OPEN
Compute Project

Data Center Cable Infrastructure
Color Schema

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Cabling

1. Introduction

This information document is a reference guide for data center cable infrastructure to enhance operational efficiencies with the use of a color schema based on cable function. This would apply to the jacket color on all cabling in the rack and can be extended outside the rack to the upstream infrastructure.

In many data centers, inter-rack cable infrastructure uses one color throughout, or the colors set by the TIA standard. TIA labeling standards are useful in understanding the type and capabilities of a cable, but cannot tell an operator how they are being used in a particular application. A cable jacket color schema based on function, that is adopted by the data center industry will offer multiple benefits:

Improved operational efficiency
Technicians can quickly identify cables by function, disregarding two-thirds of the cabling in the rack. This will improve accuracy and response time during changes or incident activity.

Reduced cabling cost
Using an agreed upon color scheme, the OCP community can take advantage of community pricing with the potential of bulk buys.

Reduced training time
New technicians or transfers do not have to re-learn a different corporate standard.
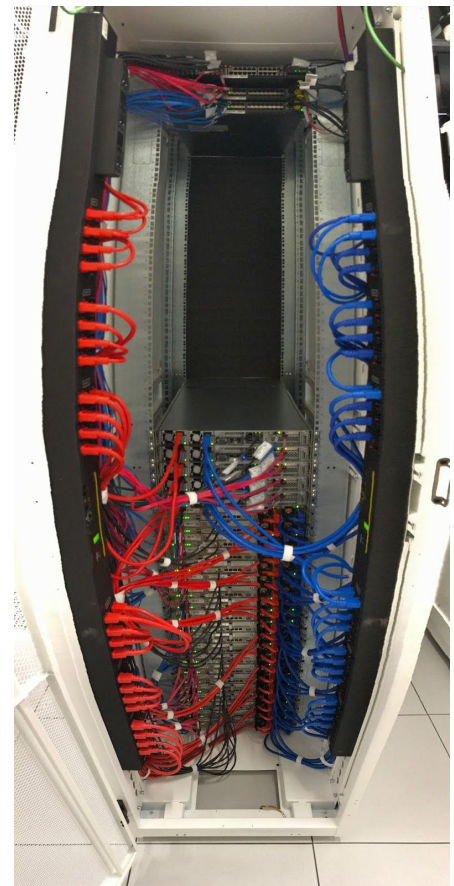
Jacket Color Schema Proposal

1.1. Table

Cable Color Scheme			Color Codes		
			RGB	pantone	RAL
A-Side Diverse path		Red	119, 17, 0	710	3018
B-Side Diverse path		Blue	0, 124, 176	3015	5015
Management		Black	39, 41, 43	6	9011
Telephone		Gray	122, 123, 122	424	7037
Non-Redundant Path		Green	0, 105, 76	342	6016
Crossover		Pink	XXX	XXX	350-60-45
Station Desk		Yellow	250, 202, 48	123	1018

1.2. When possible the <u>connectors</u> should keep their TIA color code.
Examples (also see photos in section 5)
    1.2.1. Multimode OM3&4 50 /125um Aqua
    1.2.2. Multimode OM1 62.5 /125um Orange or Slate
    1.2.3. Single Mode OS1 & 2 ~9-10 /125um UPC Yellow
    1.2.4. Single Mode OS1 & 2 APC Green (angle fiber connector)

2. Cable Jacket Label

Cables should not only have the color specified from the manufacture, but also standard jacket labeling. The following are some recommended best practices.

2.1. Cabling should include labeling on both ends of cable. This could be a unique ID such as a QR code with a human readable number.

2.2. Cables should be marked with length marker.

2.3.   Cables should have the manufacturer's name and serial number. This can be the Unique ID.

2.4.   Fiber cables should have the method, polarity, fire rating and loss marked on the cable.

3.   Cable Label

Each cable should be labeled to allow for location information. Below is an example format and information that should be included.

Format: "XXX-YYY-ZZZ"

3.1.   Far end destination – "XXX" - Room identification

3.2.   Far end destination – "YYY" - Grid location

3.3.   Port count – "ZZZ" - cables numbered in sequential order

4.   Cable Examples

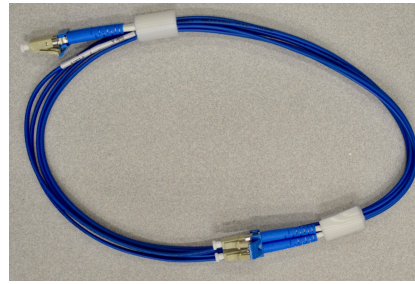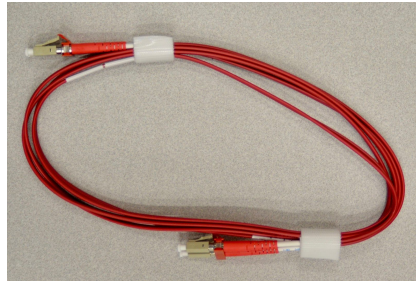Below are specific examples of cables using the proposed color schema

4.1.   Power cords

4.2.   Copper RJ45

4.3.   MM Fiber

4.4.   SM Fiber

4.5.   Twinax / DAC

5.   Summary

A standardized cable color schema might appear to be a simplistic improvement, but it can bring significant fundamental operational efficiencies to a data center. If adopted by the community, further benefits are gained through reduced material costs and reduced training time. We encourage the community to provide further suggestions and improvements to this information document.