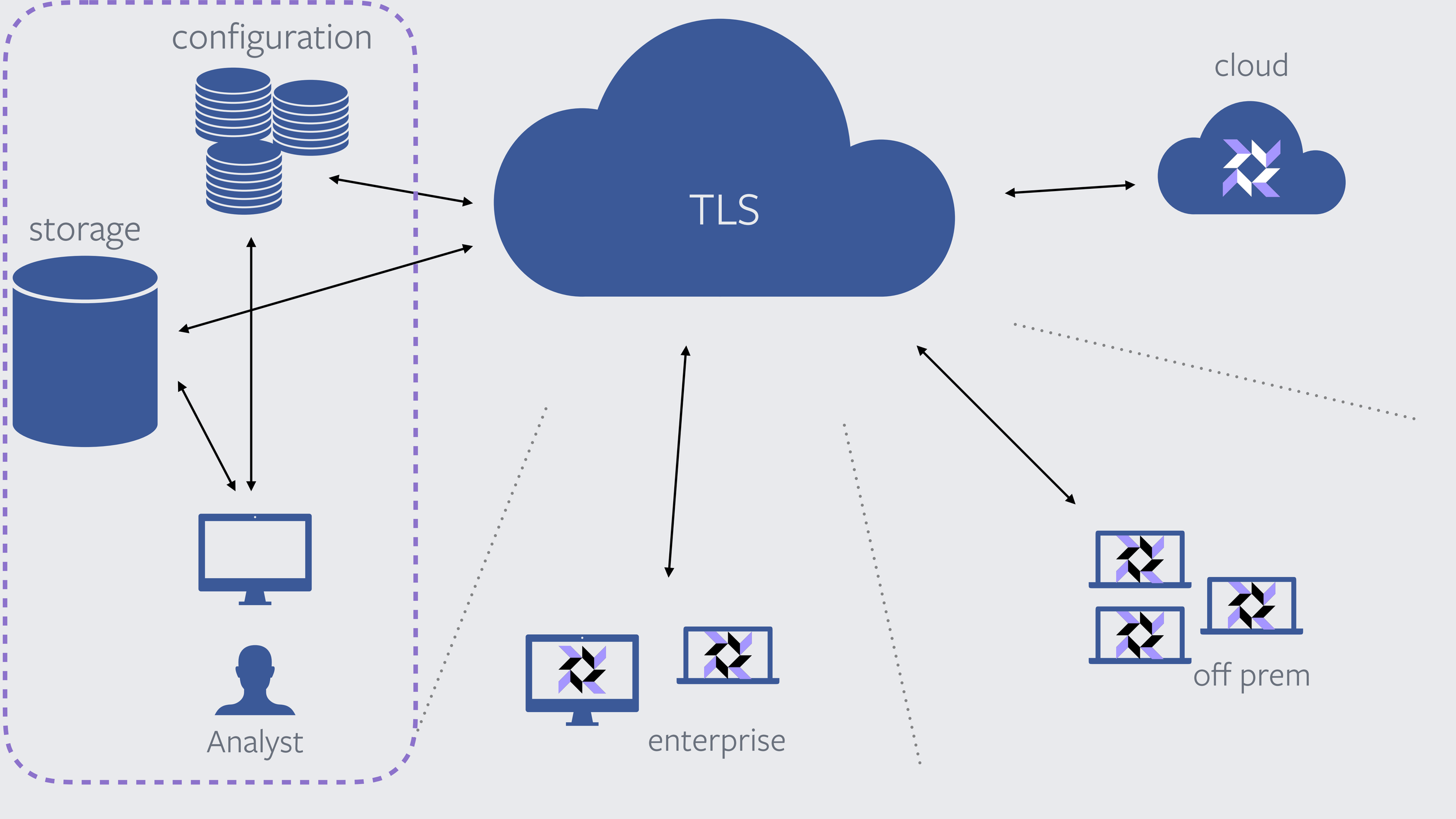
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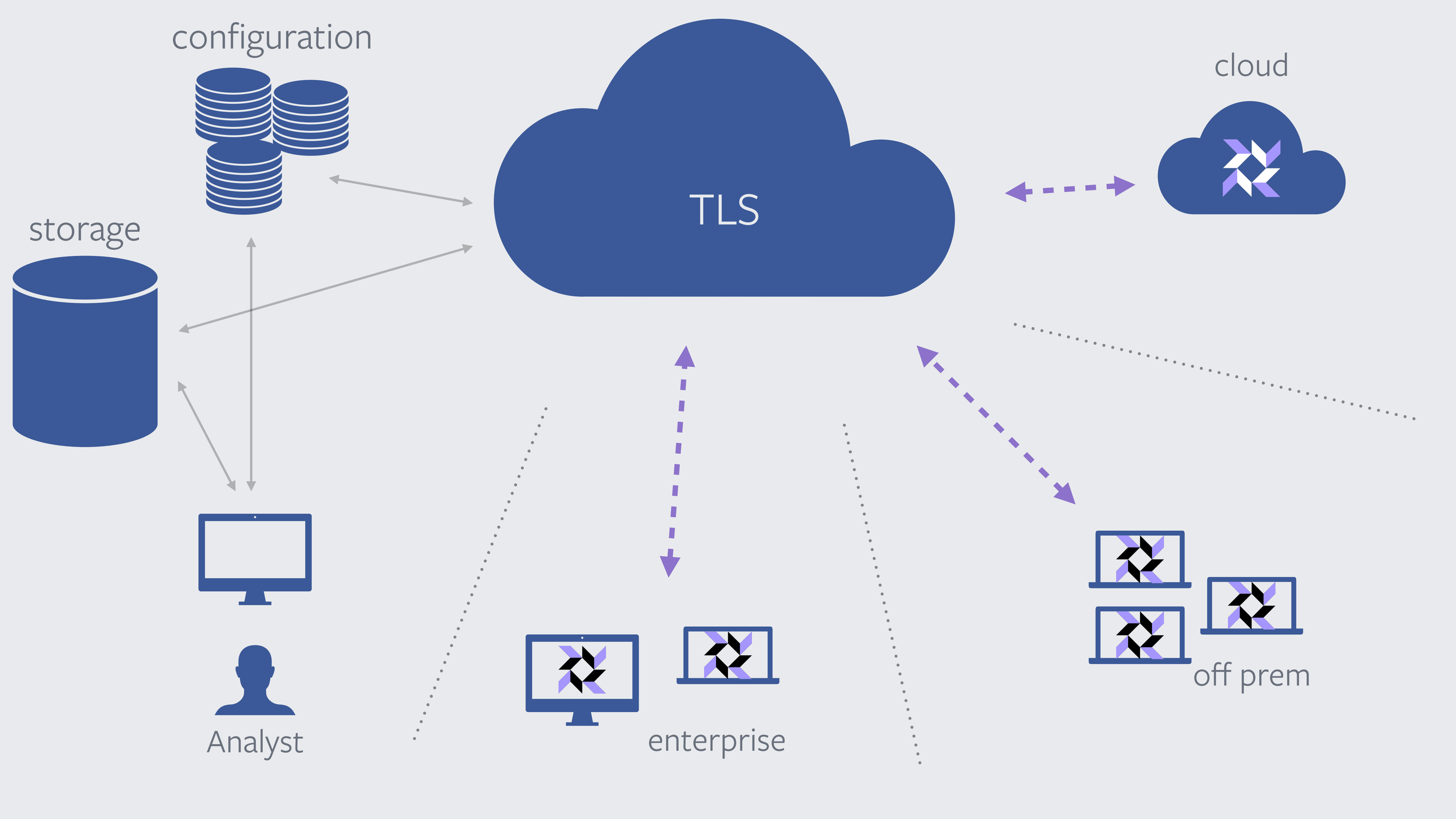
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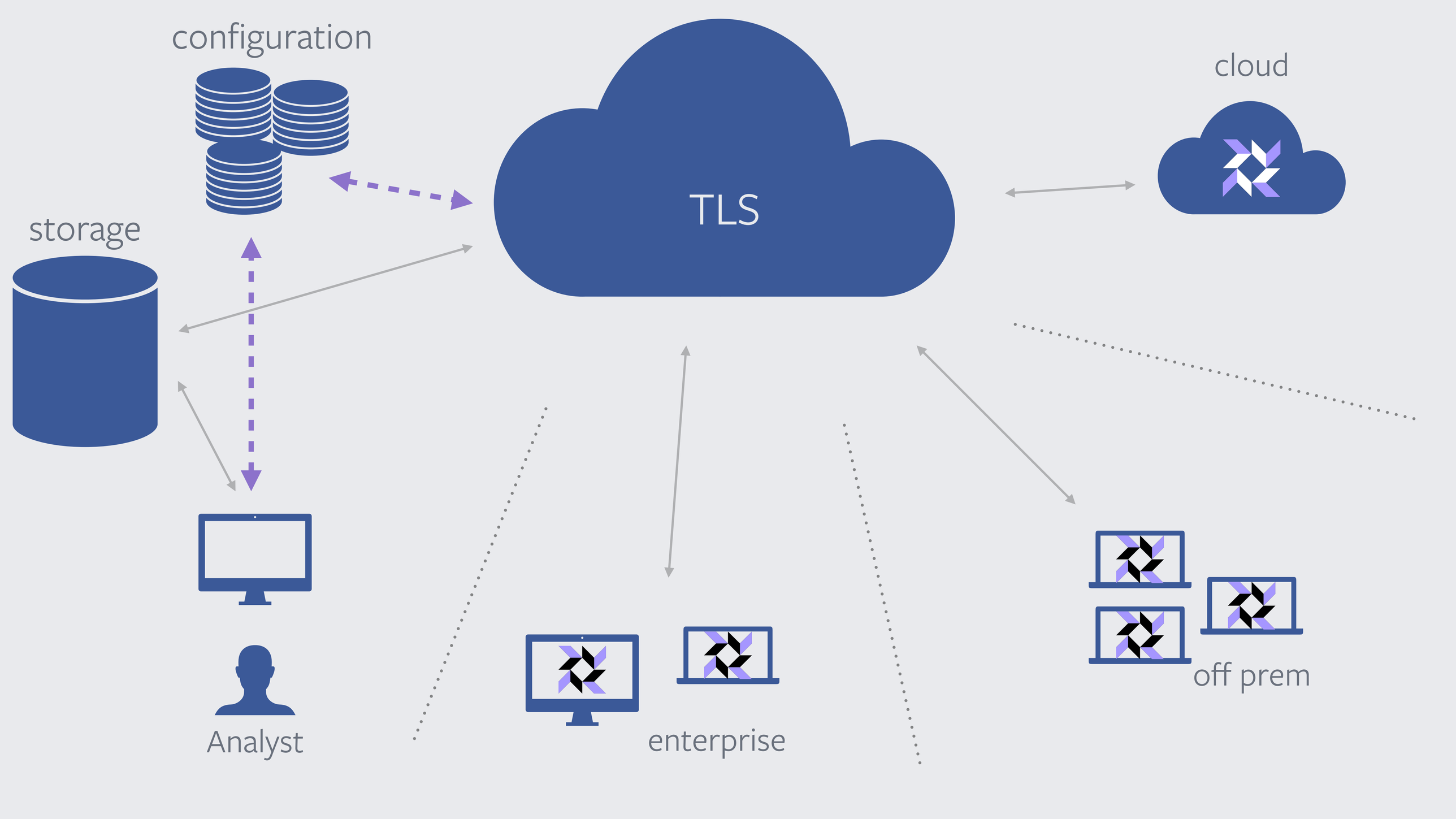
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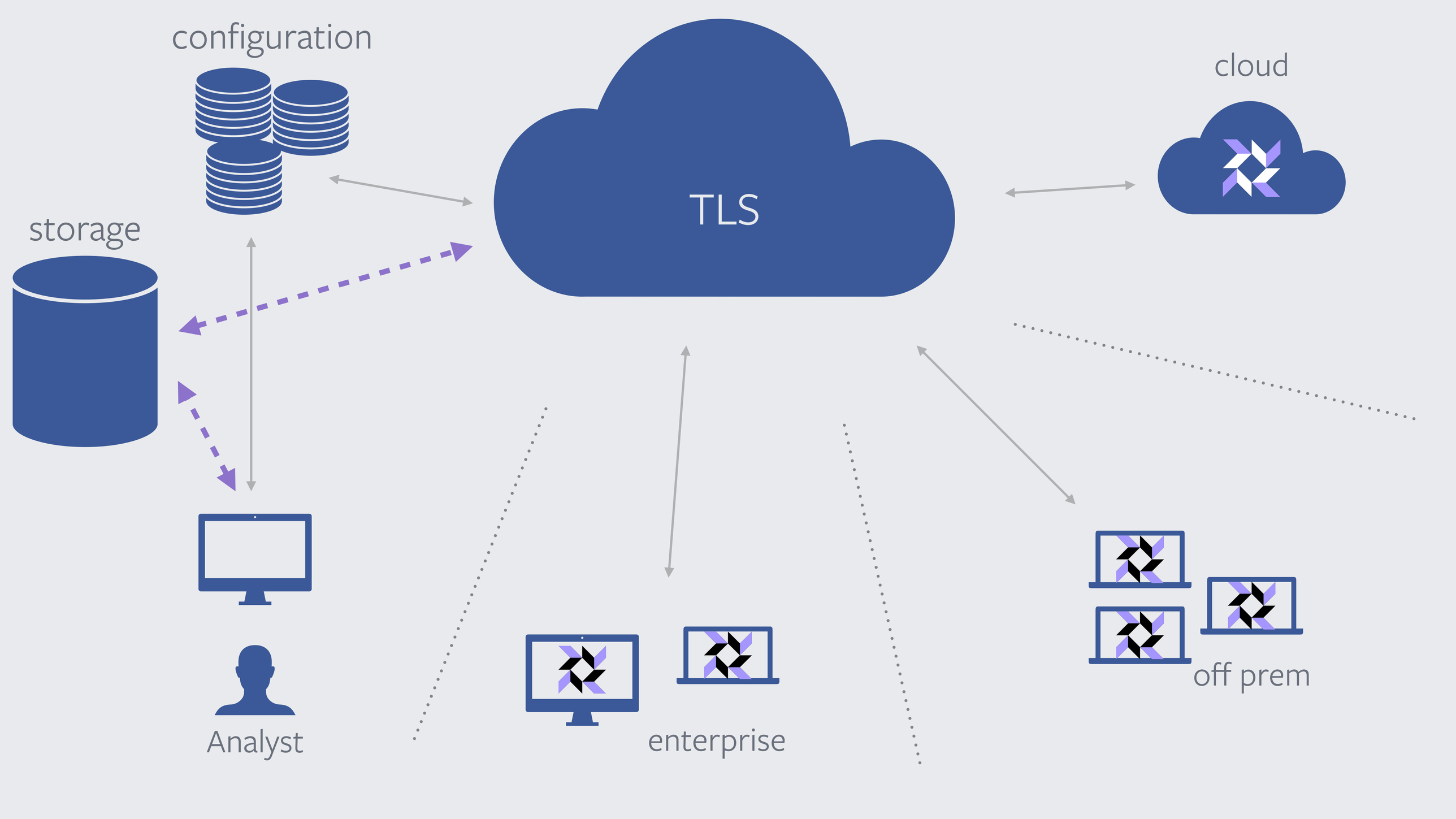
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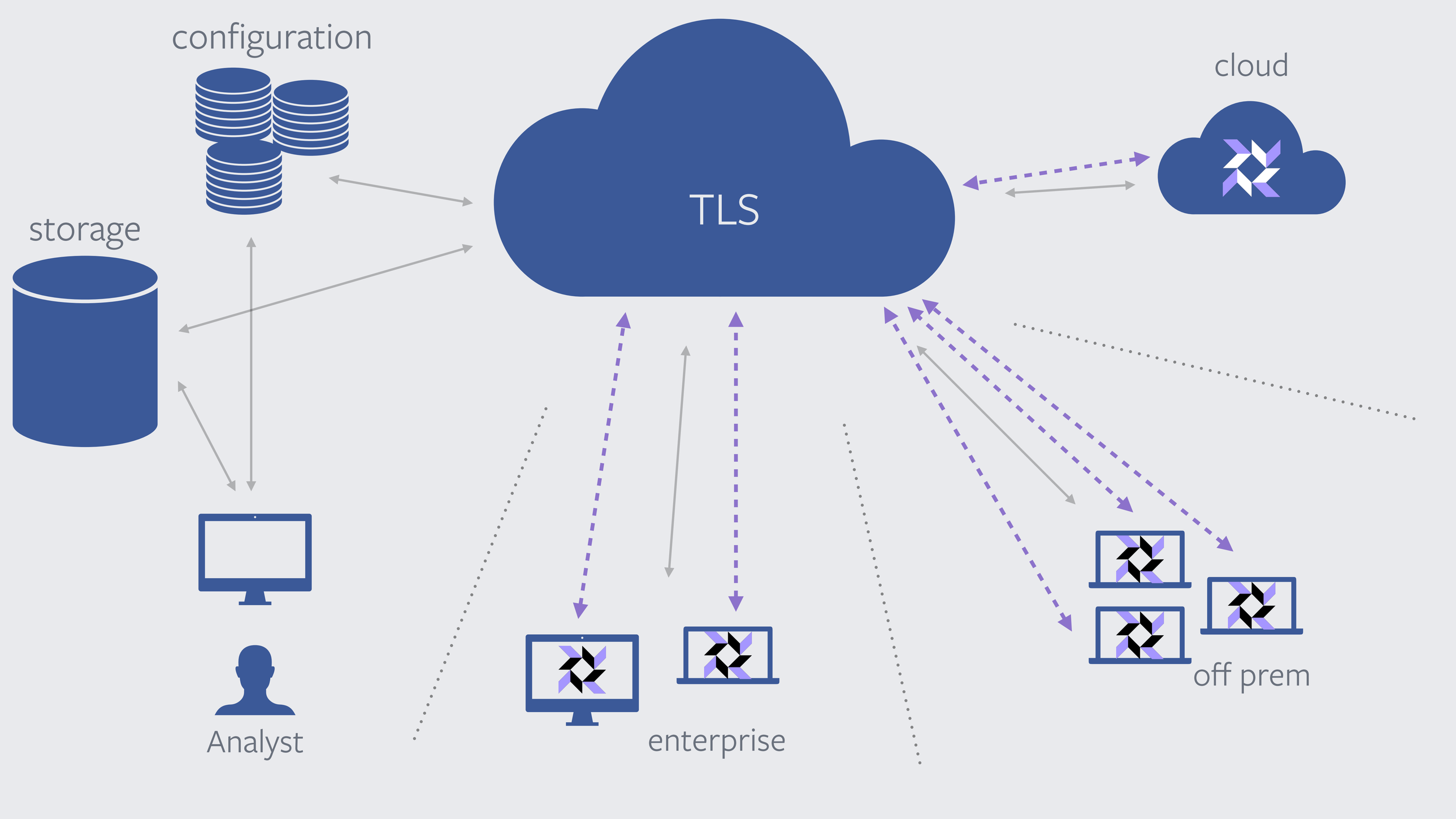
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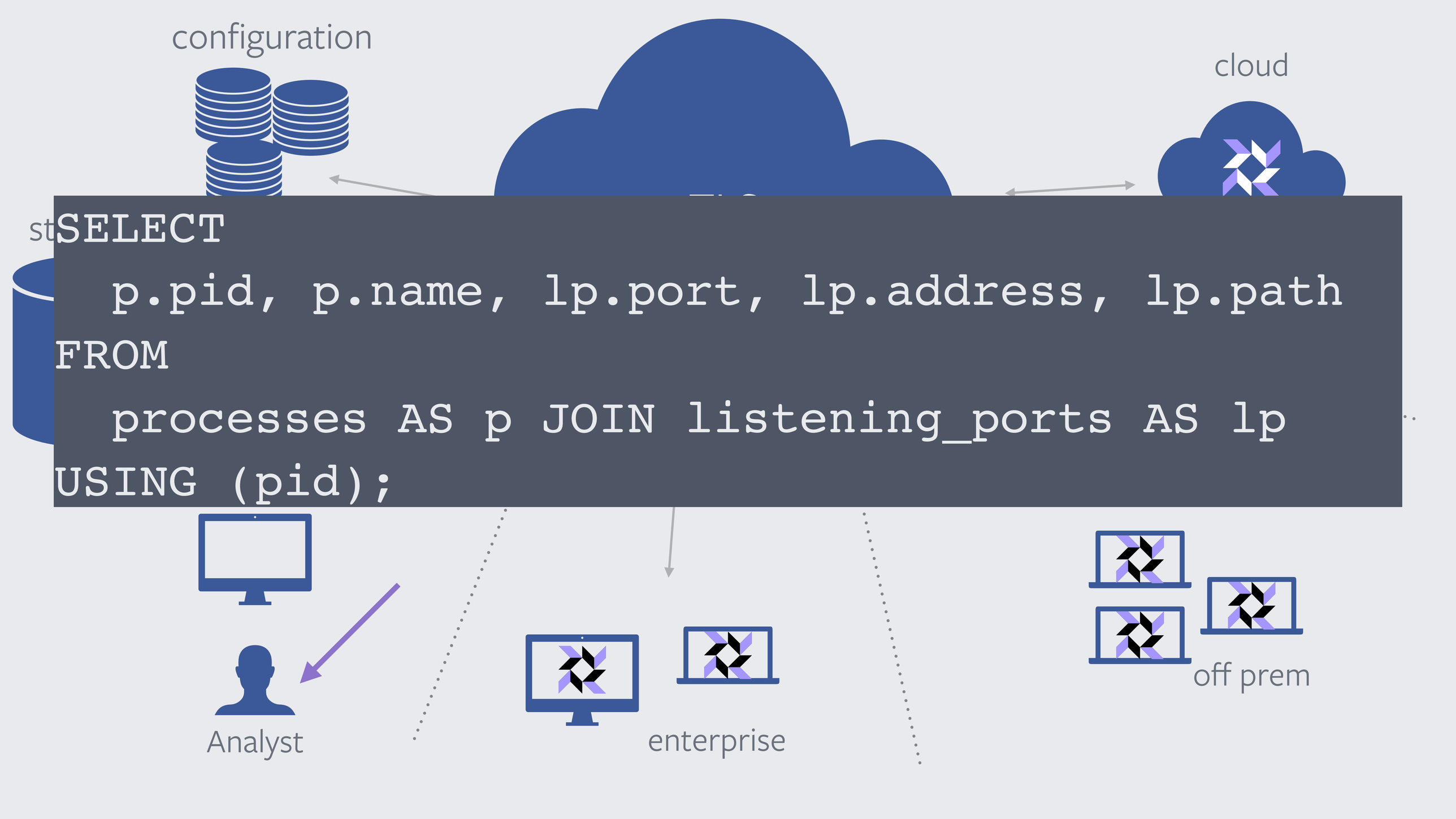
distributed queries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st
SELECT
p.pid, p.name, lp.port, lp.address, lp.path
FROM
processes AS p JOIN listening_ports AS lp
USING (pid);
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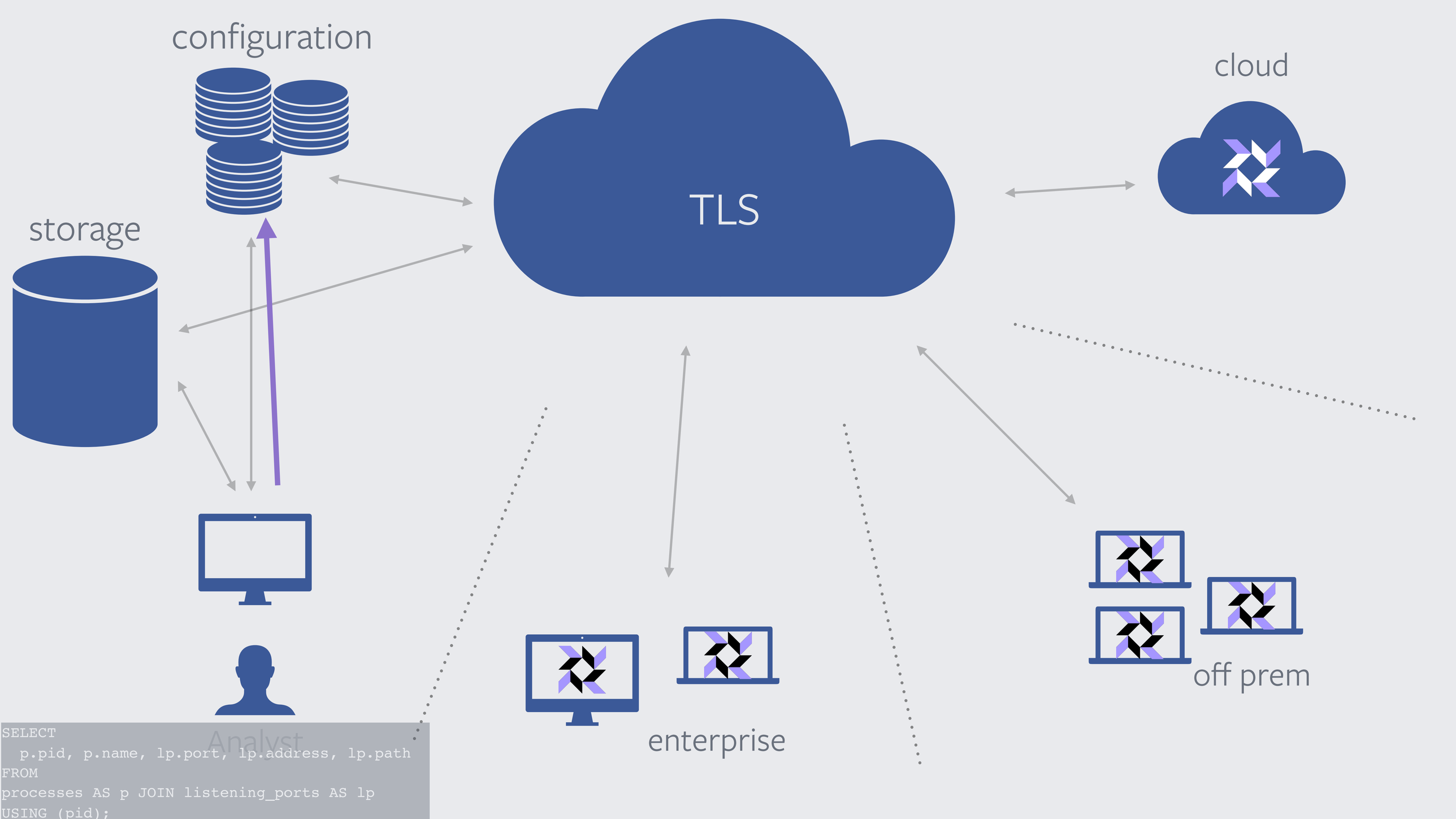


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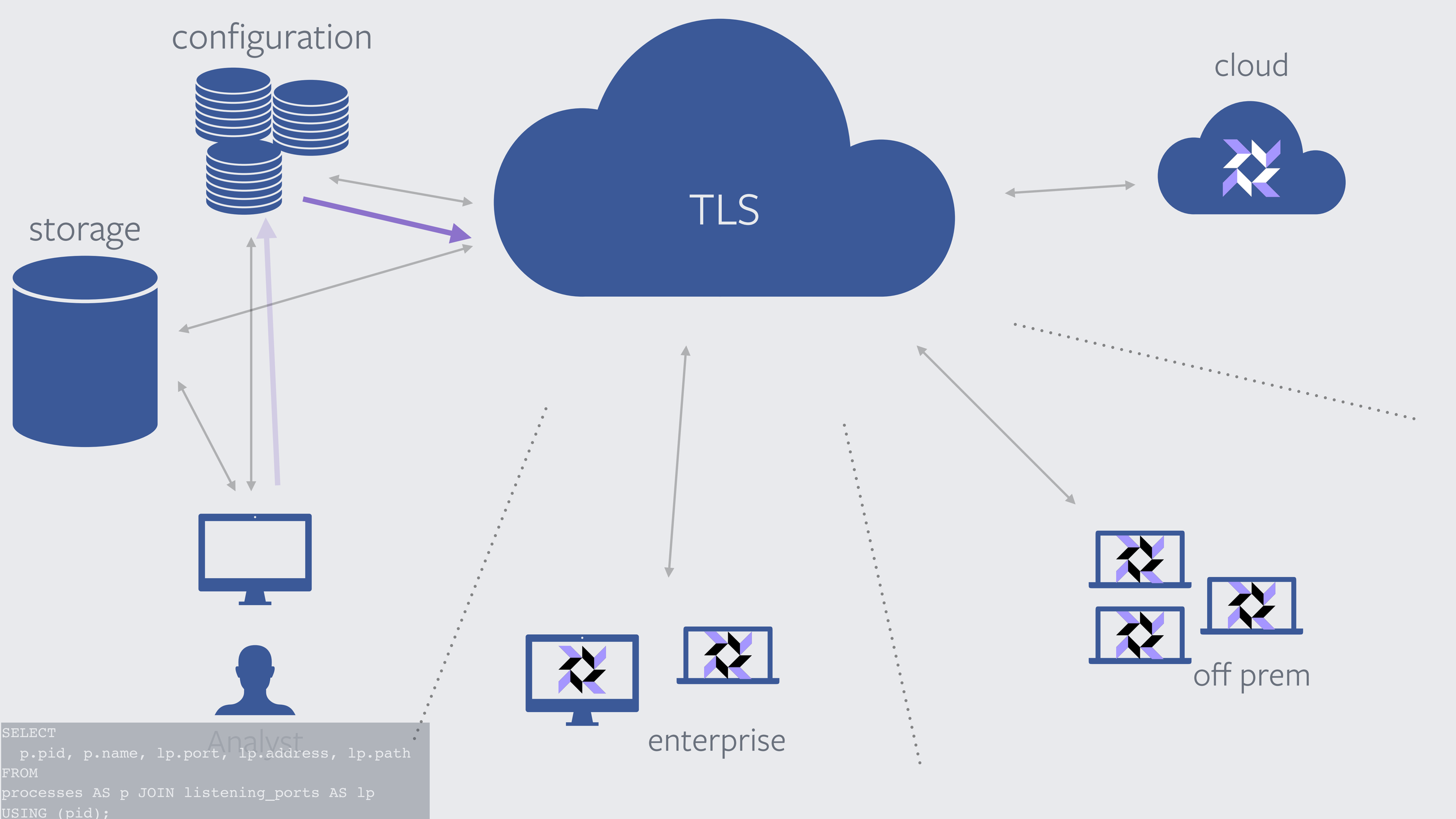


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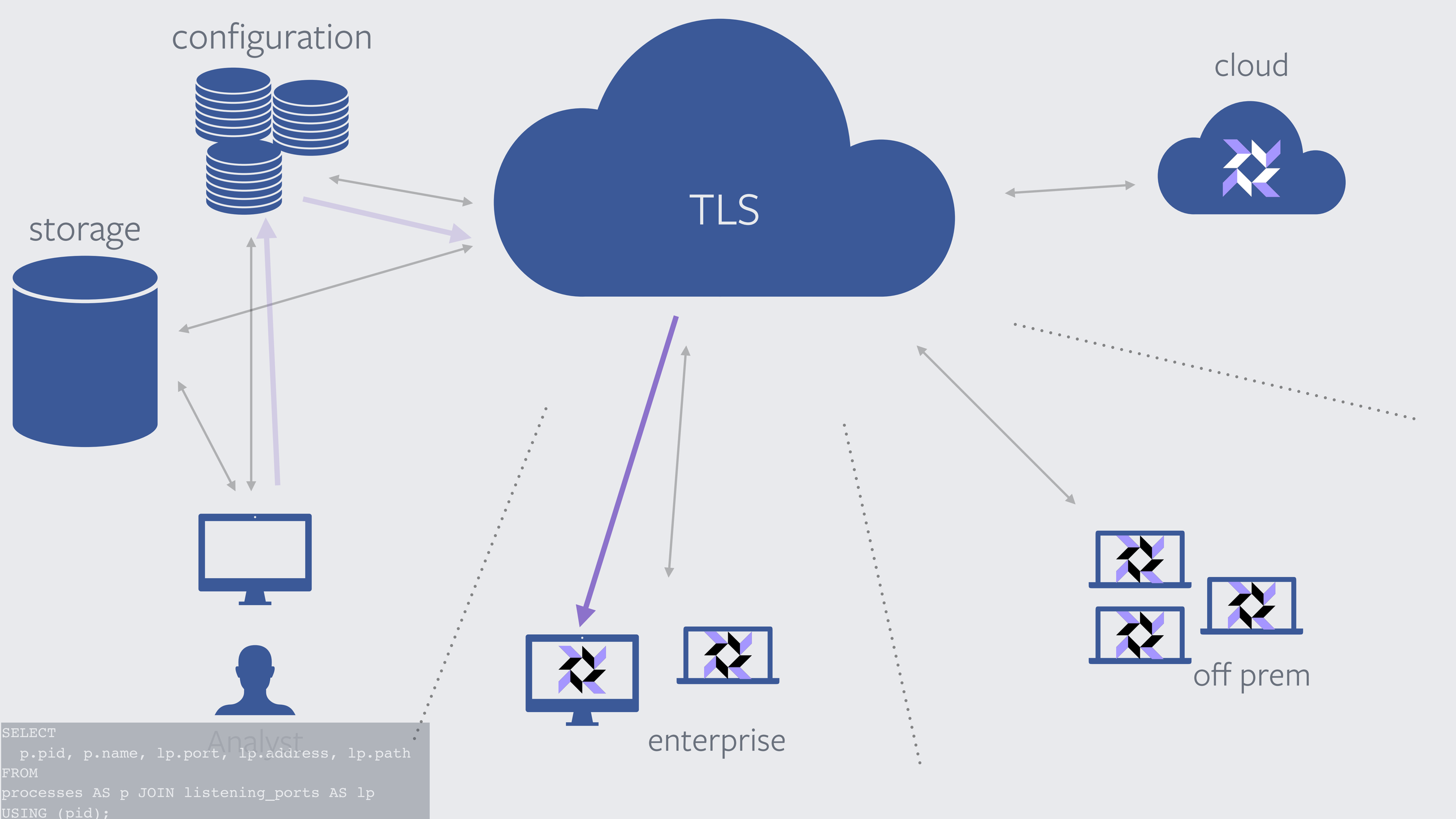


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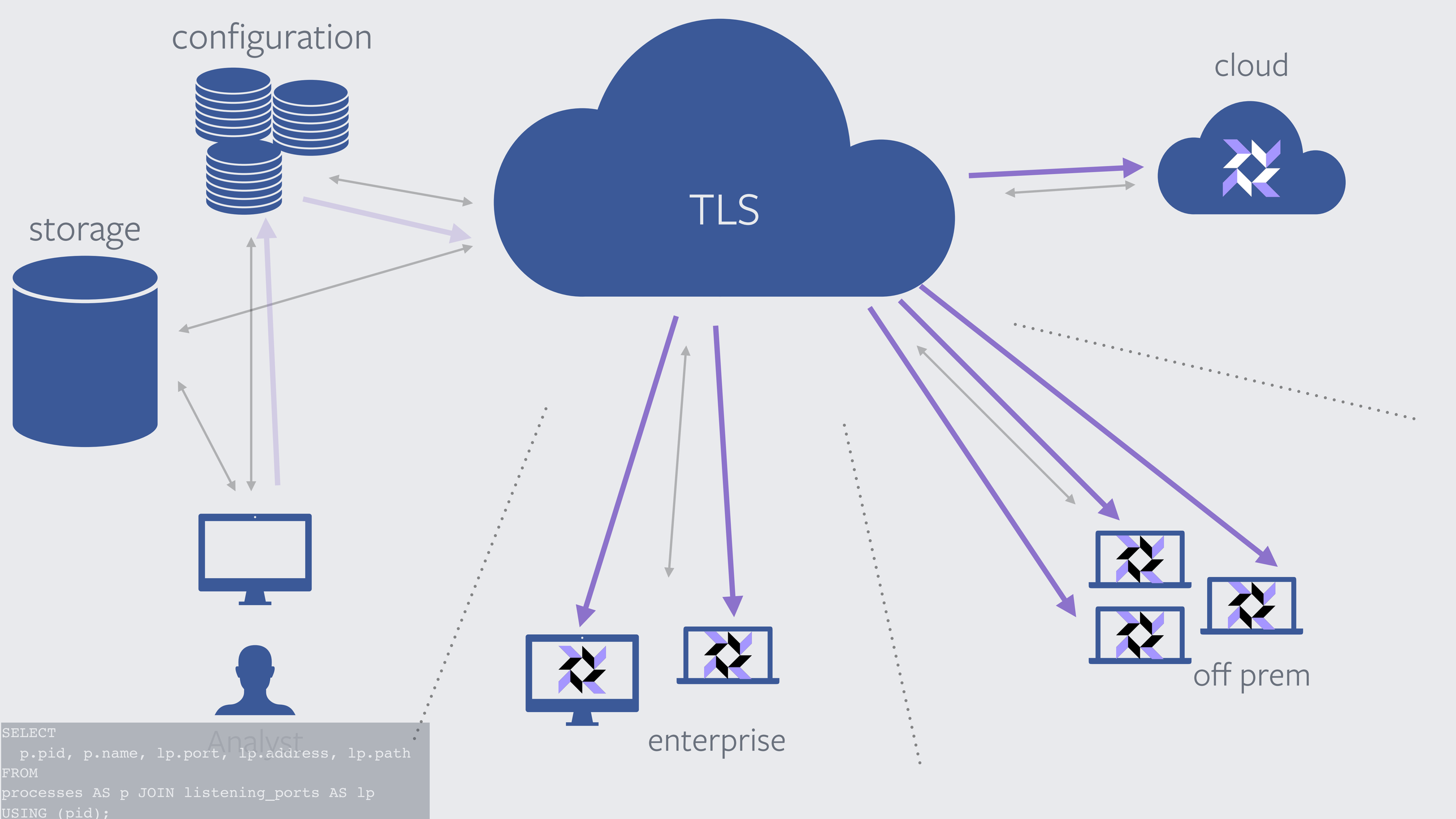


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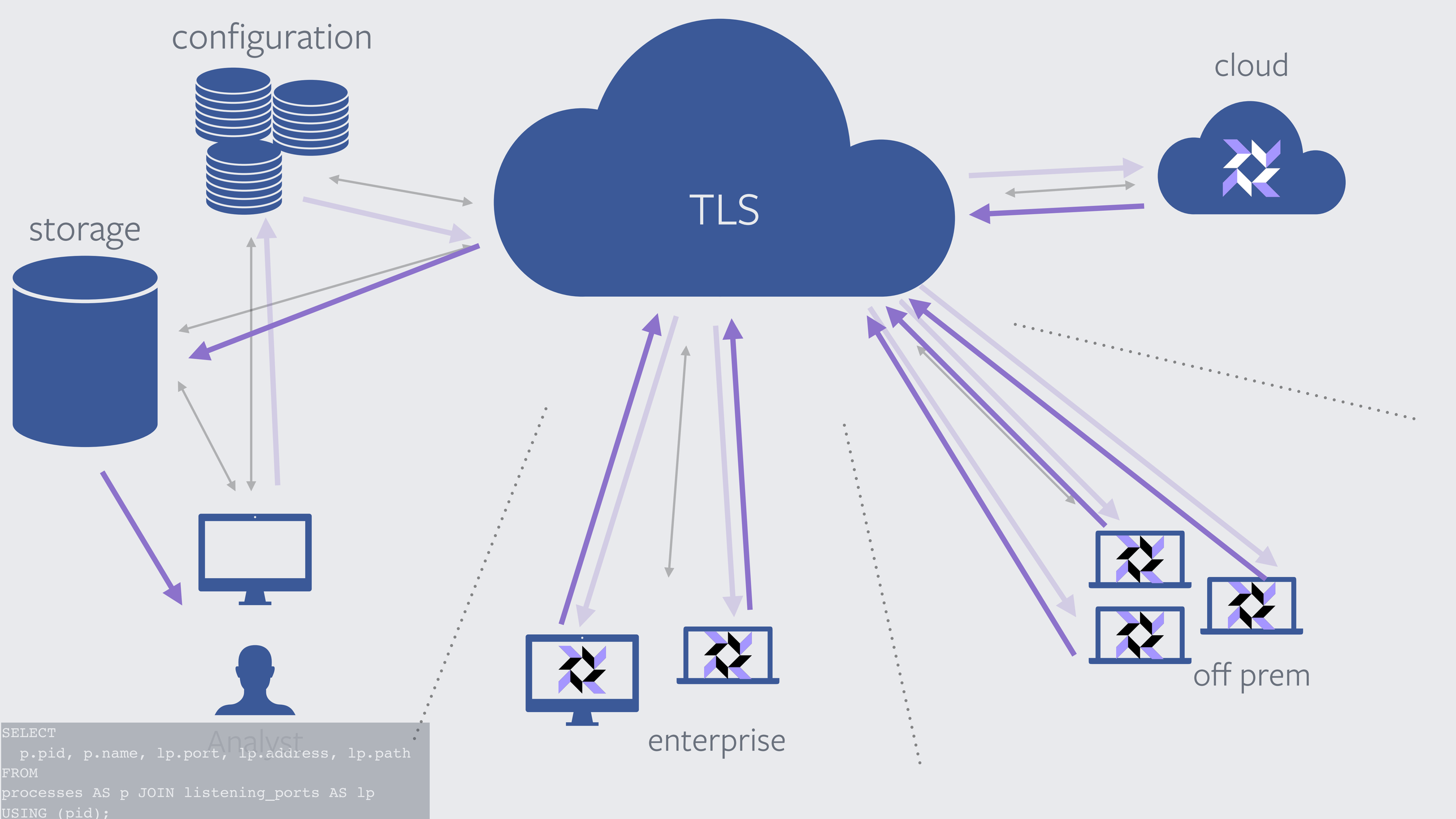


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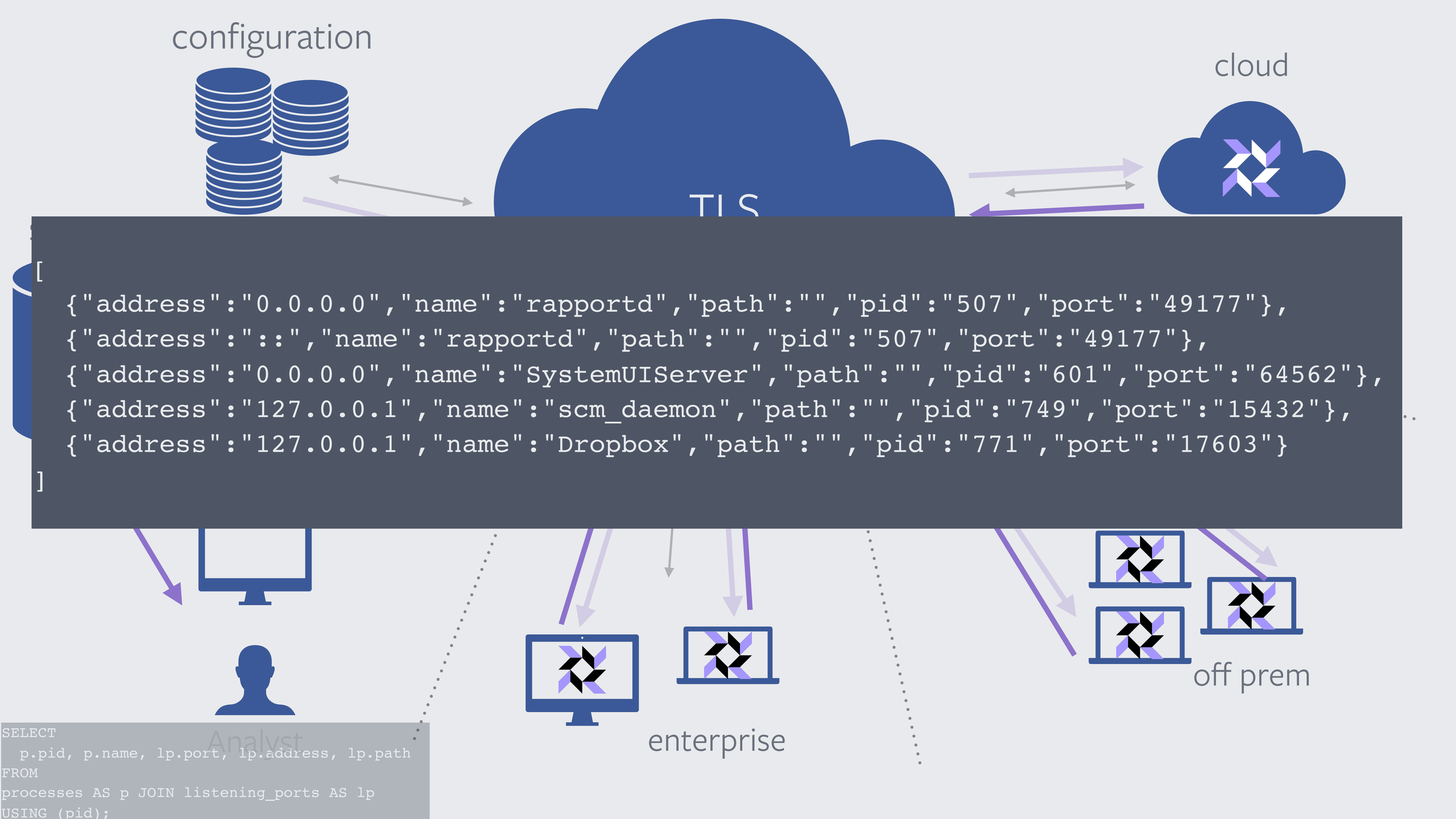
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{"address":"127.0.0.1","name":"Dropbox","path":"","pid":"771","port":"17603"}
]
Analyst
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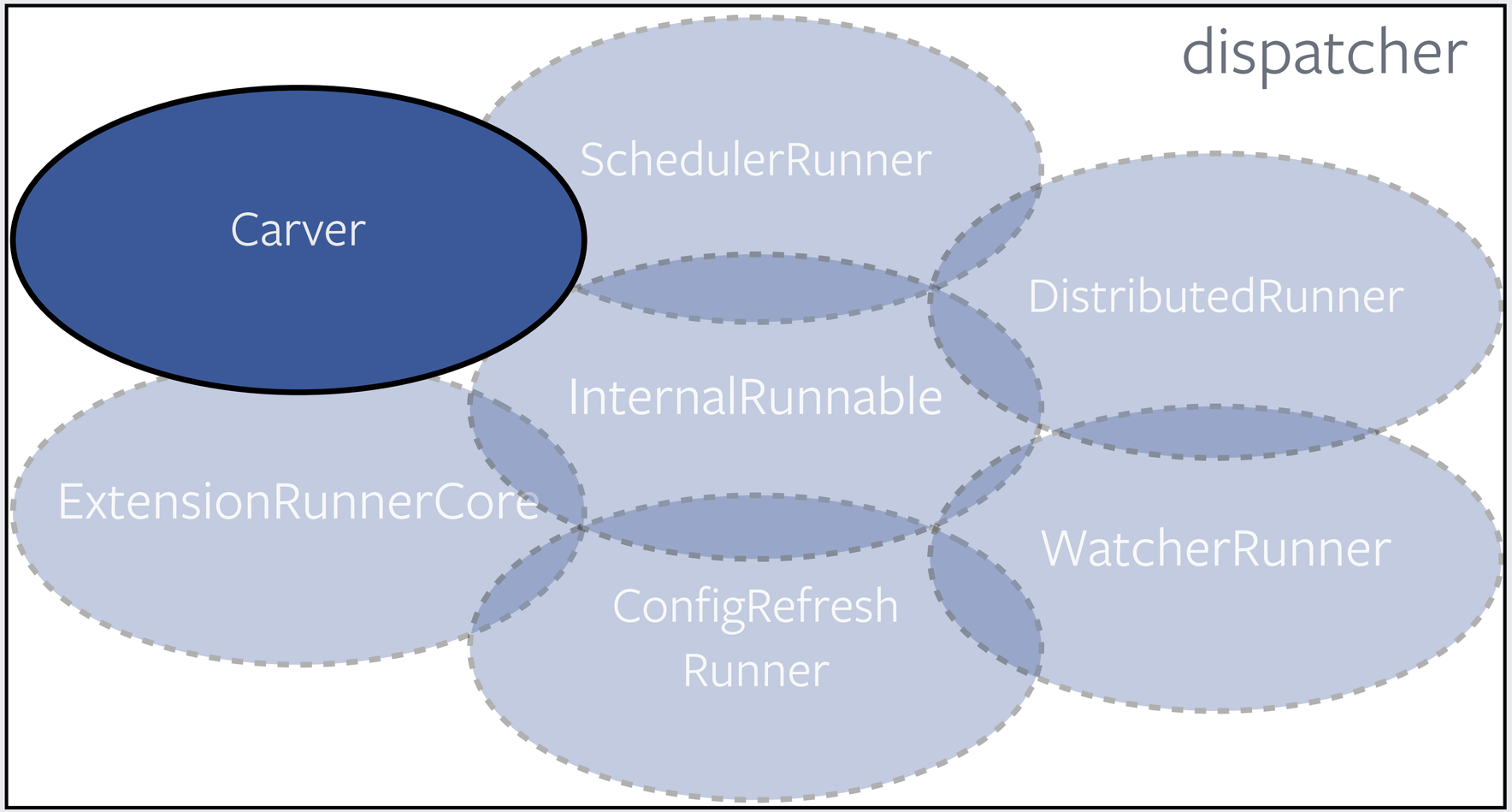
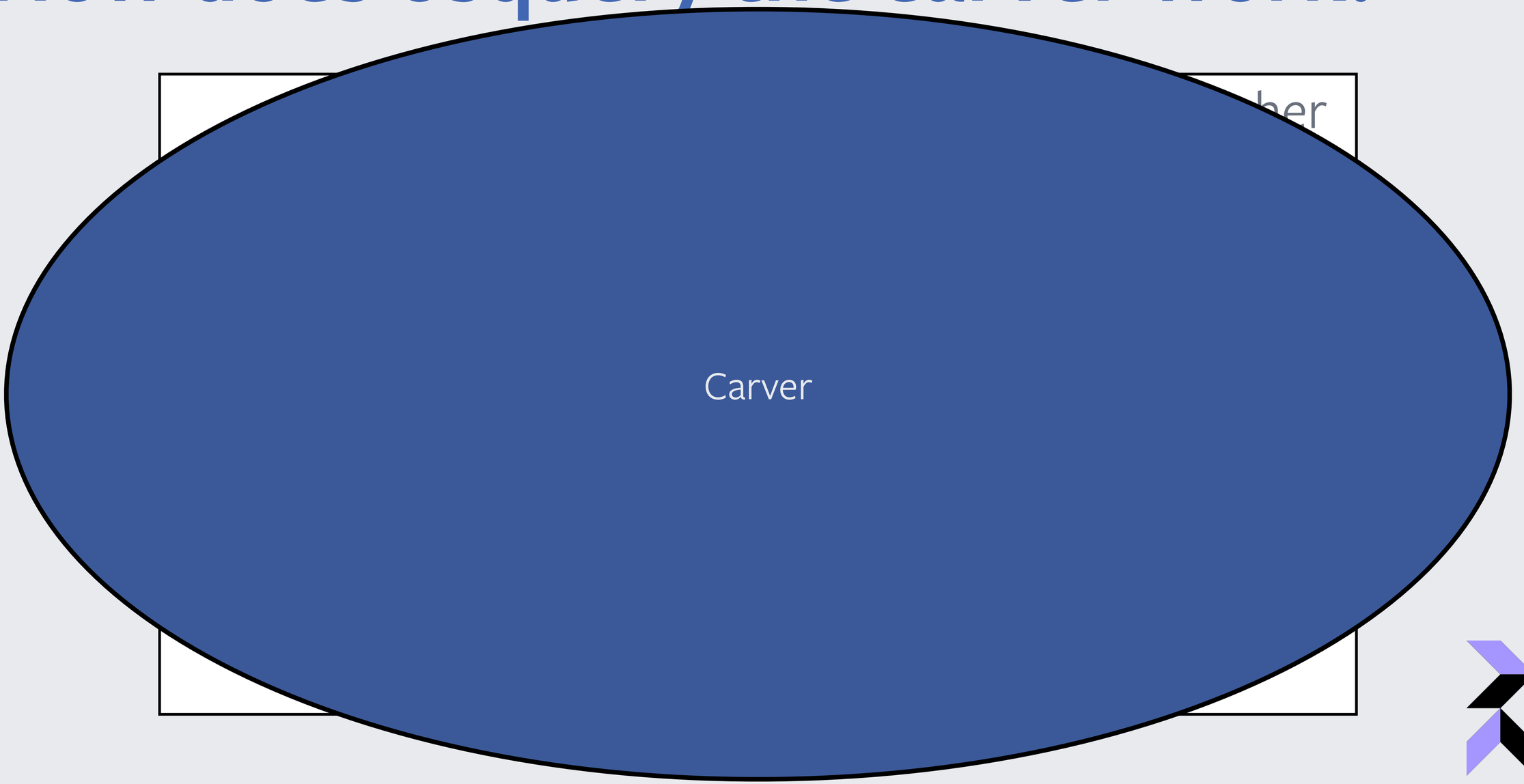
Repurposing Runnables

How does osquery work?



How does ~~osquery~~ the carver work?



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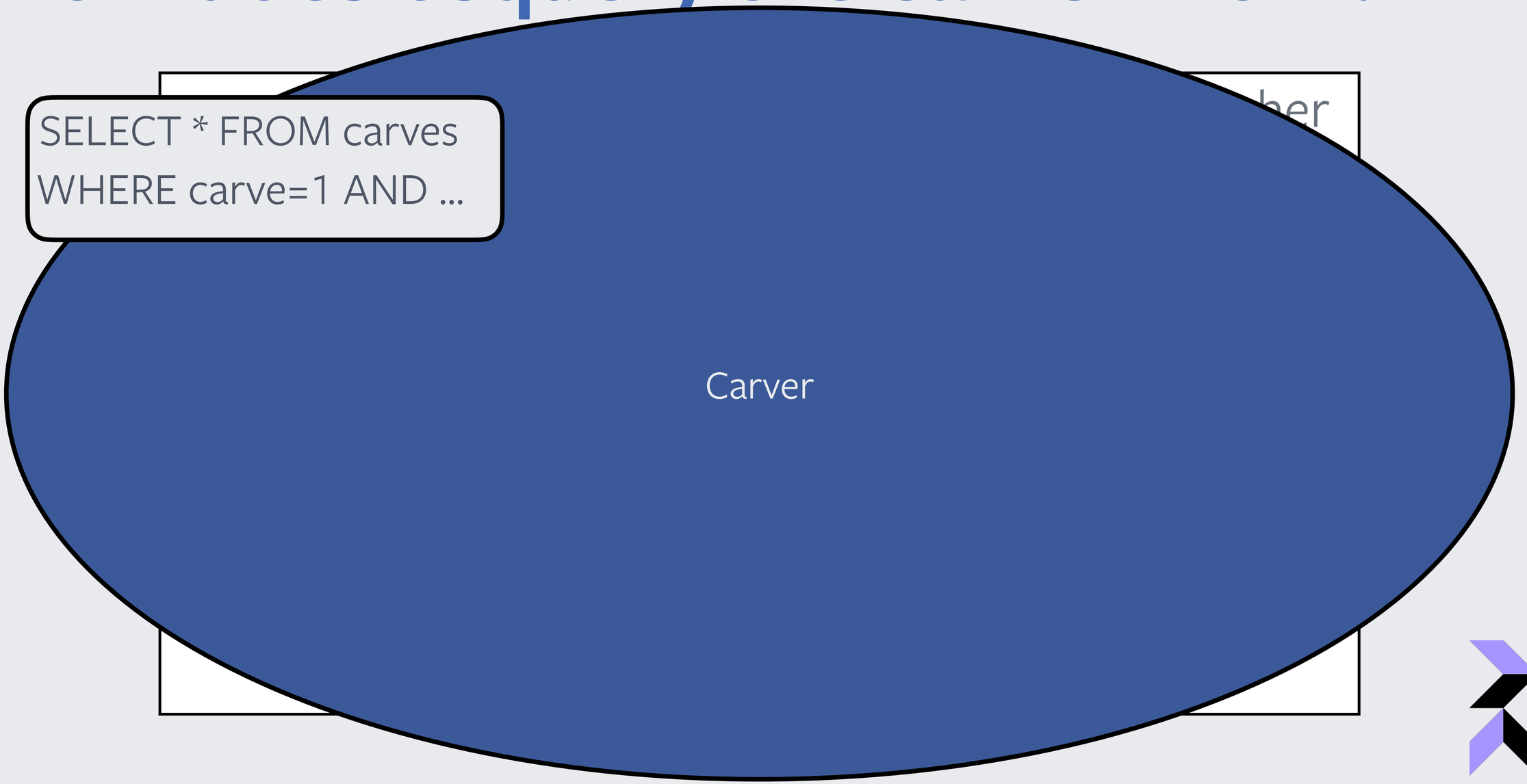

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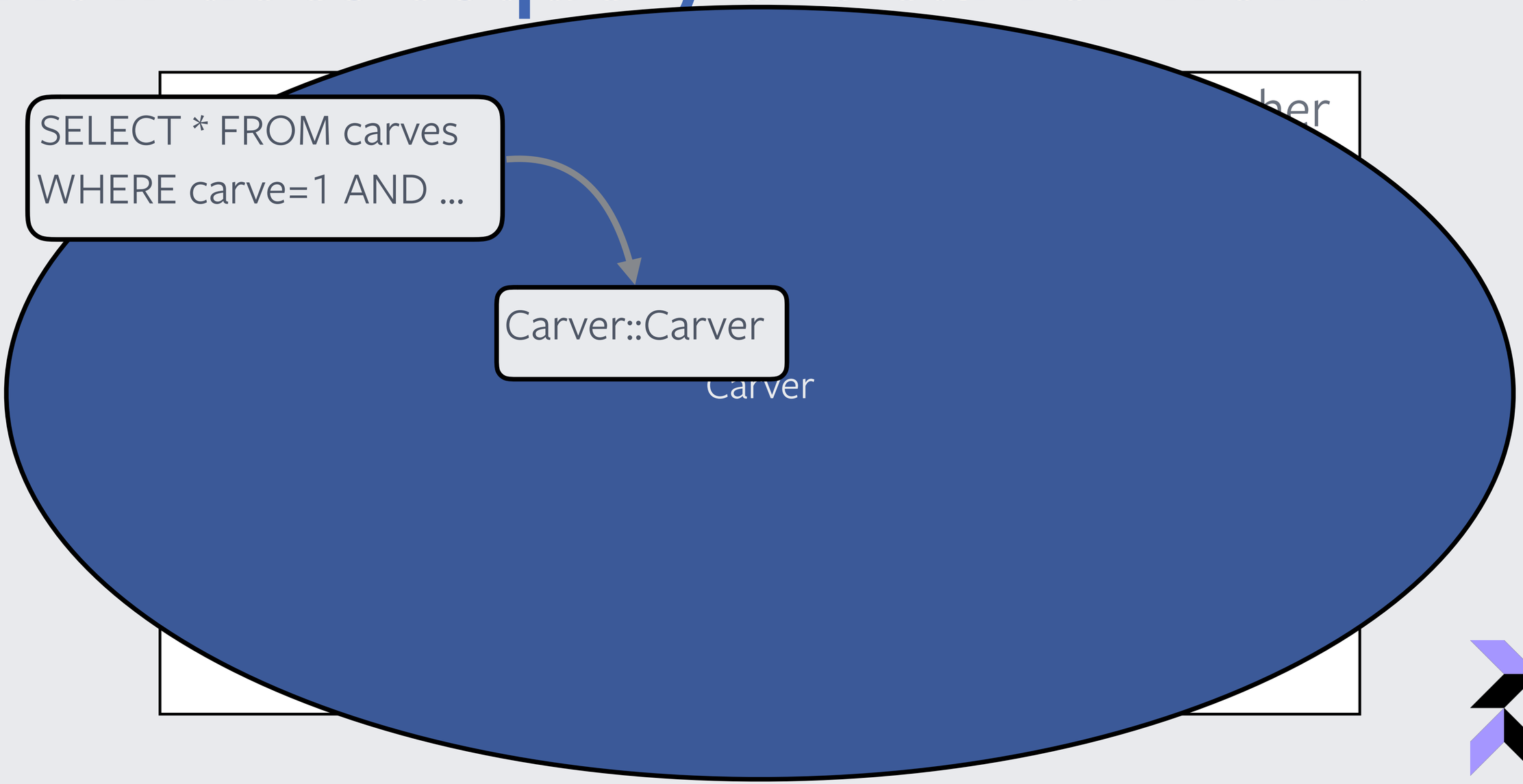

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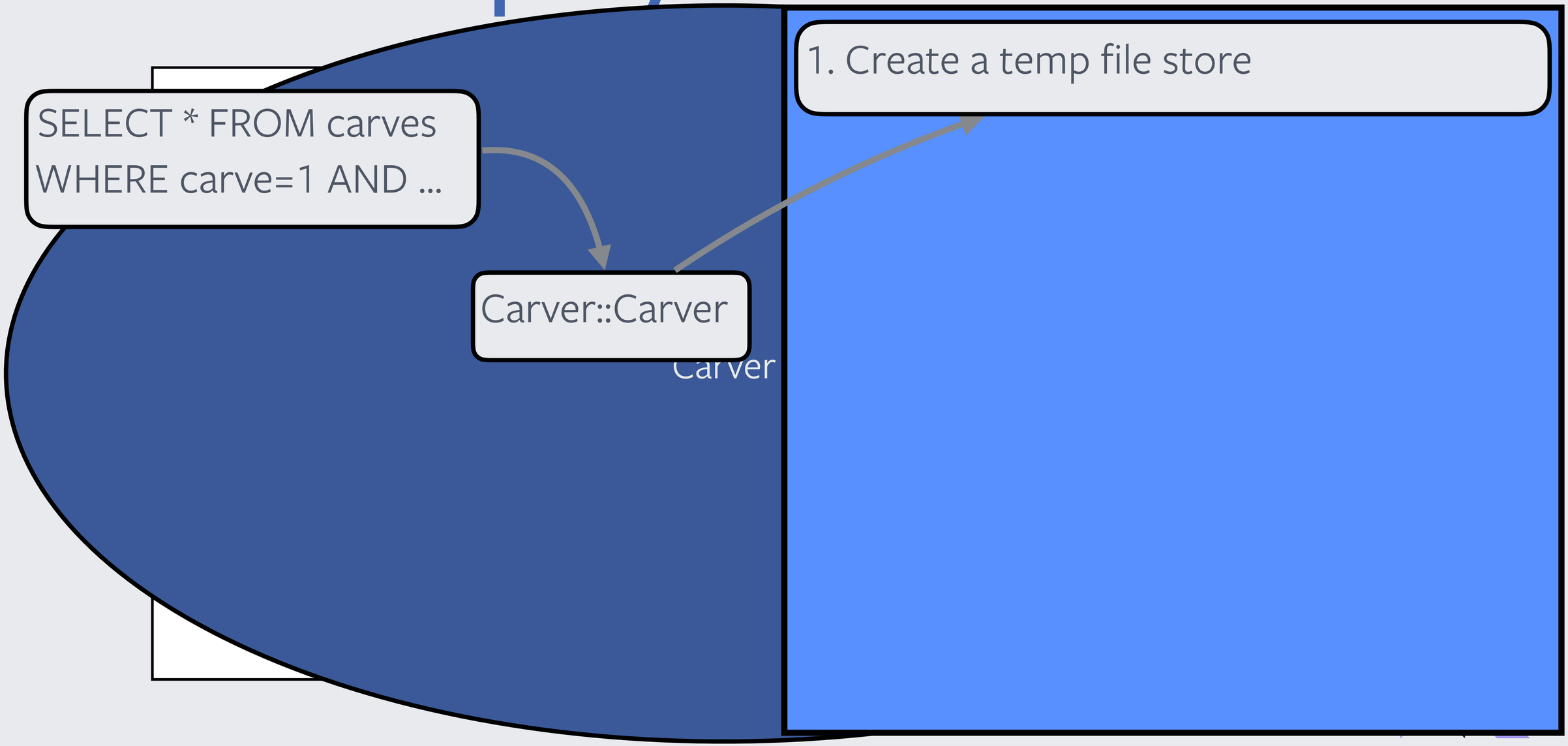

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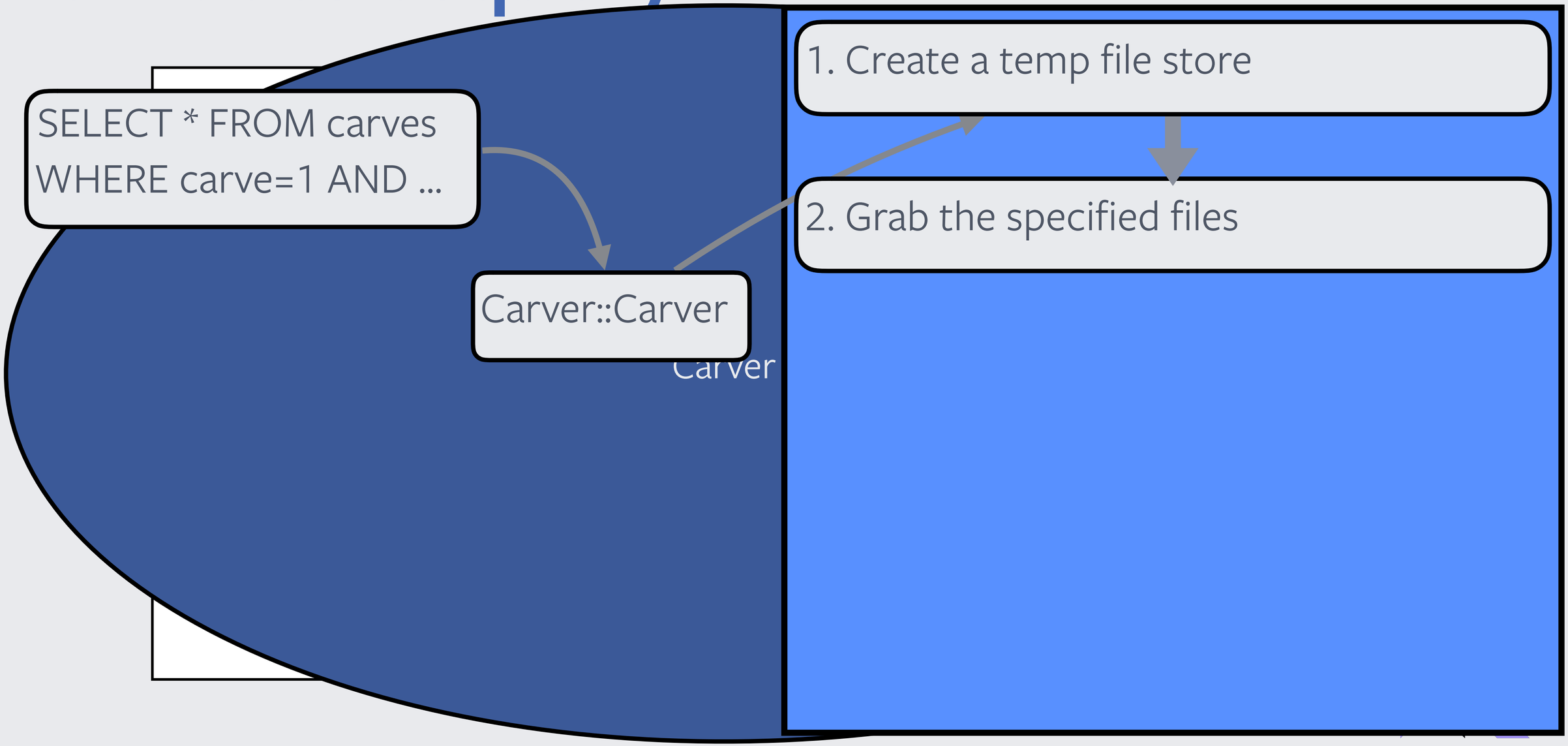

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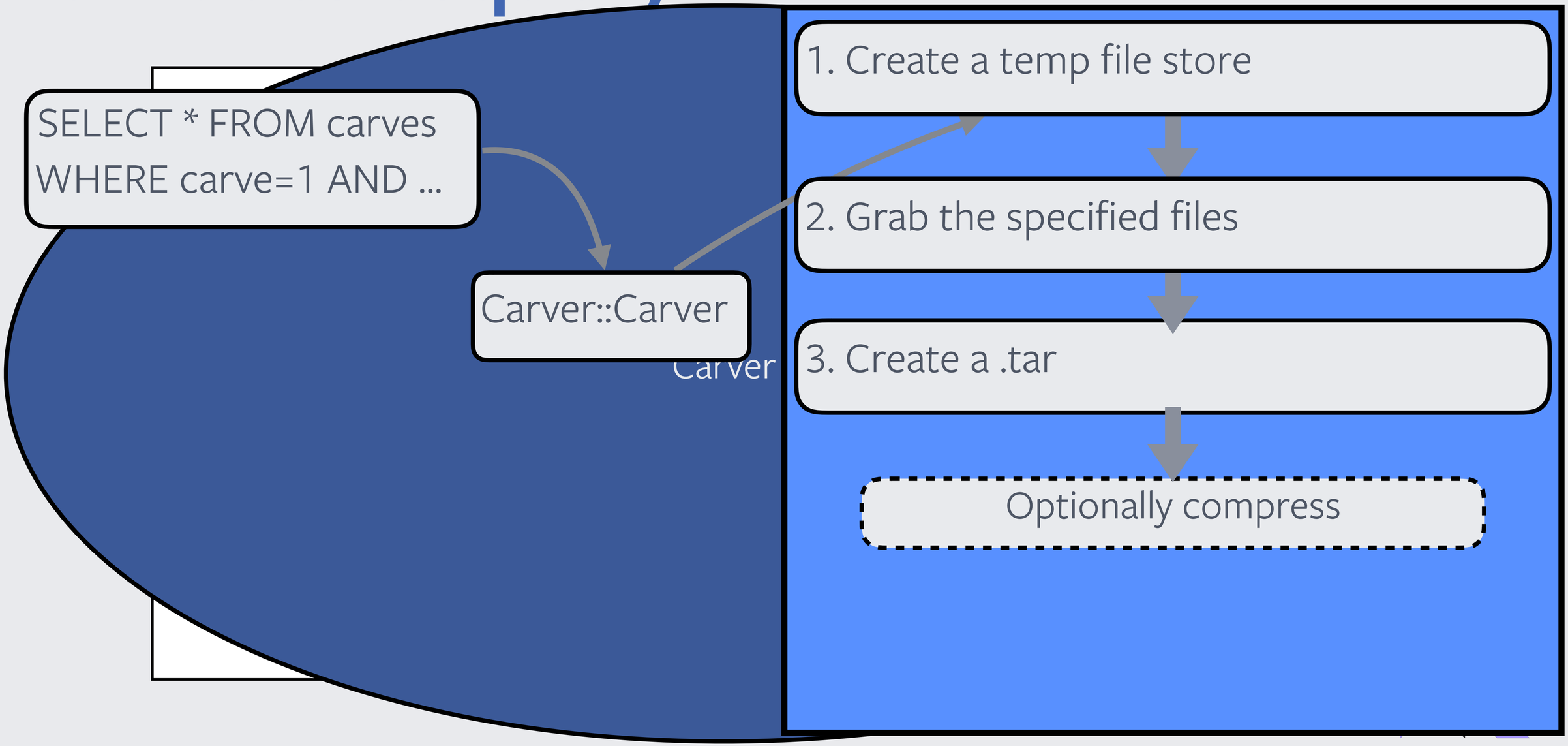

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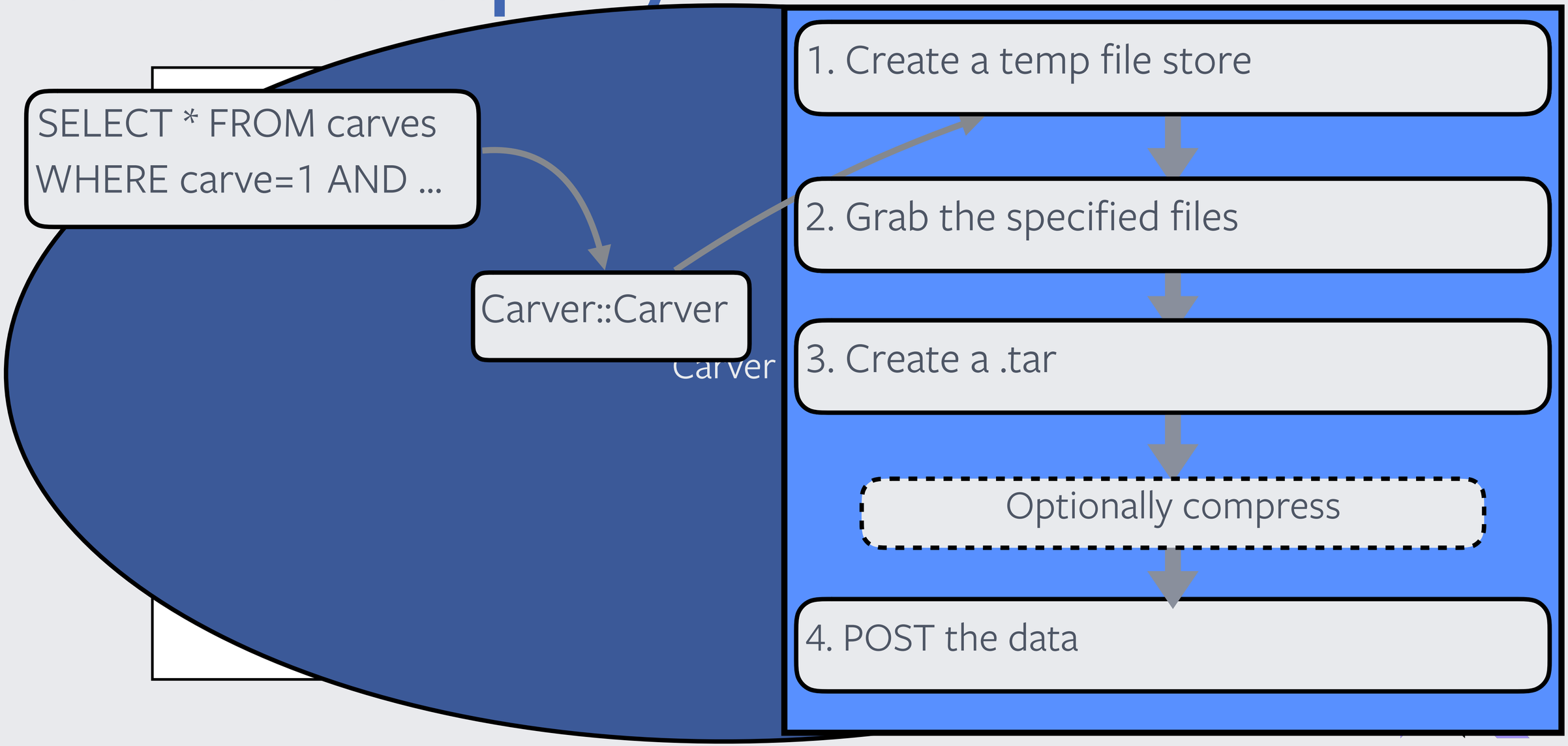

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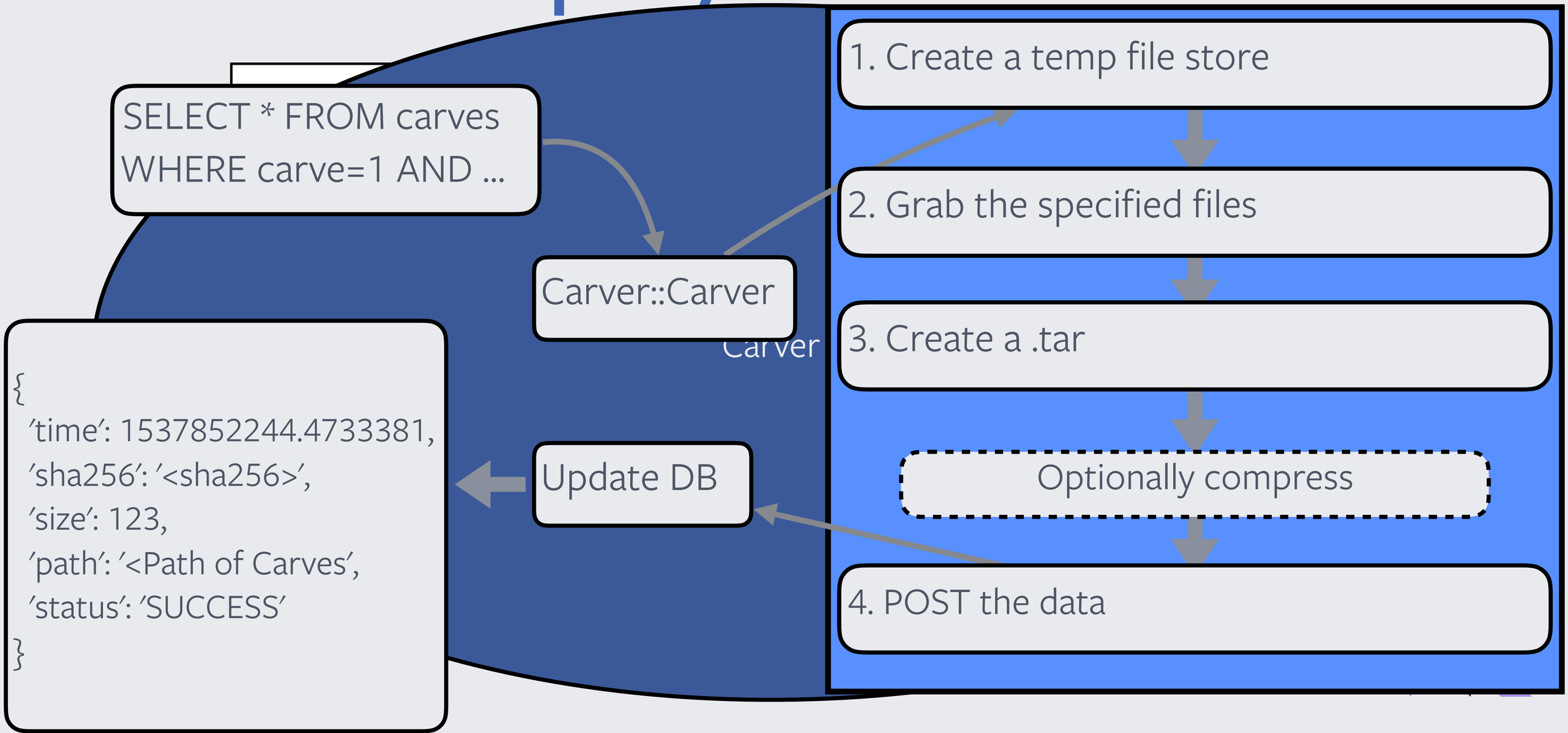
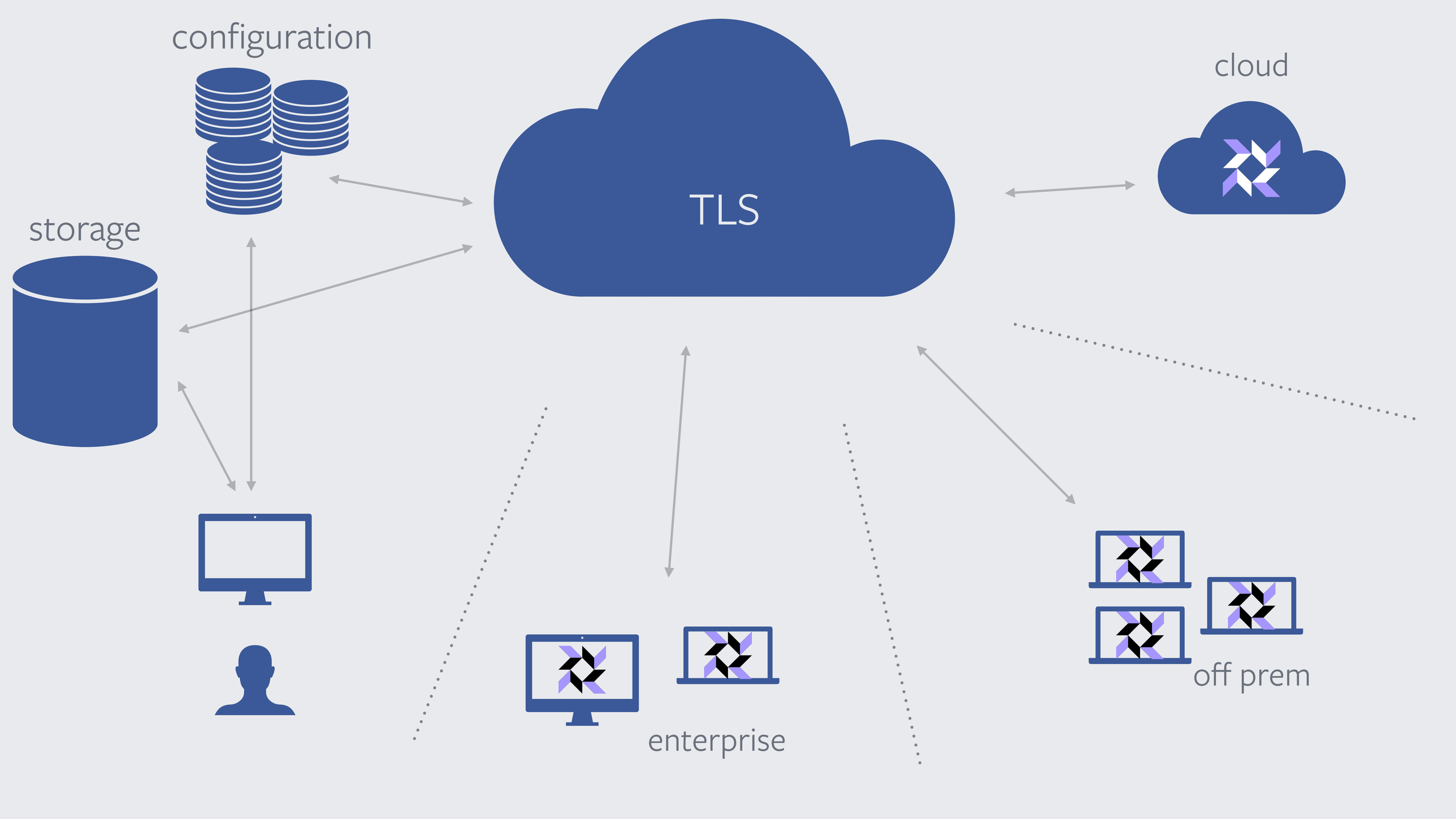


The file carver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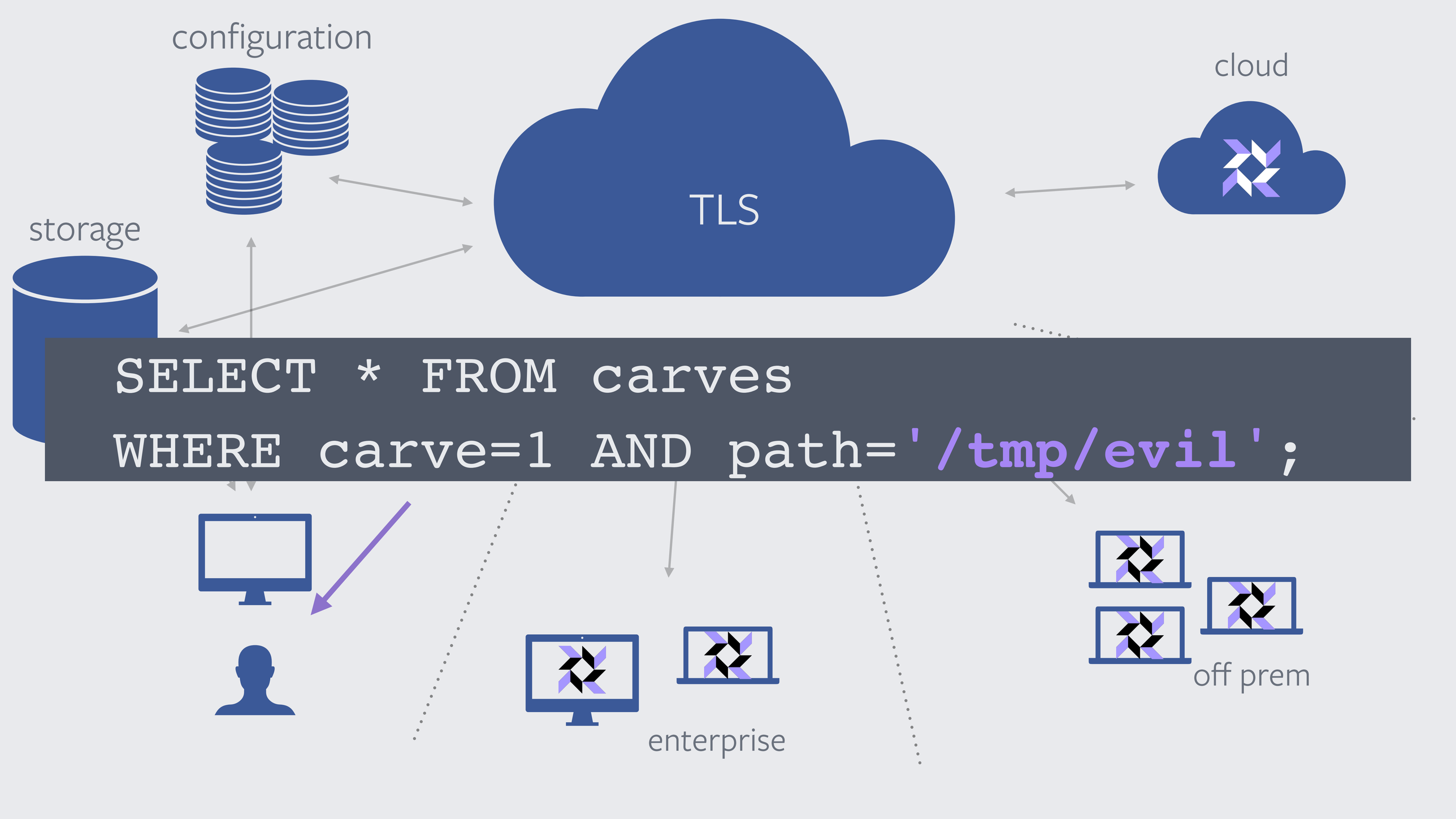
configuration
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SELECT * FROM carves
WHERE carve=1 AND path='/tmp/evil';
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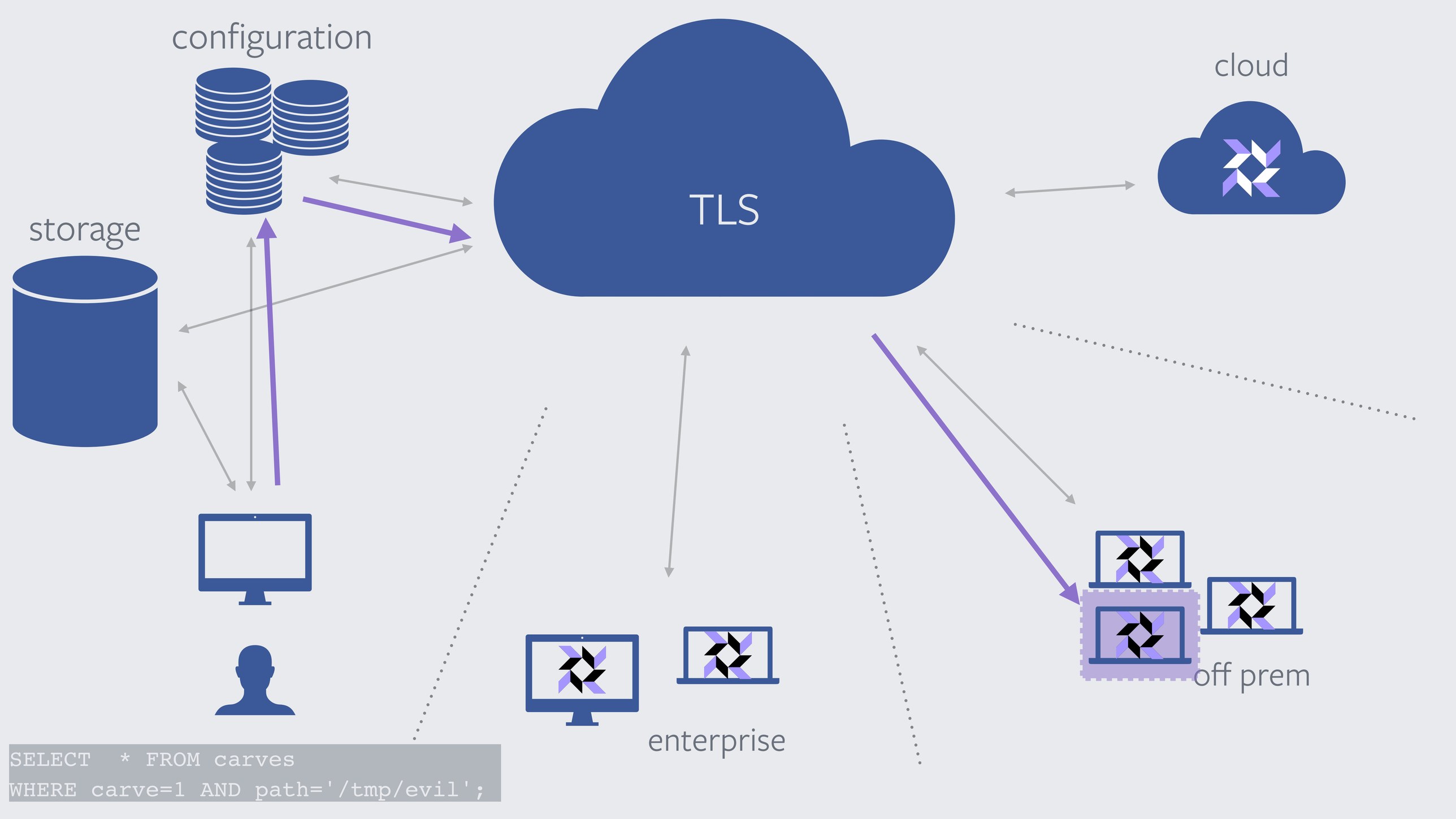


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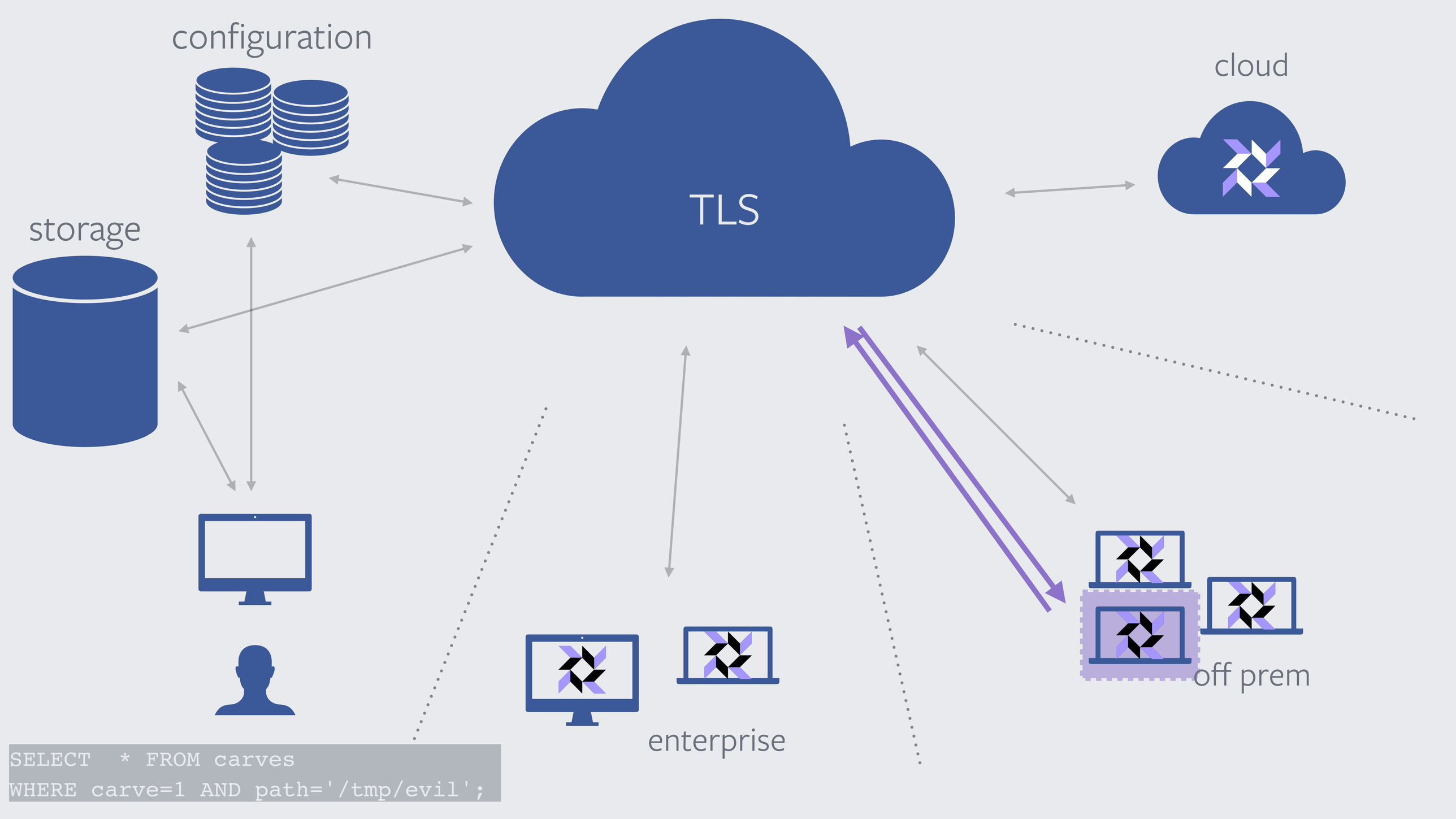
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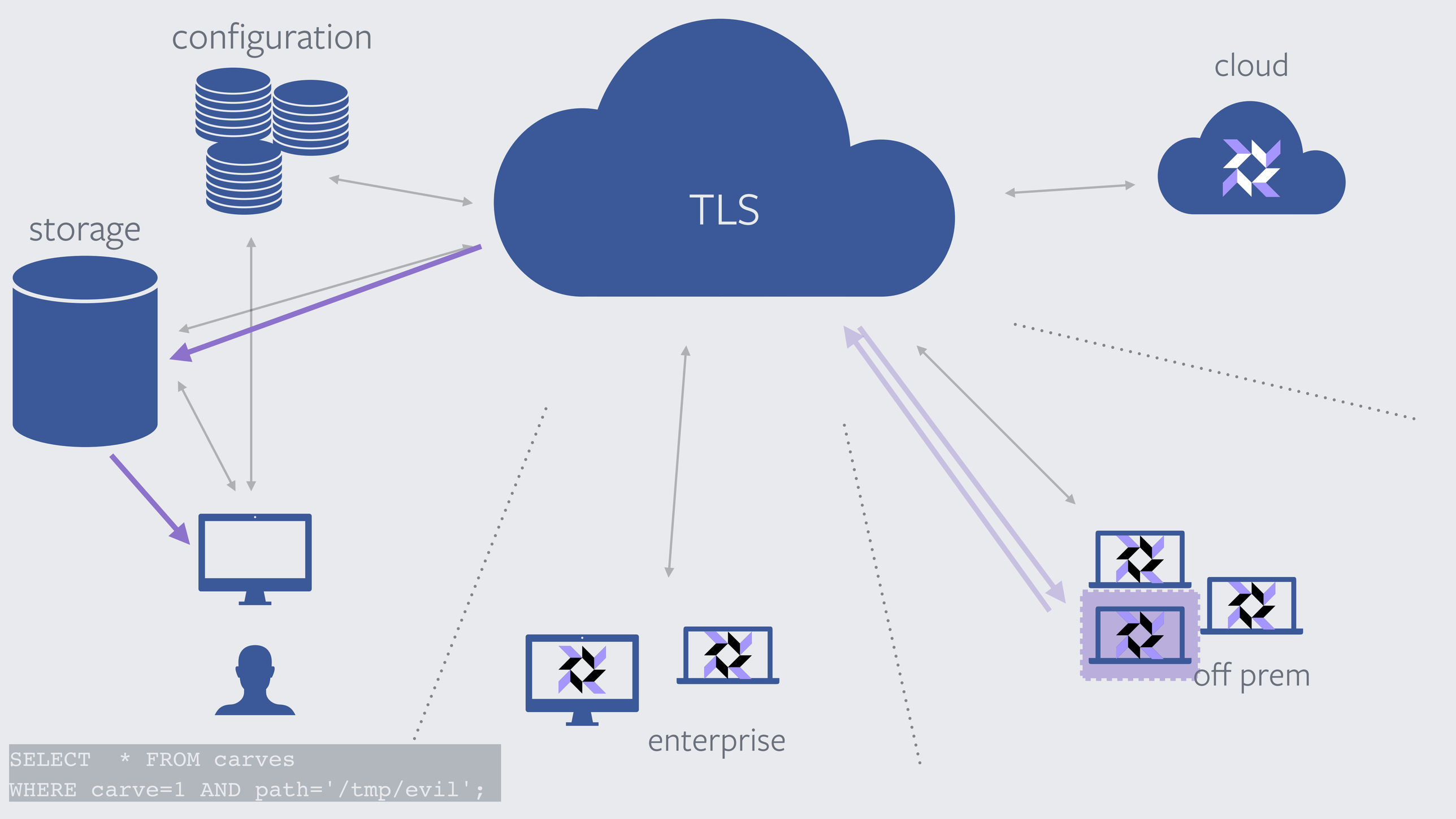
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Use Cases

Use Cases

- Auto Carving
  - New files
  - Case artifacts

Use Cases

- Auto Carving
  - New files
  - Case artifacts
- Asynchronous acquisitions
  - Endpoint is off corp network
  - Laptop is shut and then opened

Surprises

Carver Wins

```
SELECT
  *
FROM
  carves
WHERE
  carve=1 AND
path LIKE '/Users/%/Downloads/%';
```

Limitations

Carver Limitations

- Watchdog and size limits

Carver Limitations

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- ″carves″

Carver Limitations

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- Block POST retry

Carver Limitations

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- Block POST retry
- Limited to TLS endpoints

Carver Limitations

- Watchdog and size limits
- ″carves″
- Block POST retry
- Limited to TLS endpoints
- How does one carve?

Carver Endpoints

Carver Endpoints

- Zentral
  - github.com/zentralopensource/zentral
- SGT
  - github.com/OktaSecurityLabs/sgt

Carver ~~Endpoints~~ Specs and Docs

- Doorman issue
  - github.com/mwielgoszewski/doorman/issues/120
- osquery integration test
  - osquery/tools/tests/test_http_server.py

Thanks! Questions?

- Nick Anderson
  - Security Engineer at Facebook
- thor@fb.com
  - Super legit, not an alias
- Github - github.com/muffins
- Twitter - twitter.com/poppyseedplehzr
- Slack - thor

facebook