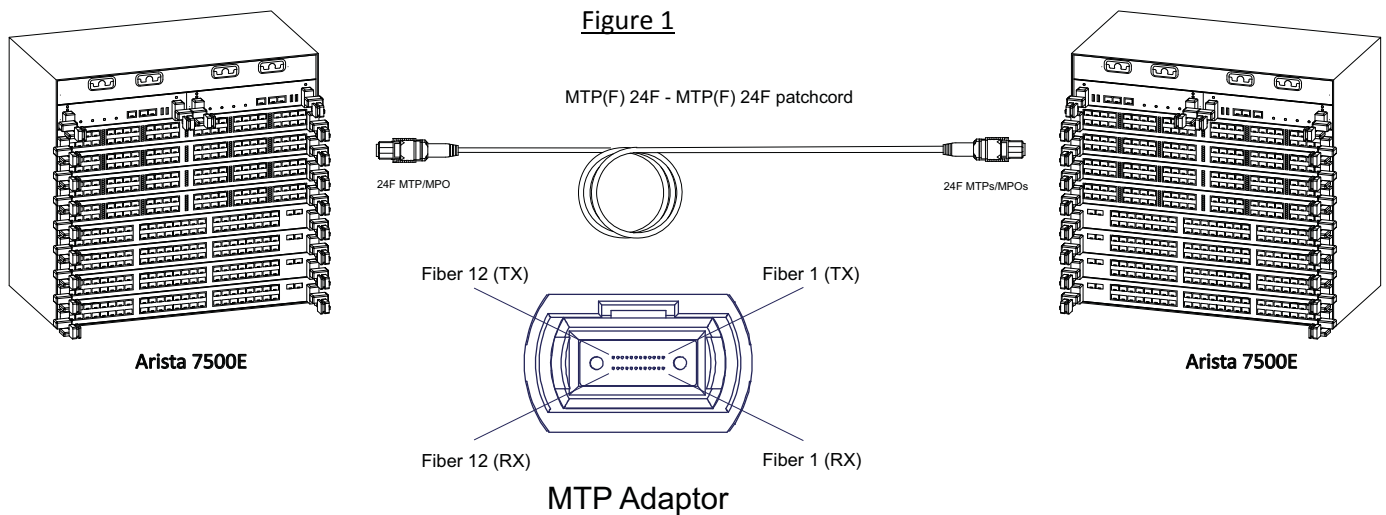


## Cabling Applications Note: Connectivity of 100G Networks

The trend of enormous increases bandwidth in telecommunication applications and data centers has lead to high I/O density requirements with double & triple speed ports. Many network equipment companies have developed switches, routers, servers with parallel optics ports to meet the speed requirement. This document focuses on cabling of a few typical connections where 24 Fiber based port equipment can be configured for direct connections as well as in the structured cabling environment.

### Direct Connection Between Two 100G+ Switches:

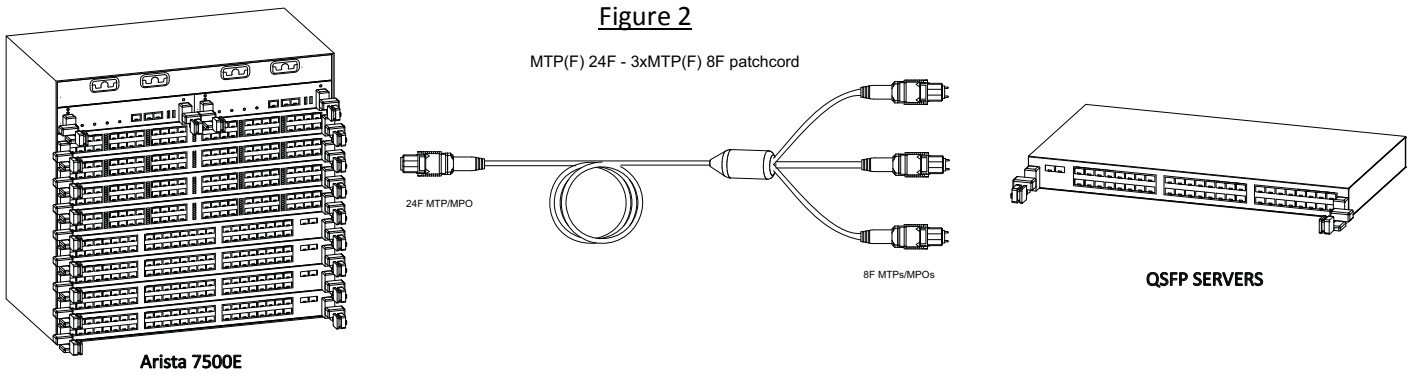
Example 1: Direct Connecting Two Active Equipment deploying 24F MTP/MPO Interface with 24F MTP/MPO interface. This type of interconnection are for equipment installed in within the same rack or between racks located within the same room. This example is for equipment such as the Arista 7500E switches. Figure 1.



BOM for Direct Connect Figure 1	
Part Number	Description
F27279R924TXXXXA (Riser Rated)	24 fiber, MTP24 (female) to MTP24 (female) jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M for Riser, use Plenum rated cable for length longer than 50M)
F27279P924TXXXXA (Plenum Rated)	24 fiber, MTP24 (female) to MTP24 (female) jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+ use Plenum rated cable)

## Direct Connection 100G Switch to 40G Fabric:

Example 2: Direct Connect Backbone Switch to 40G fabric. Typically this application is deploying QSFP 40G fabric connecting to the backbone layer. . This interconnection assumed equipment installed within the same rack or between racks located within the same room i.e in Arista 7500E switches direct connecting to QSFP storage or server devices. Figure 2.

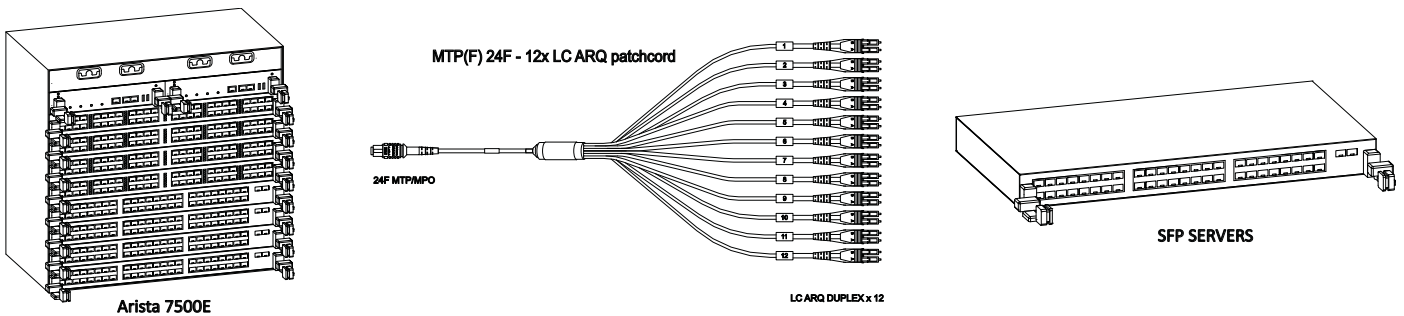


BOM for Direct Connect Figure 2	
Part Number	Description
RH88729R1GGH1B9TXXXA (Riser Rated)	24 fiber, MTP24 (Female) to 3 x MTP12 (female) jumper, QSFP config, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
RH88729P1GGH1B9TXXXA (Plenum Rated)	24 fiber, MTP24 (Female) to 3 x MTP12 (female) jumper, QSFP config, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)

## Direct Connect 100G Switch to 10G Fabric:

Example 3: Interconnection link between two the backbone switch to SFP 10G Fabric Server. This interconnectio. This scenario of interconnection assumed the equipment installed in within the same rack or between racks located within the same room. i.e Arista 7500E switches direct connecting to storage and server SFP devices. Figure3.

Figure 3



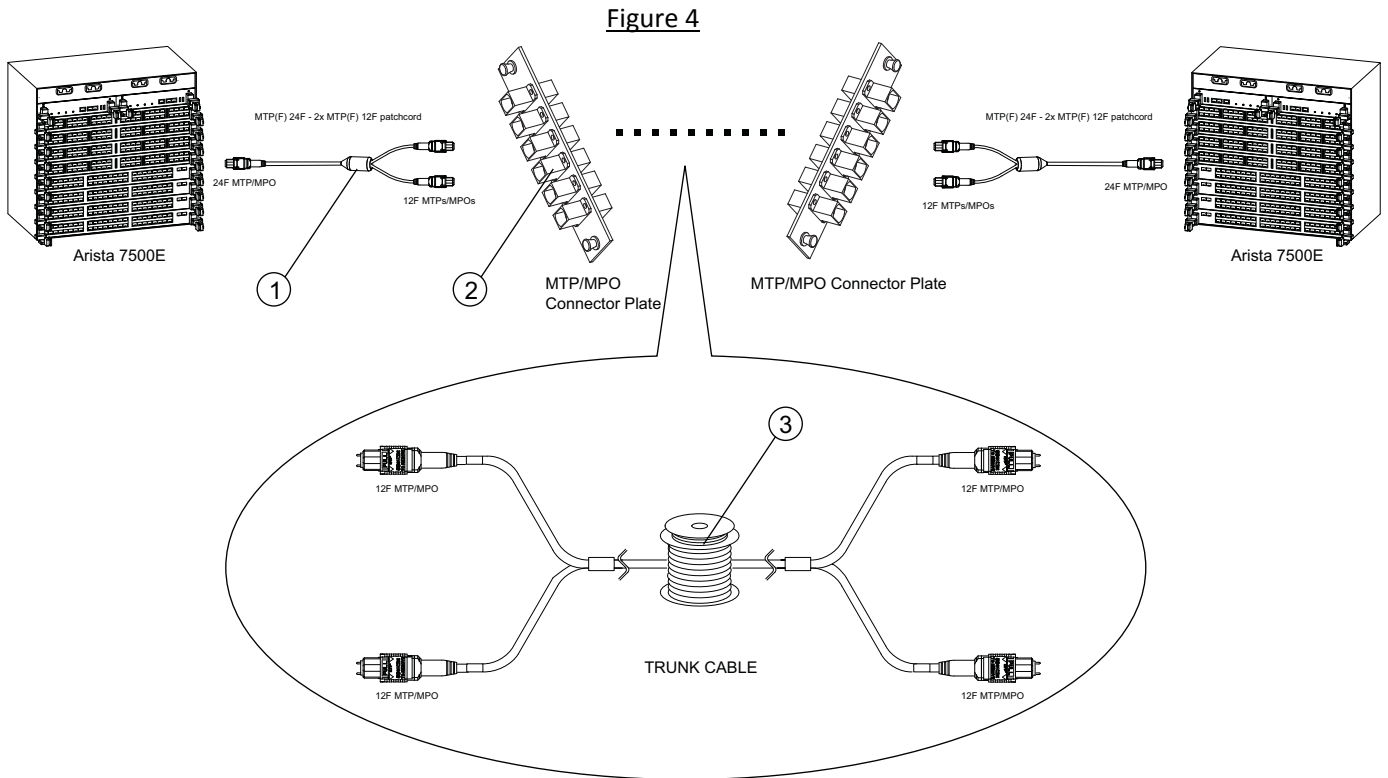
BOM for Direct Connect Figure 3	
Part Number	Description
RP97889R1GGMJH1TXXXXA (Riser Rated)	24 fiber, MTP24 (Female) to 12 x LC-Duplex jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
RP97889P1GGMJH1TXXXXA (Plenum Rated)	24 fiber, MTP24 (Female) to 12 x LC-Duplex jumper, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)

## Structured Cabling Interconnections:

In the structured cabling environment, where larger fiber count MTP trunks (up to 144 fibers) are used to create a permanent cabling links. MTPs couplers are installed on either cassettes or plates. The cassette or plates are mounted in a 19" rack mount enclosure. The MTP24 to 2x MTP12 "Y" jumper can be deployed to create the connection from the patch panel to the switch active port. The Y cables utilizes all fibers connecting to either MTP-MTP couplers panel, or MTP-LC hydra cassette, or a converter hydra cassette with 2x3 Hydra 12F MTP to 3F MTP. The following are illustration how the interconnection of these can be made..

## Connecting 100G Backbone-Backbone Switch through Infrastructure

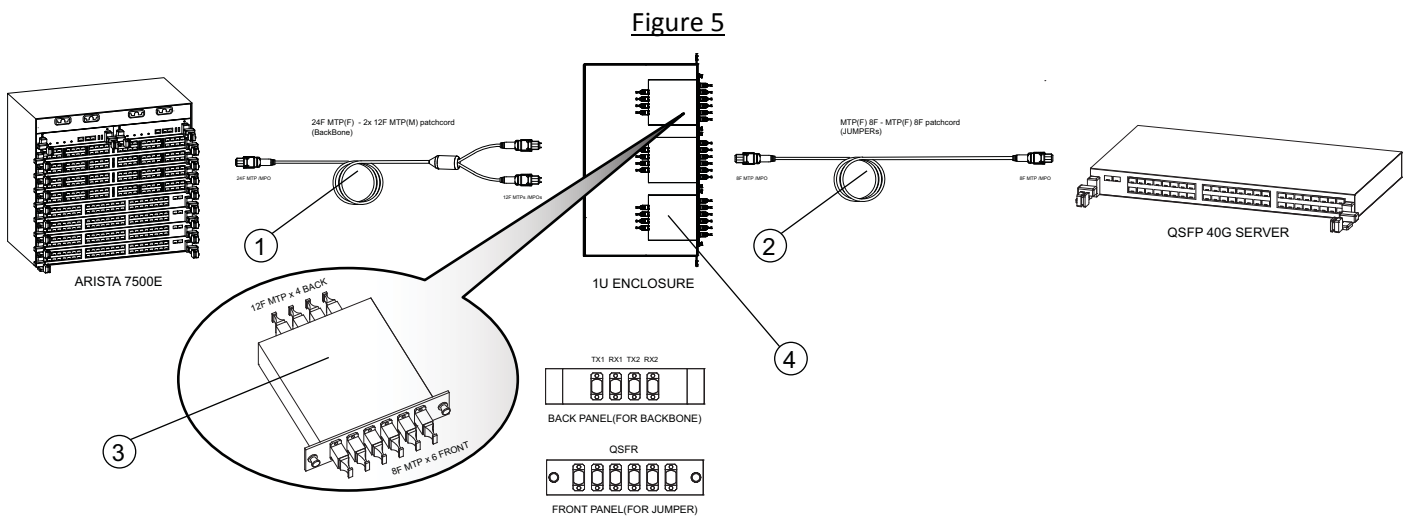
Example 4: For some of the existing infrastructure where MTP/MPO patch panels are. To accomplish the interconnection of two Arista 7000E switches. The 24FMTP/MPO to 2x12F MTP/MPO Y-Cable will be used to connect to the MTP/MPO patch panel. A trunk cable with 12F MTP/MPO (up to 144 fibers) made connection to another patch panel. Then another Y-cable is used to patch back to the back bone switch.



BOM for Direct Connect Figure 4		
	Part Number	Description
1	RM88729R1GGH1B9TXXXA (Riser Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
	RM88729P1GGH1B9TXXXA (Plenum Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)
2	ES-03030	FACE PLATE LOADED with 6 x MTP REDUCED FLANGE COUPLER (SC SX FOOTPRINT)
3	RA73739R3GGM9M9TXXXA (Riser Rated)	24 fiber, 2 x MTP12 (Male) to 2 x MTP12 (Male) Backbone, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX, (Up to 50M)
	RA73739P3GGM9M9TXXXA (Riser Rated)	24 fiber, 2 x MTP12 (Male) to 2 x MTP12 (Male) Backbone, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX, (50M+)

## Connecting 100G Backbone Switch to 40G Fabric Existing Infrastructure

Example 5: To accomplish the interconnection between the Arista 7000E switch backbone to 40G fabric (servers/storage). The 24FMTP/MPO to 2x12F MTP/MPO Y-Cable will be used to make the connection from the Backbone Switch to a 2x3 converter hydra inside a 4x6 cassette (mounted on 1U enclosure). Then the standard MTP/MPO QSFP patch cable is used to connect to the back side of the converter to the 40G Fabric. Figure 5

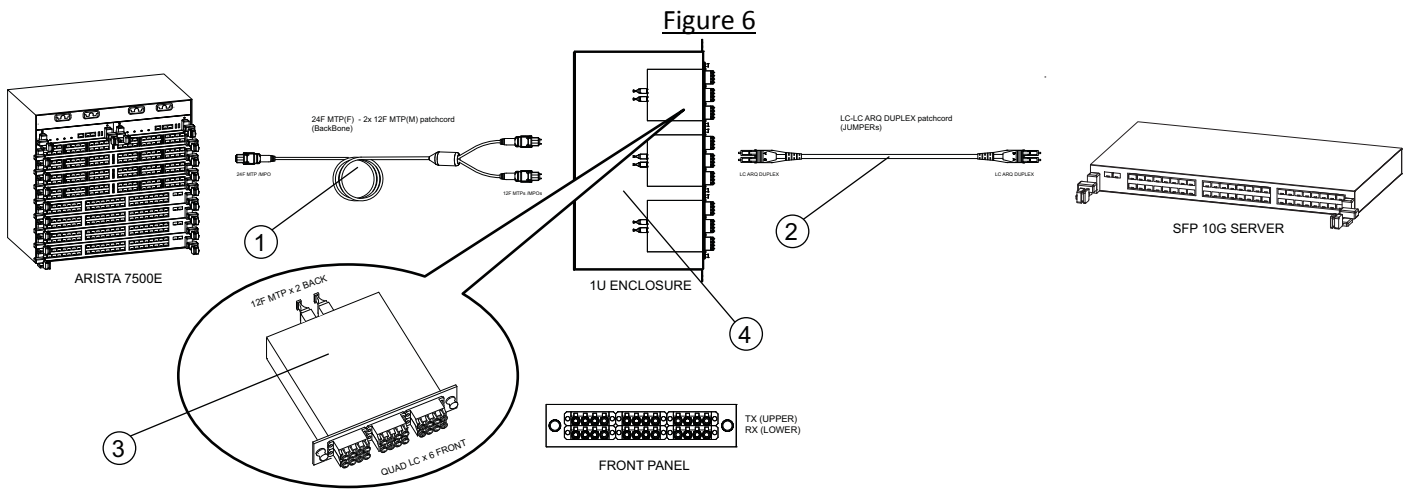


BOM for Direct Connect Figure 5		
	Part Number	Description
1	RM88729R1GGH1B9TXXXA (Riser Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
	RM88729P1GGH1B9TXXXA (Plenum Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)
2	F27279R908TXXXA (Riser Rated)	8 fiber, MTP (Female) to MTP (Female) jumper QSFP, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
	F27279P908TXXXA (Plenum Rated)	8 fiber, MTP (Female) to MTP (Female) jumper QSFP, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)
3	ES-03020	MTP-MTP CASSETTE 4 X 12MTP(M) - 6 x 8MTP(M) QSFP OM4 CASSETTE MODULE
4	71000N00036	1U RACK MOUNT ENCLOSURE, BLACK COLOUR, FRAME ONLY FOR 3 x MTP MODULES MAXIMUM

## Connecting 100G Backbone Switch to 10G Fabric Existing Infrastructure

Example 6: To accomplish the interconnection between the Arista 7000E switch backbone to 10G fabric (servers/storage) in an existing structured cabling infrastructure. The 24FMTP/MPO to 2x12F MTP/MPO Y-Cable will be used to make the connection from the Backbone Switch to a 12xLC-MTP hydra cassette. Then the standard LC-LC patch cords can be used to connect to the 10G fabric devices. Figure 6

Figure 6



BOM for Direct Connect Figure 5		
	Part Number	Description
1	RM88729R1GGH1B9TXXXA (Riser Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Riser rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (Up to 50M)
	RM88729P1GGH1B9TXXXA (Plenum Rated)	24 fiber, MTP24 (Female) to 2 x MTP12 (Female) jumper, Plenum rated cable, OM4 ClearCurve fiber, Type A polarity, Overall Length = XXX , (50M+)
2	F19199R802TXXXA (Riser Rated)	2 fiber, LC to LC jumper, Plenum rated cable, OM4 ClearCurve fiber, Overall Length = XXX , (Up to 50M)
	F19199P802TXXXA (Plenum Rated)	2 fiber, LC to LC jumper, Plenum rated cable, OM4 ClearCurve fiber, Overall Length = XXX , (50M+)
3	ES-03012	MTP 24 CORE OM4 LOADED CASSETTE MODULE BLACK COLOUR, WITH 6 x LC QUAD AQUA MM ADAPTOR (CERAMIC SLEEVE) 2 x MTP ADAPTOR(KEY UP - KEY DOWN)
4	71000N00036	1U RACK MOUNT ENCLOSURE, BLACK COLOUR, FRAME ONLY FOR 3 x MTP MODULES MAXIMUM