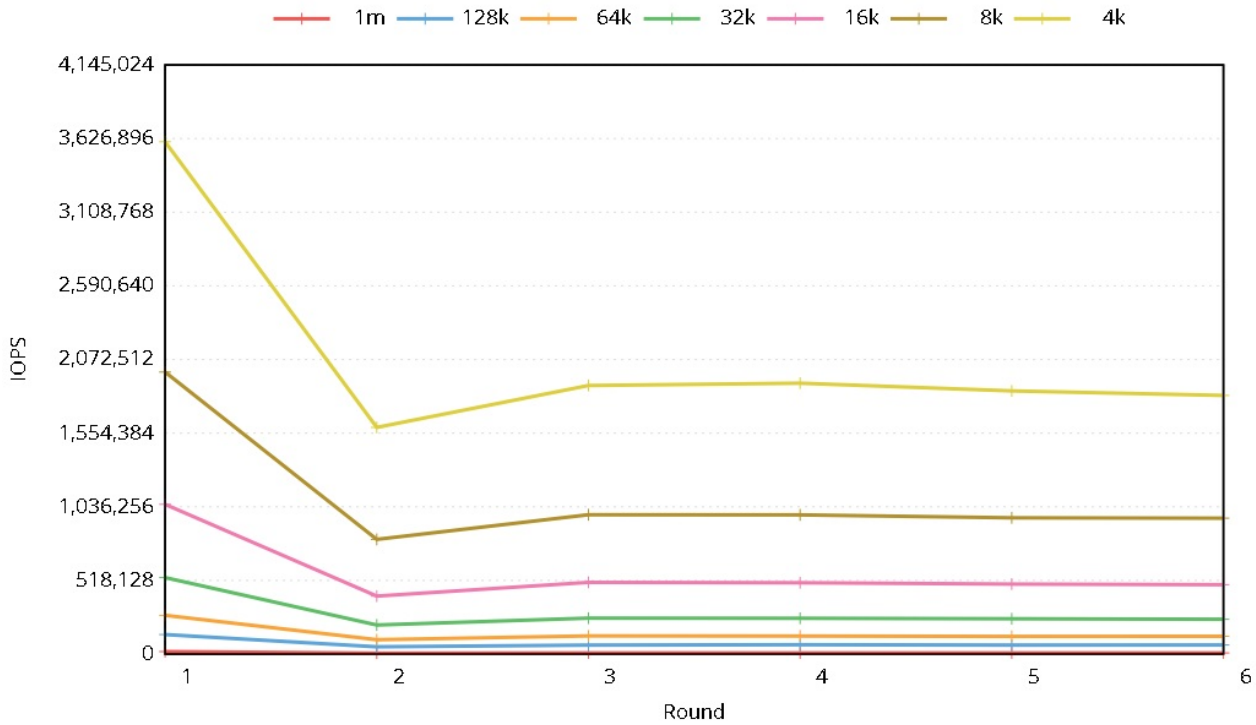


IOPS Test - Report Page

SNIA SSS TWG	Solid State Storage Performance Test Spec		IOPS - Block Size x RW Mix Matrix			Rev.	PTSE 1.1
Service:	Not Specified	Instance Type:	Not Specified		Tested By:	CloudHarmony	
Page.	1 of 6						
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	VS	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

IOPS Steady State Convergence Plot - All Block Sizes

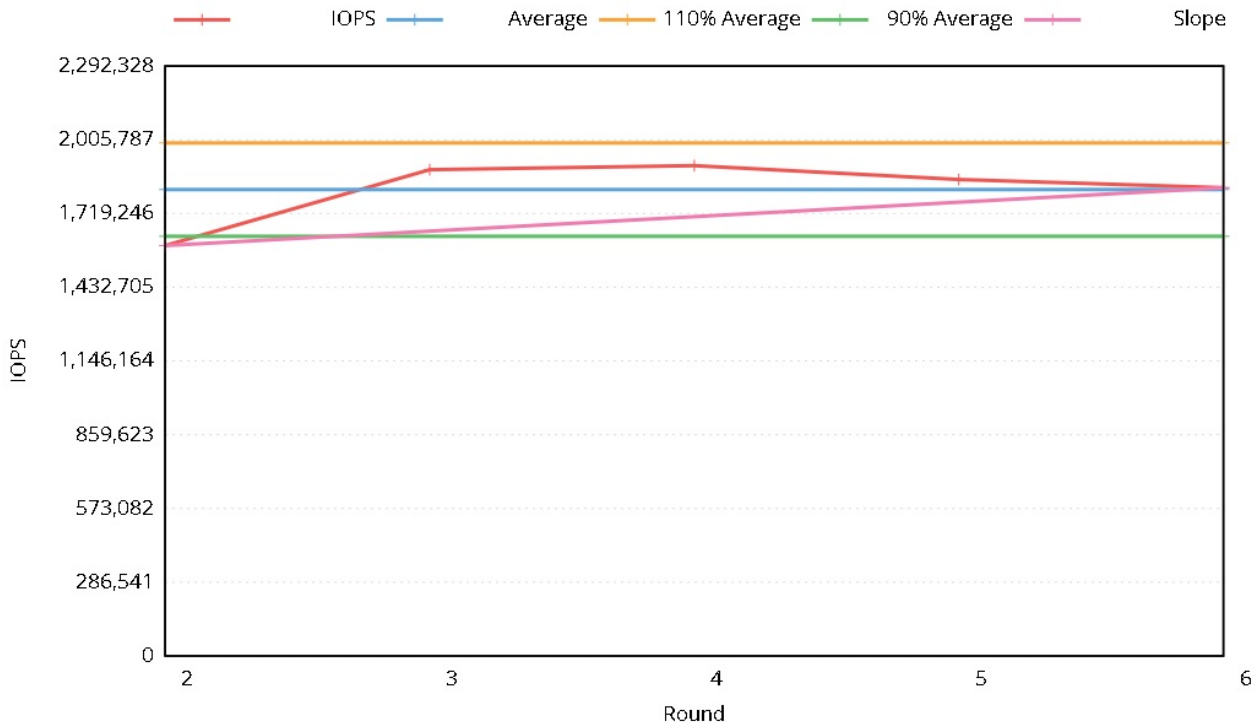


Plot A.1 - IOPS Steady State Convergence Plot - All Block Sizes

### IOPS Test - Report Page

SNIA SSS TWG		Solid State Storage Performance Test Spec		IOPS - Block Size x RW Mix Matrix		Rev.	PTSE 1.1
Service:		Not Specified	Instance Type:	Not Specified		Page.	2 of 6
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	VS	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

### IOPS Steady State Measurement Window

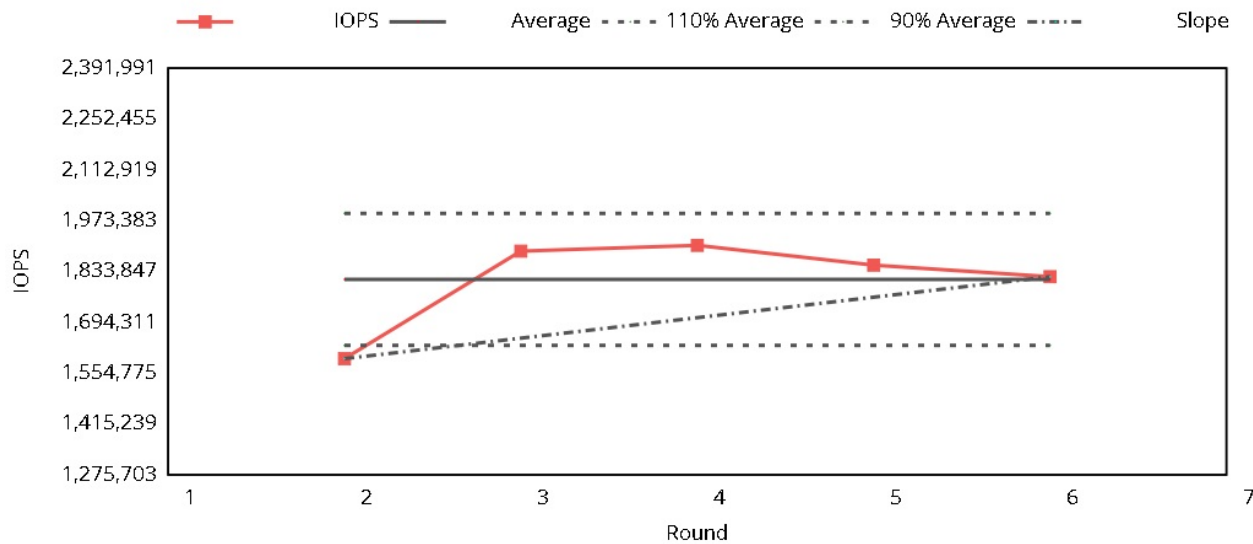


Plot A.2 - IOPS Steady State Measurement Window

## IOPS Test - Report Page

SNIA SSS TWG	Solid State Storage Performance Test Spec		IOPS - Block Size x RW Mix Matrix			Rev.	PTSE 1.1
Service:	Not Specified	Instance Type:	Not Specified		Tested By:	CloudHarmony	
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	\S	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

## IOPS Steady State Measurement Window - RND/4KiB



## Steady State Determination Data

Average IOPS:		1812116
Allowed Maximum Data Excursion:	362423.2548	Measured Maximum Data Excursion: 310765.5
Allowed Maximum Slope Excursion:	181211.6274	Measured Maximum Slope Excursion: 164672.3
Least Squares Linear Fit Formula:		41168.077 * R + 1647443.966

Plot A.3 - IOPS Steady State Measurement Window - RND/4KiB

## IOPS Test - Report Page

SNIA SSS TWG	Solid State Storage Performance Test Spec		IOPS - Block Size x RW Mix Matrix			Rev.	PTSE 1.1
						Page.	4 of 6
Service:	Not Specified	Instance Type:	Not Specified		Tested By:	CloudHarmony	
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	\S	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

## IOPS - All RW Mix &amp; BS - Tabular Data

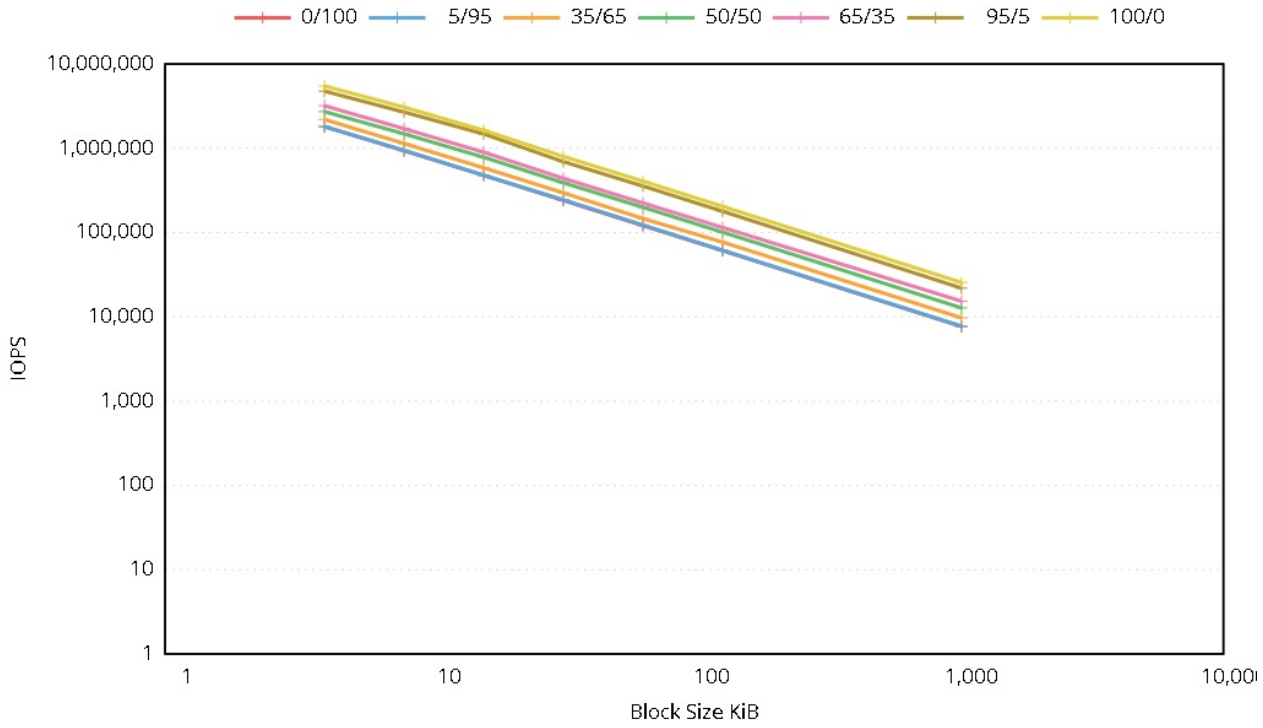
Block Size (KiB)	Read / Write Mix %						
	0/100	5/95	35/65	50/50	65/35	95/5	100/0
4k	1812116.3	1809277.2	2198163	2727792.5	3200406.5	4764291.1	5495514
8k	935962.9	944296.1	1138526.8	1484159.4	1711232.8	2687779.8	3077155.3
16k	478549.1	479073.6	587694.5	784049.7	899273.7	1480302.7	1638193.7
32k	240434.2	244709.5	295948	390307.5	440088.9	694702.2	799313.7
64k	120961.8	122876.1	146761.7	199599.1	224498	355700.3	407471.5
128k	61171.4	61443.8	76957.4	101065.2	114665.6	178373.8	204437
1m	7676.2	7755.9	9720.3	12774.2	15338.5	21883.9	25587.7

Plot A.4 - IOPS - All RW Mix &amp; BS - Tabular Data

### IOPS Test - Report Page

SNIA SSS TWG	Solid State Storage Performance Test Spec	IOPS - Block Size x RW Mix Matrix				Rev. Page.	PTSE 1.1 5 of 6
Service:	Not Specified	Instance Type:	Not Specified		Tested By:		
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	VS	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

#### IOPS - All RW Mix & BS - 2D Plot

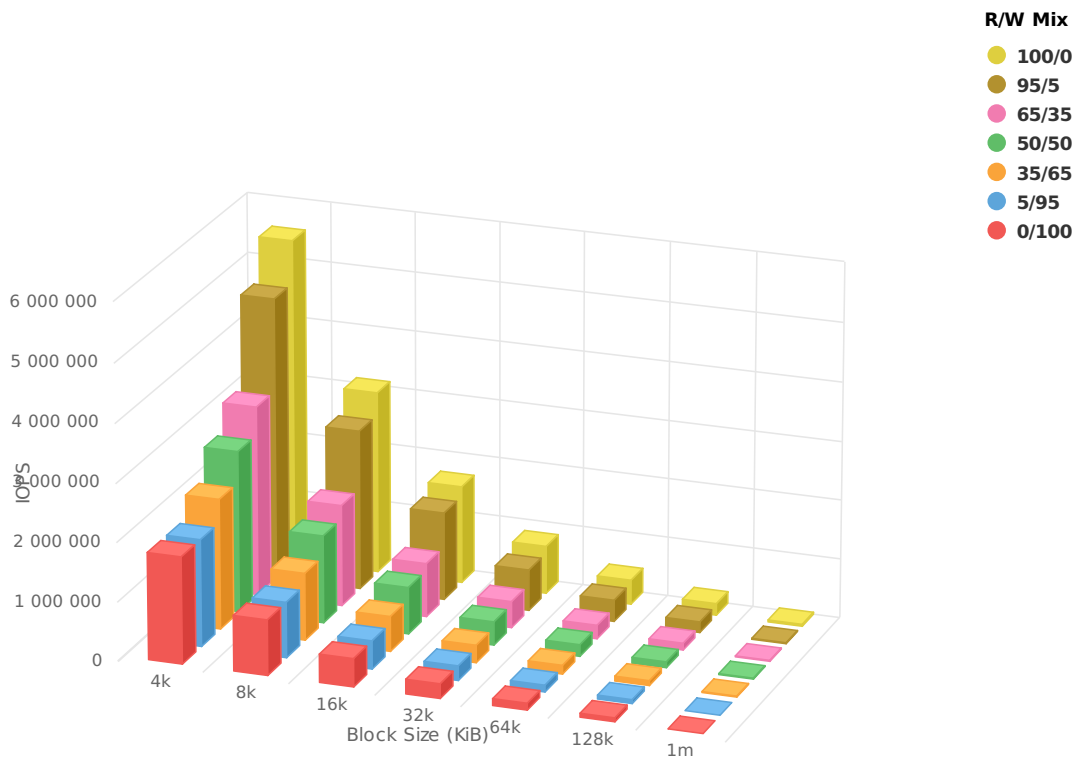


Plot A.5 - IOPS - All RW Mix & BS - 2D Plot

## IOPS Test - Report Page

SNIA SSS TWG	Solid State Storage Performance Test Spec		IOPS - Block Size x RW Mix Matrix			Rev.	PTSE 1.1
						Page.	6 of 6
Service:	Not Specified	Instance Type:	Not Specified		Tested By:	CloudHarmony	
Test Platform		Storage Platform		Setup Parameters		Test Parameters	
Provider	Not Specified	Storage Config	Not Specified	Data Pattern	RND	Data Pattern	RND
Service	Not Specified	# Devices	8	AR	100%	AR & Amount	100%
Region		Devices	/dev/nvme0n1, /dev/nvme1n1, /dev/nvme2n1, /dev/nvme3n1, /dev/nvme4n1, /dev/nvme5n1, /dev/nvme6n1, /dev/nvme7n1	AR Segments	N/A	Test Stimulus 1	IOPS Loop
Instance ID	Not Specified	Device Capacities	5961.63 GiB	Pre Condition 1	SEQ 128K W	RW Mix	Outer Loop
CPU	Intel Xeon Platinum 8167M 2.00GHz	Purge Methods	Zero	TOIO - TC/QD	TC 8/QD 64	Block Sizes	Inner Loop
Memory	754 GB	Drive Model		Duration	2X Device Capacity	TOIO - TC/QD	TC 64/QD 64
Operating System	\S	Drive Type		Pre Condition 2	IOPS Loop	Steady State	2 - 6
Test SW	ch-block-storage 1.0	Drive Interface		TOIO - TC/QD	TC 64/QD 64	Test Stimulus 2	N/A
Test ID	us-ashburn-1-2 BM.DenseIO2.52 nvme	Notes		SS Rouds	2 - 6	TOIO - TC/QD	N/A
Notes				Notes		Steady State	N/A

## IOPS -All RW Mix &amp; BS - 3D Columns



Plot A.6 - IOPS -All RW Mix &amp; BS - 3D Columns