



Edge Connect

Introduction & Features

The Drive to the Private Edge

In virtually all verticals, today's progressive enterprises are pursuing software-driven operating models using analytics, automation, and machine communications to improve productivity. These processes are underpinned by new-wave wireless network solutions that offer scalable control and extreme reliability in very dense, machine-oriented environments.

In the context of digital automation, privately managed LTE networks and technologies attract enterprises with the ability to address performance, reliability, and security concerns commonly associated with alternative wireless network technologies. Enterprises require full control over the wireless networks deployed within their premises so that the network can be optimized to meet all their needs.

To support the growing demand for private networks driven by accelerated digital transformation, enterprises can now create a software-defined private network solution by leveraging Private Edge and The 5G Edge API. Edge Connect helps enterprises build, operate, and control their private LTE network. This private LTE solution will meet the growing demand for enterprises deploying CBRS networks and allows enterprises to connect to Alef's globally distributed, multitenant, neutral host compute and delivery network, Private Edge. Edge Connect enables enterprises to connect to Private Edge in minutes using a high degree of automation and allows them to build 5G Edge applications and services in minutes using Alef's programmable, open API architecture.

Getting Started

Creating your own private Edge network with the Edge Connect can easily be deployed in minutes. To find out more about Private Edge and The 5G Edge API, please visit our [website](#). For more information on how to get started email us at partners@alefedge.com.

Introducing Edge Connect

Edge Connect abstract out the complexities of 5G, allowing an enterprise to launch their own private LTE network. Enterprises save the CAPEX and OPEX of building, operating, and managing their own private systems that require in-house 3GPP expertise. Enterprises can turn on a private network in minutes once small-cell access points (eNodeB AP) have been deployed on customer premises.

Edge Connect includes the following features and capabilities:



Edge Connect

Features & Customer Benefits

- Software-defined private network setup to connect eNodeB APs at enterprise premise based on Alef provided L3 vSwitch deployed at customer site
- Managed cloud-based MME in neutral host ePC for mobility management of the private network
- Managed cloud based HSS in neutral host ePC for subscriber management of the private network
- Managed cloud based SGW and PGW in neutral host ePC for subscriber session management of the private network
- Removable SIMs and eSIMs to be used for the private network
- Private LTE subscriber access control and management
- Private LTE subscriber secure Local Breakout to the Internet at the nearest Micro Edge Site of Private Edge
- Value-added Secure Local Breakout service that provides user data access to enterprise content co-hosted at the Micro Edge Site
- Value added service that provides user data access to enterprise content in public clouds via Alef Boost and private peering.

Customer Benefits

Enterprises that need private networks may not have the expertise to manage mobile networks and may not be familiar with technologies and equipment used to construct and maintain a typical private mobile network. To build and manage a private network in house, enterprise customers must hire relevant mobile network support engineers and managers. This drives a high total cost of ownership and creates a burden on the IT department.

With a software-defined mobile network solution built on Private Edge, Alef enables an enterprise to deploy and commission a private network in minutes without knowledge of 3GPP standards and installing complicated mobile packet core infrastructure. It's as easy as setting up a Wi-Fi network once the access points are installed. By distributing cloud-based infrastructure as a service to enterprise customers, Alef perfectly integrates mobile infrastructure and network management expertise in the cloud for economy of scale. Private Edge securely breaks out user data close to the point of consumption and maintains low latency application performance as well as operational efficiencies for the enterprise, who in turn will save considerably on the total cost of ownership of deploying their own private network.

Edge Connect

Target Markets & Positioning

Target Markets



Transportation/Shipping

- Airports
- Sea Ports
- Railyards
- Transportation Hubs



Entertainment Venues

- Sports stadiums
- Arenas
- Concert Halls
- Convention Centers



Commercial Buildings

- Hospitals
- Hotels
- Shopping Malls
- Office Buildings



Remote Sites

- Rural Areas
- Oil platforms
- Mines
- Off-shore locations
- Construction sites



Industrial Buildings

- Factories
- Power plants
- Warehouses
- Refineries



Smart Cities

- Municipalities

Positioning within Markets

Many enterprises need a private network to provide Internet access via wireless connectivity at locations where other means of network access are limited. This includes the lack of public wireless network coverage in a rural area or in-building, or where Wi-Fi cannot provide mobility or efficient user access control. These enterprises need to use private LTE networks to serve users with wireless connectivity for mobile broadband Internet access.

Many enterprises use private LTE networks to achieve manufacturing automation, robotic control, and other Industrial 4.0 process. Autonomous systems such as drones, cars etc., are examples where the primary User Equipment (UE) on the private network will be IoT devices or machines instead of consumer mobile devices in the hands of human beings. The needs and requirements of such use cases on private networks are much more stringent than providing secure local breakout to the Internet. Often, ultra-reliable and resilient wireless network connectivity is taken for granted. For those Enterprise customers, wireless access control and device management, as well as policy enforcement, become super critical on top of basic network connectivity.

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Base Requirements

Access Points & Devices

CBRS Access Point(s) connected to Private Edge and Devices that are CBRS enabled are provided an eSIM or SIM card to connect to Private Edge.

Private Edge Enterprise Software Switch

Edge Connect allows you to launch your own sponsored data system without worrying about the complexity of building an advertising network.

Hardware

Following are the minimal requirements for the server on which you wish to install Private Edge Enterprise Software Switch:

- Private Edge VM Image
- SDN Controller
- Available VMs

Or

- Intel CPU i5-9400 (or higher)
- 6 Cores
- 32 GB RAM
- 240 GB Disk (SSD preferred)
- Hardware requires EFI boot source
- 2 Ethernet ports NIC

Port List

The table below lists all ports and permission for incoming and outbound traffic for the server. These rules need to be implemented on the firewall, router and/or switch of the provider.

From	To	Range Outbound	Range Inbound	Remarks
ESW	Internet	59000-60999 (UDP)	n/a	VPN Communication to Private Edge site

eSIMs & SIMs

Electronic SIM (eSIM) cards are provided by AlefEdge to enterprise users, so they can connect to Private Edge.

Operating System

Recommended base operating system is Ubuntu 18.4.5-LTS + KVM.

Networking Cards

All network interfaces should be active ("UP").

Networking

Following are the network-related requirements for the server on which you wish to install Private Edge Enterprise Software Switch.

IP Addresses

The server needs to have one IP address in the VLAN with the connected AP. A second IP address in the inside network is connected to the router/firewall connected to the Internet