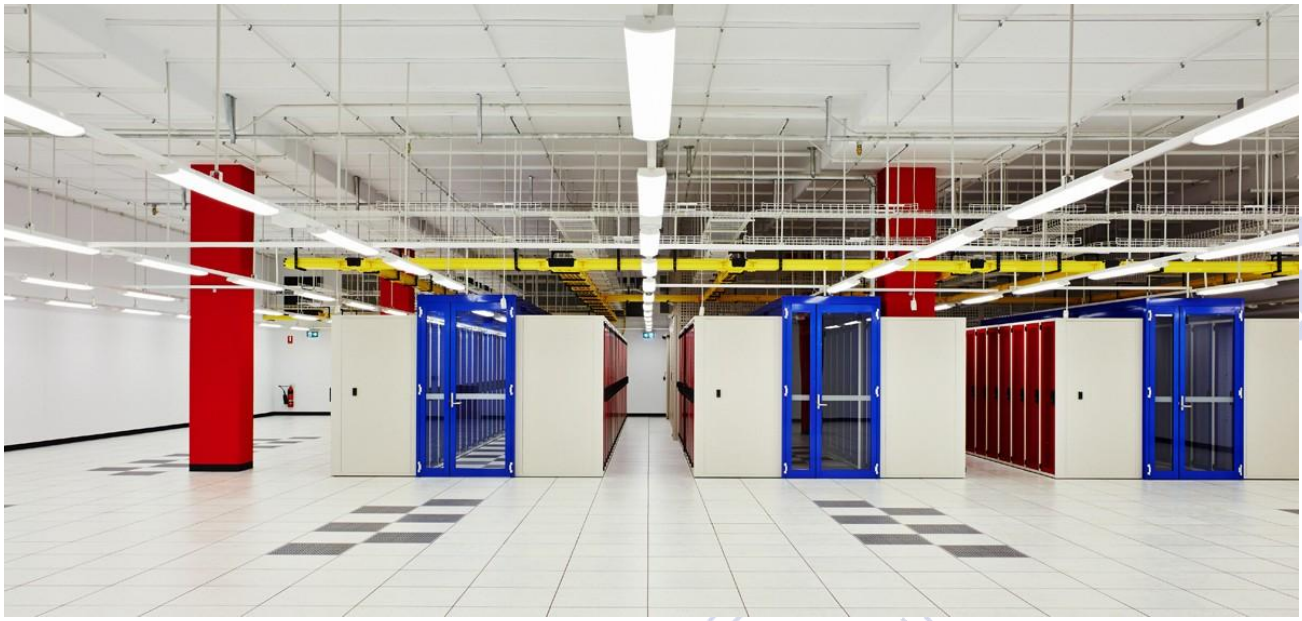
IDC Data Center Solutions



1、 Data Center Overview

With the development of the communication industry, the construction of modular data centers has become a common trend. With years of experience, Changcheng provides innovative modular data center optical series products, including optical distribution frames, modules, pre terminated jumpers, and other products, which have high density and scalability, and are suitable for the smooth upgrading of future large data centers of 40G/100G/400G.

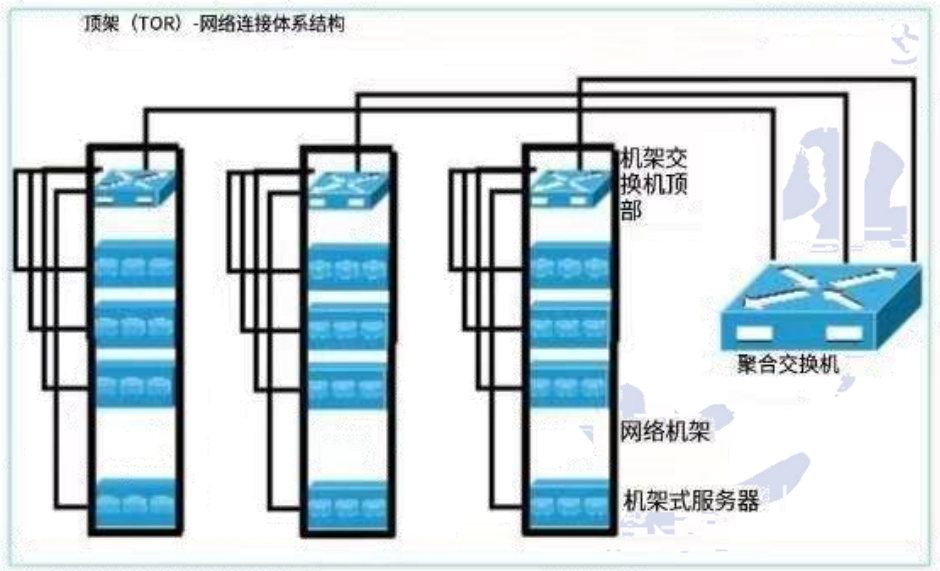
With the arrival of the big data era, the development of internet data centers has improved the overall computing power level and ushered in large-scale construction. The internal data transmission rate of internet data centers has also moved from the initial gigabit and gigabit networks to the stage of large-scale deployment of "25G access+100G interconnection". In the era of "100G access+400G interconnection", data centers have also begun to deploy and pave the way for future 800G links.

2、 Application of OM3/OM4/OM5 Fiber Optics

At present, the average distance between the Internet data center TOR and the leaf switch is about 45 meters, and the distance between the leaf and ridge switch is within 200 meters. The OM3/OM4 fiber optic system can be used for the link of the TOR leaf switch, while the OM4/OM5/OS2 fiber optic system is recommended for the link of the leaf ridge switch.

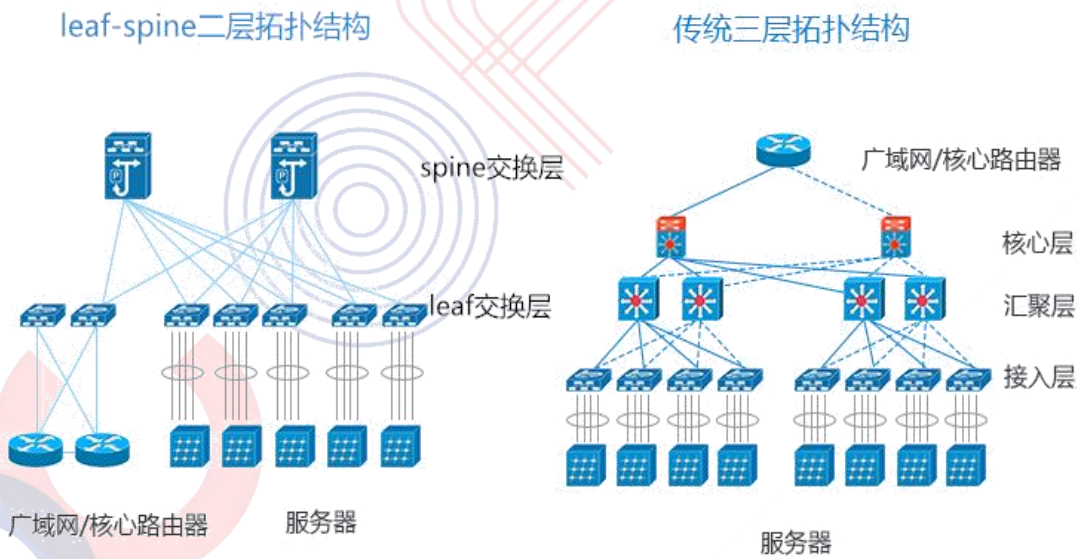
2.1 The average distance between TOR and leaf switches is about 45 meters. OM3/OM4 fiber optic system can be used in the link of TOR leaf switch

TOR-机架顶部设计:



2.2 It is recommended to use OM4/OM5/OS2 fiber optic systems in the link of leaf ridge switches with a distance of less than 200 meters.

Spine leaf spine and leaf switch design:



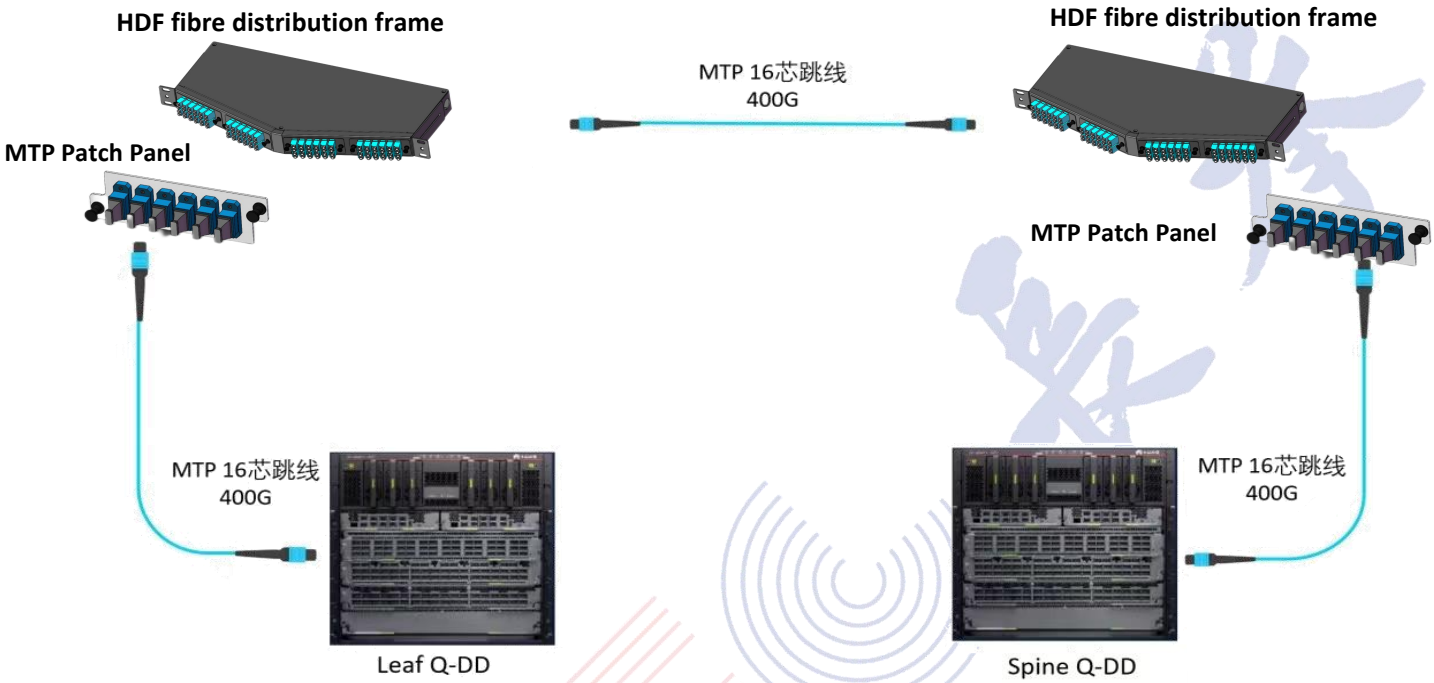
2.3 Ethernet standard using OM3-OM5 fiber optic

speed(Gb/s)	standard	wavelength(nm)	Number of two-way communication optical fibers	Maximum transmission distance(m)		
				OM3	OM4	OM5
10	10GBASE-SR	850	2	300	550	550
25	25GBASE-SR	850	2	70	100	100
40	40GBASE-SR4	850	8	100	150	150
100	100GBASE-SR4	850	8	70	100	100
	100GBASE-SR10	850	20	100	150	150
400	400GBASE-SR16	850	32	70	100	100
	400GBASE-SR8	850	16	70	100	100
	400GBASE-SR4.2	850	8	70	100	150

3. HDF high-density MPO distribution frame networking scheme

The HDF series fiber optic distribution frame is suitable for standard 19 inch equipment cabinet or rack installation. The fiber distribution frame has 1U and 4U, with a maximum height of 1U supporting pre terminated/fused 144 cores (dual LC adapter) or 72 port MPO, and a maximum height of 4U supporting pre terminated/fused 576 cores (dual LC adapter) or 288 port MPO. It can support all current 40G-400G application solutions. For 400G applications, Changfei has launched a series of 400G networking solutions, including 400G-SR8400G-DR4400G-FR4.

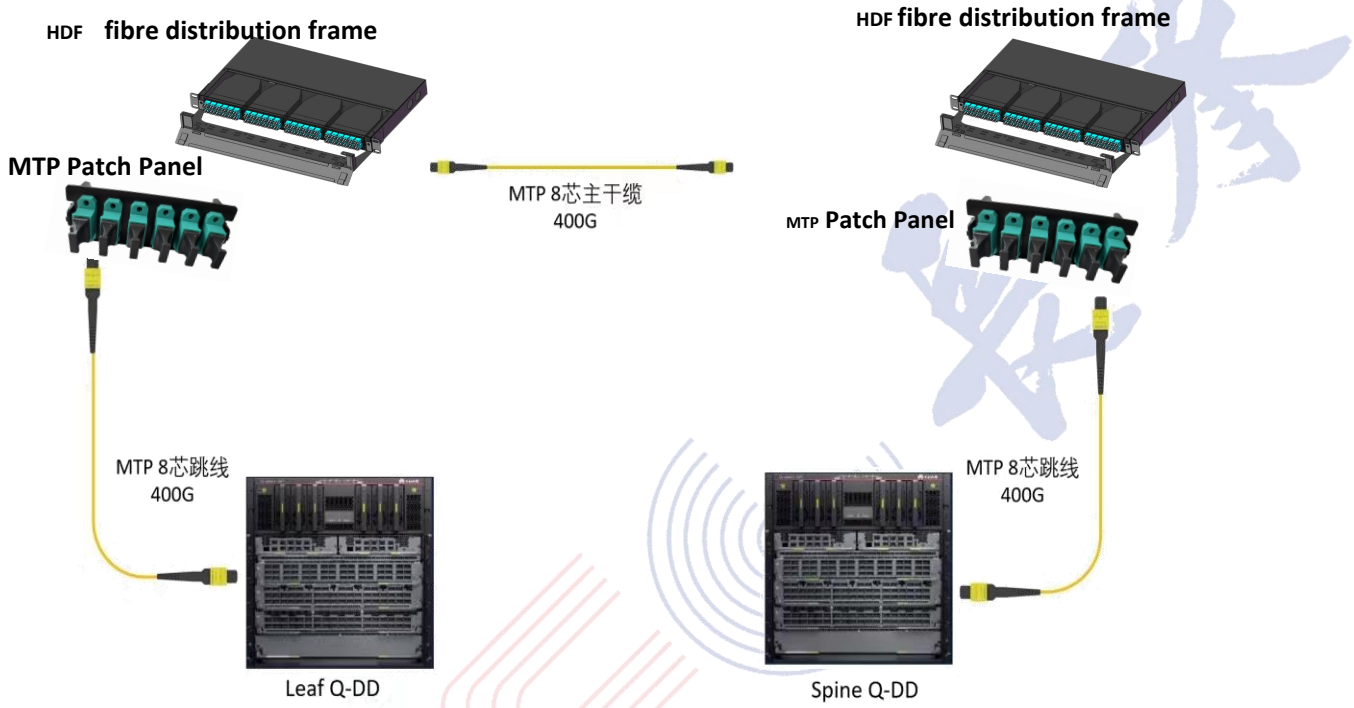
3.1 400G-SR8 Interconnection: The core adopts a 400G-SR8 interface backbone switch, and the leaf layer adopts 400G-SR8. The MTP16, which is a long supporting multimode and low loss, perfectly solves the interconnection of 400G applications.



400G-SR 8 interconnection solution product recommendation:：

name	model	dosage
Pre terminated backbone	CCOFC-MTP/M-MTP/M-LSZH-OM5-16F-50m	1
MTP**Patch Panel**	CCOFC-AP-6MTP	2
MDA **fibre distribution frame**	CCOFC-HDF-4U	1
EDA **fibre distribution frame**	CCOFC-HDF-1U	1
MTP Patch cord	CCOFC-MTP/F-MTP/F-LSZH-OM5-16F-5m	2

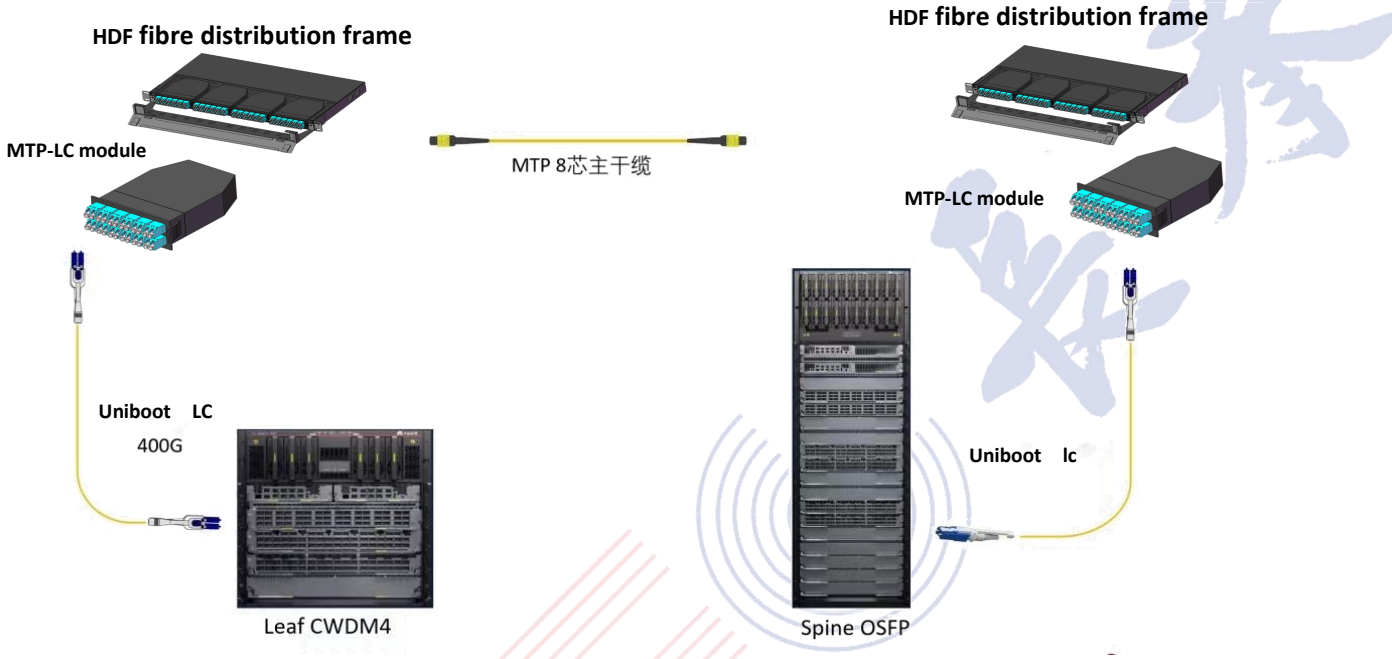
3.2 400G-DR4 Interconnection: The core adopts a 400G-DR4 interface ridge switch, the leaf layer adopts a 100G-DR, and the long-term single mode low loss 8-core MTP connection will be upgraded to future 400G rates.



400G-DR4 interconnection solution product recommendation:

name	model	dosage
Pre terminated backbone	CCOFC-MTP/F-MTP/F-LSZH-G657A2-8F-50m	1
MTP**Patch Panel**	CCOFC-AP-6MTP	2
MDA **fibre distribution frame**	CCOFC-HUDF-4U	1
EDA **fibre distribution frame**	CCOFC-HDF-1U	1
MTP Patch cord	CCOFC-MTP/F-MTP/M-LSZH-G657A2-8F-5m	1

3.3 400G-2FR4 interconnection: The core adopts a 400G-2FR4 interface ridge switch, and the blade layer adopts 100G-CWDM4. The long support single mode low loss MTP and Uniboot are connected to 400G applications.



400G-2FR4 interconnection solution product recommendation:

name	model	dosage
Pre terminated backbone	CCOFC-MTP/F-MTP/F-LSZH-G657A2-8F-50m	1
MTP(MPO)-LC module	CCOFC-12-MTP-DLC/UPC-G657A2	2
MDA distribution frame	CCOFC-HDF-4U	1
EDA distribution frame	CCOFC-HDF-1U	1
LC-LCPatch cord	CCOFC-**Uniboot**LC/U-**Uniboot**LC/U-LSZH-G657A2-20-5m	2

4、 About CCOFC

CCOFC Company is a high-tech and computing infrastructure enterprise specializing in research and development, production, and sales, and is a well-known brand of intelligent networking and comprehensive wiring; Product coverage # Communication optical cable series # Data center series # Fiber optic comprehensive wiring series # Copper cable comprehensive wiring series products and solutions; Assist in the comprehensive launch of the Eastern Digital and Western Computing, and provide product and technical support for thousands of engineering projects such as # data center construction # government brain # smart education # digital

healthcare.

The company team has been deeply involved in the communication industry for 21 years, adhering to the business philosophy of quality as the foundation, and creating a global leader and well-known brand in the optical communication industry for comprehensive cabling. I have participated in influential and representative communication technology industry exhibitions such as the CIOE China Optical Expo, Germany, France, India, Egypt, Vietnam, Singapore, etc. The glorious journey of 21 years is a history of continuous improvement in quality and technological innovation in optical communication.