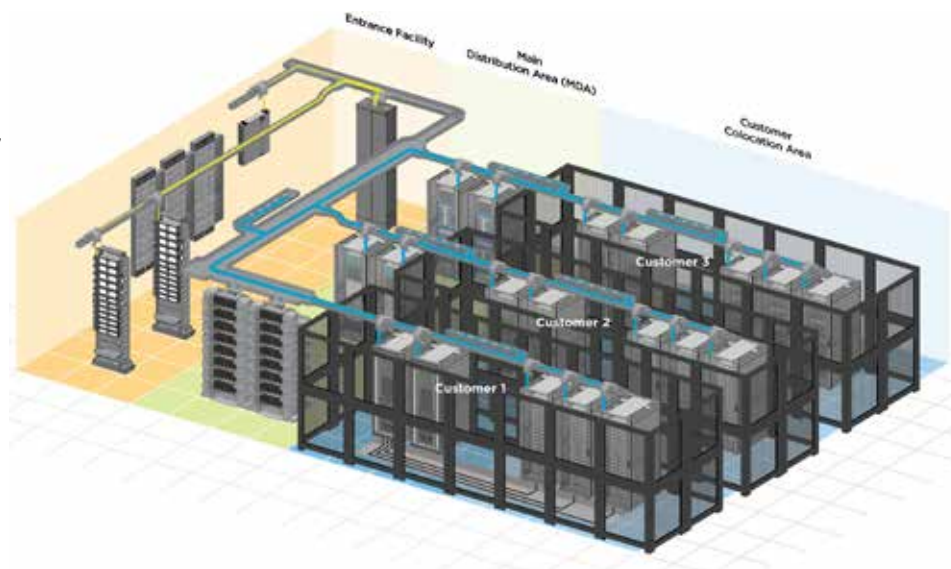


Faster method for connecting customers in the colocation data center

The increased demand for data center space is creating both opportunities and challenges for providers of colocation space. Among these challenges is how to quickly configure and physically connect network services to a new colocation tenant. The ability to quickly provide service to a new tenant helps colocation providers improve their customers' experience and by accelerating the time to establish services, while accelerating the colocation provider's time to revenue. Conversely, errors or delays in establishing or changing physical connections can detract from the customer experience, delay revenue, and result in SLA (Service Level Agreement) fines. Fortunately, CommScope provides a family of products known as the Rapid Fiber™ panel, which can help address these issues. By using CommScope's Rapid Fiber panel products, data center operators can increase the agility of their data center, allowing them to quickly respond to moves, adds, and changes in the customer areas.

Overview of the colocation data center

The colocation data center, generally speaking, consists of multiple secure customer colocation areas, which may be larger areas contained in a "cage," or which may be within a particular cabinet in a row. These customer colocation areas are connected to a main distribution area. This is where the colocation facility owner's equipment resides, and in a TIA-942 compliant data center it includes provisions for cross-connect. The main distribution area(s) are then connected to the entrance facility, where services from multiple telecommunications providers enter the building.



The challenge of connecting a customer

When a customer wishes to occupy space in a colocation area, it is the facility owner's responsibility to provide reliable and stable network connectivity with the outside world. Usually the customer specifies the nature of the connection to their cage or cabinet. Should the customer choose a fiber connection, in the current method, the process is usually as follows:

1. Determine the space required by the customer and develop a floor plan
2. Determine the length of trunk cable assemblies needed to connect the handoff panel in the customer area with the MDA or meet-me room (the take-offs)
3. Order the panel and custom-length cable assemblies
4. Upon arrival, install the fiber panel in the customer cage
5. Install the cable assemblies in the customer cage

6. Route the cable assemblies to the MDA
 - a. If the cable assembly is the wrong length, go back to step 2
7. Store any slack/excess cable
8. Connect the customer in the MDA

The overall timeline for this activity can be several days, with the most critical item being the wait from ordering the panel and cable assembly until its arrival—which could be 2–7 days for non-stocked items.

The Rapid Fiber panel

The Rapid Fiber panel is an important innovation in the fiber optic panel market. Serving as a key distribution point between the electronic equipment and the main optical distribution frame, the Rapid Fiber panel offers data center providers unmatched savings in installation time, labor costs and performance.

The Rapid Fiber panel employs CommScope's unique RapidReel™ cable spool to deploy dual 12-fiber 3 mm diameter cable—which means the intrafacility cable (IFC) cable is always the right length. Available in 100' increments (up to 1000'), the multifiber cable terminates to a multi-fiber push-on connector (MPO), which enables a plug-and-play connection to the main distribution frame. The MPO connector and multi-fiber cable ensure fast cable routing and easy handling by technicians; and offers maximum space savings for high density fiber applications.

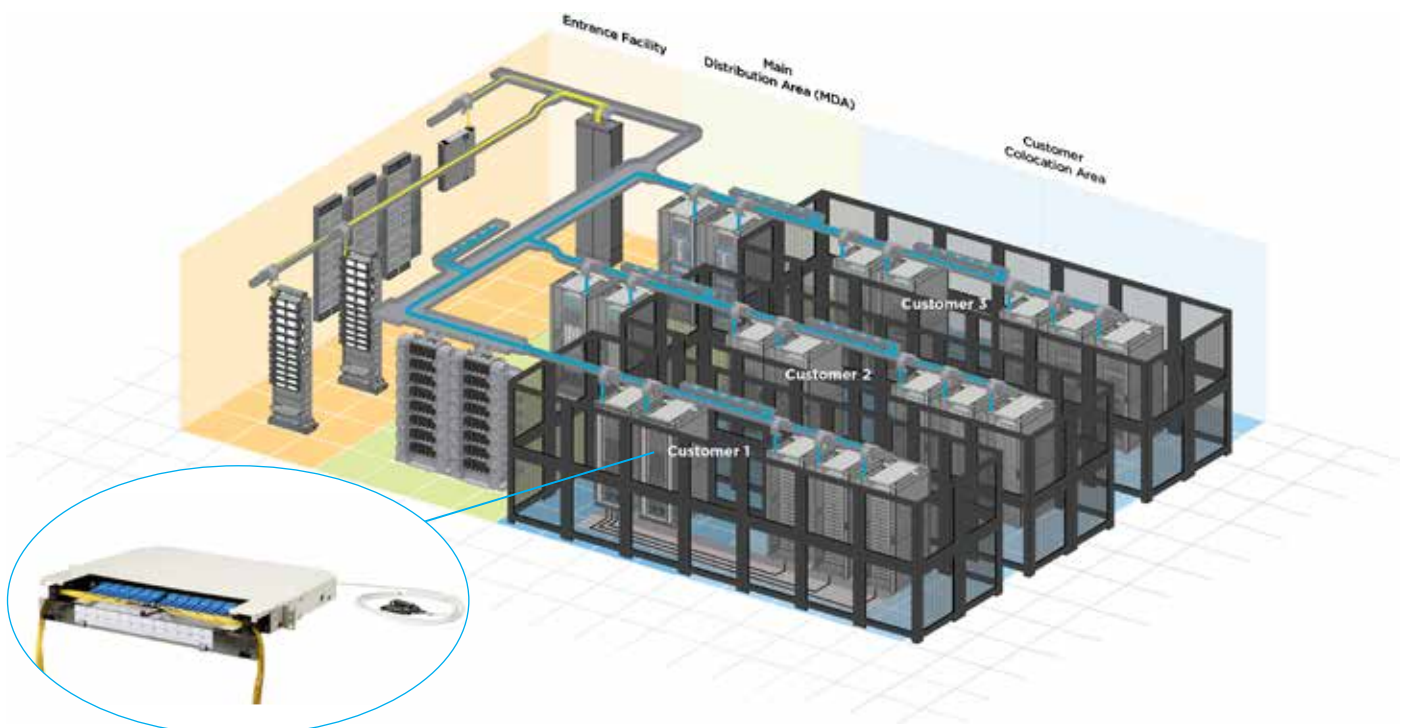
Offering up to 48 fiber connections in one rack unit of space, the individual panels are stackable and feature SC/UPC and LC/UPC connector styles. In addition, such solutions incorporate flexibility, in the form of a small (3 mm) 12f microcable. Installers can run the microcable in a fiber raceway system or on ladder racking. In either application, the microcable dramatically reduces cable congestion. By replacing 12 single-fiber connectors, the MPO enables a more compact, streamlined installation process. Its built-in pulling eye makes it much easier for technicians to pull through the microcable and connectors. The MPO minimizes loading issues because technicians only have to load one cable, rather than 12, and lacing no longer is necessary—technicians simply have to route the cable through the fiber guide. The Rapid Fiber panel's combination of microcable, RapidReel cable spooling and MPO connector technology in a single panel not only relieves cable congestion but also simplifies the ordering and inventory of equipment.

The panel also features CommScope's industry-leading cable management—providing bend radius protection, cable routing paths and physical protection for optimal network performance.



The challenge of connecting a customer—Rapid Fiber panel method

Let us look at how these features enable the colocation data center provider to conduct their task differently. Compared to the steps required to provide a connection in the current method, the Rapid Fiber panel removes the need for several steps and shortens the overall timeline considerably.



1RU Rapid Fiber panel in the colocation data center

Traditional solution	With Rapid Fiber panel
Determine the space required by the customer and develop a floor plan	Determine the space required by the customer and develop a floor plan
Determine the length of the cable assembly needed to connect the hand off panel in the customer area with the MDA	Not Required. The RapidReel spool allows the panel to handle any connection length
Order the panel and cable assembly	Not Required. Only 1-2 Rapid Fiber panel configurations are adequate for most data centers, meaning the operator can keep product on hand or close by
Upon arrival, install the fiber panel in the customer cage	Install the Rapid Fiber panel in the customer colocation area
Install the cable assembly in the customer cage	Not Required. The trunk cable is already terminated inside the Rapid Fiber panel, eliminating a connection point.
Run the cable assembly to the MDA If the cable assembly is the wrong length, go back to step 2	Pull as much cable as needed from the Rapid Fiber panel until it connects with the MDA
Store any slack/excess cable	Not Required. The RapidReel spool holds all of the slack.
Connect network services to customer	Connect network services to customer

The Rapid Fiber panel solution eliminates half of the steps in the process. It does more than just shorten the list of steps, though—it provides a solution that dramatically enhances total value compared to the standard method.

Total value

The total value benefits of the Rapid Fiber panel fall into two major categories:

1. Faster turnup time
2. Reduced total costs

Faster turn-up time

Turning up customers faster is often a critical, if not decisive, consideration for colocation providers. Many have agreements which specify a certain amount of time between when the customer signs a lease agreement until the colocation provider provides power and network connections to the customer's equipment. This time is usually one week or less. This means that the equipment needed to effect these connections, including the physical layer equipment, must be readily available.

In the standard method, when a customer wishes to move in or expand, the colocation provider must lay out the space which the tenant will occupy. They must then measure or survey the distance from that space to the main distribution area in order to determine the length of cable assembly they will need. Then, they must order that cable assembly. The fact that this assembly must be at (or close to) a specific length means that is usually must be made to order.

With a Rapid Fiber panel, the colocation provider can easily keep a very small stock of panels—usually one or two—on hand. Thanks to the RapidReel cable spool, a small number of panels—usually a 100' and a 200'—will be sufficient to cover the distance from a customer cage to the nearest MDA or meet-me room. There is no wait for a part to come in. If the colocation provider does not wish to keep stock in hand, a number of distributors stock Rapid Fiber panels

at various locations and can deliver them quickly and effectively. The colocation provider now can get the benefit of a preterminated solution without waiting for a custom-built cable assembly. This can improve the time to turn up service for a new customer—with the benefit of increased revenue more than offsetting the cost of the Rapid Fiber panel.

Reduced total costs

In addition to faster turnup times, the Rapid Fiber panel improves the total costs of installation and operation for the data center operator. Some of the ways it does this include:

- Slack storage: eliminating the cost of a slack storage tray and the time required for a technician to store any cable slack
- Installation cost: the RapidReel cable spool eliminates the need to unwind and lay out a trunk or IFC cable. It also means only the far end of the MPO trunk needs to be connected—less work, and less cleaning. It is a pre-connectorized, plug-and-play solution which eliminates the need for time-consuming splices
- Reduced shipping costs: instead of a separate cable assembly and panel, the operator is only ordering a single item
- No delays from incorrect cable lengths: In a significant percentage of cases, the installer will try to connect a panel only to find that the cable assembly is the wrong length and will not work. The Rapid Fiber panel with RapidReel cable spool is able to support a wide range of lengths, in 100 foot (31 meter) increments. It eliminates this problem
- Reduced inventory management costs: fewer items to manage in inventory—a single Rapid Fiber panel instead of a standard panel and multiple lengths of IFC or trunk cable
- Reduced site survey requirements: there is no need to precisely measure the length of trunk or IFC cable required. The RapidReel spool allows for a significant margin of error in estimating the distance from the customer cage to the MDA.

Total value—summary

Summing all of these paints a clear picture of the value added by the Rapid Fiber panel. Cost considerations alone make it a superior solution. The added impact of faster customer turn-up further enhances the solution's total value.

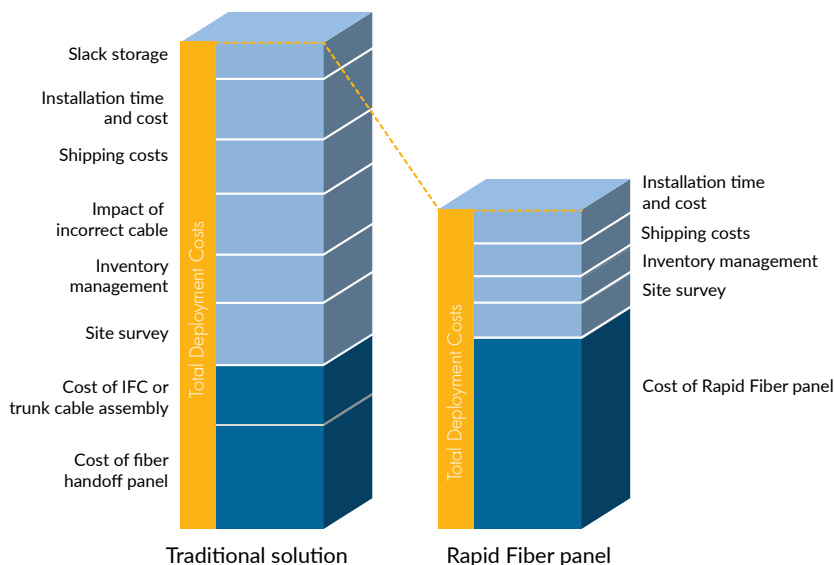
Finally, there are other less quantifiable benefits of the Rapid Fiber panel which are not shown in the above graph:

- Access: Technician-friendly, front-facing interface ensures trouble-free maintenance and fast service turn-ups.
- Space Savings—Rack Density: Compact, Low Loss MPO connector design and multifiber cable is ideal for high density intrafacility applications. Excess fiber is stored within unit—no additional enclosures are required. This means more space available to colocation customers.
- Space Savings—Overhead: Each Rapid Fiber panel cable is the equivalent of 24 fiber jumpers—resulting in 70% space savings within fiber raceway compared to 1.7 mm jumpers, and 85% space savings within ladder racking compared to standard IFC cable.
- Performance and Reliability: Offers superior cable management with highly reliable connectors for uninterrupted network operation and high quality of service.
- Product re-use: when a customer chooses to discontinue service, fiber can be retracted back in to the Rapid Fiber panel and redeployed to provide network services to a new customer, providing superior return on investment in a frequently changing colocation environment.
- Standards Compliance: the Rapid Fiber panel is fully compliant with applicable standards for data center architecture (TIA-942), and TIA and ISO/CENELEC structured cabling standards. It also meets demanding network and optical standards such as UL1863, NEBS, GR-326, GR-1435, and GR-409.

Conclusion

In the colocation data center, the old adage “time is money” rings as true as ever. Also, data center operators continue to strive for greater efficiency in their operations. By using a Rapid Fiber panel solution from CommScope, data center operators can move forward on both fronts: turn up customers faster, and reduce the costs of adding and connecting those customers. The Rapid Fiber panel is a key component of the agile data center—able to meet the challenges of today and allow a quick response to changes that occur throughout the life of the data center.

For more information on CommScope's Rapid Fiber panel solution for colocation applications, visit: www.commscope.com



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