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## *Data Center Cabling Guide*

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### Gratitude Message

We are very blessed for the opportunity to bid on this exciting project, and we will honor our commitment to technology and innovation through discipline, expertise, and customer first approach.

Moe Melki  
CEO

# Company Overview



**40+**

Years of operations

**5,000+**

Happy clients

**95%**

Customer Retention

**98%**

Customer Satisfaction

Welcome to ATEL Technologies, Inc. We are excited to present our proposal for your technology needs. At ATEL, we combine creativity, innovation, and discipline to deliver exceptional solutions that will help your business thrive .



# Data Center Cabling Best Practices Guide

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## **Proven Tips to Improve Performance, Reliability & Scalability:**

Structured cabling is the backbone of every modern data center. Poor cabling design can cause performance bottlenecks, increase downtime risk, and create unnecessary costs during upgrades. This guide walks you through industry best practices and actionable tips to ensure your cabling infrastructure is future ready.

## 1. Plan for Growth, Not Just Today

- Always design with scalability in mind. Cabling should support at least two future refresh cycles (10–15 years).
- Implement modular cabling and leave room in racks and conduits for expansion.
- Run more cable than you need today—it's far cheaper during the build than adding later.

## 2. Use Standardized Structured Cabling

- Follow TIA/EIA standards (568 & 942) for data centers.
- Use a structured cabling methodology (horizontal & backbone cabling) instead of ad-hoc patching.
- Color-code cables by function (data, voice, management, storage, security) to simplify troubleshooting.

## 3. Choose the Right Media

- Fiber vs. Copper: Use fiber for high-bandwidth, long-distance backbone connections; copper for short-run device connections.
- Category 6A or higher is the current standard for copper to support 10Gbps.
- Deploy multimode OM4/OM5 fiber for futureproofing up to 100Gbps.

## 4. Optimize Rack & Cabinet Layouts

- Place racks in hot aisle / cold aisle configurations to improve airflow and cooling.
- Use vertical and horizontal cable managers to maintain neat routing.
- Label all connections at both ends—this prevents hours of guesswork later.

## 5. Cable Management Matters

- Use Velcro straps instead of zip ties (non-damaging and adjustable).
- Maintain bend radius compliance—over-bent cables degrade performance.
- Bundle and route cables in trays or ladders, never across the floor.

## 6. Test & Certify Every Connection

- Don't assume—it must be tested. Certify all copper and fiber runs with professional equipment.
- Document results for compliance, warranties, and future troubleshooting.

## 7. Maintain Documentation

- Keep an updated as-built drawing and labeling scheme.
- Use a digital asset management system or at least spreadsheet maps of ports and devices.
- Good documentation saves time, reduces downtime, and lowers operating costs.

## 8. Prioritize Security & Redundancy

- Route critical links through diverse pathways to avoid single points of failure.
- Secure cabling routes in locked cabinets and trays.
- Consider redundant fiber pairs for mission-critical systems.

## 9. Plan for Power & Cooling Alongside Cabling

- Cabling decisions affect airflow and cooling. Avoid blocking vents or piling cable under floors.
- Separate power and data cabling to reduce EMI interference.
- Coordinate with facilities early to align with HVAC and UPS design.

## 10. Partner With Experienced Professionals

- The best cabling projects start with expert design and flawless execution.
- Experienced partners understand compliance, warranty requirements, and long-term scalability.
- Investing in quality structured cabling pays back in performance, reliability, and lower total cost of ownership.

## Quick Tips Checklist

- Use Cat6A or higher for new copper installs
- Deploy OM4/OM5 fiber for high-speed backbone
- Implement hot/cold aisle containment
- Label both ends of every cable
- Test & certify all connections
- Document everything

## Ready to Upgrade Your Data Center?

A well-planned cabling infrastructure is an investment in reliability, scalability, and cost savings. If you're planning a new data center build, expansion, or refresh, our team can help.

 [Schedule a Free Cabling Assessment](#)