

IS YOUR CABLE ABLE?

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Cable... no, not the TV, the structured cable running through your building. While structured cabling may not seem as exciting as a discussion about your favorite show on cable television, what cabling solution you choose for a new or retro-fit building is the single most important decision you can make when it comes to your network design. Keep in mind that most servers and desktops last an average of three to five years. Your cabling system is built to last– if designed and installed properly.

There are several components that you, as a decision maker, should be aware of. There are partnerships in the cabling industry that work to your advantage. Existing between cable and connection device manufacturers (patch panels, jacks, etc.), these partnerships maximize the end to end performance of the network cabling through testing of interference factors, bandwidth performance and more. The list below is not all inclusive, but gives a good sense of which partnerships are available today:

- Panduit/General Cable
- Systimax/CommScope
- Ortonics/Berktek
- Siemens/Siemens (they have begun to sell their own cable)

Why is this important? Many of these partnerships offer extended warranties (15+ years) for the cable (ex.-Berktek) and connector equipment (ex.-Ortronics) used in the installation. The warranty criteria include other factors, such as the installer of the product must be certified by the manufacturer of the solution. Be careful when reviewing proposals from vendors. If these criteria are not met, your promised 15+ year warranty will be invalid.

Many people are tired of hearing about the differences between CAT5, CAT5E, CAT6 and now CAT7. However, these categories and other standards in the cabling industry are relevant to final network performance. CAT5 is generally used for telephone connections rather than the previous CAT3 cable. CAT5E is still widely used for data applications at this time, but CAT6 is becoming more prevalent.

More bandwidth mandated a new standard. Ten years ago we were talking about whether a company would run a 10MB or 100MB network. Now the question is, do they run a 100MB or 1GB network? CAT6 is built with tighter wire twists and increased separation of pairs which reduces interference between cables and increases the amount of data that can be pushed through the wires. Take care, however, that you do not install CAT6 cable in the wall and think that is going to allow the 1GB network to function at full speed. The jacks, patch panels, patch cords, switches, and NIC (network interface card) must also be 1GB compliant to ensure 1GB performance.

When embarking on a new building project or a substantial remodel, CAT6 should be installed for both voice and data locations to prepare for the future. The cost difference is generally between 25 – 30% higher for the material, while the labor remains virtually the same. It is still far less expensive to cable for the future in the beginning rather than to come back and re-do. If you need to tweak the budget do it by not purchasing

1GB switches, NIC cards and patch cables because those components are easy to change as you grow. If the additional cost for the right cable seems frivolous, compare that cost to the components of your voice and data network (IP telephones, servers, desktop devices, software). It will make the cable cost seem like a drop in the bucket.

Not to muddy the waters but now the newest talk of the town (although it has been around for a while) is CAT7 – or 10Gigabit cable?! It never ends. But there is good news. This cable is not ideal for mainstream desktop cable runs in most situations at this time. Appropriate applications for CAT7 are data centers, data devices pushing very high bandwidth such as full medical records, etc. If the distance limitation of 300 ft is not a factor, CAT7 could also provide a less expensive option than fiber to connect remote data closets within a building.

Plenum anyone? Each cable is offered in a plenum or non-plenum (PVC) variety. In the event of a fire, the plenum cable is slow to burn and produces less smoke than standard PVC cable. It does not mean that the cable will not burn – it simply means that when it burns it will burn “cleaner”. All of the cables mentioned above come in these varieties and it is important to install the proper cable. Many new buildings are required to install plenum cable as are buildings using the drop ceiling structure for a cold air return rather than providing venting for this purpose. Stay educated to avoid undue consequences for non-compliance. An architect/engineer would be a good source for this information.

Lastly, the NEC (National Electric Code) requires that unused (abandoned) cable be removed from a building. The main reason for this is that the old copper cable does not add any value but it may be a fire inducer. Many people do not even think about this issue when pulling in a new cable system. Be sure to check on local codes to ensure that your company is adhering to the policies set in your city. If no code exists in your city or state, the NEC is the one to follow.

You wouldn't construct your building without a solid foundation. Give the same attention to your **network** foundation – the structured cabling system. Do not simply go for the cheapest solution –most likely it will cost more money later in re-cabling the same areas or poor network performance troubleshooting. Be safe and research the type of cable needed for the environment in which it is installed. And finally, rely on industry professionals to assist you in your decision making process.