# Control Plane/User Plane Separation (CUPS)

Benefits

- **5G readiness** – Cisco® Control Plane/User Separation Plan (CUPS) for Cisco Ultra Services Platform (USP) prepares the mobile data network for 5G core network capabilities in the future. The 5G core network will inherit the CUPS capability as defined in 3GPP Release 14. Also, Cisco's design of CUPS for USP is designed to be aligned with 5G core network architecture at inception. Cisco CUPS supports SAE-GW-C and SAE-GW-U, which aligns with the 5G core network Session Management Function (SMF) and User-Plane Function (UPF) network functions.

- **Gi-LAN integration** - The Cisco USP CUPS-based Evolved Packet Core (EPC) gateways support inline services for different SPI and DPI capabilities. One of advantages with Cisco CUPS for USP is the ability to integrate the USP gateway with Cisco Gi-LAN or Cisco Ultra Services Framework (USF) so that Gi-LAN services can be done externally as well using either Cisco or third-party applications (firewall, video optimization, DPI, Network Address Translation [NAT], and others). With the Cisco USF, service-chaining is implemented via Software-Defined Networking (SDN) technology to provide interconnectivity between virtualized Service Functions (SFs) in a more scalable, flexible, efficient, and resilient manner.

- **Ability to mix different types of user planes** - The CUPS for USP solution supports a mix of different types of user planes. With this flexibility, operators can now implement specialized user planes for specialized applications without having to incur the expense of providing an associated control plane for a specific application.

- **CapEx and OpEx savings** - Cisco CUPS introduces the capability to independently scale the control plane and user plane in an efficient and dynamic manner. As the demands on mobile network evolve and change, operators can react swiftly without having to incur additional CapEx and OpEx. Further, this rapid network adjustment of resources allows operators to deliver the highest level of customer experience.

Get started

Monetize and optimize your networks in the face of ever-increasing demands. For more information about Cisco CUPS for USP, contact your local account representative.
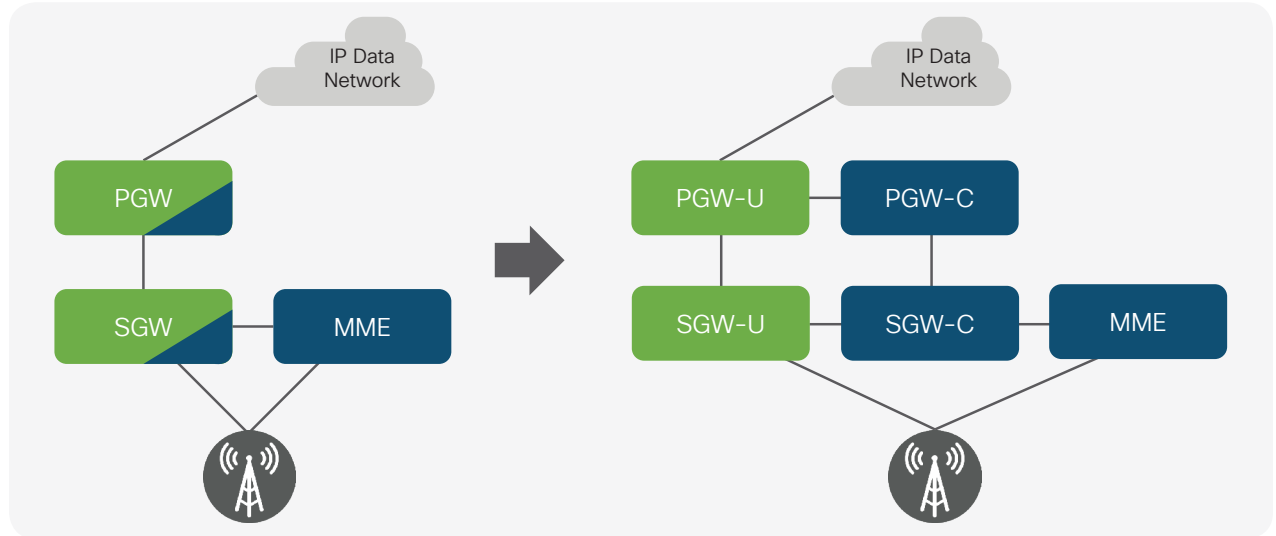
Cisco is the market leader in virtualized mobile packet core

Cisco understands the role dynamic resource allocation plays in carriers' ability to monetize their networks and deliver a winning customer experience. To compete in this rapidly changing environment, mobile operators need a solution that provides the dynamic allocation of network resources in an efficient and timely manner. The Cisco CUPS for USP solution delivers this capability.

What CUPS does

The Cisco CUPS solution for Ultra Services Platform (USP) is a new capability that allows mobile operators to separate the control plane and user plane of their Evolved Packet Core (EPC) network. This capability delivers the ability to scale each network plane independent of one another, promoting a more cost-effective approach to core mobile architecture and future-proofing the network for 5G. With CUPS for USP, the existing SGW, PGW, and SAEGW are logically separated into SGW-C, PGW-C, and SAE-GW-C for the control plane and SGW-U, PGW-U, and SAE-GWU for the user plane. Key features include:

- Independent scalability of the control and user planes
- Ability to specialize the user plane for key applications
- 5G readiness

- Lower backhaul costs
- Traffic offload
- New use-case enablement
- Multi-level CUPS offerings