

# From uCPE to a Full-Blown Edge Compute Platform

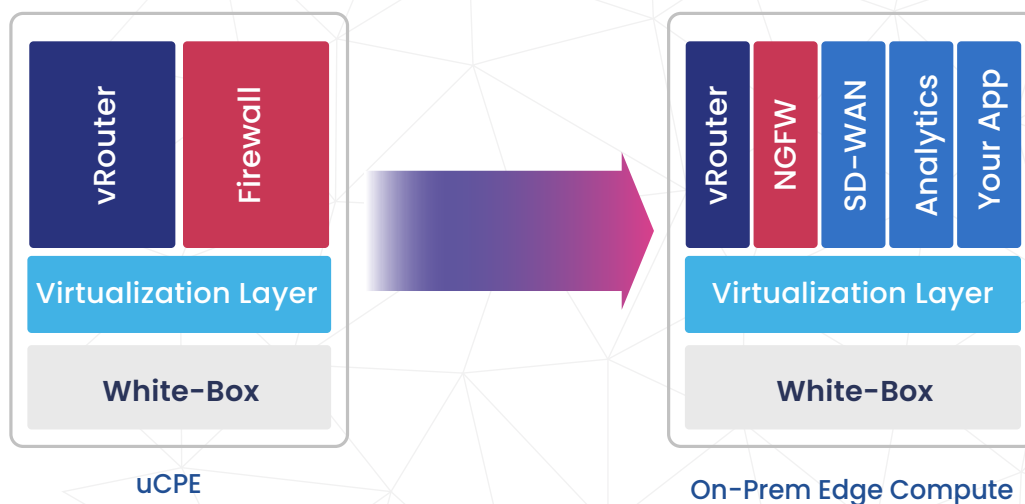
Based on open hardware platforms, Universal Customer Premise Equipment (uCPE) enables the rapid addition, integration or removal of any number of centrally managed virtual functions. To increase revenues and maintain their competitive edge, Managed Service Providers (MSPs) and enterprises are deploying uCPE to enhance business agility, accelerate the introduction of new services and increase operational efficiency.

Originally, uCPEs were deployed as a single box to replace multiple standalone network edge appliances such as firewall and router. To meet enterprises' evolving needs, MSPs began to harness the inherent compute power of uCPEs to incorporate additional functions (e.g. backup, print servers, VoIP).

uCPEs allow enterprises to leverage best-in-class solutions from multiple vendors on a single platform, eliminating lock-in, reducing costs and simplifying management. For MSPs, uCPE serves as an on-prem launchpad for high-value add-on services - beyond networking - for increased revenue and higher margins.

## SD-WAN, SASE and uCPE

To enjoy the full range of operational benefits that uCPE offers, enterprises should strive for on-prem virtualization. Secure SD-WAN or SASE - combining best-of-breed networking and security components - exemplifies the need for open platforms that support multiple vendors and functions. Installing only SD-WAN or security functions is limited and doesn't utilize the full capabilities of uCPE. However, when deployed over an open uCPE platform, edge computing power can be harnessed for SD-WAN and security, as well as additional functions that support business dynamicity.



## The Smart Way to Implement a uCPE-based Solution

Here are some “must have” requirements for a successful uCPE-based solution:

### Open Platform

Creating virtualization on a uCPE requires integrating multiple software components on a COTS whitebox and then maintaining and updating (lifecycle management) these components over the device’s lifetime. Such a framework requires an open, vendor-neutral platform (hardware and apps) that supports your choice of vendors.

While the uCPE concept started with virtualized networking functions (VNFs), its future rests in the ability to incorporate many additional functions, thus morphing into an on-prem edge compute platform.

### Edge Optimized for Varying Requirements

uCPE was designed to be installed at the customer premise or the network edge. However, the edge has since evolved and has various shapes and forms depending on the business type, network size and industry. Edge devices need to support large regional offices, smaller branch offices and remote workers. Therefore, a uCPE solution must be designed with the flexibility to support cost-efficient low-resource devices for sites requiring only one or two applications, as well as more powerful devices for sites that leverage uCPE compute power to run several applications.

### Full Lifecycle Management at Scale

- **Orchestration and Management**

uCPE-based solutions should support operation, administration and management (OA&M) of up to tens of thousands of applications and edge devices per enterprise. The solution should include a robust MANO for handling the full IT lifecycle – from deployment through operation, monitoring, updates and troubleshooting. For enterprises that oversee their network and services, a powerful uCPE manager is often enough to provide the necessary management capabilities. For MSPs managing multiple client networks, a multi-tenant MANO can streamline managed services operations and support dedicated customer portals.

- **Fast Service Delivery**

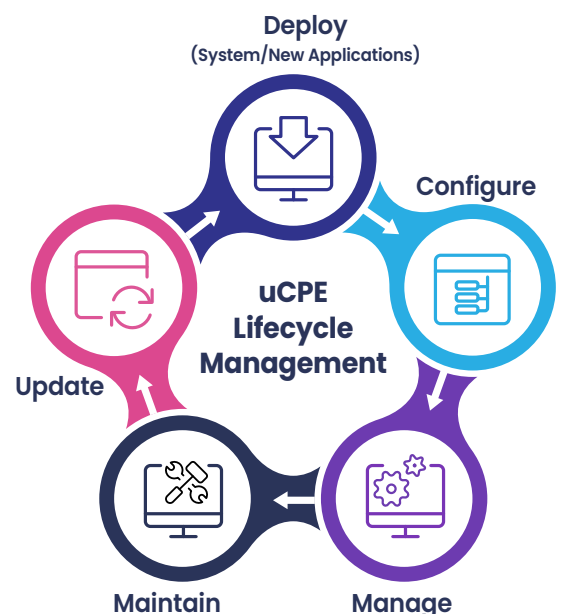
Going live with a new service at the customer premises must be quick and simple to allow self-installation without IT support. Automated deployment and management using zero touch provisioning tools accelerates service delivery and eliminates the need for costly truck rolls to smaller branches that do not have local IT staff.

- **Automation for Large and Complex Networks**

The complexity of managing edge devices connected to multiple CSPs across dispersed sites has increased exponentially. To ensure operational efficiency, enterprises and MSPs require an automated service delivery platform that enables applications and network services to be added, changed or replaced simply and rapidly – on demand – using a centralized management system. Automation reduces costs, improves scaling of operations, and shortens lead times, allowing MSPs to react more quickly to customer demands.

- **Troubleshooting and Health Monitoring**

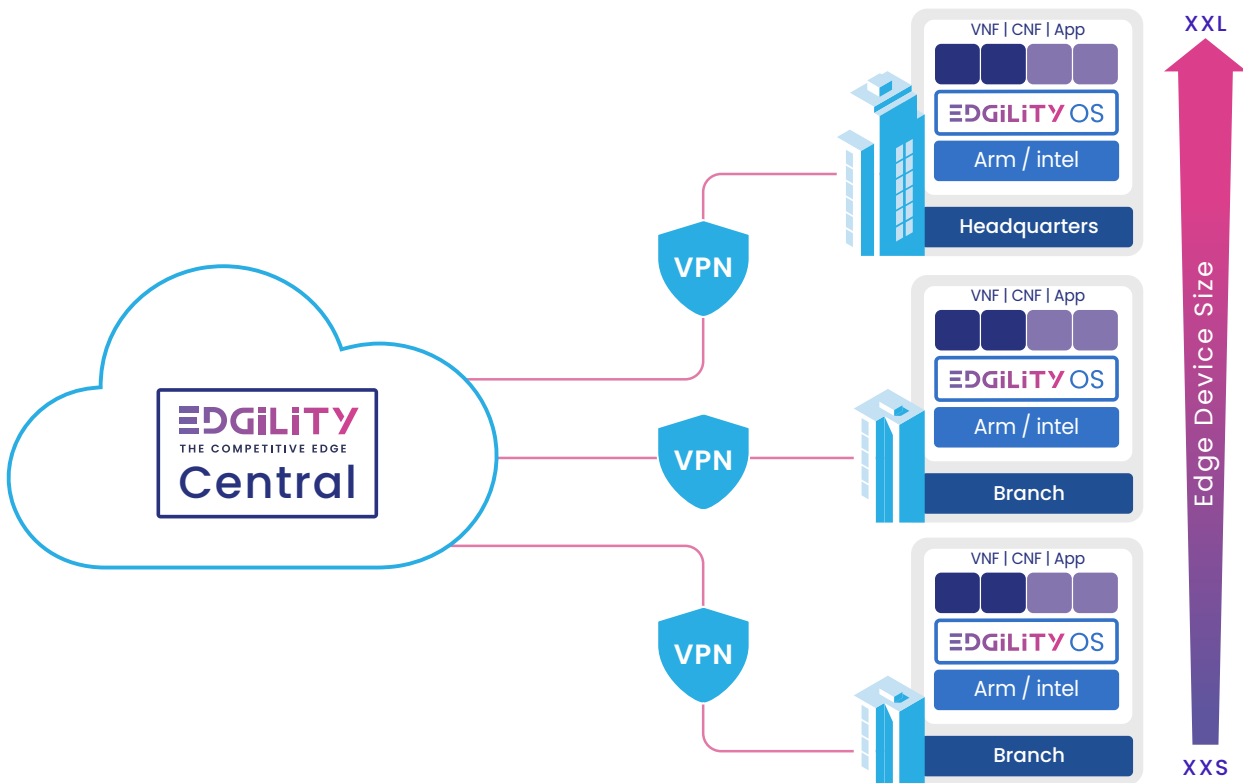
Secure remote management of edge devices is crucial for increasing operational efficiency by enabling configuration changes and upgrades to be performed remotely over a secure connection from IT headquarters. Full real-time visibility into device health and network performance helps to reduce mean time to repair (MTTR) and ensure an optimal user experience. Health monitoring should cover both the full service and its individual components so that if a failure occurs in a specific service component (e.g., SD-WAN), the uCPE itself will still be available and provide a path to fix or restart the service.



## Start Your Edge Compute Journey on the Right Foot

Telco Systems' Edgility is an agile edge compute software suite, providing enterprise IT teams and MSPs (Managed Services Providers) with a 360-degree toolset for automating the deployment, operation and lifecycle management of thousands of edge devices and IT services across multiple branches, home and "mobile" offices forming the enterprise WAN.

Working with any uCPE solution, Edgility eliminates vendor lock-in (HW and SW) and enables you to select the solution components that best fit your dynamic business requirements – today and tomorrow. Edgility simplifies the deployment of any service, by creating a control layer for the operation, management, and administration of edge devices and the application software they are running.



### Edgility Central

Edgility Central is a powerful, Management and Orchestration (MANO) system that enables enterprises to manage multiple edge devices, applications, network functions, and service policies across multiple sites via a single pane of glass. Using the 'point and click' Graphic Service Designer, users can easily configure connectivity, complex workloads and templates. Edgility Central can run on-prem in your datacenter, and in private or public clouds.

### Edgility OS

Edgility OS is a high-performance, small footprint operating system that turns any whitebox into a fully operational edge device. Optimized for maximum resource utilization, Edgility OS delivers high throughput even on low-resource edge compute devices. Edgility OS supports hybrid virtualized and containerized services/ applications from any vendor, allowing you to deploy and run multi-service workloads (service chaining).

Multi-tenancy and cloud native management provide high availability, scalability and reliability for MSPs looking to expand their offerings, while enabling cost-efficient edge device management and orchestration for multiple clients.

## Enabling Better Scalability, Manageability and Operational Efficiency

Edgility helps you build a manageable and cost-efficient SASE architecture at scale while addressing the full spectrum of use cases. It is a vendor neutral, agile and future-proof solution that meets enterprises' rapidly evolving IT needs.



### Optimized for uCPE

- Small footprint and low OS resource consumption, fully utilize edge device resources
- Optimized for low-power edge devices, reducing carbon footprint
- Pre-installed on variety of partner whiteboxes



### Fully Automated OA&M

- Automated and fast workloads design via point & click graphic service designer
- Plug & Play deployment of any application in minutes
- Zero touch auto provisioning of edge devices



### Efficient Management @ Scale

- Intuitive, single-pane-of-glass management
- Full life cycle management of tens of thousands of applications and edge devices
- Enforce corporate policies everywhere



### Full Visibility & Control

- Stay in control - out-of-band remote management via secure VPN tunnels
- Alarms and events dashboard - remote monitoring of edge devices to identify
- potential faults
- Remote monitoring tools - holistic health monitoring of both edge devices and applications
- Remote troubleshooting - perform network tests from remote and decrease the meantime to repair (MTTR)



### Agile & Future Proof

- Cherry-pick the best tools available and keep your network up to date
- Vendor-neutral architecture runs any software on any hardware
- BYOApp (Bring Your Own App) - add new apps or change current ones (beyond secure SD-WAN)
- BYOD (Bring Your Own Device) - better manage supply chain issues

### About Telco Systems

Telco Systems is a leading vendor of innovative communications software products, for the new generation of edge computing and enterprise networks. Telco Systems enables global enterprises, communications service providers, and system integrators to build and operate sophisticated virtual networks, with powerful edge devices, and endless application schemes. Telco Systems' products are successfully deployed at large carriers and enterprises around the world, delivering a resilient, secured, and flexible connectivity between thousands of branches and the cloud.

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