

Amdocs Open Ecosystem Accelerator for Disaggregated Cell Site Gateway



5G promises to boost data speeds, increase bandwidth and network capacity, while also enabling new applications based on ultra-low latency/less lag and high availability, as well as offering massive Internet of Things (IoT) scale. This network evolution is driving transport network upgrades and paving the path towards disaggregation. Yet the fundamental shift towards open, multi-vendor networks needs to overcome current transport network challenges.

Current cell site gateways limitations

Mobile base stations typically connect to a cell site gateway using RJ45 or SFP Gigabit Ethernet interfaces. However, to accommodate the increased capacity required in modern 4G and 5G networks, base stations will also use 10 Gigabit Ethernet SFP+ interfaces. This makes most currently deployed cell site routers unsuitable to carry 5G base station traffic.

Traditional routers provide a monolithic package of hardware and software from a single vendor. While in the past, this model has provided benefits like guaranteed hardware/software interoperability and a single point of contact for purchasing, service and support, today it creates several challenges for

network operators. The significant vendor lock-in of proprietary, closed routers and the small number of router vendors result in limited pricing pressure and high costs. Meanwhile, innovation is dependent on the capabilities of the single selected vendor rather than an ecosystem, and network operators are prevented from leveraging different rates of hardware and software innovation independently or selecting best-of-breed hardware and software independently.

To accommodate ever-growing network infrastructure bandwidth requirements with solutions that are futureproof, while also reducing capex and opex and enabling automation & agility to introduce new services, the transport network needs to be upgraded and provisioned with disaggregation.

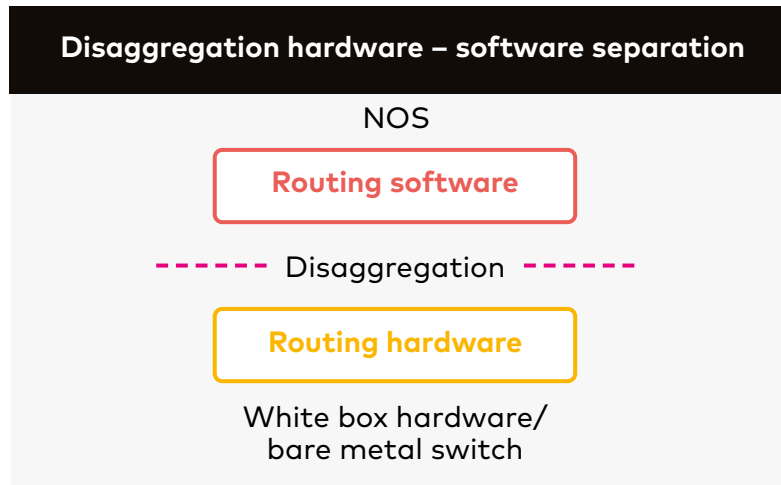
As connectivity, automation and artificial intelligence accelerate ever-increasing user expectations for instant access to data, service providers need agile networks to evolve, scale and launch new innovative services. To compete effectively, service providers must therefore adopt a disaggregated cell site gateway strategy by addressing the current transport network challenges.

Figure 1: Network challenges



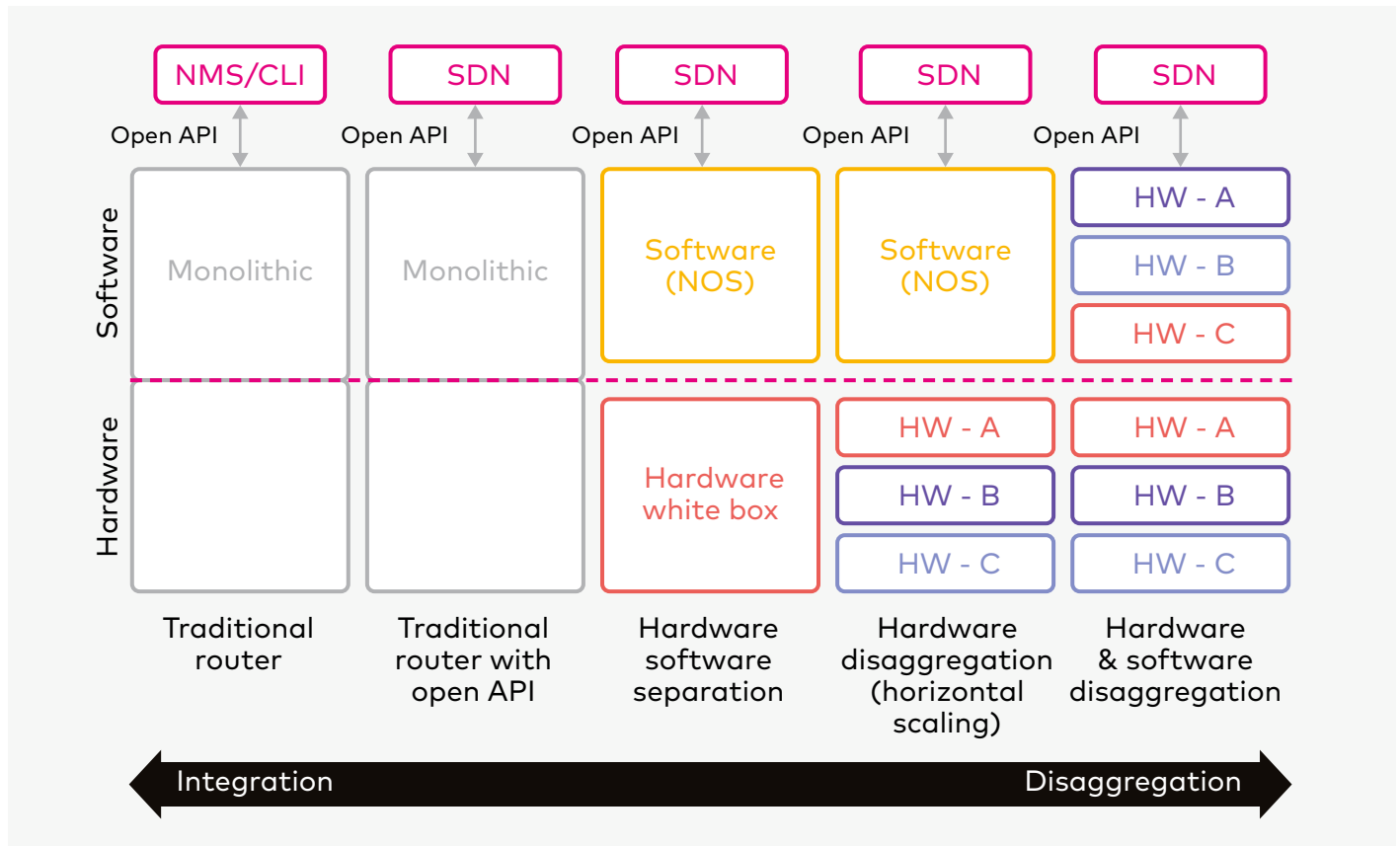
What is a Disaggregated Cell Site Gateway (DCSG)?

At its most basic level, disaggregated routing separates router software and hardware. The hardware becomes a white box based on merchant silicon, also known as a bare metal switch. Meanwhile, the software becomes a network operating system (NOS). While the hardware and NOS can come from different vendors, it is not possible to just take any white box and load any NOS.



Disaggregation is not binary but rather exists on a spectrum. A first step from traditional routers with command line interface (CLI)-based configuration and/ or network management system (NMS)-based management is the transition to software-defined networking (SDN) and open application programming interfaces (APIs) based on NETCONF. This lowers operational expenditure (opex), increases programmability and provides the option to disaggregate some control plane functionality from the network element to the SDN controller/orchestrator. Beyond the basic separation of software and hardware, the different hardware elements of a chassis-based router can also be disaggregated to enable horizontal scaling. Horizontal scaling means scaling by adding more "machines," or in this case, white boxes, as opposed to vertical scaling, thereby upgrading the power of existing machines.

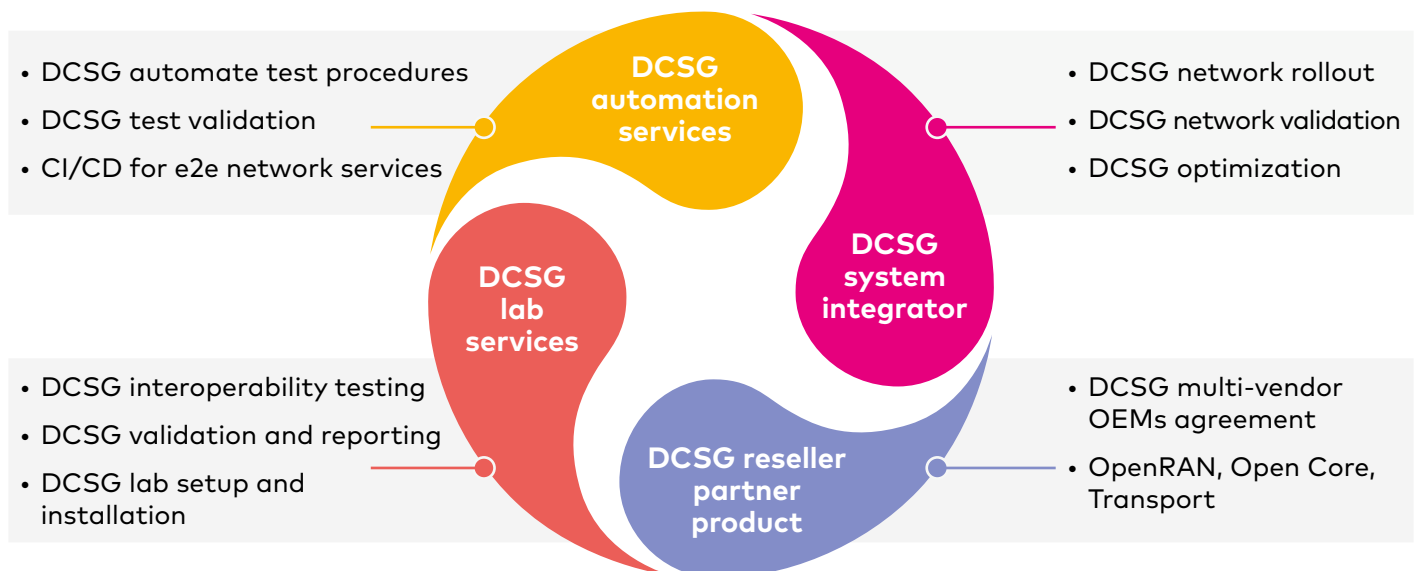
Router disaggregation spectrum



Amdocs Open Ecosystem Accelerator for Disaggregated Cell Site Gateway (DCSG)

Amdocs Open Ecosystem Accelerator for DCSG provides a comprehensive set of open network solution and services that minimizes risk during the transition. In addition, we have carefully evaluated product technology, hardware and software vendors from the Telcom Infra Project (TIP) community, and established reseller agreements with various members

Amdocs DCSG offering



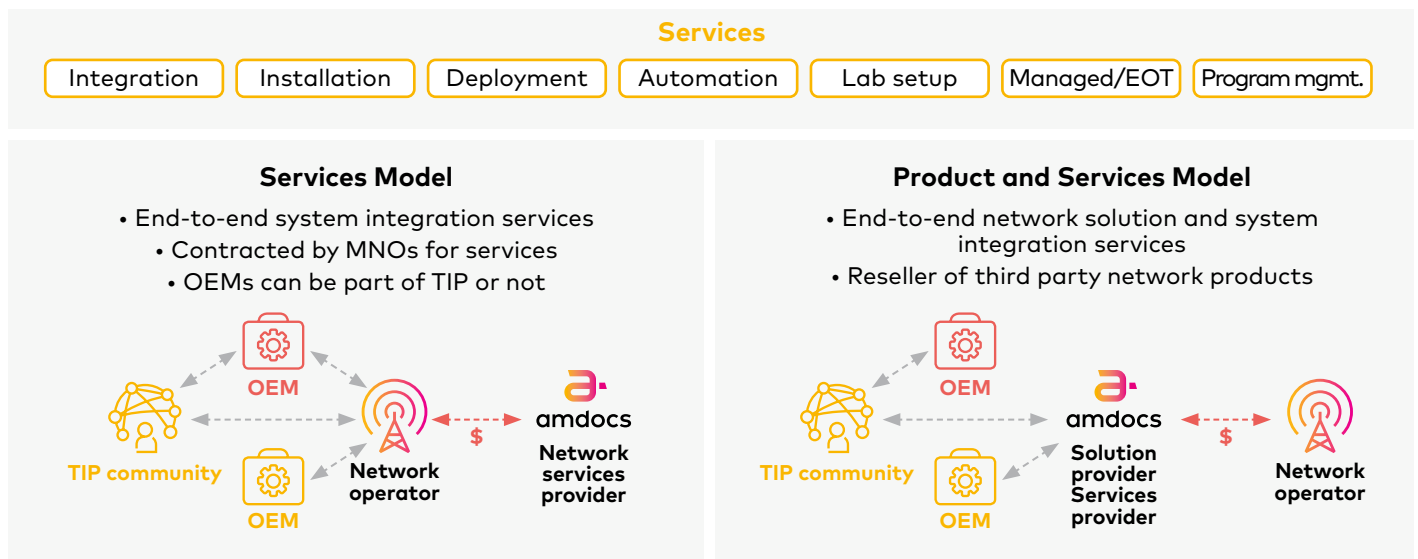
Amdocs Open Ecosystem Accelerator for DCSG includes:

- DCSG System Integrator services for network operators who are in the process of deploying DCSG hardware and software in their networks.
- DCSG reseller partner products to ease the process of buying, deploying and supporting the new technology, hardware and software for the network operators.
- DCSG lab services to test various DCSG hardware and software combinations for specific use cases in their labs.

- DCSG automation services to carry out automated test/use cases on their DCSG hardware and software OEM combinations.

Two engagement model options are available – Services model and Product & Services model. The Product and Services model enables quick time to market using an end-to-end solution and services, while the Services model includes installation, integration, commissioning, testing, verification and managed (EOT) services designed for open networks.

Amdocs DCSG engagement models



Leveraging the ecosystem

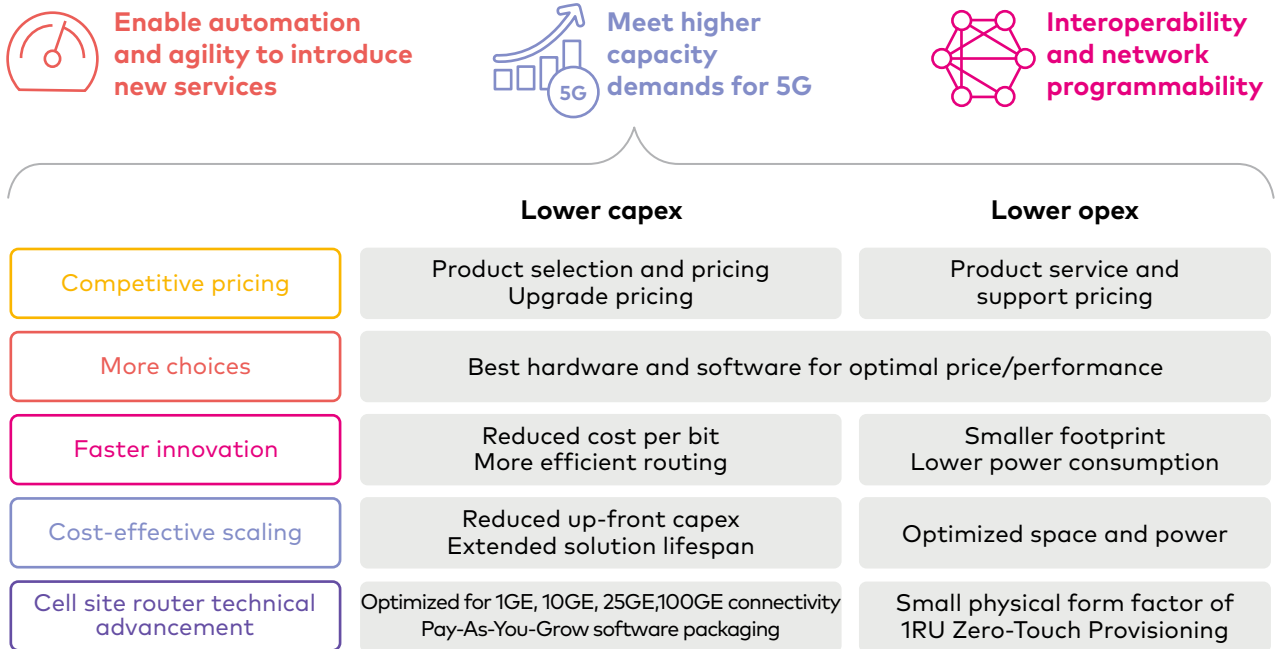
As a certified TIP system integrator, Amdocs leverages a massive ecosystem of solution vendors to accelerate and transform the way open telecom infrastructure is created, implemented and deployed.

A TIP member since 2016, Amdocs leads several workgroups in telecom infra projects, such as Open Cellular, Disaggregated Cell Site Gateway and Test Automation.



Benefits

- Reduced vendor lock-in:** By lowering barriers to entry for both hardware and software vendors, disaggregation has the potential to significantly increase price competition. Reduced vendor lock-in is also a key enabler for greater choice and faster innovation.
- More choice:** Disaggregated routing provides an unprecedented level of choice with the flexibility to mix and match white boxes and NOSs to best match the requirements of a particular operator/ use case.
- Faster innovation:** The disaggregated router approach enables network operators to leverage innovation capabilities of the entire ecosystem, selecting best-in-class vendors and upgrading based on the innovation cycle of each component of the disaggregated solution.
- Cost effective and flexible scaling:** Disaggregated routing addresses the capacity requirements of different parts of the network, all leveraging a very limited set of individual white boxes and a common NOS.





Network Equipment

We integrate and partner with innovative and disruptive companies with a mission to 'open the network'



Network Processes

We design, build, test, operate and optimize some of the world's largest and most complex networks



Network Software

We develop, invest in and deliver the industry's most open and advanced network software – from engineering tools to autonomous operations

Why Amdocs

In Amdocs' capacity as a member and contributor to the TIP, we support the industry's first DCSG production environments, helping transform physical networks into agile ones.

Amdocs has a proven track record supporting projects during all phases of network rollout and acceptance – including, but not limited to RAN, transport and core design, provisioning and troubleshooting services, pre/post-launch optimization, managed services, as well as support services for multivendor, multi-technology heterogeneous networks.

As a preferred partner for service providers across the globe, our vast network rollout and acceptance services provide scalable, fast and reliable network rollouts, leveraging the combination of a software-led approach, together with automation and resource flexibility – all of which supports process acceleration.

For more information, contact [Amdocs Network Marketing](#).