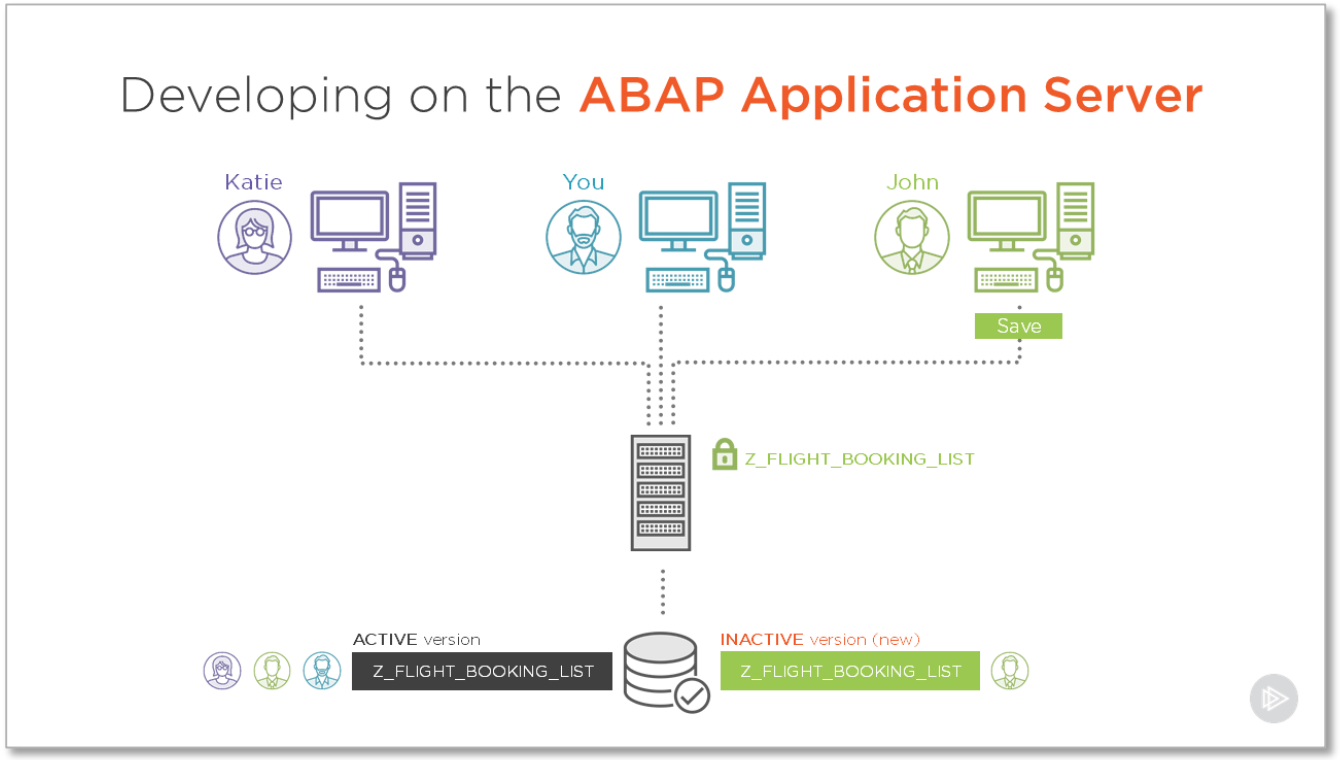
ABAP: Behind the Scenes

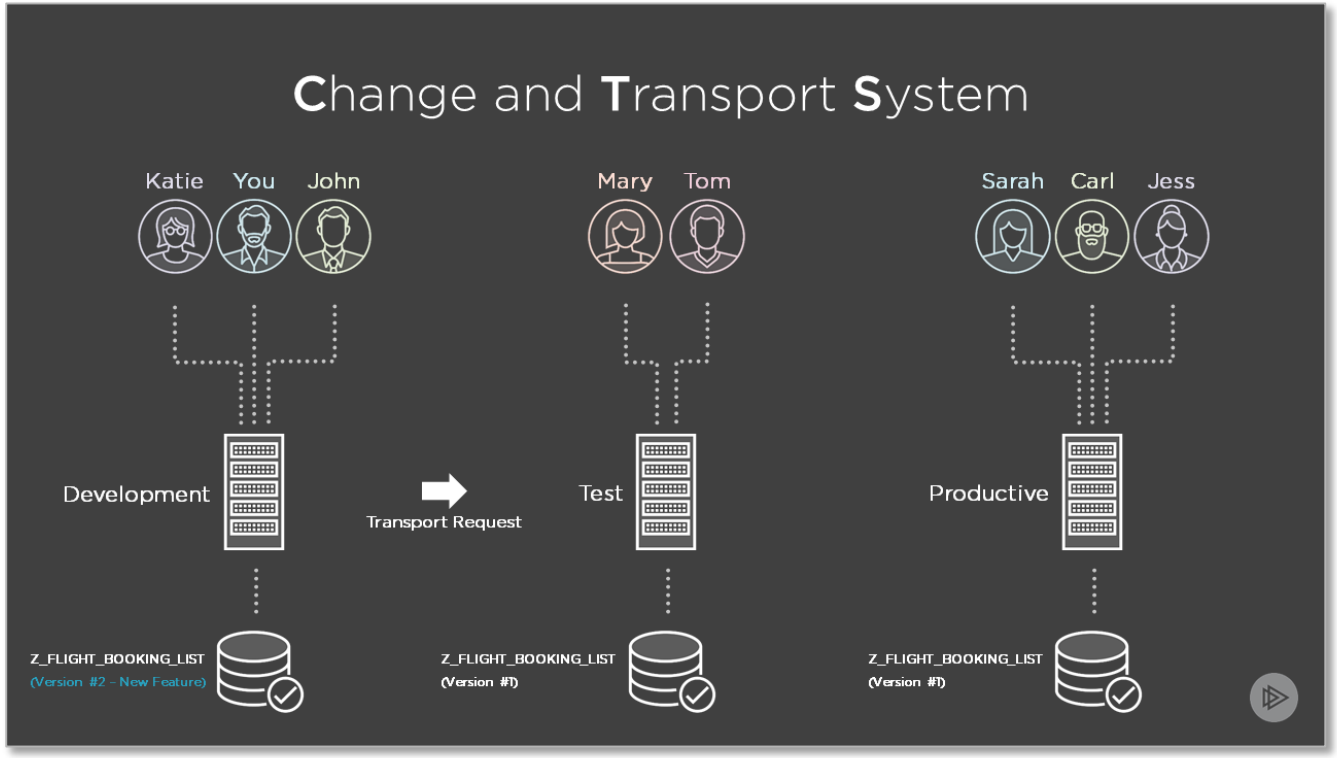
Alex Gönczy
ABAP DEVELOPER

@abapmentor http://abapmentor.expertise-team.com/

Developing on the ABAP Application Server



Develop, Test and Run



Develop, Activate and Run

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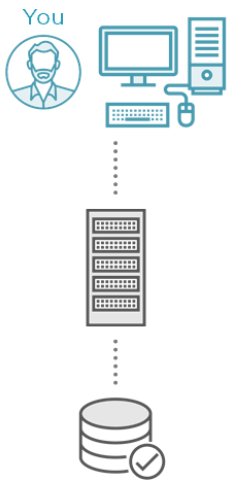

ABAP Source Code

```
DATA(result) = 3 + 2.
WRITE result.
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ABAP Byte Code (ABAP Load)

```
...
21 L ccqi CB 0000 0003 0000 0002
25 S WRIB 01 0000
...
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Z_ABAP_DEMO

REPOSRC - Report Source Code

Program	Status	Created By	Source Code (Compressed)
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REPOLOAD - Report Loads

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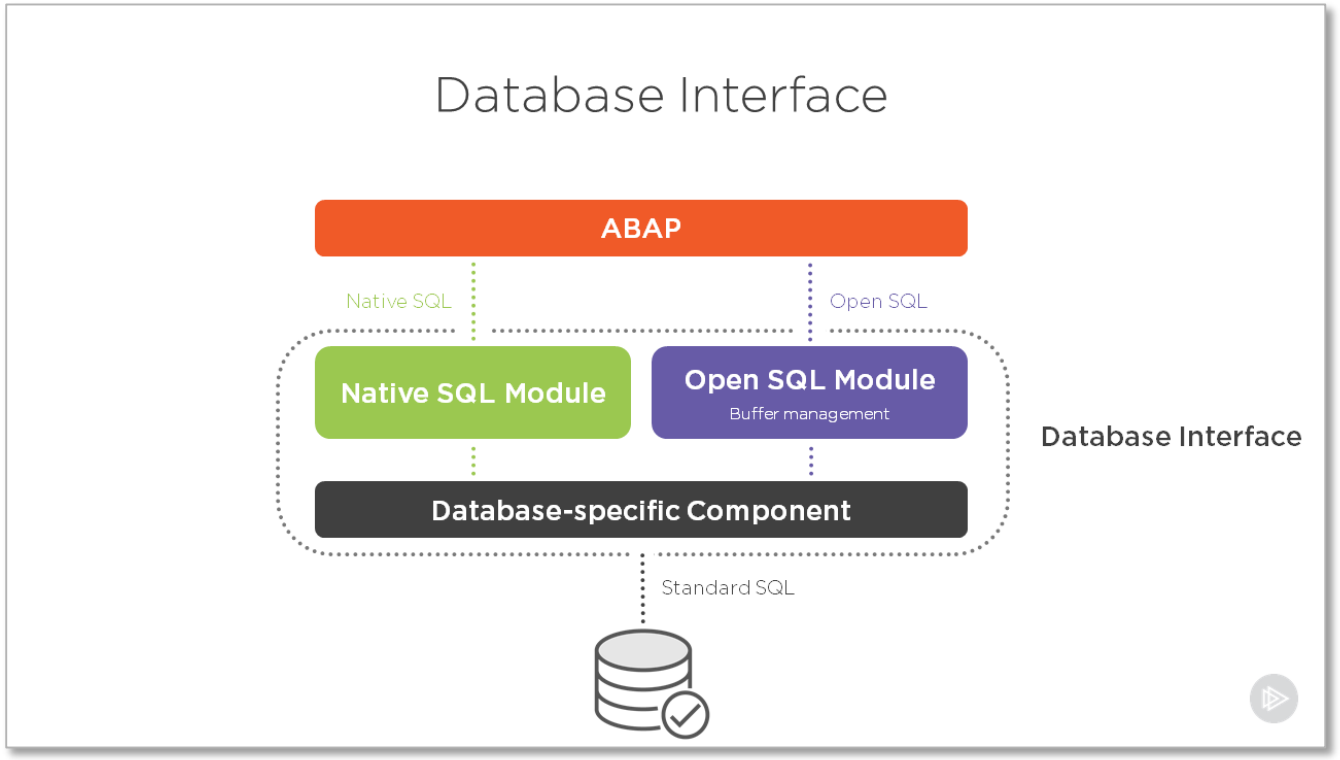
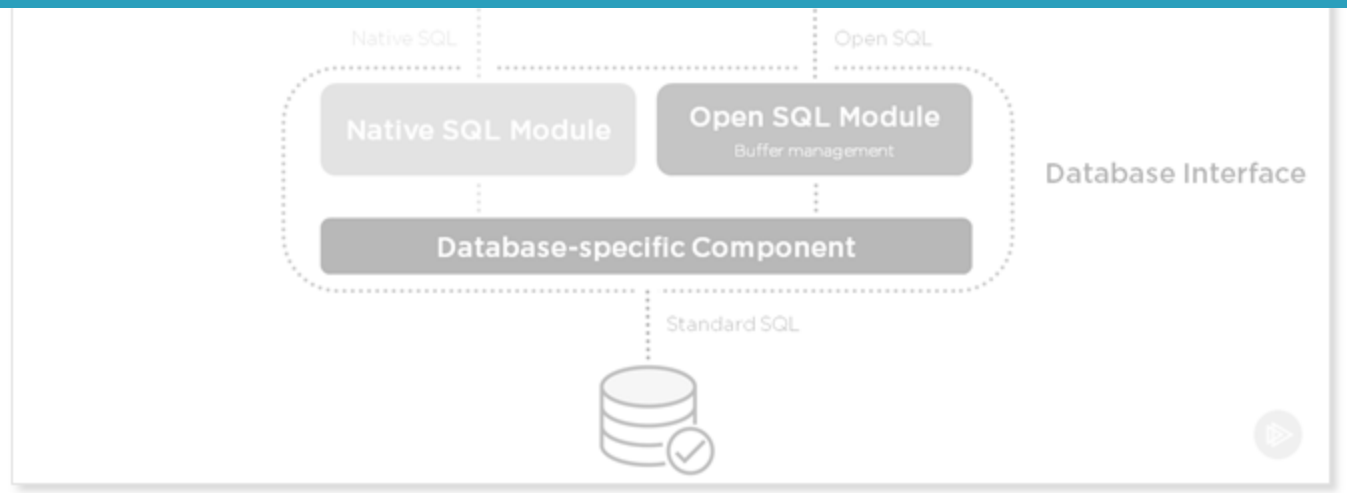
Working with Open SQL



Working
Open S

Next

Developing on the ABAP Application Server



Developing on the ABAP Application Server

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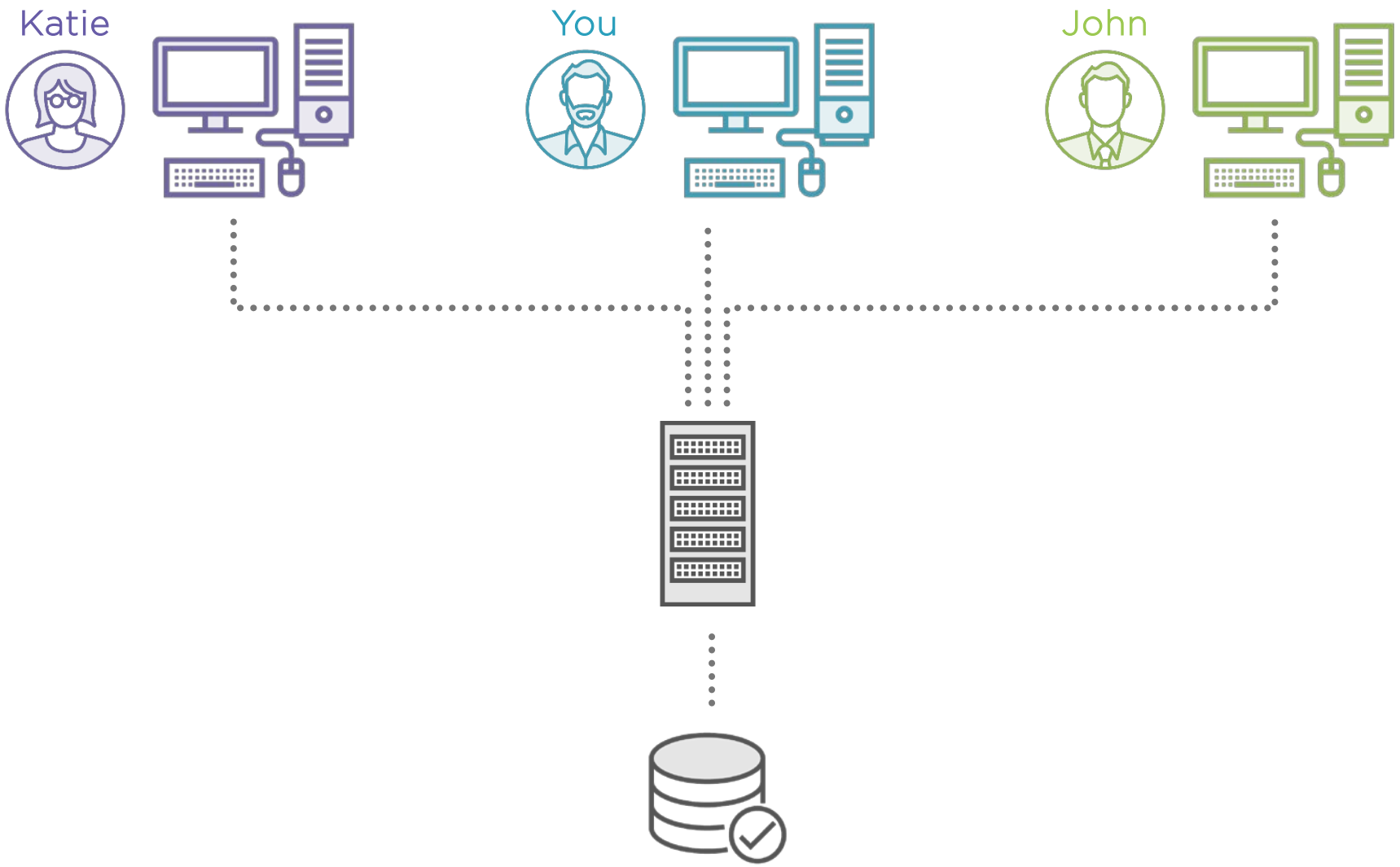

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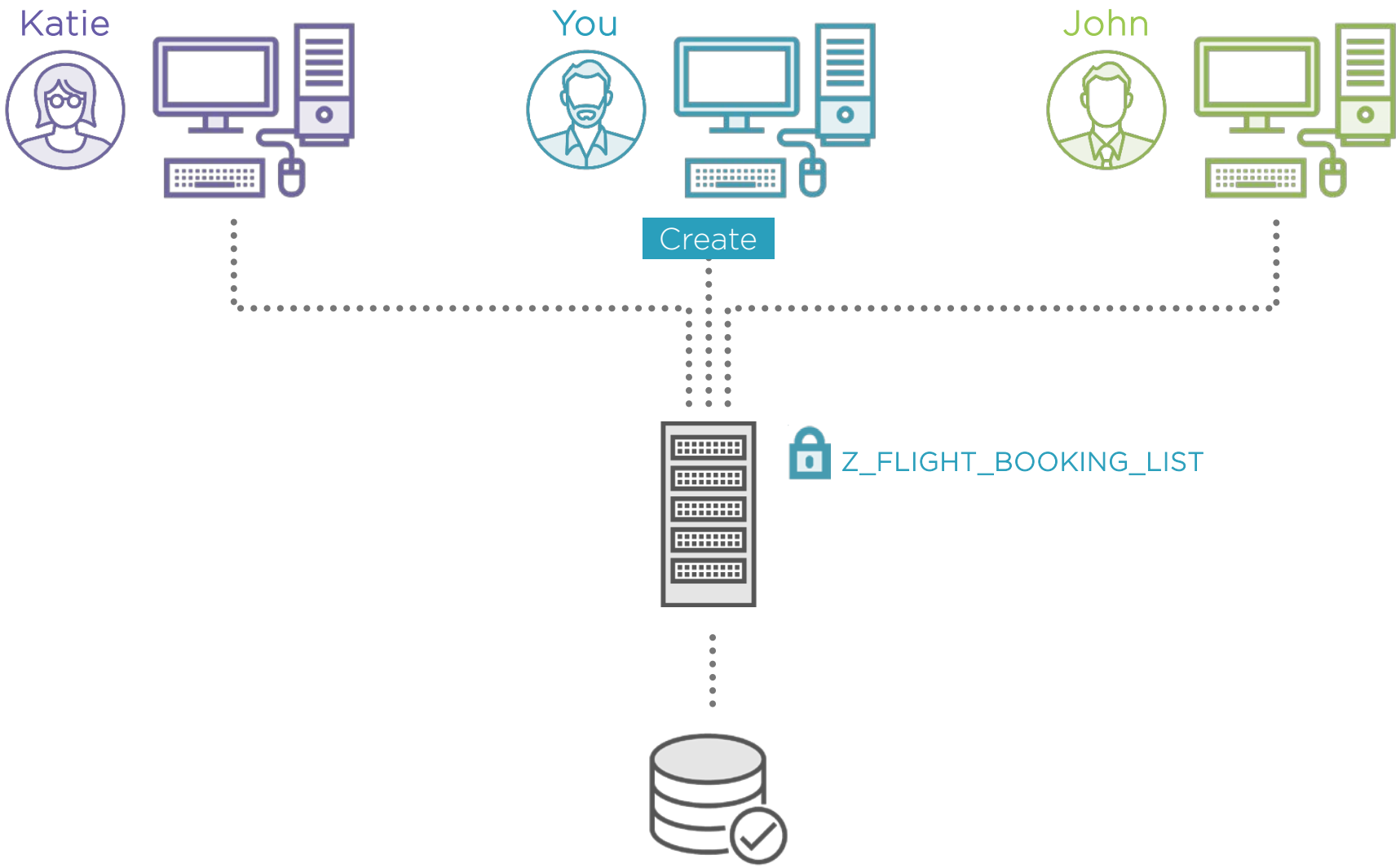

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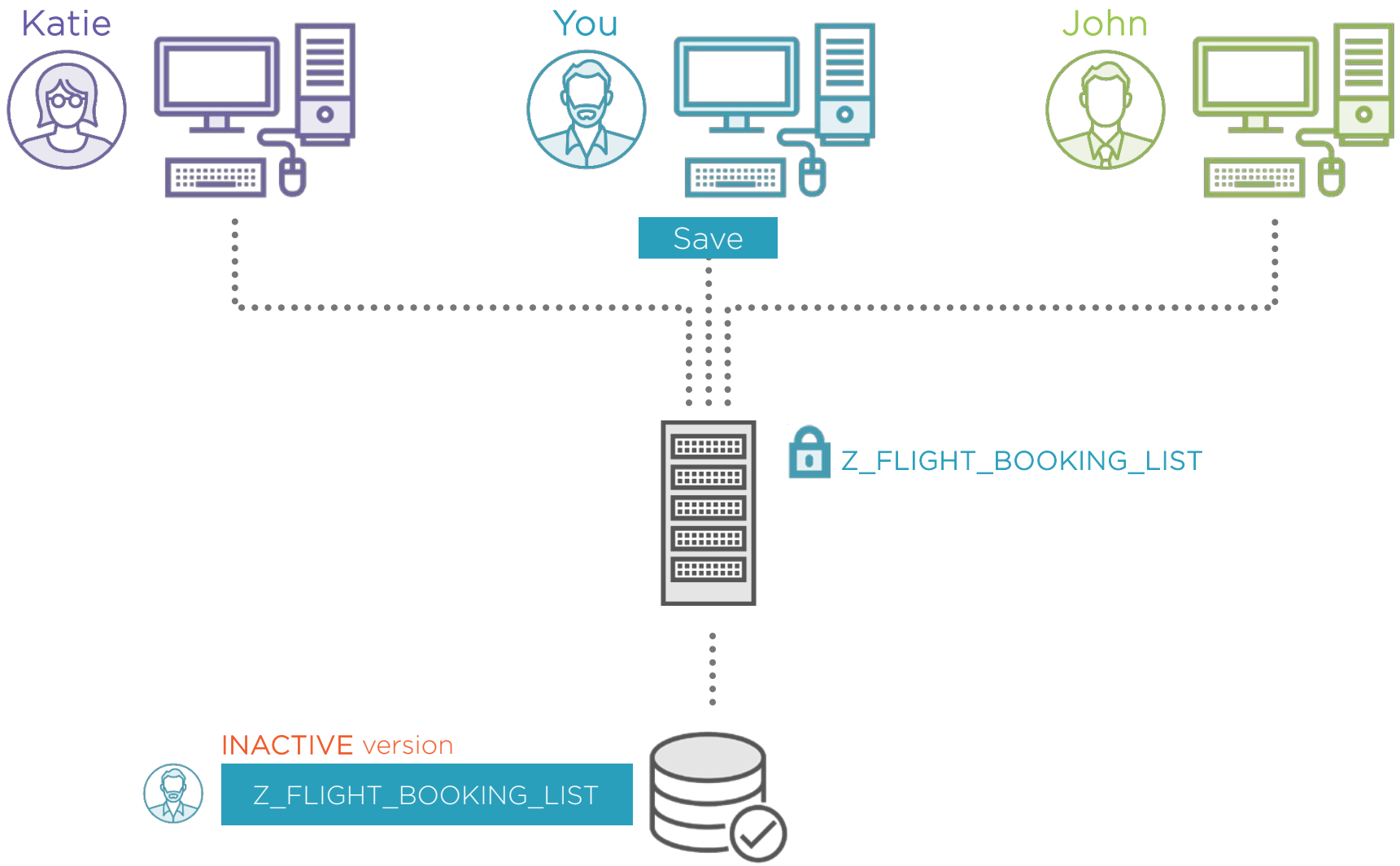

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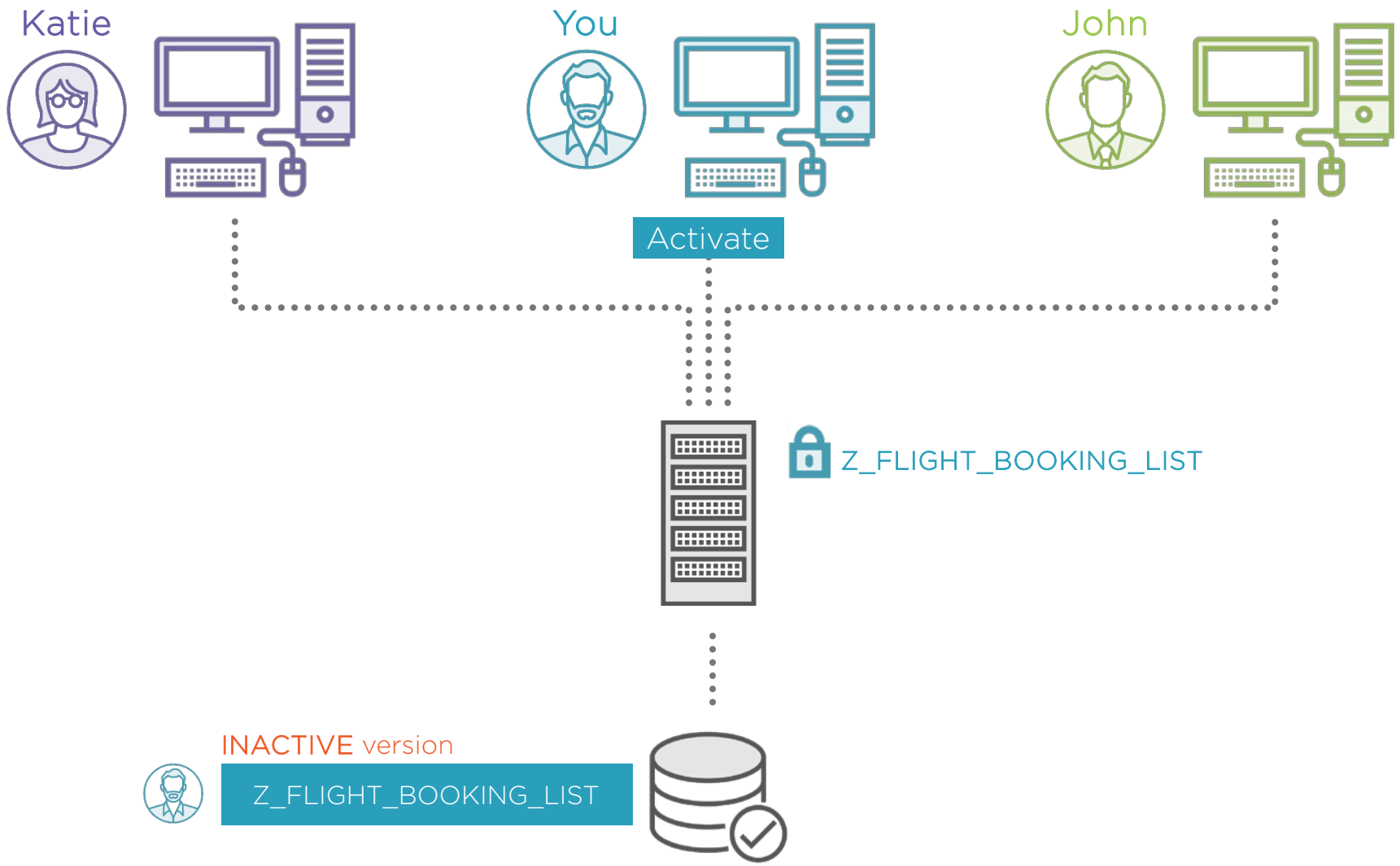

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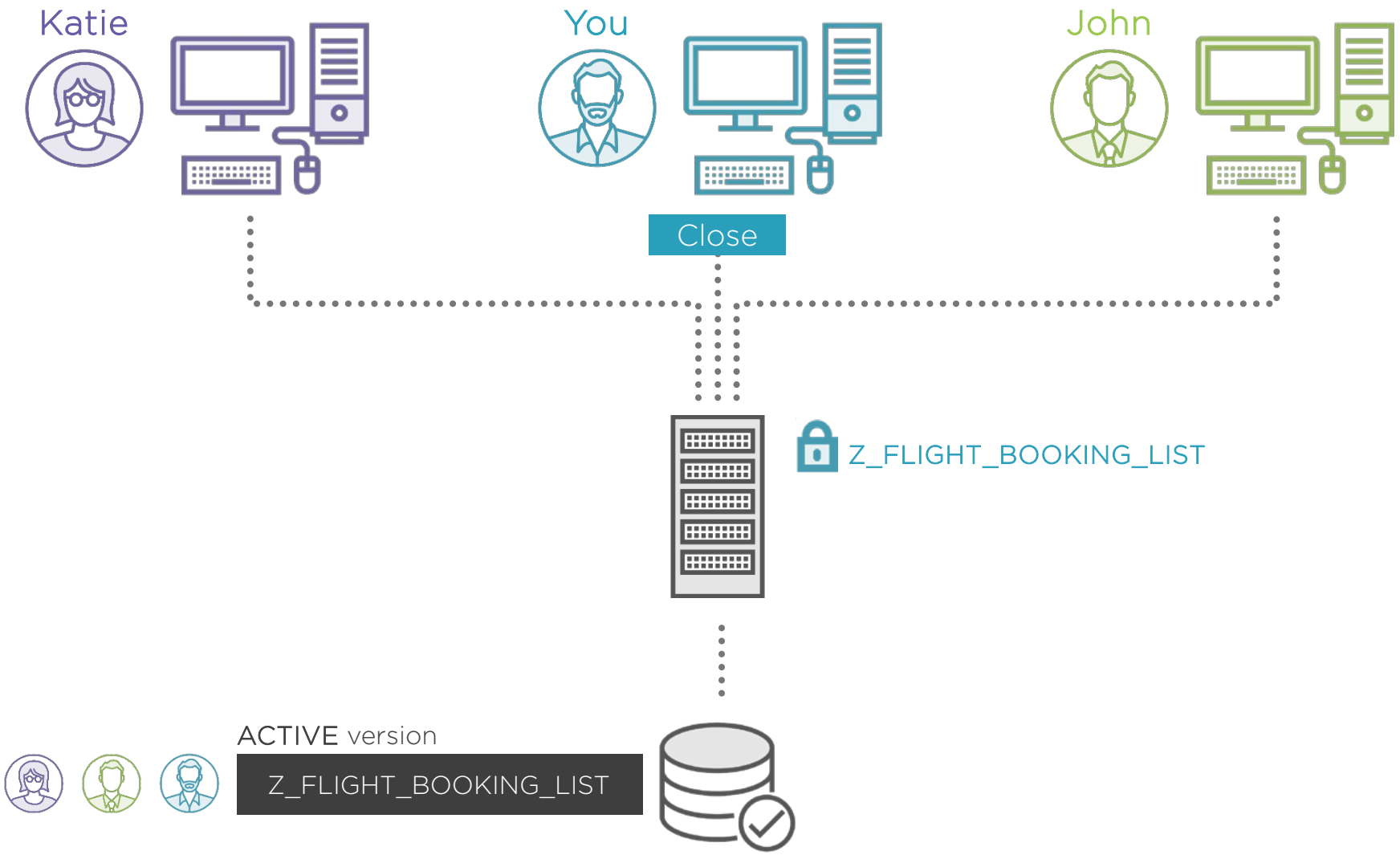

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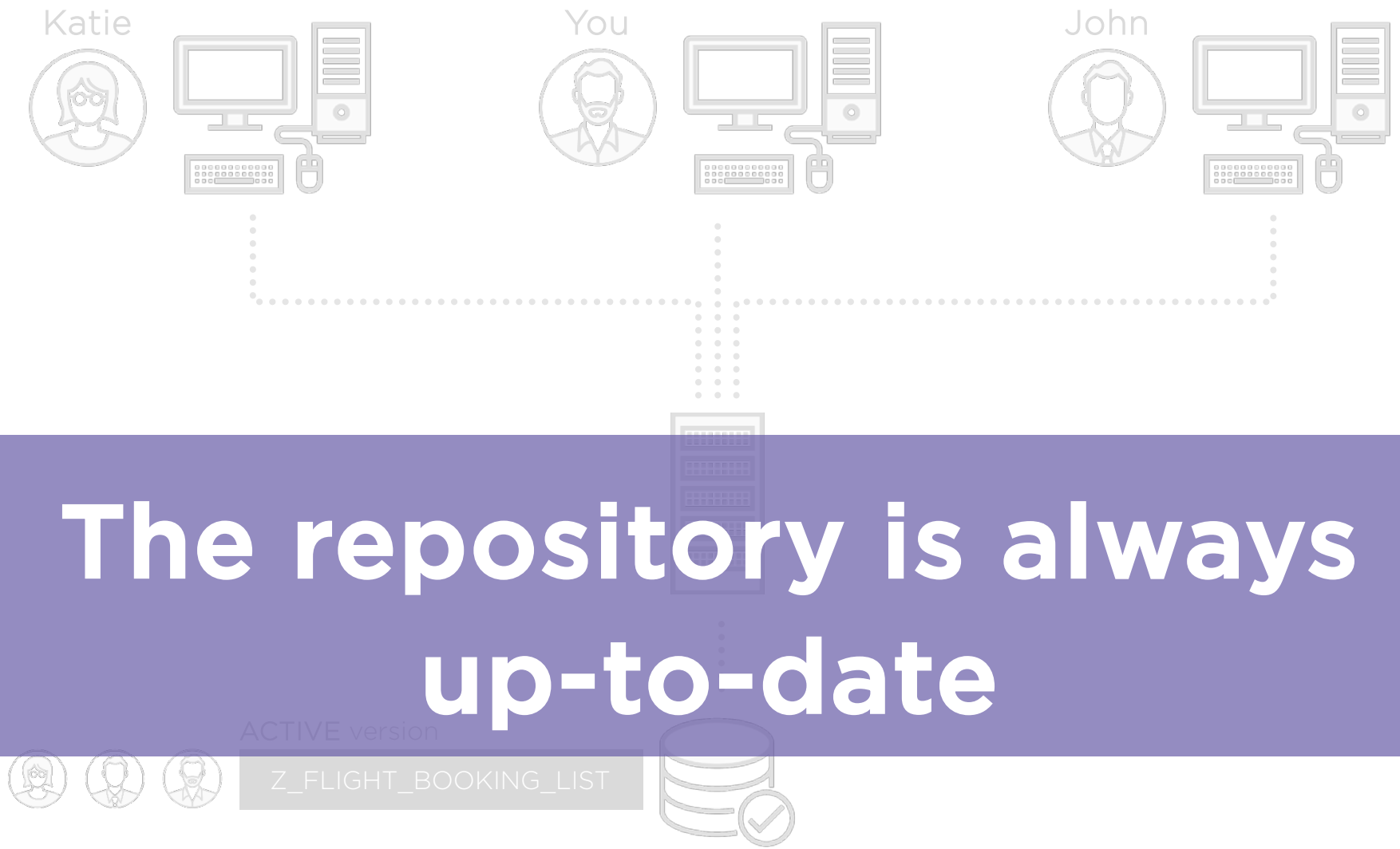
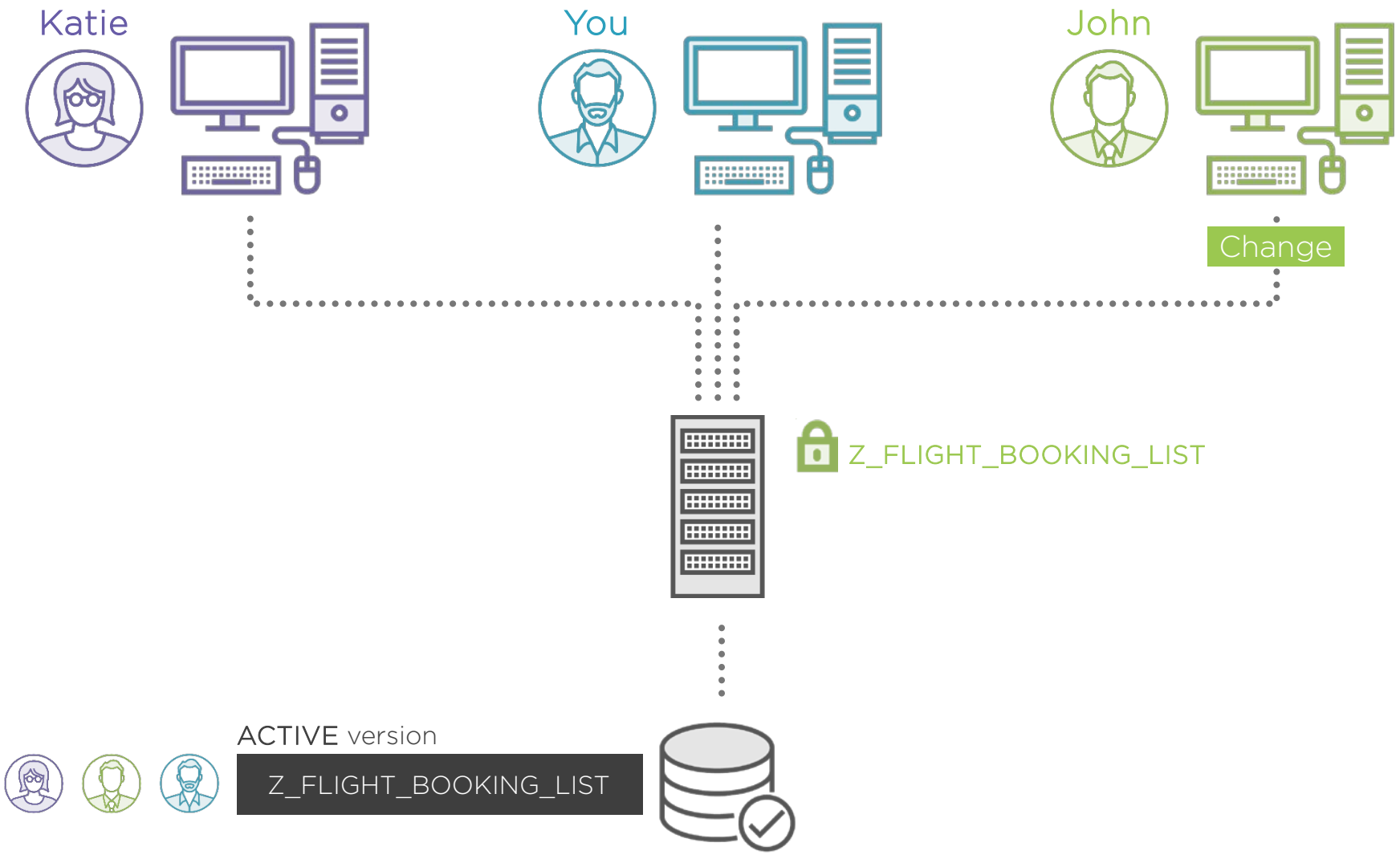


The repository is always up-to-date

A few hours later ...

Developing on the **ABAP Application Server**



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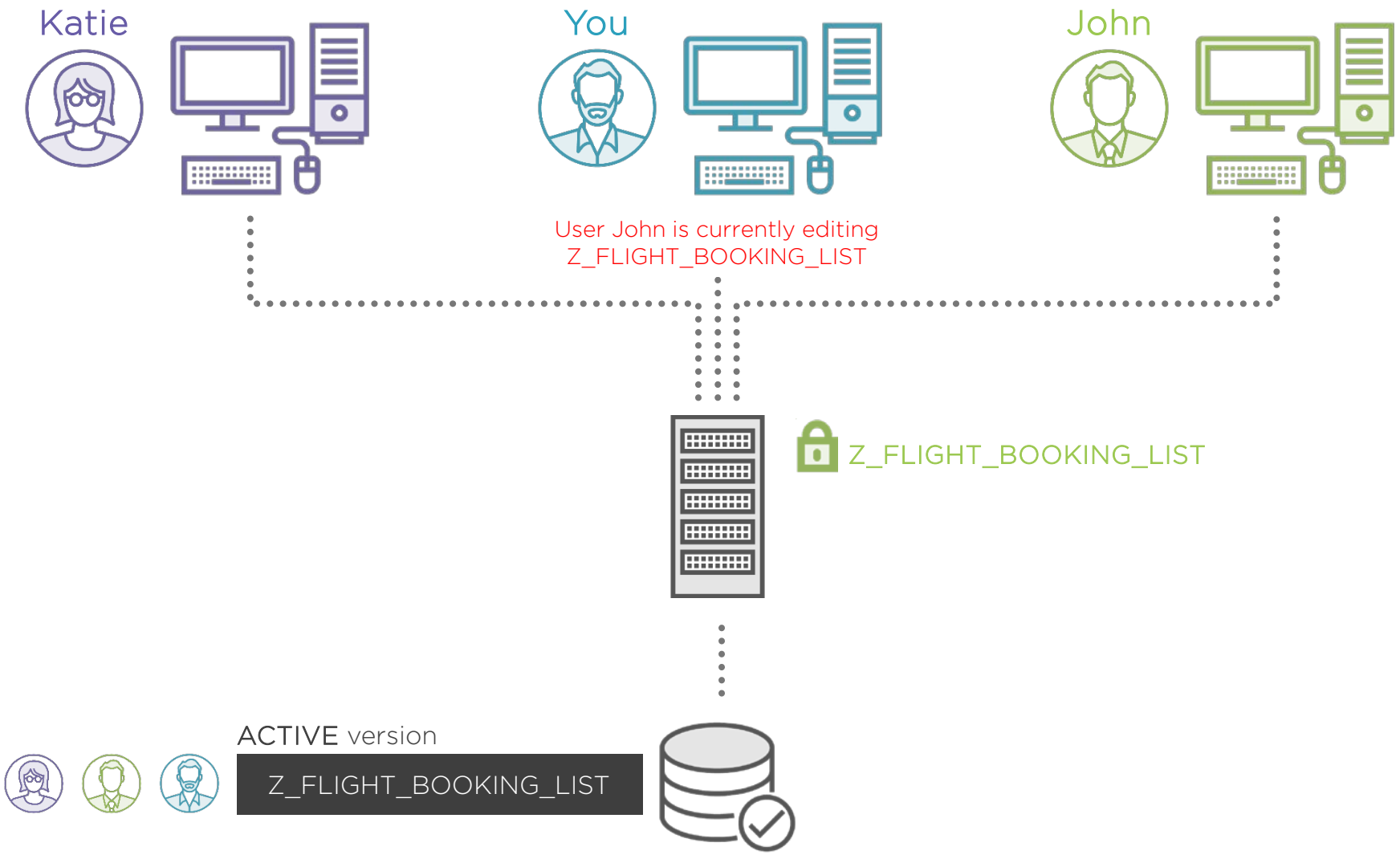

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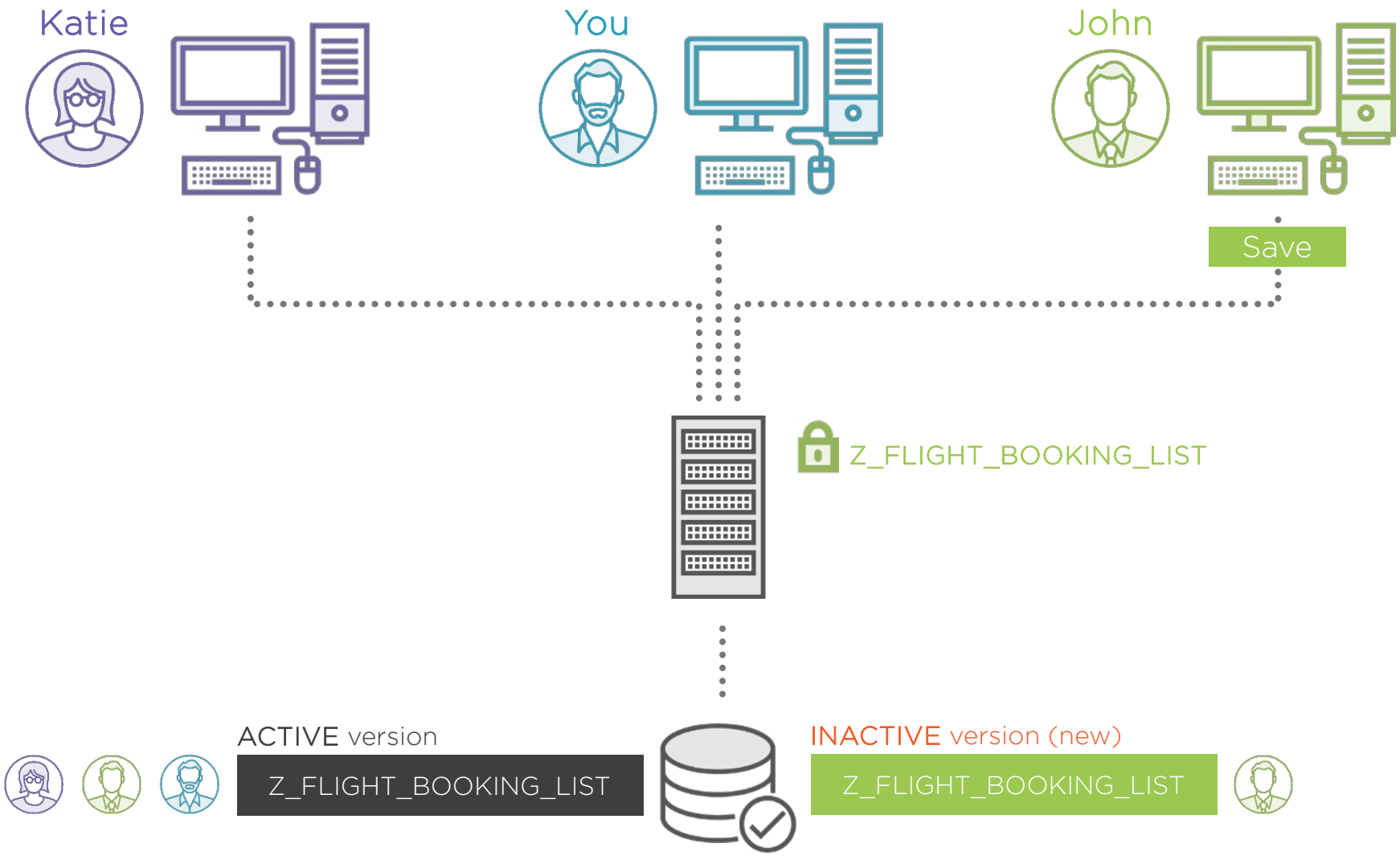

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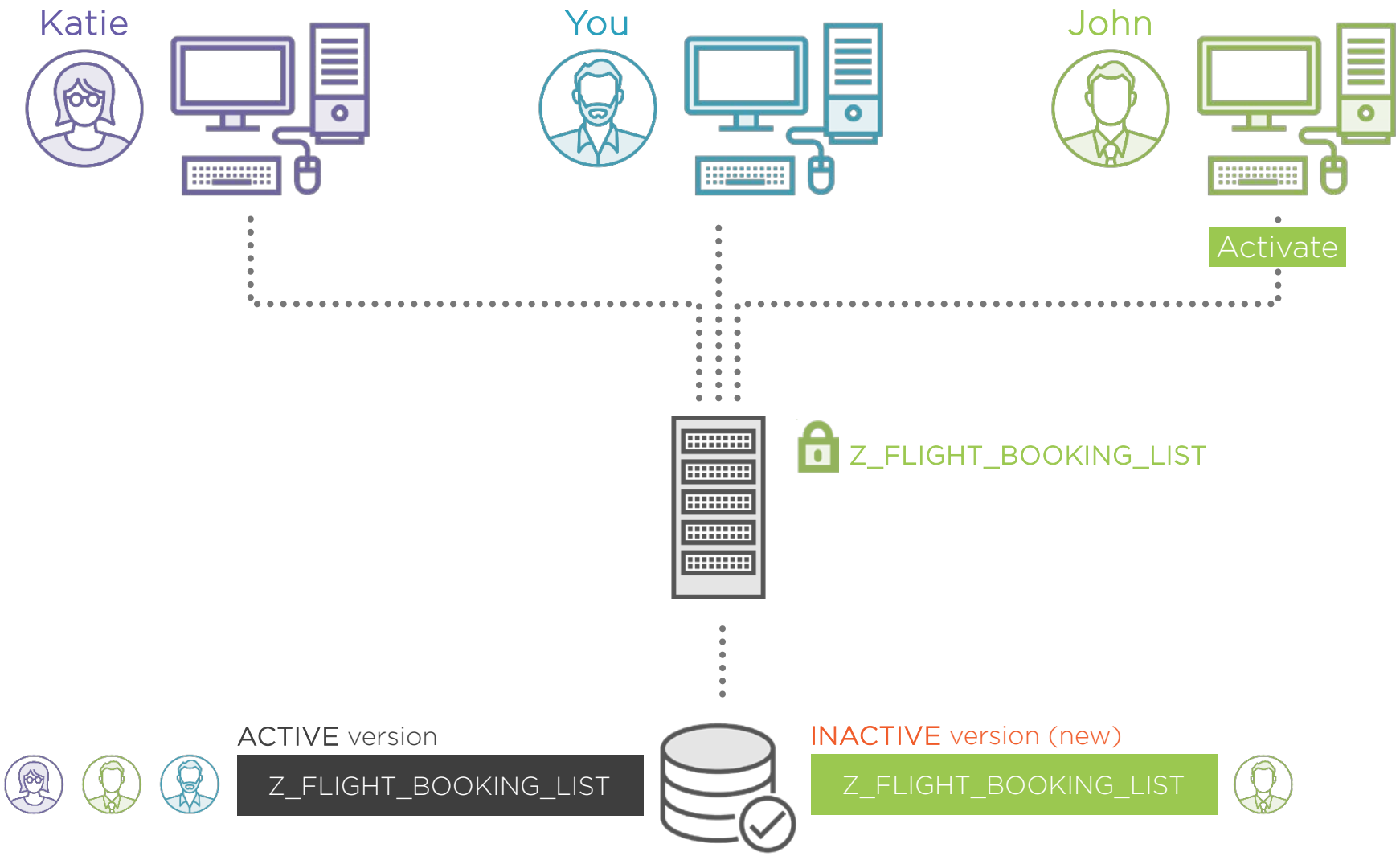

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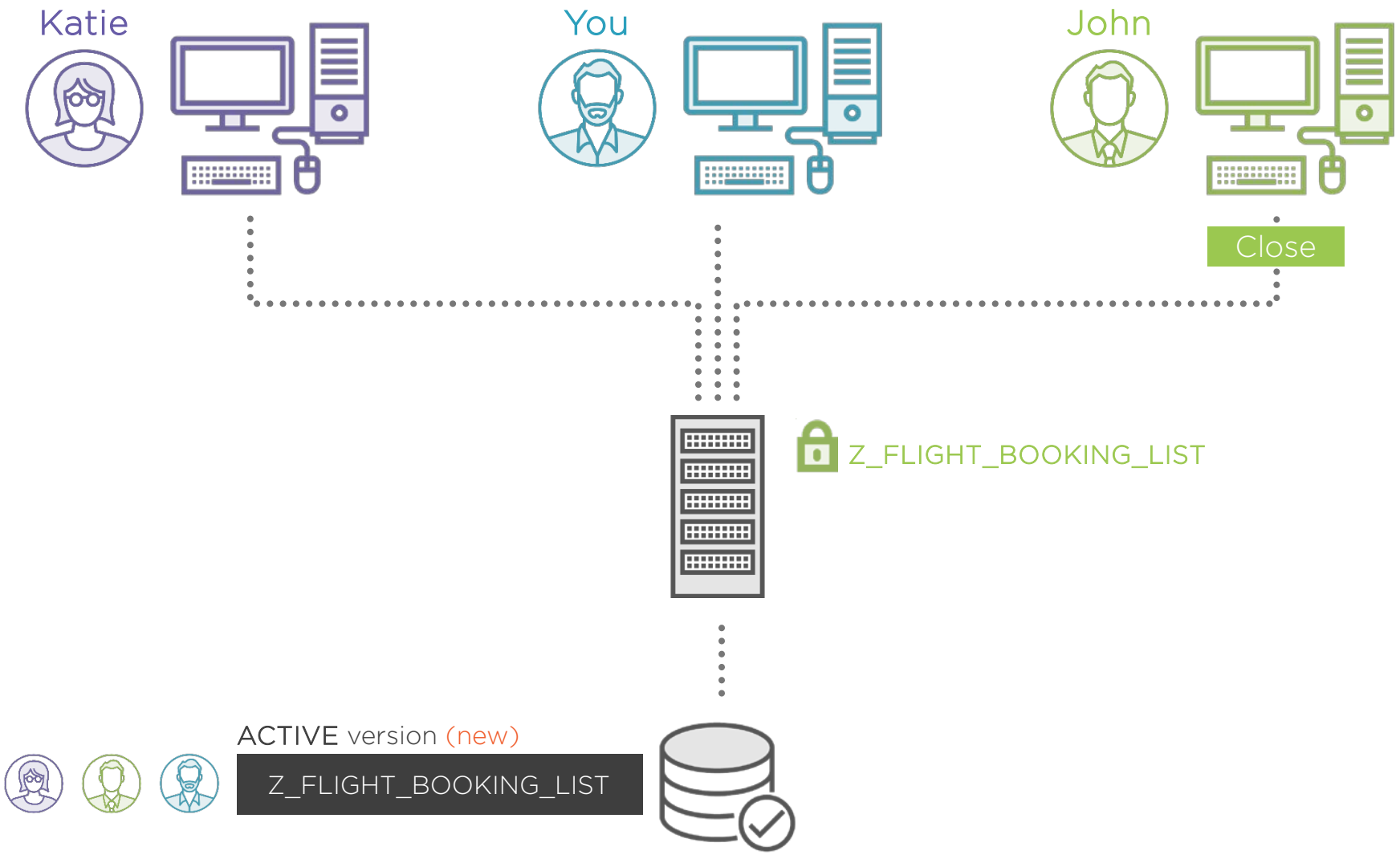

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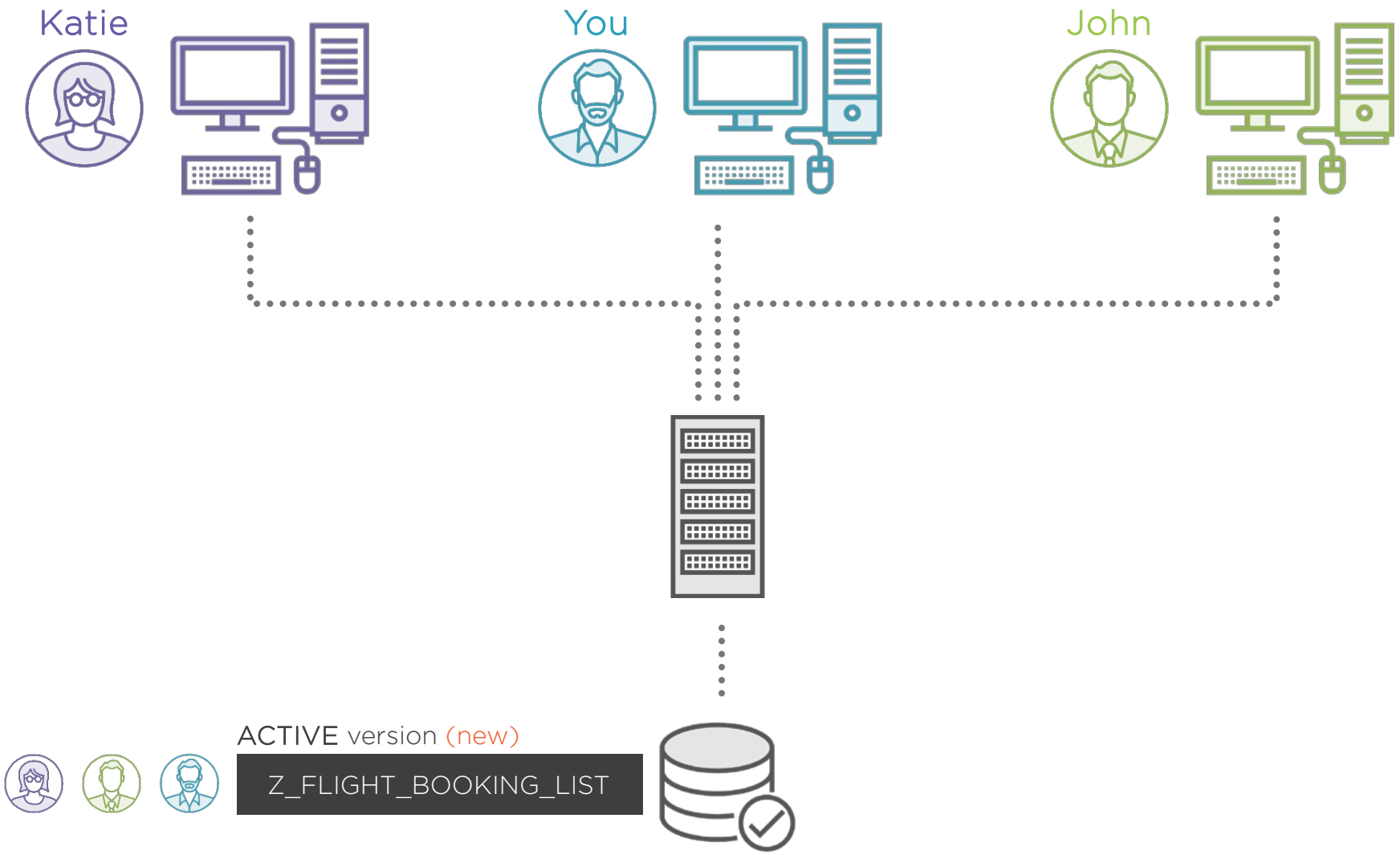

Developing o

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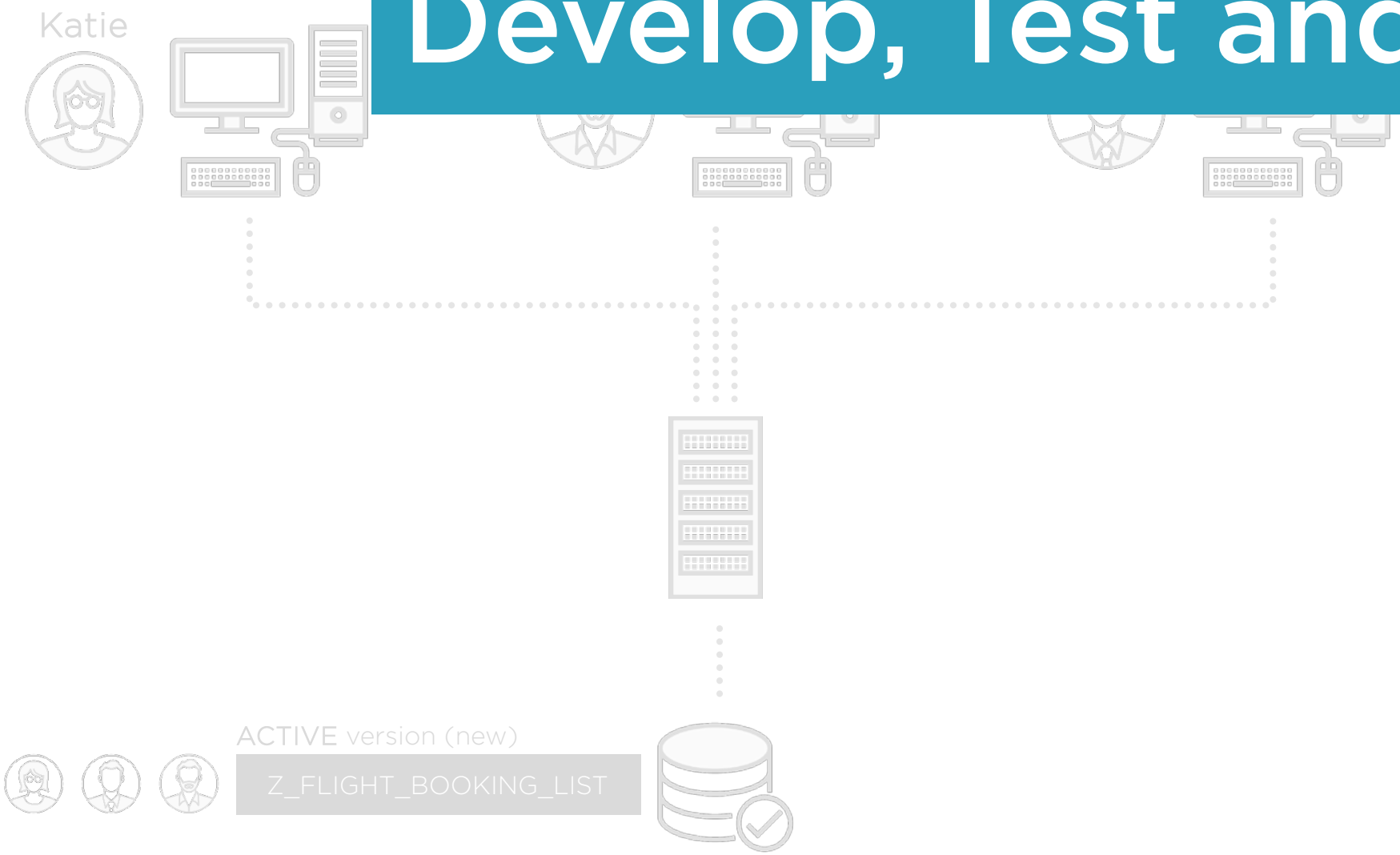
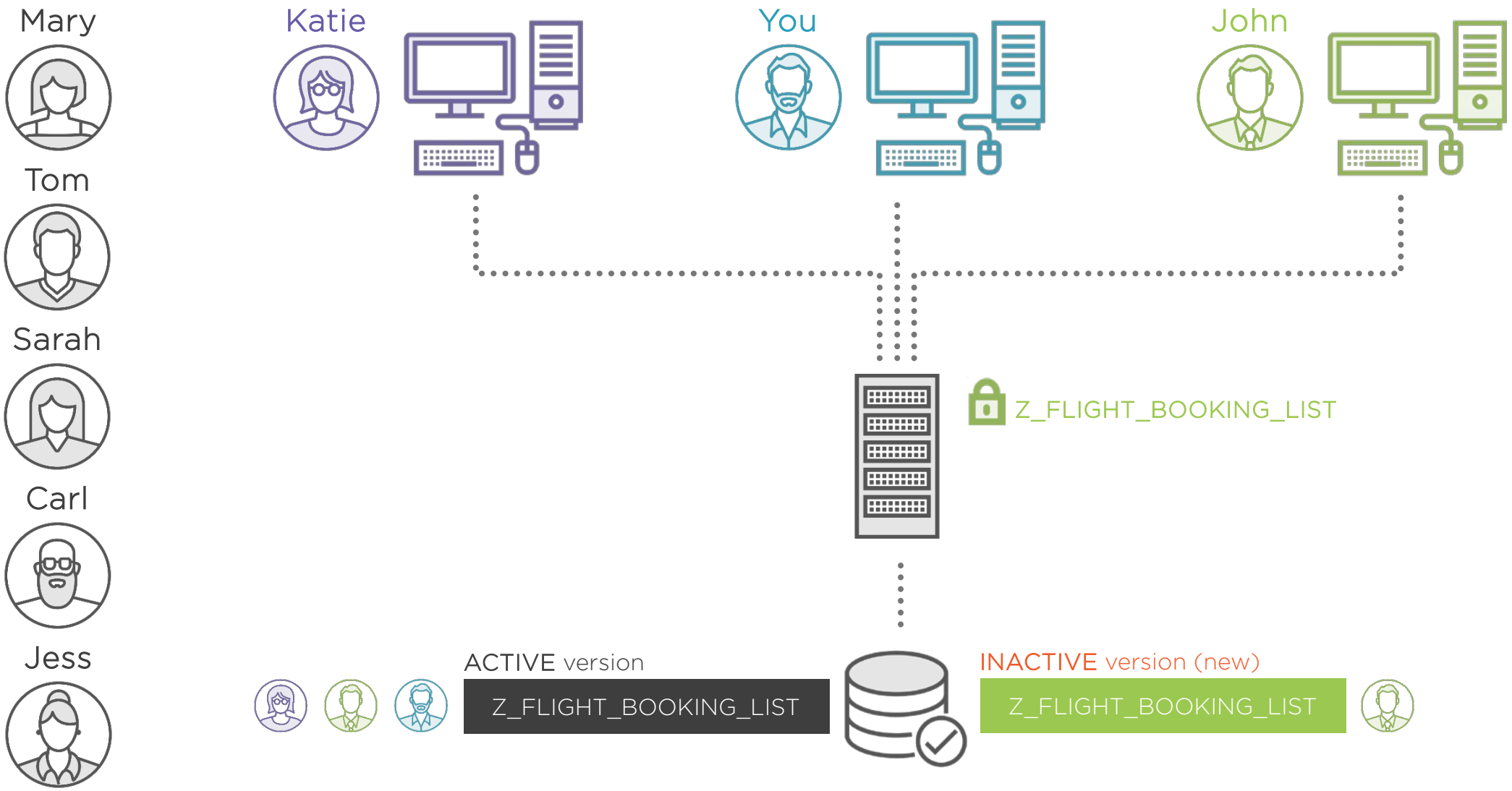
Develop, Test and Run



Develop, Test and Run

Where Are the **Business Users**?



SAP System Landscape

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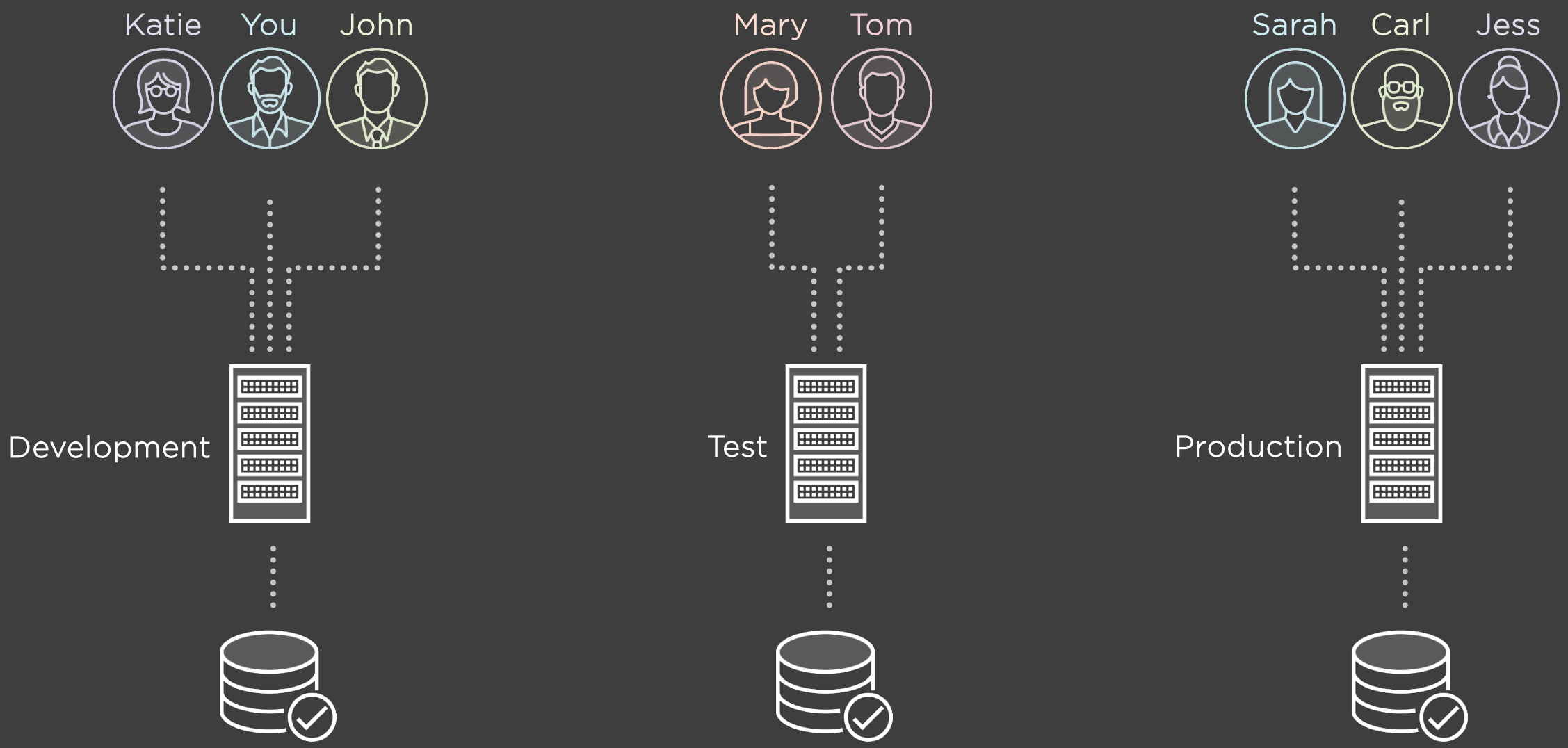

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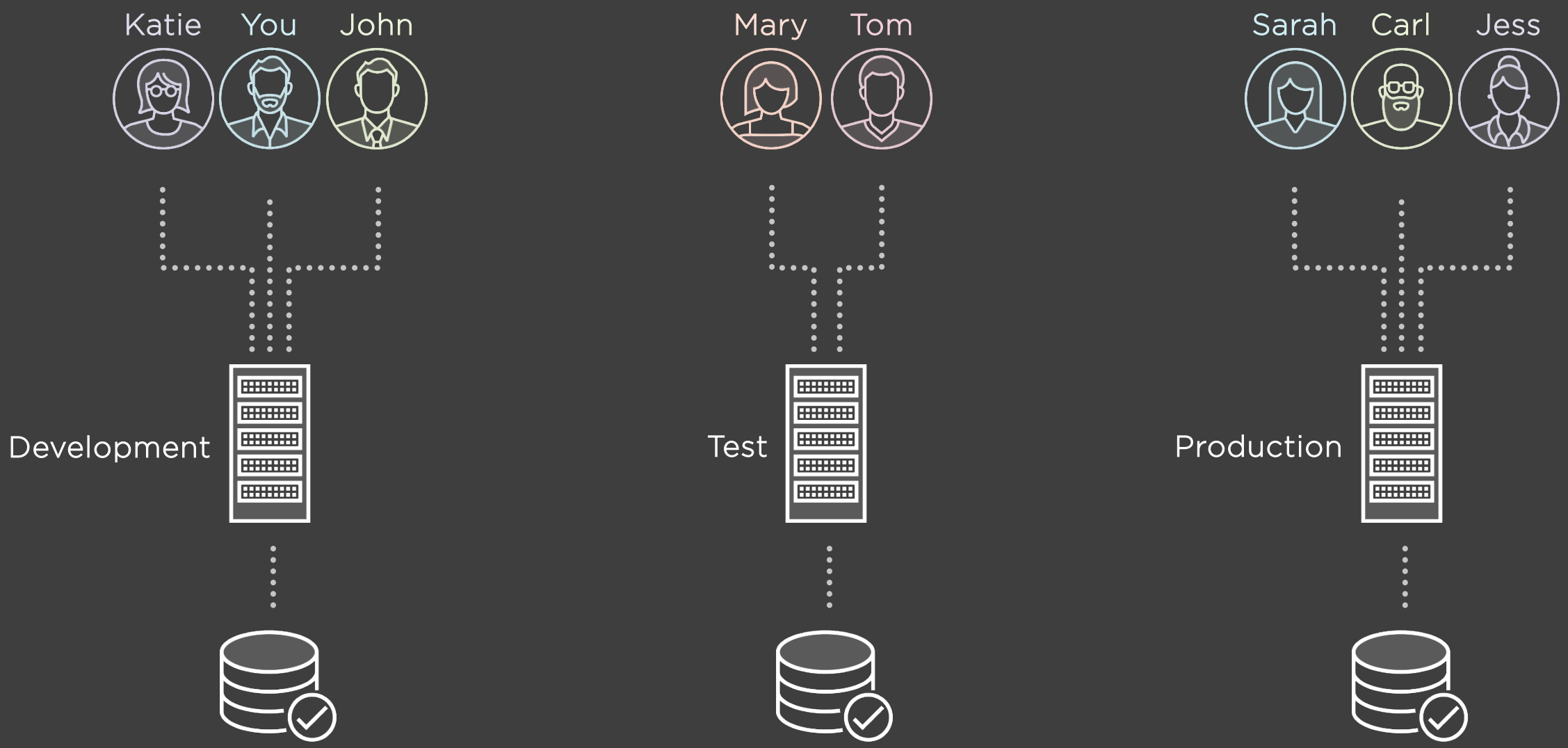
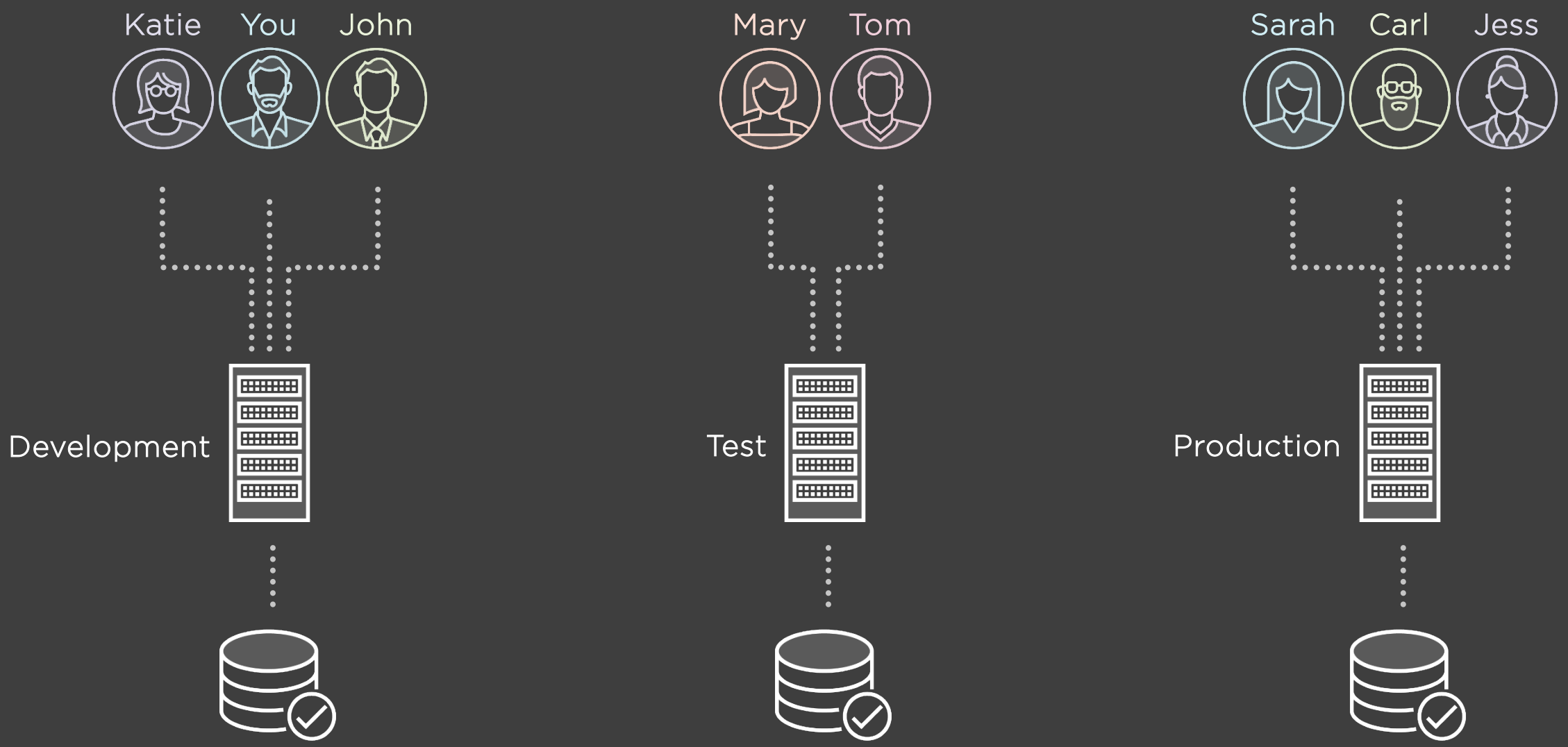


Change and Transport System



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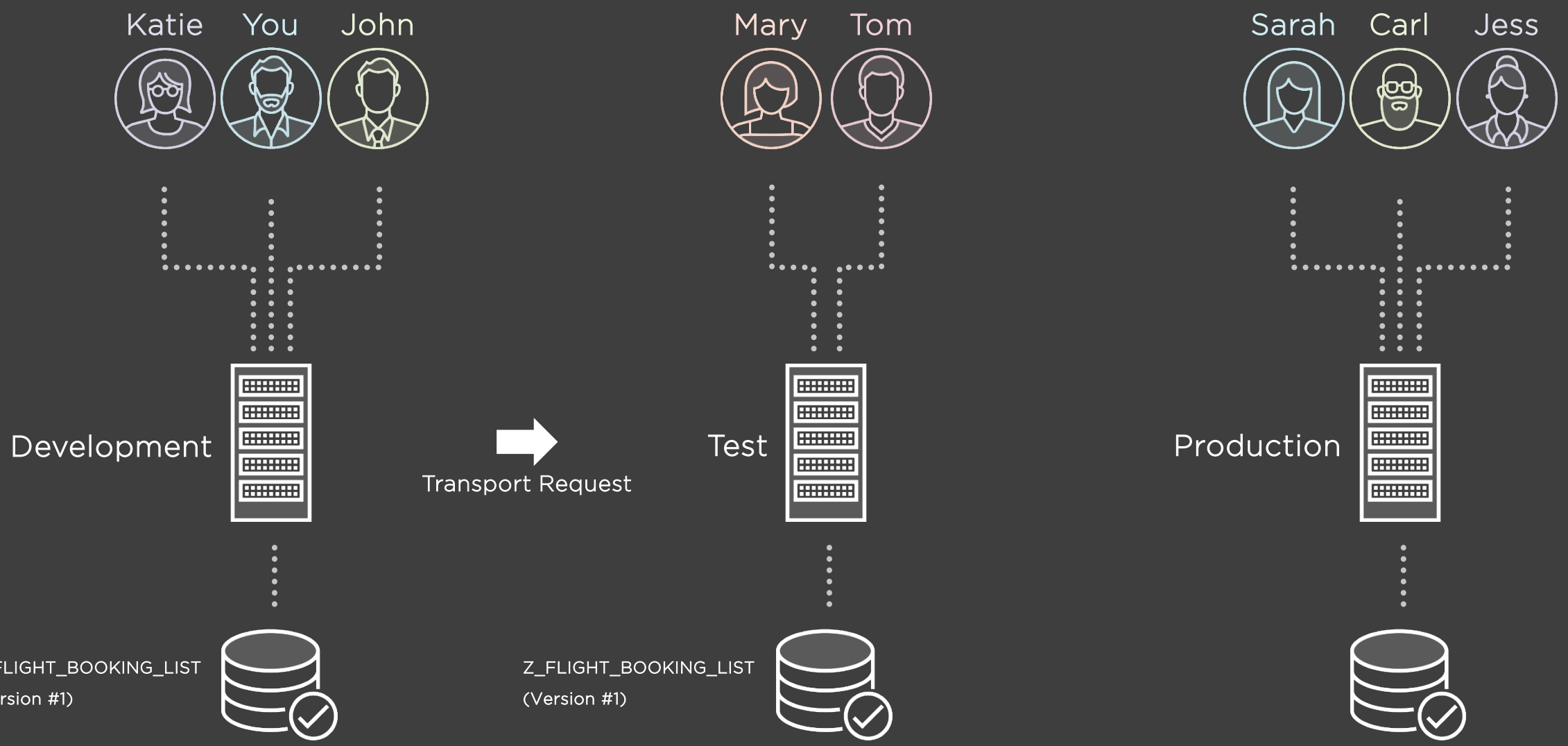

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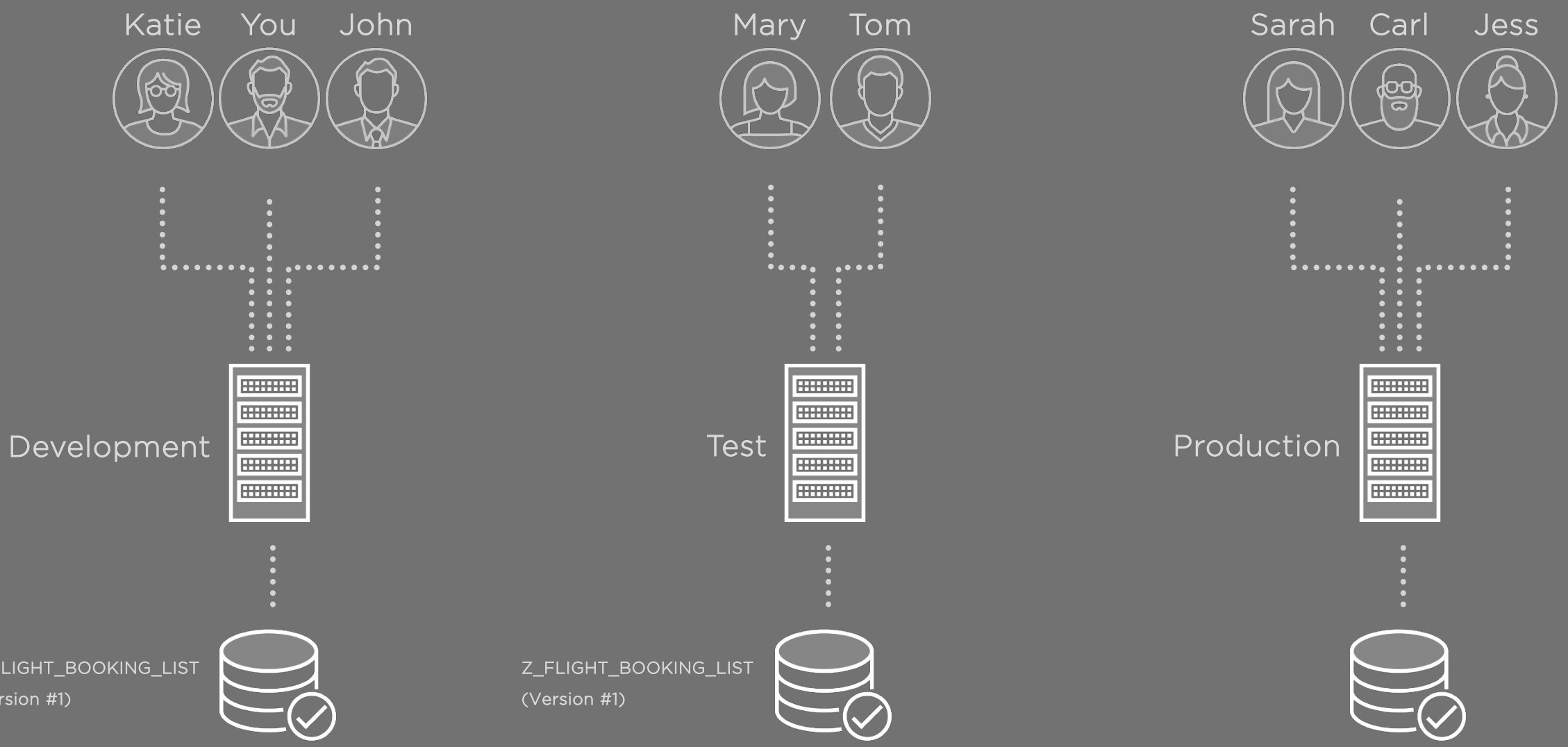

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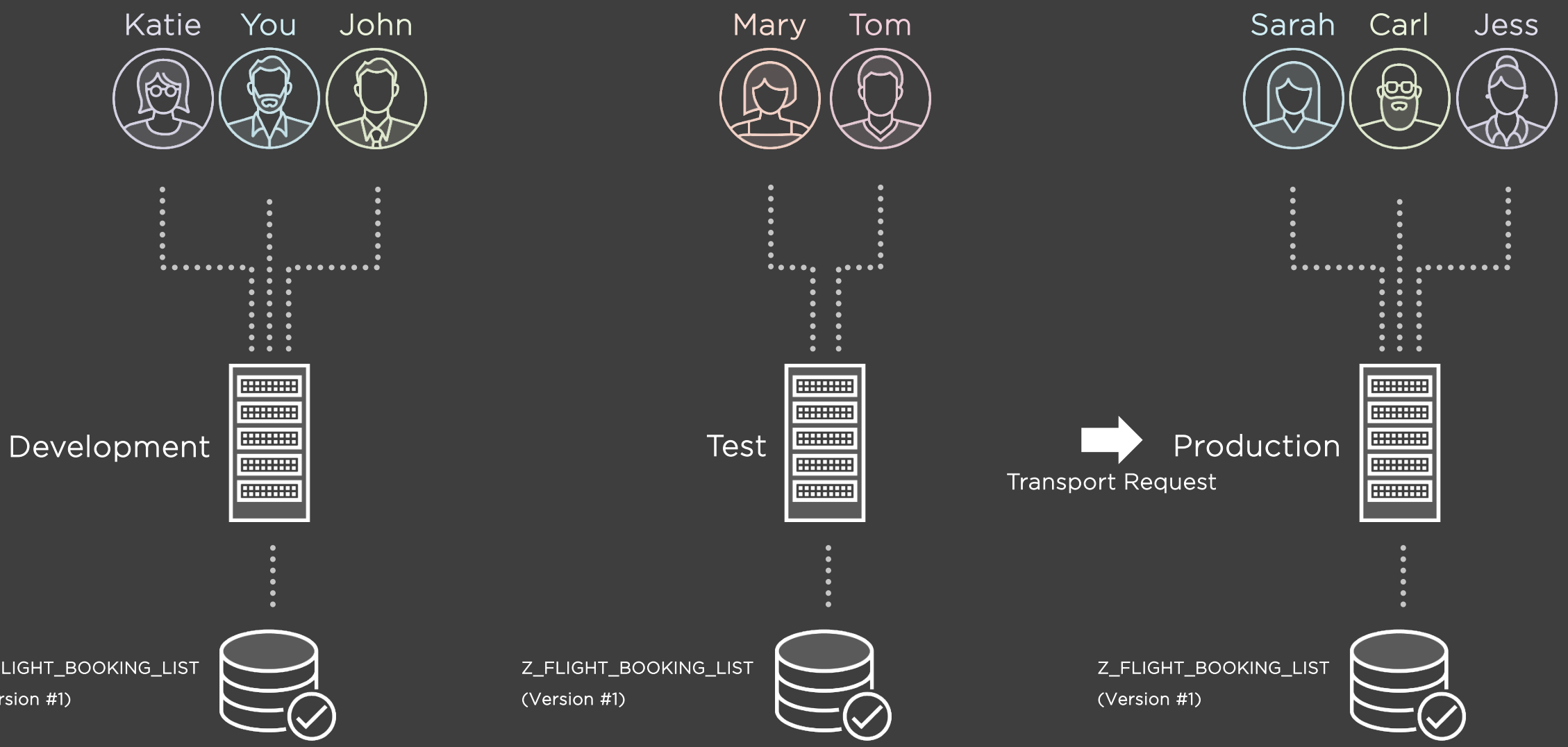

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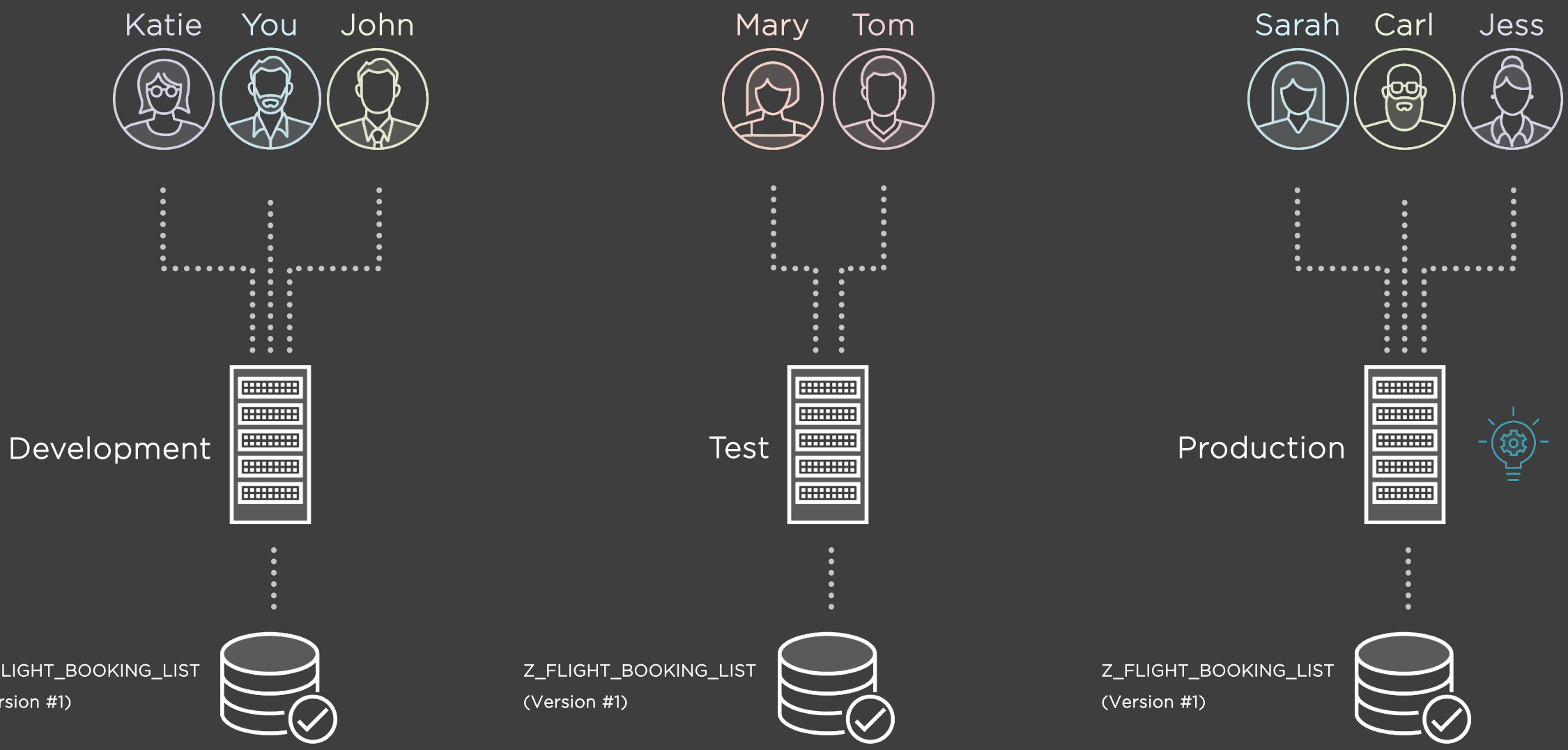

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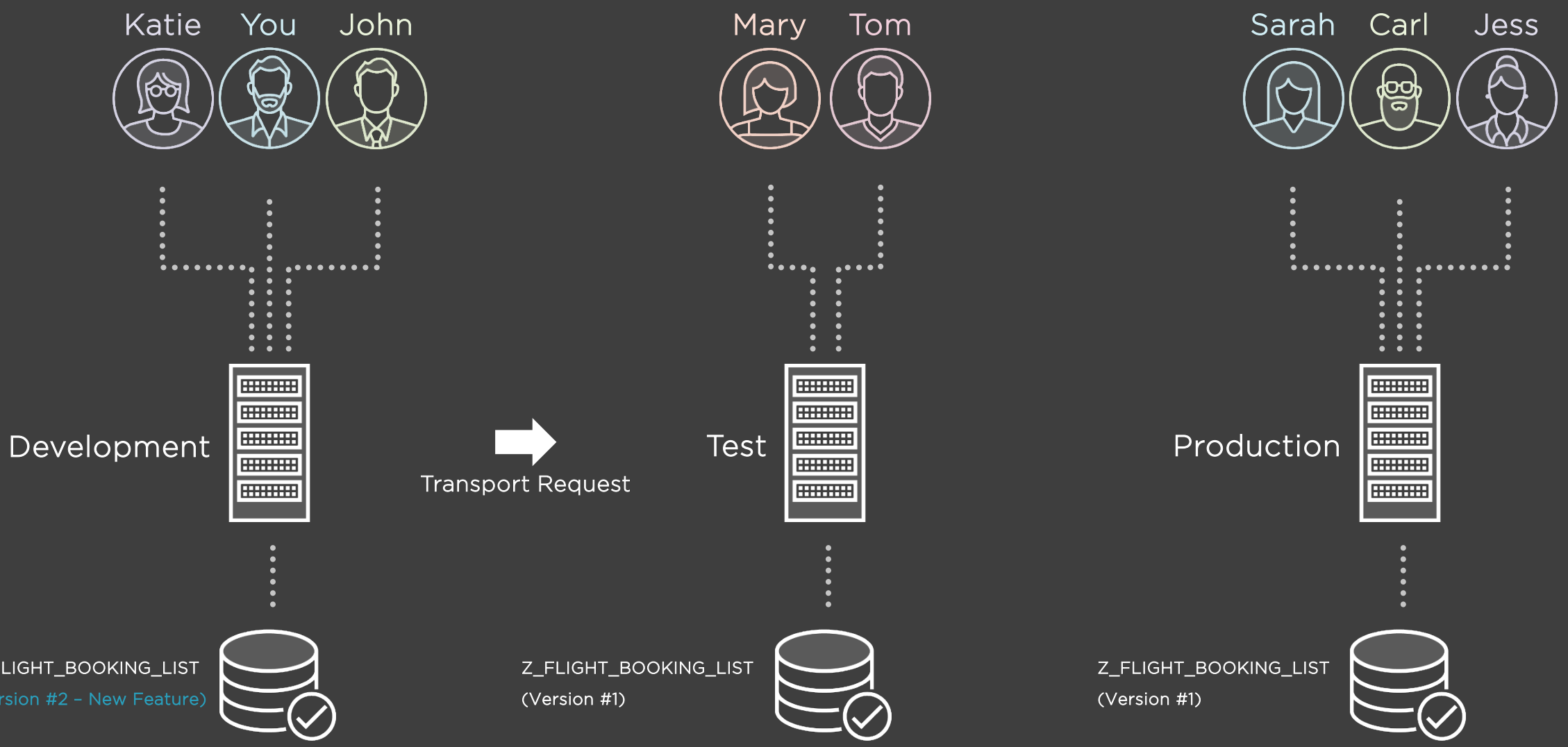

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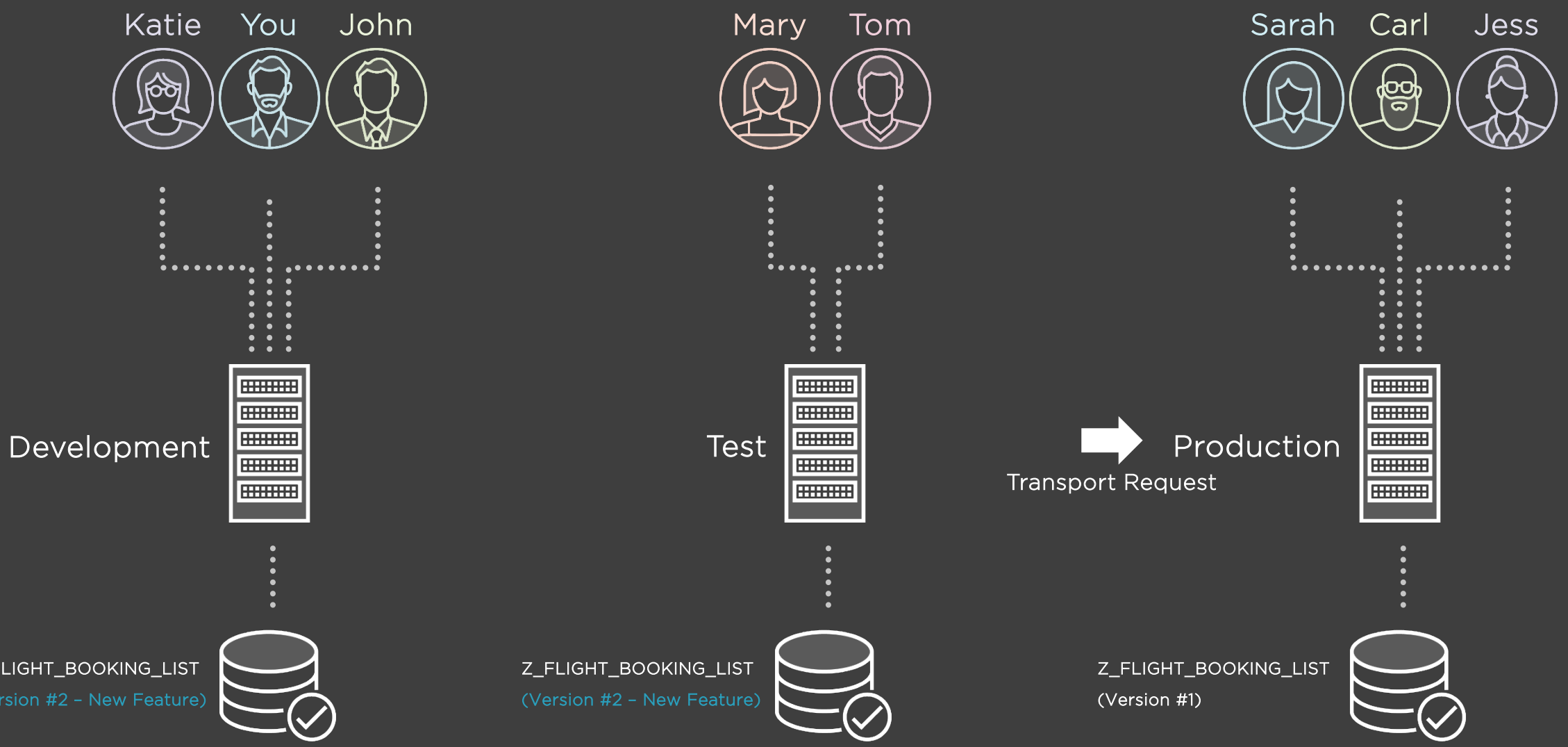

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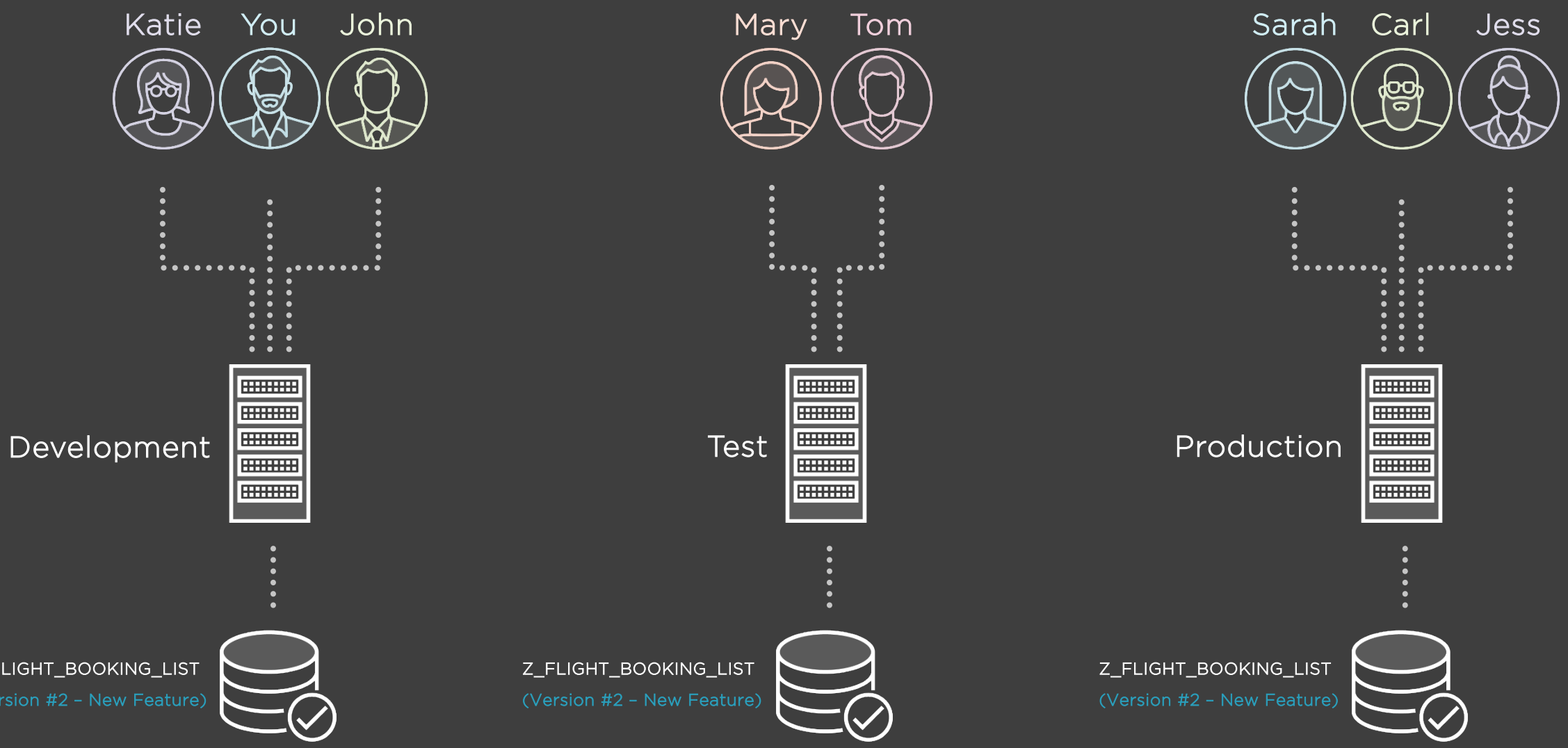
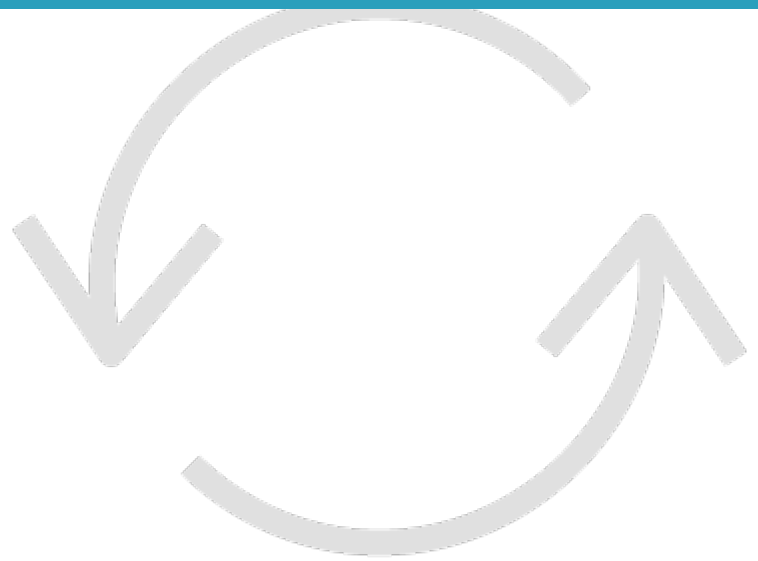


Next

Develop, Activate and Run



Develop, Activate and Run

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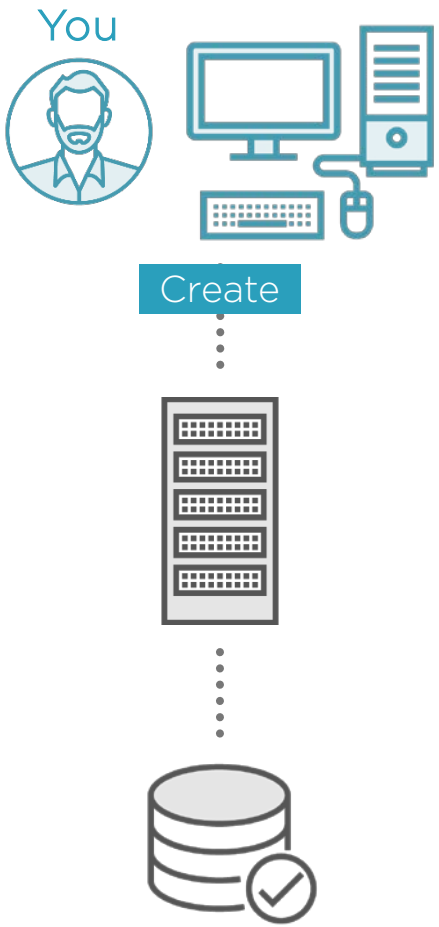

ABAP Source Code

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Z_ABAP_DEMO

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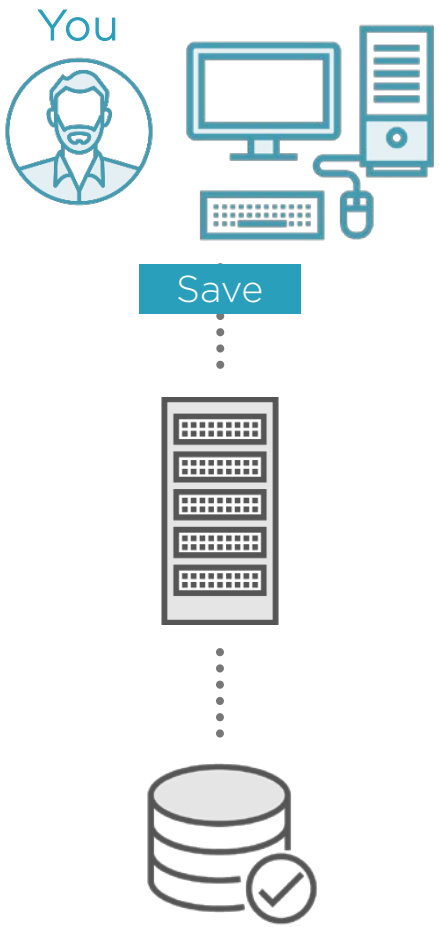

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REPOSRC - Report Source Code

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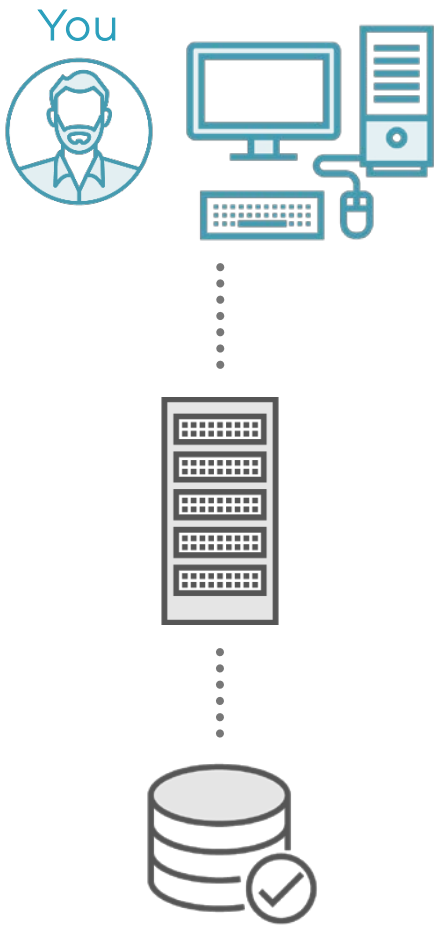

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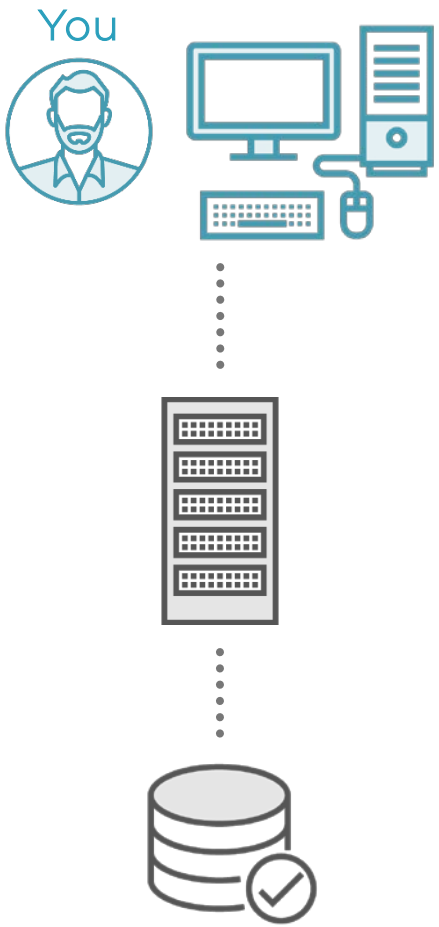

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Z_ABAP_DEMO

Lempel-**Z**iv and **H**uffman
algorithm

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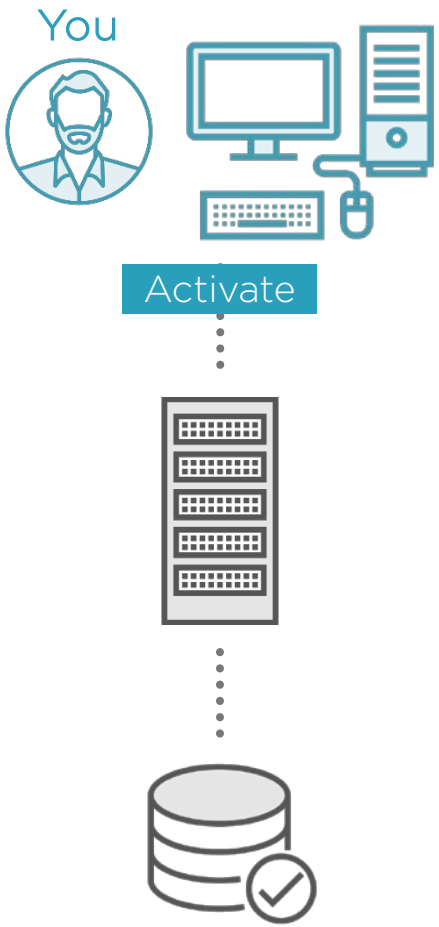

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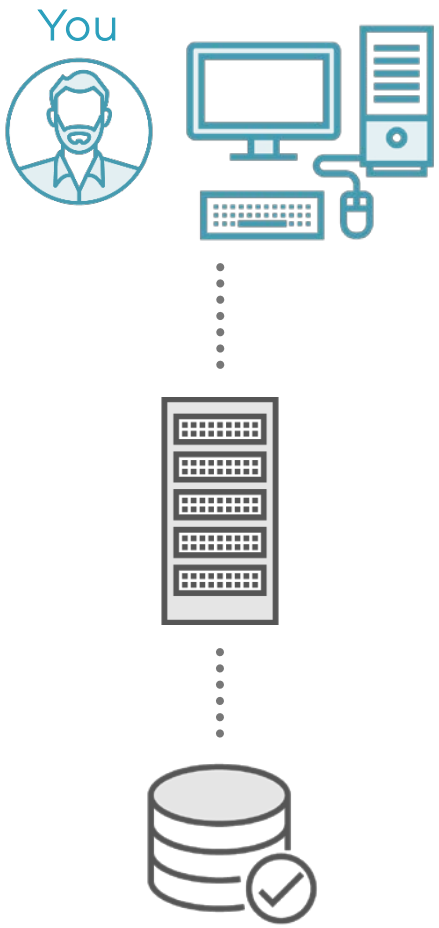

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Z_ABAP_DEMO

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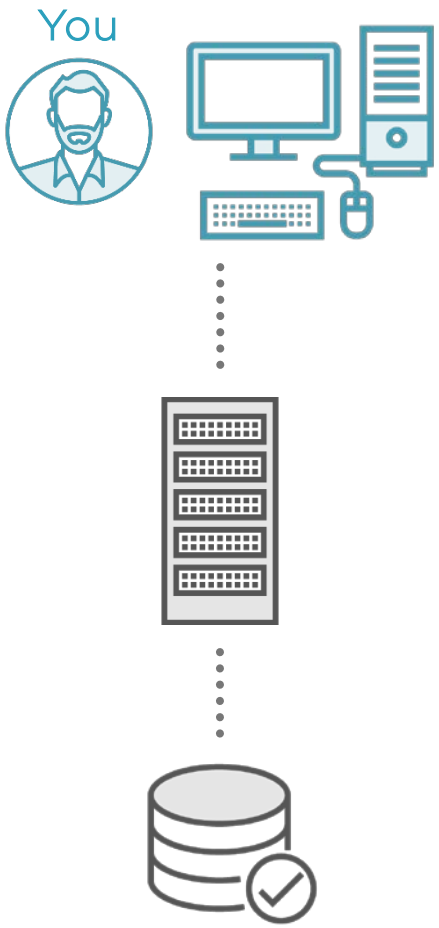

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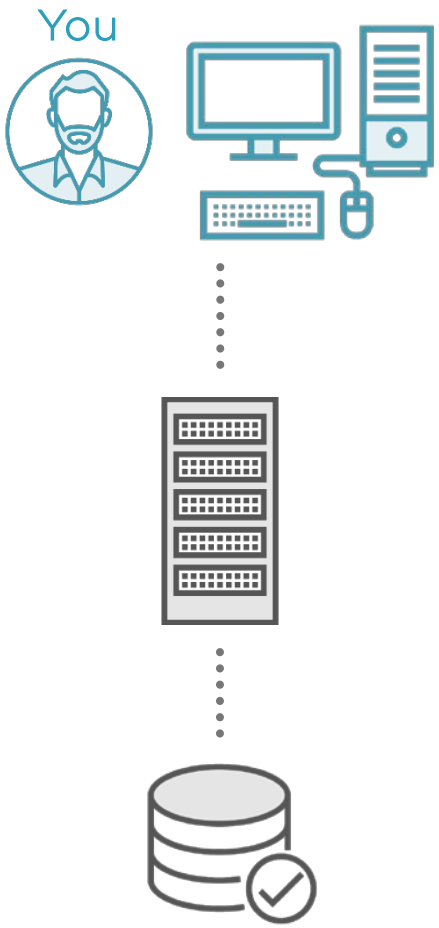

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Develop, Activate and Run

ABAP Editor

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```

ABAP Byte Code

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Develop, Activate and Run

ABAP Editor

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REPORT z_abap_demo.
DATA(result) = 3 + 2.
WRITE result.
```

Activate

ABAP Byte Code

```
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...
```

Run

ABAP Runtime Environment

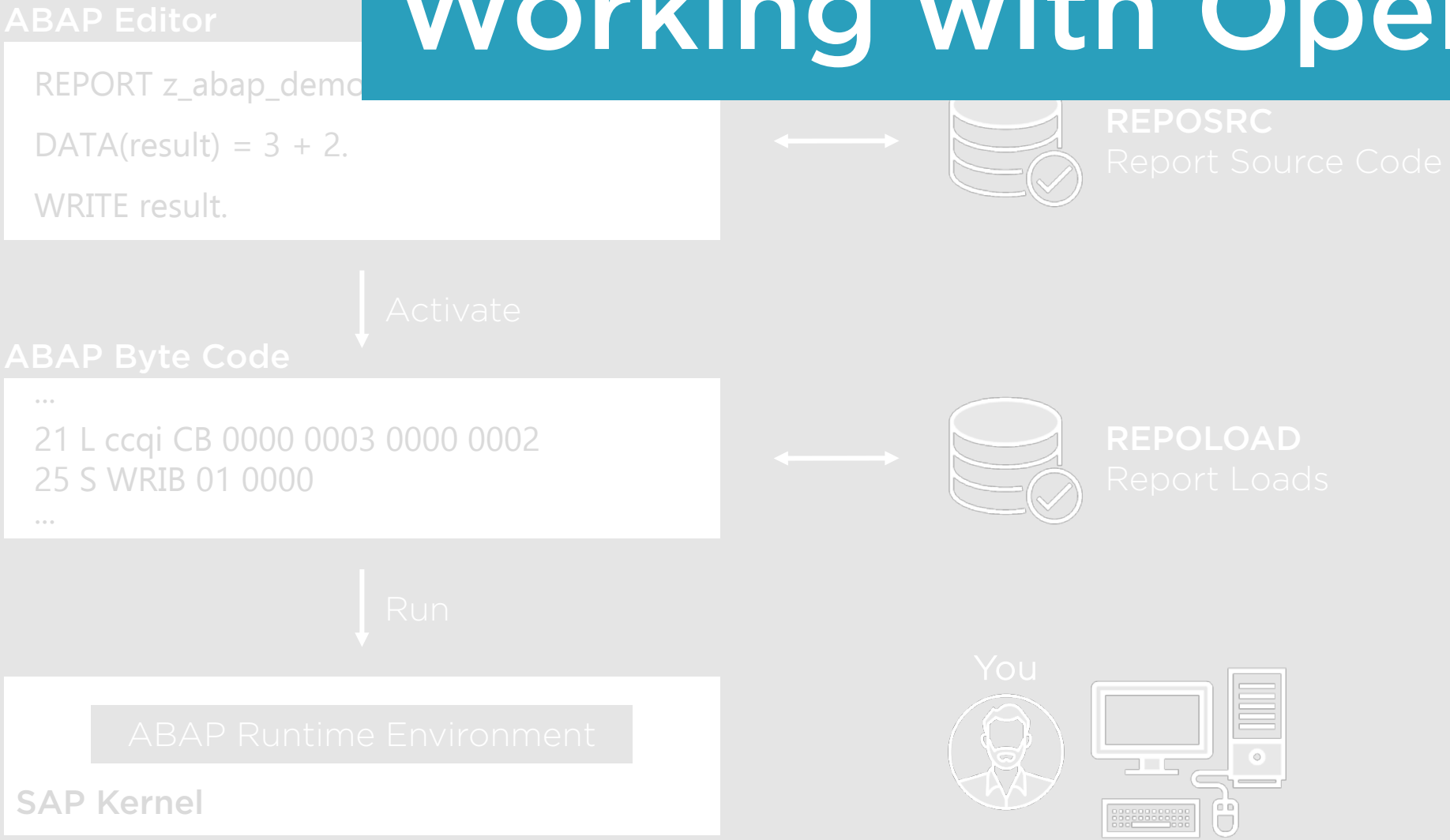
SAP Kernel

REPOSRC
Report Source Code

REPOLOAD
Report Loads

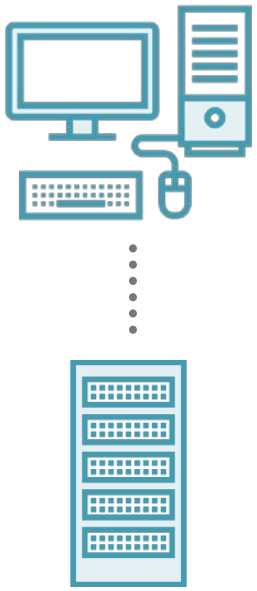
Next

Working with Open SQL



Working with Open SQL

SQL in ABAP



SQL Statements

SELECT | INSERT | UPDATE | DELETE

MS-SQL | Oracle | IBM DB2 | MAXDB

Open SQL

Open SQL

Subset of
the Standard SQL statements

Fully integrated
within ABAP

Set of
ABAP statements

Enables data access
within the database

Independent from
any database

```
SELECT vbak~vbeln vbak~ernam vbak~auart
       vbap~posnr vbap~matnr vbap~matkl
  INTO TABLE @DATA(sales_documents)
  FROM vbak JOIN vbap ON vbap~vbeln = vbak~vbeln
  WHERE vbak~erdat = '20160312'.
```

Write **Once**. Run **Anywhere**.

Use only Open SQL as far as possible.

```
DATA total_flight_time TYPE i.

EXEC SQL.
  SELECT SUM(fltime)
    INTO :total_flight_time
    FROM spfli
ENDEXEC.
```

Native SQL

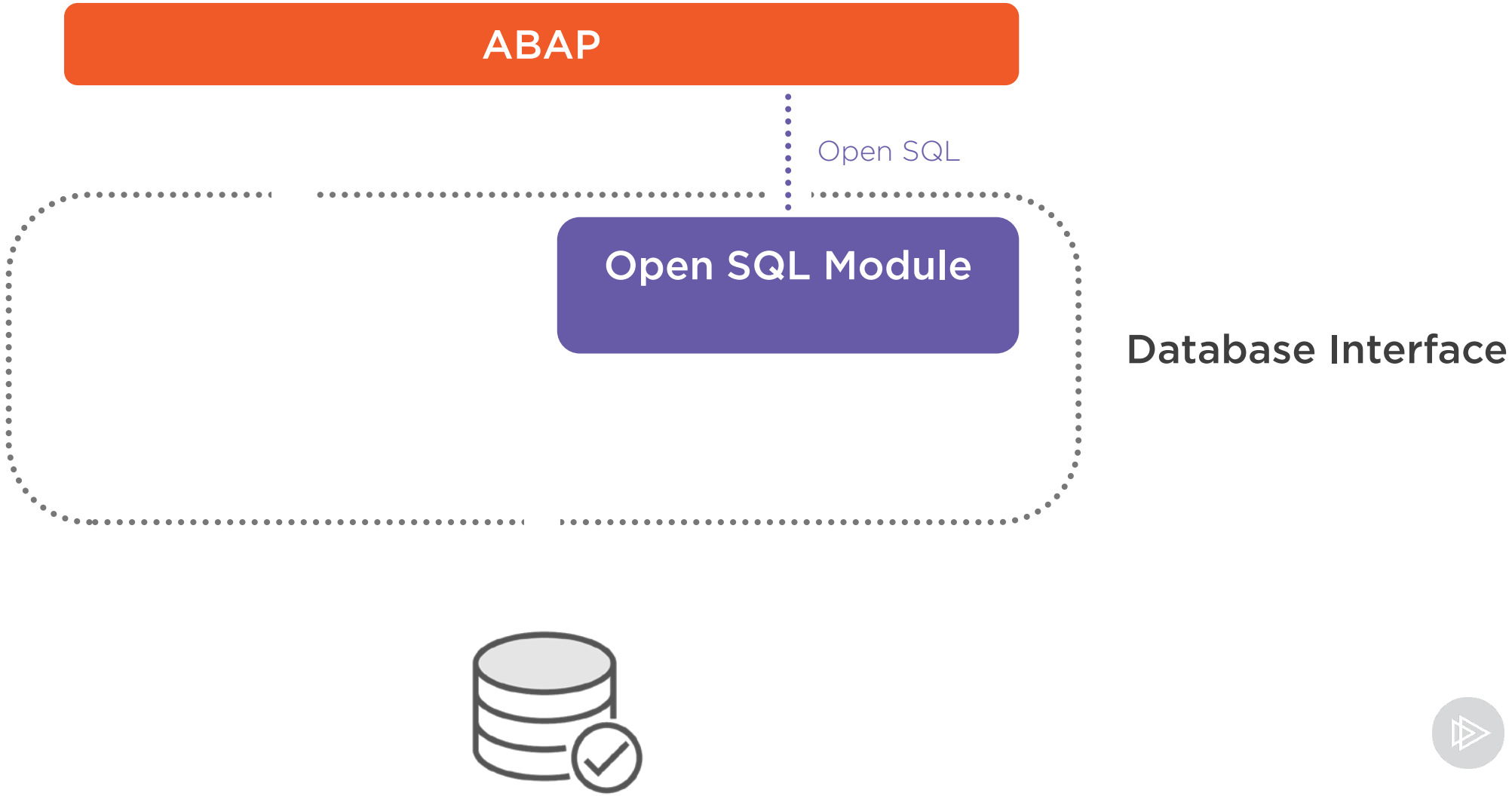
```
DATA total_flight_time TYPE i.

EXEC SQL.
  SELECT SUM(fltime)
    INTO :total_flight_time
    FROM spfli
ENDEXEC.
```

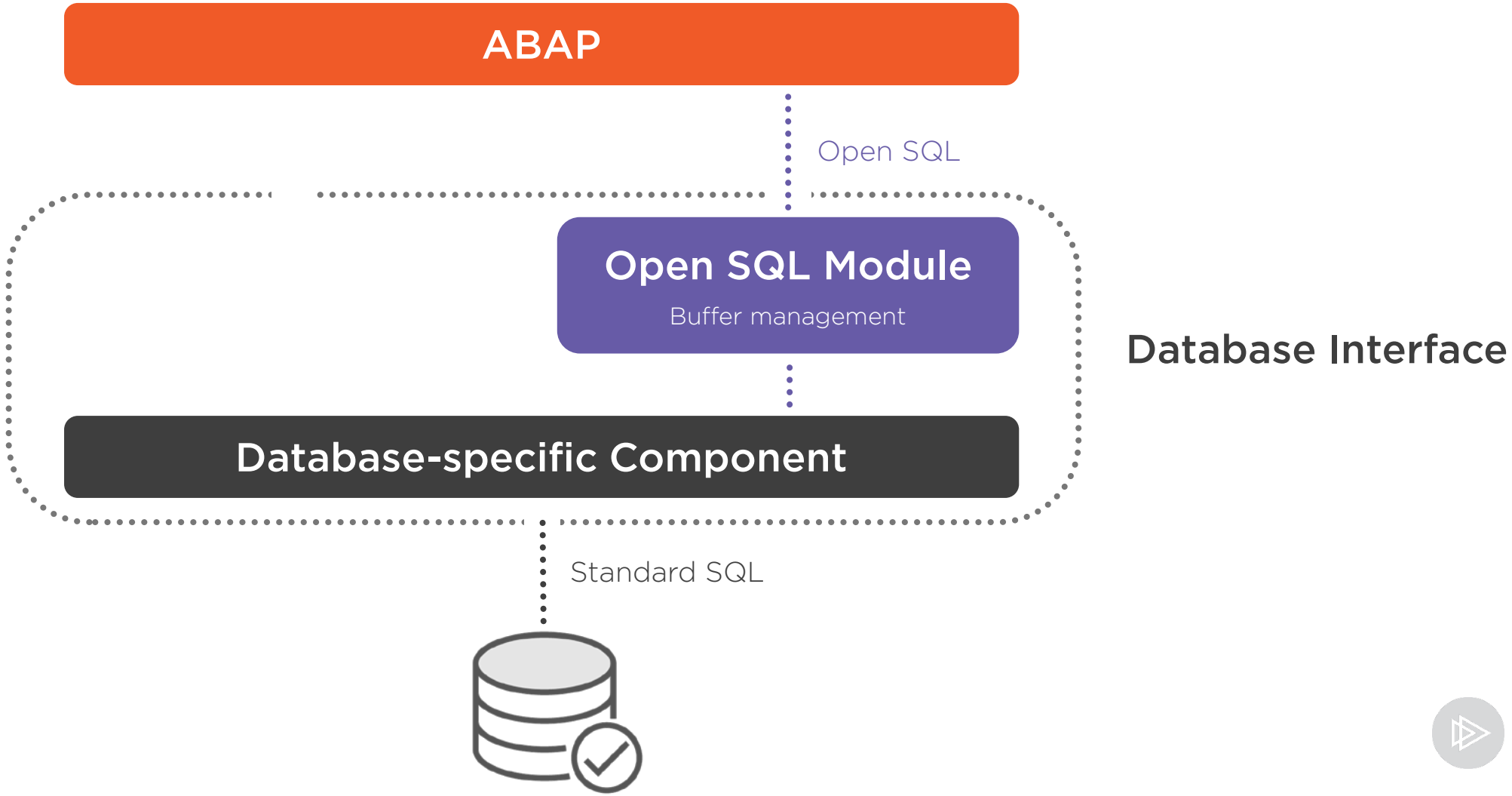
Native SQL

Try to avoid as far as possible

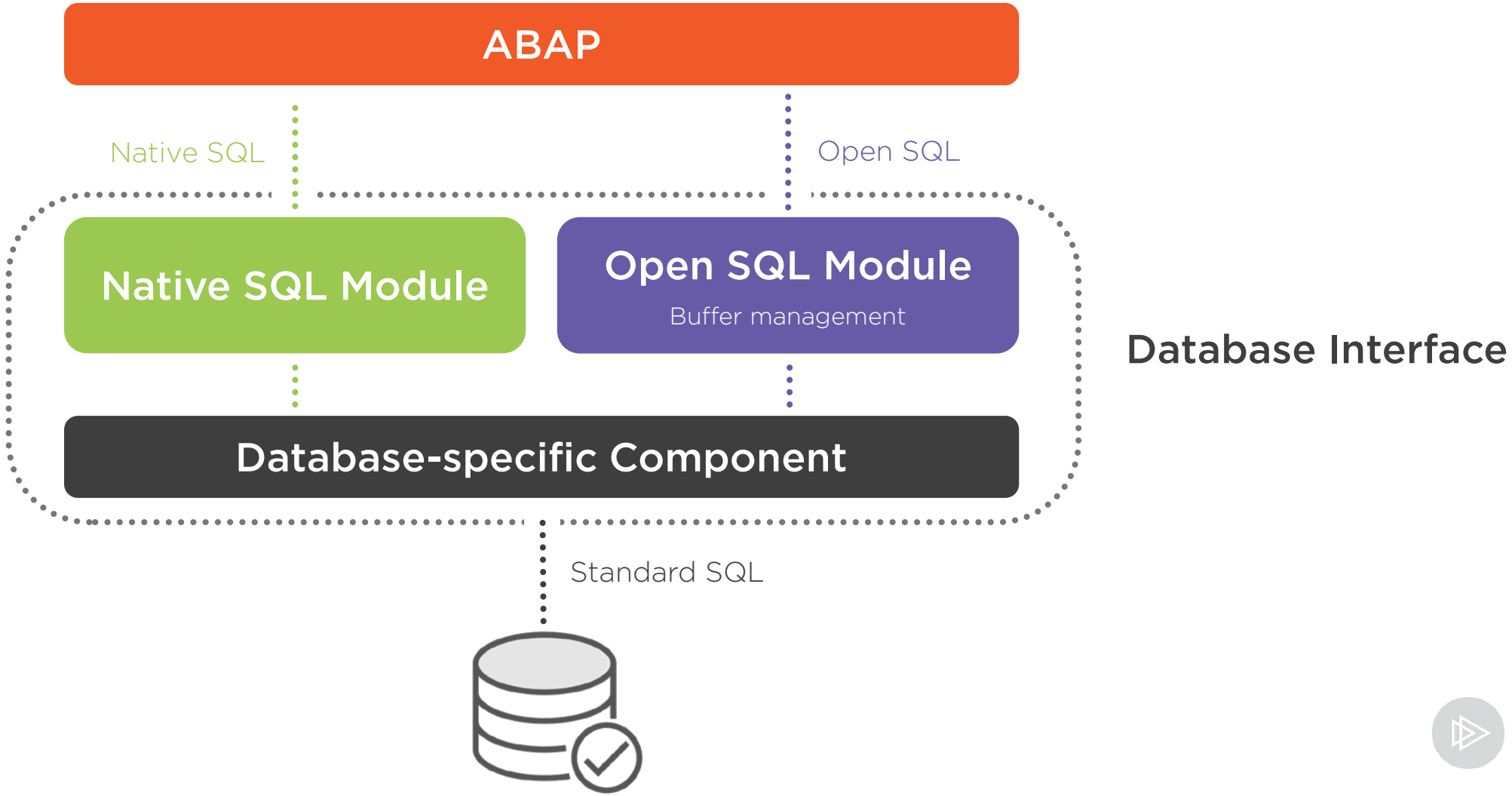
Database Interface



Database Interface



Database Interface



Use only **Open SQL**
as far as possible.

Next

Summary

Use only **Open SQL**
as far as possible.

Summary

Developing in ABAP is different

- No need for checking in and out
- Repository is always up-to-date

Develop, Test and Run

- Deploy changes with transports
- Transport is just a copy process

SAP stores ABAP code in the database

- ABAP Runtime loads and interprets
- Operating system independent

Subset of the Standard SQL statements

- Fully integrated within ABAP
- Database Interface

Next Module

Introducing the ABAP Workbench

Developing in ABAP is different

- Transport is just a copy process

SAP stores ABAP code in the database

- ABAP Runtime loads and interprets
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Subset of the Standard SQL statements

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