

Executive Summary

The rise of the distributed workforce and the universal adoption of cloud-based applications have created stress on the branch networks of many enterprises (including government and education) that operate large private Wide Area Networks (WANs). The requirement for dynamic, low cost, reliable, and secure links to the cloud means that WAN connectivity between branches and central data centers—traditionally using MPLS—no longer meets customer expectations. To deliver flexible access to the cloud, enterprises must utilize hybrid cloud networks, leveraging a mix of broadband Internet connectivity with their traditional WANs.

Software-Defined WAN (SD-WAN) offers compelling advantages—including improved business agility, increased application performance, and lower cost of bandwidth—for enterprises with critical branch operations. It also provides opportunities for Communications Service Providers (CSPs) to meet their customers' demands with a compelling new service that offers an improved customer experience, complements their existing Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) initiatives, and accelerates their ongoing shift to virtualized services.

Many CSPs have begun implementing managed SD-WAN services as point solutions to meet customer requirements. Over time, they must architect comprehensive WAN solutions that combine SD-WAN with other network resources to support multiple applications. As SD-WAN technologies continue to emerge and mature, leveraging an orchestration layer to abstract the specifics of the SD-WAN solution (and other software applications) allows CSPs to evolve their managed WAN solutions and build more compelling end-to-end services. For success with SD-WAN deployments, CSPs require the following:

- Automated deployment at scale
- An open architecture to support multiple and varied SD-WAN solutions
- The ability to connect SD-WAN with other cloud and network services
- Robust and flexible integration with OSS/BSS systems

This white paper describes how Multi-Domain Service Orchestration (MDSO) capabilities, provided by Ciena's Blue Planet software platform, meet these requirements to ensure a successful SD-WAN deployment and accelerate the creation and delivery of differentiated new service offerings.