

SM Value Add Technologies Pvt Ltd

Centralised Structured Connectivity Solution

- Significant Savings in terms of Test Set Up time .
- Clean , Neat and Professional Cabling Set up.
- Effective Planning of Traffic Generators, systems and common resources.
- Cost effective over the period of time due to re use of Cables.
- Capex and Opex savings in terms of Power,Space,Manual Resources etc.
- Re- Use and Re-Purpose of the Solution Modules.
- Scalability ,Customize and Easy Upgrade for Future requirements.
- High-speed data transfer and low latency.
- Improved cable management and organization.
- Reduced signal interference and errors.

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SM VALUE ADD TECHNOLOGIES

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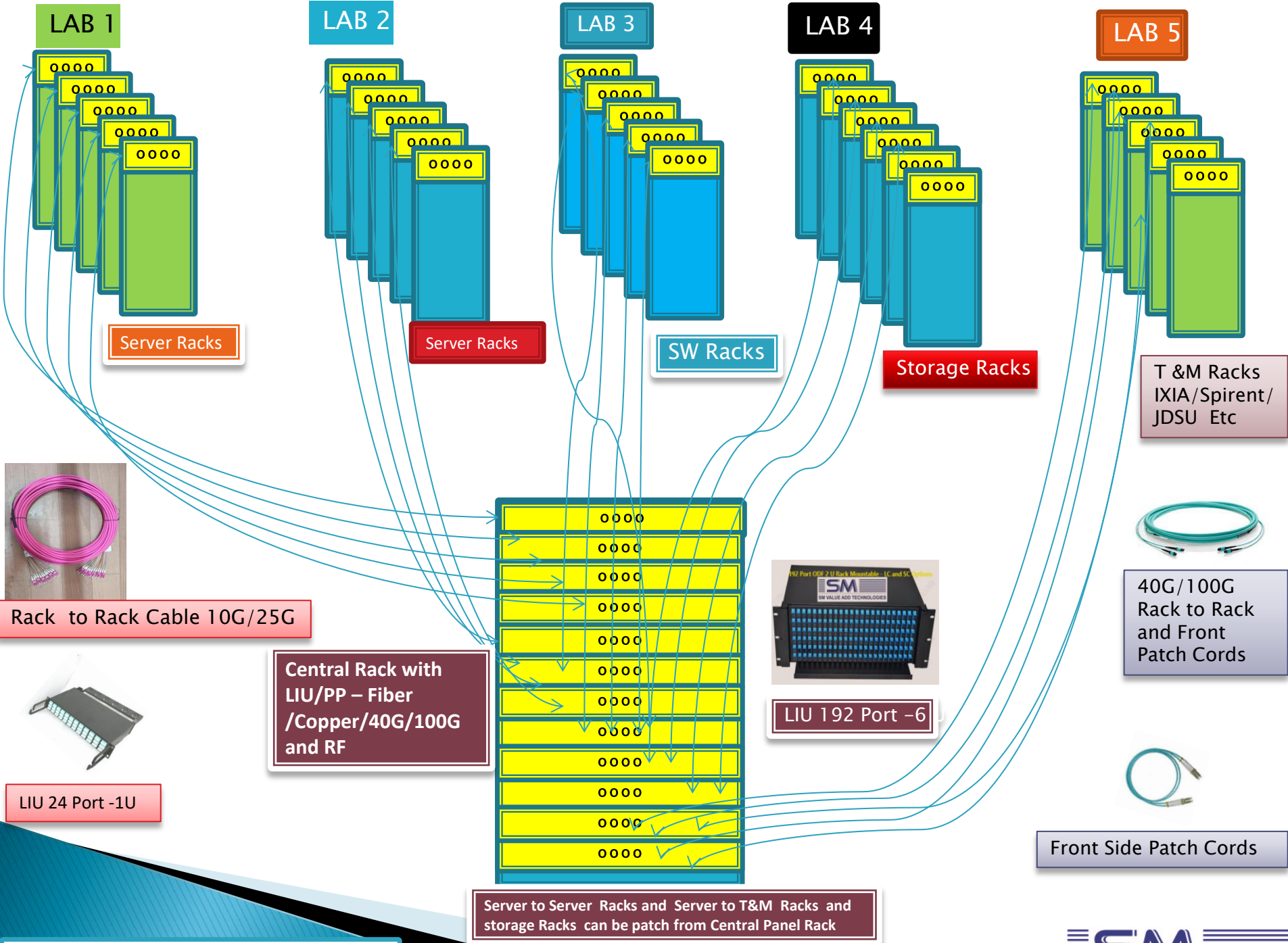
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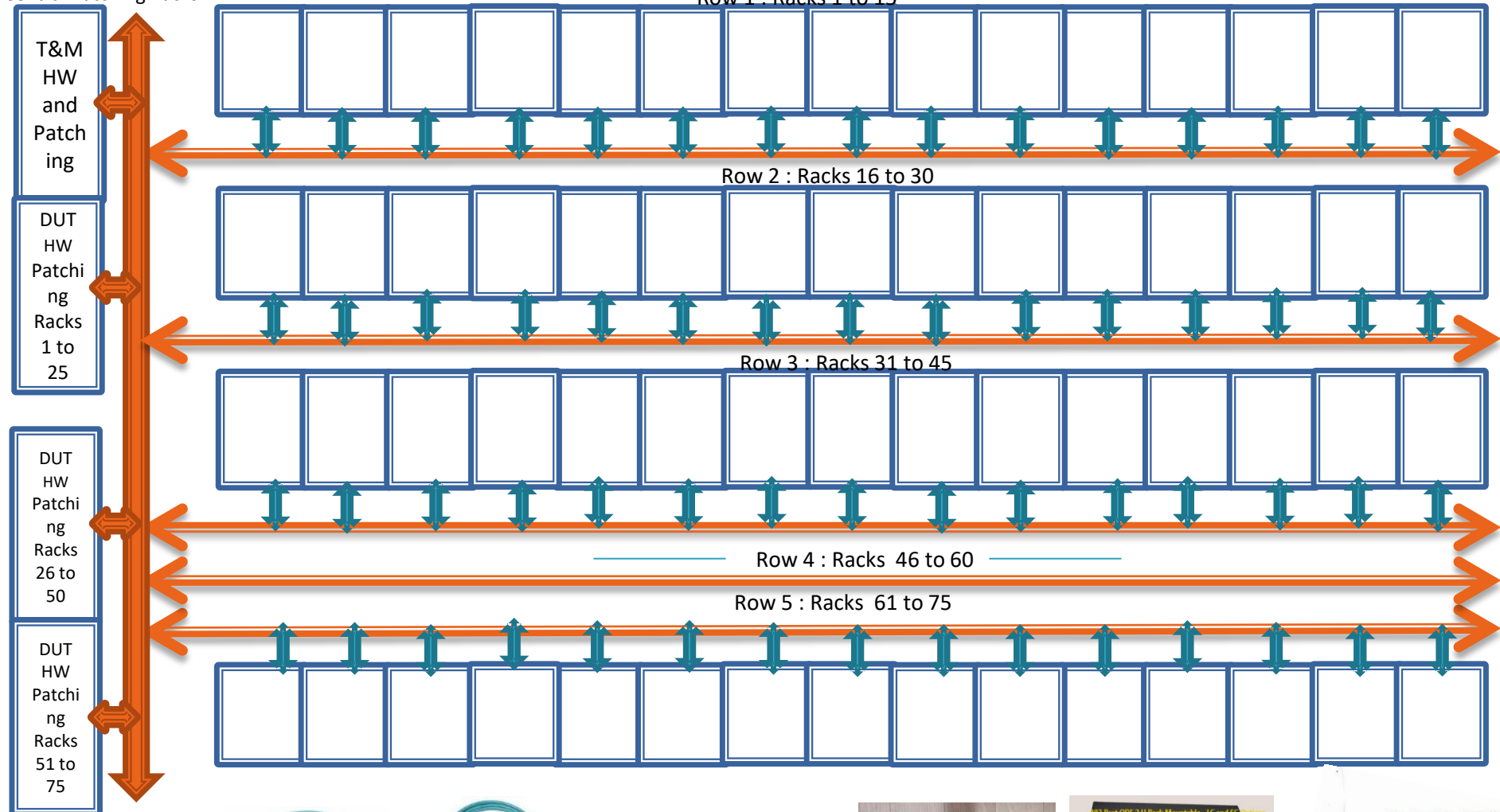
Centralised Structured Connectivity Solution

Brief : Solution involves designing and installing a high-speed fiber cabling infrastructure for a data center, supporting speeds of 10G, 40G, 100G, 400G, and 800G.

- **Fiber Cables:** Multimode (MM) and Single mode (SM) fiber cables, MPO Cables including AOC and DAC cables for high-density connections.
- **Rack to Rack Extensions:** Fiber cables connecting racks, ensuring high-speed data transfer between servers and storage systems with Low Loss and Low Latency.
- **Structured Cabling:** An organized and standardized cabling system, using fiber optic cables, LIU (Line Interface Unit) modules for easy management and scalability.
- **Dressing and Installation:** Professional installation and dressing of cables, ensuring a neat, organized, and secure environment.
- **Racks:** High-density racks accommodating servers, storage systems, and networking equipment, with integrated cable management systems.
- **LIU Units:** Line Interface Units facilitate patching between servers, storage ,networking equipment, enabling high-speed data transmission.
- **MPO Cables:** Multifiber Push-On cables supporting high-density connections, ideal for 40G, 100G, and 400G/800G applications.



Central Patching Racks



24 Port LIU Qty 78
144 Port LIU Qty 14
 Based on Length
 Rack to Rack 10G Cable
 Rack to Rack 100G Cable
 Patch Cords 10G & MPO



Patch Cords 100G/40
Panel to Devices



Patch Cords
10G/25G
Panel to Devices



DUT Racks to Central Racks
100G/40G MPO Cable



DUT Rack to Central Racks
Factory Build Harness Cable
Or Field Splicing



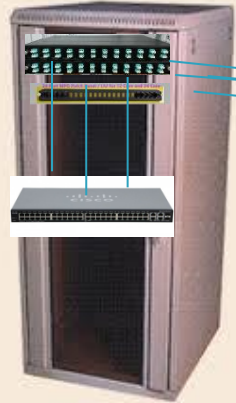
144 Port LIU
Installed Central RACKS



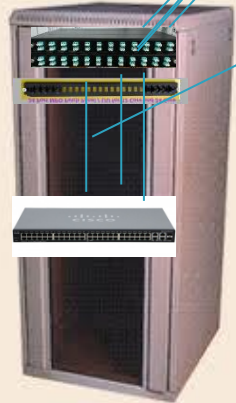
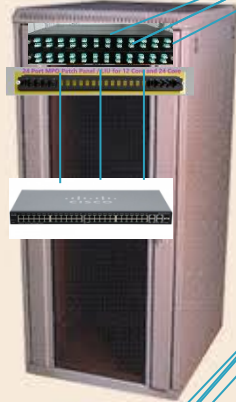
24 Port LIU
Installed DUT RACKS

24/144 Port LIU Will be Mix of 10G/25G and 40G/100G.
10G/25G Can be Mix of SMF and MMF

LAB and DC Centralized Structured Fiber Infra Solution

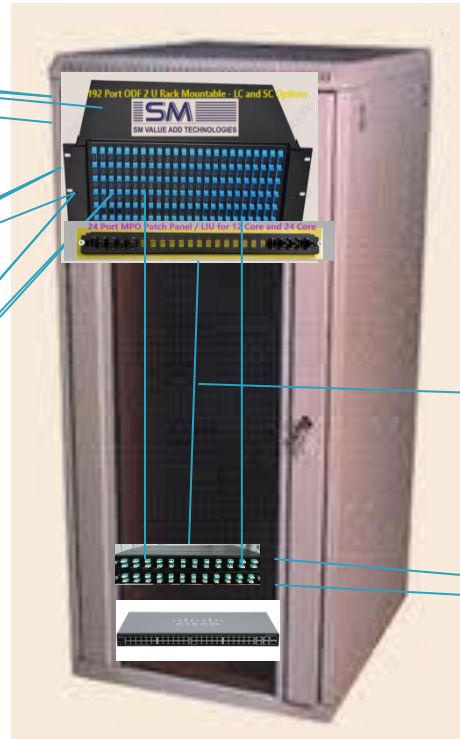


Fiber Inter Rack Cables 10G LC and 40G/100G/400G MPO Cables - Trunk /Back End



10G LC and 40G/100G/400G MPO Patch Cords - Terminal Ends

Devices Under Test



10G LC and 40G/100G/400G MPO Cables - Trunk /Back End

10G LC and 40G/100G/400G MPO Patch Cords - Terminal Ends

T & M DATA Sources - IXIA/Spirent/JDA ETC...



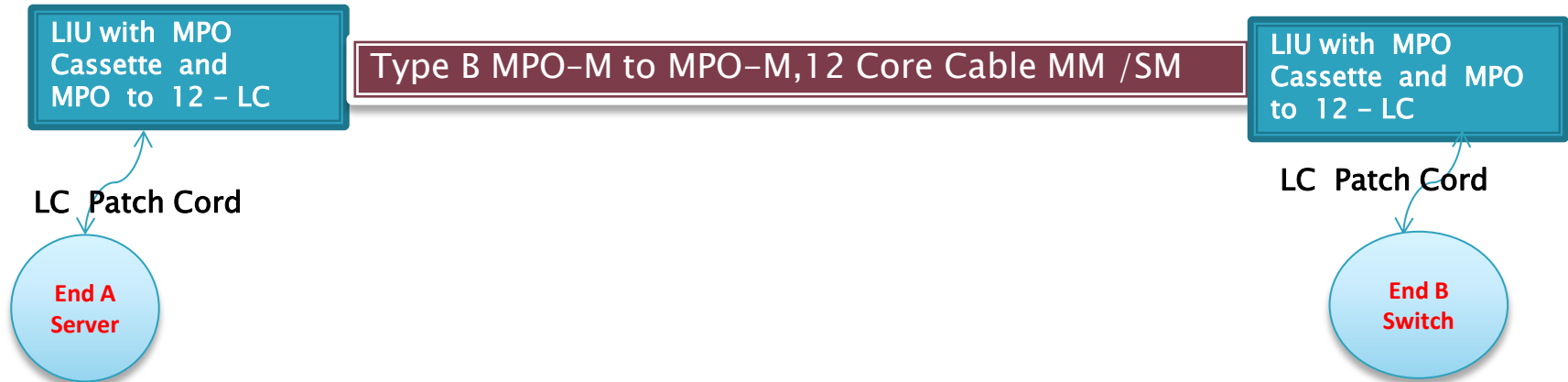
40G/100G/400G Patch Panel 24 ports

24 Port MPO Patch Panel / LIU for 12 Core and 24 Core

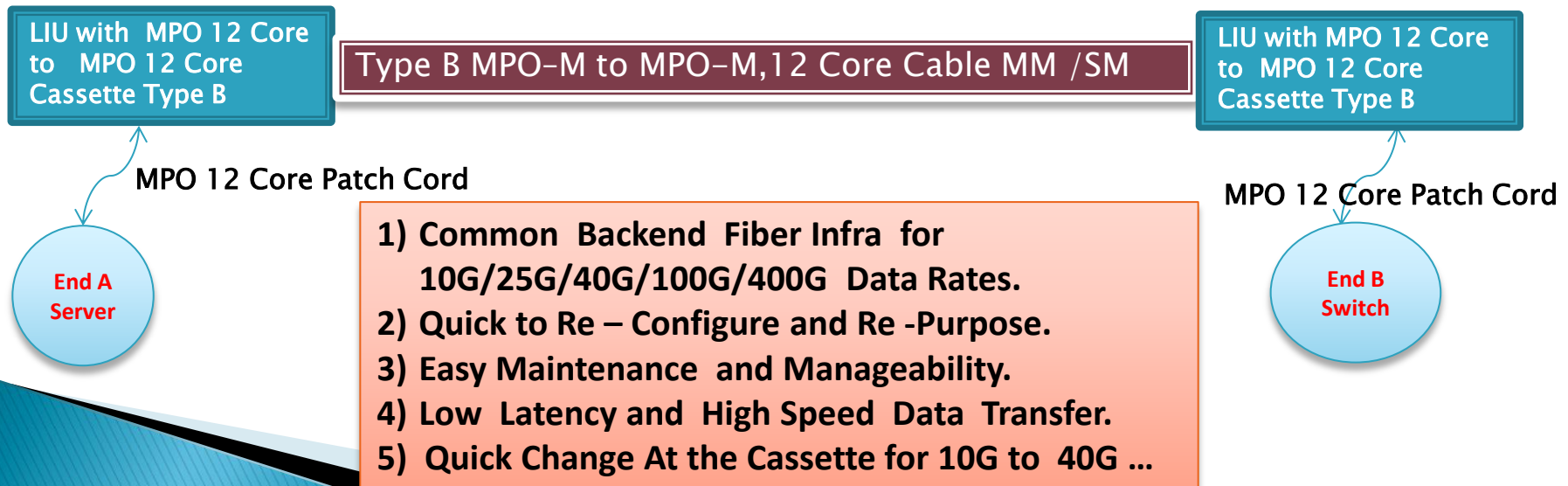


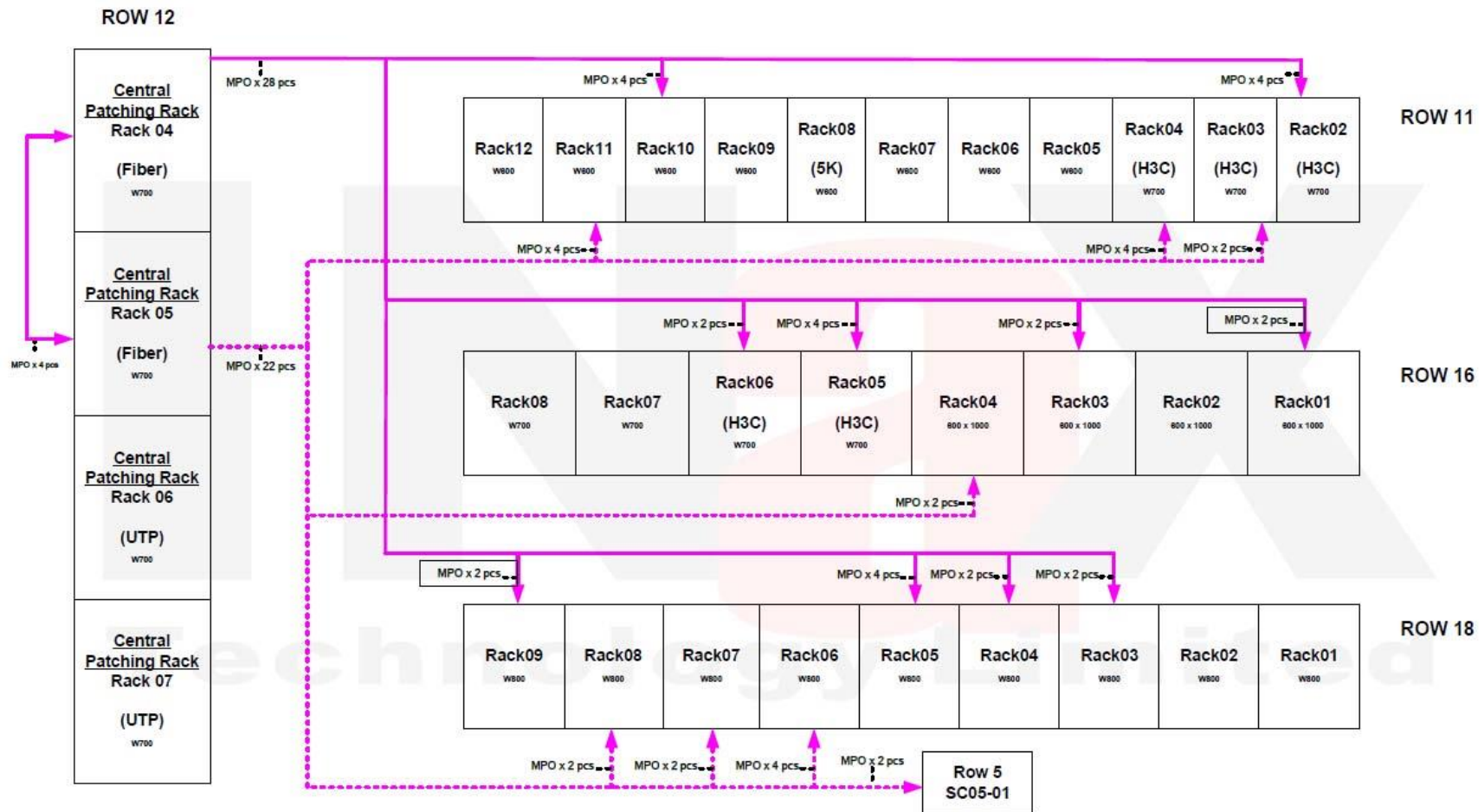
LIU/ODF 24/48/96/144 Ports

10G/25 G LC Ports Rack to Rack Extension



40G/100/400 G MPO Ports Rack to Rack Extension





Achieving Clear Polarity and Easy Management for MPO and LC Connections 10G/40G/100G Links.

For 40G and 100G connections, Using Type B MPO backbone cables, the polarity remains consistent while extending the link distance. The design optimizes MPO high-density cables and MPO Cassette system for quick, cost-effective deployment.

MPO cassette module is enclosed unit that contains 8, 12 or 24-fiber factory terminated fan-outs inside. The fan-outs typically include such as SC, LC style connectors plugged into adapters on the front side of the fiber cassette and a MPO connector plugged into a MPO adapter mounted at the rear of the cassette.

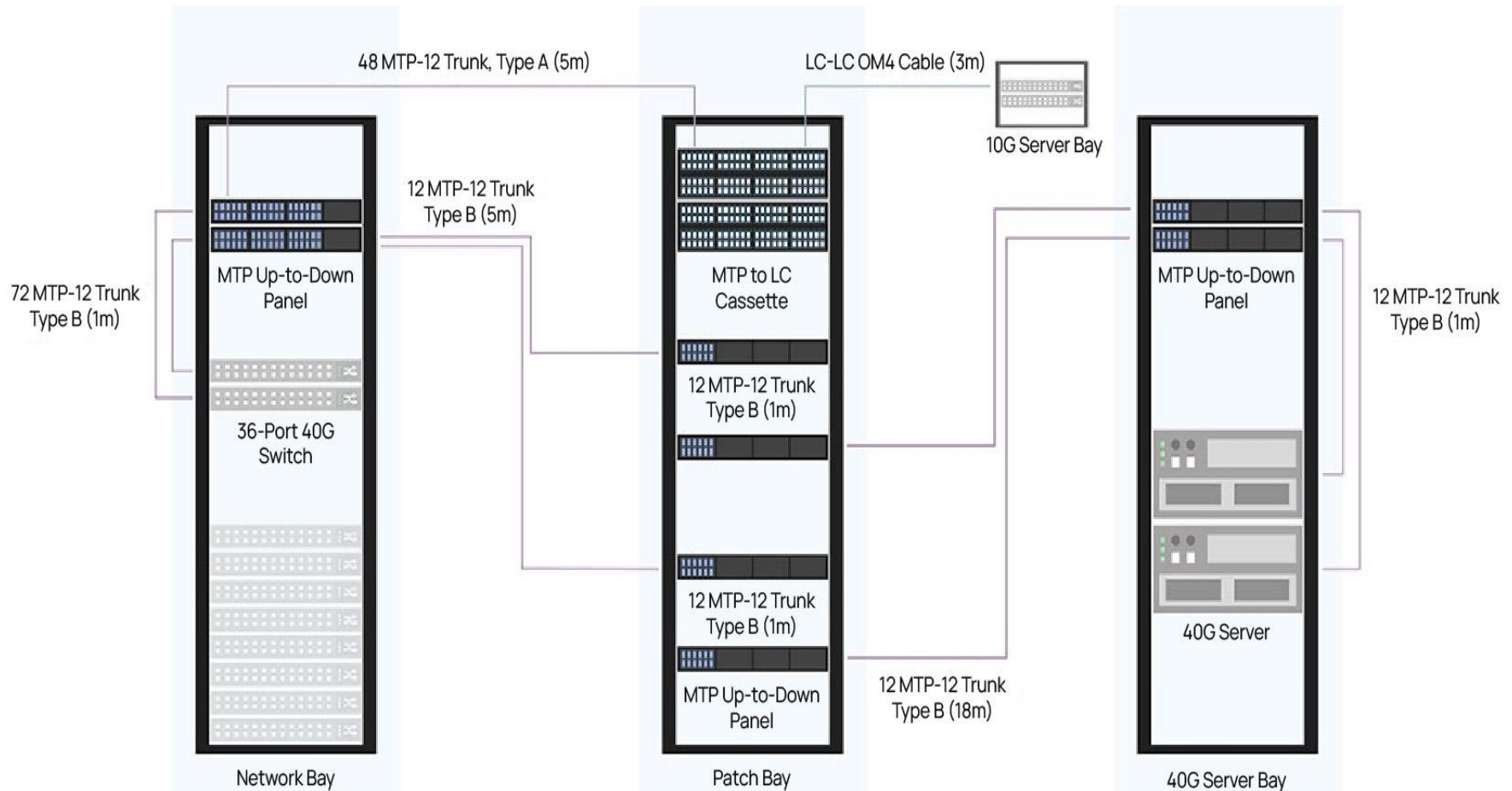
With pre-engineered cabling management, MPO to LC fiber cassette provide plug-and-play fiber connectivity, enabling more network flexibility, faster installation, and easier moves, adds and changes, which result in reduced cost of deployment and maintenance.

cassettes provides adaptability for the changing data center environment. Facing technology refresh frequencies of 12-18 months, Plug & Play MPO fiber cassettes used in the data center offer a great advantage. When connector requirements change in the future, simply swap the cassettes whilst leaving the existing backbone infrastructure intact.

MPO to LC cassettes are a quick and efficient way of deploying MPO connector breakout .The following are two application scenes for MPO to LC cassettes.

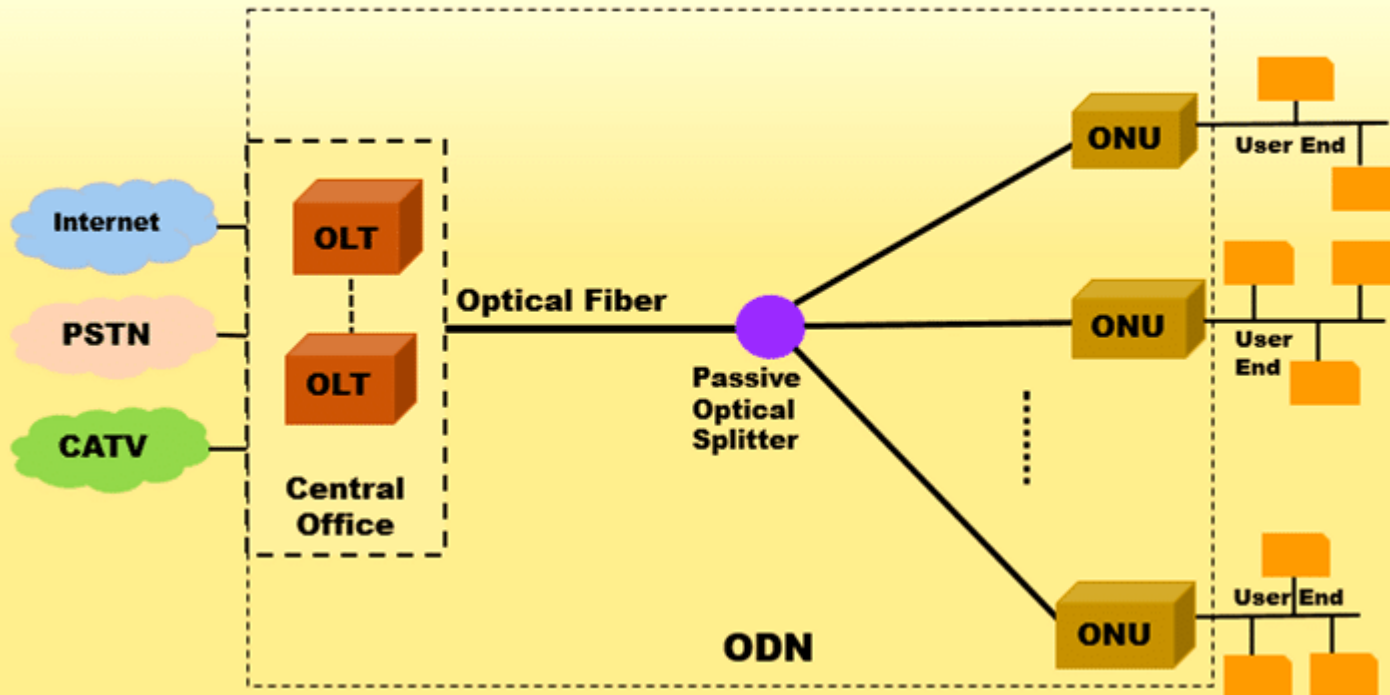
For 40G /100G/400G MPO Extensions By simply connecting the MPO Patch Cord on the MPO Adapter Mounted at the rear side and Unplug the Fanout Cables .





10G/40G/100G Links will be achieved by using MPO Trunk, MPO Cassette, MPO Patch Cords and Fiber Patch Cords. Polarity remains consistent through the Link. The design optimizes MPO high-density cables and MPO Cassette system for quick, cost-effective deployment.

Passive Optical Network



FTTH LAB Setup for Testing 512 ONU Devices ,4 Racks with Cables OLT HW Unit, Splitters ,Switches, LIU's, PDU's .
Test Lab built for SW and HW development ,Testing and Supporting Customers.



Central LIU – 168
Port LC DX ,MMF
Adapters

DUT / Edge side LIU
– 24 Port LC DX ,MMF
Adapters

Interconnectivity
Between Edge and
central LIU's with
MPO or LC Trunk
Cables.

T & M HW
LC to LC
,DX,OM4 Patch
Cords 1/2/3 M

Switch/Server
Side , LC to LC
,DX,OM4 Patch
Cords 1/2/3 M

- **Central LIU Where Common Test Equipment , Traffic Generators , Signal Generators Connected .**
- **Management of common resources will be easy.**
- **Planning ,Scheduling and Re Patching the Resources will be easy .**
- **Cluster Free and Professional Look and Feel set up.**



Sample Patch Cord
LC to LC , Duplex MMF-OM3
For SR Optics.

Parts Used in the Solution

LIU /Patch Panels Edge Side



LC Patch Cords -Front End



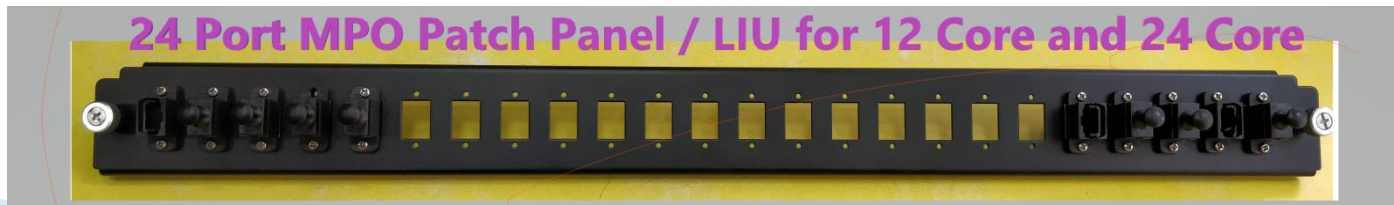
LIU /Patch Panels Central Side



MPO Patch Cords -Front End



Trunk Cable - Back
End Inter Rack

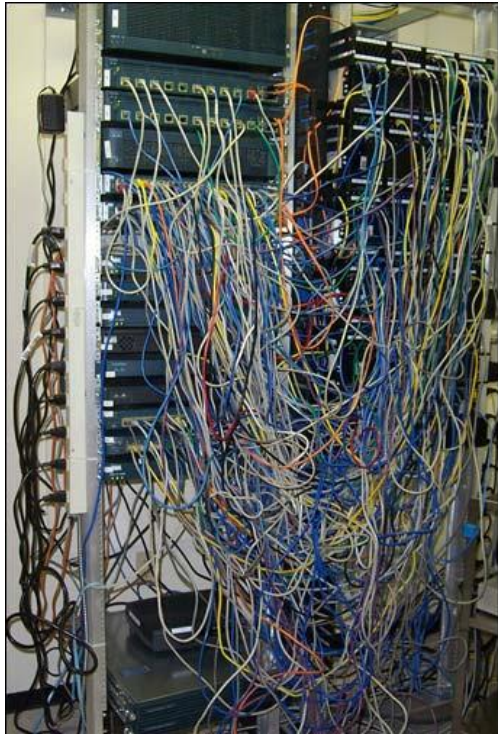


100G/40G MPO Patch Panel Link Extension

Fiber Infrastructure Projects Executed

1. **GSTIN Tax Network:** SM VADD commissioned Fiber Structured Cabling solution comprising of Central storage and 25 No's of Racks with Servers in the Data Center.
2. **Parallel Wireless : OPEN RAN** Engineering Lab Build and Fiber Network Set up For Base Stations Testing and Verification , Racks with Base stations to central Data Net work Servers.
3. **IP- Infusion:** Rack to Rack 10G /40G/100G Data Links Extensions for Server HW Boards test Environment Utilizing our Fiber Infrastructure services to power their innovative IP-Based Solutions.
4. **Radisis** : Comprehensive FTTH Lab Test Solution comprising of 512 No's ONU Devices Verification and Testing Involving Fiber Power Splitters ,LIU's and OLT Servers ,T& M Systems.
5. **Cambium** : Partnered with us for Wireless Broad Band ,WI-FI Solutions, ONU Devices test Lab for Verification and Testing of FTTH Network HW and Software, Servers ,Power Splitters ,LIU's and Central OLT System.
6. **Celona** : Telecom and Wireless units Test Setup involving Fiber and RF Devices.
7. **Marvel** : Rack to Rack cabling of 10G /40G/100G Data Links to connect Central T&M Devices (Spirent ,IXIA ..etc) with Platform HW boards for Verification.

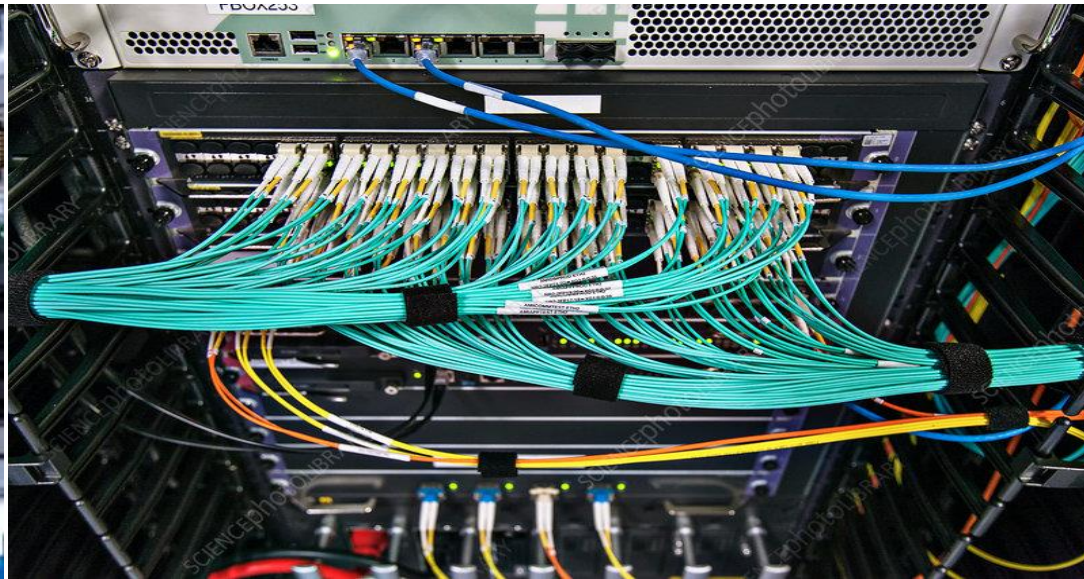
Before Dressing



After Dressing



Structured Cabling Solution



Structured Cabling Solution

LAB Structured RF Infra Solution



SMA Front and rear Side Panel Views ,1U 19 Inch Rack Mount



N Type Front and rear Side Panel Views ,2 U 19 Inch Rack Mount

LAB Structured RF Infra Solution

Source Side Patch Panel
/Central - 16 Port SMA –F
, Adapters DC to 6 Ghz

Destination Side - 16 Port
SMA –F , Adapters DC to 6
Ghz



RF Signal
Source
Equipment Side
– Central
Panels.

Interconnectivity Between
Central and Destination
Panels with RF Patch Cords ,
up to 25 Mtrs DC to 6 Ghz

Destination RF
Equipment

Central Patch Panel Connected to Common resources
Destination Side Patch Panel to End Devices under test.
Central /Source Side Panel can be customized
Be based on no of ports and Type of Connectors.

Sample Patch Cord
LMR Series /RG Series Up to 6 Ghz
SMA /N Type Connectors



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