STEP CG

Private LTE

There's tremendous potential and significant momentum for Private LTE and shared spectrum such as CBRS in enterprise networking. PLTE/CBRS is a secure, reliable, high-performance, and cost-effective alternative to Wi-Fi in large areas such as large campuses, ports, venues warehouses, airports, manufacturing plants, and as a foundation for smart cities.

A Private LTE ecosystem is comprised of partners and equipment combining various hardware platforms; on-premises servers, applications, and services; and public cloud services to consider. With private LTE, organizations are bringing the scale and technology of the carrier, into the enterprise.

BENEFITS

1. More efficient use of bandwidth

The number of wireless devices (enterprise and consumer) is increasing exponentially, and so is the correlating amount of data transmitted and received by these devices. The bottleneck is that there is a finite number of available wireless frequencies on the radio spectrum, and those frequencies are being consumed rapidly. Wi-Fi has become extremely congested and limited due to the high "noise" of Wi-Fi, especially in urban areas. CBRS helps alleviate this bottleneck by allocating a new band of frequencies. It's like adding lanes to a highway and eliminating any traffic jams. While Wi-Fi 6E is also adding a lot of new spectrum, LTE offers a more efficient use of spectrum.

2. The 3.5 GHz band is available to anyone

CBRS is commercially available to pretty much everyone. The typical carriers don't own this spectrum. The top technology companies, including Cradlepoint, Cisco, Ericsson, Google, Intel, Facebook, Nokia, CommScope/Ruckus, and many others, are moving fast to develop and certify devices and networks for the new open spectrum. Enterprises are now able to deploy their own indoor and/or outdoor private LTE networks. There's some light regulation to make sure that no one entity gobbles up the air that's available.

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3. Greater network security

Wi-Fi is largely considered a non-secure, or easily hackable, platform. PLTE/CBRS networks have restricted access based on SIM cards and have configurable network topologies so IT can leverage best practices in cybersecurity design. You can feel comfortable knowing that the same security that the carriers have enjoyed for years, is now available to the enterprise.

4. Better cellular signal indoors and outdoors

A private LTE network utilizing the CBRS band effectively can be used instead of, or in combination with, traditional Wi-Fi. It also effectively addresses cellular coverage gaps in large campus environments or spread-out facilities such as commercial office parks, sports venues, airports, manufacturing plants, hotels and hospitals, etc. In Industrial IoT applications, feel good about the investment with one third the number of equivalent access points.

COMPONENTS

Enhanced Packet Core (EPC)

Applications that run on the Private LTE network may only need to stay on the private network and not go to the cloud. EPCs provide IP data routing to other UEs or another local network on the backend. All of the traffic from the Private LTE network has to go to the EPC for routing. The EPC contain multiple pieces that can be cloud-based or on-premise, depending on the end user's preferences and requirements. Some can also provide a hybrid cloud and on-premises solution. Rest easy knowing you are in control of your data and all the breakout points.

Spectrum Allocation Server (SAS)

The SAS is used to control the power and frequencies used by the CBSD radios. The U.S. Navy has priority on all CBRS channels if located near a coast or where naval activity is taking place. Those who purchase priority access license frequencies in the FCC spectrum auction have priority access to their channels. When the incumbents are not around, everyone has access to the additional channels for use. Think of the SAS as the guardian to make sure everyone has a level playing field.

User Equipment (UE) or Customer Premises Equipment (CPE)

Typically, enterprises need a router that complies with the FCC Part 96 authorization for CBRS. This authorization ensures that a router will comply with any changes in frequency that are coming from the citizen broadband radio service devices (CBSDs) due to actions from the spectrum allocation server (SAS).

Evolved Node B (eNodeB) and Citizen Broadband Radio Service Devices (CBSDs)

eNodeB/CBSDs are small cells that actually produce radio waves. Many technology manufacturers produce CBSDs, which are similar to Wi-Fi access points, but have extended reach and coverage, thus requiring far fewer units. For security and multiple access, the CBSDs can advertise the equivalent of SSIDs to help segment off traffic.

Element Management System/Server (EMS)

The EMS is the management system for the Private LTE network. Typically, this is provided by the CBSD vendor, but it also can be delivered by the enhanced packet core (EPC) provider. This management system can either be managed by the end-user organization or offered as a service by a managed service provider (MSP).

SUMMARY

Private LTE may sound like a lot of new terms and complex technologies, but it does not have to be. STEP CG can be your guide to help provide the “easy” button for deployment, and keep it as simple as running your traditional network today. Let us help you navigate the terms, correlation to what you know and keep bringing the carrier to the enterprise.

CONTACT STEP CG FOR QUESTIONS OR MORE INFORMATION

About STEP CG

STEP CG is a highly innovative, award winning, nationwide IT services engineering firm headquartered in Northern Kentucky/Greater Cincinnati. STEP CG solutions are powered by strategic experts and best of breed technologies solving our customers’ most complex IT challenges. STEP CG’s team and expert engineers provide customers with solutions for cloud, security, collaboration, core infrastructure, and managed services. We are about doing what's right and sharing in our customers' successes. We have a culture that empowers talent and passion allowing employees to be innovative and execute. STEP CG is where innovation meets execution.

BENEFITS
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