

OSPF, BGP, and EIGRP Routing



Presented By:

Debodipto Samadder

ID: 21201079

Roll: 79

Section: B2

Department of CSE,

University of Asia Pacific.

Understanding Network Routing:

Efficient Data Delivery:

Routing protocols determine the optimal paths for data to travel between network devices, ensuring reliable and timely communication.

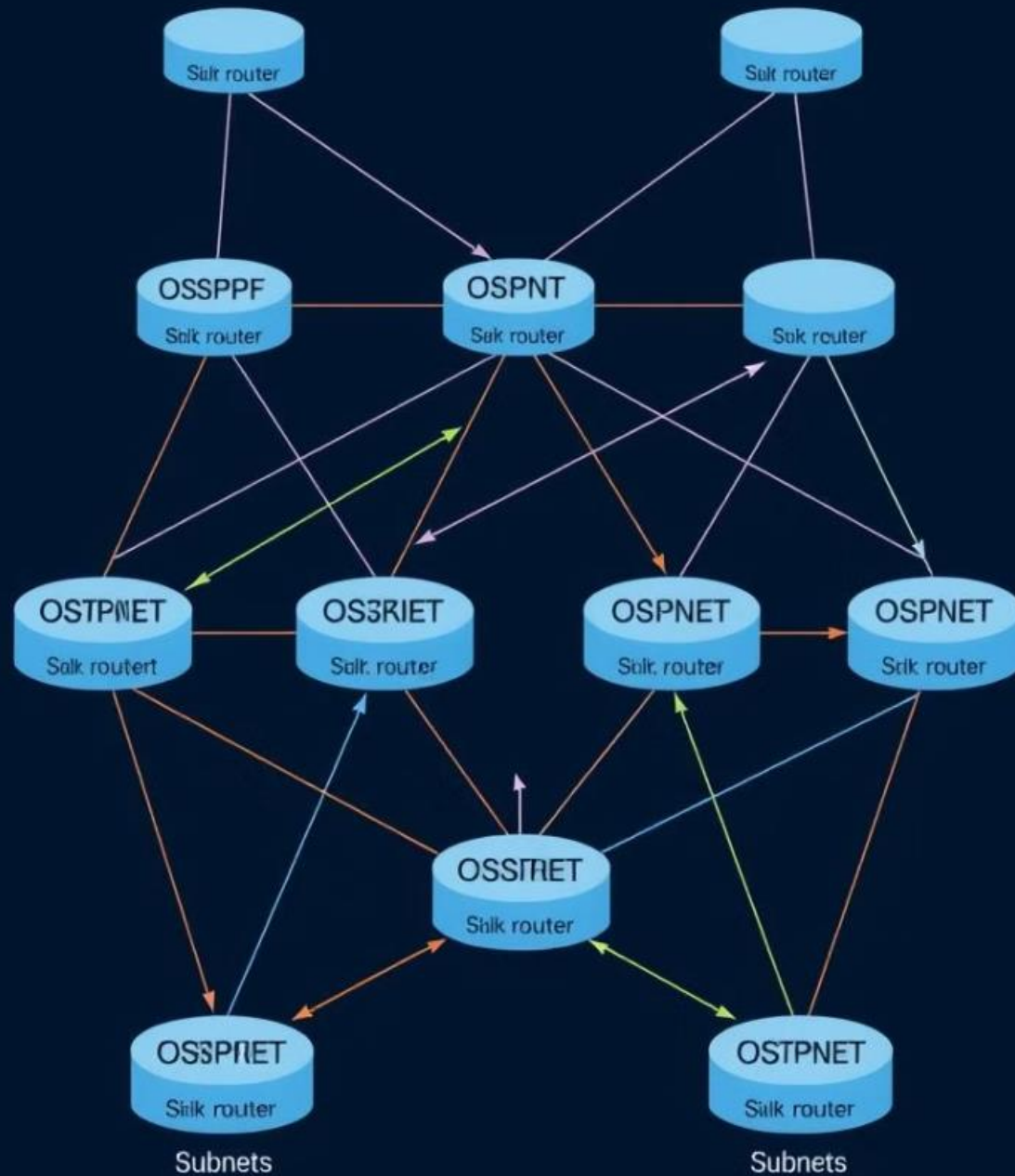
Adaptive Routing:

These protocols can dynamically adjust to changes in network topology, maintaining connectivity even in the face of failures or congestion.

Scalable Design:

Sophisticated routing algorithms allow networks to scale to support growing demands, from small office environments to global infrastructure.

OSPF: Open Shortest Path First



1

Link-State Routing

OSPF is a link-state routing protocol that builds a comprehensive view of the network topology.

2

Hierarchical Design

OSPF organizes networks into logical areas, allowing for more efficient routing and scalability.

3

Shortest Path Calculation

OSPF uses the Dijkstra algorithm to determine the optimal paths between network nodes.

OSPP Protitou features



OSPF Characteristics and Features:

1

Fast Convergence

OSPF quickly adapts to network changes, ensuring rapid route updates and minimal downtime.

2

Load Balancing

OSPF supports equal-cost multi-path (ECMP) routing, allowing for the distribution of traffic across multiple paths.

3

Broad Compatibility

OSPF is a vendor-neutral protocol, making it widely adopted across diverse network environments.

BGP: Border Gateway Protocol:

Exterior Gateway Protocol

BGP is the de facto standard for routing between autonomous systems (AS) on the internet.

Path Vector Routing

BGP uses path attributes to select the best routes, enabling policies and traffic engineering.

Scalable Design

BGP's hierarchical structure and incremental updates allow it to scale to support the global internet.

BGP Functionality and Applications:

Multi-homing

BGP enables organizations to connect to multiple internet service providers for redundancy and load sharing.

Traffic Engineering

BGP's flexible policies allow network administrators to control the flow of internet traffic.

Internet Backbone

BGP is the fundamental protocol that powers the interconnections between internet service providers globally.

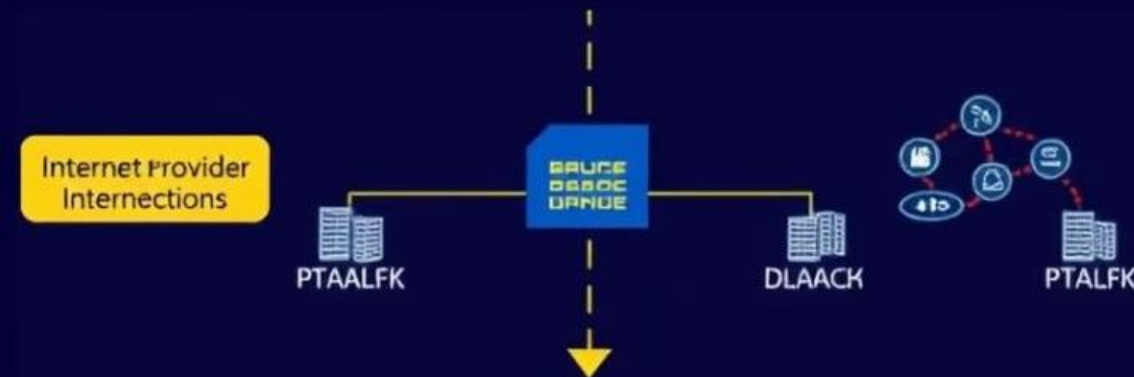
BGP Routing Use cases

1.

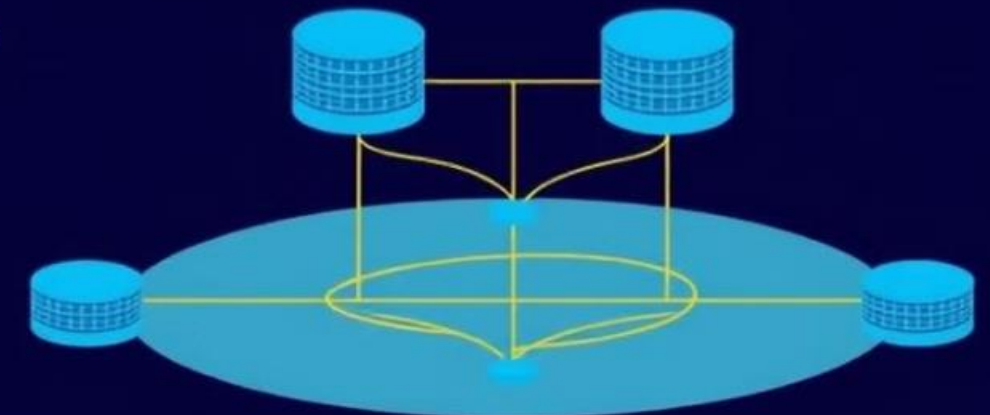
Low multi-homing



- Internet service providers
- Your traffic congestion



3.





EIGRP: Enhanced Interior Gateway Routing Protocol:

1

Hybrid Protocol

EIGRP combines the benefits of both distance-vector and link-state routing protocols.

2

Efficient Updates

EIGRP uses incremental updates and reliable transport, reducing network congestion.

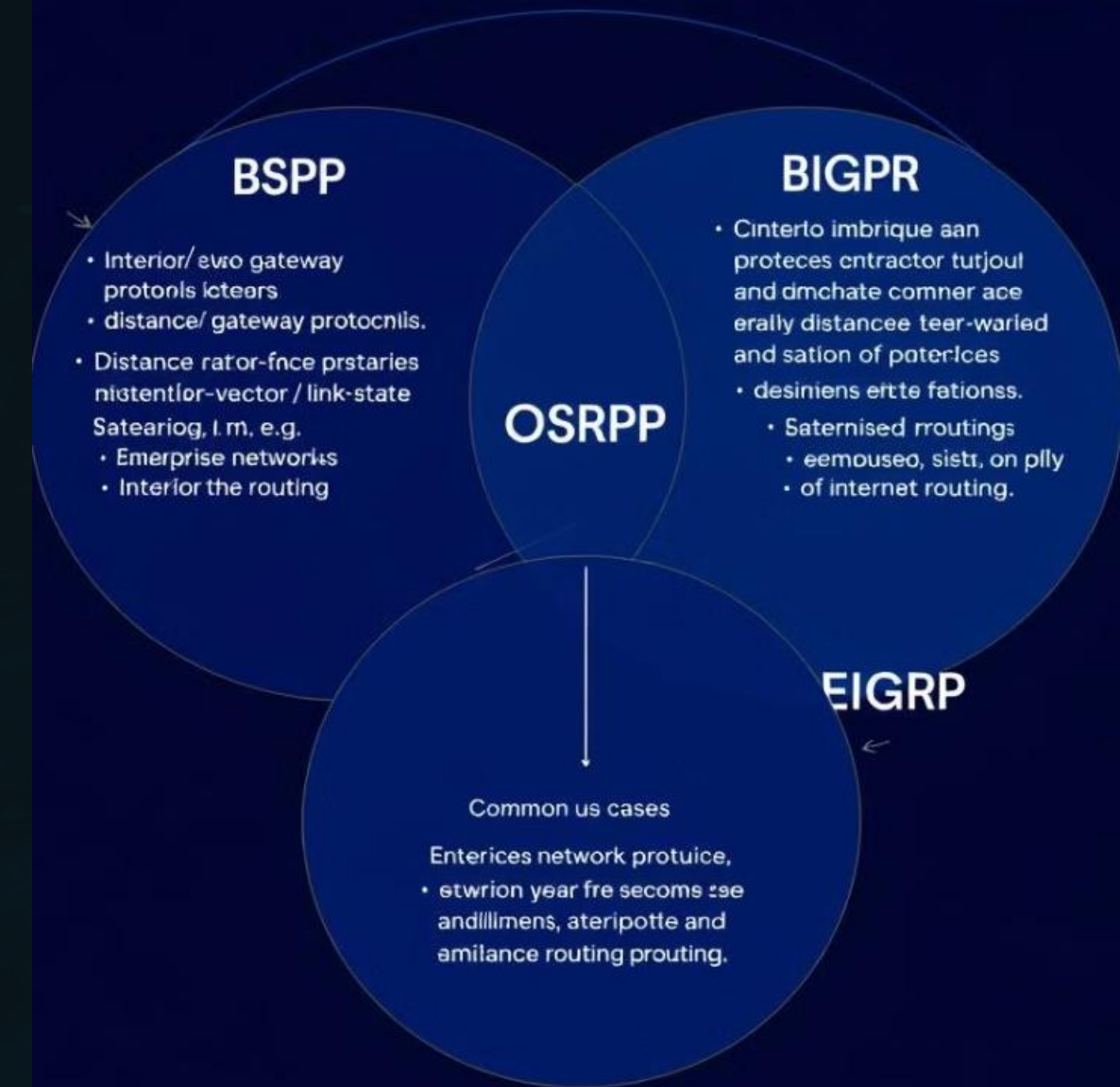
3

Rapid Convergence

EIGRP's advanced algorithms enable fast adaptation to network changes and failures.

Comparing OSPF, BGP, and EIGRP:

Characteristic	OSPF	BGP	EIGRP
Routing Scope	Intra-domain	Inter-domain	Intra-domain
Routing Algorithm	Link-state	Path vector	Hybrid
Convergence Speed	Fast	Slower	Very Fast
Scalability	Hierarchical	Highly Scalable	Scalable



Thank You

