

Switching Trends

Continued strength in 2Q23; though driven by backlog drawdown again

Industry Overview

2Q23 switching growth supported by backlog drawdown

The overall switching market grew a solid 39% YoY with campus and data center (DC) switching up 54% and 23% YoY, respectively. These are abnormal growth rates, in historical perspective, and we expect a sharp correction in the next few quarters. Between 2018 to 2021, the DC switching market grew 0%-7% YoY, but the growth jumped to 32% and 26% in 2022 and 1H23. In campus switching, growth fluctuated between 2%-3% YoY in the last 10 years, then jumped to 26% in 2022 and 53% in 1H23. We believe these growth rates are not sustainable and are mostly attributed to COVID-related demand and early ordering due to component shortages, which resulted in elevated backlog levels. We expect meaningful moderation in the growth, possibly to negative territories. We think this has negative implications to Cisco, Juniper, and Arista, and believe Street estimates are not capturing the associated risks.

Cloud demand and 400G driving DC switching growth

The data center switching market grew 23% YoY in 2Q23. Hyperscalers accounted for 31% of the total DC market, enterprises 29%, telcos 17%, and tier-2 cloud providers accounted for 23%. There are two overlapping growth drivers: Cloud demand and 400G. On the cloud front, white box switches, reflecting mostly Amazon and Google, grew 35% YoY, while Arista grew 38% YoY with Arista's overall share up from 18.8% to 21%. 400G demand continues to be strong, with 400G DC switching revenue up 83% YoY in 2Q, while the rest of the market (ex-400G) was only up 14%. 400G revenue now accounts for 20% of total DC switching revenue vs. 13% a year ago. Arista and white box vendors hold the majority of the 400G market, at roughly 39% share each, while Cisco only holds 3% share, suggesting that hyperscalers account for most of the 400G market.

DC share trends vary across cloud provider exposure

DC switching represents 29% of Cisco's total switching revenue, and should we exclude the cloud providers revenue, Cisco has largely stabilized its share. In addition, we highlight the high exposure of Arista to hyperscalers and tier-2 cloud providers, jointly accounting for 81% of Arista's DC switching revenue, vs. both accounting for only 20% of Cisco's share (entirely in tier-2 cloud). Juniper has the most distributed customer exposure with 27% contribution from Enterprise, 21% from Hyperscaler, 18% from Telco, and 35% from Tier-2 Cloud, yet its DC share declined 60bps YoY to 2.7%.

Campus switching is supporting overall 2Q growth

Campus switching is generally not a growth market, given it is less driven by bandwidth growth, but rather by employee count and technology refresh. The resumption of network upgrade projects after a few years of COVID-related delays and impact of pricing actions has helped to temporarily uplift growth rates, with the market growing 54% YoY in 2Q23. Cisco remains the market leader, increasing its share from 49% in 2Q22 to 55% in 2Q23, shipping more ports over the last four quarters than it has in any other quarter over the last 10 years. Arista's share declined 200bps YoY to 1.4% in 2Q23, and Juniper continues to fluctuate between 2%-3% share since 2018.

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Switching Market Overview

We present the total market data first, followed by the Campus and Data Center segments. Note: figures are global.

Total Switching Market Trends

Exhibit 1: Global Switching Revenue Share

The global switching market grew 39.4% YoY in 2Q23, driven by acceleration in both campus and data center switching

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Revenue (\$mn)	\$5,785	\$6,327	\$7,140	\$7,364	\$6,495	\$6,758	\$7,523	\$8,331	\$7,578	\$8,930	\$10,406	\$10,546	\$10,681	\$12,447			\$27,754	\$26,615	\$29,106	\$37,461
QoQ % Chg	-21.5%	9.4%	12.8%	3.1%	-11.8%	4.1%	11.3%	10.7%	-9.0%	17.8%	16.5%	1.4%	1.3%	16.5%						
YoY % Chg	-11.0%	-7.8%	1.7%	-0.1%	12.3%	6.8%	5.4%	13.1%	16.7%	32.1%	38.3%	26.6%	40.9%	39.4%			2.4%	-4.1%	9.4%	28.7%
Market Share (%)																				
Cisco	50.7%	45.3%	47.8%	42.8%	47.8%	44.1%	44.0%	42.5%	42.3%	40.3%	41.8%	40.3%	42.2%	44.8%			49.3%	46.5%	44.5%	41.1%
Arista	7.1%	6.6%	6.7%	7.0%	8.1%	8.2%	8.1%	8.4%	10.1%	10.8%	9.7%	10.4%	10.1%	9.7%			7.3%	6.9%	8.2%	10.2%
Huawei	8.0%	11.3%	11.0%	14.5%	8.4%	11.2%	11.3%	12.2%	7.6%	10.1%	11.0%	11.3%	6.2%	8.6%			9.7%	11.4%	10.9%	10.2%
White Box Vendors	2.8%	4.7%	4.2%	4.6%	5.2%	1.7%	4.4%	5.5%	6.7%	7.3%	6.9%	7.5%	8.7%	7.1%			2.8%	4.1%	4.2%	7.1%
HPE	6.8%	5.6%	5.3%	6.8%	6.2%	7.5%	6.1%	5.5%	6.1%	5.3%	4.6%	5.4%	6.5%	5.9%			5.7%	6.1%	6.3%	5.3%
H3C	4.8%	8.2%	6.8%	5.8%	5.6%	8.8%	8.2%	7.8%	8.3%	7.7%	6.5%	5.5%	4.7%	4.5%			6.0%	6.4%	7.6%	6.9%
Juniper	3.5%	3.0%	3.0%	3.3%	2.8%	3.6%	3.5%	3.2%	3.0%	3.2%	3.1%	3.1%	2.4%	2.3%			3.1%	3.2%	3.3%	3.1%
Extreme	1.6%	1.5%	2.0%	1.6%	1.9%	0.0%	0.0%	1.1%	1.5%	1.6%	1.5%	1.6%	1.6%	1.5%			2.0%	1.7%	0.8%	1.6%
Dell	2.3%	2.1%	1.8%	1.9%	1.9%	1.7%	1.6%	1.9%	2.0%	1.6%	1.4%	1.8%	1.7%	1.5%			2.0%	2.0%	1.8%	1.7%
Ruijie Networks													1.3%	1.1%						
Ubiquiti	0.9%	0.7%	1.0%	1.0%	1.1%	0.0%	0.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.7%			0.6%	0.9%	0.5%	0.9%
NETGEAR	1.0%	0.7%	0.8%	0.8%	1.0%	0.0%	0.0%	1.0%	1.0%	1.0%	0.9%	1.0%	0.8%	0.5%			0.9%	0.8%	0.5%	1.0%
D-Link	0.8%	0.6%	0.7%	0.7%	0.8%	0.0%	0.0%	0.7%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%			0.8%	0.7%	0.4%	0.6%
TP-Link	0.8%	0.8%	0.8%	0.8%	0.7%	0.0%	0.0%	0.7%	0.6%	0.3%	0.7%	0.4%	0.7%	0.4%			0.8%	0.8%	0.3%	0.5%
CommScope (Ruckus)	0.7%	0.7%	0.7%	0.6%	0.7%	0.0%	0.0%	0.5%	0.6%	0.5%	0.5%	0.5%	0.4%	0.3%			0.0%	0.7%	0.3%	0.5%
Alcatel-Lucent Enterprise	0.4%	0.3%	0.4%	0.6%	0.4%	0.0%	0.0%	0.5%	0.4%	0.4%	0.5%	0.5%	0.3%	0.3%			0.5%	0.5%	0.2%	0.5%
Ruby Tech	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%			0.1%	0.1%	0.0%	0.1%
Alaxala	0.3%	0.2%	0.2%	0.1%	0.2%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%			0.2%	0.2%	0.1%	0.1%
Apresia	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%			0.1%	0.1%	0.1%	0.1%
ZTE	0.8%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.0%	0.4%	0.0%	0.0%
Arris	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.6%	0.0%	0.0%	0.0%
Adtran	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.1%	0.0%	0.0%	0.0%
Other	6.4%	6.3%	6.6%	6.9%	6.9%	13.2%	12.8%	7.3%	7.9%	8.1%	9.1%	8.9%	10.9%	9.9%			6.2%	6.6%	10.0%	8.6%

Source: Omdia

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**Exhibit 2: Global Switching Port Shipment Share**

Global switching port shipments grew 17.1% YoY in 2Q23, vs. 4.5% growth in 2Q22

	1Q20 20-Mar	2Q20 20-Jun	3Q20 20-Sep	4Q20 20-Dec	1Q21 21-Mar	2Q21 21-Jun	3Q21 21-Sep	4Q21 21-Dec	1Q22 22-Mar	2Q22 22-Jun	3Q22 22-Sep	4Q22 22-Dec	1Q23 23-Mar	2Q23 23-Jun	3Q23 23-Sep	4Q23 23-Dec	CY2019	CY2020	CY2021	CY2022
Ports (mn)	156	167	189	192	164	242	252	245	213	253	303	305	265	296			721	704	904	1,075
QoQ % Chg	-22.7%	7.0%	12.8%	1.7%	-14.5%	47.6%	4.3%	-2.8%	-13.1%	18.5%	20.1%	0.6%	-13.2%	11.8%			4.5%	-2.5%	28.4%	18.9%
YoY % Chg	-2.0%	-5.1%	2.7%	-5.2%	4.9%	44.7%	33.9%	28.0%	30.1%	4.5%	20.2%	24.4%	24.2%	17.1%						
Market Share (%)																				
Cisco	21.4%	19.8%	18.1%	17.1%	20.2%	20.6%	20.3%	19.6%	20.9%	22.1%	25.7%	23.7%	23.8%	24.6%			20.6%	19.0%	20.2%	23.3%
Arista	1.3%	1.3%	1.3%	1.2%	1.6%	1.1%	1.3%	1.5%	1.7%	1.6%	1.6%	1.6%	2.0%	2.0%			1.1%	1.3%	1.3%	1.6%
Huawei	7.3%	10.8%	11.2%	12.7%	6.4%	7.9%	8.5%	7.9%	5.4%	7.5%	7.9%	8.4%	5.2%	9.2%			6.8%	10.6%	7.8%	7.4%
White Box Vendors	1.3%	2.2%	1.4%	1.5%	1.8%	0.4%	1.2%	1.4%	1.6%	1.7%	1.5%	1.6%	2.5%	1.9%			1.2%	1.6%	1.1%	1.6%
HPE	6.2%	4.4%	5.6%	6.4%	6.2%	7.5%	6.0%	6.1%	5.6%	5.1%	7.9%	5.8%	6.3%	6.0%			5.9%	5.7%	6.4%	6.2%
H3C	8.4%	12.1%	10.7%	8.1%	10.4%	14.2%	14.5%	14.3%	15.0%	15.3%	12.7%	12.7%	9.9%	9.6%			11.9%	9.8%	13.6%	13.8%
Juniper	1.7%	2.0%	1.7%	1.9%	1.9%	1.9%	1.9%	1.9%	2.2%	1.7%	1.5%	1.8%	2.2%	2.3%			1.6%	1.8%	1.9%	1.8%
Extreme	0.9%	0.8%	0.7%	0.9%	1.0%	0.0%	0.0%	1.0%	0.9%	0.9%	1.0%	1.1%	1.2%	1.2%			1.0%	0.8%	0.5%	1.0%
Dell	1.2%	1.1%	0.9%	0.9%	0.9%	0.7%	0.6%	0.8%	0.7%	0.5%	0.4%	0.6%	0.6%	0.6%			1.2%	1.0%	0.7%	0.6%
Ruijie Networks													3.4%	4.3%						
Ubiquiti	4.7%	3.8%	5.4%	5.6%	6.1%	0.0%	0.0%	5.8%	5.4%	5.3%	5.2%	4.8%	4.6%	4.3%			3.3%	4.9%	2.7%	5.1%
NETGEAR	6.2%	4.7%	5.3%	5.3%	6.5%	0.0%	0.0%	6.3%	6.4%	6.3%	5.3%	5.4%	4.8%	3.3%			5.6%	5.4%	2.9%	5.8%
D-Link	7.0%	4.0%	5.2%	5.4%	6.1%	0.0%	0.0%	4.3%	4.9%	4.5%	4.1%	4.4%	4.4%	5.0%			6.8%	5.4%	2.3%	4.4%
TP-Link	15.7%	16.9%	16.4%	16.4%	14.6%	0.0%	0.0%	14.1%	13.7%	12.7%	11.6%	12.6%	12.6%	9.8%			16.0%	16.4%	6.5%	12.6%
CommScope (Ruckus)	1.1%	1.2%	1.3%	1.2%	1.4%	0.0%	0.0%	1.2%	1.3%	1.2%	1.1%	1.1%	1.1%	0.9%			0.0%	1.2%	0.6%	1.2%
Alcatel-Lucent																				
Enterprise	0.3%	0.3%	0.3%	0.4%	0.4%	0.0%	0.0%	0.6%	0.4%	0.5%	0.5%	0.4%	0.4%	0.4%			0.4%	0.3%	0.2%	0.5%
Ruby Tech	0.2%	0.3%	0.2%	0.2%	0.2%	0.0%	0.0%	0.4%	0.3%	0.3%	0.3%	0.4%	0.4%	0.7%			0.3%	0.2%	0.1%	0.3%
Alaxala	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.1%	0.0%	0.0%
Apresia	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%			0.1%	0.1%	0.1%	0.1%
ZTE	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.4%	0.1%	0.0%	0.0%
Arris	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.1%	0.0%	0.0%	0.0%
Adtran	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.1%	0.0%	0.0%	0.0%
Other	14.6%	13.9%	14.2%	14.3%	14.4%	45.7%	45.7%	12.7%	13.3%	12.8%	11.8%	13.3%	14.5%	13.8%			14.4%	14.2%	31.0%	12.8%

Source: Omdia

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Exhibit 3: Regional Switching Revenue Share

Switching growth is supported by regional recovery in North America, which grew from a 41.7% contribution in 2Q22 to 45.5% in 2Q23

	1Q20 20-Mar	2Q20 20-Jun	3Q20 20-Sep	4Q20 20-Dec	1Q21 21-Mar	2Q21 21-Jun	3Q21 21-Sep	4Q21 21-Dec	1Q22 22-Mar	2Q22 22-Jun	3Q22 22-Sep	4Q22 22-Dec	1Q23 23-Mar	2Q23 23-Jun	3Q23 23-Sep	4Q23 23-Dec	CY19	CY20	CY21	CY22
North America	42.3%	40.4%	41.7%	38.3%	40.8%	38.0%	40.4%	39.3%	42.0%	41.7%	42.9%	42.3%	44.5%	45.5%			41.6%	40.6%	39.6%	42.3%
EMEA	28.9%	25.9%	26.7%	27.0%	29.5%	27.1%	26.7%	26.0%	28.1%	26.0%	26.3%	27.0%	27.4%	26.9%			27.0%	27.1%	27.2%	26.8%
APAC	26.0%	31.2%	29.3%	32.3%	27.2%	32.6%	30.7%	32.7%	27.7%	30.2%	28.2%	27.6%	25.5%	24.8%			28.4%	29.9%	31.0%	28.4%
CALA	2.8%	2.4%	2.3%	2.4%	2.4%	2.2%	2.3%	2.0%	2.1%	2.1%	2.6%	3.2%	2.6%	2.8%			3.0%	2.5%	2.2%	2.5%

Source: Omdia

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Exhibit 4: Global Switching Port Speed Revenue Share

1G revenue share grew from 31.7% in 2Q22 to 37.1% in 2Q23, while 100G share declined from 26.7% to 21.5%

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
100M	1.5%	1.8%	1.5%	1.8%	1.7%	1.2%	1.2%	1.0%	0.5%	1.0%	1.0%	1.0%	0.9%	1.2%				2.5%	1.7%	1.3%	0.9%
1 Gig	42.4%	38.1%	38.8%	36.7%	35.9%	39.9%	33.9%	32.6%	30.6%	31.7%	34.2%	33.9%	34.2%	37.1%				40.8%	38.8%	35.4%	32.8%
2.5 Gig	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.8%	0.8%	0.9%	0.9%	0.9%	1.0%				0.0%	0.0%	0.0%	0.9%
5 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%				0.0%	0.0%	0.0%	0.2%
10 Gig	22.4%	23.6%	21.2%	22.3%	22.1%	23.0%	24.6%	24.6%	20.9%	19.4%	19.6%	20.2%	18.8%	19.2%				25.2%	22.3%	23.7%	20.0%
25 Gig	7.6%	8.0%	9.4%	8.8%	9.3%	8.2%	9.2%	9.0%	10.6%	9.7%	9.3%	9.1%	9.7%	9.3%				5.7%	8.5%	8.9%	9.6%
40 Gig	5.0%	4.8%	4.5%	4.9%	4.2%	4.5%	4.3%	3.9%	3.6%	3.2%	3.1%	2.4%	2.2%	2.0%				6.8%	4.8%	4.2%	3.0%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	0.4%	0.5%	0.0%	0.2%				0.0%	0.0%	0.0%	0.5%
100 Gig	20.7%	23.2%	24.1%	24.9%	26.1%	22.0%	25.4%	25.1%	27.6%	26.7%	24.8%	24.0%	24.8%	21.5%				18.8%	23.4%	24.7%	25.6%
200 Gig	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.1%				0.0%	0.0%	0.1%	0.2%
400 Gig	0.3%	0.5%	0.4%	0.5%	0.6%	1.1%	1.4%	3.5%	4.7%	6.7%	6.3%	7.6%	8.0%	8.2%				0.1%	0.4%	1.8%	6.4%
Legacy (100M/1G)	43.9%	39.9%	40.3%	38.5%	37.6%	41.1%	35.1%	33.6%	31.0%	32.6%	35.2%	34.9%	35.0%	38.3%				43.3%	40.5%	36.6%	33.7%
Total ex-100G/200G/400G	79.0%	76.3%	75.5%	74.5%	73.3%	76.9%	73.2%	71.3%	67.6%	66.4%	68.7%	68.2%	66.9%	70.2%				81.1%	76.2%	73.5%	67.8%

Source: Omdia

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Exhibit 5: Global Switching Port Speed Shipment Share

Despite only 3.8% port shipment share share, 100G accounted for 21.5% of revenue share, suggesting premium pricing compared to legacy speeds, such as 1G

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
100M	11.2%	10.1%	10.5%	9.6%	8.6%	8.3%	8.2%	7.6%	8.0%	8.1%	7.3%	7.1%	5.8%	6.2%				14.6%	10.3%	8.2%	7.6%
1 Gig	77.1%	76.1%	77.2%	77.8%	78.3%	82.1%	80.8%	79.5%	76.8%	77.2%	79.2%	78.9%	78.1%	80.0%				74.4%	77.1%	80.3%	78.2%
2.5 Gig	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.8%	1.0%	1.0%	1.0%	1.2%	1.2%				0.0%	0.0%	0.1%	1.0%
5 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%				0.0%	0.0%	0.0%	0.2%
10 Gig	5.5%	6.6%	5.9%	6.0%	5.6%	5.2%	5.4%	6.6%	7.2%	7.0%	6.3%	6.7%	6.4%	4.8%				6.1%	6.0%	5.7%	6.8%
25 Gig	2.9%	2.8%	2.6%	2.7%	2.8%	1.8%	2.1%	2.3%	2.6%	2.3%	2.0%	2.0%	2.7%	2.5%				1.7%	2.7%	2.2%	2.2%
40 Gig	0.6%	0.7%	0.5%	0.6%	0.6%	0.4%	0.4%	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%				0.7%	0.6%	0.5%	0.3%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%
100 Gig	2.7%	3.7%	3.2%	3.3%	4.0%	2.0%	3.0%	3.2%	3.6%	3.4%	3.0%	3.1%	4.4%	3.8%				2.5%	3.2%	3.0%	3.2%
200 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%
400 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.3%	0.5%	0.6%	0.7%	0.8%	0.9%				0.0%	0.0%	0.1%	0.5%
Legacy (100M/1G)	88.3%	86.1%	87.7%	87.3%	86.9%	90.4%	89.0%	87.1%	84.8%	85.3%	86.5%	86.0%	83.9%	86.2%				89.0%	87.4%	88.5%	85.7%
Total ex-100G/200G/400G	97.2%	96.3%	96.8%	96.7%	96.0%	97.9%	97.0%	96.5%	96.0%	96.1%	96.4%	96.2%	94.7%	95.3%				97.5%	96.7%	96.9%	96.2%

Source: Omdia

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Exhibit 6: Global Switching Revenue per Port Overview

Global switching revenue per port grew 19% YoY I 2Q23, supported by the impact of pricing actions

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
Revenue per Port (\$)	\$37	\$38	\$38	\$38	\$40	\$28	\$30	\$34	\$36	\$35	\$34	\$35	\$40	\$42				\$38	\$38	\$32	\$35
QoQ % Chg	1.5%	2.2%	0.1%	1.4%	3.2%	-29.5%	6.7%	13.9%	4.7%	-0.6%	-3.0%	0.8%	16.7%	4.2%							
YoY % Chg	-9.2%	-2.8%	-0.9%	5.3%	7.0%	-26.2%	-21.3%	-11.6%	-10.3%	26.5%	15.1%	1.8%	13.5%	19.0%				-2.1%	-1.7%	-14.8%	8.2%
Revenue per Port Speed																					
100M	\$5	\$7	\$5	\$7	\$8	\$4	\$4	\$4	\$2	\$4	\$5	\$5	\$6	\$8				\$7	\$6	\$5	\$4
1 Gig	\$20	\$19	\$19	\$18	\$18	\$14	\$12	\$14	\$14	\$14	\$15	\$15	\$18	\$20				\$21	\$19	\$14	\$15
2.5 Gig	\$20	\$28	\$25	\$28	\$32	\$14	\$16	\$16	\$37	\$30	\$30	\$30	\$33	\$34				\$19	\$26	\$19	\$31
5 Gig	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45	\$42	\$41	\$41	\$47	\$49				\$0	\$0	\$0	\$42
10 Gig	\$152	\$135	\$137	\$144	\$156	\$123	\$136	\$126	\$102	\$97	\$106	\$105	\$119	\$167				\$159	\$141	\$133	\$103
25 Gig	\$98	\$108	\$136	\$126	\$131	\$127	\$132	\$136	\$145	\$148	\$156	\$154	\$144	\$153				\$131	\$118	\$132	\$151
40 Gig	\$319	\$260	\$320	\$300	\$293	\$309	\$300	\$295	\$351	\$328	\$331	\$299	\$298	\$278				\$363	\$298	\$299	\$327
50 Gig	\$201	\$161	\$102	\$46	\$55	\$58	\$58	\$111	\$408	\$357	\$463	\$418	\$150	\$239				\$371	\$65	\$84	\$410
100 Gig	\$278	\$239	\$288	\$290	\$261	\$308	\$256	\$265	\$271	\$281	\$283	\$271	\$225	\$240				\$291	\$274	\$269	\$276
200 Gig	\$216	\$199	\$243	\$314	\$252	\$239	\$239	\$244	\$318	\$377	\$386	\$354	\$403	\$339				\$0	\$247	\$244	\$362
400 Gig	\$570	\$620	\$537	\$609	\$601	\$560	\$576	\$500	\$516	\$472	\$381	\$391	\$390	\$384				\$495	\$586	\$529	\$421

Source: Omdia

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Campus Switching Market Trends

Exhibit 7: Global Campus Switching Revenue Share

The global campus switching market saw growth of 54.1% YoY in 223, fueled by a resumption of network upgrade projects and an improving supply chain

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Revenue (\$mn)	\$3,254	\$3,433	\$3,939	\$4,036	\$3,556	\$3,972	\$4,167	\$4,666	\$3,932	\$4,666	\$6,088	\$5,978	\$5,938	\$7,190			\$15,752	\$14,662	\$16,361	\$20,664
QoQ % Chg	-26.2%	5.5%	14.7%	2.5%	-11.9%	11.7%	4.9%	12.0%	-15.7%	18.7%	30.5%	-1.8%	-0.7%	21.1%			1.9%	-6.9%	11.6%	26.3%
YoY % Chg	-10.6%	-9.1%	0.2%	-8.4%	9.3%	15.7%	5.8%	15.6%	10.6%	17.5%	46.1%	28.1%	51.0%	54.1%						
Market Share (%)																				
Cisco	56.8%	52.5%	51.6%	46.8%	53.4%	47.2%	47.3%	48.3%	47.2%	49.1%	50.4%	48.9%	51.5%	55.0%			55.6%	51.6%	48.9%	49.1%
Arista	0.2%	0.4%	0.4%	0.4%	0.3%	0.4%	0.9%	1.9%	2.9%	3.4%	1.7%	2.5%	1.7%	1.4%			0.1%	0.4%	0.9%	2.6%
Huawei	7.2%	9.8%	11.6%	12.5%	7.0%	11.0%	11.2%	10.1%	7.2%	10.5%	10.6%	12.2%	5.8%	9.9%			8.5%	10.4%	9.9%	10.4%
HPE	10.7%	8.9%	8.5%	11.1%	9.9%	11.6%	9.8%	8.9%	10.9%	9.4%	7.3%	8.6%	10.4%	9.1%			8.7%	9.8%	10.0%	8.8%
H3C	4.2%	8.6%	6.1%	6.8%	6.9%	9.1%	9.7%	9.2%	9.2%	5.9%	8.6%	6.3%	4.9%	3.7%			6.5%	6.5%	8.8%	7.4%
Juniper	2.6%	2.8%	2.8%	2.9%	2.2%	2.6%	2.9%	3.0%	2.4%	3.2%	2.6%	2.2%	1.9%	2.0%			2.4%	2.8%	2.7%	2.6%
Extreme	2.9%	2.8%	3.7%	2.9%	3.5%	0.0%	0.0%	2.0%	2.9%	3.1%	2.5%	2.9%	2.9%	2.6%			3.6%	3.1%	1.4%	2.8%
Dell	1.2%	0.9%	0.9%	0.9%	0.8%	0.7%	0.6%	1.0%	1.1%	0.6%	0.3%	0.7%	0.6%	0.5%			1.0%	1.0%	0.8%	0.6%
Ruijie Networks													2.4%	1.9%						
Ubiquiti	1.6%	1.3%	1.8%	1.9%	2.0%	0.0%	0.0%	1.6%	1.7%	1.7%	1.6%	1.6%	1.4%	1.3%			1.1%	1.7%	0.9%	1.6%
NETGEAR	1.8%	1.3%	1.4%	1.5%	1.8%	0.0%	0.0%	1.8%	1.9%	2.0%	1.6%	1.7%	1.4%	0.9%			1.6%	1.5%	0.9%	1.8%
D-Link	1.5%	1.0%	1.2%	1.3%	1.5%	0.0%	0.0%	1.3%	1.2%	1.2%	1.0%	0.9%	0.8%	0.9%			1.3%	1.3%	0.7%	1.1%
TP-Link	1.4%	1.5%	1.5%	1.5%	1.2%	0.0%	0.0%	1.2%	1.1%	0.6%	1.2%	0.7%	1.3%	0.7%			1.4%	1.5%	0.6%	0.9%
CommScope (Ruckus)	1.2%	1.3%	1.3%	1.2%	1.3%	0.0%	0.0%	1.0%	1.1%	1.0%	0.8%	0.9%	0.7%	0.6%			0.0%	1.2%	0.5%	1.0%
Alcatel-Lucent Enterprise	0.8%	0.6%	0.7%	1.1%	0.8%	0.0%	0.0%	0.9%	0.8%	0.9%	0.8%	0.8%	0.6%	0.5%			0.9%	0.8%	0.4%	0.8%
Ruby Tech	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.2%			0.2%	0.1%	0.1%	0.1%
Alaxala	0.5%	0.4%	0.4%	0.3%	0.5%	0.0%	0.0%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.2%			0.3%	0.4%	0.2%	0.3%
Apresia	0.3%	0.2%	0.3%	0.2%	0.2%	0.0%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%			0.2%	0.2%	0.1%	0.1%
ZTE	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.4%	0.1%	0.0%	0.0%
Arris	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.1%	0.0%	0.0%	0.0%
Adtran	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.2%	0.0%	0.0%	0.0%
Other	4.8%	5.3%	5.9%	6.5%	6.5%	17.4%	17.5%	7.2%	7.4%	6.9%	8.5%	8.5%	11.0%	8.5%			4.8%	5.7%	12.1%	7.9%

Source: Omdia

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Exhibit 8: Global Campus Switching Port Shipment Share

Cisco has shipped more ports over the last four quarters than it has in the last 10 years, resulting in port shipment share gain over the last few years

	1Q20 20-Mar	2Q20 20-Jun	3Q20 20-Sep	4Q20 20-Dec	1Q21 21-Mar	2Q21 21-Jun	3Q21 21-Sep	4Q21 21-Dec	1Q22 22-Mar	2Q22 22-Jun	3Q22 22-Sep	4Q22 22-Dec	1Q23 23-Mar	2Q23 23-Jun	3Q23 23-Sep	4Q23 23-Dec	CY19	CY20	CY21	CY22
Ports (mn)	142	151	173	175	148	228	235	227	196	232	283	284	240	270			664	641	839	996
QoQ % Chg	-24.3%	6.0%	14.6%	1.6%	-15.4%	53.6%	3.0%	-3.2%	-13.8%	18.5%	22.0%	0.4%	-15.5%	12.3%			5.0%	-3.4%	30.8%	18.8%
YoY % Chg	-2.7%	-6.2%	2.3%	-6.6%	4.4%	51.3%	35.9%	29.6%	32.0%	1.9%	20.7%	25.1%	22.6%	16.2%						
Market Share (%)																				
Cisco	20.0%	19.1%	16.8%	15.8%	18.9%	19.6%	19.4%	19.0%	20.2%	22.0%	25.9%	23.7%	23.7%	24.4%			19.6%	17.8%	19.3%	23.2%
Arista	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.3%	0.4%	0.6%	0.6%	0.5%	0.6%	0.6%	0.6%			0.0%	0.1%	0.2%	0.5%
Huawei	7.4%	10.9%	11.5%	12.7%	6.3%	7.8%	8.5%	7.6%	5.2%	7.4%	7.7%	8.3%	5.1%	9.4%			6.7%	10.8%	7.7%	7.3%
HPE	6.6%	4.8%	6.0%	6.9%	6.6%	7.8%	6.3%	6.6%	6.0%	5.5%	8.4%	6.2%	6.8%	6.5%			6.3%	6.1%	6.9%	6.6%
H3C	8.3%	12.2%	10.6%	8.2%	10.7%	14.3%	14.8%	14.6%	15.3%	15.3%	13.2%	13.1%	10.2%	9.9%			12.3%	9.8%	13.9%	14.1%
Juniper	1.5%	2.0%	1.6%	1.9%	1.8%	1.9%	1.8%	1.9%	2.1%	1.6%	1.4%	1.7%	2.2%	2.3%			1.5%	1.8%	1.8%	1.7%
Extreme	1.0%	0.9%	0.8%	1.0%	1.1%	0.0%	0.0%	1.1%	1.0%	1.0%	1.0%	1.2%	1.3%	1.3%			1.0%	0.9%	0.5%	1.0%
Dell	0.9%	0.6%	0.5%	0.5%	0.4%	0.5%	0.3%	0.5%	0.4%	0.2%	0.2%	0.3%	0.2%	0.2%			0.7%	0.6%	0.4%	0.3%
Ruijie Networks													3.7%	4.7%						
Ubiquiti	5.1%	4.2%	5.9%	6.1%	6.7%	0.0%	0.0%	6.2%	5.8%	5.7%	5.5%	5.1%	5.1%	4.8%			3.6%	5.4%	2.9%	5.5%
NETGEAR	6.9%	5.2%	5.8%	5.8%	7.2%	0.0%	0.0%	6.8%	7.0%	6.9%	5.6%	5.8%	5.3%	3.6%			6.1%	5.9%	3.1%	6.2%
D-Link	7.7%	4.5%	5.7%	5.9%	6.7%	0.0%	0.0%	4.7%	5.3%	4.9%	4.4%	4.8%	4.9%	5.5%			7.3%	5.9%	2.4%	4.8%
TP-Link	17.2%	18.7%	17.9%	18.0%	16.1%	0.0%	0.0%	15.2%	14.9%	13.8%	12.4%	13.6%	13.9%	10.8%			17.4%	18.0%	7.0%	13.5%
CommScope (Ruckus)	1.3%	1.4%	1.4%	1.3%	1.5%	0.0%	0.0%	1.3%	1.4%	1.3%	1.1%	1.2%	1.2%	1.0%			0.0%	1.4%	0.6%	1.2%
Alcatel-Lucent																				
Enterprise	0.3%	0.3%	0.3%	0.5%	0.5%	0.0%	0.0%	0.6%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%			0.4%	0.4%	0.3%	0.5%
Ruby Tech	0.2%	0.3%	0.2%	0.2%	0.3%	0.0%	0.0%	0.4%	0.4%	0.3%	0.3%	0.5%	0.5%	0.8%			0.4%	0.2%	0.2%	0.4%
Alaxala	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.1%	0.0%	0.0%
Apresia	0.2%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%			0.2%	0.1%	0.1%	0.1%
ZTE	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.4%	0.1%	0.0%	0.0%
Arris	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.2%	0.0%	0.0%	0.0%
Adtran	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.1%	0.0%	0.0%	0.0%
Other	15.1%	14.5%	14.6%	14.8%	15.0%	47.9%	48.5%	13.0%	13.6%	12.9%	11.8%	13.4%	14.7%	13.8%			14.9%	14.7%	32.8%	12.9%

Source: Omdia

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Exhibit 9: Global Campus Switching Port Speed Revenue Share

From the perspective of port speeds, the largest share of revenue in the campus switching market will be from lower to mid-range switches

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
100M	2.7%	3.3%	2.7%	3.3%	3.1%	2.1%	2.2%	1.8%	0.9%	1.9%	1.8%	1.7%	1.6%	2.1%				4.4%	3.0%	2.2%	1.6%
1 Gig	74.1%	69.3%	69.4%	66.3%	64.5%	67.1%	60.4%	57.6%	58.4%	60.1%	58.2%	59.6%	61.1%	64.0%				70.4%	69.6%	62.1%	59.1%
2.5 Gig	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	1.6%	1.5%	1.5%	1.5%	1.7%	1.7%				0.0%	0.1%	0.1%	1.5%
5 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.3%	0.3%	0.4%	0.4%				0.0%	0.0%	0.0%	0.4%
10 Gig	22.7%	26.5%	25.2%	27.1%	29.8%	30.8%	33.7%	33.6%	31.0%	27.6%	26.2%	28.5%	27.5%	28.2%				24.5%	25.5%	32.1%	28.1%
25 Gig	0.2%	0.2%	0.6%	0.7%	0.7%	-0.5%	0.6%	1.5%	2.0%	1.7%	2.5%	1.7%	1.7%	1.7%				0.1%	0.4%	0.6%	2.0%
40 Gig	0.2%	0.1%	0.3%	0.2%	0.1%	1.1%	1.0%	1.1%	0.9%	1.1%	1.5%	0.5%	0.4%	0.3%				0.4%	0.2%	0.9%	1.0%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.9%	0.7%	0.8%	0.0%	0.0%				0.0%	0.0%	0.0%	0.8%
100 Gig	0.1%	0.5%	1.6%	2.3%	1.7%	-0.8%	1.9%	4.0%	3.6%	4.0%	6.9%	5.1%	5.2%	1.9%				0.1%	1.2%	1.8%	5.1%
200 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%				0.0%	0.0%	0.0%	0.0%
400 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.4%	0.3%	0.8%	0.4%	0.2%	0.4%	0.0%				0.0%	0.0%	0.2%	0.4%
Legacy (100M/1G)	76.8%	72.6%	72.2%	69.6%	67.6%	69.2%	62.6%	59.3%	59.2%	62.0%	59.9%	61.4%	62.6%	66.1%				74.9%	72.6%	64.4%	60.7%
Total ex-100G/200G/400G	99.9%	99.5%	98.4%	97.7%	98.3%	100.8%	98.0%	95.6%	96.1%	95.2%	92.7%	94.8%	94.3%	98.3%				99.9%	98.8%	98.0%	94.5%

Source: Omdia

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Exhibit 10: Global Campus Switching Port Speed Shipment Share

1G constitutes the bulk of campus switching port shipments, with a 87.5% contribution in 2Q23

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
100M	12.3%	11.2%	11.4%	10.5%	9.5%	8.9%	8.9%	8.2%	8.7%	8.8%	7.9%	7.7%	6.4%	6.8%				15.9%	11.3%	8.8%	8.2%
1 Gig	84.2%	83.9%	83.9%	84.6%	85.9%	86.8%	86.5%	85.5%	83.4%	83.7%	84.6%	84.5%	85.8%	87.5%				80.3%	84.2%	86.2%	84.1%
2.5 Gig	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.9%	1.0%	1.1%	1.1%	1.3%	1.3%				0.0%	0.0%	0.1%	1.0%
5 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%				0.0%	0.0%	0.0%	0.2%
10 Gig	3.3%	4.6%	4.4%	4.4%	4.2%	4.3%	4.3%	5.5%	6.3%	6.0%	5.6%	6.0%	5.4%	3.8%				3.7%	4.2%	4.6%	5.9%
25 Gig	0.1%	0.1%	0.1%	0.1%	0.1%	-0.2%	0.1%	0.3%	0.3%	0.1%	0.3%	0.2%	0.4%	0.3%				0.0%	0.1%	0.1%	0.3%
40 Gig	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%				0.1%	0.1%	0.1%	0.1%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%
100 Gig	0.0%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.3%	0.1%	0.0%	0.2%	0.2%	0.4%	0.0%				0.0%	0.1%	0.2%	0.1%
200 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%
400 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%
Legacy (100M/1G)	96.5%	95.1%	95.3%	95.1%	95.4%	95.7%	95.4%	93.7%	92.1%	92.5%	92.5%	92.2%	92.2%	94.3%				96.1%	95.5%	95.0%	92.3%
Total ex-100G/200G/400G	100.0%	99.9%	99.9%	99.8%	99.8%	100.0%	99.9%	99.7%	99.9%	100.0%	99.8%	99.8%	99.6%	100.0%				100.0%	99.9%	99.8%	99.8%

Source: Omdia

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Data Center Switching Market Trends

Exhibit 11: Global Data Center Switching Revenue Share

The global data center switching market grew 23.3% YoY in 2Q22, below 2Q22's 53.1% YoY on spending moderation

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Revenue (\$mn)	\$2,531	\$2,894	\$3,200	\$3,328	\$2,939	\$2,786	\$3,357	\$3,664	\$3,647	\$4,264	\$4,318	\$4,568	\$4,743	\$5,257			\$12,002	\$11,953	\$12,745	\$16,797
QoQ % Chg	-14.7%	14.3%	10.6%	4.0%	-11.7%	-5.2%	20.5%	9.2%	-0.5%	16.9%	1.3%	5.8%	3.8%	10.8%			2.9%	-0.4%	6.6%	31.8%
YoY % Chg	-11.5%	-6.2%	3.5%	12.2%	16.1%	-3.7%	4.9%	10.1%	24.1%	53.1%	28.7%	24.7%	30.1%	23.3%						
Market Share (%)																				
Cisco	42.7%	36.7%	43.2%	37.9%	41.1%	39.7%	39.8%	35.2%	36.9%	30.6%	29.6%	29.2%	30.5%	31.0%			41.0%	40.1%	38.8%	31.3%
Arista	15.9%	14.1%	14.5%	15.0%	17.6%	19.4%	17.1%	16.7%	17.8%	18.8%	21.0%	20.8%	20.5%	21.0%			16.8%	14.8%	17.6%	19.7%
White Box Vendors	6.4%	10.4%	9.3%	10.2%	11.5%	4.1%	9.8%	12.4%	14.0%	15.3%	16.7%	17.3%	19.6%	16.8%			6.5%	9.2%	9.7%	15.9%
Huawei	9.2%	13.1%	10.3%	16.8%	10.0%	11.6%	11.4%	14.9%	7.9%	9.5%	11.5%	10.2%	6.6%	6.7%			11.3%	12.6%	12.1%	9.9%
Juniper	4.7%	3.3%	3.2%	3.7%	3.5%	5.0%	4.2%	3.4%	3.7%	3.3%	3.9%	4.2%	2.9%	2.7%			4.1%	3.7%	4.0%	3.8%
H3C	5.4%	7.7%	7.6%	4.5%	4.1%	8.3%	6.3%	6.0%	7.3%	9.6%	3.6%	4.4%	4.3%	5.7%			5.3%	6.3%	6.1%	6.1%
Dell	3.7%	3.6%	3.0%	3.0%	3.2%	3.2%	2.8%	3.1%	3.0%	2.8%	3.0%	3.2%	3.0%	2.9%			3.4%	3.3%	3.1%	3.0%
HPE	1.9%	1.7%	1.4%	1.5%	1.8%	1.6%	1.4%	1.1%	1.0%	0.7%	0.8%	1.3%	1.7%	1.4%			1.8%	1.6%	1.4%	0.9%
NVIDIA														2.1%						
ZTE	1.6%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.8%	0.8%	0.0%	0.0%
Other	8.5%	7.5%	7.5%	7.3%	7.4%	7.2%	7.1%	7.3%	8.4%	9.5%	10.0%	9.5%	10.9%	9.6%			7.9%	7.6%	7.3%	9.4%

Source: Omdia

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Exhibit 12: Global Data Center Switching Port Shipment Share

Arista and White Box Vendors continue to grow their port shipment share, supported by hyperscaler initiatives

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Ports (mn)	14	17	16	16	15	14	18	18	17	20	20	21	24	26			58	63	65	78
QoQ % Chg	-1.8%	17.3%	-4.1%	3.0%	-5.1%	-9.8%	26.1%	2.5%	-4.2%	18.2%	-1.7%	3.3%	18.1%	6.8%						
YoY % Chg	5.9%	6.2%	7.2%	13.8%	9.9%	-15.5%	11.0%	10.6%	11.7%	46.4%	14.1%	15.0%	41.7%	28.0%			-1.0%	8.3%	3.7%	20.7%
Market Share (%)																				
Cisco	35.6%	27.0%	32.6%	31.5%	32.0%	36.0%	32.7%	28.3%	28.6%	23.2%	23.2%	23.8%	24.2%	26.6%			32.1%	31.5%	32.0%	24.6%
Arista	14.0%	12.7%	14.3%	13.4%	16.8%	17.1%	14.5%	14.5%	14.4%	13.7%	17.0%	16.1%	15.7%	16.1%			14.4%	13.6%	15.6%	15.3%
White Box Vendors	13.9%	20.9%	16.1%	18.1%	18.7%	6.6%	17.4%	19.2%	20.4%	21.0%	23.3%	23.8%	26.7%	22.0%			15.2%	17.4%	15.9%	22.2%
Huawei	6.3%	9.7%	7.8%	12.5%	7.3%	9.0%	8.6%	12.0%	6.6%	8.2%	10.4%	9.4%	6.4%	7.1%			8.5%	9.2%	9.3%	8.8%
Juniper	3.7%	2.3%	2.0%	2.3%	2.3%	3.3%	2.9%	2.4%	2.8%	2.4%	3.1%	3.4%	2.5%	2.4%			3.3%	2.5%	2.7%	2.9%
H3C	9.3%	10.7%	12.0%	7.0%	7.7%	13.1%	10.1%	9.7%	11.2%	15.3%	6.5%	6.4%	6.1%	6.2%			7.8%	9.7%	10.1%	9.8%
Dell	4.9%	5.3%	4.7%	5.0%	5.1%	5.1%	4.3%	4.7%	4.8%	4.0%	3.9%	4.4%	4.5%	4.5%			6.9%	5.0%	4.8%	4.2%
HPE	1.2%	1.1%	1.4%	1.5%	1.6%	1.4%	1.1%	0.6%	0.9%	0.8%	0.7%	0.8%	1.1%	0.9%			1.8%	1.3%	1.1%	0.8%
NVIDIA														2.6%						
ZTE	1.2%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.1%	0.7%	0.0%	0.0%
Other	9.9%	8.7%	9.2%	8.8%	8.4%	8.4%	8.4%	8.6%	10.3%	11.2%	12.1%	11.9%	12.8%	11.6%			8.8%	9.1%	8.5%	11.4%

Source: Omdia

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Exhibit 13: Global 100G DC Switching Revenue Share

100G DC switching remains a competitive market with the top three vendors accounting for roughly 20%-25% of the market each

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Revenue (\$mn)	\$1,193	\$1,450	\$1,656	\$1,744	\$1,632	\$1,514	\$1,832	\$1,906	\$1,948	\$2,200	\$2,159	\$2,231	\$2,341	\$2,535			\$5,210	\$6,043	\$6,885	\$8,539
QoQ % Chg	-7.6%	21.5%	14.3%	5.3%	-6.4%	-7.2%	21.0%	4.0%	2.2%	12.9%	-1.9%	3.3%	4.9%	8.3%						
YoY % Chg	-3.0%	9.3%	21.5%	35.1%	36.8%	4.5%	10.6%	9.3%	19.4%	45.3%	17.8%	17.0%	20.1%	15.2%			31.2%	16.0%	13.9%	24.0%
Market Share (%)																				
Cisco	33.9%	31.0%	36.8%	32.3%	34.5%	35.1%	34.1%	31.0%	31.0%	25.9%	24.8%	24.3%	25.6%	26.9%			33.6%	33.6%	33.6%	26.4%
Arista	25.1%	20.8%	20.3%	20.9%	22.1%	27.1%	23.2%	22.9%	23.6%	22.7%	26.0%	25.6%	23.6%	24.2%			26.0%	21.5%	23.7%	24.5%
White Box Vendors	8.6%	16.3%	15.3%	17.2%	19.1%	4.6%	14.7%	14.4%	15.1%	15.9%	17.6%	17.6%	22.6%	16.7%			11.6%	14.8%	13.4%	16.6%
Huawei	9.9%	11.3%	8.7%	14.0%	8.7%	11.0%	10.1%	13.7%	7.2%	8.9%	11.1%	10.3%	6.7%	6.9%			7.7%	11.1%	11.0%	9.4%
Juniper	6.2%	3.5%	3.4%	3.8%	3.4%	5.7%	4.3%	4.0%	4.0%	3.6%	4.2%	4.7%	3.4%	3.2%			5.1%	4.1%	4.3%	4.2%
H3C	4.2%	6.1%	9.4%	4.0%	3.9%	8.4%	5.9%	5.6%	8.7%	11.0%	3.3%	4.0%	4.0%	5.5%			4.1%	6.0%	5.9%	6.7%
Dell	2.1%	2.1%	1.3%	1.3%	1.4%	1.4%	1.2%	1.3%	1.8%	1.7%	1.7%	2.0%	1.6%	1.7%			2.2%	1.6%	1.3%	1.8%
HPE	1.1%	0.7%	0.6%	1.7%	1.7%	1.8%	1.6%	1.6%	1.2%	0.7%	1.2%	1.9%	2.2%	1.4%			0.7%	1.0%	1.7%	1.2%
NVIDIA														3.6%						
ZTE	0.5%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			1.6%	0.5%	0.0%	0.0%
Other	8.4%	6.6%	4.2%	4.9%	5.3%	5.1%	5.1%	5.5%	7.5%	9.7%	10.0%	9.7%	10.4%	9.9%			7.4%	5.8%	5.2%	9.3%

Source: Omdia

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Exhibit 14: Global 100G DC Switching Port Shipment Share

Cisco's lower port shipment share and higher revenue share than Arista and White Box Vendors suggests premium pricing in 100G DC switching

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Ports (mn)	4	6	6	6	6	5	7	7	7	9	8	9	11	11			18	22	25	33
QoQ % Chg	3.0%	41.5%	-5.0%	4.5%	4.2%	-24.3%	52.3%	-0.4%	4.0%	14.6%	-1.2%	3.9%	23.9%	2.4%						
YoY % Chg	4.6%	17.3%	27.6%	44.6%	46.3%	-21.7%	25.6%	19.6%	19.4%	80.6%	17.2%	22.3%	45.7%	30.3%			24.2%	23.3%	15.0%	31.0%
Market Share (%)																				
Cisco	17.3%	13.7%	16.5%	15.8%	17.0%	24.8%	19.3%	16.9%	15.8%	13.3%	12.7%	12.9%	12.6%	15.6%			15.8%	15.7%	19.1%	13.6%
Arista	25.8%	20.7%	22.7%	20.0%	19.2%	29.6%	21.0%	22.3%	22.2%	19.8%	22.4%	21.9%	20.0%	20.6%			21.9%	22.0%	22.5%	21.6%
White Box Vendors	24.3%	40.8%	37.8%	42.4%	42.9%	13.1%	35.6%	34.0%	33.3%	34.9%	38.4%	37.8%	42.0%	33.6%			38.3%	37.3%	32.7%	36.2%
Huawei	6.1%	6.3%	4.5%	7.2%	5.0%	8.1%	6.0%	8.7%	4.6%	5.7%	7.2%	6.8%	5.3%	6.0%			4.4%	6.0%	6.9%	6.1%
Juniper	7.2%	2.1%	1.5%	1.5%	1.6%	3.6%	2.4%	2.3%	2.3%	2.0%	2.3%	2.5%	1.9%	1.8%			4.6%	2.7%	2.4%	2.3%
H3C	4.2%	4.3%	9.7%	3.8%	5.1%	11.9%	7.3%	7.4%	9.6%	11.7%	3.4%	4.2%	3.6%	5.2%			3.0%	5.5%	7.7%	7.1%
Dell	2.1%	2.4%	1.4%	1.4%	1.3%	1.6%	1.0%	1.0%	1.8%	1.4%	1.4%	1.5%	1.1%	1.2%			3.0%	1.8%	1.2%	1.5%
HPE	0.4%	0.2%	0.5%	1.5%	1.4%	1.6%	1.2%	1.0%	0.8%	0.3%	0.7%	1.2%	1.2%	0.6%			0.3%	0.7%	1.3%	0.8%
NVIDIA														3.9%						
ZTE	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.3%	0.1%	0.0%	0.0%
Other	12.4%	9.2%	5.4%	6.5%	6.6%	5.7%	6.3%	6.4%	9.6%	10.9%	11.4%	11.1%	12.5%	11.4%			8.5%	8.1%	6.3%	10.8%

Source: Omdia

BofA GLOBAL RESEARCH



**Exhibit 15: Global 400G DC Switching Revenue Share**

Arista and White Box Vendors dominate the 400G DC switching market with >38% of revenue share each

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Revenue (\$mn)	\$19	\$30	\$26	\$34	\$38	\$77	\$97	\$275	\$344	\$562	\$628	\$793	\$834	\$1,030			\$23	\$109	\$488	\$2,327
QoQ % Chg	64.2%	56.7%	-12.6%	29.9%	13.7%	99.8%	26.6%	183.0%	25.0%	63.3%	11.7%	26.2%	5.2%	23.6%						
YoY % Chg		557.5%	284.0%	192.1%	102.2%	157.9%	273.4%	713.7%	794.9%	631.4%	545.7%	187.9%	142.1%	83.3%				374.7%	348.8%	376.9%
Market Share (%)																				
Cisco	25.8%	13.4%	15.4%	11.8%	10.4%	6.1%	12.6%	7.5%	9.6%	5.5%	5.3%	4.9%	4.0%	3.3%			12.0%	15.6%	8.5%	5.8%
Arista	6.8%	17.6%	20.2%	25.9%	24.8%	26.9%	33.9%	27.8%	28.3%	40.8%	42.2%	40.4%	41.0%	38.8%			9.2%	18.9%	28.6%	39.2%
White Box Vendors	60.8%	47.9%	54.0%	41.8%	32.4%	33.4%	33.0%	50.1%	51.7%	45.8%	46.2%	43.8%	37.9%	38.7%			72.9%	49.7%	42.6%	46.1%
H3C	0.0%	13.1%	1.7%	5.0%	21.5%	29.0%	16.0%	8.7%	3.6%	2.5%	0.5%	5.3%	4.5%	9.9%			0.0%	5.6%	14.4%	3.1%
Dell	1.5%	1.0%	1.1%	2.0%	1.5%	1.2%	1.2%	1.0%	0.8%	0.5%	0.7%	0.9%	0.6%	0.5%			1.0%	1.4%	1.1%	0.7%
NVIDIA														0.5%						
Other	5.0%	7.1%	7.7%	13.5%	9.3%	3.4%	3.3%	4.9%	6.1%	4.8%	5.1%	4.8%	11.9%	8.2%			4.9%	8.9%	4.7%	5.1%

Source: Omdia

BoFA GLOBAL RESEARCH

Exhibit 16: Global 400G DC Switching Port Shipment Share

Cisco remains a tiny fraction of 400G DC port shipments, declining to 1.7% share in 2Q23 vs. 2.2% in 2Q22

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec				
Ports (mn)	0	0	0	0	0	0	0	1	1	1	2	2	2	3			0	0	1	6
QoQ % Chg	49.3%	43.9%	0.9%	14.6%	14.7%	115.2%	31.5%	224.5%	16.6%	84.6%	35.4%	19.7%	4.2%	26.0%						
YoY % Chg		408.7%	234.3%	148.5%	90.9%	185.5%	272.2%	953.4%	970.2%	818.1%	845.0%	248.6%	211.5%	112.6%				300.6%	421.2%	488.3%
Market Share (%)																				
Cisco	12.3%	6.2%	6.2%	5.4%	4.7%	2.9%	5.8%	3.0%	4.0%	2.2%	1.8%	1.8%	1.8%	1.7%			5.0%	7.1%	3.6%	2.2%
Arista	4.5%	9.4%	9.3%	13.5%	14.9%	13.9%	23.1%	14.5%	13.1%	33.0%	44.0%	39.2%	39.9%	37.3%			9.7%	9.7%	16.1%	36.1%
White Box Vendors	75.6%	64.7%	63.2%	55.4%	48.9%	49.0%	45.1%	65.1%	68.5%	54.0%	45.3%	45.8%	44.0%	44.7%			77.7%	63.5%	58.0%	50.2%
H3C	0.0%	4.2%	0.7%	2.9%	13.5%	14.3%	9.4%	4.5%	2.0%	1.2%	0.2%	2.7%	3.0%	6.9%			0.0%	2.2%	7.4%	1.6%
Dell	2.7%	2.1%	2.0%	7.9%	5.1%	2.4%	2.3%	1.6%	0.9%	0.9%	0.7%	0.9%	0.6%	0.5%			2.8%	3.9%	2.1%	0.8%
NVIDIA														0.3%						
Other	5.0%	13.4%	18.5%	14.9%	12.9%	17.4%	14.3%	11.4%	11.5%	8.8%	7.9%	9.5%	10.7%	8.6%			4.9%	13.7%	12.9%	9.1%

Source: Omdia

BoFA GLOBAL RESEARCH

Exhibit 17: Global Data Center Switching Port Speed Revenue Share

400G accounted for 19.6% of total DC switching revenue in 2Q23 vs. 13.2% a year ago, partially driven by a 22% YoY decline in pricing

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
1 Gig	1.6%	1.1%	1.1%	0.8%	1.3%	1.0%	0.9%	0.8%	0.6%	0.5%	0.4%	0.3%	0.5%	0.4%				1.9%	1.1%	1.0%	0.5%
10 Gig	22.1%	20.1%	16.3%	16.5%	12.9%	11.9%	13.2%	13.2%	9.9%	10.4%	10.2%	9.4%	7.9%	7.1%				26.2%	18.5%	12.9%	9.9%
25 Gig	17.1%	17.3%	20.3%	18.6%	19.8%	20.6%	19.8%	18.7%	19.8%	18.5%	18.9%	18.7%	19.7%	19.6%				13.1%	18.4%	19.6%	19.0%
40 Gig	11.3%	10.3%	9.7%	10.5%	9.0%	9.3%	8.4%	7.5%	6.5%	5.5%	5.4%	4.9%	4.5%	4.3%				15.2%	10.4%	8.5%	5.5%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%				0.0%	0.0%	0.0%	0.0%
100 Gig	47.2%	50.1%	51.8%	52.4%	55.5%	54.4%	54.6%	52.0%	53.4%	51.6%	50.0%	48.8%	49.3%	48.2%				43.4%	50.6%	54.0%	50.8%
200 Gig	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.3%	0.5%	0.4%	0.4%	0.5%				0.0%	0.1%	0.1%	0.4%
400 Gig	0.8%	1.0%	0.8%	1.0%	1.3%	2.8%	2.9%	7.5%	9.4%	13.2%	14.5%	17.3%	17.6%	19.6%				0.2%	0.9%	3.8%	13.9%
Total ex-100G/200G/400G	52.0%	48.8%	47.3%	46.4%	43.0%	42.8%	42.4%	40.3%	36.9%	34.9%	35.0%	33.4%	32.6%	31.7%				56.4%	48.4%	42.0%	34.9%

Source: Omdia

BoFA GLOBAL RESEARCH

Exhibit 18: Global Data Center Switching Port Speed Shipment Share

25G and 100G constitute the bulk of DC switching port shipments with a combined 68.7% contribution in 2Q23

	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23		CY19	CY20	CY21	CY22
	20-Mar	20-Jun	20-Sep	20-Dec	21-Mar	21-Jun	21-Sep	21-Dec	22-Mar	22-Jun	22-Sep	22-Dec	23-Mar	23-Jun	23-Sep	23-Dec					
1 Gig	5.1%	4.2%	4.7%	3.7%	5.5%	5.2%	4.1%	3.9%	2.6%	2.4%	1.9%	1.5%	2.9%	2.4%				6.9%	4.4%	4.6%	2.1%
10 Gig	27.1%	24.6%	22.6%	22.7%	19.6%	19.9%	20.4%	21.1%	18.1%	18.6%	17.0%	16.1%	15.9%	15.1%				33.7%	24.2%	20.3%	17.4%
25 Gig	31.1%	27.7%	30.1%	29.8%	28.6%	33.9%	28.2%	27.0%	28.5%	27.2%	26.6%	26.5%	25.0%	26.1%				20.5%	29.6%	29.2%	27.2%
40 Gig	6.0%	6.5%	6.0%	6.5%	5.4%	5.9%	5.1%	4.8%	3.5%	3.5%	3.7%	3.4%	2.8%	2.9%				7.9%	6.3%	5.3%	3.5%
50 Gig	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%				0.0%	0.0%	0.0%	0.0%
100 Gig	30.4%	36.6%	36.3%	36.8%	40.4%	34.0%	41.0%	39.8%	43.2%	41.9%	42.1%	42.4%	44.4%	42.6%				30.9%	35.2%	39.0%	42.4%
200 Gig	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%	0.3%	0.2%	0.2%				0.0%	0.1%	0.1%	0.2%
400 Gig	0.2%	0.3%	0.3%	0.3%	0.4%	1.0%	1.0%	3.2%	4.0%	6.2%	8.5%	9.8%	8.7%	10.2%				0.1%	0.3%	1.5%	7.2%
Total ex-100G/200G/400G	69.3%	63.0%	63.4%	62.8%	59.1%	65.0%	57.9%	56.8%	52.7%	51.7%	49.2%	47.5%	46.6%	46.9%				69.0%	64.4%	59.4%	50.2%

Source: Omdia

BoFA GLOBAL RESEARCH

Exhibit 19: Stocks mentioned

Prices and ratings for stocks mentioned in this report

BoFA Ticker	Bloomberg ticker	Company name	Price	Rating
ANET	ANET US	Arista Networks	US\$ 200.37	B-1-9
CSCO	CSCO US	Cisco Systems	US\$ 52.13	B-2-7
JNPR	JNPR US	Juniper Networks	US\$ 26.92	B-3-7

Source: BoFA Global Research

BoFA GLOBAL RESEARCH



Price objective basis & risk

Arista Networks (ANET)

Our \$225 PO is based on a 2024E P/E multiple of roughly 33x. This is a discount to high-growth software peers of 40x and a premium versus networking peers of 20x. We compare the stock to the two groups given its growth attributes and networking hardware solutions, as well as its exposure to secular growth trends across the cloud, OTT video, and big data.

Downside risks are 1) margin pressure from the ramp in sales to Cloud Titans, 2) lumpiness around large customer spending, 3) valuation risks, especially if issues arise around newer growth opportunities.

Upside risks are 1) better-than-expected execution that could translate into higher-than-anticipated growth rates, especially within Cloud Titan 2) solid market share gains in new areas, such as campus switching and 400G

Cisco Systems (CSCO)

Our \$60 PO is based on roughly 13x EV/FCF using our CY2024 estimate, in-line with tech peers at 9-20x (appropriate given Cisco's stability and high 3.0%+ dividend yield). We also focus on FCF to better capture software revenue growth and the shift to subscription models.

Downside risks to our price objective are: (1) deterioration in the spending environment, (2) lack of growth in public spending, a vertical that Cisco dominates, (3) downside risk to gross margin stemming from pricing and competitive pressures, (4) technological changes that would adversely impact high profit switching and routing segments, (5) inability to drive technological innovation in its core and new growth segments through organic innovation and acquisitions, and (6) change in customer behavior that would result in revenue pressure in services and other key areas.

Upside risks to our price objective are: (1) higher than expected growth in key markets, particularly switching and routing, and (2) solid market share gains in security and observability.

Juniper Networks (JNPR)

Our \$29 PO is based on roughly 11.5x our FY2024 EPS estimate, which is in-line with peers (avg. 11-15x) growing revenues in the mid-single digits and EPS in the high-single digits. Solid underlying demand for Cloud and Data Centers should help drive revenue growth acceleration in 2023 and onwards. However, we flag the near-term risk of order growth deceleration as well as supply constraints and macro conditions limiting revenue growth acceleration.

Downside risks to our price objective: 1) a slowdown in demand for high-end networking equipment due to a weak economic environment, 2) commoditization of networking hardware in the data center creating price pressure, 3) difficulty in penetrating new markets with new products, 4) competition in next-generation markets like SDN and NFV from larger competitor Cisco and start up companies, 5) a need to execute on new product cycles to support growth.

Upside risks to our price objective: 1) better than expected execution with new products that could translate into higher than anticipated growth rates, 2) any improvement in Cloud and Service Provider spending environments.



Analyst Certification

I, Tal Liani, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Securities is currently acting as financial advisor to Cisco Systems Inc in connection with its proposed acquisition of Splunk Inc, which was announced on September 21, 2023. The proposed transaction is subject to approval by shareholders of Splunk Inc. This research report is not intended to provide voting advice, serve as an endorsement of the proposed transaction, or result in the procurement, withholding or revocation of a proxy.

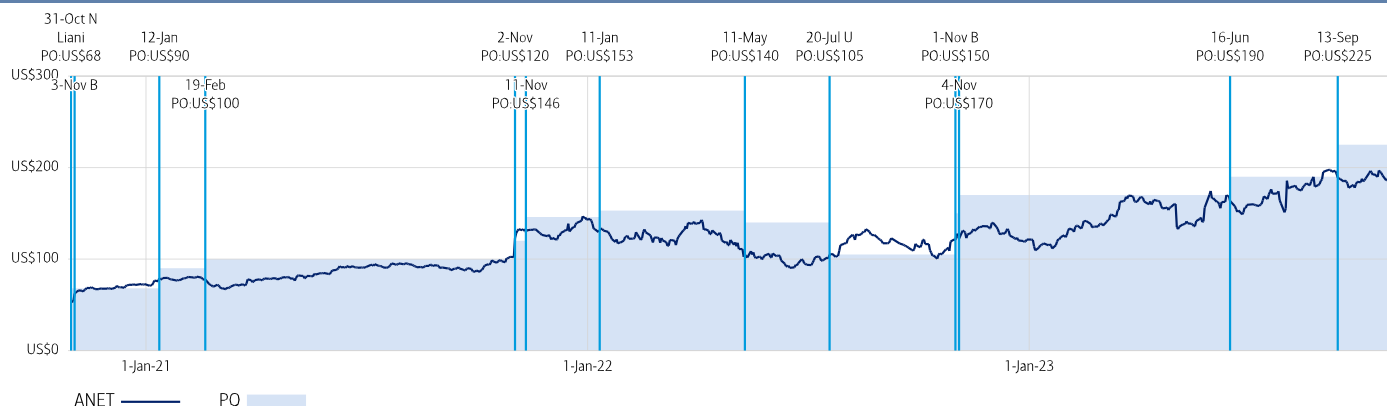
US - Telecom and Data Networking Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Akamai	AKAM	AKAM US	Madeline Brooks
	Amdocs	DOX	DOX US	Tal Liani
	Arista Networks	ANET	ANET US	Tal Liani
	Check Point Software Technologies	CHKP	CHKP US	Tal Liani
	Ciena	CIEN	CIEN US	Tal Liani
	CommScope	COMM	COMM US	Tal Liani
	CrowdStrike Holdings Inc.	CRWD	CRWD US	Tal Liani
	CyberArk	CYBR	CYBR US	Tal Liani
	Fastly	FSLY	FSLY US	Madeline Brooks
	Fortinet	FTNT	FTNT US	Tal Liani
	InterDigital, Inc.	IDCC	IDCC US	Tal Liani
	Motorola Solutions	MSI	MSI US	Tomer Zilberman
	Palo Alto Networks	PANW	PANW US	Tal Liani
	Qualcomm	QCOM	QCOM US	Tal Liani
	Zscaler	ZS	ZS US	Tal Liani
NEUTRAL				
	Cellebrite	CLBT	CLBT US	Tal Liani
	Cisco Systems	CSCO	CSCO US	Tal Liani
	SentinelOne, Inc.	S	S US	Tal Liani
UNDERPERFORM				
	Cloudflare	NET	NET US	Madeline Brooks
	F5 Inc	FFIV	FFIV US	Tal Liani
	Juniper Networks	JNPR	JNPR US	Tal Liani
	Okta Inc	OKTA	OKTA US	Madeline Brooks
	SecureWorks	SCWX	SCWX US	Tal Liani

Disclosures

Important Disclosures

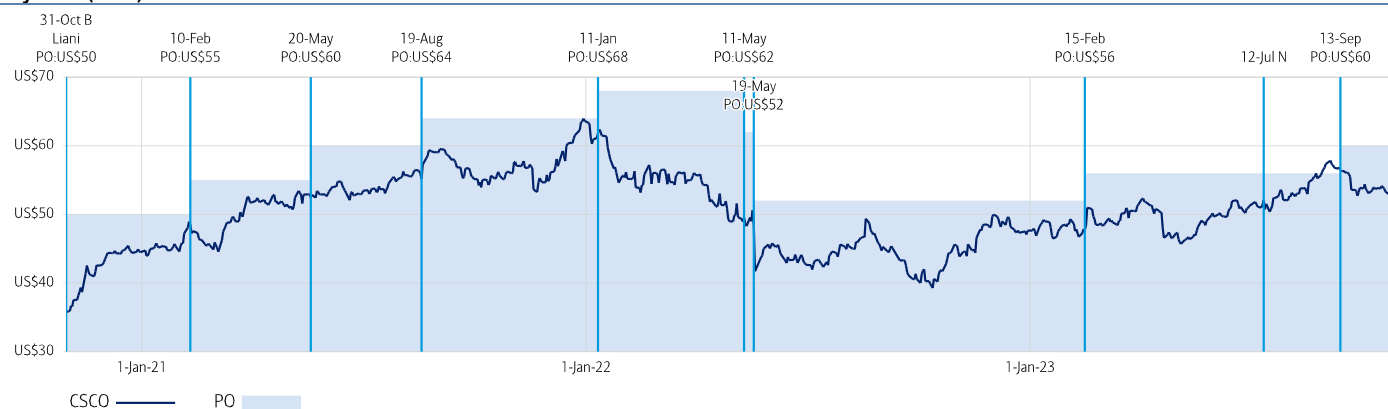
Arista Networks (ANET) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

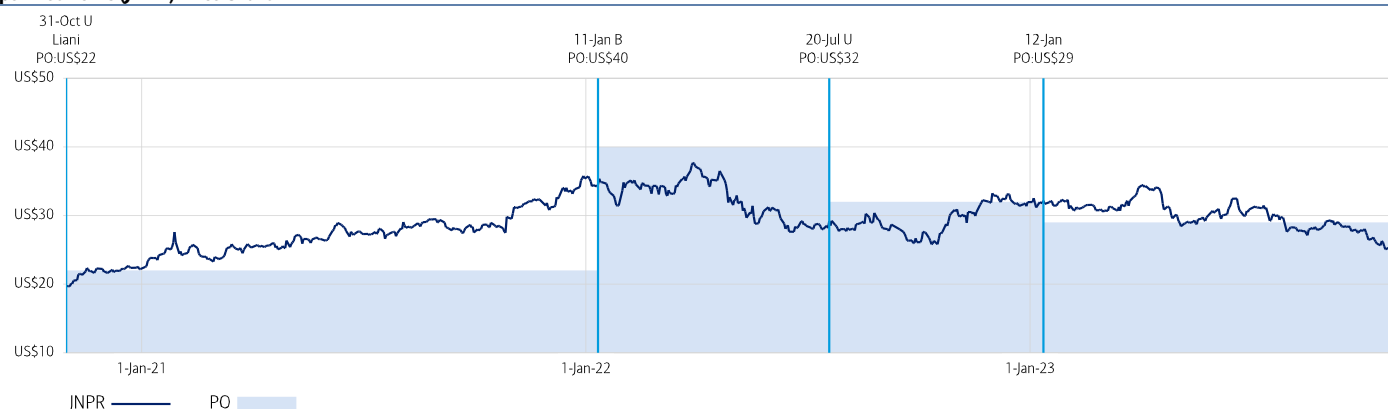
Cisco Systems (CSCO) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Juniper Networks (JNPR) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Telecommunications Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	53	49.07%	Buy	38	71.70%
Hold	30	27.78%	Hold	20	66.67%
Sell	25	23.15%	Sell	13	52.00%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1869	53.48%	Buy	1046	55.97%
Hold	828	23.69%	Hold	461	55.68%
Sell	798	22.83%	Sell	370	46.37%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the [Price Charts website](#), or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: Arista Networks, Cisco Systems, Juniper Networks.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Cisco Systems, Juniper Networks.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Arista Networks, Cisco Systems, Juniper Networks.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: Arista Networks, Cisco Systems, Juniper Networks.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Cisco Systems, Juniper Networks.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Cisco Systems, Juniper Networks.

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