

IT Hardware Industry

NTAP VAR survey indicates weaker demand environment

Industry Overview

Cautious on storage spending heading into year end

NTAP reports on Nov 28th. We model revenues slightly below consensus and based on our VAR survey, expect weaker results from the channel for the Oct and Jan qtrs. While the Oct qtr benefits from high margin Federal business, we are more cautious on the Jan qtr outlook, where large enterprise spending remains challenged. We see the risk of increased commodity pricing, weaker mix (driven by weak enterprise demand) in F24 and remain cautious on the revenue and margin outlook. Maintain Underperform on NTAP as we see risk to estimates driven by weak product growth, potential margin risk and any share loss in all flash arrays.

Demand sustainability unclear; short-term orders helpful

50% of the VARs surveyed for C3Q23 saw sales track in line with their plan, and the weighted score for respondents at -0.3% for this survey was up from -1.4% in the prior survey. We use the weighted average score as an indicator of sentiment directionality rather than an absolute indicator. Respondents remain cautious on storage demand sustainability with 90% noting that the storage order pipeline has mostly short-term deals (was 80% in Aug) and were unclear if storage demand will sustain through CY23.

Discounting picked back up in C3Q23

C2023 revenue outlook for NTAP was still calling for a decline in the survey with respondents expecting -0.3% y/y decline (vs -1% y/y expectation in the prior survey). Storage discounting increased q/q as 65% respondents observed that discounting has accelerated which was higher than the 50% noting accelerated discounting last quarter.

3Q orders sequentially lower; lead times decreasing

Order rate in 3Q continue to be weak with VARs on average observing -0.8% q/q decline vs. -1.4% q/q last quarter. September orders were lower MoM and recent earnings reports suggest weakness in large enterprise spending. Backlog also moved lower. Lead times also decreased with 35% of respondents observing a reduction in lead times.

NTAP's flash deployments down slightly; Pure & Dell lead

An average of 19% of the survey participants' customers currently deploy All-Flash FAS or NetApp's EF/E-series for their flash needs, which is down from 21% in the previous survey. NetApp's flash wallet-share was stable at 20%. Pure (45% share, +5% q/q) and Dell (25% share, -5% q/q) were the leading flash vendors with NetApp ranking third. 21% of NetApp's installed base has so far converted to flash-based storage, which is a small decline from the nearly 23% observed in the previous survey.

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Equity
United States
IT Hardware

Wamsi Mohan
Research Analyst
BofAS
+1 646 855 3854
wamsi.mohan@bofa.com

Ruplu Bhattacharya
Research Analyst
BofAS
+1 646 855 0315
ruplu.bhattacharya@bofa.com

Joseph Leeman
Research Analyst
BofAS
joseph.leeman@bofa.com

Nathawan Asdornwised
Research Analyst
BofAS
nathawan.asdornwised@bofa.com

Abbreviations:

AFA: All Flash Array

HCI: Hyper-converged Infrastructure

SMB: Small Medium Business

VAR: Value Added Reseller

S/T: Short Term

NTAP: NetApp

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NTAP F2Q24 Earnings Preview

Exhibit 1: NTAP Second Quarter Fiscal 2024 Results Preview

We model F2Q24 rev/EPS of \$1.5bn/\$1.36

October Quarter (Q2 FY24) Results Preview

(\$ in millions except EPS)	BofA Est (Oct 23)	Consensus	Management Guide for FY Q2 24	Prior Q (Jul 23)	Q/Q Growth	Prior Y (Oct 22)	Y/Y Growth
Revenue	\$1,519	\$1,528	\$1.455bn - \$1.605bn	\$1,432	6.1%	\$1,663	(8.7%)
Gross Profit Margin	69.7%	70.1%	~70%	70.7%		66.3%	
OpEx	693	699		703	(1.4%)	709	(2.2%)
Operating Margin (excl. SBC)	24.1%	24.4%	~24%	21.6%		23.6%	
Interest/Other Exp, net	8	8		8	0.0%	23	(65.2%)
Tax Rate	21.5%	21.2%		21.5%		21.6%	
Net income	293	300		249	17.8%	326	(10.0%)
EPS, Non-GAAP (excl. SBC)	\$1.36	\$1.39	\$1.35 - \$1.45	\$1.15	17.8%	\$1.48	(8.4%)
Diluted Shares	216	215		216	0.0%	220	(1.8%)
Free Cash Flow	56	217		418	(86.6%)	137	(59.3%)
Revenues of Segments:							
Hybrid Cloud Segment revenue	1,363	1370		1,278	6.6%	1,521	(10.4%)
Public Cloud Segment Net Rev	156	158		154	1.4%	142	10.0%

Source: BofA Research Estimates, Visible Alpha, Company Data

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Exhibit 2: NTAP Third Quarter Fiscal 2024 Results Preview

We model F3Q24 rev/EPS of \$1.5bn/\$1.47

January Quarter (Q3 FY24) Results Preview

(\$ in millions except per share data)	BofA Est (Jan 24)	Consensus	Prior Q (Oct 23)	Q/Q Growth	Prior Y (Jan 23)	Y/Y Growth
Revenue	\$1,513	\$1,557	\$1,519	(0.4%)	\$1,526	(0.9%)
Gross Profit Margin	70.7%	70.4%	69.7%		66.8%	
OpEx	673	688	693	(3.0%)	648	3.8%
Operating Margin (excl. SBC)	26.2%	26.1%	24.1%		24.4%	
Interest/Other Exp, net	8	8	8	0.0%	5	60.0%
Tax Rate	21.5%	21.3%	21.5%		20.2%	
Net income	318	326	293	8.4%	301	5.6%
EPS, Non-GAAP (excl. SBC)	\$1.47	\$1.52	\$1.36	8.4%	\$1.37	7.1%
Diluted Shares	216	215	216	0.0%	219	(1.4%)
Free Cash Flow	275	284	56	392.6%	319	(13.8%)
Revenues of Segments:						
Hybrid Cloud Segment revenue	1,355	1,398	1,363	(0.5%)	1,376	(1.5%)
Public Cloud Segment Net Rev	158	161	156	0.8%	150	5.0%

Source: BofA Research Estimates, Visible Alpha, Company Data

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Exhibit 3: NTAP Fiscal 2024 Results Preview (full year)

We model FY24 rev/EPS of \$6.1bn/\$5.51

FY24 estimates and management guides

(\$ in millions except EPS)	BofA Est FY24	Consensus FY24	Management Guide for FY24 (As of Aug 2023)
Revenue	\$6,062	\$6,143	Down low-to-mid single digits y/y
Gross Margin	69.9%	70.3%	~70%
Operating Margin	24.5%	24.9%	~25%
EPS, Non-GAAP (excl. SBC)	\$5.51	\$5.73	\$5.65 to \$5.85
Net cash from operating activities	\$1,238	\$1,411	
Free Cash Flow	\$1,090	\$1,255	

Source: BofA Research Estimates, Visible Alpha, Company Data

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VAR survey takeaways

Our quarterly survey of VARs is designed to provide a closer look at storage channel dynamics. We surveyed 20 VARs, which ranged in size and scope from approx. \$80mn to \$3.4bn in annual sales, with total combined annual revenue of \$7.9bn.

Our main takeaways include:

- In our recent survey, 30% of the VARs indicated downside to their revenue performance vs. planned last quarter. The weighted score for respondents was -0.8% which was directionally higher than the -1.4% in the prior survey.
- Backlog is trending lower. Majority of the VARs (55%) said that their backlog was similar to last quarter, while 0% observed higher backlog (vs 5% earlier) and 45% noted reduced backlog (vs 30% earlier). Lead times are decreasing with 65% of VAR seeing no change in lead times while 0% noted an expansion and 35% saw a reduction in lead times.
- C3Q order growth declined sequentially with VARs on average noting -0.8% q/q decline. Orders in Sep were lower MoM.
- VARs remain cautious on storage demand outlook for CY23, with 90% of respondents unclear if storage demand will sustain through CY23 (worse than the 80% figure in the last survey).
- Storage discounting by NetApp increased slightly as 65% respondents observed that discounting has accelerated which was higher than the 50% noting accelerated discounting last quarter. Another 35% saw no change in discounts (down from 50% in the prior survey) while no respondent saw price increases (same as the prior survey).
- HPE's Greenlake program still does not appear to have a material impact on NetApp as 70% of VARs expect no change to either HPE or NetApp sales (was 65% last quarter). 30% of VARs are more likely to sell NetApp products (lower than the previous survey).
- 19% of the participants' customers on average currently deploy All-Flash FAS or NetApp's EF/E-series for their flash needs (down from 21% in the previous survey). Average of 21% of NetApp's installed base has so far converted to flash-based storage (down from 23% in the previous survey).
- NetApp's flash wallet-share was stable at 20%. Pure (45% share, +5% q/q) and Dell (25% share, -5% q/q) were the leading flash vendors with NetApp ranking third.
- Nutanix and Dell had the biggest wallet-share in HyperConverged (HCI) storage spend with shares of 40% and 30% respectively, followed by HPE (15%) and NTAP (10%). 20% of VARs customers expect to deploy Nutanix HCI in the next 12 months, up from 17% in the previous survey. Majority of VARs do not expect HCI to replace midrange storage.
- Availability of FSx shows some positive impact on PCS adoption. Cloud Insights and Spot were the most widely used NetApp Cloud services.
- Component shortages are still impacting NetApp as 75% of the VARs noted that component shortages are not having a meaningful negative impact on NetApp storage sales (vs. 70% in the prior survey). 20% said that NetApp is still facing some impact due to component shortages (vs. 30% in the prior survey).



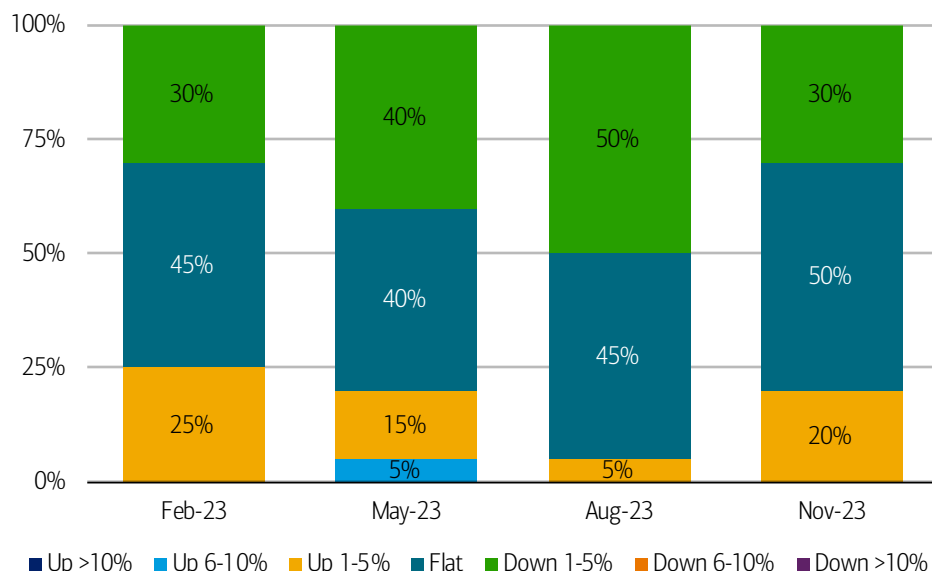
Survey Details

C3Q23 survey indicates further downside potential

30% of the VARs surveyed for last quarter saw sales track below plan, while 50% tracked in-line and 20% were tracking above plan. The weighted average score for respondents was -0.3% for this survey and is down from -1.4% in the prior survey in August. Please note we do not look at the weighted score on an absolute basis, but as a directional indicator.

Figure 1: What % above or below plan did the last quarter track?

In the Nov 2023 survey, the weighted score was -0.3%, up from -1.4% in the prior survey



Source: BofA Global Research survey

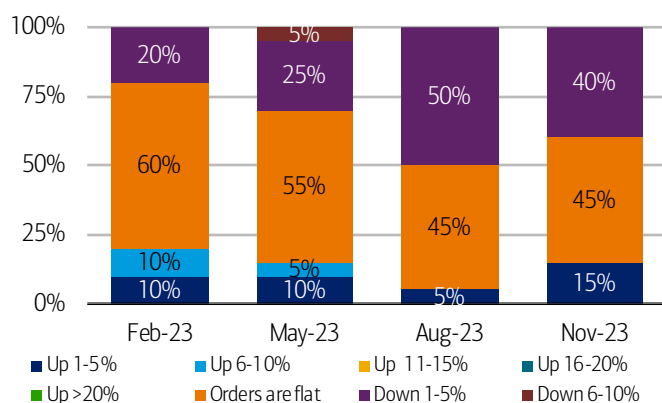
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C3Q order growth weak; September orders lower MoM

QoQ order growth was directionally lower in 3Q, with VARs on average noting -0.8% q/q decline vs. -1.4% q/q in 2Q. 40% of VARs saw a q/q decrease in orders while 45% said order growth was flat and 15% noted an increase in orders. September orders were lower (-0.8% MoM) vs. August with 45% VARs observing a decrease in orders, 35% seeing no change and 20% noting an increase in orders.

Figure 2: How did order rates trend in C3Q vs C2Q?

3Q order growth was directionally weaker

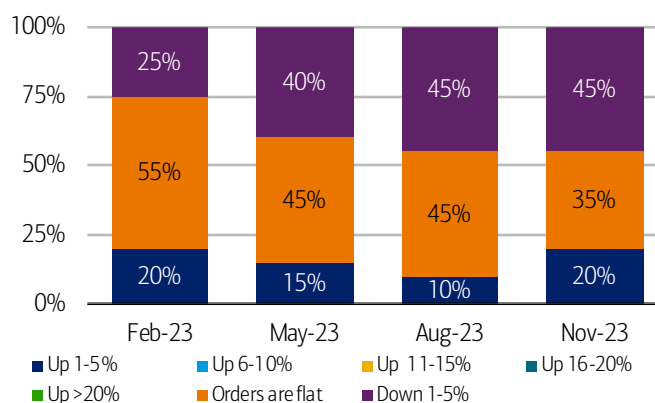


Source: BofA Global Research survey

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Figure 3: How did order rates trend in September vs. August?

September orders were lower than August



Source: BofA Global Research survey

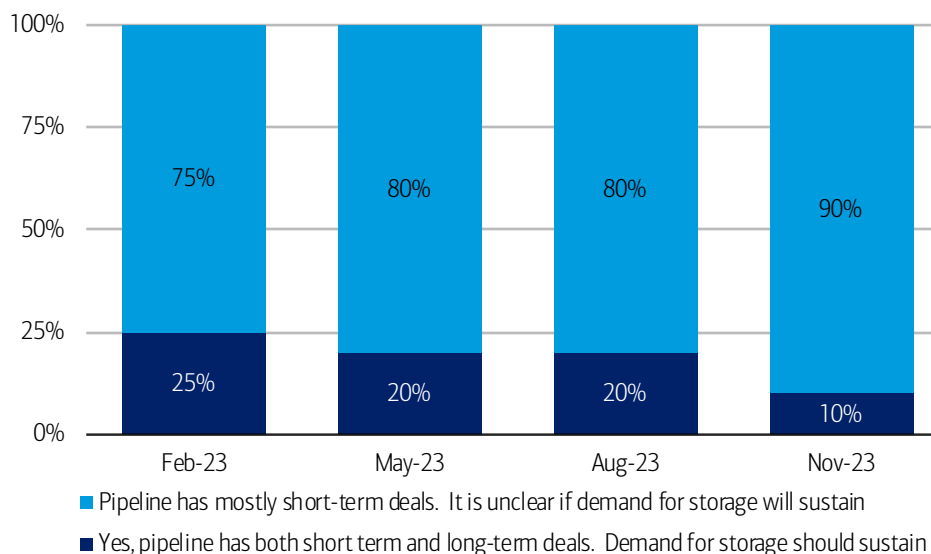
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VARs remain cautious on storage demand outlook

With regards to near-term demand outlook for the storage market, 90% of the respondents observed that the order pipeline has mostly short-term deals and were unclear if storage demand will sustain through CY23 (slightly higher than the previous survey). The remaining 10% of the respondents noted that the order pipeline has both short-term and long-term deals which should help storage demand sustain through CY23.

Figure 4: Looking at pipeline of storage orders, is it a short-term pipeline, or will storage demand sustain throughout CY23?

90% of the respondents were unclear if storage demand will sustain through CY23



Source: BofA Global Research survey

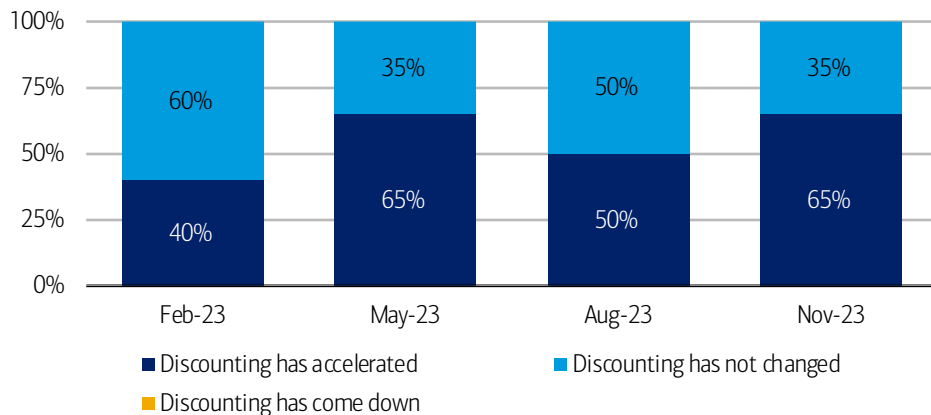
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NetApp discounting modestly higher in the quarter

When queried on whether NetApp Storage discounting has changed this quarter compared to the prior quarters, 65% of VARs noted that discounting has accelerated, which was higher than 50% observing accelerated discounting in the prior quarter. Another 35% of respondents observed that discounting was unchanged, down from 50% in the previous survey. No respondent noted higher pricing this quarter, similar to the previous survey.

Figure 5: Has NetApp Storage discounting changed this quarter versus prior quarters?

65% of VARs observed discounting has accelerated this quarter, higher than 50% in the prior survey



Source: BofA Global Research survey

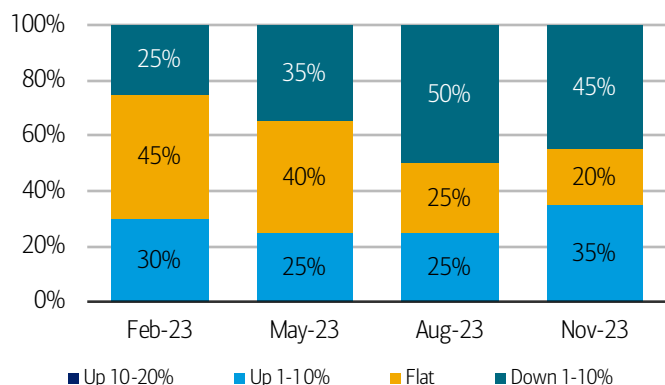
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C2023 outlook weaker; component shortages alleviating

Looking at full year C2023, survey respondents on average expect their NetApp storage revenue to decline -0.3% y/y, which is slightly better than the expectation in the previous survey. 35% of the respondents expect 1-10% y/y revenue growth from NetApp, 20% expect revenues to be flat while 45% expect 1-10% revenue decline. 75% of the VARs observed that component shortages are not having a meaningful negative impact on NetApp storage sales (up from 70% in the prior survey) while 20% said that NetApp is still impacted due to component shortages.

Figure 6: How much do you expect 2023 revenues (from NTAP) to be up/down relative to 2022?

Respondents on average expect their NetApp storage revenue decline -0.3% y/y in C2023

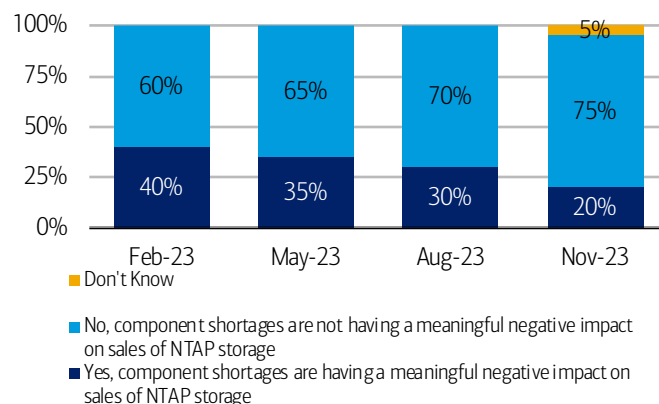


Source: BofA Global Research survey

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Figure 7: Are component shortages negatively impacting storage sales for NTAP?

75% of respondents noted that component shortages are not having a meaningful negative impact on NetApp storage sales



Source: BofA Global Research survey

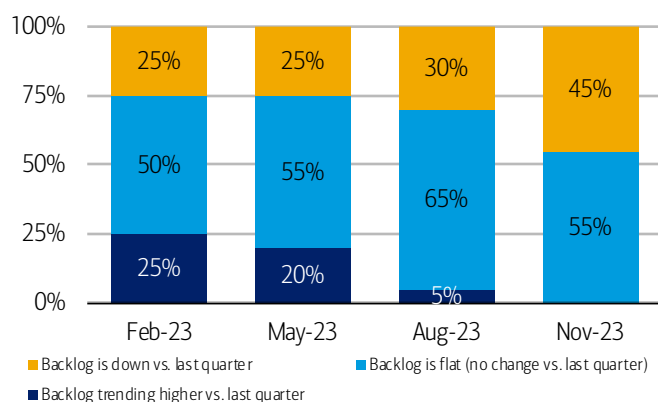
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Backlog and lead times decreasing

55% of VARs observed no change to their current backlog compared to last quarter. 45% of respondents noted that backlog is down vs. last quarter.

Figure 8: How is your own backlog trending?

55% of VARs said their backlog was similar to last quarter

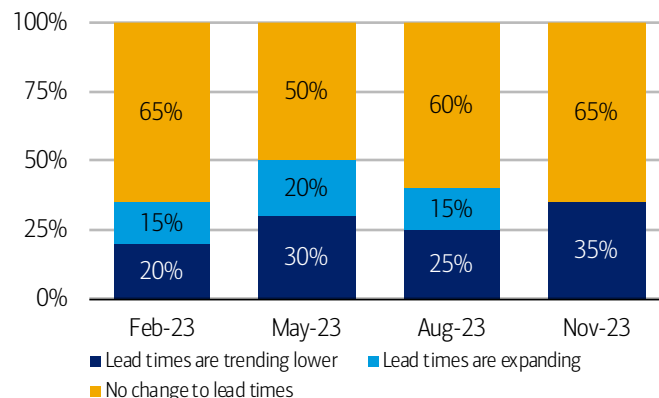


Source: BofA Global Research survey

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Figure 9: Relative to 3 months ago how are lead times trending?

65% of VARs observed no change to lead times



Source: BofA Global Research survey

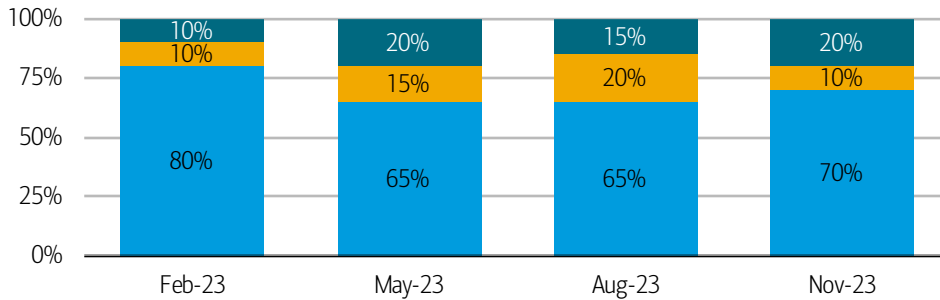
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HPE GreenLake unlikely to meaningfully impact NetApp

In response to a question about the impact of the HPE's GreenLake model on NetApp's existing customer base, 70% do not expect to see any change to end customer sales for either HPE or NetApp. No VAR stated that they are now more likely to offer HP Enterprise over NetApp (unchanged from the previous survey). 30% of respondents see customers sticking with NetApp products (similar to the previous survey).

Figure 10: Respondents' views of HP Enterprise and NetApp given the new GreenLake model

70% of VARs expect no change to end customer sales for either HPE or NetApp



- More likely to sell NetApp products, despite the HPE GreenLake program
- NetApp channel program still better and more likely to sell NetApp products to end-customers
- No change to end-customer sales for either HPE or NetApp
- More likely to offer HPE Storage products to end-customers versus NetApp

Source: BofA Global Research survey

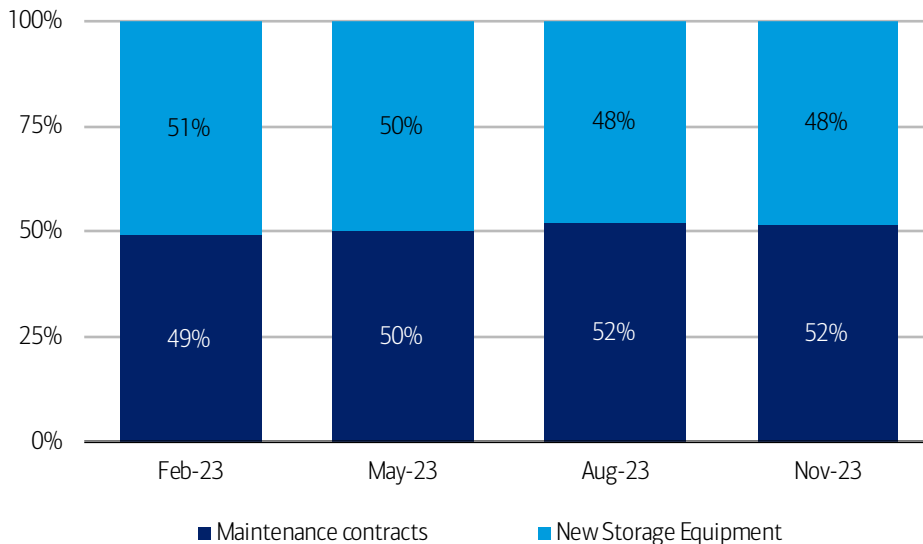
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Share of NetApp customers renewing maintenance contracts was slightly higher than new equipment purchasers

When queried about the percentage of NetApp customers who are purchasing new storage equipment vs. renewing maintenance contracts, participants replied that 52% of NetApp customers renewed maintenance contracts and the remaining 48% purchased new storage equipment during the quarter.

Figure 11: Percentage of customers renewing maintenance contracts vs purchasing new storage equipment

In the November 2023 survey, 52% of customers renewed maintenance contracts



Source: BofA Global Research survey

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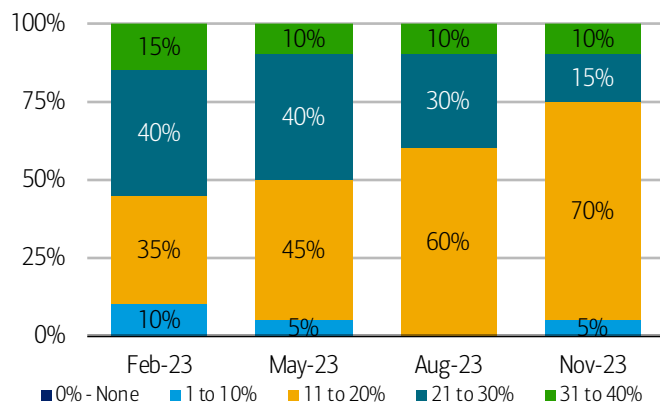
NetApp flash mindshare slightly lower; 21% of installed base on flash

An average of 19% of the survey participants' customers currently deploy All-Flash FAS or NetApp's EF/E-series for their flash needs, which is marginally lower than the

previous survey. On average, 21% of NetApp's installed base has so far converted to flash-based storage, down from 23% observed in the previous survey.

Figure 12: % of customers currently deploying NetApp's flash solutions

19% of the respondents' customers deploy NetApp's flash solutions, which was slightly lower compared to the previous survey

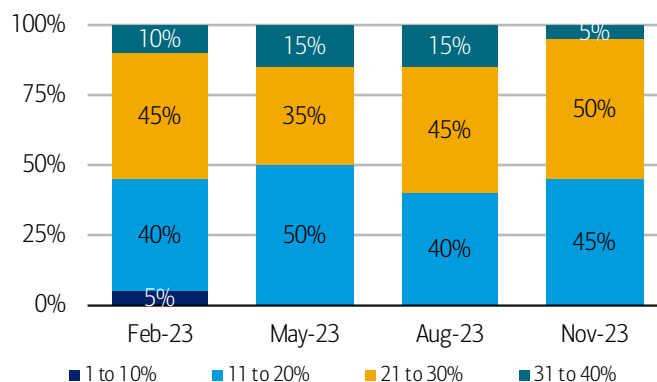


Source: BofA Global Research survey

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Figure 13: How much of your NTAP installed base has so far converted to flash-based storage?

An average of 21% of NetApp's installed base has so far converted to flash-based storage



Source: BofA Global Research survey

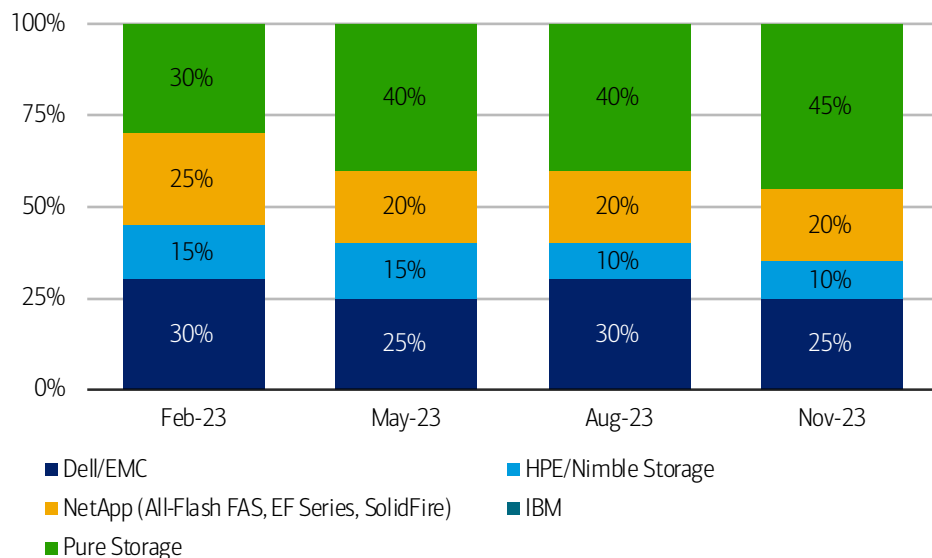
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Pure and Dell top flash wallet-share in latest survey; NetApp's share stable

Pure and Dell had the biggest wallet-share of flash-based storage spend at their customers with 45% and 25% share respectively (Pure's share grew 5% q/q while Dell's share declined 5% q/q). NetApp ranked third with 20% flash wallet-share (flat q/q) followed by HPE with 10% share.

Figure 14: Which vendor has biggest wallet share of flash-based storage spend at your customers?

NetApp's flash wallet-share was 20%, which was similar to the previous survey



Source: BofA Global Research survey

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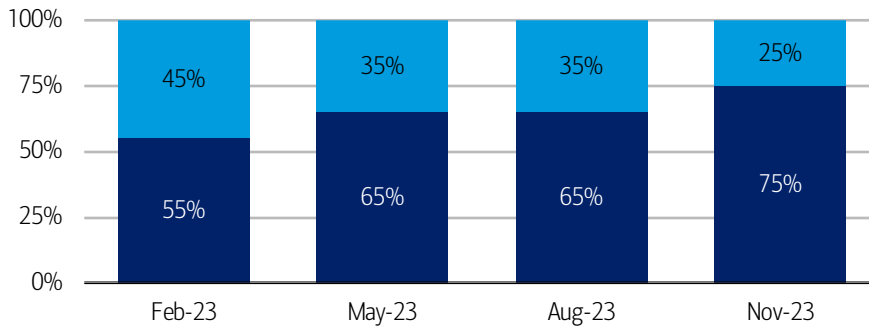
NetApp PCS adoption positively impacted by the availability of FSx

Amazon FSx for NTAP ONTAP provides fully managed shared storage in the AWS cloud with the popular data access and management capabilities of ONTAP. 25% of the respondents noted a moderate impact with 5-15% of customers incrementally moving workloads to AWS driven by FSx, while 75% of VARs noted a low impact with less than

5% of customers incrementally moving workloads to AWS driven by FSx (similar to the previous survey).

Figure 15: Is the adoption of NTAP PCS improving after the announced of FSx?

25% of respondents noted moderate impact on NetApp PCS adoption after the announcement of Amazon FSx



■ Moderate impact so far. 5-15% of customers incrementally moving workloads to AWS driven by announcement of FSx

■ Low impact so far. Less than 5% of customers incrementally moving to workloads to AWS driven by FSx

Source: BofA Global Research survey

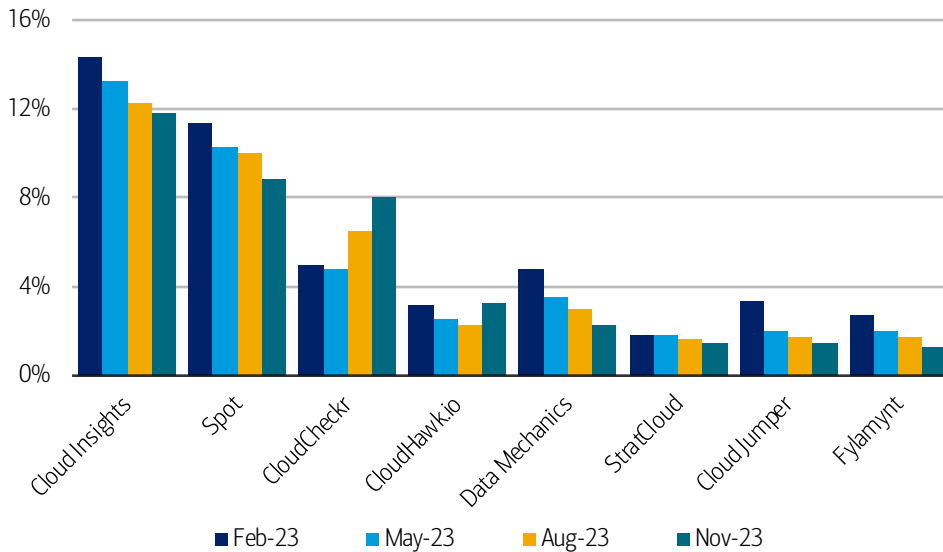
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Cloud Insights and Spot most widely used NetApp Cloud services

Among the various NetApp Cloud services, Cloud Insights (Monitoring and observability) and Spot (Application Cost Optimization) were the most widely used services with 12% and 9% of the VARs' customers using them, respectively. The cloud services that were least used were StratCloud (Reservation Optimization), Fylamynt (Automation and Integration) and Cloud Jumper (Virtual Desktop Optimization).

Figure 16: What percent of your customers use each of the following NTAP Cloud services?

Cloud Insights (12%) and Spot (9%) are the most widely used NetApp Cloud services



Source: BofA Global Research survey

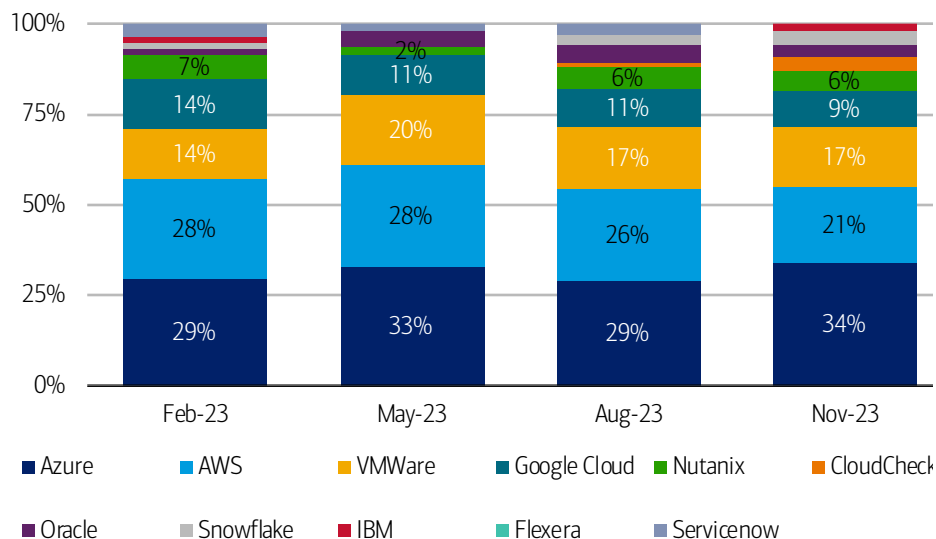
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Azure, AWS, VMware, Google Cloud popular alternatives for Cloud Ops

VARs customers who do not choose NetApp use a variety of other vendors for Cloud Ops, with Azure (34%), AWS (21%), VMware (17%) and Google Cloud (9%) the most popular choices.

Figure 17: If not NetApp, which of these other vendors to your clients use for Cloud ops?

Azure, AWS, VMware and Google Cloud are popular choices for customers who do not use NetApp



Source: BofA Global Research survey

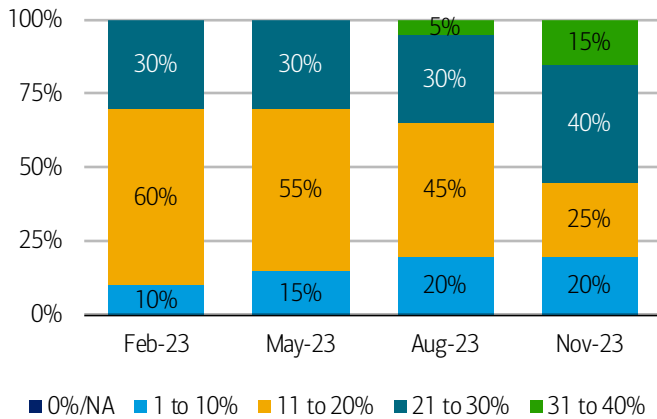
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Nutanix HCI planned deployment rate improved, Nutanix, Dell lead HCI wallet-share

A weighted average of 20% of customers plan to deploy Nutanix HyperConverged Storage in the next 12 months (improved from 17% from the previous survey). Nutanix and Dell had the biggest wallet-share in HyperConverged storage spend with 40% and 30% share respectively, followed by HPE at 15% and NetApp at 10%.

Figure 18: % of customers planning to deploy Nutanix HyperConverged Storage in the next 12 months

An average 20% of customers plan to deploy Nutanix HyperConverged Storage in the next 12 months

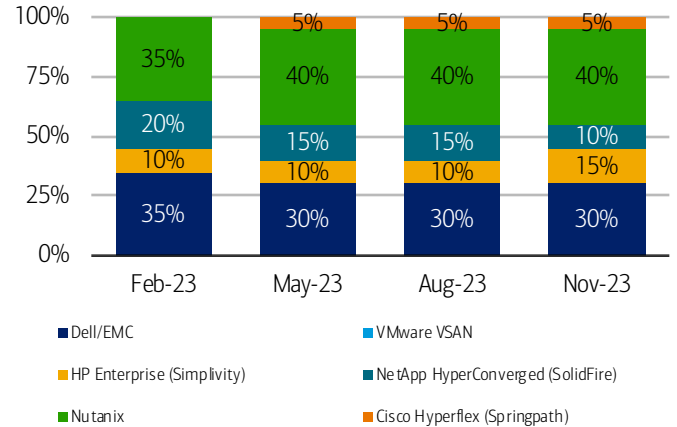


Source: BofA Global Research survey

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Figure 19: Which vendor has biggest wallet share of HyperConverged (HCI) storage spend at your customers?

Nutanix and Dell had the biggest wallet-share in HCI storage spend with 40% and 30% share respectively



Source: BofA Global Research survey

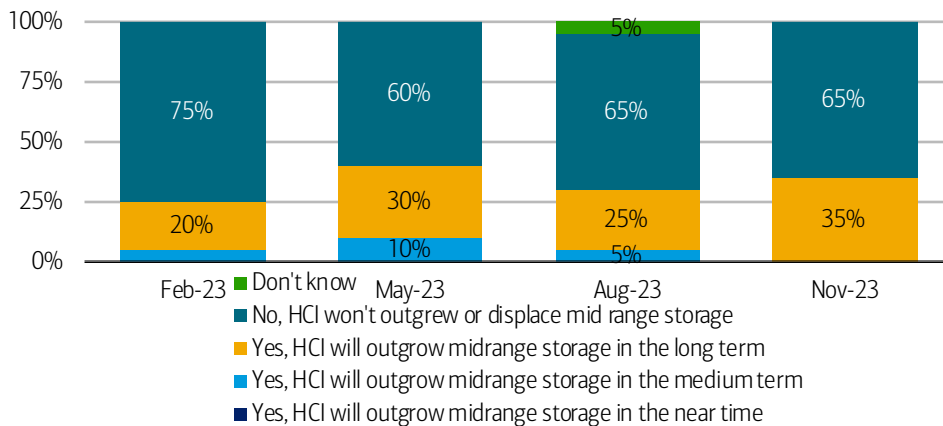
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Majority of VARs do not expect HCI to displace midrange storage

65% of VARs do not expect HyperConverged (HCI) to outgrow or displace midrange storage (flat q/q). However, 35% of VARs expect HCI to outgrow midrange storage in the long term (up from 25% in the previous survey).

Figure 20: Will Hyperconverged (HCI) outgrow/displace midrange storage?

65% of VARs do not expect HyperConverged (HCI) to outgrow or displace midrange storage



Source: BofA Global Research survey

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Price objective basis & risk

NetApp Inc. (NTAP, B-3-7, \$77.94)

Our PO of \$63 is based on 11x C24E EPS of \$5.55. This multiple is at the lower end of its historical range of 10-18x. We believe this multiple balances the benefit of potential revenue growth in All Flash Arrays against the long-term risk from data-center migration to the Cloud, and technological pressure from emerging competitors.

Upside risks are faster than expected growth in public cloud revenues and lower drag from investments, unexpected share gain from competitors, unanticipated large M&A which drives revenue growth faster than expected, and faster than expected penetration of Flash into the existing NetApp installed base.

Downside risks are extended component shortage, an unexpected slowdown in the economy, higher than expected inflation, stall in the installed base refresh, material share loss in the Flash and Converged technology space, including Hyper Converged to competitors, acceleration of storage moving to the public cloud, and decline in penetration and success beyond the top enterprise accounts.

Analyst Certification

I, Wamsi Mohan, 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.

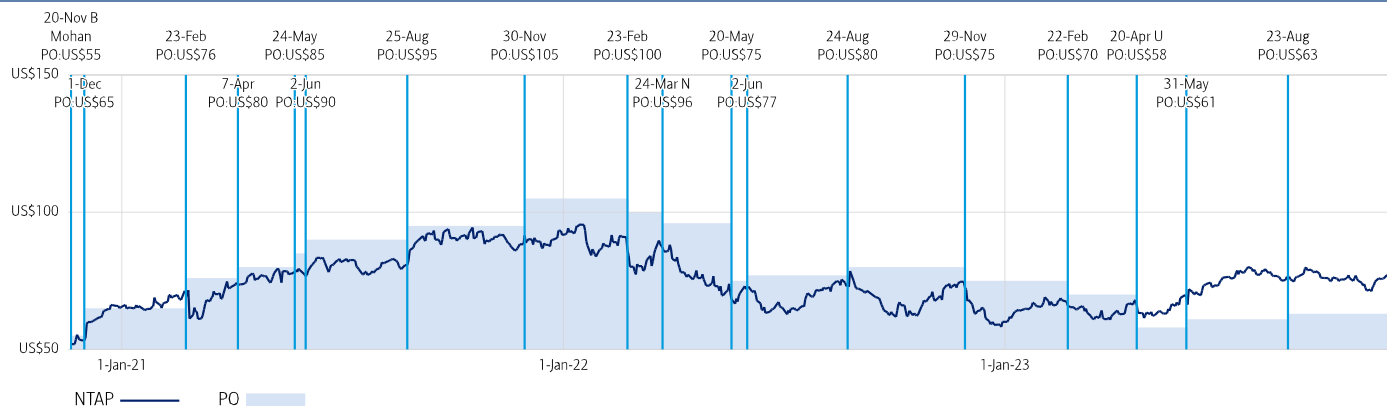
US - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Amphenol	APH	APH US	Wamsi Mohan
	Corning Inc.	GLW	GLW US	Wamsi Mohan
	Dell Technologies Inc.	DELL	DELL US	Wamsi Mohan
	Flex Ltd.	FLEX	FLEX US	Ruplu Bhattacharya
	HP Inc.	HPQ	HPQ US	Wamsi Mohan
	International Business Machines Corp.	IBM	IBM US	Wamsi Mohan
	Jabil Inc.	JBL	JBL US	Ruplu Bhattacharya
	Nutanix Inc.	NTNX	NTNX US	Wamsi Mohan
	Roku, Inc.	ROKU	ROKU US	Ruplu Bhattacharya
	Seagate Technology	STX	STX US	Wamsi Mohan
	Sensata Technologies Holdings Plc	ST	ST US	Wamsi Mohan
	TD Synnex Corp	SNX	SNX US	Ruplu Bhattacharya
	TE Connectivity Ltd.	TEL	TEL US	Wamsi Mohan
	Teradata Corporation	TDC	TDC US	Wamsi Mohan
	Western Digital Corporation	WDC	WDC US	Wamsi Mohan
NEUTRAL				
	Apple Inc.	AAPL	AAPL US	Wamsi Mohan
	Arrow Electronics Inc.	ARW	ARW US	Ruplu Bhattacharya
	Avnet Inc.	AVT	AVT US	Ruplu Bhattacharya
	CDW Corp	CDW	CDW US	Ruplu Bhattacharya
	Concentrix Corporation	CNXC	CNXC US	Ruplu Bhattacharya
	Hewlett-Packard Enterprise	HPE	HPE US	Wamsi Mohan
	Pure Storage	PSTG	PSTG US	Wamsi Mohan
UNDERPERFORM				
	DigitalOcean	DOCN	DOCN US	Wamsi Mohan
	NetApp Inc.	NTAP	NTAP US	Wamsi Mohan
	Vishay Intertechnology, Inc.	VSH	VSH US	Ruplu Bhattacharya
	Vizio	VZIO	VZIO US	Wamsi Mohan

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Important Disclosures

NetApp (NTAP) 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: Technology Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	204	51.52%	Buy	104	50.98%
Hold	95	23.99%	Hold	45	47.37%
Sell	97	24.49%	Sell	27	27.84%

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.

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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%

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