Amazon Neptune

Fast, reliable graph database built for the cloud

Brad Bebee, Amazon Neptune, Principal Product Manager, AWS

aws

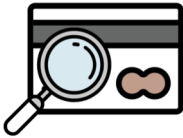# USE CASES FOR HIGHLY CONNECTED DATA

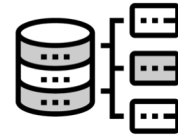**Social Networking**

Recommendations

Knowledge Graphs

Fraud Detection

Life Sciences

Network & IT Operations

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Leading graph models and frameworks

PROPERTY GRAPH

Open Source Apache TinkerPop™

Gremlin Traversal Language

RESOURCE DESCRIPTION FRAMEWORK (RDF)

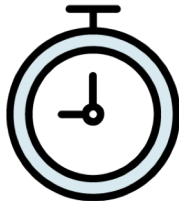W3C Standard

SPARQL Query Language

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Amazon Neptune
Fully managed graph database

FAST

RELIABLE

EASY

OPEN

Query billions of relationships with millisecond latency

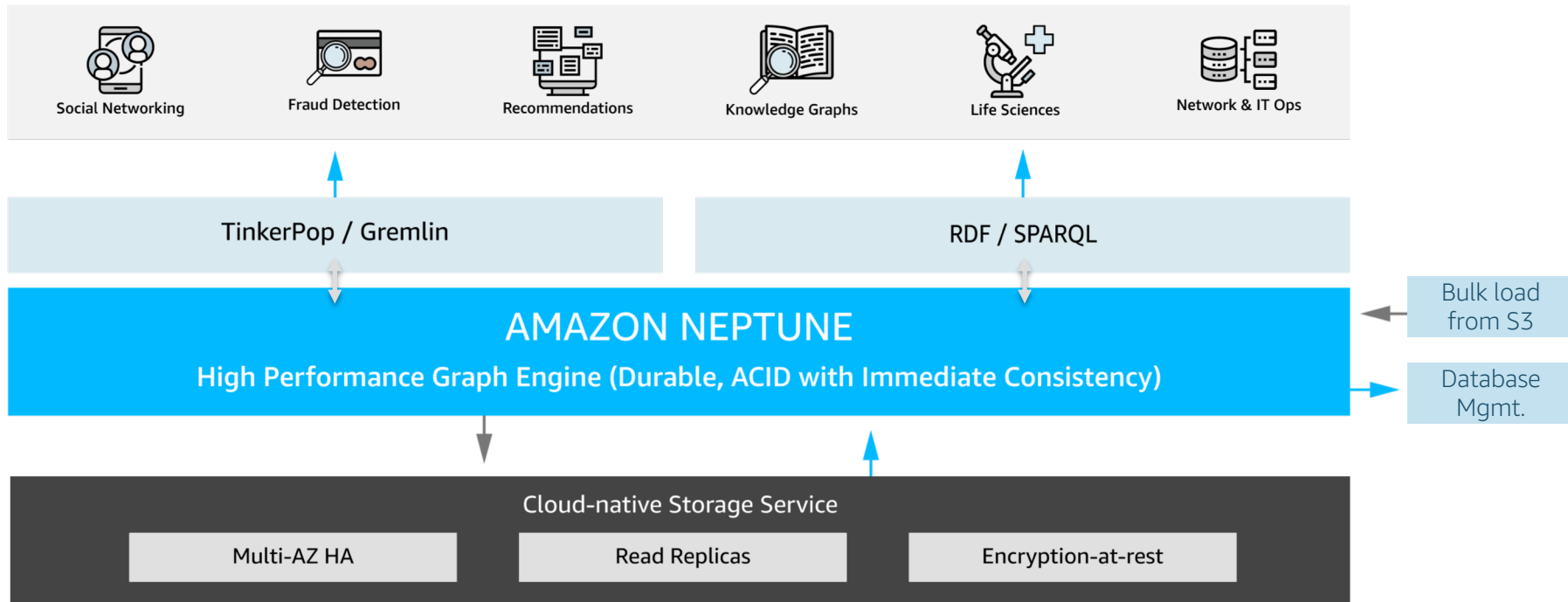6 replicas of your data across 3 AZs with full backup and restore

Build powerful queries easily with Gremlin and SPARQL
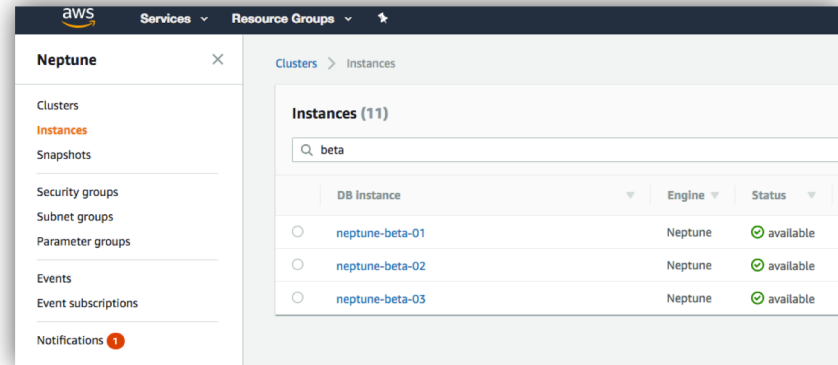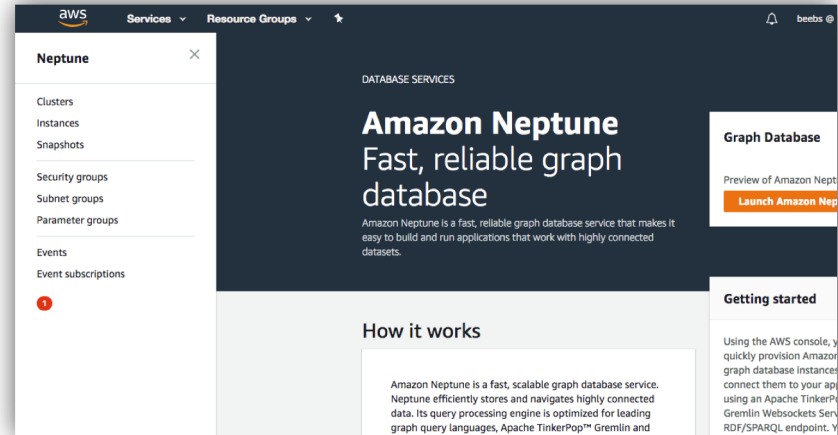
Supports Apache TinkerPop & W3C RDF graph models

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Amazon Neptune high level architecture

Social Networking Fraud Detection Recommendations Knowledge Graphs Life Sciences Network & IT Ops

TinkerPop / Gremlin

RDF / SPARQL

AMAZON NEPTUNE
High Performance Graph Engine (Durable, ACID with Immediate Consistency)

Bulk load from S3

Database Mgmt.

Cloud-native Storage Service

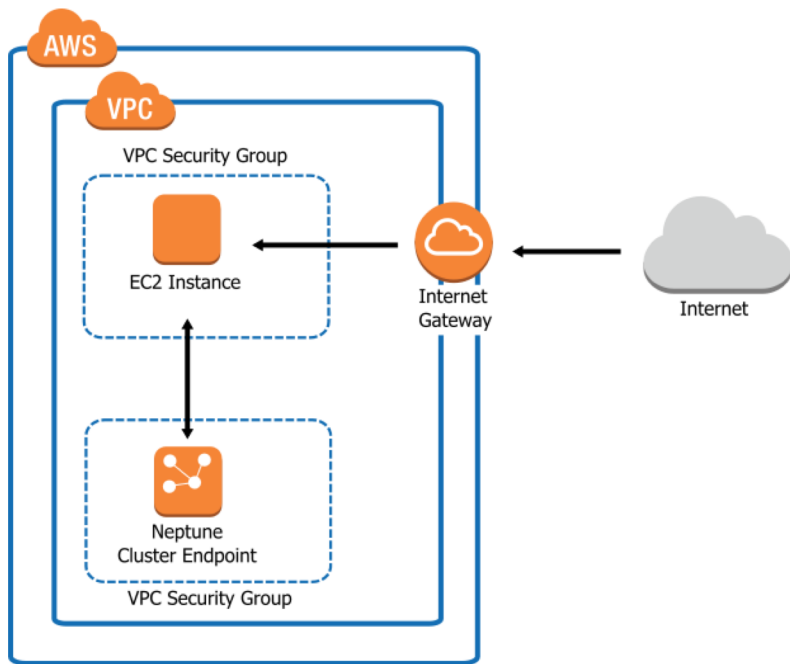Multi-AZ HA   Read Replicas   Encryption-at-rest

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Fully managed service

B E N E F I T S

✓ Easily configurable via the Console

✓ AWS CloudFormation, CLI, SDK

✓ Multi-AZ High Availability, ACID

✓ Support for up to 15 read replicas

✓ Supports Encryption at rest

✓ Backup and Restore, Point-in-time Recovery
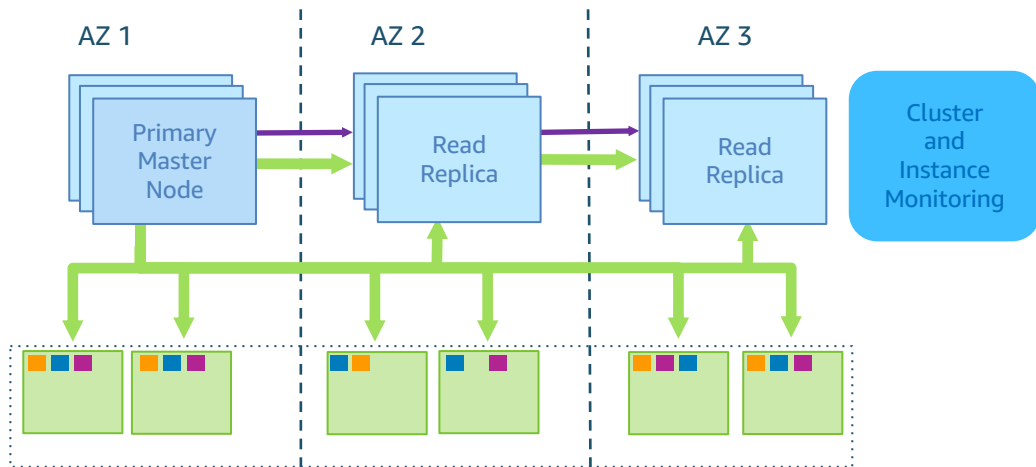
AMAZON NEPTUNE: VPC DEPLOYMENT

- Secure deployment in a VPC

- Increased availability through deployment in two subnets in two different Availability Zones (AZs)

- Cluster volume always spans three AZ to provide durable storage

- See the Amazon Neptune Documentation for VPC setup details

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AMAZON NEPTUNE READ REPLICAS

Availability

- Failing database nodes are automatically detected and replaced

- Failing database processes are automatically detected and recycled

- Replicas are automatically promoted to primary if needed (failover)

- Customer specifiable fail-over order

AZ 1 — Primary Master Node

AZ 2 — Read Replica

AZ 3 — Read Replica

Cluster and Instance Monitoring

Performance

- Customer applications can scale out read traffic across read replicas
- Read balancing across read replicas

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Neptune GA Customers

THOMSON REUTERS

SIEMENS

FINRA

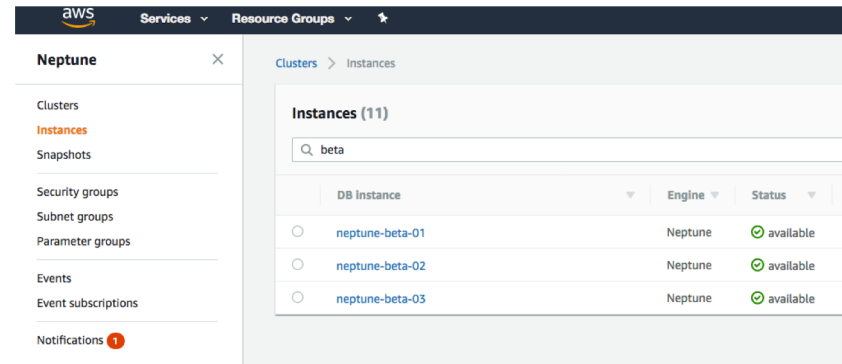AstraZeneca

LIFEOMIC

amazon alexa

INTUIT

Pearson

SAMSUNG

Blackfynn
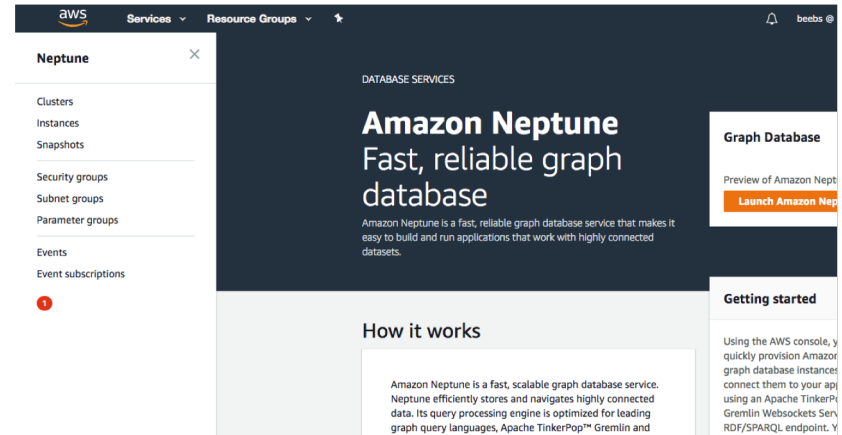
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Neptune General Availability

- Announced on 5/30/2018

- Four regions

  - US East (No. Virginia), US East (Ohio), US West (Oregon), EU West (Ireland)

- https://aws.amazon.com/about-aws/whats-new/2018/05/amazon-neptune-is-now-generally-available/

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Demo/Questions

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Thank you!

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