The True Story Of Network Layering

And The Origin Of The OSI Model

Despite the success of the Internet in replacing all the previous attempts to build a global computer communication system, some engineers haven't updated their thinking from old descriptions of networks. instead they still cling to the outdated 7–layer reference model that was invented by ISO instead of the 5–layer reference model that was invented for the Internet. Interestingly, engineers who insist on using the older model cannot identify single protocol at layers 5 and 6. But... because they learned the model somewhere in school, they desparately hope that the extra layers must be useful. As a result, they incorrectly classify applications as as layer 7 instead of layer 5.

Researchers have begun looking into the origins and uses of the OSI 7–layer reference model to determine why a cumbersome and inaccurate model has had such staying power. They have recently uncovered some surprising facts. We have know for a long time that the model was the work of a group. We did not know, however, that the group met late one night in a bar and began making fun of American pop cluture. As it turns out, they started scribbling names of the seven dwarfs from the Disney movie on a paper cocktail napkin, and somebody joked that seven was a really good number for network layers. The next morning at the standards committee meeting, the group passed around the cocktail napkin and generally agreed that that they had discovered something fundamental the previous night while they were drunk. By the end of the day, they had renamed the seven layers (with names that sounded more scientific), and produced the basic model. Here's the lineup and a bit of explanation:

Layer	Dwarf	Name	Explanations
1	Sleepy	Physical	The group new that physical connections are boring, and figured it might as well assign the physical layer to dwarf ``Sleepy''. As it happens, a Layer 1 protocol specification does indeed put everyone to sleep (just try reading one late at night).
2	Sneezy	Link	If you monitor a network and watch the pattern of packets emitted by a computer, you'll immediately understand the relationship between link–layer

			protocols and ``Sneezy''.
3	Happy	Network	Everyone's happy with the network layer. Well... to be honest, the only network layer protocol that makes everyone's happy is the Internet Protocol. Unfortunately, the Internet protocol isn't part of OSI, and wasn't really built to follow the OSI model (the model didn't include internetworking). But, the designers had good intentions.
4	Doc	Transport	This one's obvious –– it definitely takes a Ph.D. to understand the subtleties of a transport layer protocol.
5	Dopey	Session	Yep, even the designers realized that having a separate session layer is a dopey idea. They decided to follow Disney's approach of adding comic relief, so they stuck in a completely unnecessary layer and laughed about it.
6	Bashful	Presentation	Another little joke. The designers realized that sooner or later someone would create a presentation layer protocol. However, the group decided to classify such protocols as too ``bashful'' to appear in public. So, even if a presentation protocol is produced, no one gets to see it.
7	Grumpy	Application	Programmers who design network applications are incredibly grumpy –– they complain about the efficiency of other layers, the fundamental abstractions of the network, the long hours, the difficulty of debugging, and the API they are forced to use. And users add to the grumpiness because users *never* complain about protocols at other layers; they only complain about applications.

Moral of the story: If you're an engineer working on a standards committee, avoid drinking with colleagues –– a bad joke you hatch late one night in the bar could turn out to haunt the industry for decades.