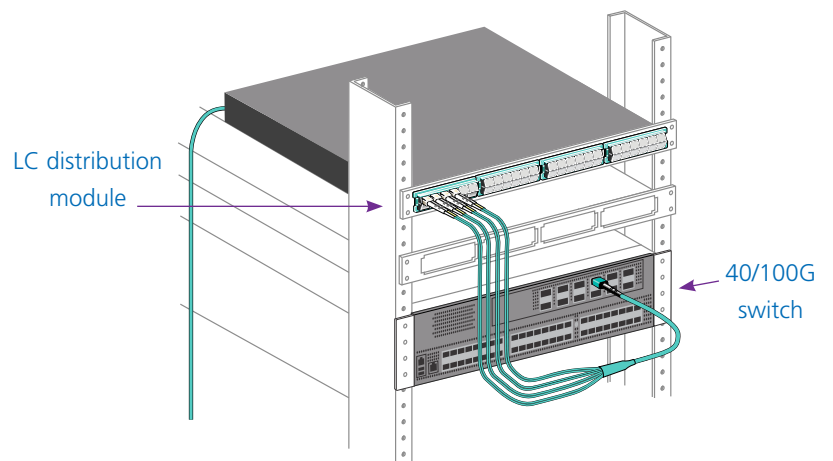


CommScope Structured Cabling Solutions for the Cisco® Catalyst® 9500 Switch Series

Enterprise networks continue to evolve, with ever increasing bandwidth requirements driving the need for higher speed and flexibility. Converged IP networks, the Internet of Things and the need for higher speed backbone networks to support wireless connectivity requires infrastructure that can grow to support these applications.

CommScope has developed a comprehensive platform of advanced fiber and connectivity, with automated infrastructure management and high-efficiency interfaces, to meet these challenges. Providing cost-effective support for 10G networks, these solutions deliver a simple migration path to 40G, 100G and beyond. As shown below, many of these switching platforms utilize QSFP or QSFP28 interfaces which can fan out and connect to multiple devices.



One example of this type of switching platform is the Cisco Catalyst 9500 series, which represents the latest generation of enterprise class switches developed for core and aggregation layers. This flexible platform consists of several models optimized to support links ranging from 1G to 100G with a variety of form factors and interfaces.

A few examples are shown below



C9500-32C: 32x 100 Gigabit Ethernet



C9500-48Y4C: 48x 1/10/25G Gigabit Ethernet + 4x 100G Uplink



C9500-32QC: 32x 40 Gigabit Ethernet

As seen in the following table, the Cisco Catalyst 9500 series provides a wide range of interfaces

Model	Description	1G port density	10G port density	25G port density	40G port density	100G port density	10G port density with breakout cable	25G port density with breakout cable
C9500-32C	Cisco Catalyst 9500 Series high-performance 32-port 100 Gigabit Ethernet switch with QSFP28	-	-	-	32 (64*)	32 (64*)	104 (208*)	96 (192*)
C9500-32QC	Cisco Catalyst 9500 Series high-performance 32-port 40 Gigabit Ethernet switch with QSFP+	-	-	-	32 (64)*	16 (32)*	68 (136)*	48 (96)*
C9500-48Y4C	Cisco Catalyst 9500 Series high-performance 48-port 1/10/25G Gigabit Ethernet switch with SFP28	48 (96*)	48 (96*)	48 (96*)	4 (8*)	4 (8*)	-	-
C9500-24Y4C	Cisco Catalyst 9500 Series high-performance 24-port 1/10/25G Gigabit Ethernet switch with SFP28	24 (48)	24 (48)	24 (48*)	4 (8*)	4 (8*)	-	-
C9500-24Q	Cisco Catalyst 9500 Series 24-port 40 Gigabit Ethernet switch with QSFP+	-	-	-	24 (48)	-	16 (32)	-
C9500-12Q	Cisco Catalyst 9500 Series 12-port 40 Gigabit Ethernet switch with QSFP+	-	-	-	12 (24)	-	16 (32)	-
C9500-40X	Cisco Catalyst 9500 Series 40-port 1/10 Gigabit Ethernet Switch with SFP/SFP+	48 (96)**	48 (96)**	-	2 (4)	-	8 (16)	-
C9500-16X	Cisco Catalyst 9500 Series 16-port 1/10 Gigabit Ethernet switch with SFP/SFP+	24 (48)**	24 (48)**	-	2 (4)	-	8 (16)	-

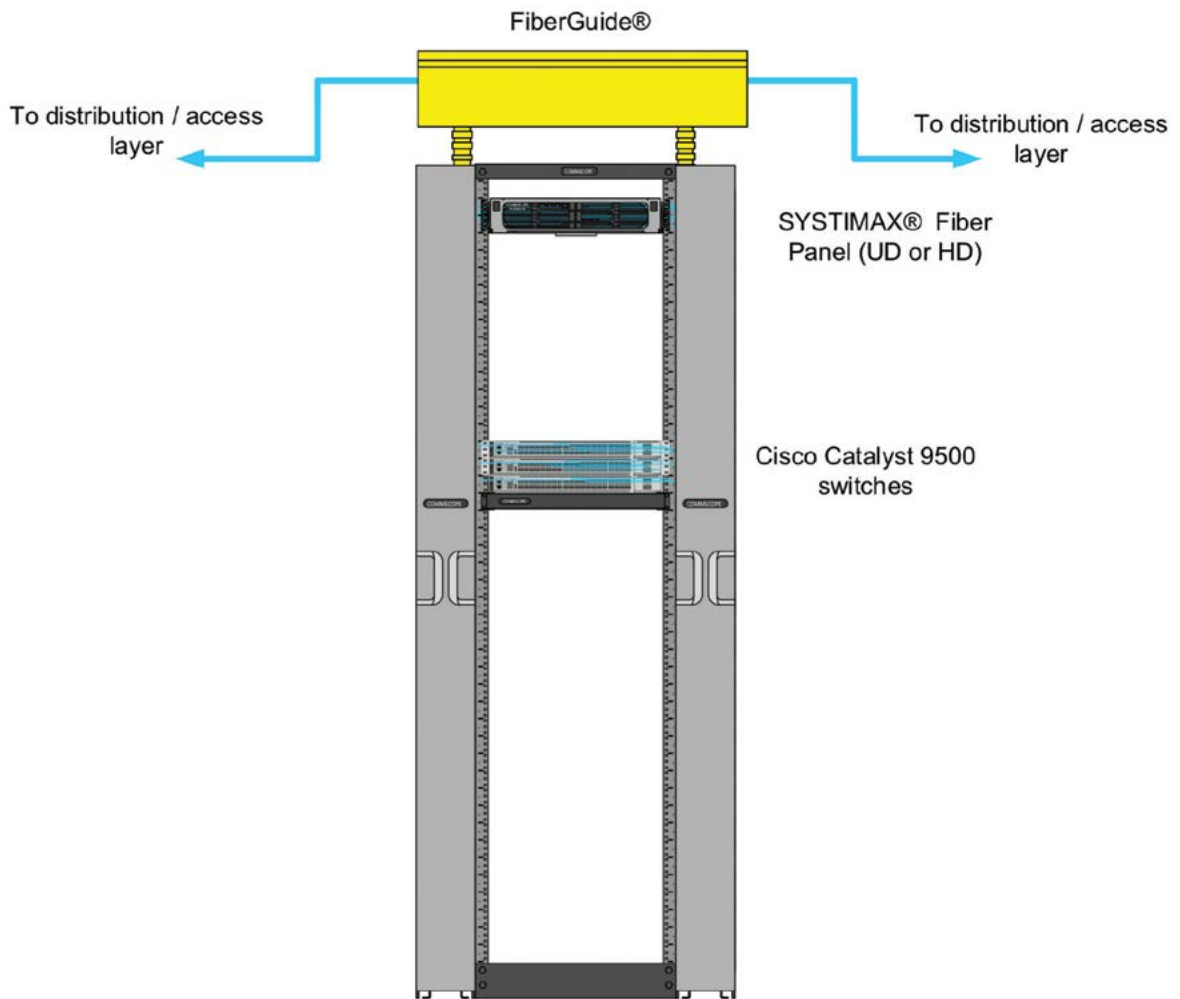
All numbers in the above table are for the standalone switch, except where indicated in parentheses () for StackWise Virtual:

* Feature not available at FCS, will be available in future software releases

** with uplink module

To support connectivity for these applications, CommScope has developed fiber connectivity solutions designed to provide industry leading density while enabling easy migration to higher speeds.

As shown, pre-terminated cable assemblies with 8, 12 or 24 fiber MPOs are available to best support the applications requirements. They are available with OM3, OM4, OM5 and singlemode fiber in trunk, array cord or fanout configurations.



SYSTIMAX® HD and UD fiber panels

SYSTIMAX fiber solutions feature high-density (HD) and ultra high-density (UD) fiber panels that provide superior port density that is incredibly easy to manage. Compact panels allow for fast, easy, pluggable deployment even in the most densely populated data centers. And the unique split-tray design enables open access to each individual fiber, simplifying moves, adds, changes and future modifications—without interrupting live channels.

The HD (High Density) panel is available in 1U, 2U and 4U sizes, and supports high density applications in data centers and buildings..



HD-1U



HD-2U



HD-4U

The UD (Ultra Density) panel is designed for even higher density applications and is available in 2U and 4U sizes.



UD-2U



UD-4U

The HD and UD fiber panels support the 360G2 style module and adapter packs, which support pre-terminated LC/MPO modules and MPO adapter packs, as well as LC cassettes and adapter packs.



OM5 24LC fiber module



Singlemode 12LC fiber cassette



Multimode 24LC adapter pack



MPO adapter pack

A summary of the panel capacities for LC and MPO connectivity is shown below:

Panel	SYSTIMAX HD 1U		SYSTIMAX HD 2U		SYSTIMAX HD 4U	
	Duplex LC	MPO	Duplex LC	MPO	Duplex LC	MPO
Number of ports/rack unit	48	32	96	64	192	128
Maximum fiber count	96	384	192	768	384	1536

Panel	SYSTIMAX UD 2U		SYSTIMAX UD 4U	
	Duplex LC	MPO	Duplex LC	MPO
Number of ports/rack unit	144	96	288	192
Maximum fiber count	288	1152	576	2304

Panel	SYSTIMAX iPatch HD 1U		SYSTIMAX iPatch HD 2U	
	Duplex LC	MPO	Duplex LC	MPO
Number of ports/rack unit	48	32	192	64
Maximum fiber count	96	384	384	786

SYSTIMAX ULL preterminated trunk cables

The SYSTIMAX UD and HD support Ultra-Low Loss and Low-Loss applications based on the insertion loss specifications of the fiber modules and pre-terminated cable assemblies. Pre-terminated trunk cables are available in low-loss as well as ultra-low loss performance.

Ultra-low loss components have minimized insertion loss for links – supporting longer link lengths or higher margin. They utilize enhanced Method B polarity. Highlights of ULL trunks are shown below:



- 8-, 12- and 24-fiber MPO connector-based modules available in LazrSPEED® 550 OM4 and LazrSPEED OM5 Wideband multimode fiber solutions
- 8- and 12-fiber MPO connector-based modules available in TeraSPEED® singlemode fiber solutions
- Factory-terminated and tested trunk cables provide superior quality and performance for field connections
- Reliable transmit-to-receive connectivity using Method B Enhanced polarity maintenance maximizes administrative convenience
- Simplified reconfiguration for moves, adds and changes (MACs)
- Easy upgrade path to parallel transmission and associated applications, and increased value of existing infrastructure
- SYSTIMAX ULL trunks are provisioned with pins to interface with G2 ULL modules (without pins)

For detailed technical specifications and ordering information for the SYSTIMAX HD and UD solution Ultra-Low Loss solutions, please download the [UD HD ULL Fiber solutions guide](#).

Pre-terminated fiber trunk and array assemblies are also available in standard low-loss performance.

For detailed technical specifications and ordering information for the SYSTIMAX HD and UD solution Low Loss solutions, please download the [HD UD Fiber Panel Solutions Guide \(Low Loss\)](#).

Automated Infrastructure Management (AIM) capabilities with imVision®

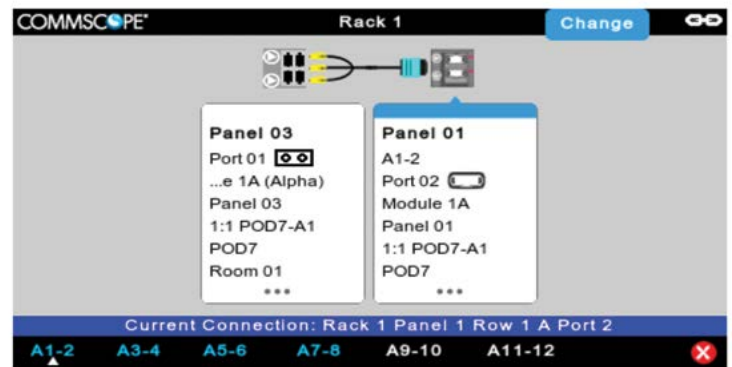
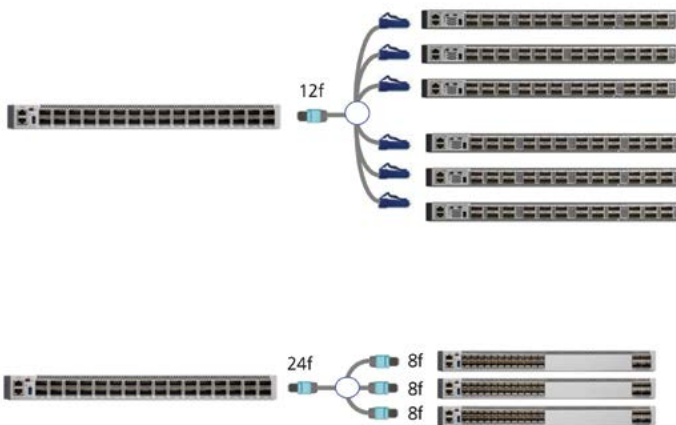
imVision is the automated infrastructure management system that provides a holistic view of fiber and copper physical layer connectivity, all in real time. An integral part of the portfolio of **SYSTIMAX®** structured cabling solutions, imVision shows you exactly where your assets are, what they're doing, and how you can get more out of them. It documents the end-to-end paths to all IP devices, such as fiber switches, IP security cameras and high-definition audio and video equipment, and also maps fiber links between buildings.



As imVision is capable of mapping the "one-to-many" connectivity that is commonplace with QSFP and QSFP28 devices, it is ideally suited to manage the connectivity between Cisco 9500 switches and other switches. Whether these connections are point to point 100G or 40G, or multipoint 100G to 4x25G or 40G to 4x10G, imVision can map and monitor the connectivity path and report any changes in real-time.

The following examples show typical point to multipoint connectivity examples, along with a screenshot from imVision System Manager which documents this type of connection. Both the higher speed connection and the multiple lower speed connections are shown.

Point to multi-point examples



imVision System Manager showing connectivity between
[Best Practices Guides](#)

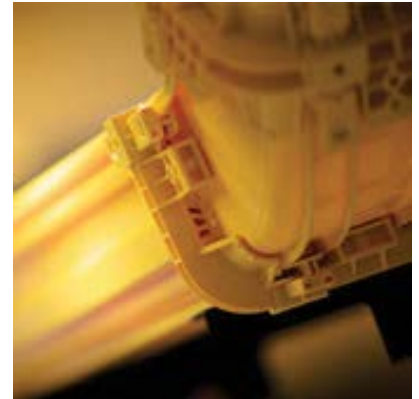
OM5 wideband multimode fiber provides the ability to migrate from 10 to 40 to 100G with SWDM technology, while maintaining serial connectivity. To learn more about how this technology can be deployed in fiber building backbones, please refer to this [whitepaper](#).

For insight into choosing the correct MPO for your network, please download the following [application note](#).

FiberGuide®

FiberGuide® is a revolutionary fiber-optic raceway system that routes and protects cabling in the data center and building. This innovative raceway is easy to design and simple to install and requires no special tools to deploy. It features myriad fittings, support structures, drop options, bends and straight sections and features the Express Exit™ system to allow new drops to be added or removed quickly and easily.

For more information on FiberGuide, please download the [configurator and BOM generator](#).



Solution
Partner

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

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