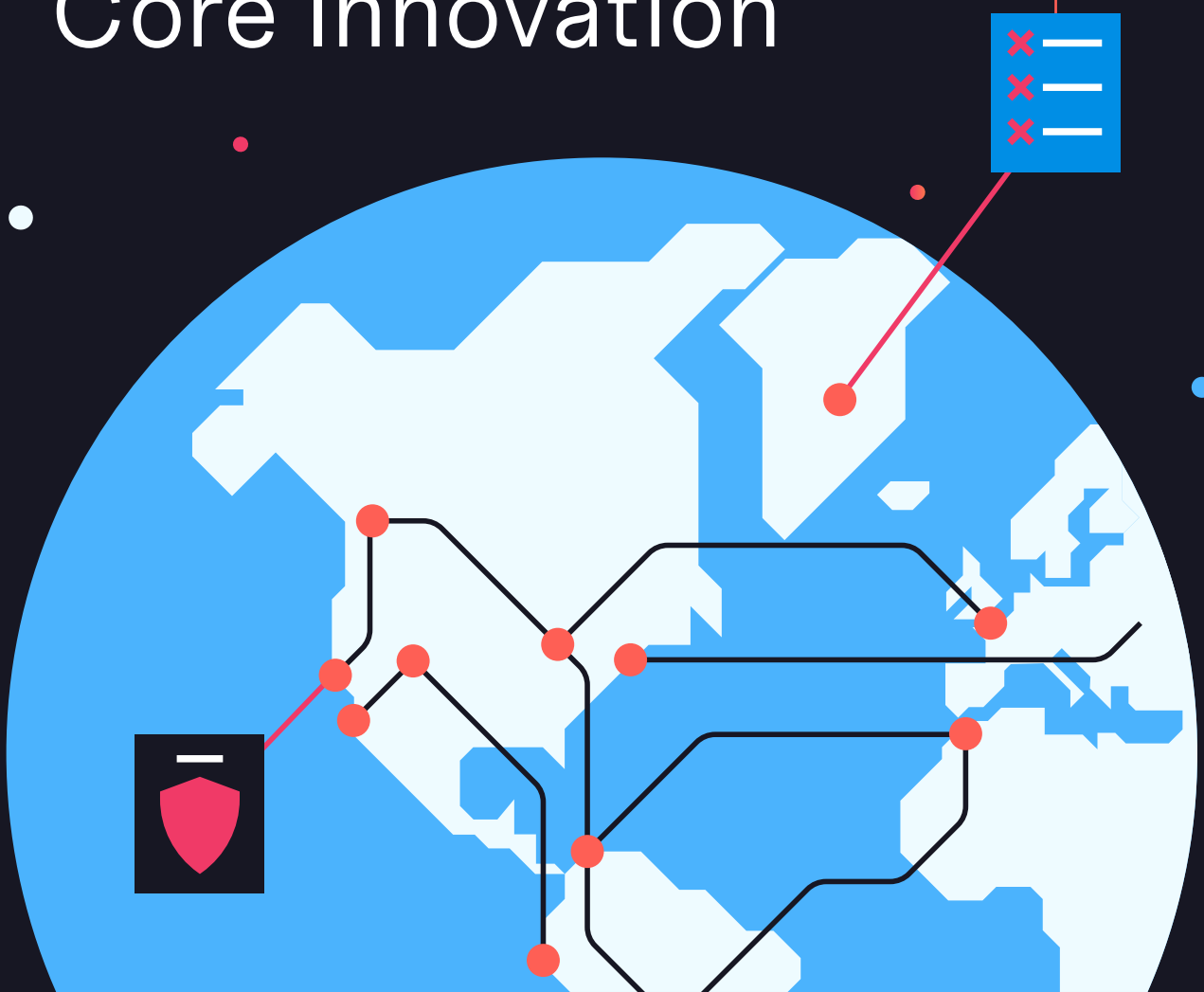
graphiant

Graphiant Delivers A Sovereign AI Network

Using Stateless Core Innovation



Executive Summary

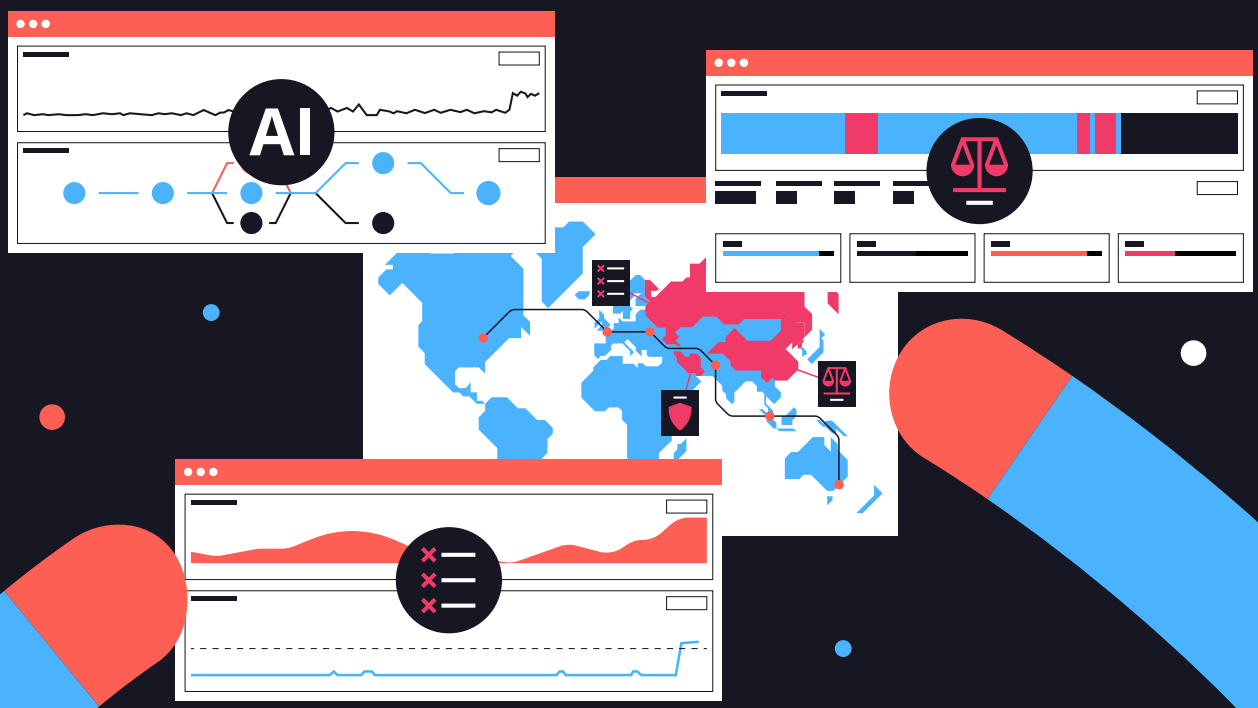
Graphiant software provides critical innovation, differentiation, and market leadership. These technological advancements empower companies to redefine connectivity standards and accelerate impact on global communications.

Graphiant software in the telecommunications sector is for groundbreaking technologies that underpin next-generation AI capabilities. These innovations accelerate telecommunications companies to invest in developing solutions using Graphiant's advanced data transmission techniques. Graphiant's technologies allow providers to differentiate services with exclusive features and capabilities. These network innovations enable providers to deliver compelling offerings that resonate deeply with customers and foster brand loyalty by offering net new premium products with specialized connectivity for cloud computing, edge computing and dynamic workload distribution for AI.

Speed is essential—in network deployment and time to market. Graphiant's software accelerates the innovation cycle by providing differentiated security and scale. This pathway to commercialization allows seizing market share and establishing leadership in emerging technologies and service sectors. Telecommunications continue to shape the digital frontier, and Graphiant's unique innovations drive innovation, protect investments, and secure market dominance.

In this area, Graphiant offers a portfolio of software innovations designed to solve complex networking challenges, with a focus on secure communications and business-to-business data exchange.

This innovation provides a dynamic, efficient, and scalable networking model tailored for AI and data assured systems. Real-time data insights enable continuous optimization, making it ideal for today's high-demand, data-intensive networks.



Graphiant Stateless Network Architecture Key Points:

Virtual Network Overlays

The system creates virtual network overlays that dynamically adjust based on data-driven insights. This results in far more efficient use of network resources and better management of network traffic.

Data-Driven Route Resolution

Routes are resolved based on real-time data resulting from data telemetry of traffic in flight, which creates an adaptive and responsive network. This method contrasts with traditional static route configuration, which is inflexible and less efficient.

Scalability

The system scales efficiently, making it suitable for large and complex network environments especially focused on regulatory data, geo-political environments and large-scale location and segmentation protections. It supports a higher number of virtual network overlays and route configurations than classical methods.

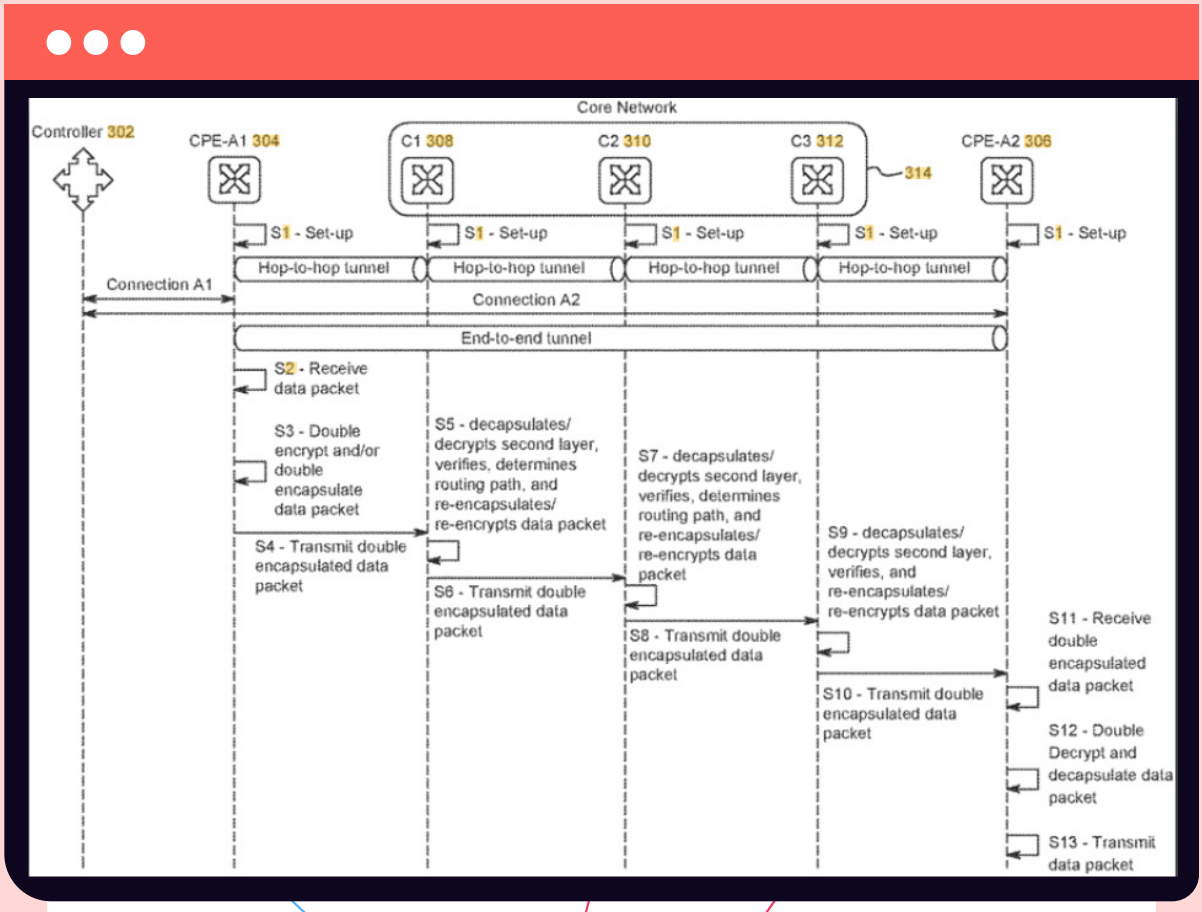
Implementation

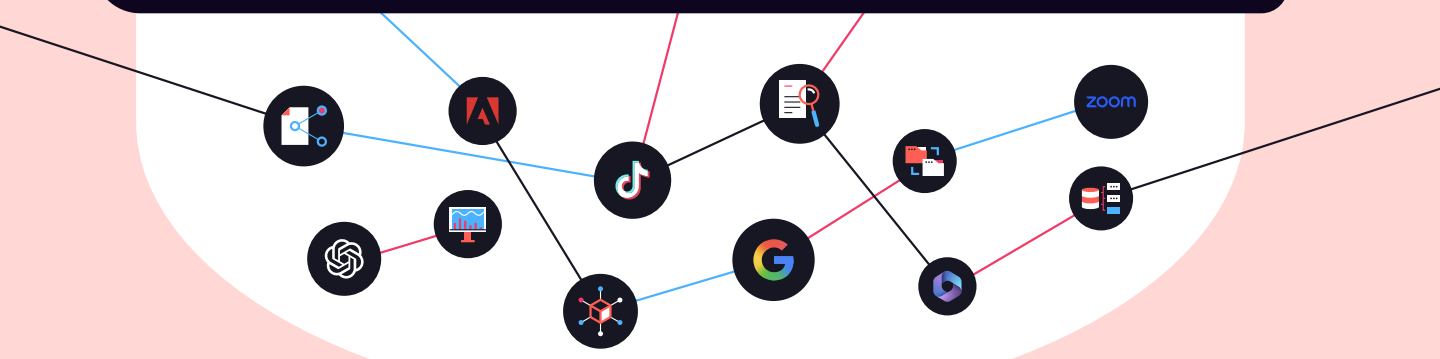
The system is implemented using existing network infrastructure, reducing extensive new hardware or significant changes to the current network setup. It integrates with current networking protocols and technologies to provide a seamless transition.

Security and Reliability

The innovation emphasizes security and reliability in route resolution, ensuring that the network overlays are secure and dependable. The system includes mechanisms for verifying and maintaining secure communications within the network.

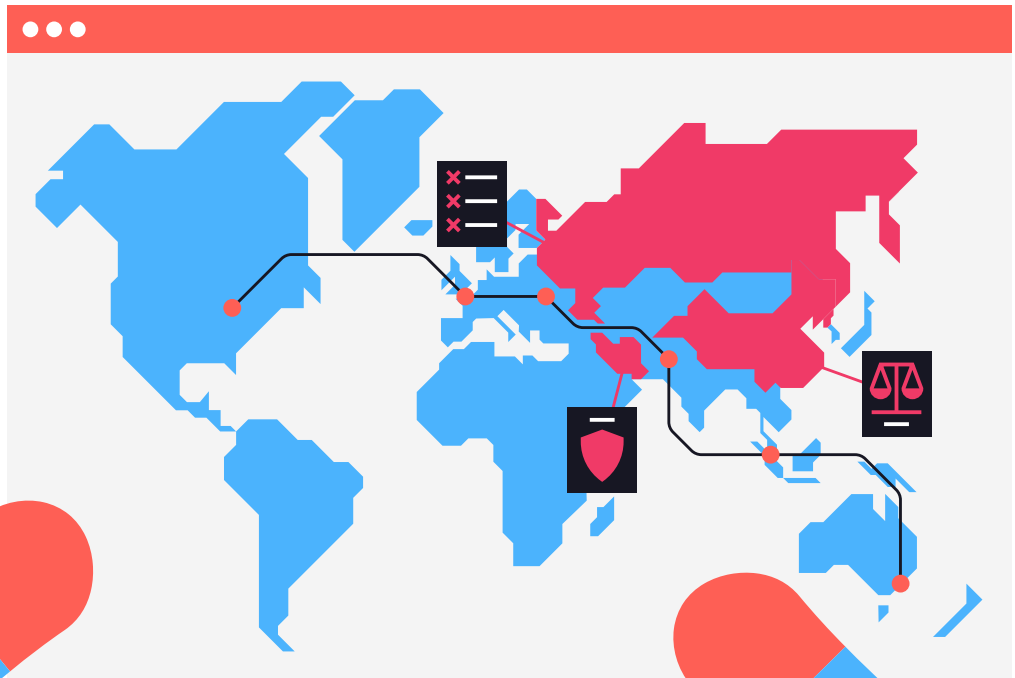
Graphiant Stateless Network Architecture Key Points:





Graphiant Delivers Next Generation Data Exchanges By Creating New Business-To-Business Networks

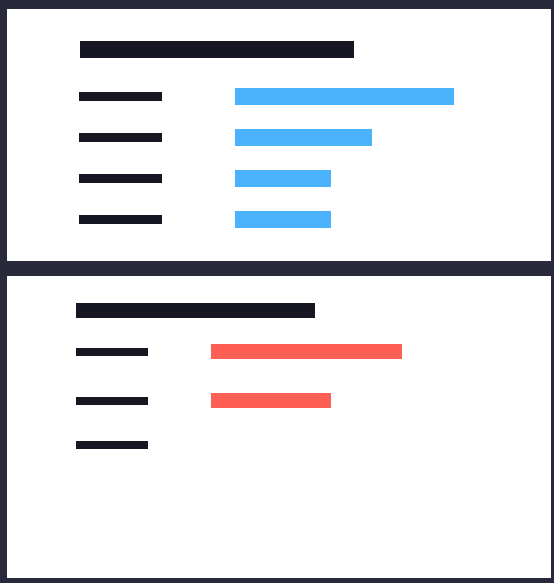
Graphiant creates secure, stateless extranets that facilitate communication between different enterprise networks to accelerate business to business commerce and data exchange between disparate systems. The system allows enterprises to establish connections dynamically without maintaining continuous state information, thus enhancing security and efficiency for instantiation of data transfers across boundaries subject to data governance policies while being ephemeral in nature to use on-demand as a service.



Graphiant Business to Business Data Exchange Key Points:

1. Service Definition and Anchor Points

The consumer receives a service definition from the provider over the control plane. This service definition helps in creating a service anchor point based on the service identifier, which acts as a reference for the stateless service.



2. Network Address Translation (NAT)

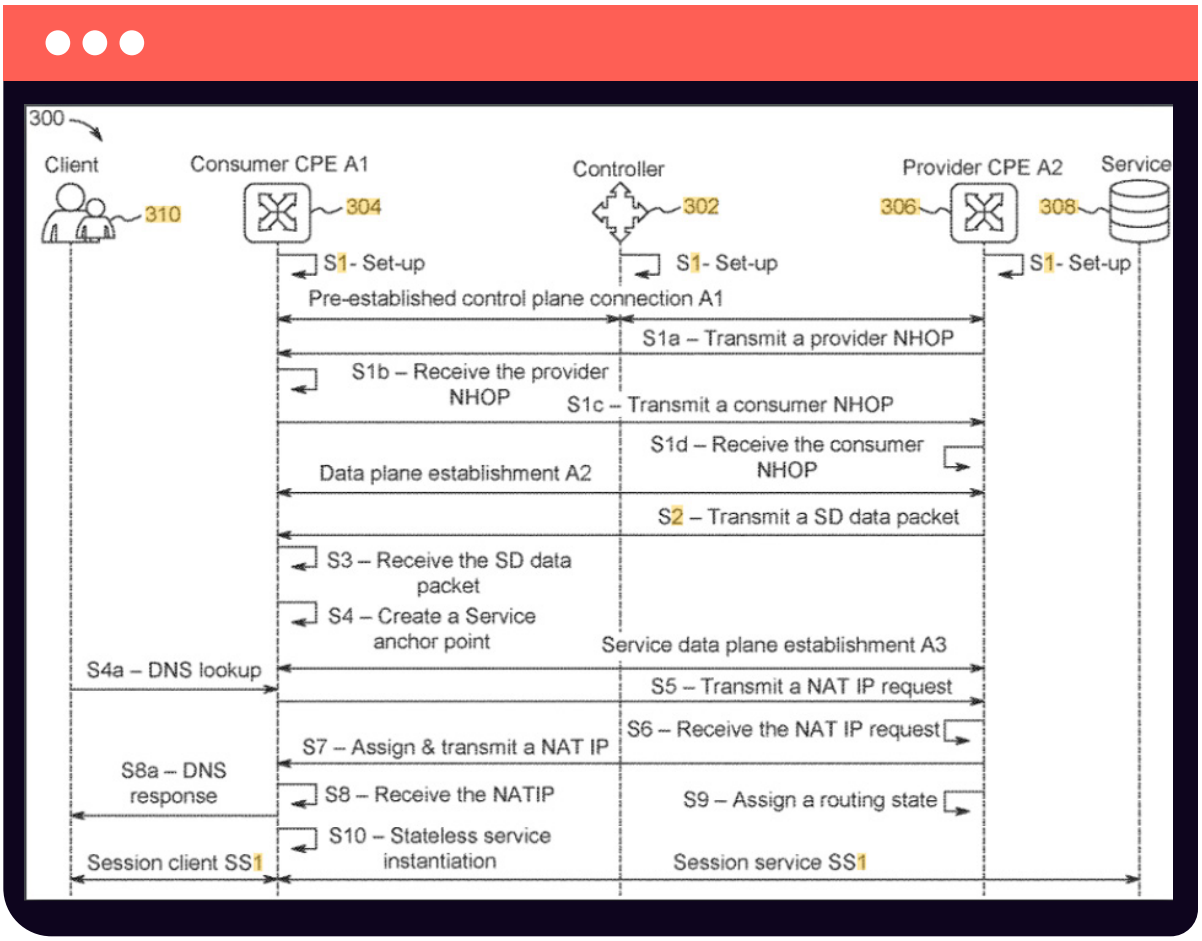
The consumer sends a NAT IP request to the provider, which responds with a NAT IP associated with the service anchor point. This allows for seamless communication without maintaining session state information.

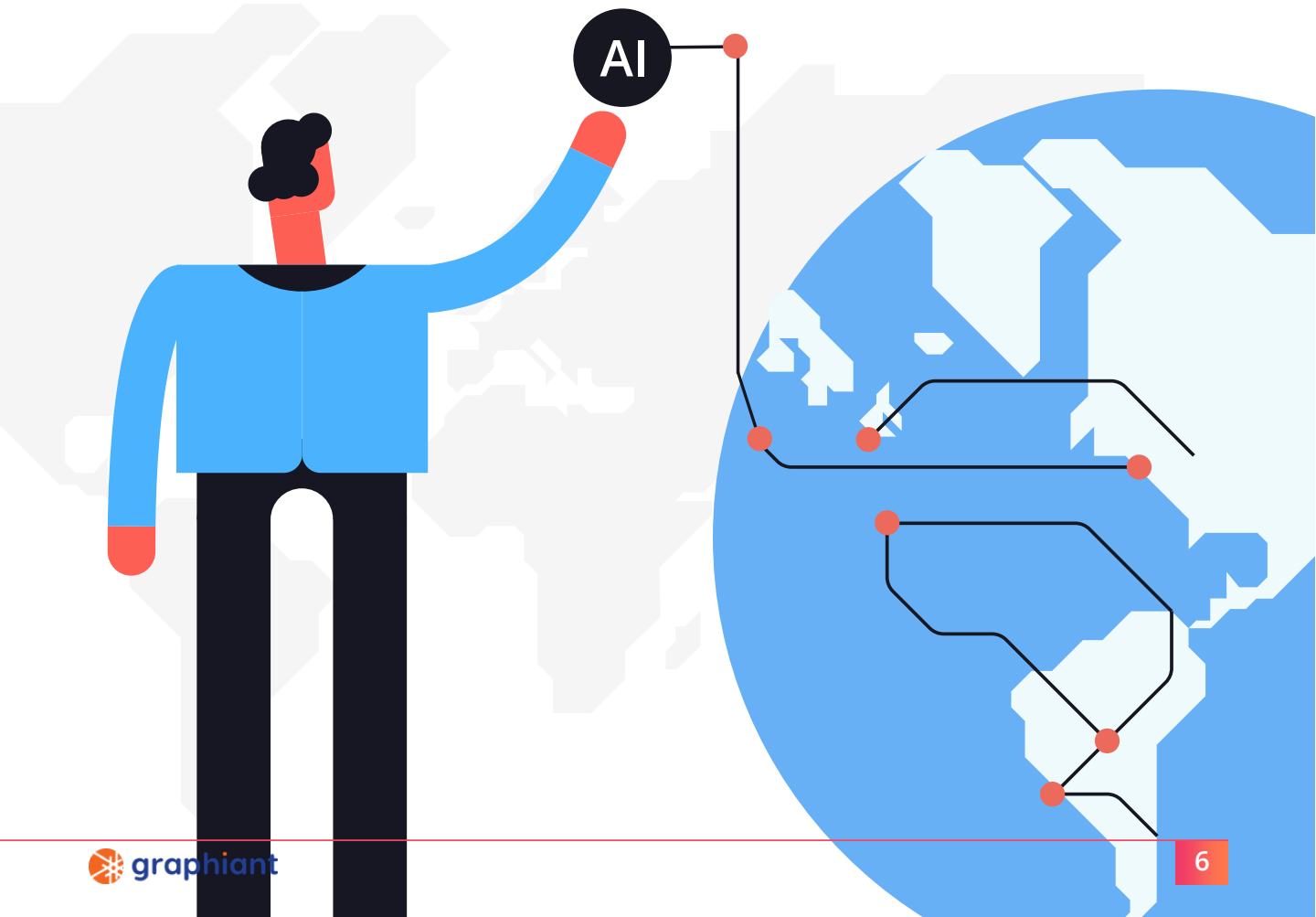
3. Stateless Service Instantiation

The primary innovation is the instantiation of a stateless service on the consumer, meaning that the system does not need to retain state information between sessions, thus enhancing security and scalability.

4. Secure Communication Tunnel

By utilizing NHOP and NAT IP, a secure communication tunnel is established in the data plane, ensuring that data packets are encrypted and securely transmitted between the consumer and provider.


300
Client
310
Consumer CPE A1
304
Controller
302
Provider CPE A2
306
Service
308
S1- Set-up
S1- Set-up
S1- Set-up
Pre-established control plane connection A1
S1a – Transmit a provider NHOP
S1b – Receive the provider NHOP
S1c – Transmit a consumer NHOP
S1d – Receive the consumer NHOP
Data plane establishment A2
S2 – Transmit a SD data packet
S3 – Receive the SD data packet
S4 – Create a Service anchor point
Service data plane establishment A3
S4a – DNS lookup
S5 – Transmit a NAT IP request
S6 – Receive the NAT IP request
S7 – Assign & transmit a NAT IP
S8a – DNS response
S8 – Receive the NATIP
S9 – Assign a routing state
S10 – Stateless service instantiation
Session client SS1
Session service SS1


AI

Graphiant specializes in managing network address translation (NAT) that enhances the efficiency and security of a data exchange environment that eliminates IP conflicts and unsecured exchange of internal addressing information for packet routing. The innovation specifically focuses on return path resolution for data packets in a NAT-enabled network environment.

Graphiant NAT (Network Address Translation) Management Key Points:

01

NAT-ENABLED ROUTER

The method involves a NAT-enabled router that processes incoming and outgoing data packets. When a forward packet is received, the router records security association data and routing identifiers in a routing table.

02

RETURN PATH RESOLUTION

For a return packet, the router uses the pre-recorded security association data to determine the correct return path to the destination. This ensures that the return packet follows the same path as the forward packet, maintaining consistency and security in the data flow.

03

SECURITY ASSOCIATION DATA

This data is crucial for identifying the return path and includes information such as encryption keys and routing identifiers. It is recorded when the forward packet is received, ensuring that the return path is uniquely associated with the forward path.

04

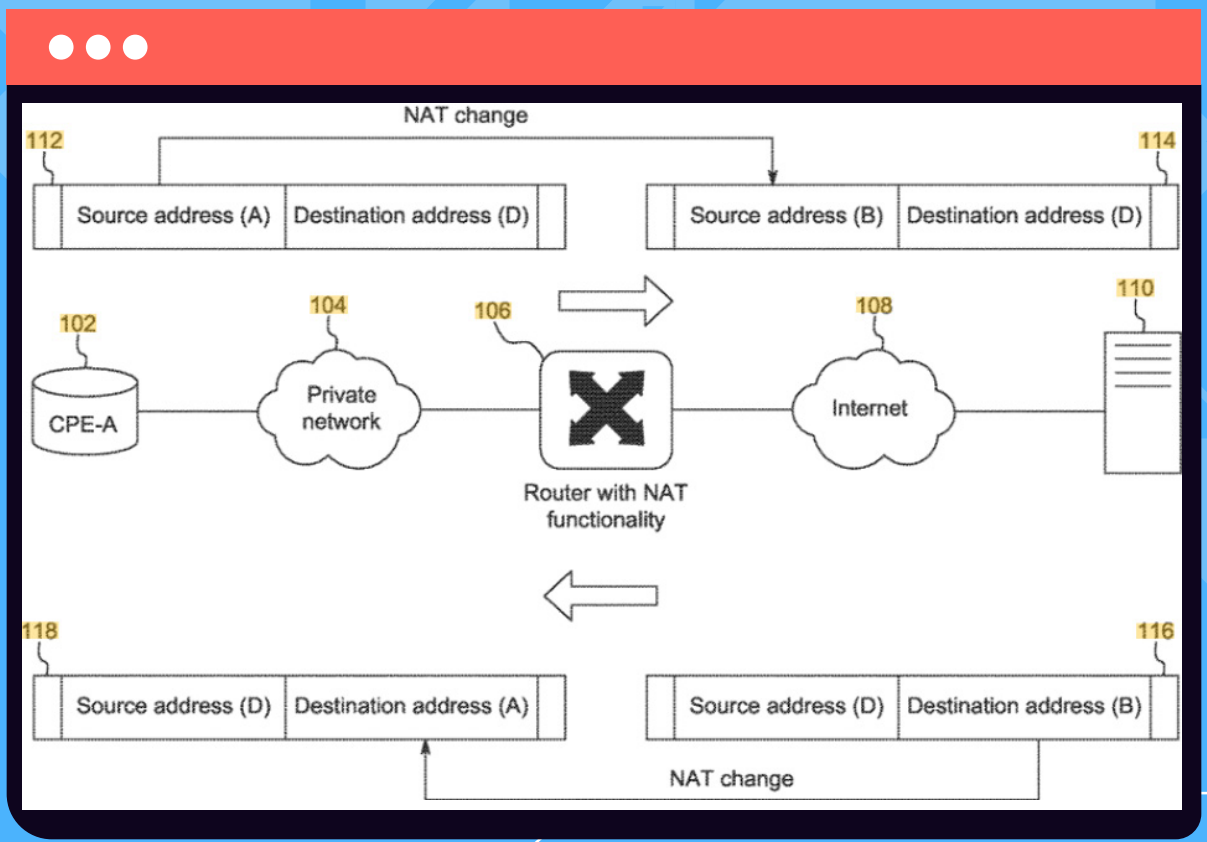
EFFICIENT ROUTING

By resolving the return path based on pre-recorded data, the system reduces the need for additional routing decisions, enhancing the efficiency of the network. This method minimizes latency and ensures that packets are routed accurately and securely.

05

IMPLEMENTATION

The system can be implemented in various network environments, including enterprise networks and service provider networks. It supports secure and efficient communication between different network segments.


NAT change
112
Source address (A)
Destination address (D)
114
Source address (B)
Destination address (D)
102
CPE-A
104
Private network
106
Router with NAT functionality
108
Internet
110
118
Source address (D)
Destination address (A)
116
Source address (D)
Destination address (B)
NAT change

Assured, Agile, Awesome.

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