Cambium Networks™

Desert iNET Delivers Gigabit Speeds to High-End Neighborhood With Fixed Wireless Infrastructure

DESERT ☀ iNET

"Desert iNET recently upgraded us to a Gigabit by Gigabit service on their new technology, and… My boys are over the moon! I had the house wired for Ethernet, and now their ping to the Fortnite servers is 2 ms, and speeds are 920 Mbps by 940 Mbps symmetrical!"

STEPHEN L.
DESERT iNET SUBSCRIBER

Overview

DESERT iNET, A BROADBAND SERVICE PROVIDER in Scottsdale, Arizona, is futureproofing their network with 60 GHz cnWave™ fixed wireless infrastructure. For the last seven years, Desert iNET has offered 7, 25, 50 and 100 Mbps packages to their mainly residential customers. More recently, they needed a way to offer up to one-gigabit packages to satisfy their customers' increasing need for higher speeds.

Two specific deployments include a horse ranching community north of Phoenix called Cave Creek, and a growing deployment at the Desert Mountain Golf Club and Community in Scottsdale in which Desert iNET is replacing fiber/cable.

The Challenge

SINCE THEIR INCEPTION IN 2004, Desert iNET has grown their customer base to about 6,000 subscribers. Many of their customers work from home, live in rural or suburban areas, and live on properties that range in size from one-and-a-half to two acres.

Their customers don't ask for fiber anymore, and in areas like theirs, it is not always feasible (as in Cave Creek) – or economical – to deliver. While not far from Phoenix, the terrain near Cave Creek makes trenching fiber impossible.

In addition, fiber is sometimes unreliable, as in the Desert Mountain deployment. In fact, Desert iNET was asked by a homeowners association (HOA) to suggest an alternative to its previous fiber/cable network.

Desert iNET proves that issues with fiber do not mean its customers can't get fiber-like speeds. With the rise in users working from home, the increased need to support streaming services and gaming requirements, the provider needed to be ready to meet current and future customer needs.

Desert iNET is truly defined as a hybrid network—their network has a fiber core, and they deliver services via fixed wireless broadband.
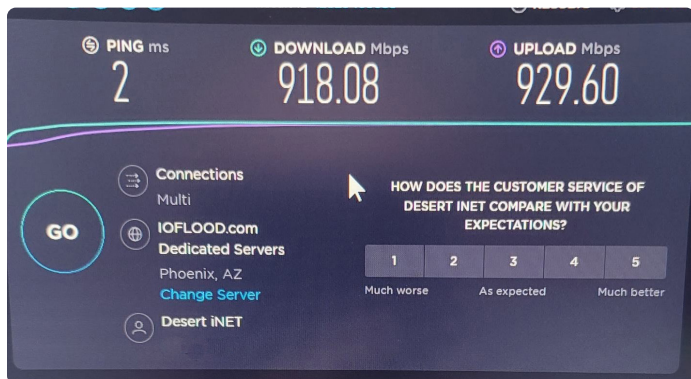
Fiber goes to at least half of all their towers, and 10-gigabit point-to-point connections go from tower to tower. On the wireless side, Desert iNET has historically used scalable, high-capacity cnMedusa technology in their network. In 2021, they began the process of seeking a solution that would bring multi-gigabit fixed wireless with support for mesh architectures.

The Solution

SO FAR, DESERT iNET HAS 310 60 GHz cnWave radios deployed throughout their network. Also, Desert iNET set up two large 60 GHz cnWave mesh configurations, representing about 150 in total, and it lit up another 10 mesh configurations in addition to these two. Desert iNET meshes off their main fiber sites and has hops that connect to each side, and this is where they set up their points of presence (PoP).

Desert iNET did not have LiDAR data to work off of when planning their network. So, they are designing the network through LINKPlanner, Cambium Networks' RF link planning tool that allows them to model "what if" scenarios. Then, when a technician installs a DN, they take 360-degree pictures to figure out where the next hop is.

To manage the network, Desert iNET is using Cambium Networks' end-to-end wireless network management system, cnMaestro™, to control their 60 GHz cnWave equipment.

For Cave Creek, the service provider started by replacing equipment for existing customers and placing 60 GHz cnWave V5000 distribution nodes (DN) on customer properties – with their permission, of course. In exchange for hosting a DN, those customers are given the next package level as a thank you. Roughly 100 of the 200-plus customers in Cave Creek are hosting equipment. In this case, it literally takes a village.

In Desert Mountain, customers literally cut the cord (or cable). Desert iNET has begun to deploy a fixed wireless solution based on Cambium technology to fix spotty performance issues.

BEST PRACTICES

- For other broadband service providers looking at 60 GHz cnWave, plan how you're going to get redundancy on that network in order to get stability before you roll your service out.
- Another challenge with millimeter wave is that you have to extend your network's coverage by adding new DNs. Build your hops in advance on shared infrastructure since it's the most realistic way to build the network.

The Results

WITH 60 GHz cnWave, Desert iNET is able to offer three package levels or next-generation services: 200 Mbps down, 300 Mbps down, or 500 Mbps-1 Gbps down. And so far, customers in Cave Creek, Desert Mountain and other parts of Desert iNET's network report high satisfaction rates.

Desert iNET is deploying more quickly now, at a rate of about 15 radios per week. Not one customer has turned down the idea of hosting a DN yet because they receive the speeds they need and help bring those speeds to the rest of their neighborhood.

In some areas, Desert iNET sees 90% penetration rate. This gives them the ability to create the mesh they need. Customers are given cautionary notes on distribution nodes telling them not to unplug the DN, and Desert iNET always leaves two ways out: if someone unplugs, only their connection is affected. For 60 GHz cnWave V1000 OR V3000 client nodes (CN) that happen to be connected to a DN, they are set up with backup links.

By March 2022, Desert iNET plans to have more than 500 customers on 60 GHz cnWave.

> "It truly feels like cnWave is helping us futureproof part of our network. We don't worry about future interference, we know that the capacity is solid, and we know that we have the ability to increase it."
>
> Jeff Hardesty
> Co-Founder
> Desert iNET
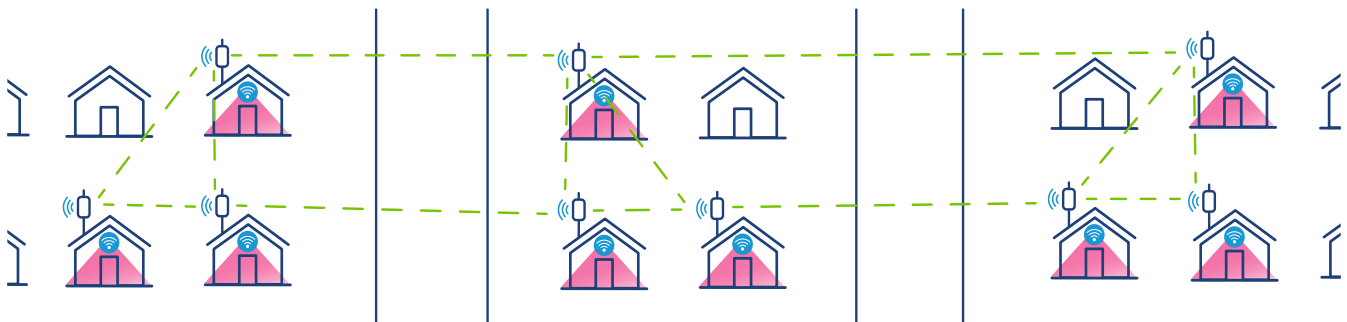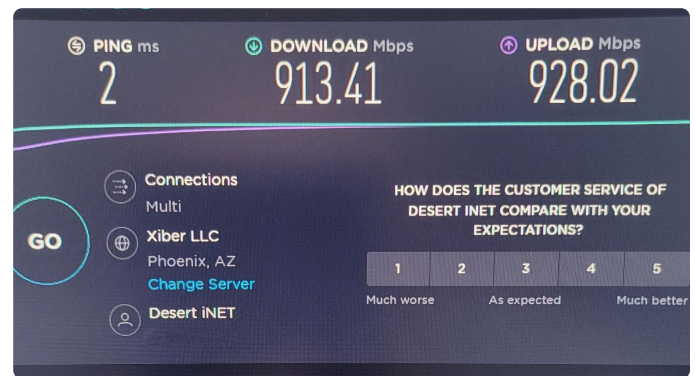
ABOUT CAMBIUM NETWORKS

Cambium Networks delivers wireless communications that work for businesses, communities and cities worldwide. Millions of our radios are deployed to connect people, places and things with a unified wireless fabric that spans multiple standards and frequencies of fixed wireless and Wi-Fi, all managed centrally via the cloud. Our multi-gigabit wireless fabric offers a compelling value proposition over traditional fiber and alternative wireless solutions. We work with our Cambium certified ConnectedPartners to deliver purpose-built networks for service provider, enterprise, industrial, and government connectivity solutions in urban, suburban, and rural environments, with wireless that just works.

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