

No. 207. Preparing the ORC Laptops for Field Day

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Nancy said I should write this, so here it is, written in May 2015.

Suppose someone donates a computer and I want to make it an ORC Field Day logging machine. What do I do to prepare it? Keeping in mind that these computers are doled out to members to use as they wish shortly after Field Day, what needs to be on them? Here is what I do.

First and foremost, after determining that all the hardware is OK, I use special software to completely wipe the drive, digitally. The first bit on the hard drive is changed to a digital one, then a digital zero. Then the second bit is done in this way. Then the third bit is done, and so on, until the first 8 bits (8 bits = 1 byte) are finished. This continues until (in the case of an 80 gigabyte hard drive) all 80,000,000,000 bytes have been changed to a one and back to a zero. When the software is done with this, it goes back and does it again, all 80 Gb. And then it does it all a third time. With three passes there is no chance of a virus or other malware, or even any of the old data, surviving. The drive is clean, much like it was when first made at the hard drive factory.

But, of course, now it has no operating system (OS) on it. It will not boot. But, even before installing a bootable OS, I partition it. That divides up the 80 Gb into recognizable chunks that an OS and other software can recognize. In the case of ORC Field Day laptops, assuming an 80 Gb-sized hard drive, I divide the drive into the following FAT32 partitions: C: 50 Gb, D: 20 Gb and the remainder as E: about 10 Gb. The C: drive is for Windows, the D: drive for programs and the E: drive for user creations (letters, pictures, etc.).

Next, I add the first of two new OS, DOS7. DOS7 is the latest DOS operating system, very stable and error-free, found under Windows 98. Having it on the drive gives one tools and abilities that are just not available with any version of Windows. After installing DOS7, the machine should now boot into it and I test to make sure it works properly. I make a few tweaks here and there to make DOS7 super efficient if it is used. Perhaps 2 hours of work has been finished at this point.

Next comes the installation of Windows XP, the second OS. It may take less than two hours to just add the XP OS, but count in a couple of more hours to install all the hardware drivers for the machine I am working on. Drivers translate Windows commands for the hardware that exists in this particular machine. This is a must do for everything to work properly, and although Windows does a pretty fair job of installing hardware drivers, it never gets them all. I identify, download and install all that Windows misses, or those in which Windows installed an outdated driver. But, we are not done yet, by far! Next comes updating Windows itself.

No updates to the XP operating system can now be done until the computer is made into a "Point of Sale" (POS) machine, and this requires editing the Registry. Microsoft will not update the software in non-POS XP machines since they consider XP to be outdated and no longer supported. Once the machine has POS status, however, one can download and install updates, up to 2019. So, I turn it into a POS machine by properly (and carefully) editing the Registry.

Now, updating of the OS can begin. There are currently over 200 XP updates to download and install, which takes many hours. I download a batch of updates, install them, and reboot. Then, the same, again and again, until all 200+ have been installed. This makes the OS really up-to-

date and as secure as it can be. Security updates are not all that important just for Field Day, since we are not attached to the Internet during that time, but they most certainly ARE important for the ORC members who use the machines the rest of the year. So I update them.

The computer is now a useful machine, but it is not yet ready for Field Day. Each machine must be assigned a unique name (ORC1, ORC2, etc.), and a unique network address (192.168.1.114, 115, etc.). They are all set to the KAPLAN workgroup and the monitors are arranged to stay on for 30 minutes (20 minutes if on battery power), and the hard drives are set not to turn off or go to standby. Wireless is turned off for the contest. The Field Day software (N3FJP) is installed and set up. Finally, a mock-up of the network (all computers attached to a router) is set up in my basement and the network is run with tests of each computer, to make sure everything is working as it should. When ORC3 logs a new contact (fake, for the test), it had better show up on the ORCMaster screen and logged on the ORCMaster hard drive within a few seconds! Otherwise, troubleshooting ensues until the problem is solved. Only when everything works perfectly are all the machines shut down and packed for the Field Day site!

All this is a lot of work! But it is worth it. The result is flawless machine logging of all the hard-earned contacts made by our operators. (Flawless except for any human logger errors). And, when Field Day is done and all the reports are in, six or seven ORC members get the loan of a perfectly operating laptop computer for about 10 months. Good stuff. Happy Computing!