# Transcript: Why Subnet with Adrian Brown

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## [Opening music with voiceover]

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## Speaker #1 (Dave Huff):

Welcome, Dave Huff here from the College of IT. Once again, today I've got Adrian Brown with me.

We had a previous discussion about subnetting and how to perform subnetting and the network and the host elements of a subnet and subnet mask. Today Adrian, I want to ask you, maybe this is a simple question maybe it's not, but why does subnetting matter? Why do we do it? Why do we need to know what it is and why do we need to know how to do it?

## Speaker #2 (Adrian Brown):

Well, subnetting is a division of a larger network, and it matters because with a massive network, and just imagine a room full of people, let's imagine a room with, let's say 30 people, and they're all having conversations, that gets noisy. Not only is it noisy, it's also distracting, meaning if we had a particular incident going on or issue, it's hard to narrow down with that issue may be.

So subnetting allows us to separate or segment out our networks into smaller pieces so that we can better manage our networks, and it keeps down that extra distracting noise for our systems. When I say noise, what I'm referring to is the broadcast. When a broadcast message goes out in a large network, every system will receive it, and therefore, every system has to process it. That's going to cost you resources in the form of processing power, memory and bandwidth.

## Speaker #1 (Dave Huff):

It's like if you and I were sitting in this room with 30 people trying to have a conversation, but we can hear the people on the table next to us and so we're eavesdropping on their conversation and the people across the room are talking loud and I can hear them and other people can hear us and you and I might be trying to talk about something that we don't want to share, but because we're in a big, large room, everybody is got access and we're having to compete with everybody else in the room as well, is that picture you're trying to make?

## Speaker #2 (Adrian Brown):

Yes, that's exactly.

## Speaker #1 (Dave Huff):

That's the computers on the network. They're all just inundated with all of the traffic, so how does subnetting address that then?

## Speaker #2 (Adrian Brown):

Subnetting allows us to separate our computers or devices into separate, smaller or as we call it sub networks. Subnetting is just an acronym for sub network. So we're creating these small isolation pockets or networks where it's taking that room with 30 people and then moving maybe 10 of those 30 into a room and another 10 into another room, and then leaving the last 10 in to the initial room, therefore reducing the amount of noise, so that we can hear each other better.

## Speaker #1 (Dave Huff):

So as a system administrator or a network administrator, I just need to look at these 30 people and say, you guys are talking about payroll and you guys are talking about operations, so let's get you into your separate room so that everybody is not stepping on top of everybody?

## Speaker #2 (Adrian Brown):

Absolutely. Yeah.

## Speaker #1 (Dave Huff):

What about routing? Does subnetting and the network mask, does that come into play in the routing world as far as decision-making and routing tables, things like that?

## Speaker #2 (Adrian Brown):

Absolutely. Routers, as we'd like to sometimes refer to them as layer three devices, will make decisions on whether to pass a message forward and the proper pathway to pass that message along when it identifies the source in the destination, more so the destination, so the IP address of the destination and the subnet mask of that destination will identify the subnet, as I said, destinations. The router needs to make a decision on how to pick the proper path and when to pick a path and it does this based on the subnet information.

## Speaker #1 (Dave Huff):

Okay, so if we're in the operations meeting and somebody from payroll walks in, the router would look and say, "Hey, you need to be in that room." It would keep that person from participating in our conversation and in their own subnetwork where the traffic needs to go.

That's really interesting way to look at it. It's easy for me to picture a big room with everybody trying to talk, and that's our collision domain or a broadcast domain on the network and then the subnetting breaks people into separate conversations at separate rooms. That paints a nice picture for me Adrian. Thank you. Anything else you'd like to add about why subnet or did we cover it?

## Speaker #2 (Adrian Brown):

I think we've covered it.

Well, I explain one last thing is think in terms of security, you may mention that if we wanted to keep the conversation to ourselves, subnetting is also used in terms of security.

## Speaker #1 (Dave Huff):

So that my conversation about payroll can't be listened to or eavesdropped on by somebody who's not in the payroll subnet?

## Speaker #2 (Adrian Brown):

Absolutely.

## Speaker #1 (Dave Huff):

Well, listen, thanks again this has been very educational and everyone thanks for listening to this discussion on the IT Audio Series.

## [Closing music with voiceover]

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