blueplanet
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SOLUTION BRIEF

# Edge Cloud Service Automation

Seamless, end-to-end service lifecycle management

## Business challenges

Communications Service Providers (CSPs) and cloud operators are collaborating to build out a new edge cloud infrastructure designed to meet evolving demands from end-users and capture new business opportunities. Also referred to as Mobile Edge Compute or Multi-Access Edge Computing (MEC), edge cloud involves distributing cloud resources such as compute, storage, and containerized network functions (CNFs) closer to end-users, while also optimizing the underlying edge transport network for speed and latency. This ongoing evolution will ensure that a new generation of more responsive, cloud-based edge services can be delivered more efficiently, at a speed and scale never seen before.

While CSPs are preparing for this edge-based transformation, a fundamental challenge they face is the operational complexity involved with managing the lifecycle of edge cloud services that extend across multiple technology domains, and involve different ecosystem participants, including CSPs, cloud operators, application vendors, and others.

Edge cloud aims to deliver ubiquitous access services, while meeting individual end-users' agility, speed, latency, and constraint demands. CSPs must be able to reliably manage thousands of services, numerous edge cloud endpoints, scale compute and storage resources, and optimize the underlying connectivity, across multiple domains. Managing these dynamic services the traditional way—manually and with centralized resources—will not scale.

The sheer number of services and evolving technologies involved with the edge exceeds the ability of any one entity to manage single handedly. In addition to CSPs, the edge cloud ecosystem involves hyperscalers and other cloud operators, application vendors, content delivery networks (CDN), containerized or Virtual Network

### BUSINESS IMPACT

- Automated lifecycle management of edge cloud services to ensure operational agility, speed, and scale
- Cloud-native, open, and standards-based solution designed for multi-vendor environments
- Works with major multi-cloud platforms including AWS ECS or EKS, Google Anthos, VMWare Tanzu, Microsoft ARC, and more
- Partner ecosystem approach enables CSPs, cloud operators, and partner developers to rapidly innovate and deliver on-demand edge services

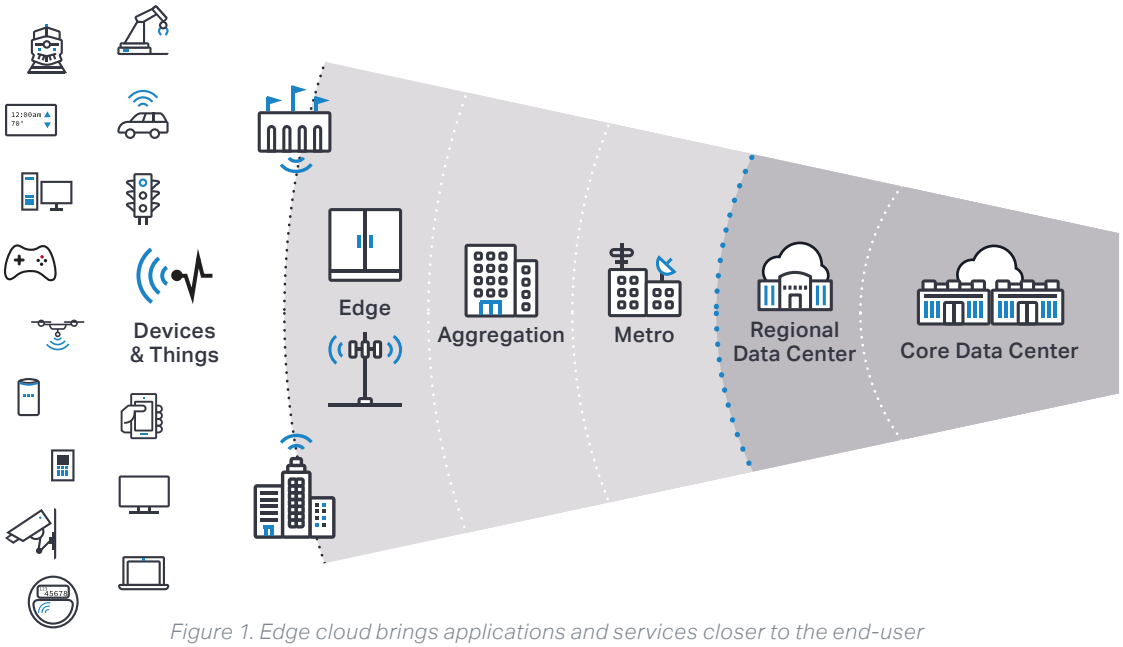


*Figure 1. Edge cloud brings applications and services closer to the end-user*

Functions (VNF) vendors, and many others working together in harmony. Delivering and assuring services across this diverse environment adds to the overall operational complexity.

With all these challenges, the edge cloud requires a fundamentally new approach to how services are delivered, and how the service lifecycle is managed.

## Blue Planet® Edge Cloud Service Automation

Blue Planet provides a vendor-agnostic automation solution that helps accelerate the design, instantiation, and lifecycle management of cloud-native edge services and the underlying network infrastructure. The Blue Planet solution automates deployment of VNFs and CNFs with service chaining, and provisions constraints-based underlying service paths from

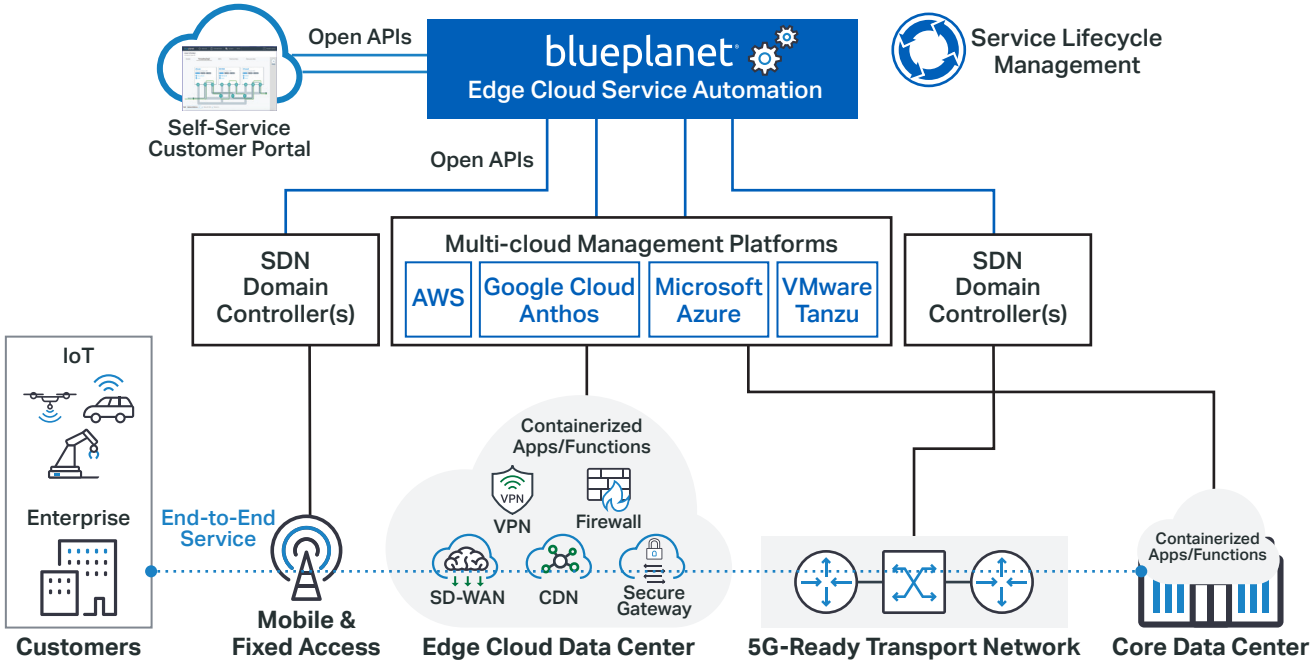


*Figure 2. Blue Planet Edge Cloud Service Automation solution*

end to end. This open and ecosystem-friendly solution helps both CSPs and cloud operators reliably deploy and manage edge services with agility and speed.

Blue Planet provides a proven set of software products used by leading network operators, service providers, and enterprises globally for automated service lifecycle management. This expertise, combined with strengths in networking and operations, helps Blue Planet understand the entire edge cloud vertical—from underlying physical and virtual infrastructure to Operations Support Systems (OSS), automation, and service lifecycle management. The result is a solution designed to cater to all aspects of the edge for both CSPs and hyperscalers, alike.

### Service lifecycle automation

Blue Planet helps providers enable truly automated edge services management. It adds automation to all stages of the service lifecycle—planning, deployment, and activation to real-time updates and assurance.

The solution ensures the proper placement of VNFs or CNFs for compute and storage, and smoothly runs Day Zero and Day One configurations. It also monitors both virtual and physical infrastructure as well as the services running on them to dynamically optimize resources when required to assure services. This allows providers to quickly deliver reliable edge services and proactively assure them to increase service agility, reduce operational costs, and improve the customer experience.

### Aligned with 5G

While edge cloud and 5G are not interdependent technologies, each plays a critical role in the success of the other. Blue Planet Edge Cloud Automation is closely aligned with the Blue Planet 5G Automation solution. This helps providers deliver constraints-based edge services over customized 5G network slices. Using Blue Planet, CSPs do not have to depend on disparate systems and manual processes for their 5G and edge service lifecycle management.

LEARN MORE
**Blue Planet 5G Automation**

### Speed and scale

Critical to the success of the edge cloud is the ability to deliver services at the speed and scale that end-users demand. The Blue Planet solution provides end-to-end IP and optical layer visibility, analytics, and orchestration allowing it to activate or deactivate edge cloud services on demand and scale them dynamically. Blue Planet ensures that user demands are met, and the end-user's digital experience does not suffer.

### Key functional capabilities

- Cater to the on-demand nature of edge cloud services with intelligent automation
- Discover and federate disparate network infrastructure information into unified information model with Blue Planet Inventory (BPI)
- Orchestrate network, compute, storage resources—be it physical or virtual, VNFs or CNFs—with Blue Planet orchestration that supports standard ETSI-defined VNFDs
- Rapidly create single or multi-vendor service chains
- Enable in-service CNF/VNF software upgrades with custom operations, as well as the ability to add, replace, or remove CNF/VNFs on running service chains
- Integrate with existing OSS/BSS through Open APIs for the creation of self-service portals
- Assure every facet of the edge cloud, from resource to service, with advanced analytics powered by Blue Planet Unified Assurance and Analytics (UAA) and Route Optimization and Analysis (ROA)

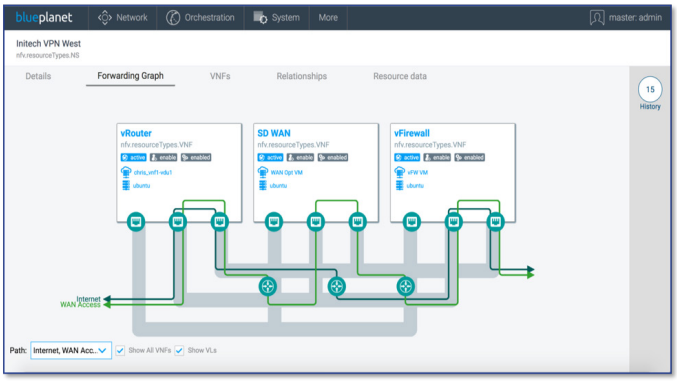


*Figure 3: Service chaining with Blue Planet*

**Partner ecosystem**

The technical and operational complexities of the edge cloud mean it will be built by several key players working together. Blue Planet is designed and optimized to enable an open partner ecosystem approach that allows all key players and developers to rapidly innovate and deliver a diverse range of services. As part of this, Blue Planet works with multiple solution vendors and is built to integrate with major multi-cloud platforms such as AWS ECS or EKS, Google Anthos, VMWare Tanzu, IBM RedHat OpenShift, Microsoft ARC, and more. This ecosystem-friendly approach enables service providers to deploy a range of pre-built virtualized services from a cloud marketplace and support multiple edge cloud use cases.

**Open, standards-based, cloud native**

Blue Planet is built to support a wide range of industry standards initiatives, open-source projects, and Open APIs to simplify integration and multi-vendor interoperability. In addition to adhering to emerging ETSI MEC and NFV standards, the Blue Planet solution supports related frameworks and open APIs from the TM Forum, MEF, 3GPP, and others. Further, the Blue Planet platform is cloud native and built on a container- and microservices-based architecture. This approach and architecture empower service providers to adopt a cloud-first strategy and rapidly deploy Blue Planet to accelerate their digital transformation and deploy cloud-native digital services.

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