



DISAGGREGATED AND OPEN vBNG & DCSCG NETWORK SOLUTIONS

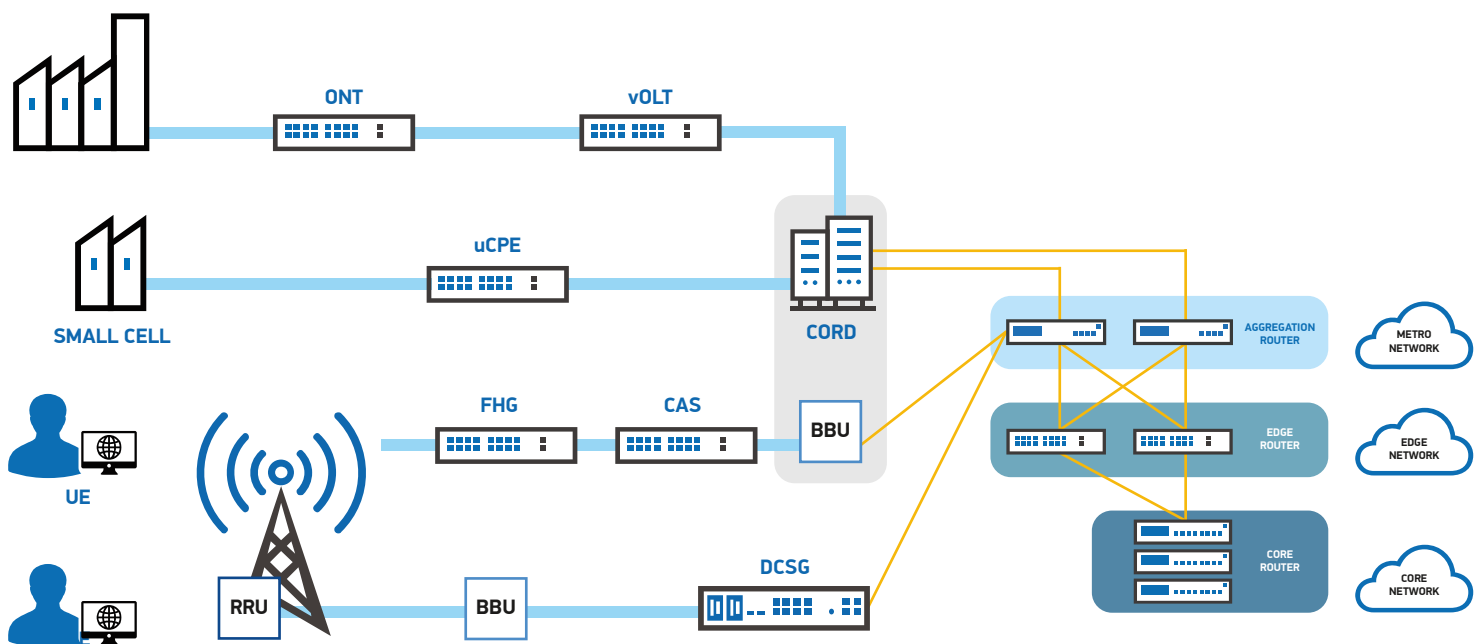
For Communication Service Providers

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Edgecore's Telco Solution Overview

Edgecore offers disaggregated telco solutions ranging from PON to cell site gateways, aggregation routers, to core routers. Our mission at Edgecore is to provide end-to-end disaggregated solutions, which allow hardware and software elements to be separated, permitting customers to select and control which solutions they deploy.

The distributed and disaggregated architecture is scalable, allowing additional leaves and spines to be added as required, improving TCO. Edgecore offers disaggregated solutions that enable open network deployments for broadband access, edge computing, mobile backhaul, and edge switching use cases.



Open and Disaggregated Broadband Network Gateway (BNG)

What is a Broadband Network Gateway?

A Broadband Network Gateway (BNG) enables subscribers to connect to the broadband network. The BNG manages subscribers and aggregates traffic from various subscriber sessions in an access network and routes it to a service provider network.

A BNG manages and delivers various broadband subscriber services, including

- Authentication, Authorization, and Accounting (AAA) of broadband subscribers.
- Establishing subscriber sessions and aggregation of subscriber traffic.
- Applies quality of service and policy functions on subscriber sessions.

The Benefits of Open BNG?

An open and disaggregated BNG provides the following key benefits compared to traditional BNG solutions:

- Enables the introduction of new innovative services from different vendors.
- Open hardware and open software allows greater choice and flexibility in deployment.
No vendor lock-in.
- Lower costs based on COTS components and open software compared to traditional BNG.
- Enables different deployment models, such as centralized, distributed, or standalone BNG, or BNG with a router.

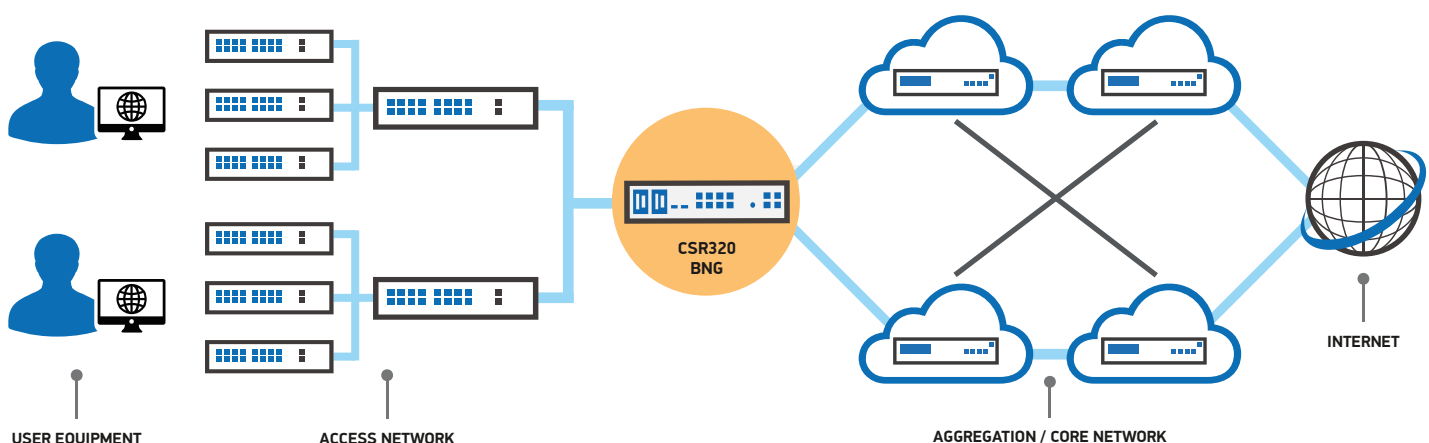
Edgecore's BNG Solution

Edgecore offers open and disaggregated hardware platforms that host BNG software components from different NOS software vendors, forming a BNG solution. The Edgecore BNG solution includes disaggregated BNG software from partners such as RtBrick, Altran, Casa Systems, and Benu Networks.

Edgecore's BNG solution supports different deployment models and scalability configurations.

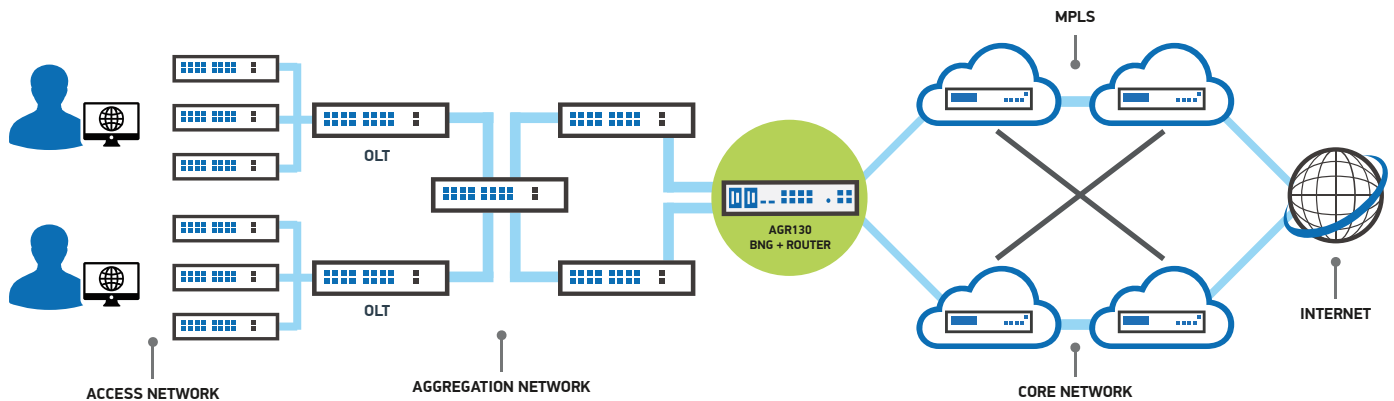
The following open BNG hardware platforms are offered by Edgecore:

- **CSR320 (300G Access Router)**
Suitable for smaller distributed BNG deployments closer to subscribers, and is located between the access network and the aggregation/core network.



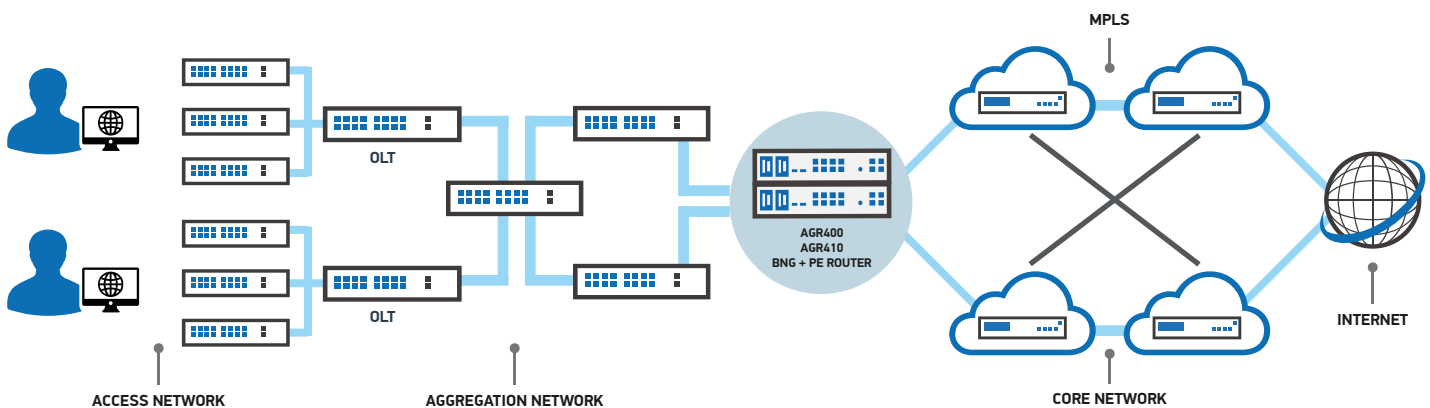
- **AGR130 (800G Aggregation Router)**

Suitable for medium centralized or distributed BNG deployments located between the aggregation and core network. Supports MPLS and PE router functionality along with BNG. Scales to support a higher number of subscribers and traffic throughput.

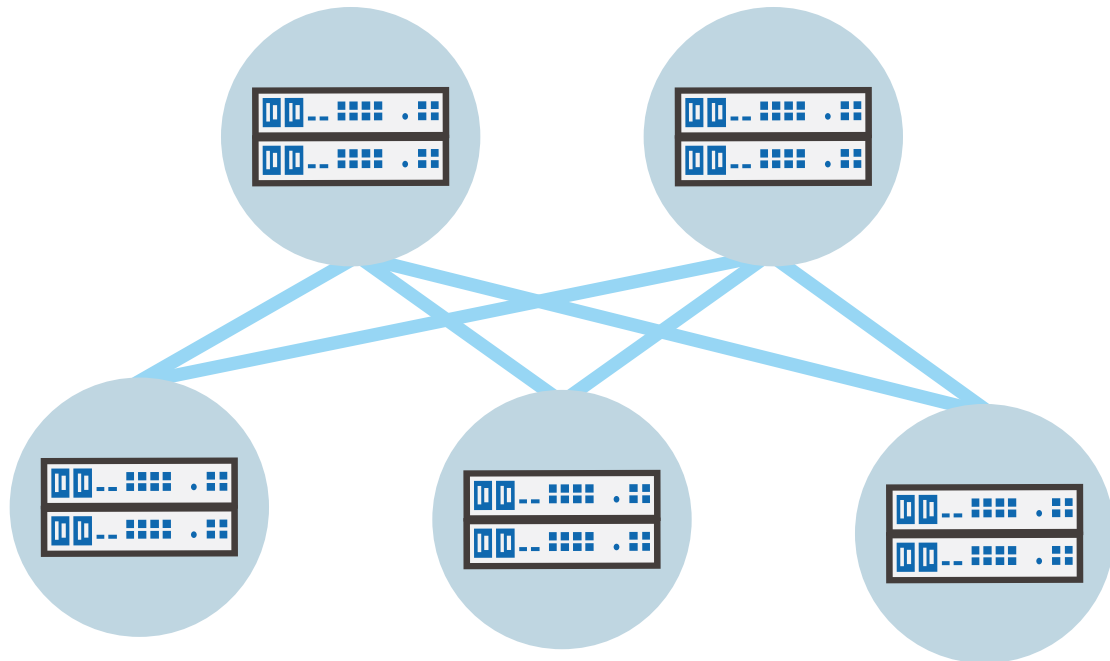


- **AGR400 (2.4Tb Spine Router), AGR410 (2.4Tb Leaf Router)**

Suitable for large centralized or distributed multi-service BNG deployments located between the aggregation and core network, and supports seamless MPLS on both uplink and downlink. Supports encapsulation of subscriber sessions over MPLS pseudowire. Capable of supporting MPLS and PE router along with BNG functionality. Highly scalable to support a large number of subscribers and traffic.

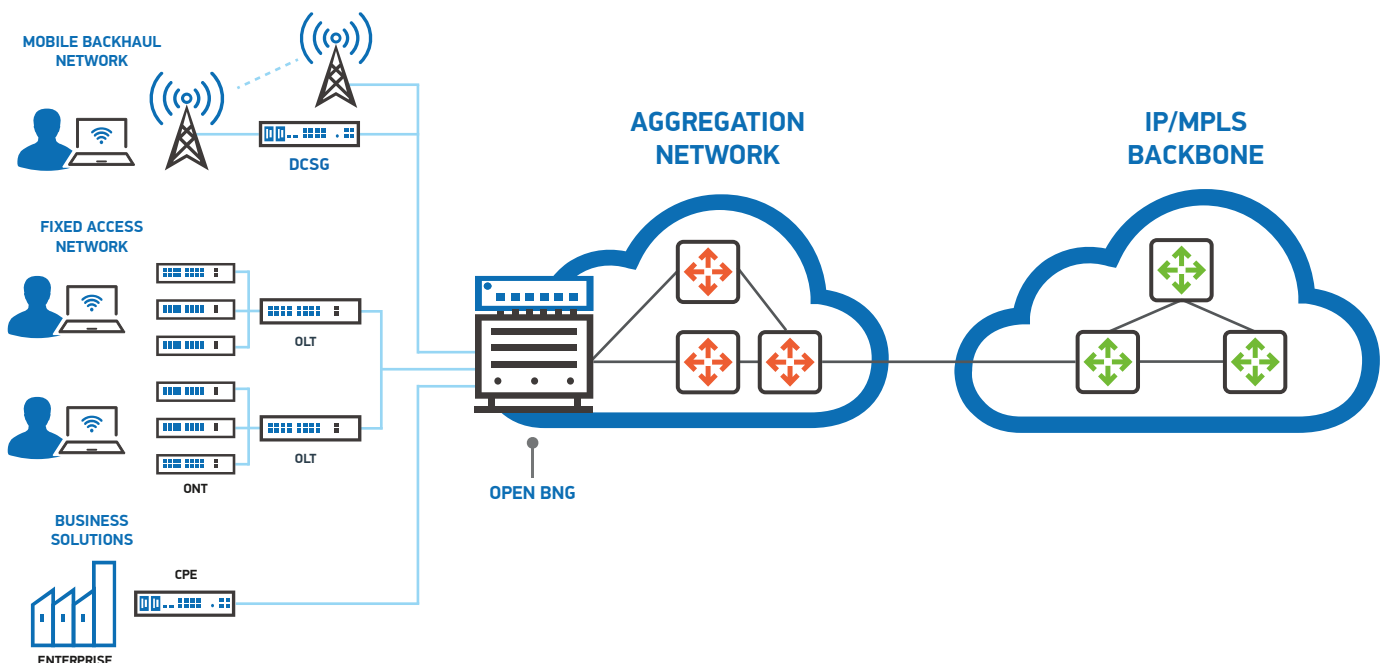


The capacity of a BNG using AGR400 and AGR410 can be significantly scaled by configuring them in a spine-leaf configuration, as shown below.



AGR400 (Spine)
AGR410 (Leaf)
HIGH CAPACITY BNG IN SPINE & LEAF CONFIGURATION

The AGR400 and AGR410 can be deployed in multiple BNG scenarios, with their ability to support BNG, PE-router, and enterprise switch functionalities.



The Industry's Most Comprehensive Disaggregated Cell Site Gateway Portfolio

What is a Disaggregated Cell Site Gateway?

According to the Telecom Infra Project (TIP), Disaggregated Cell Site Gateways (DCSGs) are a family of aggregation routers based on an open and disaggregated architecture for existing 2G/3G/4G and 5G mobile infrastructures. A DCSG is a 1RU fully-featured cell site router with a wide range of Ethernet connectivity options for client and network sides. It supports Layer 2, Layer 3, and MPLS features - with time synchronization protocols such as IEEE-1588 v2 and Synchronous Ethernet.

Why a Disaggregated Cell Site Gateway Solution for 5G Networks?

- **5G Readiness:** Mobile operators are rapidly building new capacity to respond to the introduction of 5G services. The traditional cell site gateway cannot meet the exponential growth of backhaul traffic.
- **Open and Disaggregated Architecture:** With an open hardware platform architecture, operators now can obtain greater control over the development of enhanced network services, and enjoy the flexibility of working with best-in-class suppliers.
- **Cost-Effective Solution:** Due to the Millimeter Wave technology used by 5G, hundreds of thousands of small cells need to be installed. Operators need a cost-effective solution to reduce both CAPEX and OPEX without compromising features, performance, and quality.

Why choose Edgecore DCSGs?

Edgecore pioneered open network DCSGs and was the first vendor to contribute open platforms to the Open Compute Project (OCP) and the Telecom Infra Project (TIP). Edgecore's ruggedized high-performance, deep-packet buffer family of DCSGs are suitable for access and aggregation applications in remote cabinet and facility-based deployments.

The compact and temperature-hardened DCSG family supports ultra-precise IEEE 1588 and Synchronous Ethernet, flexible combinations of 1G, 10G, 25G, 100G, and 400G network interfaces, and choice of airflow. Additionally, 100G unit stacking can be supported, an industry first for open networking DCSGs. Stacking provides advanced redundancy and a unified control, forwarding, and management plane.

Edgecore's DCSG family supports a vibrant ecosystem of Network Operating System (NOS) partners, offering the ultimate choice for network operators.

The Edgecore CSR Series

The Edgecore CSR series of DCSGs are deployed at cell sites or as a first aggregation point for multiple cell sites. This series builds in network timing and synchronization functions that makes it an ideal solution for current LTE and emerging 5G mobile backhaul networks.

The CSR series supports a wide operational temperature range from -40°C to 65°C and supports redundant and hot-swappable power and fan modules that provide high availability and hassle-free maintenance.

Edgecore's full, proven, CSR portfolio with multiple performance, CPU, thermal, and timing/synchronization options is ideal for high-volume cell site and aggregation routing applications. CSR brings the benefits of reducing operator costs, increasing choice, and quickening the pace of innovation.

