SD-LAN

WITH THE REVENUE EXTRACTION GATEWAY

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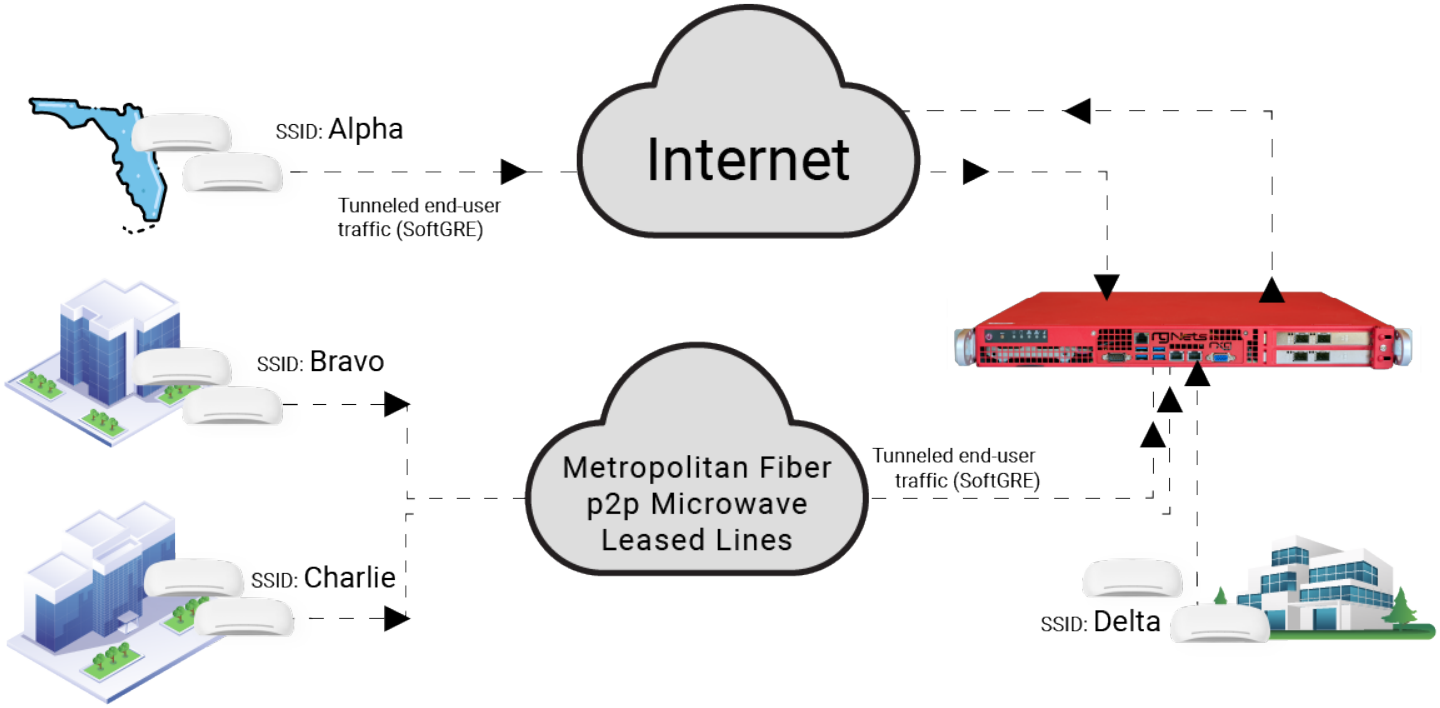
Hybrid Converged WLANS



Network virtualization, overlay networks, tunneled architecture, centralized forwarding, these are all phrases with a similar meaning. We deploy and maintain a physical network, sometimes called an underlay network, solely for the purpose of (reliably) moving packets between participants in a different software defined (aka virtualized, overlay, tunneled, centralized) network. This approach is most commonly used to leverage economies of scale with centralized co-location of intensive network applications. In all of these cases, the application of software defined networking strategies to create an overlay network is relevant. In particular, using a software-defined overlay to create a virtual LAN on which end-user traffic is transported. Utilizing this SD-LAN approach enables unrivaled agility, efficiency, and scale.

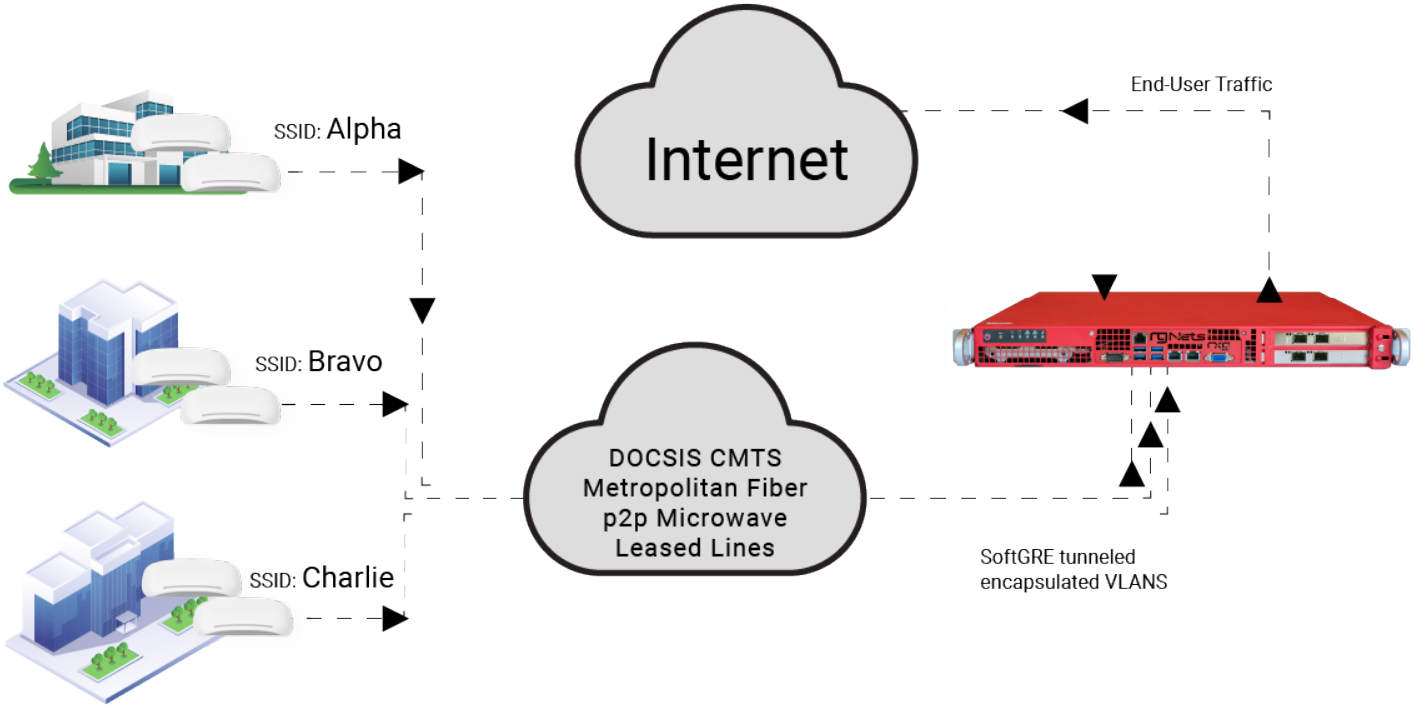
Let's say you have 1,400 retail stores where BYOD guest network access is a requirement. The number of stores and the industry of the operator garners a CALEA requirement. The deployment of CALEA compliance hardware and software at every store would likely be a combination of complex, cumbersome, and cost prohibitive. One possible solution would be to transport all of the BYOD guest traffic to a single central location or a small number of regional locations where the CALEA compliance solution is stored.

A similar situation might arise if you have a library system with two dozen branches that support 50 people per venue. The availability of guest Wi-Fi as well as content filtering is mandated by local law. Furthermore, the library organization also has a mechanism to bill for printing that is tied into the library patron card database. It would likely be advantageous to transport the guest Wi-Fi to a central location for content filtering before Internet egress as well as proxied management and billing for the printers as opposed to deploying these systems at each branch.

There are also numerous use cases where software defined networking with overlay / underlay or SoftGRE tunneled architectures are extremely useful even within a single venue that is well designed and centrally controlled. In some cases the number of network segments that are desired by the service network exceed what is supported by the underlay technology. In others, the political or enduring support ramifications of segmentation make underlay segmentation configurations intractable. This is particularly true when the wired networking is run by one department and the wireless networking, or the applications that ride on the wireless, are run by a different team.

In all of these cases, an SD-LAN architecture is relevant.

Converged Multiple WLANS



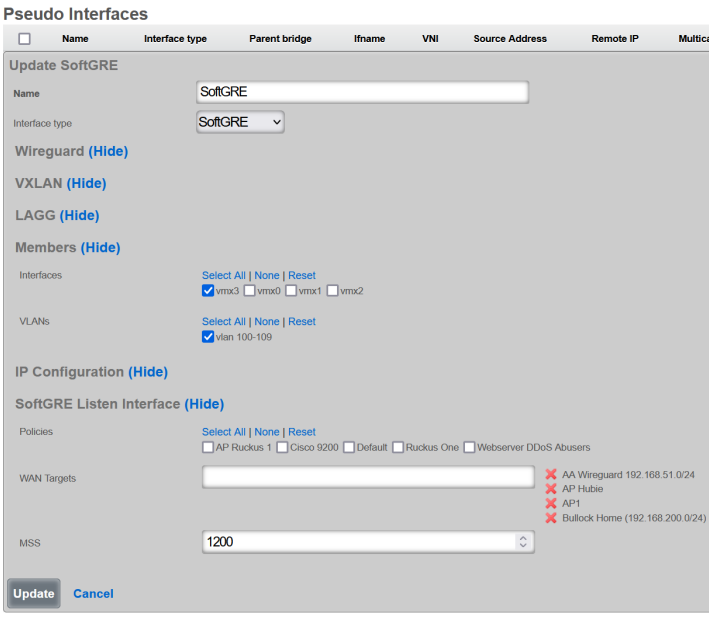
AN SD-LAN ARCHITECTURE FOR WI-FI HAS SEVERAL BENEFITS

Agility:

- Centralized forwarding supports zero-touch provisioning, which means no pre-staging of access points (APs) is required. The exact same AP configuration can be applied to APs at different locations making it easy to deploy. Furthermore centralized forwarding using standardized protocols enables operators to diversify their endpoint hardware based on cost and availability while delivering the same services.

Efficiency:

- All the information goes through an aggregation point, making it easy to track and collect data from the entire network. One or a small number of centralized aggregation points is often more cost effective and easier to manage than a very large number of distributed systems.



Scaling:

- Single aggregation points are typically designed to handle hundreds or thousands of endpoints. As the number of endpoints increases horizontal scaling at the aggregation point usually increases at less than linear rate with respect to the number of endpoints.

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