SPC BENCHMARK 2™

FULL DISCLOSURE REPORT

IBM CORPORATION

IBM SYSTEM STORAGE® DS8800

SPC-2™ V1.3

Submitted for Review: December 1, 2010

Submission Identifier: B00051

First Edition – December 2010

Trademarks

Table of Contents

AUDIT CERTIFICATION

Bruce McNutt
IBM Corporation
650 Harry Road
San Jose, CA 95120

November 24, 2010

The SPC Benchmark 2™ results listed below for the IBM System Storage® DS8800 produced in compliance with the SPC Benchmark 2™ V1.3 Remote Audit requirements.

SPC Benchmark 2™ V1.3 Results	
Tested Storage Product (TSP) Name: IBM System Storage® DS8800	
Metric	**Reported Result**
SPC-2 MBPS™	9,705.74
SPC-2 Price-Performance	$270.38/SPC-2 MBPS™
ASU Capacity	71,536.975 GB
Data Protection Level	Protected *(RAID-5)*
Total Price (including three-year maintenance)	$2,624,257.00

The following SPC Benchmark 2™ Remote Audit requirements were reviewed and found compliant with V1.3 of the SPC Benchmark 2™ specification:

- A Letter of Good Faith, signed by a senior executive.
- The following Data Repository storage items were verified by documentation supplied by IBM Corporation:
  - ✓ Physical Storage Capacity and related requirements.
  - ✓ Configured Storage Capacity and related requirements.
  - ✓ Addressable Storage Capacity and related requirements.
  - ✓ Capacity of each Logical Volume and related requirements.
  - ✓ Capacity of the Application Storage Unit (ASU) and related requirements.
- An appropriate diagram of the Benchmark Configuration (BC)/Tested Storage Configuration (TSC).
- Listings and commands used to create and configure the Benchmark Configuration/Tested Storage Configuration.
- Documentation of each customer tunable parameter or option that was changed from its default value.

Storage Performance Council
643 Bair Island Road, Suite 103
Redwood City, CA 94062
AuditService@StoragePerformance.org
650.556.9384

AUDIT CERTIFICATION *(CONT.)*

- The following Host System items were verified by documentation supplied by IBM Corporation:
  - ✓ Required Host System configuration information.
  - ✓ The TSC boundary within each Host System.
- The following SPC-2 Workload Generator information was verified by documentation supplied by IBM Corporation:
  - ✓ The presence and version number of the Workload Generator on each Host System.
  - ✓ Commands and parameters used to configure the SPC-2 Workload Generator.
- The Test Results Files and resultant Summary Results Files received for each of the following were authentic, accurate, and compliant with all of the requirements and constraints of Clauses 5 and 6 of the SPC-2 Benchmark Specification:
  - ✓ Data Persistence Test
  - ✓ Large File Processing Test
  - ✓ Large Database Query Test
  - ✓ Video on Demand Delivery Test
- There were no differences between the Tested Storage Configuration (TSC) used for the benchmark and Priced Storage Configuration.
- The submitted pricing information met all of the requirements and constraints of Clause 9 of the SPC-2 Benchmark Specification.
- The Full Disclosure Report (FDR) met all of the requirements in Clause 10 of the SPC-2 Benchmark Specification.
- This successfully audited SPC measurement is not subject to an SPC Confidential Review.

Audit Notes:

There were no audit notes or exceptions.

Respectfully,

Walter E. Baker

Walter E. Baker
SPC Auditor

Storage Performance Council
643 Bair Island Road, Suite 103
Redwood City, CA 94062
AuditService@StoragePerformance.org
650.556.9384

LETTER OF GOOD FAITH

IBM

Vice President and Disk Storage Business Line Executive

IBM Technology & Systems Group
3039 Cornwallis Road,
Research Triangle Park, NC 27709

Phone: 1-919-543-6345
Fax: 1-919-543-2856

November 22, 2010

Mr. Walter E. Baker, SPC Auditor
Gradient Systems, Inc.
643 Bair Island Road, Suite 103
Redwood City, CA 94063

Subject: SPC-2 Letter of Good Faith for the IBM System Storage DS8800.

IBM Corporation is the SPC-2 Test Sponsor for the above listed product. To the best of our knowledge and belief, the required SPC-2 benchmark results and materials we have submitted for that product are complete, accurate, and in full compliance with Version 1.2.1 of the SPC-2 benchmark specification.

Our disclosure of the Benchmark configuration and execution of the benchmark includes all items that, to the best of our knowledge and belief, materially affect the reported results, regardless of whether such items are explicitly required to be disclosed by the SPC-2 benchmark specification.

Sincerely,

Doug Balog

EXECUTIVE SUMMARY

Test Sponsor and Contact Information

Test Sponsor and Contact Information	
Test Sponsor Primary Contact	IBM Corporation – http://www.ibm.com Bruce McNutt – bmcnutt@us.ibm.com 650 Harry Road San Jose, CA 95120 Phone: (408) 927-2717 FAX: (408) 927-2050
Test Sponsor Alternate Contact	IBM Corporation – http://www.ibm.com David Whitworth – davidbw@us.ibm.com 11501 Burnet Road Austin, TX 78758 Phone: (512) 286-9218 FAX: (512) 973-4763
Auditor	Storage Performance Council – http://www.storageperformance.org Walter E. Baker – AuditService@StoragePerformance.org 643 Bair Island Road, Suite 103 Redwood City, CA 94063 Phone: (650) 556-9384 FAX: (650) 556-9385

Revision Information and Key Dates

Revision Information and Key Dates	
SPC-2 Specification revision number	V1.3
SPC-2 Workload Generator revision number	V1.0
Date Results were first used publicly	December 1, 2010
Date FDR was submitted to the SPC	December 1, 2010
Date the TSC will be available for shipment to customers	November 19, 2010
Date the TSC completed audit certification	November 24, 2010

Tested Storage Product (TSP) Description

The IBM System Storage DS8000® series encompasses the flagship disk enterprise storage products in the IBM System Storage portfolio. The DS8800 represents the latest in this series of enterprise disk storage systems designed for high-performance, high-capacity and resiliency. Major new capabilities include higher density packaging through deployment of 2.5 inch disk drives, faster disk attachment bandwidth and support for 8 Gbps fibre channel infrastructure for host attachment.

SPC-2 Reported Data

SPC-2 Reported Data consists of three groups of information:

- The following SPC-2 Primary Metrics, which characterize the overall benchmark result:
  - SPC-2 MBPS™
  - SPC-2 Price Performance
  - Application Storage Unit (ASU) Capacity
- Supplemental data to the SPC-2 Primary Metrics.
  - Total Price
  - Data Protection Level
- Reported Data for each SPC Test: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand Delivery (VOD) Test.

SPC-2 Reported Data				
IBM System Storage DS8800				
SPC-2 MBPS™	**SPC-2 Price-Performance**	**ASU Capacity (GB)**	**Total Price**	**Data Protection Level**
9,705.74	$270.38	71,536.975	$2,624,257.00	RAID-5
The above SPC-2 MBPS™ value represents the aggregate data rate of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video On Demand (VOD)				
SPC-2 Large File Processing (LFP) Reported Data				
	Data Rate *(MB/second)*	**Number of Streams**	**Data Rate per Stream**	**Price-Performance**
LFP Composite	8,985.67			$292.05
Write Only:				
1024 KiB Transfer	6,779.74	192	35.31	
256 KiB Transfer	6,725.53	192	35.03	
Read-Write:				
1024 KiB Transfer	8,536.08	192	44.46	
256 KiB Transfer	8,529.39	192	44.42	
Read Only:				
1024 KiB Transfer	11,690.25	192	60.89	
256 KiB Transfer	11,653.04	192	60.69	
The above SPC-2 Data Rate value for LFP Composite represents the aggregate performance of all three LFP Test Phases: (Write Only, Read-Write, and Read Only).				
SPC-2 Large Database Query (LDQ) Reported Data				
	Data Rate *(MB/second)*	**Number of Streams**	**Data Rate per Stream**	**Price-Performance**
LDQ Composite	11,480.61			$228.58
1024 KiB Transfer Size				
4 I/Os Outstanding	11,614.03	192	60.49	
1 I/O Outstanding	11,589.55	192	60.36	
64 KiB Transfer Size				
4 I/Os Outstanding	11,254.13	192	58.62	
1 I/O Outstanding	11,464.73	192	59.71	
The above SPC-2 Data Rate value for LDQ Composite represents the aggregate performance of the two LDQ Test Phases: (1024 KiB and 64 KiB Transfer Sizes).				
SPC-2 Video On Demand (VOD) Reported Data				
	Data Rate *(MB/second)*	**Number of Streams**	**Data Rate per Stream**	**Price-Performance**
	8,650.92	11,000	0.79	$303.35

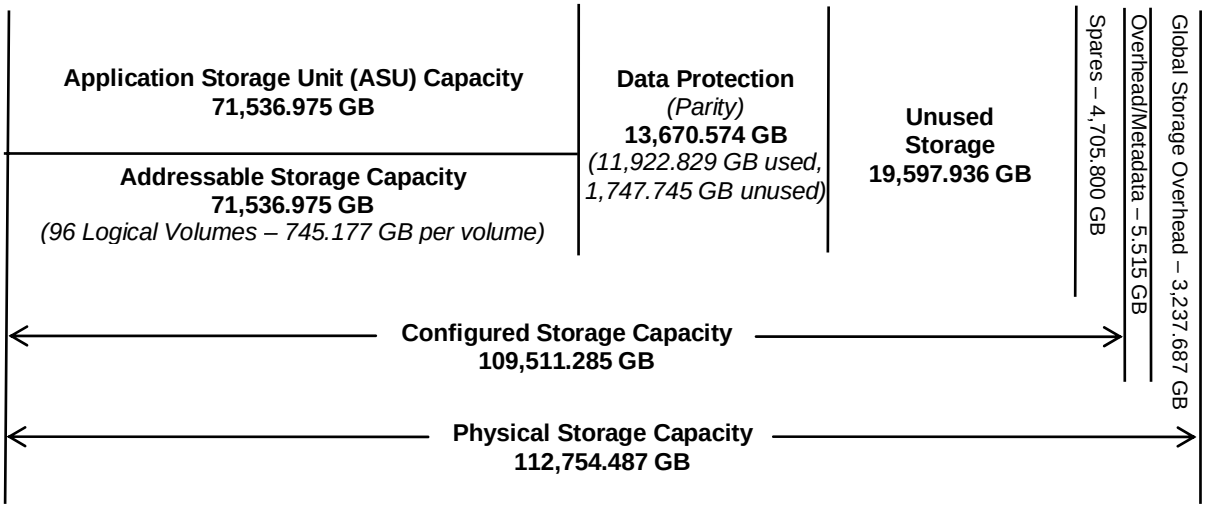
SPC-2 MBPS™ represents the aggregate data rate, in megabytes per second, of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand (VOD).

ASU (Application Storage Unit) **Capacity** represents the total storage capacity read and written in the course of executing the SPC-2 benchmark.

A **Data Protection Level** of **Protected** using ***RAID-5*** provides data protection by distributing check data corresponding to user data across multiple disks in the form of bit-by-bit parity.

Storage Capacities and Relationships

The following diagram *(not to scale)* and table document the various storage capacities, used in this benchmark, and their relationships, as well as the storage utilization values required to be reported.



SPC-1 Storage Capacity Utilization	
Application Utilization	63.44%
Protected Application Utilization	74.02%
Unused Storage Ratio	18.93%

Application Utilization: Total ASU Capacity *(71,536.975 GB)* divided by Physical Storage Capacity *(112,754.487 GB)*

Protected Application Utilization: (Total ASU Capacity *(71,536.975 GB)* plus total Data Protection Capacity *(13,670.574 GB)* minus unused Data Protection Capacity *(1,747.745 GB)*) divided by Physical Storage Capacity *(112,754.487 GB)*.

Unused Storage Ratio: Total Unused Capacity *(21,345.681 GB)* divided by Physical Storage Capacity *(112,754.487 GB)* and may not exceed 45%.

Detailed information for the various storage capacities and utilizations is available on pages 21-22 in the Full Disclosure Report.

Differences between the Tested Storage Configuration (TSC) and Priced Storage Configuration

There were no differences between the TSC and Priced Storage Configuration.

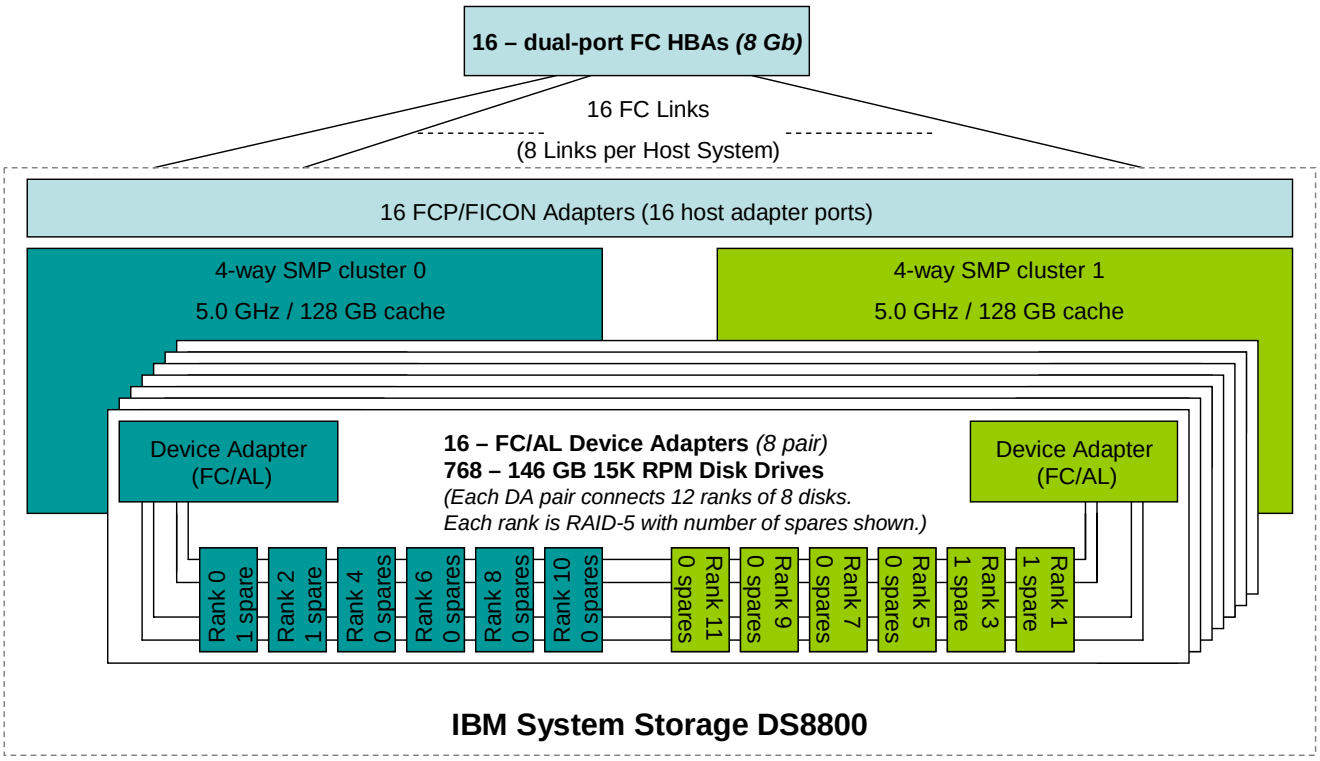
Priced Storage Configuration Pricing

The following pricing includes the following:

- Acknowledgement of new and existing hardware and/or software problems within four hours.
- Onsite presence of a qualified maintenance engineer or provision of a customer replaceable part within four hours of the above acknowledgement for any hardware failure that results in an inoperative Priced Storage Configuration component.
- Standard IBM field delegation discounts.

Product	Description	Qty	List Price	Extended Price	Discount (%)	Disc. Price
2423-951	IBM System Storage DS8800	1	$ 72,419.00	$ 72,419.00	50.00%	$ 36,209.50
1	9xE factory merge	2	N/C			
100	Eligible for EU Shipment	1	N/C			
351	951 - 95E Position 1	1	N/C			
352	951 - 95E Position 2	1	N/C			
700	OEL Indicator	1	N/C			
830	100.1 to 150.0 TB capacity	1	N/C			
900	Non-Standby CoD	1	N/C			
1050	Battery Assembly	3	$ 1,700.00	$ 5,100.00	50.00%	$ 2,550.00
1090	Line Cord (US/LA/AP/Canada)	1	$ 1,900.00	$ 1,900.00	50.00%	$ 950.00
1120	Management Console - English Laptop Internal	1	$ 9,160.00	$ 9,160.00	50.00%	$ 4,580.00
1241	HD Disk Enclosure Pair	5	$ 20,000.00	$ 100,000.00	50.00%	$ 50,000.00
1246	HD Disk Drive Cable Group 1	1	$ 7,000.00	$ 7,000.00	50.00%	$ 3,500.00
1301	I/O Enclosure Pair PCIE	2	$ 11,780.00	$ 23,560.00	50.00%	$ 11,780.00
1321	PCI-E Cable Group 2	1	$ 4,100.00	$ 4,100.00	50.00%	$ 2,050.00
1410	50 um Fibre Cable (LC)	32	$ 100.00	$ 3,200.00	50.00%	$ 1,600.00
1721	DS8000 Licensed Machine Code R6.0	1	$ 40,000.00	$ 40,000.00	50.00%	$ 20,000.00
2208	146 GB 15K Drive Set, 16 disk drives per set	15	$ 46,076.00	$ 691,140.00	50.00%	$ 345,570.00
3053	Device Adapter Pair I	4	$ 15,000.00	$ 60,000.00	50.00%	$ 30,000.00
3153	8 Gb 4 port SW FCP/FICON Adapter PCIE	8	$ 37,312.00	$ 298,496.00	50.00%	$ 149,248.00
4225	256 GB Processor Memory (4-Way)	1	$ 784,640.00	$ 784,640.00	50.00%	$ 392,320.00
4302	4 Way Processor Card	1	$ 80,893.00	$ 80,893.00	50.00%	$ 40,446.50
2398-LFA	DS8000 Function Authorization	1	N/C			
7031	OEL - 1 TB	3	N/C			
7033	OEL - 10 TB	1	N/C			
7040	OEL - 100 TB	1	N/C			
7051	OEL - 1 Value Unit	1	$ 6,666.00	$ 6,666.00	40.00%	$ 3,999.60
7052	OEL - 5 Value Unit	1	$ 26,829.00	$ 26,829.00	40.00%	$ 16,097.40
7054	OEL - 25 Value Unit	1	$ 85,397.00	$ 85,397.00	40.00%	$ 51,238.20
7065	OEL - 200 Value Unit	1	$ 429,677.00	$ 429,677.00	40.00%	$ 257,806.20
2423-95E	IBM System Storage DS8800 Expansion Unit	1	$ 73,500.00	$ 73,500.00	50.00%	$ 36,750.00
1	9xE factory merge	1	N/C			
100	Eligible for EU Shipment	1	N/C			
351	951 - 95E Position 1	1	N/C			
830	100.1 to 150.0 TB capacity	1	N/C			
1050	Battery Assembly	2	$ 1,700.00	$ 3,400.00	50.00%	$ 1,700.00
1090	Line Cord (US/LA/AP/Canada)	1	$ 1,900.00	$ 1,900.00	50.00%	$ 950.00
1241	HD Disk Enclosure Pair	7	$ 20,000.00	$ 140,000.00	50.00%	$ 70,000.00
1247	HD Disk Drive Cable Group 2	1	$ 9,000.00	$ 9,000.00	50.00%	$ 4,500.00
1301	I/O Enclosure Pair PCIE	2	$ 11,780.00	$ 23,560.00	50.00%	$ 11,780.00
1322	PCIE Cable Group 3	1	$ 5,000.00	$ 5,000.00	50.00%	$ 2,500.00
1410	50 um Fibre Cable (LC)	32	$ 100.00	$ 3,200.00	50.00%	$ 1,600.00
2208	146 GB 15K Drive Set, 16 disk drives per set	21	$ 46,076.00	$ 967,596.00	50.00%	$ 483,798.00
3053	Device Adapter Pair I	4	$ 15,000.00	$ 60,000.00	50.00%	$ 30,000.00
3153	8 Gb 4 port SW FCP/FICON Adapter PCIE	8	$ 37,312.00	$ 298,496.00	50.00%	$ 149,248.00
2423-95E	IBM System Storage DS8800 Expansion Unit	1	$ 73,500.00	$ 73,500.00	50.00%	$ 36,750.00
1	9xE factory merge	1	N/C			
100	Eligible for EU Shipment	1	N/C			
352	951 - 95E Position 2	1	N/C			
830	100.1 to 150.0 TB capacity	1	N/C			
1090	Line Cord (US/LA/AP/Canada)	1	$ 1,900.00	$ 1,900.00	50.00%	$ 950.00
1241	HD Disk Enclosure Pair	4	$ 20,000.00	$ 80,000.00	50.00%	$ 40,000.00
1248	HD Disk Drive Cable Group 4	1	$ 12,000.00	$ 12,000.00	50.00%	$ 6,000.00
2208	146 GB 15K Drive Set, 16 disk drives per set	12	$ 46,076.00	$ 552,912.00	50.00%	$ 276,456.00
9117-577D	8 Gb PCI-e dual port FC	16	$ 4,583.00	$ 73,328.00	30.00%	$ 51,329.60
	Total discounted price……					**$ 2,624,257.00**

Priced Storage Configuration Diagram



Priced Storage Configuration Components

Priced Storage Configuration:
16 – 8 Gb dual port FC PCIe HBAs
IBM System Storage DS8800: 2 – 4-way SMP processing clusters 128 GB memory/cache per cluster *(256 GB total)* 16 – 8 Gb FCP/FICON Adapters 64 – 8 Gbps FC host connections, 4 per FCP/FICON Adapter, *(16 connections used, 1 per adapter)* 16 – FC/AL Device Adapters *(8 pairs)* 64 – 8 Gbps FC backend connections, 4 per FC/AL Device Adapter *(64 connections used)*
1 – Management Console *(English laptop internal)*
2 – IBM System Storage DS8800 Expansion Units
768 – 146 GB 15K RPM FC disk drives

CONFIGURATION INFORMATION

This portion of the Full Disclosure Report documents and illustrates the detailed information necessary to recreate the Benchmark Configuration (BC), including the Tested Storage Configuration (TSC), so that the SPC-2 benchmark result produced by the BC may be independently reproduced.

In each of the following sections of this document, the appropriate Full Disclosure Report requirement, from the SPC-2 benchmark specification, is stated in italics followed by the information to fulfill the stated requirement.

Benchmark Configuration (BC)/Tested Storage Configuration (TSC) Diagram

Clause 10.6.6

The FDR will contain a one page BC/TSC diagram that illustrates all major components of the BC/TSC.

The Benchmark Configuration (BC)/Tested Storage Configuration (TSC) is illustrated on page 17.

Storage Network Configuration

Clause 10.6.6.1

If a storage network was configured as a part of the Tested Storage Configuration and the Benchmark Configuration described in Clause 10.6.6 contains a high-level illustration of the network configuration, the Executive Summary will contain a one page topology diagram of the storage network as illustrated in Figure 10.11.

The Benchmark Configuration (BC)/Tested Storage Configuration (TSC) was configured with local storage and, as such, did not employ a storage network.

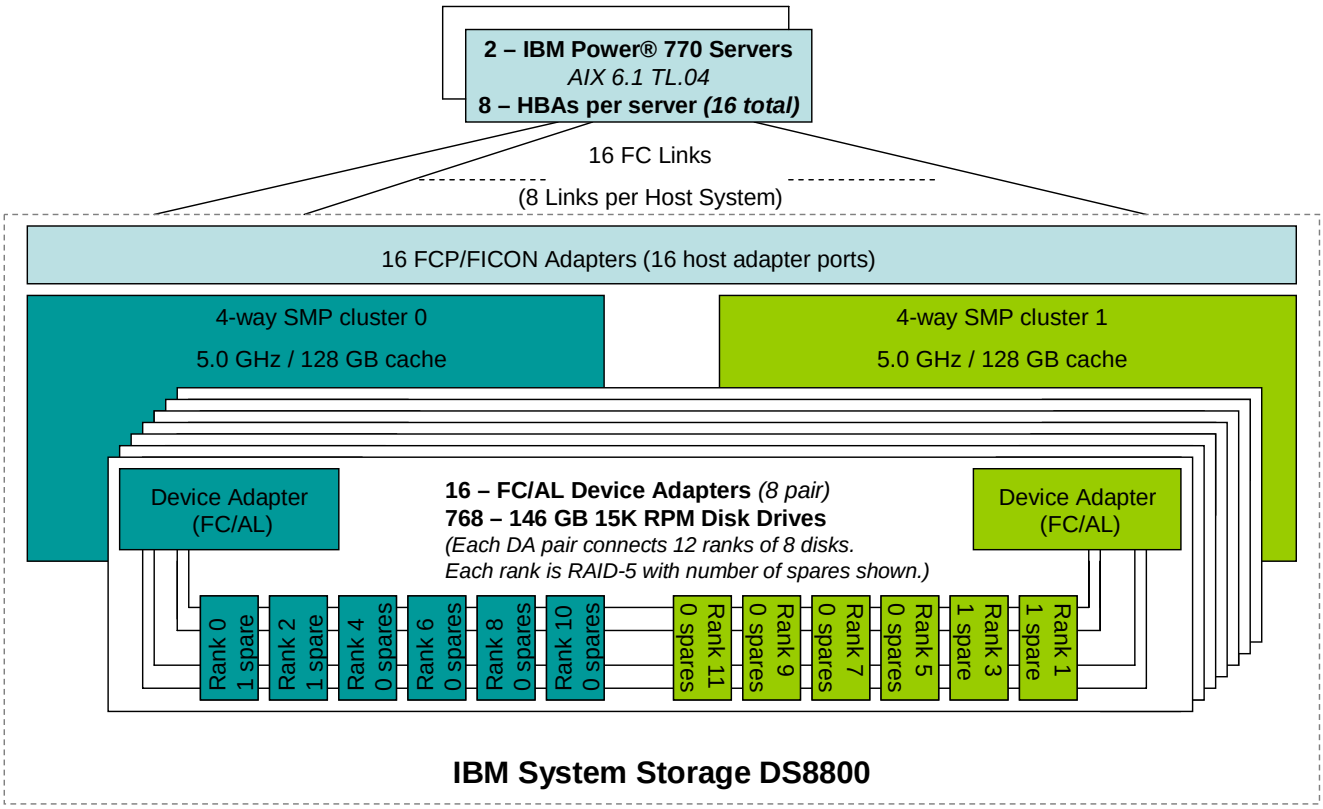
Host System and Tested Storage Configuration Table

Clause 10.6.6.2

The FDR will contain a table that lists the major components of each Host System and the Tested Storage Configuration.

The components that comprise each Host System and the Tested Storage Configuration are listed in the table that appears on page 17.

Benchmark Configuration/Tested Storage Configuration Diagram



Host Systems and Tested Storage Configuration Components

Host Systems:	Tested Storage Configuration (TSC):
2 – IBM Power® 770 Servers *(9117 MMB)* each with: 64 – 3.1 GHz POWER7 processor cores 8 cores/module, 256 KB L2 cache per core, 4 MB L3 cache per core 512 GB main memory AIX 6.1 TL.04 DSCLI PCIe	16 – 8 Gb dual port FC PCIe HBAs
	IBM System Storage DS8800: 2 – 4-way SMP processing clusters 128 GB memory/cache per cluster *(256 GB total)* 16 – 8 Gb FCP/FICON Adapters 64 – 8 Gbps FC host connections, 4 per FCP/FICON Adapter, *(16 connections used, 1 per adapter)* 16 – FC/AL Device Adapters *(8 pairs)* 64 – 8 Gbps FC backend connections, 4 per FC/AL Device Adapter *(64 connections used)*
	1 – Management Console *(English laptop internal)*
	2 – IBM System Storage DS8800 Expansion Units
	768 – 146 GB 15K RPM FC disk drives

Customer Tunable Parameters and Options

Clause 10.6.6.1

All Benchmark Configuration (BC) components with customer tunable parameter and options that have been altered from their default values must be listed in the FDR. The FDR entry for each of those components must include both the name of the component and the altered value of the parameter or option. If the parameter name is not self-explanatory to a knowledgeable practitioner, a brief description of the parameter's use must also be included in the FDR entry.

"Appendix B: Customer Tunable Parameters and Options" on page 96 contains the customer tunable parameters and options that have been altered from their default values for this benchmark.

Tested Storage Configuration (TSC) Description

Clause 10.6.6.2

The Full Disclosure Report must include sufficient information to recreate the logical representation of the Tested Storage Configuration (TSC). In addition to customer tunable parameters and options (Clause10.6.6.1), that information must include, at a minimum:

- *A diagram and/or description of the following:*
  - *All physical components that comprise the TSC. Those components are also illustrated in the BC Configuration Diagram in Clause 10.6.5.7 and the Storage Network Configuration Diagram in Clause 10.6.5.8.*
  - *The logical representation of the TSC, configured from the above components that will be presented to the SPC-2 Workload Generator.*
- *Listings of scripts used to create the logical representation of the TSC.*
- *If scripts were not used, a description of the process used with sufficient detail to recreate the logical representation of the TSC.*

"Appendix C: Tested Storage Configuration (TSC) Creation" on page 97 contains the detailed information that describes how to create and configure the logical TSC.

SPC-2 Workload Generator Storage Configuration

Clause 10.6.6.3

The Full Disclosure Report will include all SPC-2 Workload Generator storage configuration commands and parameters used in the SPC-2 benchmark measurement.

The SPC-2 Workload Generator storage configuration commands and parameters for this measurement appear in "Appendix D: SPC-2 Workload Generator Storage Commands and Parameters" on page 97.

SPC-2 DATA REPOSITORY

This portion of the Full Disclosure Report presents the detailed information that fully documents the various SPC-2 storage capacities and mappings used in the Tested Storage Configuration. "SPC-2 Data Repository Definitions" on page 91 contains definitions of terms specific to the SPC-2 Data Repository.

In each of the following sections of this document, the appropriate Full Disclosure Report requirement, from the SPC-2 benchmark specification, is stated in italics followed by the information to fulfill the stated requirement.

SPC-2 Storage Capacities and Relationships

Two tables and an illustration documenting the storage capacities and relationships of the SPC-2 Storage Hierarchy (Clause 2.1) shall be included in the FDR.

SPC-2 Storage Capacities

SPC-2 Storage Capacities		
Storage Hierarchy Component	**Units**	**Capacity**
Total ASU Capacity	Gigabytes (GB)	71,536.975
Addressable Storage Capacity	Gigabytes (GB)	71,536.975
Configured Storage Capacity	Gigabytes (GB)	109,511.285
Physical Storage Capacity	Gigabytes (GB)	112,754.487
Data Protection *(RAID-5 parity)*	Gigabytes (GB)	13,670.574
Required Storage *(spares/overhead/metadata)*	Gigabytes (GB)	4,711.315
Global Storage Overhead	Gigabytes (GB)	3,237.687
Total Unused Storage	Gigabytes (GB)	21,345.681

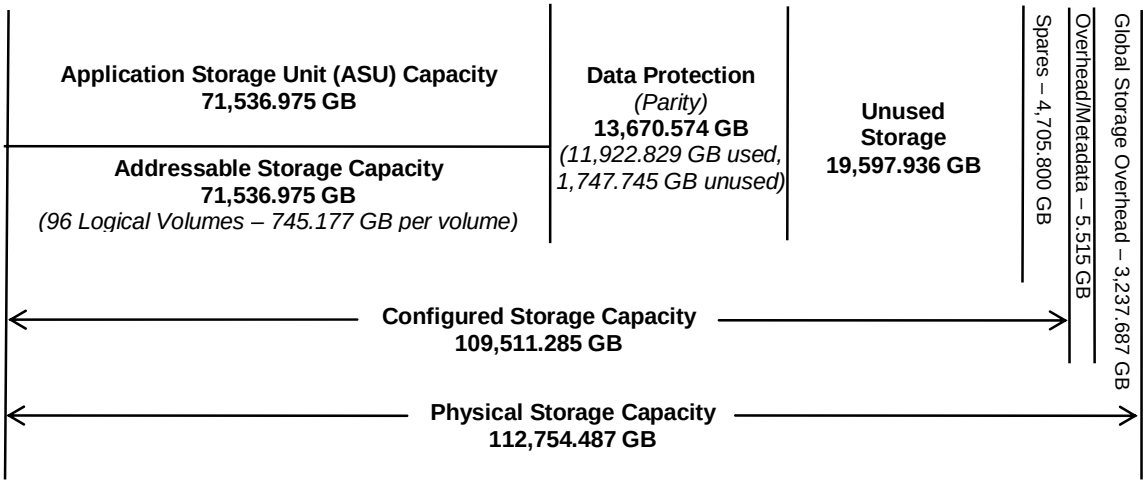
SPC-2 Storage Hierarchy Ratios

	Addressable Storage Capacity	Configured Storage Capacity	Physical Storage Capacity
Total ASU Capacity	100.00%	65.32%	63.44%
Data Protection *(RAID-5 parity)*		12.48%	12.12%
Addressable Storage Capacity		65.32%	63.44
Required Storage		4.30%	4.18%
Configured Storage Capacity			97.12%
Global Storage Overhead			2.87%
Unused Storage:			
Addressable	0.00%		
Configured		17.90%	
Physical			0.00%

The Physical Storage Capacity consisted of 112,754.487 GB distributed over 768 disk drives each with a formatted capacity of 146.816 GB. There was 0.000 GB (0.00%) of Unused Storage within the Physical Storage Capacity. Global Storage Overhead consisted of 3,237.687 GB (2.87%) of Physical Storage Capacity. There was 19,597.936 GB (17.90%) of Unused Storage within the Configured Storage Capacity. The Total ASU Capacity utilized 100% of the Addressable Storage Capacity resulting in 0.000 GB (0.00%) of Unused Storage within the Addressable Storage Capacity. The Data Protection *(RAID-5 parity)* capacity was 13,670.547 GB of which 11,922.829 GB was utilized. The total Unused Storage was 21,345.681 GB.

SPC-2 Storage Capacities and Relationships Illustration

The various storage capacities configured in the benchmark result are illustrated below (not to scale).



Storage Capacity Utilization

Clause 10.6.8.2

The FDR will include a table illustrating the storage capacity utilization values defined for Application Utilization (Clause 2.8.1), Protected Application Utilization (Clause 2.8.2), and Unused Storage Ratio (Clause 2.8.3).

Clause 2,8.1

***Application Utilization** is defined as Total ASU Capacity divided by Physical Storage Capacity.*

Clause 2,8.2

***Protected Application Utilization** is defined as (Total ASU Capacity plus total Data Protection Capacity minus unused Data Protection Capacity) divided by Physical Storage Capacity.*

Clause 2,8.3

***Unused Storage Ratio** is defined as Total Unused Capacity divided by Physical Storage Capacity and may not exceed 45%.*

SPC-1 Storage Capacity Utilization	
Application Utilization	63.44%
Protected Application Utilization	74.02%
Unused Storage Ratio	18.93%

Logical Volume Capacity and ASU Mapping

Clause 10.6.7.2

A table illustrating the capacity of the Application Storage Unit (ASU) and the mapping of Logical Volumes to ASU will be provided in the FDR. Capacity must be stated in gigabytes (GB) as a value with a minimum of two digits to the right of the decimal point. Each Logical Volume will be sequenced in the table from top to bottom per its position in the contiguous address space of the ASU. Each Logical Volume entry will list its total capacity, the portion of that capacity used for the ASU, and any unused capacity.

Logical Volume (LV) Capacity and Mapping			
ASU (71,536.975 GB)			
	Total Capacity *(GB)*	Capacity Used *(GB)*	Capacity Unused *(GB)*
Logical Volumes 1-96	745.177 per LV	745.177 per LV	0.000 per LV

See the Storage Definition (sd) entries in "Appendix D: SPC-2 Workload Generator Storage Commands and Parameters" on page 97 for more detailed configuration information.

SPC-2 TEST EXECUTION RESULTS

This portion of the Full Disclosure Report documents the results of the various SPC-2 Test, Test Phases, Test Run Sequences, and Test Runs. "SPC-2 Test Execution Definitions" on page 92 contains definitions of terms specific to the SPC-2 Data Repository.

In each of the following sections of this document, the appropriate Full Disclosure Report requirement, from the SPC-2 benchmark specification, is stated in italics followed by the information to fulfill the stated requirement.

SPC-2 Tests, Test Phases, Test Run Sequences, and Test Runs

The SPC-2 benchmark consists of the following Tests, Test Phases, Test Run Sequences, and Test Runs:

- **Data Persistence Test**
  - Data Persistence Test Run 1
  - Data Persistence Test Run 2
- **Large File Processing Test**
  - WRITE ONLY Test Phase
    - Test Run Sequence 1
      - ✓ Test Run 1 – 1024 KiB Transfer – maximum number of Streams
      - ✓ Test Run 2 – 1024 KiB Transfer – 50% of Test Run 1's Streams value
      - ✓ Test Run 3 – 1024 KiB Transfer – 25% of Test Run 1's Streams value
      - ✓ Test Run 4 – 1024 KiB Transfer – 12.5% of Test Run 1's Streams value
      - ✓ Test Run 5 – 1024 KiB Transfer – single (1) Stream
    - Test Run Sequence 2
      - ✓ Test Run 6 – 256 KiB Transfer – maximum number of Streams
      - ✓ Test Run 7 – 256 KiB Transfer – 50% of Test Run 6's Streams value
      - ✓ Test Run 8 – 256 KiB Transfer – 25% of Test Run 6's Streams value
      - ✓ Test Run 9 – 256 KiB Transfer – 12.5% of Test Run 6's Streams value
      - ✓ Test Run 10 – 256 KiB Transfer – single (1) Stream
  - READ-WRITE Test Phase
    - Test Run Sequence 3
      - ✓ Test Run 11 – 1024 KiB Transfer – maximum number of Streams
      - ✓ Test Run 12 – 1024 KiB Transfer – 50% of Test Run 11's Streams value
      - ✓ Test Run 13 – 1024 KiB Transfer – 25% of Test Run 11's Streams value
      - ✓ Test Run 14 – 1024 KiB Transfer – 12.5% of Test Run 11's Streams value
      - ✓ Test Run 15 – 1024 KiB Transfer – single (1) Stream
    - Test Run Sequence 4
      - ✓ Test Run 16 – 256 KiB Transfer – maximum number of Streams
      - ✓ Test Run 17 – 256 KiB Transfer – 50% of Test Run 16's Streams value
      - ✓ Test Run 18 – 256 KiB Transfer – 25% of Test Run 16's Streams value
      - ✓ Test Run 19 – 256 KiB Transfer – 12.5% of Test Run 16's Streams value
      - ✓ Test Run 20 – 256 KiB Transfer – single (1) Stream

- **Large File Processing Test *(continued)***
  - READ ONLY Test Phase
    - Test Run Sequence 5
      - ✓ Test Run 21 – 1024 KiB Transfer – maximum number of Streams
      - ✓ Test Run 22 – 1024 KiB Transfer – 50% of Test Run 21's Streams value
      - ✓ Test Run 23 – 1024 KiB Transfer – 25% of Test Run 21's Streams value
      - ✓ Test Run 24 – 1024 KiB Transfer – 12.5% of Test Run 21's Streams value
      - ✓ Test Run 25 – 1024 KiB Transfer – single (1) Stream
    - Test Run Sequence 6
      - ✓ Test Run 26 – 256 KiB Transfer – maximum number of Streams
      - ✓ Test Run 27 – 256 KiB Transfer – 50% of Test Run 26's Streams value
      - ✓ Test Run 28 – 256 KiB Transfer – 25% of Test Run 26's Streams value
      - ✓ Test Run 29 – 256 KiB Transfer – 12.5% of Test Run 26's Streams value
      - ✓ Test Run 30 – 256 KiB Transfer – single (1) Stream

- **Large Database Query Test**
  - 1024 KIB TRANSFER SIZE Test Phase
    - Test Run Sequence 1
      - ✓ Test Run 1 – 4 I/O Requests Outstanding – maximum number of Streams
      - ✓ Test Run 2 – 4 I/O Requests Outstanding – 50% of Test Run 1's Streams value
      - ✓ Test Run 3 – 4 I/O Requests Outstanding – 25% of Test Run 1's Streams value
      - ✓ Test Run 4 – 4 I/O Requests Outstanding – 12.5% of Test Run 1's Streams value
      - ✓ Test Run 5 – 4 I/O Requests Outstanding – single (1) Stream
    - Test Run Sequence 2
      - ✓ Test Run 6 – 1 I/O Request Outstanding – maximum number of Streams
      - ✓ Test Run 7 – 1 I/O Request Outstanding – 50% of Test Run 6's Streams value
      - ✓ Test Run 8 – 1 I/O Request Outstanding – 25% of Test Run 6's Streams value
      - ✓ Test Run 9 – 1 I/O Request Outstanding – 12.5% of Test Run 6's Streams value
      - ✓ Test Run 10 – 1 I/O Request Outstanding – single (1) Stream
  - 64 KIB TRANSFER SIZE Test Phase
    - Test Run Sequence 3
      - ✓ Test Run 11 – 4 I/O Requests Outstanding – maximum number of Streams
      - ✓ Test Run 12 – 4 I/O Requests Outstanding – 50% of Test Run 11's Streams value
      - ✓ Test Run 13 – 4 I/O Requests Outstanding – 25% of Test Run 11's Streams value
      - ✓ Test Run 14 – 4 I/O Requests Outstanding – 12.5% of Test Run 11's Streams value
      - ✓ Test Run 15 – 4 I/O Requests Outstanding – single (1) Stream
    - Test Run Sequence 4
      - ✓ Test Run 16 – 1 I/O Request Outstanding – maximum number of Streams
      - ✓ Test Run 17 – 1 I/O Request Outstanding – 50% of Test Run 16's Streams value
      - ✓ Test Run 18 – 1 I/O Request Outstanding – 25% of Test Run 16's Streams value
      - ✓ Test Run 19 – 1 I/O Request Outstanding – 12.5% of Test Run 16's Streams value
      - ✓ Test Run 20 – 1 I/O Request Outstanding – single (1) Stream

- **Video on Demand Delivery Test**
  - Video on Demand Delivery Test Run

Each Test is an atomic unit that must be executed from start to finish before any other Test, Test Phase, or Test Run may be executed. The Tests may be executed in any sequence.

The results from each Test, Test Phase, and Test Run are listed below along with a more detailed explanation of each component.

Large File Processing Test

Clause 6.4.2.1

The Large File Processing Test consists of the I/O operations associated with the type of applications, in a wide range of fields, which require simple sequential processing of one or more large files. Specific examples of those types of applications include scientific computing and large-scale financial processing

Clause 6.4.2.2

The Large File Processing Test has three Test Phases, which shall be executed in the following uninterrupted sequence:

1. *WRITE ONLY*
2. *READ-WRITE*
3. *READ ONLY*

The BC shall not be restarted or manually disturbed, altered, or adjusted during the execution of the Large File Processing Test. If power is lost to the BC during this Test all results shall be rendered invalid and the Test re-run in its entirety.

Clause 10.6.8.1

The Full Disclosure Report will contain the following content for the Large File Processing Test:

1. *A listing of the SPC-2 Workload Generator commands and parameters used to execute each of the Test Runs in the Large File Processing Test.*
2. *The human readable SPC-2 Test Results File for each of the Test Runs in the Large File Processing Test.*
3. *A table that contains the following information for each Test Run in all three Test Phases of the Large File Processing Test:*
    - *The number Streams specified.*
    - *The Ramp-Up duration in seconds.*
    - *The Measurement Interval duration in seconds.*
    - *The average data rate, in MB per second, for the Measurement Interval.*
    - *The average data rate, in MB per second, per Stream for the Measurement Interval.*
4. *Average Data Rate and Average Data Rate per Stream graphs as defined in Clauses 10.1.1 and 10.1.2.*

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Large File Processing Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 124.

SPC-2 Test Results File

A link to the SPC-2 Test Results file generated from the Large File Processing Test Runs is listed below.

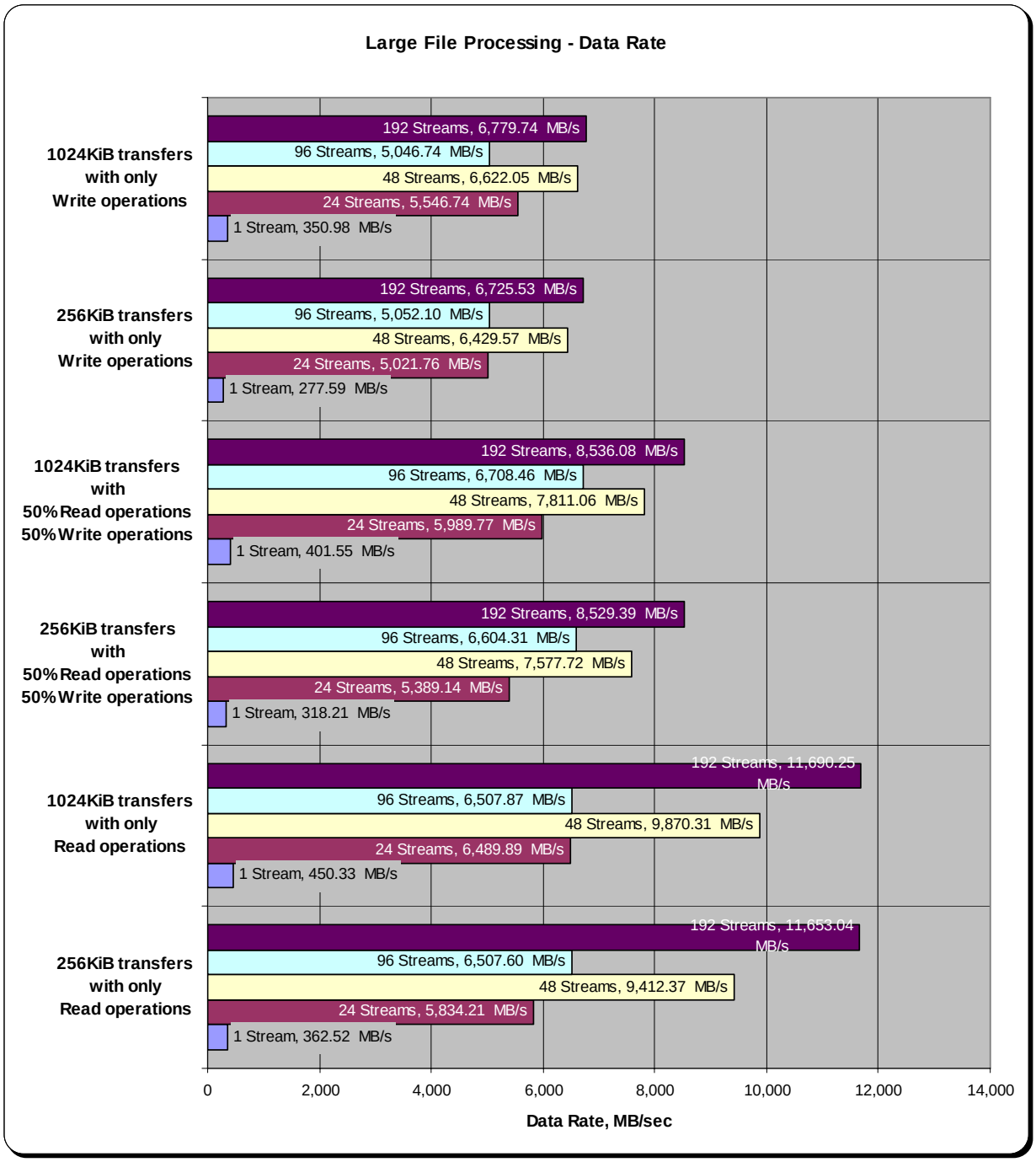
SPC-2 Large File Processing Test Results File

SPC-2 Large File Processing Average Data Rates (MB/s)

The average Data Rate (MB/s) for each Test Run in the three Test Phases of the SPC-2 Large File Processing Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
Write 1024KiB	350.98	5,546.74	6,622.05	5,046.74	6,779.74
Write 256KiB	277.59	5,021.76	6,429.57	5,052.10	6,725.53
Read/Write 1024KiB	401.55	5,989.77	7,811.06	6,708.46	8,536.08
Read/Write 256KiB	318.21	5,389.14	7,577.72	6,604.31	8,529.39
Read 1024KiB	450.33	6,489.89	9,870.31	6,507.87	11,690.25
Read 256KiB	362.52	5,834.21	9,412.37	6,507.60	11,653.04

SPC-2 Large File Processing Average Data Rates Graph

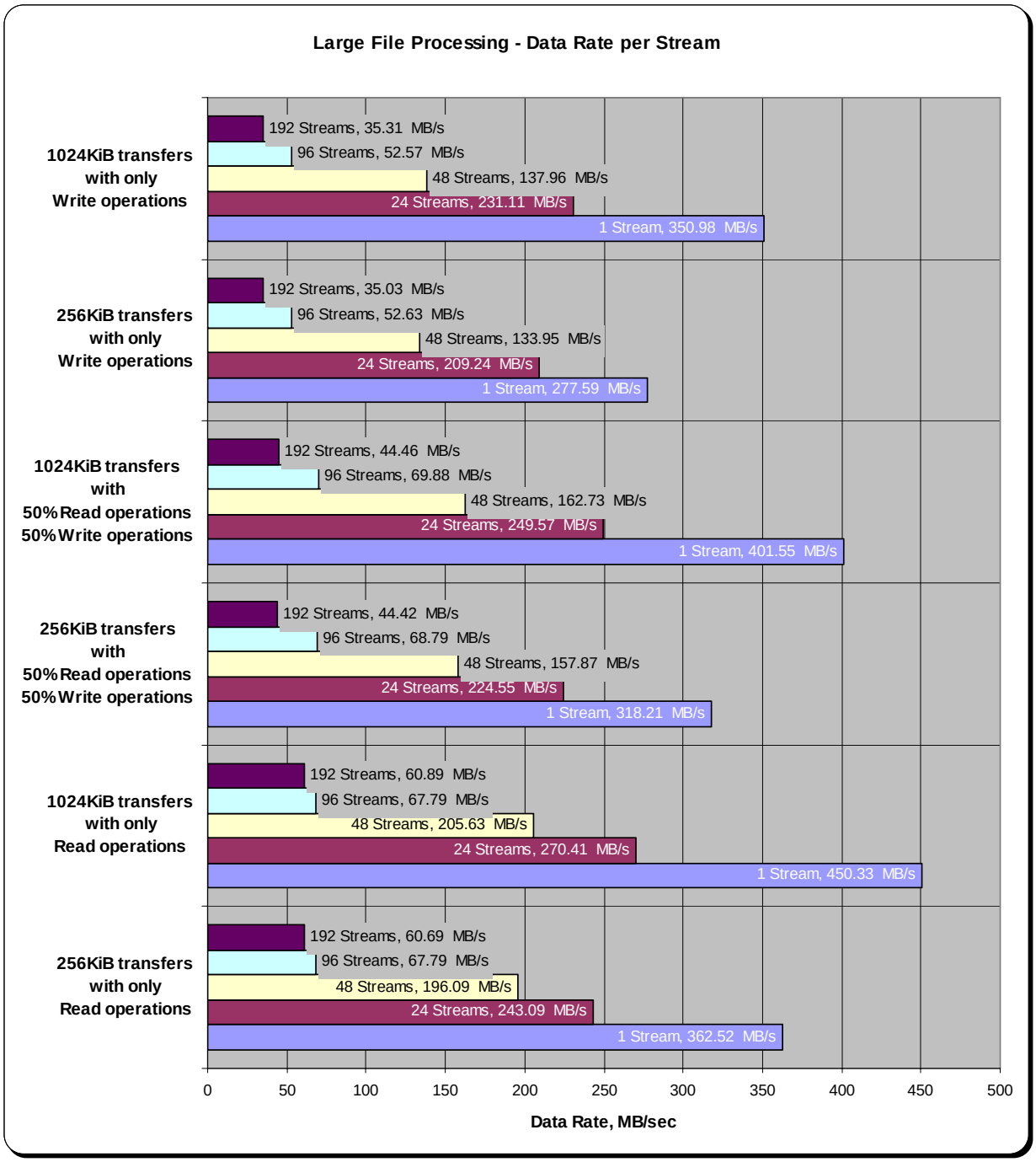


SPC-2 Large File Processing Average Data Rate per Stream

The average Data Rate per Stream for each Test Run in the three Test Phases of the SPC-2 Large File Processing Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
Write 1024KiB	350.98	231.11	137.96	52.57	35.31
Write 256KiB	277.59	209.24	133.95	52.63	35.03
Read/Write 1024KiB	401.55	249.57	162.73	69.88	44.46
Read/Write 256KiB	318.21	224.55	157.87	68.79	44.42
Read 1024KiB	450.33	270.41	205.63	67.79	60.89
Read 256KiB	362.52	243.09	196.09	67.79	60.69

SPC-2 Large File Processing Average Data Rate per Stream Graph

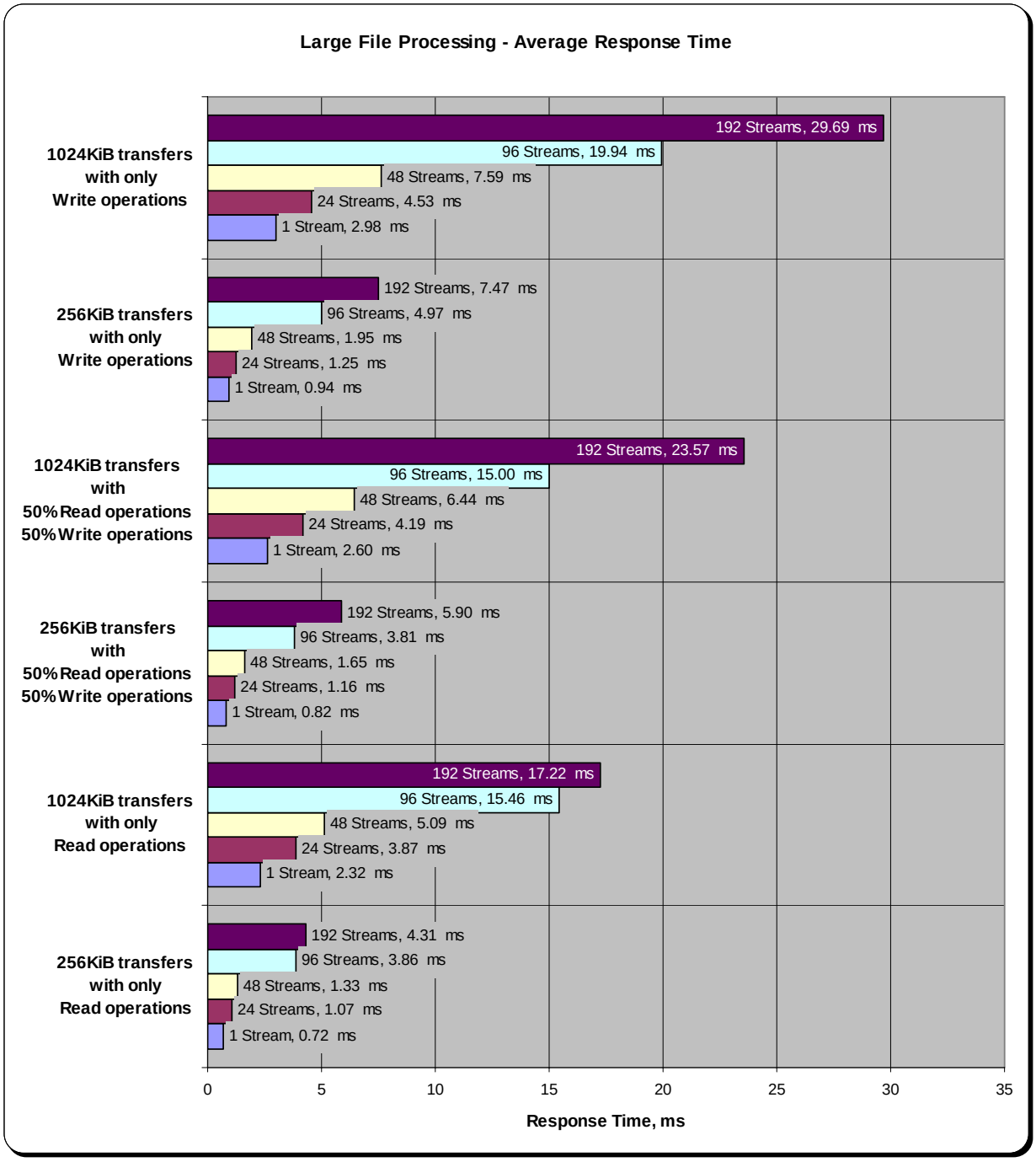


SPC-2 Large File Processing Average Response Time

The average Response Time, milliseconds (ms), for each Test Run in the three Test Phases of the SPC-2 Large File Processing Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
Write 1024KiB	2.98	4.53	7.59	19.94	29.69
Write 256KiB	0.94	1.25	1.95	4.97	7.47
Read/Write 1024KiB	2.60	4.19	6.44	15.00	23.57
Read/Write 256KiB	0.82	1.16	1.65	3.81	5.90
Read 1024KiB	2.32	3.87	5.09	15.46	17.22
Read 256KiB	0.72	1.07	1.33	3.86	4.31

SPC-2 Large File Processing Average Response Time Graph



Large File Processing Test – WRITE ONLY Test Phase

Clause 10.6.8.1.1

1. *A table that will contain the following information for each "WRITE ONLY, 1024 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
2. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "WRITE ONLY, 1024 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*
3. *A table that will contain the following information for each "WRITE ONLY, 256 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
4. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "WRITE ONLY, 256 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*

The SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

Immediately following the SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" table and graphs will be the SPC-2 "Large File Processing/WRITE ONLY/64 KiB Transfer Size" table and graphs. The table contains the Test Run data and the graphs illustrate the average Data Rate, average Data Rate per Stream, and average Response Time produced by the Test Runs.

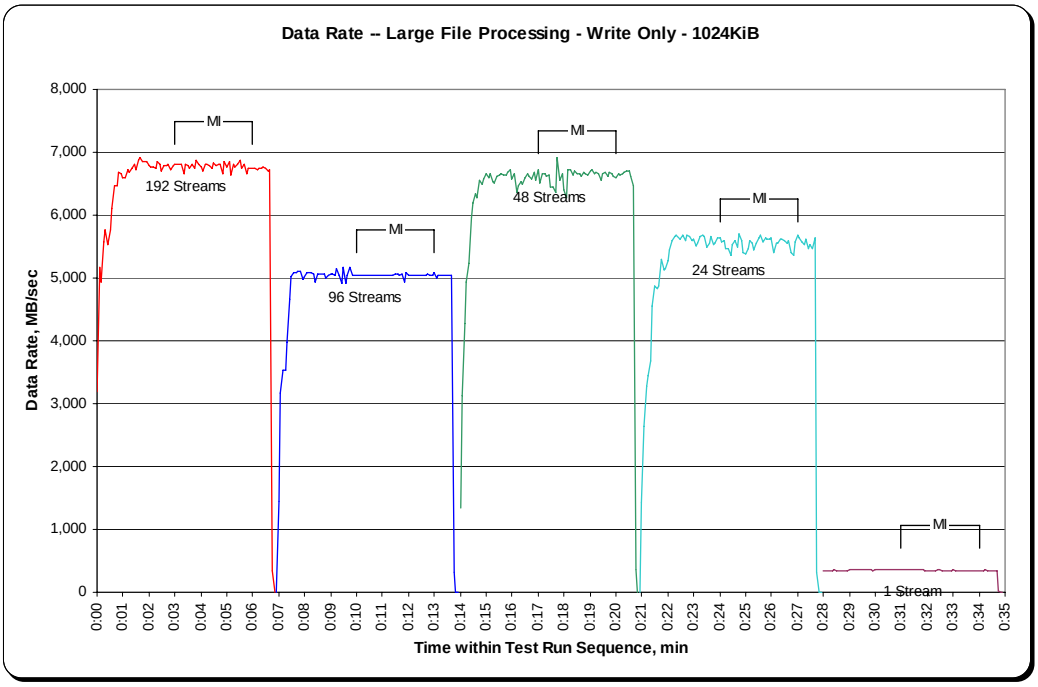
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR1	192 Streams			TR2	96 Streams			TR3	48 Streams			TR4	24 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	3,187.88	138.60	4.01	0:06:55	0.00	0.00	0.00	0:14:00	1,348.68	192.67	2.69	0:20:55	0.00	0.00	0.00	0:28:00	336.17	336.17	2.98
0:00:05	5,180.38	117.74	6.94	0:07:00	1,442.00	131.09	3.31	0:14:05	3,124.97	240.38	3.03	0:21:00	1,432.98	286.60	2.66	0:28:05	350.22	350.22	2.99
0:00:10	4,941.31	77.21	10.97	0:07:05	3,169.64	126.79	5.42	0:14:10	4,271.27	224.80	3.83	0:21:05	2,632.35	263.23	3.06	0:28:10	349.80	349.80	2.99
0:00:15	5,564.58	70.44	13.45	0:07:10	3,534.96	103.97	8.73	0:14:15	4,935.65	224.35	4.56	0:21:10	3,280.99	328.10	3.19	0:28:15	350.01	350.01	2.99
0:00:20	5,763.81	61.32	15.75	0:07:15	3,538.73	86.31	10.90	0:14:20	5,228.41	193.64	4.79	0:21:15	3,448.14	313.47	3.28	0:28:20	350.85	350.85	2.98
0:00:25	5,535.22	53.22	18.66	0:07:20	3,968.23	73.49	12.77	0:14:25	5,965.77	186.43	5.11	0:21:20	3,671.48	262.25	3.35	0:28:25	352.11	352.11	2.97
0:00:30	5,756.05	50.49	19.64	0:07:25	4,667.84	77.80	12.49	0:14:30	6,196.66	187.78	5.43	0:21:25	4,561.10	285.07	3.44	0:28:30	350.22	350.22	2.99
0:00:35	6,105.86	48.46	20.52	0:07:30	5,021.63	79.71	12.88	0:14:35	6,337.59	181.07	5.66	0:21:30	4,869.38	270.52	3.54	0:28:35	350.43	350.43	2.99
0:00:40	6,460.91	46.15	21.75	0:07:35	5,086.01	74.79	13.64	0:14:40	6,285.16	165.40	6.09	0:21:35	4,826.39	268.13	3.88	0:28:40	349.80	349.80	2.99
0:00:45	6,465.52	43.39	23.24	0:07:40	5,093.14	70.74	14.54	0:14:45	6,544.58	155.82	6.35	0:21:40	4,881.12	256.90	4.07	0:28:45	349.60	349.60	2.99
0:00:50	6,675.44	42.52	24.37	0:07:45	5,114.11	67.29	15.51	0:14:50	6,492.36	150.99	6.90	0:21:45	5,300.34	265.02	3.92	0:28:50	350.43	350.43	2.99
0:00:55	6,660.55	41.63	24.77	0:07:50	5,115.79	65.59	15.75	0:14:55	6,570.59	146.01	6.96	0:21:50	5,133.41	256.67	4.08	0:28:55	350.64	350.64	2.97
0:01:00	6,604.56	39.55	25.96	0:07:55	4,976.75	60.69	16.52	0:15:00	6,659.51	144.77	7.09	0:21:55	5,151.65	245.32	4.13	0:29:00	352.95	352.95	2.96
0:01:05	6,602.88	37.73	27.11	0:08:00	5,026.87	60.56	17.01	0:15:05	6,590.09	143.26	7.32	0:22:00	5,283.15	251.58	4.16	0:29:05	352.32	352.32	2.97
0:01:10	6,719.48	36.72	28.13	0:08:05	5,093.98	59.23	17.44	0:15:10	6,658.67	141.67	7.30	0:22:05	5,447.77	236.86	4.17	0:29:10	352.53	352.53	2.97
0:01:15	6,688.45	35.77	28.97	0:08:10	5,093.35	57.23	18.05	0:15:15	6,529.48	138.93	7.54	0:22:10	5,599.61	243.46	4.30	0:29:15	353.58	353.58	2.96
0:01:20	6,742.97	35.49	29.33	0:08:15	5,085.17	54.68	18.70	0:15:20	6,517.32	135.78	7.70	0:22:15	5,652.45	235.52	4.37	0:29:20	352.74	352.74	2.97
0:01:25	6,811.76	35.48	29.44	0:08:20	5,069.66	53.36	19.58	0:15:25	6,617.56	137.87	7.60	0:22:20	5,684.54	236.86	4.42	0:29:25	353.16	353.16	2.96
0:01:30	6,714.87	34.97	29.44	0:08:25	4,930.40	51.36	19.90	0:15:30	6,632.66	138.18	7.58	0:22:25	5,641.34	235.06	4.46	0:29:30	353.79	353.79	2.96
0:01:35	6,870.90	35.79	29.42	0:08:30	5,062.11	52.73	19.94	0:15:35	6,668.10	138.92	7.54	0:22:30	5,616.17	234.01	4.48	0:29:35	352.74	352.74	2.97
0:01:40	6,907.39	35.98	29.42	0:08:35	5,063.15	52.74	19.94	0:15:40	6,646.92	138.48	7.57	0:22:35	5,674.05	236.42	4.43	0:29:40	352.95	352.95	2.97
0:01:45	6,860.83	35.73	29.34	0:08:40	5,060.01	52.71	19.95	0:15:45	6,640.63	138.35	7.57	0:22:40	5,605.90	233.58	4.48	0:29:45	351.90	351.90	2.97
0:01:50	6,847.62	35.66	29.40	0:08:45	5,054.98	52.66	19.94	0:15:50	6,680.69	139.18	7.53	0:22:45	5,683.49	236.81	4.42	0:29:50	359.45	359.45	2.97
0:01:55	6,857.69	35.72	29.36	0:08:50	4,998.35	52.07	19.99	0:15:55	6,728.08	140.17	7.58	0:22:50	5,664.62	236.03	4.44	0:29:55	341.63	341.63	2.97
0:02:00	6,777.79	35.30	29.65	0:08:55	5,048.26	52.59	19.93	0:16:00	6,571.64	136.91	7.56	0:22:55	5,587.44	232.81	4.50	0:30:00	352.95	352.95	2.97
0:02:05	6,769.19	35.26	29.74	0:09:00	5,056.02	52.67	19.93	0:16:05	6,663.28	138.82	7.55	0:23:00	5,624.98	234.37	4.47	0:30:05	353.79	353.79	2.96
0:02:10	6,775.27	35.29	29.71	0:09:05	5,061.48	52.72	19.93	0:16:10	6,368.42	132.68	7.90	0:23:05	5,501.04	229.21	4.57	0:30:10	353.37	353.37	2.96
0:02:15	6,746.96	35.14	29.68	0:09:10	5,034.63	52.44	19.95	0:16:15	6,472.86	134.85	7.77	0:23:10	5,558.71	231.61	4.52	0:30:15	353.58	353.58	2.96
0:02:20	6,842.38	35.64	29.67	0:09:15	5,139.70	53.54	19.86	0:16:20	6,540.18	136.25	7.69	0:23:15	5,663.99	236.00	4.44	0:30:20	352.74	352.74	2.97
0:02:25	6,798.76	35.41	29.61	0:09:20	5,045.54	52.56	19.95	0:16:25	6,487.96	135.17	7.75	0:23:20	5,687.69	236.99	4.42	0:30:25	353.16	353.16	2.96
0:02:30	6,691.80	34.85	29.66	0:09:25	4,919.71	51.25	20.06	0:16:30	6,590.51	137.30	7.63	0:23:25	5,666.09	236.09	4.44	0:30:30	352.53	352.53	2.97
0:02:35	6,788.06	35.35	29.74	0:09:30	5,176.82	53.93	19.82	0:16:35	6,662.23	138.80	7.55	0:23:30	5,499.57	229.15	4.57	0:30:35	353.79	353.79	2.96
0:02:40	6,787.01	35.35	29.73	0:09:35	4,918.87	51.24	20.05	0:16:40	6,626.79	138.06	7.59	0:23:35	5,561.86	231.74	4.52	0:30:40	352.95	352.95	2.96
0:02:45	6,799.18	35.41	29.70	0:09:40	5,052.04	52.63	19.92	0:16:45	6,564.30	136.76	7.66	0:23:40	5,651.41	235.48	4.45	0:30:45	353.37	353.37	2.96
0:02:50	6,720.11	35.00	29.68	0:09:45	5,160.04	53.75	19.84	0:16:50	6,687.19	139.32	7.52	0:23:45	5,529.35	230.39	4.55	0:30:50	352.32	352.32	2.97
0:02:55	6,794.56	35.39	29.75	0:09:50	5,045.75	52.56	19.95	0:16:55	6,551.92	136.50	7.68	0:23:50	5,556.82	231.53	4.52	0:30:55	352.95	352.95	2.96
				0:09:55	5,050.57	52.61	19.93					0:23:55	5,644.69	235.20	4.45				

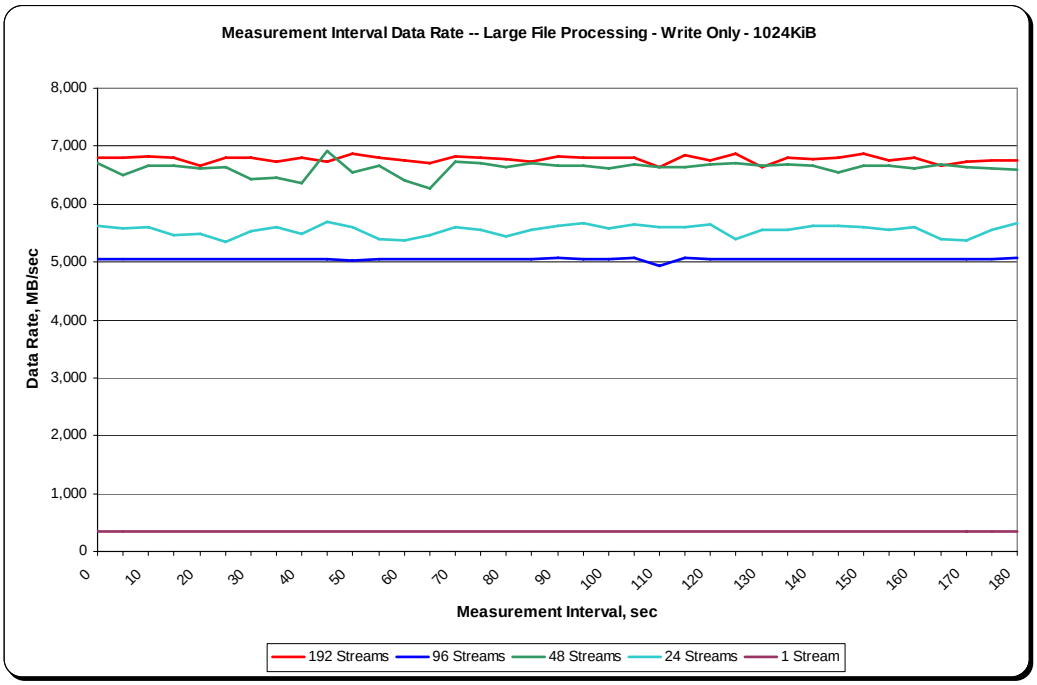
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data
Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	192 Streams			TR2	96 Streams			TR3	48 Streams			TR4	24 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:00	6,808.82	35.46	29.66	0:10:00	5,047.64	52.58	19.94	0:17:00	6,713.61	139.87	7.60	0:24:00	5,631.48	234.65	4.46	0:31:00	351.48	351.48	2.98
0:03:05	6,812.18	35.48	29.66	0:10:05	5,045.75	52.56	19.94	0:17:05	6,501.17	135.44	7.61	0:24:05	5,584.72	232.70	4.50	0:31:05	352.53	352.53	2.97
0:03:10	6,818.89	35.52	29.64	0:10:10	5,047.84	52.58	19.94	0:17:10	6,666.64	138.89	7.55	0:24:10	5,599.61	233.32	4.49	0:31:10	351.69	351.69	2.97
0:03:15	6,805.47	35.45	29.67	0:10:15	5,049.10	52.59	19.93	0:17:15	6,664.12	138.84	7.58	0:24:15	5,464.97	227.71	4.60	0:31:15	354.00	354.00	2.96
0:03:20	6,669.99	34.74	29.64	0:10:20	5,047.43	52.58	19.94	0:17:20	6,614.21	137.80	7.57	0:24:20	5,478.18	228.26	4.55	0:31:20	352.53	352.53	2.97
0:03:25	6,808.19	35.46	29.68	0:10:25	5,044.28	52.54	19.96	0:17:25	6,636.86	138.27	7.58	0:24:25	5,356.34	223.18	4.71	0:31:25	353.37	353.37	2.96
0:03:30	6,793.72	35.38	29.66	0:10:30	5,047.84	52.58	19.94	0:17:30	6,436.37	134.09	7.66	0:24:30	5,538.79	230.78	4.54	0:31:30	353.79	353.79	2.96
0:03:35	6,738.78	35.10	29.76	0:10:35	5,047.01	52.57	19.94	0:17:35	6,451.89	134.41	7.79	0:24:35	5,596.46	233.19	4.49	0:31:35	353.16	353.16	2.96
0:03:40	6,805.47	35.45	29.70	0:10:40	5,050.78	52.61	19.93	0:17:40	6,367.16	132.65	7.90	0:24:40	5,494.12	228.92	4.57	0:31:40	353.16	353.16	2.96
0:03:45	6,742.13	35.12	29.73	0:10:45	5,052.46	52.63	19.93	0:17:45	6,908.65	143.93	7.53	0:24:45	5,705.09	237.71	4.41	0:31:45	352.74	352.74	2.97
0:03:50	6,874.67	35.81	29.68	0:10:50	5,034.00	52.44	19.94	0:17:50	6,543.74	136.33	7.55	0:24:50	5,605.27	233.55	4.48	0:31:50	352.32	352.32	2.97
0:03:55	6,809.24	35.46	29.67	0:10:55	5,050.57	52.61	19.93	0:17:55	6,657.41	138.70	7.57	0:24:55	5,395.97	224.83	4.66	0:31:55	349.60	349.60	2.98
0:04:00	6,760.59	35.21	29.67	0:11:00	5,048.68	52.59	19.94	0:18:00	6,407.01	133.48	7.69	0:25:00	5,379.19	224.13	4.67	0:32:00	350.22	350.22	2.99
0:04:05	6,710.05	34.95	29.71	0:11:05	5,049.10	52.59	19.93	0:18:05	6,277.61	130.78	8.01	0:25:05	5,472.52	228.02	4.59	0:32:05	350.01	350.01	2.99
0:04:10	6,813.86	35.49	29.66	0:11:10	5,045.96	52.56	19.95	0:18:10	6,729.13	140.19	7.47	0:25:10	5,605.48	233.56	4.48	0:32:10	350.01	350.01	2.99
0:04:15	6,801.69	35.43	29.72	0:11:15	5,050.15	52.61	19.93	0:18:15	6,716.34	139.92	7.49	0:25:15	5,550.74	231.28	4.53	0:32:15	349.18	349.18	3.00
0:04:20	6,788.27	35.36	29.66	0:11:20	5,049.31	52.60	19.93	0:18:20	6,637.28	138.28	7.59	0:25:20	5,449.87	227.08	4.61	0:32:20	350.64	350.64	2.98
0:04:25	6,743.39	35.12	29.65	0:11:25	5,049.31	52.60	19.94	0:18:25	6,699.98	139.58	7.53	0:25:25	5,545.08	231.04	4.53	0:32:25	351.27	351.27	2.98
0:04:30	6,819.31	35.52	29.65	0:11:30	5,063.99	52.75	19.91	0:18:30	6,663.91	138.83	7.62	0:25:30	5,635.05	234.79	4.46	0:32:30	351.48	351.48	2.98
0:04:35	6,791.42	35.37	29.72	0:11:35	5,053.51	52.64	19.92	0:18:35	6,654.47	138.63	7.56	0:25:35	5,671.12	236.30	4.43	0:32:35	349.18	349.18	3.00
0:04:40	6,807.36	35.45	29.69	0:11:40	5,050.15	52.61	19.93	0:18:40	6,616.10	137.84	7.57	0:25:40	5,572.55	232.19	4.51	0:32:40	350.64	350.64	2.99
0:04:45	6,799.18	35.41	29.67	0:11:45	5,068.61	52.80	19.92	0:18:45	6,679.01	139.15	7.53	0:25:45	5,641.97	235.08	4.46	0:32:45	350.85	350.85	2.98
0:04:50	6,650.70	34.64	29.69	0:11:50	4,929.15	51.35	20.04	0:18:50	6,650.49	138.55	7.56	0:25:50	5,610.93	233.79	4.48	0:32:50	350.22	350.22	2.99
0:04:55	6,842.17	35.64	29.65	0:11:55	5,075.95	52.87	19.91	0:18:55	6,628.26	138.09	7.51	0:25:55	5,607.16	233.63	4.48	0:32:55	349.39	349.39	3.00
0:05:00	6,764.57	35.23	29.71	0:12:00	5,050.99	52.61	19.93	0:19:00	6,696.63	139.51	7.54	0:26:00	5,644.90	235.20	4.45	0:33:00	351.27	351.27	2.98
0:05:05	6,861.25	35.74	29.72	0:12:05	5,050.15	52.61	19.92	0:19:05	6,716.13	139.92	7.52	0:26:05	5,403.31	225.14	4.65	0:33:05	350.43	350.43	2.99
0:05:10	6,646.92	34.62	29.71	0:12:10	5,048.05	52.58	19.94	0:19:10	6,659.72	138.74	7.58	0:26:10	5,558.08	231.59	4.52	0:33:10	350.22	350.22	2.99
0:05:15	6,809.45	35.47	29.68	0:12:15	5,047.01	52.57	19.95	0:19:15	6,679.85	139.16	7.54	0:26:15	5,561.44	231.73	4.52	0:33:15	351.06	351.06	2.98
0:05:20	6,776.11	35.29	29.65	0:12:20	5,046.80	52.57	19.94	0:19:20	6,655.31	138.65	7.59	0:26:20	5,618.27	234.09	4.47	0:33:20	350.01	350.01	2.99
0:05:25	6,808.19	35.46	29.66	0:12:25	5,049.31	52.60	19.93	0:19:25	6,555.91	136.58	7.53	0:26:25	5,621.00	234.21	4.47	0:33:25	350.43	350.43	2.99
0:05:30	6,877.40	35.82	29.68	0:12:30	5,047.22	52.58	19.94	0:19:30	6,664.75	138.85	7.58	0:26:30	5,599.19	233.30	4.49	0:33:30	350.01	350.01	2.99
0:05:35	6,751.78	35.17	29.67	0:12:35	5,045.54	52.56	19.94	0:19:35	6,674.19	139.05	7.56	0:26:35	5,556.40	231.52	4.52	0:33:35	350.01	350.01	2.99
0:05:40	6,805.47	35.45	29.67	0:12:40	5,049.52	52.60	19.94	0:19:40	6,611.69	137.74	7.65	0:26:40	5,596.46	233.19	4.49	0:33:40	350.43	350.43	2.99
0:05:45	6,664.75	34.71	29.70	0:12:45	5,053.51	52.64	19.92	0:19:45	6,682.78	139.22	7.52	0:26:45	5,393.67	224.74	4.66	0:33:45	349.80	349.80	2.99
0:05:50	6,741.92	35.11	29.92	0:12:50	5,047.43	52.58	19.94	0:19:50	6,651.12	138.56	7.56	0:26:50	5,370.18	223.76	4.68	0:33:50	347.50	347.50	2.99
0:05:55	6,747.38	35.14	29.90	0:12:55	5,048.47	52.59	19.93	0:19:55	6,624.48	138.01	7.59	0:26:55	5,567.10	231.96	4.51	0:33:55	350.43	350.43	2.99
0:06:00	6,745.07	35.13	29.90	0:13:00	5,075.53	52.87	19.91	0:20:00	6,601.83	137.54	7.62	0:27:00	5,676.57	236.52	4.43	0:34:00	350.85	350.85	2.98
0:06:05	6,741.30	35.11	29.88	0:13:05	5,000.03	52.08	19.98	0:20:05	6,656.78	138.68	7.56	0:27:05	5,641.13	235.05	4.45	0:34:05	350.64	350.64	2.98
0:06:10	6,731.65	35.06	29.90	0:13:10	5,043.65	52.54	19.95	0:20:10	6,646.92	138.48	7.57	0:27:10	5,568.15	232.01	4.52	0:34:10	350.01	350.01	2.99
0:06:15	6,738.36	35.10	29.97	0:13:15	5,048.26	52.59	19.94	0:20:15	6,664.12	138.84	7.55	0:27:15	5,534.17	230.59	4.46	0:34:15	351.27	351.27	2.98
0:06:20	6,744.65	35.13	29.93	0:13:20	5,049.31	52.60	19.93	0:20:20	6,690.75	139.39	7.52	0:27:20	5,610.93	233.79	4.47	0:34:20	350.22	350.22	2.99
0:06:25	6,759.12	35.20	29.86	0:13:25	5,045.54	52.56	19.94	0:20:25	6,706.27	139.71	7.50	0:27:25	5,475.03	228.13	4.59	0:34:25	349.60	349.60	2.99
0:06:30	6,746.12	35.14	29.90	0:13:30	5,050.36	52.61	19.93	0:20:30	6,707.11	139.73	7.50	0:27:30	5,539.00	230.79	4.54	0:34:30	350.01	350.01	2.99
0:06:35	6,694.53	34.87	29.91	0:13:35	5,048.05	52.58	19.93	0:20:35	6,627.42	138.07	7.59	0:27:35	5,478.60	228.27	4.59	0:34:35	351.06	351.06	2.98
0:06:40	6,723.68	35.02	29.94	0:13:40	5,050.78	52.61	19.93	0:20:40	6,469.71	134.79	7.78	0:27:40	5,635.26	234.80	4.46	0:34:40	350.64	350.64	2.98
0:06:45	336.38	0.00	25.81	0:13:45	309.75	0.00	17.77	0:20:45	354.21	0.00	6.88	0:27:45	310.59	0.00	4.76	0:34:45	18.25	0.00	2.98
0:06:50	0.00	0.00	0.00	0:13:50	0.00	0.00	0.00	0:20:50	0.00	0.00	0.00	0:27:50	0.00	0.00	0.00	0:34:50	0.00	0.00	0.00
				0:13:55	0.00	0.00	0.00					0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

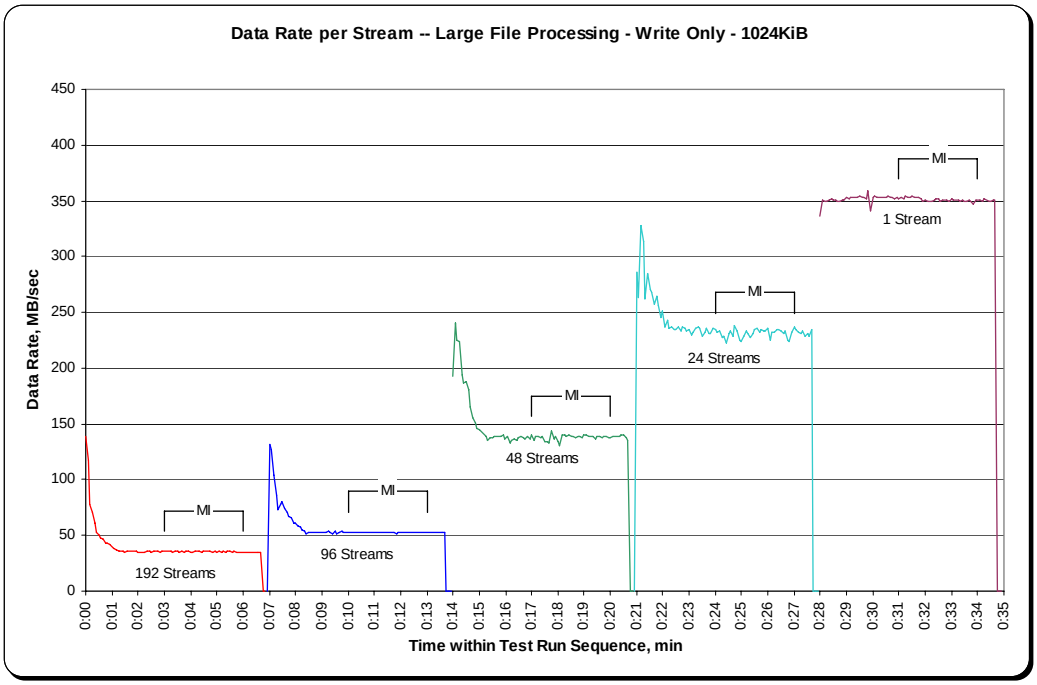
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



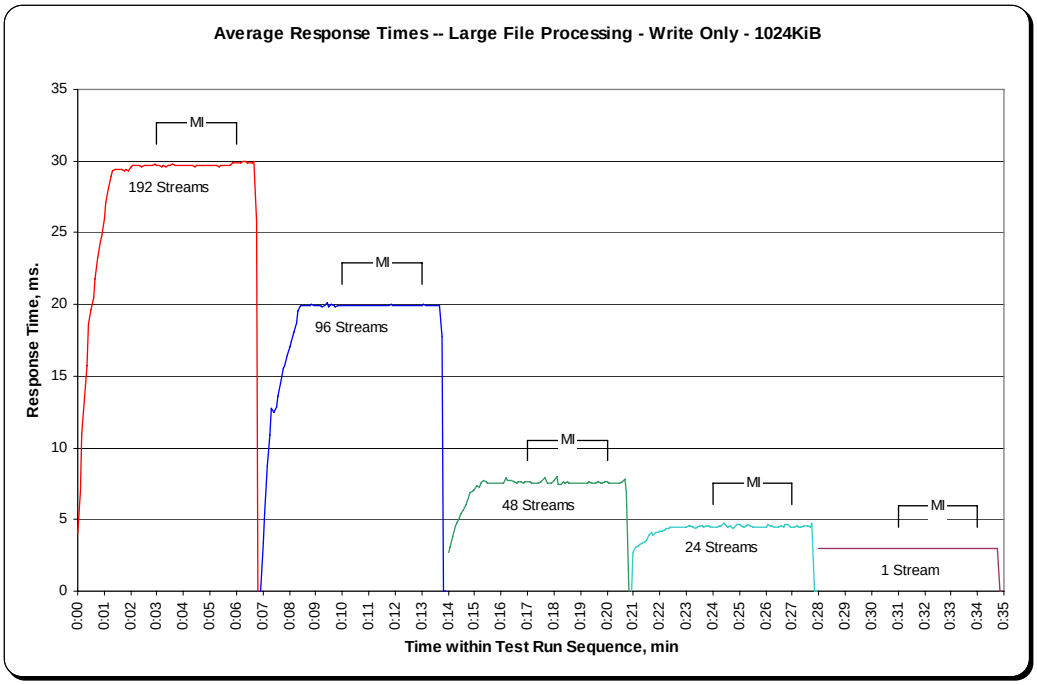
SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Response Time Graph



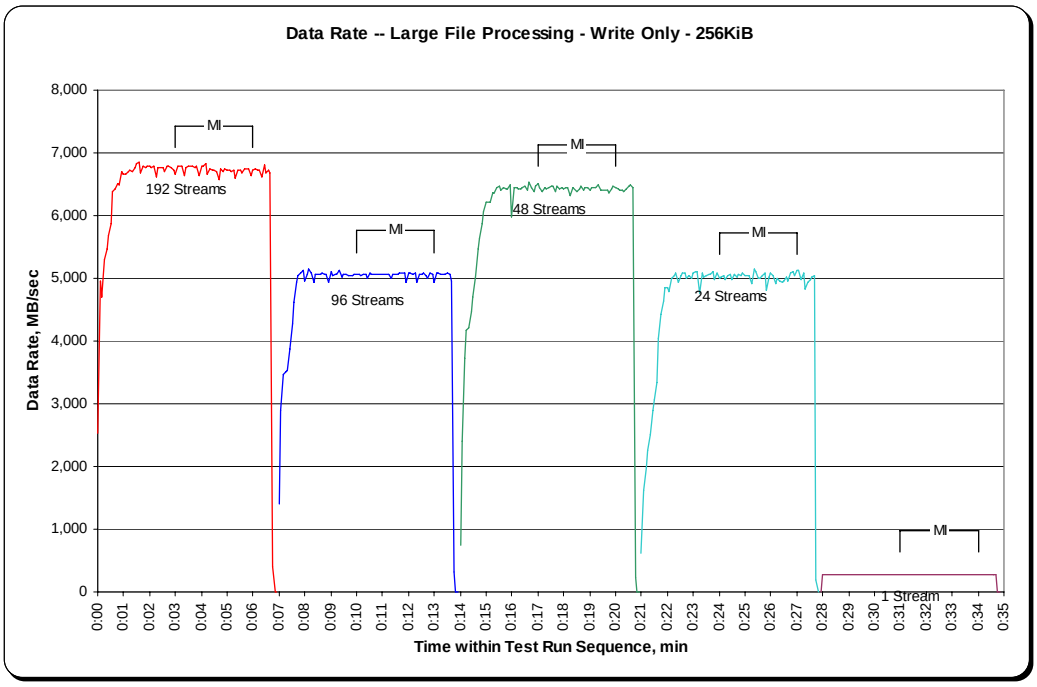
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR6	192 Streams			TR7	96 Streams			TR8	48 Streams			TR9	24 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	2,524.87	120.23	1.09	0:07:00	1,395.65	139.57	1.00	0:14:00	735.42	147.08	0.87	0:21:00	609.38	121.88	0.87	0:27:55	0.00	0.00	0.00
0:00:05	4,957.61	123.94	1.59	0:07:05	2,899.78	138.08	1.40	0:14:05	2,393.85	199.49	0.93	0:21:05	1,623.62	231.95	0.86	0:28:00	267.07	267.07	0.94
0:00:10	4,711.20	88.89	2.45	0:07:10	3,459.30	101.74	2.15	0:14:10	3,720.30	218.84	1.06	0:21:10	1,984.27	248.03	0.92	0:28:05	277.93	277.93	0.94
0:00:15	5,307.05	74.75	3.18	0:07:15	3,500.30	85.37	2.75	0:14:15	4,162.85	231.27	1.13	0:21:15	2,253.97	281.75	0.92	0:28:10	277.35	277.35	0.94
0:00:20	5,476.87	65.20	3.64	0:07:20	3,524.21	78.32	3.17	0:14:20	4,208.77	210.44	1.16	0:21:20	2,518.99	251.90	0.94	0:28:15	277.61	277.61	0.94
0:00:25	5,676.99	57.34	4.10	0:07:25	3,864.63	75.78	3.30	0:14:25	4,459.02	193.87	1.27	0:21:25	2,900.31	241.69	0.98	0:28:20	276.93	276.93	0.94
0:00:30	5,874.59	51.08	4.74	0:07:30	4,279.82	80.75	3.21	0:14:30	4,699.25	187.97	1.32	0:21:30	3,064.62	235.74	1.00	0:28:25	278.24	278.24	0.94
0:00:35	6,372.46	50.98	5.01	0:07:35	4,622.91	74.56	3.23	0:14:35	5,017.07	185.82	1.33	0:21:35	3,344.43	222.96	1.04	0:28:30	278.24	278.24	0.94
0:00:40	6,424.15	46.89	5.27	0:07:40	4,930.72	74.71	3.37	0:14:40	5,460.72	182.02	1.35	0:21:40	4,050.91	238.29	1.04	0:28:35	278.19	278.19	0.94
0:00:45	6,520.94	44.97	5.66	0:07:45	5,035.21	69.93	3.61	0:14:45	5,637.67	176.18	1.41	0:21:45	4,422.37	232.76	1.10	0:28:40	277.40	277.40	0.94
0:00:50	6,488.96	41.07	6.02	0:07:50	5,078.73	67.72	3.77	0:14:50	5,870.82	172.67	1.46	0:21:50	4,634.29	231.71	1.11	0:28:45	277.09	277.09	0.94
0:00:55	6,706.43	41.14	6.23	0:07:55	5,125.60	64.88	3.91	0:14:55	6,064.28	159.59	1.56	0:21:55	4,850.45	220.48	1.15	0:28:50	277.09	277.09	0.95
0:01:00	6,655.26	38.25	6.64	0:08:00	4,956.20	57.63	4.25	0:15:00	6,217.11	159.41	1.62	0:22:00	4,853.86	220.63	1.18	0:28:55	275.30	275.30	0.94
0:01:05	6,663.23	37.02	6.99	0:08:05	5,074.22	56.38	4.56	0:15:05	6,203.80	151.31	1.67	0:22:05	4,783.81	207.99	1.23	0:29:00	277.40	277.40	0.94
0:01:10	6,703.18	36.23	7.18	0:08:10	5,141.74	55.89	4.65	0:15:10	6,217.01	144.58	1.75	0:22:10	5,005.17	208.55	1.25	0:29:05	277.66	277.66	0.94
0:01:15	6,715.08	36.10	7.21	0:08:15	5,078.57	54.03	4.78	0:15:15	6,362.34	138.31	1.80	0:22:15	5,040.61	210.03	1.24	0:29:10	277.87	277.87	0.94
0:01:20	6,710.20	35.32	7.34	0:08:20	4,941.20	52.01	4.95	0:15:20	6,356.10	135.24	1.93	0:22:20	5,078.31	211.60	1.23	0:29:15	277.87	277.87	0.94
0:01:25	6,763.73	35.23	7.34	0:08:25	5,066.72	52.78	4.95	0:15:25	6,443.39	134.24	1.93	0:22:25	4,935.18	205.63	1.27	0:29:20	277.66	277.66	0.94
0:01:30	6,836.51	35.61	7.39	0:08:30	5,068.55	52.80	4.98	0:15:30	6,463.47	134.66	1.94	0:22:30	5,046.85	210.29	1.24	0:29:25	276.46	276.46	0.94
0:01:35	6,853.44	35.70	7.37	0:08:35	5,071.39	52.83	4.98	0:15:35	6,404.07	133.42	1.96	0:22:35	5,094.82	212.28	1.23	0:29:30	277.14	277.14	0.94
0:01:40	6,689.29	34.84	7.39	0:08:40	5,074.53	52.86	4.96	0:15:40	6,452.83	134.43	1.95	0:22:40	5,090.89	212.12	1.23	0:29:35	277.77	277.77	0.94
0:01:45	6,778.05	35.30	7.44	0:08:45	5,074.01	52.85	4.97	0:15:45	6,425.67	133.87	1.96	0:22:45	4,996.20	208.18	1.25	0:29:40	277.51	277.51	0.94
0:01:50	6,767.93	35.25	7.46	0:08:50	5,072.96	52.84	4.97	0:15:50	6,428.45	133.93	1.96	0:22:50	5,048.37	210.35	1.24	0:29:45	276.35	276.35	0.94
0:01:55	6,781.35	35.32	7.44	0:08:55	4,941.57	51.47	5.00	0:15:55	6,484.50	135.09	1.94	0:22:55	4,994.05	208.09	1.25	0:29:50	278.13	278.13	0.94
0:02:00	6,784.13	35.33	7.44	0:09:00	5,111.44	53.24	4.96	0:16:00	5,972.48	124.43	2.07	0:23:00	5,086.01	211.92	1.23	0:29:55	278.76	278.76	0.93
0:02:05	6,773.80	35.28	7.46	0:09:05	5,051.83	52.62	4.98	0:16:05	6,439.62	134.16	1.96	0:23:05	5,108.30	212.85	1.23	0:30:00	277.30	277.30	0.94
0:02:10	6,793.15	35.38	7.43	0:09:10	5,058.44	52.69	4.97	0:16:10	6,444.65	134.26	1.95	0:23:10	5,115.22	213.13	1.22	0:30:05	276.72	276.72	0.94
0:02:15	6,625.48	34.51	7.46	0:09:15	5,057.70	52.68	4.97	0:16:15	6,433.38	134.03	1.95	0:23:15	4,755.40	198.14	1.31	0:30:10	277.19	277.19	0.94
0:02:20	6,769.66	35.26	7.46	0:09:20	5,118.83	53.32	4.96	0:16:20	6,435.90	134.08	1.95	0:23:20	5,088.95	212.04	1.23	0:30:15	276.67	276.67	0.94
0:02:25	6,759.91	35.21	7.43	0:09:25	5,012.14	52.21	4.99	0:16:25	6,444.18	134.25	1.95	0:23:25	5,023.15	209.30	1.25	0:30:20	275.41	275.41	0.95
0:02:30	6,775.37	35.29	7.44	0:09:30	5,070.07	52.81	4.97	0:16:30	6,460.22	134.59	1.94	0:23:30	5,038.46	209.94	1.24	0:30:25	277.40	277.40	0.94
0:02:35	6,709.79	34.95	7.44	0:09:35	5,056.86	52.68	4.97	0:16:35	6,407.53	133.49	1.96	0:23:35	5,056.02	210.67	1.24	0:30:30	278.45	278.45	0.94
0:02:40	6,792.15	35.38	7.43	0:09:40	5,052.72	52.63	4.98	0:16:40	6,527.44	135.99	1.94	0:23:40	5,067.40	211.14	1.24	0:30:35	278.19	278.19	0.94
0:02:45	6,777.73	35.30	7.44	0:09:45	5,052.25	52.63	4.98	0:16:45	6,456.87	134.52	1.95	0:23:45	5,097.91	212.41	1.23	0:30:40	277.98	277.98	0.94
0:02:50	6,773.59	35.28	7.44	0:09:50	5,051.51	52.62	4.98	0:16:50	6,387.56	133.07	1.96	0:23:50	4,979.27	207.47	1.25	0:30:45	278.03	278.03	0.94
0:02:55	6,718.38	34.99	7.45	0:09:55	5,054.45	52.65	4.97	0:16:55	6,458.44	134.55	1.94	0:23:55	5,086.12	211.92	1.23	0:30:50	278.13	278.13	0.94
																0:30:55	278.40	278.40	0.94

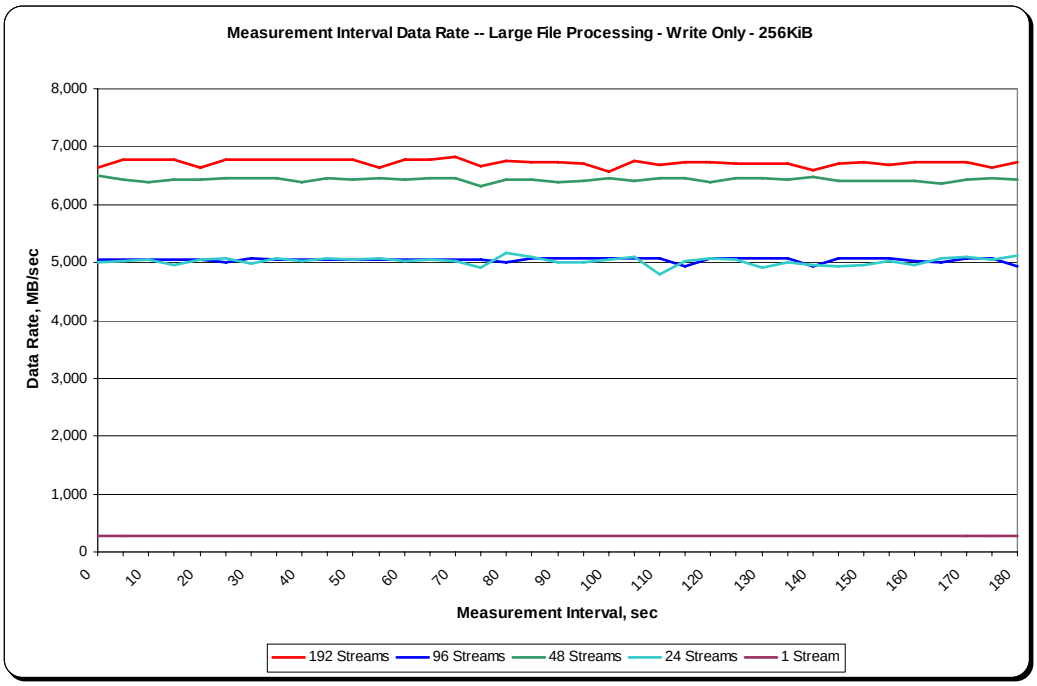
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	192 Streams			TR7	96 Streams			TR8	48 Streams			TR9	24 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:00	6,650.38	34.64	7.44	0:10:00	5,056.92	52.68	4.97	0:17:00	6,505.16	135.52	1.93	0:24:00	5,009.73	208.74	1.25	0:31:00	277.82	277.82	0.94
0:03:05	6,778.52	35.30	7.45	0:10:05	5,056.60	52.67	4.97	0:17:05	6,442.66	134.22	1.95	0:24:05	5,020.42	209.18	1.25	0:31:05	277.77	277.77	0.94
0:03:10	6,780.30	35.31	7.44	0:10:10	5,052.72	52.63	4.98	0:17:10	6,389.18	133.11	1.96	0:24:10	5,051.93	210.50	1.24	0:31:10	277.24	277.24	0.94
0:03:15	6,782.92	35.33	7.45	0:10:15	5,056.13	52.67	4.97	0:17:15	6,441.61	134.20	1.95	0:24:15	4,968.15	207.01	1.26	0:31:15	278.19	278.19	0.94
0:03:20	6,629.57	34.53	7.46	0:10:20	5,054.50	52.65	4.97	0:17:20	6,427.88	133.91	1.95	0:24:20	5,049.94	210.41	1.24	0:31:20	277.77	277.77	0.94
0:03:25	6,769.97	35.26	7.45	0:10:25	4,993.21	52.01	4.99	0:17:25	6,447.96	134.33	1.95	0:24:25	5,061.37	210.89	1.24	0:31:25	277.35	277.35	0.94
0:03:30	6,780.62	35.32	7.45	0:10:30	5,074.95	52.86	4.97	0:17:30	6,465.21	134.69	1.94	0:24:30	4,982.41	207.60	1.26	0:31:30	278.34	278.34	0.94
0:03:35	6,786.59	35.35	7.44	0:10:35	5,053.19	52.64	4.97	0:17:35	6,462.37	134.63	1.94	0:24:35	5,065.25	211.05	1.24	0:31:35	276.30	276.30	0.94
0:03:40	6,778.26	35.30	7.45	0:10:40	5,054.92	52.66	4.97	0:17:40	6,387.09	133.06	1.96	0:24:40	5,031.28	209.64	1.24	0:31:40	278.50	278.50	0.94
0:03:45	6,775.11	35.29	7.44	0:10:45	5,056.29	52.67	4.97	0:17:45	6,465.10	134.69	1.94	0:24:45	5,065.67	211.07	1.24	0:31:45	276.30	276.30	0.94
0:03:50	6,778.99	35.31	7.44	0:10:50	5,056.50	52.67	4.97	0:17:50	6,427.46	133.91	1.95	0:24:50	5,051.25	210.47	1.24	0:31:50	278.08	278.08	0.94
0:03:55	6,636.54	34.57	7.44	0:10:55	5,056.60	52.67	4.97	0:17:55	6,445.75	134.29	1.95	0:24:55	5,076.73	211.53	1.23	0:31:55	277.40	277.40	0.94
0:04:00	6,779.36	35.31	7.45	0:11:00	5,055.92	52.67	4.97	0:18:00	6,421.43	133.78	1.95	0:25:00	5,036.99	209.87	1.25	0:32:00	276.35	276.35	0.94
0:04:05	6,788.69	35.36	7.44	0:11:05	5,054.35	52.65	4.97	0:18:05	6,447.59	134.32	1.95	0:25:05	5,041.08	210.05	1.25	0:32:05	277.35	277.35	0.94
0:04:10	6,822.09	35.53	7.44	0:11:10	5,053.61	52.64	4.97	0:18:10	6,456.82	134.52	1.94	0:25:10	5,032.75	209.70	1.25	0:32:10	278.45	278.45	0.94
0:04:15	6,662.76	34.70	7.43	0:11:15	5,053.19	52.64	4.97	0:18:15	6,316.46	131.59	1.95	0:25:15	4,909.07	204.54	1.25	0:32:15	276.88	276.88	0.94
0:04:20	6,751.89	35.17	7.48	0:11:20	4,996.25	52.04	4.99	0:18:20	6,442.50	134.22	1.96	0:25:20	5,154.12	214.75	1.24	0:32:20	276.40	276.40	0.94
0:04:25	6,727.66	35.04	7.51	0:11:25	5,065.99	52.77	4.97	0:18:25	6,422.37	133.80	1.95	0:25:25	5,102.84	212.62	1.23	0:32:25	277.93	277.93	0.94
0:04:30	6,730.23	35.05	7.50	0:11:30	5,069.71	52.81	4.97	0:18:30	6,376.76	132.85	1.97	0:25:30	5,002.39	208.43	1.25	0:32:30	277.72	277.72	0.94
0:04:35	6,710.52	34.95	7.51	0:11:35	5,061.27	52.72	4.98	0:18:35	6,417.02	133.69	1.96	0:25:35	5,006.79	208.62	1.25	0:32:35	277.40	277.40	0.94
0:04:40	6,580.76	34.27	7.51	0:11:40	5,078.67	52.90	4.97	0:18:40	6,458.70	134.56	1.94	0:25:40	5,049.89	210.41	1.24	0:32:40	277.56	277.56	0.94
0:04:45	6,747.74	35.14	7.49	0:11:45	5,081.77	52.94	4.97	0:18:45	6,412.57	133.60	1.96	0:25:45	5,094.93	212.29	1.23	0:32:45	278.03	278.03	0.94
0:04:50	6,696.00	34.87	7.51	0:11:50	5,079.51	52.91	4.97	0:18:50	6,448.59	134.35	1.95	0:25:50	4,805.62	200.23	1.30	0:32:50	277.61	277.61	0.94
0:04:55	6,738.10	35.09	7.49	0:11:55	4,937.80	51.44	5.00	0:18:55	6,455.56	134.49	1.94	0:25:55	5,022.05	209.25	1.25	0:32:55	278.71	278.71	0.93
0:05:00	6,729.08	35.05	7.50	0:12:00	5,077.89	52.89	4.97	0:19:00	6,393.80	133.20	1.96	0:26:00	5,077.47	211.56	1.23	0:33:00	277.24	277.24	0.94
0:05:05	6,716.34	34.98	7.51	0:12:05	5,081.56	52.93	4.97	0:19:05	6,447.69	134.33	1.95	0:26:05	5,052.35	210.51	1.24	0:33:05	277.72	277.72	0.94
0:05:10	6,708.95	34.94	7.52	0:12:10	5,068.50	52.80	4.97	0:19:10	6,455.40	134.49	1.94	0:26:10	4,909.64	204.57	1.28	0:33:10	277.87	277.87	0.94
0:05:15	6,714.77	34.97	7.51	0:12:15	5,076.73	52.88	4.97	0:19:15	6,438.31	134.13	1.95	0:26:15	4,999.92	208.33	1.25	0:33:15	277.03	277.03	0.94
0:05:20	6,604.14	34.40	7.50	0:12:20	4,943.56	51.50	5.00	0:19:20	6,480.41	135.01	1.94	0:26:20	4,958.30	206.60	1.26	0:33:20	277.30	277.30	0.94
0:05:25	6,717.54	34.99	7.51	0:12:25	5,072.54	52.84	4.97	0:19:25	6,405.54	133.45	1.96	0:26:25	4,935.91	205.66	1.26	0:33:25	276.61	276.61	0.94
0:05:30	6,726.30	35.03	7.50	0:12:30	5,073.01	52.84	4.97	0:19:30	6,412.36	133.59	1.96	0:26:30	4,967.10	206.96	1.26	0:33:30	278.24	278.24	0.94
0:05:35	6,684.67	34.82	7.50	0:12:35	5,083.08	52.95	4.97	0:19:35	6,405.02	133.44	1.96	0:26:35	5,018.38	209.10	1.25	0:33:35	278.82	278.82	0.93
0:05:40	6,737.10	35.09	7.49	0:12:40	5,033.32	52.43	4.98	0:19:40	6,407.64	133.49	1.96	0:26:40	4,952.01	206.33	1.26	0:33:40	278.03	278.03	0.94
0:05:45	6,737.73	35.09	7.49	0:12:45	5,006.22	52.15	4.94	0:19:45	6,352.80	132.35	1.98	0:26:45	5,078.04	211.59	1.23	0:33:45	278.71	278.71	0.93
0:05:50	6,735.16	35.08	7.49	0:12:50	5,079.14	52.91	4.97	0:19:50	6,423.05	133.81	1.95	0:26:50	5,099.33	212.47	1.23	0:33:50	276.46	276.46	0.94
0:05:55	6,643.83	34.60	7.50	0:12:55	5,069.39	52.81	4.97	0:19:55	6,458.70	134.56	1.94	0:26:55	5,042.39	210.10	1.24	0:33:55	277.61	277.61	0.94
0:06:00	6,730.76	35.06	7.49	0:13:00	4,941.15	51.47	5.00	0:20:00	6,439.57	134.16	1.95	0:27:00	5,129.11	213.71	1.23	0:34:00	278.45	278.45	0.94
0:06:05	6,748.01	35.15	7.48	0:13:05	5,075.27	52.87	4.97	0:20:05	6,418.28	133.71	1.95	0:27:05	5,132.20	213.84	1.23	0:34:05	277.56	277.56	0.94
0:06:10	6,719.75	35.00	7.51	0:13:10	5,079.88	52.92	4.97	0:20:10	6,409.89	133.54	1.95	0:27:10	4,981.26	207.55	1.23	0:34:10	277.24	277.24	0.94
0:06:15	6,726.41	35.03	7.50	0:13:15	5,065.15	52.76	4.97	0:20:15	6,410.00	133.54	1.96	0:27:15	5,078.88	211.62	1.25	0:34:15	277.09	277.09	0.94
0:06:20	6,607.55	34.41	7.48	0:13:20	5,073.59	52.85	4.97	0:20:20	6,382.16	132.96	1.96	0:27:20	4,829.37	201.22	1.30	0:34:20	278.08	278.08	0.94
0:06:25	6,808.67	35.46	7.50	0:13:25	5,068.34	52.80	4.97	0:20:25	6,431.65	133.99	1.95	0:27:25	4,928.31	205.35	1.27	0:34:25	274.94	274.94	0.95
0:06:30	6,685.09	34.82	7.49	0:13:30	5,074.64	52.86	4.97	0:20:30	6,466.83	134.73	1.94	0:27:30	4,969.36	207.06	1.26	0:34:30	277.03	277.03	0.94
0:06:35	6,729.45	35.05	7.50	0:13:35	5,066.67	52.78	4.97	0:20:35	6,482.61	135.05	1.96	0:27:35	5,012.19	208.84	1.25	0:34:35	277.51	277.51	0.94
0:06:40	6,681.79	34.80	7.51	0:13:40	4,954.31	51.61	5.00	0:20:40	6,449.42	134.36	1.95	0:27:40	5,042.50	210.10	1.24	0:34:40	277.51	277.51	0.94
0:06:45	403.81	0.00	5.99	0:13:45	323.12	0.00	4.86	0:20:45	223.87	0.00	1.71	0:27:45	195.09	0.00	1.20	0:34:45	10.54	0.00	0.94
0:06:50	0.00	0.00	0.00	0:13:50	0.00	0.00	0.00	0:20:50	0.00	0.00	0.00	0:27:50	0.00	0.00	0.00	0:34:50	0.00	0.00	0.00
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00								

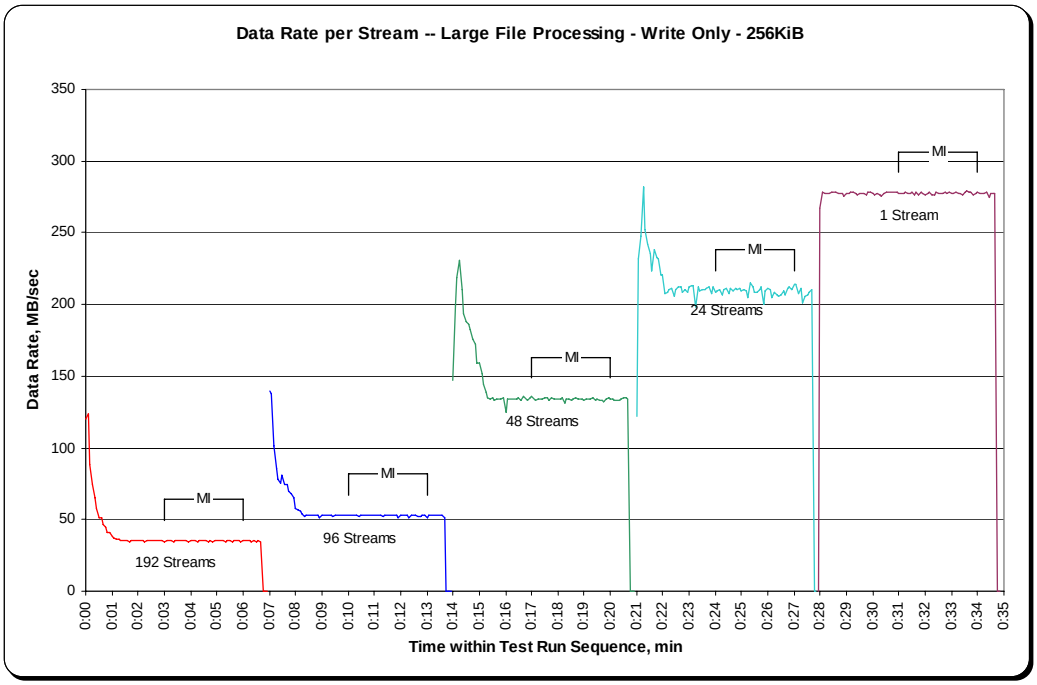
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



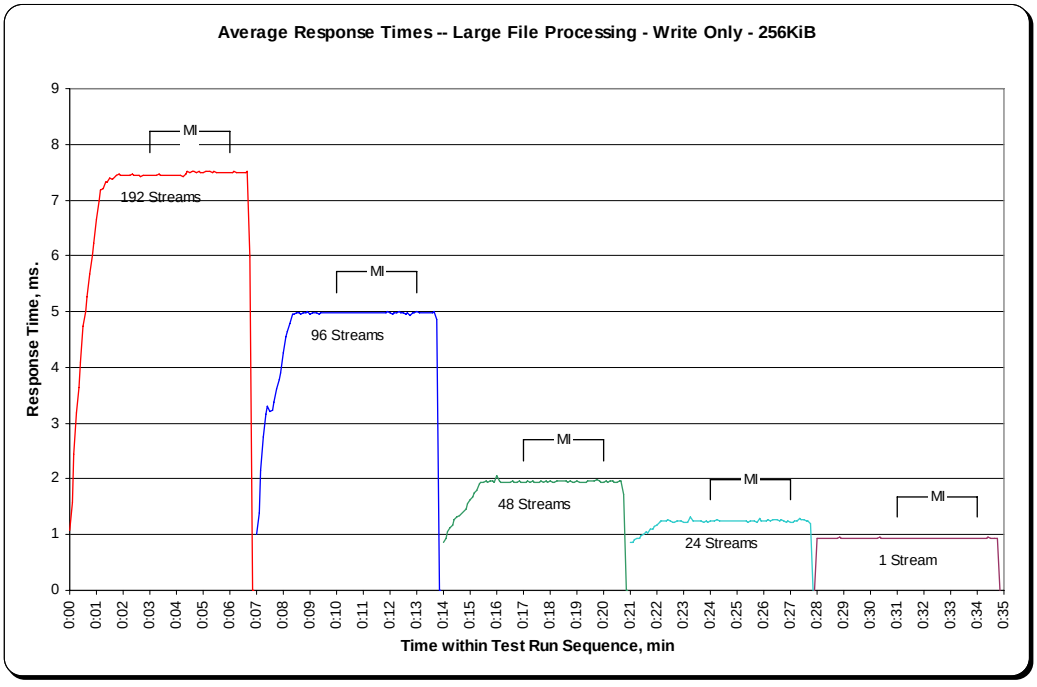
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Response Time Graph



Large File Processing Test – READ-WRITE Test Phase

Clause 10.6.8.1.2

1. *A table that will contain the following information for each "READ-WRITE, 1024 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
2. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "READ-WRITE, 1024 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*
3. *A table that will contain the following information for each " READ-WRITE, 256 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
4. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "READ-WRITE, 256 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*

The SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

Immediately following the SPC-2 "Large File Processing/ READ-WRITE /1024 KiB Transfer Size" table and graphs will be the SPC-2 "Large File Processing/ READ-WRITE /64 KiB Transfer Size" table and graphs. The table contains the Test Run data and the graphs illustrate the average Data Rate, average Data Rate per Stream, and average Response Time produced by the Test Runs.

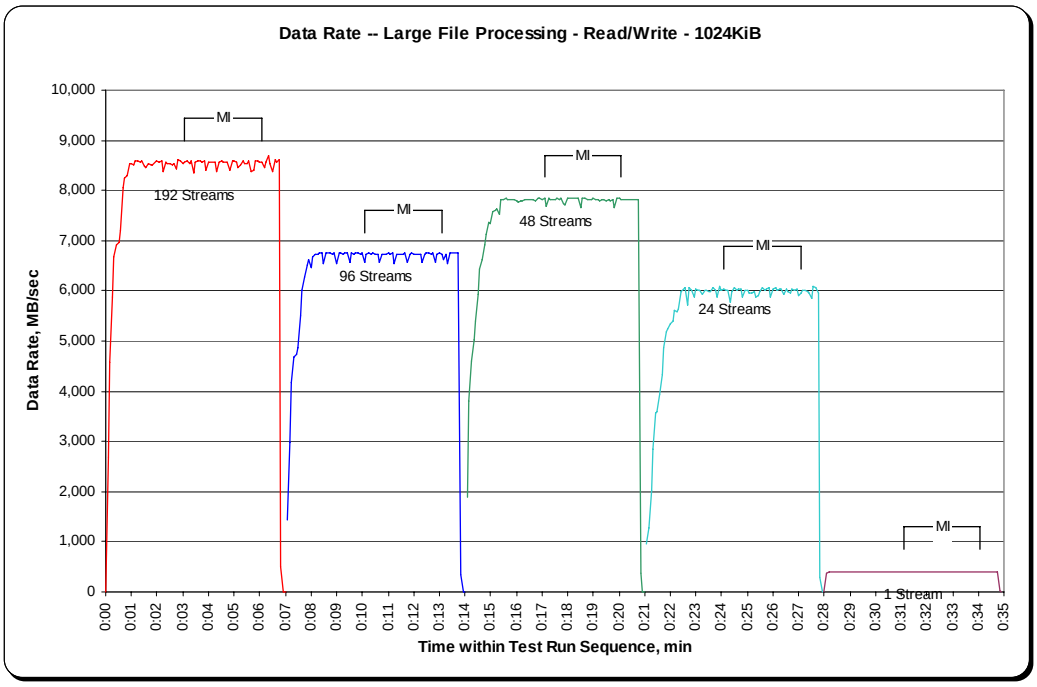
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR11	192 Streams			TR12	96 Streams			TR13	48 Streams			TR14	24 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:05	1,441.16	205.88	3.31	0:14:05	1,889.32	236.17	2.63	0:21:05	947.49	315.83	2.60	0:28:00	0.00	0.00	0.00
0:00:05	2,681.21	134.06	4.63	0:07:10	2,972.50	165.14	4.55	0:14:10	3,806.33	253.76	3.25	0:21:10	1,280.31	320.08	2.63	0:28:05	378.54	378.54	2.61
0:00:10	4,577.03	130.77	6.10	0:07:15	4,172.91	149.03	5.43	0:14:15	4,604.51	270.85	3.55	0:21:15	2,025.01	289.29	2.73	0:28:10	404.96	404.96	2.60
0:00:15	5,884.19	105.07	7.84	0:07:20	4,687.55	137.87	6.94	0:14:20	5,028.76	251.44	3.81	0:21:20	2,854.01	285.40	3.06	0:28:15	405.38	405.38	2.60
0:00:20	6,671.25	98.11	9.77	0:07:25	4,729.71	109.99	8.57	0:14:25	5,410.02	225.42	4.32	0:21:25	3,552.79	322.98	3.24	0:28:20	408.53	408.53	2.58
0:00:25	6,908.23	77.62	12.21	0:07:30	4,875.88	99.51	9.81	0:14:30	5,941.44	228.52	4.43	0:21:30	3,588.02	299.00	3.28	0:28:25	406.64	406.64	2.59
0:00:30	6,969.05	74.94	13.75	0:07:35	5,509.22	98.38	9.94	0:14:35	6,443.71	230.13	4.40	0:21:35	3,927.97	302.15	3.33	0:28:30	408.53	408.53	2.58
0:00:35	7,219.66	68.76	14.12	0:07:40	6,002.68	98.40	10.15	0:14:40	6,633.71	213.99	4.61	0:21:40	4,326.42	309.03	3.33	0:28:35	388.81	388.81	2.59
0:00:40	8,058.10	69.47	14.41	0:07:45	6,269.65	94.99	10.59	0:14:45	6,911.37	215.98	4.77	0:21:45	4,863.09	286.06	3.42	0:28:40	409.15	409.15	2.57
0:00:45	8,245.16	64.92	15.34	0:07:50	6,508.93	91.68	11.15	0:14:50	7,137.24	203.92	4.90	0:21:50	5,196.32	288.68	3.59	0:28:45	411.04	411.04	2.57
0:00:50	8,288.15	60.06	16.40	0:07:55	6,613.16	89.37	11.61	0:14:55	7,363.31	193.77	5.26	0:21:55	5,247.70	276.19	3.71	0:28:50	407.48	407.48	2.58
0:00:55	8,544.01	60.17	17.33	0:08:00	6,462.37	81.80	12.17	0:15:00	7,352.61	188.53	5.40	0:22:00	5,338.30	266.92	3.74	0:28:55	407.90	407.90	2.58
0:01:00	8,528.70	57.24	18.03	0:08:05	6,685.93	77.74	12.96	0:15:05	7,573.24	189.33	5.54	0:22:05	5,411.28	270.56	3.79	0:29:00	409.36	409.36	2.58
0:01:05	8,523.66	52.94	19.21	0:08:10	6,734.37	76.53	13.63	0:15:10	7,604.69	181.06	5.64	0:22:10	5,609.25	280.46	3.75	0:29:05	392.17	392.17	2.57
0:01:10	8,599.16	50.58	20.50	0:08:15	6,728.50	74.76	13.89	0:15:15	7,626.92	181.59	5.79	0:22:15	5,590.38	266.21	3.95	0:29:10	407.90	407.90	2.59
0:01:15	8,599.16	48.31	21.31	0:08:20	6,758.91	73.47	14.27	0:15:20	7,530.03	171.14	5.84	0:22:20	5,626.66	244.64	4.06	0:29:15	409.15	409.15	2.58
0:01:20	8,565.40	46.30	22.37	0:08:25	6,758.28	71.14	14.64	0:15:25	7,815.67	169.91	6.08	0:22:25	5,976.46	249.02	4.22	0:29:20	408.11	408.11	2.59
0:01:25	8,596.02	45.72	22.75	0:08:30	6,552.55	68.26	15.09	0:15:30	7,807.49	162.66	6.41	0:22:30	6,043.78	251.82	4.17	0:29:25	408.53	408.53	2.57
0:01:30	8,494.30	44.24	23.43	0:08:35	6,748.64	70.30	14.95	0:15:35	7,835.80	163.25	6.42	0:22:35	6,075.45	253.14	4.15	0:29:30	402.02	402.02	2.62
0:01:35	8,445.02	43.98	23.57	0:08:40	6,747.80	70.29	14.98	0:15:40	7,819.23	162.90	6.43	0:22:40	5,730.47	238.77	4.22	0:29:35	388.81	388.81	2.60
0:01:40	8,550.51	44.53	23.63	0:08:45	6,743.18	70.24	14.96	0:15:45	7,811.68	162.74	6.44	0:22:45	6,052.80	252.20	4.16	0:29:40	408.11	408.11	2.58
0:01:45	8,517.37	44.36	23.58	0:08:50	6,733.12	70.14	14.97	0:15:50	7,820.70	162.93	6.43	0:22:50	6,020.50	250.85	4.19	0:29:45	411.46	411.46	2.56
0:01:50	8,512.97	44.34	23.64	0:08:55	6,747.59	70.29	14.98	0:15:55	7,816.09	162.84	6.43	0:22:55	5,888.59	245.36	4.28	0:29:50	405.17	405.17	2.60
0:01:55	8,574.63	44.66	23.53	0:09:00	6,546.47	68.19	15.10	0:16:00	7,795.11	162.40	6.45	0:23:00	6,024.28	251.01	4.18	0:29:55	404.96	404.96	2.60
0:02:00	8,586.37	44.72	23.57	0:09:05	6,743.60	70.25	14.98	0:16:05	7,758.62	161.64	6.44	0:23:05	6,003.94	250.16	4.20	0:30:00	409.57	409.57	2.57
0:02:05	8,554.28	44.55	23.61	0:09:10	6,742.76	70.24	14.97	0:16:10	7,799.94	162.50	6.47	0:23:10	6,002.68	250.11	4.19	0:30:05	393.43	393.43	2.57
0:02:10	8,584.90	44.71	23.51	0:09:15	6,720.32	70.00	15.01	0:16:15	7,786.52	162.22	6.46	0:23:15	5,939.76	247.49	4.16	0:30:10	406.85	406.85	2.58
0:02:15	8,368.89	43.59	23.64	0:09:20	6,742.97	70.24	14.99	0:16:20	7,823.22	162.98	6.43	0:23:20	6,008.55	250.36	4.20	0:30:15	404.54	404.54	2.61
0:02:20	8,554.70	44.56	23.63	0:09:25	6,759.33	70.41	14.95	0:16:25	7,831.81	163.16	6.42	0:23:25	6,008.76	250.36	4.19	0:30:20	405.59	405.59	2.59
0:02:25	8,531.42	44.43	23.66	0:09:30	6,564.51	68.38	15.07	0:16:30	7,818.39	162.88	6.43	0:23:30	5,980.45	249.19	4.21	0:30:25	407.90	407.90	2.58
0:02:30	8,540.02	44.48	23.63	0:09:35	6,749.05	70.30	14.93	0:16:35	7,810.84	162.73	6.44	0:23:35	5,978.35	249.10	4.21	0:30:30	406.64	406.64	2.59
0:02:35	8,511.92	44.33	23.67	0:09:40	6,733.54	70.14	14.99	0:16:40	7,806.02	162.63	6.44	0:23:40	6,068.95	252.87	4.15	0:30:35	390.07	390.07	2.58
0:02:40	8,530.59	44.43	23.68	0:09:45	6,759.33	70.41	14.95	0:16:45	7,798.68	162.47	6.43	0:23:45	6,010.44	250.43	4.20	0:30:40	411.04	411.04	2.57
0:02:45	8,434.12	43.93	23.49	0:09:50	6,756.18	70.38	14.94	0:16:50	7,844.82	163.43	6.43	0:23:50	5,883.98	245.17	4.20	0:30:45	403.49	403.49	2.60
0:02:50	8,616.15	44.88	23.43	0:09:55	6,736.89	70.18	14.99	0:16:55	7,854.46	163.63	6.43	0:23:55	6,093.28	253.89	4.14	0:30:50	409.57	409.57	2.58
0:02:55	8,581.76	44.70	23.55	0:10:00	6,756.60	70.38	14.94	0:17:00	7,826.57	163.05	6.44	0:24:00	6,000.16	250.01	4.21	0:30:55	406.85	406.85	2.59
0:03:00	8,533.52	44.45	23.71													0:31:00	394.68	394.68	2.67

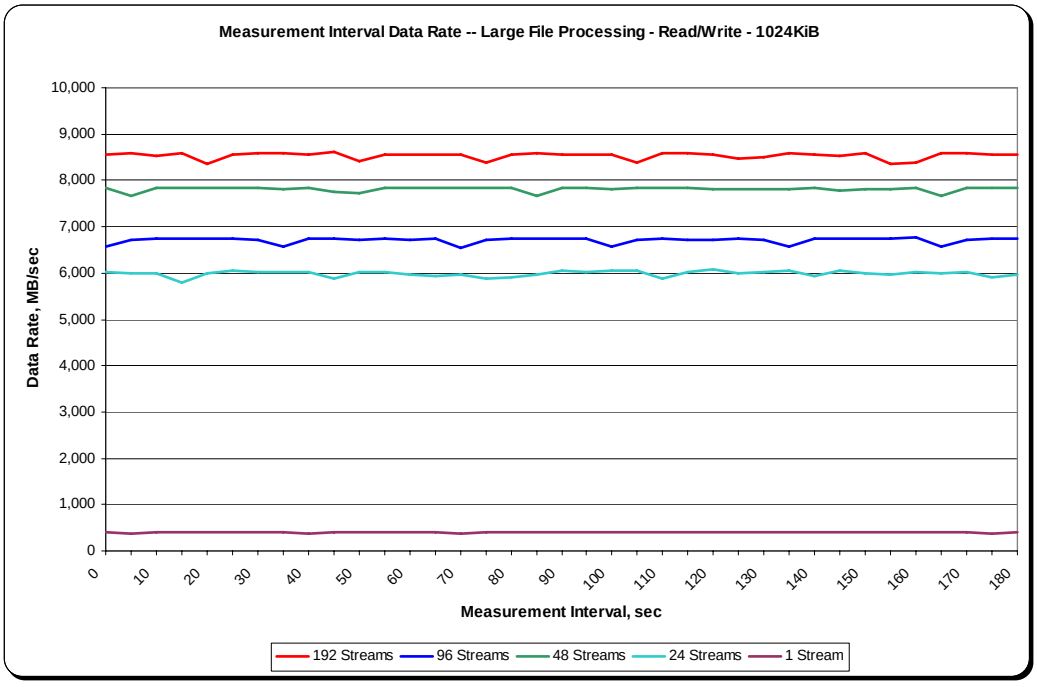
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	192 Streams			TR12	96 Streams			TR13	48 Streams			TR14	24 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	8,573.16	44.65	23.48	0:10:05	6,578.56	68.53	15.05	0:17:05	7,837.48	163.28	6.44	0:24:05	6,025.54	251.06	4.18	0:31:05	401.60	401.60	2.62
0:03:10	8,586.58	44.72	23.56	0:10:10	6,726.41	70.07	15.01	0:17:10	7,674.74	159.89	6.43	0:24:10	6,008.34	250.35	4.20	0:31:10	388.60	388.60	2.59
0:03:15	8,530.79	44.43	23.54	0:10:15	6,745.28	70.26	14.96	0:17:15	7,838.73	163.31	6.44	0:24:15	6,003.73	250.16	4.20	0:31:15	405.38	405.38	2.60
0:03:20	8,583.01	44.70	23.54	0:10:20	6,741.30	70.22	14.99	0:17:20	7,828.67	163.10	6.43	0:24:20	5,783.11	240.96	4.27	0:31:20	405.80	405.80	2.59
0:03:25	8,363.65	43.56	23.70	0:10:25	6,742.76	70.24	14.96	0:17:25	7,824.47	163.01	6.44	0:24:25	5,983.59	249.32	4.21	0:31:25	405.38	405.38	2.60
0:03:30	8,572.53	44.65	23.64	0:10:30	6,732.07	70.13	14.97	0:17:30	7,829.30	163.11	6.44	0:24:30	6,051.75	252.16	4.18	0:31:30	406.43	406.43	2.59
0:03:35	8,581.55	44.70	23.41	0:10:35	6,721.79	70.02	15.02	0:17:35	7,853.00	163.60	6.42	0:24:35	6,011.28	250.47	4.19	0:31:35	404.12	404.12	2.60
0:03:40	8,586.16	44.72	23.56	0:10:40	6,558.84	68.32	15.08	0:17:40	7,819.65	162.91	6.44	0:24:40	6,027.84	251.16	4.18	0:31:40	393.43	393.43	2.68
0:03:45	8,563.93	44.60	23.60	0:10:45	6,737.10	70.18	14.98	0:17:45	7,832.86	163.18	6.45	0:24:45	6,030.78	251.28	4.18	0:31:45	387.97	387.97	2.60
0:03:50	8,603.15	44.81	23.47	0:10:50	6,737.52	70.18	15.00	0:17:50	7,751.91	161.50	6.44	0:24:50	5,887.96	245.33	4.19	0:31:50	404.75	404.75	2.60
0:03:55	8,406.64	43.78	23.56	0:10:55	6,719.07	69.99	14.98	0:17:55	7,724.44	160.93	6.43	0:24:55	6,017.57	250.73	4.19	0:31:55	405.80	405.80	2.60
0:04:00	8,551.56	44.54	23.59	0:11:00	6,749.26	70.30	14.98	0:18:00	7,835.59	163.24	6.43	0:25:00	6,023.02	250.96	4.19	0:32:00	405.17	405.17	2.60
0:04:05	8,556.59	44.57	23.62	0:11:05	6,727.45	70.08	14.99	0:18:05	7,837.90	163.29	6.43	0:25:05	5,952.77	248.03	4.23	0:32:05	405.38	405.38	2.59
0:04:10	8,570.85	44.64	23.57	0:11:10	6,742.97	70.24	14.98	0:18:10	7,843.77	163.41	6.44	0:25:10	5,949.20	247.88	4.24	0:32:10	402.23	402.23	2.62
0:04:15	8,557.01	44.57	23.63	0:11:15	6,555.49	68.29	15.08	0:18:15	7,838.94	163.31	6.43	0:25:15	5,974.16	248.92	4.22	0:32:15	388.81	388.81	2.59
0:04:20	8,390.71	43.70	23.60	0:11:20	6,719.48	69.99	15.05	0:18:20	7,848.38	163.51	6.43	0:25:20	5,890.06	245.42	4.19	0:32:20	405.17	405.17	2.60
0:04:25	8,567.70	44.62	23.59	0:11:25	6,741.92	70.23	14.97	0:18:25	7,842.51	163.39	6.44	0:25:25	5,917.53	246.56	4.26	0:32:25	405.59	405.59	2.60
0:04:30	8,601.89	44.80	23.47	0:11:30	6,733.12	70.14	15.00	0:18:30	7,670.33	159.80	6.44	0:25:30	5,975.42	248.98	4.22	0:32:30	406.64	406.64	2.59
0:04:35	8,563.93	44.60	23.61	0:11:35	6,730.81	70.11	15.00	0:18:35	7,838.73	163.31	6.44	0:25:35	6,057.41	252.39	4.17	0:32:35	405.80	405.80	2.60
0:04:40	8,565.61	44.61	23.54	0:11:40	6,742.76	70.24	14.96	0:18:40	7,840.20	163.34	6.43	0:25:40	6,017.99	250.75	4.19	0:32:40	406.43	406.43	2.59
0:04:45	8,560.57	44.59	23.64	0:11:45	6,559.05	68.32	15.06	0:18:45	7,809.79	162.70	6.44	0:25:45	6,046.93	251.96	4.16	0:32:45	400.77	400.77	2.62
0:04:50	8,393.43	43.72	23.54	0:11:50	6,725.57	70.06	14.98	0:18:50	7,830.56	163.14	6.44	0:25:50	6,051.54	252.15	4.17	0:32:50	389.44	389.44	2.59
0:04:55	8,577.98	44.68	23.57	0:11:55	6,747.80	70.29	14.97	0:18:55	7,828.67	163.10	6.44	0:25:55	5,878.32	244.93	4.20	0:32:55	403.28	403.28	2.60
0:05:00	8,586.58	44.72	23.57	0:12:00	6,723.47	70.04	15.01	0:19:00	7,848.59	163.51	6.43	0:26:00	6,024.07	251.00	4.18	0:33:00	399.09	399.09	2.63
0:05:05	8,559.11	44.58	23.57	0:12:05	6,728.29	70.09	14.99	0:19:05	7,821.75	162.95	6.43	0:26:05	6,073.56	253.07	4.15	0:33:05	405.17	405.17	2.60
0:05:10	8,464.94	44.09	23.75	0:12:10	6,741.09	70.22	14.98	0:19:10	7,821.12	162.94	6.43	0:26:10	5,999.95	250.00	4.20	0:33:10	407.48	407.48	2.59
0:05:15	8,504.37	44.29	23.53	0:12:15	6,728.71	70.09	15.02	0:19:15	7,801.62	162.53	6.45	0:26:15	6,036.86	251.54	4.18	0:33:15	403.07	403.07	2.60
0:05:20	8,584.06	44.71	23.54	0:12:20	6,580.44	68.55	15.03	0:19:20	7,811.26	162.73	6.44	0:26:20	6,042.10	251.75	4.17	0:33:20	403.70	403.70	2.61
0:05:25	8,549.46	44.53	23.62	0:12:25	6,741.09	70.22	14.97	0:19:25	7,825.52	163.03	6.43	0:26:25	5,930.96	247.12	4.16	0:33:25	389.65	389.65	2.59
0:05:30	8,540.23	44.48	23.63	0:12:30	6,748.43	70.30	14.97	0:19:30	7,795.11	162.40	6.45	0:26:30	6,047.14	251.96	4.17	0:33:30	407.06	407.06	2.59
0:05:35	8,582.59	44.70	23.50	0:12:35	6,748.84	70.30	14.97	0:19:35	7,819.65	162.91	6.43	0:26:35	5,994.08	249.75	4.21	0:33:35	404.96	404.96	2.59
0:05:40	8,365.33	43.57	23.67	0:12:40	6,740.46	70.21	14.98	0:19:40	7,800.78	162.52	6.43	0:26:40	5,953.81	248.08	4.23	0:33:40	404.75	404.75	2.60
0:05:45	8,392.17	43.71	23.62	0:12:45	6,759.54	70.41	14.95	0:19:45	7,831.18	163.15	6.44	0:26:45	6,036.02	251.50	4.17	0:33:45	407.48	407.48	2.59
0:05:50	8,598.32	44.78	23.50	0:12:50	6,580.44	68.55	15.02	0:19:50	7,668.03	159.75	6.44	0:26:50	6,001.84	250.08	4.20	0:33:50	396.78	396.78	2.65
0:05:55	8,592.03	44.75	23.56	0:12:55	6,724.10	70.04	14.99	0:19:55	7,838.53	163.30	6.44	0:26:55	6,029.73	251.24	4.19	0:33:55	404.33	404.33	2.60
0:06:00	8,570.85	44.64	23.57	0:13:00	6,743.18	70.24	14.98	0:20:00	7,834.54	163.22	6.44	0:27:00	5,895.72	245.66	4.19	0:34:00	388.39	388.39	2.60
0:06:05	8,559.74	44.58	23.57	0:13:05	6,735.63	70.16	15.02	0:20:05	7,827.83	163.08	6.43	0:27:05	5,961.15	248.38	4.23	0:34:05	409.15	409.15	2.58
0:06:10	8,461.59	44.07	23.37	0:13:10	6,632.24	69.09	14.90	0:20:10	7,811.68	162.74	6.44	0:27:10	6,001.21	250.05	4.20	0:34:10	405.80	405.80	2.59
0:06:15	8,569.59	44.63	23.58	0:13:15	6,738.78	70.20	15.00	0:20:15	7,810.84	162.73	6.45	0:27:15	6,010.23	250.43	4.20	0:34:15	406.64	406.64	2.59
0:06:20	8,690.39	45.26	23.50	0:13:20	6,547.31	68.20	15.10	0:20:20	7,813.15	162.77	6.43	0:27:20	5,995.13	249.80	4.21	0:34:20	404.96	404.96	2.60
0:06:25	8,542.54	44.49	23.63	0:13:25	6,745.70	70.27	14.96	0:20:25	7,812.52	162.76	6.44	0:27:25	5,946.26	247.76	4.24	0:34:25	400.14	400.14	2.64
0:06:30	8,372.46	43.61	23.61	0:13:30	6,749.89	70.31	14.97	0:20:30	7,824.05	163.00	6.43	0:27:30	5,854.20	243.92	4.22	0:34:30	388.81	388.81	2.59
0:06:35	8,624.12	44.92	23.46	0:13:35	6,749.47	70.31	14.96	0:20:35	7,813.36	162.78	6.44	0:27:35	6,098.73	254.11	4.14	0:34:35	404.12	404.12	2.60
0:06:40	8,572.95	44.65	23.56	0:13:40	6,746.33	70.27	14.96	0:20:40	7,819.02	162.90	6.43	0:27:40	6,054.90	252.29	4.16	0:34:40	404.54	404.54	2.60
0:06:45	8,605.87	44.82	23.42	0:13:45	6,751.99	70.33	14.97	0:20:45	7,819.23	162.90	6.43	0:27:45	5,963.25	248.47	4.23	0:34:45	406.01	406.01	2.60
0:06:50	505.83	0.00	25.28	0:13:50	335.12	0.00	15.76	0:20:50	364.28	0.00	6.10	0:27:50	279.34	0.00	4.16	0:34:50	15.10	0.00	2.80
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00								

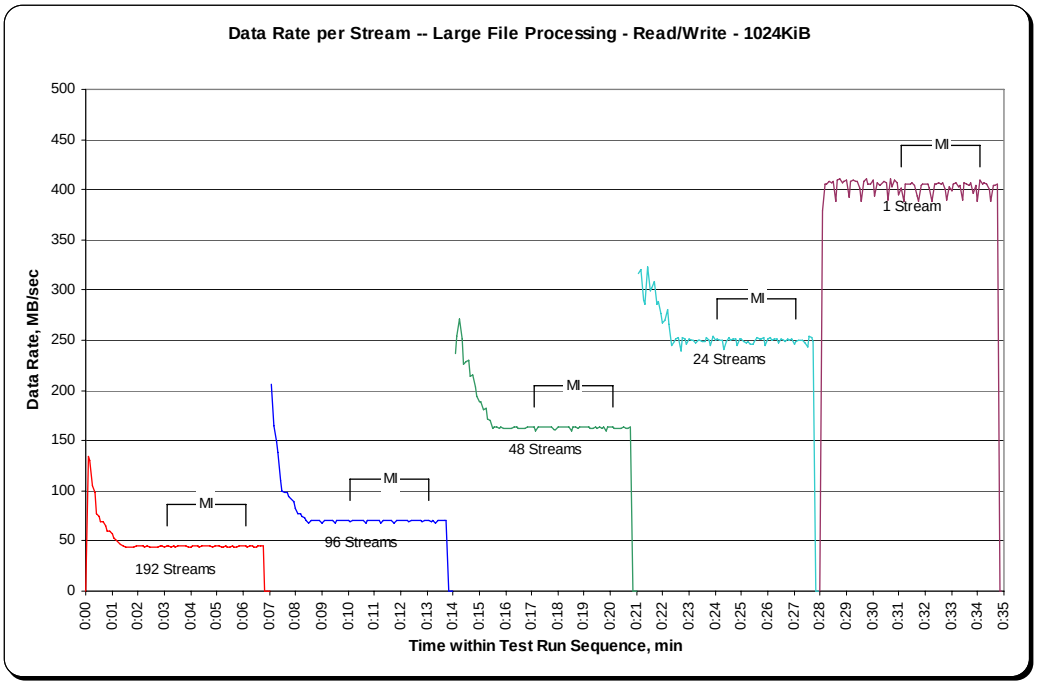
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



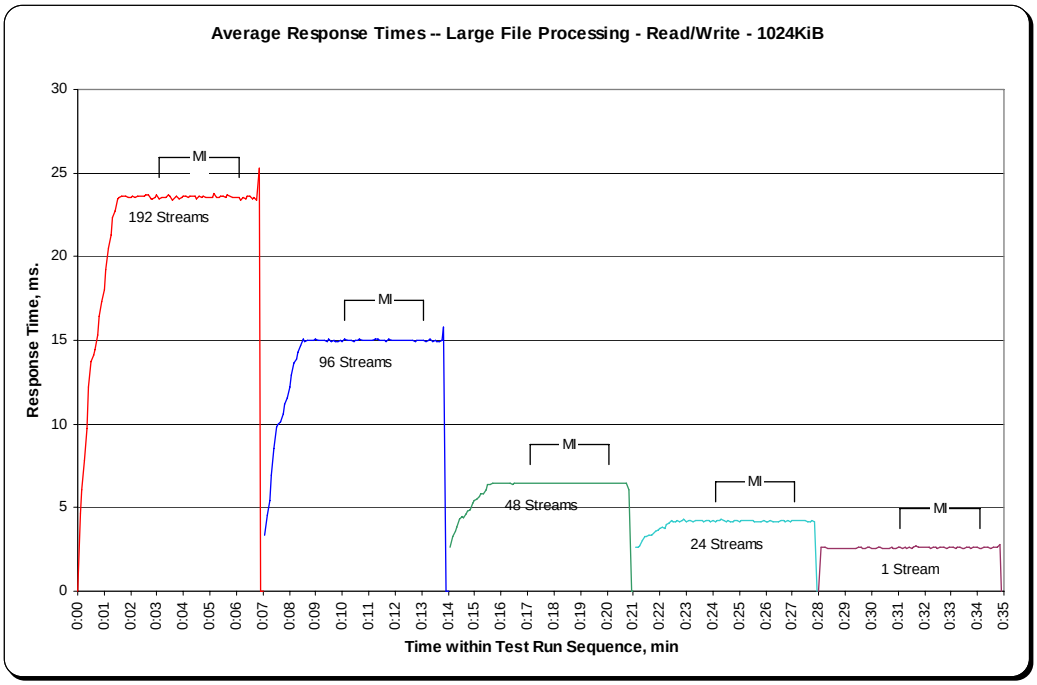
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Average Response Time Graph



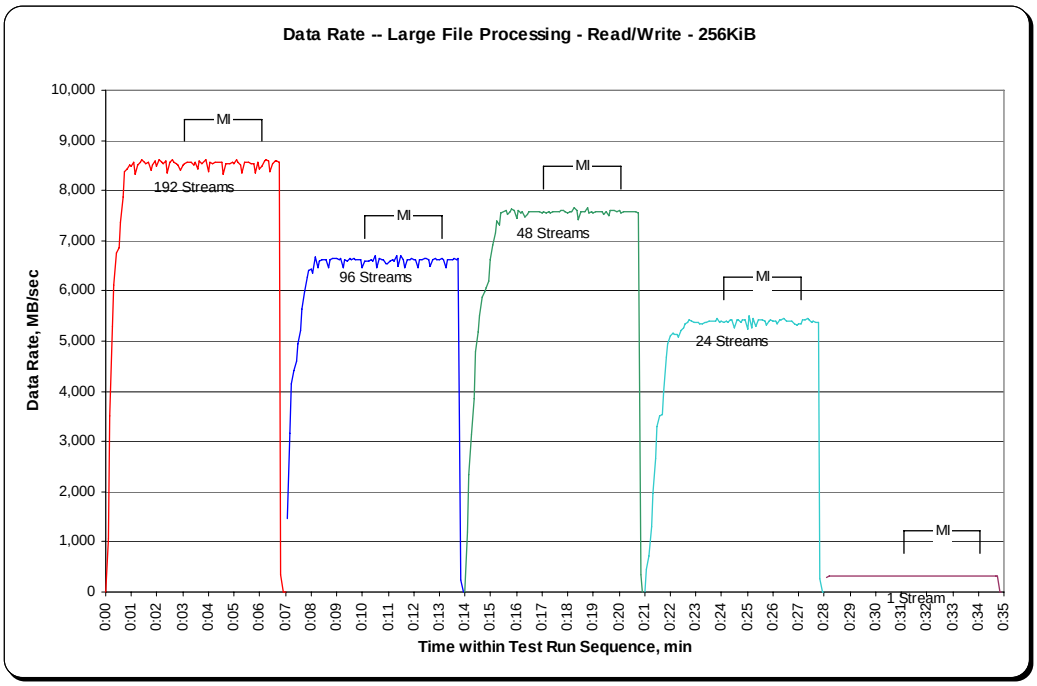
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR16	192 Streams			TR17	96 Streams			TR18	48 Streams			TR19	24 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:05	1,465.38	122.12	1.03	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:05	305.29	305.29	0.83
0:00:05	1,063.89	106.39	1.12	0:07:10	3,173.83	151.13	1.35	0:14:05	1,204.97	172.14	0.80	0:21:05	444.44	222.22	0.81	0:28:10	318.30	318.30	0.82
0:00:10	3,500.09	129.63	1.40	0:07:15	4,137.73	137.92	1.58	0:14:10	2,337.38	259.71	0.86	0:21:10	726.66	242.22	0.80	0:28:15	317.77	317.77	0.82
0:00:15	5,299.45	129.25	1.81	0:07:20	4,413.04	116.13	1.89	0:14:15	3,144.00	224.57	0.90	0:21:15	1,300.97	216.83	0.81	0:28:20	318.19	318.19	0.82
0:00:20	6,120.33	92.73	2.30	0:07:25	4,600.21	112.20	2.20	0:14:20	3,860.02	241.25	1.01	0:21:20	1,975.26	219.47	0.87	0:28:25	317.14	317.14	0.82
0:00:25	6,754.51	83.39	2.87	0:07:30	4,951.01	103.15	2.50	0:14:25	4,782.97	199.29	1.17	0:21:25	2,659.66	221.64	0.94	0:28:30	318.98	318.98	0.82
0:00:30	6,874.78	73.92	3.33	0:07:35	5,216.04	96.59	2.55	0:14:30	5,192.71	207.71	1.22	0:21:30	3,289.17	253.01	0.97	0:28:35	318.30	318.30	0.82
0:00:35	7,354.08	70.04	3.55	0:07:40	5,645.06	95.68	2.59	0:14:35	5,492.02	203.41	1.21	0:21:35	3,513.04	270.23	0.96	0:28:40	318.50	318.50	0.82
0:00:40	7,878.63	64.58	3.68	0:07:45	5,994.39	90.82	2.70	0:14:40	5,885.08	217.97	1.20	0:21:40	3,541.72	252.98	0.96	0:28:45	317.40	317.40	0.82
0:00:45	8,380.80	62.54	4.04	0:07:50	6,270.69	89.58	2.82	0:14:45	5,975.31	213.40	1.21	0:21:45	3,980.50	221.14	0.99	0:28:50	319.92	319.92	0.81
0:00:50	8,425.52	59.33	4.31	0:07:55	6,415.45	90.36	2.90	0:14:50	6,070.89	202.36	1.25	0:21:50	4,668.78	233.44	1.05	0:28:55	318.19	318.19	0.82
0:00:55	8,498.45	55.55	4.56	0:08:00	6,432.17	83.53	3.00	0:14:55	6,186.55	199.57	1.27	0:21:55	4,953.32	235.87	1.07	0:29:00	318.40	318.40	0.82
0:01:00	8,472.70	54.31	4.80	0:08:05	6,364.17	77.61	3.24	0:15:00	6,630.67	184.19	1.32	0:22:00	5,113.64	232.44	1.08	0:29:05	319.03	319.03	0.82
0:01:05	8,568.96	53.22	4.87	0:08:10	6,678.54	79.51	3.29	0:15:05	6,920.71	182.12	1.38	0:22:05	5,160.25	234.56	1.11	0:29:10	319.03	319.03	0.82
0:01:10	8,316.78	49.50	5.10	0:08:15	6,473.12	72.73	3.42	0:15:10	7,154.33	170.34	1.46	0:22:10	5,132.88	233.31	1.12	0:29:15	316.51	316.51	0.82
0:01:15	8,511.24	48.64	5.24	0:08:20	6,602.04	71.76	3.59	0:15:15	7,382.50	167.78	1.52	0:22:15	5,122.29	232.83	1.12	0:29:20	319.13	319.13	0.82
0:01:20	8,564.24	47.58	5.44	0:08:25	6,626.58	69.03	3.74	0:15:20	7,307.05	158.85	1.57	0:22:20	5,077.26	230.78	1.13	0:29:25	317.40	317.40	0.82
0:01:25	8,613.48	46.31	5.58	0:08:30	6,632.40	69.09	3.80	0:15:25	7,550.95	160.66	1.61	0:22:25	5,214.94	217.29	1.12	0:29:30	318.77	318.77	0.82
0:01:30	8,557.53	44.57	5.85	0:08:35	6,626.11	69.02	3.80	0:15:30	7,590.85	158.14	1.65	0:22:30	5,277.69	219.90	1.19	0:29:35	318.98	318.98	0.82
0:01:35	8,545.63	44.51	5.91	0:08:40	6,475.27	67.45	3.82	0:15:35	7,611.40	158.57	1.65	0:22:35	5,353.77	223.07	1.17	0:29:40	318.50	318.50	0.82
0:01:40	8,567.44	44.62	5.88	0:08:45	6,615.15	68.91	3.80	0:15:40	7,536.22	157.00	1.65	0:22:40	5,378.46	224.10	1.16	0:29:45	318.50	318.50	0.82
0:01:45	8,409.95	43.80	5.88	0:08:50	6,636.91	69.13	3.80	0:15:45	7,580.37	157.92	1.65	0:22:45	5,415.69	225.65	1.16	0:29:50	316.67	316.67	0.82
0:01:50	8,499.86	44.27	5.93	0:08:55	6,636.33	69.13	3.79	0:15:50	7,646.06	159.29	1.66	0:22:50	5,398.54	224.94	1.16	0:29:55	316.09	316.09	0.82
0:01:55	8,581.70	44.70	5.88	0:09:00	6,639.90	69.17	3.80	0:15:55	7,616.44	158.68	1.65	0:22:55	5,384.12	224.34	1.16	0:30:00	318.61	318.61	0.82
0:02:00	8,475.43	44.14	5.94	0:09:05	6,616.67	68.92	3.81	0:16:00	7,436.76	154.93	1.66	0:23:00	5,384.96	224.37	1.16	0:30:05	319.34	319.34	0.82
0:02:05	8,607.39	44.83	5.87	0:09:10	6,636.65	69.13	3.80	0:16:05	7,600.18	158.34	1.65	0:23:05	5,365.93	223.58	1.17	0:30:10	319.08	319.08	0.82
0:02:10	8,575.25	44.66	5.88	0:09:15	6,465.94	67.35	3.82	0:16:10	7,566.37	157.63	1.66	0:23:10	5,342.39	222.60	1.17	0:30:15	319.34	319.34	0.81
0:02:15	8,533.05	44.44	5.91	0:09:20	6,632.24	69.09	3.80	0:16:15	7,583.88	158.00	1.66	0:23:15	5,344.43	222.68	1.17	0:30:20	316.98	316.98	0.82
0:02:20	8,584.38	44.71	5.87	0:09:25	6,588.94	68.63	3.80	0:16:20	7,467.80	155.58	1.65	0:23:20	5,362.68	223.44	1.17	0:30:25	315.31	315.31	0.83
0:02:25	8,355.63	43.52	5.91	0:09:30	6,637.75	69.14	3.80	0:16:25	7,537.32	157.03	1.65	0:23:25	5,365.77	223.57	1.17	0:30:30	317.88	317.88	0.82
0:02:30	8,564.40	44.61	5.89	0:09:35	6,621.44	68.97	3.81	0:16:30	7,592.37	158.17	1.65	0:23:30	5,403.57	225.15	1.16	0:30:35	317.93	317.93	0.82
0:02:35	8,614.73	44.87	5.85	0:09:40	6,636.07	69.13	3.80	0:16:35	7,590.22	158.13	1.65	0:23:35	5,392.67	224.69	1.16	0:30:40	318.66	318.66	0.82
0:02:40	8,552.19	44.54	5.90	0:09:45	6,623.38	68.99	3.80	0:16:40	7,584.51	158.01	1.65	0:23:40	5,405.51	225.23	1.16	0:30:45	319.24	319.24	0.82
0:02:45	8,541.07	44.48	5.90	0:09:50	6,629.05	69.05	3.80	0:16:45	7,575.91	157.83	1.66	0:23:45	5,407.82	225.33	1.16	0:30:50	317.46	317.46	0.82
0:02:50	8,519.68	44.37	5.93	0:09:55	6,628.21	69.04	3.81	0:16:50	7,582.15	157.96	1.65	0:23:50	5,439.65	226.65	1.15	0:30:55	318.45	318.45	0.82
0:02:55	8,397.10	43.73	5.88	0:10:00	6,467.41	67.37	3.82	0:16:55	7,581.41	157.95	1.65	0:23:55	5,385.28	224.39	1.16	0:31:00	316.30	316.30	0.82
0:03:00	8,520.94	44.38	5.92					0:17:00	7,561.02	157.52	1.66	0:24:00	5,400.06	225.00	1.16				

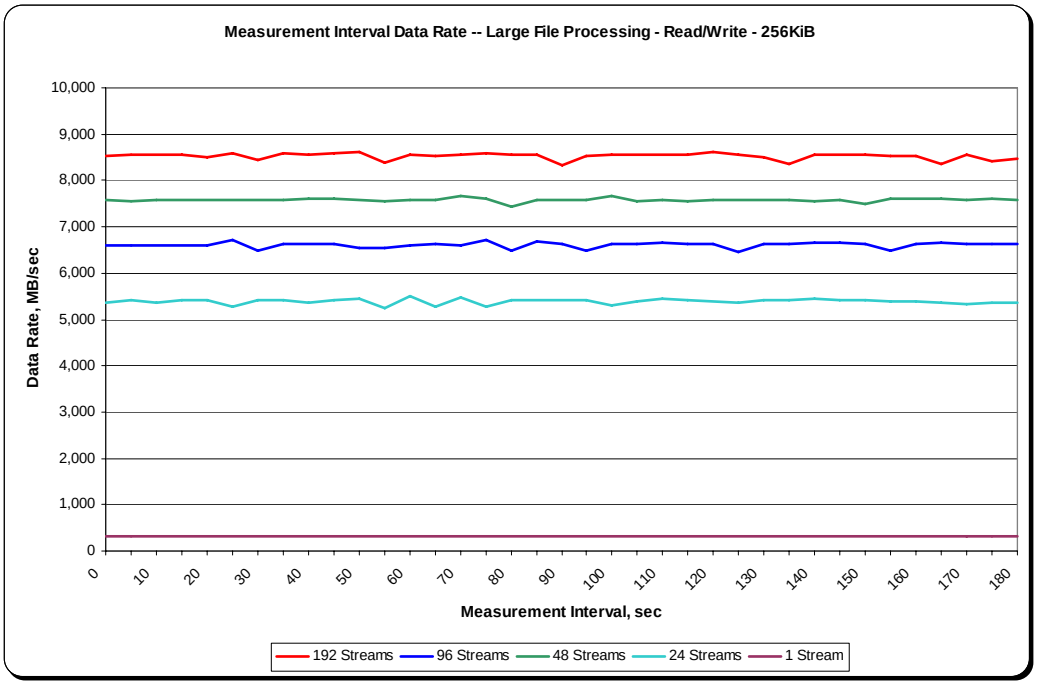
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR16	192 Streams			TR17	96 Streams			TR18	48 Streams			TR19	24 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	8,539.71	44.48	5.91	0:10:05	6,604.82	68.80	3.80	0:17:05	7,581.47	157.95	1.65	0:24:05	5,364.67	223.53	1.17	0:31:05	319.19	319.19	0.82
0:03:10	8,563.14	44.60	5.89	0:10:10	6,596.54	68.71	3.81	0:17:10	7,545.13	157.19	1.66	0:24:10	5,411.86	225.49	1.16	0:31:10	317.09	317.09	0.82
0:03:15	8,555.54	44.56	5.89	0:10:15	6,595.39	68.70	3.81	0:17:15	7,569.09	157.69	1.66	0:24:15	5,371.02	223.79	1.17	0:31:15	318.40	318.40	0.82
0:03:20	8,572.84	44.65	5.88	0:10:20	6,610.54	68.86	3.80	0:17:20	7,566.00	157.63	1.66	0:24:20	5,431.68	226.32	1.15	0:31:20	318.98	318.98	0.82
0:03:25	8,514.23	44.34	5.92	0:10:25	6,586.79	68.61	3.82	0:17:25	7,573.71	157.79	1.66	0:24:25	5,428.79	226.20	1.15	0:31:25	319.50	319.50	0.81
0:03:30	8,576.62	44.67	5.88	0:10:30	6,714.45	69.94	3.79	0:17:30	7,586.50	158.05	1.65	0:24:30	5,272.92	219.71	1.19	0:31:30	317.35	317.35	0.82
0:03:35	8,432.96	43.92	5.86	0:10:35	6,473.02	67.43	3.81	0:17:35	7,590.59	158.14	1.65	0:24:35	5,430.00	226.25	1.15	0:31:35	320.55	320.55	0.81
0:03:40	8,593.87	44.76	5.88	0:10:40	6,637.54	69.14	3.80	0:17:40	7,585.92	158.04	1.65	0:24:40	5,421.35	225.89	1.15	0:31:40	314.00	314.00	0.83
0:03:45	8,547.00	44.52	5.90	0:10:45	6,620.39	68.96	3.81	0:17:45	7,608.36	158.51	1.65	0:24:45	5,366.56	223.61	1.17	0:31:45	319.34	319.34	0.82
0:03:50	8,599.37	44.79	5.88	0:10:50	6,619.35	68.95	3.81	0:17:50	7,595.36	158.24	1.65	0:24:50	5,419.30	225.80	1.16	0:31:50	319.19	319.19	0.82
0:03:55	8,608.23	44.83	5.86	0:10:55	6,554.39	68.27	3.81	0:17:55	7,575.70	157.83	1.66	0:24:55	5,433.20	226.38	1.15	0:31:55	319.03	319.03	0.82
0:04:00	8,377.07	43.63	5.90	0:11:00	6,546.47	68.19	3.82	0:18:00	7,555.62	157.41	1.66	0:25:00	5,244.24	218.51	1.17	0:32:00	319.40	319.40	0.81
0:04:05	8,551.61	44.54	5.90	0:11:05	6,597.75	68.73	3.81	0:18:05	7,576.28	157.84	1.66	0:25:05	5,498.73	229.11	1.16	0:32:05	319.03	319.03	0.82
0:04:10	8,544.27	44.50	5.91	0:11:10	6,617.77	68.94	3.80	0:18:10	7,580.26	157.92	1.65	0:25:10	5,271.30	219.64	1.16	0:32:10	318.03	318.03	0.82
0:04:15	8,551.08	44.54	5.90	0:11:15	6,600.10	68.75	3.81	0:18:15	7,659.90	159.58	1.66	0:25:15	5,465.02	227.71	1.17	0:32:15	318.66	318.66	0.82
0:04:20	8,576.67	44.67	5.88	0:11:20	6,703.91	69.83	3.80	0:18:20	7,613.40	158.61	1.65	0:25:20	5,286.08	220.25	1.16	0:32:20	315.36	315.36	0.82
0:04:25	8,557.53	44.57	5.90	0:11:25	6,496.82	67.68	3.81	0:18:25	7,427.69	154.74	1.66	0:25:25	5,418.36	225.76	1.16	0:32:25	316.77	316.77	0.82
0:04:30	8,569.28	44.63	5.88	0:11:30	6,696.26	69.75	3.80	0:18:30	7,575.23	157.82	1.66	0:25:30	5,417.10	225.71	1.16	0:32:30	319.24	319.24	0.82
0:04:35	8,336.44	43.42	5.93	0:11:35	6,620.50	68.96	3.81	0:18:35	7,592.48	158.18	1.66	0:25:35	5,418.52	225.77	1.16	0:32:35	318.50	318.50	0.82
0:04:40	8,529.33	44.42	5.92	0:11:40	6,473.59	67.43	3.82	0:18:40	7,577.64	157.87	1.66	0:25:40	5,410.29	225.43	1.16	0:32:40	314.94	314.94	0.83
0:04:45	8,546.21	44.51	5.89	0:11:45	6,627.47	69.04	3.80	0:18:45	7,670.96	159.81	1.66	0:25:45	5,316.12	221.51	1.18	0:32:45	318.87	318.87	0.82
0:04:50	8,547.00	44.52	5.90	0:11:50	6,627.79	69.04	3.81	0:18:50	7,563.48	157.57	1.66	0:25:50	5,385.64	224.40	1.16	0:32:50	318.50	318.50	0.82
0:04:55	8,562.30	44.60	5.90	0:11:55	6,645.46	69.22	3.80	0:18:55	7,567.26	157.65	1.66	0:25:55	5,437.81	226.58	1.15	0:32:55	317.67	317.67	0.82
0:05:00	8,547.57	44.52	5.90	0:12:00	6,625.27	69.01	3.80	0:19:00	7,560.60	157.51	1.66	0:26:00	5,411.96	225.50	1.16	0:33:00	319.66	319.66	0.81
0:05:05	8,604.30	44.81	5.86	0:12:05	6,626.79	69.03	3.80	0:19:05	7,584.40	158.01	1.65	0:26:05	5,396.18	224.84	1.16	0:33:05	317.04	317.04	0.82
0:05:10	8,564.72	44.61	5.86	0:12:10	6,453.36	67.22	3.82	0:19:10	7,573.34	157.78	1.66	0:26:10	5,356.55	223.19	1.17	0:33:10	319.24	319.24	0.82
0:05:15	8,514.28	44.35	5.93	0:12:15	6,627.11	69.03	3.80	0:19:15	7,568.04	157.67	1.66	0:26:15	5,418.78	225.78	1.16	0:33:15	314.00	314.00	0.83
0:05:20	8,359.25	43.54	5.91	0:12:20	6,624.33	69.00	3.80	0:19:20	7,570.88	157.73	1.66	0:26:20	5,429.47	226.23	1.15	0:33:20	318.61	318.61	0.82
0:05:25	8,572.27	44.65	5.89	0:12:25	6,642.99	69.20	3.80	0:19:25	7,536.95	157.02	1.65	0:26:25	5,443.21	226.80	1.15	0:33:25	319.13	319.13	0.82
0:05:30	8,573.21	44.65	5.88	0:12:30	6,646.14	69.23	3.79	0:19:30	7,567.63	157.66	1.66	0:26:30	5,405.15	225.21	1.16	0:33:30	318.71	318.71	0.82
0:05:35	8,556.59	44.57	5.89	0:12:35	6,620.18	68.96	3.80	0:19:35	7,492.60	156.10	1.65	0:26:35	5,411.07	225.46	1.16	0:33:35	318.30	318.30	0.82
0:05:40	8,532.68	44.44	5.92	0:12:40	6,490.00	67.60	3.81	0:19:40	7,597.51	158.28	1.65	0:26:40	5,389.16	224.55	1.16	0:33:40	319.13	319.13	0.82
0:05:45	8,533.10	44.44	5.90	0:12:45	6,622.65	68.99	3.80	0:19:45	7,608.00	158.50	1.65	0:26:45	5,399.54	224.98	1.16	0:33:45	319.13	319.13	0.82
0:05:50	8,350.96	43.49	5.92	0:12:50	6,650.23	69.27	3.79	0:19:50	7,613.29	158.61	1.65	0:26:50	5,349.47	222.89	1.17	0:33:50	318.40	318.40	0.82
0:05:55	8,569.75	44.63	5.90	0:12:55	6,628.57	69.05	3.80	0:19:55	7,588.07	158.08	1.65	0:26:55	5,324.09	221.84	1.17	0:33:55	318.56	318.56	0.82
0:06:00	8,426.93	43.89	5.99	0:13:00	6,630.51	69.07	3.81	0:20:00	7,598.66	158.31	1.65	0:27:00	5,353.98	223.08	1.17	0:34:00	317.93	317.93	0.82
0:06:05	8,483.45	44.18	5.95	0:13:05	6,641.16	69.18	3.80	0:20:05	7,564.85	157.60	1.66	0:27:05	5,350.78	222.95	1.17	0:34:05	317.98	317.98	0.82
0:06:10	8,582.80	44.70	5.87	0:13:10	6,618.66	68.94	3.81	0:20:10	7,575.38	157.82	1.66	0:27:10	5,414.11	225.59	1.16	0:34:10	318.92	318.92	0.82
0:06:15	8,604.14	44.81	5.87	0:13:15	6,464.68	67.34	3.82	0:20:15	7,575.86	157.83	1.66	0:27:15	5,424.65	226.03	1.15	0:34:15	318.09	318.09	0.82
0:06:20	8,584.53	44.71	5.87	0:13:20	6,621.08	68.97	3.81	0:20:20	7,590.12	158.13	1.65	0:27:20	5,451.44	227.14	1.15	0:34:20	318.66	318.66	0.82
0:06:25	8,365.22	43.57	5.90	0:13:25	6,629.78	69.06	3.80	0:20:25	7,586.97	158.06	1.65	0:27:25	5,433.35	226.39	1.15	0:34:25	316.41	316.41	0.82
0:06:30	8,532.79	44.44	5.91	0:13:30	6,632.72	69.09	3.80	0:20:30	7,584.04	158.00	1.65	0:27:30	5,367.66	223.65	1.17	0:34:30	319.76	319.76	0.81
0:06:35	8,577.14	44.67	5.87	0:13:35	6,638.95	69.16	3.80	0:20:35	7,572.24	157.75	1.66	0:27:35	5,394.19	224.76	1.16	0:34:35	319.03	319.03	0.82
0:06:40	8,597.22	44.78	5.87	0:13:40	6,619.61	68.95	3.80	0:20:40	7,569.25	157.69	1.66	0:27:40	5,359.06	223.29	1.17	0:34:40	317.61	317.61	0.82
0:06:45	8,567.97	44.62	5.89	0:13:45	6,640.53	69.17	3.80	0:20:45	7,557.51	157.45	1.66	0:27:45	5,373.32	223.89	1.17	0:34:45	318.77	318.77	0.82
0:06:50	337.96	0.00	6.21	0:13:50	234.88	0.00	3.87	0:20:50	348.07	0.00	1.58	0:27:50	257.48	0.00	1.17	0:34:50	12.27	0.00	0.84
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
0:07:00	0.00	0.00	0.00									0:28:00	0.00	0.00	0.00				

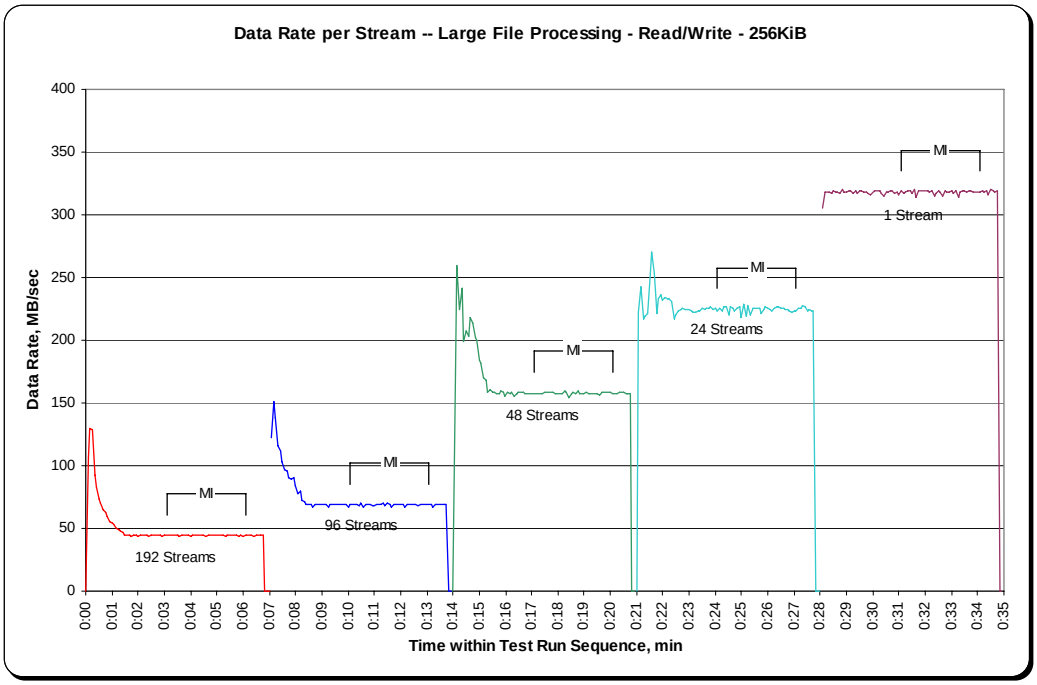
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



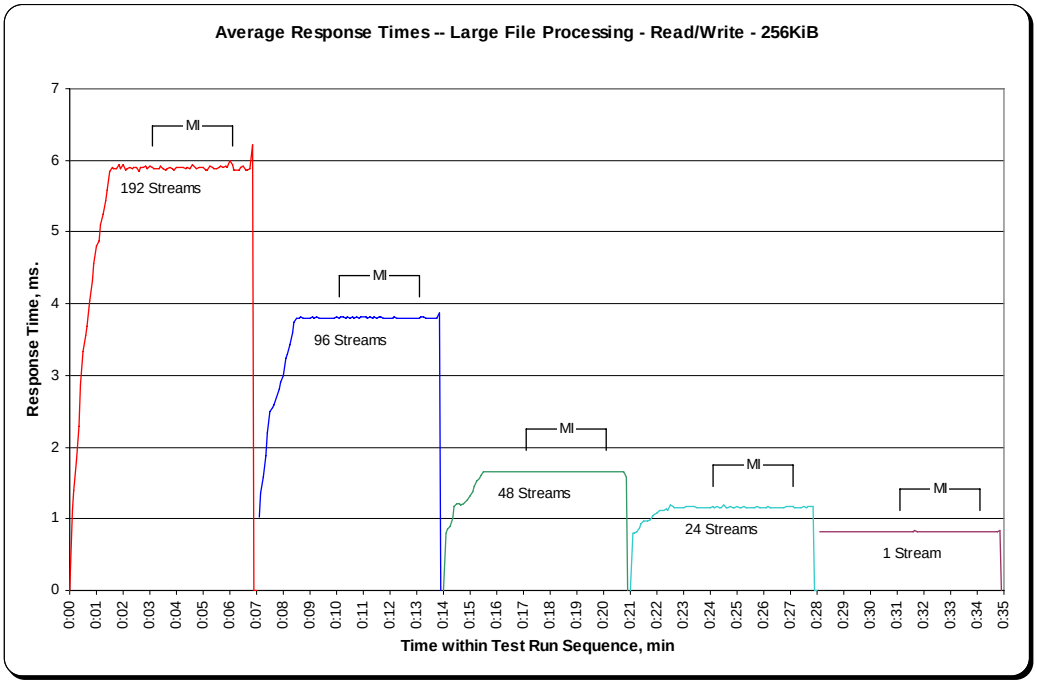
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Response Time Graph



Large File Processing Test – READ ONLY Test Phase

Clause 10.6.8.1.3

1. *A table that will contain the following information for each "READ ONLY, 1024 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
2. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "READ ONLY, 1024 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*
3. *A table that will contain the following information for each "READ ONLY, 256 KiB Transfer Size" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
4. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "READ ONLY, 256 KiB Transfer Size" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*

The SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

Immediately following the SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" table and graphs will be the SPC-2 "Large File Processing/READ ONLY/64 KiB Transfer Size" table and graphs. The table contains the Test Run data and the graphs illustrate the average Data Rate, average Data Rate per Stream, and average Response Time produced by the Test Runs.

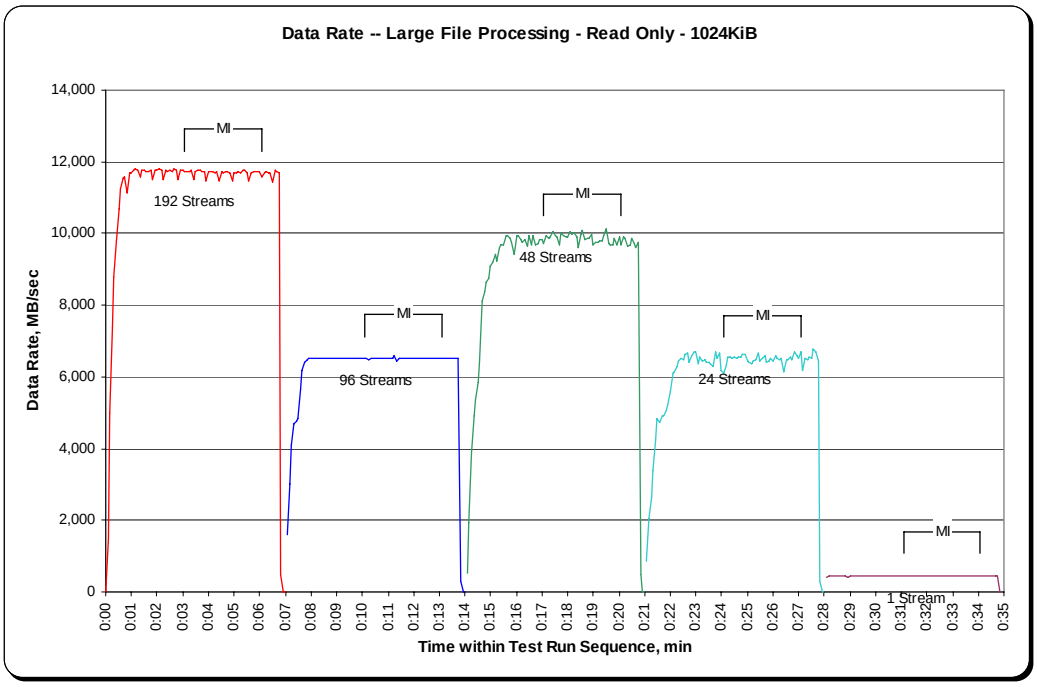
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data – Ramp Up Period

TR21	192 Streams			TR22	96 Streams			TR23	48 Streams			TR24	24 Streams			TR25	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:05	1,617.53	179.73	2.87	0:14:05	504.16	168.05	2.30	0:21:05	866.96	173.39	2.47	0:28:05	423.00	423.00	2.33
0:00:05	1,505.13	107.51	3.52	0:07:10	3,007.95	200.53	3.90	0:14:10	1,933.36	276.19	2.46	0:21:10	2,057.10	411.42	2.54	0:28:10	456.13	456.13	2.29
0:00:10	4,987.66	138.55	5.07	0:07:15	4,110.00	171.25	4.99	0:14:15	3,863.79	321.98	2.74	0:21:15	2,660.87	295.65	2.71	0:28:15	456.34	456.34	2.29
0:00:15	7,384.28	123.07	6.71	0:07:20	4,703.07	142.52	6.24	0:14:20	4,912.37	307.02	3.02	0:21:20	3,376.83	306.98	2.88	0:28:20	465.15	465.15	2.25
0:00:20	8,797.34	104.73	8.96	0:07:25	4,752.15	121.85	7.93	0:14:25	5,374.16	282.85	3.32	0:21:25	4,237.72	325.98	3.08	0:28:25	444.18	444.18	2.35
0:00:25	9,790.34	92.36	10.28	0:07:30	4,849.03	96.98	9.65	0:14:30	5,827.99	264.91	3.64	0:21:30	4,830.58	345.04	3.03	0:28:30	451.73	451.73	2.32
0:00:30	10,695.48	92.20	10.81	0:07:35	5,670.70	105.01	9.53	0:14:35	6,388.97	228.18	3.91	0:21:35	4,719.22	337.09	3.10	0:28:35	447.32	447.32	2.34
0:00:35	11,227.31	87.03	11.59	0:07:40	6,196.66	101.58	9.75	0:14:40	8,116.19	245.95	3.98	0:21:40	4,904.82	350.34	2.99	0:28:40	453.40	453.40	2.31
0:00:40	11,546.29	85.53	12.07	0:07:45	6,421.69	94.44	10.57	0:14:45	8,370.15	253.64	4.13	0:21:45	4,902.30	326.82	3.07	0:28:45	453.40	453.40	2.31
0:00:45	11,591.80	80.50	12.73	0:07:50	6,472.02	92.46	11.06	0:14:50	8,624.96	253.68	4.17	0:21:50	5,075.74	338.38	3.10	0:28:50	453.40	453.40	2.31
0:00:50	11,149.09	75.33	13.20	0:07:55	6,499.28	84.41	12.18	0:14:55	8,757.92	230.47	4.19	0:21:55	5,199.26	305.84	3.19	0:28:55	423.62	423.62	2.47
0:00:55	11,695.61	74.49	13.73	0:08:00	6,505.99	79.34	12.95	0:15:00	9,087.17	227.18	4.50	0:22:00	5,591.43	310.63	3.32	0:29:00	444.81	444.81	2.35
0:01:00	11,705.67	70.52	14.50	0:08:05	6,506.41	73.94	13.81	0:15:05	9,206.92	224.56	4.60	0:22:05	6,092.65	304.63	3.35	0:29:05	445.64	445.64	2.35
0:01:05	11,763.76	69.20	15.01	0:08:10	6,507.25	73.12	14.30	0:15:10	9,435.72	219.44	4.66	0:22:10	6,126.41	278.47	3.64	0:29:10	462.21	462.21	2.34
0:01:10	11,800.05	67.82	15.40	0:08:15	6,508.93	71.53	14.49	0:15:15	9,235.23	205.23	4.96	0:22:15	6,276.15	272.88	3.71	0:29:15	456.13	456.13	2.29
0:01:15	11,755.59	64.59	15.88	0:08:20	6,506.62	69.96	14.88	0:15:20	9,609.99	204.47	4.97	0:22:20	6,425.67	267.74	3.78	0:29:20	452.98	452.98	2.31
0:01:20	11,563.49	62.85	16.27	0:08:25	6,508.51	68.51	15.21	0:15:25	9,669.76	201.45	5.11	0:22:25	6,520.67	271.69	3.93	0:29:25	447.32	447.32	2.34
0:01:25	11,758.73	62.88	16.58	0:08:30	6,509.77	67.81	15.45	0:15:30	9,678.15	201.63	5.17	0:22:30	6,481.25	270.05	3.88	0:29:30	457.60	457.60	2.29
0:01:30	11,763.97	61.27	17.07	0:08:35	6,517.74	67.89	15.47	0:15:35	9,931.06	206.90	5.07	0:22:35	6,620.71	275.86	3.80	0:29:35	451.94	451.94	2.31
0:01:35	11,744.26	61.17	17.19	0:08:40	6,507.67	67.79	15.46	0:15:40	9,935.89	207.00	5.08	0:22:40	6,654.68	277.28	3.78	0:29:40	440.40	440.40	2.38
0:01:40	11,732.73	61.11	17.21	0:08:45	6,508.51	67.80	15.46	0:15:45	9,864.58	205.51	5.11	0:22:45	6,402.61	266.78	3.93	0:29:45	452.57	452.57	2.31
0:01:45	11,780.96	61.36	17.16	0:08:50	6,509.98	67.81	15.46	0:15:50	9,740.01	202.92	5.16	0:22:50	6,579.39	274.14	3.82	0:29:50	443.76	443.76	2.36
0:01:50	11,511.27	59.95	17.19	0:08:55	6,507.46	67.79	15.46	0:15:55	9,428.17	196.42	5.34	0:22:55	6,709.00	279.54	3.75	0:29:55	442.92	442.92	2.36
0:01:55	11,768.17	61.29	17.16	0:09:00	6,508.09	67.79	15.46	0:16:00	9,942.81	207.14	5.06	0:23:00	6,719.48	279.98	3.74	0:30:00	446.48	446.48	2.34
0:02:00	11,771.10	61.31	17.17	0:09:05	6,507.67	67.79	15.46	0:16:05	9,942.39	207.13	5.07	0:23:05	6,380.79	265.87	3.94	0:30:05	452.57	452.57	2.31
0:02:05	11,788.93	61.40	17.15	0:09:10	6,509.56	67.81	15.46	0:16:10	9,832.92	204.85	5.13	0:23:10	6,546.05	272.75	3.84	0:30:10	449.21	449.21	2.33
0:02:10	11,761.04	61.26	17.17	0:09:15	6,507.88	67.79	15.46	0:16:15	9,762.03	203.38	5.06	0:23:15	6,450.00	268.75	3.90	0:30:15	432.85	432.85	2.42
0:02:15	11,508.33	59.94	17.20	0:09:20	6,507.25	67.78	15.46	0:16:20	9,841.93	205.04	5.15	0:23:20	6,487.33	270.31	3.87	0:30:20	453.40	453.40	2.31
0:02:20	11,758.10	61.24	17.19	0:09:25	6,508.93	67.80	15.46	0:16:25	9,645.64	200.95	5.21	0:23:25	6,394.43	266.43	3.85	0:30:25	450.26	450.26	2.32
0:02:25	11,727.27	61.08	17.21	0:09:30	6,508.09	67.79	15.46	0:16:30	9,956.23	207.42	5.05	0:23:30	6,398.20	266.59	3.93	0:30:30	454.03	454.03	2.30
0:02:30	11,753.91	61.22	17.20	0:09:35	6,507.88	67.79	15.46	0:16:35	9,695.55	201.99	5.19	0:23:35	6,350.18	264.59	3.97	0:30:35	452.98	452.98	2.31
0:02:35	11,742.58	61.16	17.22	0:09:40	6,508.51	67.80	15.46	0:16:40	9,940.08	207.09	5.06	0:23:40	6,286.21	261.93	4.01	0:30:40	447.53	447.53	2.34
0:02:40	11,797.53	61.45	17.10	0:09:45	6,507.67	67.79	15.46	0:16:45	9,698.28	202.05	5.18	0:23:45	6,684.67	278.53	3.77	0:30:45	449.00	449.00	2.33
0:02:45	11,750.13	61.20	17.16	0:09:50	6,508.93	67.80	15.47	0:16:50	9,699.75	202.08	5.18	0:23:50	6,525.71	271.90	3.86	0:30:50	452.36	452.36	2.31
0:02:50	11,510.22	59.95	17.18	0:09:55	6,507.88	67.79	15.46	0:16:55	9,828.51	204.76	5.12	0:23:55	6,660.76	277.53	3.78	0:30:55	452.98	452.98	2.31
0:02:55	11,765.44	61.28	17.22	0:10:00	6,508.51	67.80	15.46	0:17:00	9,820.54	204.59	5.13	0:24:00	6,197.92	258.25	4.06	0:31:00	450.47	450.47	2.32
0:03:00	11,767.12	61.29	17.14																

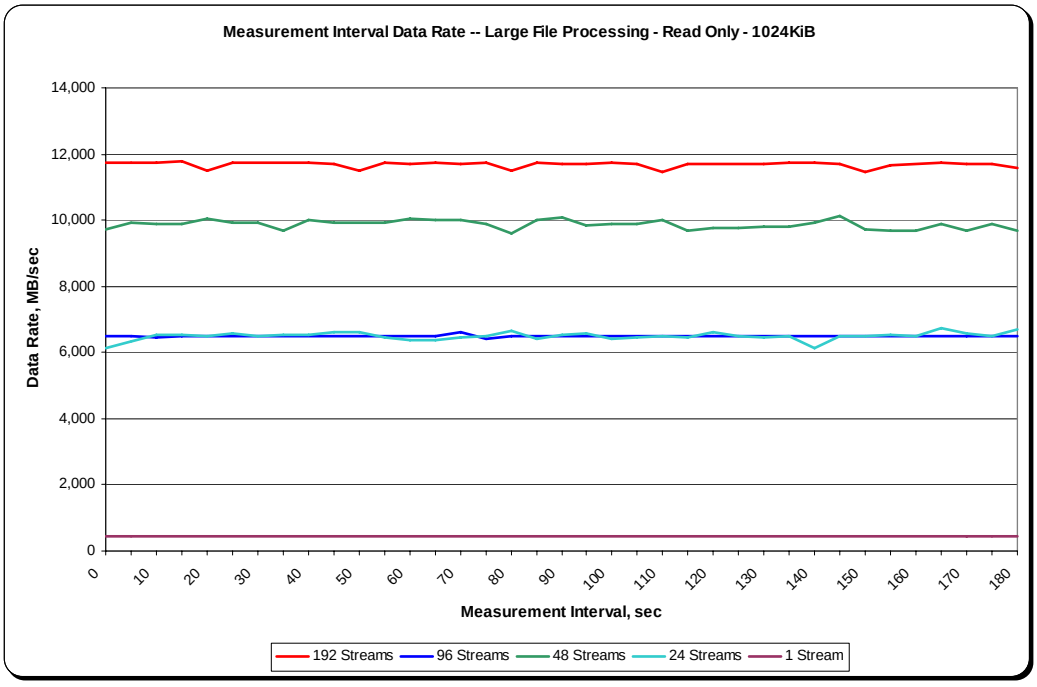
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data
Measurement Interval, Run-Out, and Ramp-Down Periods

TR21	192 Streams			TR22	96 Streams			TR23	48 Streams			TR24	24 Streams			TR25	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	11,727.69	61.08	17.20	0:10:05	6,508.72	67.80	15.46	0:17:05	9,714.43	202.38	5.16	0:24:05	6,114.88	254.79	4.11	0:31:05	454.03	454.03	2.30
0:03:10	11,742.79	61.16	17.19	0:10:10	6,513.33	67.85	15.46	0:17:10	9,936.10	207.00	5.06	0:24:10	6,340.32	264.18	3.96	0:31:10	442.92	442.92	2.36
0:03:15	11,746.57	61.18	17.17	0:10:15	6,469.50	67.39	15.46	0:17:15	9,878.42	205.80	5.11	0:24:15	6,550.03	272.92	3.84	0:31:15	444.18	444.18	2.35
0:03:20	11,778.86	61.35	17.16	0:10:20	6,507.46	67.79	15.46	0:17:20	9,901.28	206.28	5.09	0:24:20	6,538.92	272.45	3.82	0:31:20	442.29	442.29	2.37
0:03:25	11,509.38	59.94	17.19	0:10:25	6,509.35	67.81	15.46	0:17:25	10,051.86	209.41	5.00	0:24:25	6,504.74	271.03	3.87	0:31:25	445.44	445.44	2.35
0:03:30	11,744.47	61.17	17.20	0:10:30	6,508.30	67.79	15.46	0:17:30	9,924.98	206.77	5.07	0:24:30	6,570.80	273.78	3.84	0:31:30	454.66	454.66	2.30
0:03:35	11,760.20	61.25	17.18	0:10:35	6,508.51	67.80	15.46	0:17:35	9,906.53	206.39	5.06	0:24:35	6,500.12	270.84	3.87	0:31:35	454.87	454.87	2.30
0:03:40	11,756.84	61.23	17.19	0:10:40	6,506.83	67.78	15.46	0:17:40	9,697.44	202.03	5.13	0:24:40	6,544.58	272.69	3.86	0:31:40	451.31	451.31	2.32
0:03:45	11,726.64	61.08	17.20	0:10:45	6,509.56	67.81	15.46	0:17:45	10,000.69	208.35	5.03	0:24:45	6,537.66	272.40	3.78	0:31:45	453.40	453.40	2.31
0:03:50	11,720.14	61.04	17.21	0:10:50	6,507.67	67.79	15.46	0:17:50	9,933.37	206.95	5.06	0:24:50	6,617.14	275.71	3.80	0:31:50	444.18	444.18	2.36
0:03:55	11,484.42	59.81	17.23	0:10:55	6,507.88	67.79	15.46	0:17:55	9,915.12	206.57	5.07	0:24:55	6,627.84	276.16	3.79	0:31:55	445.64	445.64	2.34
0:04:00	11,733.57	61.11	17.20	0:11:00	6,508.93	67.80	15.46	0:18:00	9,911.56	206.49	5.09	0:25:00	6,448.11	268.67	3.91	0:32:00	442.50	442.50	2.36
0:04:05	11,712.59	61.00	17.24	0:11:05	6,509.14	67.80	15.46	0:18:05	10,054.17	209.46	5.04	0:25:05	6,387.09	266.13	3.93	0:32:05	449.00	449.00	2.33
0:04:10	11,733.98	61.11	17.21	0:11:10	6,507.04	67.78	15.47	0:18:10	9,991.88	208.16	5.03	0:25:10	6,356.47	264.85	3.95	0:32:10	453.40	453.40	2.31
0:04:15	11,704.21	60.96	17.26	0:11:15	6,599.95	68.75	15.46	0:18:15	10,004.46	208.43	5.03	0:25:15	6,439.31	268.30	3.90	0:32:15	448.58	448.58	2.33
0:04:20	11,723.08	61.06	17.23	0:11:20	6,435.11	67.03	15.46	0:18:20	9,896.04	206.17	5.09	0:25:20	6,496.14	270.67	3.87	0:32:20	446.69	446.69	2.34
0:04:25	11,481.28	59.80	17.22	0:11:25	6,509.14	67.80	15.46	0:18:25	9,613.55	200.28	5.14	0:25:25	6,665.17	277.72	3.77	0:32:25	454.24	454.24	2.28
0:04:30	11,726.23	61.07	17.25	0:11:30	6,506.62	67.78	15.46	0:18:30	9,995.45	208.24	5.03	0:25:30	6,433.22	268.05	3.91	0:32:30	459.70	459.70	2.28
0:04:35	11,699.38	60.93	17.22	0:11:35	6,509.14	67.80	15.46	0:18:35	10,089.82	210.20	5.00	0:25:35	6,527.18	271.97	3.85	0:32:35	442.71	442.71	2.36
0:04:40	11,718.68	61.03	17.25	0:11:40	6,508.72	67.80	15.46	0:18:40	9,843.82	205.08	5.12	0:25:40	6,577.93	274.08	3.89	0:32:40	451.94	451.94	2.31
0:04:45	11,733.57	61.11	17.23	0:11:45	6,508.30	67.79	15.46	0:18:45	9,868.78	205.60	5.10	0:25:45	6,412.88	267.20	3.89	0:32:45	456.76	456.76	2.29
0:04:50	11,697.70	60.93	17.26	0:11:50	6,509.35	67.81	15.46	0:18:50	9,875.70	205.74	5.09	0:25:50	6,439.72	268.32	3.90	0:32:50	456.97	456.97	2.29
0:04:55	11,469.53	59.74	17.25	0:11:55	6,505.78	67.77	15.46	0:18:55	9,992.93	208.19	5.09	0:25:55	6,508.30	271.18	3.86	0:32:55	455.08	455.08	2.30
0:05:00	11,687.22	60.87	17.26	0:12:00	6,508.93	67.80	15.46	0:19:00	9,665.14	201.36	5.11	0:26:00	6,445.39	268.56	3.90	0:33:00	439.98	439.98	2.38
0:05:05	11,704.21	60.96	17.25	0:12:05	6,508.30	67.79	15.46	0:19:05	9,751.76	203.16	5.16	0:26:05	6,606.87	275.29	3.80	0:33:05	450.05	450.05	2.32
0:05:10	11,713.01	61.01	17.22	0:12:10	6,508.72	67.80	15.46	0:19:10	9,748.61	203.10	5.16	0:26:10	6,499.07	270.79	3.87	0:33:10	461.58	461.58	2.27
0:05:15	11,707.77	60.98	17.25	0:12:15	6,507.88	67.79	15.46	0:19:15	9,790.55	203.97	5.15	0:26:15	6,474.54	269.77	3.88	0:33:15	450.68	450.68	2.32
0:05:20	11,756.63	61.23	17.19	0:12:20	6,507.46	67.79	15.47	0:19:20	9,810.27	204.38	5.14	0:26:20	6,499.07	270.79	3.87	0:33:20	444.81	444.81	2.35
0:05:25	11,751.60	61.21	17.18	0:12:25	6,509.56	67.81	15.46	0:19:25	9,929.39	206.86	5.06	0:26:25	6,151.37	256.31	4.09	0:33:25	455.29	455.29	2.30
0:05:30	11,689.94	60.89	17.25	0:12:30	6,508.30	67.79	15.47	0:19:30	10,122.32	210.88	5.03	0:26:30	6,476.42	269.85	3.88	0:33:30	448.58	448.58	2.33
0:05:35	11,462.40	59.70	17.24	0:12:35	6,508.93	67.80	15.46	0:19:35	9,721.35	202.53	5.07	0:26:35	6,486.91	270.29	3.86	0:33:35	448.79	448.79	2.33
0:05:40	11,675.05	60.81	17.27	0:12:40	6,507.25	67.78	15.46	0:19:40	9,672.90	201.52	5.22	0:26:40	6,547.31	272.80	3.85	0:33:40	450.05	450.05	2.32
0:05:45	11,716.37	61.02	17.24	0:12:45	6,508.51	67.80	15.47	0:19:45	9,676.89	201.60	5.21	0:26:45	6,491.10	270.46	3.89	0:33:45	449.42	449.42	2.33
0:05:50	11,722.45	61.05	17.25	0:12:50	6,507.46	67.79	15.46	0:19:50	9,881.78	205.87	5.11	0:26:50	6,720.74	280.03	3.74	0:33:50	453.40	453.40	2.31
0:05:55	11,711.76	61.00	17.26	0:12:55	6,509.56	67.81	15.46	0:19:55	9,664.72	201.35	5.21	0:26:55	6,584.85	274.37	3.75	0:33:55	455.71	455.71	2.30
0:06:00	11,718.68	61.03	17.22	0:13:00	6,508.09	67.79	15.46	0:20:00	9,897.09	206.19	5.10	0:27:00	6,513.96	271.42	3.86	0:34:00	452.98	452.98	2.31
0:06:05	11,584.46	60.34	17.26	0:13:05	6,507.46	67.79	15.46	0:20:05	9,688.21	201.84	5.13	0:27:05	6,705.43	279.39	3.82	0:34:05	434.11	434.11	2.41
0:06:10	11,703.16	60.95	17.24	0:13:10	6,510.40	67.82	15.46	0:20:10	9,904.85	206.35	5.08	0:27:10	6,164.79	256.87	3.99	0:34:10	450.47	450.47	2.32
0:06:15	11,710.29	60.99	17.24	0:13:15	6,508.09	67.79	15.46	0:20:15	9,876.75	205.77	5.09	0:27:15	6,506.83	271.12	3.86	0:34:15	450.89	450.89	2.32
0:06:20	11,681.77	60.84	17.27	0:13:20	6,508.30	67.79	15.46	0:20:20	9,660.95	201.27	5.21	0:27:20	6,482.93	270.12	3.88	0:34:20	458.02	458.02	2.28
0:06:25	11,704.62	60.96	17.25	0:13:25	6,506.62	67.78	15.46	0:20:25	9,665.98	201.37	5.20	0:27:25	6,563.04	273.46	3.83	0:34:25	448.58	448.58	2.35
0:06:30	11,439.96	59.58	17.28	0:13:30	6,509.35	67.81	15.46	0:20:30	9,884.09	205.92	5.09	0:27:30	6,530.32	272.10	3.85	0:34:30	438.51	438.51	2.36
0:06:35	11,751.39	61.21	17.20	0:13:35	6,507.25	67.78	15.46	0:20:35	9,703.31	202.15	5.18	0:27:35	6,774.43	282.27	3.78	0:34:35	444.81	444.81	2.35
0:06:40	11,710.71	60.99	17.26	0:13:40	6,508.09	67.79	15.47	0:20:40	9,590.91	199.81	5.24	0:27:40	6,715.50	279.81	3.74	0:34:40	449.84	449.84	2.33
0:06:45	11,692.25	60.90	17.25	0:13:45	6,508.30	67.79	15.46	0:20:45	9,772.94	203.60	5.14	0:27:45	6,442.66	268.44	3.85	0:34:45	446.69	446.69	2.34
0:06:50	469.97	0.00	17.34	0:13:50	296.75	0.00	14.74	0:20:50	485.07	0.00	4.89	0:27:50	303.67	0.00	3.74	0:34:50	16.15	0.00	2.41
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00				

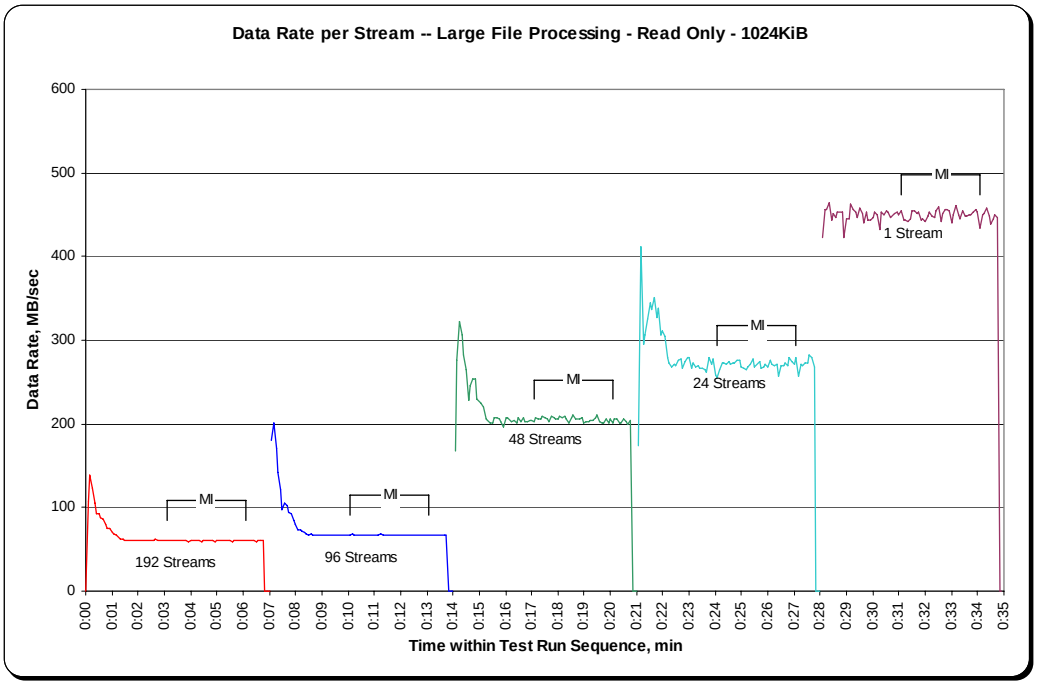
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



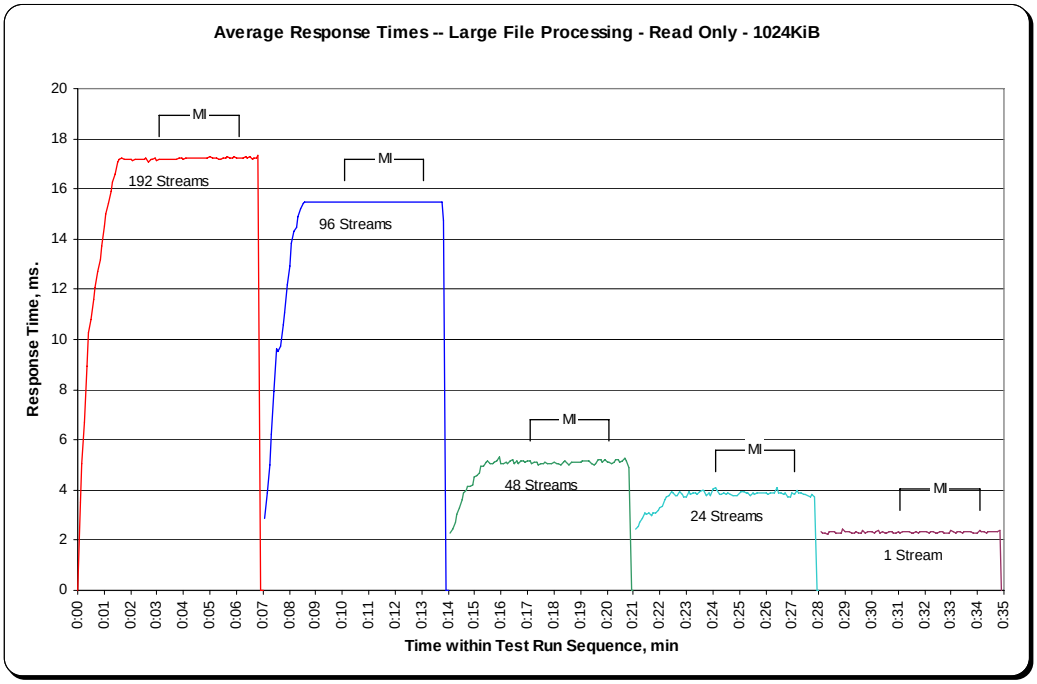
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Response Time Graph



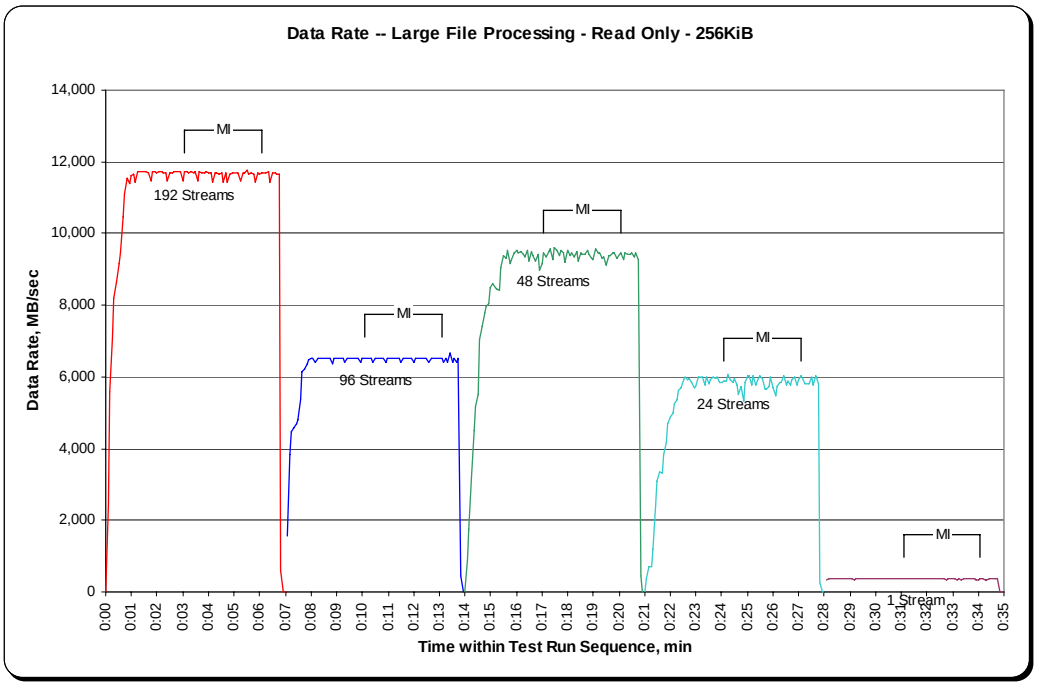
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR26	192 Streams			TR27	96 Streams			TR28	48 Streams			TR29	24 Streams			TR30	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:05	1,559.86	111.42	0.99	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:05	348.44	348.44	0.72
0:00:05	2,474.69	130.25	1.01	0:07:10	3,828.25	166.45	1.27	0:14:05	902.82	225.71	0.74	0:21:05	354.31	354.31	0.72	0:28:10	366.69	366.69	0.71
0:00:10	5,573.86	135.95	1.43	0:07:15	4,453.46	164.94	1.52	0:14:10	1,731.83	288.64	0.73	0:21:10	692.11	346.06	0.72	0:28:15	365.11	365.11	0.71
0:00:15	7,078.36	136.12	1.71	0:07:20	4,577.45	138.71	1.72	0:14:15	3,218.71	229.91	0.82	0:21:15	698.56	349.28	0.72	0:28:20	370.09	370.09	0.70
0:00:20	8,199.13	113.88	2.03	0:07:25	4,694.95	111.78	2.10	0:14:20	4,501.01	250.06	0.91	0:21:20	1,207.96	201.33	0.75	0:28:25	373.56	373.56	0.70
0:00:25	8,651.54	102.99	2.33	0:07:30	4,821.30	102.58	2.37	0:14:25	5,162.93	245.85	0.98	0:21:25	2,435.89	270.65	0.80	0:28:30	363.28	363.28	0.72
0:00:30	9,177.87	97.64	2.57	0:07:35	5,361.95	99.30	2.45	0:14:30	5,517.82	212.22	1.08	0:21:30	3,077.78	279.80	0.85	0:28:35	363.96	363.96	0.71
0:00:35	9,473.88	93.80	2.64	0:07:40	6,161.75	101.01	2.49	0:14:35	7,033.95	242.55	1.07	0:21:35	3,359.17	305.38	0.86	0:28:40	355.10	355.10	0.72
0:00:40	10,467.57	91.82	2.69	0:07:45	6,235.67	100.58	2.57	0:14:40	7,402.68	224.32	1.07	0:21:40	3,328.86	277.41	0.88	0:28:45	367.21	367.21	0.71
0:00:45	11,100.28	85.39	2.92	0:07:50	6,377.60	93.79	2.66	0:14:45	7,769.53	235.44	1.11	0:21:45	3,849.85	296.14	0.88	0:28:50	364.49	364.49	0.71
0:00:50	11,528.67	84.15	3.06	0:07:55	6,490.48	92.72	2.80	0:14:50	7,980.03	228.00	1.13	0:21:50	4,174.85	278.32	0.88	0:28:55	364.43	364.43	0.71
0:00:55	11,377.78	79.56	3.20	0:08:00	6,502.32	86.70	2.90	0:14:55	8,043.05	217.38	1.16	0:21:55	4,709.05	294.32	0.88	0:29:00	367.68	367.68	0.71
0:01:00	11,601.44	77.86	3.33	0:08:05	6,519.15	82.52	3.10	0:15:00	8,474.22	217.29	1.17	0:22:00	4,869.85	270.55	0.93	0:29:05	365.22	365.22	0.71
0:01:05	11,641.92	73.22	3.46	0:08:10	6,393.12	77.96	3.25	0:15:05	8,594.65	220.38	1.19	0:22:05	4,996.25	277.57	0.94	0:29:10	346.55	346.55	0.75
0:01:10	11,442.48	68.52	3.66	0:08:15	6,524.19	73.31	3.44	0:15:10	8,494.93	217.82	1.18	0:22:10	5,255.46	250.26	0.97	0:29:15	364.80	364.80	0.71
0:01:15	11,733.09	66.67	3.87	0:08:20	6,518.05	69.34	3.70	0:15:15	8,446.38	216.57	1.21	0:22:15	5,373.79	255.89	1.00	0:29:20	359.77	359.77	0.72
0:01:20	11,728.95	65.89	3.97	0:08:25	6,518.05	69.34	3.78	0:15:20	8,400.04	204.88	1.25	0:22:20	5,629.02	255.86	0.99	0:29:25	365.74	365.74	0.71
0:01:25	11,732.04	62.74	4.08	0:08:30	6,525.08	67.97	3.83	0:15:25	9,040.19	205.46	1.22	0:22:25	5,688.32	258.56	1.01	0:29:30	368.89	368.89	0.70
0:01:30	11,725.02	61.07	4.22	0:08:35	6,518.42	67.90	3.86	0:15:30	9,398.12	195.79	1.31	0:22:30	5,916.17	246.51	1.03	0:29:35	366.22	366.22	0.71
0:01:35	11,719.04	61.04	4.30	0:08:40	6,524.97	67.97	3.86	0:15:35	9,304.54	193.84	1.35	0:22:35	5,992.56	249.69	1.05	0:29:40	368.73	368.73	0.71
0:01:40	11,707.09	60.97	4.30	0:08:45	6,525.13	67.97	3.86	0:15:40	9,538.00	198.71	1.32	0:22:40	5,930.59	247.11	1.06	0:29:45	362.65	362.65	0.72
0:01:45	11,481.70	59.80	4.31	0:08:50	6,381.53	66.47	3.86	0:15:45	9,168.22	191.00	1.34	0:22:45	5,959.53	248.31	1.05	0:29:50	368.21	368.21	0.71
0:01:50	11,715.53	61.02	4.30	0:08:55	6,531.42	68.04	3.86	0:15:50	9,264.27	193.01	1.36	0:22:50	5,847.44	243.64	1.07	0:29:55	364.85	364.85	0.71
0:01:55	11,723.97	61.06	4.30	0:09:00	6,518.37	67.90	3.86	0:15:55	9,459.73	197.08	1.33	0:22:55	5,684.70	236.86	1.08	0:30:00	360.50	360.50	0.72
0:02:00	11,698.33	60.93	4.30	0:09:05	6,531.32	68.03	3.86	0:16:00	9,519.65	198.33	1.32	0:23:00	5,750.18	239.59	1.09	0:30:05	363.44	363.44	0.72
0:02:05	11,727.27	61.08	4.30	0:09:10	6,524.97	67.97	3.86	0:16:05	9,466.07	197.21	1.33	0:23:05	5,980.92	249.21	1.05	0:30:10	367.05	367.05	0.71
0:02:10	11,723.24	61.06	4.30	0:09:15	6,531.42	68.04	3.86	0:16:10	9,505.03	198.02	1.32	0:23:10	5,995.13	249.80	1.05	0:30:15	363.65	363.65	0.72
0:02:15	11,706.41	60.97	4.30	0:09:20	6,388.19	66.54	3.86	0:16:15	9,406.62	195.97	1.34	0:23:15	5,997.38	249.89	1.05	0:30:20	365.32	365.32	0.71
0:02:20	11,706.77	60.97	4.31	0:09:25	6,524.92	67.97	3.86	0:16:20	9,327.56	194.32	1.32	0:23:20	5,768.06	240.34	1.09	0:30:25	365.59	365.59	0.71
0:02:25	11,473.26	59.76	4.30	0:09:30	6,531.48	68.04	3.86	0:16:25	9,542.41	198.80	1.32	0:23:25	6,005.40	250.23	1.05	0:30:30	363.86	363.86	0.71
0:02:30	11,697.39	60.92	4.31	0:09:35	6,518.26	67.90	3.86	0:16:30	9,236.43	192.43	1.36	0:23:30	5,812.26	242.18	1.06	0:30:35	355.83	355.83	0.73
0:02:35	11,697.65	60.93	4.30	0:09:40	6,525.03	67.97	3.86	0:16:35	9,486.36	197.63	1.33	0:23:35	5,935.57	247.32	1.06	0:30:40	365.69	365.69	0.71
0:02:40	11,723.39	61.06	4.30	0:09:45	6,531.42	68.04	3.86	0:16:40	9,368.19	195.17	1.34	0:23:40	6,002.57	250.11	1.05	0:30:45	362.55	362.55	0.72
0:02:45	11,717.52	61.03	4.30	0:09:50	6,524.76	67.97	3.86	0:16:45	9,228.52	192.26	1.36	0:23:45	5,957.75	248.24	1.05	0:30:50	354.73	354.73	0.73
0:02:50	11,725.44	61.07	4.30	0:09:55	6,394.64	66.61	3.86	0:16:50	9,422.82	196.31	1.34	0:23:50	5,987.11	249.46	1.05	0:30:55	370.04	370.04	0.70
0:02:55	11,726.75	61.08	4.30	0:10:00	6,525.03	67.97	3.86	0:16:55	8,968.10	186.84	1.37	0:23:55	5,851.58	243.82	1.07	0:31:00	368.94	368.94	0.70
0:03:00	11,486.36	59.82	4.30					0:17:00	9,156.06	190.75	1.37	0:24:00	5,854.72	243.95	1.07				

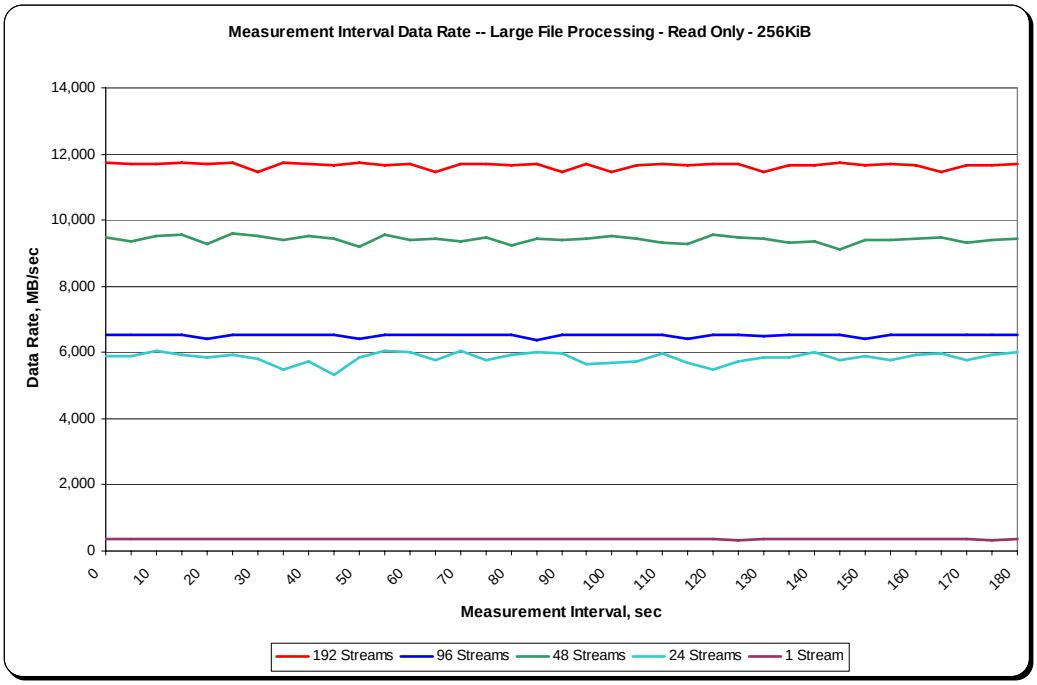
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR26	192 Streams			TR27	96 Streams			TR28	48 Streams			TR29	24 Streams			TR30	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	11,742.95	61.16	4.28	0:10:05	6,524.71	67.97	3.86	0:17:05	9,462.82	197.14	1.33	0:24:05	5,897.24	245.72	1.04	0:31:05	366.27	366.27	0.71
0:03:10	11,717.21	61.03	4.31	0:10:10	6,531.42	68.04	3.86	0:17:10	9,354.82	194.89	1.34	0:24:10	5,895.62	245.65	1.06	0:31:10	368.16	368.16	0.71
0:03:15	11,688.32	60.88	4.31	0:10:15	6,531.21	68.03	3.86	0:17:15	9,504.71	198.01	1.32	0:24:15	6,058.46	252.44	1.04	0:31:15	365.27	365.27	0.71
0:03:20	11,722.35	61.05	4.31	0:10:20	6,525.13	67.97	3.86	0:17:20	9,551.90	199.00	1.32	0:24:20	5,930.12	247.09	1.06	0:31:20	365.80	365.80	0.71
0:03:25	11,709.55	60.99	4.31	0:10:25	6,394.90	66.61	3.86	0:17:25	9,260.24	192.92	1.33	0:24:25	5,840.67	243.36	1.08	0:31:25	364.12	364.12	0.71
0:03:30	11,724.86	61.07	4.30	0:10:30	6,524.66	67.97	3.86	0:17:30	9,621.94	200.46	1.31	0:24:30	5,941.60	247.57	1.06	0:31:30	372.19	372.19	0.70
0:03:35	11,472.16	59.75	4.30	0:10:35	6,518.32	67.90	3.86	0:17:35	9,540.36	198.76	1.32	0:24:35	5,789.76	241.24	1.09	0:31:35	365.95	365.95	0.71
0:03:40	11,741.74	61.15	4.30	0:10:40	6,531.32	68.03	3.86	0:17:40	9,386.22	195.55	1.34	0:24:40	5,499.15	229.13	1.12	0:31:40	365.43	365.43	0.71
0:03:45	11,704.83	60.96	4.31	0:10:45	6,525.24	67.97	3.86	0:17:45	9,526.84	198.48	1.32	0:24:45	5,739.07	239.13	1.09	0:31:45	368.05	368.05	0.71
0:03:50	11,677.52	60.82	4.31	0:10:50	6,524.76	67.97	3.86	0:17:50	9,445.10	196.77	1.33	0:24:50	5,314.24	221.43	1.18	0:31:50	360.45	360.45	0.71
0:03:55	11,730.00	61.09	4.30	0:10:55	6,394.90	66.61	3.86	0:17:55	9,203.88	191.75	1.34	0:24:55	5,833.70	243.07	1.08	0:31:55	365.80	365.80	0.71
0:04:00	11,679.46	60.83	4.32	0:11:00	6,524.92	67.97	3.86	0:18:00	9,548.39	198.92	1.32	0:25:00	6,047.30	251.97	1.04	0:32:00	363.54	363.54	0.72
0:04:05	11,688.74	60.88	4.31	0:11:05	6,531.84	68.04	3.86	0:18:05	9,387.48	195.57	1.34	0:25:05	6,023.65	250.99	1.04	0:32:05	361.34	361.34	0.72
0:04:10	11,440.96	59.59	4.31	0:11:10	6,518.47	67.90	3.86	0:18:10	9,452.44	196.93	1.33	0:25:10	5,767.69	240.32	1.07	0:32:10	363.91	363.91	0.71
0:04:15	11,681.56	60.84	4.32	0:11:15	6,524.55	67.96	3.86	0:18:15	9,341.24	194.61	1.35	0:25:15	6,039.43	251.64	1.04	0:32:15	364.59	364.59	0.71
0:04:20	11,689.42	60.88	4.31	0:11:20	6,531.84	68.04	3.86	0:18:20	9,499.99	197.92	1.32	0:25:20	5,772.15	240.51	1.09	0:32:20	368.05	368.05	0.71
0:04:25	11,660.27	60.73	4.32	0:11:25	6,524.40	67.96	3.86	0:18:25	9,244.35	192.59	1.33	0:25:25	5,948.99	247.87	1.05	0:32:25	367.95	367.95	0.71
0:04:30	11,697.23	60.92	4.32	0:11:30	6,388.34	66.55	3.86	0:18:30	9,442.69	196.72	1.33	0:25:30	6,024.70	251.03	1.04	0:32:30	365.27	365.27	0.72
0:04:35	11,440.44	59.59	4.32	0:11:35	6,531.48	68.04	3.86	0:18:35	9,413.75	196.12	1.33	0:25:35	5,971.64	248.82	1.05	0:32:35	359.40	359.40	0.71
0:04:40	11,681.92	60.84	4.32	0:11:40	6,525.13	67.97	3.86	0:18:40	9,431.42	196.49	1.33	0:25:40	5,642.23	235.09	1.12	0:32:40	361.23	361.23	0.72
0:04:45	11,444.63	59.61	4.31	0:11:45	6,524.82	67.97	3.86	0:18:45	9,520.76	198.35	1.32	0:25:45	5,669.02	236.21	1.08	0:32:45	349.28	349.28	0.75
0:04:50	11,669.34	60.78	4.32	0:11:50	6,524.92	67.97	3.86	0:18:50	9,423.08	196.31	1.33	0:25:50	5,732.36	238.85	1.10	0:32:50	363.49	363.49	0.72
0:04:55	11,692.83	60.90	4.31	0:11:55	6,531.16	68.03	3.86	0:18:55	9,313.92	194.04	1.35	0:25:55	5,988.05	249.50	1.05	0:32:55	360.66	360.66	0.72
0:05:00	11,676.63	60.82	4.32	0:12:00	6,394.95	66.61	3.86	0:19:00	9,264.59	193.01	1.33	0:26:00	5,707.03	237.79	1.10	0:33:00	361.18	361.18	0.72
0:05:05	11,683.97	60.85	4.32	0:12:05	6,531.58	68.04	3.86	0:19:05	9,566.21	199.30	1.31	0:26:06	5,486.88	228.62	1.15	0:33:05	368.16	368.16	0.71
0:05:10	11,684.39	60.86	4.32	0:12:10	6,524.97	67.97	3.86	0:19:10	9,475.40	197.40	1.32	0:26:10	5,737.60	239.07	1.10	0:33:10	341.36	341.36	0.76
0:05:15	11,456.79	59.67	4.31	0:12:15	6,505.52	67.77	3.86	0:19:15	9,440.91	196.69	1.33	0:26:15	5,852.63	243.86	1.05	0:33:15	364.17	364.17	0.71
0:05:20	11,675.11	60.81	4.32	0:12:20	6,525.08	67.97	3.86	0:19:20	9,314.19	194.05	1.35	0:26:20	5,848.54	243.69	1.07	0:33:20	353.63	353.63	0.74
0:05:25	11,677.26	60.82	4.32	0:12:25	6,525.03	67.97	3.86	0:19:25	9,359.85	195.00	1.34	0:26:25	6,017.73	250.74	1.04	0:33:25	365.74	365.74	0.71
0:05:30	11,752.81	61.21	4.29	0:12:30	6,525.03	67.97	3.86	0:19:30	9,130.21	190.21	1.35	0:26:30	5,780.75	240.86	1.09	0:33:30	367.42	367.42	0.71
0:05:35	11,669.39	60.78	4.32	0:12:35	6,394.95	66.61	3.86	0:19:35	9,389.00	195.60	1.34	0:26:35	5,886.18	245.26	1.07	0:33:35	365.01	365.01	0.71
0:05:40	11,684.96	60.86	4.31	0:12:40	6,524.97	67.97	3.86	0:19:40	9,381.35	195.44	1.34	0:26:40	5,772.15	240.51	1.09	0:33:40	365.11	365.11	0.71
0:05:45	11,663.73	60.75	4.32	0:12:45	6,525.03	67.97	3.86	0:19:45	9,456.06	197.00	1.33	0:26:45	5,911.19	246.30	1.06	0:33:45	362.91	362.91	0.72
0:05:50	11,440.49	59.59	4.32	0:12:50	6,524.82	67.97	3.86	0:19:50	9,462.04	197.13	1.33	0:26:50	5,976.41	249.02	1.05	0:33:50	366.53	366.53	0.71
0:05:55	11,676.26	60.81	4.32	0:12:55	6,531.16	68.03	3.86	0:19:55	9,312.25	194.01	1.35	0:26:55	5,763.92	240.16	1.07	0:33:55	351.54	351.54	0.74
0:06:00	11,669.50	60.78	4.32	0:13:00	6,531.95	68.04	3.86	0:20:00	9,414.90	196.14	1.33	0:27:00	5,923.88	246.83	1.06	0:34:00	341.94	341.94	0.76
0:06:05	11,690.94	60.89	4.32	0:13:05	6,518.42	67.90	3.86	0:20:05	9,442.37	196.72	1.33	0:27:05	6,023.39	250.97	1.04	0:34:05	361.50	361.50	0.72
0:06:10	11,676.16	60.81	4.32	0:13:10	6,388.66	66.55	3.86	0:20:10	9,277.54	193.28	1.33	0:27:10	5,963.15	248.46	1.05	0:34:10	361.86	361.86	0.72
0:06:15	11,697.70	60.93	4.31	0:13:15	6,524.97	67.97	3.86	0:20:15	9,471.94	197.33	1.33	0:27:15	5,793.17	241.38	1.08	0:34:15	351.95	351.95	0.74
0:06:20	11,711.49	61.00	4.31	0:13:20	6,401.03	66.68	3.86	0:20:20	9,419.46	196.24	1.33	0:27:20	5,821.27	242.55	1.08	0:34:20	343.83	343.83	0.76
0:06:25	11,414.64	59.45	4.32	0:13:25	6,661.81	69.39	3.86	0:20:25	9,432.41	196.51	1.33	0:27:25	5,791.70	241.32	1.08	0:34:25	360.87	360.87	0.72
0:06:30	11,673.90	60.80	4.32	0:13:30	6,394.85	66.61	3.86	0:20:30	9,469.32	197.28	1.33	0:27:30	6,010.54	250.44	1.04	0:34:30	365.69	365.69	0.71
0:06:35	11,684.28	60.86	4.32	0:13:35	6,525.03	67.97	3.86	0:20:35	9,328.87	194.35	1.35	0:27:35	5,768.37	240.35	1.08	0:34:35	360.76	360.76	0.72
0:06:40	11,651.88	60.69	4.32	0:13:40	6,388.71	66.55	3.86	0:20:40	9,446.31	196.80	1.33	0:27:40	6,021.55	250.90	1.05	0:34:40	363.70	363.70	0.72
0:06:45	11,638.77	60.62	4.33	0:13:45	6,524.76	67.97	3.86	0:20:45	9,282.52	193.39	1.33	0:27:45	5,808.11	242.00	1.07	0:34:45	370.04	370.04	0.70
0:06:50	612.42	0.00	4.43	0:13:50	434.22	0.00	3.66	0:20:50	450.99	0.00	1.27	0:27:50	258.95	0.00	1.09	0:34:50	18.14	0.00	0.70
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
0:07:00	0.00	0.00	0.00									0:28:00	0.00	0.00	0.00	0:35:00	0.00	0.00	0.00

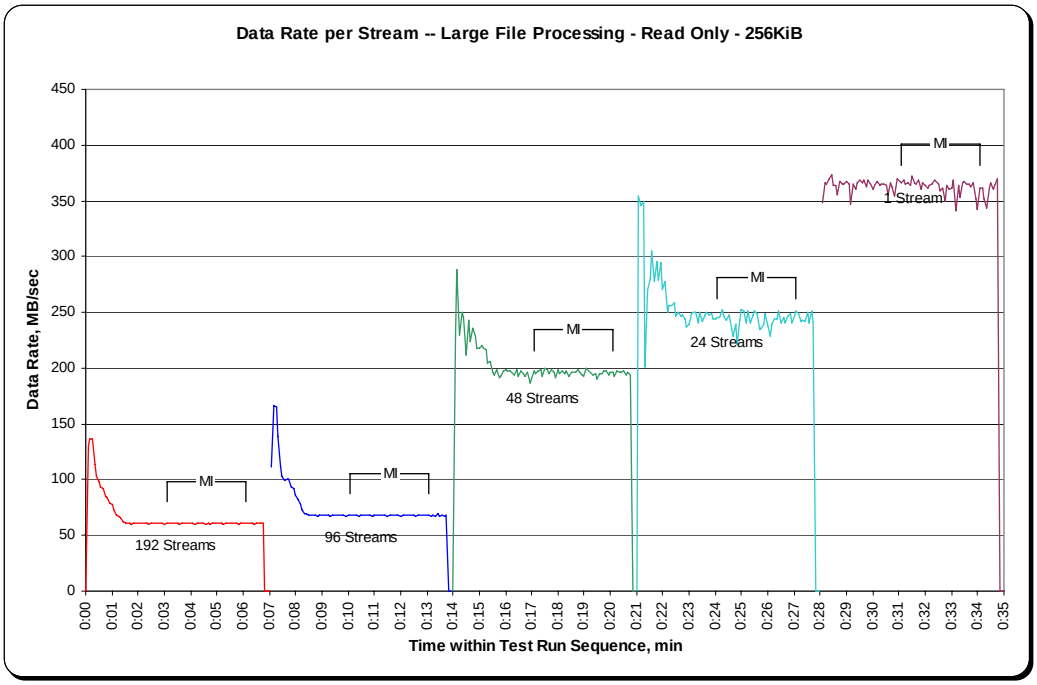
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



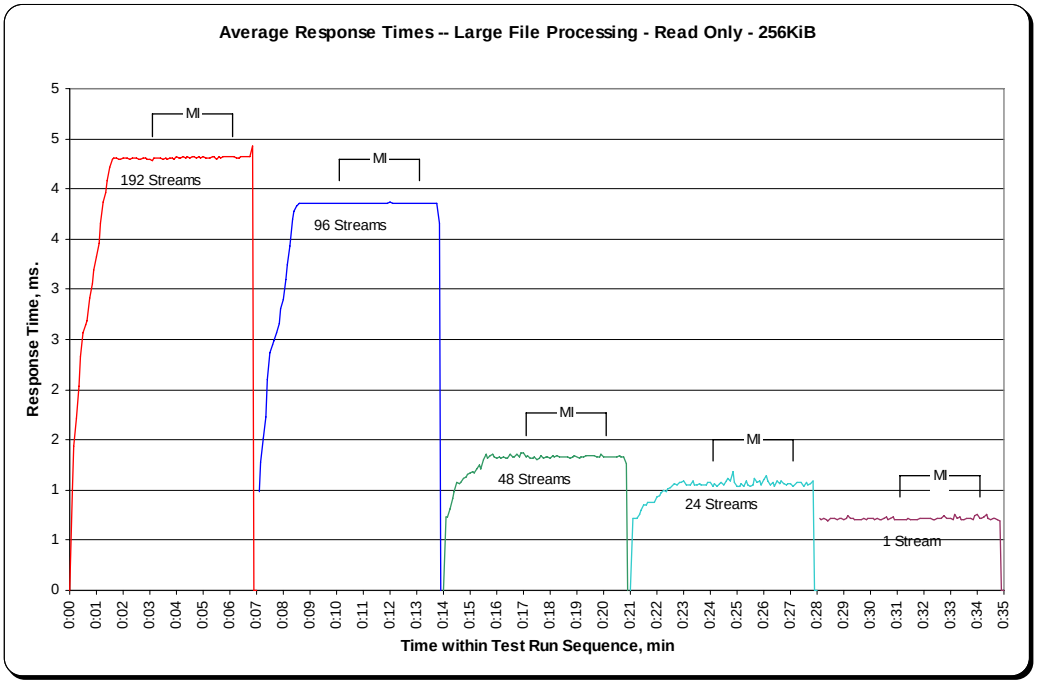
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate per Stream Graph



SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Response Time Graph



Large Database Query Test

Clause 6.4.3.1

The Large Database Query Test is comprised of a set of I/O operations representative of scans or joins of large relational tables such as those performed for data mining or business intelligence.

Clause 6.4.3.2

The Large Database Query Test has two Test Phases, which shall be executed in the following uninterrupted sequence:

1. *1024 KIB TRANSFER SIZE*
2. *64 KIB TRANSFER SIZE*

The BC shall not be restarted or manually disturbed, altered, or adjusted during the execution of the Large File Processing Test. If power is lost to the BC during this Test all results shall be rendered invalid and the Test re-run in its entirety.

Clause 10.6.8.2

The Full Disclosure Report will contain the following content for the Large Database Query Test:

1. *A listing of the SPC-2 Workload Generator commands and parameters used to execute each of the Test Runs in the Large Database Query Test.*
2. *The human readable SPC-2 Test Results File for each of the Test Runs in the Large Database Query Test.*
3. *A table that contains the following information for each Test Run in the two Test Phases of the Large Database Query Test:*
   - *The number Streams specified.*
   - *The Ramp-Up duration in seconds.*
   - *The Measurement Interval duration in seconds.*
   - *The average data rate, in MB per second, for the Measurement Interval.*
   - *The average data rate, in MB per second, per Stream for the Measurement Interval.*
4. *Average Data Rate and Average Data Rate per Stream graphs as defined in Clauses 10.1.1 and 10.1.2.*

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Large Database Query Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 124.

SPC-2 Test Results File

A link to the SPC-2 Test Results file generated from the Large Database Query Test Runs is listed below.

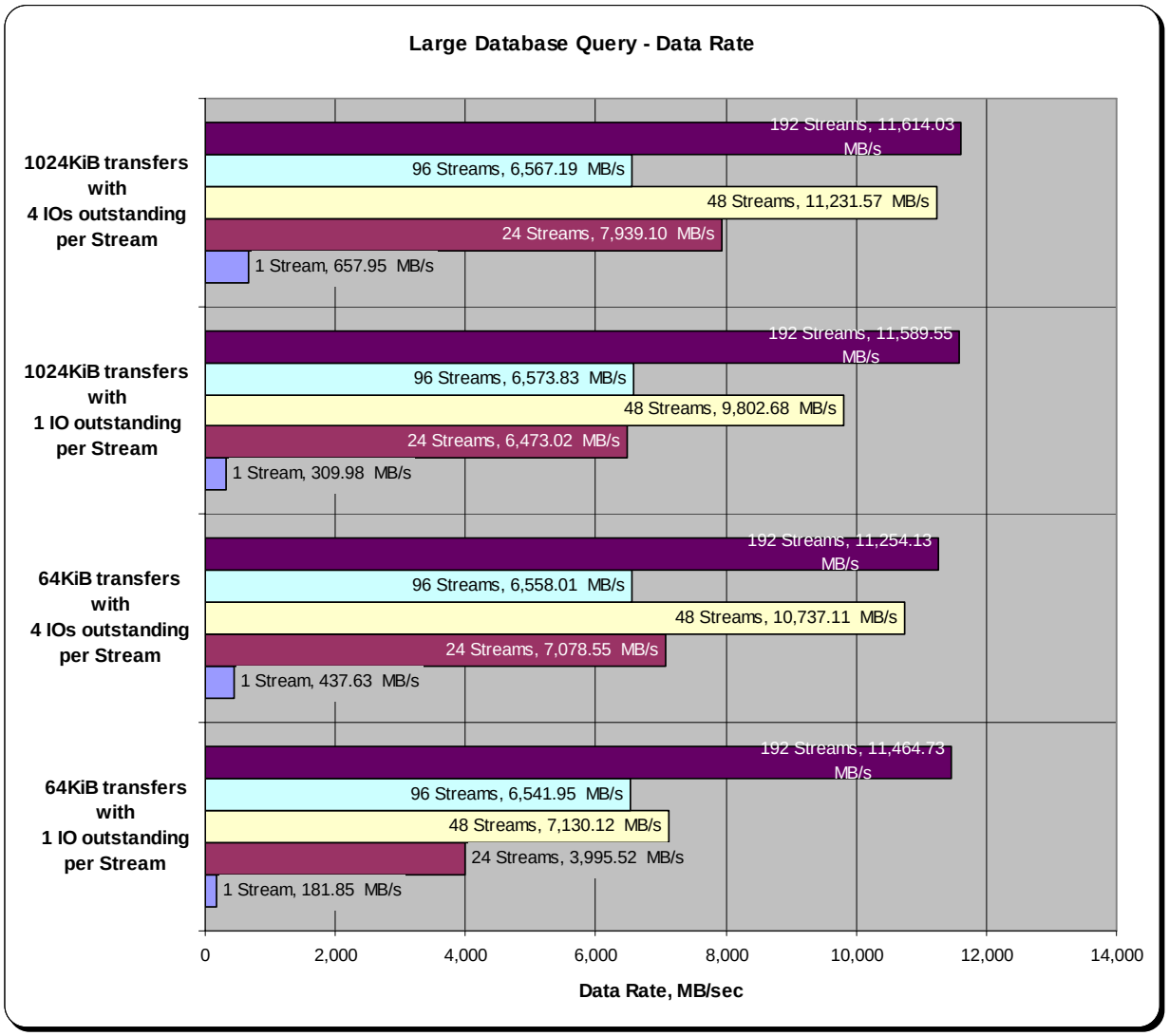
SPC-2 Large Database Query Test Results File

SPC-2 Large Database Query Average Data Rates (MB/s)

The average Data Rate (MB/s) for each Test Run in the two Test Phases of the SPC-2 Large Database Query Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
1024KiB w/ 4 IOs/Stream	657.95	7,939.10	11,231.57	6,567.19	11,614.03
1024KiB w/ 1 IO/Stream	309.98	6,473.02	9,802.68	6,573.83	11,589.55
64KiB w/ 4 IOs/Stream	437.63	7,078.55	10,737.11	6,558.01	11,254.13
64KiB w/ 1 IO/Stream	181.85	3,995.52	7,130.12	6,541.95	11,464.73

SPC-2 Large Database Query Average Data Rates Graph

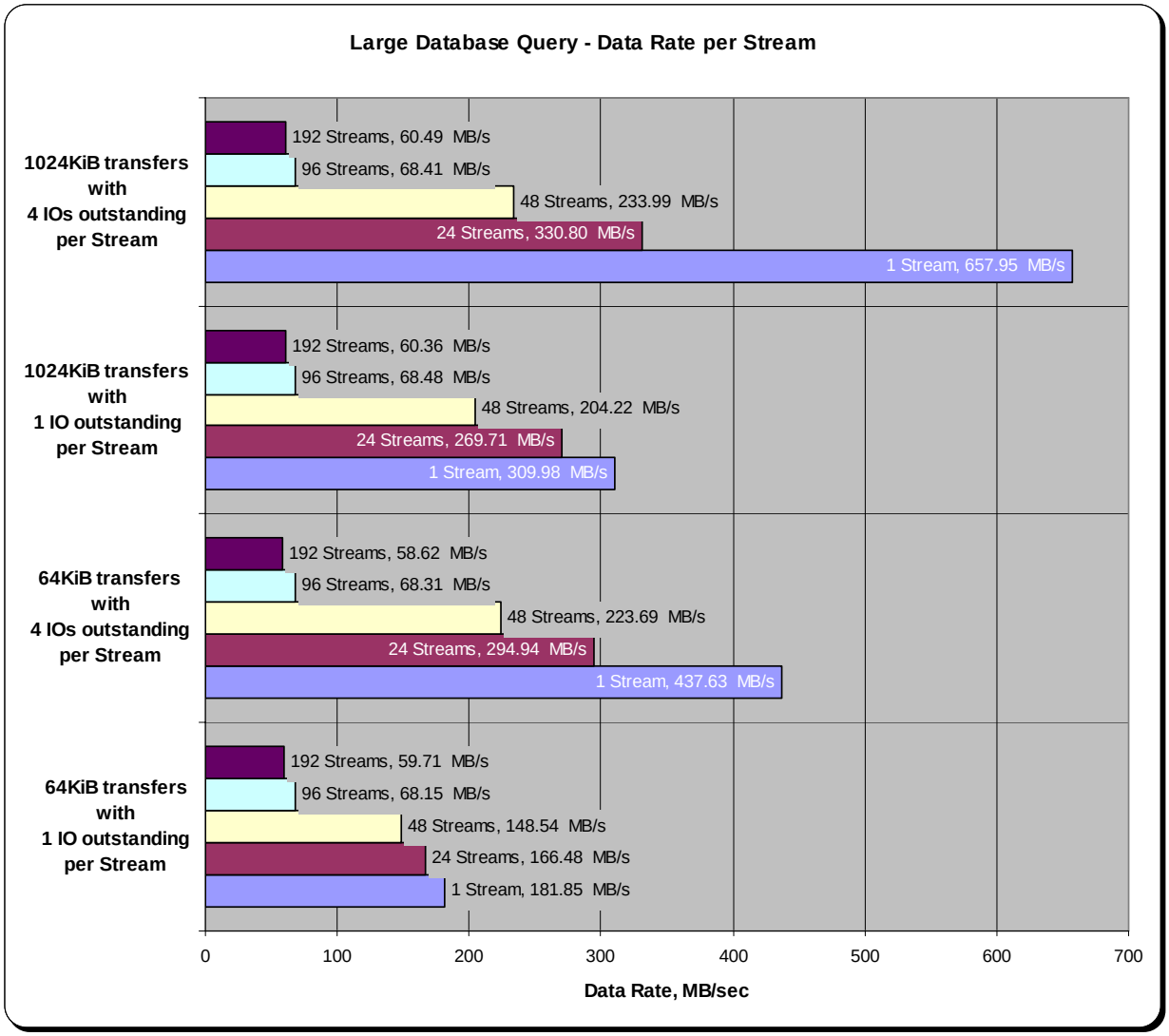


SPC-2 Large Database Query Average Data Rate per Stream

The average Data Rate per Stream for each Test Run in the two Test Phases of the SPC-2 Large Database Query Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
1024KiB w/ 4 IOs/Stream	657.95	330.80	233.99	68.41	60.49
1024KiB w/ 1 IO/Stream	309.98	269.71	204.22	68.48	60.36
64KiB w/ 4 IOs/Stream	437.63	294.94	223.69	68.31	58.62
64KiB w/ 1 IO/Stream	181.85	166.48	148.54	68.15	59.71

SPC-2 Large Database Query Average Data Rate per Stream Graph

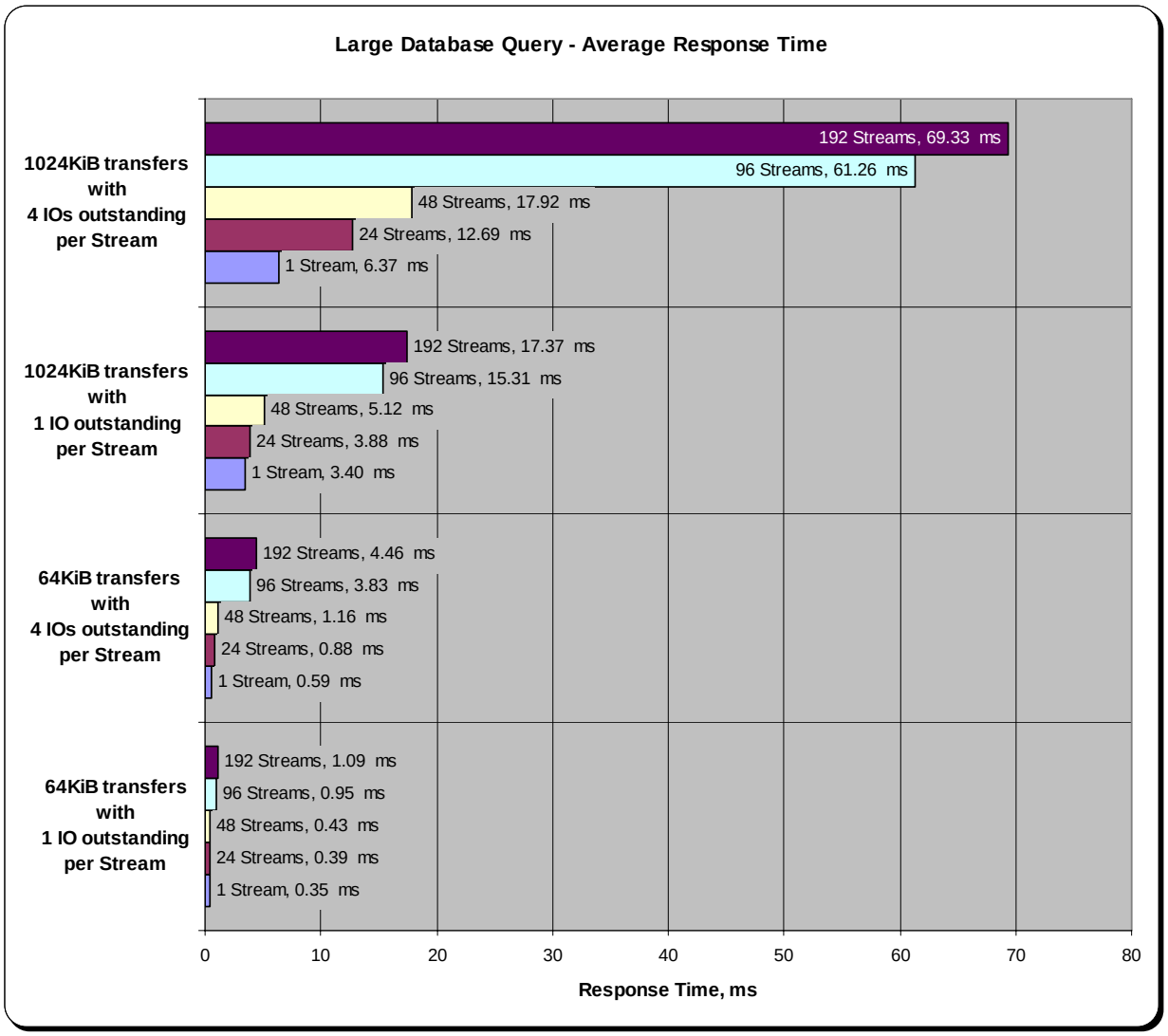


SPC-2 Large Database Query Average Response Time

The average Response Time, in milliseconds, for each Test Run in the two Test Phases of the SPC-2 Large Database Query Test is listed in the table below as well as illustrated in the following graph.

Test Run Sequence	1 Stream	24 Streams	48 Streams	96 Streams	192 Streams
1024KiB w/ 4 IOs/Stream	6.37	12.69	17.92	61.26	69.33
1024KiB w/ 1 IO/Stream	3.40	3.88	5.12	15.31	17.37
64KiB w/ 4 IOs/Stream	0.59	0.88	1.16	3.83	4.46
64KiB w/ 1 IO/Stream	0.35	0.39	0.43	0.95	1.09

SPC-2 Large Database Query Average Response Time Graph



Large Database Query Test – 1024 KIB TRANSFER SIZE Test Phase

Clause 10.6.8.2.1

1. *A table that will contain the following information for each "1024 KiB Transfer Size, 4 Outstanding I/Os" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
2. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "1024 KiB Transfer Size, 4 Outstanding I/Os" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*
3. *A table that will contain the following information for each "1024 KiB Transfer Size, 1 Outstanding I/O" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
4. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "1024 KiB Transfer Size, 1 Outstanding I/O" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*

The SPC-2 "Large DatabaseQuery/1024 KIB TRANSFER SIZE/4 Outstanding I/Os" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

Immediately following the SPC-2 "Large DatabaseQuery/1024 KIB TRANSFER SIZE/4 Outstanding I/Os" table and graphs will be the SPC-2 "Large DatabaseQuery/1024 KIB TRANSFER SIZE/1 Outstanding I/O" table and graphs. The table contains the Test Run data and the graphs illustrate the average Data Rate, average Data Rate per Stream, and average Response Time produced by the Test Runs.

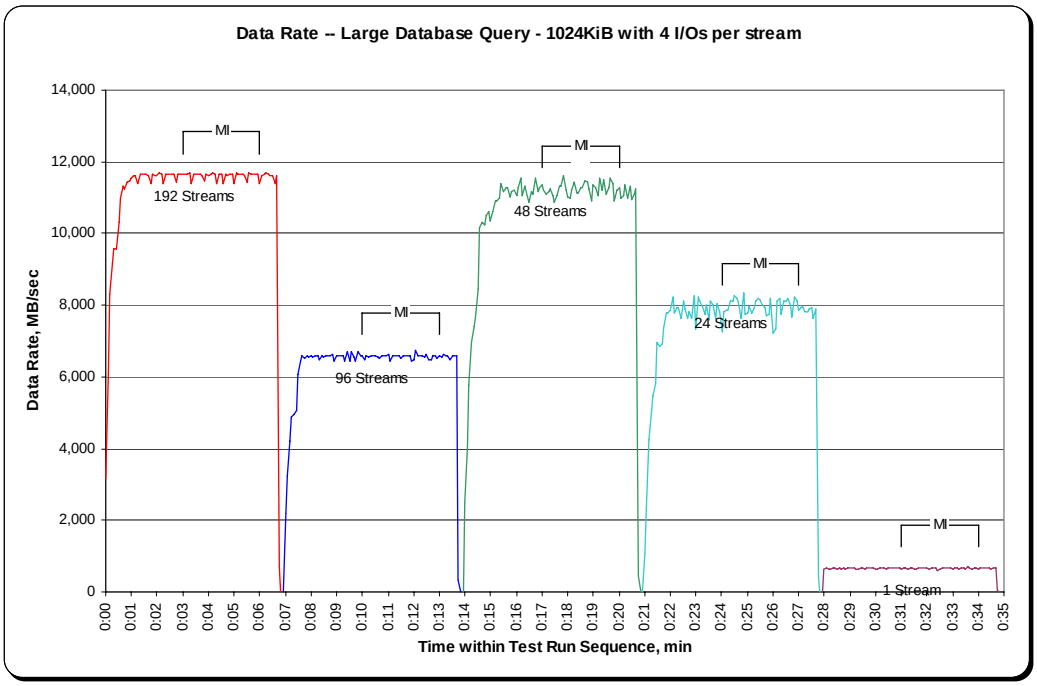
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR1	192 Streams			TR2	96 Streams			TR3	48 Streams			TR4	24 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	3,170.68	158.53	15.07	0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00
0:00:05	6,175.90	154.40	19.60	0:07:00	2,186.07	312.30	8.21	0:14:00	2,481.56	354.51	7.04	0:21:00	1,069.34	356.45	6.92	0:28:00	641.10	641.10	6.42
0:00:10	8,320.03	132.06	26.65	0:07:05	3,244.29	231.74	12.98	0:14:05	4,049.39	449.93	8.85	0:21:05	2,356.36	392.73	7.25	0:28:05	659.55	659.55	6.38
0:00:15	9,155.75	122.08	31.36	0:07:10	4,191.16	209.56	16.87	0:14:10	5,772.20	384.81	8.94	0:21:10	4,247.57	353.96	8.92	0:28:10	631.45	631.45	6.40
0:00:20	9,586.92	112.79	35.14	0:07:15	4,890.56	168.64	21.29	0:14:15	6,956.46	386.47	10.19	0:21:15	5,061.27	421.77	9.98	0:28:15	643.20	643.20	6.54
0:00:25	9,581.89	101.93	39.05	0:07:20	4,935.02	123.38	29.02	0:14:20	7,409.24	370.46	10.79	0:21:20	5,469.79	420.75	9.30	0:28:20	674.65	674.65	6.23
0:00:30	10,300.37	97.17	41.20	0:07:25	5,081.19	99.63	37.27	0:14:25	7,687.32	320.31	11.96	0:21:25	5,811.84	387.46	9.95	0:28:25	662.70	662.70	6.36
0:00:35	10,974.19	94.61	43.38	0:07:30	6,055.74	110.10	36.70	0:14:30	8,442.50	291.12	12.73	0:21:30	6,955.20	434.70	9.66	0:28:30	648.86	648.86	6.50
0:00:40	11,312.04	88.38	45.07	0:07:35	6,447.90	107.47	37.07	0:14:35	10,161.54	307.93	12.83	0:21:35	6,857.69	428.61	9.81	0:28:35	683.67	683.67	6.18
0:00:45	11,255.83	83.38	48.09	0:07:40	6,581.07	107.89	38.58	0:14:40	10,325.54	295.02	13.74	0:21:40	6,921.02	407.12	9.78	0:28:40	645.92	645.92	6.54
0:00:50	11,433.46	76.73	52.39	0:07:45	6,505.78	98.57	40.15	0:14:45	10,246.06	284.61	14.34	0:21:45	7,384.91	388.68	10.64	0:28:45	670.46	670.46	6.27
0:00:55	11,475.83	74.52	55.76	0:07:50	6,574.57	87.66	44.60	0:14:50	10,495.41	283.66	14.59	0:21:50	7,794.90	389.75	10.33	0:28:50	647.60	647.60	6.25
0:01:00	11,532.03	70.75	58.20	0:07:55	6,564.30	80.05	50.85	0:14:55	10,610.54	286.77	14.68	0:21:55	7,769.32	353.15	11.32	0:28:55	656.83	656.83	6.42
0:01:05	11,608.99	67.49	60.78	0:08:00	6,601.42	76.76	53.69	0:15:00	10,343.36	265.21	15.70	0:22:00	7,852.37	341.41	11.92	0:29:00	665.22	665.22	6.35
0:01:10	11,635.21	65.74	63.14	0:08:05	6,548.36	73.58	56.30	0:15:05	10,626.90	272.48	15.42	0:22:05	8,221.26	342.55	11.81	0:29:05	654.94	654.94	6.44
0:01:15	11,404.73	63.71	64.04	0:08:10	6,599.74	70.96	58.51	0:15:10	10,893.66	247.58	16.32	0:22:10	7,770.16	323.76	12.99	0:29:10	674.23	674.23	6.25
0:01:20	11,671.07	63.09	65.48	0:08:15	6,599.11	68.74	60.14	0:15:15	10,926.79	248.34	16.59	0:22:15	7,937.93	330.75	12.69	0:29:15	645.50	645.50	6.54
0:01:25	11,663.31	60.75	67.97	0:08:20	6,460.91	67.30	61.29	0:15:20	10,985.93	238.82	17.08	0:22:20	7,942.75	330.95	12.71	0:29:20	648.65	648.65	6.23
0:01:30	11,643.18	60.64	69.47	0:08:25	6,589.04	68.64	61.26	0:15:25	11,382.08	237.13	17.64	0:22:25	7,634.47	318.10	13.24	0:29:25	652.42	652.42	6.43
0:01:35	11,647.79	60.67	69.40	0:08:30	6,549.41	68.22	61.29	0:15:30	11,178.45	232.88	18.06	0:22:30	8,123.11	338.46	12.17	0:29:30	663.12	663.12	6.37
0:01:40	11,632.27	60.58	69.39	0:08:35	6,593.66	68.68	61.25	0:15:35	11,289.81	235.20	17.88	0:22:35	7,884.66	328.53	12.81	0:29:35	649.70	649.70	6.49
0:01:45	11,403.68	59.39	69.42	0:08:40	6,596.80	68.72	61.25	0:15:40	11,291.70	235.24	17.90	0:22:40	7,619.16	317.47	13.26	0:29:40	680.11	680.11	6.19
0:01:50	11,664.57	60.75	69.36	0:08:45	6,591.56	68.66	61.25	0:15:45	11,034.79	229.89	18.29	0:22:45	7,833.49	326.40	12.86	0:29:45	669.20	669.20	6.30
0:01:55	11,627.03	60.56	69.44	0:08:50	6,630.36	69.07	61.29	0:15:50	11,187.05	233.06	17.67	0:22:50	7,644.33	318.51	13.22	0:29:50	652.00	652.00	6.45
0:02:00	11,624.93	60.55	69.56	0:08:55	6,443.08	67.12	61.26	0:15:55	11,202.15	233.38	18.04	0:22:55	8,269.91	344.58	12.21	0:29:55	659.97	659.97	6.12
0:02:05	11,683.23	60.85	69.21	0:09:00	6,604.56	68.80	61.32	0:16:00	11,052.20	230.25	18.23	0:23:00	7,327.24	305.30	13.48	0:30:00	641.31	641.31	6.56
0:02:10	11,655.55	60.71	69.27	0:09:05	6,603.30	68.78	61.24	0:16:05	11,285.61	235.12	17.89	0:23:05	8,239.29	343.30	12.26	0:30:05	648.86	648.86	6.52
0:02:15	11,407.67	59.41	69.32	0:09:10	6,597.01	68.72	61.27	0:16:10	11,537.06	240.36	17.49	0:23:10	8,107.38	337.81	12.46	0:30:10	687.03	687.03	6.12
0:02:20	11,639.61	60.62	69.34	0:09:15	6,601.21	68.76	61.25	0:16:15	11,041.92	230.04	18.27	0:23:15	7,968.55	332.02	12.67	0:30:15	664.80	664.80	6.35
0:02:25	11,664.99	60.76	69.31	0:09:20	6,456.92	67.26	61.25	0:16:20	11,329.02	236.02	17.83	0:23:20	7,738.28	322.43	13.02	0:30:20	656.83	656.83	6.46
0:02:30	11,668.97	60.78	69.25	0:09:25	6,704.18	69.84	61.24	0:16:25	11,034.58	229.89	17.91	0:23:25	8,008.81	333.70	12.60	0:30:25	644.04	644.04	6.23
0:02:35	11,668.97	60.78	69.28	0:09:30	6,441.40	67.10	61.28	0:16:30	10,864.30	226.34	18.58	0:23:30	7,587.92	316.16	13.31	0:30:30	684.72	684.72	6.17
0:02:40	11,661.00	60.73	69.32	0:09:35	6,706.69	69.86	61.25	0:16:35	11,152.03	232.33	18.11	0:23:35	8,112.62	338.03	12.19	0:30:35	665.43	665.43	6.34
0:02:45	11,422.35	59.49	69.37	0:09:40	6,567.23	68.41	61.30	0:16:40	11,092.05	231.08	18.20	0:23:40	8,000.01	333.33	12.63	0:30:40	665.22	665.22	6.34
0:02:50	11,638.14	60.62	69.38	0:09:45	6,443.29	67.12	61.26	0:16:45	11,556.99	240.77	17.49	0:23:45	7,634.26	318.09	13.20	0:30:45	665.22	665.22	6.33
0:02:55	11,643.18	60.64	69.39	0:09:50	6,705.85	69.85	61.25	0:16:50	11,158.95	232.48	18.11	0:23:50	8,052.43	335.52	12.55	0:30:50	673.81	673.81	6.24
				0:09:55	6,571.85	68.46	61.27	0:16:55	11,277.43	234.95	17.55	0:23:55	7,810.21	325.43	12.92	0:30:55	676.75	676.75	6.24

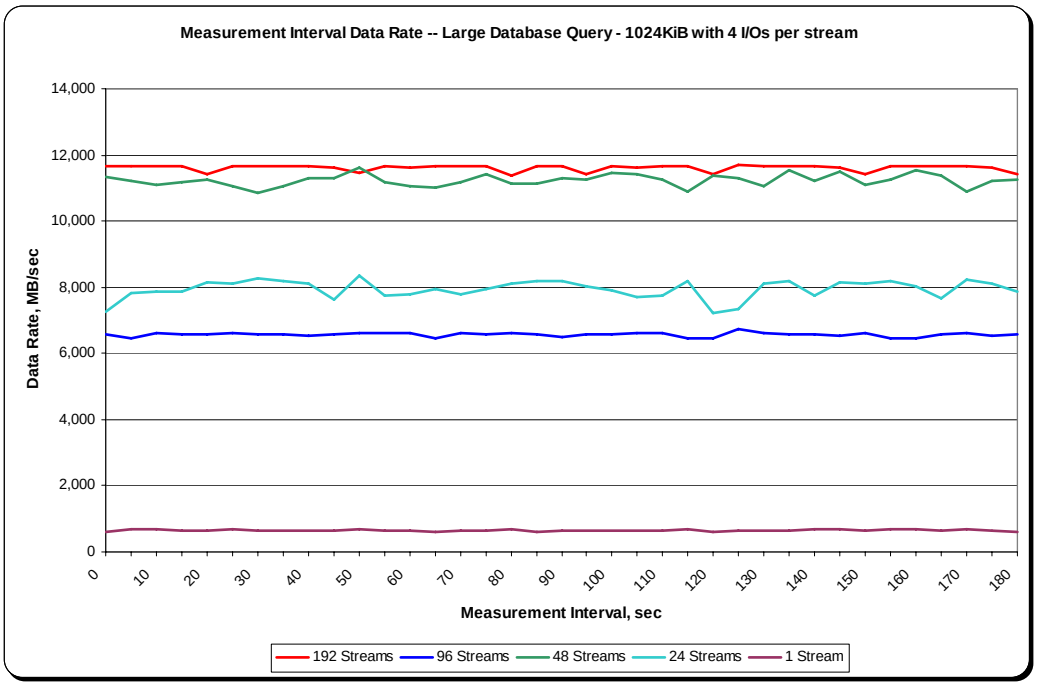
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	192 Streams			TR2	96 Streams			TR3	48 Streams			TR4	24 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:00	11,656.18	60.71	69.30	0:10:00	6,574.15	68.48	61.30	0:17:00	11,345.59	236.37	17.78	0:24:00	7,259.50	302.48	13.91	0:31:00	615.72	615.72	6.56
0:03:05	11,665.83	60.76	69.25	0:10:05	6,460.91	67.30	61.28	0:17:05	11,207.81	233.50	18.03	0:24:05	7,807.91	325.33	12.67	0:31:05	675.91	675.91	6.23
0:03:10	11,652.83	60.69	69.24	0:10:10	6,608.76	68.84	61.17	0:17:10	11,097.71	231.20	18.19	0:24:10	7,847.96	327.00	12.86	0:31:10	675.07	675.07	6.26
0:03:15	11,674.22	60.80	69.26	0:10:15	6,565.13	68.39	61.28	0:17:15	11,158.53	232.47	18.11	0:24:15	7,847.54	326.98	12.87	0:31:15	649.49	649.49	6.50
0:03:20	11,405.36	59.40	69.41	0:10:20	6,573.73	68.48	61.26	0:17:20	11,248.91	234.35	17.95	0:24:20	8,132.76	338.86	12.41	0:31:20	659.34	659.34	6.39
0:03:25	11,661.42	60.74	69.35	0:10:25	6,596.59	68.71	61.22	0:17:25	11,051.15	230.23	18.26	0:24:25	8,108.64	337.86	12.43	0:31:25	677.17	677.17	6.23
0:03:30	11,643.81	60.64	69.37	0:10:30	6,581.91	68.56	61.24	0:17:30	10,867.86	226.41	18.21	0:24:30	8,258.17	344.09	12.22	0:31:30	640.26	640.26	6.32
0:03:35	11,659.54	60.73	69.33	0:10:35	6,561.78	68.35	61.31	0:17:35	11,071.70	230.66	18.25	0:24:35	8,178.26	340.76	12.34	0:31:35	629.77	629.77	6.67
0:03:40	11,666.67	60.76	69.33	0:10:40	6,521.51	67.93	61.25	0:17:40	11,308.68	235.60	17.85	0:24:40	8,092.91	337.20	12.21	0:31:40	665.43	665.43	6.34
0:03:45	11,631.43	60.58	69.43	0:10:45	6,595.54	68.70	61.25	0:17:45	11,311.20	235.65	17.87	0:24:45	7,635.52	318.15	13.23	0:31:45	659.55	659.55	6.40
0:03:50	11,450.03	59.64	69.16	0:10:50	6,599.11	68.74	61.26	0:17:50	11,610.46	241.88	17.41	0:24:50	8,348.34	347.85	12.07	0:31:50	682.20	682.20	6.19
0:03:55	11,651.78	60.69	69.34	0:10:55	6,600.79	68.76	61.17	0:17:55	11,189.14	233.11	18.02	0:24:55	7,757.57	323.23	13.00	0:31:55	665.22	665.22	6.33
0:04:00	11,626.61	60.56	69.49	0:11:00	6,630.78	69.07	61.30	0:18:00	11,035.00	229.90	17.93	0:25:00	7,782.32	324.26	12.93	0:32:00	664.17	664.17	6.08
0:04:05	11,642.13	60.64	69.44	0:11:05	6,451.47	67.20	61.33	0:18:05	10,996.00	229.08	18.34	0:25:05	7,953.87	331.41	12.70	0:32:05	622.64	622.64	6.77
0:04:10	11,674.64	60.81	69.27	0:11:10	6,601.83	68.77	61.25	0:18:10	11,194.60	233.22	18.04	0:25:10	7,780.22	324.18	12.96	0:32:10	655.99	655.99	6.44
0:04:15	11,648.00	60.67	69.36	0:11:15	6,596.38	68.71	61.22	0:18:15	11,415.85	237.83	17.67	0:25:15	7,937.30	330.72	12.73	0:32:15	656.41	656.41	6.41
0:04:20	11,381.87	59.28	69.41	0:11:20	6,603.51	68.79	61.23	0:18:20	11,126.23	231.80	18.14	0:25:20	8,099.62	337.48	12.20	0:32:20	682.83	682.83	6.18
0:04:25	11,645.28	60.65	69.39	0:11:25	6,593.45	68.68	61.32	0:18:25	11,130.01	231.88	18.15	0:25:25	8,178.47	340.77	12.34	0:32:25	596.22	596.22	7.07
0:04:30	11,664.15	60.75	69.33	0:11:30	6,498.44	67.69	61.29	0:18:30	11,294.63	235.30	17.87	0:25:30	8,172.18	340.51	12.36	0:32:30	645.50	645.50	6.27
0:04:35	11,403.47	59.39	69.34	0:11:35	6,573.10	68.47	61.33	0:18:35	11,264.43	234.68	17.54	0:25:35	8,015.52	333.98	12.59	0:32:35	665.43	665.43	6.35
0:04:40	11,640.45	60.63	69.40	0:11:40	6,582.12	68.56	61.28	0:18:40	11,469.32	238.94	17.59	0:25:40	7,916.75	329.86	12.73	0:32:40	658.72	658.72	6.41
0:04:45	11,616.75	60.50	69.42	0:11:45	6,599.74	68.75	61.27	0:18:45	11,416.90	237.85	17.68	0:25:45	7,720.67	321.69	13.07	0:32:45	655.57	655.57	6.42
0:04:50	11,642.55	60.64	69.43	0:11:50	6,602.25	68.77	61.24	0:18:50	11,252.48	234.43	17.88	0:25:50	7,743.94	322.66	13.05	0:32:50	658.09	658.09	6.42
0:04:55	11,649.47	60.67	69.26	0:11:55	6,452.31	67.21	61.28	0:18:55	10,905.19	227.19	18.49	0:25:55	8,179.31	340.80	12.07	0:32:55	679.69	679.69	6.20
0:05:00	11,407.46	59.41	69.42	0:12:00	6,470.34	67.40	61.25	0:19:00	11,374.32	236.97	17.73	0:26:00	7,225.32	301.05	13.96	0:33:00	623.69	623.69	6.49
0:05:05	11,697.70	60.93	69.15	0:12:05	6,729.97	70.10	61.26	0:19:05	11,287.29	235.15	17.89	0:26:05	7,327.24	305.30	13.78	0:33:05	662.70	662.70	6.36
0:05:10	11,669.60	60.78	69.20	0:12:10	6,597.22	68.72	61.29	0:19:10	11,047.80	230.16	18.27	0:26:10	8,114.09	338.09	12.43	0:33:10	661.02	661.02	6.39
0:05:15	11,652.41	60.69	69.33	0:12:15	6,589.46	68.64	61.22	0:19:15	11,532.03	240.25	17.51	0:26:15	8,189.80	341.24	12.32	0:33:15	646.34	646.34	6.52
0:05:20	11,672.75	60.80	69.26	0:12:20	6,576.67	68.51	61.24	0:19:20	11,203.62	233.41	17.66	0:26:20	7,746.46	322.77	13.03	0:33:20	681.15	681.15	6.20
0:05:25	11,634.16	60.59	69.44	0:12:25	6,543.11	68.16	61.30	0:19:25	11,506.02	239.71	17.57	0:26:25	8,134.85	338.95	12.42	0:33:25	685.56	685.56	6.15
0:05:30	11,435.14	59.56	69.23	0:12:30	6,631.61	69.08	61.26	0:19:30	11,084.71	230.93	17.84	0:26:30	8,108.43	337.85	12.18	0:33:30	638.16	638.16	6.33
0:05:35	11,674.85	60.81	69.26	0:12:35	6,466.99	67.36	61.20	0:19:35	11,266.53	234.72	17.93	0:26:35	8,174.28	340.59	12.33	0:33:35	689.12	689.12	6.18
0:05:40	11,645.90	60.66	69.36	0:12:40	6,464.47	67.34	61.30	0:19:40	11,545.03	240.52	17.49	0:26:40	8,022.86	334.29	12.57	0:33:40	674.86	674.86	6.21
0:05:45	11,668.13	60.77	69.26	0:12:45	6,588.62	68.63	61.30	0:19:45	11,393.20	237.36	17.74	0:26:45	7,668.03	319.50	13.17	0:33:45	637.95	637.95	6.61
0:05:50	11,655.97	60.71	69.35	0:12:50	6,601.00	68.76	61.20	0:19:50	10,902.04	227.13	18.15	0:26:50	8,230.48	342.94	12.26	0:33:50	688.70	688.70	6.13
0:05:55	11,636.47	60.61	69.42	0:12:55	6,534.10	68.06	61.26	0:19:55	11,224.38	233.84	18.00	0:26:55	8,110.53	337.94	12.45	0:33:55	660.60	660.60	6.38
0:06:00	11,407.88	59.42	69.42	0:13:00	6,593.24	68.68	61.25	0:20:00	11,268.42	234.76	17.92	0:27:00	7,874.81	328.12	12.81	0:34:00	624.53	624.53	6.47
0:06:05	11,620.95	60.53	69.37	0:13:05	6,536.61	68.09	61.25	0:20:05	10,991.59	228.99	18.38	0:27:05	7,945.69	331.07	12.20	0:34:05	658.51	658.51	6.40
0:06:10	11,656.18	60.71	69.37	0:13:10	6,634.97	69.11	61.28	0:20:10	11,065.41	230.53	18.26	0:27:10	7,968.97	332.04	12.65	0:34:10	660.39	660.39	6.40
0:06:15	11,679.67	60.83	69.22	0:13:15	6,597.85	68.73	61.29	0:20:15	11,374.95	236.98	17.74	0:27:15	7,813.15	325.55	12.93	0:34:15	677.38	677.38	6.22
0:06:20	11,651.57	60.69	69.35	0:13:20	6,593.45	68.68	61.25	0:20:20	10,966.85	228.48	18.02	0:27:20	7,832.86	326.37	12.88	0:34:20	663.96	663.96	6.36
0:06:25	11,627.45	60.56	69.48	0:13:25	6,465.73	67.35	61.23	0:20:25	11,328.82	236.02	17.83	0:27:25	7,906.05	329.42	12.76	0:34:25	660.60	660.60	6.36
0:06:30	11,621.37	60.53	69.44	0:13:30	6,606.87	68.82	61.19	0:20:30	10,937.70	227.87	18.49	0:27:30	7,916.33	329.85	12.74	0:34:30	638.37	638.37	6.59
0:06:35	11,394.04	59.34	69.36	0:13:35	6,587.15	68.62	61.25	0:20:35	11,088.90	231.02	18.21	0:27:35	7,635.52	318.15	13.24	0:34:35	655.99	655.99	6.16
0:06:40	11,626.82	60.56	69.41	0:13:40	6,582.75	68.57	61.24	0:20:40	11,239.69	234.16	17.96	0:27:40	7,882.98	328.46	12.55	0:34:40	671.93	671.93	6.28
0:06:45	700.87	0.00	69.54	0:13:45	340.37	0.00	60.39	0:20:45	430.76	0.00	17.72	0:27:45	391.96	0.00	12.84	0:34:45	22.65	0.00	6.39
0:06:50	0.00	0.00	0.00	0:13:50	0.00	0.00	0.00	0:20:50	0.00	0.00	0.00	0:27:50	0.00	0.00	0.00	0:34:50	0.00	0.00	0.00

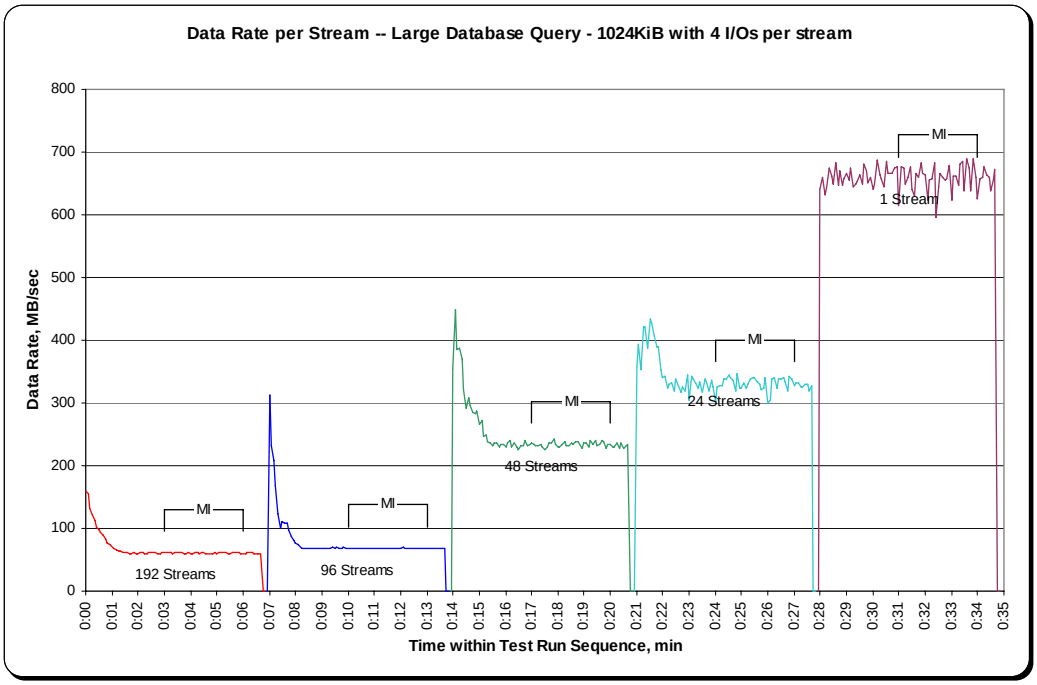
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



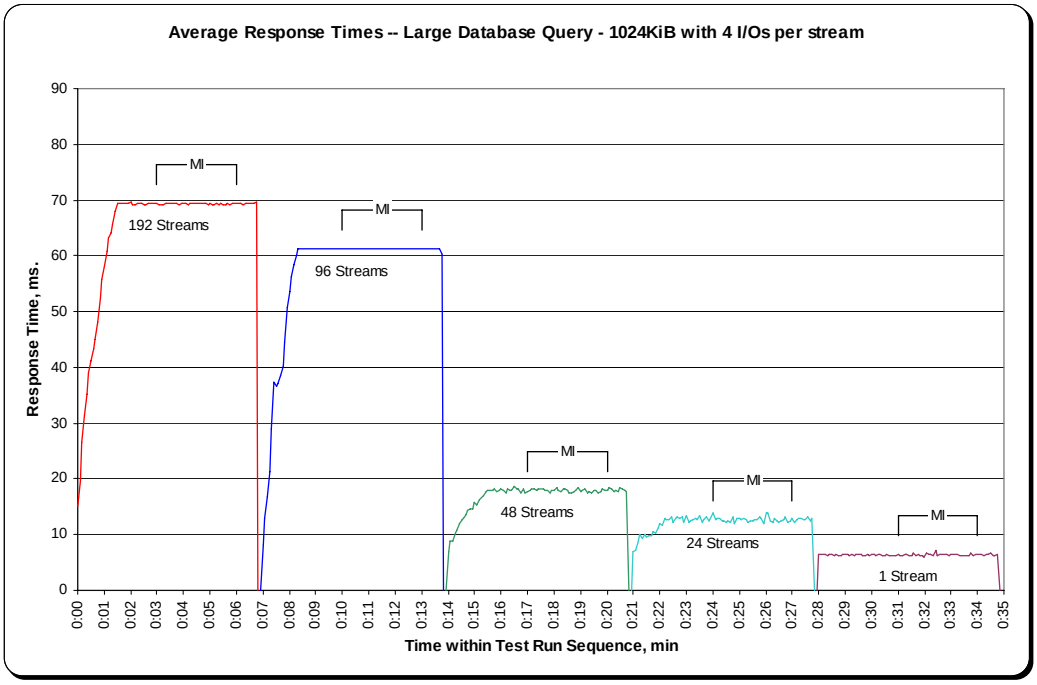
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate per Stream Graph



SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Response Time Graph



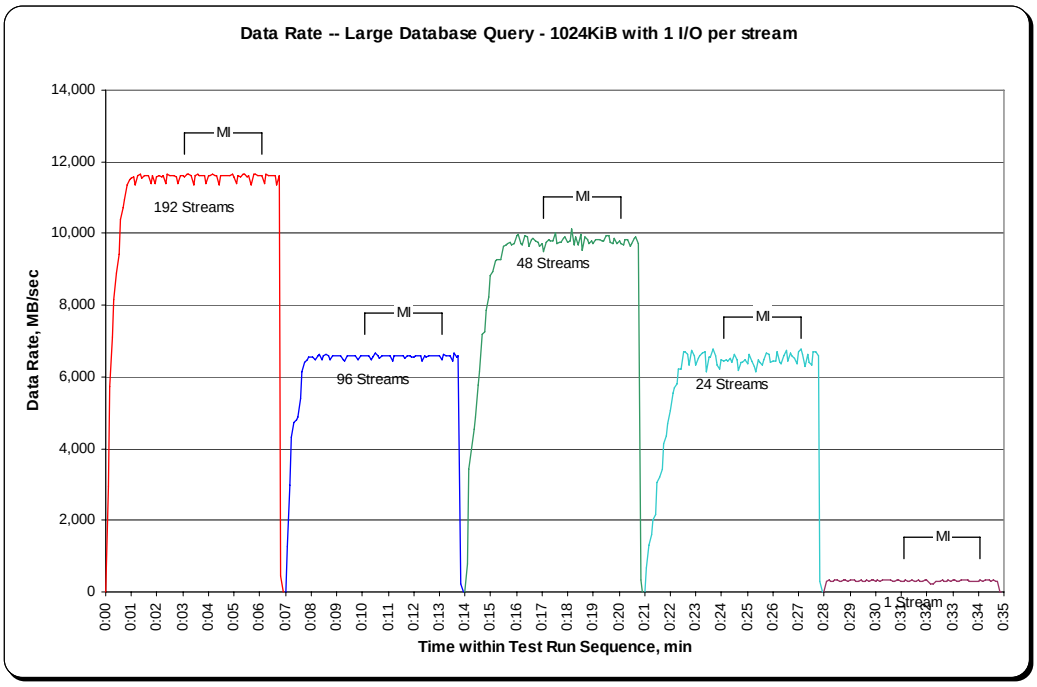
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR6	192 Streams			TR7	96 Streams			TR8	48 Streams			TR9	24 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	2,955.52	147.78	4.20	0:07:05	1,272.97	181.85	2.71	0:14:05	771.54	154.31	2.36	0:21:05	675.91	225.30	2.42	0:28:05	295.49	295.49	3.44
0:00:10	5,719.14	146.64	5.47	0:07:10	2,965.79	185.36	4.00	0:14:10	3,412.70	341.27	2.72	0:21:10	1,291.64	430.55	2.43	0:28:10	327.58	327.58	3.20
0:00:15	7,108.09	134.11	6.61	0:07:15	4,332.72	166.64	5.01	0:14:15	3,990.25	362.75	2.76	0:21:15	1,592.16	318.43	2.47	0:28:15	311.64	311.64	3.36
0:00:20	8,162.33	116.60	7.78	0:07:20	4,732.64	147.90	6.30	0:14:20	4,531.95	348.61	2.87	0:21:20	2,023.96	404.79	2.59	0:28:20	312.27	312.27	3.35
0:00:25	8,889.41	104.58	9.23	0:07:25	4,814.85	111.97	8.23	0:14:25	4,876.93	304.81	3.18	0:21:25	2,141.82	305.97	2.67	0:28:25	317.09	317.09	3.30
0:00:30	9,435.72	94.36	10.36	0:07:30	4,880.49	103.84	9.60	0:14:30	5,756.47	274.12	3.44	0:21:30	3,070.02	341.11	2.84	0:28:30	317.09	317.09	3.30
0:00:35	10,391.60	95.34	10.51	0:07:35	5,390.10	99.82	9.68	0:14:35	6,138.57	245.54	3.84	0:21:35	3,206.55	356.28	2.94	0:28:35	316.04	316.04	3.31
0:00:40	10,728.19	91.69	11.03	0:07:40	6,144.87	100.74	9.72	0:14:40	7,172.68	275.87	3.77	0:21:40	3,443.52	313.05	2.83	0:28:40	309.75	309.75	3.38
0:00:45	10,945.04	85.51	11.63	0:07:45	6,418.96	97.26	10.32	0:14:45	7,267.26	259.55	3.81	0:21:45	4,136.84	318.22	3.03	0:28:45	318.56	318.56	3.29
0:00:50	11,354.82	82.28	12.23	0:07:50	6,494.04	96.93	10.68	0:14:50	7,853.41	253.34	3.87	0:21:50	4,359.56	311.40	3.20	0:28:50	318.77	318.77	3.28
0:00:55	11,491.55	79.25	12.87	0:07:55	6,538.29	89.57	11.32	0:14:55	8,222.51	241.84	4.13	0:21:55	4,700.14	335.72	3.12	0:28:55	311.43	311.43	3.39
0:01:00	11,546.92	75.97	13.61	0:08:00	6,563.67	86.36	11.97	0:15:00	8,821.25	245.03	4.20	0:22:00	5,062.32	297.78	3.10	0:29:00	318.77	318.77	3.25
0:01:05	11,567.68	73.68	14.01	0:08:05	6,567.44	81.08	12.41	0:15:05	8,952.11	229.54	4.47	0:22:05	5,553.47	292.29	3.32	0:29:05	321.70	321.70	3.25
0:01:10	11,365.93	68.47	14.66	0:08:10	6,495.30	75.53	13.26	0:15:10	9,237.33	236.85	4.44	0:22:10	5,683.70	299.14	3.50	0:29:10	324.22	324.22	3.23
0:01:15	11,606.48	67.09	15.35	0:08:15	6,598.27	73.31	14.06	0:15:15	9,272.56	231.81	4.48	0:22:15	5,810.58	290.53	3.44	0:29:15	311.01	311.01	3.36
0:01:20	11,650.52	64.37	15.93	0:08:20	6,628.47	71.27	14.80	0:15:20	9,276.33	220.87	4.53	0:22:20	6,230.22	311.51	3.36	0:29:20	311.43	311.43	3.36
0:01:25	11,559.29	62.15	16.66	0:08:25	6,485.23	68.99	14.90	0:15:25	9,281.79	201.78	4.81	0:22:25	6,212.39	270.10	3.56	0:29:25	318.35	318.35	3.29
0:01:30	11,626.82	60.56	17.03	0:08:30	6,588.83	68.63	15.18	0:15:30	9,637.67	200.78	5.20	0:22:30	6,702.29	279.26	3.71	0:29:30	303.88	303.88	3.44
0:01:35	11,624.30	60.54	17.39	0:08:35	6,637.91	69.14	15.31	0:15:35	9,683.60	201.74	5.10	0:22:35	6,708.79	279.53	3.74	0:29:35	309.33	309.33	3.38
0:01:40	11,616.96	60.51	17.40	0:08:40	6,596.17	68.71	15.30	0:15:40	9,700.38	202.09	5.20	0:22:40	6,640.84	276.70	3.79	0:29:40	317.30	317.30	3.30
0:01:45	11,392.78	59.34	17.37	0:08:45	6,468.88	67.38	15.31	0:15:45	9,749.87	203.12	5.17	0:22:45	6,322.91	263.45	3.96	0:29:45	314.57	314.57	3.32
0:01:50	11,611.72	60.48	17.38	0:08:50	6,576.04	68.50	15.32	0:15:50	9,697.23	202.03	5.20	0:22:50	6,735.42	280.64	3.73	0:29:50	319.40	319.40	3.27
0:01:55	11,399.49	59.37	17.38	0:08:55	6,602.25	68.77	15.30	0:15:55	9,725.75	202.62	5.18	0:22:55	6,589.46	274.56	3.82	0:29:55	328.20	328.20	3.19
0:02:00	11,593.69	60.38	17.40	0:09:00	6,601.00	68.76	15.31	0:16:00	9,936.52	207.01	5.07	0:23:00	6,345.35	264.39	3.98	0:30:00	314.36	314.36	3.33
0:02:05	11,604.17	60.44	17.40	0:09:05	6,589.67	68.64	15.32	0:16:05	9,987.27	208.07	5.04	0:23:05	6,512.50	271.35	3.82	0:30:05	327.78	327.78	3.19
0:02:10	11,579.63	60.31	17.42	0:09:10	6,597.43	68.72	15.31	0:16:10	9,701.43	202.11	5.17	0:23:10	6,595.75	274.82	3.81	0:30:10	314.15	314.15	3.33
0:02:15	11,615.92	60.50	17.39	0:09:15	6,465.31	67.35	15.32	0:16:15	9,680.03	201.67	5.19	0:23:15	6,648.60	277.03	3.78	0:30:15	324.43	324.43	3.23
0:02:20	11,387.12	59.31	17.37	0:09:20	6,456.92	67.26	15.32	0:16:20	9,938.61	207.05	5.07	0:23:20	6,702.71	279.28	3.75	0:30:20	325.27	325.27	3.22
0:02:25	11,642.34	60.64	17.35	0:09:25	6,597.85	68.73	15.30	0:16:25	9,905.69	206.37	5.09	0:23:25	6,135.85	255.66	4.09	0:30:25	324.85	324.85	3.22
0:02:30	11,609.20	60.46	17.40	0:09:30	6,590.09	68.65	15.30	0:16:30	9,627.40	200.57	5.13	0:23:30	6,545.42	272.73	3.85	0:30:30	319.82	319.82	3.27
0:02:35	11,632.90	60.59	17.38	0:09:35	6,593.45	68.68	15.31	0:16:35	9,816.98	204.52	5.14	0:23:35	6,558.84	273.29	3.84	0:30:35	318.35	318.35	3.29
0:02:40	11,615.29	60.50	17.39	0:09:40	6,599.32	68.74	15.31	0:16:40	9,876.33	205.76	5.09	0:23:40	6,773.38	282.22	3.72	0:30:40	311.01	311.01	3.37
0:02:45	11,595.36	60.39	17.41	0:09:45	6,589.88	68.64	15.32	0:16:45	9,786.99	203.90	5.15	0:23:45	6,606.45	275.27	3.82	0:30:45	315.41	315.41	3.32
0:02:50	11,395.92	59.35	17.39	0:09:50	6,461.12	67.30	15.31	0:16:50	9,767.28	203.48	5.16	0:23:50	6,325.22	263.55	3.90	0:30:50	326.95	326.95	3.20
0:02:55	11,619.06	60.52	17.33	0:09:55	6,599.74	68.75	15.31	0:16:55	9,626.77	200.56	5.22	0:23:55	6,206.31	258.60	4.09	0:30:55	320.24	320.24	3.26
0:03:00	11,632.69	60.59	17.38	0:10:00	6,599.11	68.74	15.32	0:17:00	9,725.96	202.62	5.17	0:24:00	6,474.12	269.75	3.88	0:31:00	316.25	316.25	3.31

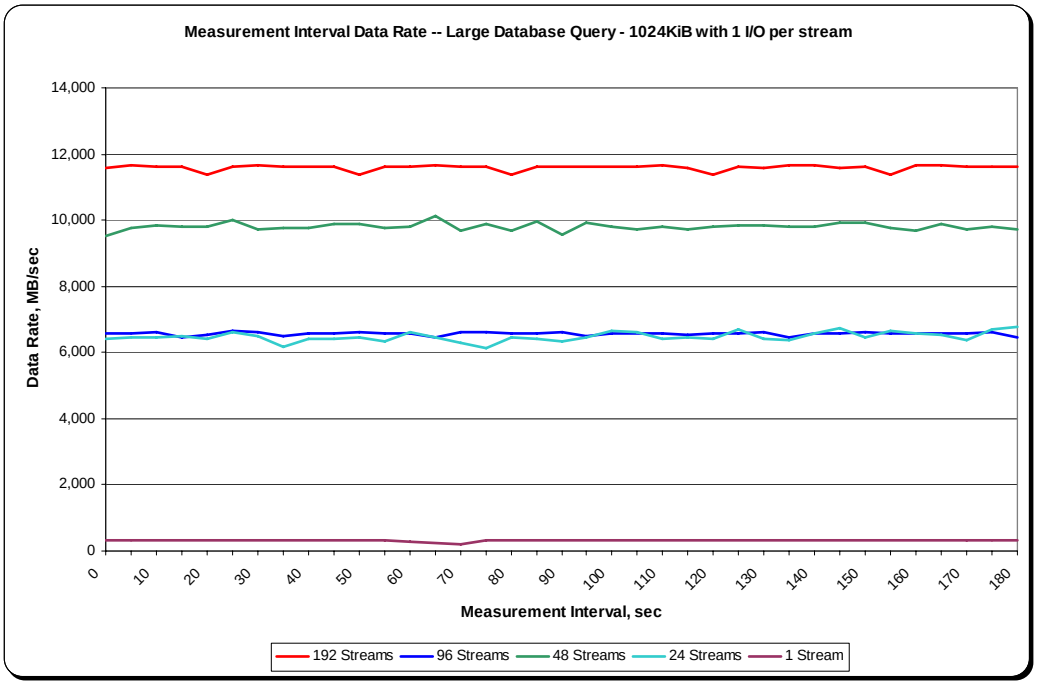
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	192 Streams			TR7	96 Streams			TR8	48 Streams			TR9	24 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	11,562.44	60.22	17.41	0:10:05	6,587.99	68.62	15.31	0:17:05	9,506.60	198.05	5.29	0:24:05	6,432.17	268.01	3.91	0:31:05	312.69	312.69	3.35
0:03:10	11,667.71	60.77	17.31	0:10:10	6,593.03	68.68	15.32	0:17:10	9,744.63	203.01	5.16	0:24:10	6,462.16	269.26	3.89	0:31:10	316.88	316.88	3.30
0:03:15	11,636.05	60.60	17.36	0:10:15	6,603.09	68.78	15.30	0:17:15	9,835.01	204.90	5.11	0:24:15	6,452.52	268.85	3.89	0:31:15	312.48	312.48	3.35
0:03:20	11,608.99	60.46	17.41	0:10:20	6,466.57	67.36	15.30	0:17:20	9,794.33	204.05	5.13	0:24:20	6,498.24	270.76	3.87	0:31:20	313.52	313.52	3.34
0:03:25	11,372.44	59.23	17.40	0:10:25	6,555.28	68.28	15.32	0:17:25	9,785.94	203.87	5.15	0:24:25	6,397.57	266.57	3.93	0:31:25	317.30	317.30	3.30
0:03:30	11,619.48	60.52	17.38	0:10:30	6,650.07	69.27	15.30	0:17:30	10,019.77	208.75	5.03	0:24:30	6,614.21	275.59	3.80	0:31:30	316.04	316.04	3.31
0:03:35	11,648.84	60.67	17.34	0:10:35	6,603.30	68.78	15.30	0:17:35	9,715.48	202.41	5.08	0:24:35	6,490.27	270.43	3.87	0:31:35	312.27	312.27	3.35
0:03:40	11,615.92	60.50	17.40	0:10:40	6,501.38	67.72	15.31	0:17:40	9,747.35	203.07	5.17	0:24:40	6,187.44	257.81	4.06	0:31:40	319.61	319.61	3.27
0:03:45	11,633.53	60.59	17.35	0:10:45	6,574.15	68.48	15.32	0:17:45	9,770.42	203.55	5.14	0:24:45	6,407.64	266.98	3.92	0:31:45	311.85	311.85	3.36
0:03:50	11,633.53	60.59	17.35	0:10:50	6,595.96	68.71	15.30	0:17:50	9,881.99	205.87	5.09	0:24:50	6,408.69	267.03	3.92	0:31:50	315.41	315.41	3.32
0:03:55	11,391.73	59.33	17.38	0:10:55	6,598.48	68.73	15.30	0:17:55	9,894.57	206.14	5.08	0:24:55	6,460.49	269.19	3.89	0:31:55	325.06	325.06	3.22
0:04:00	11,627.87	60.56	17.36	0:11:00	6,594.49	68.69	15.32	0:18:00	9,773.36	203.61	5.05	0:25:00	6,348.92	264.54	3.93	0:32:00	318.14	318.14	3.29
0:04:05	11,620.95	60.53	17.40	0:11:05	6,594.91	68.70	15.32	0:18:05	9,809.01	204.35	5.13	0:25:05	6,619.24	275.80	3.83	0:32:05	264.66	264.66	3.95
0:04:10	11,640.66	60.63	17.36	0:11:10	6,444.34	67.13	15.33	0:18:10	10,127.78	211.00	5.06	0:25:10	6,440.56	268.36	3.90	0:32:10	239.29	239.29	4.38
0:04:15	11,613.61	60.49	17.37	0:11:15	6,596.59	68.71	15.31	0:18:15	9,669.13	201.44	5.10	0:25:15	6,292.09	262.17	3.99	0:32:15	211.39	211.39	4.95
0:04:20	11,625.14	60.55	17.38	0:11:20	6,605.19	68.80	15.30	0:18:20	9,885.76	205.95	5.20	0:25:20	6,145.49	256.06	4.08	0:32:20	307.65	307.65	3.40
0:04:25	11,358.38	59.16	17.41	0:11:25	6,585.27	68.60	15.33	0:18:25	9,671.86	201.50	5.10	0:25:25	6,465.52	269.40	3.90	0:32:25	312.48	312.48	3.35
0:04:30	11,613.40	60.49	17.36	0:11:30	6,595.54	68.70	15.32	0:18:30	9,972.38	207.76	5.20	0:25:30	6,396.52	266.52	3.94	0:32:30	316.46	316.46	3.31
0:04:35	11,623.26	60.54	17.39	0:11:35	6,601.21	68.76	15.31	0:18:35	9,543.09	198.81	5.06	0:25:35	6,338.85	264.12	3.98	0:32:35	317.30	317.30	3.30
0:04:40	11,618.22	60.51	17.38	0:11:40	6,515.64	67.87	15.34	0:18:40	9,914.71	206.56	5.14	0:25:40	6,464.26	269.34	3.82	0:32:40	316.04	316.04	3.31
0:04:45	11,613.40	60.49	17.39	0:11:45	6,572.05	68.46	15.31	0:18:45	9,813.20	204.44	5.13	0:25:45	6,670.83	277.95	3.77	0:32:45	312.69	312.69	3.35
0:04:50	11,601.65	60.43	17.36	0:11:50	6,579.60	68.54	15.31	0:18:50	9,716.31	202.42	5.19	0:25:50	6,614.63	275.61	3.80	0:32:50	324.01	324.01	3.23
0:04:55	11,640.03	60.63	17.36	0:11:55	6,565.34	68.39	15.33	0:18:55	9,803.35	204.24	5.14	0:25:55	6,405.96	266.92	3.93	0:32:55	315.41	315.41	3.32
0:05:00	11,592.64	60.38	17.38	0:12:00	6,542.49	68.15	15.30	0:19:00	9,720.72	202.51	5.08	0:26:00	6,446.23	268.59	3.91	0:33:00	318.35	318.35	3.29
0:05:05	11,396.34	59.36	17.36	0:12:05	6,589.46	68.64	15.32	0:19:05	9,821.80	204.62	5.14	0:26:05	6,431.76	267.99	3.93	0:33:05	320.44	320.44	3.26
0:05:10	11,608.99	60.46	17.39	0:12:10	6,593.66	68.68	15.31	0:19:10	9,835.01	204.90	5.13	0:26:10	6,705.64	279.40	3.75	0:33:10	314.57	314.57	3.33
0:05:15	11,593.48	60.38	17.42	0:12:15	6,599.11	68.74	15.31	0:19:15	9,839.00	204.98	5.11	0:26:15	6,415.19	267.30	3.87	0:33:15	312.27	312.27	3.35
0:05:20	11,649.89	60.68	17.32	0:12:20	6,456.08	67.25	15.30	0:19:20	9,796.22	204.09	5.13	0:26:20	6,369.89	265.41	3.84	0:33:20	333.87	333.87	3.13
0:05:25	11,654.29	60.70	17.33	0:12:25	6,579.60	68.54	15.31	0:19:25	9,785.31	203.86	5.12	0:26:25	6,574.99	273.96	3.83	0:33:25	322.75	322.75	3.24
0:05:30	11,593.69	60.38	17.39	0:12:30	6,557.58	68.31	15.32	0:19:30	9,928.55	206.84	5.08	0:26:30	6,757.02	281.54	3.73	0:33:30	326.95	326.95	3.20
0:05:35	11,625.77	60.55	17.38	0:12:35	6,599.32	68.74	15.31	0:19:35	9,926.03	206.79	5.09	0:26:35	6,453.78	268.91	3.91	0:33:35	317.72	317.72	3.29
0:05:40	11,367.19	59.20	17.38	0:12:40	6,594.28	68.69	15.32	0:19:40	9,772.10	203.59	5.16	0:26:40	6,672.72	278.03	3.77	0:33:40	310.80	310.80	3.37
0:05:45	11,669.81	60.78	17.29	0:12:45	6,590.09	68.65	15.32	0:19:45	9,702.47	202.13	5.10	0:26:45	6,592.40	274.68	3.82	0:33:45	315.83	315.83	3.31
0:05:50	11,644.02	60.65	17.36	0:12:50	6,588.20	68.63	15.32	0:19:50	9,875.49	205.74	5.18	0:26:50	6,517.74	271.57	3.87	0:33:50	315.62	315.62	3.32
0:05:55	11,616.33	60.50	17.37	0:12:55	6,591.35	68.66	15.33	0:19:55	9,707.93	202.25	5.09	0:26:55	6,381.42	265.89	3.87	0:33:55	310.17	310.17	3.37
0:06:00	11,624.09	60.54	17.39	0:13:00	6,597.01	68.72	15.30	0:20:00	9,789.72	203.95	5.15	0:27:00	6,695.79	278.99	3.77	0:34:00	311.43	311.43	3.36
0:06:05	11,615.08	60.50	17.38	0:13:05	6,466.78	67.36	15.31	0:20:05	9,703.31	202.15	5.20	0:27:05	6,767.93	282.00	3.75	0:34:05	326.95	326.95	3.20
0:06:10	11,401.17	59.38	17.36	0:13:10	6,610.01	68.85	15.33	0:20:10	9,686.75	201.81	5.21	0:27:10	6,632.87	276.37	3.79	0:34:10	314.78	314.78	3.33
0:06:15	11,644.44	60.65	17.33	0:13:15	6,589.46	68.64	15.32	0:20:15	9,843.40	205.07	5.09	0:27:15	6,296.28	262.34	3.99	0:34:15	319.61	319.61	3.27
0:06:20	11,622.00	60.53	17.39	0:13:20	6,585.06	68.59	15.31	0:20:20	9,822.43	204.63	5.14	0:27:20	6,617.56	275.73	3.80	0:34:20	320.86	320.86	3.26
0:06:25	11,618.85	60.51	17.38	0:13:25	6,606.45	68.82	15.30	0:20:25	9,631.59	200.66	5.23	0:27:25	6,395.06	266.46	3.93	0:34:25	318.77	318.77	3.28
0:06:30	11,618.22	60.51	17.40	0:13:30	6,455.66	67.25	15.31	0:20:30	9,730.79	202.72	5.18	0:27:30	6,319.98	263.33	3.98	0:34:30	313.31	313.31	3.34
0:06:35	11,615.92	60.50	17.39	0:13:35	6,658.04	69.35	15.31	0:20:35	9,854.52	205.30	5.10	0:27:35	6,707.32	279.47	3.75	0:34:35	323.17	323.17	3.24
0:06:40	11,363.63	59.19	17.41	0:13:40	6,542.90	68.16	15.32	0:20:40	9,916.17	206.59	5.05	0:27:40	6,688.87	278.70	3.74	0:34:40	306.39	306.39	3.42
0:06:45	11,622.00	60.53	17.38	0:13:45	6,588.20	68.63	15.32	0:20:45	9,708.14	202.25	5.18	0:27:45	6,599.95	275.00	3.78	0:34:45	315.41	315.41	3.32
0:06:50	436.00	0.00	18.12	0:13:50	212.02	0.00	13.54	0:20:50	344.56	0.00	4.81	0:27:50	308.70	0.00	3.80	0:34:50	6.92	0.00	3.82
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

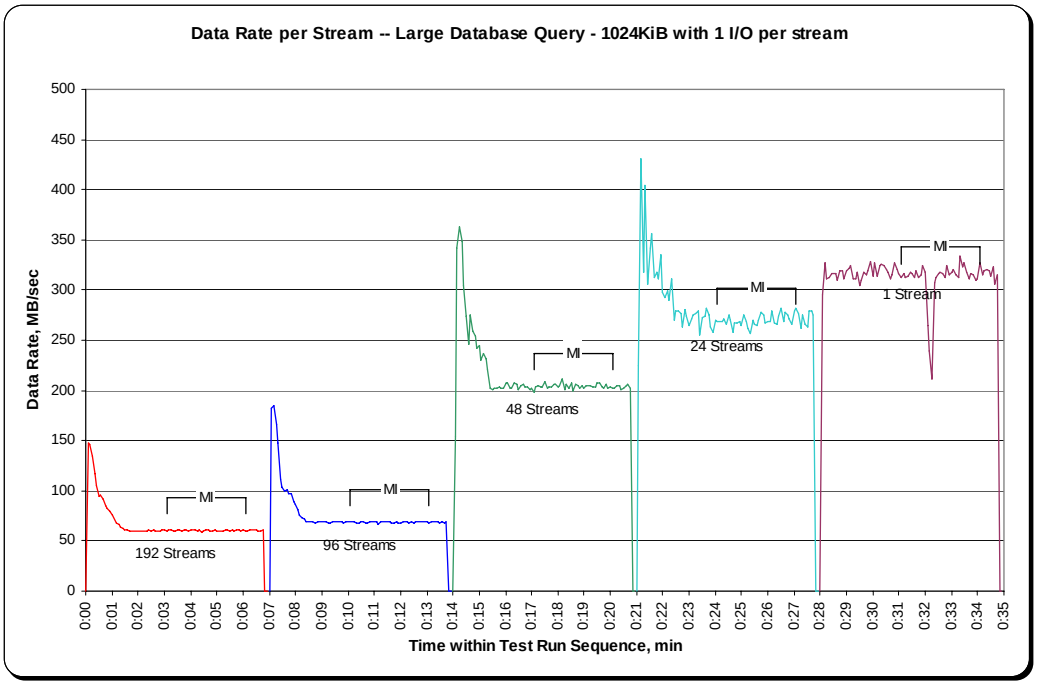
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



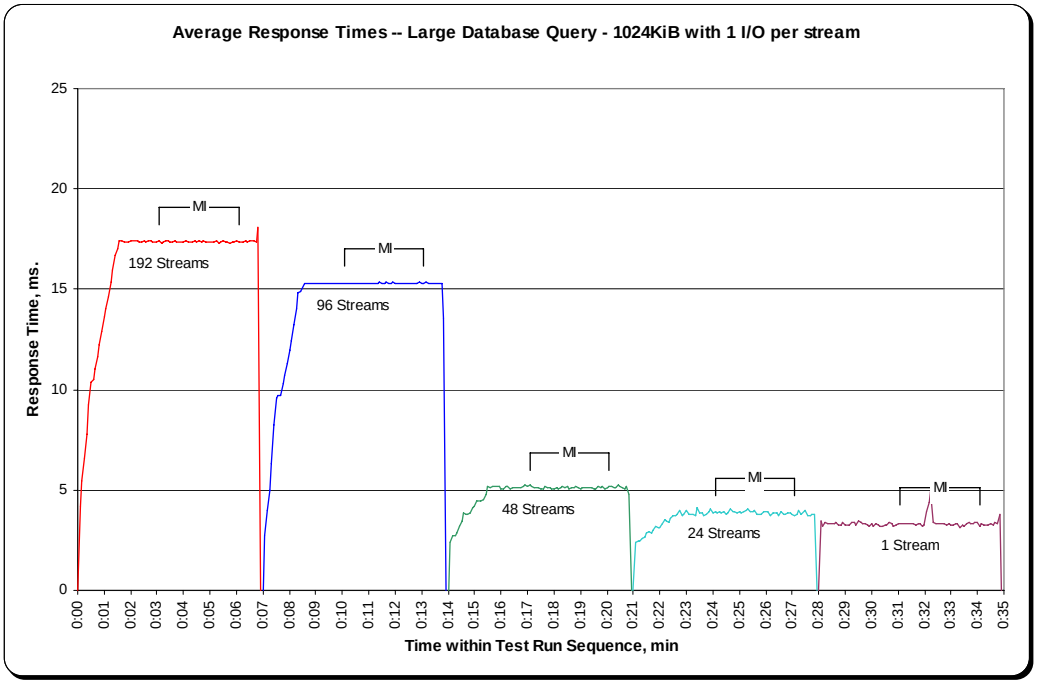
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate per Stream Graph



SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Response Time Graph



Large Database Query Test – 64 KIB TRANSFER SIZE Test Phase

Clause 10.6.8.2.1

5. *A table that will contain the following information for each "64 KiB Transfer Size, 4 Outstanding I/Os" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
6. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "64 KiB Transfer Size, 4 Outstanding I/Os" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*
7. *A table that will contain the following information for each "64 KiB Transfer Size, 1 Outstanding I/O" Test Run:*
   - *The number of Streams specified.*
   - *The average data rate, average data rate per stream, and average Response Time reported at five second intervals.*
8. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the "64 KiB Transfer Size, 1 Outstanding I/O" Test Runs as specified in Clauses 10.1.4 – 10.1.6.*

The SPC-2 "Large DatabaseQuery/64 KIB TRANSFER SIZE/4 Outstanding I/Os" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

Immediately following the SPC-2 "Large DatabaseQuery/64 KIB TRANSFER SIZE/4 Outstanding I/Os" table and graphs will be the SPC-2 "Large DatabaseQuery/64 KIB TRANSFER SIZE/1 Outstanding I/O" table and graphs. The table contains the Test Run data and the graphs illustrate the average Data Rate, average Data Rate per Stream, and average Response Time produced by the Test Runs.

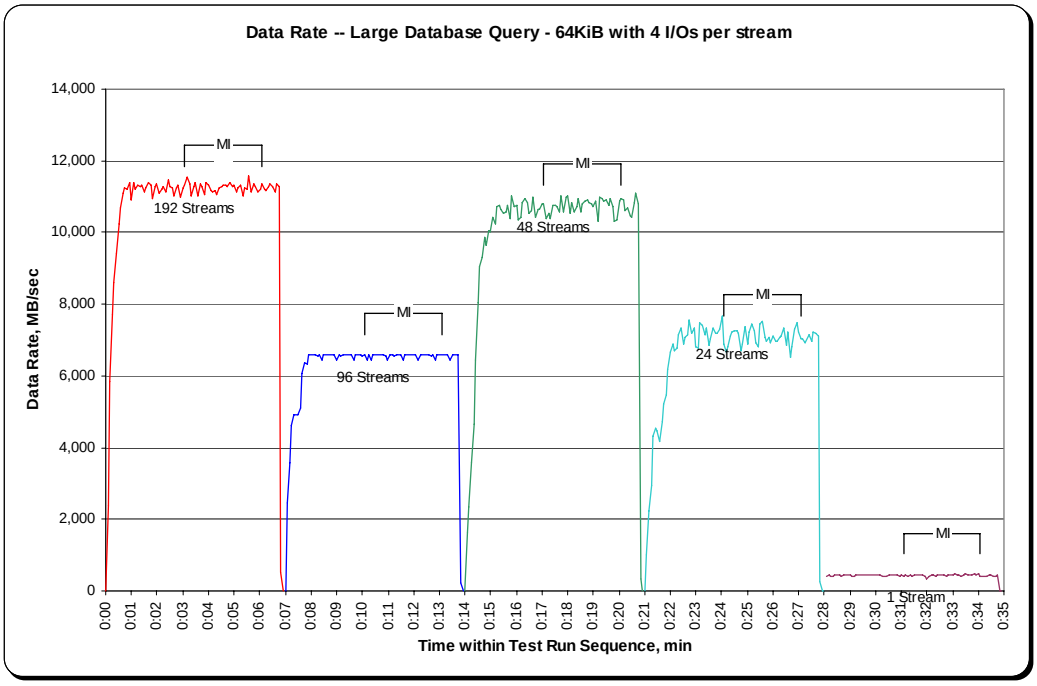
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR11	192 Streams			TR12	96 Streams			TR13	48 Streams			TR14	24 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:05	402.90	402.90	0.61
0:00:05	2,380.44	113.35	1.17	0:07:05	2,440.20	187.71	0.75	0:14:05	1,652.65	330.53	0.54	0:21:05	992.62	198.52	0.54	0:28:10	441.60	441.60	0.59
0:00:10	5,854.32	146.36	1.39	0:07:10	3,571.28	198.40	1.13	0:14:10	2,360.28	393.38	0.57	0:21:10	2,246.66	374.44	0.65	0:28:15	426.51	426.51	0.61
0:00:15	7,725.68	126.65	1.70	0:07:15	4,617.93	177.61	1.30	0:14:15	3,561.27	356.13	0.62	0:21:15	2,925.16	292.52	0.64	0:28:20	426.35	426.35	0.61
0:00:20	8,609.66	113.28	2.01	0:07:20	4,913.16	153.54	1.49	0:14:20	4,641.33	331.52	0.65	0:21:20	4,328.11	393.46	0.64	0:28:25	443.63	443.63	0.58
0:00:25	9,423.93	97.15	2.38	0:07:25	4,922.06	126.21	1.87	0:14:25	6,442.98	257.72	0.81	0:21:25	4,525.80	411.44	0.63	0:28:30	429.73	429.73	0.60
0:00:30	10,254.44	94.08	2.65	0:07:30	4,933.33	109.63	2.25	0:14:30	8,027.64	286.70	0.83	0:21:30	4,485.19	373.77	0.66	0:28:35	437.38	437.38	0.59
0:00:35	10,698.85	92.23	2.75	0:07:35	5,089.04	96.02	2.50	0:14:35	9,048.95	301.63	0.85	0:21:35	4,176.53	348.04	0.75	0:28:40	410.66	410.66	0.63
0:00:40	11,078.27	88.63	2.90	0:07:40	6,084.88	103.13	2.42	0:14:40	9,294.81	265.57	0.89	0:21:40	4,723.46	363.34	0.67	0:28:45	432.06	432.06	0.60
0:00:45	11,233.97	83.84	3.01	0:07:45	6,377.11	104.54	2.45	0:14:45	9,874.87	282.14	0.92	0:21:45	5,197.07	346.47	0.72	0:28:50	443.44	443.44	0.58
0:00:50	11,222.51	78.48	3.23	0:07:50	6,344.41	102.33	2.48	0:14:50	9,635.01	253.55	0.98	0:21:50	5,480.66	322.39	0.75	0:28:55	429.06	429.06	0.60
0:00:55	11,380.14	76.38	3.37	0:07:55	6,583.88	95.42	2.59	0:14:55	10,063.17	258.03	1.00	0:21:55	6,177.31	343.18	0.74	0:29:00	432.87	432.87	0.60
0:01:00	10,910.41	68.62	3.65	0:08:00	6,588.24	90.25	2.84	0:15:00	10,020.76	244.41	1.05	0:22:00	6,660.85	333.04	0.75	0:29:05	428.18	428.18	0.60
0:01:05	11,394.66	69.48	3.73	0:08:05	6,582.24	84.39	2.98	0:15:05	10,407.79	247.80	1.03	0:22:05	6,899.89	328.57	0.79	0:29:10	423.89	423.89	0.61
0:01:10	11,223.33	64.87	3.95	0:08:10	6,575.20	77.36	3.29	0:15:10	10,244.19	238.24	1.09	0:22:10	6,689.23	290.84	0.86	0:29:15	432.84	432.84	0.60
0:01:15	11,301.49	62.79	4.12	0:08:15	6,567.84	75.49	3.44	0:15:15	10,740.58	238.68	1.08	0:22:15	6,772.44	282.18	0.90	0:29:20	429.02	429.02	0.60
0:01:20	11,295.18	62.06	4.20	0:08:20	6,580.05	73.11	3.49	0:15:20	10,746.49	233.62	1.12	0:22:20	7,152.32	298.01	0.87	0:29:25	447.91	447.91	0.58
0:01:25	11,315.08	59.87	4.31	0:08:25	6,443.31	70.04	3.62	0:15:25	10,638.56	226.35	1.13	0:22:25	7,330.45	305.44	0.85	0:29:30	433.32	433.32	0.60
0:01:30	11,139.15	58.02	4.43	0:08:30	6,574.42	68.48	3.71	0:15:30	10,535.76	219.49	1.15	0:22:30	6,906.24	287.76	0.90	0:29:35	440.36	440.36	0.59
0:01:35	11,237.46	58.53	4.48	0:08:35	6,583.30	68.58	3.83	0:15:35	10,564.59	220.10	1.19	0:22:35	7,076.68	294.86	0.88	0:29:40	441.46	441.46	0.59
0:01:40	11,378.30	59.26	4.43	0:08:40	6,582.14	68.56	3.83	0:15:40	10,769.78	224.37	1.16	0:22:40	7,157.87	298.24	0.87	0:29:45	443.60	443.60	0.58
0:01:45	11,333.00	59.03	4.45	0:08:45	6,580.70	68.55	3.83	0:15:45	10,387.32	216.40	1.21	0:22:45	7,568.35	315.35	0.82	0:29:50	433.85	433.85	0.60
0:01:50	10,948.83	57.03	4.50	0:08:50	6,581.90	68.56	3.83	0:15:50	11,007.59	229.32	1.14	0:22:50	7,192.76	299.70	0.86	0:29:55	435.28	435.28	0.59
0:01:55	11,268.11	58.69	4.49	0:08:55	6,587.76	68.62	3.83	0:15:55	10,737.16	223.69	1.17	0:22:55	7,324.08	305.17	0.85	0:30:00	448.12	448.12	0.60
0:02:00	11,351.94	59.12	4.45	0:09:00	6,450.42	67.19	3.83	0:16:00	10,767.95	224.33	1.16	0:23:00	6,801.23	283.38	0.92	0:30:05	444.83	444.83	0.58
0:02:05	11,089.53	57.76	4.47	0:09:05	6,575.00	68.49	3.83	0:16:05	10,358.77	215.81	1.21	0:23:05	6,776.17	282.34	0.92	0:30:10	435.46	435.46	0.59
0:02:10	11,202.27	58.35	4.49	0:09:10	6,567.14	68.41	3.83	0:16:10	10,441.14	217.52	1.17	0:23:10	7,465.64	311.07	0.84	0:30:15	427.71	427.71	0.61
0:02:15	11,299.22	58.85	4.46	0:09:15	6,581.38	68.56	3.83	0:16:15	10,833.93	225.71	1.16	0:23:15	7,425.96	309.42	0.84	0:30:20	426.33	426.33	0.61
0:02:20	11,135.39	58.00	4.44	0:09:20	6,574.98	68.49	3.83	0:16:20	10,963.32	228.40	1.14	0:23:20	7,133.63	297.23	0.86	0:30:25	420.49	420.49	0.62
0:02:25	11,482.58	59.81	4.48	0:09:25	6,573.73	68.48	3.83	0:16:25	10,835.00	225.73	1.16	0:23:25	7,341.84	305.91	0.85	0:30:30	434.75	434.75	0.59
0:02:30	11,294.10	58.82	4.45	0:09:30	6,587.32	68.62	3.83	0:16:30	10,523.46	219.24	1.17	0:23:30	6,855.65	285.65	0.89	0:30:35	436.72	436.72	0.59
0:02:35	11,261.65	58.65	4.47	0:09:35	6,574.21	68.48	3.83	0:16:35	10,606.51	220.97	1.18	0:23:35	7,040.61	293.36	0.89	0:30:40	431.51	431.51	0.60
0:02:40	11,010.48	57.35	4.49	0:09:40	6,451.15	67.20	3.83	0:16:40	10,978.61	228.72	1.17	0:23:40	7,352.47	306.35	0.85	0:30:45	430.87	430.87	0.60
0:02:45	11,249.02	58.59	4.48	0:09:45	6,574.67	68.49	3.83	0:16:45	10,443.62	217.58	1.18	0:23:45	7,192.65	299.69	0.87	0:30:50	442.73	442.73	0.58
0:02:50	11,319.95	58.96	4.46	0:09:50	6,580.93	68.55	3.83	0:16:50	10,661.76	222.12	1.18	0:23:50	7,175.99	299.00	0.87	0:30:55	419.01	419.01	0.62
0:02:55	10,978.89	57.18	4.49	0:09:55	6,580.90	68.55	3.83	0:16:55	10,652.55	221.93	1.15	0:23:55	7,309.53	304.56	0.86	0:31:00	432.97	432.97	0.60
0:03:00	11,239.11	58.54	4.48	0:10:00	6,561.69	68.35	3.83	0:17:00	10,804.88	225.10	1.16	0:24:00	7,686.02	320.25	0.81				

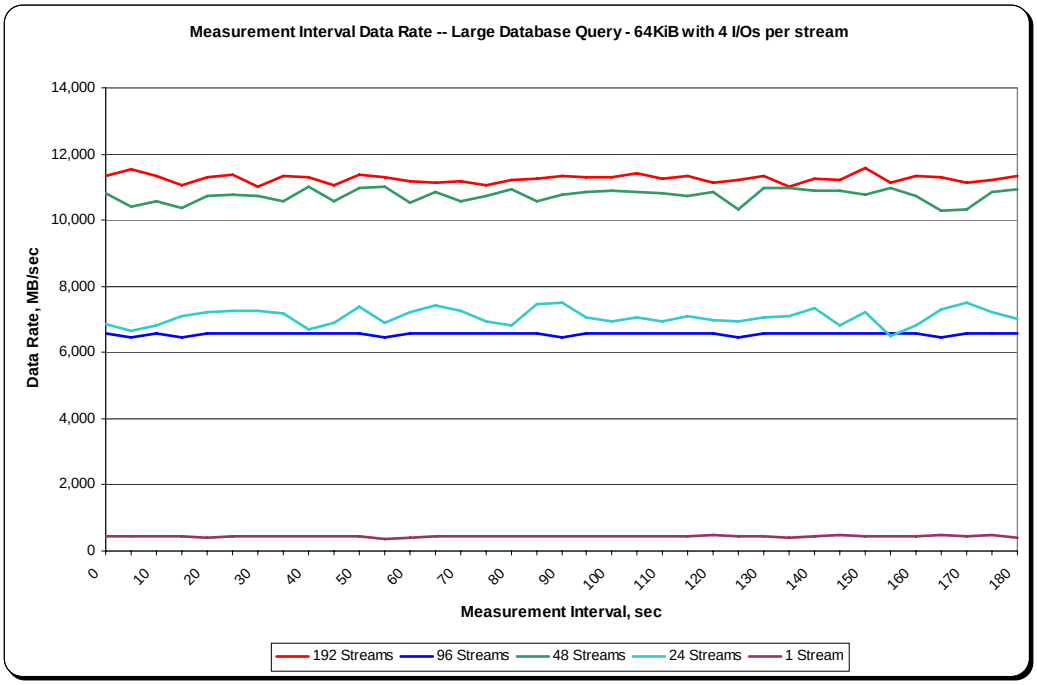
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	192 Streams			TR12	96 Streams			TR13	48 Streams			TR14	24 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	11,332.72	59.02	4.44	0:10:05	6,580.46	68.55	3.83	0:17:05	10,811.54	225.24	1.16	0:24:05	6,878.65	286.61	0.91	0:31:05	424.58	424.58	0.61
0:03:10	11,530.56	60.06	4.46	0:10:10	6,450.57	67.19	3.83	0:17:10	10,396.41	216.59	1.21	0:24:10	6,670.29	277.93	0.92	0:31:10	434.53	434.53	0.60
0:03:15	11,339.67	59.06	4.44	0:10:15	6,579.76	68.54	3.82	0:17:15	10,552.71	219.85	1.19	0:24:15	6,806.94	283.62	0.92	0:31:15	425.88	425.88	0.61
0:03:20	11,038.65	57.49	4.47	0:10:20	6,450.19	67.19	3.83	0:17:20	10,383.80	216.33	1.21	0:24:20	7,099.59	295.82	0.88	0:31:20	434.97	434.97	0.59
0:03:25	11,282.49	58.76	4.47	0:10:25	6,580.45	68.55	3.83	0:17:25	10,749.63	223.95	1.17	0:24:25	7,234.96	301.46	0.86	0:31:25	409.25	409.25	0.61
0:03:30	11,389.19	59.32	4.42	0:10:30	6,587.91	68.62	3.83	0:17:30	10,767.88	224.33	1.16	0:24:30	7,262.33	302.60	0.86	0:31:30	462.43	462.43	0.58
0:03:35	11,011.08	57.35	4.49	0:10:35	6,581.01	68.55	3.83	0:17:35	10,738.34	223.72	1.17	0:24:35	7,253.42	302.23	0.86	0:31:35	429.10	429.10	0.60
0:03:40	11,352.49	59.13	4.44	0:10:40	6,575.19	68.49	3.83	0:17:40	10,588.39	220.59	1.16	0:24:40	7,174.00	298.92	0.87	0:31:40	429.23	429.23	0.60
0:03:45	11,288.08	58.79	4.47	0:10:45	6,579.75	68.54	3.83	0:17:45	11,006.68	229.31	1.14	0:24:45	6,705.48	279.39	0.93	0:31:45	431.97	431.97	0.60
0:03:50	11,058.80	57.60	4.47	0:10:50	6,581.53	68.56	3.83	0:17:50	10,567.67	220.16	1.19	0:24:50	6,896.05	287.34	0.89	0:31:50	440.57	440.57	0.59
0:03:55	11,380.28	59.27	4.51	0:10:55	6,568.38	68.42	3.83	0:17:55	10,985.55	228.87	1.14	0:24:55	7,379.00	307.46	0.85	0:31:55	424.69	424.69	0.59
0:04:00	11,305.52	58.88	4.46	0:11:00	6,449.05	67.18	3.83	0:18:00	11,005.33	229.28	1.14	0:25:00	6,893.24	287.22	0.91	0:32:00	350.73	350.73	0.74
0:04:05	11,180.18	58.23	4.50	0:11:05	6,581.65	68.56	3.83	0:18:05	10,527.59	219.32	1.19	0:25:05	7,205.35	300.22	0.87	0:32:05	396.06	396.06	0.66
0:04:10	11,142.97	58.04	4.45	0:11:10	6,581.37	68.56	3.83	0:18:10	10,844.10	225.92	1.16	0:25:10	7,434.91	309.79	0.84	0:32:10	439.09	439.09	0.61
0:04:15	11,181.72	58.24	4.50	0:11:15	6,568.61	68.42	3.83	0:18:15	10,579.65	220.41	1.18	0:25:15	7,275.43	303.14	0.86	0:32:15	436.51	436.51	0.59
0:04:20	11,062.14	57.62	4.47	0:11:20	6,581.20	68.55	3.83	0:18:20	10,738.79	223.72	1.17	0:25:20	6,919.80	288.33	0.90	0:32:20	428.01	428.01	0.61
0:04:25	11,235.90	58.52	4.49	0:11:25	6,581.93	68.56	3.83	0:18:25	10,932.73	227.77	1.15	0:25:25	6,808.63	283.69	0.90	0:32:25	435.52	435.52	0.59
0:04:30	11,266.27	58.68	4.48	0:11:30	6,575.15	68.49	3.83	0:18:30	10,558.34	219.97	1.16	0:25:30	7,454.21	310.59	0.84	0:32:30	433.67	433.67	0.60
0:04:35	11,335.93	59.04	4.45	0:11:35	6,450.41	67.19	3.83	0:18:35	10,780.53	224.59	1.16	0:25:35	7,505.64	312.74	0.83	0:32:35	434.90	434.90	0.60
0:04:40	11,307.22	58.89	4.46	0:11:40	6,574.01	68.48	3.83	0:18:40	10,860.60	226.26	1.15	0:25:40	7,077.05	294.88	0.88	0:32:40	443.19	443.19	0.59
0:04:45	11,278.17	58.74	4.45	0:11:45	6,580.70	68.55	3.83	0:18:45	10,906.57	227.22	1.15	0:25:45	6,949.37	289.56	0.90	0:32:45	424.03	424.03	0.61
0:04:50	11,409.89	59.43	4.42	0:11:50	6,582.01	68.56	3.83	0:18:50	10,841.74	225.87	1.16	0:25:50	7,076.01	294.83	0.88	0:32:50	439.16	439.16	0.59
0:04:55	11,266.48	58.68	4.47	0:11:55	6,588.93	68.63	3.83	0:18:55	10,808.88	225.18	1.16	0:25:55	6,930.65	288.78	0.90	0:32:55	428.34	428.34	0.60
0:05:00	11,322.63	58.97	4.46	0:12:00	6,587.59	68.62	3.83	0:19:00	10,717.73	223.29	1.17	0:26:00	7,105.30	296.05	0.88	0:33:00	449.16	449.16	0.58
0:05:05	11,116.02	57.90	4.44	0:12:05	6,582.98	68.57	3.83	0:19:05	10,872.59	226.51	1.15	0:26:05	6,969.80	290.41	0.88	0:33:05	476.68	476.68	0.54
0:05:10	11,231.08	58.50	4.50	0:12:10	6,450.54	67.19	3.83	0:19:10	10,327.24	215.15	1.19	0:26:10	6,948.86	289.54	0.90	0:33:10	450.70	450.70	0.57
0:05:15	11,320.53	58.96	4.45	0:12:15	6,581.80	68.56	3.83	0:19:15	10,988.33	228.92	1.14	0:26:15	7,060.26	294.18	0.89	0:33:15	460.00	460.00	0.56
0:05:20	11,013.21	57.36	4.48	0:12:20	6,577.03	68.51	3.83	0:19:20	10,960.95	228.35	1.14	0:26:20	7,108.19	296.17	0.88	0:33:20	412.09	412.09	0.63
0:05:25	11,257.63	58.63	4.48	0:12:25	6,582.27	68.57	3.83	0:19:25	10,878.23	226.63	1.15	0:26:25	7,340.24	305.84	0.86	0:33:25	437.04	437.04	0.59
0:05:30	11,217.24	58.42	4.48	0:12:30	6,575.31	68.49	3.83	0:19:30	10,901.60	227.12	1.15	0:26:30	6,838.58	284.94	0.90	0:33:30	467.33	467.33	0.55
0:05:35	11,570.67	60.26	4.44	0:12:35	6,580.87	68.55	3.83	0:19:35	10,764.88	224.27	1.16	0:26:35	7,227.11	301.13	0.87	0:33:35	439.03	439.03	0.59
0:05:40	11,123.52	57.94	4.45	0:12:40	6,568.78	68.42	3.83	0:19:40	10,958.99	228.31	1.14	0:26:40	6,508.24	271.18	0.96	0:33:40	448.18	448.18	0.58
0:05:45	11,346.43	59.10	4.44	0:12:45	6,582.56	68.57	3.83	0:19:45	10,721.49	223.36	1.17	0:26:45	6,827.44	284.48	0.92	0:33:45	460.91	460.91	0.56
0:05:50	11,289.58	58.80	4.47	0:12:50	6,445.24	67.14	3.83	0:19:50	10,303.58	214.66	1.22	0:26:50	7,299.82	304.16	0.86	0:33:50	490.25	490.25	0.53
0:05:55	11,140.13	58.02	4.43	0:12:55	6,588.77	68.63	3.83	0:19:55	10,345.09	215.52	1.19	0:26:55	7,484.95	311.87	0.84	0:33:55	451.43	451.43	0.57
0:06:01	11,223.66	58.46	4.50	0:13:00	6,574.34	68.48	3.83	0:20:00	10,861.89	226.29	1.15	0:27:00	7,218.07	300.75	0.87	0:34:00	475.49	475.49	0.54
0:06:05	11,357.23	59.15	4.43	0:13:05	6,581.60	68.56	3.83	0:20:05	10,932.66	227.76	1.15	0:27:05	7,027.81	292.83	0.87	0:34:05	416.59	416.59	0.62
0:06:10	11,223.23	58.45	4.49	0:13:10	6,573.32	68.47	3.83	0:20:10	10,919.14	227.48	1.15	0:27:10	7,031.95	293.00	0.89	0:34:10	403.45	403.45	0.64
0:06:15	11,173.56	58.20	4.42	0:13:15	6,587.76	68.62	3.83	0:20:15	10,609.64	221.03	1.18	0:27:15	6,935.92	289.00	0.90	0:34:15	399.50	399.50	0.64
0:06:20	11,298.95	58.85	4.46	0:13:20	6,580.77	68.55	3.83	0:20:20	10,698.19	222.88	1.17	0:27:20	7,083.49	295.15	0.88	0:34:20	422.30	422.30	0.60
0:06:25	11,363.10	59.18	4.44	0:13:25	6,451.85	67.21	3.83	0:20:25	10,462.23	217.96	1.20	0:27:25	7,159.76	298.32	0.87	0:34:25	430.67	430.67	0.62
0:06:30	11,273.60	58.72	4.49	0:13:30	6,575.72	68.50	3.83	0:20:30	10,431.92	217.33	1.18	0:27:30	6,957.78	289.91	0.90	0:34:30	435.59	435.59	0.59
0:06:35	11,117.83	57.91	4.44	0:13:35	6,578.36	68.52	3.83	0:20:35	10,852.76	226.10	1.16	0:27:35	7,207.71	300.32	0.87	0:34:35	408.85	408.85	0.63
0:06:40	11,362.31	59.18	4.44	0:13:40	6,574.28	68.48	3.83	0:20:40	11,112.60	231.51	1.13	0:27:40	7,178.53	299.11	0.87	0:34:40	407.05	407.05	0.62
0:06:45	11,267.31	58.68	4.48	0:13:45	6,573.33	68.47	3.83	0:20:45	10,796.72	224.93	1.16	0:27:45	7,103.32	295.97	0.87	0:34:45	430.92	430.92	0.61
0:06:50	531.42	0.00	4.27	0:13:50	227.94	0.00	3.42	0:20:50	333.85	0.00	1.11	0:27:50	260.53	0.00	0.87	0:34:50	7.40	0.00	0.57
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
												0:28:00	0.00	0.00	0.00				

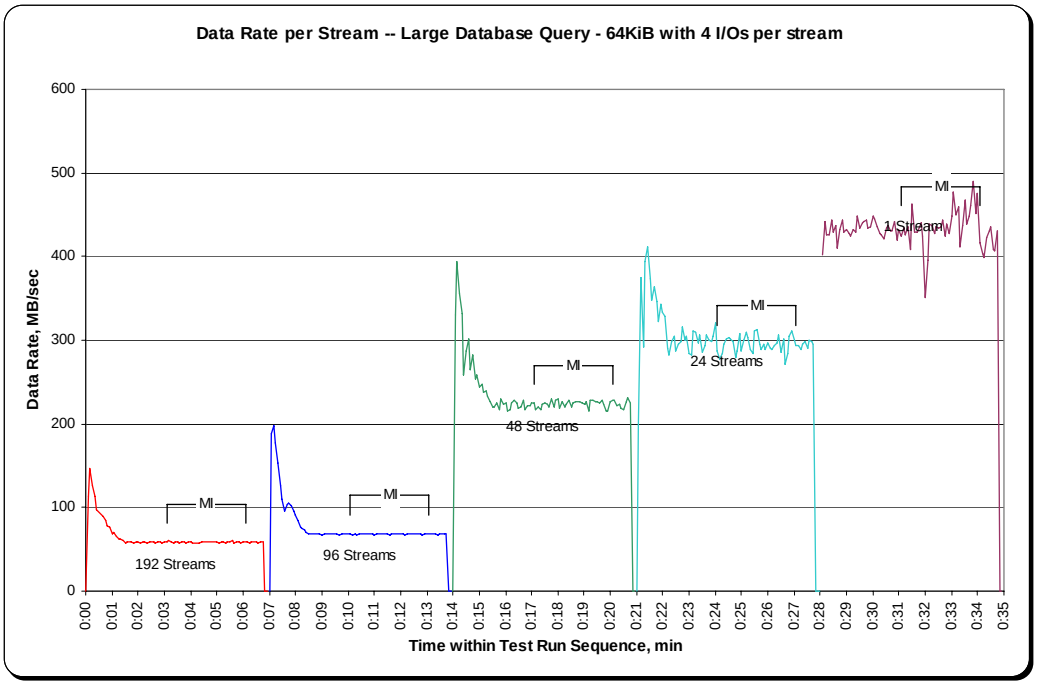
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



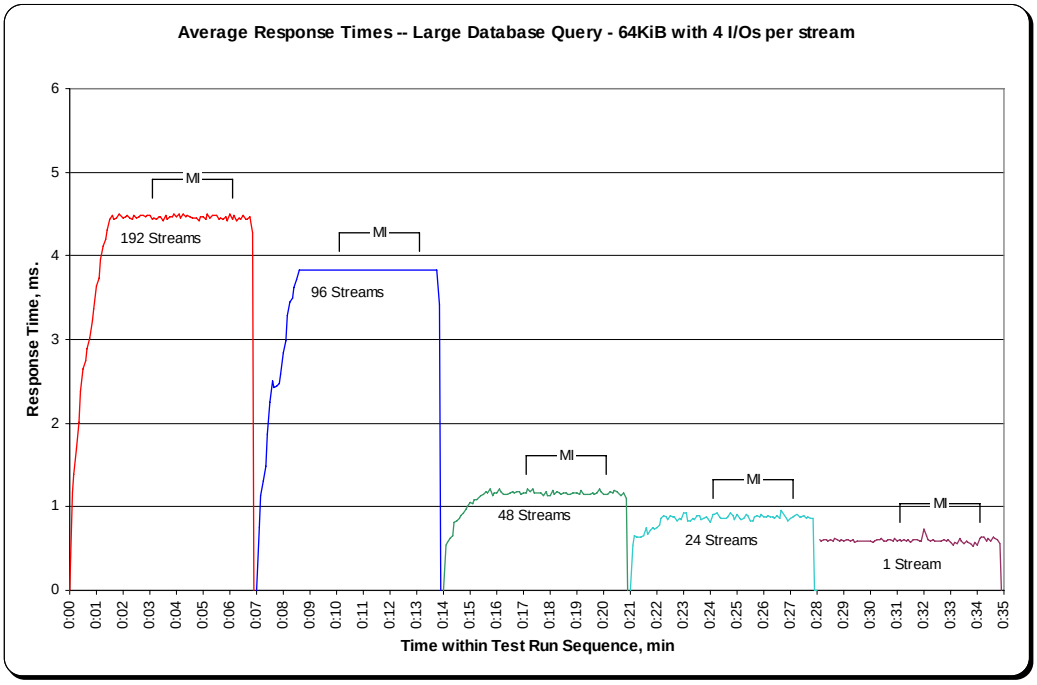
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate per Stream Graph



SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Response Time Graph



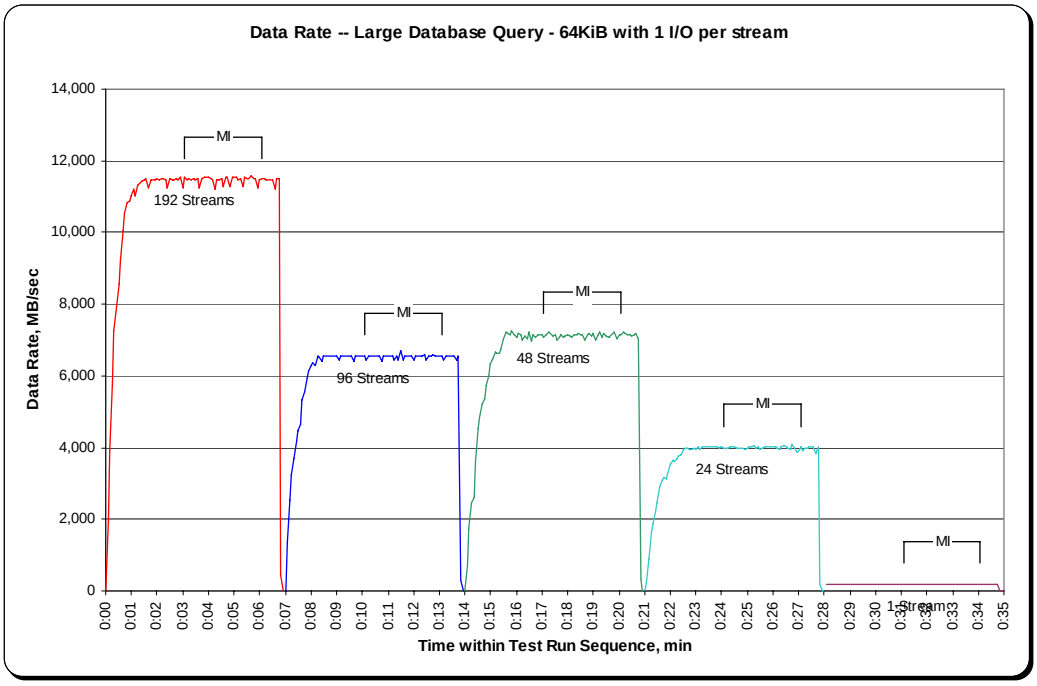
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR16	192 Streams			TR17	96 Streams			TR18	48 Streams			TR19	24 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:05	172.70	172.70	0.36
0:00:05	1,957.75	108.76	0.39	0:07:05	1,326.14	102.01	0.38	0:14:05	724.10	120.68	0.32	0:21:05	208.35	104.18	0.32	0:28:10	179.96	179.96	0.36
0:00:10	3,897.10	105.33	0.44	0:07:10	2,530.38	133.18	0.41	0:14:10	1,749.11	145.76	0.34	0:21:10	892.82	111.60	0.33	0:28:15	184.33	184.33	0.35
0:00:15	5,810.95	101.95	0.50	0:07:15	3,225.33	129.01	0.43	0:14:15	2,446.77	174.77	0.35	0:21:15	1,661.05	184.56	0.34	0:28:20	180.05	180.05	0.36
0:00:20	7,256.65	100.79	0.59	0:07:20	3,687.23	118.94	0.49	0:14:20	2,593.63	172.91	0.36	0:21:20	1,844.04	167.64	0.35	0:28:25	183.04	183.04	0.35
0:00:25	7,902.70	90.84	0.67	0:07:25	4,163.99	94.64	0.59	0:14:25	3,617.38	144.70	0.38	0:21:25	2,218.95	170.69	0.36	0:28:30	181.87	181.87	0.35
0:00:30	8,550.81	82.22	0.72	0:07:30	4,469.18	97.16	0.66	0:14:30	4,535.97	162.00	0.39	0:21:30	2,472.70	176.62	0.35	0:28:35	181.88	181.88	0.35
0:00:35	9,238.73	83.99	0.74	0:07:35	4,667.75	95.26	0.67	0:14:35	4,854.06	156.58	0.39	0:21:35	2,890.38	170.02	0.36	0:28:40	182.81	182.81	0.35
0:00:40	10,063.56	78.62	0.78	0:07:40	5,316.12	93.27	0.66	0:14:40	5,208.17	157.82	0.39	0:21:40	3,085.32	171.41	0.36	0:28:45	182.46	182.46	0.35
0:00:45	10,529.11	75.21	0.83	0:07:45	5,532.80	92.21	0.68	0:14:45	5,350.93	157.38	0.40	0:21:45	3,165.81	175.88	0.37	0:28:50	183.25	183.25	0.35
0:00:50	10,840.14	75.28	0.86	0:07:50	5,950.90	90.17	0.69	0:14:50	5,732.38	159.23	0.40	0:21:50	3,145.57	174.75	0.37	0:28:55	181.08	181.08	0.36
0:00:55	10,880.12	72.05	0.89	0:07:55	6,135.53	87.65	0.72	0:14:55	5,999.47	153.83	0.41	0:21:55	3,281.27	164.06	0.37	0:29:00	178.48	178.48	0.36
0:01:00	11,012.90	67.56	0.92	0:08:00	6,284.64	86.09	0.74	0:15:00	6,327.74	154.34	0.41	0:22:00	3,543.44	168.74	0.37	0:29:05	183.25	183.25	0.35
0:01:05	11,189.55	66.21	0.98	0:08:05	6,380.33	83.95	0.77	0:15:05	6,493.57	151.01	0.42	0:22:05	3,658.32	174.21	0.37	0:29:10	179.84	179.84	0.36
0:01:10	11,027.64	63.02	1.00	0:08:10	6,291.61	76.73	0.80	0:15:10	6,662.57	154.94	0.42	0:22:10	3,617.46	172.26	0.37	0:29:15	180.97	180.97	0.36
0:01:15	11,336.60	62.29	1.02	0:08:15	6,547.71	76.14	0.85	0:15:15	6,624.58	154.06	0.42	0:22:15	3,669.01	166.77	0.37	0:29:20	184.53	184.53	0.35
0:01:20	11,384.97	62.21	1.05	0:08:20	6,516.47	70.83	0.89	0:15:20	6,645.01	147.67	0.43	0:22:20	3,757.10	170.78	0.38	0:29:25	179.96	179.96	0.36
0:01:25	11,448.97	61.89	1.05	0:08:25	6,415.40	67.53	0.93	0:15:25	6,726.76	149.48	0.43	0:22:25	3,781.69	164.42	0.38	0:29:30	183.35	183.35	0.35
0:01:30	11,468.99	59.73	1.08	0:08:30	6,562.72	68.36	0.96	0:15:30	7,029.09	146.44	0.43	0:22:30	3,947.97	164.50	0.39	0:29:35	179.82	179.82	0.36
0:01:35	11,511.02	59.95	1.09	0:08:35	6,556.52	68.30	0.96	0:15:35	7,226.43	150.55	0.43	0:22:35	3,986.35	166.10	0.39	0:29:40	183.28	183.28	0.35
0:01:40	11,247.12	58.58	1.09	0:08:40	6,556.96	68.30	0.96	0:15:40	7,184.36	149.67	0.43	0:22:40	3,988.90	166.20	0.39	0:29:45	181.70	181.70	0.35
0:01:45	11,467.33	59.73	1.09	0:08:45	6,564.34	68.38	0.96	0:15:45	7,137.82	148.70	0.43	0:22:45	3,963.47	165.14	0.39	0:29:50	183.34	183.34	0.35
0:01:50	11,460.09	59.69	1.09	0:08:50	6,559.43	68.33	0.96	0:15:50	7,259.88	151.25	0.43	0:22:50	3,964.85	165.20	0.39	0:29:55	181.05	181.05	0.36
0:01:55	11,477.67	59.78	1.09	0:08:55	6,566.93	68.41	0.96	0:15:55	7,167.32	149.32	0.43	0:22:55	3,973.58	165.57	0.39	0:30:00	185.28	185.28	0.35
0:02:00	11,495.60	59.87	1.09	0:09:00	6,556.84	68.30	0.96	0:16:00	7,075.10	147.40	0.43	0:23:00	3,946.84	164.45	0.39	0:30:05	183.06	183.06	0.35
0:02:05	11,485.36	59.82	1.09	0:09:05	6,432.66	67.01	0.96	0:16:05	7,170.81	149.39	0.43	0:23:05	4,022.70	167.61	0.39	0:30:10	178.05	178.05	0.36
0:02:10	11,500.11	59.90	1.09	0:09:10	6,565.70	68.39	0.96	0:16:10	7,145.68	148.87	0.44	0:23:10	3,957.93	164.91	0.39	0:30:15	180.62	180.62	0.36
0:02:15	11,522.02	60.01	1.09	0:09:15	6,550.37	68.23	0.96	0:16:15	6,997.88	145.79	0.44	0:23:15	4,030.25	167.93	0.38	0:30:20	179.64	179.64	0.36
0:02:20	11,473.16	59.76	1.09	0:09:20	6,571.52	68.45	0.96	0:16:20	7,128.79	148.52	0.44	0:23:20	4,008.19	167.01	0.39	0:30:25	183.77	183.77	0.35
0:02:25	11,253.43	58.61	1.09	0:09:25	6,560.19	68.34	0.96	0:16:25	7,038.09	146.63	0.44	0:23:25	4,019.55	167.48	0.39	0:30:30	179.75	179.75	0.36
0:02:30	11,514.85	59.97	1.09	0:09:30	6,558.63	68.32	0.96	0:16:30	7,224.88	150.52	0.44	0:23:30	4,030.68	167.95	0.38	0:30:35	179.88	179.88	0.36
0:02:35	11,470.59	59.74	1.09	0:09:35	6,570.23	68.44	0.96	0:16:35	6,958.43	144.97	0.44	0:23:35	4,011.23	167.13	0.39	0:30:40	181.51	181.51	0.36
0:02:40	11,484.21	59.81	1.09	0:09:40	6,422.86	66.90	0.96	0:16:40	7,165.40	149.28	0.43	0:23:40	4,004.68	166.86	0.39	0:30:45	180.40	180.40	0.36
0:02:45	11,486.78	59.83	1.09	0:09:45	6,563.13	68.37	0.96	0:16:45	7,084.43	147.59	0.43	0:23:45	4,024.95	167.71	0.38	0:30:50	184.70	184.70	0.35
0:02:50	11,485.49	59.82	1.09	0:09:50	6,568.47	68.42	0.96	0:16:50	7,136.27	148.67	0.43	0:23:50	4,026.78	167.78	0.38	0:30:55	181.11	181.11	0.36
0:02:55	11,524.85	60.03	1.09	0:09:55	6,570.79	68.45	0.96	0:16:55	7,131.62	148.58	0.44	0:23:55	3,985.89	166.08	0.39	0:31:00	184.30	184.30	0.36
0:03:00	11,257.78	58.63	1.09	0:10:00	6,557.89	68.31	0.96	0:17:00	7,141.76	148.79	0.43	0:24:00	4,030.01	167.92	0.38				

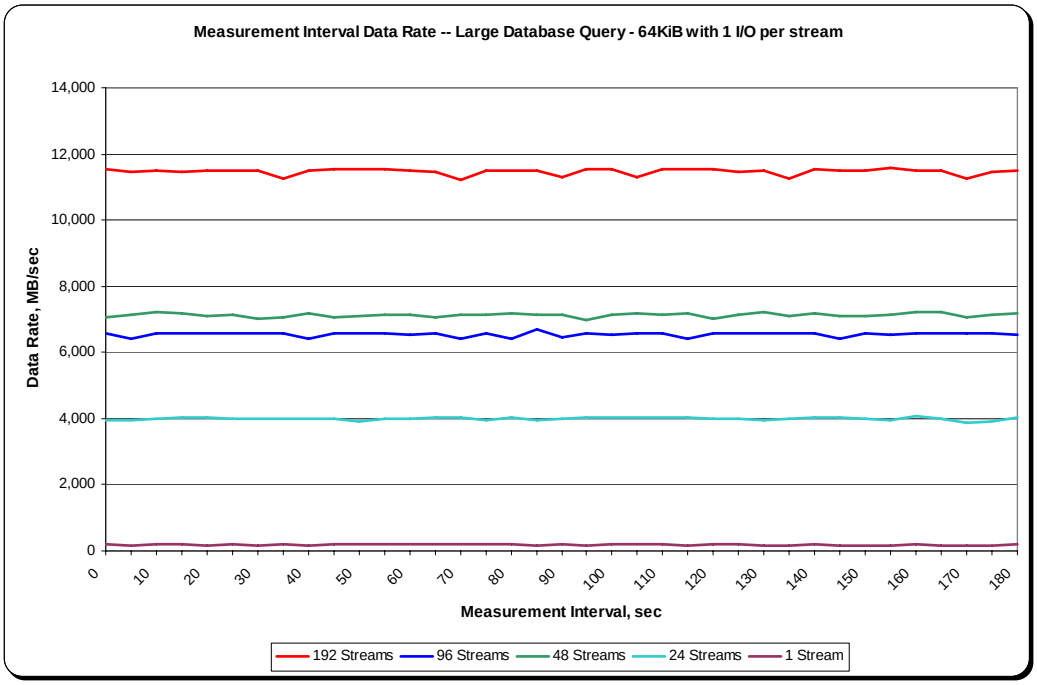
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Period

TR16	192 Streams			TR17	96 Streams			TR18	48 Streams			TR19	24 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	11,548.16	60.15	1.09	0:10:05	6,564.62	68.38	0.96	0:17:05	7,078.40	147.47	0.44	0:24:05	3,969.30	165.39	0.39	0:31:05	182.35	182.35	0.35
0:03:10	11,464.66	59.71	1.09	0:10:10	6,426.87	66.95	0.96	0:17:10	7,147.97	148.92	0.43	0:24:10	3,972.07	165.50	0.39	0:31:10	179.75	179.75	0.36
0:03:15	11,501.53	59.90	1.09	0:10:15	6,565.57	68.39	0.96	0:17:15	7,218.82	150.39	0.43	0:24:15	3,985.48	166.06	0.39	0:31:15	183.94	183.94	0.35
0:03:20	11,477.65	59.78	1.09	0:10:20	6,570.07	68.44	0.96	0:17:20	7,178.32	149.55	0.43	0:24:20	4,029.17	167.88	0.38	0:31:20	183.94	183.94	0.35
0:03:25	11,493.80	59.86	1.09	0:10:25	6,565.18	68.39	0.96	0:17:25	7,103.80	148.00	0.44	0:24:25	4,037.85	168.24	0.38	0:31:25	179.14	179.14	0.36
0:03:30	11,482.54	59.80	1.09	0:10:30	6,566.52	68.40	0.96	0:17:30	7,138.80	148.72	0.44	0:24:30	4,010.24	167.09	0.39	0:31:30	182.35	182.35	0.35
0:03:35	11,493.01	59.86	1.09	0:10:35	6,564.52	68.38	0.96	0:17:35	7,017.08	146.19	0.44	0:24:35	4,002.61	166.78	0.39	0:31:35	180.67	180.67	0.36
0:03:40	11,238.22	58.53	1.09	0:10:40	6,565.76	68.39	0.96	0:17:40	7,069.00	147.27	0.44	0:24:40	3,999.67	166.65	0.39	0:31:40	183.86	183.86	0.35
0:03:45	11,487.35	59.83	1.09	0:10:45	6,420.00	66.88	0.96	0:17:45	7,163.24	149.23	0.43	0:24:45	3,981.09	165.88	0.39	0:31:45	180.86	180.86	0.36
0:03:50	11,532.71	60.07	1.09	0:10:50	6,563.33	68.37	0.96	0:17:50	7,076.78	147.43	0.44	0:24:50	3,994.78	166.45	0.38	0:31:50	183.09	183.09	0.35
0:03:55	11,532.74	60.07	1.09	0:10:55	6,568.74	68.42	0.96	0:17:55	7,109.82	148.12	0.44	0:24:55	3,929.42	163.73	0.40	0:31:55	183.30	183.30	0.35
0:04:00	11,536.87	60.09	1.09	0:11:00	6,557.89	68.31	0.96	0:18:00	7,131.62	148.58	0.44	0:25:00	4,001.51	166.73	0.39	0:32:00	182.40	182.40	0.35
0:04:05	11,505.27	59.92	1.09	0:11:05	6,548.78	68.22	0.96	0:18:05	7,127.76	148.49	0.44	0:25:05	4,011.26	167.14	0.39	0:32:05	183.72	183.72	0.35
0:04:10	11,471.73	59.75	1.09	0:11:10	6,571.03	68.45	0.96	0:18:10	7,078.10	147.46	0.44	0:25:10	4,020.33	167.51	0.39	0:32:10	187.57	187.57	0.34
0:04:15	11,211.79	58.39	1.10	0:11:15	6,433.33	67.01	0.96	0:18:15	7,145.67	148.87	0.44	0:25:15	4,043.50	168.48	0.38	0:32:15	182.45	182.45	0.35
0:04:20	11,483.21	59.81	1.09	0:11:20	6,564.73	68.38	0.96	0:18:20	7,157.38	149.11	0.43	0:25:20	3,971.91	165.50	0.39	0:32:20	182.47	182.47	0.35
0:04:25	11,481.66	59.80	1.09	0:11:25	6,433.32	67.01	0.96	0:18:25	7,190.44	149.80	0.43	0:25:25	4,029.30	167.89	0.38	0:32:25	183.44	183.44	0.35
0:04:30	11,511.89	59.96	1.09	0:11:30	6,702.96	69.82	0.96	0:18:30	7,151.48	148.99	0.43	0:25:30	3,946.59	164.44	0.39	0:32:30	179.03	179.03	0.36
0:04:35	11,286.40	58.78	1.09	0:11:35	6,435.53	67.04	0.96	0:18:35	7,152.70	149.01	0.43	0:25:35	3,997.65	166.57	0.39	0:32:35	181.84	181.84	0.35
0:04:40	11,530.67	60.06	1.09	0:11:40	6,563.97	68.37	0.96	0:18:40	6,991.79	145.66	0.43	0:25:40	4,025.07	167.71	0.38	0:32:40	181.38	181.38	0.36
0:04:45	11,524.73	60.02	1.09	0:11:45	6,555.50	68.29	0.96	0:18:45	7,160.83	149.18	0.43	0:25:45	4,020.98	167.54	0.39	0:32:45	183.20	183.20	0.35
0:04:50	11,284.62	58.77	1.09	0:11:50	6,571.32	68.45	0.96	0:18:50	7,171.96	149.42	0.43	0:25:50	4,026.22	167.76	0.38	0:32:50	182.98	182.98	0.35
0:04:55	11,531.44	60.06	1.09	0:11:55	6,558.61	68.32	0.96	0:18:55	7,126.27	148.46	0.44	0:25:55	4,024.80	167.70	0.38	0:32:55	186.38	186.38	0.35
0:05:00	11,528.55	60.04	1.09	0:12:00	6,433.08	67.01	0.96	0:19:00	7,178.32	149.55	0.43	0:26:00	4,021.52	167.56	0.39	0:33:00	180.27	180.27	0.36
0:05:05	11,527.56	60.04	1.09	0:12:05	6,570.52	68.44	0.96	0:19:05	7,017.51	146.20	0.43	0:26:05	4,003.11	166.80	0.39	0:33:05	183.58	183.58	0.35
0:05:10	11,465.34	59.72	1.09	0:12:10	6,557.86	68.31	0.96	0:19:10	7,153.12	149.02	0.44	0:26:10	3,974.99	165.62	0.39	0:33:10	181.62	181.62	0.36
0:05:15	11,503.56	59.91	1.09	0:12:15	6,563.79	68.37	0.96	0:19:15	7,208.45	150.18	0.44	0:26:15	3,942.44	164.27	0.39	0:33:15	180.75	180.75	0.36
0:05:20	11,270.40	58.70	1.09	0:12:20	6,566.54	68.40	0.96	0:19:20	7,092.21	147.75	0.44	0:26:20	4,010.59	167.11	0.39	0:33:20	180.72	180.72	0.36
0:05:25	11,528.93	60.05	1.09	0:12:25	6,572.35	68.46	0.96	0:19:25	7,189.40	149.78	0.43	0:26:25	4,049.68	168.74	0.38	0:33:25	182.50	182.50	0.35
0:05:30	11,487.53	59.83	1.09	0:12:30	6,425.66	66.93	0.96	0:19:30	7,119.56	148.32	0.43	0:26:30	4,034.91	168.12	0.38	0:33:30	178.45	178.45	0.36
0:05:35	11,514.31	59.97	1.09	0:12:35	6,557.18	68.30	0.96	0:19:35	7,091.19	147.73	0.44	0:26:35	3,988.97	166.21	0.39	0:33:35	178.68	178.68	0.36
0:05:40	11,565.33	60.24	1.08	0:12:40	6,549.71	68.23	0.96	0:19:40	7,127.92	148.50	0.44	0:26:40	3,946.96	164.46	0.38	0:33:40	181.01	181.01	0.36
0:05:45	11,487.46	59.83	1.09	0:12:45	6,572.33	68.46	0.96	0:19:45	7,204.19	150.09	0.43	0:26:45	4,091.90	170.50	0.39	0:33:45	181.92	181.92	0.35
0:05:50	11,511.10	59.95	1.09	0:12:50	6,567.66	68.41	0.95	0:19:50	7,232.01	150.67	0.43	0:26:50	3,985.16	166.05	0.39	0:33:50	178.77	178.77	0.36
0:05:55	11,256.10	58.63	1.09	0:12:55	6,563.76	68.37	0.96	0:19:55	7,041.97	146.71	0.43	0:26:55	3,854.83	160.62	0.39	0:33:55	180.31	180.31	0.36
0:06:00	11,471.54	59.75	1.09	0:13:00	6,571.68	68.45	0.96	0:20:00	7,140.45	148.76	0.44	0:27:00	3,902.86	162.62	0.39	0:34:00	177.80	177.80	0.36
0:06:05	11,493.59	59.86	1.09	0:13:05	6,552.22	68.25	0.96	0:20:05	7,162.65	149.22	0.43	0:27:05	4,026.65	167.78	0.39	0:34:05	186.12	186.12	0.34
0:06:10	11,514.25	59.97	1.09	0:13:10	6,427.69	66.96	0.96	0:20:10	7,206.01	150.13	0.43	0:27:10	3,924.98	163.54	0.40	0:34:10	181.84	181.84	0.35
0:06:15	11,484.80	59.82	1.09	0:13:15	6,563.37	68.37	0.95	0:20:15	7,179.89	149.58	0.43	0:27:15	3,985.31	166.05	0.39	0:34:15	181.72	181.72	0.35
0:06:20	11,471.89	59.75	1.09	0:13:20	6,563.19	68.37	0.96	0:20:20	7,163.68	149.24	0.43	0:27:20	3,992.62	166.36	0.39	0:34:20	184.65	184.65	0.35
0:06:25	11,464.52	59.71	1.09	0:13:25	6,557.88	68.31	0.96	0:20:25	7,139.75	148.74	0.43	0:27:25	4,012.58	167.19	0.39	0:34:25	182.23	182.23	0.35
0:06:30	11,478.97	59.79	1.09	0:13:30	6,567.81	68.41	0.96	0:20:30	7,113.98	148.21	0.44	0:27:30	4,022.22	167.59	0.39	0:34:30	179.74	179.74	0.36
0:06:35	11,224.10	58.46	1.09	0:13:35	6,570.27	68.44	0.96	0:20:35	7,140.71	148.76	0.43	0:27:35	4,027.28	167.80	0.39	0:34:35	181.74	181.74	0.35
0:06:40	11,500.61	59.90	1.09	0:13:40	6,422.99	66.91	0.96	0:20:40	7,186.64	149.72	0.43	0:27:40	3,847.29	160.30	0.40	0:34:40	184.18	184.18	0.35
0:06:45	11,494.89	59.87	1.09	0:13:45	6,569.44	68.43	0.96	0:20:45	7,020.96	146.27	0.43	0:27:45	4,025.07	167.71	0.38	0:34:45	188.83	188.83	0.34
0:06:50	455.82	0.00	1.09	0:13:50	286.28	0.00	0.91	0:20:50	342.62	0.00	0.43	0:27:50	197.77	0.00	0.38	0:34:50	6.48	0.00	0.33
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00
												0:28:00	0.00	0.00	0.00	0:35:00	0.00	0.00	0.00

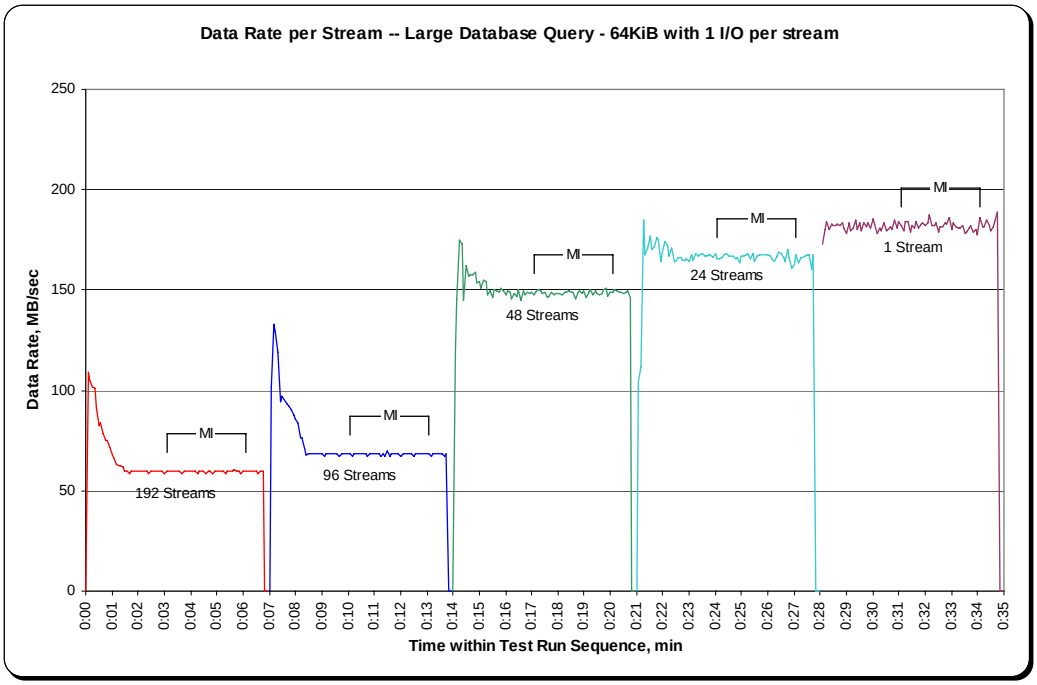
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



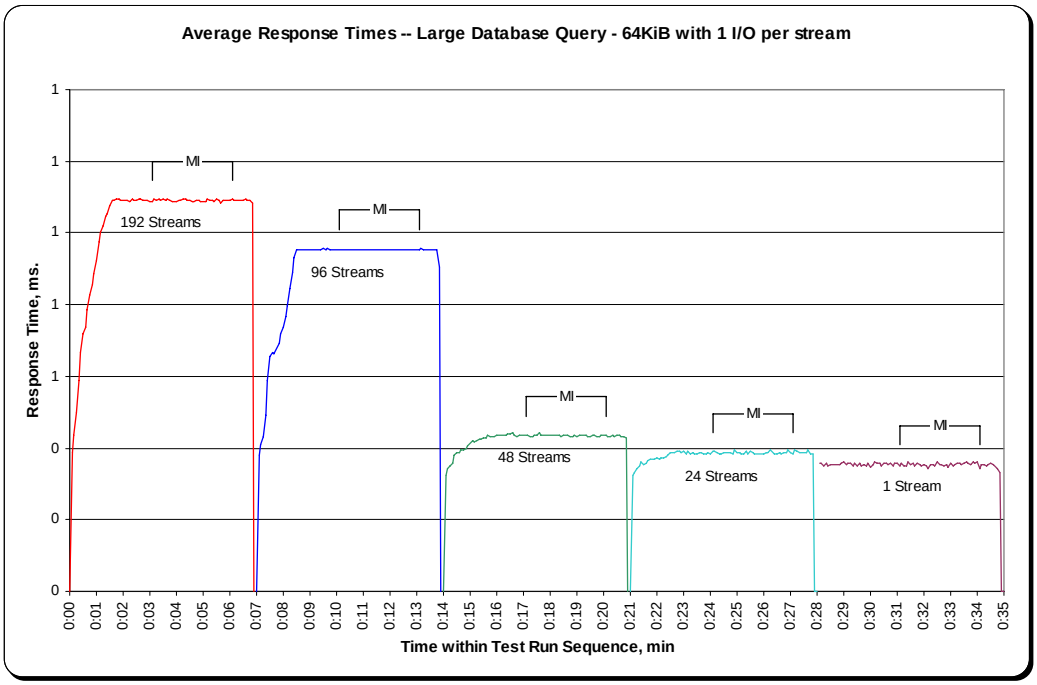
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate per Stream Graph



SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Response Time Graph



Video on Demand Delivery Test

Clause 6.4.4.1

The Video on Demand Delivery Test represents the I/O operations required to enable individualized video entertainment for a community of subscribers, which draw from a digital film library.

Clause 6.4.2.2

The Video on Demand Delivery Test consists of one (1) Test Run.

The BC shall not be restarted or manually disturbed, altered, or adjusted during the execution of the Video on Demand Delivery Test. If power is lost to the BC during this Test all results shall be rendered invalid and the Test re-run in its entirety.

Clause 10.6.8.3

The Full Disclosure Report will contain the following content for the Video on Demand Delivery Test:

1. *A listing of the SPC-2 Workload Generator commands and parameters used to execute the Test Run in the Video on Demand Delivery Test.*
2. *The human readable SPC-2 Test Results File for the Test Run in the Video on Demand Delivery Test.*
3. *A table that contains the following information for the Test Run in the Video on Demand Delivery Test:*
    - *The number Streams specified.*
    - *The Ramp-Up duration in seconds.*
    - *The Measurement Interval duration in seconds.*
    - *The average data rate, in MB per second, for the Measurement Interval.*
    - *The average data rate, in MB per second, per Stream for the Measurement Interval.*
4. *A table that contains the following information for the single Video on Demand Delivery Test Run:*
    - *The number Streams specified.*
    - *The average data rate, average data rate per stream, average Response Time, and Maximum Response Time reported at 60 second intervals.*
5. *Average Data Rate (intervals), Average Data Rate per Stream (intervals), and Average Response Time (intervals) graphs for the single Video on Demand Delivery Test Run as specified in Clauses 10.1.4-2-10.1.6.*
6. *A Maximum Response Time (intervals) graph, which will utilize the format defined in Clause 10.1.6, substituting maximum Response Time data for average Response Time data.*

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Video on Demand Delivery Test Run are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 124.

SPC-2 Test Results File

A link to the SPC-2 Test Results file generated from the Video on Demand Delivery Test Run is listed below.

SPC-2 Video on Demand Delivery Test Results File

SPC-2 Video on Demand Delivery Test Run Data

The number of Streams specified, Ramp-Up duration in seconds, Measurement Interval duration in seconds, average Data Rate for the Measurement Interval, and average Data Rate per Stream for the Measurement Interval are listed in the following table.

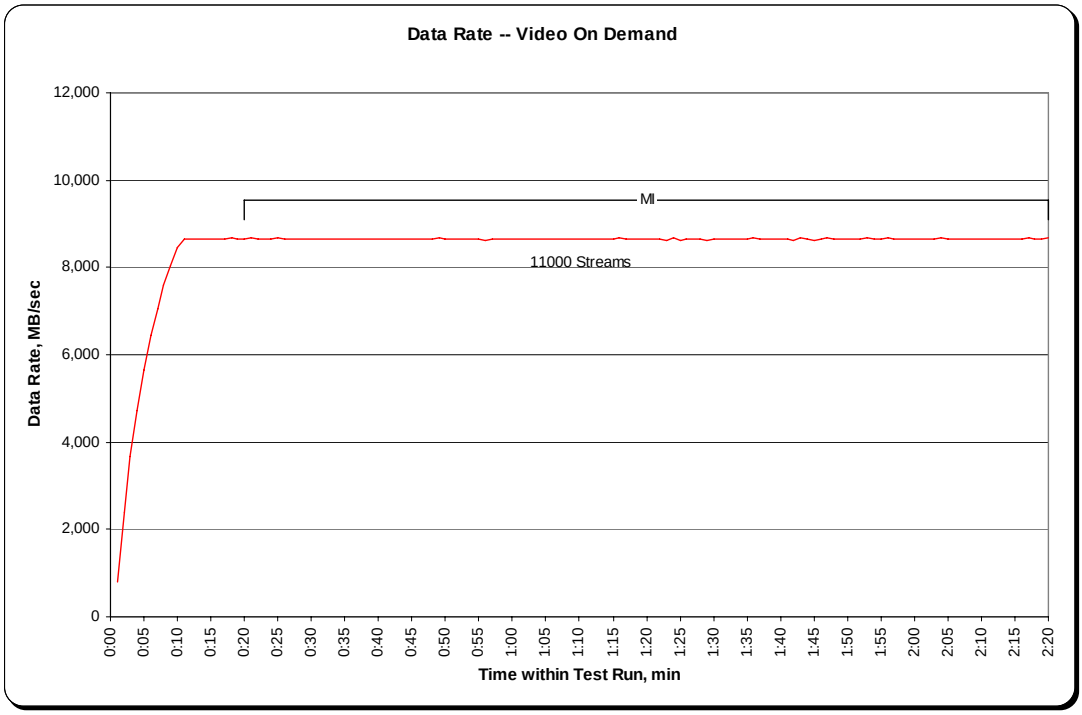
SPC-2-VOD	TR1
Number of Streams	11000
Ramp-up Time, sec	1200
Measurement Interval, sec	7200
Average Data Rate, MB/sec	8,650.92
Per Stream Data Rate, MB/sec	0.79
Average Response Time, ms	1.51
Average Max Response Time, ms	169.42

Video on Demand Delivery Test – TEST RUN DATA BY INTERVAL

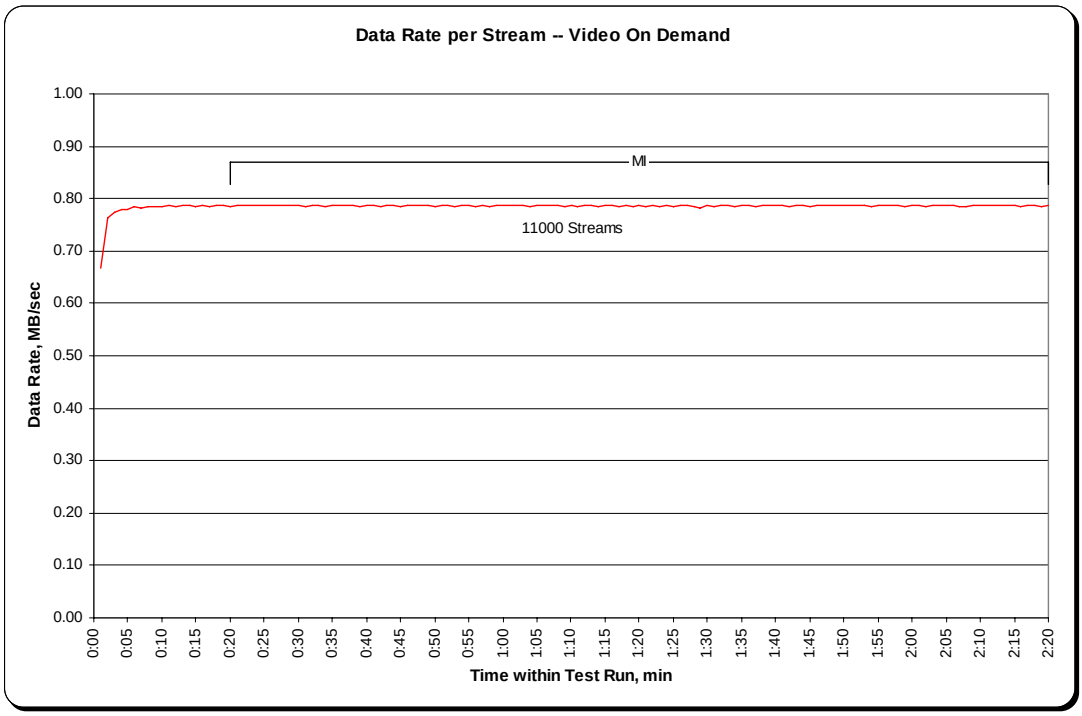
The SPC-2 Video on Demand Delivery Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate and average Data Rate per Stream produced by the same Test Runs. The table and graphs present the data at sixty second intervals.

TR1	11000 Streams				TR1	11000 Streams				TR1	11000 Streams			
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms
0:01:00	800.74	0.67	1.04	21.10	0:51:00	8,647.67	0.79	1.58	378.76	1:41:00	8,659.32	0.79	1.50	133.07
0:02:00	2,389.99	0.76	0.83	99.47	0:52:00	8,661.10	0.79	1.57	319.07	1:42:00	8,630.54	0.78	1.46	70.10
0:03:00	3,666.50	0.77	0.87	38.40	0:53:00	8,633.13	0.78	1.56	358.21	1:43:00	8,665.45	0.79	1.43	46.36
0:04:00	4,719.53	0.78	0.92	39.85	0:54:00	8,651.40	0.79	1.55	322.00	1:44:00	8,650.11	0.79	1.43	35.37
0:05:00	5,636.09	0.78	0.99	36.14	0:55:00	8,663.87	0.79	1.56	270.30	1:45:00	8,631.84	0.78	1.43	34.95
0:06:00	6,438.69	0.78	1.07	33.71	0:56:00	8,631.48	0.78	1.54	191.11	1:46:00	8,647.81	0.79	1.43	32.97
0:07:00	7,037.75	0.78	1.16	35.56	0:57:00	8,663.27	0.79	1.52	173.21	1:47:00	8,665.29	0.79	1.44	49.89
0:08:00	7,605.88	0.78	1.22	39.82	0:58:00	8,638.27	0.79	1.52	139.57	1:48:00	8,648.01	0.79	1.46	104.80
0:09:00	8,051.92	0.78	1.31	35.60	0:59:00	8,659.04	0.79	1.51	148.45	1:49:00	8,651.46	0.79	1.47	190.84
0:10:00	8,465.75	0.78	1.39	33.57	1:00:00	8,649.14	0.79	1.53	137.99	1:50:00	8,650.78	0.79	1.57	339.93
0:11:00	8,659.45	0.79	1.44	32.79	1:01:00	8,646.50	0.79	1.51	168.23	1:51:00	8,646.59	0.79	1.50	115.80
0:12:00	8,636.46	0.79	1.44	52.59	1:02:00	8,653.66	0.79	1.48	76.48	1:52:00	8,647.34	0.79	1.52	235.14
0:13:00	8,652.55	0.79	2.09	605.03	1:03:00	8,653.12	0.79	1.46	52.68	1:53:00	8,668.38	0.79	1.51	197.02
0:14:00	8,663.75	0.79	1.95	680.24	1:04:00	8,637.73	0.79	1.45	50.65	1:54:00	8,640.49	0.79	1.50	139.74
0:15:00	8,635.77	0.79	1.58	431.44	1:05:00	8,653.87	0.79	1.45	44.32	1:55:00	8,651.25	0.79	1.49	138.45
0:16:00	8,658.04	0.79	1.60	440.52	1:06:00	8,646.89	0.79	1.47	118.15	1:56:00	8,667.47	0.79	1.50	97.43
0:17:00	8,636.84	0.79	1.55	370.76	1:07:00	8,648.36	0.79	1.51	250.27	1:57:00	8,647.82	0.79	1.49	141.34
0:18:00	8,665.91	0.79	1.53	397.76	1:08:00	8,661.96	0.79	1.53	242.87	1:58:00	8,654.56	0.79	1.48	120.41
0:19:00	8,652.59	0.79	1.50	211.59	1:09:00	8,634.98	0.78	1.56	338.51	1:59:00	8,639.45	0.79	1.50	93.13
0:20:00	8,635.36	0.79	1.50	238.61	1:10:00	8,659.82	0.79	1.57	391.97	2:00:00	8,654.28	0.79	1.49	103.97
0:21:00	8,665.24	0.79	1.57	363.39	1:11:00	8,635.94	0.79	1.55	228.82	2:01:00	8,663.15	0.79	1.48	114.20
0:22:00	8,646.50	0.79	1.49	143.24	1:12:00	8,660.55	0.79	1.54	313.22	2:02:00	8,635.19	0.79	1.45	63.74
0:23:00	8,648.63	0.79	1.46	73.88	1:13:00	8,658.40	0.79	1.57	274.03	2:03:00	8,650.98	0.79	1.45	40.09
0:24:00	8,645.17	0.79	1.46	103.55	1:14:00	8,638.89	0.79	1.52	191.47	2:04:00	8,668.09	0.79	1.43	42.20
0:25:00	8,666.07	0.79	1.45	57.97	1:15:00	8,655.96	0.79	1.50	150.23	2:05:00	8,647.12	0.79	1.44	46.28
0:26:00	8,645.09	0.79	1.44	53.29	1:16:00	8,665.45	0.79	1.51	111.39	2:06:00	8,647.34	0.79	1.49	101.39
0:27:00	8,647.60	0.79	1.44	38.84	1:17:00	8,638.10	0.79	1.53	129.17	2:07:00	8,644.26	0.79	1.48	129.86
0:28:00	8,662.42	0.79	1.50	215.76	1:18:00	8,653.30	0.79	1.52	114.05	2:08:00	8,641.10	0.79	1.48	145.71
0:29:00	8,662.29	0.79	2.15	709.97	1:19:00	8,644.42	0.79	1.51	154.43	2:09:00	8,663.59	0.79	1.50	167.85
0:30:00	8,649.35	0.79	1.69	520.37	1:20:00	8,649.04	0.79	1.49	157.83	2:10:00	8,651.13	0.79	1.52	111.23
0:31:00	8,639.84	0.79	1.56	378.20	1:21:00	8,644.84	0.79	1.56	257.09	2:11:00	8,655.43	0.79	1.49	150.51
0:32:00	8,649.16	0.79	1.74	516.69	1:22:00	8,662.30	0.79	1.48	74.33	2:12:00	8,648.28	0.79	1.48	117.31
0:33:00	8,664.58	0.79	1.58	362.09	1:23:00	8,631.78	0.78	1.44	58.78	2:13:00	8,650.67	0.79	1.49	93.77
0:34:00	8,636.05	0.79	1.59	417.35	1:24:00	8,668.49	0.79	1.43	41.99	2:14:00	8,651.63	0.79	1.50	113.65
0:35:00	8,661.71	0.79	1.59	332.65	1:25:00	8,632.46	0.78	1.43	44.89	2:15:00	8,657.04	0.79	1.47	92.76
0:36:00	8,646.54	0.79	1.57	303.55	1:26:00	8,654.06	0.79	1.43	35.81	2:16:00	8,634.87	0.78	1.46	54.02
0:37:00	8,663.45	0.79	1.55	207.44	1:27:00	8,661.06	0.79	1.43	60.79	2:17:00	8,666.01	0.79	1.47	48.46
0:38:00	8,650.28	0.79	1.55	197.85	1:28:00	8,633.61	0.78	1.43	37.09	2:18:00	8,652.97	0.79	1.46	55.02
0:39:00	8,640.20	0.79	1.55	180.55	1:29:00	8,609.16	0.78	1.52	292.63	2:19:00	8,633.83	0.78	1.49	74.14
0:40:00	8,650.01	0.79	1.55	173.71	1:30:00	8,649.63	0.79	1.52	236.11	2:20:00	8,666.47	0.79	1.46	46.82
0:41:00	8,654.97	0.79	1.56	221.04	1:31:00	8,644.56	0.79	1.56	380.95					
0:42:00	8,644.89	0.79	1.49	74.77	1:32:00	8,650.07	0.79	1.51	292.59					
0:43:00	8,661.83	0.79	1.46	75.83	1:33:00	8,663.82	0.79	1.50	260.13					
0:44:00	8,650.92	0.79	1.45	54.69	1:34:00	8,636.99	0.79	1.50	158.60					
0:45:00	8,633.65	0.78	1.43	46.87	1:35:00	8,650.71	0.79	1.51	154.10					
0:46:00	8,656.15	0.79	1.46	47.64	1:36:00	8,667.02	0.79	1.50	151.24					
0:47:00	8,662.31	0.79	1.47	121.18	1:37:00	8,634.79	0.78	1.50	102.44					
0:48:00	8,645.97	0.79	1.50	283.58	1:38:00	8,661.81	0.79	1.48	112.51					
0:49:00	8,666.95	0.79	1.59	346.92	1:39:00	8,646.77	0.79	1.50	168.54					
0:50:00	8,641.63	0.79	1.56	357.64	1:40:00	8,647.82	0.79	1.47	107.90					

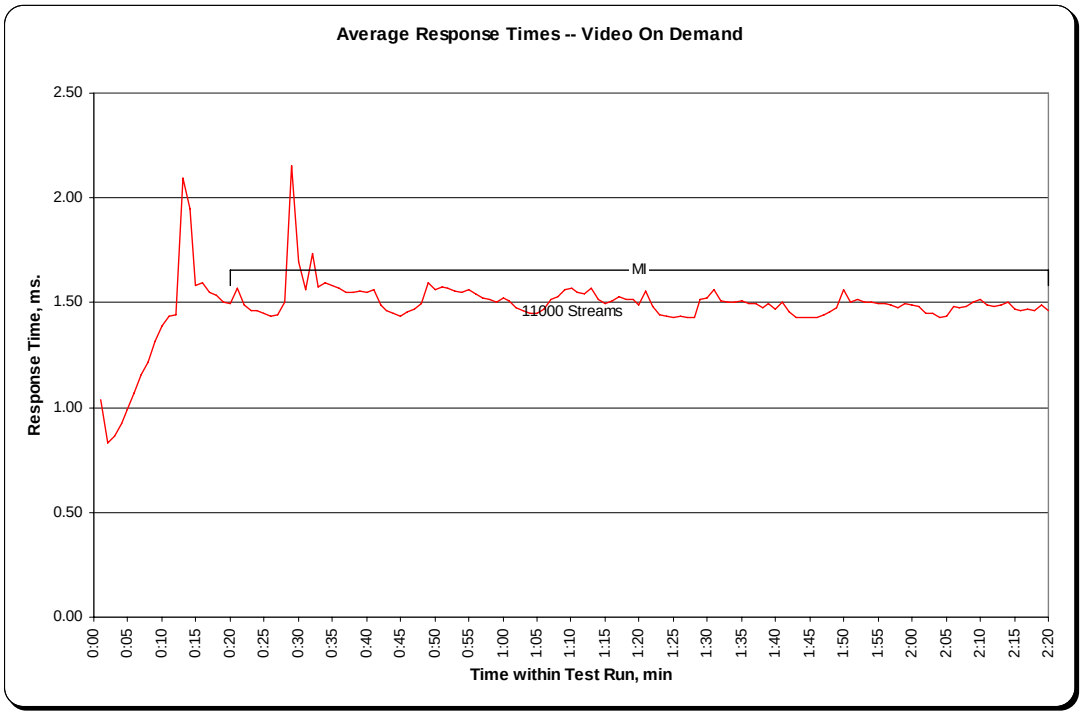
SPC-2 Video on Demand Delivery Average Data Rate Graph



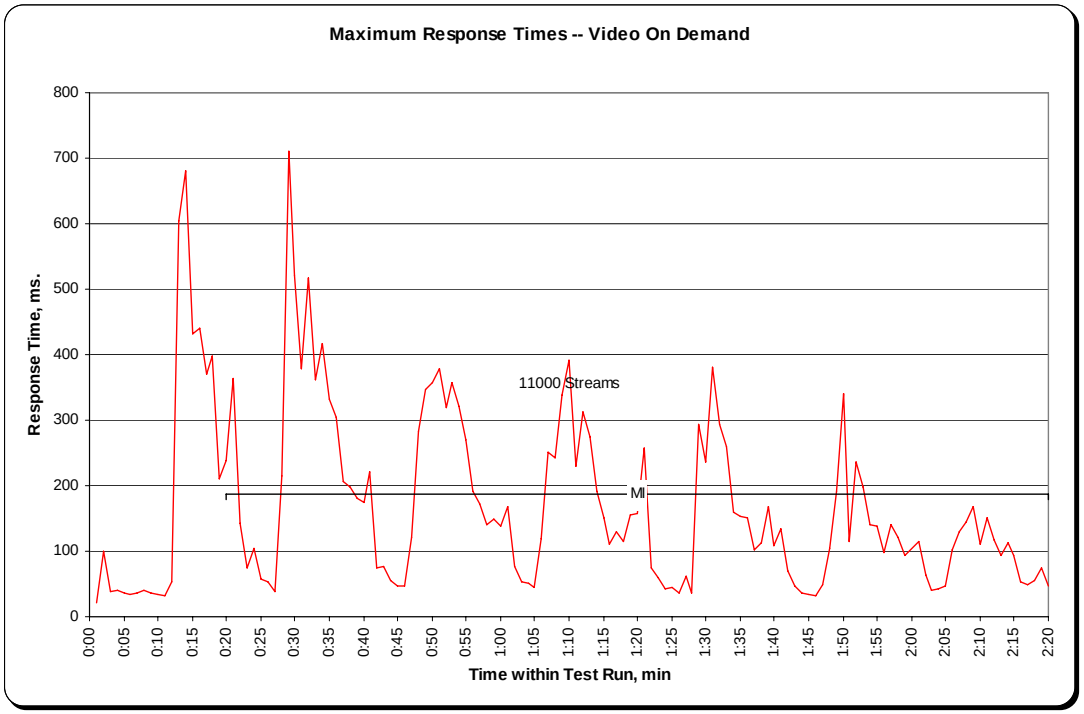
SPC-2 Video on Demand Delivery Average Data Rate per Stream Graph



SPC-2 Video on Demand Delivery Average Response Time Graph



SPC-2 Video on Demand Delivery Maximum Response Time Graph



Data Persistence Test

Clause 6

The Data Persistence Test demonstrates the Tested Storage Configuration (TSC):

- *Is capable of maintain data integrity across a power cycle.*
- *Ensures the transfer of data between Logical Volumes and host systems occurs without corruption or loss.*

The SPC-2 Workload Generator will write a specific pattern at randomly selected locations throughout the Total ASU Capacity (Persistence Test Run 1). The SPC-2 Workload Generator will retain the information necessary to later validate the pattern written at each location.

The Tested Storage Configuration will be shutdown and restarted using a power off/power on cycle at the end of the above sequence of write operations. In addition, any caches employing battery backup must be flushed/emptied.

Restart the TSC, and if the Host System(s) were shutdown and powered off, restart the Host System(s).

The SPC-2 Workload Generator will utilize the retained data from Persistence Test Run 1 to verify (Persistence Run 2) the bit patterns written in Persistence Test Run 1 and their corresponding location.

Clause 10.6.8.4

The Full Disclosure Report will contain the following content for the Data Persistence Test:

1. *A listing of the SPC-2 Workload Generator commands and parameters used to execute each of the Test Runs in the Persistence Test.*
2. *The human readable SPC-2 Test Results File for each of the Test Runs in the Data Persistence Test.*
3. *A table from the successful Persistence Test, which contains the results from the test.*

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Persistence Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 124.

Data Persistence Test Results File

A link to the test result file generated from each Data Persistence Test Run is listed below.

Persistence 1 Test Run Results File

Persistence 2 Test Run Results File

Data Persistence Test Results

Data Persistence Test Results	
Data Persistence Test Number: 1	
Total Number of Logical Blocks Written	2,987,062
Total Number of Logical Blocks Re-referenced	64,723
Total Number of Logical Blocks Verified	2,922,339
Total Number of Logical Blocks that Failed Verification	0
Number of Failed I/O Requests in the process of the Test	0

PRICED STORAGE CONFIGURATION AVAILABILITY DATE

Clause 10.6.9

The committed delivery date for general availability (Availability Date) of all products that comprise the Priced Storage Configuration must be reported. When the Priced Storage Configuration includes products or components with different availability dates, the reported Availability Date must be the date at which all components are committed to be available. All availability dates, whether for individual components or for the Priced Storage Configuration as a whole, must be disclosed to a precision of one day.

*The FDR shall state: "The **Priced Storage Configuration**, as documented in this Full Disclosure Report will be available for shipment to customers on MMMM DD, YYYY." Where **Priced Storage Configuration** is the Priced Storage Configuration Name as described in Clause 10.6.5.3, #1 and MM is month, DD is the day, and YY is the year of the date that the Priced Storage Configuration, as documented, is available for shipment to customers as described above.*

The IBM System Storage® *DS8800*, as documented in this SPC-2 Full Disclosure Report, will become November 19, 2010 for customer purchase and shipment.

ANOMALIES OR IRREGULARITIES

Clause 10.6.11

The FDR shall include a clear and complete description of any anomalies or irregularities encountered in the course of executing the SPC-2 benchmark that may in any way call into question the accuracy, verifiability, or authenticity of information published in this FDR.

There were no anomalies or irregularities encountered during the SPC-2 Remote Audit of the IBM System Storage® *DS8800*.

APPENDIX A: SPC-2 GLOSSARY

"Decimal" *(powers of ten)* Measurement Units

In the storage industry, the terms "kilo", "mega", "giga", "tera", "peta", and "exa" are commonly used prefixes for computing performance and capacity. For the purposes of the SPC workload definitions, all of the following terms are defined in "powers of ten" measurement units.

- A kilobyte (KB) is equal to 1,000 (10^3) bytes.
- A megabyte (MB) is equal to 1,000,000 (10^6) bytes.
- A gigabyte (GB) is equal to 1,000,000,000 (10^9) bytes.
- A terabyte (TB) is equal to 1,000,000,000,000 (10^{12}) bytes.
- A petabyte (PB) is equal to 1,000,000,000,000,000 (10^{15}) bytes
- An exabyte (EB) is equal to 1,000,000,000,000,000,000 (10^{18}) bytes

"Binary" *(powers of two)* Measurement Units

The sizes reported by many operating system components use "powers of two" measurement units rather than "power of ten" units. The following standardized definitions and terms are also valid and may be used in this document.

- A kibibyte (KiB) is equal to 1,024 (2^{10}) bytes.
- A mebibyte (MiB) is equal to 1,048,576 (2^{20}) bytes.
- A gigibyte (GiB) is equal to 1,073,741,824 (2^{30}) bytes.
- A tebibyte (TiB) is equal to 1,099,511,627,776 (2^{40}) bytes.
- A pebibyte (PiB) is equal to 1,125,899,906,842,624 (2^{50}) bytes.
- An exbibyte (EiB) is equal to 1,152,921,504,606,846,967 (2^{60}) bytes.

SPC-2 Data Repository Definitions

Total ASU Capacity: The total storage capacity read and written in the course of executing the SPC-2 benchmark.

Application Storage Unit (ASU): The logical interface between the storage and SPC-2 Workload Generator. The ASU is implemented on one or more Logical Volume.

Logical Volume: The division of Addressable Storage Capacity into individually addressable logical units of storage used in the SPC-2 benchmark. Each Logical Volume is implemented as a single, contiguous address space.

Addressable Storage Capacity: The total storage (sum of Logical Volumes) that can be read and written by application programs such as the SPC-2 Workload Generator.

Configured Storage Capacity: This capacity includes the Addressable Storage Capacity and any other storage (parity disks, hot spares, etc.) necessary to implement the Addressable Storage Capacity.

Physical Storage Capacity: The formatted capacity of all storage devices physically present in the Tested Storage Configuration (TSC).

Data Protection Overhead: The storage capacity required to implement the selected level of data protection.

Required Storage: The amount of Configured Storage Capacity required to implement the Addressable Storage Configuration, excluding the storage required for the ASU.

Global Storage Overhead: The amount of Physical Storage Capacity that is required for storage subsystem use and unavailable for use by application programs.

Total Unused Storage: The sum of unused storage capacity within the Physical Storage Capacity, Configured Storage Capacity, and Addressable Storage Capacity.

SPC-2 Data Protection Levels

RAID5: User data is distributed across the disks in the array. Check data corresponding to user data is distributed across multiple disks in the form of bit-by-bit parity.

Mirroring: Two or more identical copies of user data are maintained on separate disks.

Other Protection Level: Any data protection other than **RAID5** or **Mirroring**.

Unprotected: There is no data protection provided.

SPC-2 Test Execution Definitions

Completed I/O Request: An I/O Request with a Start Time and a Completion Time *(see "I/O Completion Types" illustrated below)*.

Completion Time: The time recorded by the Workload Generator when an I/O Request is completed by the Tested Storage Configuration (TSC) as signaled by System Software.

Data Rate: The data volume, in MB, transferred by all Measured I/O Requests in an SPC-2 Test Run divided by the length of the Test Run in seconds.

Failed I/O Request: Any I/O Request issued by the SPC-2 Workload Generator that meets one of the following conditions *(see "I/O Completion Types" illustrated below)*:

- The I/O Request was signaled as failed by System Software.
- The I/O Request started within the Measurement Interval, but did not complete prior to the end of the appropriate Run-Out period..
- The I/O Request started within the Run-Out period, but did not complete prior to the end of the appropriate Ramp-Down period.

I/O Request Throughput: The total number of Measured I/O Requests in an SPC-2 Test Run divided by the duration of the Measurement Interval in seconds.

Measured I/O Request: A Completed I/O Request that begins (Start Time) within a Measurement Interval and completes (Completion Time) prior to the end of the appropriate Ramp Down *(see "I/O Completion Types" illustrated below).*

Measurement Interval: A specified, contiguous period of time, after the TSC has reached Steady State, when data is collected by the Workload Generator to produce the test results for a SPC-2 Test Run *(see "SPC-2 Test Run Components" illustrated below, Test Run 1: T_2-T_3 and Test Run 2: T_7-T_8).*

Outstanding I/O Requests: The Outstanding I/O Requests parameter specifies the maximum number of concurrent I/O Requests, associated with a give Stream, which have been issued but not yet completed. *(Clause 3.4.4 of the SPC-2 Benchmark Specification).*

Ramp-Down: A specified, contiguous period of time in which the TSC is required to complete I/O Requests started but not completed during the preceding Run-Out period. Ramp-Down begins at the end of the preceding Run-Out period *(see "SPC-2 Test Run Components" illustrated below, Test Run 1: T_4-T_5 and Test Run 2: T_9-T_{10}).* The Workload Generator will not submit any I/O Requests during the Ramp-Down.

Ramp-Up: A specified, contiguous period of time required for the Benchmark Configuration (BC) to produce Steady State throughput after the Workload Generator begins submitting I/O Requests to the TSC for execution. The Ramp-Up period ends at the beginning of the Measurement Interval *(see "SPC-2 Test Run Components" illustrated below, Test Run 1: T_0-T_2 and Test Run 2: T_5-T_7).*

Response Time: The Response Time of a Measured I/O Request is its Completion Time minus its Start Time.

Run-Out: A specified, contiguous period of time in which the TSC is required to complete I/O Requests started but not completed during the preceding Measurement Interval. The Run-Out period begins at the end of the preceding Measurement Interval and is a component of the Steady State period *(see "SPC-2 Test Run Components" illustrated below, Test Run 1: T_3-T_4 and Test Run 2: T_9-T_{10}).* The Workload Generator will continue to submit I/O Requests at the Test Run's specified rate during the Run-Out period.

Start Time: The time recorded by the Workload Generator when an I/O Request is submitted, by the Workload Generator, to the System Software for execution on the TSC.

Steady State: The period during which the workload presented to the TSC by the SPC-2 Workload Generator is constant and the resulting TSC I/O Request Throughput is both consistent and sustainable. The Steady State period includes both the Measurement Interval and Run-Out periods *(see "SPC-2 Test Run Components" illustrated below, Test Run 1: T_1-T_4 and Test Run 2: T_6-T_9).*

Steady State is achieved only after caches in the TSC have filled and as a result the I/O Request Throughput of the TSC has stabilized.

Stream: A collection of Stream Segments that started within a Test Run.

Stream Segment: A sequentially organized pattern of I/O requests, which transfers a contiguous range of data.

Test: A collection of Test Phases and or Test Runs sharing a common objective.

Test Phase: A collection of one or more SPC-2 Test Runs sharing a common objective and intended to be run in a specific sequence.

Test Run: The execution of SPC-2 that produces specific SPC-2 test results. SPC-2 Test Runs have specified, measured Ramp-Up, Measurement Interval, Run-Out and Ramp-Down periods. "SPC-2 Test Run Components" *(see below)* illustrates the Ramp-Up, Steady State, Measurement Interval, Run-Out, and Ramp-Down components contained in two uninterrupted SPC-2 Test Runs *(Test Run 1: T_0-T_5 and Test Run 2: T_5-T_{10})*.

Test Run Sequence: A related sequence of Large File Processing (LFP) or Large Database Query (LDQ) Test Runs. Each Test Run Sequence will consist of five Test Runs, which vary the number of Streams as follows:

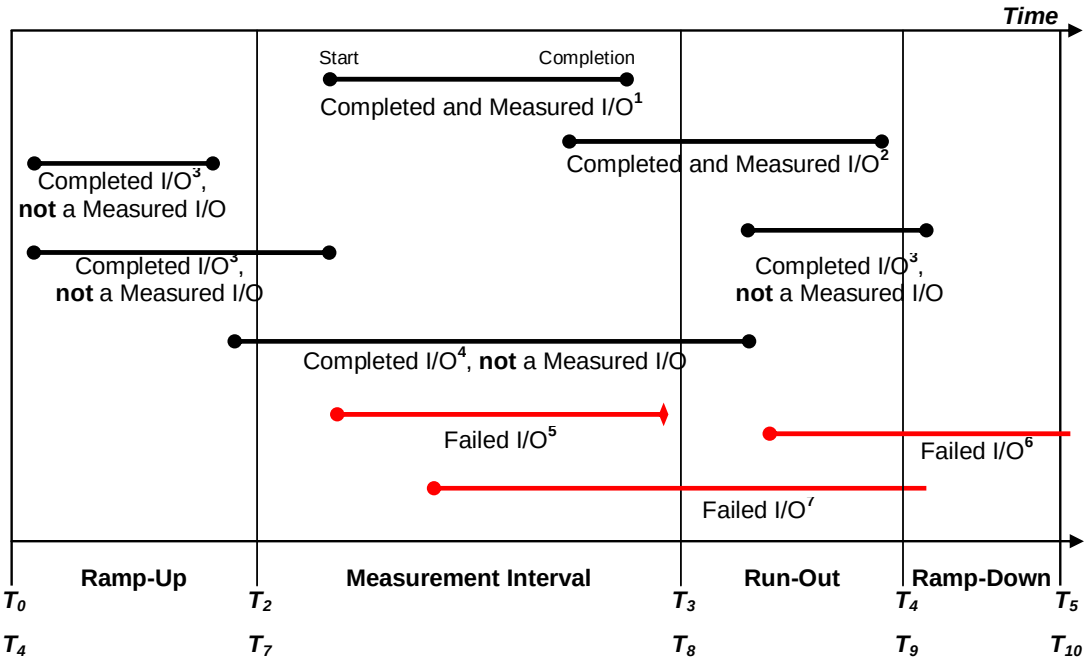
- Test Run 1: Maximum number of Streams, which is selected by the Test Sponsor
- Test Run 2: 50% of the maximum number of Streams used in Test Run 1.
- Test Run 3: 25% of the maximum number of Streams used in Test Run 1.
- Test Run 4: 12.5% of the maximum number of Streams used in Test Run 1.
- Test Run 5: 1 Stream.

Each of the five Test Runs in a Test Run Sequence will share the same attributes with the exception of the number of Streams. For example:

- Large File Processing, Read, 1024 KiB Transfer Size: Maximum Streams
- Large File Processing, Read, 1024 KiB Transfer Size: 50% of Maximum Streams
- Large File Processing, Read, 1024 KiB Transfer Size: 25% of Maximum Streams
- Large File Processing, Read, 1024 KiB Transfer Size: 12.5% of Maximum Streams
- Large File Processing, Read, 1024 KiB Transfer Size: 1 Stream

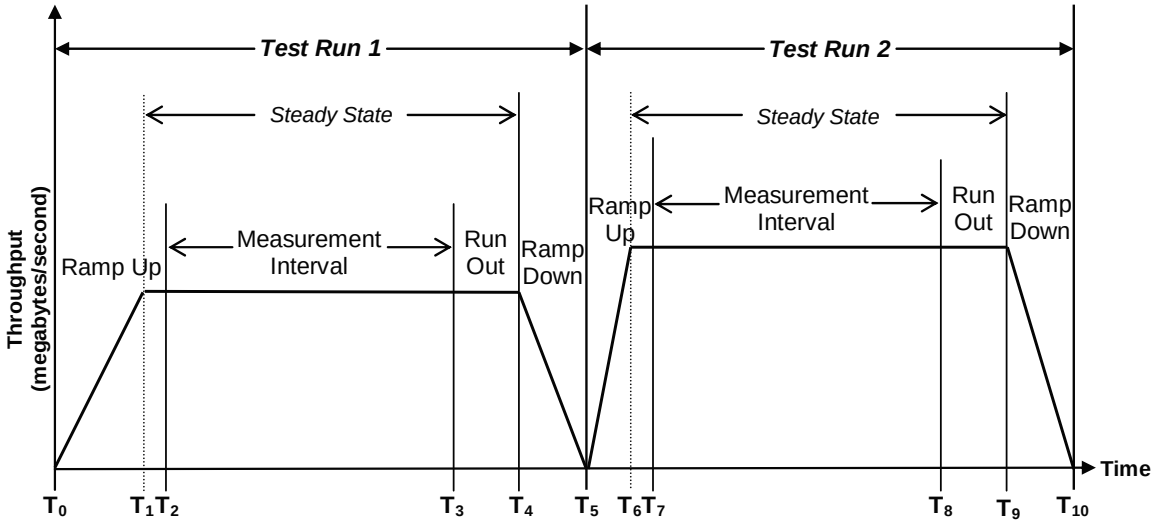
Transfer Size: The Transfer Size parameter specifies the number of bytes in KiB to transfer. *(Clause 3.4.7 of the SPC-2 Benchmark Specification)*

I/O Completion Types



Completed and Measured I/O[1]: *I/O started and completed within the Measurement Interval.*
Completed and Measured I/O[2]: *I/O started within the Measurement Interval and completed within Ramp Down.*
Completed I/O[3]: *I/O started before or after the Measurement Interval – not measured.*
Completed I/O[4]: *I/O started before and completed after the Measurement Interval – not measured.*
Failed I/O[5]: *Signaled as failed by System Software.*
Failed I/O[6]: *I/O did not complete prior to the end of Ramp-Down.*
Failed I/O[7]: *I/O did not complete prior to the end of Run-Out.*

SPC-2 Test Run Components



APPENDIX B: CUSTOMER TUNABLE PARAMETERS AND OPTIONS

The hdisk **qdepth** parameter was changed from a default of 64 to 256. That parameter is a setting for the Host System that determines the maximum number of concurrent outstanding I/O requests against an hdisk (SPC-1 Logical Volume).

APPENDIX C: TESTED STORAGE CONFIGURATION (TSC) CREATION

The **step1_makearray.txt**, **step2_mkranks.txt**, **step3_makevols.txt** and **step4_define_paths.txt** scripts, listed below, are scripts written in the DSCLI command language and executed on either Host System. DSCI was installed and configured to allow management of the DS8800.

The **step5_discover.sh** script, listed below, is Shell script executed from an AIX command window on each of the two Host Systems.

Create the RAID-5 ranks

The first script, **step1_makearray.txt**, groups the physical volumes into 96 RAID-5 arrays and the system automatically generates a set of array names, A0-A95. A predefined set of 8 physical disks is associated with each array in a specified "array site". Each "array site" is associated with a pair of Device Adapters, as shown in the BC/TSC diagram on page 19. During the execution of the **step1_makearray.txt** script, one of the 8 disks is reserved as a spare in the first four "array sites" of a DA pair, as also illustrated on page 19.

The **step1_makearray.txt** script configures all "array site" disks other than the spares into a RAID-5 array. Thus, the effect of the script is to produce a mixture of 6+P+S and 7+P arrays, for a total of 96 RAID-5 arrays.

The next script **step2_mkranks.txt**, defines the arrays, A0-A95, as 96 open system ranks, R0-R31 . As in the previous script, the rank names are assigned by the system. Step 2 also defines the ranks R0-R95 to comprise a set of 96 'extentpools" (pools of available storage) with the names P0-P95.

step1_makearray.txt

```
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S0
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S1
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S2
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S3
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S4
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S5
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S6
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S7
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S8
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S9
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S10
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S11
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S12
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S13
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S14
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S15
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S16
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S17
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S18
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S19
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S20
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S21
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S22
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S23
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S24
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S25
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S26
```

```
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S27
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S28
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S29
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S30
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S31
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S32
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S33
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S34
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S35
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S36
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S37
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S38
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S39
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S40
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S41
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S42
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S43
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S44
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S45
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S46
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S47
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S48
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S49
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S50
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S51
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S52
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S53
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S54
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S55
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S56
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S57
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S58
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S59
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S60
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S61
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S62
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S63
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S64
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S65
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S66
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S67
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S68
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S69
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S70
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S71
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S72
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S73
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S74
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S75
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S76
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S77
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S78
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S79
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S80
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S81
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S82
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S83
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S84
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S85
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S86
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S87
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S88
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S89
```

```
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S90
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S91
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S92
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S93
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S94
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S95
mkarray -dev IBM.2107-75RA321 -raidtype 5 -arsite S96
```

step2_makeranks.txt

```
mkrank -dev IBM.2107-75RA321 -array A0  -stgtype fb -extpool P0
mkrank -dev IBM.2107-75RA321 -array A1  -stgtype fb -extpool P1
mkrank -dev IBM.2107-75RA321 -array A2  -stgtype fb -extpool P2
mkrank -dev IBM.2107-75RA321 -array A3  -stgtype fb -extpool P3
mkrank -dev IBM.2107-75RA321 -array A4  -stgtype fb -extpool P4
mkrank -dev IBM.2107-75RA321 -array A5  -stgtype fb -extpool P5
mkrank -dev IBM.2107-75RA321 -array A6  -stgtype fb -extpool P6
mkrank -dev IBM.2107-75RA321 -array A7  -stgtype fb -extpool P7
mkrank -dev IBM.2107-75RA321 -array A8  -stgtype fb -extpool P8
mkrank -dev IBM.2107-75RA321 -array A9  -stgtype fb -extpool P9
mkrank -dev IBM.2107-75RA321 -array A10  -stgtype fb -extpool P10
mkrank -dev IBM.2107-75RA321 -array A11  -stgtype fb -extpool P11
mkrank -dev IBM.2107-75RA321 -array A12  -stgtype fb -extpool P12
mkrank -dev IBM.2107-75RA321 -array A13  -stgtype fb -extpool P13
mkrank -dev IBM.2107-75RA321 -array A14  -stgtype fb -extpool P14
mkrank -dev IBM.2107-75RA321 -array A15  -stgtype fb -extpool P15
mkrank -dev IBM.2107-75RA321 -array A16  -stgtype fb -extpool P16
mkrank -dev IBM.2107-75RA321 -array A17  -stgtype fb -extpool P17
mkrank -dev IBM.2107-75RA321 -array A18  -stgtype fb -extpool P18
mkrank -dev IBM.2107-75RA321 -array A19  -stgtype fb -extpool P19
mkrank -dev IBM.2107-75RA321 -array A20  -stgtype fb -extpool P20
mkrank -dev IBM.2107-75RA321 -array A21  -stgtype fb -extpool P21
mkrank -dev IBM.2107-75RA321 -array A22  -stgtype fb -extpool P22
mkrank -dev IBM.2107-75RA321 -array A23  -stgtype fb -extpool P23
mkrank -dev IBM.2107-75RA321 -array A24  -stgtype fb -extpool P24
mkrank -dev IBM.2107-75RA321 -array A25  -stgtype fb -extpool P25
mkrank -dev IBM.2107-75RA321 -array A26  -stgtype fb -extpool P26
mkrank -dev IBM.2107-75RA321 -array A27  -stgtype fb -extpool P27
mkrank -dev IBM.2107-75RA321 -array A28  -stgtype fb -extpool P28
mkrank -dev IBM.2107-75RA321 -array A29  -stgtype fb -extpool P29
mkrank -dev IBM.2107-75RA321 -array A30  -stgtype fb -extpool P30
mkrank -dev IBM.2107-75RA321 -array A31  -stgtype fb -extpool P31
mkrank -dev IBM.2107-75RA321 -array A32  -stgtype fb -extpool P32
mkrank -dev IBM.2107-75RA321 -array A33  -stgtype fb -extpool P33
mkrank -dev IBM.2107-75RA321 -array A34  -stgtype fb -extpool P34
mkrank -dev IBM.2107-75RA321 -array A35  -stgtype fb -extpool P35
mkrank -dev IBM.2107-75RA321 -array A36  -stgtype fb -extpool P36
mkrank -dev IBM.2107-75RA321 -array A37  -stgtype fb -extpool P37
mkrank -dev IBM.2107-75RA321 -array A38  -stgtype fb -extpool P38
mkrank -dev IBM.2107-75RA321 -array A39  -stgtype fb -extpool P39
mkrank -dev IBM.2107-75RA321 -array A40  -stgtype fb -extpool P40
mkrank -dev IBM.2107-75RA321 -array A41  -stgtype fb -extpool P41
mkrank -dev IBM.2107-75RA321 -array A42  -stgtype fb -extpool P42
mkrank -dev IBM.2107-75RA321 -array A43  -stgtype fb -extpool P43
mkrank -dev IBM.2107-75RA321 -array A44  -stgtype fb -extpool P44
mkrank -dev IBM.2107-75RA321 -array A45  -stgtype fb -extpool P45
mkrank -dev IBM.2107-75RA321 -array A46  -stgtype fb -extpool P46
mkrank -dev IBM.2107-75RA321 -array A47  -stgtype fb -extpool P47
mkrank -dev IBM.2107-75RA321 -array A48  -stgtype fb -extpool P48
mkrank -dev IBM.2107-75RA321 -array A49  -stgtype fb -extpool P49
mkrank -dev IBM.2107-75RA321 -array A50  -stgtype fb -extpool P50
mkrank -dev IBM.2107-75RA321 -array A51  -stgtype fb -extpool P51
```

```
mkrank -dev IBM.2107-75RA321 -array A52  -stgtype fb -extpool P52
mkrank -dev IBM.2107-75RA321 -array A53  -stgtype fb -extpool P53
mkrank -dev IBM.2107-75RA321 -array A54  -stgtype fb -extpool P54
mkrank -dev IBM.2107-75RA321 -array A55  -stgtype fb -extpool P55
mkrank -dev IBM.2107-75RA321 -array A56  -stgtype fb -extpool P56
mkrank -dev IBM.2107-75RA321 -array A57  -stgtype fb -extpool P57
mkrank -dev IBM.2107-75RA321 -array A58  -stgtype fb -extpool P58
mkrank -dev IBM.2107-75RA321 -array A59  -stgtype fb -extpool P59
mkrank -dev IBM.2107-75RA321 -array A60  -stgtype fb -extpool P60
mkrank -dev IBM.2107-75RA321 -array A61  -stgtype fb -extpool P61
mkrank -dev IBM.2107-75RA321 -array A62  -stgtype fb -extpool P62
mkrank -dev IBM.2107-75RA321 -array A63  -stgtype fb -extpool P63
mkrank -dev IBM.2107-75RA321 -array A64  -stgtype fb -extpool P64
mkrank -dev IBM.2107-75RA321 -array A65  -stgtype fb -extpool P65
mkrank -dev IBM.2107-75RA321 -array A66  -stgtype fb -extpool P66
mkrank -dev IBM.2107-75RA321 -array A67  -stgtype fb -extpool P67
mkrank -dev IBM.2107-75RA321 -array A68  -stgtype fb -extpool P68
mkrank -dev IBM.2107-75RA321 -array A69  -stgtype fb -extpool P69
mkrank -dev IBM.2107-75RA321 -array A70  -stgtype fb -extpool P70
mkrank -dev IBM.2107-75RA321 -array A71  -stgtype fb -extpool P71
mkrank -dev IBM.2107-75RA321 -array A72  -stgtype fb -extpool P72
mkrank -dev IBM.2107-75RA321 -array A73  -stgtype fb -extpool P73
mkrank -dev IBM.2107-75RA321 -array A74  -stgtype fb -extpool P74
mkrank -dev IBM.2107-75RA321 -array A75  -stgtype fb -extpool P75
mkrank -dev IBM.2107-75RA321 -array A76  -stgtype fb -extpool P76
mkrank -dev IBM.2107-75RA321 -array A77  -stgtype fb -extpool P77
mkrank -dev IBM.2107-75RA321 -array A78  -stgtype fb -extpool P78
mkrank -dev IBM.2107-75RA321 -array A79  -stgtype fb -extpool P79
mkrank -dev IBM.2107-75RA321 -array A80  -stgtype fb -extpool P80
mkrank -dev IBM.2107-75RA321 -array A81  -stgtype fb -extpool P81
mkrank -dev IBM.2107-75RA321 -array A82  -stgtype fb -extpool P82
mkrank -dev IBM.2107-75RA321 -array A83  -stgtype fb -extpool P83
mkrank -dev IBM.2107-75RA321 -array A84  -stgtype fb -extpool P84
mkrank -dev IBM.2107-75RA321 -array A85  -stgtype fb -extpool P85
mkrank -dev IBM.2107-75RA321 -array A86  -stgtype fb -extpool P86
mkrank -dev IBM.2107-75RA321 -array A87  -stgtype fb -extpool P87
mkrank -dev IBM.2107-75RA321 -array A88  -stgtype fb -extpool P88
mkrank -dev IBM.2107-75RA321 -array A89  -stgtype fb -extpool P89
mkrank -dev IBM.2107-75RA321 -array A90  -stgtype fb -extpool P90
mkrank -dev IBM.2107-75RA321 -array A91  -stgtype fb -extpool P91
mkrank -dev IBM.2107-75RA321 -array A92  -stgtype fb -extpool P92
mkrank -dev IBM.2107-75RA321 -array A93  -stgtype fb -extpool P93
mkrank -dev IBM.2107-75RA321 -array A94  -stgtype fb -extpool P94
mkrank -dev IBM.2107-75RA321 -array A95  -stgtype fb -extpool P95
```

Create the LUNs

The **step3_makevols.txt** script defines 96 LUNs on the set of 96 RAID-5 ranks. All LUNs have size 694 GiB. All LUNs were used in the SPC-2 measurements. Each LUN is assigned to one of four volume groups, V1-V4, so that paths can be assigned by groups of volumes.

step3_makevols.txt

```
mkfbvol -dev IBM.2107-75RA321 -extpool P0  -type ds -cap 694 -name da0r0_#h 1000
mkfbvol -dev IBM.2107-75RA321 -extpool P2  -type ds -cap 694 -name da0r2_#h 1020
mkfbvol -dev IBM.2107-75RA321 -extpool P4  -type ds -cap 694 -name da0r4_#h 1040
mkfbvol -dev IBM.2107-75RA321 -extpool P1  -type ds -cap 694 -name da0r1_#h 1100
mkfbvol -dev IBM.2107-75RA321 -extpool P3  -type ds -cap 694 -name da0r3_#h 1120
mkfbvol -dev IBM.2107-75RA321 -extpool P5  -type ds -cap 694 -name da0r5_#h 1140

mkfbvol -dev IBM.2107-75RA321 -extpool P6  -type ds -cap 694 -name da1r0_#h 1200
```

```
mkfbvol -dev IBM.2107-75RA321 -extpool P8  -type ds -cap 694 -name da1r2_#h 1220
mkfbvol -dev IBM.2107-75RA321 -extpool P10 -type ds -cap 694 -name da1r4_#h 1240
mkfbvol -dev IBM.2107-75RA321 -extpool P7  -type ds -cap 694 -name da1r1_#h 1300
mkfbvol -dev IBM.2107-75RA321 -extpool P9  -type ds -cap 694 -name da1r3_#h 1320
mkfbvol -dev IBM.2107-75RA321 -extpool P11 -type ds -cap 694 -name da1r5_#h 1340

mkfbvol -dev IBM.2107-75RA321 -extpool P12 -type ds -cap 694 -name da2r0_#h 1400
mkfbvol -dev IBM.2107-75RA321 -extpool P14 -type ds -cap 694 -name da2r2_#h 1420
mkfbvol -dev IBM.2107-75RA321 -extpool P16 -type ds -cap 694 -name da2r4_#h 1440
mkfbvol -dev IBM.2107-75RA321 -extpool P13 -type ds -cap 694 -name da2r1_#h 1500
mkfbvol -dev IBM.2107-75RA321 -extpool P15 -type ds -cap 694 -name da2r3_#h 1520
mkfbvol -dev IBM.2107-75RA321 -extpool P17 -type ds -cap 694 -name da2r5_#h 1540

mkfbvol -dev IBM.2107-75RA321 -extpool P18 -type ds -cap 694 -name da3r0_#h 1600
mkfbvol -dev IBM.2107-75RA321 -extpool P20 -type ds -cap 694 -name da3r2_#h 1620
mkfbvol -dev IBM.2107-75RA321 -extpool P22 -type ds -cap 694 -name da3r4_#h 1640
mkfbvol -dev IBM.2107-75RA321 -extpool P19 -type ds -cap 694 -name da3r1_#h 1700
mkfbvol -dev IBM.2107-75RA321 -extpool P21 -type ds -cap 694 -name da3r3_#h 1720
mkfbvol -dev IBM.2107-75RA321 -extpool P23 -type ds -cap 694 -name da3r5_#h 1740

mkfbvol -dev IBM.2107-75RA321 -extpool P24 -type ds -cap 694 -name da4r0_#h 1800
mkfbvol -dev IBM.2107-75RA321 -extpool P26 -type ds -cap 694 -name da4r2_#h 1820
mkfbvol -dev IBM.2107-75RA321 -extpool P28 -type ds -cap 694 -name da4r4_#h 1840
mkfbvol -dev IBM.2107-75RA321 -extpool P25 -type ds -cap 694 -name da4r1_#h 1900
mkfbvol -dev IBM.2107-75RA321 -extpool P27 -type ds -cap 694 -name da4r3_#h 1920
mkfbvol -dev IBM.2107-75RA321 -extpool P29 -type ds -cap 694 -name da4r5_#h 1940

mkfbvol -dev IBM.2107-75RA321 -extpool P30 -type ds -cap 694 -name da5r0_#h 1A00
mkfbvol -dev IBM.2107-75RA321 -extpool P32 -type ds -cap 694 -name da5r2_#h 1A20
mkfbvol -dev IBM.2107-75RA321 -extpool P34 -type ds -cap 694 -name da5r4_#h 1A40
mkfbvol -dev IBM.2107-75RA321 -extpool P31 -type ds -cap 694 -name da5r1_#h 1B00
mkfbvol -dev IBM.2107-75RA321 -extpool P33 -type ds -cap 694 -name da5r3_#h 1B20
mkfbvol -dev IBM.2107-75RA321 -extpool P35 -type ds -cap 694 -name da5r5_#h 1B40

mkfbvol -dev IBM.2107-75RA321 -extpool P36 -type ds -cap 694 -name da6r0_#h 1C00
mkfbvol -dev IBM.2107-75RA321 -extpool P38 -type ds -cap 694 -name da6r2_#h 1C20
mkfbvol -dev IBM.2107-75RA321 -extpool P40 -type ds -cap 694 -name da6r4_#h 1C40
mkfbvol -dev IBM.2107-75RA321 -extpool P37 -type ds -cap 694 -name da6r1_#h 1D00
mkfbvol -dev IBM.2107-75RA321 -extpool P39 -type ds -cap 694 -name da6r3_#h 1D20
mkfbvol -dev IBM.2107-75RA321 -extpool P41 -type ds -cap 694 -name da6r5_#h 1D40

mkfbvol -dev IBM.2107-75RA321 -extpool P42 -type ds -cap 694 -name da7r0_#h 1E00
mkfbvol -dev IBM.2107-75RA321 -extpool P44 -type ds -cap 694 -name da7r2_#h 1E20
mkfbvol -dev IBM.2107-75RA321 -extpool P46 -type ds -cap 694 -name da7r4_#h 1E40
mkfbvol -dev IBM.2107-75RA321 -extpool P43 -type ds -cap 694 -name da7r1_#h 1F00
mkfbvol -dev IBM.2107-75RA321 -extpool P45 -type ds -cap 694 -name da7r3_#h 1F20
mkfbvol -dev IBM.2107-75RA321 -extpool P47 -type ds -cap 694 -name da7r5_#h 1F40


mkfbvol -dev IBM.2107-75RA321 -extpool P48 -type ds -cap 694 -name da0r6_#h 1004
mkfbvol -dev IBM.2107-75RA321 -extpool P50 -type ds -cap 694 -name da0r8_#h 1024
mkfbvol -dev IBM.2107-75RA321 -extpool P52 -type ds -cap 694 -name da0r10_#h 1044
mkfbvol -dev IBM.2107-75RA321 -extpool P49 -type ds -cap 694 -name da0r7_#h 1104
mkfbvol -dev IBM.2107-75RA321 -extpool P51 -type ds -cap 694 -name da0r9_#h 1124
mkfbvol -dev IBM.2107-75RA321 -extpool P53 -type ds -cap 694 -name da0r11_#h 1144

mkfbvol -dev IBM.2107-75RA321 -extpool P54 -type ds -cap 694 -name da1r6_#h 1204
mkfbvol -dev IBM.2107-75RA321 -extpool P56 -type ds -cap 694 -name da1r8_#h 1224
mkfbvol -dev IBM.2107-75RA321 -extpool P58 -type ds -cap 694 -name da1r10_#h 1244
mkfbvol -dev IBM.2107-75RA321 -extpool P55 -type ds -cap 694 -name da1r7_#h 1304
mkfbvol -dev IBM.2107-75RA321 -extpool P57 -type ds -cap 694 -name da1r9_#h 1324
mkfbvol -dev IBM.2107-75RA321 -extpool P59 -type ds -cap 694 -name da1r11_#h 1344
```

```
mkfbvol -dev IBM.2107-75RA321 -extpool P60 -type ds -cap 694 -name da2r6_#h 1404
mkfbvol -dev IBM.2107-75RA321 -extpool P62 -type ds -cap 694 -name da2r8_#h 1424
mkfbvol -dev IBM.2107-75RA321 -extpool P64 -type ds -cap 694 -name da2r10_#h 1444
mkfbvol -dev IBM.2107-75RA321 -extpool P61 -type ds -cap 694 -name da2r7_#h 1504
mkfbvol -dev IBM.2107-75RA321 -extpool P63 -type ds -cap 694 -name da2r9_#h 1524
mkfbvol -dev IBM.2107-75RA321 -extpool P65 -type ds -cap 694 -name da2r11_#h 1544

mkfbvol -dev IBM.2107-75RA321 -extpool P66 -type ds -cap 694 -name da3r6_#h 1604
mkfbvol -dev IBM.2107-75RA321 -extpool P68 -type ds -cap 694 -name da3r8_#h 1624
mkfbvol -dev IBM.2107-75RA321 -extpool P70 -type ds -cap 694 -name da3r10_#h 1644
mkfbvol -dev IBM.2107-75RA321 -extpool P67 -type ds -cap 694 -name da3r7_#h 1704
mkfbvol -dev IBM.2107-75RA321 -extpool P69 -type ds -cap 694 -name da3r9_#h 1724
mkfbvol -dev IBM.2107-75RA321 -extpool P71 -type ds -cap 694 -name da3r11_#h 1744

mkfbvol -dev IBM.2107-75RA321 -extpool P72 -type ds -cap 694 -name da4r6_#h 1804
mkfbvol -dev IBM.2107-75RA321 -extpool P74 -type ds -cap 694 -name da4r8_#h 1824
mkfbvol -dev IBM.2107-75RA321 -extpool P76 -type ds -cap 694 -name da4r10_#h 1844
mkfbvol -dev IBM.2107-75RA321 -extpool P73 -type ds -cap 694 -name da4r7_#h 1904
mkfbvol -dev IBM.2107-75RA321 -extpool P75 -type ds -cap 694 -name da4r9_#h 1924
mkfbvol -dev IBM.2107-75RA321 -extpool P77 -type ds -cap 694 -name da4r11_#h 1944

mkfbvol -dev IBM.2107-75RA321 -extpool P78 -type ds -cap 694 -name da5r6_#h 1A04
mkfbvol -dev IBM.2107-75RA321 -extpool P80 -type ds -cap 694 -name da5r8_#h 1A24
mkfbvol -dev IBM.2107-75RA321 -extpool P82 -type ds -cap 694 -name da5r10_#h 1A44
mkfbvol -dev IBM.2107-75RA321 -extpool P79 -type ds -cap 694 -name da5r7_#h 1B04
mkfbvol -dev IBM.2107-75RA321 -extpool P81 -type ds -cap 694 -name da5r9_#h 1B24
mkfbvol -dev IBM.2107-75RA321 -extpool P83 -type ds -cap 694 -name da5r11_#h 1B44

mkfbvol -dev IBM.2107-75RA321 -extpool P84 -type ds -cap 694 -name da6r6_#h 1C04
mkfbvol -dev IBM.2107-75RA321 -extpool P86 -type ds -cap 694 -name da6r8_#h 1C24
mkfbvol -dev IBM.2107-75RA321 -extpool P88 -type ds -cap 694 -name da6r10_#h 1C44
mkfbvol -dev IBM.2107-75RA321 -extpool P85 -type ds -cap 694 -name da6r7_#h 1D04
mkfbvol -dev IBM.2107-75RA321 -extpool P87 -type ds -cap 694 -name da6r9_#h 1D24
mkfbvol -dev IBM.2107-75RA321 -extpool P89 -type ds -cap 694 -name da6r11_#h 1D44

mkfbvol -dev IBM.2107-75RA321 -extpool P90 -type ds -cap 694 -name da7r6_#h 1E04
mkfbvol -dev IBM.2107-75RA321 -extpool P92 -type ds -cap 694 -name da7r8_#h 1E24
mkfbvol -dev IBM.2107-75RA321 -extpool P94 -type ds -cap 694 -name da7r10_#h 1E44
mkfbvol -dev IBM.2107-75RA321 -extpool P91 -type ds -cap 694 -name da7r7_#h 1F04
mkfbvol -dev IBM.2107-75RA321 -extpool P93 -type ds -cap 694 -name da7r9_#h 1F24
mkfbvol -dev IBM.2107-75RA321 -extpool P95 -type ds -cap 694 -name da7r11_#h 1F44

mkvolgrp -dev IBM.2107-75RA321 -hosttype pSeries V1
mkvolgrp -dev IBM.2107-75RA321 -hosttype pSeries V2
mkvolgrp -dev IBM.2107-75RA321 -hosttype pSeries V3
mkvolgrp -dev IBM.2107-75RA321 -hosttype pSeries V4

chvolgrp -dev IBM.2107-75RA321 -name allvol -action replace -volume
1000,1020,1040,1100,1120,1140,1200,1220,1240,1300,1320,1340,1400,1420,1440,1500,1520
,1540,1600,1620,1640,1700,1720,1740 V1
chvolgrp -dev IBM.2107-75RA321 -name allvol -action replace -volume
1800,1820,1840,1900,1920,1940,1A00,1A20,1A40,1B00,1B20,1B40,1C00,1C20,1C40,1D00,1D20
,1D40,1E00,1E20,1E40,1F00,1F20,1F40 V2

chvolgrp -dev IBM.2107-75RA321 -name allvol -action replace -volume
1004,1024,1044,1104,1124,1144,1204,1224,1244,1304,1324,1344,1404,1424,1444,1504,1524
,1544,1604,1624,1644,1704,1724,1744 V3
chvolgrp -dev IBM.2107-75RA321 -name allvol -action replace -volume
1804,1824,1844,1904,1924,1944,1A04,1A24,1A44,1B04,1B24,1B44,1C04,1C24,1C44,1D04,1D24
,1D44,1E04,1E24,1E44,1F04,1F24,1F44 V4
```

Define the LUN access path

The next step is to define the paths by which each LUN can be accessed by AIX. Two AIX hosts are used in this test; each host has 12 connections to the DS8800. The path definitions are created by the **step4_define_paths.txt** script. Each host WWPN (total of 16) is assigned to one of the four volume groups, V1-V4.

step4_define_paths.txt

```
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA778 -profile "IBM pSeries -
AIX" -volgrp V1  fcs2
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0A446 -profile "IBM pSeries -
AIX" -volgrp V2  fcs14
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CB078 -profile "IBM pSeries -
AIX" -volgrp V3  fcs26
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA988 -profile "IBM pSeries -
AIX" -volgrp V4  fcs38
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA4F0 -profile "IBM pSeries -
AIX" -volgrp V1  fcs8
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA886 -profile "IBM pSeries -
AIX" -volgrp V2  fcs20
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA4E4 -profile "IBM pSeries -
AIX" -volgrp V3  fcs32
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0AEF6 -profile "IBM pSeries -
AIX" -volgrp V4  fcs44
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99DD89E -profile "IBM pSeries -
AIX" -volgrp V1  fcs0
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA7C4 -profile "IBM pSeries -
AIX" -volgrp V2  fcs10
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CAB6E -profile "IBM pSeries -
AIX" -volgrp V3  fcs12
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C99CA60C -profile "IBM pSeries -
AIX" -volgrp V4  fcs22
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0B2F2 -profile "IBM pSeries -
AIX" -volgrp V1  fcs24
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0A34A -profile "IBM pSeries -
AIX" -volgrp V2  fcs34
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0A356 -profile "IBM pSeries -
AIX" -volgrp V3  fcs36
mkhostconnect -dev IBM.2107-75RA321 -wwname 10000000C9C0A23C -profile "IBM pSeries -
AIX" -volgrp V4  fcs46
```

Discover the LUNs and create multi-path "hdisks"

The **step5_discover.sh** script performs discovery on each of the 8 Host System paths on each host. In this configuration, AIX MPIO capability is utilized, creating one multi-path hdisk that corresponds to each LUN. The script also changes the hdisk **qdepth** to 256.

step5_discover.sh

```
cfgmgr -l  fcs2
cfgmgr -l  fcs14
cfgmgr -l  fcs26
cfgmgr -l  fcs38
cfgmgr -l  fcs8
cfgmgr -l  fcs20
cfgmgr -l  fcs32
cfgmgr -l  fcs44
cfgmgr -l  fcs0
cfgmgr -l  fcs10
```

```
cfgmgr -l  fcs12
cfgmgr -l  fcs22
cfgmgr -l  fcs24
cfgmgr -l  fcs34
cfgmgr -l  fcs36
cfgmgr -l  fcs46
DISK=$(lsdev -Cc disk | grep 2107 | awk '{ print $1 }')
for d in $DISK; do
        rmdev -l $d
        chdev -l $d -a queue_depth=256
        cfgmgr -l $d
done
```

APPENDIX D: SPC-2 WORKLOAD GENERATOR STORAGE COMMANDS AND PARAMETERS

Large File Processing Test *(LFP)*

```
maxlatestart=0
host=localhost,jvms=3,maxstreams=400
host=(9.11.210.85,perfsh1a),
  java=(java,"-Xms384m  -Xmx768m  -Xss128k"),
  shell=spc2,
  jvms=3,
  maxstreams=400
reportinginterval=5
segmentlength=512m

sd=default,host=localhost,size=694g
sd=sd1,lun=/dev/rhdisk4
sd=sd2,lun=/dev/rhdisk5
sd=sd3,lun=/dev/rhdisk6
sd=sd4,lun=/dev/rhdisk7
sd=sd5,lun=/dev/rhdisk8
sd=sd6,lun=/dev/rhdisk9
sd=sd7,lun=/dev/rhdisk10
sd=sd8,lun=/dev/rhdisk11
sd=sd9,lun=/dev/rhdisk12
sd=sd10,lun=/dev/rhdisk13
sd=sd11,lun=/dev/rhdisk14
sd=sd12,lun=/dev/rhdisk15
sd=sd13,lun=/dev/rhdisk16
sd=sd14,lun=/dev/rhdisk17
sd=sd15,lun=/dev/rhdisk18
sd=sd16,lun=/dev/rhdisk19
sd=sd17,lun=/dev/rhdisk20
sd=sd18,lun=/dev/rhdisk21
sd=sd19,lun=/dev/rhdisk22
sd=sd20,lun=/dev/rhdisk23
sd=sd21,lun=/dev/rhdisk24
sd=sd22,lun=/dev/rhdisk25
sd=sd23,lun=/dev/rhdisk26
sd=sd24,lun=/dev/rhdisk27
sd=sd25,lun=/dev/rhdisk28
sd=sd26,lun=/dev/rhdisk29
sd=sd27,lun=/dev/rhdisk30
sd=sd28,lun=/dev/rhdisk31
sd=sd29,lun=/dev/rhdisk32
sd=sd30,lun=/dev/rhdisk33
sd=sd31,lun=/dev/rhdisk34
sd=sd32,lun=/dev/rhdisk35
sd=sd33,lun=/dev/rhdisk36
sd=sd34,lun=/dev/rhdisk37
sd=sd35,lun=/dev/rhdisk38
sd=sd36,lun=/dev/rhdisk39
sd=sd37,lun=/dev/rhdisk40
sd=sd38,lun=/dev/rhdisk41
sd=sd39,lun=/dev/rhdisk42
sd=sd40,lun=/dev/rhdisk43
sd=sd41,lun=/dev/rhdisk44
sd=sd42,lun=/dev/rhdisk45
sd=sd43,lun=/dev/rhdisk46
sd=sd44,lun=/dev/rhdisk47
```

```
  sd=sd45,lun=/dev/rhdisk48
  sd=sd46,lun=/dev/rhdisk49
  sd=sd47,lun=/dev/rhdisk50
  sd=sd48,lun=/dev/rhdisk51
  sd=sd49,lun=/dev/rhdisk52
  sd=sd50,lun=/dev/rhdisk53
  sd=sd51,lun=/dev/rhdisk54
  sd=sd52,lun=/dev/rhdisk55
  sd=sd53,lun=/dev/rhdisk56
  sd=sd54,lun=/dev/rhdisk57
  sd=sd55,lun=/dev/rhdisk58
  sd=sd56,lun=/dev/rhdisk59
  sd=sd57,lun=/dev/rhdisk60
  sd=sd58,lun=/dev/rhdisk61
  sd=sd59,lun=/dev/rhdisk62
  sd=sd60,lun=/dev/rhdisk63
  sd=sd61,lun=/dev/rhdisk64
  sd=sd62,lun=/dev/rhdisk65
  sd=sd63,lun=/dev/rhdisk66
  sd=sd64,lun=/dev/rhdisk67
  sd=sd65,lun=/dev/rhdisk68
  sd=sd66,lun=/dev/rhdisk69
  sd=sd67,lun=/dev/rhdisk70
  sd=sd68,lun=/dev/rhdisk71
  sd=sd69,lun=/dev/rhdisk72
  sd=sd70,lun=/dev/rhdisk73
  sd=sd71,lun=/dev/rhdisk74
  sd=sd72,lun=/dev/rhdisk75
  sd=sd73,lun=/dev/rhdisk76
  sd=sd74,lun=/dev/rhdisk77
  sd=sd75,lun=/dev/rhdisk78
  sd=sd76,lun=/dev/rhdisk79
  sd=sd77,lun=/dev/rhdisk80
  sd=sd78,lun=/dev/rhdisk81
  sd=sd79,lun=/dev/rhdisk82
  sd=sd80,lun=/dev/rhdisk83
  sd=sd81,lun=/dev/rhdisk84
  sd=sd82,lun=/dev/rhdisk85
  sd=sd83,lun=/dev/rhdisk86
  sd=sd84,lun=/dev/rhdisk87
  sd=sd85,lun=/dev/rhdisk88
  sd=sd86,lun=/dev/rhdisk89
  sd=sd87,lun=/dev/rhdisk90
  sd=sd88,lun=/dev/rhdisk91
  sd=sd89,lun=/dev/rhdisk92
  sd=sd90,lun=/dev/rhdisk93
  sd=sd91,lun=/dev/rhdisk94
  sd=sd92,lun=/dev/rhdisk95
  sd=sd93,lun=/dev/rhdisk96
  sd=sd94,lun=/dev/rhdisk97
  sd=sd95,lun=/dev/rhdisk98
  sd=sd96,lun=/dev/rhdisk99

  sd=default,host=perfsh1a,size=694g
  sd=sd1,lun=/dev/rhdisk26
  sd=sd2,lun=/dev/rhdisk27
  sd=sd3,lun=/dev/rhdisk28
  sd=sd4,lun=/dev/rhdisk29
  sd=sd5,lun=/dev/rhdisk30
  sd=sd6,lun=/dev/rhdisk31
  sd=sd7,lun=/dev/rhdisk32
  sd=sd8,lun=/dev/rhdisk33
  sd=sd9,lun=/dev/rhdisk34
```

```
  sd=sd10,lun=/dev/rhdisk35
  sd=sd11,lun=/dev/rhdisk36
  sd=sd12,lun=/dev/rhdisk37
  sd=sd13,lun=/dev/rhdisk38
  sd=sd14,lun=/dev/rhdisk39
  sd=sd15,lun=/dev/rhdisk40
  sd=sd16,lun=/dev/rhdisk41
  sd=sd17,lun=/dev/rhdisk42
  sd=sd18,lun=/dev/rhdisk43
  sd=sd19,lun=/dev/rhdisk44
  sd=sd20,lun=/dev/rhdisk45
  sd=sd21,lun=/dev/rhdisk46
  sd=sd22,lun=/dev/rhdisk47
  sd=sd23,lun=/dev/rhdisk48
  sd=sd24,lun=/dev/rhdisk49
  sd=sd25,lun=/dev/rhdisk50
  sd=sd26,lun=/dev/rhdisk51
  sd=sd27,lun=/dev/rhdisk52
  sd=sd28,lun=/dev/rhdisk53
  sd=sd29,lun=/dev/rhdisk54
  sd=sd30,lun=/dev/rhdisk55
  sd=sd31,lun=/dev/rhdisk56
  sd=sd32,lun=/dev/rhdisk57
  sd=sd33,lun=/dev/rhdisk58
  sd=sd34,lun=/dev/rhdisk59
  sd=sd35,lun=/dev/rhdisk60
  sd=sd36,lun=/dev/rhdisk61
  sd=sd37,lun=/dev/rhdisk62
  sd=sd38,lun=/dev/rhdisk63
  sd=sd39,lun=/dev/rhdisk64
  sd=sd40,lun=/dev/rhdisk65
  sd=sd41,lun=/dev/rhdisk66
  sd=sd42,lun=/dev/rhdisk67
  sd=sd43,lun=/dev/rhdisk68
  sd=sd44,lun=/dev/rhdisk69
  sd=sd45,lun=/dev/rhdisk70
  sd=sd46,lun=/dev/rhdisk71
  sd=sd47,lun=/dev/rhdisk72
  sd=sd48,lun=/dev/rhdisk73
  sd=sd49,lun=/dev/rhdisk74
  sd=sd50,lun=/dev/rhdisk75
  sd=sd51,lun=/dev/rhdisk76
  sd=sd52,lun=/dev/rhdisk77
  sd=sd53,lun=/dev/rhdisk78
  sd=sd54,lun=/dev/rhdisk79
  sd=sd55,lun=/dev/rhdisk80
  sd=sd56,lun=/dev/rhdisk81
  sd=sd57,lun=/dev/rhdisk82
  sd=sd58,lun=/dev/rhdisk83
  sd=sd59,lun=/dev/rhdisk84
  sd=sd60,lun=/dev/rhdisk85
  sd=sd61,lun=/dev/rhdisk86
  sd=sd62,lun=/dev/rhdisk87
  sd=sd63,lun=/dev/rhdisk88
  sd=sd64,lun=/dev/rhdisk89
  sd=sd65,lun=/dev/rhdisk90
  sd=sd66,lun=/dev/rhdisk91
  sd=sd67,lun=/dev/rhdisk92
  sd=sd68,lun=/dev/rhdisk93
  sd=sd69,lun=/dev/rhdisk94
  sd=sd70,lun=/dev/rhdisk95
  sd=sd71,lun=/dev/rhdisk96
  sd=sd72,lun=/dev/rhdisk97
```

```
  sd=sd73,lun=/dev/rhdisk98
  sd=sd74,lun=/dev/rhdisk99
  sd=sd75,lun=/dev/rhdisk100
  sd=sd76,lun=/dev/rhdisk101
  sd=sd77,lun=/dev/rhdisk102
  sd=sd78,lun=/dev/rhdisk103
  sd=sd79,lun=/dev/rhdisk104
  sd=sd80,lun=/dev/rhdisk105
  sd=sd81,lun=/dev/rhdisk106
  sd=sd82,lun=/dev/rhdisk107
  sd=sd83,lun=/dev/rhdisk108
  sd=sd84,lun=/dev/rhdisk109
  sd=sd85,lun=/dev/rhdisk110
  sd=sd86,lun=/dev/rhdisk111
  sd=sd87,lun=/dev/rhdisk112
  sd=sd88,lun=/dev/rhdisk113
  sd=sd89,lun=/dev/rhdisk114
  sd=sd90,lun=/dev/rhdisk115
  sd=sd91,lun=/dev/rhdisk116
  sd=sd92,lun=/dev/rhdisk117
  sd=sd93,lun=/dev/rhdisk118
  sd=sd94,lun=/dev/rhdisk119
  sd=sd95,lun=/dev/rhdisk120
  sd=sd96,lun=/dev/rhdisk121

  rd=default,rampup=180,measurement=180,runout=45,rampdown=15,buffers=1,periods=90
  rd=default,rdpct=0,xfersize=1024k
  rd=TR1_SPC-2-FP2.0,streams=192
  rd=TR2_SPC-2-FP2.0,streams=96
  rd=TR3_SPC-2-FP2.0,streams=48
  rd=TR4_SPC-2-FP2.0,streams=24
  rd=TR5_SPC-2-FP2.0,streams=1
  rd=default,rdpct=0,xfersize=256k
  rd=TR6_SPC-2-FP2.0,streams=192
  rd=TR7_SPC-2-FP2.0,streams=96
  rd=TR8_SPC-2-FP2.0,streams=48
  rd=TR9_SPC-2-FP2.0,streams=24
  rd=TR10_SPC-2-FP2.0,streams=1
  rd=default,rdpct=50,xfersize=1024k
  rd=TR11_SPC-2-FP2.0,streams=192
  rd=TR12_SPC-2-FP2.0,streams=96
  rd=TR13_SPC-2-FP2.0,streams=48
  rd=TR14_SPC-2-FP2.0,streams=24
  rd=TR15_SPC-2-FP2.0,streams=1
  rd=default,rdpct=50,xfersize=256k
  rd=TR16_SPC-2-FP2.0,streams=192
  rd=TR17_SPC-2-FP2.0,streams=96
  rd=TR18_SPC-2-FP2.0,streams=48
  rd=TR19_SPC-2-FP2.0,streams=24
  rd=TR20_SPC-2-FP2.0,streams=1
  rd=default,rdpct=100,xfersize=1024k
  rd=TR21_SPC-2-FP2.0,streams=192
  rd=TR22_SPC-2-FP2.0,streams=96
  rd=TR23_SPC-2-FP2.0,streams=48
  rd=TR24_SPC-2-FP2.0,streams=24
  rd=TR25_SPC-2-FP2.0,streams=1
  rd=default,rdpct=100,xfersize=256k
  rd=TR26_SPC-2-FP2.0,streams=192
  rd=TR27_SPC-2-FP2.0,streams=96
  rd=TR28_SPC-2-FP2.0,streams=48
  rd=TR29_SPC-2-FP2.0,streams=24
  rd=TR30_SPC-2-FP2.0,streams=1
```

Large Database Query Test *(LDQ)*

```
maxlatestart=0
host=localhost,jvms=3,maxstreams=400
host=(9.11.210.85,perfsh1a),
  java=(java,"-Xms384m  -Xmx768m  -Xss128k"),
  shell=spc2,
  jvms=3,
  maxstreams=400
reportinginterval=5
segmentlength=512m

sd=default,host=localhost,size=694g
sd=sd1,lun=/dev/rhdisk4
sd=sd2,lun=/dev/rhdisk5
sd=sd3,lun=/dev/rhdisk6
sd=sd4,lun=/dev/rhdisk7
sd=sd5,lun=/dev/rhdisk8
sd=sd6,lun=/dev/rhdisk9
sd=sd7,lun=/dev/rhdisk10
sd=sd8,lun=/dev/rhdisk11
sd=sd9,lun=/dev/rhdisk12
sd=sd10,lun=/dev/rhdisk13
sd=sd11,lun=/dev/rhdisk14
sd=sd12,lun=/dev/rhdisk15
sd=sd13,lun=/dev/rhdisk16
sd=sd14,lun=/dev/rhdisk17
sd=sd15,lun=/dev/rhdisk18
sd=sd16,lun=/dev/rhdisk19
sd=sd17,lun=/dev/rhdisk20
sd=sd18,lun=/dev/rhdisk21
sd=sd19,lun=/dev/rhdisk22
sd=sd20,lun=/dev/rhdisk23
sd=sd21,lun=/dev/rhdisk24
sd=sd22,lun=/dev/rhdisk25
sd=sd23,lun=/dev/rhdisk26
sd=sd24,lun=/dev/rhdisk27
sd=sd25,lun=/dev/rhdisk28
sd=sd26,lun=/dev/rhdisk29
sd=sd27,lun=/dev/rhdisk30
sd=sd28,lun=/dev/rhdisk31
sd=sd29,lun=/dev/rhdisk32
sd=sd30,lun=/dev/rhdisk33
sd=sd31,lun=/dev/rhdisk34
sd=sd32,lun=/dev/rhdisk35
sd=sd33,lun=/dev/rhdisk36
sd=sd34,lun=/dev/rhdisk37
sd=sd35,lun=/dev/rhdisk38
sd=sd36,lun=/dev/rhdisk39
sd=sd37,lun=/dev/rhdisk40
sd=sd38,lun=/dev/rhdisk41
sd=sd39,lun=/dev/rhdisk42
sd=sd40,lun=/dev/rhdisk43
sd=sd41,lun=/dev/rhdisk44
sd=sd42,lun=/dev/rhdisk45
sd=sd43,lun=/dev/rhdisk46
sd=sd44,lun=/dev/rhdisk47
sd=sd45,lun=/dev/rhdisk48
sd=sd46,lun=/dev/rhdisk49
sd=sd47,lun=/dev/rhdisk50
sd=sd48,lun=/dev/rhdisk51
sd=sd49,lun=/dev/rhdisk52
sd=sd50,lun=/dev/rhdisk53
```

```
  sd=sd51,lun=/dev/rhdisk54
  sd=sd52,lun=/dev/rhdisk55
  sd=sd53,lun=/dev/rhdisk56
  sd=sd54,lun=/dev/rhdisk57
  sd=sd55,lun=/dev/rhdisk58
  sd=sd56,lun=/dev/rhdisk59
  sd=sd57,lun=/dev/rhdisk60
  sd=sd58,lun=/dev/rhdisk61
  sd=sd59,lun=/dev/rhdisk62
  sd=sd60,lun=/dev/rhdisk63
  sd=sd61,lun=/dev/rhdisk64
  sd=sd62,lun=/dev/rhdisk65
  sd=sd63,lun=/dev/rhdisk66
  sd=sd64,lun=/dev/rhdisk67
  sd=sd65,lun=/dev/rhdisk68
  sd=sd66,lun=/dev/rhdisk69
  sd=sd67,lun=/dev/rhdisk70
  sd=sd68,lun=/dev/rhdisk71
  sd=sd69,lun=/dev/rhdisk72
  sd=sd70,lun=/dev/rhdisk73
  sd=sd71,lun=/dev/rhdisk74
  sd=sd72,lun=/dev/rhdisk75
  sd=sd73,lun=/dev/rhdisk76
  sd=sd74,lun=/dev/rhdisk77
  sd=sd75,lun=/dev/rhdisk78
  sd=sd76,lun=/dev/rhdisk79
  sd=sd77,lun=/dev/rhdisk80
  sd=sd78,lun=/dev/rhdisk81
  sd=sd79,lun=/dev/rhdisk82
  sd=sd80,lun=/dev/rhdisk83
  sd=sd81,lun=/dev/rhdisk84
  sd=sd82,lun=/dev/rhdisk85
  sd=sd83,lun=/dev/rhdisk86
  sd=sd84,lun=/dev/rhdisk87
  sd=sd85,lun=/dev/rhdisk88
  sd=sd86,lun=/dev/rhdisk89
  sd=sd87,lun=/dev/rhdisk90
  sd=sd88,lun=/dev/rhdisk91
  sd=sd89,lun=/dev/rhdisk92
  sd=sd90,lun=/dev/rhdisk93
  sd=sd91,lun=/dev/rhdisk94
  sd=sd92,lun=/dev/rhdisk95
  sd=sd93,lun=/dev/rhdisk96
  sd=sd94,lun=/dev/rhdisk97
  sd=sd95,lun=/dev/rhdisk98
  sd=sd96,lun=/dev/rhdisk99

  sd=default,host=perfsh1a,size=694g
  sd=sd1,lun=/dev/rhdisk26
  sd=sd2,lun=/dev/rhdisk27
  sd=sd3,lun=/dev/rhdisk28
  sd=sd4,lun=/dev/rhdisk29
  sd=sd5,lun=/dev/rhdisk30
  sd=sd6,lun=/dev/rhdisk31
  sd=sd7,lun=/dev/rhdisk32
  sd=sd8,lun=/dev/rhdisk33
  sd=sd9,lun=/dev/rhdisk34
  sd=sd10,lun=/dev/rhdisk35
  sd=sd11,lun=/dev/rhdisk36
  sd=sd12,lun=/dev/rhdisk37
  sd=sd13,lun=/dev/rhdisk38
  sd=sd14,lun=/dev/rhdisk39
  sd=sd15,lun=/dev/rhdisk40
```

```
  sd=sd16,lun=/dev/rhdisk41
  sd=sd17,lun=/dev/rhdisk42
  sd=sd18,lun=/dev/rhdisk43
  sd=sd19,lun=/dev/rhdisk44
  sd=sd20,lun=/dev/rhdisk45
  sd=sd21,lun=/dev/rhdisk46
  sd=sd22,lun=/dev/rhdisk47
  sd=sd23,lun=/dev/rhdisk48
  sd=sd24,lun=/dev/rhdisk49
  sd=sd25,lun=/dev/rhdisk50
  sd=sd26,lun=/dev/rhdisk51
  sd=sd27,lun=/dev/rhdisk52
  sd=sd28,lun=/dev/rhdisk53
  sd=sd29,lun=/dev/rhdisk54
  sd=sd30,lun=/dev/rhdisk55
  sd=sd31,lun=/dev/rhdisk56
  sd=sd32,lun=/dev/rhdisk57
  sd=sd33,lun=/dev/rhdisk58
  sd=sd34,lun=/dev/rhdisk59
  sd=sd35,lun=/dev/rhdisk60
  sd=sd36,lun=/dev/rhdisk61
  sd=sd37,lun=/dev/rhdisk62
  sd=sd38,lun=/dev/rhdisk63
  sd=sd39,lun=/dev/rhdisk64
  sd=sd40,lun=/dev/rhdisk65
  sd=sd41,lun=/dev/rhdisk66
  sd=sd42,lun=/dev/rhdisk67
  sd=sd43,lun=/dev/rhdisk68
  sd=sd44,lun=/dev/rhdisk69
  sd=sd45,lun=/dev/rhdisk70
  sd=sd46,lun=/dev/rhdisk71
  sd=sd47,lun=/dev/rhdisk72
  sd=sd48,lun=/dev/rhdisk73
  sd=sd49,lun=/dev/rhdisk74
  sd=sd50,lun=/dev/rhdisk75
  sd=sd51,lun=/dev/rhdisk76
  sd=sd52,lun=/dev/rhdisk77
  sd=sd53,lun=/dev/rhdisk78
  sd=sd54,lun=/dev/rhdisk79
  sd=sd55,lun=/dev/rhdisk80
  sd=sd56,lun=/dev/rhdisk81
  sd=sd57,lun=/dev/rhdisk82
  sd=sd58,lun=/dev/rhdisk83
  sd=sd59,lun=/dev/rhdisk84
  sd=sd60,lun=/dev/rhdisk85
  sd=sd61,lun=/dev/rhdisk86
  sd=sd62,lun=/dev/rhdisk87
  sd=sd63,lun=/dev/rhdisk88
  sd=sd64,lun=/dev/rhdisk89
  sd=sd65,lun=/dev/rhdisk90
  sd=sd66,lun=/dev/rhdisk91
  sd=sd67,lun=/dev/rhdisk92
  sd=sd68,lun=/dev/rhdisk93
  sd=sd69,lun=/dev/rhdisk94
  sd=sd70,lun=/dev/rhdisk95
  sd=sd71,lun=/dev/rhdisk96
  sd=sd72,lun=/dev/rhdisk97
  sd=sd73,lun=/dev/rhdisk98
  sd=sd74,lun=/dev/rhdisk99
  sd=sd75,lun=/dev/rhdisk100
  sd=sd76,lun=/dev/rhdisk101
  sd=sd77,lun=/dev/rhdisk102
  sd=sd78,lun=/dev/rhdisk103
```

```
sd=sd79,lun=/dev/rhdisk104
sd=sd80,lun=/dev/rhdisk105
sd=sd81,lun=/dev/rhdisk106
sd=sd82,lun=/dev/rhdisk107
sd=sd83,lun=/dev/rhdisk108
sd=sd84,lun=/dev/rhdisk109
sd=sd85,lun=/dev/rhdisk110
sd=sd86,lun=/dev/rhdisk111
sd=sd87,lun=/dev/rhdisk112
sd=sd88,lun=/dev/rhdisk113
sd=sd89,lun=/dev/rhdisk114
sd=sd90,lun=/dev/rhdisk115
sd=sd91,lun=/dev/rhdisk116
sd=sd92,lun=/dev/rhdisk117
sd=sd93,lun=/dev/rhdisk118
sd=sd94,lun=/dev/rhdisk119
sd=sd95,lun=/dev/rhdisk120
sd=sd96,lun=/dev/rhdisk121

rd=default,rdpct=99,rampup=180,measurement=180,runout=45,rampdown=15,periods=90
rd=default,xfersize=1024k,buffers=4
rd=TR1_SPC-2-DQ2.0,streams=192
rd=TR2_SPC-2-DQ2.0,streams=96
rd=TR3_SPC-2-DQ2.0,streams=48
rd=TR4_SPC-2-DQ2.0,streams=24
rd=TR5_SPC-2-DQ2.0,streams=1
rd=default,xfersize=1024k,buffers=1
rd=TR6_SPC-2-DQ2.0,streams=192
rd=TR7_SPC-2-DQ2.0,streams=96
rd=TR8_SPC-2-DQ2.0,streams=48
rd=TR9_SPC-2-DQ2.0,streams=24
rd=TR10_SPC-2-DQ2.0,streams=1
rd=default,xfersize=64k,buffers=4
rd=TR11_SPC-2-DQ2.0,streams=192
rd=TR12_SPC-2-DQ2.0,streams=96
rd=TR13_SPC-2-DQ2.0,streams=48
rd=TR14_SPC-2-DQ2.0,streams=24
rd=TR15_SPC-2-DQ2.0,streams=1
rd=default,xfersize=64k,buffers=1
rd=TR16_SPC-2-DQ2.0,streams=192
rd=TR17_SPC-2-DQ2.0,streams=96
rd=TR18_SPC-2-DQ2.0,streams=48
rd=TR19_SPC-2-DQ2.0,streams=24
rd=TR20_SPC-2-DQ2.0,streams=1
```

Video on Demand Delivery Test (VOD)

```
maxlatestart=0
host=localhost,jvms=17,maxstreams=400
host=(9.11.210.85,perfsh1a),
  java=(java,"-Xms384m  -Xmx768m  -Xss128k"),
  shell=spc2,
  jvms=17,
  maxstreams=400
reportinginterval=5
videosegmentduration=1200
maxlatevod=0


sd=default,host=localhost,size=694g
sd=sd1,lun=/dev/rhdisk4
sd=sd2,lun=/dev/rhdisk5
```

```
sd=sd3,lun=/dev/rhdisk6
sd=sd4,lun=/dev/rhdisk7
sd=sd5,lun=/dev/rhdisk8
sd=sd6,lun=/dev/rhdisk9
sd=sd7,lun=/dev/rhdisk10
sd=sd8,lun=/dev/rhdisk11
sd=sd9,lun=/dev/rhdisk12
sd=sd10,lun=/dev/rhdisk13
sd=sd11,lun=/dev/rhdisk14
sd=sd12,lun=/dev/rhdisk15
sd=sd13,lun=/dev/rhdisk16
sd=sd14,lun=/dev/rhdisk17
sd=sd15,lun=/dev/rhdisk18
sd=sd16,lun=/dev/rhdisk19
sd=sd17,lun=/dev/rhdisk20
sd=sd18,lun=/dev/rhdisk21
sd=sd19,lun=/dev/rhdisk22
sd=sd20,lun=/dev/rhdisk23
sd=sd21,lun=/dev/rhdisk24
sd=sd22,lun=/dev/rhdisk25
sd=sd23,lun=/dev/rhdisk26
sd=sd24,lun=/dev/rhdisk27
sd=sd25,lun=/dev/rhdisk28
sd=sd26,lun=/dev/rhdisk29
sd=sd27,lun=/dev/rhdisk30
sd=sd28,lun=/dev/rhdisk31
sd=sd29,lun=/dev/rhdisk32
sd=sd30,lun=/dev/rhdisk33
sd=sd31,lun=/dev/rhdisk34
sd=sd32,lun=/dev/rhdisk35
sd=sd33,lun=/dev/rhdisk36
sd=sd34,lun=/dev/rhdisk37
sd=sd35,lun=/dev/rhdisk38
sd=sd36,lun=/dev/rhdisk39
sd=sd37,lun=/dev/rhdisk40
sd=sd38,lun=/dev/rhdisk41
sd=sd39,lun=/dev/rhdisk42
sd=sd40,lun=/dev/rhdisk43
sd=sd41,lun=/dev/rhdisk44
sd=sd42,lun=/dev/rhdisk45
sd=sd43,lun=/dev/rhdisk46
sd=sd44,lun=/dev/rhdisk47
sd=sd45,lun=/dev/rhdisk48
sd=sd46,lun=/dev/rhdisk49
sd=sd47,lun=/dev/rhdisk50
sd=sd48,lun=/dev/rhdisk51
sd=sd49,lun=/dev/rhdisk52
sd=sd50,lun=/dev/rhdisk53
sd=sd51,lun=/dev/rhdisk54
sd=sd52,lun=/dev/rhdisk55
sd=sd53,lun=/dev/rhdisk56
sd=sd54,lun=/dev/rhdisk57
sd=sd55,lun=/dev/rhdisk58
sd=sd56,lun=/dev/rhdisk59
sd=sd57,lun=/dev/rhdisk60
sd=sd58,lun=/dev/rhdisk61
sd=sd59,lun=/dev/rhdisk62
sd=sd60,lun=/dev/rhdisk63
sd=sd61,lun=/dev/rhdisk64
sd=sd62,lun=/dev/rhdisk65
sd=sd63,lun=/dev/rhdisk66
sd=sd64,lun=/dev/rhdisk67
sd=sd65,lun=/dev/rhdisk68
```

```
  sd=sd66,lun=/dev/rhdisk69
  sd=sd67,lun=/dev/rhdisk70
  sd=sd68,lun=/dev/rhdisk71
  sd=sd69,lun=/dev/rhdisk72
  sd=sd70,lun=/dev/rhdisk73
  sd=sd71,lun=/dev/rhdisk74
  sd=sd72,lun=/dev/rhdisk75
  sd=sd73,lun=/dev/rhdisk76
  sd=sd74,lun=/dev/rhdisk77
  sd=sd75,lun=/dev/rhdisk78
  sd=sd76,lun=/dev/rhdisk79
  sd=sd77,lun=/dev/rhdisk80
  sd=sd78,lun=/dev/rhdisk81
  sd=sd79,lun=/dev/rhdisk82
  sd=sd80,lun=/dev/rhdisk83
  sd=sd81,lun=/dev/rhdisk84
  sd=sd82,lun=/dev/rhdisk85
  sd=sd83,lun=/dev/rhdisk86
  sd=sd84,lun=/dev/rhdisk87
  sd=sd85,lun=/dev/rhdisk88
  sd=sd86,lun=/dev/rhdisk89
  sd=sd87,lun=/dev/rhdisk90
  sd=sd88,lun=/dev/rhdisk91
  sd=sd89,lun=/dev/rhdisk92
  sd=sd90,lun=/dev/rhdisk93
  sd=sd91,lun=/dev/rhdisk94
  sd=sd92,lun=/dev/rhdisk95
  sd=sd93,lun=/dev/rhdisk96
  sd=sd94,lun=/dev/rhdisk97
  sd=sd95,lun=/dev/rhdisk98
  sd=sd96,lun=/dev/rhdisk99

  sd=default,host=perfsh1a,size=694g
  sd=sd1,lun=/dev/rhdisk26
  sd=sd2,lun=/dev/rhdisk27
  sd=sd3,lun=/dev/rhdisk28
  sd=sd4,lun=/dev/rhdisk29
  sd=sd5,lun=/dev/rhdisk30
  sd=sd6,lun=/dev/rhdisk31
  sd=sd7,lun=/dev/rhdisk32
  sd=sd8,lun=/dev/rhdisk33
  sd=sd9,lun=/dev/rhdisk34
  sd=sd10,lun=/dev/rhdisk35
  sd=sd11,lun=/dev/rhdisk36
  sd=sd12,lun=/dev/rhdisk37
  sd=sd13,lun=/dev/rhdisk38
  sd=sd14,lun=/dev/rhdisk39
  sd=sd15,lun=/dev/rhdisk40
  sd=sd16,lun=/dev/rhdisk41
  sd=sd17,lun=/dev/rhdisk42
  sd=sd18,lun=/dev/rhdisk43
  sd=sd19,lun=/dev/rhdisk44
  sd=sd20,lun=/dev/rhdisk45
  sd=sd21,lun=/dev/rhdisk46
  sd=sd22,lun=/dev/rhdisk47
  sd=sd23,lun=/dev/rhdisk48
  sd=sd24,lun=/dev/rhdisk49
  sd=sd25,lun=/dev/rhdisk50
  sd=sd26,lun=/dev/rhdisk51
  sd=sd27,lun=/dev/rhdisk52
  sd=sd28,lun=/dev/rhdisk53
  sd=sd29,lun=/dev/rhdisk54
  sd=sd30,lun=/dev/rhdisk55
```

```
  sd=sd31,lun=/dev/rhdisk56
  sd=sd32,lun=/dev/rhdisk57
  sd=sd33,lun=/dev/rhdisk58
  sd=sd34,lun=/dev/rhdisk59
  sd=sd35,lun=/dev/rhdisk60
  sd=sd36,lun=/dev/rhdisk61
  sd=sd37,lun=/dev/rhdisk62
  sd=sd38,lun=/dev/rhdisk63
  sd=sd39,lun=/dev/rhdisk64
  sd=sd40,lun=/dev/rhdisk65
  sd=sd41,lun=/dev/rhdisk66
  sd=sd42,lun=/dev/rhdisk67
  sd=sd43,lun=/dev/rhdisk68
  sd=sd44,lun=/dev/rhdisk69
  sd=sd45,lun=/dev/rhdisk70
  sd=sd46,lun=/dev/rhdisk71
  sd=sd47,lun=/dev/rhdisk72
  sd=sd48,lun=/dev/rhdisk73
  sd=sd49,lun=/dev/rhdisk74
  sd=sd50,lun=/dev/rhdisk75
  sd=sd51,lun=/dev/rhdisk76
  sd=sd52,lun=/dev/rhdisk77
  sd=sd53,lun=/dev/rhdisk78
  sd=sd54,lun=/dev/rhdisk79
  sd=sd55,lun=/dev/rhdisk80
  sd=sd56,lun=/dev/rhdisk81
  sd=sd57,lun=/dev/rhdisk82
  sd=sd58,lun=/dev/rhdisk83
  sd=sd59,lun=/dev/rhdisk84
  sd=sd60,lun=/dev/rhdisk85
  sd=sd61,lun=/dev/rhdisk86
  sd=sd62,lun=/dev/rhdisk87
  sd=sd63,lun=/dev/rhdisk88
  sd=sd64,lun=/dev/rhdisk89
  sd=sd65,lun=/dev/rhdisk90
  sd=sd66,lun=/dev/rhdisk91
  sd=sd67,lun=/dev/rhdisk92
  sd=sd68,lun=/dev/rhdisk93
  sd=sd69,lun=/dev/rhdisk94
  sd=sd70,lun=/dev/rhdisk95
  sd=sd71,lun=/dev/rhdisk96
  sd=sd72,lun=/dev/rhdisk97
  sd=sd73,lun=/dev/rhdisk98
  sd=sd74,lun=/dev/rhdisk99
  sd=sd75,lun=/dev/rhdisk100
  sd=sd76,lun=/dev/rhdisk101
  sd=sd77,lun=/dev/rhdisk102
  sd=sd78,lun=/dev/rhdisk103
  sd=sd79,lun=/dev/rhdisk104
  sd=sd80,lun=/dev/rhdisk105
  sd=sd81,lun=/dev/rhdisk106
  sd=sd82,lun=/dev/rhdisk107
  sd=sd83,lun=/dev/rhdisk108
  sd=sd84,lun=/dev/rhdisk109
  sd=sd85,lun=/dev/rhdisk110
  sd=sd86,lun=/dev/rhdisk111
  sd=sd87,lun=/dev/rhdisk112
  sd=sd88,lun=/dev/rhdisk113
  sd=sd89,lun=/dev/rhdisk114
  sd=sd90,lun=/dev/rhdisk115
  sd=sd91,lun=/dev/rhdisk116
  sd=sd92,lun=/dev/rhdisk117
  sd=sd93,lun=/dev/rhdisk118
```

```
sd=sd94,lun=/dev/rhdisk119
sd=sd95,lun=/dev/rhdisk120
sd=sd96,lun=/dev/rhdisk121

rd=default,measurement=7200,rampup=1200,runout=45,rampdown=15,periods=600
rd=TR1_SPC-2-VOD11.0,streams=11000,buffers=8
```

Persistence Test Run 1 *(write phase)*

```
* Persistence Test Run 1
host=localhost,jvms=3,maxstreams=192
host=(9.11.210.85,perfsh1a),
   java=("/usr/java5/bin/java","-Xmx768m -Xgcpolicy:optavgpause"),
   shell=spc2,
   jvms=3,
   maxstreams=192

sd=default,host=localhost,size=694g
sd=sd1,lun=/dev/rhdisk4
sd=sd2,lun=/dev/rhdisk5
sd=sd3,lun=/dev/rhdisk6
sd=sd4,lun=/dev/rhdisk7
sd=sd5,lun=/dev/rhdisk8
sd=sd6,lun=/dev/rhdisk9
sd=sd7,lun=/dev/rhdisk10
sd=sd8,lun=/dev/rhdisk11
sd=sd9,lun=/dev/rhdisk12
sd=sd10,lun=/dev/rhdisk13
sd=sd11,lun=/dev/rhdisk14
sd=sd12,lun=/dev/rhdisk15
sd=sd13,lun=/dev/rhdisk16
sd=sd14,lun=/dev/rhdisk17
sd=sd15,lun=/dev/rhdisk18
sd=sd16,lun=/dev/rhdisk19
sd=sd17,lun=/dev/rhdisk20
sd=sd18,lun=/dev/rhdisk21
sd=sd19,lun=/dev/rhdisk22
sd=sd20,lun=/dev/rhdisk23
sd=sd21,lun=/dev/rhdisk24
sd=sd22,lun=/dev/rhdisk25
sd=sd23,lun=/dev/rhdisk26
sd=sd24,lun=/dev/rhdisk27
sd=sd25,lun=/dev/rhdisk28
sd=sd26,lun=/dev/rhdisk29
sd=sd27,lun=/dev/rhdisk30
sd=sd28,lun=/dev/rhdisk31
sd=sd29,lun=/dev/rhdisk32
sd=sd30,lun=/dev/rhdisk33
sd=sd31,lun=/dev/rhdisk34
sd=sd32,lun=/dev/rhdisk35
sd=sd33,lun=/dev/rhdisk36
sd=sd34,lun=/dev/rhdisk37
sd=sd35,lun=/dev/rhdisk38
sd=sd36,lun=/dev/rhdisk39
sd=sd37,lun=/dev/rhdisk40
sd=sd38,lun=/dev/rhdisk41
sd=sd39,lun=/dev/rhdisk42
sd=sd40,lun=/dev/rhdisk43
sd=sd41,lun=/dev/rhdisk44
sd=sd42,lun=/dev/rhdisk45
sd=sd43,lun=/dev/rhdisk46
sd=sd44,lun=/dev/rhdisk47
```

```
  sd=sd45,lun=/dev/rhdisk48
  sd=sd46,lun=/dev/rhdisk49
  sd=sd47,lun=/dev/rhdisk50
  sd=sd48,lun=/dev/rhdisk51
  sd=sd49,lun=/dev/rhdisk52
  sd=sd50,lun=/dev/rhdisk53
  sd=sd51,lun=/dev/rhdisk54
  sd=sd52,lun=/dev/rhdisk55
  sd=sd53,lun=/dev/rhdisk56
  sd=sd54,lun=/dev/rhdisk57
  sd=sd55,lun=/dev/rhdisk58
  sd=sd56,lun=/dev/rhdisk59
  sd=sd57,lun=/dev/rhdisk60
  sd=sd58,lun=/dev/rhdisk61
  sd=sd59,lun=/dev/rhdisk62
  sd=sd60,lun=/dev/rhdisk63
  sd=sd61,lun=/dev/rhdisk64
  sd=sd62,lun=/dev/rhdisk65
  sd=sd63,lun=/dev/rhdisk66
  sd=sd64,lun=/dev/rhdisk67
  sd=sd65,lun=/dev/rhdisk68
  sd=sd66,lun=/dev/rhdisk69
  sd=sd67,lun=/dev/rhdisk70
  sd=sd68,lun=/dev/rhdisk71
  sd=sd69,lun=/dev/rhdisk72
  sd=sd70,lun=/dev/rhdisk73
  sd=sd71,lun=/dev/rhdisk74
  sd=sd72,lun=/dev/rhdisk75
  sd=sd73,lun=/dev/rhdisk76
  sd=sd74,lun=/dev/rhdisk77
  sd=sd75,lun=/dev/rhdisk78
  sd=sd76,lun=/dev/rhdisk79
  sd=sd77,lun=/dev/rhdisk80
  sd=sd78,lun=/dev/rhdisk81
  sd=sd79,lun=/dev/rhdisk82
  sd=sd80,lun=/dev/rhdisk83
  sd=sd81,lun=/dev/rhdisk84
  sd=sd82,lun=/dev/rhdisk85
  sd=sd83,lun=/dev/rhdisk86
  sd=sd84,lun=/dev/rhdisk87
  sd=sd85,lun=/dev/rhdisk88
  sd=sd86,lun=/dev/rhdisk89
  sd=sd87,lun=/dev/rhdisk90
  sd=sd88,lun=/dev/rhdisk91
  sd=sd89,lun=/dev/rhdisk92
  sd=sd90,lun=/dev/rhdisk93
  sd=sd91,lun=/dev/rhdisk94
  sd=sd92,lun=/dev/rhdisk95
  sd=sd93,lun=/dev/rhdisk96
  sd=sd94,lun=/dev/rhdisk97
  sd=sd95,lun=/dev/rhdisk98
  sd=sd96,lun=/dev/rhdisk99

  sd=default,host=perfsh1a,size=694g
  sd=sd1,lun=/dev/rhdisk26
  sd=sd2,lun=/dev/rhdisk27
  sd=sd3,lun=/dev/rhdisk28
  sd=sd4,lun=/dev/rhdisk29
  sd=sd5,lun=/dev/rhdisk30
  sd=sd6,lun=/dev/rhdisk31
  sd=sd7,lun=/dev/rhdisk32
  sd=sd8,lun=/dev/rhdisk33
  sd=sd9,lun=/dev/rhdisk34
```

```
  sd=sd10,lun=/dev/rhdisk35
  sd=sd11,lun=/dev/rhdisk36
  sd=sd12,lun=/dev/rhdisk37
  sd=sd13,lun=/dev/rhdisk38
  sd=sd14,lun=/dev/rhdisk39
  sd=sd15,lun=/dev/rhdisk40
  sd=sd16,lun=/dev/rhdisk41
  sd=sd17,lun=/dev/rhdisk42
  sd=sd18,lun=/dev/rhdisk43
  sd=sd19,lun=/dev/rhdisk44
  sd=sd20,lun=/dev/rhdisk45
  sd=sd21,lun=/dev/rhdisk46
  sd=sd22,lun=/dev/rhdisk47
  sd=sd23,lun=/dev/rhdisk48
  sd=sd24,lun=/dev/rhdisk49
  sd=sd25,lun=/dev/rhdisk50
  sd=sd26,lun=/dev/rhdisk51
  sd=sd27,lun=/dev/rhdisk52
  sd=sd28,lun=/dev/rhdisk53
  sd=sd29,lun=/dev/rhdisk54
  sd=sd30,lun=/dev/rhdisk55
  sd=sd31,lun=/dev/rhdisk56
  sd=sd32,lun=/dev/rhdisk57
  sd=sd33,lun=/dev/rhdisk58
  sd=sd34,lun=/dev/rhdisk59
  sd=sd35,lun=/dev/rhdisk60
  sd=sd36,lun=/dev/rhdisk61
  sd=sd37,lun=/dev/rhdisk62
  sd=sd38,lun=/dev/rhdisk63
  sd=sd39,lun=/dev/rhdisk64
  sd=sd40,lun=/dev/rhdisk65
  sd=sd41,lun=/dev/rhdisk66
  sd=sd42,lun=/dev/rhdisk67
  sd=sd43,lun=/dev/rhdisk68
  sd=sd44,lun=/dev/rhdisk69
  sd=sd45,lun=/dev/rhdisk70
  sd=sd46,lun=/dev/rhdisk71
  sd=sd47,lun=/dev/rhdisk72
  sd=sd48,lun=/dev/rhdisk73
  sd=sd49,lun=/dev/rhdisk74
  sd=sd50,lun=/dev/rhdisk75
  sd=sd51,lun=/dev/rhdisk76
  sd=sd52,lun=/dev/rhdisk77
  sd=sd53,lun=/dev/rhdisk78
  sd=sd54,lun=/dev/rhdisk79
  sd=sd55,lun=/dev/rhdisk80
  sd=sd56,lun=/dev/rhdisk81
  sd=sd57,lun=/dev/rhdisk82
  sd=sd58,lun=/dev/rhdisk83
  sd=sd59,lun=/dev/rhdisk84
  sd=sd60,lun=/dev/rhdisk85
  sd=sd61,lun=/dev/rhdisk86
  sd=sd62,lun=/dev/rhdisk87
  sd=sd63,lun=/dev/rhdisk88
  sd=sd64,lun=/dev/rhdisk89
  sd=sd65,lun=/dev/rhdisk90
  sd=sd66,lun=/dev/rhdisk91
  sd=sd67,lun=/dev/rhdisk92
  sd=sd68,lun=/dev/rhdisk93
  sd=sd69,lun=/dev/rhdisk94
  sd=sd70,lun=/dev/rhdisk95
  sd=sd71,lun=/dev/rhdisk96
  sd=sd72,lun=/dev/rhdisk97
```

```
sd=sd73,lun=/dev/rhdisk98
sd=sd74,lun=/dev/rhdisk99
sd=sd75,lun=/dev/rhdisk100
sd=sd76,lun=/dev/rhdisk101
sd=sd77,lun=/dev/rhdisk102
sd=sd78,lun=/dev/rhdisk103
sd=sd79,lun=/dev/rhdisk104
sd=sd80,lun=/dev/rhdisk105
sd=sd81,lun=/dev/rhdisk106
sd=sd82,lun=/dev/rhdisk107
sd=sd83,lun=/dev/rhdisk108
sd=sd84,lun=/dev/rhdisk109
sd=sd85,lun=/dev/rhdisk110
sd=sd86,lun=/dev/rhdisk111
sd=sd87,lun=/dev/rhdisk112
sd=sd88,lun=/dev/rhdisk113
sd=sd89,lun=/dev/rhdisk114
sd=sd90,lun=/dev/rhdisk115
sd=sd91,lun=/dev/rhdisk116
sd=sd92,lun=/dev/rhdisk117
sd=sd93,lun=/dev/rhdisk118
sd=sd94,lun=/dev/rhdisk119
sd=sd95,lun=/dev/rhdisk120
sd=sd96,lun=/dev/rhdisk121

maxlatestart=1
reportinginterval=5
segmentlength=512m

rd=default,rampup=180,periods=90,measurement=300,runout=0,rampdown=0,buffers=1

rd=default,rdpct=0,xfersize=1024k
rd=TR1-5s_SPC-2-persist-w,streams=192
```

Persistence Test Run 2 (read phase)

```
* Persistence Test Run 2

host=localhost,jvms=3,maxstreams=192
host=(9.11.210.85,perfsh1a),
   java=("/usr/java5/bin/java","-Xmx768m -Xgcpolicy:optavgpause"),
   shell=spc2,
   jvms=3,
   maxstreams=192

sd=default,host=localhost,size=694g
sd=sd1,lun=/dev/rhdisk4
sd=sd2,lun=/dev/rhdisk5
sd=sd3,lun=/dev/rhdisk6
sd=sd4,lun=/dev/rhdisk7
sd=sd5,lun=/dev/rhdisk8
sd=sd6,lun=/dev/rhdisk9
sd=sd7,lun=/dev/rhdisk10
sd=sd8,lun=/dev/rhdisk11
sd=sd9,lun=/dev/rhdisk12
sd=sd10,lun=/dev/rhdisk13
sd=sd11,lun=/dev/rhdisk14
sd=sd12,lun=/dev/rhdisk15
sd=sd13,lun=/dev/rhdisk16
sd=sd14,lun=/dev/rhdisk17
sd=sd15,lun=/dev/rhdisk18
sd=sd16,lun=/dev/rhdisk19
sd=sd17,lun=/dev/rhdisk20
sd=sd18,lun=/dev/rhdisk21
sd=sd19,lun=/dev/rhdisk22
sd=sd20,lun=/dev/rhdisk23
sd=sd21,lun=/dev/rhdisk24
sd=sd22,lun=/dev/rhdisk25
sd=sd23,lun=/dev/rhdisk26
sd=sd24,lun=/dev/rhdisk27
sd=sd25,lun=/dev/rhdisk28
sd=sd26,lun=/dev/rhdisk29
sd=sd27,lun=/dev/rhdisk30
sd=sd28,lun=/dev/rhdisk31
sd=sd29,lun=/dev/rhdisk32
sd=sd30,lun=/dev/rhdisk33
sd=sd31,lun=/dev/rhdisk34
sd=sd32,lun=/dev/rhdisk35
sd=sd33,lun=/dev/rhdisk36
sd=sd34,lun=/dev/rhdisk37
sd=sd35,lun=/dev/rhdisk38
sd=sd36,lun=/dev/rhdisk39
sd=sd37,lun=/dev/rhdisk40
sd=sd38,lun=/dev/rhdisk41
sd=sd39,lun=/dev/rhdisk42
sd=sd40,lun=/dev/rhdisk43
sd=sd41,lun=/dev/rhdisk44
sd=sd42,lun=/dev/rhdisk45
sd=sd43,lun=/dev/rhdisk46
sd=sd44,lun=/dev/rhdisk47
sd=sd45,lun=/dev/rhdisk48
sd=sd46,lun=/dev/rhdisk49
sd=sd47,lun=/dev/rhdisk50
sd=sd48,lun=/dev/rhdisk51
sd=sd49,lun=/dev/rhdisk52
```

```
  sd=sd50,lun=/dev/rhdisk53
  sd=sd51,lun=/dev/rhdisk54
  sd=sd52,lun=/dev/rhdisk55
  sd=sd53,lun=/dev/rhdisk56
  sd=sd54,lun=/dev/rhdisk57
  sd=sd55,lun=/dev/rhdisk58
  sd=sd56,lun=/dev/rhdisk59
  sd=sd57,lun=/dev/rhdisk60
  sd=sd58,lun=/dev/rhdisk61
  sd=sd59,lun=/dev/rhdisk62
  sd=sd60,lun=/dev/rhdisk63
  sd=sd61,lun=/dev/rhdisk64
  sd=sd62,lun=/dev/rhdisk65
  sd=sd63,lun=/dev/rhdisk66
  sd=sd64,lun=/dev/rhdisk67
  sd=sd65,lun=/dev/rhdisk68
  sd=sd66,lun=/dev/rhdisk69
  sd=sd67,lun=/dev/rhdisk70
  sd=sd68,lun=/dev/rhdisk71
  sd=sd69,lun=/dev/rhdisk72
  sd=sd70,lun=/dev/rhdisk73
  sd=sd71,lun=/dev/rhdisk74
  sd=sd72,lun=/dev/rhdisk75
  sd=sd73,lun=/dev/rhdisk76
  sd=sd74,lun=/dev/rhdisk77
  sd=sd75,lun=/dev/rhdisk78
  sd=sd76,lun=/dev/rhdisk79
  sd=sd77,lun=/dev/rhdisk80
  sd=sd78,lun=/dev/rhdisk81
  sd=sd79,lun=/dev/rhdisk82
  sd=sd80,lun=/dev/rhdisk83
  sd=sd81,lun=/dev/rhdisk84
  sd=sd82,lun=/dev/rhdisk85
  sd=sd83,lun=/dev/rhdisk86
  sd=sd84,lun=/dev/rhdisk87
  sd=sd85,lun=/dev/rhdisk88
  sd=sd86,lun=/dev/rhdisk89
  sd=sd87,lun=/dev/rhdisk90
  sd=sd88,lun=/dev/rhdisk91
  sd=sd89,lun=/dev/rhdisk92
  sd=sd90,lun=/dev/rhdisk93
  sd=sd91,lun=/dev/rhdisk94
  sd=sd92,lun=/dev/rhdisk95
  sd=sd93,lun=/dev/rhdisk96
  sd=sd94,lun=/dev/rhdisk97
  sd=sd95,lun=/dev/rhdisk98
  sd=sd96,lun=/dev/rhdisk99

  sd=default,host=perfsh1a,size=694g
  sd=sd1,lun=/dev/rhdisk26
  sd=sd2,lun=/dev/rhdisk27
  sd=sd3,lun=/dev/rhdisk28
  sd=sd4,lun=/dev/rhdisk29
  sd=sd5,lun=/dev/rhdisk30
  sd=sd6,lun=/dev/rhdisk31
  sd=sd7,lun=/dev/rhdisk32
  sd=sd8,lun=/dev/rhdisk33
  sd=sd9,lun=/dev/rhdisk34
  sd=sd10,lun=/dev/rhdisk35
  sd=sd11,lun=/dev/rhdisk36
  sd=sd12,lun=/dev/rhdisk37
  sd=sd13,lun=/dev/rhdisk38
  sd=sd14,lun=/dev/rhdisk39
```

```
  sd=sd15,lun=/dev/rhdisk40
  sd=sd16,lun=/dev/rhdisk41
  sd=sd17,lun=/dev/rhdisk42
  sd=sd18,lun=/dev/rhdisk43
  sd=sd19,lun=/dev/rhdisk44
  sd=sd20,lun=/dev/rhdisk45
  sd=sd21,lun=/dev/rhdisk46
  sd=sd22,lun=/dev/rhdisk47
  sd=sd23,lun=/dev/rhdisk48
  sd=sd24,lun=/dev/rhdisk49
  sd=sd25,lun=/dev/rhdisk50
  sd=sd26,lun=/dev/rhdisk51
  sd=sd27,lun=/dev/rhdisk52
  sd=sd28,lun=/dev/rhdisk53
  sd=sd29,lun=/dev/rhdisk54
  sd=sd30,lun=/dev/rhdisk55
  sd=sd31,lun=/dev/rhdisk56
  sd=sd32,lun=/dev/rhdisk57
  sd=sd33,lun=/dev/rhdisk58
  sd=sd34,lun=/dev/rhdisk59
  sd=sd35,lun=/dev/rhdisk60
  sd=sd36,lun=/dev/rhdisk61
  sd=sd37,lun=/dev/rhdisk62
  sd=sd38,lun=/dev/rhdisk63
  sd=sd39,lun=/dev/rhdisk64
  sd=sd40,lun=/dev/rhdisk65
  sd=sd41,lun=/dev/rhdisk66
  sd=sd42,lun=/dev/rhdisk67
  sd=sd43,lun=/dev/rhdisk68
  sd=sd44,lun=/dev/rhdisk69
  sd=sd45,lun=/dev/rhdisk70
  sd=sd46,lun=/dev/rhdisk71
  sd=sd47,lun=/dev/rhdisk72
  sd=sd48,lun=/dev/rhdisk73
  sd=sd49,lun=/dev/rhdisk74
  sd=sd50,lun=/dev/rhdisk75
  sd=sd51,lun=/dev/rhdisk76
  sd=sd52,lun=/dev/rhdisk77
  sd=sd53,lun=/dev/rhdisk78
  sd=sd54,lun=/dev/rhdisk79
  sd=sd55,lun=/dev/rhdisk80
  sd=sd56,lun=/dev/rhdisk81
  sd=sd57,lun=/dev/rhdisk82
  sd=sd58,lun=/dev/rhdisk83
  sd=sd59,lun=/dev/rhdisk84
  sd=sd60,lun=/dev/rhdisk85
  sd=sd61,lun=/dev/rhdisk86
  sd=sd62,lun=/dev/rhdisk87
  sd=sd63,lun=/dev/rhdisk88
  sd=sd64,lun=/dev/rhdisk89
  sd=sd65,lun=/dev/rhdisk90
  sd=sd66,lun=/dev/rhdisk91
  sd=sd67,lun=/dev/rhdisk92
  sd=sd68,lun=/dev/rhdisk93
  sd=sd69,lun=/dev/rhdisk94
  sd=sd70,lun=/dev/rhdisk95
  sd=sd71,lun=/dev/rhdisk96
  sd=sd72,lun=/dev/rhdisk97
  sd=sd73,lun=/dev/rhdisk98
  sd=sd74,lun=/dev/rhdisk99
  sd=sd75,lun=/dev/rhdisk100
  sd=sd76,lun=/dev/rhdisk101
  sd=sd77,lun=/dev/rhdisk102
```

```
sd=sd78,lun=/dev/rhdisk103
sd=sd79,lun=/dev/rhdisk104
sd=sd80,lun=/dev/rhdisk105
sd=sd81,lun=/dev/rhdisk106
sd=sd82,lun=/dev/rhdisk107
sd=sd83,lun=/dev/rhdisk108
sd=sd84,lun=/dev/rhdisk109
sd=sd85,lun=/dev/rhdisk110
sd=sd86,lun=/dev/rhdisk111
sd=sd87,lun=/dev/rhdisk112
sd=sd88,lun=/dev/rhdisk113
sd=sd89,lun=/dev/rhdisk114
sd=sd90,lun=/dev/rhdisk115
sd=sd91,lun=/dev/rhdisk116
sd=sd92,lun=/dev/rhdisk117
sd=sd93,lun=/dev/rhdisk118
sd=sd94,lun=/dev/rhdisk119
sd=sd95,lun=/dev/rhdisk120
sd=sd96,lun=/dev/rhdisk121

maxlatestart=1
reportinginterval=5
segmentlength=512m

maxpersistenceerrors=10
*corruptstreams=3

rd=default,buffers=1,rdpct=100,xfersize=1024k
rd=TR1-5s_SPC-2-persist-r
```

APPENDIX E: SPC-2 WORKLOAD GENERATOR EXECUTION COMMANDS AND PARAMETERS

Video on Demand Delivery, Large File Processing Test, Large Database Query Tests, and Persistence Test Run 1

The following script was used to execute the Video on Demand Delivery, Large File Processing and Large Database Query Tests, as well as, Persistence Test Run 1.

```
export PATH=/usr/java5/bin:$PATH
export SPC2HOME=/perform/spc2install
export CLASSPATH=$SPC2HOME
export LIBPATH=$SPC2HOME/aix
export IBM_JAVADUMP_OUTOFMEMORY=false
export IBM_HEAPDUMP_OUTOFMEMORY=false
date > capdat.txt
#ssh -p 12201 perfss05h issmap -jctpfsa >> capdat.txt
for h in `lsdev -Cc disk | awk '/FC 2107/ {print $1}'`
do
echo $h `bootinfo -s $h` >> capdat.txt
done
java -Xoptionsfile=javaopts.cfg vdbench -f vod.cfg -o vod
java -Xoptionsfile=javaopts.cfg vdbench -f lfp.cfg -o lfp
java -Xoptionsfile=javaopts.cfg vdbench -f ldq.cfg -o ldq
java -Xoptionsfile=javaopts.cfg vdbench -f persistw.cfg -o persistw
date > capdat2.txt
#ssh -p 12201 perfss05h issmap -jctpfsa >> capdat2.txt
for h in `lsdev -Cc disk | awk '/FC 2107/ {print $1}'`
do
echo $h `bootinfo -s $h` >> capdat2.txt
done
```

Persistence Test Run 2

The following script was used to execute Persistence Test Run 2.

```
export PATH=$PATH:/usr/java5/bin
export SPC2HOME=/perform/spc2install
export CLASSPATH=$SPC2HOME
export LIBPATH=$SPC2HOME/aix
export IBM_JAVADUMP_OUTOFMEMORY=false
export IBM_HEAPDUMP_OUTOFMEMORY=false
java -Xoptionsfile=javaopts.cfg vdbench -f persistr.cfg -o persistr
```

Java Parameters

The following file was used to supply Java options to all JVMs when executing both of the above scripts.

javaopts.cfg

```
-Xms384m  -Xmx768m  -Xss128k
```