

It Will All be Software One Day...



All of us audio people are gearheads and that is good and healthy too. It also helps the industry and the manufacturers who are happy to sell and supply us with all this gear. However, we all cannot ignore that more and more of what we are dealing with every day, is software based and in the clear majority of products, there is a processor of some sort and a software of some sort involved. Whether it is MAC or PC

or Smartphone, or RASPBERRY based gear, or FPGA based products, they all have some software on board.

This opens a huge amount of opportunities on both the development and manufacturing side, as well it does create the need for us to familiarize ourselves with those software items anew every day. We are used to using wireless devices on stage for monitor tuning and to expand control possibilities on iPads and other touchscreen devices. Virtual reality and its need for good audio create a whole other universe of demand and also possibilities for us in pro audio.

In this regard, it does not matter if you like your analog audio or if you find that this analog gear sounds warmer and it has more headroom (which it does not if you drive it right), but the future is digital, end of story. So, we all better start digging in and getting used to IT structures and how they work. As much as this can look rather alien at the beginning, trust me, there is no magic and no rocket science behind it and in general the people from the IT industry are not smarter than pro audio people, so it should be possible for us to learn all that we need to know.

Let's have a look at Network layers for example. There are eight layers and that's a number which is not scary to any audio engineer at all. My hands can span a bank of eight faders with no problem, so getting to work with eight Network layers is no big challenge. Since everything in Digital happens on a "two wire system" all the communication is serial. For this purpose the IT community breaks down all communication and transport into packages. These packages have a certain size (bits and bytes) and they contain both addressing information as well as content, which in our case is Audio signals. At the beginning of each package there is information on where this is coming from and whom it is intended for and this should make sense for everyone since on the network, everybody can see everything, if they want to.

It works rather similar with the IP addresses and it does not matter if you use fixed IP or DHCP. Fixed IP address means that the user will allocate an individual and unique IP address in a standard format to any

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device on the network. This means the user is in control (I like that very much), but it also forces you to manage this proactively and with great attention to detail. DHCP is comfortable since someone else (the DHCP Server) will automatically allocate network addresses to any new device within the network from a range, which has been predefined. In both cases it is ultimately our responsibility to make sure that devices can "see" each other and will be able to communicate, so that we can do the work we are actually being paid for. If you observe and know about those two things properly, then you will have solved 95 % of your digital challenges and the rest should be easy. Welcome all to this exciting new world of possibilities. If ever you want help and need advice, you know how to find me.....

Join the conversation and share your thoughts with Alex. Alex can be reached at alex@asaudio.de