Assigning an IP Address to an APC Network Management Card without having the APC software.

JULY 17, 2012 BY JOE (HTTPS://JOEIT.WORDPRESS.COM/AUTHOR/JOEIT/) 3 COMMENTS (HTTPS://JOEIT.WORDPRESS.COM/2012/07/17/ASSIGNING-AN-IP-ADDRESS-TO-AN-APC-NETWORK-MANAGEMENT-CARD-WITHOUT-HAVING-THE-APC-SOFTWARE/#COMMENTS)

I work for a company that does Electrical construction and design. When I took this job I though that would translate into having little things like plenty of power in the server room, well documented wiring, and maybe having everything in the building(s) on UPS units. I should have known better.

Much like most IT Professionals home networks are kinda messy, working for a company full of electricians translates to wiring… issues.

We do have a generator, and we do have a building UPS in the main building. That UPS is 15 years old. The UPS battery had never been replaced when I got here (it basically had a runtime measured in microseconds). Only some outlets are on the UPS circuits. The server room is in another building. That building is on the generator, but there is only one circuit that is on the UPS. That circuit was for the 17 year old Toshiba PBX that was mounted (I kid you not) in a cupboard in the bathroom in that building.

The servers were on UPS units. APC SmartUPS 1500 units. Four of them. That were 6 years old. With batteries that had never been replaced. Desk units that were housed on shelves in the rack. That were at approximately 150% of draw capacity (when all servers were at peak draw). Unconnected in any way to any of the servers.

This meant that if the power failed (which is does, because this is an older part of town), most of the workstations would go down, and the generator would kick on. Approximately 1/1000000000 of a second before the UPS batteries on the servers and the few workstations on building UPS circuits ran out. Most of the time.

So clearly my first priority was to get the servers on a UPS that was correctly sized for the draw, with fresh batteries. Enter the APC SmartUPS RT 5000 with two battery arrays. This unit will handle all of our current servers, with about 30% extra capacity for expansion. I bought this unit with a Network Management Card so that I could remotely monitor the unit. And then never configured it. I'm not going to make excuses, it was just one of those things where I got busy and forgot.

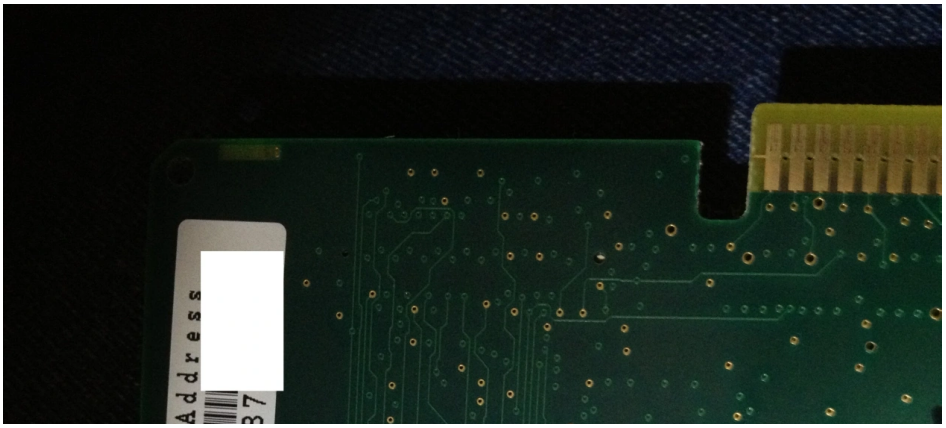
Until I needed to get access to a UPS in the other building. This got me thinking about the UPS on the servers. So I plugged the NMC into one of the switches, and… nothing.

As it turns out, the NMC in this particular unit will not pull a DHCP lease without intervention through some APC software that ships with the unit. Which I cannot find. Not an insurmountable issue.

Enter the ARP command.

Address resolution protocol (ARP) can be used to configure the NMC. All we need is the MAC address of the NMC. The MAC address is located on the quality assurance slip that shipped with the NMC, and is also located on a white sticker on the NMC itself.Unfortunately the QA slip is long gone, and the sticker on the NMC with the MAC printed on it is on once of the actual circuit boards of the NMC, now safely concealed inside the UPS.

Now ***I DO NOT recommend that you do this***, but it is possible to remove the NMC with the UP running. If you feel like taking your life in your own hands, you could just unscrew the NMC and pull it out of the UPS without taking the UPS offline. Which is what I did.



(https://joeit.wordpress.com/wp-content/uploads/2012/07/nmc-mac.jpg)

Now we just need a computer on the same subnet.

Open up a command prompt and type the following (*MAC Address format: xx-xx-xx-xx-xx-xx*):

arp -s [IP_ADDRESS_FOR_THE_NMC] [MAC_ADDRESS_OF_THE_NMC]

Hit Enter.

Next, use Ping with a size of 113 bytes to assign the IP address defined by the ARP command.

Use one of the following Ping commands *(To clarify, the -l option is the letter L but must be lowercase when executing the command)*:

Windows command format: ping [IP_ADDRESS_ASSIGNED_ABOVE] -l 113

*NIX command format: ping [IP_ADDRESS_ASSIGNED_ABOVE] -s 113

Now, you can Telnet to the card by typing: telnet [IP_ADDRESS_OF_THE_NMC]

Use “apc” for username and password.

Configure/apply any additional changes.

Log out to save changes.

That’s it, now you can use the web interface of the NMC to make configuration changes or retrieve information from the UPS unit.

All of this could have been avoided had I simply taken 30 minutes to configure the UPS when I installed it, or even taken 5 minutes to document the MAC and put all of the paperwork that came with the UPS in a folder in my file cabinet. Learn from my mistakes, ***DOCUMENT EVERYTHING***.