NEW HORIZONS

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SPRING HAS NEARLY SPRUNG HERE IN BEAUTIFUL KANSAS . . .

The first days of a new Spring are just around the corner as is that exciting change to Daylight Savings Time as we "spring forward" into more daylight hours and a renewed sense of purpose. Those wonderful tiny crocus are already popping up here in Kansas. Temperatures in the fifties and sixties this week are also warming up that dormant grass. Watch out – things are greening up! And, just in time for St. Patrick's Day.

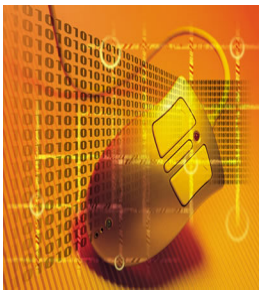
PRODUCT IMPROVEMENTS

Our customers are the "best in the business." That's why we listen to their requests, implement new product ideas, and then sit back in awe at their brilliance. Here are just some of the newest ideas we've implemented thanks to our great customers.

- Wood flooring (hand-scraped hickory) makes life easier, provides great durability, and looks fabulous!

- Frameless windows create clean lines and great visibility.

- More head room in the bathroom and bedroom areas. If you need more interior height, just let us know. We can now accommodate up to 6'10" in bedroom and bath areas.
- Beautiful full body paint combinations.



Internet On The Road, Part Three

Customer Premises Equipment

Jack Mayer, www.jackdanmayer.com

Customer Premises Equipment (CPE) is a general term used to refer to devices that contain a radio set and antenna and are used to pick up a Wi-Fi signal (or other type of signal) and then provide it to your local LAN or computer. Effectively, they "boost" your Wi-Fi signal. They may be specialty devices, intended to only be used to bridge between the broadcast network and your local LAN, or they may be a generalized carrier-grade radio that can function in multiple fashions – as a bridge, a router, an Access Point, etc. A CPE has a higher powered radio than that available in your laptop, a better antenna, and it is mounted outside with clear line of sight (LOS) to the AP (Access Point). Thus it solves the biggest issues with Wi-Fi reception (LOS, power, antenna quality). The CPE is directly wired to your router or your computer with Ethernet cable – which is a digital signal that can be sent around 300' without degradation. This overcomes the typical issue with extending an antenna from your Wi-Fi adaptor; an antenna connection is analog and the signal degrades rapidly when sent over a long antenna cable. If you refer to my website you will see pictures of various CPEs.

While use of this carrier-class equipment provides for a **very** good signal capture, it also adds a great deal of complexity to the solution. This is why most people do not deploy it. It requires the end user to understand the device, how to configure it, how to design the network, how to install and (perhaps) build Ethernet lines, and how to successfully interface the CPE to the LAN. Because these CPEs have typically been sold to professional installers, there are few instructions with them – they are simply not aimed at the consumer market. To demonstrate the power of these devices, it is not uncommon for two of them to be able to communicate with each other

over five miles, when used in point-to-point mode or as AP/Client. Of course, that is under nearly ideal conditions.

There are many commercial radios on the market that may be used to deploy Wi-Fi networks when configured as Access Points. Almost all of them can be used as CPEs with proper configuration. Ubiquity and Deliberant are two companies that make highly flexible devices that are priced right and are very reliable. Over the years I've used many of their products to deploy both Wi-Fi networks, and as CPEs.

My favorite CPEs at the moment are the Ubiquity Bullet or Nanostation. I like them because they are small, reliable, cheap, and relatively easy to configure. The Bullet is easily combined with an omni antenna, and the Nanostation has an in-built directional antenna, so you have two choices of signal capture. When using a directional antenna you have to carefully consider the mounting method, and your willingness to aim the device before use. Directional antennas provide for better signal capture over longer distances, and in more difficult circumstances – but the downside is determining where the Wi-Fi signal originates, and then aiming the CPE. Typically, directional antennas are best used in fixed locations that are permanent, while omni antennas provide for a good method of signal capture on mobile vehicles like an RV. Some people do mount directional antennas on RVs, but typically this is not necessary for RV parks, or close-in signal capture. An 8dbi omni antenna, combined with a Ubiquity Bullet, will pull in Wi-Fi signal from 800-3000' pretty readily. Of course it does somewhat depend on the quality of the signal from the AP.

You can set up a CPE to capture and feed Wi-Fi signal to any router – either cellular or a regular home router. However, if you go that route, you will be responsible for configuring and managing the CPE as well as the router for your local LAN. It requires an understanding of IP addressing and some of the details of network setup. In the last article we talked a little about the Wi-FiRanger cellular router and its unique capabilities (www.Wi-Firanger.com). While you do not need a special router like the WFR to use a CPE, with the WFRBoost option of the Wi-FiRanger the configuration details are handled by the firmware in the Wi-FiRanger - you never have to directly access the CPE device itself. This is the only turnkey package on the market that combines cellular, Wi-Fi, and "boosted Wi-Fi" (e.g. CPE) capabilities in an integrated package. So let's summarize your choices for *Internet on the Road*. For those who have nothing now and want cellular data service I always recommend a cellular router. There are many advantages to having a router and in relative terms they are not that expensive. If you need one today, I'd recommend the Cradlepoint 500 or the Cradlepoint 1000, depending on the size and capabilities you need. If you can wait a month, by the end of March or early April the Wi-FiRanger would be my first choice. At the moment, this new router is still working out issues but it will be the router of choice once these are resolved.

For getting better Wi-Fi reception in RV parks there are various choices, with the CPE being the best, and the external USB Wi-Fi adaptor being the least expensive, but most limiting. With the Wi-FiRanger you can add on the WFRBoost feature for better Wi-Fi capture in RV parks, so it has many advantages. In my opinion it is worth waiting for the Wi-FiRanger to become stable, if you can.

For cellular data providers, I recommend 3G cellular data from Verizon (via Millenicom, if it meets your needs). Or, if you frequent areas where the newer 4G service is available, then you can subscribe to 4G data from Verizon – but it is not worth it yet for most people because of the limited availability.

My Setup

I've been getting questions about what our personal RV communications arrangement is. Because I test equipment for a variety of manufacturers and design and implement Wi-Fi networks I have lots of equipment. What is being used at any point in time varies, but here is my current configuration.

- The LAN in our RV is driven by a Wi-FiRanger cellular router. On that LAN are a wireless multifunction printer, three full-size laptops (15" and two 17"), and a Eee Netbook. For storage there is a four terabyte NAS (Network Attached Storage with 2x2 mirrored drives). The DTV satellite receiver and TV are also on the LAN and are hardwired through a switch in the entertainment center. When building the trailer, I specified to New Horizons a communications center in the upper closet just inside the door. I had them add 12-volt power, as well as 120-volt in that location. New Horizons also ran Ethernet for me from my communications center to the roof, the utility hookup area, and the entertainment center. With the router in this location I can pick up my network while driving, so nothing has to be moved or modified to have Internet while driving down the road.
- In addition to the Wi-FiRanger I also have a Cradlepoint 1000 permanently mounted next to the WFR. That is my "standby" router, and is what I used prior to the Wi-FiRanger. If something happens to the WFR then it is a simple matter to move a few lines to the Cradlepoint: one USB line for the aircard, and three Ethernet lines (one for the CPE, one for the NAS, and one that feeds the TV and DTV receiver at the entertainment center).
- DroidX smartphone. This can connect through my LAN via Wi-Fi as well as the cellular network. Everything I do is Google based to the extent possible, so it is totally integrated between the smartphone and the computers.
- I have a hand-built WFRBoost (CPE) on the roof of the RV attached via Ethernet to the Wi-FiRanger. I built this from on-hand components and I'm using it to beta test the WFRBoost capability for the manufacturer of the Wi-FiRanger. This will shortly be replaced with the commercial version of the WFRBoost. Prior to my using the Wi-FiRanger I used this same CPE directly connected to the Cradlepoint 1000. Since I have various radios available to me my CPE varies with what I have on hand, but has been a Bullet for some time. There is a picture of this on our website.
- I use a USB 727 aircard on the Verizon network. This is plugged into the Wi-FiRanger's USB port via a USB cable. The aircard is always connected to a Cyfre wired amp and the antenna is a Wilson RV. This amp/antenna is dedicated to cellular data.
- For the rest of the cellular devices (phones) I use an SCT Large RV wireless amplifier. This provides the cell phones better reception.

For more information and details consult our website. And if you have questions not answered there, feel free to email me at jackdanmayer@gmail.com.

RECIPES OF THE MONTH (With nearly 37 million U.S. residents able to trace their roots to Ireland, it's a good bet at least some of you out there might enjoy an Irish feast this St. Patrick's Day.—recipes attributed to http://allrecipes.com)

Amazingly Easy Irish Soda Bread

4 cups all-purpose flour
4 tablespoons white sugar
1 teaspoon baking soda
1 tablespoon baking powder
½ teaspoon salt
½ cup margarine, softened
1 cup buttermilk
1 egg
¼ cup butter, melted
¼ cup buttermilk

Preheat oven to 375 degrees F. Lightly grease a large baking sheet. In a large bowl, mix together flour, sugar, baking soda, baking powder, salt and margarine. Stir in 1 cup of buttermilk and egg. Turn dough out onto a lightly floured surface and knead slightly. Form dough into a round and place on prepared baking sheet. In a small bowl, combine melted butter with ¼ cup buttermilk; brush loaf with this mixture. Use a sharp knife to cut an "X" into the top of the loaf.

Bake in a preheated oven for 45 to 50 minutes, or until a toothpick inserted into the center of the loaf comes out clean, about 30 to 50 minutes. You may continue to brush the loaf with the butter mixture while it bakes.

Beer Braised Irish Stew

1 tablespoon vegetable oil
1 (3 pound) beef chuck roast, trimmed of fat and cut into ½-inch cubes
2 tablespoons all-purpose flour
1 cup coarsely chopped onion
1 cup coarsely chopped carrot
1 (12 fl. Ounce) can or bottle dark beer
2 bay leaves
1 teaspoon dried thyme
1 teaspoon salt
½ teaspoon ground black pepper
2 cloves garlic, minced
2 tablespoons Worcestershire sauce

Preheat oven to 325 degrees F. Heat the vegetable oil in a large Dutch oven over medium-high heat until very hot, and brown the meat in two batches, stirring to brown the cubes on all sides. Return all the meat to the Dutch oven, sprinkle with flour, and stir lightly to coat the meat with flour. Stir in onion, carrots, dark beer, bay leaves, thyme, salt, pepper, garlic and Worcestershire sauce. Bring the mixture to a boil, and cover. Place the Dutch oven into the preheated oven, and cook for 45 minutes, uncover, stir the stew, and cook until the beef is very tender and the liquid is reduced by half, about 45 more minutes.

Serve with Irish Soda bread.

STAY IN TOUCH WITH US - Facebook (give us the "thumbs up" as you hit the "Like" button); join the New Horizons Owners Group Forum (NHOG) at http://www.irv2.com/forums/f269; or stop by next time you're in Central Kansas.

As always, we hope to see you down the road.

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