

Hybrid Control Plane/User Plane Separation (CUPS)

Benefits

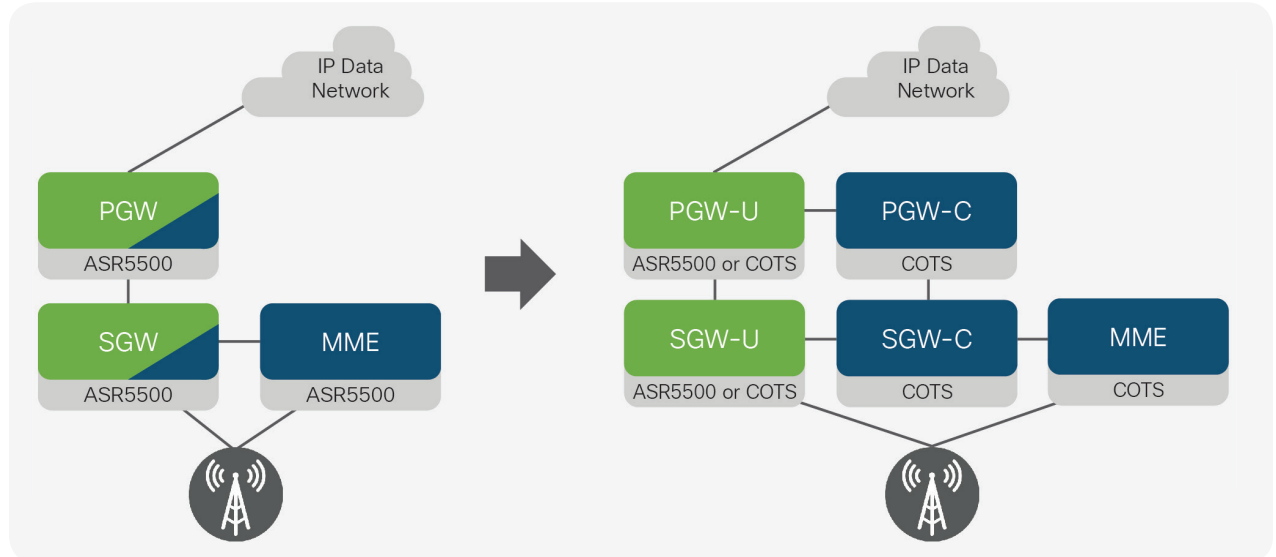
- **Investment protection** – Cisco® Hybrid Control Plane/User Plane Separation (Hybrid CUPS) for Cisco Ultra Services Platform (USP) allows operators that have existing Cisco ASR 5500 Series deployments to repurpose your systems to function as user-plane elements. This capability helps operators to leverage your existing investment as part of a CUPS implementation as well as for a future 5G core network.
- **5G readiness** – Cisco CUPS for 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 Hybrid CUPS supports SAE-GW-C and SAE-GW-U, which aligns with 5G core network Session Management Function and User-Plane Function (UPF) network function.
- **Gi-LAN integration** – The Cisco USP Hybrid CUPS-based EPC gateways support inline services for different SPI and DPI capabilities. One of the advantages with Cisco Hybrid 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 as 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** – Cisco Hybrid CUPS for USP is capable of supporting 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 Hybrid CUPS introduces the capability to independently scale the control plane and user plane in an efficient and dynamic manner. As demands on the 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.

Key features include:

- Independent scalability of control and user plane
- Investment protection of the ASR 5500
- Ability to specialize the user plane for key applications
- 5G readiness
- Lower backhaul costs
- Traffic offload
- New use-case enablement
- Multi-level CUPS offerings

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 Hybrid CUPS for USP solution delivers this capability with the added benefit of saving on capital equipment costs by allowing operators to repurpose the ASR 5500 as a user-plane element.

What Hybrid CUPS does

Cisco's Hybrid 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. What makes it a hybrid solution? CUPS allows Cisco customers to repurpose their existing ASR 5500 gateways as user-plane elements in the new CUPS architecture, while the control plane remains a virtual node element, making a hybrid solution together. Protecting their existing network infrastructure investment.

The overall CUPS capability allows for the scale of 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 SAE GW are logically separated into SGW-C, PGW-C, and SAE-GW-C for the control plane and SGW-U, PGW-U, and SAE-GW-U for the user plane.