celona

ALE Private 5G

Alcatel·Lucent Enterprise

PRODUCT BRIEF

Celona Orchestrator

Features and Benefits

The Celona Orchestrator is a cloud-based network administration platform that centrally coordinates the deployment, management, and operation of the Celona 5G LAN solution. This includes configuration and optimization of network elements, subscriber management, and defining and automating the enforcement of QoS policies for individual applications and devices.

The Orchestrator is built using RESTful APIs, ensuring a highly flexible system that can be integrated into any existing network infrastructure for simplified in-house or third-party Managed Service Provider (MSP) management.

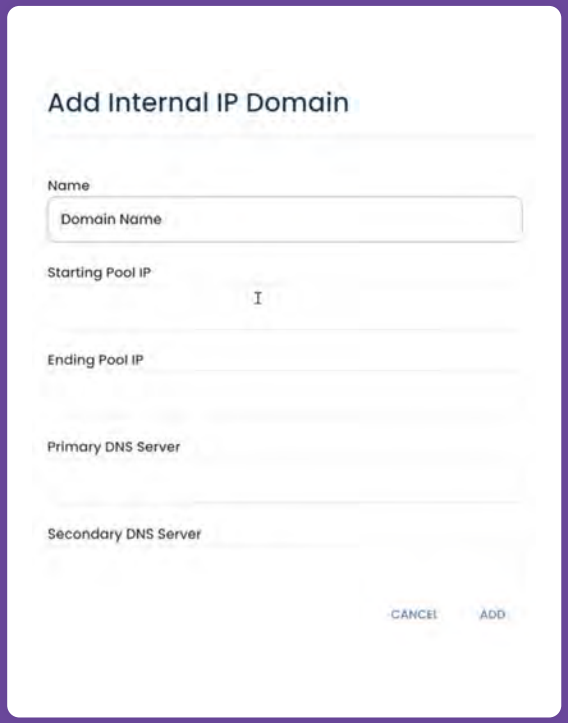
FEATURES	BENEFITS
Configure systems and services, not 3GPP elements	Simple Network operation without being a cellular expert
Device subscriber management	SIM management made easy and secure
API-first platform	Integration with Enterprise operational workflows
Monitoring, Troubleshooting and Insights	Proactive detection, root cause analysis and faster resolution
Role Based Access Single-Sign-On (SSO)	Securely support different operational models while adhering to ZTNA principles
Multi-tenancy	Scalable operational workflows for large organizations and Managed Service Providers (MSP)

Configure Systems and Services, not 3GPP Elements

The Orchestrator eliminates the need for a complex 3GPP element setup. Instead, administrators can focus on the configuration of enterprise-level systems and services required to deploy a private wireless network. This includes configuring the
APs (Access Points) and the Edge (EPC) which seamlessly integrate into the existing enterprise LAN for providing network connectivity to business-critical devices.

Setting up IP Domain to integrate with an enterprise LAN

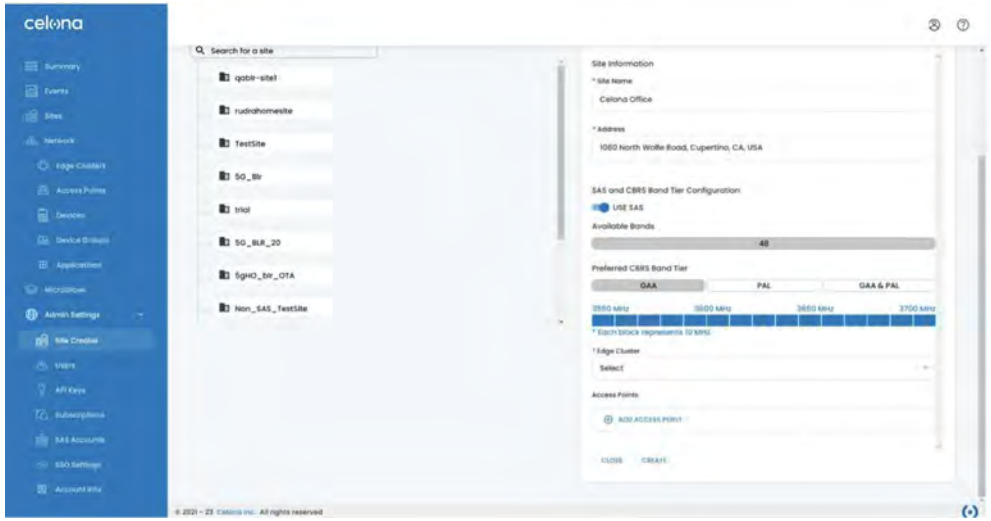
IP Domains specify how traffic from the cellular network accesses the corporate LAN that it connects to. Internal or external IP Domains can be generated depending on whether administrators choose to use DHCP, DNS and NAT services on the edge or want traffic to be forwarded using their existing VLANs that tap into the existing enterprise DHCP and DNS services, resulting in enterprise visibility to these devices.



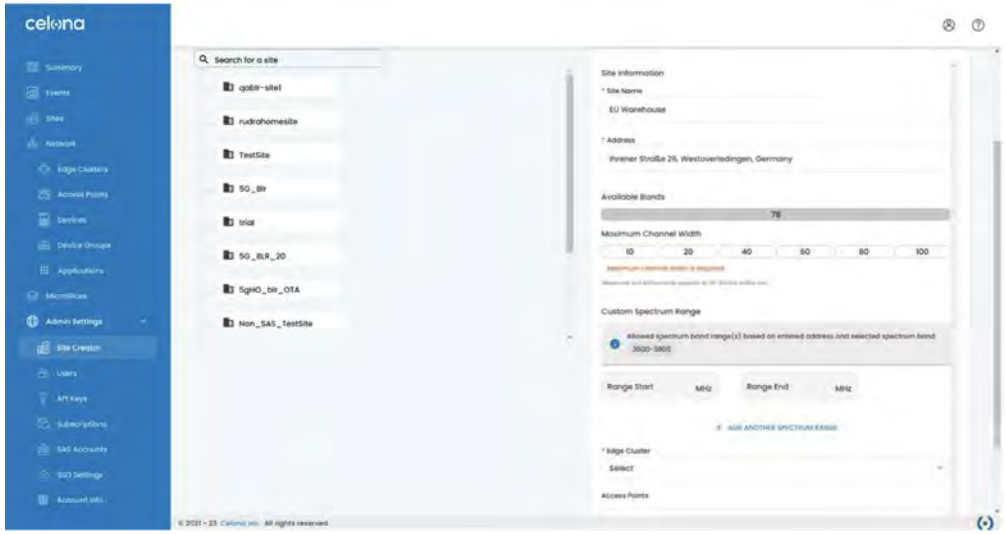
Site Creator

The site creator in the Orchestrator is used to create a new site or location where a Celona private wireless network will be deployed. Administrators are walked through the process of assigning a site name and physical address and assigning which Edge Clusters and APs will be part of the site. Note that an Edge Cluster can be part of more than one site. Depending on the geographic location of the site, the bands, channels, tiers and frequency range will change to meet regulatory requirements for spectrum use in that region.

Site Creator for US location

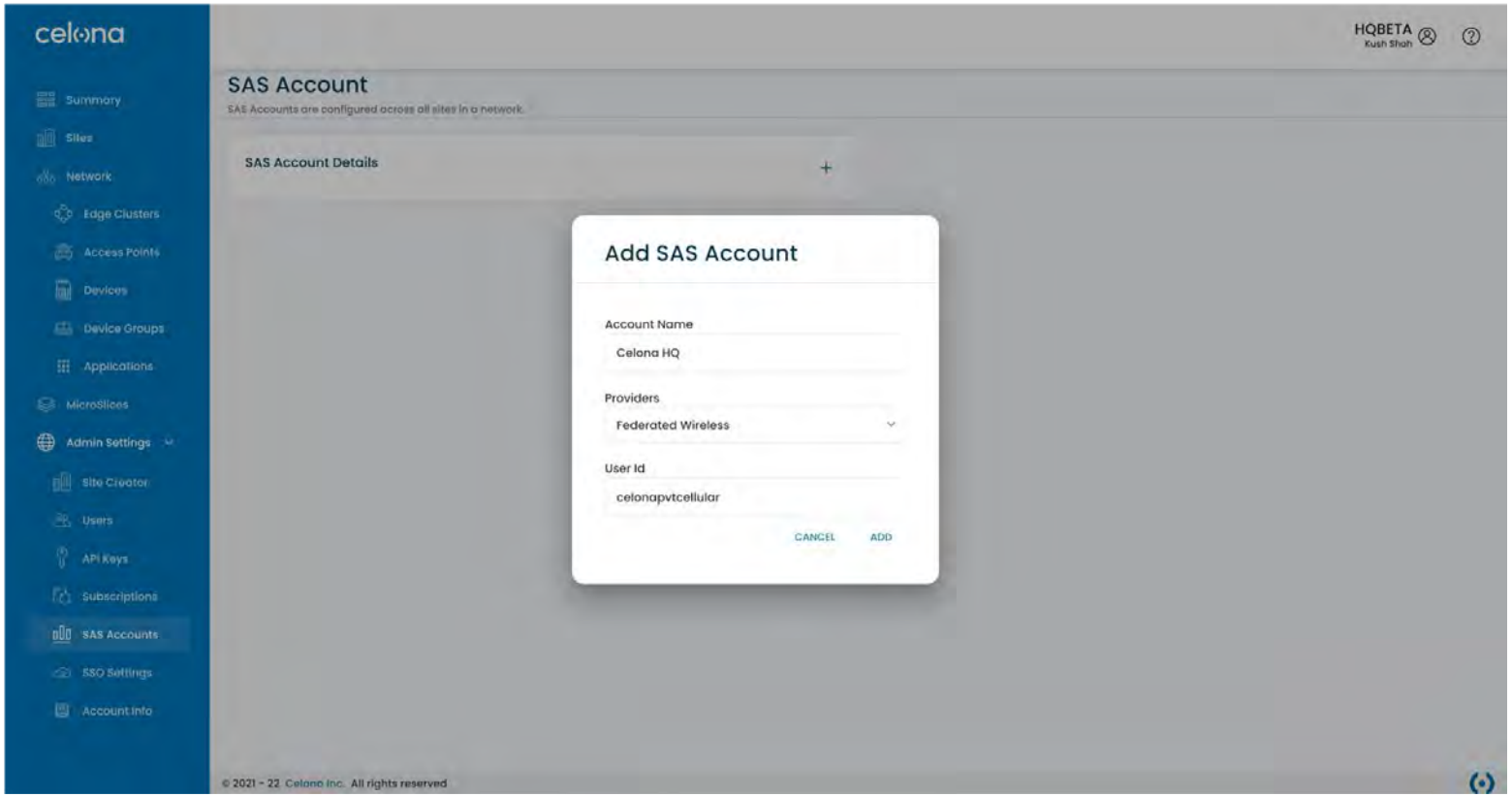


Site Creator for Non-US/International location



Setting up SAS (US only)

The Spectrum Access System (SAS) is a cloud-managed service in the US that grants access and manages the ongoing access to available portions of the CBRS spectrum within a geographic region. Registering a SAS account is required before the Celona Private Wireless network can be authorized to transmit in the CBRS band. Celona facilitates this connection with SAS via the domain proxy on the Edge. Celona APs are CBRS certified, and the setup requires a Certified Professional Installer (CPI) to configure the APs. Complete CPI workflow with necessary RBAC is built into the Orchestrator to help enterprises streamline the AP installation process.

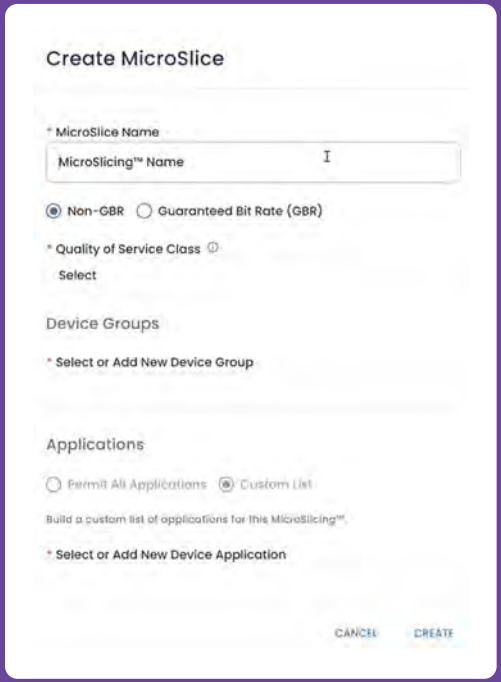


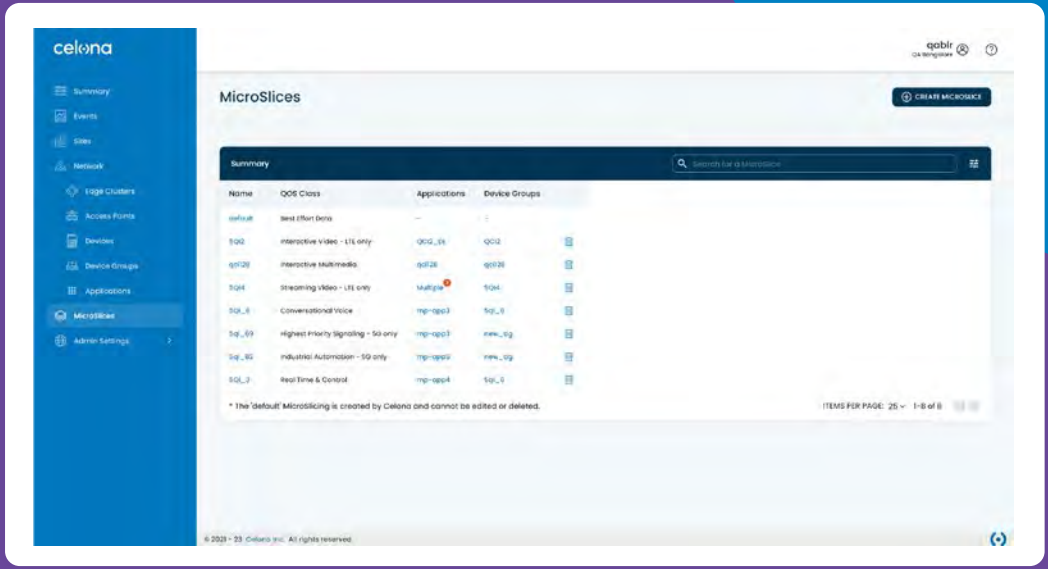
Setting up Granular QoS control using MicroSlicing

MicroSlicing™ is a patented technology that allows network administrators to define specific QoS controls for individual applications, traffic flows, or device groups. These QoS parameters are automatically enforced by Celona's Edge software. Each MicroSlice is separately encrypted within the cellular network for secure communication of sensitive traffic. The key differentiator of Celona's MicroSlicing technology is that the QoS policy is set centrally by the infrastructure and does not require configuration of the devices (UEs).

MicroSlices are created by specifying the application and device traffic that should adhere to a QoS policy defined by - guaranteed bit rate (GBR) or a non-GBR and QoS class.

Details of each MicroSlice - including the assigned applications and device groups – can be viewed via the Orchestrator.



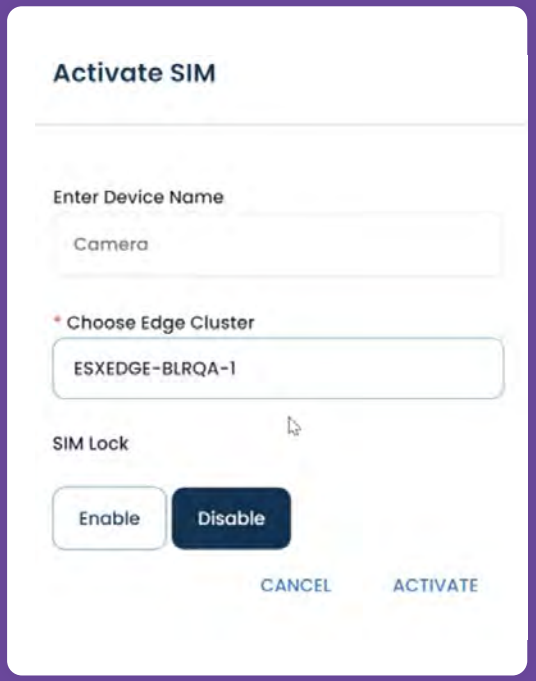


Integrated subscriber management

Physical SIM or eSIM connected endpoints are referred to as Devices within the Orchestrator. Administrators manage full subscriber lifecycle - activation, deactivation, SIM lock - within the Orchestrator. Devices can be placed into device groups for assignment of secure MicroSlice QoS and IP domain policies. The Orchestrator gives users real time monitoring view of the status of the device and the applied policies.

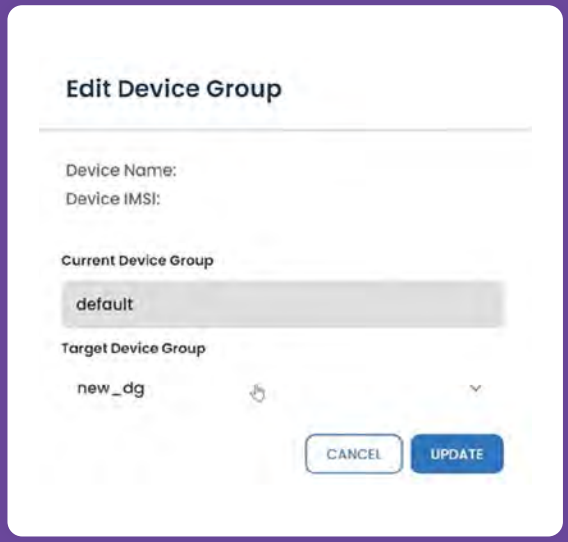
Activating, Deactivating SIMs

SIM activation capabilities include the naming of the device, assignment to an Edge Cluster, and the ability to optionally lock SIMs to devices to protect the enterprise from unauthorized access.



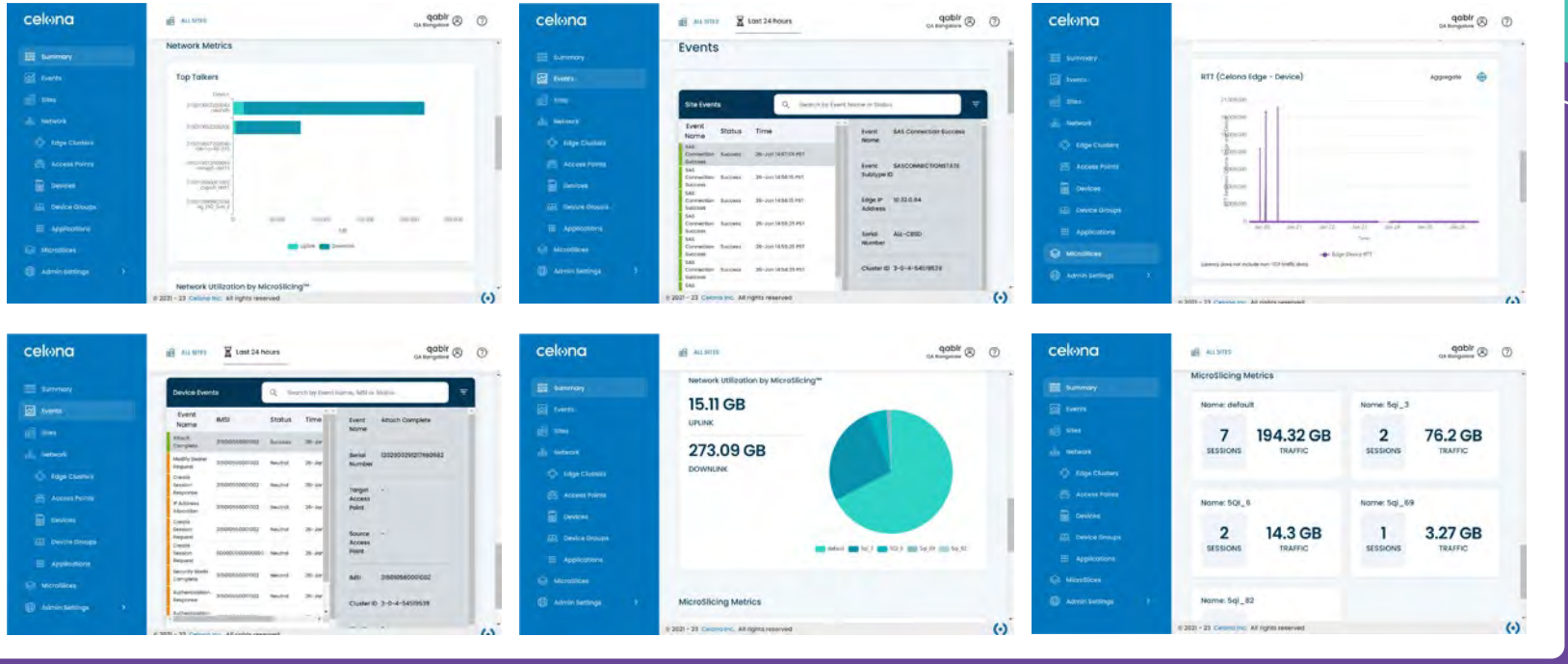
Assigning Devices to Device Groups

Devices can be placed into logical groups for ease of management and for assigning devices to specific MicroSlices for granular QoS control over secure tunnels across the cellular network. Device group assignment also controls the IP domain policy that will be applied to the device when it attaches to the network.

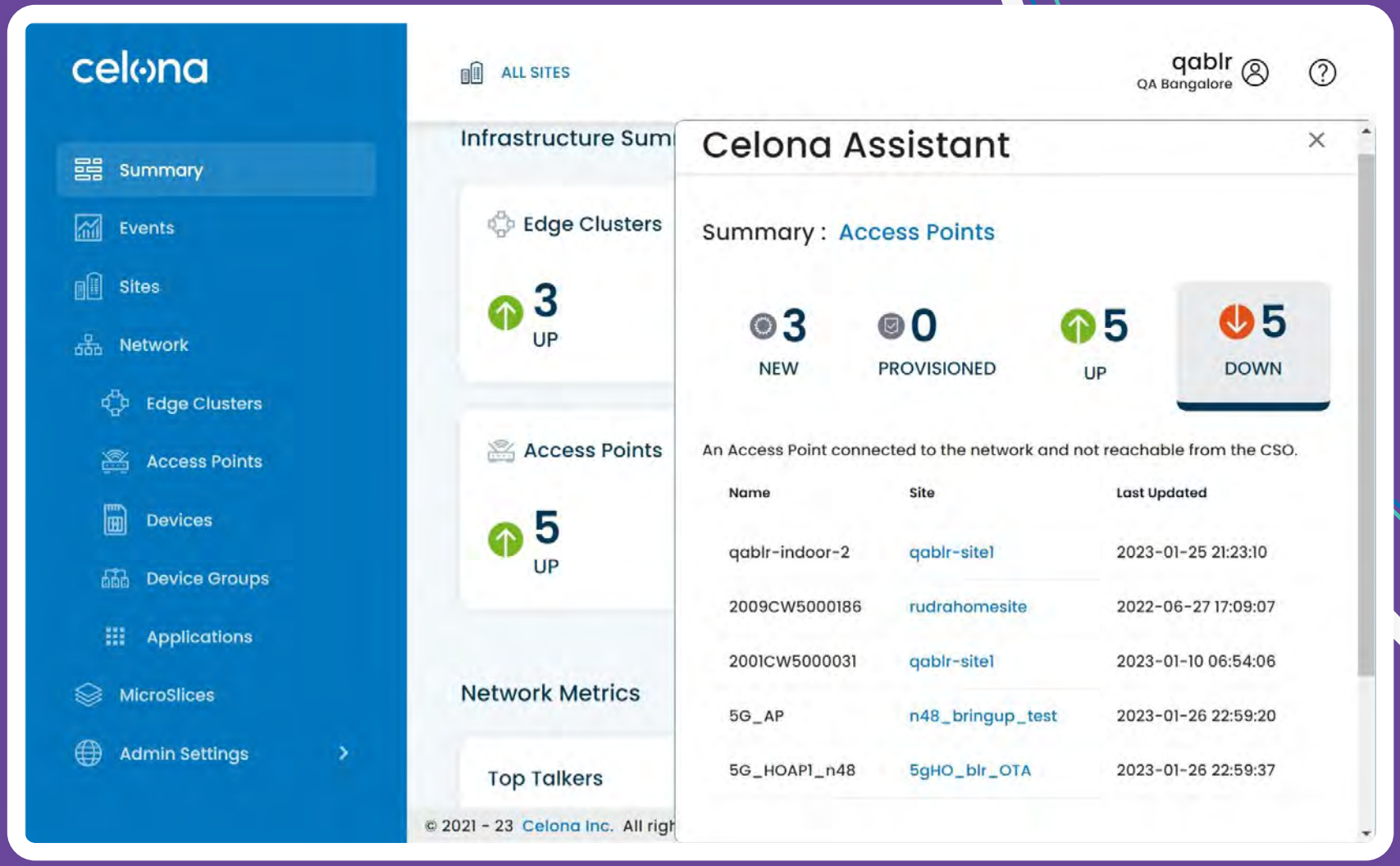


Monitoring, Troubleshooting and Insights

The Orchestrator provides full-featured monitoring, troubleshooting and insights built directly into the platform. This includes relevant health and event data such as top talkers, site/AP/device events, round-trip times (RTT) and network utilization broken out by MicroSlice.



Additionally, the Celona Assistant offers a context-focused view of the private 5G cellular network to automatically deliver relevant insights that pinpoint potential operational issues.

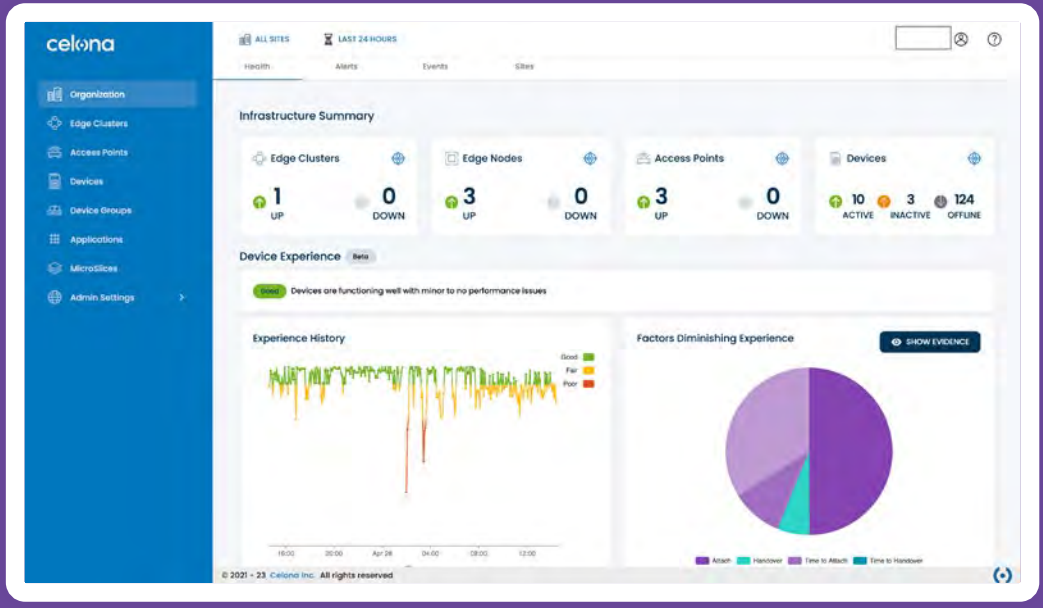


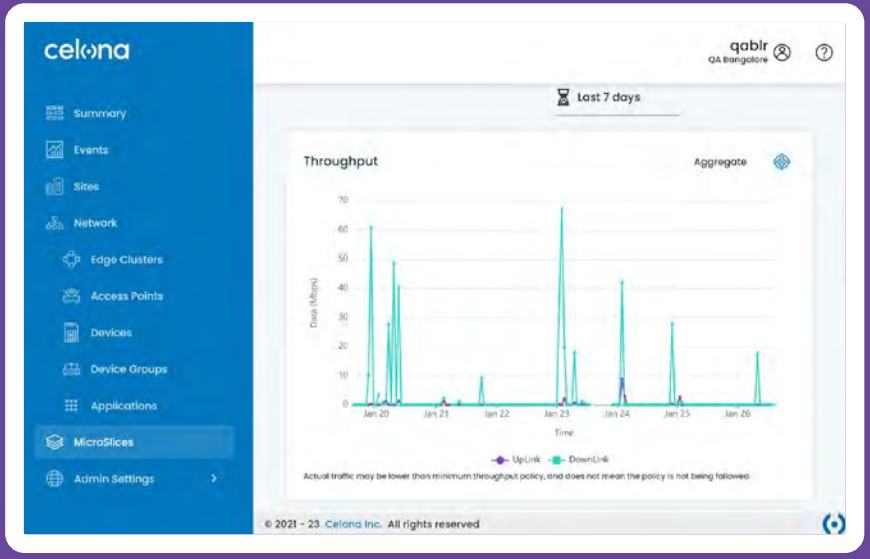
Monitoring Device activities

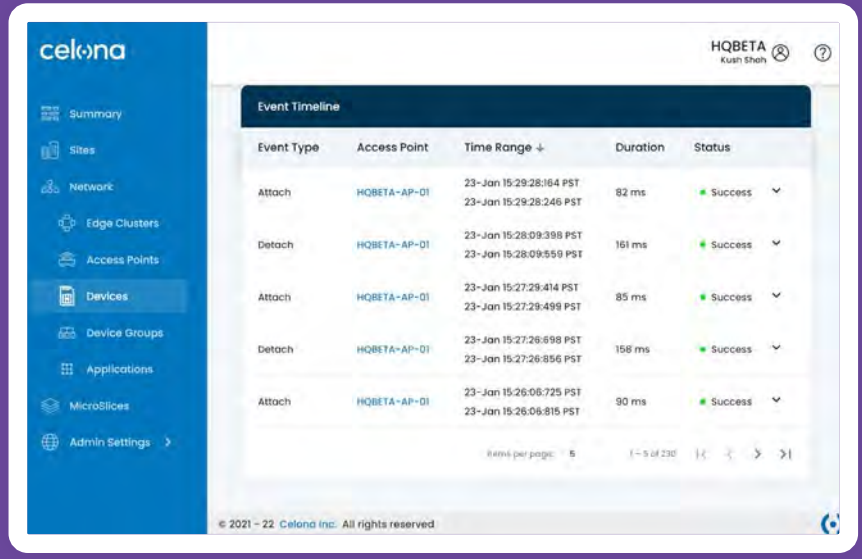
Device monitoring includes detailed information on which AP each device is actively connected to along with historical throughput statistics and detailed device activity (Attach, Detach, Handover) on the network.

Gain insights into the performance of devices on the Celona network with a calculated device experience score and ranking of contributing factors.

This allows you to view aggregated device experience data across all your sites or per individual site.

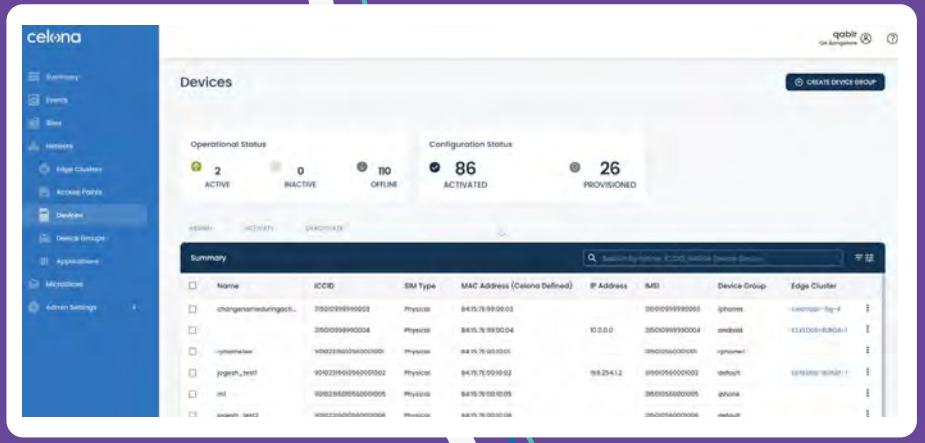






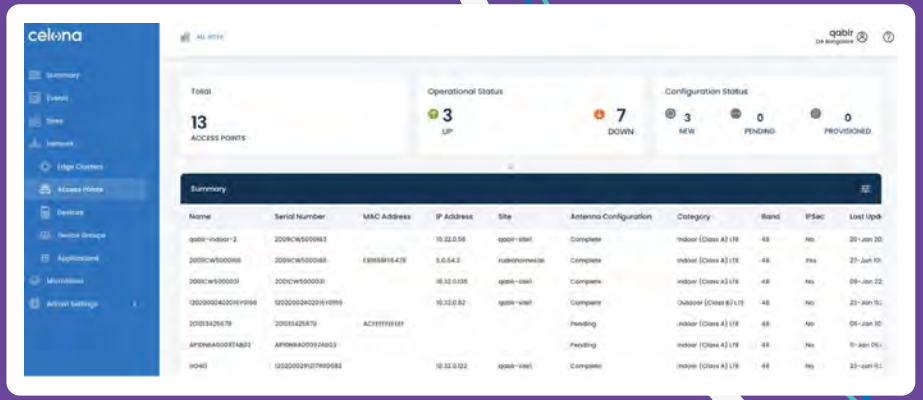
Detailed operational status visibility

NetOps teams can take advantage of dashboards highlighting the operational and configuration status of Access Points, Edge Clusters and devices across one or more sites.



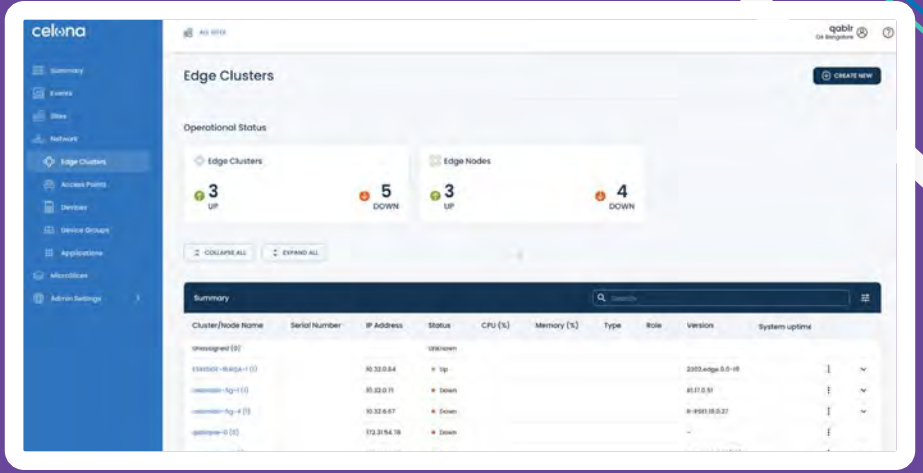
Access Points

The Orchestrator facilitates bringing the Access Points into an operational state by providing a way to enter CPI information for each sector of the Access Point. CPI information is mandatory for all Access Points in the US which communicate with SAS. Once complete, the operational and configuration status of each AP can then be visualized within the dashboard.



Edge Clusters

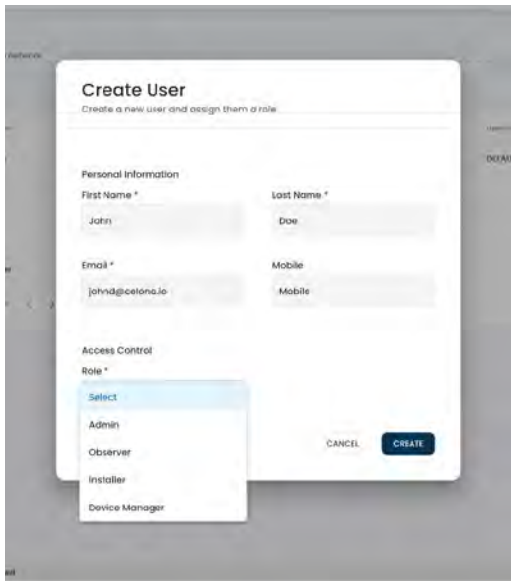
Celona Edge clusters are containerized microservices responsible for delivering control and user plane services to the Celona 5G LAN. The Orchestrator allows for easy monitoring of Edge Clusters and Edge Nodes operational health.

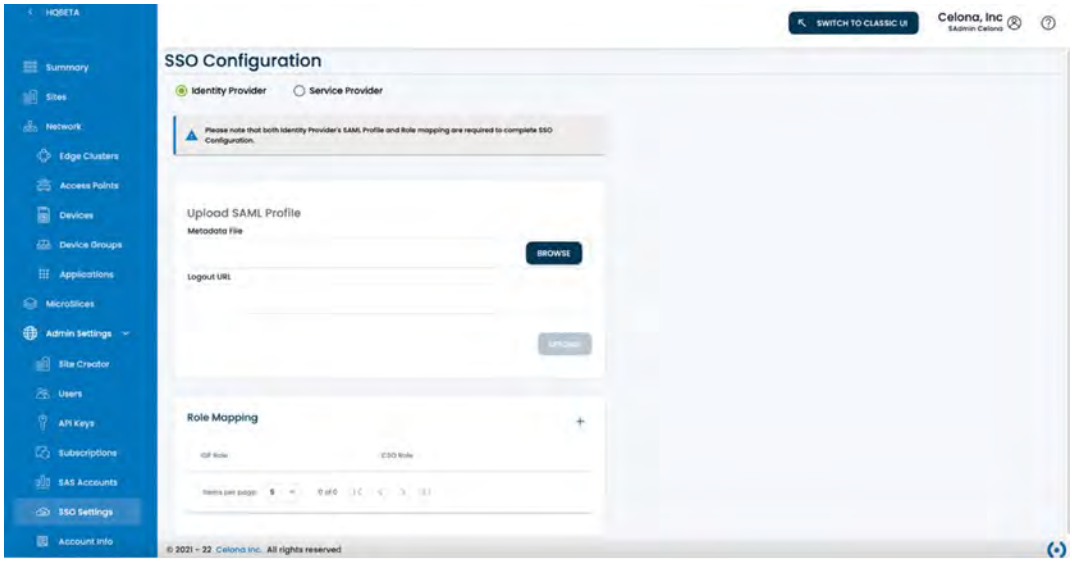


Secure Role Based Access

To help administrators manage the day-to-day operations of a Celona private 5G LAN, user accounts can be created locally and are assigned to specific roles depending on the level of visibility and permissions each user requires.

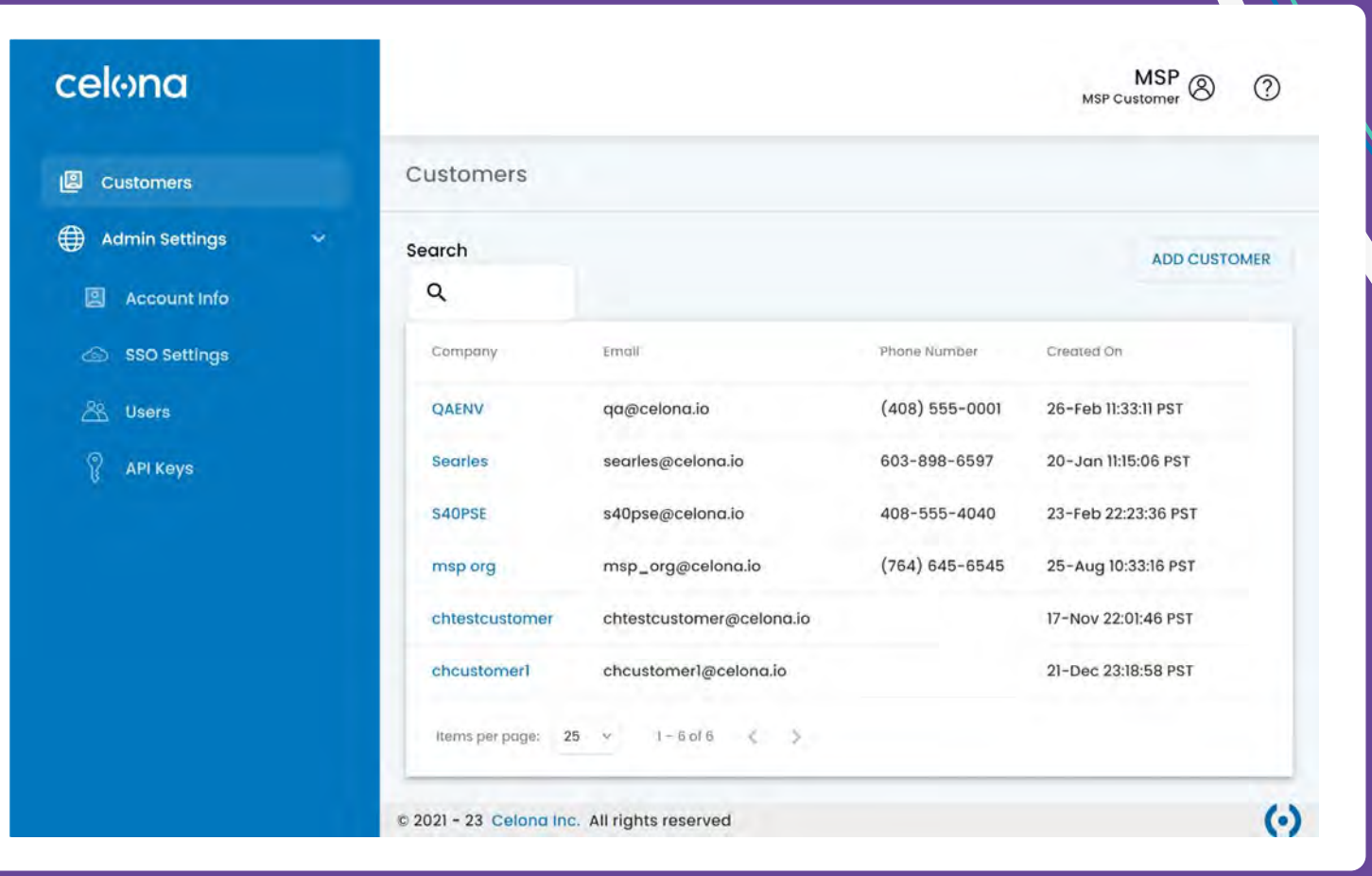
Single sign-on (SSO) is also an available option for enterprises that use existing user authentication services. This externally managed authentication mechanism can securely support different operational models while adhering to ZTNA principles.





Multi-tenancy

The Orchestrator supports multi-tenant environments for large organizations and MSPs. The multi-tenant dashboard allows users to easily manage separate tenant networks with a single-pane-of-glass view.



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