



# ADTELL

INTEGRATION



## TOTAL COMMUNICATION SOLUTION

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Field Engineering & Installation

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Network Optimization

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Engineering & Design — EFI&T

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Fiber Optic Training

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Support Maintenance

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Emergency Response

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Distributed Antenna System (DAS)

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Site Survey & Documentation

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Rack & Stack

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Performance Monitoring

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**Managing your network so you don't have to...**

Integration, Testing, Fusion Splicing, Fiber Characterization & More

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# About Adtell Integration

Adtell Integration was founded in 1995 by Chris LaBonge. Adtell Integration started out troubleshooting LAN/WAN networks, database programming and cable installations. Today Adtell Integration, headquartered just outside of Allentown, Pennsylvania, has become a leader in: field engineering & installation, network optimization, EFI&T, site survey and documentation, fiber optic training, fiber splicing, fiber characterization, emergency restoration services, and capable of ISP or OSP testing or troubleshooting on 100 Gig systems. Our customers range from fortune 500 companies, tier 1 telecom companies, dark fiber providers, NEMs, MSOs, enterprise to local municipalities and general contractors, across the country and around the world.

Adtell Integration brings innovative ideas and solutions to the complex challenges, this is where our value is created. Our value comes from our seasoned and highly-trained engineers and technicians. From complete project management or in a support role with your staff, the goal is always the same – to deliver quality.

Adtell Integration has implemented the use of FiberBase® (Network Management Software) to document customers' system topologies, assets, and test data in real-time while performing field services. Adtell Integration understands networks and testing. We can help you select products and implement and integrate those products efficiently and effectively. Using industry standards we help you develop solutions that are often unique to every installation. Adtell Integration has a proven track record of success and we look forward to becoming a valued partner for your company.

## Safety is a Priority

At Adtell Integration we are committed to ensuring that our technicians work in an environment that is sanitary, non-hazardous, and harmless to their health and safety. We provide training on recognizing and avoidance of unsafe conditions and the regulations applicable to our work environment to control or eliminate any hazards or other exposure to illness or injury.

Using the safety and health training programs provided by the Occupational Safety and Health Administration (OSHA), as well as other reference materials, company safety training, policies and procedures have been implemented.

## Safety Considerations

On every project we have a qualified person with the knowledge and authority to stop work, should a hazardous condition develop that cannot be immediately resolved. Routine inspections ensure that the established safety procedures are being followed. Over the years we have developed a safety culture and continually improve our safety processes. We focus on continuing education and safety coaching to ensure a safe working environment.

## Results

The policies we have developed have kept our workforce safe and accident free over the past ten years. Our goal is to provide safety orientation and continued education to all of our technicians ensuring their safety first and foremost.





# Field Engineering & Installation

Whether your installation project is around the corner - or around the world, we're interested in having a discussion to see how our involvement may bring value to your final objectives. We've worked in central offices, downtown districts, and even in the Amazon rain forest, so if the job needs to get done, we'll be there!

Our engineers have in-depth expertise in network architecture, Virtual Private Networks (VPN) technology, wireless, security, network integration, business continuity planning and operational support. We bring the future to the present.

## Fusion Splicing

With extensive experience and state-of-the-art fusion splicing equipment, Adtell Integration's team provides insight that you can count on. Adtell Integration can assist you with everything from aerial and underground to premise splicing anywhere in the United States or abroad. We identify the security, performance, and sustainability needs of the project to meet your business requirements.

## Connectivity / Installation

Fiber optic terminations come in many varieties, so working with an experienced crew is paramount to being able to adapt to any environment the situation presents. Whatever your fiber project, 24 count fiber running into a single location or a multiple entry application with thousands of terminations like a data center, we'll make sure everything comes together as planned.

## Setup and Installation Services

Adtell Integration's Network Setup and Installation Services can provide the resources to build or expand your network. We help you chose the right design, technology and hardware that suits your business needs.

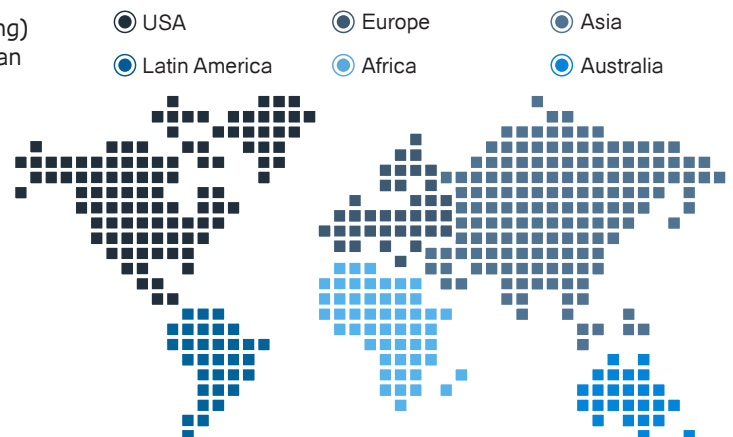
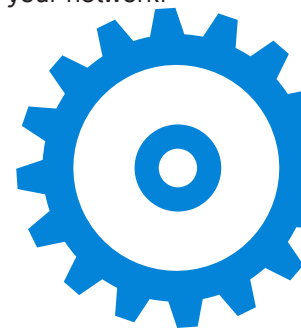
- ONT and ONU placement for FTTP projects
- Premise wiring for FTTP projects
- Emergency Maintenance agreements
- Network Audit Services (Informing you what you have in the field)

## Adtell Integration has Performed Services Throughout the World

- AboveNet – NY (OTDR Testing as a sub contractor)
- CableVision – CT, NJ, NY (Fusion Splicing & Testing)
- Time Warner - Western Ohio Division – (Project Coordinator for upgrade, integration, and node reduction)
- The White House – Washington, D.C. (Troubleshooting & Testing)
- Disaster Recovery – Hurricanes Charlie, Jeanne, Francis, & Ivan
- TalkPool – Haiti (Fiber characterization and repair)
- Meridian Communications – NJ (Fusion Splicing & Testing)
- Digital Panacea – PA (Fusion Splicing & Testing)
- Earthquake Recovery — Haiti

## Our technicians are ETA Certified OSP Installers and have experience on the following enclosures:

- TYCO Enclosures - Specifically 400 and 450D (Raychem)
- Corning Enclosures – Specifically 22" LT and 28" Ribbon
- 3M - Specifically Lightlinker
- Multilink - Specifically 400D & Starfighter
- Coyote Runt







# Network Optimization

The need to deliver new services, on-time and on-budget, while optimizing your existing network has never been greater. Working with your staff, Adtell Integration's Network Optimization Services enable you to reduce your time-to-market, lower equipment costs, reduce network downtime and plan for future upgrades. Adtell Integration offers a wide variety of Network Optimization Services including, but not limited to Fiber Characterization, Trace Analysis and Gigabit Ethernet Testing.

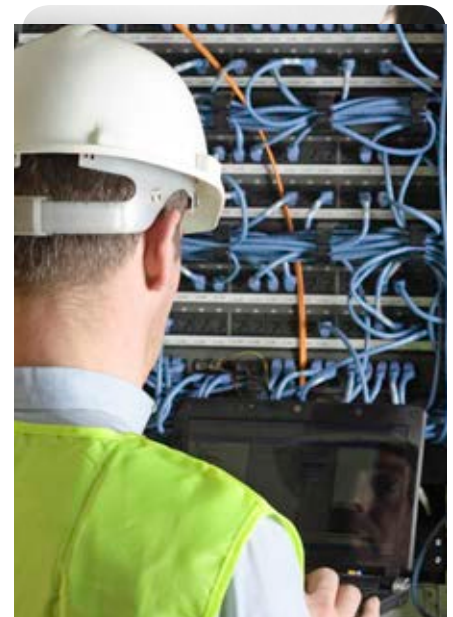
## Fiber Characterization

Adtell Integration's Fiber Characterization is a series of tests taken on a fiber optic span to determine the integrity of the fiber, installation practices and performance of a desired transmission rate and/or service. Tests that can be performed include: Optical Time Domain Reflectometer (OTDR) - Multiple wavelengths, Bi-directional; Power Meter and Light Source - Multiple wavelengths, Bi-directional; Chromatic Dispersion - 10nm wavelength increments, Uni-directional; Polarization Mode Dispersion - Single wavelength, Uni-directional; Optical Return Loss - Single wavelength, both directions.

Adtell Integration's Fiber Characterization team is staffed to be able to respond to your needs on a timely basis. Analysis of the acquired data and corresponding reports are provided almost immediately after the testing is completed. The Adtell Integration team has the expertise to provide real-time, on-site corrective action when problems are identified. For example, if the fiber plant under test has any deficiencies, the Adtell Integration team is often able to assist you with immediate resolution by either dealing with the issue directly or providing root cause analysis. The result is an optimized network without having to redeploy crews at a later date, adding to the time needed for project completion. Typical problems resolved on-site by Adtell Integration engineers include Reflectance Optimization and Loss Optimization. The number one failure or marginal specification in the field is Optical Return Loss (ORL). Adtell Integrations engineers can work with you to isolate and correct or improve the major contributors to ORL while on-site.

## Trace Analysis

Adtell Integration's Trace Analysis Service provides an analysis of all your OTDR traces and quickly provides a clear, concise report detailing all necessary OTDR trace data to properly commission your fiber optic cables. This is especially important when conducting dual wavelength, bi-directional testing of fiber optic cables that results in hundreds or thousands of OTDR trace signatures. Trace analysis can be conducted on any size cable.





### **Spectral Analysis**

Adtell Integration's Spectral Analysis Service provides an analysis of your Dense Wavelength Division Multiplexing (DWDM) network that enables you to optimize the operation, upgrade and performance of your DWDM system, ensuring maximum performance and reliability. Adtell Integration takes into consideration such parameters as Optical Signal to Noise Ratio, System Gain Tilt and Total Power in order to optimize the system and avoid potential non-linearities.

### **SONET/SDH Testing**

SONET/SDH rings remain important parts of the still a dynamic designs implemented in today's fiber rings to provide redundancy and diversity. However, the proper test times and required equipment can be quite costly, both in capital and operational expenses. Adtell Integration's SONET/SDH Testing Service can help alleviate this situation by providing the equipment, engineers and time required to properly test and exercise your network. Our proactive approach saves you time and money and ensures reliable service.

### **Gigabit Ethernet Testing**

Today, 10/100 Mbps Ethernet networks power over 90% of the world's Enterprise LANs. With the advent of Gigabit data rates, new applications include interconnecting LANs, providing high speed Internet connections, Metropolitan Area Network (MAN) backbone and access technology, Storage Area Network (SAN) server interconnect and server aggregation in Campus Area Networking or Data Center environments. These applications require more extensive testing to be performed at the time of installation. Proper testing and characterization ensure that the vast amounts of data transported reach their destination successfully and reliably. Adtell Integration's Gigabit Ethernet testing service follows the Internet Society's "RFC2544 Benchmarking Methodology for Network Interconnect Devices" to provide such tests as Throughput, Frame Loss and Latency, and Traffic generation/monitoring. In addition, Adtell Integrations provides both full global and channel statistics to facilitate fast, efficient troubleshooting and maintenance.

For installation and commissioning engagements, Adtell Integration engineers conduct active tests on such things as continuity, configuration, throughput, frame loss, back-to-back frames and latency. For maintenance and troubleshooting engagements, Adtell Integration engineers non-intrusively monitor the network, observing the nature of the traffic on the network to gain important insights into the cause of the problem.







Engineering

Adtell Integration

# Engineering & Design - EFI & T



In today's competitive environment, your network must be cost effective, reliable and expandable in order to meet today's business requirements, while guaranteeing a road-map for future needs without wholesale capital expenditure requirements.

Be it the latest cutting edge technologies or traditional ones, Adtell Integration's Network Engineering and Design Services can help you analyze, design, deploy, test, manage and support your network. We help you eliminate your networking troubles before they begin so that you can focus on other important business matters like meeting your implementation milestones and timelines.

Our engineers have in-depth expertise in network architecture, Virtual Private Networks (VPN) technology, wireless, security, network integration, business continuity planning and operational support.

## Network Consulting

With the extensive network experience you need, Adtell Integration's Team provides you with key insight and analysis you can count on. We can assist you with everything from Security Consulting to IP Telephony Network Assessment to LAN/WAN Planning and Design. We identify the security, performance, and sustainability needs of the network to meet your business requirements.

## Network Design

Adtell Integration only employs certified network design engineers with years of experience. They make the most complicated networking problems seem simple, with robust and effective solutions. We'll work with you to develop solutions that expand your reach, enable new market opportunities, deliver superior end-user experiences and scale for the future.

## Network Setup and Installation

Our Network Setup and Installation Services can provide you with the insight that you need to build or expand your network. We help you chose the right design, technology and hardware that suits your business needs and is within your Capital Expenditure budget requirements. We work with you from network setup through maintenance and support.



### Network Upgrade and Data Migration

Adtell Integration helps you upgrade to the latest technologies with minimal overhead. Our certified professionals are specially trained for network upgrade and data migration services. We make sure the process is fast, smooth and adds value to the bottom-line of your business.

### Network Management

Our Network Management Services provide ongoing network monitoring, problem resolution and system administration services for your voice and/or data networks. Adtell Integration's flexibility let's you choose the services you need to augment your networking staff. Adtell Integration's services complement other industry testing and monitoring tools, thereby preserving your prior investments. With the advanced processes, tools and methodologies from Adtell Integration, you can experience support services at a level that matches your business requirements. We will work with you to establish Service Level Agreements that define your expected levels of service.

### Network Test Planning

The importance of network test plans is nothing less than that of a network design. Your network is all about reliability and the only way you can make sure your network is reliable is by developing great test plans. As a world leader in network testing equipment, Adtell Integration engineers can work with you to develop world class test plans.





# Fiber Optic Training

As your partner in fiber optic testing, Adtell Integration understands how important it is that your staff remains up-to-date on the latest network technologies and how to test them. To help you achieve this goal, Adtell Integration has partnered with FiberOptic.com to offer a variety of training courses that can be customized to meet your needs. Training can take place via WebEX, at FiberOptic.com's 1,600 sq ft fiber optic training room, one of FiberOptic.com's regularly scheduled domestic or international locations, or at your site of preference for increased convenience and reduced downtime.

## Online Training - WebEx

When getting training via WebEx, you will receive one-on-one attention from one of Adtell Integration's engineers trained specifically in the area for which you desire training.

## Regularly Scheduled Locations

Training at one of FiberOptic.com's facilities is a cost effective way of providing training when only a few members of your staff require training or when space is not available at your facility for on-site training. FiberOptic.com has trained students all over the United States and holds training courses at centrally located international locations in order to accommodate international students. FiberOptic.com's Certified Fiber Installer course is scheduled in 35 cities every year, expanding across the globe!

## On-Site Training

When conducting on-site training at a facility of your choice, our staff works with you to customize the course material to meet the needs of your staff. We know how difficult it can be to take valuable employees out of the field to attend training courses. Discussions can be tailored to your specific applications. Your staff learns in their own environment, they spend less time away of their work and it allows them to apply what they have learned more quickly.







# Performance Monitoring

Adtell Integration's Performance Monitoring Services encompass the equipment, resources, and highly-skilled staff necessary to help you understand, analyze and optimize your LAN, WAN or ATM network. Adtell Integration engineers focus on providing a broad spectrum of objective analyses ranging from, capacity planning, network configuration evaluations, network migration and application deployment assessments, network optimization audits and troubleshooting.

## Capacity Planning

Utilizing NTest's monitoring equipment, Adtell Integration's capacity planning services can provide you with the historical trend data necessary to make informed decisions about your network. Our engineers will work with you to analyze your network's trends so that you can accurately forecast the build-out of your network. Ntest's equipment has been independently lab certified as the provider of the most granular traffic flow data available on the market.

## Corrective Audits

When your network is experiencing unexplainable behavior, a Corrective Audit utilizing NTest's powerful equipment, can provide the answers that you need to get your network back on track. Real-time troubleshooting, superior data granularity, trend analysis and reporting provide you with the information needed to correct almost any type of network problem.

## Network Migration Assessments

Is your company planning to deploy a new business critical application? Are you confident that the application will perform as needed? Let Adtell Integration show you the pros, cons, and potential "show stoppers" that could impact deployment. We provide strategies that will enable you to proceed with confidence.

## Network Optimization Audits

Do you need to verify that your WAN carrier is providing the agreed upon level of Quality of Service(QoS)? Do you need to identify the areas of your organization that are reducing the QoS you can deliver? Adtell Integration network optimization audits can thoroughly analyze the data flow of your network in order to suggest optimization strategies, set-up your base-lining and define relevant QoS indicators.





# Support & Maintenance

Our skilled and certified technicians are available to assist you with “as needed” or with scheduled maintenance agreements. With technicians located throughout the United States, Adtell Integration can provide our customers with managed services that cover everything from routine installation & testing requirements to emergency response resolution.

If you need to supplement your existing telecommunications network workforce, or need an outsourced team, Adtell Integration is the perfect company to assist you. Our services provide telecommunications carriers, MSOs, and Enterprise companies with proven, effective services that are unmatched in the industry.

Our services are available long-term, short-term, hourly, daily and even “Off-Hours” year round. When you call Adtell Integration you will speak with knowledgeable support team that will work with you to determine the problem and then begin to develop a plan that will lead to resolution of the issue. A qualified Adtell Integration technician will be dispatched with the tools and equipment required to get your network online as quickly as possible. Though our relationship with various distributors we carry an extensive line of supplies and what we don’t have we can get very quickly.

Utilizing procedures that have been developed over years of experience, our dispatch coordinates with our field technicians, NOC and vendors as necessary to ensure an open line of communications among all parties involved. Adtell Integration provides project pricing as we all schedule maintenance and emergency dispatch.

**Services include:**

- Scheduled and preventative maintenance
- Emergency restoration
- Installation and removal of electronic components
- Splicing
- Testing & documentation

**Types of maintenance:**

- Network infrastructure (fiber splicing and testing)
- Cabling
- Annual mapping updates
- Network monitoring
- Splice audits
- Customer add/drops







# Emergency Response

Adtell Integration's Emergency Response Team (ERT) restores service following a catastrophic outage. If your company provides service under a Service Level Agreement (SLA), you should speak with Adtell Integration about our PROACTIVE emergency restoration services. Contrary to most ER Services, Adtell Integration's team has the ability to operate a remote network monitoring system, which alerts the ER team of an outage, and quickly identifies exactly where to deploy the ER team – without additional field testing, which can require additional time and money.

Are you in need of a company who can respond to outages and restore your lines of communication? Adtell Integration technicians have extensive fiber optic experience and have the necessary skills, tools and knowledge to respond to any fiber optic emergency.

Trust that all of our work is fully tested, accurate and up to date with current industry standards, practices and procedures. If you are in need of fiber optic restoration services, we've got you covered.

Adtell Integration will maintain an emergency on call system 24 hours a day, 7 days a week. The emergency number will be provided to you to be used should a dig-up or tear-down occur. Once Adtell Integration's ERT is alerted to a problem, Adtell Integration will make telephone contact within 60 minutes of receiving the page or telephone call and, if necessary, be on-site within the contracted response time. Once on-site, Adtell Integration will secure the Cable Plant to inspect the extent of damage, and ensure that further damage is prevented.

Innovative? Yes.  
Responsive? Yes.  
Exclusive? Yes.

In fact, Adtell Integration is the only company offering this level of immediate response to our clients.







# Distributed Antenna Systems (DAS)

Businesses are realizing the continually growing demand to provide a wide variety of wireless technologies and services.

Wireless cellular customers depend on the mobility of their devices wherever they go. This demand has created a need to implement a Distributed Antenna System (DAS) network with the breadth of design requirements that allow the network to carry a wide range of technologies. Venue owners and wireless carriers wish to provide their customers and occupants with a satisfying wireless user experience. Mobile data traffic will triple its share of total global IP data traffic during the next several years, and will be almost 25% of all IP traffic in the next several years.

Venues such as airports, sporting arenas, concert halls, convention centers and motor speedways have tens and hundreds of thousands of customers converging all at the same time. These customers are trying to receive coverage from an outside network. The location, building structure and the existing cellular coverage are the deciding factors in the quality of service at these locations.

Although the carriers are installing more picocells and microcells they require DAS to fill in the gaps that these small cells can not address. DAS solves these problems by bringing the “antenna” closer to the consumer. If the building is an LEED building cellular coverage may fail completely.

Adtell Integration can install an indoor Distributed Antenna System in your building to help ensure constant connection between the consumers and the cellular carriers.

Adtell Integration has been installing fiber optic networks for over a decade and has incorporated DAS into our portfolio. From the Georgia Dome in Atlanta, to the Susquehanna Bank Center in Camden NJ, Adtell Integration has the experience you will need for your DAS installation.





# Site Survey & Documentation



Every existing network should be thoroughly documented and every new network requires a complete and through site survey.

While this sounds great in principle, most networks have very little documentation once they have been completed and often no one knows where these drawings and maps are kept. Furthermore, changes and additions to the network are rarely documented. And no matter the size of the installation having these documents current and up to date will reduce time spent when an outage occurs. This documentation will save you time and money.

Having the manpower to keep the data current and a single software source to store this information has been a historical problem that companies have been challenged with for years. Adtell Integration has the resources and the software to solve this problem and keep your network documentation current.

During site surveys, our engineers will assess your site and review power, fiber optic cables, data cables, risers, supports, premise wiring, racks, and equipment installation. Adtell Integration's installation engineers provide final site survey deliverables based on the result of the site assessment. Adtell Integration can verify the as-built plans and assess their reliability. This is accomplished by having Adtell Integration personnel survey and record the actual position of completed work to compare with actual location and the submitted as-built plans.

Adtell Integration engineers can provide assessments for transmission capacity, loss budgets, and fiber distribution options for existing fiber backbones or LAN's. By taking inventory of the components, cable types/counts, Floor Deployed Platform (FDP) capacities, and network requirements, Adtell Integration engineers will provide assessments and feasibility analysis for network operators.

Adtell Integration provides consulting survey services to Municipalities, Telecom Carriers, and virtually any company that owns or operates a wide area network (WAN). Utilizing mapping to tag elements such as vault and maintenance hole lids, road crossings, node/drop locations, etc., Adtell Integration will create material lists and related network information which will establish a single repository for your network documentation.





# Rack & Stack



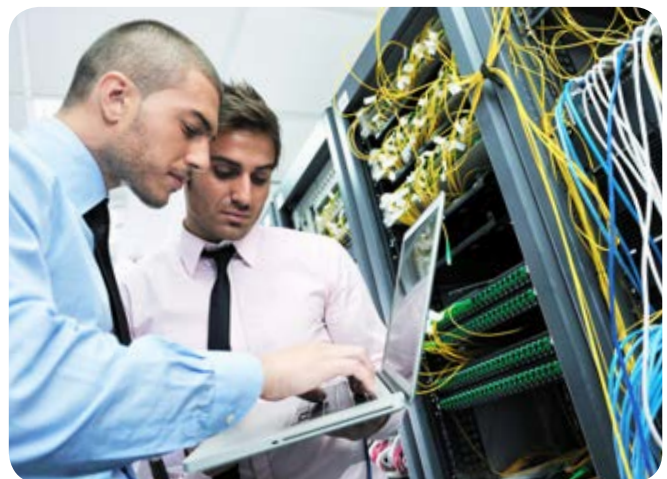
Adtell Integration can provide you with the resources you need to setup your equipment with our professional server rack design and installation service. No need to have your technicians traveling around the country or world and no need to worry about having all the right equipment or skills required.

Our trained data center experts will help you design the rack, install the equipment, wire the rack cleanly and efficiently, verify the configuration and power up the equipment. Complete documentation in our FiberBase software provides you with the detailed requirements of inside plant documentation along with digital pictures.



## Rack & Stack Features:

- Rack design and layout
- Receiving and unpacking hardware
- Inventory check, labeling, and serial number recording
- Professional assembly and rack mounting
- Power and network cables installed
- Intra-cabinet cabling as specified
- Fully-documented cable list
- Final documentation of layout and cable runs
- FiberBase diagrams and digital picture documentation







## Conclusion

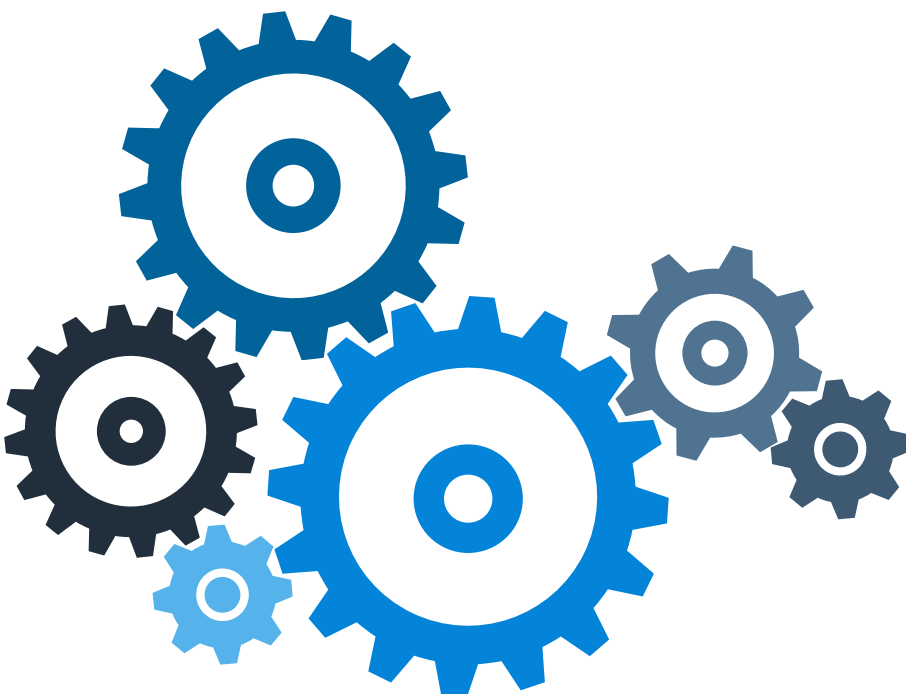
Adtell Integration can provide you with a wide variety of services to help you ensure that your network is operating at peak performance. This enables you to save time, money and resources. Adtell Integration will work with you and your team to provide you with the highest quality craftsmanship.

Adtell Integration has years of proven experience and is often the team that others vendors call when they need assistance. From simple cable terminations to complex testing and network issues, Adtell Integration's team of seasoned professionals have the ability to assist on your project.

You have lots of choices in picking an installation company, but only one choice in selecting an installation partner. Select Adtell Integration, you will be glad you did.

## Learn More

To learn more about Adtell Integration's suite of professional services, please contact us by phone at 888-423-8355, or send us an email at [sales@adtellintegration.com](mailto:sales@adtellintegration.com). Visit us online at [www.adtellintegration.com](http://www.adtellintegration.com).





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