



INDIA | MAY 25, 2023

How Paytm leverages AWS to perform millions of daily transactions on FASTag

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AWS India

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AVP, Technology
Paytm

Agenda

- Introduction to the FASTag ecosystem
- About Paytm Payments Bank
- FASTag solution journey for Paytm Payments Bank
- Scalable architecture of Paytm Payments Bank
- Migration approach
- Vision forward
- Key takeaways

Introduction to FASTag ecosystem

The FASTag program

- Developed by NPCI to meet electronic tolling needs of Indian market.
- Specifies common set of business & technical specifications.



The FASTag program



RFID passive tag
interoperable
across India



Efficient cashless
payments



Settlement &
dispute management



Reduced toll-plaza
congestions & fuel
consumption



FASTag transaction process flow

FASTag transaction process flow



Issuer Bank



Tag Owner

FASTag transaction process flow



FASTag transaction process flow



FASTag transaction process flow



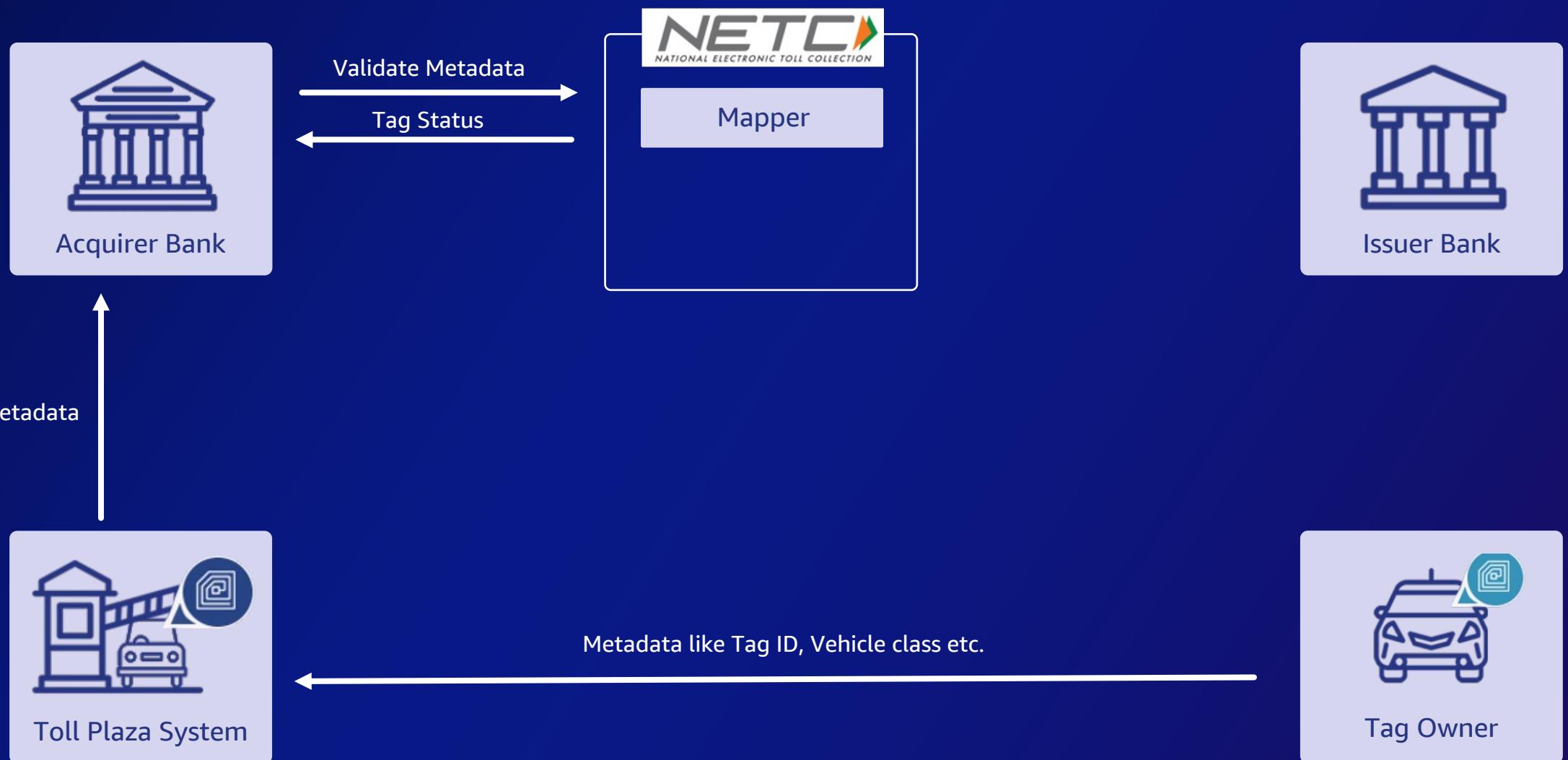
FASTag transaction process flow



FASTag transaction process flow



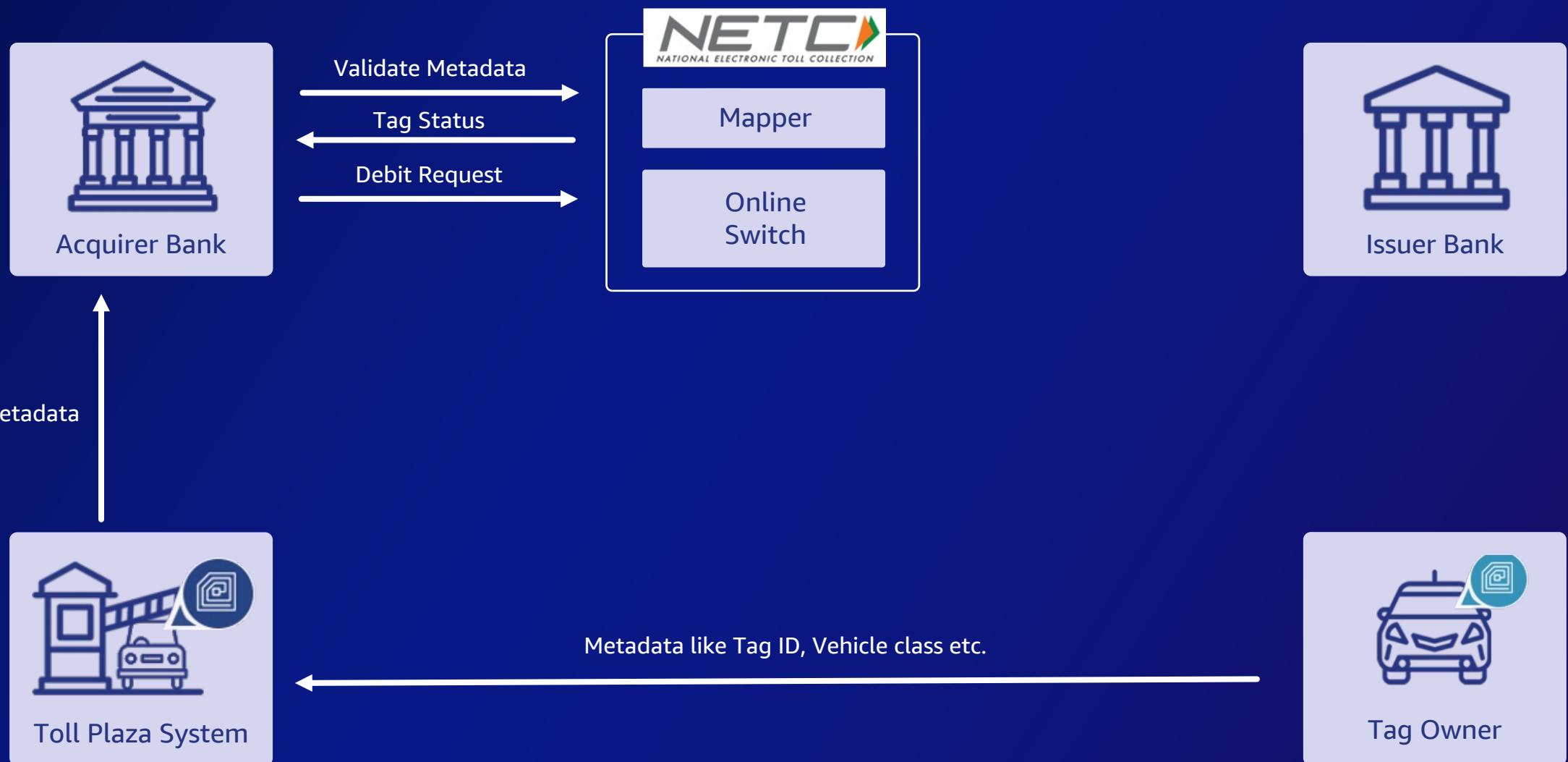
Calculate toll fare



FASTag transaction process flow



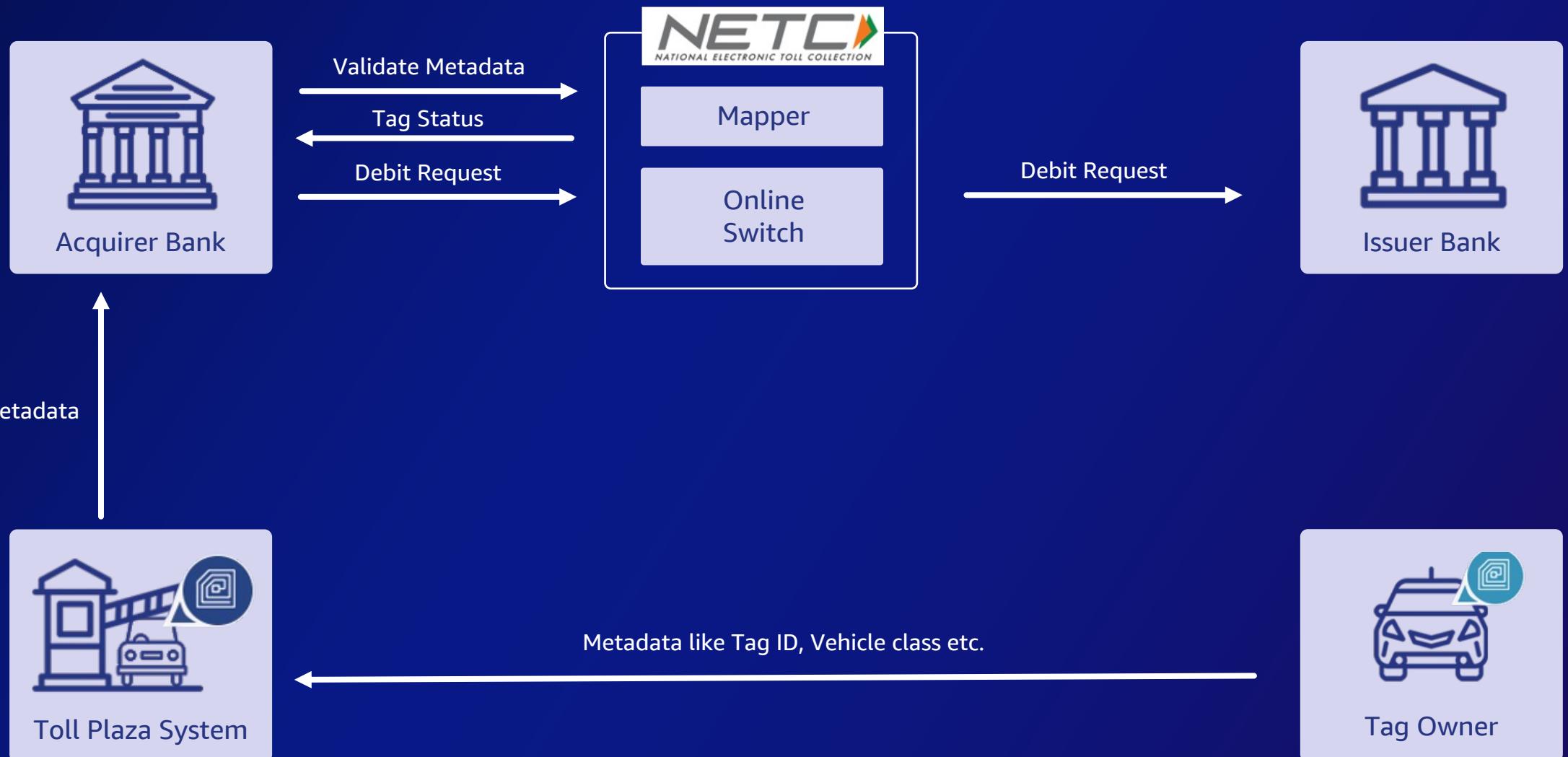
Calculate toll fare



FASTag transaction process flow



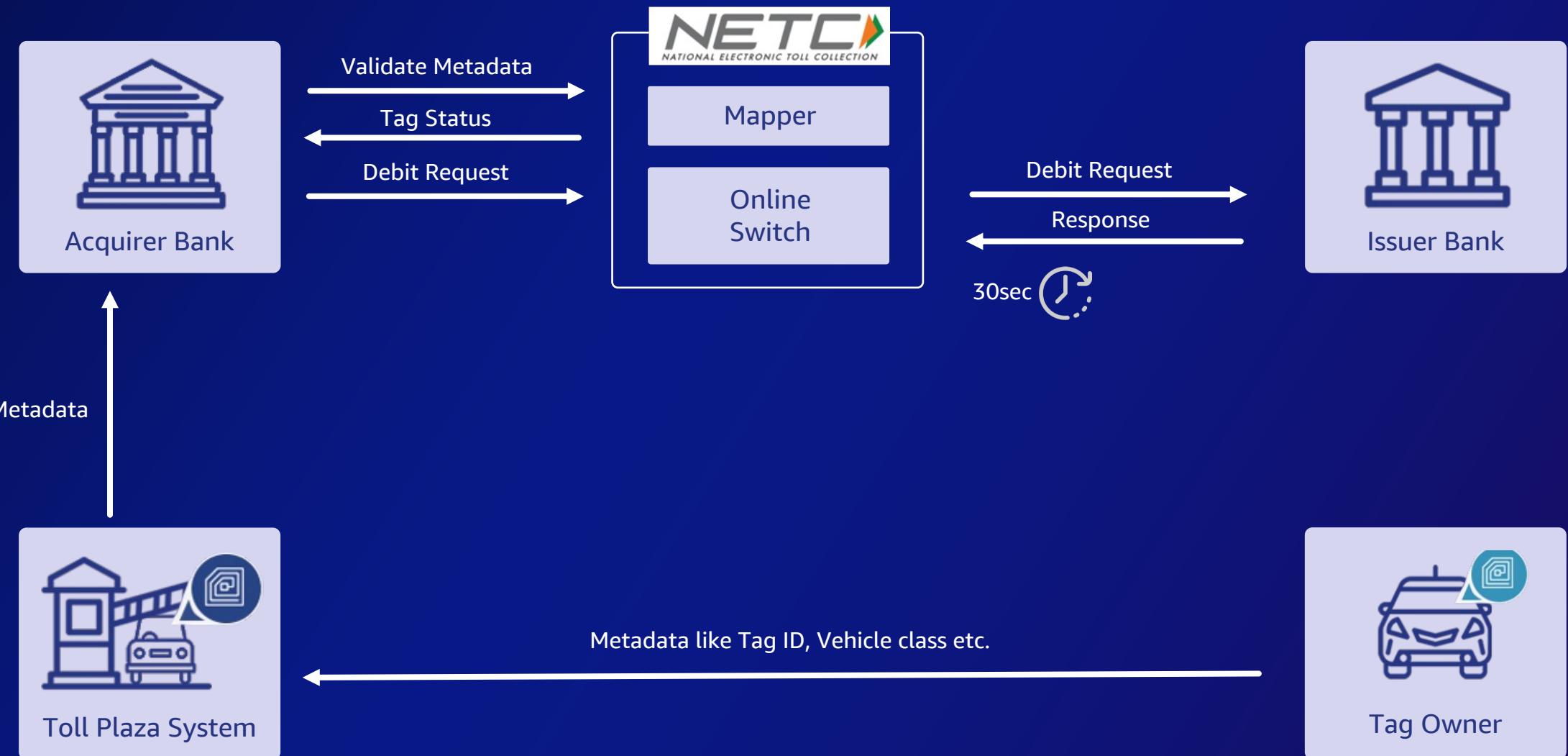
Calculate toll fare



FASTag transaction process flow



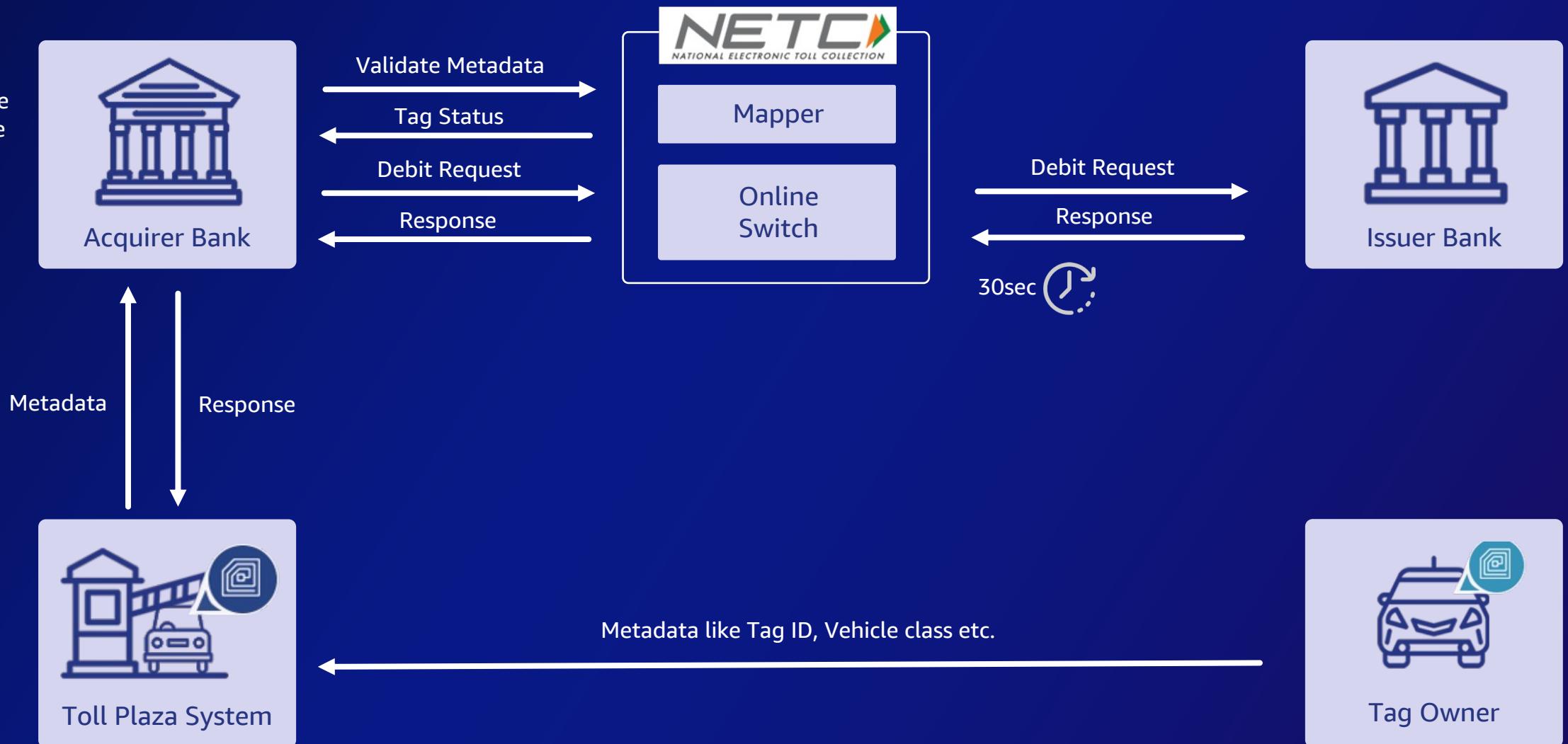
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FASTag transaction process flow



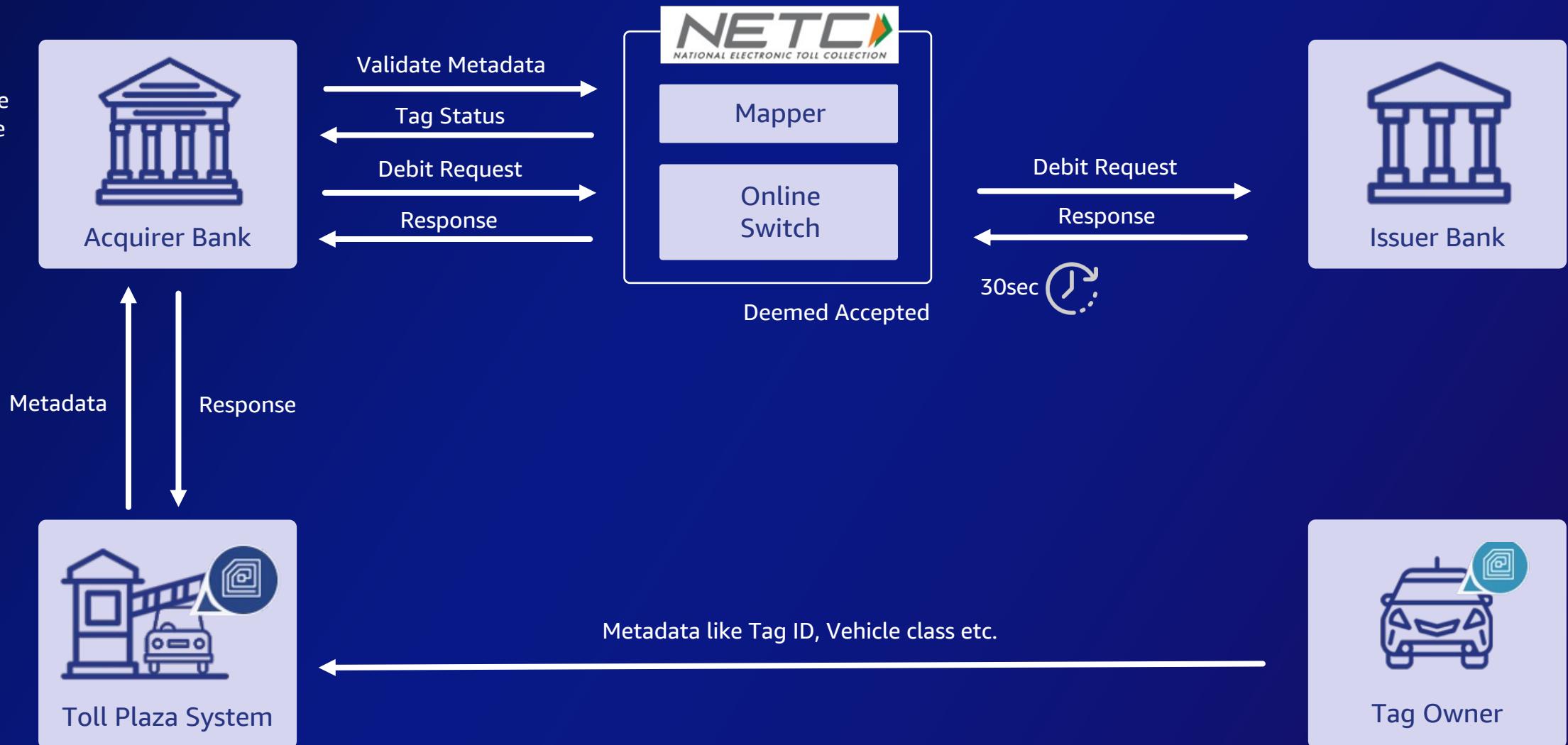
Calculate toll fare



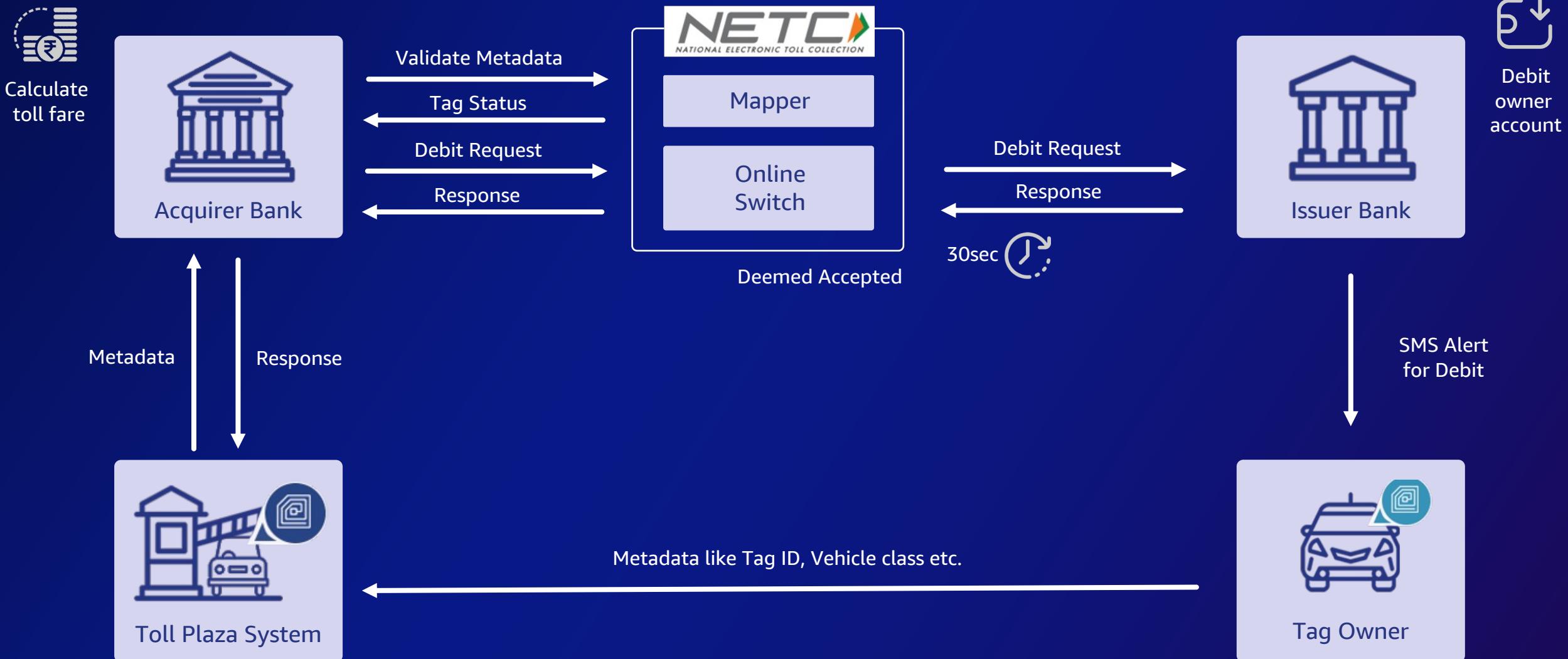
FASTag transaction process flow



Calculate toll fare



FASTag transaction process flow



FASTag dispute settlement



Paytm Payments Bank solutions for FASTag ecosystem



About Paytm Payments Bank

Paytm Payments Bank

Savings Account



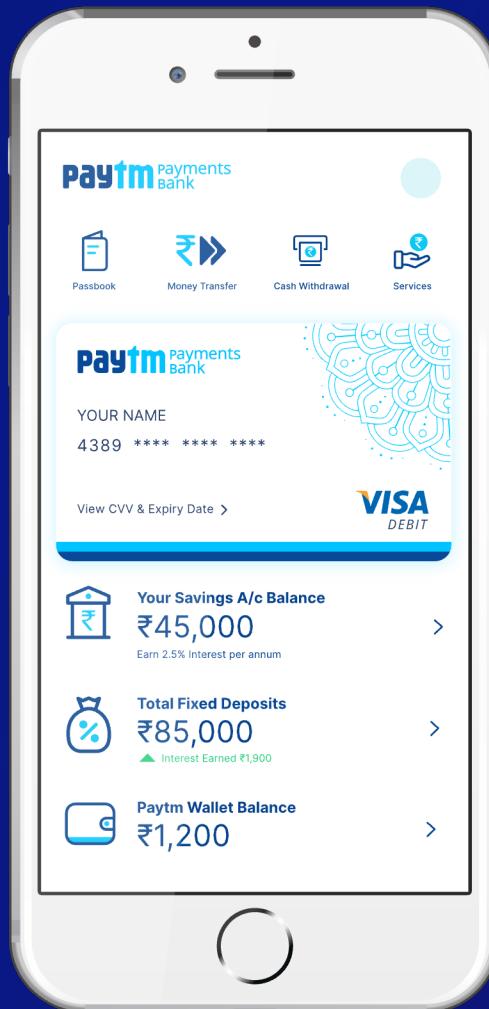
Salary Account



Current Account



Nodal Account



Wallet



UPI

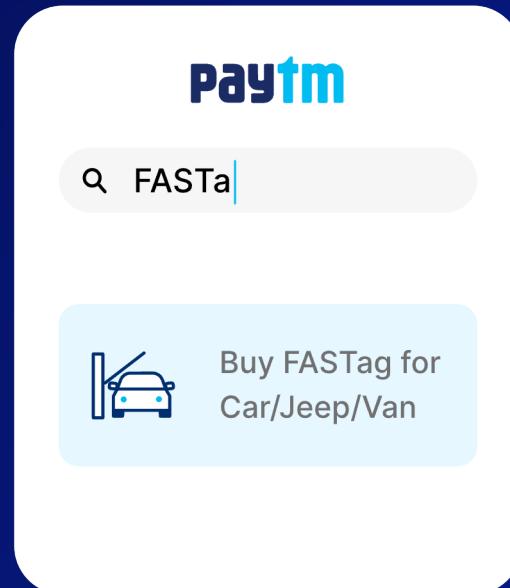


Debit Cards

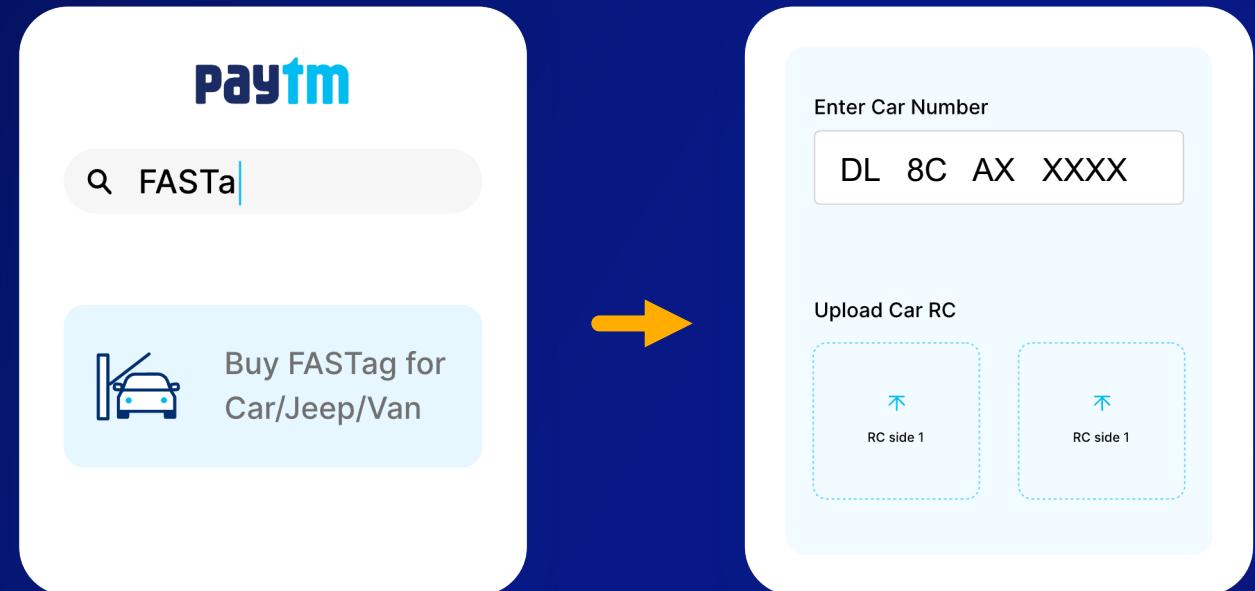


FASTag services

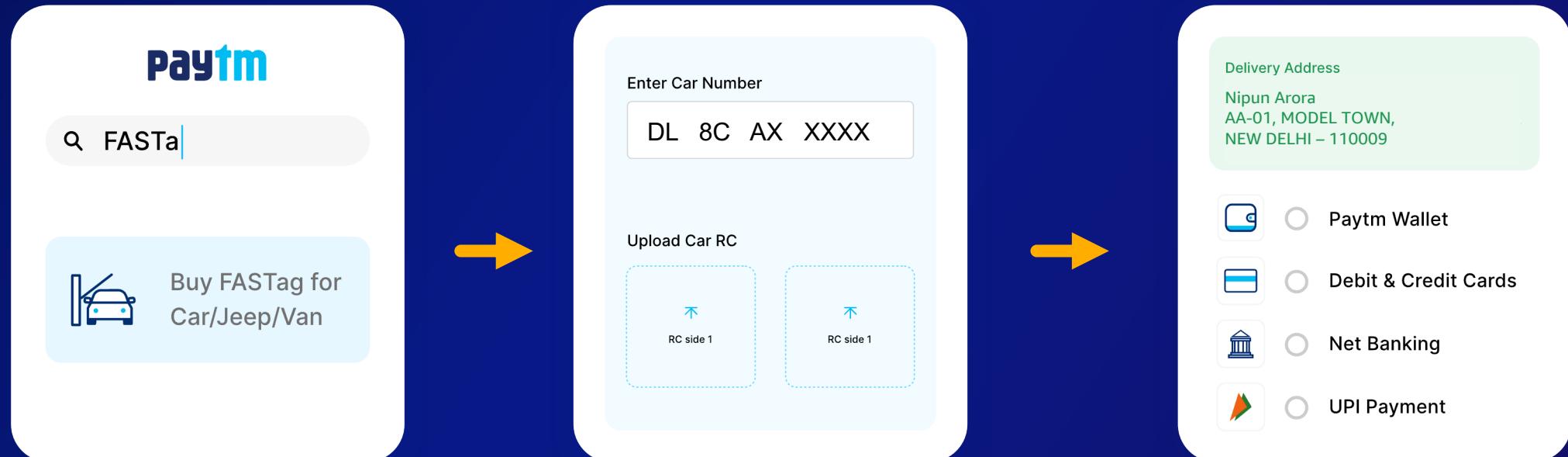
Paytm Payments Bank- FASTag user experience



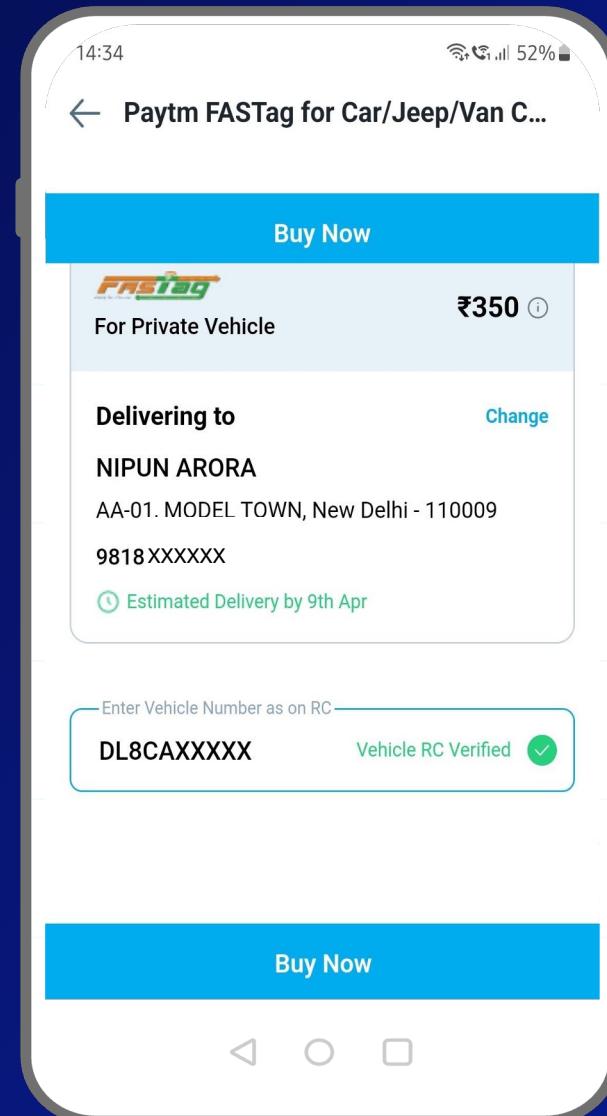
Paytm Payments Bank- FASTag user experience



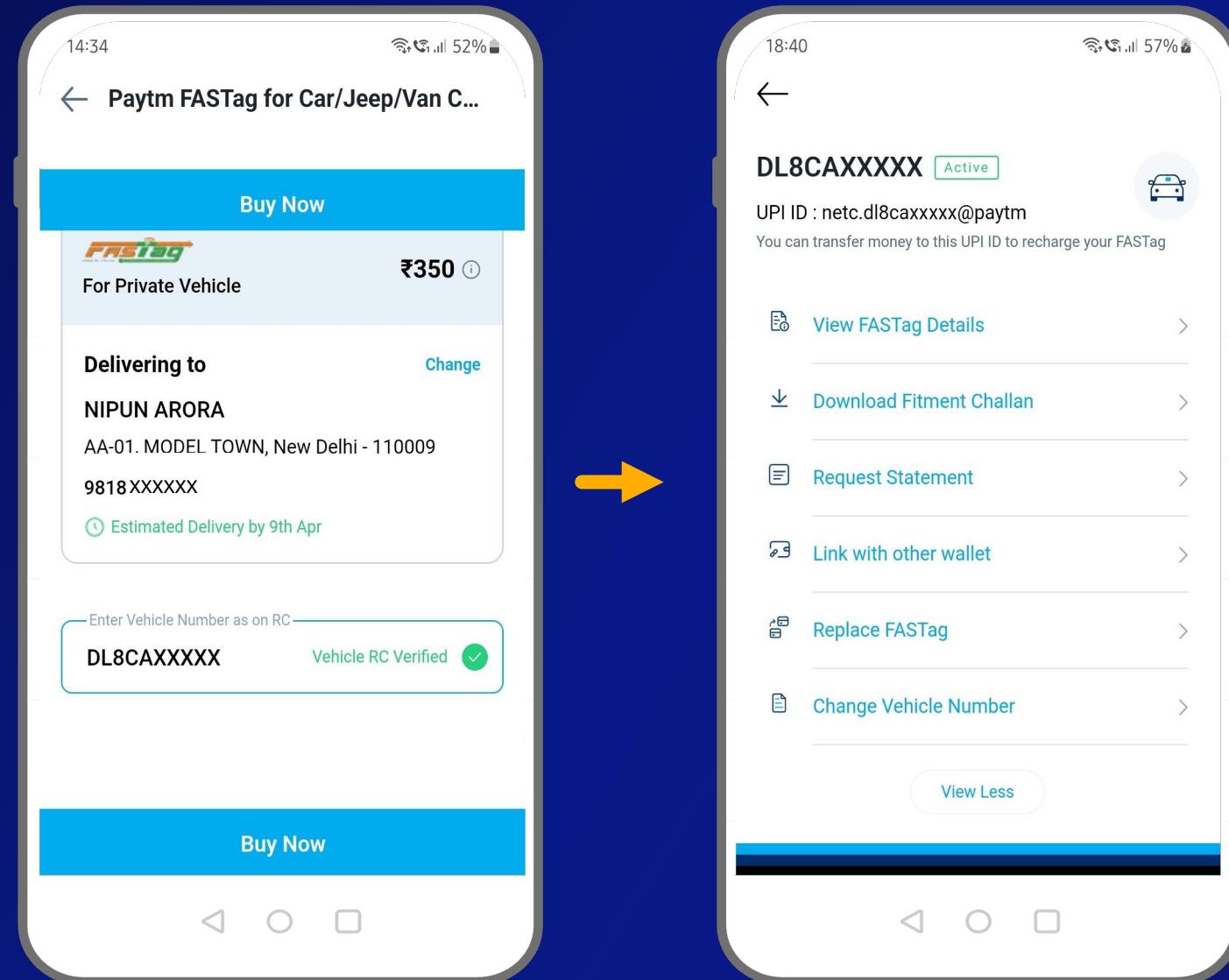
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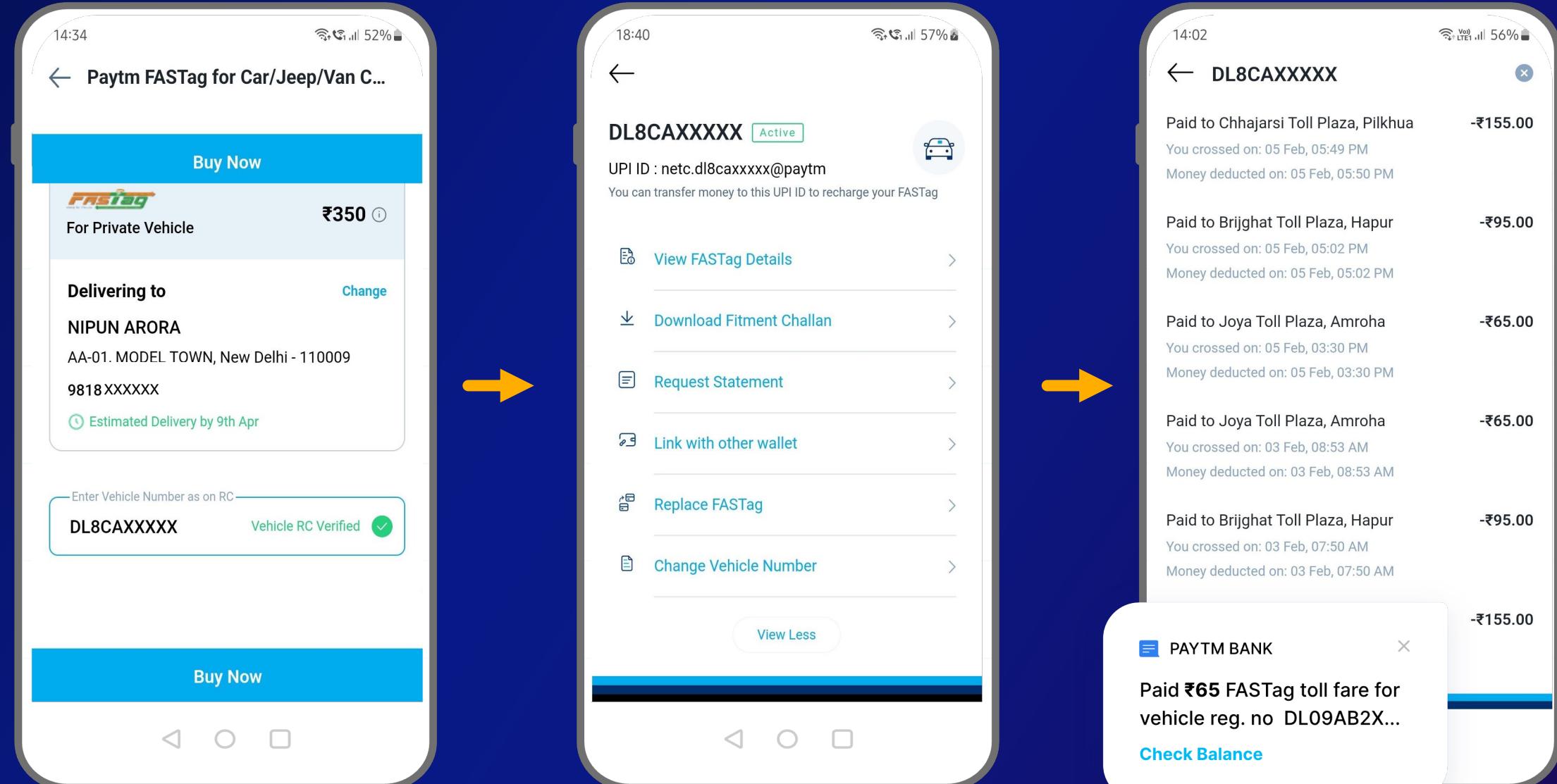
Paytm Payments Bank- FASTag user experience



Paytm Payments Bank- FASTag user experience



Paytm Payments Bank- FASTag user experience



Paytm Payments Bank achievements in FASTag ecosystem



Largest till date

16.35M

tags issued
since inception

Paytm Payments Bank achievements in FASTag ecosystem



Largest till date

16.35M

tags issued
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64.20M

peak monthly
transactions

Paytm Payments Bank achievements in FASTag ecosystem



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99.54%

approval rate for
transactions
(NETC – Jan'23)

Paytm Payments Bank achievements in FASTag ecosystem



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ASSOCHAM Annual FinTech Digital Payments 2021
Excellence in Payments (Issuer) award

Paytm Payments Bank achievements in FASTag ecosystem



Including
Parking plazas

280

Toll Plaza
onboarded since
Sep'21

Paytm Payments Bank achievements in FASTag ecosystem



Including
Parking plazas

280

Toll Plaza
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60.03M
peak monthly
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Paytm Payments Bank achievements in FASTag ecosystem



Including
Parking plazas

280

Toll Plaza
onboarded since
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60.03M
peak monthly
transactions

99.96%
approval rate for
transactions
(NETC – Jan'23)

FASTag solution journey for Paytm Payments Bank

Solution journey for Paytm Payments Bank



Solution journey for Paytm Payments Bank

Q3-2019

Development begins for
Tag Issuer System (TIS) &
Tag Acquirer System (TAS)

Solution journey for Paytm Payments Bank



Solution journey for Paytm Payments Bank



Solution journey for Paytm Payments Bank



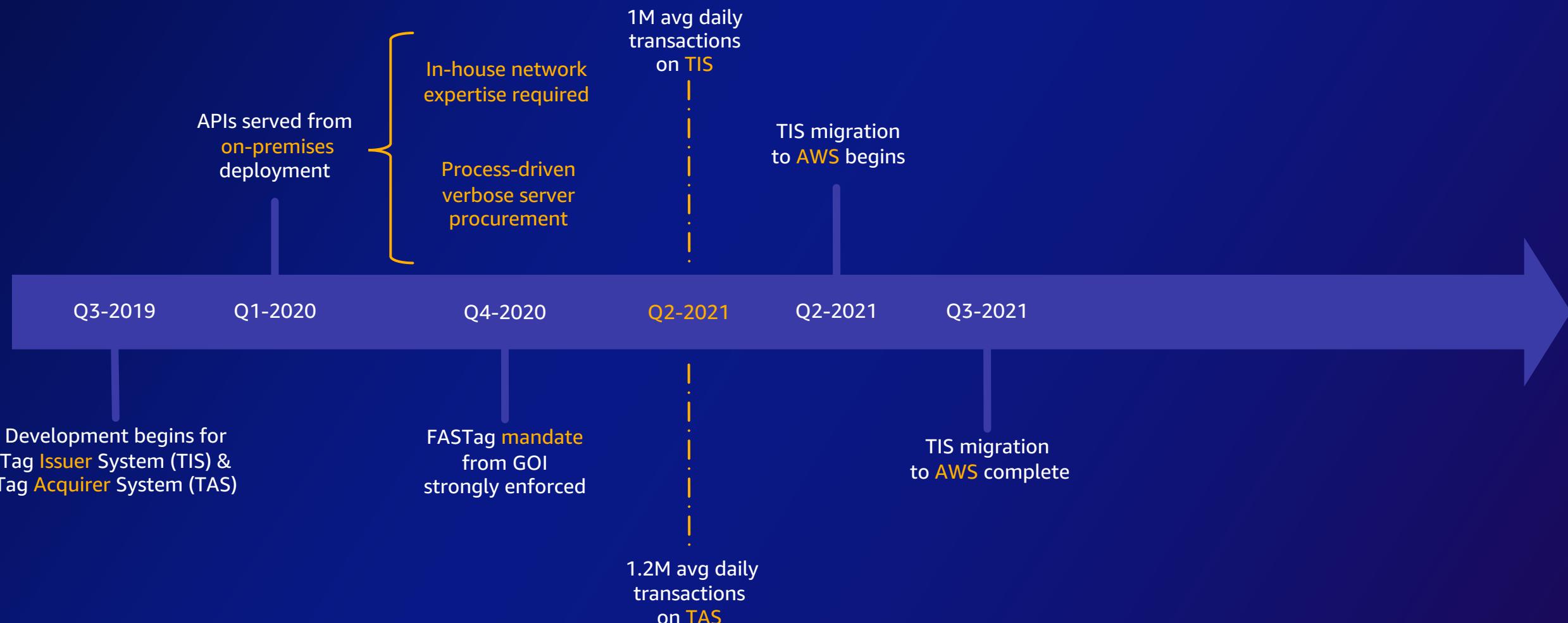
Solution journey for Paytm Payments Bank



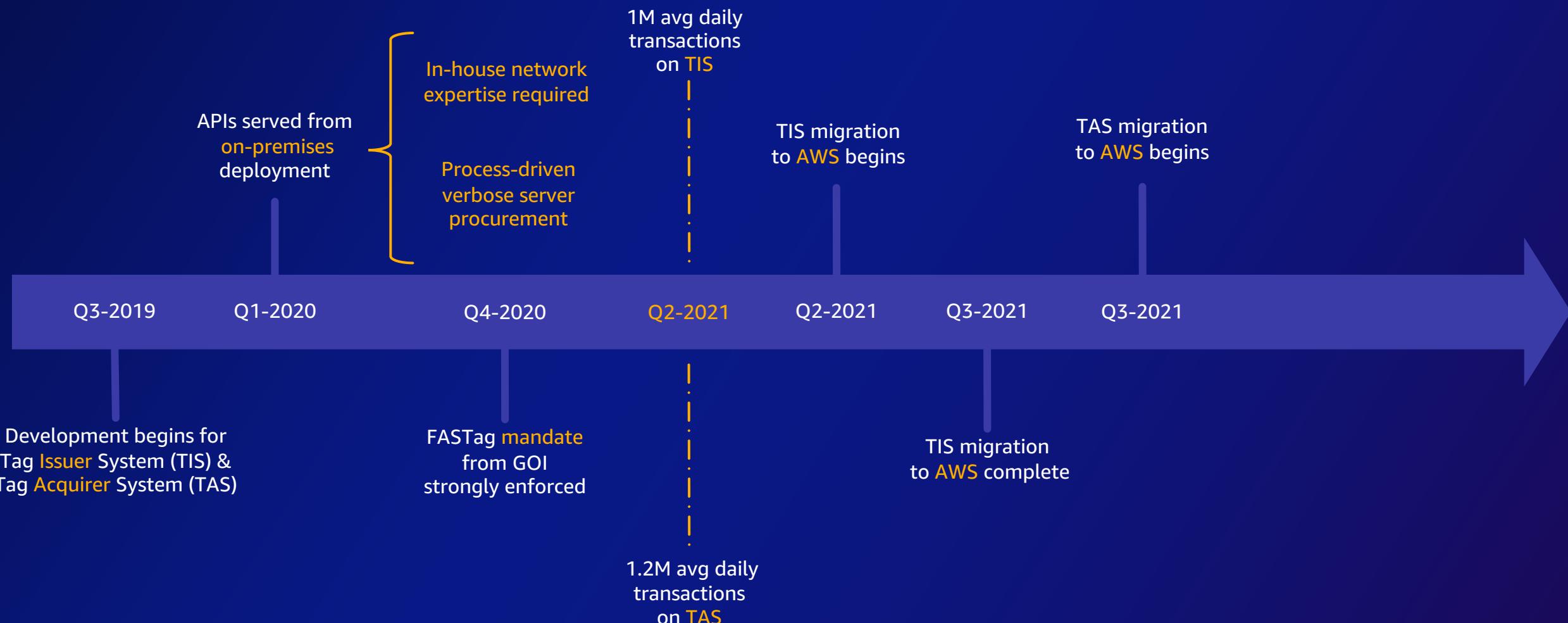
Solution journey for Paytm Payments Bank



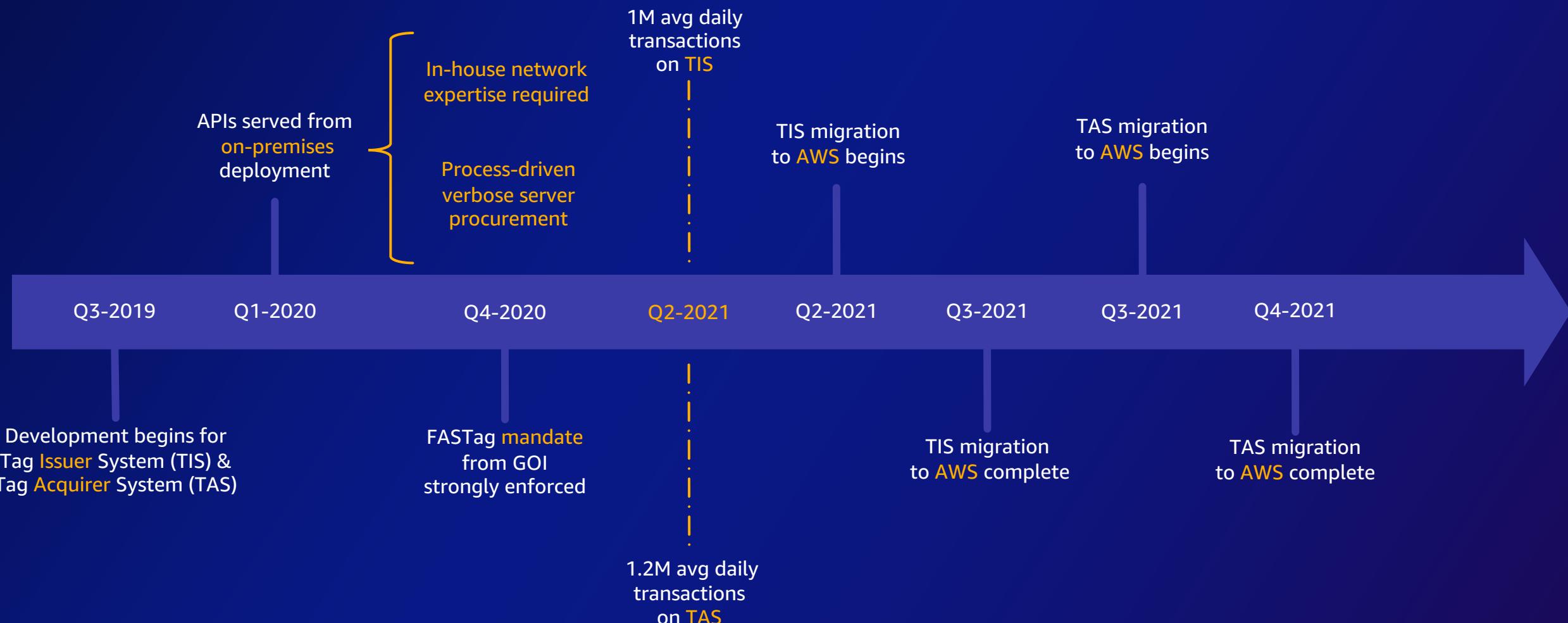
Solution journey for Paytm Payments Bank



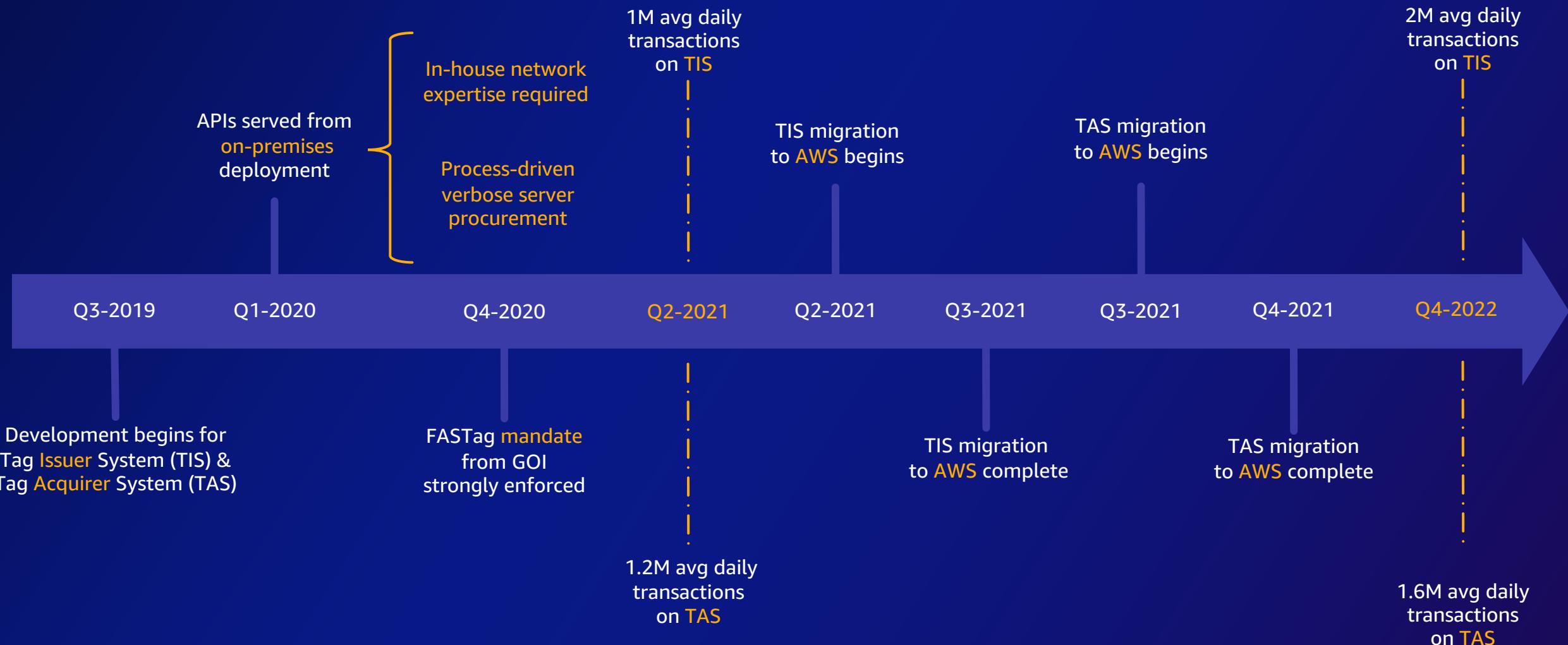
Solution journey for Paytm Payments Bank



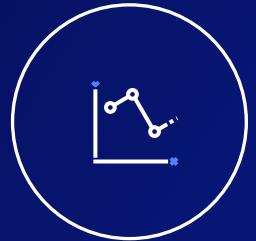
Solution journey for Paytm Payments Bank



Solution journey for Paytm Payments Bank



Why cloud infrastructure ?



Increase IT agility
and performance



Dynamic
scalability



Improved
reliability



Efficient
cost

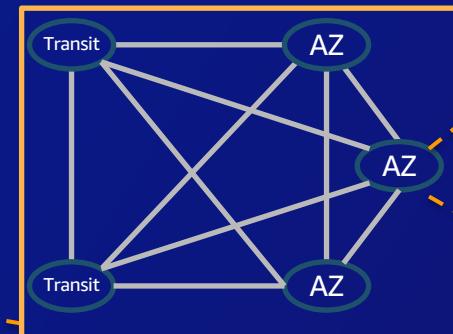
← Maximum security →

AWS region chosen

AWS Regions are comprised of multiple AZs for **high availability**, **high scalability**, and **high fault tolerance**. Applications and data are replicated in real time and consistent in the different AZs.

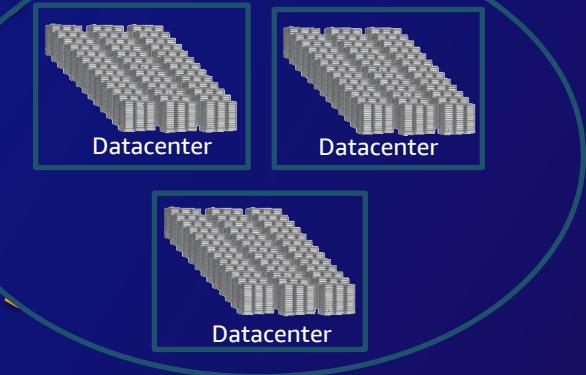


AWS Region : ap-south-1



A **Region** is a physical location in the world where we have multiple **Availability Zones**.

AWS Availability Zone (AZ)



Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

Scalable architecture of Paytm Payments Bank

Acquirer scalable architecture



AWS Cloud



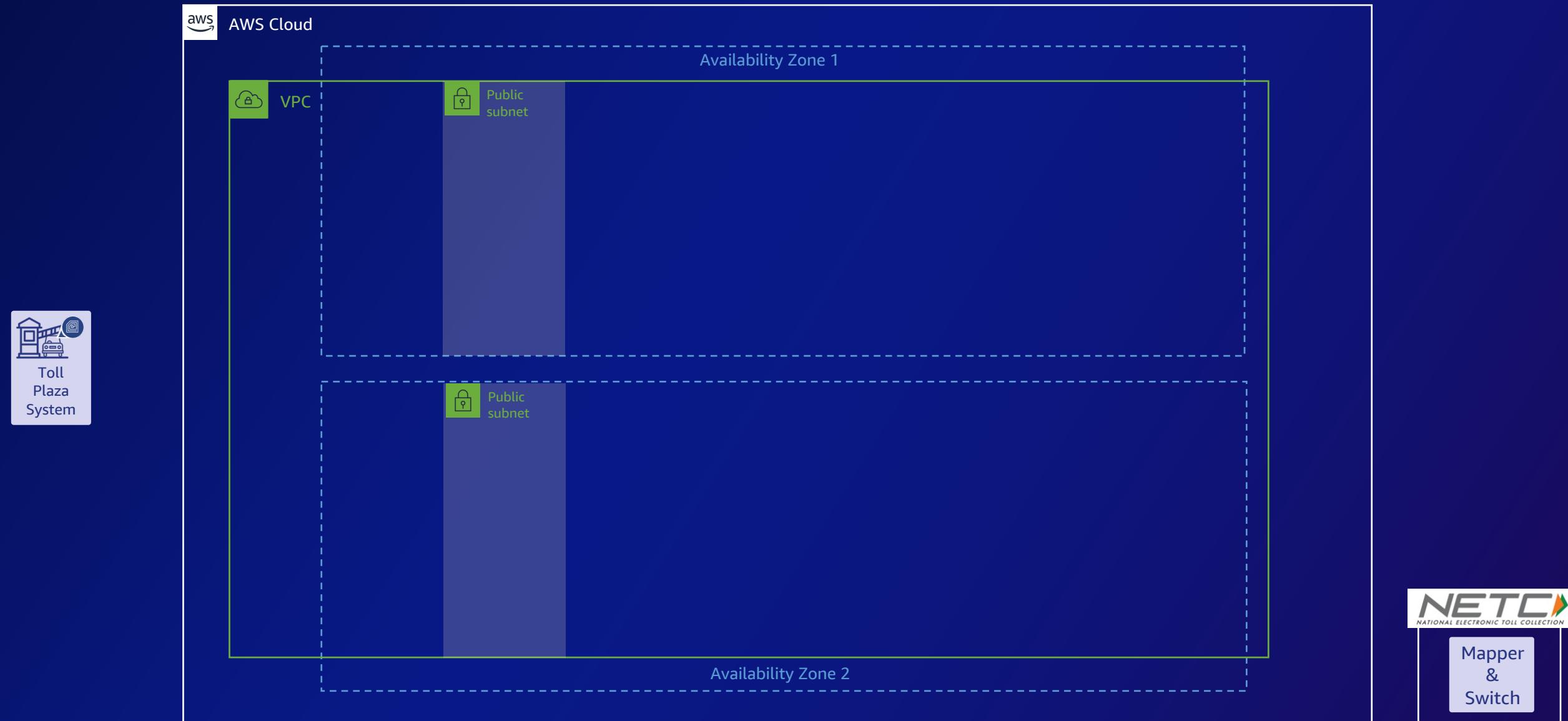
Acquirer scalable architecture



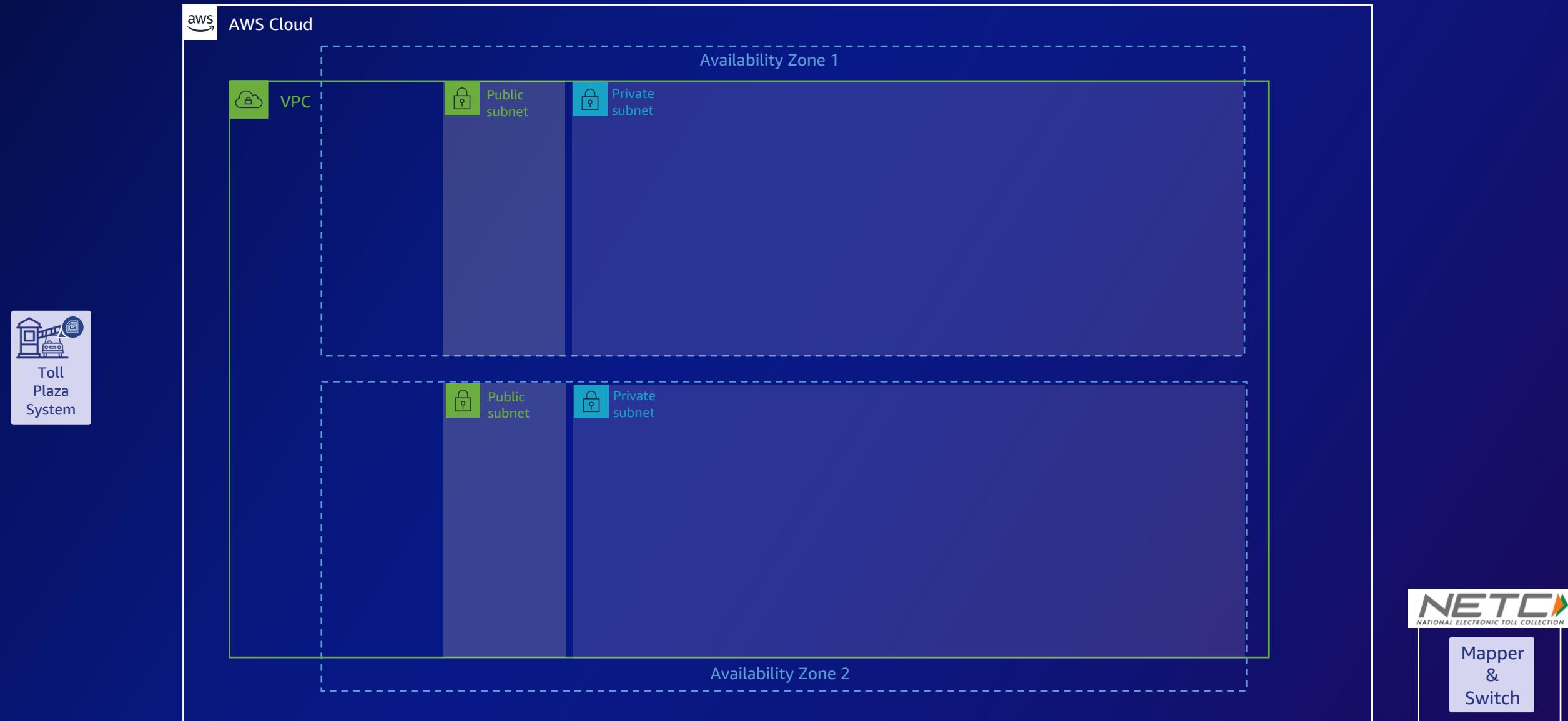
Acquirer scalable architecture



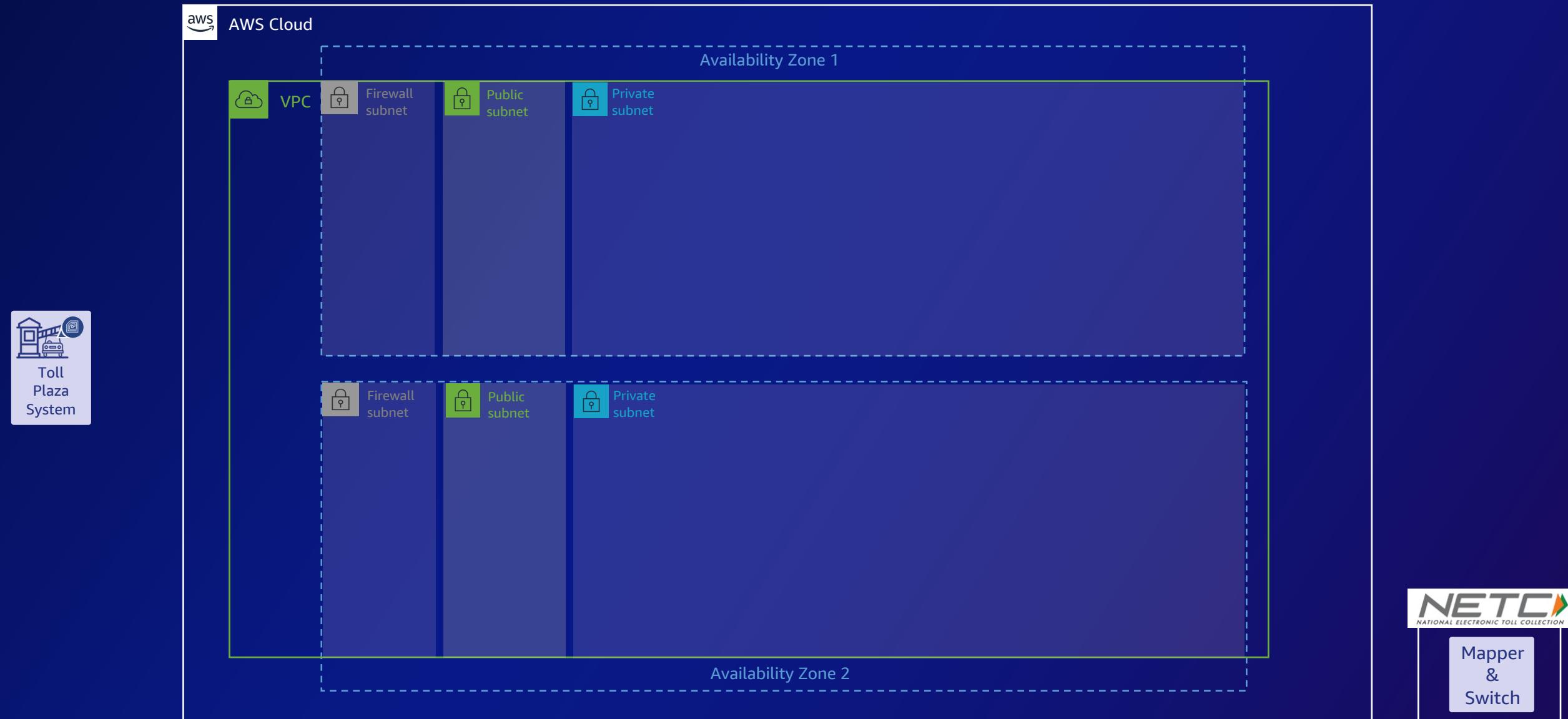
Acquirer scalable architecture



Acquirer scalable architecture



Acquirer scalable architecture



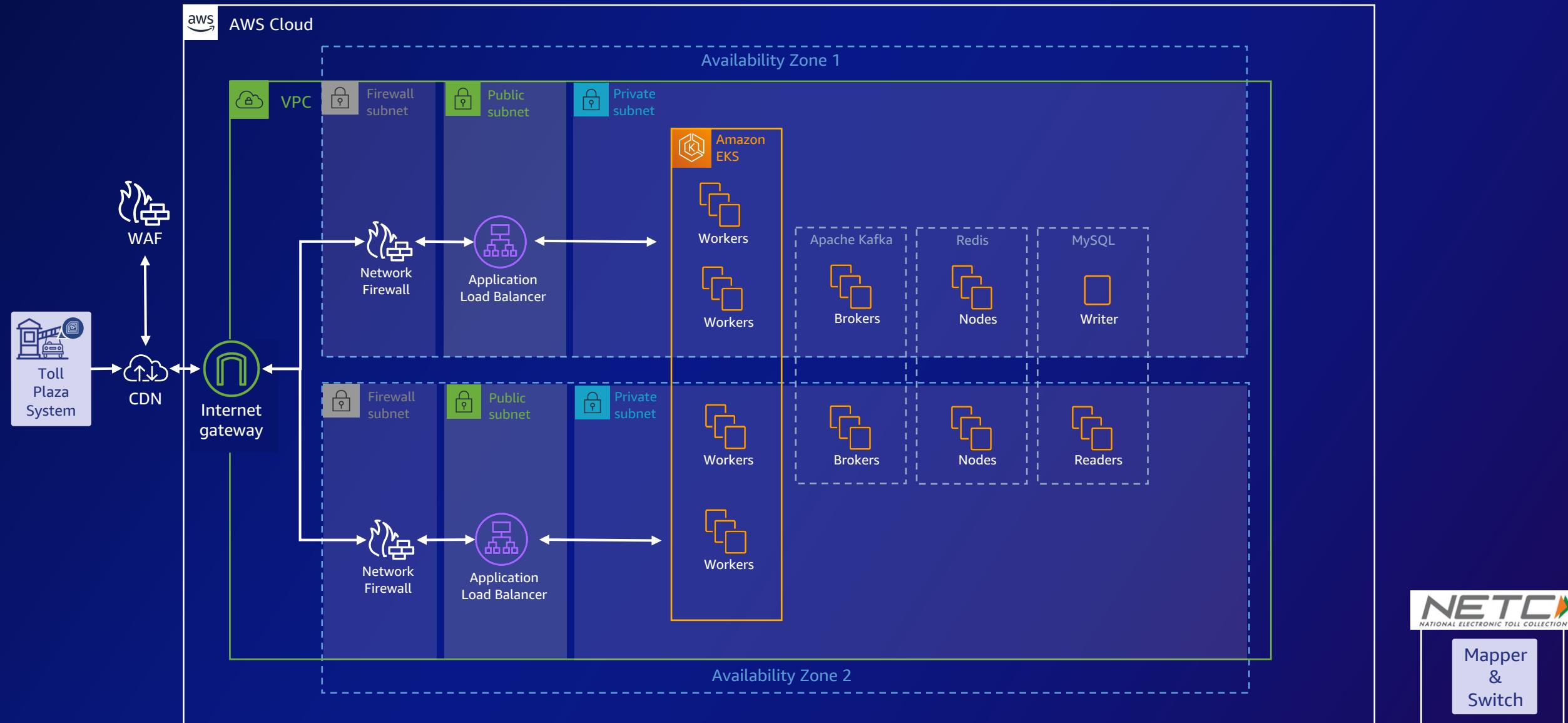
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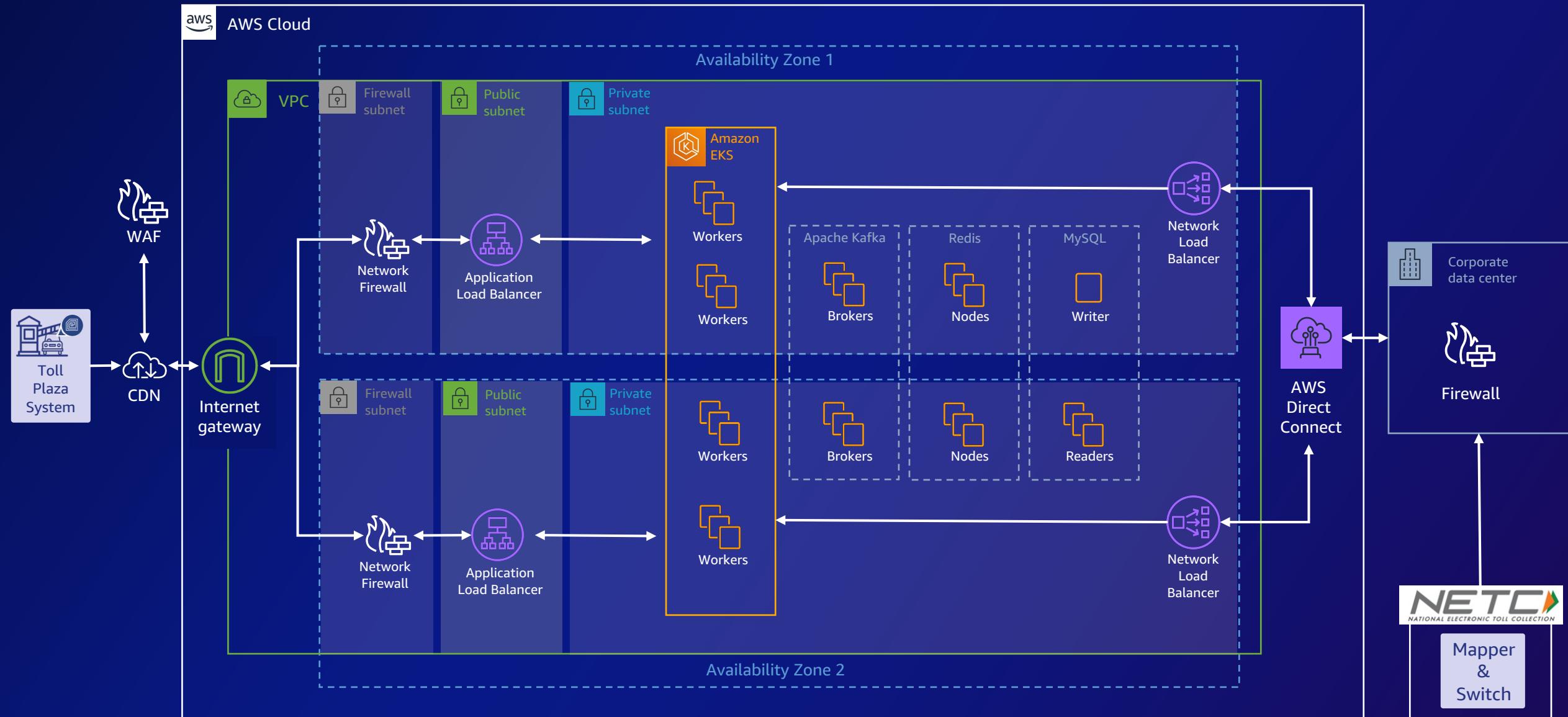
Acquirer scalable architecture



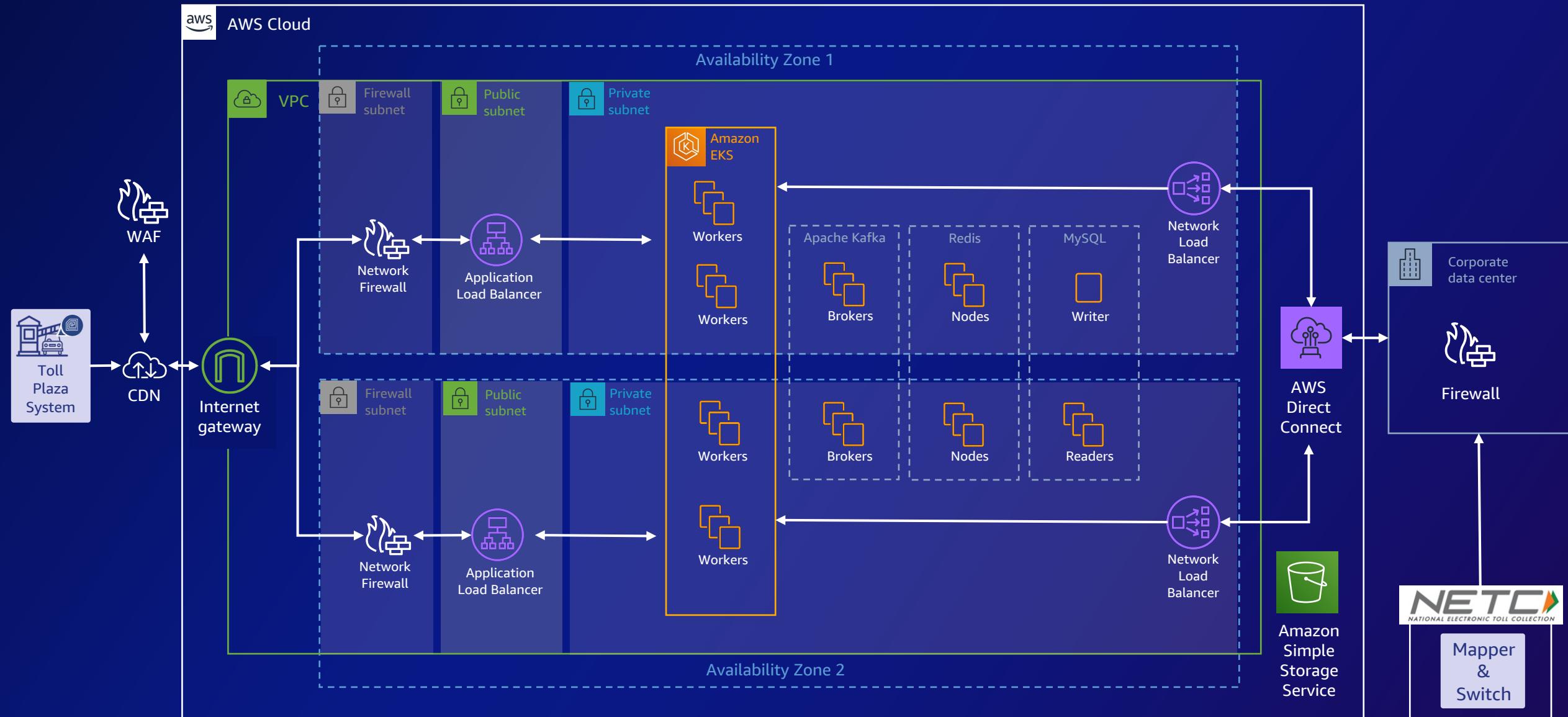
Acquirer scalable architecture



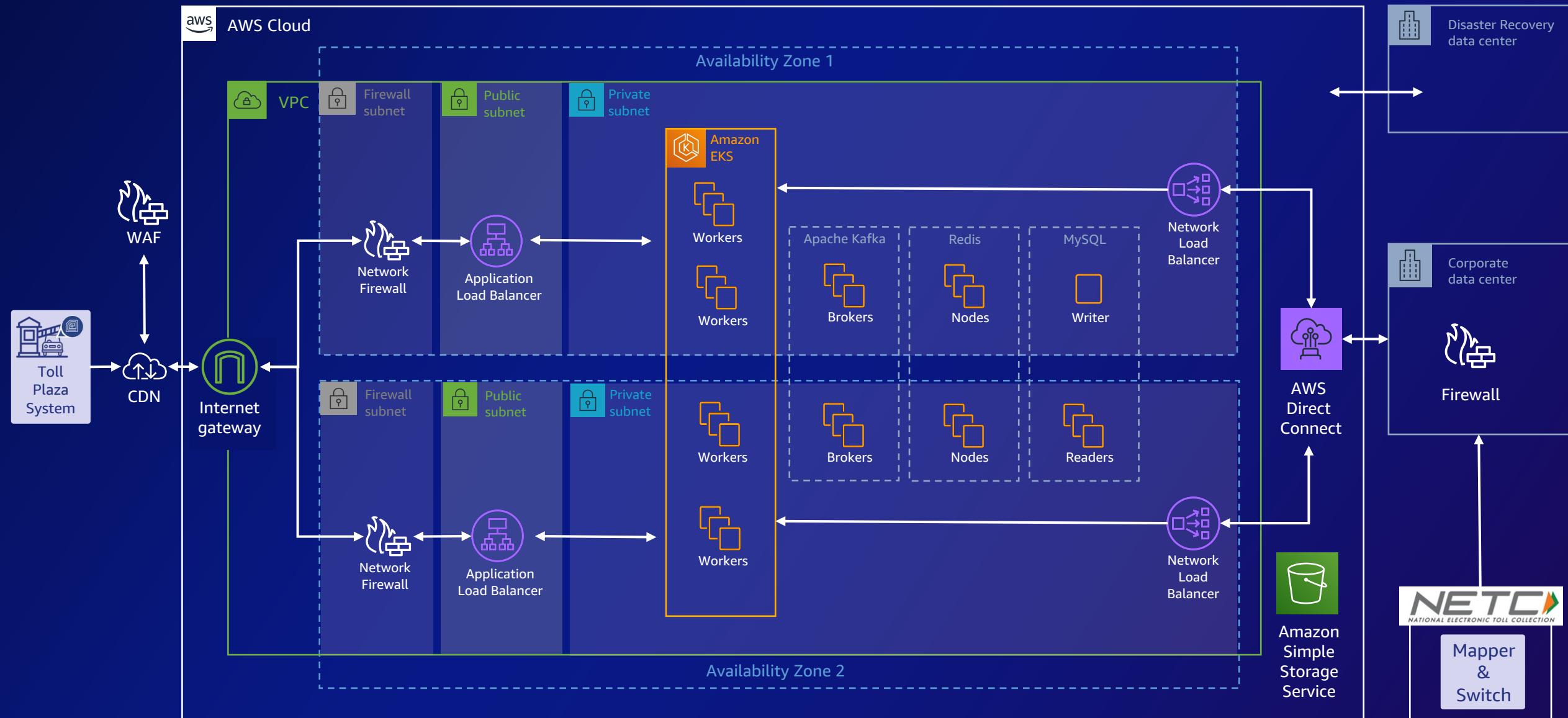
Acquirer scalable architecture



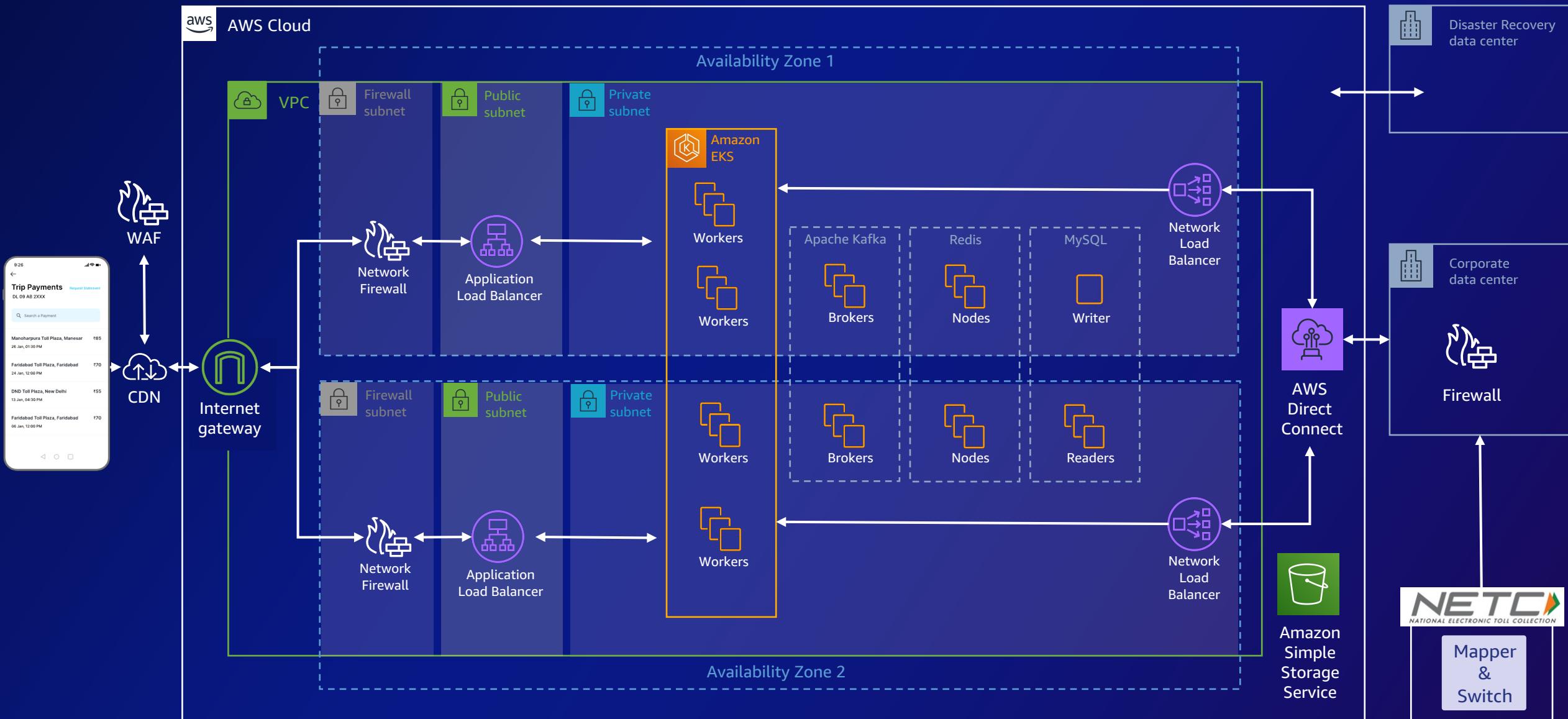
Acquirer scalable architecture



Acquirer scalable architecture



Issuer scalable architecture



FASTag migration approach for Paytm Payments Bank

Migration approach for Paytm Payments Bank



Migration approach for Paytm Payments Bank

Milestone 1

AWS replica setup
of on-premises
deployment

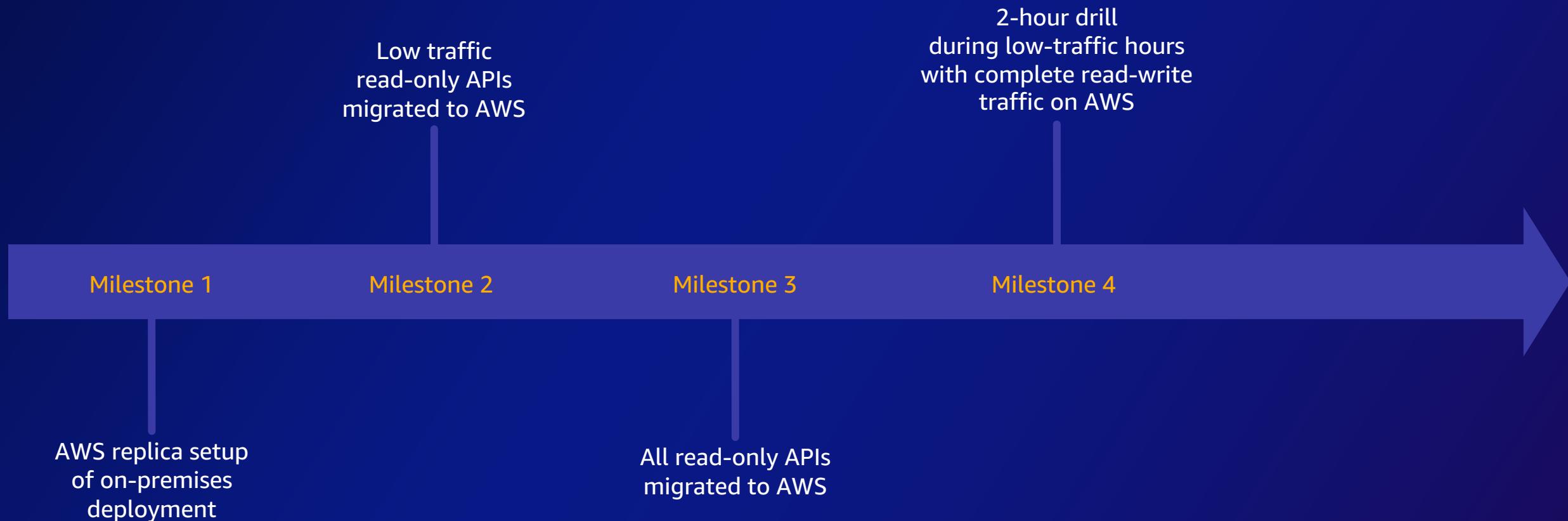
Migration approach for Paytm Payments Bank



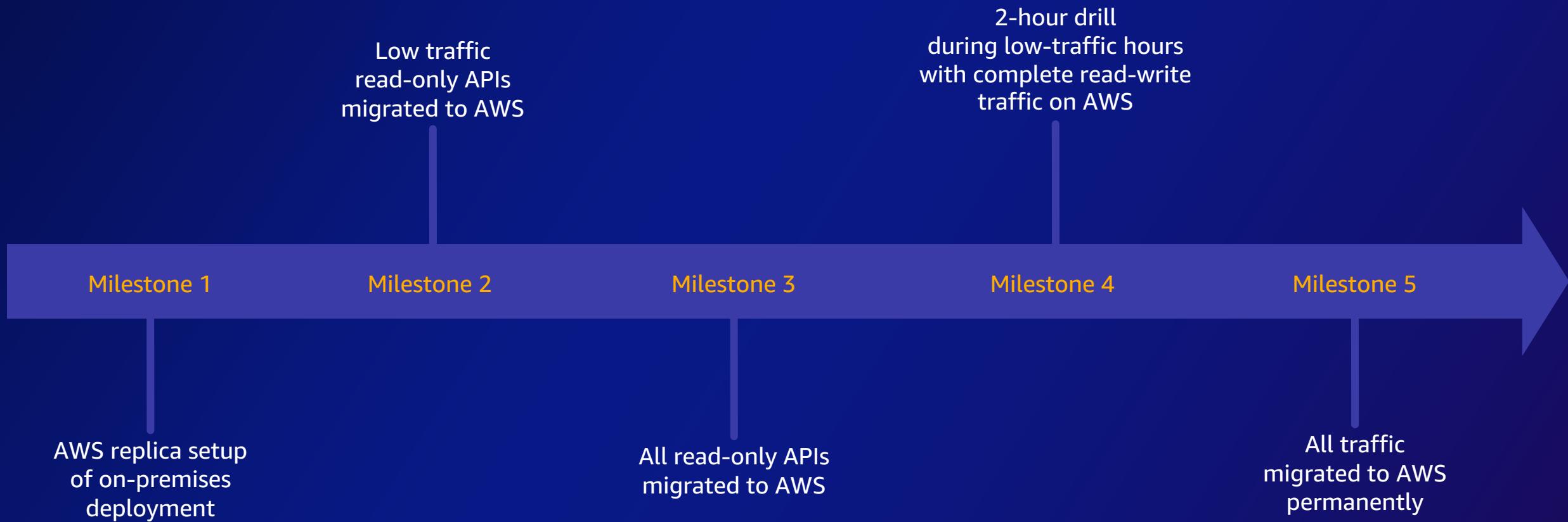
Migration approach for Paytm Payments Bank



Migration approach for Paytm Payments Bank



Migration approach for Paytm Payments Bank



Vision Forward



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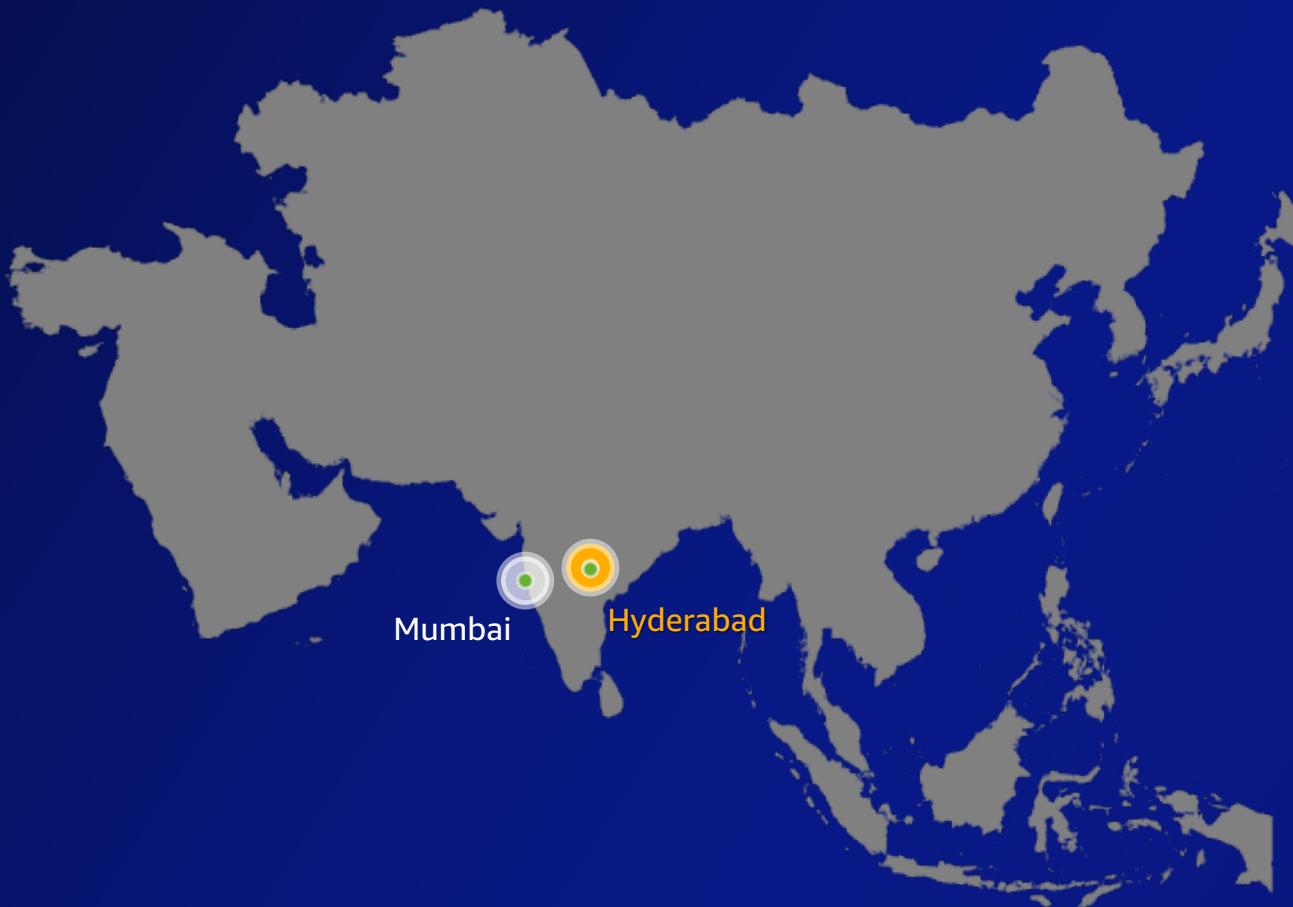
Vision forward

Expand on parking in
malls & airports for
Acquirer & Issuer
functionality

Adoption of
Graviton2
instances

Vision forward - HYD region

Launched in Nov 2022



Hyderabad (HYD) is the Second AWS Region in India



More choice



Increased Application Availability & Capacity



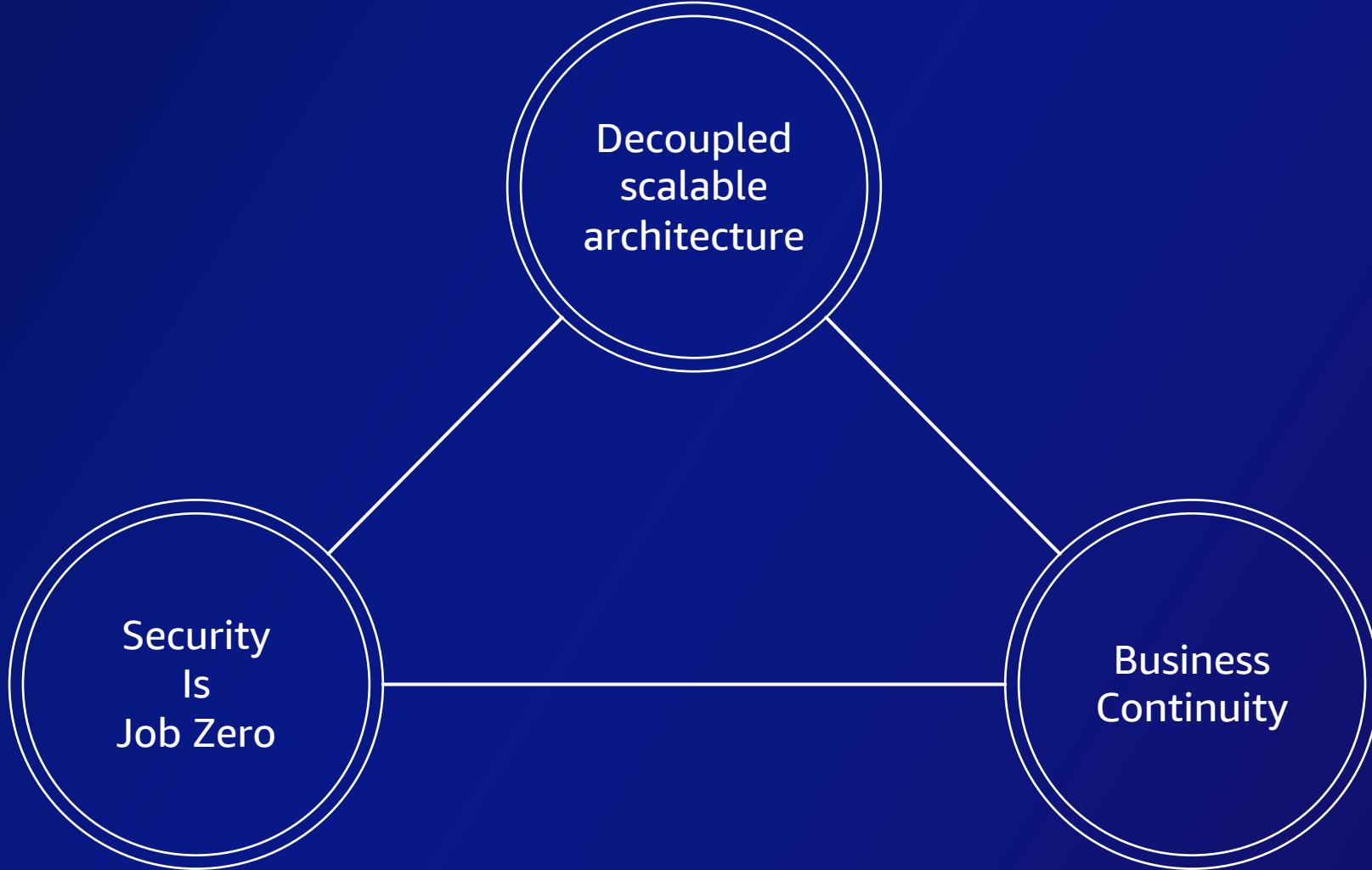
Latency sensitive workloads



Business Continuity

Key takeaways

Key takeaways



skillbuilder.aws 

Your time is now

Build in-demand cloud skills your way



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Thank you!

Nikhil Khokhar
Senior Solutions Architect
AWS India

Nipun Arora
AVP, Technology
Paytm



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session survey