SPC BENCHMARK 2™

FULL DISCLOSURE REPORT

IBM CORPORATION
IBM TOTALSTORAGE® DS8300

SPC-2™ V1.0

Submitted for Review: January 16, 2006
Submission Identifier: B00006

First Edition – January 2006

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AUDIT CERTIFICATION

Bruce McNutt
IBM Corporation
KBV/9062-2
9000 South Rita Road
Tucson, AZ 85744

December 6, 2005

The SPC Benchmark 2™ results listed below for the IBM TotalStorage® DS8300 were produced in compliance with the SPC Benchmark 2™ V1.0 Onsite Audit requirements.

SPC Benchmark 2™ V1.0 Results	
Tested Storage Configuration (TSC) Name: IBM TotalStorage® DS8300	
Metric	**Reported Result**
SPC-2 MBPS™	3,217.53
SPC-2 Price-Performance	$539.38/SPC-2 MBPS™
Total ASU Capacity	15,393.163 GB
Data Protection Level	Mirroring
Total Price (including three-year maintenance)	$1,735,472.50

The following SPC Benchmark 2™ Onsite Audit requirements were reviewed and found compliant with V1.0 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 physical inspection and information 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).
- Physical verification of the components to match the above diagram.

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AUDIT CERTIFICATION *(continued)*

- Listings and commands to create and configure the Benchmark Configuration/Tested Storage Configuration, including each customer tunable parameter or option that was changed from its default value.
- The following Host System items were verified by physical inspection and information 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 physical inspection and information 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 execution of each Test, Test Phase, and Test Run was observed and found compliant with all of the requirements and constraints of Clauses 5 and 6 of the SPC-2 Benchmark Specification.
- 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 final version of the pricing spreadsheet 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.

Audit Notes:

There were no additional audit notes or exceptions.

Respectfully,

Walter E. Baker

Walter E. Baker
SPC Auditor

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LETTER OF GOOD FAITH

Vice President & BLE, Disk Storage

IBM Technology & Systems Group
5600 Cottle Road, San Jose, California 95193

Phone: 408-256-7405
Fax: 408-256-7420

December 3, 2005

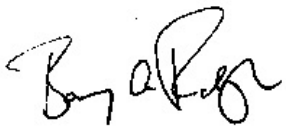
Mr. Walter E. Baker, SPC Auditor
Gradient Systems, Inc.
643 Bair Island Road, Suite 103
Redwood City, CA 94063

Subject: SPC-2 Letter of Good Faith for the IBM TotalStorage DS8300

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 1.0 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,



Barry Rudolph

EXECUTIVE SUMMARY

Test Sponsor and Contact Information

Test Sponsor and Contact Information	
Test Sponsor Primary Contact	IBM Corporation – http://www.ibm.com Peter Leung – leungp@us.ibm.com 65S/9062-2 9000 South Rita Road Tucson, AZ 85744 Phone: (520) 799-2853 FAX: (520) 799-5530
Test Sponsor Alternate Contact	IBM Corporation – http://www.ibm.com Bruce McNutt – bmcnutt@us.ibm.com KBV/9062-2 9000 South Rita Road Tucson, AZ 85744 Phone: (520) 799-2460 FAX: (520) 799-5530
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	V1.0
SPC-2 Workload Generator revision number	spc2rc8j
Date Results were first used publicly	January 16, 2006
Date FDR was submitted to the SPC	January 16, 2006
Date the TSC will be available for shipment to customers	currently available
Date the TSC completed audit certification	December 5 2005

SPC-2 Reported Data

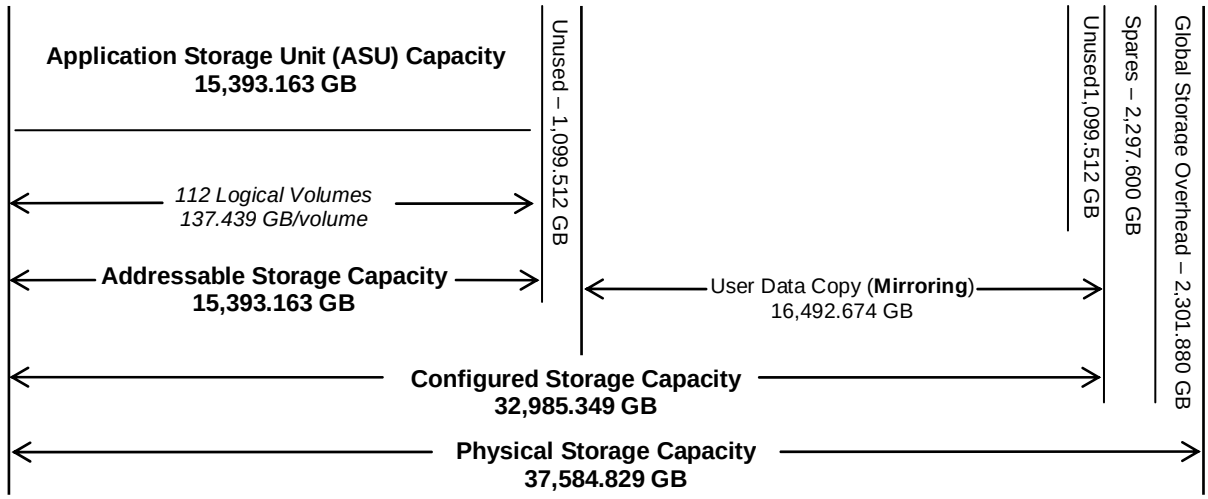
SPC-2 Reported Data consists of three groups of information:

- 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.

IBM TotalStorage™ DS8300				
SPC-2 MBPS™	**SPC-2 Price-Performance**	**ASU Capacity (GB)**	**Total Price**	**Data Protection Level**
3,217.53	$539.38	15,393.163	$1,735,472.50	Mirroring
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	2,573.57			$674.34
Write Only:				
1024 KiB Transfer	1,905.04	112	17.01	
256 KiB Transfer	1,850.41	112	16.52	
Read-Write:				
1024 KiB Transfer	2,312.43	112	20.65	
256 KiB Transfer	2,307.01	112	20.60	
Read Only:				
1024 KiB Transfer	3,532.09	112	31.54	
256 KiB Transfer	3,534.42	112	31.56	
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	3,697.33			$469.39
1024 KiB Transfer Size				
4 I/Os Outstanding	3,733.18	112	33.33	
1 I/O Outstanding	3,733.76	112	33.34	
64 KiB Transfer Size				
4 I/Os Outstanding	3,654.84	112	32.63	
1 I/O Outstanding	3,667.54	112	32.75	
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**
	3,381.70	4,300	0.79	$513.20

Storage Capacities and Relationships

The following diagram *(not to scale)* documents the various storage capacities and their relationships, used in this SPC-2 benchmark measurement.



Tested Storage Configuration Pricing *(Priced Storage Configuration)*

Product	Description	Quantity	Unit Price	Extended Purchase
2107-922	TotalStorage DS8300	1	190,000.00	190,000.00
1	9xE factory merge	2	N/C	N/C
221	922 - 92E Position 1	1	N/C	N/C
222	922 - 92E Position 2	1	N/C	N/C
700	OEL Indicator	1	N/C	N/C
815	25.1 to 50.0 TB capacity	1	N/C	N/C
900	Non-Standby CoD	1	N/C	N/C
1050	Battery Assembly	3	1,700.00	5,100.00
1090	Line Cord (US/LA/AP/Canada)	1	1,900.00	1,900.00
1100	Management Console Internal	1	10,000.00	10,000.00
1210	Disk Enclosure Pair	4	10,000.00	40,000.00
1211	Disk Drive Cable Group 1	1	1,000.00	1,000.00
1300	I/O Enclosure Pair	2	12,500.00	25,000.00
1316	RIO-G Cable Group 6	1	1,600.00	1,600.00
1411	50 um Fibre Cable (LC/SC)	16	100.00	1,600.00
2016	73 GB 15K Drive Set	8	26,000.00	208,000.00
3011	Device Adapter Pair	4	10,000.00	40,000.00
3111	2Gb SW FCP/FICON Adapter	16	20,500.00	328,000.00
4103	64 GB Processor Memory	1	200,000.00	200,000.00
9090	AC Voltage: 200V - 240V	1	N/C	N/C
9100	MC Keyboard - US English	1	N/C	N/C
	Serial: N/A	**Total**		**1,052,200.00**
2107-92E	TotalStorage DS8000 Enclosure Unit	1	75,000.00	75,000.00
1	9xE factory merge	1	N/C	N/C
222	922 - 92E Position 2	1	N/C	N/C
1090	Line Cord (US/LA/AP/Canada)	1	1,900.00	1,900.00
1210	Disk Enclosure Pair	4	10,000.00	40,000.00
1214	Disk Drive Cable Group 4	1	2,400.00	2,400.00
2016	73 GB 15K Drive Set	8	26,000.00	208,000.00
9090	AC Voltage: 200V - 240V	1	N/C	N/C
	Serial: N/A	**Total**		**327,300.00**

Tested Storage Configuration Pricing *(Priced Storage Configuration)* – cont.

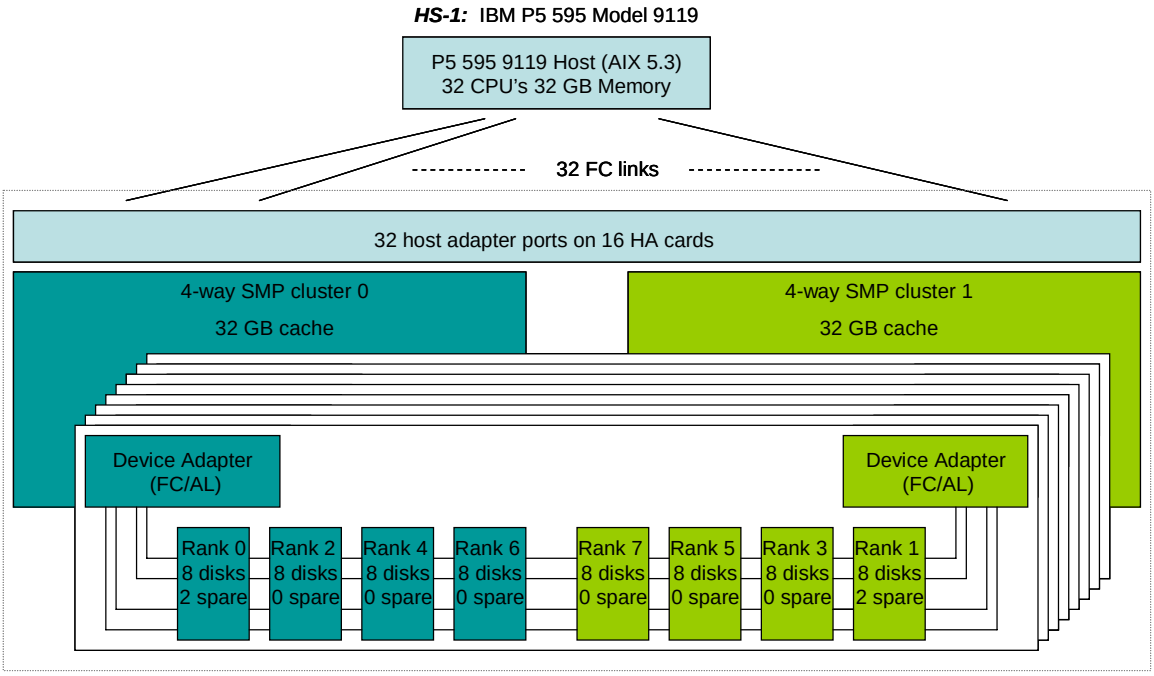
Product	Description	Quantity	Unit Price	Extended Purchase
2107-92E	TotalStorage DS8000 Enclosure Unit	1	75,000.00	75,000.00
1	9xE factory merge	1	N/C	N/C
221	922 - 92E Position 1	1	N/C	N/C
1020	Power Module second pair	1	N/C	N/C
1050	Battery Assembly	3	1,700.00	5,100.00
1090	Line Cord (US/LA/AP/Canada)	1	1,900.00	1,900.00
1210	Disk Enclosure Pair	8	10,000.00	80,000.00
1212	Disk Drive Cable Group 2	1	1,900.00	1,900.00
1300	I/O Enclosure Pair	2	12,500.00	25,000.00
1314	RIO-G Cable Group 4	1	2,300.00	2,300.00
2016	73 GB 15K Drive Set	16	26,000.00	416,000.00
3011	Device Adapter Pair	4	10,000.00	40,000.00
9090	AC Voltage: 200V - 240V	1	N/C	N/C
	Serial: N/A	**Total**		**647,200.00**
2244-OEL	DS8000 Function Authorization	1	N/C	N/C
7001	OEL - 1 TB Unit	3	6,750.00	20,250.00
7003	OEL - 10 TB Unit	1	54,500.00	54,500.00
7004	OEL - 25 TB Unit	1	87,500.00	87,500.00
	Serial: N/A	**Total**		**162,250.00**
==== Non-	S8300 charges ====			
	5716 P5 595 adapter (2 Gbit, PCI-X)	32	2,720.00	87,040.00
	Short wave FC cable (2 Gbit, 25m)	32	210.00	6,720.00
		Total		**93,760.00**
	Total DS8300 Charges			**2,188,950.00**
	Field Delegation Discount of 25%			***547,237.50***
	Total DS8300 Charges after discount			**1,641,712.50**
	Non-DS8300 Charges			**93,760.00**
	Total Charges			**1,735,472.50**

The above pricing provides maintenance/support for 24 hours per day, 7 days per week for three years with four hour acknowledgement and four hour subsequent response (support engineer onsite or customer replaceable part available

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

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

Benchmark Configuration/Tested Storage Configuration Diagram



SC-1: IBM TotalStorage® DS8300

Host System(s) and Tested Storage Configuration Components

Host Systems:	Tested Storage Configuration (TSC):
UID=HS-1	32 – P5 595 adapters (2Gb, PCI-X)
IBM P5 595 Model 9119	***UID=SC-1:*** TotalStorage® DS8300 Each cluster contains: 4 POWER5 CPUs 64 GB processor memory total
32 – 1.9 GHz CPUs – 2 CPUs/POWER5 chip 32 KB L1 cache, 960 KB L2 cache, and 18 MB L3 cache per CPU	
32 GB main memory	
AIX 5.3	
PCI-X/RIO	8 – 4-port 2Gb/s FC-AL device adapter pairs
WG	16 – 2Gb SW FCP/FICON adapters
	16 – Disk enclosure pairs 16 – 73 GB, 15K RPM disk drives per enclosure

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 10.6.5.7

The Executive Summary 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 18 *(Benchmark Configuration/Tested Storage Configuration Diagram).*

Storage Network Configuration

Clause 9.2.4.4.2

If a storage network was configured as a part of the Tested Storage Configuration and the Benchmark Configuration described in Clause 10.6.5.7 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 10.8.

The storage network configured as a part of the Tested Storage Configuration is illustrated on page 18 *(Benchmark Configuration/Tested Storage Configuration Diagram).*

Host System and Tested Storage Configuration Table

Clause 10.6.5.9

The Executive Summary 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 **Error! Bookmark not defined.** *(Host System(s) and Tested Storage Configuration Components).*

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 89 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 90 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 90.

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 84 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)	15,393.163
Addressable Storage Capacity	Gigabytes (GB)	15,393.163
Configured Storage Capacity	Gigabytes (GB)	32,985.349
Physical Storage Capacity	Gigabytes (GB)	37,584.829
Data Protection Overhead (mirror)	Gigabytes (GB)	16,492.673
Required Storage/Spares	Gigabytes (GB)	2,297.600
Global Storage Overhead	Gigabytes (GB)	2,301.880
Total Unused Storage	Gigabytes (GB)	2,199.023

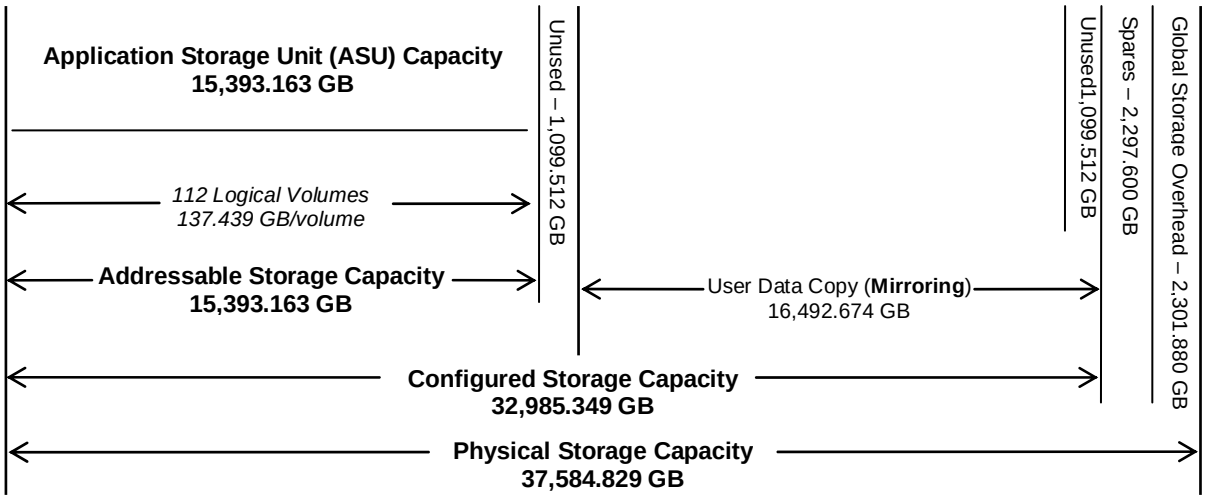
SPC-2 Storage Hierarchy Ratios

	Addressable Storage Capacity	**Configured Storage Capacity**	**Physical Storage Capacity**
Total ASU Capacity	100.00%	46.67%	40.96%
Required for Data Protection (Mirroring)		50.00%	43.88%
Addressable Storage Capacity		46.67%	40.96%
Required Storage/Spares		6.97%	6.11%
Configured Storage Capacity			87.76%
Global Storage Overhead			6.12%
Unused Storage:			
Addressable	0.00%		
Configured		6.67%	
Physical			0.00%

The Physical Storage Capacity consisted of 37,584.829 GB distributed over 512 disk drives each with a formatted capacity of 73.408 GB. There was 0.000 GB (0.00%) of Unused Storage within the Physical Storage Capacity. Global Storage Overhead consisted of 2,301.880 GB (6.12%) of Physical Storage Capacity. There was 2,199.023 GB (6.67%) of Unused Storage within the Configured Storage Capacity. The Total ASU Capacity utilized 100.00% of the Addressable Storage Capacity resulting in 0.000 GB (0.00%) of Unused Storage within the Addressable Storage Capacity.

SPC-2 Storage Capacities and Relationships Illustration

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



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 (15,393.163 GB)			
	Total Capacity *(GB)*	Capacity Used *(GB)*	Capacity Unused *(GB)*
Logical Volumes 1-112	137.439 per LV	137.439 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 90 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 85 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

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 102.

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.

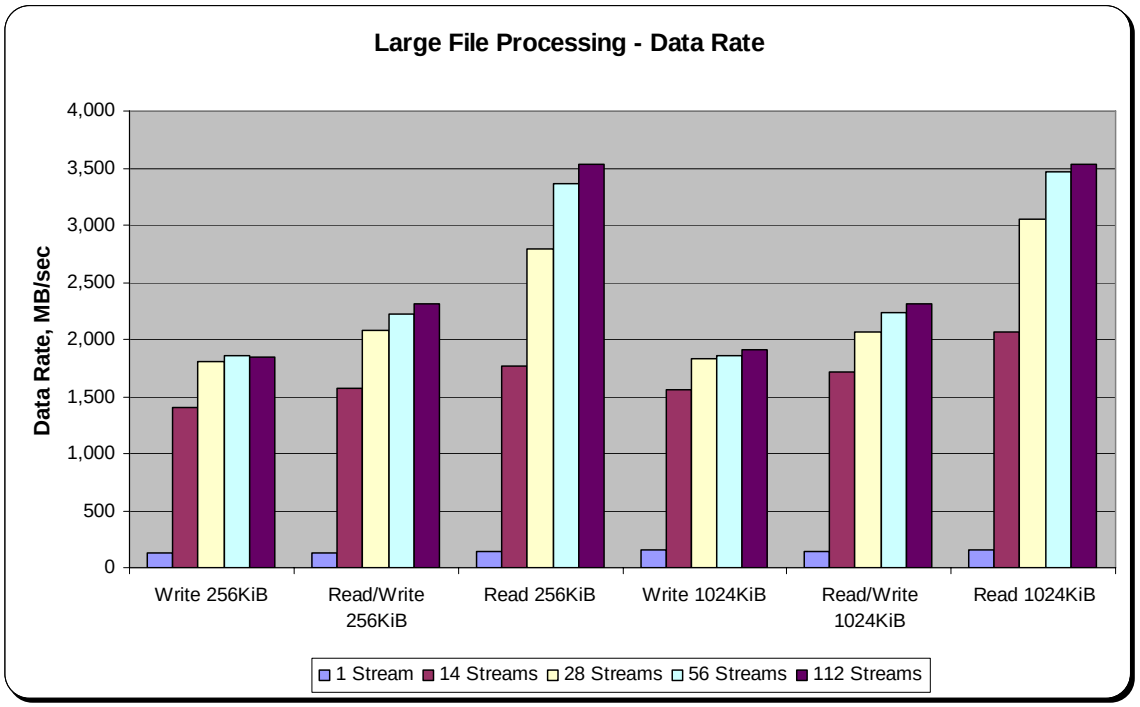
SPC-2 Large File Processing Test Results File

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	14 Streams	28 Streams	56 Streams	112 Streams
Write 256KiB	131.07	1,400.81	1,799.20	1,858.92	1,850.41
Read/Write 256KiB	134.58	1,566.78	2,073.02	2,221.12	2,307.01
Read 256KiB	138.41	1,766.32	2,788.51	3,367.87	3,534.42
Write 1024KiB	159.12	1,552.74	1,831.09	1,861.14	1,905.04
Read/Write 1024KiB	140.98	1,709.03	2,065.87	2,228.09	2,312.43
Read 1024KiB	155.70	2,058.82	3,049.35	3,468.26	3,532.09

SPC-2 Large File Processing Average Data Rates Graph

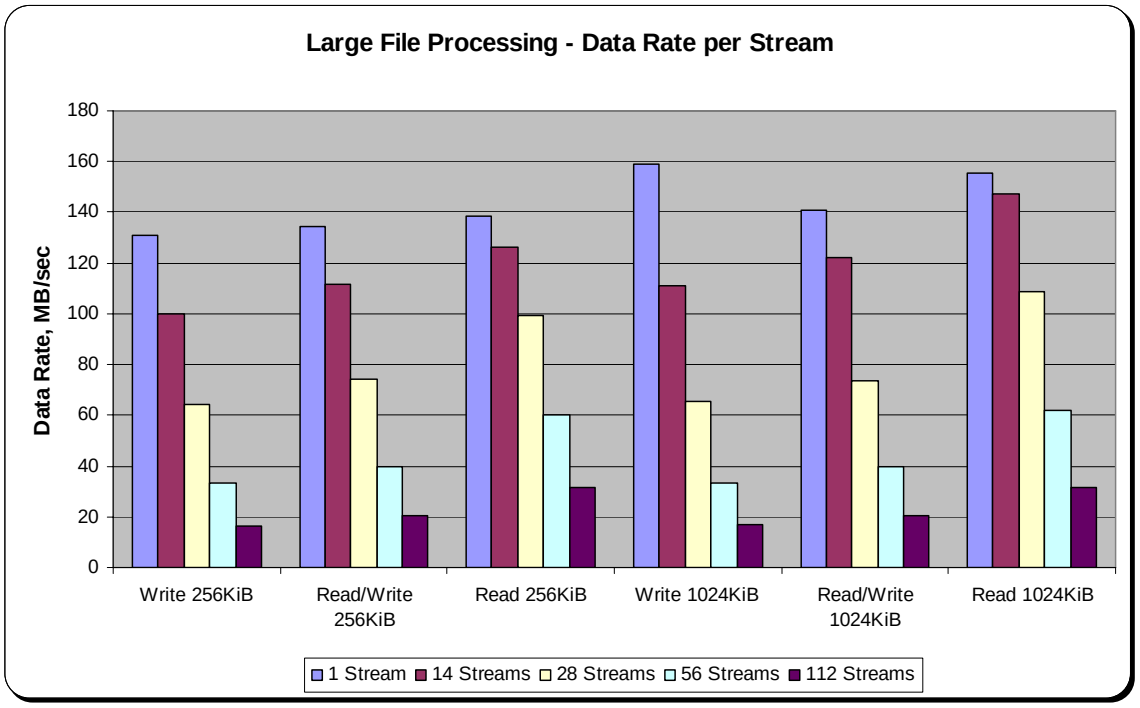


SPC-2 Large File Processing Average Data Rate per Stream

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	14 Streams	28 Streams	56 Streams	112 Streams
Write 256KiB	131.07	100.06	64.26	33.19	16.52
Read/Write 256KiB	134.58	111.91	74.04	39.66	20.60
Read 256KiB	138.41	126.17	99.59	60.14	31.56
Write 1024KiB	159.12	110.91	65.40	33.23	17.01
Read/Write 1024KiB	140.98	122.07	73.78	39.79	20.65
Read 1024KiB	155.70	147.06	108.91	61.93	31.54

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

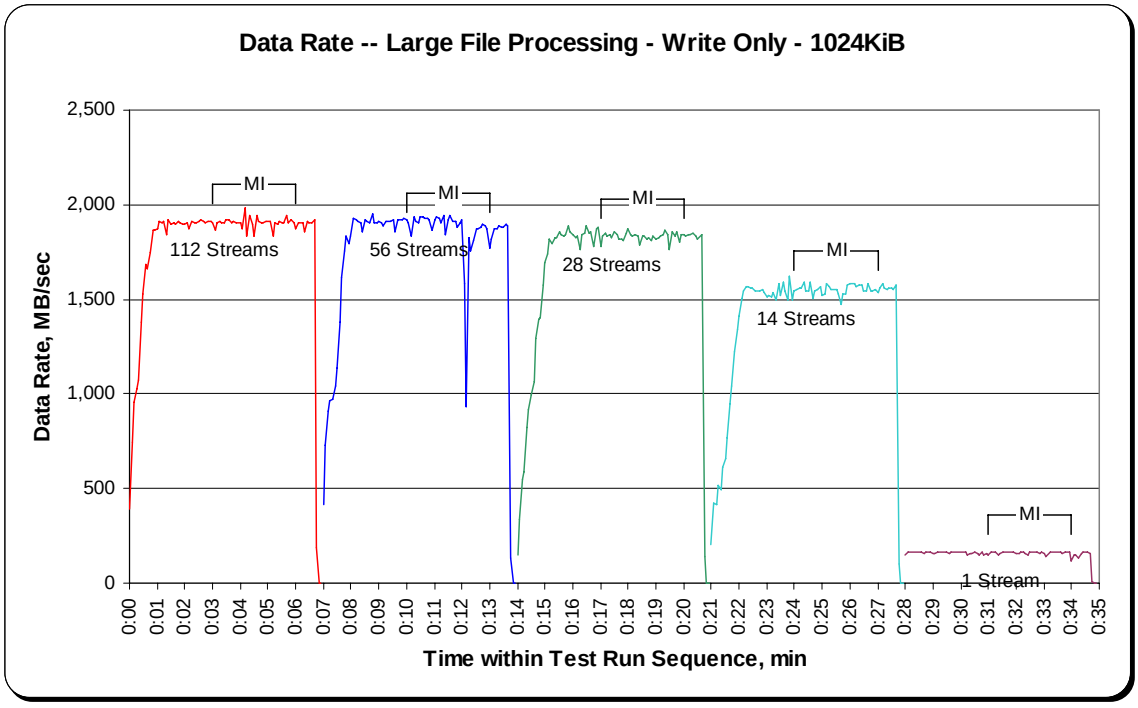
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR1	112 Streams			TR2	56 Streams			TR3	28 Streams			TR4	14 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	394.05	28.15	18.97	0:07:00	412.30	41.23	12.79	0:14:00	152.25	152.25	6.50	0:21:00	200.91	66.97	6.76	0:28:00	151.41	151.41	6.50
0:00:05	742.81	23.96	34.13	0:07:05	729.18	42.89	18.09	0:14:05	337.64	84.41	7.99	0:21:05	422.37	140.79	7.44	0:28:05	161.48	161.48	6.49
0:00:10	953.99	25.11	37.43	0:07:10	906.81	50.38	19.65	0:14:10	551.55	110.31	9.47	0:21:10	418.17	139.39	7.52	0:28:10	161.48	161.48	6.48
0:00:15	1,027.60	21.86	44.39	0:07:15	960.08	50.53	20.68	0:14:15	588.25	73.53	10.09	0:21:15	515.69	128.92	7.61	0:28:15	161.48	161.48	6.49
0:00:20	1,074.16	18.52	51.85	0:07:20	975.18	42.40	22.40	0:14:20	819.99	82.00	11.79	0:21:20	494.09	123.52	8.48	0:28:20	160.85	160.85	6.51
0:00:25	1,379.51	21.90	46.35	0:07:25	1,043.54	38.65	25.41	0:14:25	918.13	76.51	12.17	0:21:25	608.17	121.63	8.07	0:28:25	161.48	161.48	6.49
0:00:30	1,528.61	20.66	47.07	0:07:30	1,134.77	37.83	26.33	0:14:30	997.62	76.74	12.63	0:21:30	654.94	130.99	8.03	0:28:30	161.27	161.27	6.49
0:00:35	1,687.37	21.91	47.21	0:07:35	1,382.65	39.50	24.54	0:14:35	1,069.13	66.82	14.53	0:21:35	771.33	96.42	8.62	0:28:35	161.06	161.06	6.51
0:00:40	1,660.32	20.00	49.28	0:07:40	1,612.71	39.33	24.73	0:14:40	1,292.89	71.83	14.49	0:21:40	949.59	118.70	8.83	0:28:40	160.64	160.64	6.52
0:00:45	1,746.72	20.31	50.91	0:07:45	1,753.85	38.13	26.26	0:14:45	1,397.33	73.54	13.81	0:21:45	1,042.91	104.29	9.27	0:28:45	161.69	161.69	6.48
0:00:50	1,865.21	19.63	52.03	0:07:50	1,836.90	39.08	26.66	0:14:50	1,400.90	73.73	13.89	0:21:50	1,220.33	122.03	8.67	0:28:50	161.27	161.27	6.49
0:00:55	1,862.06	18.81	54.58	0:07:55	1,793.27	38.15	26.80	0:14:55	1,577.06	71.68	13.79	0:21:55	1,340.50	111.71	8.78	0:28:55	161.27	161.27	6.50
0:01:00	1,874.02	18.74	55.83	0:08:00	1,835.85	36.72	27.74	0:15:00	1,696.18	70.67	13.87	0:22:00	1,412.64	117.72	8.90	0:29:00	158.96	158.96	6.59
0:01:05	1,910.72	18.73	56.05	0:08:05	1,928.96	35.72	28.51	0:15:05	1,738.75	69.55	14.63	0:22:05	1,508.06	107.72	9.29	0:29:05	159.59	159.59	6.57
0:01:10	1,902.12	18.29	57.23	0:08:10	1,917.22	35.50	29.63	0:15:10	1,815.92	69.84	15.05	0:22:10	1,542.87	110.21	9.51	0:29:10	161.27	161.27	6.50
0:01:15	1,913.02	17.88	57.85	0:08:15	1,911.55	35.40	29.61	0:15:15	1,796.84	69.11	15.16	0:22:15	1,568.46	112.03	9.35	0:29:15	160.85	160.85	6.51
0:01:20	1,837.94	16.56	60.29	0:08:20	1,905.68	34.65	29.80	0:15:20	1,828.09	65.29	15.52	0:22:20	1,564.69	111.76	9.38	0:29:20	161.27	161.27	6.50
0:01:25	1,923.09	17.17	61.54	0:08:25	1,857.03	33.16	30.48	0:15:25	1,828.72	65.31	15.92	0:22:25	1,556.09	111.15	9.43	0:29:25	161.27	161.27	6.49
0:01:30	1,898.76	16.95	61.96	0:08:30	1,920.36	34.29	30.68	0:15:30	1,858.50	66.37	15.91	0:22:30	1,561.54	111.54	9.39	0:29:30	160.85	160.85	6.52
0:01:35	1,902.12	16.98	61.90	0:08:35	1,911.13	34.13	30.72	0:15:35	1,843.40	65.84	15.92	0:22:35	1,546.65	110.47	9.49	0:29:35	160.64	160.64	6.52
0:01:40	1,896.04	16.93	61.88	0:08:40	1,904.00	34.00	30.83	0:15:40	1,835.01	65.54	15.99	0:22:40	1,545.81	110.42	9.51	0:29:40	161.48	161.48	6.49
0:01:45	1,912.60	17.08	61.68	0:08:45	1,949.30	34.81	30.85	0:15:45	1,842.98	65.82	15.96	0:22:45	1,545.18	110.37	9.50	0:29:45	161.27	161.27	6.49
0:01:50	1,900.65	16.97	61.75	0:08:50	1,905.89	34.03	30.81	0:15:50	1,888.28	67.44	15.85	0:22:50	1,552.94	110.92	9.49	0:29:50	161.06	161.06	6.50
0:01:55	1,897.71	16.94	61.90	0:08:55	1,906.31	34.04	30.80	0:15:55	1,856.82	66.31	15.81	0:22:55	1,537.63	109.83	9.54	0:29:55	161.06	161.06	6.50
0:02:00	1,898.76	16.95	61.84	0:09:00	1,909.04	34.09	30.80	0:16:00	1,843.82	65.85	15.92	0:23:00	1,513.10	108.08	9.70	0:30:00	161.27	161.27	6.50
0:02:05	1,905.26	17.01	61.70	0:09:05	1,907.15	34.06	30.78	0:16:05	1,825.15	65.18	16.04	0:23:05	1,520.64	108.62	9.65	0:30:05	161.27	161.27	6.49
0:02:10	1,870.03	16.70	61.81	0:09:10	1,890.79	33.76	30.86	0:16:10	1,833.33	65.48	16.06	0:23:10	1,512.89	108.06	9.74	0:30:10	160.85	160.85	6.52
0:02:15	1,909.25	17.05	61.79	0:09:15	1,909.67	34.10	30.79	0:16:15	1,766.01	63.07	16.00	0:23:15	1,538.47	109.89	9.56	0:30:15	151.20	151.20	6.92
0:02:20	1,903.17	16.99	61.73	0:09:20	1,914.70	34.19	30.74	0:16:20	1,842.98	65.82	15.98	0:23:20	1,500.09	107.15	9.54	0:30:20	157.50	157.50	6.65
0:02:25	1,900.86	16.97	61.74	0:09:25	1,913.23	34.16	30.36	0:16:25	1,848.64	66.02	15.90	0:23:25	1,584.61	113.19	9.33	0:30:25	158.96	158.96	6.59
0:02:30	1,908.62	17.04	61.54	0:09:30	1,916.80	34.23	31.06	0:16:30	1,892.26	67.58	15.82	0:23:30	1,518.34	108.45	9.55	0:30:30	161.27	161.27	6.49
0:02:35	1,917.01	17.12	61.53	0:09:35	1,857.66	33.17	30.71	0:16:35	1,852.83	66.17	15.85	0:23:35	1,591.11	113.65	9.37	0:30:35	157.92	157.92	6.63
0:02:40	1,911.13	17.06	61.56	0:09:40	1,922.46	34.33	30.74	0:16:40	1,857.03	66.32	15.92	0:23:40	1,543.71	110.27	9.50	0:30:40	146.59	146.59	7.14
0:02:45	1,906.94	17.03	61.62	0:09:45	1,919.73	34.28	30.69	0:16:45	1,782.16	63.65	15.94	0:23:45	1,499.88	107.13	9.58	0:30:45	161.48	161.48	6.49
0:02:50	1,913.65	17.09	61.62	0:09:50	1,920.78	34.30	30.63	0:16:50	1,869.82	66.78	15.95	0:23:50	1,618.58	115.61	9.39	0:30:50	145.33	145.33	7.20
0:02:55	1,911.76	17.07	61.63	0:09:55	1,930.01	34.46	30.71	0:16:55	1,879.89	67.14	15.92	0:23:55	1,499.88	107.13	9.53	0:30:55	158.13	158.13	6.62

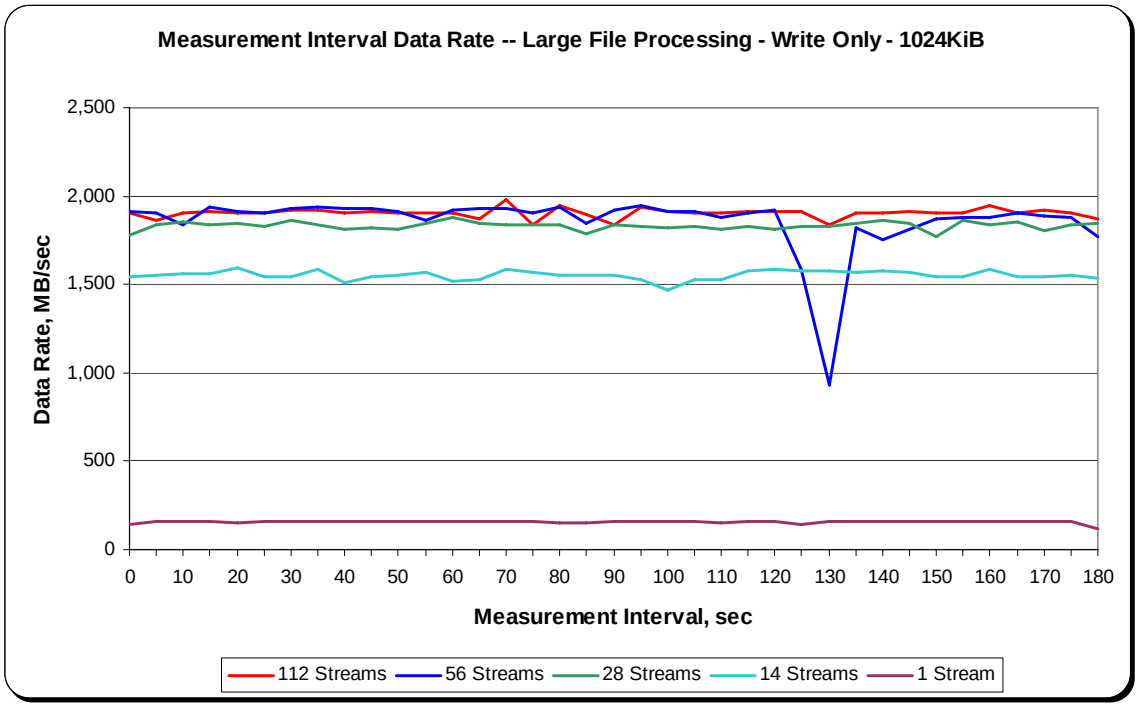
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	112 Streams			TR2	56 Streams			TR3	28 Streams			TR4	14 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	1,905.47	17.01	61.62	0:10:00	1,916.80	34.23	30.75	0:17:00	1,776.92	63.46	15.91	0:24:00	1,541.83	110.13	9.51	0:31:00	146.17	146.17	7.17
0:03:05	1,866.47	16.66	61.62	0:10:05	1,907.78	34.07	30.77	0:17:05	1,833.33	65.48	16.01	0:24:05	1,551.89	110.85	9.45	0:31:05	161.06	161.06	6.50
0:03:10	1,907.15	17.03	61.64	0:10:10	1,833.33	32.74	30.80	0:17:10	1,852.20	66.15	16.10	0:24:10	1,556.30	111.16	9.44	0:31:10	161.69	161.69	6.48
0:03:15	1,914.70	17.10	61.59	0:10:15	1,935.04	34.55	30.51	0:17:15	1,833.75	65.49	16.01	0:24:15	1,558.60	111.33	9.42	0:31:15	161.27	161.27	6.49
0:03:20	1,907.99	17.04	61.53	0:10:20	1,912.81	34.16	30.68	0:17:20	1,841.72	65.78	15.94	0:24:20	1,593.63	113.83	9.20	0:31:20	148.69	148.69	7.05
0:03:25	1,902.75	16.99	61.67	0:10:25	1,907.36	34.06	30.79	0:17:25	1,829.56	65.34	15.84	0:24:25	1,544.97	110.36	9.50	0:31:25	159.80	159.80	6.56
0:03:30	1,922.88	17.17	61.62	0:10:30	1,933.36	34.52	30.74	0:17:30	1,860.17	66.43	15.81	0:24:30	1,542.67	110.19	9.56	0:31:30	161.27	161.27	6.49
0:03:35	1,921.20	17.15	61.57	0:10:35	1,937.56	34.60	30.53	0:17:35	1,839.62	65.70	16.00	0:24:35	1,588.59	113.47	9.38	0:31:35	160.85	160.85	6.52
0:03:40	1,904.84	17.01	61.62	0:10:40	1,930.22	34.47	30.48	0:17:40	1,815.29	64.83	16.17	0:24:40	1,507.64	107.69	9.47	0:31:40	161.06	161.06	6.50
0:03:45	1,908.62	17.04	61.64	0:10:45	1,928.12	34.43	30.44	0:17:45	1,819.07	64.97	16.12	0:24:45	1,546.44	110.46	9.51	0:31:45	160.85	160.85	6.51
0:03:50	1,902.33	16.99	61.71	0:10:50	1,916.59	34.22	30.62	0:17:50	1,812.57	64.73	16.24	0:24:50	1,552.73	110.91	9.45	0:31:50	161.48	161.48	6.49
0:03:55	1,906.94	17.03	61.74	0:10:55	1,865.42	33.31	30.79	0:17:55	1,846.96	65.96	15.95	0:24:55	1,565.31	111.81	9.37	0:31:55	160.85	160.85	6.51
0:04:00	1,905.47	17.01	61.61	0:11:00	1,922.46	34.33	30.68	0:18:00	1,875.06	66.97	15.81	0:25:00	1,522.53	108.75	9.82	0:32:00	159.59	159.59	6.57
0:04:05	1,871.08	16.71	61.67	0:11:05	1,932.74	34.51	30.71	0:18:05	1,843.19	65.83	15.92	0:25:05	1,529.66	109.26	9.59	0:32:05	160.22	160.22	6.53
0:04:10	1,980.13	17.68	61.61	0:11:10	1,928.54	34.44	30.45	0:18:10	1,836.06	65.57	15.99	0:25:10	1,583.35	113.10	9.27	0:32:10	161.06	161.06	6.50
0:04:15	1,833.54	16.37	61.53	0:11:15	1,908.20	34.07	30.82	0:18:15	1,839.41	65.69	15.98	0:25:15	1,571.19	112.23	9.34	0:32:15	161.48	161.48	6.49
0:04:20	1,942.59	17.34	61.87	0:11:20	1,940.29	34.65	30.69	0:18:20	1,835.22	65.54	16.05	0:25:20	1,552.31	110.88	9.45	0:32:20	154.77	154.77	6.76
0:04:25	1,900.02	16.96	61.69	0:11:25	1,842.98	32.91	30.64	0:18:25	1,789.50	63.91	16.00	0:25:25	1,548.96	110.64	9.47	0:32:25	152.67	152.67	6.88
0:04:30	1,837.31	16.40	61.61	0:11:30	1,918.26	34.25	30.61	0:18:30	1,835.64	65.56	15.99	0:25:30	1,547.91	110.56	9.48	0:32:30	161.48	161.48	6.49
0:04:35	1,940.29	17.32	61.72	0:11:35	1,945.74	34.75	30.82	0:18:35	1,829.97	65.36	15.99	0:25:35	1,526.10	109.01	9.66	0:32:35	161.27	161.27	6.49
0:04:40	1,915.33	17.10	61.80	0:11:40	1,911.97	34.14	30.89	0:18:40	1,821.59	65.06	16.28	0:25:40	1,470.52	105.04	9.62	0:32:40	161.06	161.06	6.50
0:04:45	1,902.75	16.99	61.72	0:11:45	1,915.54	34.21	30.84	0:18:45	1,825.99	65.21	16.07	0:25:45	1,526.94	109.07	9.60	0:32:45	161.27	161.27	6.50
0:04:50	1,903.79	17.00	61.67	0:11:50	1,880.31	33.58	30.77	0:18:50	1,811.52	64.70	15.88	0:25:50	1,530.29	109.31	9.58	0:32:50	155.19	155.19	6.74
0:04:55	1,913.02	17.08	61.64	0:11:55	1,908.20	34.07	30.76	0:18:55	1,830.18	65.36	16.13	0:25:55	1,573.28	112.38	9.33	0:32:55	161.48	161.48	6.49
0:05:00	1,910.51	17.06	61.58	0:12:00	1,922.46	34.33	30.55	0:19:00	1,815.92	64.85	16.15	0:26:00	1,583.77	113.13	9.27	0:33:00	160.64	160.64	6.52
0:05:05	1,909.25	17.05	61.48	0:12:05	1,582.30	28.26	30.77	0:19:05	1,828.09	65.29	16.05	0:26:05	1,580.41	112.89	9.28	0:33:05	144.49	144.49	7.25
0:05:10	1,837.73	16.41	61.74	0:12:10	929.88	16.60	73.91	0:19:10	1,830.39	65.37	16.10	0:26:10	1,579.16	112.80	9.29	0:33:10	156.24	156.24	6.71
0:05:15	1,905.47	17.01	61.61	0:12:15	1,823.89	32.57	31.64	0:19:15	1,845.07	65.90	15.93	0:26:15	1,565.94	111.85	9.38	0:33:15	161.48	161.48	6.48
0:05:20	1,900.23	16.97	61.77	0:12:20	1,757.41	31.38	33.87	0:19:20	1,862.27	66.51	15.99	0:26:20	1,577.69	112.69	9.31	0:33:20	161.06	161.06	6.51
0:05:25	1,913.02	17.08	61.68	0:12:25	1,809.21	32.31	32.59	0:19:25	1,843.82	65.85	16.07	0:26:25	1,571.61	112.26	9.34	0:33:25	161.48	161.48	6.49
0:05:30	1,905.89	17.02	61.58	0:12:30	1,872.76	33.44	31.35	0:19:30	1,766.22	63.08	16.01	0:26:30	1,542.25	110.16	9.51	0:33:30	161.27	161.27	6.49
0:05:35	1,904.42	17.00	61.68	0:12:35	1,875.48	33.49	31.29	0:19:35	1,860.59	66.45	16.03	0:26:35	1,541.62	110.12	9.54	0:33:35	161.06	161.06	6.50
0:05:40	1,946.16	17.38	61.67	0:12:40	1,881.15	33.59	31.23	0:19:40	1,833.33	65.48	16.02	0:26:40	1,583.98	113.14	9.38	0:33:40	160.64	160.64	6.52
0:05:45	1,905.26	17.01	61.61	0:12:45	1,900.44	33.94	31.20	0:19:45	1,857.24	66.33	15.97	0:26:45	1,540.15	110.01	9.52	0:33:45	160.85	160.85	6.51
0:05:50	1,919.52	17.14	61.68	0:12:50	1,890.79	33.76	31.08	0:19:50	1,803.76	64.42	15.84	0:26:50	1,546.44	110.46	9.49	0:33:50	161.06	161.06	6.50
0:05:55	1,907.36	17.03	61.64	0:12:55	1,875.48	33.49	31.44	0:19:55	1,837.94	65.64	15.97	0:26:55	1,552.10	110.86	9.45	0:33:55	161.27	161.27	6.50
0:06:00	1,869.40	16.69	61.58	0:13:00	1,769.16	31.59	31.92	0:20:00	1,844.86	65.89	15.96	0:27:00	1,538.47	109.89	9.53	0:34:00	115.97	115.97	9.04
0:06:05	1,908.20	17.04	61.77	0:13:05	1,820.12	32.50	32.24	0:20:05	1,833.75	65.49	16.02	0:27:05	1,563.22	111.66	9.38	0:34:05	150.58	150.58	6.95
0:06:10	1,905.89	17.02	61.74	0:13:10	1,876.32	33.51	31.31	0:20:10	1,842.14	65.79	15.94	0:27:10	1,583.98	113.14	9.26	0:34:10	150.79	150.79	6.95
0:06:15	1,903.58	17.00	61.79	0:13:15	1,870.03	33.39	31.36	0:20:15	1,844.45	65.87	15.90	0:27:15	1,563.01	111.64	9.38	0:34:15	136.94	136.94	7.63
0:06:20	1,861.22	16.62	61.71	0:13:20	1,885.55	33.67	31.35	0:20:20	1,849.69	66.06	15.92	0:27:20	1,550.84	110.77	9.46	0:34:20	160.22	160.22	6.55
0:06:25	1,908.62	17.04	61.55	0:13:25	1,881.15	33.59	31.20	0:20:25	1,832.07	65.43	16.06	0:27:25	1,557.35	111.24	9.42	0:34:25	161.06	161.06	6.50
0:06:30	1,905.05	17.01	61.64	0:13:30	1,877.37	33.52	31.31	0:20:30	1,815.09	64.82	16.16	0:27:30	1,559.86	111.42	9.40	0:34:30	161.06	161.06	6.50
0:06:35	1,903.79	17.00	61.69	0:13:35	1,897.71	33.89	31.14	0:20:35	1,835.22	65.54	16.00	0:27:35	1,549.17	110.65	9.47	0:34:35	160.85	160.85	6.51
0:06:40	1,918.68	17.13	61.66	0:13:40	1,889.95	33.75	31.38	0:20:40	1,840.67	65.74	15.98	0:27:40	1,577.69	112.69	9.30	0:34:40	154.77	154.77	6.77
0:06:45	188.32	0.00	59.28	0:13:45	133.59	0.00	29.41	0:20:45	140.30	0.00	15.55	0:27:45	101.92	0.00	9.27	0:34:45	7.76	0.00	6.51
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

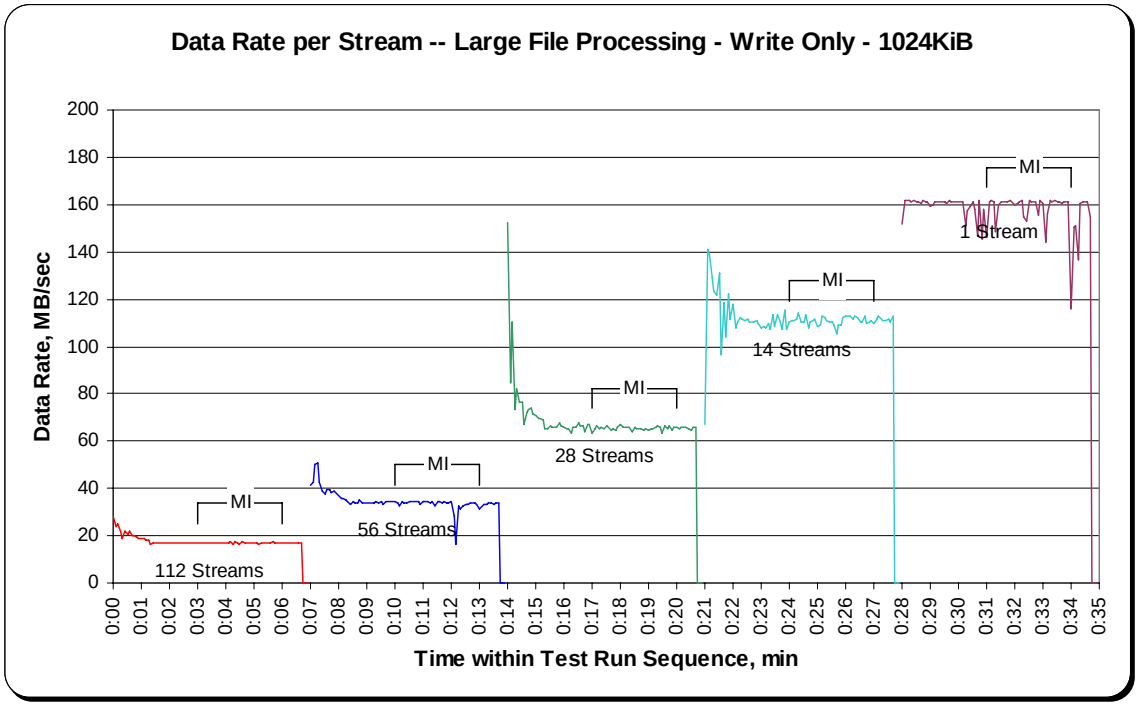
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



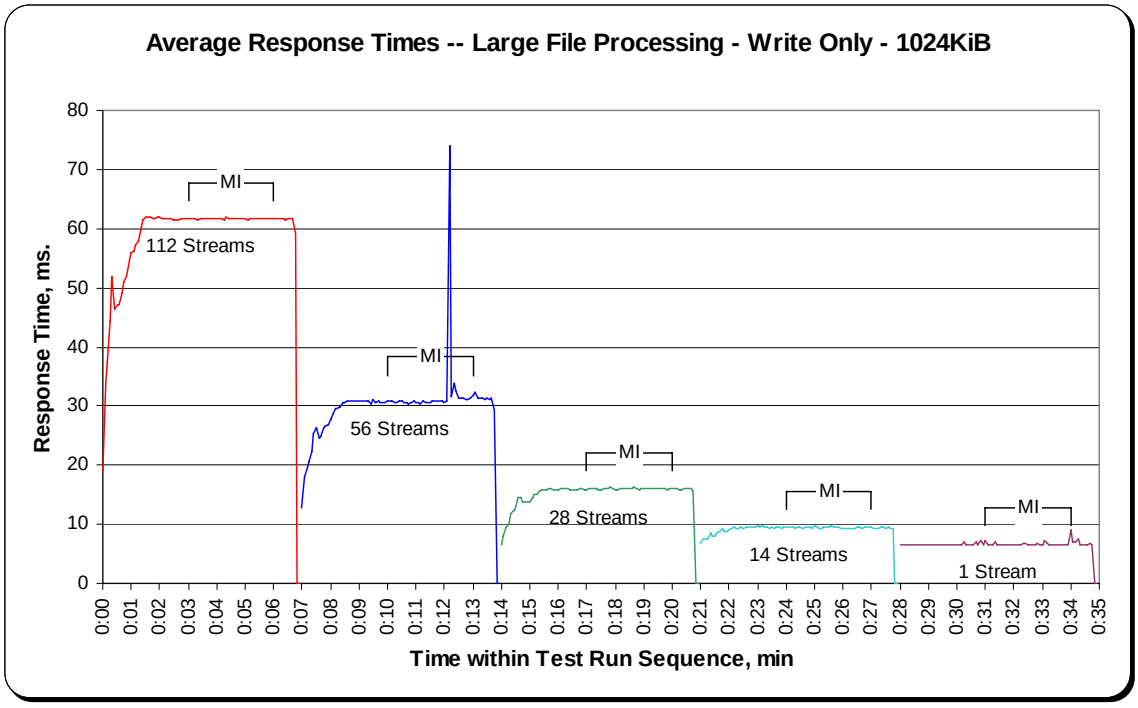
SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



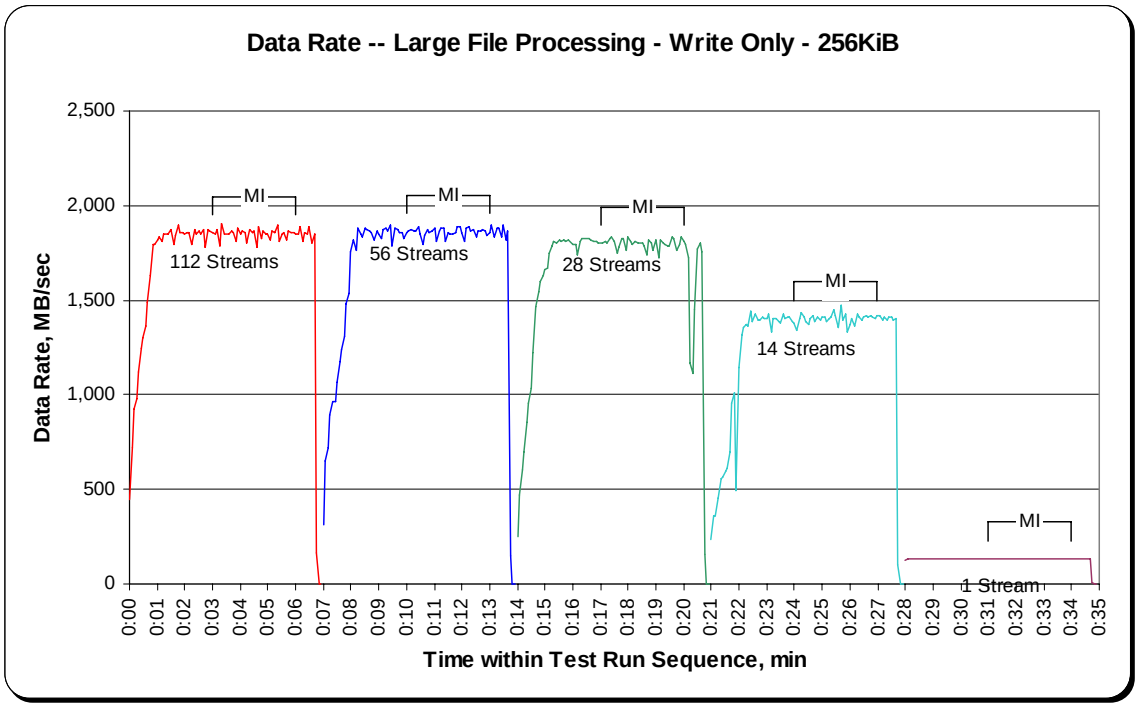
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR6	112 Streams			TR7	56 Streams			TR8	28 Streams			TR9	14 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	444.18	26.13	5.63	0:07:00	314.21	39.28	3.10	0:14:00	252.23	84.08	2.28	0:21:00	235.04	78.35	2.14	0:28:00	121.74	121.74	2.00
0:00:05	719.74	24.82	8.69	0:07:05	653.05	50.23	4.20	0:14:05	473.12	78.85	2.57	0:21:05	357.72	119.24	2.19	0:28:05	131.28	131.28	1.99
0:00:10	924.79	25.69	9.33	0:07:10	720.63	48.04	5.06	0:14:10	605.71	86.53	2.92	0:21:10	358.35	119.45	2.19	0:28:10	131.12	131.12	1.99
0:00:15	979.21	20.40	10.92	0:07:15	891.39	44.57	5.01	0:14:15	700.24	70.02	2.98	0:21:15	457.49	91.50	2.27	0:28:15	131.39	131.39	1.99
0:00:20	1,120.19	18.36	13.06	0:07:20	963.90	45.90	5.59	0:14:20	853.12	71.09	3.27	0:21:20	555.06	111.01	2.35	0:28:20	130.97	130.97	1.99
0:00:25	1,243.72	18.84	13.34	0:07:25	967.15	40.30	5.95	0:14:25	952.26	73.25	3.31	0:21:25	563.50	112.70	2.32	0:28:25	130.97	130.97	1.99
0:00:30	1,302.23	18.60	13.77	0:07:30	1,063.05	36.66	6.61	0:14:30	1,034.42	64.65	3.66	0:21:30	597.74	99.62	2.35	0:28:30	131.02	131.02	1.99
0:00:35	1,365.09	18.20	13.97	0:07:35	1,178.76	35.72	6.76	0:14:35	1,219.18	67.73	3.75	0:21:35	611.37	101.90	2.57	0:28:35	131.23	131.23	1.99
0:00:40	1,487.82	18.37	13.65	0:07:40	1,241.36	36.51	6.98	0:14:40	1,466.64	69.84	3.61	0:21:40	695.94	86.99	2.38	0:28:40	130.70	130.70	2.00
0:00:45	1,628.70	18.51	13.41	0:07:45	1,307.05	36.31	6.90	0:14:45	1,544.66	73.56	3.59	0:21:45	958.35	106.48	2.44	0:28:45	131.02	131.02	1.99
0:00:50	1,793.38	18.88	13.50	0:07:50	1,479.54	36.99	6.80	0:14:50	1,596.77	72.58	3.58	0:21:50	1,014.44	101.44	2.48	0:28:50	130.70	130.70	2.00
0:00:55	1,794.01	18.49	13.92	0:07:55	1,536.22	36.58	6.66	0:14:55	1,626.18	73.92	3.54	0:21:55	497.08	45.19	5.72	0:28:55	131.49	131.49	1.99
0:01:00	1,820.85	18.77	14.18	0:08:00	1,752.17	38.94	6.66	0:15:00	1,663.51	72.33	3.61	0:22:00	1,144.73	88.06	2.90	0:29:00	131.33	131.33	1.99
0:01:05	1,837.00	18.19	14.34	0:08:05	1,815.35	37.05	6.96	0:15:05	1,669.07	72.57	3.61	0:22:05	1,314.34	101.10	2.62	0:29:05	131.07	131.07	1.99
0:01:10	1,814.19	17.44	14.45	0:08:10	1,760.61	35.21	7.19	0:15:10	1,743.99	69.76	3.70	0:22:10	1,353.03	104.08	2.54	0:29:10	130.70	130.70	2.00
0:01:15	1,851.16	17.46	14.89	0:08:15	1,883.09	36.92	7.27	0:15:15	1,782.95	63.68	3.89	0:22:15	1,371.85	97.99	2.60	0:29:15	130.65	130.65	2.00
0:01:20	1,849.90	16.97	15.32	0:08:20	1,847.38	35.53	7.34	0:15:20	1,811.73	64.70	4.06	0:22:20	1,362.21	97.30	2.61	0:29:20	130.50	130.50	2.00
0:01:25	1,853.10	16.55	15.61	0:08:25	1,830.60	32.69	7.62	0:15:25	1,805.39	64.48	4.06	0:22:25	1,444.68	103.19	2.57	0:29:25	130.50	130.50	2.00
0:01:30	1,875.80	16.75	15.88	0:08:30	1,877.58	33.53	7.85	0:15:30	1,814.88	64.82	4.06	0:22:30	1,386.01	99.00	2.59	0:29:30	130.81	130.81	2.00
0:01:35	1,798.31	16.06	15.87	0:08:35	1,875.90	33.50	7.87	0:15:35	1,808.48	64.59	4.05	0:22:35	1,428.68	102.05	2.62	0:29:35	130.81	130.81	2.00
0:01:40	1,845.23	16.48	15.83	0:08:40	1,863.69	33.28	7.87	0:15:40	1,814.98	64.82	4.04	0:22:40	1,391.98	99.43	2.65	0:29:40	131.18	131.18	1.99
0:01:45	1,898.76	16.95	15.83	0:08:45	1,857.03	33.16	7.90	0:15:45	1,814.25	64.79	4.04	0:22:45	1,393.24	99.52	2.59	0:29:45	130.60	130.60	2.00
0:01:50	1,855.09	16.56	15.85	0:08:50	1,818.76	32.48	7.93	0:15:50	1,820.28	65.01	4.05	0:22:50	1,411.12	100.79	2.60	0:29:50	130.65	130.65	2.00
0:01:55	1,856.40	16.57	15.84	0:08:55	1,867.88	33.36	7.93	0:15:55	1,806.59	64.52	4.05	0:22:55	1,404.31	100.31	2.61	0:29:55	130.55	130.55	2.00
0:02:00	1,851.84	16.53	15.85	0:09:00	1,850.32	33.04	7.94	0:16:00	1,793.27	64.05	4.09	0:23:00	1,404.15	100.30	2.61	0:30:00	131.02	131.02	2.00
0:02:05	1,854.67	16.56	15.84	0:09:05	1,822.69	32.55	7.90	0:16:05	1,798.41	64.23	4.10	0:23:05	1,423.70	101.69	2.60	0:30:05	130.76	130.76	1.99
0:02:10	1,853.78	16.55	15.84	0:09:10	1,870.50	33.40	7.89	0:16:10	1,742.05	62.22	4.06	0:23:10	1,335.62	95.40	2.64	0:30:10	131.18	131.18	1.99
0:02:15	1,793.06	16.01	15.84	0:09:15	1,879.78	33.57	7.87	0:16:15	1,806.43	64.52	4.06	0:23:15	1,403.36	100.24	2.65	0:30:15	131.07	131.07	1.99
0:02:20	1,872.34	16.72	15.86	0:09:20	1,863.74	33.28	7.87	0:16:20	1,822.84	65.10	4.02	0:23:20	1,402.84	100.20	2.63	0:30:20	130.97	130.97	1.99
0:02:25	1,852.47	16.54	15.85	0:09:25	1,897.82	33.89	7.91	0:16:25	1,825.52	65.20	4.01	0:23:25	1,385.01	98.93	2.62	0:30:25	130.76	130.76	2.00
0:02:30	1,868.93	16.69	15.85	0:09:30	1,786.14	31.90	7.90	0:16:30	1,827.98	65.29	4.01	0:23:30	1,376.47	98.32	2.66	0:30:30	131.07	131.07	1.99
0:02:35	1,849.48	16.51	15.87	0:09:35	1,877.48	33.53	7.91	0:16:35	1,828.77	65.31	4.02	0:23:35	1,423.23	101.66	2.59	0:30:35	131.07	131.07	1.99
0:02:40	1,873.54	16.73	15.85	0:09:40	1,869.72	33.39	7.90	0:16:40	1,820.07	65.00	4.04	0:23:40	1,403.52	100.25	2.61	0:30:40	130.39	130.39	2.00
0:02:45	1,781.43	15.91	15.88	0:09:45	1,860.44	33.22	7.89	0:16:45	1,806.59	64.52	4.05	0:23:45	1,411.44	100.82	2.59	0:30:45	131.39	131.39	1.99
0:02:50	1,870.19	16.70	15.84	0:09:50	1,859.18	33.20	7.89	0:16:50	1,813.77	64.78	4.05	0:23:50	1,408.19	100.58	2.60	0:30:50	130.50	130.50	2.00
0:02:55	1,861.48	16.62	15.81	0:09:55	1,827.51	32.63	7.89	0:16:55	1,806.22	64.51	4.06	0:23:55	1,389.84	99.27	2.63	0:30:55	130.76	130.76	2.00

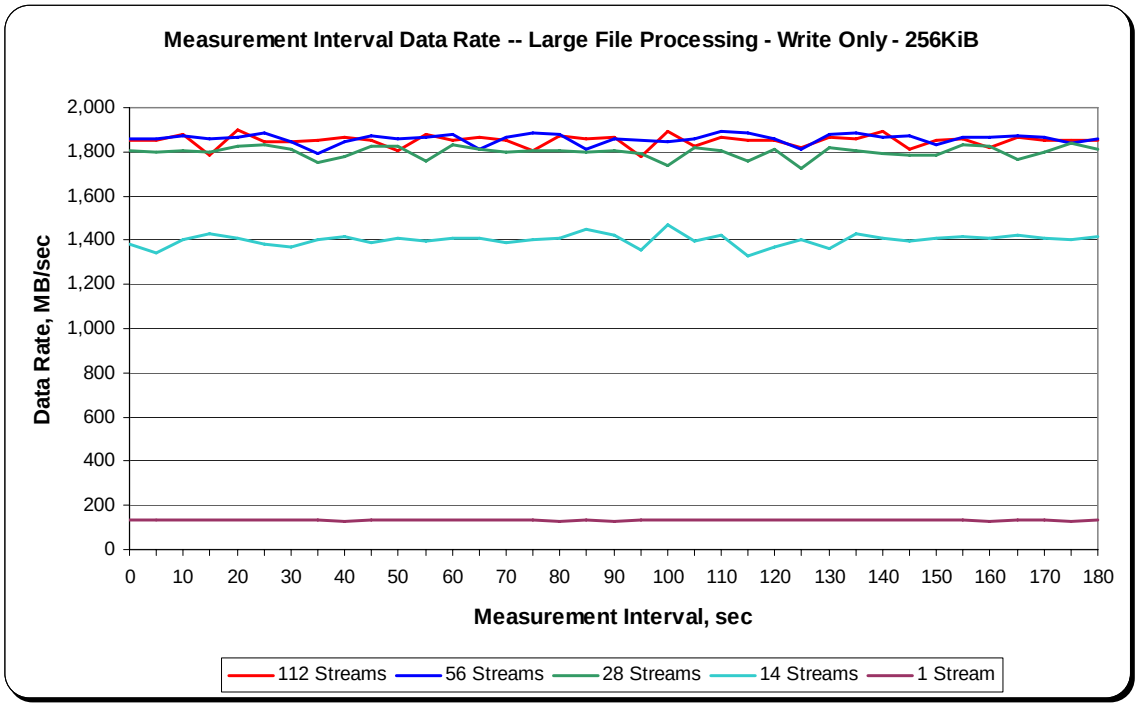
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	112 Streams			TR7	56 Streams			TR8	28 Streams			TR9	14 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	1,854.30	16.56	15.91	0:10:00	1,861.07	33.23	7.85	0:17:00	1,802.61	64.38	4.06	0:24:00	1,382.02	98.72	2.68	0:31:00	131.12	131.12	1.99
0:03:05	1,852.47	16.54	15.84	0:10:05	1,862.11	33.25	7.88	0:17:05	1,801.82	64.35	4.07	0:24:05	1,341.97	95.85	2.65	0:31:05	131.02	131.02	1.99
0:03:10	1,876.43	16.75	15.89	0:10:10	1,875.80	33.50	7.88	0:17:10	1,807.43	64.55	4.06	0:24:10	1,404.46	100.32	2.64	0:31:10	131.23	131.23	1.99
0:03:15	1,783.63	15.93	15.86	0:10:15	1,862.27	33.25	7.88	0:17:15	1,800.04	64.29	4.07	0:24:15	1,430.47	102.18	2.59	0:31:15	131.33	131.33	1.99
0:03:20	1,902.17	16.98	15.86	0:10:20	1,863.84	33.28	7.87	0:17:20	1,824.10	65.15	4.02	0:24:20	1,407.14	100.51	2.60	0:31:20	131.18	131.18	1.99
0:03:25	1,848.53	16.50	15.84	0:10:25	1,885.23	33.66	7.90	0:17:25	1,833.38	65.48	4.04	0:24:25	1,383.44	98.82	2.61	0:31:25	131.18	131.18	1.99
0:03:30	1,848.74	16.51	15.90	0:10:30	1,847.17	32.99	7.90	0:17:30	1,812.25	64.72	4.05	0:24:30	1,370.23	97.87	2.62	0:31:30	131.33	131.33	1.99
0:03:35	1,850.53	16.52	15.84	0:10:35	1,791.70	31.99	7.91	0:17:35	1,748.82	62.46	4.09	0:24:35	1,400.69	100.05	2.62	0:31:35	131.39	131.39	1.99
0:03:40	1,863.11	16.63	15.88	0:10:40	1,844.39	32.94	7.96	0:17:40	1,778.80	63.53	4.13	0:24:40	1,415.63	101.12	2.64	0:31:40	129.97	129.97	2.01
0:03:45	1,853.78	16.55	15.85	0:10:45	1,869.77	33.39	7.91	0:17:45	1,827.35	65.26	4.10	0:24:45	1,390.36	99.31	2.60	0:31:45	131.02	131.02	1.99
0:03:50	1,808.64	16.15	15.84	0:10:50	1,857.92	33.18	7.90	0:17:50	1,823.47	65.12	4.03	0:24:50	1,408.45	100.60	2.60	0:31:50	131.23	131.23	1.99
0:03:55	1,877.74	16.77	15.84	0:10:55	1,867.15	33.34	7.91	0:17:55	1,759.41	62.84	4.02	0:24:55	1,393.30	99.52	2.63	0:31:55	131.07	131.07	1.99
0:04:00	1,849.37	16.51	15.85	0:11:00	1,877.63	33.53	7.91	0:18:00	1,832.33	65.44	4.03	0:25:00	1,407.92	100.57	2.60	0:32:00	130.97	130.97	1.99
0:04:05	1,864.21	16.64	15.92	0:11:05	1,811.00	32.34	7.89	0:18:05	1,809.95	64.64	4.05	0:25:05	1,410.02	100.72	2.61	0:32:05	131.02	131.02	1.99
0:04:10	1,854.09	16.55	15.86	0:11:10	1,863.42	33.28	7.88	0:18:10	1,797.21	64.19	4.09	0:25:10	1,390.31	99.31	2.61	0:32:10	131.23	131.23	1.99
0:04:15	1,802.76	16.10	15.88	0:11:15	1,883.50	33.63	7.89	0:18:15	1,807.12	64.54	4.10	0:25:15	1,400.22	100.02	2.61	0:32:15	131.18	131.18	1.99
0:04:20	1,869.45	16.69	15.86	0:11:20	1,878.79	33.55	7.89	0:18:20	1,804.34	64.44	4.08	0:25:20	1,406.93	100.49	2.60	0:32:20	130.55	130.55	2.00
0:04:25	1,860.65	16.61	15.83	0:11:25	1,810.89	32.34	7.89	0:18:25	1,798.88	64.25	4.07	0:25:25	1,447.51	103.39	2.58	0:32:25	131.02	131.02	1.99
0:04:30	1,868.25	16.68	15.86	0:11:30	1,856.19	33.15	7.92	0:18:30	1,803.76	64.42	4.08	0:25:30	1,419.82	101.42	2.59	0:32:30	130.81	130.81	2.00
0:04:35	1,781.53	15.91	15.83	0:11:35	1,849.53	33.03	7.93	0:18:35	1,789.92	63.93	4.09	0:25:35	1,355.44	96.82	2.61	0:32:35	131.02	131.02	1.99
0:04:40	1,889.53	16.87	15.86	0:11:40	1,847.75	33.00	7.94	0:18:40	1,739.22	62.12	4.13	0:25:40	1,469.74	104.98	2.57	0:32:40	131.54	131.54	1.99
0:04:45	1,828.51	16.33	15.85	0:11:45	1,856.24	33.15	7.90	0:18:45	1,816.92	64.89	4.09	0:25:45	1,394.82	99.63	2.57	0:32:45	130.97	130.97	1.99
0:04:50	1,868.88	16.69	15.83	0:11:50	1,892.31	33.79	7.87	0:18:50	1,805.33	64.48	4.07	0:25:50	1,425.07	101.79	2.60	0:32:50	130.91	130.91	1.99
0:04:55	1,852.68	16.54	15.84	0:11:55	1,888.17	33.72	7.89	0:18:55	1,760.09	62.86	4.10	0:25:55	1,331.17	95.08	2.68	0:32:55	131.02	131.02	1.99
0:05:00	1,849.22	16.51	15.85	0:12:00	1,857.87	33.18	7.89	0:19:00	1,815.35	64.83	4.11	0:26:00	1,368.29	97.73	2.67	0:33:00	131.28	131.28	1.99
0:05:05	1,818.70	16.24	15.89	0:12:05	1,812.73	32.37	7.91	0:19:05	1,722.55	61.52	4.09	0:26:05	1,401.21	100.09	2.64	0:33:05	131.12	131.12	1.99
0:05:10	1,865.84	16.66	15.82	0:12:10	1,877.79	33.53	7.85	0:19:10	1,818.39	64.94	4.09	0:26:10	1,362.15	97.30	2.70	0:33:10	131.33	131.33	1.99
0:05:15	1,860.17	16.61	15.84	0:12:15	1,885.86	33.68	7.89	0:19:15	1,805.07	64.47	4.07	0:26:15	1,430.05	102.15	2.60	0:33:15	131.12	131.12	1.99
0:05:20	1,895.62	16.93	15.88	0:12:20	1,865.57	33.31	7.86	0:19:20	1,791.70	63.99	4.09	0:26:20	1,412.64	100.90	2.57	0:33:20	130.91	130.91	2.00
0:05:25	1,810.47	16.16	15.85	0:12:25	1,871.97	33.43	7.86	0:19:25	1,783.94	63.71	4.11	0:26:25	1,393.24	99.52	2.58	0:33:25	130.91	130.91	1.99
0:05:30	1,851.99	16.54	15.88	0:12:30	1,832.07	32.72	7.86	0:19:30	1,786.46	63.80	4.10	0:26:30	1,411.91	100.85	2.59	0:33:30	131.44	131.44	1.99
0:05:35	1,859.18	16.60	15.83	0:12:35	1,868.72	33.37	7.88	0:19:35	1,833.59	65.49	4.05	0:26:35	1,419.25	101.37	2.58	0:33:35	131.12	131.12	1.99
0:05:40	1,819.23	16.24	15.84	0:12:40	1,866.62	33.33	7.87	0:19:40	1,828.61	65.31	4.03	0:26:40	1,411.38	100.81	2.59	0:33:40	130.81	130.81	2.00
0:05:45	1,865.47	16.66	15.85	0:12:45	1,871.50	33.42	7.87	0:19:45	1,764.96	63.03	4.07	0:26:45	1,421.82	101.56	2.57	0:33:45	131.39	131.39	1.99
0:05:50	1,854.67	16.56	15.79	0:12:50	1,866.31	33.33	7.86	0:19:50	1,798.20	64.22	4.08	0:26:50	1,409.97	100.71	2.60	0:33:50	131.23	131.23	1.99
0:05:55	1,854.35	16.56	15.88	0:12:55	1,840.20	32.86	7.87	0:19:55	1,837.73	65.63	4.04	0:26:55	1,400.22	100.02	2.61	0:33:55	130.70	130.70	2.00
0:06:00	1,850.84	16.53	15.85	0:13:00	1,858.02	33.18	7.90	0:20:00	1,810.58	64.66	4.05	0:27:00	1,417.52	101.25	2.58	0:34:00	131.07	131.07	1.99
0:06:05	1,847.07	16.49	15.88	0:13:05	1,893.36	33.81	7.85	0:20:05	1,797.63	64.20	4.08	0:27:05	1,416.10	101.15	2.58	0:34:05	130.86	130.86	2.00
0:06:10	1,890.11	16.88	15.88	0:13:10	1,832.86	32.73	7.86	0:20:10	1,723.28	61.55	4.10	0:27:10	1,393.87	99.56	2.63	0:34:10	130.70	130.70	2.00
0:06:15	1,807.95	16.14	15.85	0:13:15	1,879.94	33.57	7.85	0:20:15	1,170.53	41.80	4.09	0:27:15	1,410.28	100.73	2.59	0:34:15	130.81	130.81	2.00
0:06:20	1,854.62	16.56	15.85	0:13:20	1,883.09	33.63	7.86	0:20:20	1,109.55	39.63	9.09	0:27:20	1,395.76	99.70	2.62	0:34:20	131.18	131.18	1.99
0:06:25	1,850.84	16.53	15.85	0:13:25	1,831.39	32.70	7.86	0:20:25	1,452.23	51.87	5.05	0:27:25	1,407.66	100.55	2.60	0:34:25	131.12	131.12	1.99
0:06:30	1,889.06	16.87	15.89	0:13:30	1,899.71	33.92	7.86	0:20:30	1,771.78	63.28	4.14	0:27:30	1,412.43	100.89	2.60	0:34:30	130.70	130.70	2.00
0:06:35	1,799.46	16.07	15.86	0:13:35	1,818.07	32.47	7.89	0:20:35	1,803.13	64.40	4.07	0:27:35	1,395.81	99.70	2.62	0:34:35	131.28	131.28	1.99
0:06:40	1,852.99	16.54	15.81	0:13:40	1,861.38	33.24	7.88	0:20:40	1,757.57	62.77	4.06	0:27:40	1,402.78	100.20	2.61	0:34:40	131.75	131.75	1.98
0:06:45	163.74	0.00	15.20	0:13:45	152.31	0.00	7.59	0:20:45	155.03	0.00	3.90	0:27:45	102.66	0.00	2.55	0:34:45	6.29	0.00	1.99
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

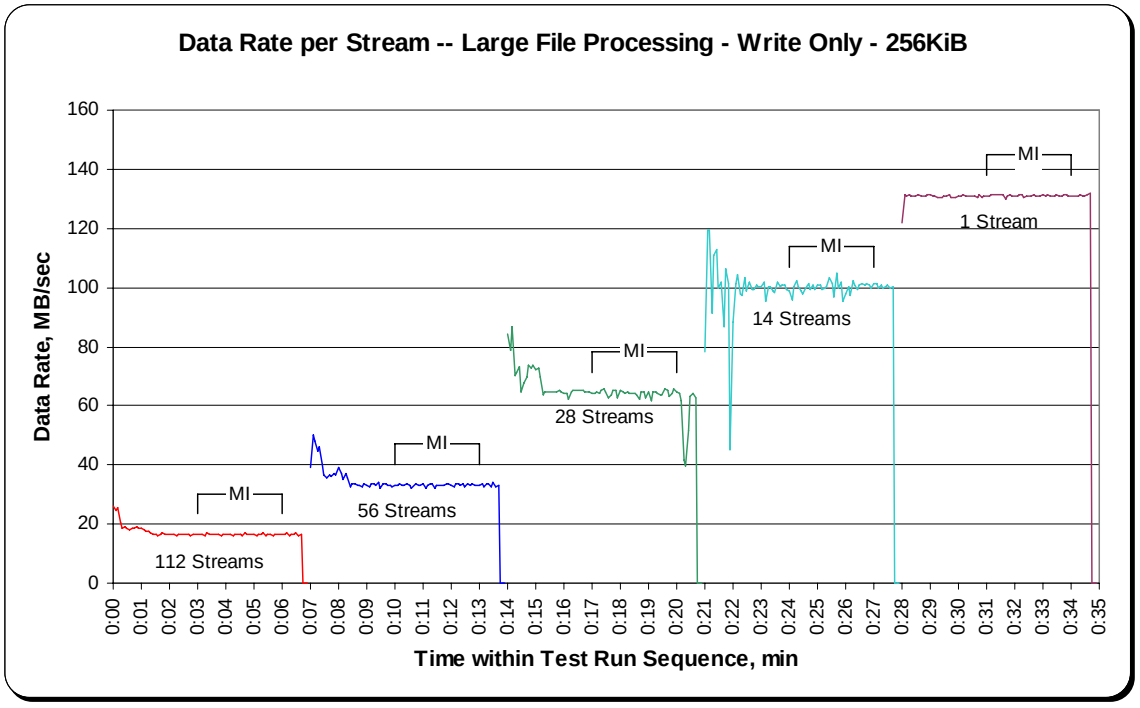
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



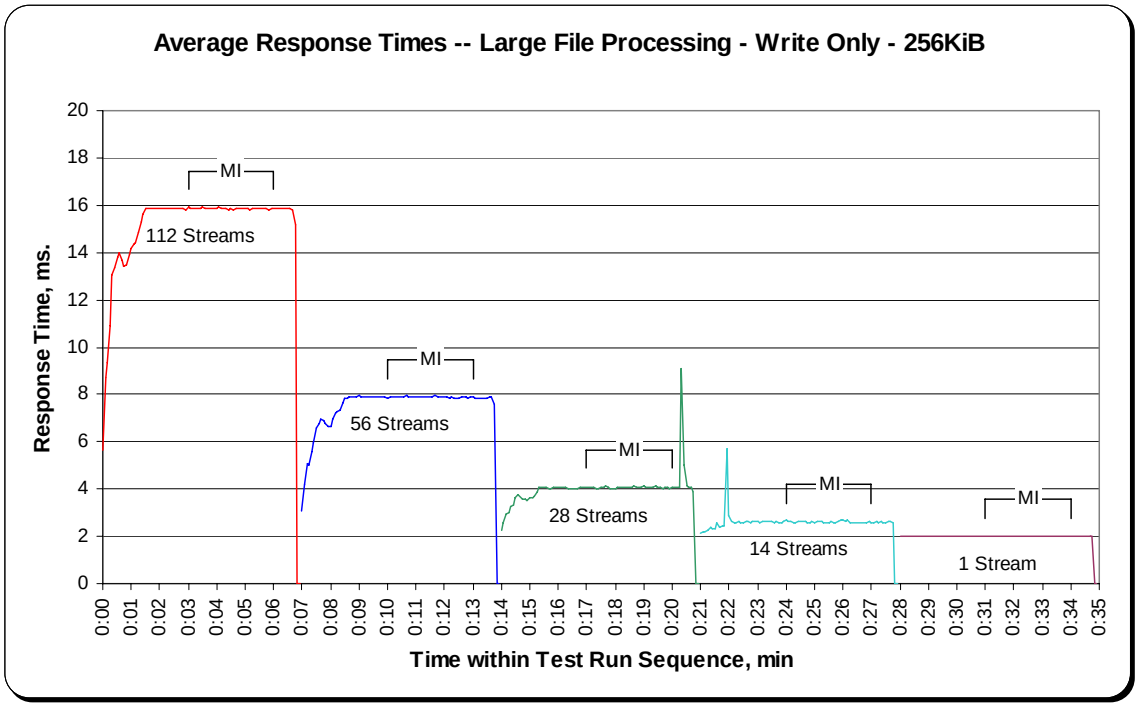
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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.

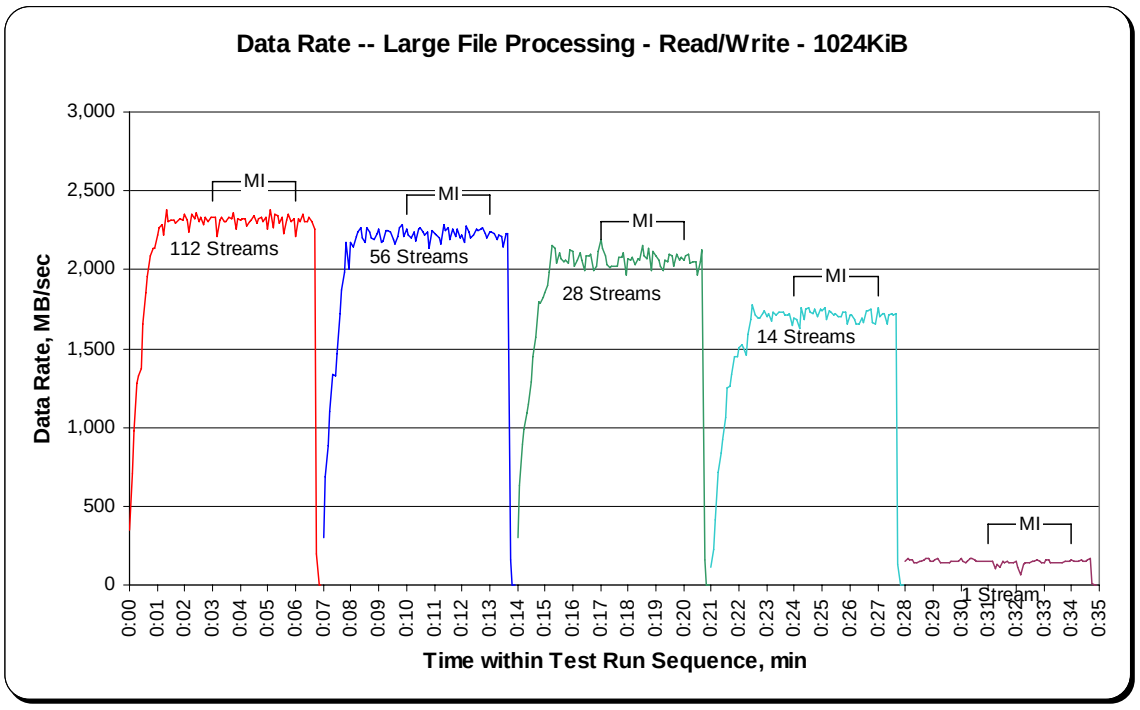
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR11	112 Streams			TR12	56 Streams			TR13	28 Streams			TR14	14 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	346.66	26.67	18.09	0:07:00	305.14	38.14	11.85	0:14:00	300.10	100.03	7.58	0:21:00	114.09	114.09	8.45	0:28:00	151.83	151.83	6.41
0:00:05	706.32	25.23	28.79	0:07:05	687.03	62.46	14.59	0:14:05	629.98	78.75	9.05	0:21:05	224.40	112.20	8.95	0:28:05	166.30	166.30	6.29
0:00:10	976.01	22.70	36.01	0:07:10	879.96	46.31	17.29	0:14:10	895.06	99.45	10.18	0:21:10	417.12	83.42	8.29	0:28:10	164.00	164.00	6.39
0:00:15	1,280.10	24.62	39.49	0:07:15	1,103.52	47.98	19.35	0:14:15	991.32	90.12	10.59	0:21:15	713.66	118.94	7.91	0:28:15	158.75	158.75	6.60
0:00:20	1,328.55	22.14	43.78	0:07:20	1,330.85	45.89	21.22	0:14:20	1,086.53	98.78	10.64	0:21:20	835.30	104.41	8.77	0:28:20	141.56	141.56	7.40
0:00:25	1,370.91	20.46	47.54	0:07:25	1,325.61	42.76	23.63	0:14:25	1,147.35	76.49	11.60	0:21:25	922.54	115.32	9.08	0:28:25	144.28	144.28	7.26
0:00:30	1,656.12	21.51	45.82	0:07:30	1,463.18	39.55	24.31	0:14:30	1,290.80	75.93	12.87	0:21:30	1,061.37	106.14	8.75	0:28:30	147.64	147.64	7.10
0:00:35	1,852.20	22.05	46.08	0:07:35	1,718.41	44.06	23.37	0:14:35	1,450.39	80.58	12.60	0:21:35	1,254.10	125.41	8.35	0:28:35	148.90	148.90	7.03
0:00:40	1,959.37	22.02	45.22	0:07:40	1,869.19	42.48	23.29	0:14:40	1,566.36	82.44	12.33	0:21:40	1,263.11	114.83	8.50	0:28:40	162.32	162.32	6.45
0:00:45	2,091.49	22.73	45.98	0:07:45	1,985.37	44.12	23.23	0:14:45	1,798.31	85.63	12.40	0:21:45	1,337.77	121.62	8.62	0:28:45	169.03	169.03	6.20
0:00:50	2,131.76	22.21	47.16	0:07:50	2,174.12	45.29	23.46	0:14:50	1,786.56	85.07	12.32	0:21:50	1,451.44	120.95	8.65	0:28:50	169.24	169.24	6.20
0:00:55	2,138.68	21.82	47.91	0:07:55	2,007.18	40.14	24.60	0:14:55	1,827.25	83.06	12.27	0:21:55	1,449.13	120.76	8.68	0:28:55	145.96	145.96	7.17
0:01:00	2,218.79	21.97	46.95	0:08:00	2,173.49	42.62	24.20	0:15:00	1,850.32	84.11	12.44	0:22:00	1,508.06	125.67	8.34	0:29:00	150.37	150.37	6.97
0:01:05	2,261.78	21.96	46.98	0:08:05	2,144.97	41.25	25.04	0:15:05	1,902.54	79.27	12.57	0:22:05	1,527.15	127.26	8.23	0:29:05	156.03	156.03	6.72
0:01:10	2,284.43	21.55	47.85	0:08:10	2,206.41	41.63	25.25	0:15:10	1,980.34	79.21	12.52	0:22:10	1,504.50	125.37	8.43	0:29:10	168.40	168.40	6.22
0:01:15	2,224.03	20.40	49.79	0:08:15	2,237.24	41.43	25.28	0:15:15	2,150.63	79.65	13.04	0:22:15	1,458.78	121.56	8.29	0:29:15	140.93	140.93	7.43
0:01:20	2,376.28	21.60	48.94	0:08:20	2,266.60	41.21	25.80	0:15:20	2,137.42	76.34	13.71	0:22:20	1,591.32	122.41	8.34	0:29:20	140.51	140.51	7.47
0:01:25	2,305.19	20.58	50.96	0:08:25	2,202.22	39.33	26.20	0:15:25	2,042.00	72.93	14.34	0:22:25	1,684.22	120.30	8.55	0:29:25	144.28	144.28	7.25
0:01:30	2,312.53	20.65	50.57	0:08:30	2,172.02	38.79	26.58	0:15:30	2,106.59	75.24	14.02	0:22:30	1,773.77	126.70	8.45	0:29:30	140.93	140.93	7.44
0:01:35	2,311.90	20.64	51.03	0:08:35	2,266.60	40.48	26.11	0:15:35	2,071.36	73.98	13.91	0:22:35	1,715.26	122.52	8.55	0:29:35	144.28	144.28	7.27
0:01:40	2,291.56	20.46	51.18	0:08:40	2,240.39	40.01	26.34	0:15:40	2,054.79	73.39	14.28	0:22:40	1,693.87	120.99	8.66	0:29:40	152.88	152.88	6.85
0:01:45	2,308.96	20.62	50.61	0:08:45	2,198.65	39.26	26.82	0:15:45	2,060.87	73.60	14.34	0:22:45	1,689.89	120.71	8.68	0:29:45	154.77	154.77	6.77
0:01:50	2,320.29	20.72	51.07	0:08:50	2,194.67	39.19	26.26	0:15:50	2,039.48	72.84	14.43	0:22:50	1,716.31	122.59	8.55	0:29:50	150.16	150.16	6.98
0:01:55	2,313.58	20.66	50.82	0:08:55	2,228.85	39.80	26.57	0:15:55	2,125.04	75.89	14.00	0:22:55	1,736.23	124.02	8.45	0:29:55	146.38	146.38	7.15
0:02:00	2,347.76	20.96	50.11	0:09:00	2,258.63	40.33	26.04	0:16:00	2,113.93	75.50	13.88	0:23:00	1,703.94	121.71	8.61	0:30:00	170.08	170.08	6.16
0:02:05	2,310.43	20.63	50.82	0:09:05	2,170.55	38.76	26.99	0:16:05	2,023.54	72.27	13.95	0:23:05	1,724.91	123.21	8.51	0:30:05	147.43	147.43	7.10
0:02:10	2,235.77	19.96	50.49	0:09:10	2,186.07	39.04	26.84	0:16:10	2,055.00	73.39	14.34	0:23:10	1,673.74	119.55	8.67	0:30:10	145.33	145.33	7.21
0:02:15	2,348.81	20.97	50.48	0:09:15	2,246.26	40.11	26.35	0:16:15	2,107.01	75.25	14.35	0:23:15	1,731.83	123.70	8.55	0:30:15	146.59	146.59	7.15
0:02:20	2,320.08	20.71	50.46	0:09:20	2,245.63	40.10	26.20	0:16:20	2,059.40	73.55	14.28	0:23:20	1,714.63	122.47	8.61	0:30:20	165.26	165.26	6.34
0:02:25	2,356.99	21.04	50.38	0:09:25	2,237.87	39.96	26.21	0:16:25	1,994.60	71.24	14.26	0:23:25	1,725.96	123.28	8.51	0:30:25	166.09	166.09	6.31
0:02:30	2,308.54	20.61	50.91	0:09:30	2,187.75	39.07	26.84	0:16:30	2,090.44	74.66	14.15	0:23:30	1,732.46	123.75	8.48	0:30:30	161.27	161.27	6.49
0:02:35	2,334.76	20.85	50.67	0:09:35	2,159.86	38.57	26.40	0:16:35	2,085.62	74.49	14.26	0:23:35	1,727.42	123.39	8.49	0:30:35	149.11	149.11	7.03
0:02:40	2,285.69	20.41	51.39	0:09:40	2,207.67	39.42	26.48	0:16:40	2,096.94	74.89	14.03	0:23:40	1,709.39	122.10	8.63	0:30:40	149.53	149.53	7.00
0:02:45	2,330.77	20.81	50.45	0:09:45	2,270.38	40.54	26.21	0:16:45	1,990.20	71.08	14.33	0:23:45	1,708.13	122.01	8.58	0:30:45	148.06	148.06	7.08
0:02:50	2,299.74	20.53	51.27	0:09:50	2,285.06	40.80	25.98	0:16:50	2,024.80	72.31	14.61	0:23:50	1,717.99	122.71	8.47	0:30:50	149.74	149.74	7.01
0:02:55	2,327.84	20.78	50.64	0:09:55	2,207.67	39.42	26.60	0:16:55	2,113.51	75.48	13.88	0:23:55	1,642.07	117.29	8.65	0:30:55	146.38	146.38	7.17

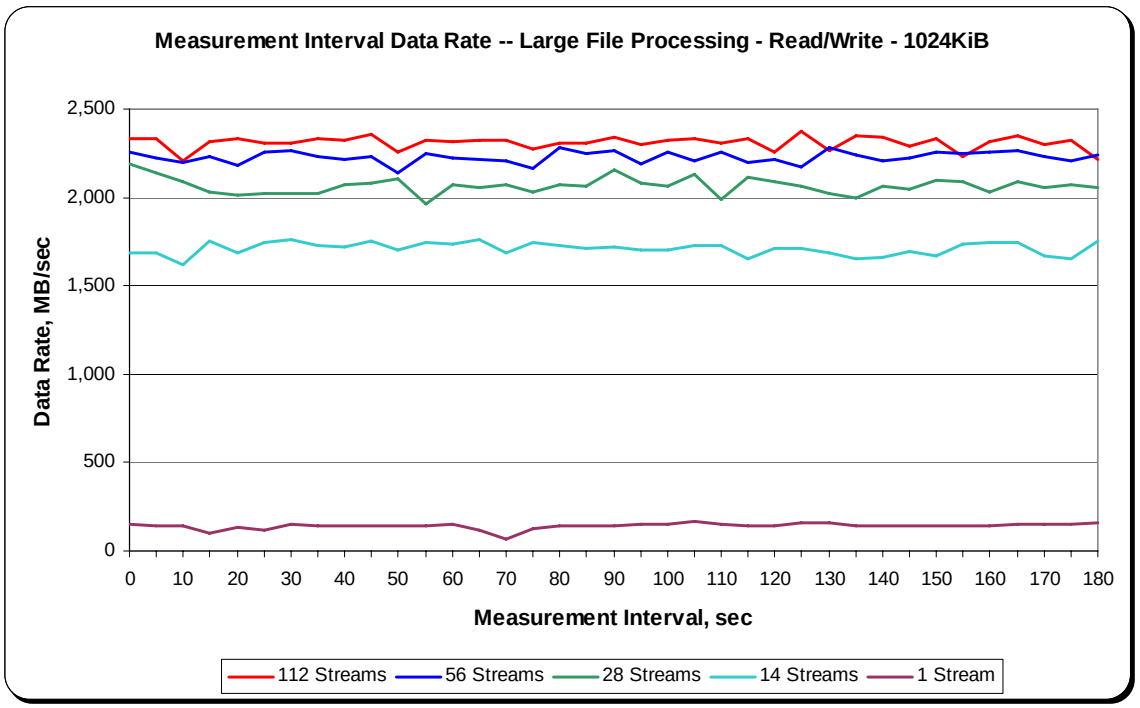
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	112 Streams			TR12	56 Streams			TR13	28 Streams			TR14	14 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
0:03:00	2,332.45	20.83	50.60	0:10:00	2,257.16	40.31	26.18	0:17:00	2,188.17	78.15	13.65	0:24:00	1,689.47	120.68	8.89	0:31:00	148.27	148.27	7.05
0:03:05	2,329.10	20.80	50.29	0:10:05	2,223.40	39.70	26.58	0:17:05	2,137.21	76.33	13.79	0:24:05	1,682.34	120.17	8.85	0:31:05	146.59	146.59	7.15
0:03:10	2,206.20	19.70	51.22	0:10:10	2,200.75	39.30	26.63	0:17:10	2,092.12	74.72	13.86	0:24:10	1,623.20	115.94	8.89	0:31:10	145.96	145.96	7.18
0:03:15	2,317.56	20.69	50.65	0:10:15	2,235.56	39.92	26.26	0:17:15	2,027.53	72.41	14.39	0:24:15	1,756.36	125.45	8.47	0:31:15	100.24	100.24	10.46
0:03:20	2,335.81	20.86	51.24	0:10:20	2,185.02	39.02	26.12	0:17:20	2,017.04	72.04	14.57	0:24:20	1,687.37	120.53	8.38	0:31:20	135.48	135.48	7.75
0:03:25	2,307.29	20.60	50.77	0:10:25	2,258.00	40.32	26.04	0:17:25	2,018.51	72.09	14.70	0:24:25	1,744.62	124.62	8.46	0:31:25	115.55	115.55	9.06
0:03:30	2,305.61	20.59	50.89	0:10:30	2,265.55	40.46	25.94	0:17:30	2,019.14	72.11	14.51	0:24:30	1,759.09	125.65	8.46	0:31:30	148.48	148.48	7.05
0:03:35	2,332.87	20.83	50.80	0:10:35	2,233.89	39.89	26.62	0:17:35	2,022.91	72.25	14.54	0:24:35	1,730.78	123.63	8.47	0:31:35	141.77	141.77	7.39
0:03:40	2,321.55	20.73	50.52	0:10:40	2,216.69	39.58	26.63	0:17:40	2,075.97	74.14	14.06	0:24:40	1,716.73	122.62	8.51	0:31:40	146.80	146.80	7.14
0:03:45	2,358.88	21.06	50.65	0:10:45	2,233.89	39.89	26.30	0:17:45	2,080.17	74.29	14.27	0:24:45	1,752.38	125.17	8.39	0:31:45	144.28	144.28	7.27
0:03:50	2,256.33	20.15	50.54	0:10:50	2,138.68	38.19	26.89	0:17:50	2,106.38	75.23	13.94	0:24:50	1,705.61	121.83	8.44	0:31:50	141.14	141.14	7.42
0:03:55	2,323.22	20.74	50.67	0:10:55	2,248.36	40.15	26.25	0:17:55	1,964.61	70.16	14.42	0:24:55	1,745.67	124.69	8.45	0:31:55	145.75	145.75	7.19
0:04:00	2,316.72	20.69	50.54	0:11:00	2,225.71	39.74	26.75	0:18:00	2,068.21	73.86	14.19	0:25:00	1,737.49	124.11	8.45	0:32:00	154.35	154.35	6.78
0:04:05	2,325.74	20.77	50.77	0:11:05	2,218.37	39.61	26.52	0:18:05	2,059.40	73.55	14.30	0:25:05	1,762.66	125.90	8.47	0:32:05	115.76	115.76	9.06
0:04:10	2,324.27	20.75	50.47	0:11:10	2,205.16	39.38	26.70	0:18:10	2,075.34	74.12	14.40	0:25:10	1,686.11	120.44	8.47	0:32:10	66.90	66.90	15.54
0:04:15	2,276.25	20.32	50.60	0:11:15	2,160.70	38.58	26.44	0:18:15	2,028.58	72.45	14.20	0:25:15	1,743.99	124.57	8.42	0:32:15	127.30	127.30	8.30
0:04:20	2,305.40	20.58	51.07	0:11:20	2,280.86	40.73	26.05	0:18:20	2,068.42	73.87	14.21	0:25:20	1,726.17	123.30	8.69	0:32:20	142.82	142.82	7.33
0:04:25	2,309.59	20.62	50.57	0:11:25	2,250.24	40.18	26.32	0:18:25	2,059.82	73.57	14.28	0:25:25	1,711.91	122.28	8.59	0:32:25	142.61	142.61	7.35
0:04:30	2,338.11	20.88	51.23	0:11:30	2,266.60	40.48	26.22	0:18:30	2,157.34	77.05	13.59	0:25:30	1,722.81	123.06	8.53	0:32:30	141.77	141.77	7.39
0:04:35	2,296.38	20.50	51.14	0:11:35	2,191.94	39.14	25.93	0:18:35	2,083.31	74.40	14.08	0:25:35	1,703.94	121.71	8.61	0:32:35	147.22	147.22	7.11
0:04:40	2,325.11	20.76	50.76	0:11:40	2,255.70	40.28	26.43	0:18:40	2,065.28	73.76	14.18	0:25:40	1,700.37	121.46	8.45	0:32:40	148.48	148.48	7.05
0:04:45	2,334.76	20.85	50.64	0:11:45	2,205.37	39.38	26.39	0:18:45	2,134.90	76.25	14.01	0:25:45	1,729.94	123.57	8.48	0:32:45	164.00	164.00	6.38
0:04:50	2,305.40	20.58	50.64	0:11:50	2,259.47	40.35	26.30	0:18:50	1,992.08	71.15	14.37	0:25:50	1,727.21	123.37	8.49	0:32:50	154.35	154.35	6.80
0:04:55	2,332.45	20.83	50.59	0:11:55	2,200.75	39.30	26.72	0:18:55	2,112.67	75.45	13.95	0:25:55	1,654.02	118.14	8.87	0:32:55	143.65	143.65	7.29
0:05:00	2,253.18	20.12	51.37	0:12:00	2,215.85	39.57	26.48	0:19:00	2,087.92	74.57	14.30	0:26:00	1,708.76	122.05	8.58	0:33:00	141.77	141.77	7.39
0:05:05	2,375.02	21.21	50.35	0:12:05	2,174.33	38.83	26.43	0:19:05	2,063.60	73.70	14.28	0:26:05	1,707.29	121.95	8.59	0:33:05	156.87	156.87	6.68
0:05:10	2,265.76	20.23	50.66	0:12:10	2,277.93	40.68	26.22	0:19:10	2,022.49	72.23	14.57	0:26:10	1,682.55	120.18	8.71	0:33:10	161.27	161.27	6.48
0:05:15	2,350.49	20.99	50.60	0:12:15	2,236.82	39.94	26.50	0:19:15	1,994.18	71.22	14.41	0:26:15	1,655.07	118.22	8.86	0:33:15	145.12	145.12	7.22
0:05:20	2,341.05	20.90	50.86	0:12:20	2,203.27	39.34	26.61	0:19:20	2,063.81	73.71	14.23	0:26:20	1,658.43	118.46	8.84	0:33:20	142.82	142.82	7.34
0:05:25	2,290.30	20.45	51.23	0:12:25	2,222.56	39.69	25.97	0:19:25	2,051.01	73.25	14.46	0:26:25	1,694.92	121.07	8.84	0:33:25	143.45	143.45	7.30
0:05:30	2,331.40	20.82	50.38	0:12:30	2,260.73	40.37	26.06	0:19:30	2,098.41	74.94	14.17	0:26:30	1,668.28	119.16	8.65	0:33:30	141.77	141.77	7.39
0:05:35	2,232.84	19.94	51.29	0:12:35	2,251.08	40.20	26.07	0:19:35	2,084.78	74.46	14.31	0:26:35	1,739.17	124.23	8.47	0:33:35	139.88	139.88	7.49
0:05:40	2,313.58	20.66	50.55	0:12:40	2,252.97	40.23	26.22	0:19:40	2,026.06	72.36	13.98	0:26:40	1,744.41	124.60	8.41	0:33:40	143.45	143.45	7.31
0:05:45	2,347.97	20.96	50.96	0:12:45	2,264.30	40.43	25.94	0:19:45	2,092.54	74.73	14.04	0:26:45	1,745.46	124.68	8.50	0:33:45	148.90	148.90	7.03
0:05:50	2,301.41	20.55	50.86	0:12:50	2,231.16	39.84	26.56	0:19:50	2,056.05	73.43	14.28	0:26:50	1,667.45	119.10	8.84	0:33:50	149.11	149.11	7.03
0:05:55	2,327.42	20.78	50.92	0:12:55	2,202.43	39.33	26.66	0:19:55	2,075.34	74.12	14.09	0:26:55	1,652.98	118.07	8.65	0:33:55	151.41	151.41	6.91
0:06:00	2,211.66	19.75	51.15	0:13:00	2,238.08	39.97	26.23	0:20:00	2,055.21	73.40	14.32	0:27:00	1,755.11	125.36	8.49	0:34:00	158.54	158.54	6.61
0:06:05	2,320.71	20.72	51.03	0:13:05	2,234.31	39.90	26.27	0:20:05	2,083.73	74.42	14.10	0:27:05	1,699.53	121.40	8.52	0:34:05	151.62	151.62	6.91
0:06:10	2,303.72	20.57	50.98	0:13:10	2,229.90	39.82	26.30	0:20:10	2,097.15	74.90	14.24	0:27:10	1,719.66	122.83	8.62	0:34:10	152.88	152.88	6.85
0:06:15	2,355.73	21.03	50.66	0:13:15	2,190.48	39.12	26.75	0:20:15	2,037.17	72.76	14.36	0:27:15	1,723.65	123.12	8.52	0:34:15	152.67	152.67	6.86
0:06:20	2,305.40	20.58	51.04	0:13:20	2,221.72	39.67	26.44	0:20:20	2,047.45	73.12	14.38	0:27:20	1,656.75	118.34	8.69	0:34:20	157.71	157.71	6.65
0:06:25	2,307.71	20.60	50.82	0:13:25	2,212.71	39.51	26.48	0:20:25	2,051.85	73.28	14.31	0:27:25	1,709.60	122.11	8.58	0:34:25	151.41	151.41	6.92
0:06:30	2,331.40	20.82	50.97	0:13:30	2,140.98	38.23	26.58	0:20:30	1,968.18	70.29	14.33	0:27:30	1,716.94	122.64	8.55	0:34:30	153.93	153.93	6.80
0:06:35	2,303.09	20.56	50.86	0:13:35	2,228.43	39.79	26.66	0:20:35	2,047.66	73.13	14.37	0:27:35	1,711.49	122.25	8.57	0:34:35	159.59	159.59	6.56
0:06:40	2,254.02	20.13	51.02	0:13:40	2,226.55	39.76	26.53	0:20:40	2,128.82	76.03	13.78	0:27:40	1,724.07	123.15	8.51	0:34:40	169.24	169.24	6.19
0:06:45	196.50	0.00	51.75	0:13:45	159.17	0.00	28.37	0:20:45	159.80	0.00	16.13	0:27:45	133.59	0.00	8.47	0:34:45	8.81	0.00	6.08
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

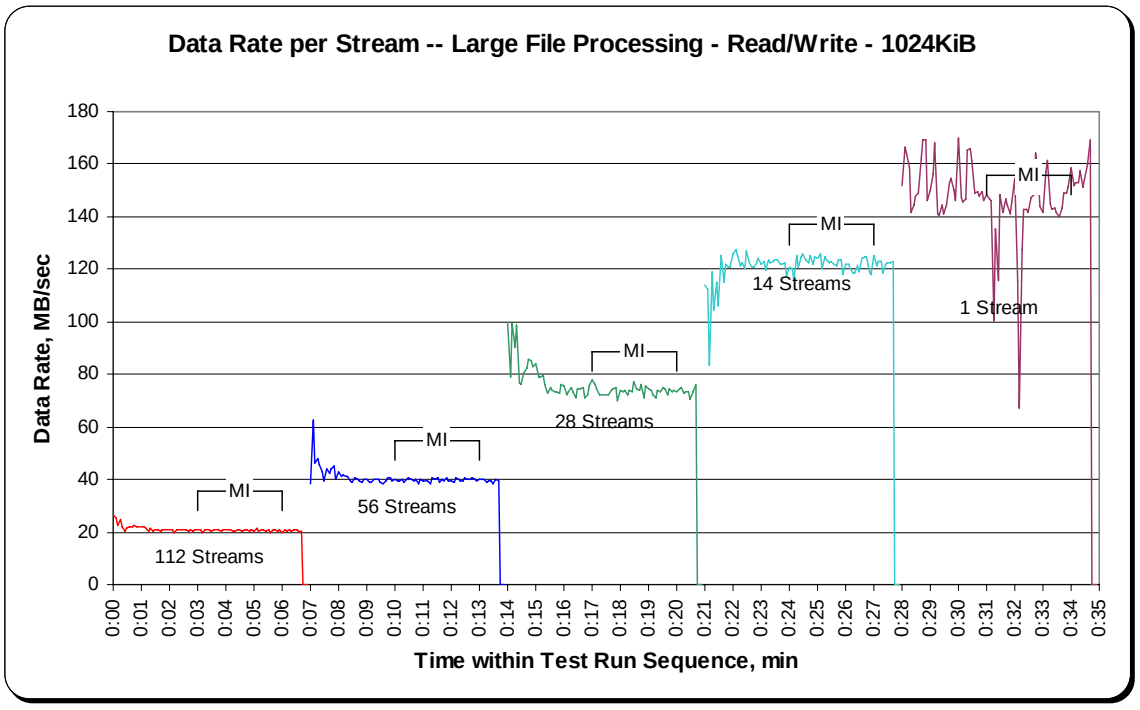
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



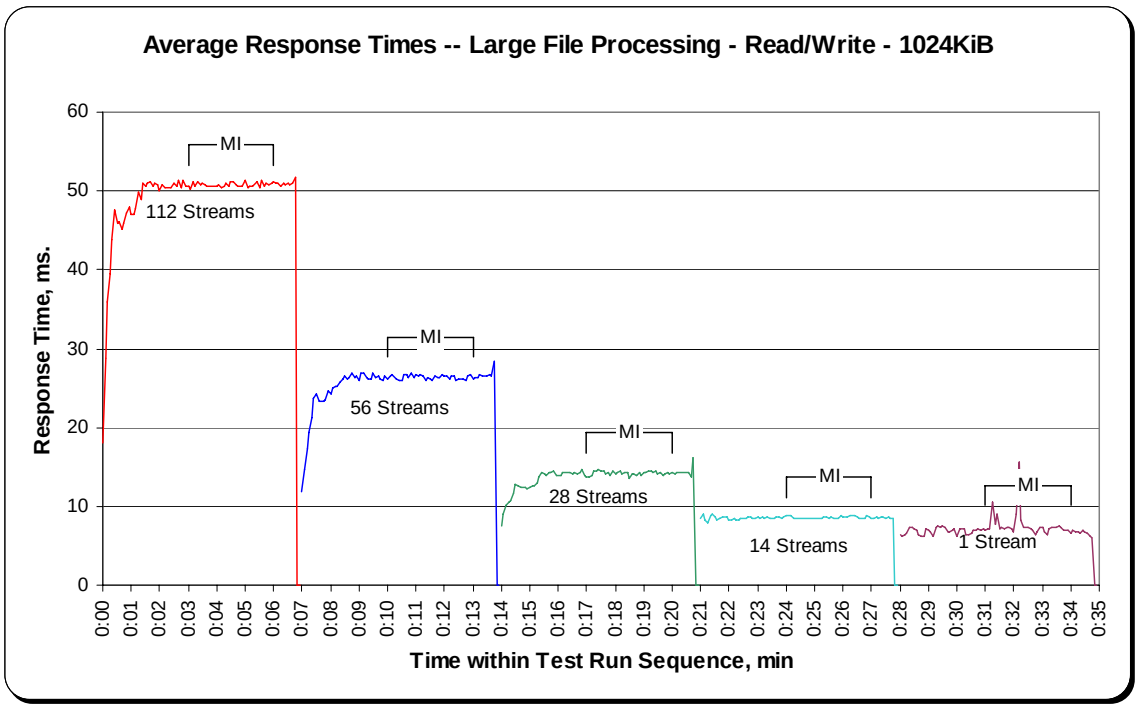
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



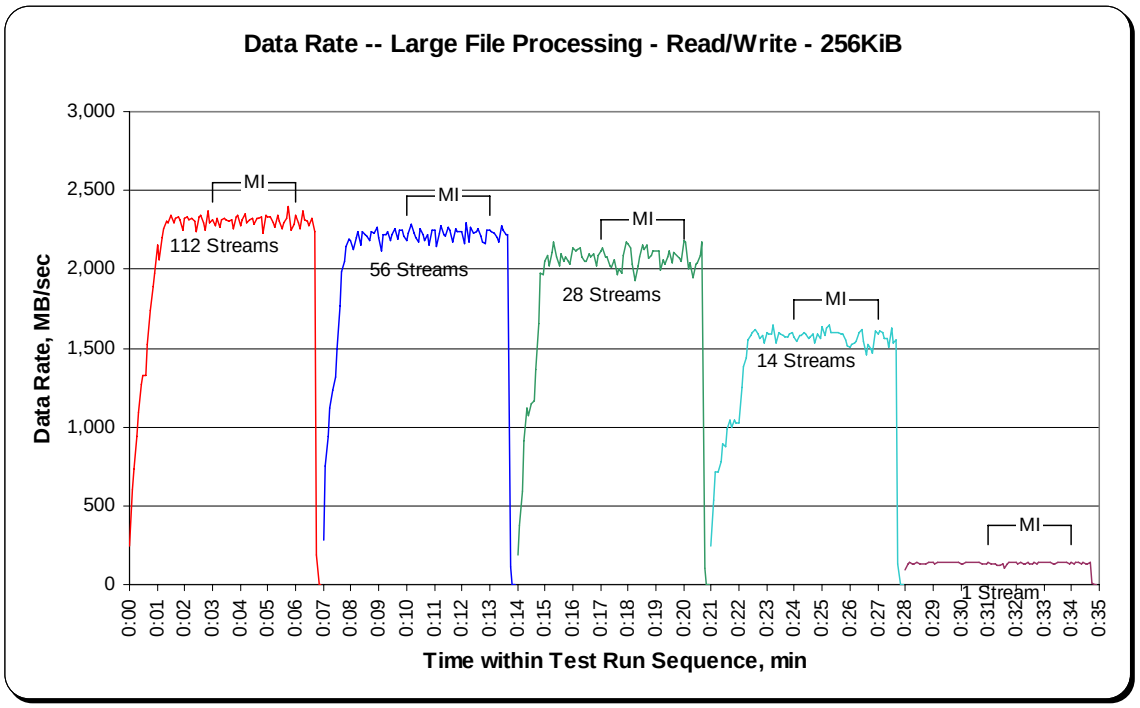
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR16	112 Streams			TR17	56 Streams			TR18	28 Streams			TR19	14 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	243.48	27.05	4.10	0:07:00	282.75	35.34	3.27	0:14:00	184.29	61.43	2.02	0:21:00	243.90	81.30	2.05	0:28:00	98.25	98.25	2.44
0:00:05	600.41	40.03	5.83	0:07:05	747.69	49.85	4.12	0:14:05	374.13	124.71	2.09	0:21:05	535.25	89.21	2.16	0:28:05	135.32	135.32	1.93
0:00:10	729.81	27.03	7.19	0:07:10	936.64	46.83	4.54	0:14:10	596.43	85.20	2.54	0:21:10	718.43	119.74	2.18	0:28:10	140.82	140.82	1.85
0:00:15	943.67	24.83	8.90	0:07:15	1,122.40	51.02	4.92	0:14:15	913.78	76.15	2.73	0:21:15	716.18	102.31	2.27	0:28:15	133.69	133.69	1.95
0:00:20	1,095.34	26.72	9.48	0:07:20	1,234.23	47.47	4.97	0:14:20	1,115.89	92.99	2.81	0:21:20	784.96	112.14	2.33	0:28:20	131.44	131.44	1.99
0:00:25	1,267.31	23.91	9.90	0:07:25	1,313.66	41.05	5.85	0:14:25	1,067.87	88.99	2.94	0:21:25	890.87	111.36	2.34	0:28:25	136.52	136.52	1.91
0:00:30	1,327.86	23.30	10.80	0:07:30	1,499.20	40.52	6.21	0:14:30	1,143.84	87.99	2.93	0:21:30	879.28	109.91	2.38	0:28:30	135.74	135.74	1.92
0:00:35	1,323.88	21.35	11.98	0:07:35	1,771.62	43.21	5.78	0:14:35	1,167.96	77.86	3.04	0:21:35	985.92	109.55	2.32	0:28:35	136.00	136.00	1.92
0:00:40	1,520.17	21.41	11.72	0:07:40	1,983.22	43.11	5.81	0:14:40	1,362.94	75.72	3.22	0:21:40	1,044.33	116.04	2.25	0:28:40	136.16	136.16	1.92
0:00:45	1,742.21	21.78	11.52	0:07:45	2,048.87	41.81	6.03	0:14:45	1,656.80	72.03	3.13	0:21:45	997.72	110.86	2.36	0:28:45	135.74	135.74	1.92
0:00:50	1,892.57	22.01	11.53	0:07:50	2,148.74	43.85	6.02	0:14:50	1,972.63	82.19	3.16	0:21:50	1,042.23	115.80	2.26	0:28:50	140.56	140.56	1.86
0:00:55	1,978.56	21.74	11.37	0:07:55	2,195.19	43.90	5.98	0:14:55	1,960.94	78.44	3.21	0:21:55	1,028.08	114.23	2.29	0:28:55	140.19	140.19	1.86
0:01:00	2,154.77	23.17	11.59	0:08:00	2,183.55	41.99	6.20	0:15:00	2,054.16	82.17	3.18	0:22:00	1,024.35	102.44	2.32	0:29:00	139.04	139.04	1.88
0:01:05	2,063.60	20.84	12.21	0:08:05	2,126.88	40.13	6.35	0:15:05	2,084.88	83.40	3.18	0:22:05	1,249.33	113.58	2.27	0:29:05	136.05	136.05	1.92
0:01:10	2,205.10	21.20	11.74	0:08:10	2,198.60	40.71	6.40	0:15:10	2,024.91	77.88	3.20	0:22:10	1,381.50	106.27	2.34	0:29:10	136.47	136.47	1.91
0:01:15	2,253.76	21.26	12.13	0:08:15	2,237.61	41.44	6.33	0:15:15	2,108.27	75.30	3.35	0:22:15	1,434.24	102.45	2.40	0:29:15	138.94	138.94	1.88
0:01:20	2,301.26	20.73	12.34	0:08:20	2,150.05	38.39	6.61	0:15:20	2,168.98	77.46	3.40	0:22:20	1,555.93	111.14	2.35	0:29:20	139.30	139.30	1.87
0:01:25	2,289.99	20.45	12.79	0:08:25	2,233.62	39.89	6.54	0:15:25	2,073.77	74.06	3.57	0:22:25	1,583.66	113.12	2.31	0:29:25	138.46	138.46	1.89
0:01:30	2,339.48	20.89	12.67	0:08:30	2,222.56	39.69	6.61	0:15:30	2,017.62	72.06	3.63	0:22:30	1,598.71	114.19	2.31	0:29:30	136.94	136.94	1.91
0:01:35	2,290.46	20.45	12.67	0:08:35	2,213.02	39.52	6.61	0:15:35	2,099.30	74.98	3.54	0:22:35	1,615.17	115.37	2.28	0:29:35	137.68	137.68	1.90
0:01:40	2,325.43	20.76	12.84	0:08:40	2,185.55	39.03	6.75	0:15:40	2,054.68	73.38	3.51	0:22:40	1,586.81	113.34	2.30	0:29:40	138.62	138.62	1.88
0:01:45	2,333.66	20.84	12.66	0:08:45	2,240.54	40.01	6.65	0:15:45	2,075.87	74.14	3.57	0:22:45	1,557.45	111.25	2.34	0:29:45	137.89	137.89	1.89
0:01:50	2,315.31	20.67	12.76	0:08:50	2,231.06	39.84	6.62	0:15:50	2,051.12	73.25	3.57	0:22:50	1,581.67	112.98	2.31	0:29:50	137.52	137.52	1.90
0:01:55	2,244.74	20.04	12.67	0:08:55	2,269.12	40.52	6.52	0:15:55	2,034.19	72.65	3.48	0:22:55	1,530.03	109.29	2.33	0:29:55	137.73	137.73	1.90
0:02:00	2,320.18	20.72	12.68	0:09:00	2,202.69	39.33	6.65	0:16:00	2,136.63	76.31	3.43	0:23:00	1,598.50	114.18	2.31	0:30:00	134.74	134.74	1.94
0:02:05	2,328.99	20.79	12.62	0:09:05	2,117.39	37.81	6.67	0:16:05	2,116.08	75.57	3.45	0:23:05	1,593.57	113.83	2.30	0:30:05	134.38	134.38	1.94
0:02:10	2,312.42	20.65	12.73	0:09:10	2,215.48	39.56	6.64	0:16:10	2,124.78	75.89	3.50	0:23:10	1,586.91	113.35	2.30	0:30:10	139.04	139.04	1.88
0:02:15	2,318.61	20.70	12.78	0:09:15	2,217.11	39.59	6.67	0:16:15	2,132.96	76.18	3.49	0:23:15	1,642.28	117.31	2.28	0:30:15	141.35	141.35	1.85
0:02:20	2,301.99	20.55	12.75	0:09:20	2,237.45	39.95	6.62	0:16:20	2,080.01	74.29	3.52	0:23:20	1,529.61	109.26	2.34	0:30:20	138.99	138.99	1.88
0:02:25	2,242.54	20.02	12.76	0:09:25	2,177.53	38.88	6.58	0:16:25	2,046.72	73.10	3.54	0:23:25	1,598.29	114.16	2.32	0:30:25	138.52	138.52	1.88
0:02:30	2,334.08	20.84	12.70	0:09:30	2,216.17	39.57	6.69	0:16:30	2,047.19	73.11	3.54	0:23:30	1,587.12	113.37	2.31	0:30:30	137.00	137.00	1.91
0:02:35	2,341.16	20.90	12.71	0:09:35	2,260.15	40.36	6.58	0:16:35	2,098.41	74.94	3.53	0:23:35	1,580.83	112.92	2.30	0:30:35	137.94	137.94	1.89
0:02:40	2,293.39	20.48	12.77	0:09:40	2,192.26	39.15	6.70	0:16:40	2,078.07	74.22	3.54	0:23:40	1,567.62	111.97	2.33	0:30:40	140.04	140.04	1.87
0:02:45	2,249.30	20.08	12.67	0:09:45	2,251.55	40.21	6.51	0:16:45	2,099.62	74.99	3.49	0:23:45	1,566.21	111.87	2.34	0:30:45	135.16	135.16	1.93
0:02:50	2,371.62	21.18	12.74	0:09:50	2,244.69	40.08	6.56	0:16:50	2,023.33	72.26	3.62	0:23:50	1,589.59	113.54	2.30	0:30:50	132.54	132.54	1.97
0:02:55	2,295.91	20.50	12.79	0:09:55	2,214.49	39.54	6.62	0:16:55	2,086.51	74.52	3.55	0:23:55	1,599.71	114.26	2.29	0:30:55	135.84	135.84	1.92

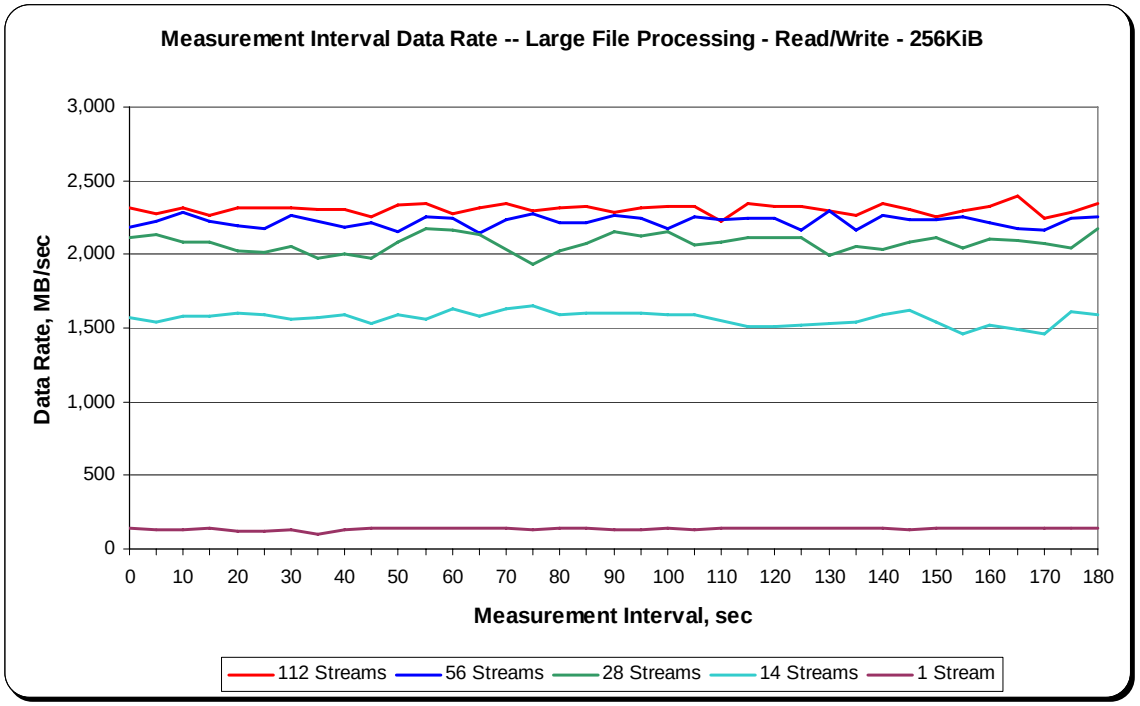
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR16	112 Streams			TR17	56 Streams			TR18	28 Streams			TR19	14 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
0:03:00	2,317.14	20.69	12.76	0:10:00	2,184.18	39.00	6.56	0:17:00	2,113.46	75.48	3.47	0:24:00	1,573.76	112.41	2.32	0:31:00	138.57	138.57	1.88
0:03:05	2,278.71	20.35	12.61	0:10:05	2,227.91	39.78	6.59	0:17:05	2,137.16	76.33	3.43	0:24:05	1,544.97	110.36	2.37	0:31:05	128.61	128.61	2.03
0:03:10	2,320.39	20.72	12.78	0:10:10	2,283.54	40.78	6.58	0:17:10	2,082.47	74.37	3.42	0:24:10	1,582.51	113.04	2.31	0:31:10	135.84	135.84	1.92
0:03:15	2,264.98	20.22	12.68	0:10:15	2,229.64	39.81	6.60	0:17:15	2,082.31	74.37	3.54	0:24:15	1,578.47	112.75	2.32	0:31:15	136.21	136.21	1.92
0:03:20	2,313.58	20.66	12.79	0:10:20	2,198.65	39.26	6.67	0:17:20	2,024.28	72.30	3.63	0:24:20	1,600.70	114.34	2.29	0:31:20	119.80	119.80	2.18
0:03:25	2,319.35	20.71	12.68	0:10:25	2,169.56	38.74	6.60	0:17:25	2,013.06	71.89	3.64	0:24:25	1,586.13	113.29	2.31	0:31:25	124.89	124.89	2.09
0:03:30	2,317.62	20.69	12.76	0:10:30	2,261.20	40.38	6.57	0:17:30	2,055.16	73.40	3.63	0:24:30	1,559.28	111.38	2.35	0:31:30	130.76	130.76	2.00
0:03:35	2,306.76	20.60	12.71	0:10:35	2,220.10	39.64	6.63	0:17:35	1,969.70	70.35	3.67	0:24:35	1,573.13	112.37	2.33	0:31:35	100.77	100.77	2.59
0:03:40	2,309.80	20.62	12.67	0:10:40	2,179.94	38.93	6.61	0:17:40	2,002.68	71.52	3.68	0:24:40	1,591.00	113.64	2.31	0:31:40	129.60	129.60	2.02
0:03:45	2,257.22	20.15	12.73	0:10:45	2,219.26	39.63	6.63	0:17:45	1,977.88	70.64	3.60	0:24:45	1,534.70	109.62	2.38	0:31:45	140.14	140.14	1.86
0:03:50	2,334.81	20.85	12.70	0:10:50	2,150.79	38.41	6.70	0:17:50	2,087.61	74.56	3.51	0:24:50	1,587.96	113.43	2.31	0:31:50	138.10	138.10	1.90
0:03:55	2,341.37	20.91	12.80	0:10:55	2,250.61	40.19	6.71	0:17:55	2,171.13	77.54	3.38	0:24:55	1,561.12	111.51	2.31	0:31:55	137.15	137.15	1.90
0:04:00	2,271.53	20.28	12.67	0:11:00	2,246.10	40.11	6.54	0:18:00	2,164.21	77.29	3.39	0:25:00	1,633.68	116.69	2.29	0:32:00	138.67	138.67	1.88
0:04:05	2,311.59	20.64	12.74	0:11:05	2,141.66	38.24	6.64	0:18:05	2,132.28	76.15	3.51	0:25:05	1,576.17	112.58	2.27	0:32:05	136.26	136.26	1.92
0:04:10	2,347.24	20.96	12.64	0:11:10	2,229.95	39.82	6.58	0:18:10	2,031.09	72.54	3.61	0:25:10	1,625.97	116.14	2.26	0:32:10	136.73	136.73	1.91
0:04:15	2,294.86	20.49	12.69	0:11:15	2,276.20	40.65	6.58	0:18:15	1,928.70	68.88	3.66	0:25:15	1,650.46	117.89	2.25	0:32:15	135.74	135.74	1.92
0:04:20	2,316.93	20.69	12.72	0:11:20	2,216.69	39.58	6.63	0:18:20	2,025.48	72.34	3.66	0:25:20	1,595.09	113.94	2.25	0:32:20	136.11	136.11	1.92
0:04:25	2,324.90	20.76	12.71	0:11:25	2,211.08	39.48	6.66	0:18:25	2,074.45	74.09	3.54	0:25:25	1,599.76	114.27	2.29	0:32:25	136.94	136.94	1.91
0:04:30	2,286.11	20.41	12.69	0:11:30	2,263.19	40.41	6.48	0:18:30	2,153.30	76.90	3.42	0:25:30	1,600.81	114.34	2.29	0:32:30	134.17	134.17	1.95
0:04:35	2,318.98	20.71	12.74	0:11:35	2,243.48	40.06	6.57	0:18:35	2,122.63	75.81	3.40	0:25:35	1,602.85	114.49	2.30	0:32:35	130.50	130.50	2.00
0:04:40	2,325.37	20.76	12.74	0:11:40	2,169.50	38.74	6.54	0:18:40	2,152.57	76.88	3.43	0:25:40	1,589.33	113.52	2.30	0:32:40	138.62	138.62	1.88
0:04:45	2,328.42	20.79	12.60	0:11:45	2,253.44	40.24	6.65	0:18:45	2,064.75	73.74	3.57	0:25:45	1,586.60	113.33	2.31	0:32:45	135.84	135.84	1.92
0:04:50	2,227.07	19.88	12.69	0:11:50	2,235.04	39.91	6.55	0:18:50	2,086.14	74.51	3.51	0:25:50	1,551.00	110.79	2.36	0:32:50	136.63	136.63	1.91
0:04:55	2,341.84	20.91	12.68	0:11:55	2,242.27	40.04	6.59	0:18:55	2,118.49	75.66	3.46	0:25:55	1,512.89	108.06	2.43	0:32:55	137.78	137.78	1.90
0:05:00	2,329.73	20.80	12.80	0:12:00	2,242.48	40.04	6.55	0:19:00	2,114.61	75.52	3.41	0:26:00	1,508.22	107.73	2.43	0:33:00	138.15	138.15	1.89
0:05:05	2,329.73	20.80	12.70	0:12:05	2,164.47	38.65	6.56	0:19:05	2,115.45	75.55	3.46	0:26:05	1,524.47	108.89	2.40	0:33:05	137.89	137.89	1.90
0:05:10	2,297.43	20.51	12.74	0:12:10	2,295.96	41.00	6.55	0:19:10	1,990.56	71.09	3.67	0:26:10	1,532.97	109.50	2.39	0:33:10	139.09	139.09	1.88
0:05:15	2,263.30	20.21	12.68	0:12:15	2,167.83	38.71	6.62	0:19:15	2,055.21	73.40	3.62	0:26:15	1,544.24	110.30	2.37	0:33:15	140.35	140.35	1.88
0:05:20	2,342.78	20.92	12.70	0:12:20	2,262.98	40.41	6.53	0:19:20	2,031.04	72.54	3.61	0:26:20	1,594.05	113.86	2.30	0:33:20	135.95	135.95	1.92
0:05:25	2,307.50	20.60	12.75	0:12:25	2,231.95	39.86	6.52	0:19:25	2,079.80	74.28	3.53	0:26:25	1,618.37	115.60	2.26	0:33:25	134.11	134.11	1.95
0:05:30	2,253.49	20.12	12.74	0:12:30	2,238.76	39.98	6.56	0:19:30	2,112.25	75.44	3.52	0:26:30	1,537.84	109.85	2.38	0:33:30	136.94	136.94	1.91
0:05:35	2,296.96	20.51	12.65	0:12:35	2,257.32	40.31	6.62	0:19:35	2,041.26	72.90	3.48	0:26:35	1,457.00	104.07	2.51	0:33:35	138.99	138.99	1.88
0:05:40	2,325.43	20.76	12.66	0:12:40	2,210.14	39.47	6.65	0:19:40	2,105.65	75.20	3.52	0:26:40	1,522.95	108.78	2.41	0:33:40	138.05	138.05	1.89
0:05:45	2,400.24	21.43	12.68	0:12:45	2,176.53	38.87	6.67	0:19:45	2,091.18	74.68	3.56	0:26:45	1,494.69	106.76	2.46	0:33:45	137.78	137.78	1.90
0:05:50	2,243.90	20.03	12.61	0:12:50	2,164.00	38.64	6.61	0:19:50	2,072.41	74.01	3.54	0:26:50	1,464.13	104.58	2.46	0:33:50	137.31	137.31	1.90
0:05:55	2,285.32	20.40	12.84	0:12:55	2,243.95	40.07	6.57	0:19:55	2,048.39	73.16	3.46	0:26:55	1,606.94	114.78	2.28	0:33:55	136.00	136.00	1.92
0:06:00	2,342.15	20.91	12.72	0:13:00	2,251.71	40.21	6.55	0:20:00	2,179.36	77.83	3.41	0:27:00	1,592.89	113.78	2.30	0:34:00	137.78	137.78	1.90
0:06:05	2,298.37	20.52	12.76	0:13:05	2,240.34	40.01	6.61	0:20:05	2,168.98	77.46	3.38	0:27:05	1,609.20	114.94	2.27	0:34:05	136.16	136.16	1.92
0:06:10	2,258.79	20.17	12.71	0:13:10	2,233.52	39.88	6.61	0:20:10	2,001.31	71.48	3.62	0:27:10	1,597.24	114.09	2.29	0:34:10	136.79	136.79	1.91
0:06:15	2,372.72	21.18	12.70	0:13:15	2,199.44	39.28	6.63	0:20:15	2,044.09	73.00	3.66	0:27:15	1,558.60	111.33	2.35	0:34:15	136.37	136.37	1.91
0:06:20	2,317.20	20.69	12.68	0:13:20	2,171.60	38.78	6.65	0:20:20	1,944.06	69.43	3.71	0:27:20	1,563.69	111.69	2.37	0:34:20	135.69	135.69	1.92
0:06:25	2,303.09	20.56	12.79	0:13:25	2,274.99	40.62	6.56	0:20:25	2,026.90	72.39	3.67	0:27:25	1,503.87	107.42	2.35	0:34:25	136.37	136.37	1.91
0:06:30	2,273.89	20.30	12.90	0:13:30	2,246.57	40.12	6.52	0:20:30	2,036.65	72.74	3.54	0:27:30	1,627.55	116.25	2.35	0:34:30	134.06	134.06	1.95
0:06:35	2,319.61	20.71	12.70	0:13:35	2,219.36	39.63	6.63	0:20:35	2,083.78	74.42	3.52	0:27:35	1,531.76	109.41	2.33	0:34:35	135.84	135.84	1.92
0:06:40	2,239.39	19.99	12.76	0:13:40	2,218.79	39.62	6.62	0:20:40	2,174.17	77.65	3.44	0:27:40	1,548.75	110.62	2.31	0:34:40	138.05	138.05	1.89
0:06:45	188.27	0.00	12.97	0:13:45	113.04	0.00	8.16	0:20:45	103.34	0.00	3.36	0:27:45	133.43	0.00	2.33	0:34:45	6.29	0.00	1.98
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
0:06:55	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

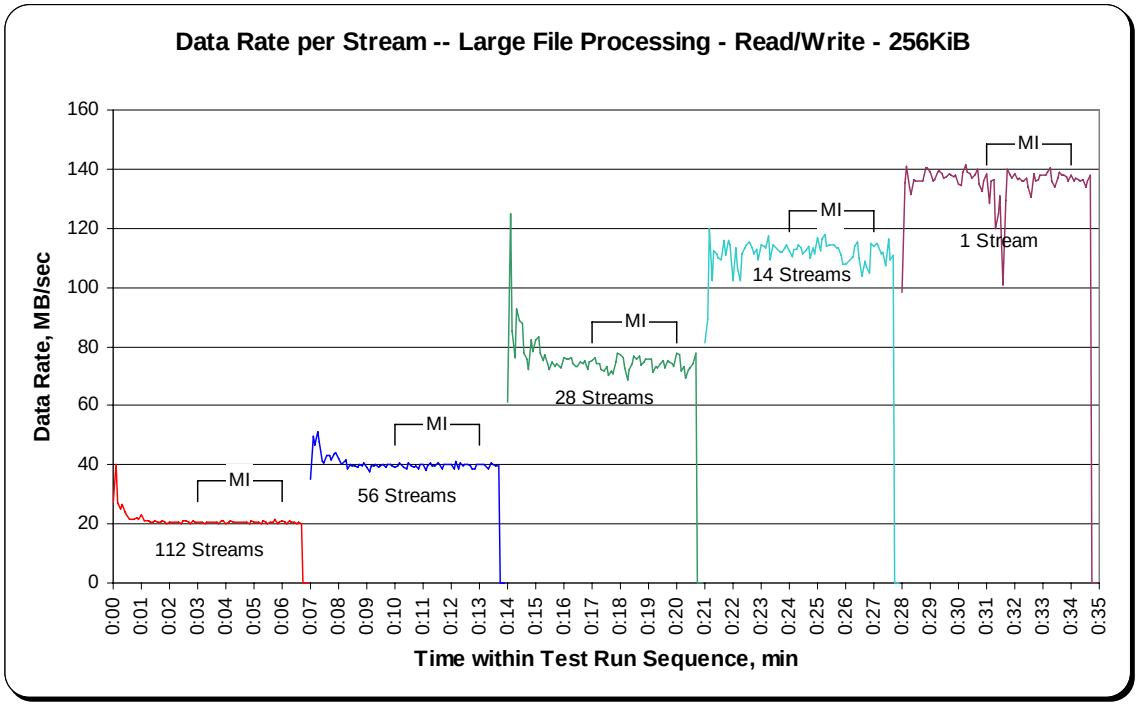
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



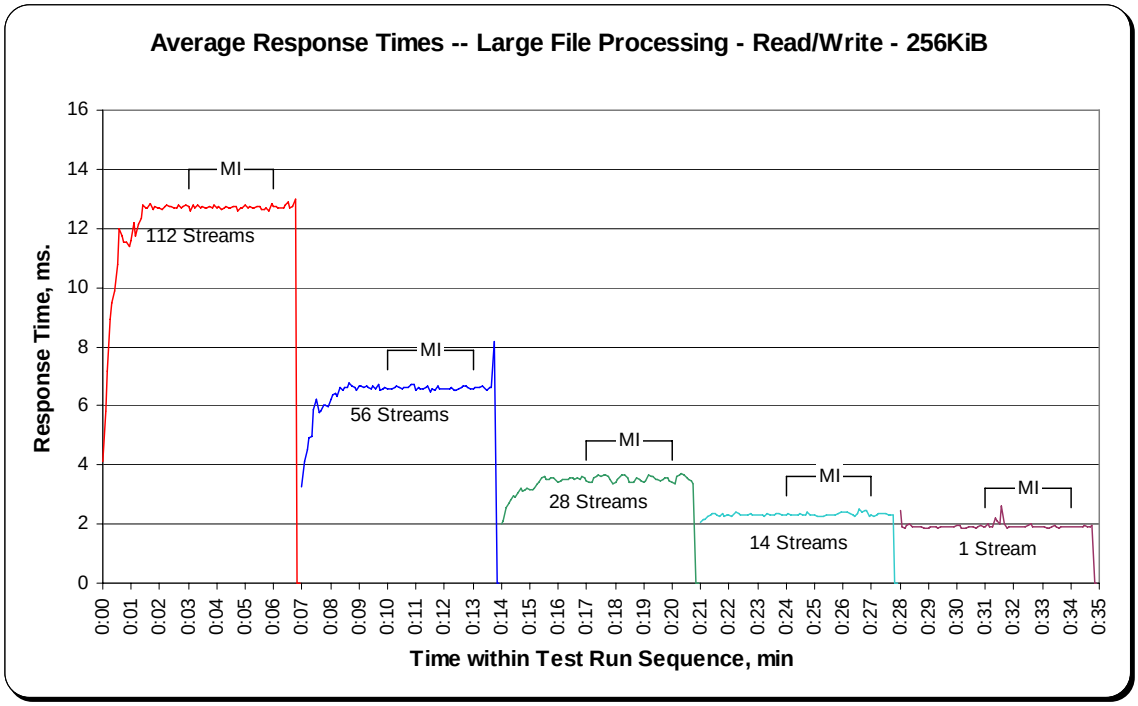
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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.

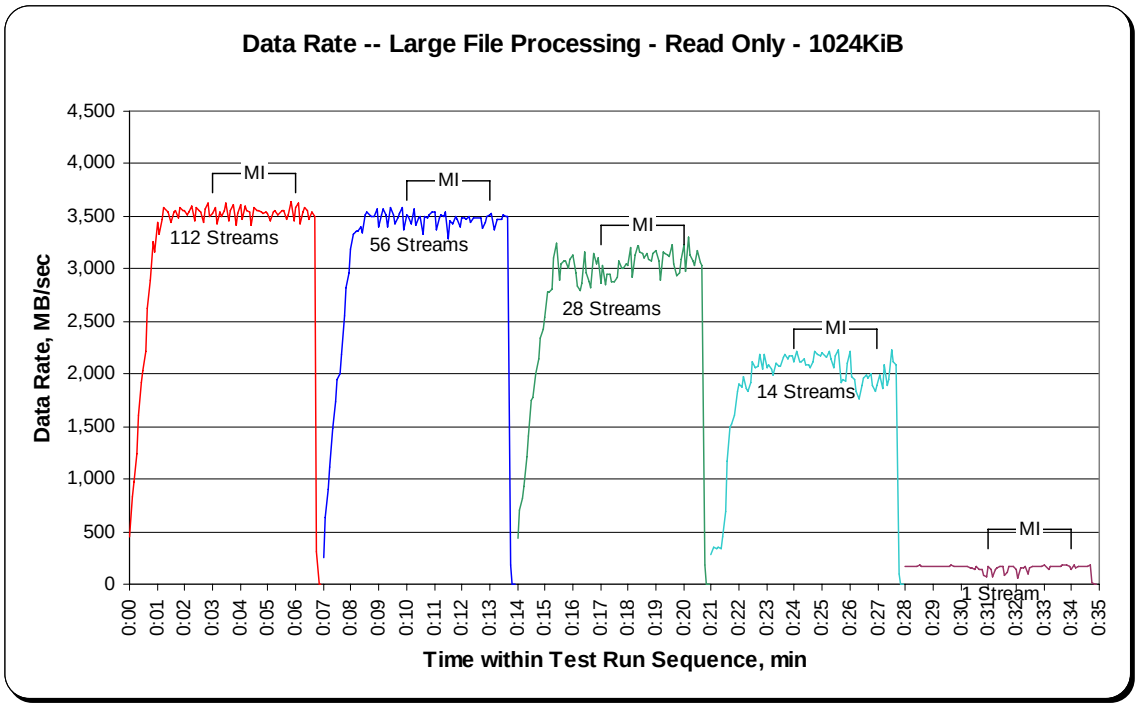
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data – Ramp Up Period

TR21	112 Streams			TR22	56 Streams			TR23	28 Streams			TR24	14 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	445.23	37.10	14.33	0:07:00	249.56	83.19	7.35	0:14:00	430.76	143.59	6.18	0:21:00	275.78	137.89	6.18	0:28:00	167.56	167.56	5.97
0:00:05	830.89	48.88	19.50	0:07:05	632.71	63.27	11.12	0:14:05	709.47	118.24	7.64	0:21:05	346.45	173.22	6.05	0:28:05	171.76	171.76	6.10
0:00:10	974.76	34.81	25.25	0:07:10	896.11	74.68	12.10	0:14:10	814.53	116.36	8.09	0:21:10	344.14	172.07	6.09	0:28:10	175.11	175.11	5.98
0:00:15	1,234.59	37.41	25.46	0:07:15	1,112.33	69.52	13.18	0:14:15	933.65	133.38	7.86	0:21:15	347.71	173.85	6.02	0:28:15	173.43	173.43	6.04
0:00:20	1,608.52	37.41	24.73	0:07:20	1,479.75	73.99	12.95	0:14:20	1,208.17	120.82	7.39	0:21:20	344.14	172.07	6.09	0:28:20	171.13	171.13	6.12
0:00:25	1,914.07	33.58	26.78	0:07:25	1,730.78	72.12	13.49	0:14:25	1,417.05	128.82	7.39	0:21:25	452.57	90.51	7.30	0:28:25	174.06	174.06	6.01
0:00:30	2,034.87	32.30	31.20	0:07:30	1,939.66	74.60	13.61	0:14:30	1,750.70	116.71	8.48	0:21:30	691.85	98.84	8.47	0:28:30	178.47	178.47	5.87
0:00:35	2,214.38	31.63	31.14	0:07:35	2,005.51	62.67	14.93	0:14:35	1,777.97	111.12	9.18	0:21:35	1,177.76	117.78	7.45	0:28:35	169.24	169.24	6.21
0:00:40	2,622.07	33.19	30.17	0:07:40	2,180.20	64.12	15.94	0:14:40	2,005.72	111.43	8.85	0:21:40	1,492.12	135.65	7.59	0:28:40	166.72	166.72	6.03
0:00:45	2,892.18	32.87	30.36	0:07:45	2,559.78	65.64	15.50	0:14:45	2,142.45	112.76	9.05	0:21:45	1,519.18	138.11	7.59	0:28:45	173.02	173.02	6.05
0:00:50	3,255.20	34.63	30.00	0:07:50	2,815.43	63.99	15.88	0:14:50	2,342.73	111.56	9.09	0:21:50	1,604.95	133.75	7.45	0:28:50	171.97	171.97	6.09
0:00:55	3,161.67	32.26	31.22	0:07:55	2,958.24	62.94	15.66	0:14:55	2,433.12	110.60	9.32	0:21:55	1,835.22	141.17	7.02	0:28:55	173.64	173.64	6.03
0:01:00	3,438.49	33.38	31.40	0:08:00	3,191.87	63.84	16.00	0:15:00	2,545.94	115.72	9.00	0:22:00	1,903.79	146.45	7.15	0:29:00	174.48	174.48	6.01
0:01:05	3,332.37	31.74	31.99	0:08:05	3,330.07	65.30	16.11	0:15:05	2,777.68	115.74	8.79	0:22:05	1,870.03	143.85	7.28	0:29:05	173.64	173.64	6.03
0:01:10	3,473.72	32.16	32.29	0:08:10	3,354.81	64.52	16.24	0:15:10	2,776.63	115.69	9.21	0:22:10	1,978.45	141.32	7.25	0:29:10	175.53	175.53	5.97
0:01:15	3,577.11	32.52	32.39	0:08:15	3,351.67	63.24	16.65	0:15:15	2,810.81	112.43	9.12	0:22:15	1,858.71	132.76	7.88	0:29:15	169.87	169.87	6.16
0:01:20	3,548.59	32.26	32.64	0:08:20	3,394.66	62.86	16.49	0:15:20	3,106.09	110.93	8.85	0:22:20	1,827.46	130.53	8.02	0:29:20	174.06	174.06	6.02
0:01:25	3,541.46	31.62	33.19	0:08:25	3,342.23	59.68	16.85	0:15:25	3,246.18	115.94	9.33	0:22:25	1,917.85	136.99	7.52	0:29:25	174.48	174.48	6.00
0:01:30	3,441.64	30.73	33.22	0:08:30	3,509.37	62.67	16.82	0:15:30	2,886.10	103.08	9.80	0:22:30	2,110.57	150.76	7.03	0:29:30	174.90	174.90	5.99
0:01:35	3,546.70	31.67	33.22	0:08:35	3,541.04	63.23	16.74	0:15:35	3,040.45	108.59	9.65	0:22:35	2,065.07	147.50	7.10	0:29:35	174.90	174.90	5.99
0:01:40	3,549.64	31.69	33.21	0:08:40	3,506.02	62.61	16.93	0:15:40	3,080.93	110.03	9.73	0:22:40	2,074.08	148.15	7.01	0:29:40	177.84	177.84	5.89
0:01:45	3,486.31	31.13	33.21	0:08:45	3,504.55	62.58	16.76	0:15:45	3,073.80	109.78	9.57	0:22:45	2,190.68	156.48	6.69	0:29:45	176.16	176.16	5.95
0:01:50	3,583.19	31.99	33.23	0:08:50	3,498.89	62.48	16.77	0:15:50	2,998.93	107.10	9.56	0:22:50	2,042.84	145.92	7.08	0:29:50	172.60	172.60	6.06
0:01:55	3,549.01	31.69	33.24	0:08:55	3,570.61	63.76	16.70	0:15:55	3,085.12	110.18	9.51	0:22:55	2,180.20	155.73	6.72	0:29:55	175.74	175.74	5.96
0:02:00	3,549.01	31.69	33.19	0:09:00	3,399.06	60.70	16.72	0:16:00	3,125.18	111.61	9.46	0:23:00	2,059.61	147.12	7.08	0:30:00	174.48	174.48	6.00
0:02:05	3,506.65	31.31	33.20	0:09:05	3,513.36	62.74	16.71	0:16:05	2,960.55	105.73	9.90	0:23:05	2,082.05	148.72	7.12	0:30:05	175.32	175.32	5.97
0:02:10	3,547.75	31.68	33.17	0:09:10	3,573.97	63.82	16.67	0:16:10	2,833.04	101.18	10.36	0:23:10	2,039.90	145.71	7.19	0:30:10	172.18	172.18	6.09
0:02:15	3,594.73	32.10	32.86	0:09:15	3,516.29	62.79	16.69	0:16:15	2,797.81	99.92	10.68	0:23:15	1,984.95	141.78	7.39	0:30:15	173.22	173.22	6.05
0:02:20	3,456.53	30.86	33.21	0:09:20	3,400.95	60.73	16.78	0:16:20	2,866.81	102.39	9.96	0:23:20	2,108.69	150.62	6.96	0:30:20	152.04	152.04	6.89
0:02:25	3,588.02	32.04	33.25	0:09:25	3,587.39	64.06	16.79	0:16:25	3,159.78	112.85	9.58	0:23:25	2,077.65	148.40	7.06	0:30:25	161.69	161.69	6.48
0:02:30	3,553.62	31.73	33.15	0:09:30	3,512.52	62.72	16.73	0:16:30	2,957.19	105.61	9.72	0:23:30	2,074.08	148.15	7.07	0:30:30	142.82	142.82	7.34
0:02:35	3,546.07	31.66	33.22	0:09:35	3,430.94	61.27	16.87	0:16:35	2,883.37	102.98	10.33	0:23:35	2,157.55	154.11	6.94	0:30:35	169.87	169.87	6.17
0:02:40	3,442.27	30.73	33.20	0:09:40	3,478.76	62.12	16.88	0:16:40	2,824.02	100.86	10.39	0:23:40	2,192.15	156.58	6.69	0:30:40	135.69	135.69	7.72
0:02:45	3,562.85	31.81	33.22	0:09:45	3,523.01	62.91	16.69	0:16:45	3,150.13	112.50	9.28	0:23:45	2,148.11	153.44	6.82	0:30:45	146.38	146.38	7.15
0:02:50	3,629.12	32.40	33.20	0:09:50	3,585.50	64.03	16.73	0:16:50	3,046.11	108.79	9.43	0:23:50	2,177.26	155.52	6.74	0:30:50	82.21	82.21	12.72
0:02:55	3,495.95	31.21	33.21	0:09:55	3,375.58	60.28	16.97	0:16:55	3,108.82	111.03	9.70	0:23:55	2,173.70	155.26	6.75	0:30:55	74.66	74.66	14.07

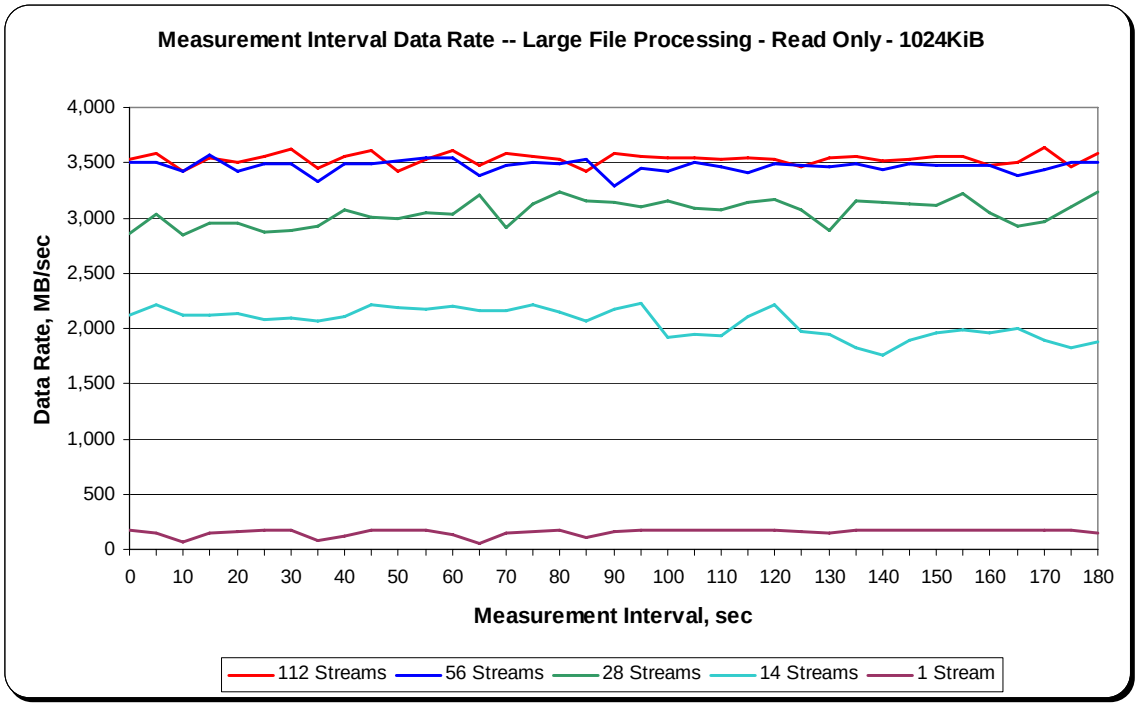
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR21	112 Streams			TR22	56 Streams			TR23	28 Streams			TR24	14 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
0:03:00	3,533.49	31.55	33.25	0:10:00	3,509.58	62.67	16.75	0:17:00	2,862.19	102.22	9.87	0:24:00	2,121.90	151.56	6.91	0:31:00	175.11	175.11	5.98
0:03:05	3,578.37	31.95	33.22	0:10:05	3,497.00	62.45	16.79	0:17:05	3,035.42	108.41	9.70	0:24:05	2,216.90	158.35	6.61	0:31:05	147.64	147.64	7.07
0:03:10	3,421.71	30.55	33.22	0:10:10	3,429.47	61.24	16.83	0:17:10	2,851.08	101.82	10.34	0:24:10	2,118.54	151.32	6.92	0:31:10	63.75	63.75	16.44
0:03:15	3,540.41	31.61	33.22	0:10:15	3,563.90	63.64	16.86	0:17:15	2,950.06	105.36	10.16	0:24:15	2,120.01	151.43	6.92	0:31:15	144.49	144.49	7.26
0:03:20	3,503.92	31.29	33.23	0:10:20	3,418.78	61.05	16.86	0:17:20	2,951.74	105.42	10.00	0:24:20	2,140.14	152.87	6.85	0:31:20	159.38	159.38	6.57
0:03:25	3,556.77	31.76	33.21	0:10:25	3,488.61	62.30	16.96	0:17:25	2,871.42	102.55	10.00	0:24:25	2,082.47	148.75	7.04	0:31:25	173.02	173.02	6.06
0:03:30	3,624.93	32.37	33.24	0:10:30	3,496.58	62.44	17.02	0:17:30	2,884.42	103.02	10.02	0:24:30	2,090.44	149.32	7.02	0:31:30	173.64	173.64	6.03
0:03:35	3,455.48	30.85	33.22	0:10:35	3,324.82	59.37	17.24	0:17:35	2,924.27	104.44	10.15	0:24:35	2,062.34	147.31	6.85	0:31:35	81.16	81.16	12.95
0:03:40	3,550.90	31.70	33.21	0:10:40	3,495.11	62.41	16.82	0:17:40	3,079.88	110.00	9.72	0:24:40	2,110.99	150.79	6.95	0:31:40	118.07	118.07	8.87
0:03:45	3,608.15	32.22	33.25	0:10:45	3,487.98	62.29	16.80	0:17:45	3,005.22	107.33	9.78	0:24:45	2,211.87	157.99	6.63	0:31:45	174.27	174.27	6.01
0:03:50	3,418.99	30.53	33.16	0:10:50	3,514.20	62.75	16.76	0:17:50	2,998.09	107.07	9.68	0:24:50	2,188.38	156.31	6.70	0:31:50	171.97	171.97	6.09
0:03:55	3,531.81	31.53	33.24	0:10:55	3,537.27	63.17	16.67	0:17:55	3,045.90	108.78	9.40	0:24:55	2,172.23	155.16	6.75	0:31:55	171.55	171.55	6.10
0:04:00	3,615.07	32.28	33.25	0:11:00	3,541.04	63.23	16.84	0:18:00	3,032.90	108.32	9.67	0:25:00	2,206.83	157.63	6.65	0:32:00	136.11	136.11	7.64
0:04:05	3,474.98	31.03	33.26	0:11:05	3,378.51	60.33	16.98	0:18:05	3,205.08	114.47	9.30	0:25:05	2,166.36	154.74	6.77	0:32:05	51.17	51.17	20.62
0:04:10	3,590.32	32.06	33.22	0:11:10	3,477.29	62.09	16.99	0:18:10	2,914.62	104.09	10.12	0:25:10	2,165.31	154.66	6.77	0:32:10	151.41	151.41	6.92
0:04:15	3,554.25	31.73	33.24	0:11:15	3,506.23	62.61	17.01	0:18:15	3,125.18	111.61	9.39	0:25:15	2,208.93	157.78	6.68	0:32:15	158.54	158.54	6.61
0:04:20	3,535.80	31.57	33.22	0:11:20	3,491.55	62.35	16.87	0:18:20	3,235.28	115.55	9.16	0:25:20	2,151.05	153.65	6.82	0:32:20	170.92	170.92	6.14
0:04:25	3,420.66	30.54	33.24	0:11:25	3,536.01	63.14	16.83	0:18:25	3,160.41	112.87	9.02	0:25:25	2,061.08	147.22	7.12	0:32:25	104.86	104.86	9.99
0:04:30	3,584.45	32.00	33.23	0:11:30	3,292.11	58.79	17.00	0:18:30	3,144.05	112.29	9.52	0:25:30	2,171.18	155.08	6.75	0:32:30	158.96	158.96	6.59
0:04:35	3,553.41	31.73	33.04	0:11:35	3,455.90	61.71	17.19	0:18:35	3,106.72	110.95	9.33	0:25:35	2,223.82	158.84	6.59	0:32:35	175.53	175.53	5.97
0:04:40	3,547.96	31.68	33.23	0:11:40	3,420.87	61.09	17.19	0:18:40	3,148.45	112.44	9.49	0:25:40	1,917.64	136.97	7.65	0:32:40	170.08	170.08	6.16
0:04:45	3,537.69	31.59	33.23	0:11:45	3,504.55	62.58	16.85	0:18:45	3,088.27	110.30	9.50	0:25:45	1,945.11	138.94	7.54	0:32:45	174.27	174.27	6.01
0:04:50	3,533.07	31.55	33.24	0:11:50	3,468.48	61.94	17.02	0:18:50	3,074.63	109.81	9.55	0:25:50	1,938.19	138.44	7.57	0:32:50	170.92	170.92	6.13
0:04:55	3,545.24	31.65	33.23	0:11:55	3,406.40	60.83	16.92	0:18:55	3,146.57	112.38	9.34	0:25:55	2,100.72	150.05	6.98	0:32:55	175.32	175.32	5.97
0:05:00	3,532.44	31.54	33.26	0:12:00	3,485.89	62.25	17.01	0:19:00	3,168.38	113.16	9.30	0:26:00	2,214.59	158.19	6.62	0:33:00	178.05	178.05	5.88
0:05:05	3,457.16	30.87	33.21	0:12:05	3,481.90	62.18	16.89	0:19:05	3,068.55	109.59	9.42	0:26:05	1,970.06	140.72	7.44	0:33:05	163.58	163.58	6.40
0:05:10	3,541.67	31.62	33.22	0:12:10	3,464.08	61.86	16.98	0:19:10	2,888.20	103.15	9.89	0:26:10	1,940.08	138.58	7.56	0:33:10	146.59	146.59	7.16
0:05:15	3,559.50	31.78	33.24	0:12:15	3,494.48	62.40	16.92	0:19:15	3,153.07	112.61	9.36	0:26:15	1,828.93	130.64	8.02	0:33:15	170.29	170.29	6.16
0:05:20	3,515.04	31.38	33.23	0:12:20	3,439.96	61.43	16.80	0:19:20	3,140.28	112.15	9.59	0:26:20	1,764.54	126.04	8.31	0:33:20	173.64	173.64	6.03
0:05:25	3,533.07	31.55	33.21	0:12:25	3,485.05	62.23	16.93	0:19:25	3,126.64	111.67	9.13	0:26:25	1,891.42	135.10	7.75	0:33:25	169.03	169.03	6.20
0:05:30	3,560.54	31.79	33.25	0:12:30	3,477.71	62.10	16.88	0:19:30	3,120.56	111.45	9.41	0:26:30	1,955.59	139.69	7.50	0:33:30	172.39	172.39	6.08
0:05:35	3,556.56	31.76	33.22	0:12:35	3,478.76	62.12	16.94	0:19:35	3,223.74	115.13	9.30	0:26:35	1,982.23	141.59	7.41	0:33:35	172.60	172.60	6.07
0:05:40	3,476.24	31.04	33.23	0:12:40	3,480.85	62.16	16.89	0:19:40	3,052.20	109.01	9.64	0:26:40	1,955.38	139.67	7.50	0:33:40	177.21	177.21	5.91
0:05:45	3,508.95	31.33	33.25	0:12:45	3,385.22	60.45	17.09	0:19:45	2,928.04	104.57	9.85	0:26:45	2,003.20	143.09	7.61	0:33:45	178.47	178.47	5.87
0:05:50	3,633.53	32.44	33.21	0:12:50	3,442.47	61.47	17.02	0:19:50	2,969.15	106.04	9.75	0:26:50	1,890.79	135.06	7.46	0:33:50	176.58	176.58	5.93
0:05:55	3,462.82	30.92	33.23	0:12:55	3,498.89	62.48	16.85	0:19:55	3,095.82	110.56	9.47	0:26:55	1,828.30	130.59	8.02	0:33:55	174.69	174.69	6.00
0:06:00	3,589.49	32.05	33.24	0:13:00	3,508.54	62.65	16.75	0:20:00	3,233.81	115.49	9.39	0:27:00	1,885.76	134.70	7.78	0:34:00	143.03	143.03	7.32
0:06:05	3,619.68	32.32	33.22	0:13:05	3,530.56	63.05	16.84	0:20:05	2,980.89	106.46	9.47	0:27:05	1,987.26	141.95	7.38	0:34:05	178.47	178.47	5.87
0:06:10	3,426.54	30.59	33.22	0:13:10	3,368.86	60.16	16.95	0:20:10	3,305.11	118.04	9.07	0:27:10	1,866.26	133.30	7.86	0:34:10	154.14	154.14	6.79
0:06:15	3,538.52	31.59	33.21	0:13:15	3,472.67	62.01	16.90	0:20:15	3,131.47	111.84	9.48	0:27:15	2,082.89	148.78	7.04	0:34:15	175.95	175.95	5.95
0:06:20	3,582.77	31.99	33.21	0:13:20	3,474.56	62.05	16.93	0:20:20	3,071.91	109.71	9.55	0:27:20	1,891.21	135.09	7.75	0:34:20	171.76	171.76	6.10
0:06:25	3,549.01	31.69	33.22	0:13:25	3,468.27	61.93	17.14	0:20:25	3,032.06	108.29	9.44	0:27:25	1,943.43	138.82	7.55	0:34:25	175.32	175.32	5.97
0:06:30	3,463.45	30.92	33.20	0:13:30	3,507.70	62.64	17.03	0:20:30	3,176.35	113.44	9.25	0:27:30	2,224.87	158.92	6.59	0:34:30	175.95	175.95	5.95
0:06:35	3,543.56	31.64	33.22	0:13:35	3,495.53	62.42	16.79	0:20:35	3,066.88	109.53	9.61	0:27:35	2,119.80	151.41	7.08	0:34:35	175.74	175.74	5.96
0:06:40	3,492.60	31.18	33.20	0:13:40	3,499.10	62.48	16.77	0:20:40	3,038.98	108.54	9.83	0:27:40	2,088.55	149.18	7.02	0:34:40	177.42	177.42	5.91
0:06:45	314.57	0.00	32.56	0:13:45	187.90	0.00	16.60	0:20:45	182.87	0.00	9.65	0:27:45	99.41	0.00	7.70	0:34:45	11.32	0.00	5.72
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

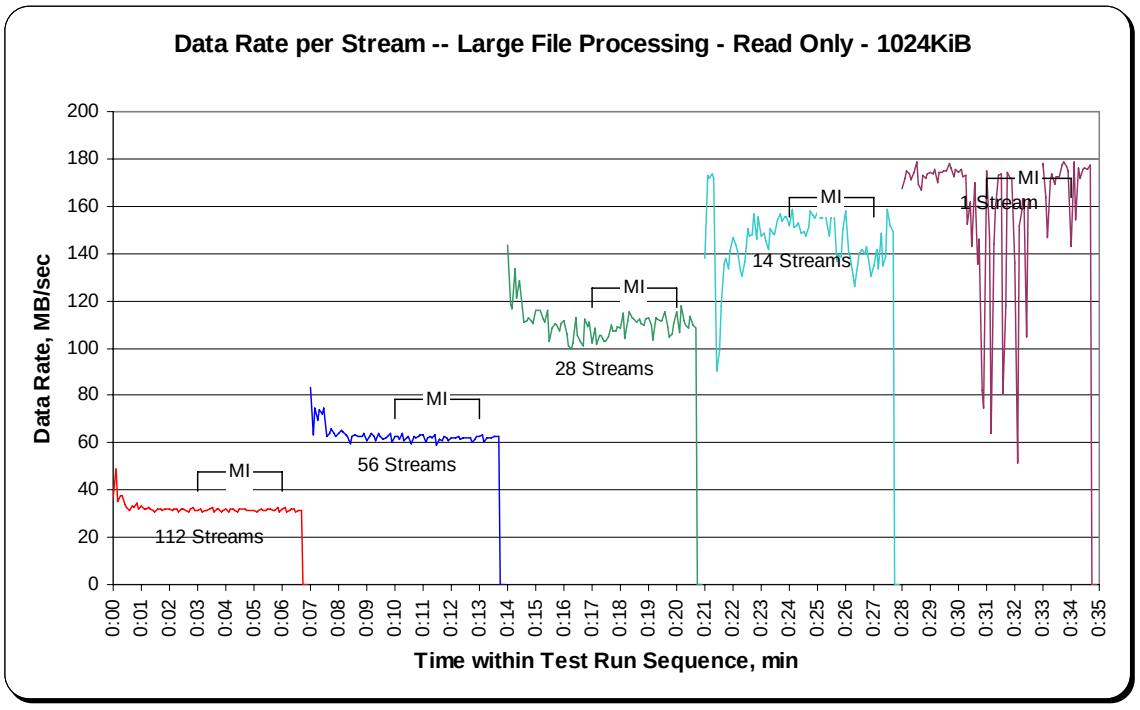
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



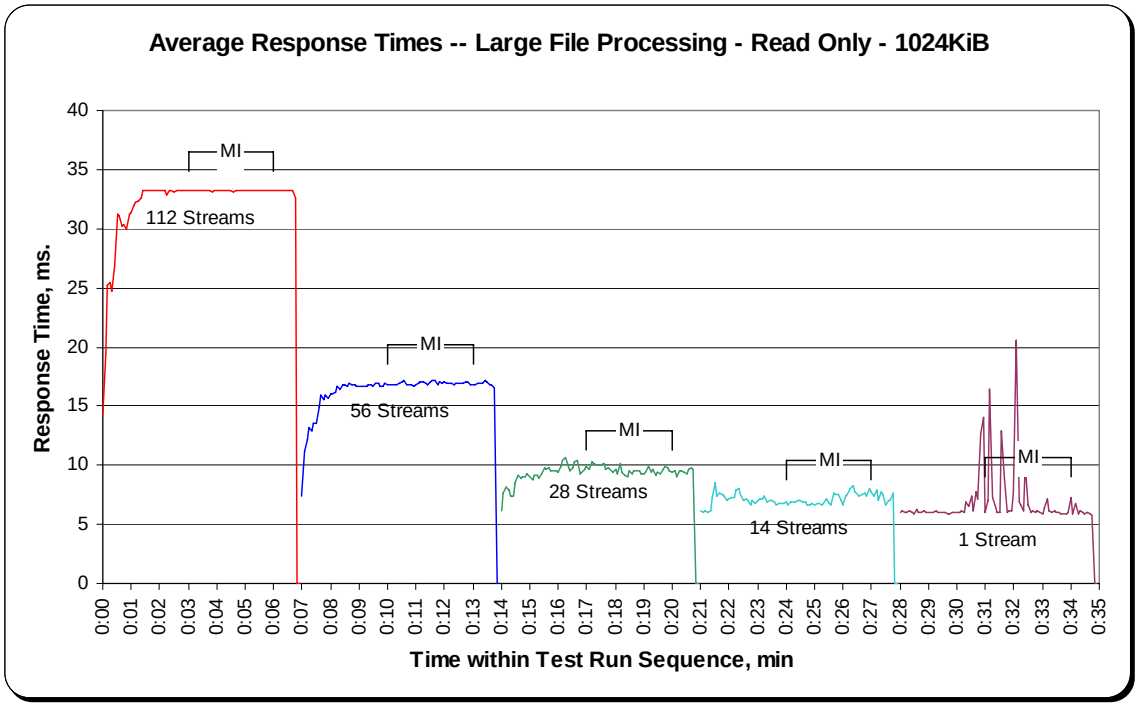
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



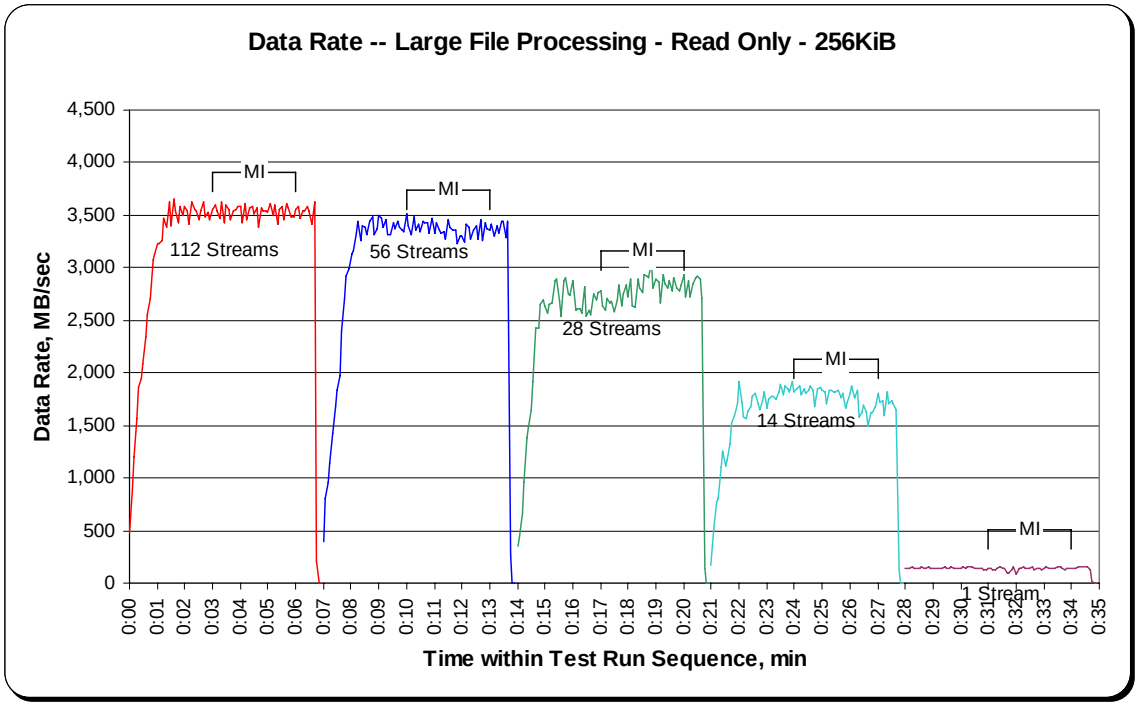
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR26	112 Streams			TR27	56 Streams			TR28	28 Streams			TR29	14 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	483.66	32.24	3.96	0:07:00	400.45	57.21	2.31	0:14:00	348.65	116.22	1.96	0:21:00	163.79	81.89	1.79	0:28:00	139.36	139.36	1.75
0:00:05	887.51	36.98	5.64	0:07:05	808.35	73.49	3.03	0:14:05	431.17	107.79	1.92	0:21:05	508.09	101.62	1.83	0:28:05	147.85	147.85	1.77
0:00:10	1,202.19	35.36	6.27	0:07:10	956.30	68.31	3.46	0:14:10	656.78	93.83	2.13	0:21:10	775.05	129.18	1.89	0:28:10	146.85	146.85	1.78
0:00:15	1,567.52	38.23	6.11	0:07:15	1,135.71	66.81	3.50	0:14:15	955.83	95.58	2.16	0:21:15	805.62	100.70	2.03	0:28:15	149.42	149.42	1.75
0:00:20	1,859.86	37.96	6.40	0:07:20	1,425.43	67.88	3.58	0:14:20	1,377.15	114.76	2.10	0:21:20	1,102.89	110.29	2.00	0:28:20	147.12	147.12	1.77
0:00:25	1,947.15	35.40	7.00	0:07:25	1,672.85	72.73	3.50	0:14:25	1,481.95	105.85	2.23	0:21:25	1,262.07	126.21	2.07	0:28:25	139.93	139.93	1.87
0:00:30	2,091.75	32.18	7.70	0:07:30	1,827.56	70.29	3.52	0:14:30	1,653.08	103.32	2.39	0:21:30	1,109.50	110.95	2.36	0:28:30	146.01	146.01	1.79
0:00:35	2,340.89	32.97	7.56	0:07:35	1,975.31	59.86	3.92	0:14:35	1,912.08	95.60	2.47	0:21:35	1,167.54	106.14	2.27	0:28:35	149.63	149.63	1.74
0:00:40	2,552.34	33.58	7.56	0:07:40	2,396.36	61.45	3.97	0:14:40	2,426.35	105.49	2.43	0:21:40	1,319.95	120.00	2.21	0:28:40	145.07	145.07	1.80
0:00:45	2,715.08	32.71	7.75	0:07:45	2,705.75	61.49	4.05	0:14:45	2,419.69	105.20	2.42	0:21:45	1,519.23	126.60	2.06	0:28:45	144.86	144.86	1.80
0:00:50	3,070.39	34.89	7.49	0:07:50	2,915.83	63.39	3.98	0:14:50	2,653.58	110.57	2.36	0:21:50	1,590.01	122.31	2.03	0:28:50	148.74	148.74	1.75
0:00:55	3,126.17	34.35	7.44	0:07:55	2,996.78	63.76	4.05	0:14:55	2,688.92	103.42	2.42	0:21:55	1,711.54	122.25	1.98	0:28:55	145.49	145.49	1.79
0:01:00	3,223.38	33.58	7.64	0:08:00	3,128.11	63.84	4.07	0:15:00	2,639.74	101.53	2.62	0:22:00	1,912.55	136.61	1.97	0:29:00	145.18	145.18	1.80
0:01:05	3,234.02	33.00	7.86	0:08:05	3,164.97	60.86	4.12	0:15:05	2,570.37	98.86	2.64	0:22:05	1,721.66	122.98	2.13	0:29:05	144.55	144.55	1.81
0:01:10	3,261.07	31.66	7.88	0:08:10	3,324.30	61.56	4.19	0:15:10	2,647.23	101.82	2.54	0:22:10	1,573.86	112.42	2.33	0:29:10	147.06	147.06	1.77
0:01:15	3,467.64	32.71	8.03	0:08:15	3,447.35	63.84	4.20	0:15:15	2,670.30	95.37	2.57	0:22:15	1,566.47	111.89	2.34	0:29:15	146.28	146.28	1.78
0:01:20	3,384.80	31.63	8.04	0:08:20	3,263.43	58.28	4.28	0:15:20	2,877.34	102.76	2.61	0:22:20	1,636.88	116.92	2.24	0:29:20	147.95	147.95	1.76
0:01:25	3,628.23	32.39	8.19	0:08:25	3,400.16	60.72	4.33	0:15:25	2,887.46	103.12	2.54	0:22:25	1,680.87	120.06	2.18	0:29:25	148.53	148.53	1.76
0:01:30	3,404.20	30.39	8.30	0:08:30	3,391.51	60.56	4.34	0:15:30	2,686.50	95.95	2.72	0:22:30	1,782.05	127.29	2.03	0:29:30	144.97	144.97	1.80
0:01:35	3,653.24	32.62	8.30	0:08:35	3,318.53	59.26	4.36	0:15:35	2,532.15	90.43	2.79	0:22:35	1,805.75	128.98	2.05	0:29:35	147.74	147.74	1.77
0:01:40	3,536.37	31.57	8.31	0:08:40	3,443.42	61.49	4.28	0:15:40	2,881.59	102.91	2.59	0:22:40	1,704.93	121.78	2.16	0:29:40	149.84	149.84	1.74
0:01:45	3,431.05	30.63	8.31	0:08:45	3,478.70	62.12	4.29	0:15:45	2,909.48	103.91	2.54	0:22:45	1,649.99	117.86	2.19	0:29:45	147.74	147.74	1.77
0:01:50	3,583.56	32.00	8.31	0:08:50	3,313.29	59.17	4.32	0:15:50	2,753.56	98.34	2.60	0:22:50	1,739.48	124.25	2.06	0:29:50	147.64	147.64	1.77
0:01:55	3,495.85	31.21	8.32	0:08:55	3,374.68	60.26	4.30	0:15:55	2,735.16	97.68	2.73	0:22:55	1,815.50	129.68	2.09	0:29:55	145.75	145.75	1.79
0:02:00	3,589.85	32.05	8.30	0:09:00	3,495.85	62.43	4.27	0:16:00	2,880.02	102.86	2.57	0:23:00	1,665.03	118.93	2.13	0:30:00	146.59	146.59	1.78
0:02:05	3,541.04	31.62	8.30	0:09:05	3,470.63	61.98	4.26	0:16:05	2,589.83	92.49	2.75	0:23:05	1,754.27	125.30	2.13	0:30:05	149.68	149.68	1.74
0:02:10	3,416.58	30.51	8.29	0:09:10	3,390.62	60.55	4.31	0:16:10	2,603.09	92.97	2.87	0:23:10	1,776.97	126.93	2.03	0:30:10	147.64	147.64	1.77
0:02:15	3,623.88	32.36	8.31	0:09:15	3,449.24	61.59	4.29	0:16:15	2,611.22	93.26	2.80	0:23:15	1,772.83	126.63	2.07	0:30:15	148.43	148.43	1.76
0:02:20	3,548.49	31.68	8.30	0:09:20	3,319.84	59.28	4.32	0:16:20	2,573.99	91.93	2.84	0:23:20	1,748.19	124.87	2.10	0:30:20	148.90	148.90	1.75
0:02:25	3,545.29	31.65	8.27	0:09:25	3,319.06	59.27	4.35	0:16:25	2,817.47	100.62	2.61	0:23:25	1,816.29	129.74	2.01	0:30:25	148.27	148.27	1.76
0:02:30	3,452.38	30.82	8.29	0:09:30	3,424.49	61.15	4.36	0:16:30	2,543.11	90.83	2.77	0:23:30	1,883.40	134.53	1.94	0:30:30	147.12	147.12	1.77
0:02:35	3,536.53	31.58	8.29	0:09:35	3,378.41	60.33	4.33	0:16:35	2,600.36	92.87	2.91	0:23:35	1,787.66	127.69	2.05	0:30:35	141.56	141.56	1.85
0:02:40	3,628.49	32.40	8.29	0:09:40	3,440.06	61.43	4.28	0:16:40	2,556.06	91.29	2.80	0:23:40	1,874.96	133.93	1.95	0:30:40	148.06	148.06	1.76
0:02:45	3,488.98	31.15	8.31	0:09:45	3,392.30	60.58	4.35	0:16:45	2,752.93	98.32	2.72	0:23:45	1,854.83	132.49	1.97	0:30:45	137.21	137.21	1.90
0:02:50	3,531.03	31.53	8.31	0:09:50	3,364.25	60.08	4.32	0:16:50	2,700.24	96.44	2.68	0:23:50	1,813.15	129.51	1.98	0:30:50	122.68	122.68	2.13
0:02:55	3,462.92	30.92	8.30	0:09:55	3,344.75	59.73	4.31	0:16:55	2,764.05	98.72	2.65	0:23:55	1,917.27	136.95	1.95	0:30:55	130.91	130.91	1.99

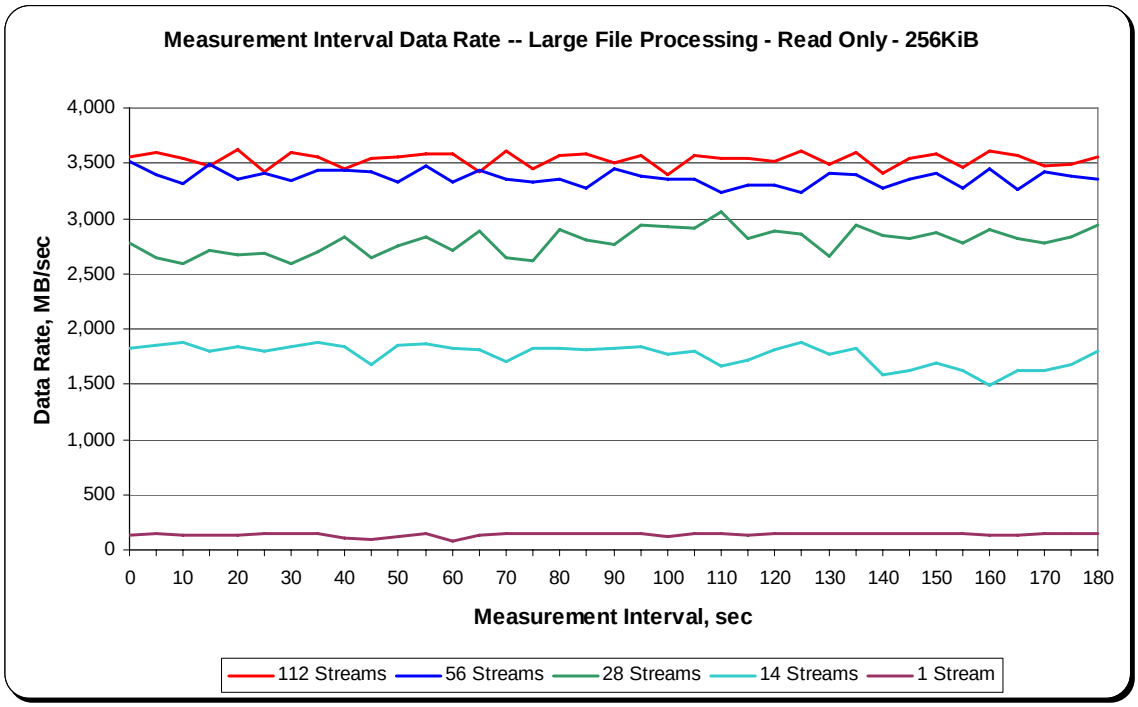
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR26	112 Streams			TR27	56 Streams			TR28	28 Streams			TR29	14 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
0:03:00	3,556.30	31.75	8.30	0:10:00	3,510.16	62.68	4.28	0:17:00	2,779.09	99.25	2.59	0:24:00	1,823.79	130.27	1.95	0:31:00	137.21	137.21	1.90
0:03:05	3,596.14	32.11	8.30	0:10:05	3,393.45	60.60	4.27	0:17:05	2,638.85	94.24	2.81	0:24:05	1,849.79	132.13	1.98	0:31:05	141.82	141.82	1.84
0:03:10	3,545.97	31.66	8.29	0:10:10	3,319.32	59.27	4.31	0:17:10	2,595.59	92.70	2.87	0:24:10	1,882.46	134.46	1.94	0:31:10	130.08	130.08	2.01
0:03:15	3,474.77	31.02	8.30	0:10:15	3,491.02	62.34	4.33	0:17:15	2,711.51	96.84	2.63	0:24:15	1,797.47	128.39	2.06	0:31:15	131.28	131.28	1.99
0:03:20	3,628.86	32.40	8.30	0:10:20	3,355.08	59.91	4.30	0:17:20	2,665.53	95.20	2.74	0:24:20	1,842.19	131.59	2.01	0:31:20	139.78	139.78	1.87
0:03:25	3,427.74	30.60	8.29	0:10:25	3,408.34	60.86	4.31	0:17:25	2,686.29	95.94	2.82	0:24:25	1,804.81	128.91	1.97	0:31:25	148.64	148.64	1.76
0:03:30	3,590.69	32.06	8.30	0:10:30	3,348.37	59.79	4.32	0:17:30	2,585.58	92.34	2.79	0:24:30	1,832.81	130.91	2.00	0:31:30	146.64	146.64	1.78
0:03:35	3,554.93	31.74	8.30	0:10:35	3,438.23	61.40	4.30	0:17:35	2,692.95	96.18	2.65	0:24:35	1,881.46	134.39	1.94	0:31:35	144.65	144.65	1.80
0:03:40	3,449.29	30.80	8.30	0:10:40	3,434.24	61.33	4.31	0:17:40	2,834.51	101.23	2.59	0:24:40	1,838.89	131.35	1.99	0:31:40	103.28	103.28	2.53
0:03:45	3,540.78	31.61	8.30	0:10:45	3,428.00	61.21	4.31	0:17:45	2,644.14	94.43	2.77	0:24:45	1,679.61	119.97	2.18	0:31:45	99.77	99.77	2.62
0:03:50	3,551.26	31.71	8.29	0:10:50	3,323.36	59.35	4.30	0:17:50	2,752.04	98.29	2.69	0:24:50	1,850.53	132.18	1.98	0:31:50	124.57	124.57	2.10
0:03:55	3,582.30	31.98	8.30	0:10:55	3,472.99	62.02	4.31	0:17:55	2,833.88	101.21	2.60	0:24:55	1,860.02	132.86	1.96	0:31:55	149.26	149.26	1.75
0:04:00	3,578.95	31.95	8.30	0:11:00	3,332.85	59.52	4.32	0:18:00	2,717.54	97.06	2.63	0:25:00	1,827.51	130.54	2.00	0:32:00	86.46	86.46	3.02
0:04:05	3,427.48	30.60	8.31	0:11:05	3,429.94	61.25	4.33	0:18:05	2,891.55	103.27	2.59	0:25:05	1,817.34	129.81	2.01	0:32:05	138.62	138.62	1.88
0:04:10	3,612.40	32.25	8.30	0:11:10	3,351.30	59.84	4.35	0:18:10	2,640.84	94.32	2.79	0:25:10	1,710.02	122.14	2.14	0:32:10	145.65	145.65	1.79
0:04:15	3,456.26	30.86	8.30	0:11:15	3,324.72	59.37	4.41	0:18:15	2,623.85	93.71	2.72	0:25:15	1,831.70	130.84	2.04	0:32:15	149.42	149.42	1.75
0:04:20	3,566.73	31.85	8.31	0:11:20	3,350.20	59.83	4.40	0:18:20	2,895.22	103.40	2.57	0:25:20	1,827.88	130.56	2.01	0:32:20	144.70	144.70	1.80
0:04:25	3,590.01	32.05	8.30	0:11:25	3,272.92	58.45	4.36	0:18:25	2,805.05	100.18	2.63	0:25:25	1,813.62	129.54	2.00	0:32:25	146.54	146.54	1.78
0:04:30	3,508.95	31.33	8.29	0:11:30	3,450.50	61.62	4.36	0:18:30	2,763.52	98.70	2.56	0:25:30	1,819.65	129.97	1.97	0:32:30	146.49	146.49	1.78
0:04:35	3,573.70	31.91	8.30	0:11:35	3,385.28	60.45	4.35	0:18:35	2,933.76	104.78	2.55	0:25:35	1,834.33	131.02	2.03	0:32:35	149.06	149.06	1.74
0:04:40	3,391.25	30.28	8.31	0:11:40	3,357.80	59.96	4.36	0:18:40	2,922.12	104.36	2.53	0:25:40	1,767.69	126.26	2.02	0:32:40	123.63	123.63	2.13
0:04:45	3,567.10	31.85	8.30	0:11:45	3,353.61	59.89	4.38	0:18:45	2,907.28	103.83	2.47	0:25:45	1,802.19	128.73	2.03	0:32:45	146.59	146.59	1.78
0:04:50	3,545.97	31.66	8.31	0:11:50	3,229.25	57.67	4.47	0:18:50	3,058.28	109.22	2.43	0:25:50	1,668.65	119.19	2.24	0:32:50	146.07	146.07	1.79
0:04:55	3,540.67	31.61	8.30	0:11:55	3,304.59	59.01	4.45	0:18:55	2,814.12	100.50	2.53	0:25:55	1,718.98	122.78	2.13	0:32:55	129.24	129.24	2.02
0:05:00	3,523.27	31.46	8.29	0:12:00	3,307.73	59.07	4.41	0:19:00	2,890.50	103.23	2.60	0:26:00	1,811.78	129.41	1.97	0:33:00	145.39	145.39	1.80
0:05:05	3,604.95	32.19	8.30	0:12:05	3,240.47	57.87	4.43	0:19:05	2,863.87	102.28	2.58	0:26:05	1,873.23	133.80	1.96	0:33:05	149.79	149.79	1.74
0:05:10	3,491.39	31.17	8.30	0:12:10	3,409.29	60.88	4.34	0:19:10	2,659.50	94.98	2.64	0:26:10	1,769.21	126.37	2.07	0:33:10	142.82	142.82	1.83
0:05:15	3,599.55	32.14	8.29	0:12:15	3,390.99	60.55	4.36	0:19:15	2,938.42	104.94	2.54	0:26:15	1,830.50	130.75	2.01	0:33:15	146.80	146.80	1.78
0:05:20	3,413.38	30.48	8.31	0:12:20	3,278.90	58.55	4.40	0:19:20	2,851.55	101.84	2.61	0:26:20	1,583.82	113.13	2.33	0:33:20	144.76	144.76	1.80
0:05:25	3,550.27	31.70	8.29	0:12:25	3,358.64	59.98	4.36	0:19:25	2,814.01	100.50	2.55	0:26:25	1,626.34	116.17	2.26	0:33:25	145.28	145.28	1.80
0:05:30	3,585.45	32.01	8.30	0:12:30	3,404.20	60.79	4.39	0:19:30	2,871.42	102.55	2.56	0:26:30	1,689.47	120.68	2.16	0:33:30	148.16	148.16	1.76
0:05:35	3,458.31	30.88	8.30	0:12:35	3,278.43	58.54	4.43	0:19:35	2,777.15	99.18	2.56	0:26:35	1,621.31	115.81	2.20	0:33:35	148.85	148.85	1.75
0:05:40	3,617.43	32.30	8.30	0:12:40	3,452.86	61.66	4.34	0:19:40	2,900.15	103.58	2.59	0:26:40	1,490.29	106.45	2.46	0:33:40	140.51	140.51	1.86
0:05:45	3,565.11	31.83	8.31	0:12:45	3,255.88	58.14	4.37	0:19:45	2,812.86	100.46	2.58	0:26:45	1,617.90	115.56	2.26	0:33:45	128.19	128.19	2.04
0:05:50	3,482.43	31.09	8.32	0:12:50	3,421.98	61.11	4.36	0:19:50	2,775.90	99.14	2.64	0:26:50	1,618.42	115.60	2.26	0:33:50	145.96	145.96	1.79
0:05:55	3,489.19	31.15	8.30	0:12:55	3,378.30	60.33	4.36	0:19:55	2,838.02	101.36	2.61	0:26:55	1,671.85	119.42	2.19	0:33:55	147.01	147.01	1.78
0:06:00	3,559.29	31.78	8.31	0:13:00	3,359.85	60.00	4.33	0:20:00	2,938.53	104.95	2.50	0:27:00	1,800.40	128.60	2.07	0:34:00	148.01	148.01	1.76
0:06:05	3,588.65	32.04	8.31	0:13:05	3,407.61	60.85	4.33	0:20:05	2,726.93	97.39	2.66	0:27:05	1,725.85	123.28	2.05	0:34:05	144.18	144.18	1.81
0:06:10	3,465.02	30.94	8.31	0:13:10	3,305.37	59.02	4.37	0:20:10	2,879.44	102.84	2.57	0:27:10	1,737.65	124.12	2.18	0:34:10	141.72	141.72	1.84
0:06:15	3,534.44	31.56	8.30	0:13:15	3,399.12	60.70	4.34	0:20:15	2,721.68	97.20	2.61	0:27:15	1,588.54	113.47	2.25	0:34:15	150.31	150.31	1.74
0:06:20	3,539.10	31.60	8.32	0:13:20	3,324.51	59.37	4.33	0:20:20	2,842.58	101.52	2.60	0:27:20	1,821.48	130.11	2.06	0:34:20	151.26	151.26	1.72
0:06:25	3,582.72	31.99	8.30	0:13:25	3,439.70	61.42	4.35	0:20:25	2,902.88	103.67	2.55	0:27:25	1,705.88	121.85	2.14	0:34:25	150.68	150.68	1.73
0:06:30	3,536.58	31.58	8.31	0:13:30	3,445.25	61.52	4.30	0:20:30	2,913.73	104.06	2.53	0:27:30	1,733.14	123.80	2.11	0:34:30	150.10	150.10	1.74
0:06:35	3,407.24	30.42	8.30	0:13:35	3,293.73	58.82	4.29	0:20:35	2,893.96	103.36	2.53	0:27:35	1,701.37	121.53	2.15	0:34:35	148.69	148.69	1.76
0:06:40	3,631.38	32.42	8.32	0:13:40	3,445.52	61.53	4.31	0:20:40	2,702.44	96.52	2.71	0:27:40	1,648.73	117.77	2.16	0:34:40	132.85	132.85	1.96
0:06:45	214.59	0.00	8.01	0:13:45	264.61	0.00	4.17	0:20:45	147.53	0.00	2.80	0:27:45	133.01	0.00	2.11	0:34:45	9.07	0.00	1.68
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

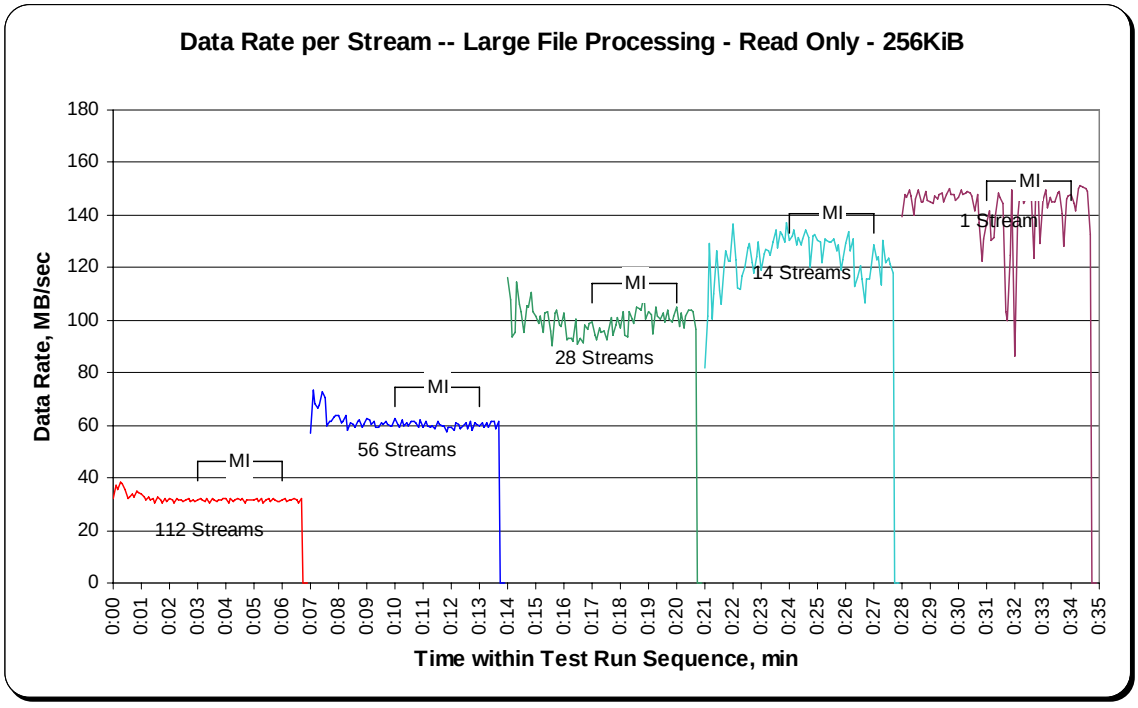
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



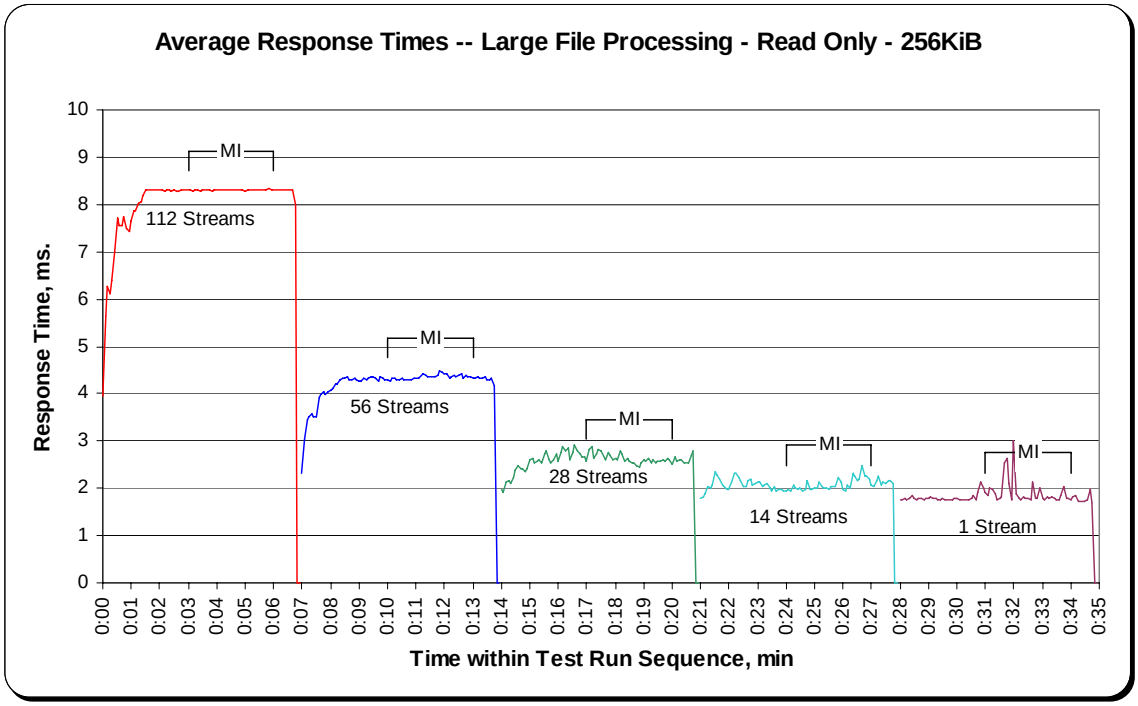
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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 102.

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.

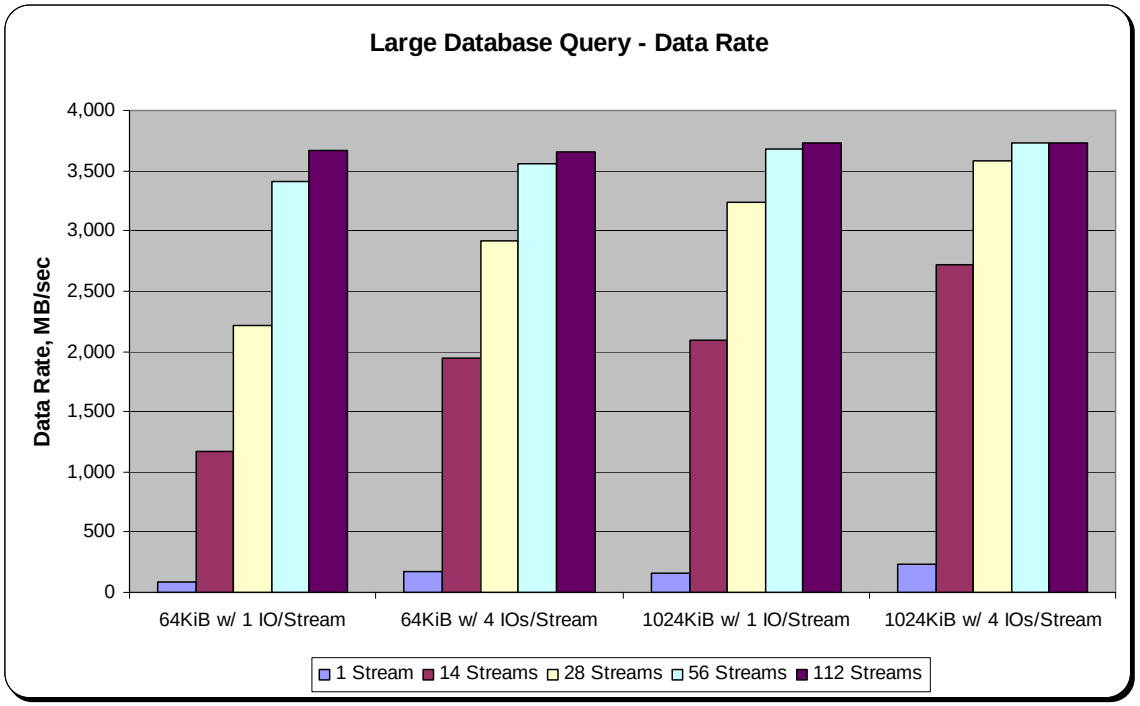
SPC-2 Large Database Query Test Results File

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	14 Streams	28 Streams	56 Streams	112 Streams
64KiB w/ 1 IO/Stream	80.86	1,173.16	2,212.19	3,405.93	3,667.54
64KiB w/ 4 IOs/Stream	172.25	1,949.49	2,918.35	3,557.39	3,654.84
1024KiB w/ 1 IO/Stream	156.48	2,095.65	3,231.09	3,677.10	3,733.76
1024KiB w/ 4 IOs/Stream	233.63	2,714.01	3,583.53	3,735.03	3,733.18

SPC-2 Large Database Query Average Data Rates Graph

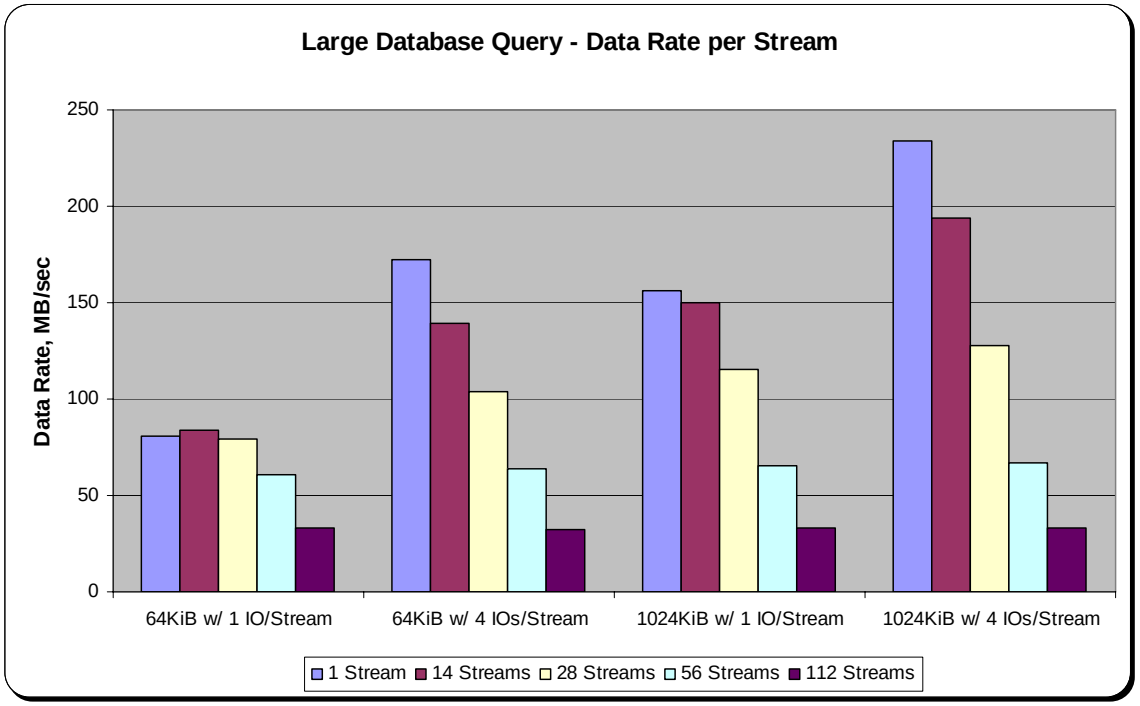


SPC-2 Large Database Query Average Data Rate per Stream

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	14 Streams	28 Streams	56 Streams	112 Streams
64KiB w/ 1 IO/Stream	80.86	83.80	79.01	60.82	32.75
64KiB w/ 4 IOs/Stream	172.25	139.25	104.23	63.52	32.63
1024KiB w/ 1 IO/Stream	156.48	149.69	115.40	65.66	33.34
1024KiB w/ 4 IOs/Stream	233.63	193.86	127.98	66.70	33.33

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

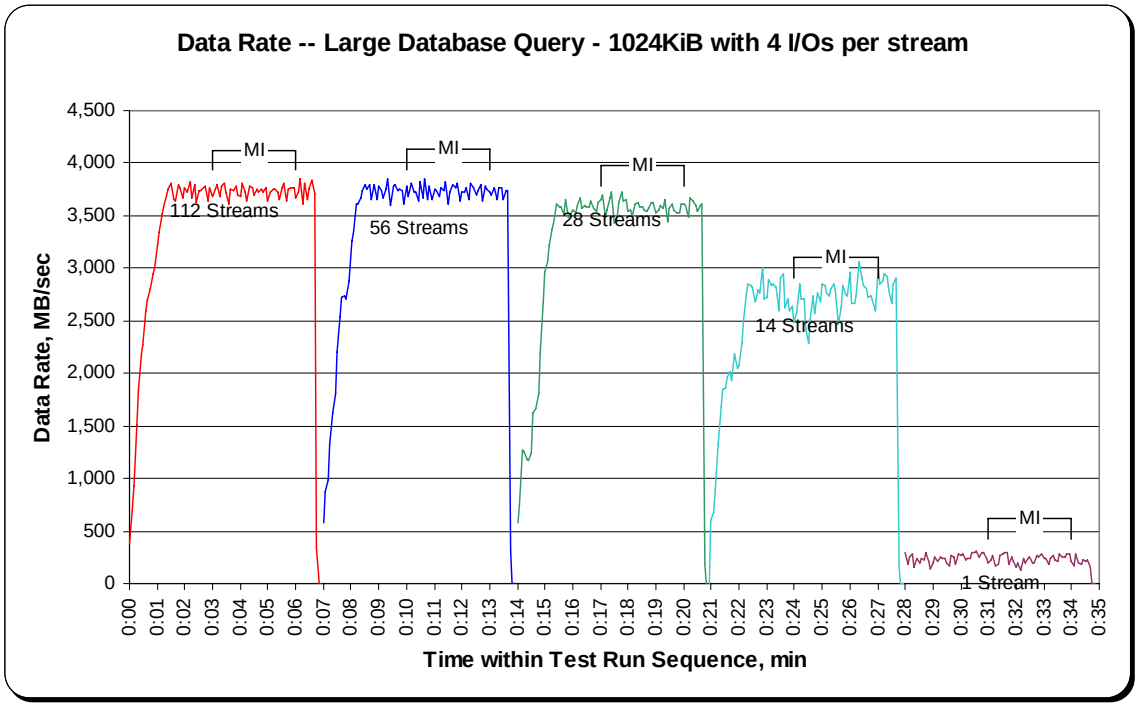
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR11	112 Streams			TR12	56 Streams			TR13	28 Streams			TR14	14 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	379.17	47.40	45.70	0:07:00	580.70	64.52	35.70	0:14:00	582.38	145.59	21.97	0:20:55	0.00	0.00	0.00	0:28:00	291.92	291.92	13.68
0:00:05	723.73	38.09	81.92	0:07:05	872.00	67.08	51.52	0:14:05	748.26	106.89	28.39	0:21:00	610.48	203.49	17.14	0:28:05	179.52	179.52	23.36
0:00:10	933.44	31.11	107.23	0:07:10	991.11	66.07	59.76	0:14:10	1,272.76	141.42	30.14	0:21:05	670.67	223.56	18.73	0:28:10	258.79	258.79	16.21
0:00:15	1,515.82	36.09	100.38	0:07:15	1,328.76	69.93	54.50	0:14:15	1,262.49	140.28	28.72	0:21:10	895.27	149.21	19.47	0:28:15	278.92	278.92	15.00
0:00:20	1,850.53	34.27	110.84	0:07:20	1,629.28	74.06	52.38	0:14:20	1,191.60	132.40	31.70	0:21:15	1,324.14	165.52	20.76	0:28:20	158.33	158.33	26.49
0:00:25	2,174.54	35.07	112.01	0:07:25	1,805.44	72.22	54.45	0:14:25	1,172.73	130.30	32.30	0:21:20	1,680.03	210.00	19.97	0:28:25	244.11	244.11	17.21
0:00:30	2,265.97	34.86	111.55	0:07:30	2,200.75	66.69	55.62	0:14:30	1,238.16	123.82	31.00	0:21:25	1,848.85	205.43	19.65	0:28:30	194.83	194.83	21.49
0:00:35	2,594.39	37.06	108.84	0:07:35	2,537.97	70.50	56.04	0:14:35	1,627.18	135.60	28.56	0:21:30	1,867.51	207.50	20.42	0:28:35	235.09	235.09	17.85
0:00:40	2,697.57	35.03	113.69	0:07:40	2,721.26	75.59	55.51	0:14:40	1,658.64	127.59	30.79	0:21:35	1,966.50	196.65	20.71	0:28:40	227.75	227.75	18.41
0:00:45	2,805.15	33.80	118.98	0:07:45	2,730.28	75.84	56.04	0:14:45	1,799.99	120.00	32.15	0:21:40	2,015.15	201.52	20.29	0:28:45	291.29	291.29	14.39
0:00:50	2,949.43	35.11	122.84	0:07:50	2,707.84	71.26	57.17	0:14:50	2,207.25	116.17	30.56	0:21:45	1,926.44	192.64	21.88	0:28:50	212.23	212.23	19.72
0:00:55	2,999.56	34.48	116.56	0:07:55	2,877.92	63.95	59.49	0:14:55	2,677.85	121.72	31.19	0:21:50	2,181.67	218.17	19.22	0:28:55	145.96	145.96	28.71
0:01:00	3,229.40	35.49	115.37	0:08:00	3,259.81	70.87	58.40	0:15:00	2,962.23	128.79	31.53	0:21:55	2,048.29	204.83	20.48	0:29:00	204.47	204.47	20.56
0:01:05	3,338.25	36.29	115.52	0:08:05	3,331.12	67.98	58.55	0:15:05	3,057.02	132.91	31.07	0:22:00	2,074.08	188.55	21.16	0:29:05	256.06	256.06	16.36
0:01:10	3,515.25	36.62	113.62	0:08:10	3,612.55	69.47	59.02	0:15:10	3,220.60	134.19	30.80	0:22:05	2,290.09	190.84	21.94	0:29:10	212.65	212.65	19.73
0:01:15	3,579.84	35.10	116.71	0:08:15	3,605.63	68.03	60.27	0:15:15	3,365.51	129.44	30.43	0:22:10	2,498.55	192.20	20.47	0:29:15	249.56	249.56	16.78
0:01:20	3,696.02	34.54	119.83	0:08:20	3,664.35	67.86	61.04	0:15:20	3,426.96	126.92	31.93	0:22:15	2,748.95	196.35	20.88	0:29:20	246.83	246.83	17.01
0:01:25	3,746.77	33.45	124.13	0:08:25	3,740.90	66.80	61.85	0:15:25	3,611.72	128.99	32.43	0:22:20	2,851.08	203.65	20.63	0:29:25	237.40	237.40	17.59
0:01:30	3,813.88	34.05	126.05	0:08:30	3,791.23	67.70	62.94	0:15:30	3,581.52	127.91	32.81	0:22:25	2,836.61	202.61	20.41	0:29:30	197.76	197.76	21.29
0:01:35	3,656.59	32.65	126.10	0:08:35	3,749.71	66.96	62.87	0:15:35	3,580.68	127.88	33.12	0:22:30	2,814.80	201.06	21.04	0:29:35	167.77	167.77	24.98
0:01:40	3,640.87	32.51	125.49	0:08:40	3,791.65	67.71	62.29	0:15:40	3,506.02	125.21	33.50	0:22:35	2,678.48	191.32	21.92	0:29:40	268.44	268.44	15.62
0:01:45	3,792.49	33.86	125.34	0:08:45	3,657.64	65.32	62.68	0:15:45	3,656.80	130.60	32.55	0:22:40	2,797.81	199.84	21.36	0:29:45	251.24	251.24	16.64
0:01:50	3,765.44	33.62	125.49	0:08:50	3,790.60	67.69	62.92	0:15:50	3,484.00	124.43	32.82	0:22:45	2,771.60	197.97	21.28	0:29:50	182.03	182.03	23.09
0:01:55	3,674.00	32.80	125.76	0:08:55	3,656.59	65.30	62.92	0:15:55	3,504.13	125.15	33.05	0:22:50	2,999.77	214.27	19.57	0:29:55	285.21	285.21	14.71
0:02:00	3,761.66	33.59	124.64	0:09:00	3,777.81	67.46	62.81	0:16:00	3,557.40	127.05	33.08	0:22:55	2,705.12	193.22	21.09	0:30:00	270.53	270.53	15.49
0:02:05	3,720.56	33.22	126.02	0:09:05	3,737.33	66.74	62.91	0:16:05	3,522.17	125.79	33.45	0:23:00	2,721.47	194.39	21.86	0:30:05	277.24	277.24	15.12
0:02:10	3,826.67	34.17	125.69	0:09:10	3,662.47	65.40	63.03	0:16:10	3,600.60	128.59	32.75	0:23:05	2,894.91	206.78	20.44	0:30:10	222.09	222.09	18.83
0:02:15	3,665.40	32.73	125.84	0:09:15	3,754.95	67.05	62.90	0:16:15	3,666.87	130.96	32.33	0:23:10	2,836.82	202.63	20.70	0:30:15	234.46	234.46	17.91
0:02:20	3,800.04	33.93	126.05	0:09:20	3,857.50	68.88	63.08	0:16:20	3,567.26	127.40	32.91	0:23:15	2,851.08	203.65	20.70	0:30:20	239.08	239.08	17.55
0:02:25	3,628.91	32.40	126.00	0:09:25	3,593.05	64.16	62.90	0:16:25	3,595.57	128.41	32.89	0:23:20	2,827.59	201.97	20.84	0:30:25	291.92	291.92	14.40
0:02:30	3,734.82	33.35	126.11	0:09:30	3,774.24	67.40	62.98	0:16:30	3,580.05	127.86	32.16	0:23:25	2,601.10	185.79	21.87	0:30:30	299.68	299.68	13.98
0:02:35	3,740.90	33.40	126.32	0:09:35	3,791.86	67.71	62.98	0:16:35	3,585.71	128.06	32.94	0:23:30	2,906.02	207.57	20.64	0:30:35	305.76	305.76	13.71
0:02:40	3,762.29	33.59	125.76	0:09:40	3,738.80	66.76	62.85	0:16:40	3,635.20	129.83	32.81	0:23:35	2,953.63	210.97	19.96	0:30:40	249.14	249.14	16.72
0:02:45	3,779.70	33.75	125.99	0:09:45	3,753.48	67.03	62.53	0:16:45	3,568.09	127.43	32.89	0:23:40	2,618.92	187.07	21.66	0:30:45	292.76	292.76	14.42
0:02:50	3,633.94	32.45	125.95	0:09:50	3,736.50	66.72	63.01	0:16:50	3,533.70	126.20	32.43	0:23:45	2,713.92	193.85	21.96	0:30:50	291.50	291.50	14.37
0:02:55	3,760.61	33.58	125.90	0:09:55	3,608.57	64.44	62.98	0:16:55	3,626.81	129.53	32.52	0:23:50	2,602.15	185.87	22.70	0:30:55	235.09	235.09	17.82
												0:23:55	2,642.41	188.74	22.20				

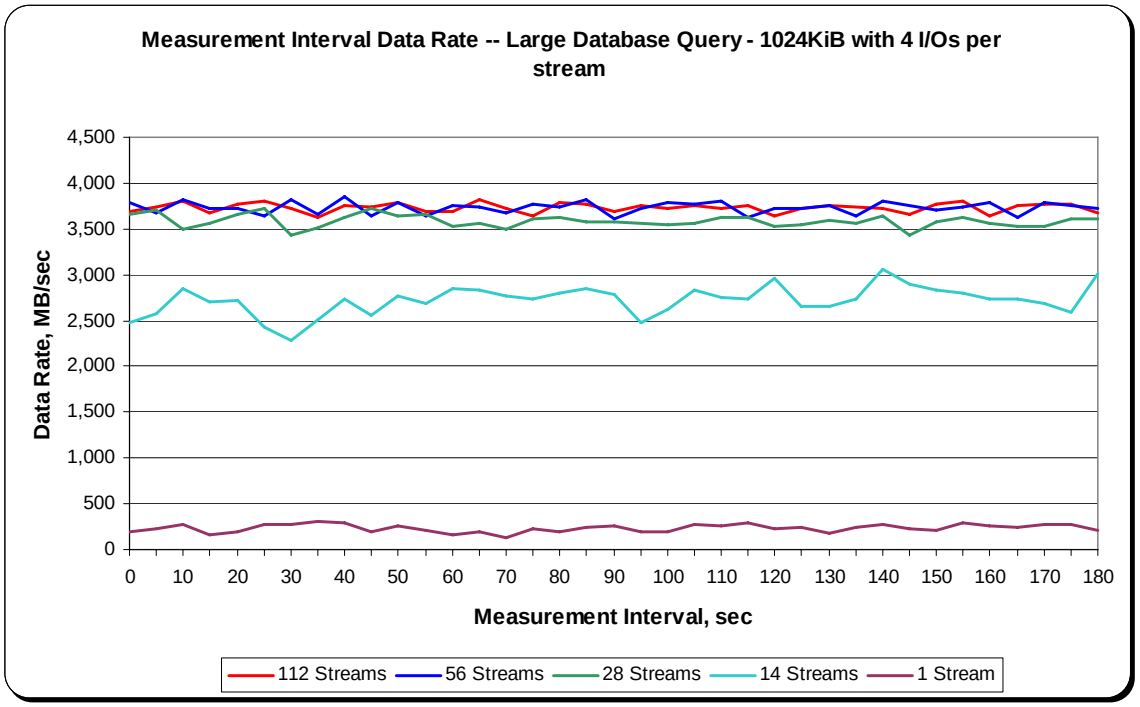
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	112 Streams			TR12	56 Streams			TR13	28 Streams			TR14	14 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
0:03:00	3,685.95	32.91	125.14	0:10:00	3,785.78	67.60	62.86	0:17:00	3,658.48	130.66	32.28	0:24:00	2,482.40	177.31	23.09	0:31:00	190.63	190.63	22.02
0:03:05	3,745.51	33.44	125.77	0:10:05	3,680.08	65.72	62.96	0:17:05	3,700.63	132.17	32.35	0:24:05	2,578.24	184.16	23.18	0:31:05	230.90	230.90	18.13
0:03:10	3,797.94	33.91	125.90	0:10:10	3,814.30	68.11	62.91	0:17:10	3,491.13	124.68	32.76	0:24:10	2,848.14	203.44	21.06	0:31:10	270.32	270.32	15.53
0:03:15	3,677.36	32.83	125.56	0:10:15	3,730.20	66.61	62.94	0:17:15	3,554.46	126.95	32.68	0:24:15	2,703.23	193.09	20.84	0:31:15	169.87	169.87	24.67
0:03:20	3,777.81	33.73	125.87	0:10:20	3,728.53	66.58	63.03	0:17:20	3,662.05	130.79	32.27	0:24:20	2,712.46	193.75	22.01	0:31:20	190.42	190.42	22.05
0:03:25	3,806.33	33.99	125.88	0:10:25	3,640.24	65.00	62.83	0:17:25	3,722.24	132.94	32.81	0:24:25	2,428.29	173.45	23.79	0:31:25	268.85	268.85	15.59
0:03:30	3,729.99	33.30	126.01	0:10:30	3,823.53	68.28	62.87	0:17:30	3,434.09	122.65	33.32	0:24:30	2,283.38	163.10	25.77	0:31:30	275.99	275.99	15.19
0:03:35	3,618.22	32.31	126.11	0:10:35	3,662.68	65.40	62.75	0:17:35	3,504.55	125.16	32.85	0:24:35	2,510.92	179.35	23.66	0:31:35	302.83	302.83	13.85
0:03:40	3,748.87	33.47	125.78	0:10:40	3,847.44	68.70	62.96	0:17:40	3,621.57	129.34	32.44	0:24:40	2,730.07	195.01	21.87	0:31:40	289.41	289.41	14.49
0:03:45	3,734.82	33.35	126.06	0:10:45	3,647.16	65.13	63.00	0:17:45	3,730.83	133.24	32.45	0:24:45	2,560.62	182.90	22.16	0:31:45	186.44	186.44	22.46
0:03:50	3,786.20	33.81	125.99	0:10:50	3,783.47	67.56	63.19	0:17:50	3,634.36	129.80	32.38	0:24:50	2,765.30	197.52	21.22	0:31:50	251.66	251.66	16.67
0:03:55	3,695.39	32.99	125.05	0:10:55	3,648.00	65.14	63.19	0:17:55	3,654.08	130.50	32.18	0:24:55	2,682.05	191.57	21.97	0:31:55	214.33	214.33	19.58
0:04:00	3,685.95	32.91	126.00	0:11:00	3,755.58	67.06	62.54	0:18:00	3,535.59	126.27	32.34	0:25:00	2,852.97	203.78	20.68	0:32:00	153.93	153.93	26.15
0:04:05	3,814.72	34.06	126.05	0:11:05	3,731.46	66.63	63.18	0:18:05	3,553.62	126.92	33.09	0:25:05	2,830.11	202.15	20.93	0:32:05	190.63	190.63	21.99
0:04:10	3,726.43	33.27	125.97	0:11:10	3,682.18	65.75	62.89	0:18:10	3,491.55	124.70	33.50	0:25:10	2,764.05	197.43	21.29	0:32:10	126.46	126.46	33.17
0:04:15	3,639.19	32.49	125.82	0:11:15	3,772.78	67.37	62.37	0:18:15	3,617.38	129.19	32.66	0:25:15	2,732.80	195.20	21.59	0:32:15	234.67	234.67	17.92
0:04:20	3,785.99	33.80	126.04	0:11:20	3,732.30	66.65	63.04	0:18:20	3,630.80	129.67	32.53	0:25:20	2,802.84	200.20	20.51	0:32:20	192.31	192.31	21.77
0:04:25	3,764.39	33.61	125.83	0:11:25	3,820.17	68.22	63.03	0:18:25	3,580.05	127.86	32.66	0:25:25	2,846.88	203.35	20.70	0:32:25	246.42	246.42	17.05
0:04:30	3,688.89	32.94	125.76	0:11:30	3,609.41	64.45	63.04	0:18:30	3,577.11	127.75	32.43	0:25:30	2,791.31	199.38	21.23	0:32:30	253.97	253.97	16.49
0:04:35	3,757.47	33.55	126.06	0:11:35	3,726.64	66.55	63.00	0:18:35	3,558.87	127.10	32.97	0:25:35	2,472.54	176.61	23.97	0:32:35	197.34	197.34	21.27
0:04:40	3,720.35	33.22	126.20	0:11:40	3,793.75	67.75	63.01	0:18:40	3,545.86	126.64	33.12	0:25:40	2,621.23	187.23	22.44	0:32:40	200.70	200.70	20.84
0:04:45	3,757.47	33.55	125.97	0:11:45	3,765.02	67.23	63.01	0:18:45	3,565.58	127.34	32.99	0:25:45	2,839.54	202.82	20.60	0:32:45	272.63	272.63	15.42
0:04:50	3,728.11	33.29	126.07	0:11:50	3,807.17	67.99	62.94	0:18:50	3,631.43	129.69	32.97	0:25:50	2,746.85	196.20	21.42	0:32:50	258.58	258.58	16.21
0:04:55	3,762.71	33.60	125.29	0:11:55	3,633.53	64.88	62.44	0:18:55	3,629.33	129.62	32.56	0:25:55	2,735.32	195.38	21.46	0:32:55	288.78	288.78	14.52
0:05:00	3,637.30	32.48	125.88	0:12:00	3,729.16	66.59	62.94	0:19:00	3,520.70	125.74	32.61	0:26:00	2,967.89	211.99	19.84	0:33:00	233.62	233.62	17.75
0:05:05	3,727.27	33.28	126.00	0:12:05	3,719.09	66.41	63.01	0:19:05	3,551.95	126.86	32.65	0:26:05	2,660.24	190.02	21.27	0:33:05	240.54	240.54	17.62
0:05:10	3,753.48	33.51	126.11	0:12:10	3,760.40	67.15	62.96	0:19:10	3,592.84	128.32	32.69	0:26:10	2,661.50	190.11	22.03	0:33:10	177.63	177.63	23.62
0:05:15	3,745.30	33.44	126.07	0:12:15	3,646.74	65.12	62.98	0:19:15	3,562.64	127.24	33.13	0:26:15	2,741.82	195.84	21.44	0:33:15	241.38	241.38	17.35
0:05:20	3,731.04	33.31	125.99	0:12:20	3,810.94	68.05	62.97	0:19:20	3,647.58	130.27	33.16	0:26:20	3,057.23	218.37	19.43	0:33:20	272.21	272.21	15.42
0:05:25	3,653.66	32.62	125.91	0:12:25	3,763.13	67.20	62.96	0:19:25	3,435.55	122.70	32.96	0:26:25	2,899.31	207.09	20.26	0:33:25	231.11	231.11	18.14
0:05:30	3,765.44	33.62	126.03	0:12:30	3,702.52	66.12	62.97	0:19:30	3,575.02	127.68	33.07	0:26:30	2,839.96	202.85	21.04	0:33:30	209.92	209.92	19.99
0:05:35	3,810.53	34.02	126.02	0:12:35	3,743.21	66.84	62.99	0:19:35	3,618.01	129.21	33.06	0:26:35	2,802.42	200.17	20.94	0:33:35	286.26	286.26	14.65
0:05:40	3,644.43	32.54	125.99	0:12:40	3,793.33	67.74	62.56	0:19:40	3,560.13	127.15	33.10	0:26:40	2,727.77	194.84	21.52	0:33:40	258.16	258.16	16.14
0:05:45	3,749.92	33.48	125.87	0:12:45	3,633.74	64.89	63.03	0:19:45	3,525.52	125.91	32.38	0:26:45	2,734.69	195.33	21.45	0:33:45	249.14	249.14	16.92
0:05:50	3,768.79	33.65	125.50	0:12:50	3,785.99	67.61	62.91	0:19:50	3,521.12	125.75	33.52	0:26:50	2,691.90	192.28	21.81	0:33:50	275.57	275.57	15.22
0:05:55	3,771.10	33.67	125.39	0:12:55	3,751.60	66.99	62.99	0:19:55	3,610.25	128.94	32.77	0:26:55	2,597.95	185.57	21.95	0:33:55	277.03	277.03	15.14
0:06:00	3,667.50	32.75	125.38	0:13:00	3,724.54	66.51	62.97	0:20:00	3,617.59	129.20	32.72	0:27:00	3,015.49	215.39	19.94	0:34:00	217.89	217.89	19.23
0:06:05	3,731.04	33.31	126.02	0:13:05	3,702.94	66.12	62.63	0:20:05	3,591.16	128.26	33.08	0:27:05	2,855.48	203.96	20.70	0:34:05	168.19	168.19	24.96
0:06:10	3,850.16	34.38	125.13	0:13:10	3,771.73	67.35	62.95	0:20:10	3,489.87	124.64	32.43	0:27:10	2,880.65	205.76	20.44	0:34:10	288.57	288.57	14.53
0:06:15	3,617.80	32.30	125.43	0:13:15	3,653.87	65.25	62.92	0:20:15	3,672.11	131.15	32.63	0:27:15	2,950.69	210.76	19.50	0:34:15	192.10	192.10	21.83
0:06:20	3,807.59	34.00	126.06	0:13:20	3,770.68	67.33	63.02	0:20:20	3,638.56	129.95	32.62	0:27:20	2,917.14	208.37	20.29	0:34:20	186.44	186.44	22.46
0:06:25	3,649.04	32.58	125.95	0:13:25	3,763.13	67.20	63.01	0:20:25	3,599.13	128.54	32.70	0:27:25	2,788.37	199.17	21.07	0:34:25	227.96	227.96	18.43
0:06:30	3,757.68	33.55	125.77	0:13:30	3,649.25	65.17	63.06	0:20:30	3,540.83	126.46	32.69	0:27:30	2,671.77	190.84	21.47	0:34:30	210.55	210.55	20.12
0:06:35	3,837.37	34.26	126.06	0:13:35	3,733.56	66.67	62.97	0:20:35	3,592.84	128.32	32.73	0:27:35	2,850.24	203.59	20.59	0:34:35	224.19	224.19	18.72
0:06:40	3,709.02	33.12	125.15	0:13:40	3,739.43	66.78	62.89	0:20:40	3,606.26	128.80	32.86	0:27:40	2,907.70	207.69	20.64	0:34:40	159.38	159.38	26.65
0:06:45	342.05	0.00	123.51	0:13:45	308.07	0.00	58.53	0:20:45	189.16	0.00	32.35	0:27:45	151.41	0.00	20.96	0:34:45	6.08	0.00	29.77
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					0:27:55	0.00	0.00	0.00				

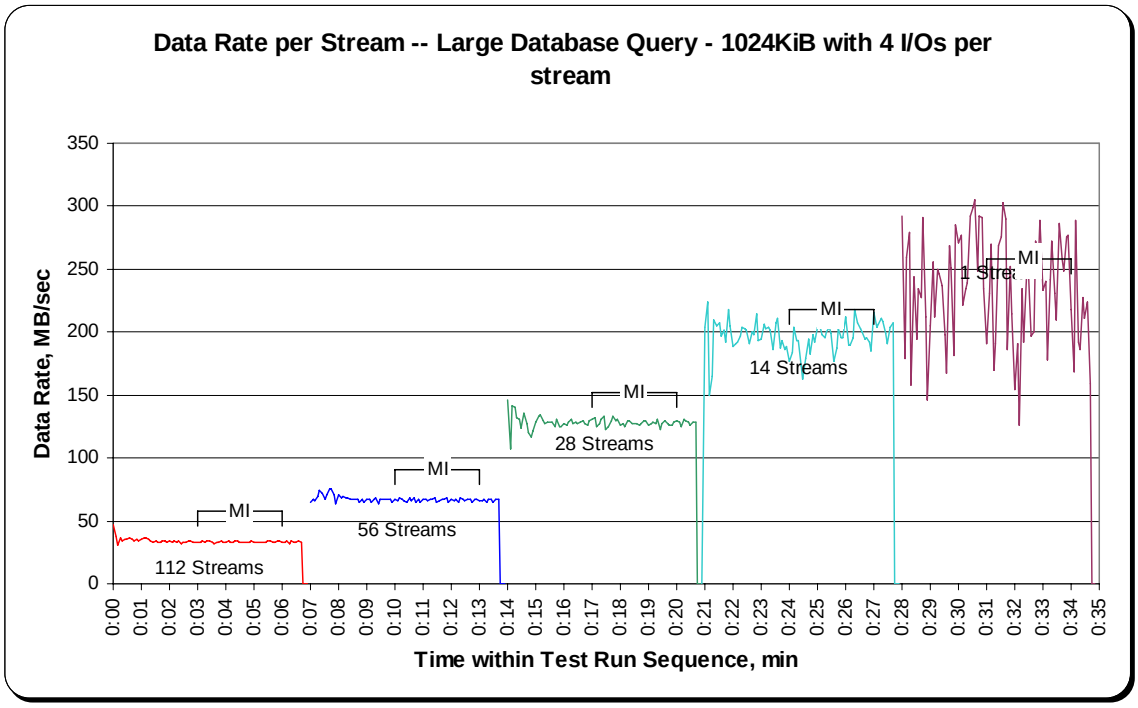
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



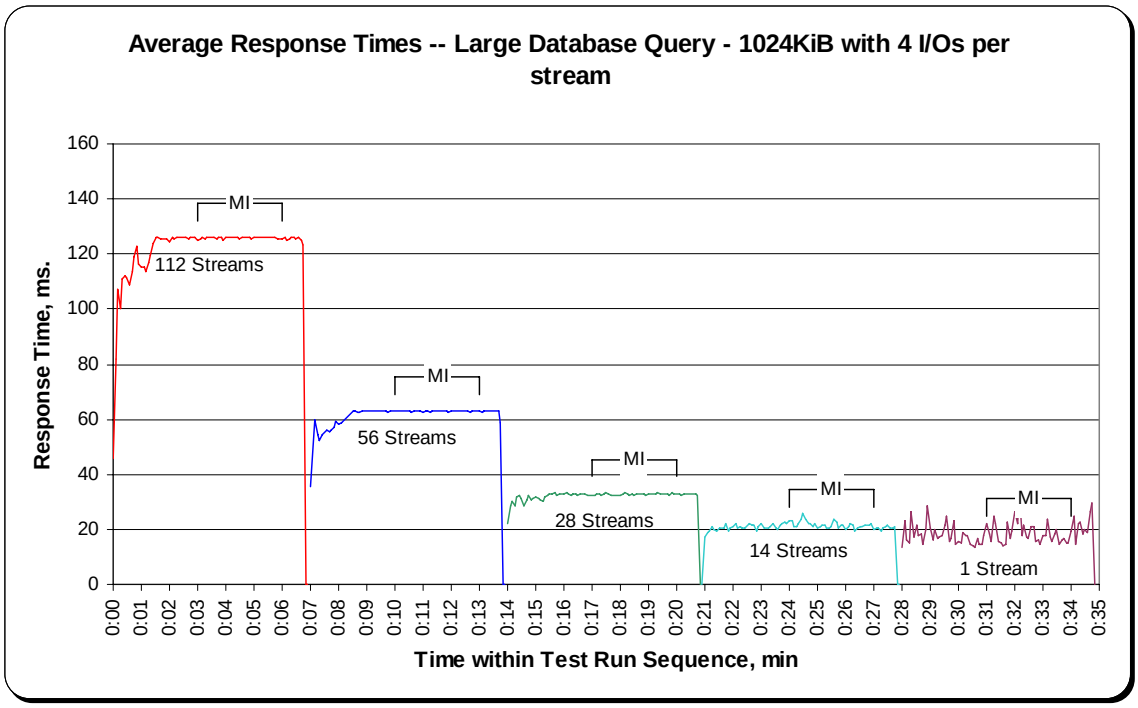
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



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



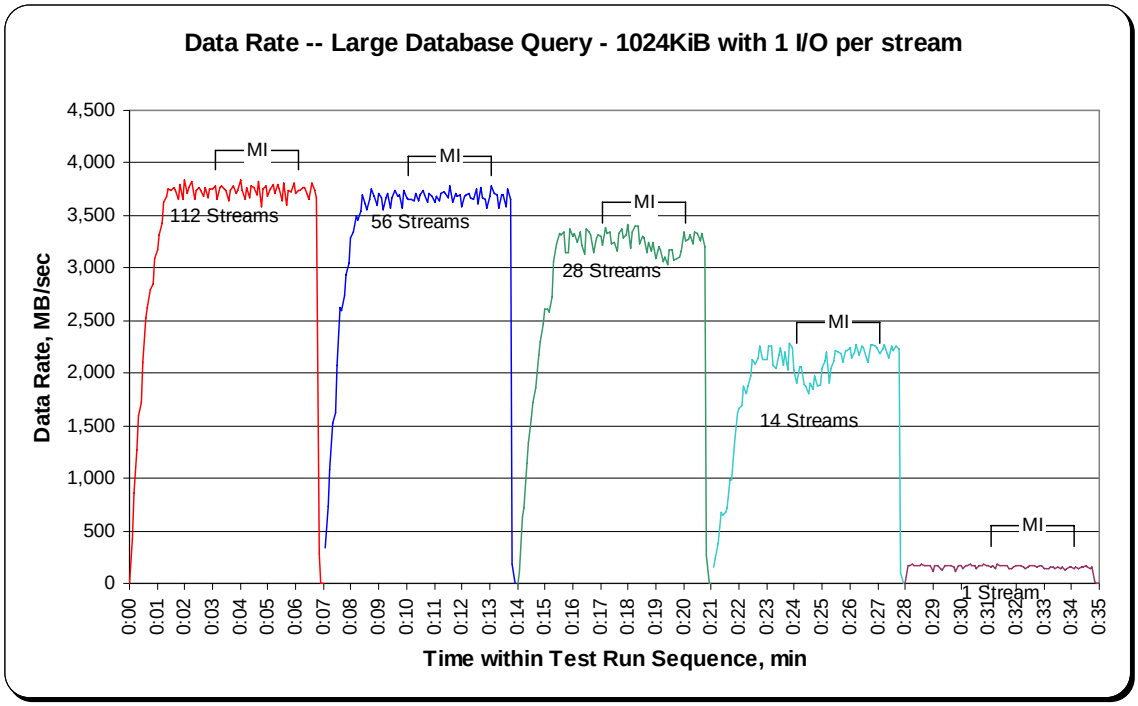
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR16	112 Streams			TR17	56 Streams			TR18	28 Streams			TR19	14 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	345.19	69.04	7.26	0:14:00	0.00	0.00	0.00	0:21:05	156.66	156.66	6.18	0:28:00	0.00	0.00	0.00
0:00:05	426.14	32.78	15.13	0:07:10	731.28	73.13	11.32	0:14:05	118.91	59.45	11.77	0:21:10	233.62	116.81	6.20	0:28:05	167.56	167.56	6.01
0:00:10	858.15	33.01	25.31	0:07:15	1,085.91	57.15	13.79	0:14:10	633.97	90.57	8.20	0:21:15	387.34	129.11	6.14	0:28:10	173.85	173.85	6.02
0:00:15	1,266.26	34.22	26.37	0:07:20	1,528.19	76.41	13.83	0:14:15	725.61	103.66	10.11	0:21:20	671.93	167.98	6.21	0:28:15	177.42	177.42	5.90
0:00:20	1,591.32	38.81	25.50	0:07:25	1,616.28	62.16	14.48	0:14:20	1,148.19	95.68	8.75	0:21:25	649.49	162.37	6.44	0:28:20	175.95	175.95	5.96
0:00:25	1,721.76	33.76	27.19	0:07:30	2,070.31	62.74	14.68	0:14:25	1,343.65	103.36	9.44	0:21:30	681.15	170.29	6.16	0:28:25	171.55	171.55	6.10
0:00:30	2,097.78	33.30	28.38	0:07:35	2,617.87	70.75	14.37	0:14:30	1,561.75	111.55	9.35	0:21:35	717.86	119.64	6.36	0:28:30	175.11	175.11	5.98
0:00:35	2,525.81	37.14	27.52	0:07:40	2,597.32	70.20	14.41	0:14:35	1,725.96	107.87	9.29	0:21:40	988.39	164.73	6.35	0:28:35	177.21	177.21	5.91
0:00:40	2,628.15	34.58	27.80	0:07:45	2,740.56	65.25	15.11	0:14:40	1,857.87	116.12	8.82	0:21:45	989.65	141.38	6.38	0:28:40	170.71	170.71	6.14
0:00:45	2,788.37	35.30	29.20	0:07:50	2,935.80	68.27	15.33	0:14:45	2,172.02	120.67	8.33	0:21:50	1,319.74	146.64	6.38	0:28:45	172.60	172.60	6.07
0:00:50	2,847.30	34.30	29.85	0:07:55	3,045.69	66.21	15.12	0:14:50	2,304.56	115.23	8.69	0:21:55	1,624.03	162.40	6.44	0:28:50	175.74	175.74	5.96
0:00:55	3,085.54	35.06	29.43	0:08:00	3,282.25	68.38	15.07	0:14:55	2,466.88	117.47	8.87	0:22:00	1,660.94	166.09	6.41	0:28:55	169.87	169.87	6.17
0:01:00	3,175.09	35.28	29.16	0:08:05	3,344.75	68.26	15.05	0:15:00	2,610.95	118.68	8.73	0:22:05	1,687.16	153.38	6.45	0:29:00	106.54	106.54	9.45
0:01:05	3,309.10	35.58	28.95	0:08:10	3,501.61	70.03	15.10	0:15:05	2,613.68	118.80	8.82	0:22:10	1,874.85	156.24	6.47	0:29:05	175.53	175.53	5.97
0:01:10	3,425.91	34.26	28.96	0:08:15	3,460.93	67.86	15.01	0:15:10	2,587.47	117.61	8.72	0:22:15	1,811.52	150.96	6.94	0:29:10	175.53	175.53	5.97
0:01:15	3,624.51	35.19	29.32	0:08:20	3,546.07	69.53	15.17	0:15:15	2,722.31	113.43	8.70	0:22:20	1,880.10	144.62	6.90	0:29:15	144.49	144.49	7.24
0:01:20	3,686.58	34.45	30.12	0:08:25	3,692.67	69.67	15.24	0:15:20	3,061.21	122.45	8.40	0:22:25	1,977.61	141.26	6.66	0:29:20	121.43	121.43	8.65
0:01:25	3,745.93	34.68	30.31	0:08:30	3,605.63	65.56	15.58	0:15:25	3,233.60	115.49	8.62	0:22:30	2,133.85	152.42	6.87	0:29:25	174.06	174.06	6.02
0:01:30	3,743.42	33.42	30.86	0:08:35	3,559.71	63.57	16.05	0:15:30	3,331.33	118.98	8.80	0:22:35	2,092.75	149.48	7.01	0:29:30	175.32	175.32	5.97
0:01:35	3,761.66	33.59	31.45	0:08:40	3,650.51	65.19	16.08	0:15:35	3,317.69	118.49	8.84	0:22:40	2,138.47	152.75	6.86	0:29:35	173.85	173.85	6.02
0:01:40	3,743.84	33.43	31.45	0:08:45	3,752.43	67.01	15.93	0:15:40	3,347.05	119.54	8.92	0:22:45	2,261.78	161.56	6.53	0:29:40	168.61	168.61	6.22
0:01:45	3,659.53	32.67	31.48	0:08:50	3,687.42	65.85	15.96	0:15:45	3,149.50	112.48	9.34	0:22:50	2,133.22	152.37	6.73	0:29:45	158.75	158.75	6.58
0:01:50	3,800.46	33.93	31.40	0:08:55	3,603.75	64.35	16.02	0:15:50	3,139.44	112.12	9.03	0:22:55	2,129.87	152.13	6.88	0:29:50	112.83	112.83	9.39
0:01:55	3,653.03	32.62	31.22	0:09:00	3,716.36	66.36	16.08	0:15:55	3,368.45	120.30	8.71	0:23:00	2,128.61	152.04	6.89	0:29:55	173.43	173.43	6.04
0:02:00	3,839.47	34.28	31.25	0:09:05	3,671.90	65.57	16.07	0:16:00	3,307.63	118.13	8.86	0:23:05	2,259.05	161.36	6.62	0:30:00	174.69	174.69	6.00
0:02:05	3,714.90	33.17	31.56	0:09:10	3,561.80	63.60	16.10	0:16:05	3,330.91	118.96	8.87	0:23:10	2,256.95	161.21	6.59	0:30:05	140.72	140.72	7.45
0:02:10	3,767.32	33.64	31.23	0:09:15	3,670.85	65.55	16.14	0:16:10	3,248.49	116.02	9.03	0:23:15	2,080.17	148.58	6.89	0:30:10	165.47	165.47	6.32
0:02:15	3,828.35	34.18	31.33	0:09:20	3,714.06	66.32	16.06	0:16:15	3,346.84	119.53	8.80	0:23:20	2,049.97	146.43	7.25	0:30:15	175.74	175.74	5.96
0:02:20	3,655.13	32.64	31.46	0:09:25	3,566.21	63.68	15.99	0:16:20	3,215.14	114.83	9.12	0:23:25	2,173.70	155.26	6.65	0:30:20	177.00	177.00	5.92
0:02:25	3,731.46	33.32	31.47	0:09:30	3,666.87	65.48	16.01	0:16:25	3,138.60	112.09	9.36	0:23:30	2,248.78	160.63	6.45	0:30:25	171.97	171.97	6.09
0:02:30	3,761.03	33.58	31.39	0:09:35	3,736.50	66.72	15.92	0:16:30	3,370.75	120.38	8.77	0:23:35	2,070.52	147.89	7.08	0:30:30	175.95	175.95	5.95
0:02:35	3,735.24	33.35	31.51	0:09:40	3,686.16	65.82	15.92	0:16:35	3,337.62	119.20	8.79	0:23:40	2,200.54	157.18	6.82	0:30:35	140.09	140.09	7.48
0:02:40	3,685.33	32.90	31.38	0:09:45	3,701.47	66.10	15.98	0:16:40	3,318.53	118.52	8.85	0:23:45	2,029.83	144.99	7.00	0:30:40	175.53	175.53	5.97
0:02:45	3,770.89	33.67	31.54	0:09:50	3,573.97	63.82	15.99	0:16:45	3,151.60	112.56	9.12	0:23:50	2,284.01	163.14	6.54	0:30:45	173.43	173.43	6.05
0:02:50	3,661.00	32.69	31.43	0:09:55	3,744.67	66.87	15.99	0:16:50	3,291.48	117.55	8.92	0:23:55	2,244.58	160.33	6.61	0:30:50	177.00	177.00	5.91
0:02:55	3,747.61	33.46	31.51	0:10:00	3,669.18	65.52	16.15	0:16:55	3,317.28	118.47	8.86	0:24:00	2,030.67	145.05	7.25	0:30:55	171.55	171.55	6.11
0:03:00	3,747.40	33.46	31.46					0:17:00	3,303.01	117.96	8.88					0:31:00	169.03	169.03	6.20

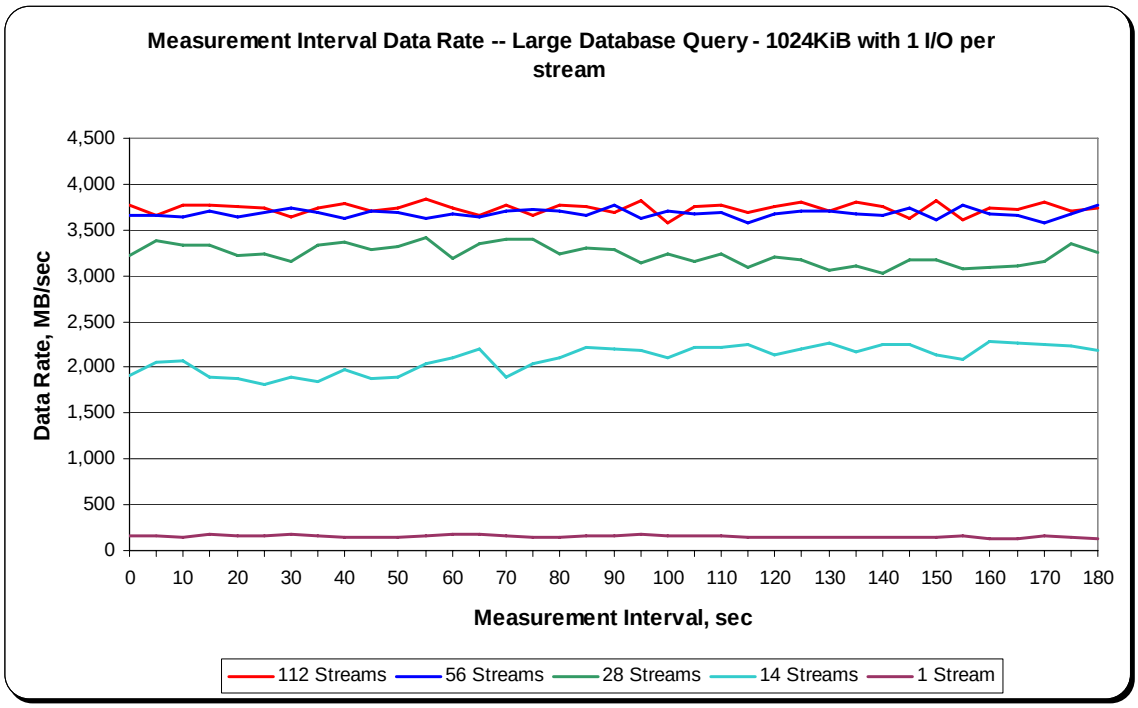
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR16	112 Streams			TR17	56 Streams			TR18	28 Streams			TR19	14 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	3,778.23	33.73	31.44	0:10:05	3,658.27	65.33	16.05	0:17:05	3,221.64	115.06	9.10	0:24:05	1,907.57	136.25	7.69	0:31:05	160.43	160.43	6.53
0:03:10	3,658.90	32.67	31.38	0:10:10	3,653.66	65.24	16.10	0:17:10	3,379.98	120.71	8.87	0:24:10	2,053.74	146.70	7.17	0:31:10	168.40	168.40	6.21
0:03:15	3,767.74	33.64	31.29	0:10:15	3,639.40	64.99	15.86	0:17:15	3,326.50	118.80	8.69	0:24:15	2,066.32	147.59	7.09	0:31:15	141.77	141.77	7.40
0:03:20	3,773.62	33.69	31.48	0:10:20	3,705.88	66.18	15.90	0:17:20	3,336.57	119.16	8.83	0:24:20	1,894.36	135.31	7.52	0:31:20	178.68	178.68	5.86
0:03:25	3,747.82	33.46	31.45	0:10:25	3,645.69	65.10	16.04	0:17:25	3,228.98	115.32	9.08	0:24:25	1,873.60	133.83	7.83	0:31:25	167.98	167.98	6.23
0:03:30	3,734.40	33.34	31.42	0:10:30	3,691.20	65.91	16.06	0:17:30	3,242.62	115.81	9.04	0:24:30	1,812.57	129.47	8.09	0:31:30	164.84	164.84	6.35
0:03:35	3,639.82	32.50	31.51	0:10:35	3,739.64	66.78	15.72	0:17:35	3,155.37	112.69	9.19	0:24:35	1,900.44	135.75	7.72	0:31:35	174.69	174.69	6.00
0:03:40	3,732.30	33.32	31.46	0:10:40	3,697.91	66.03	15.87	0:17:40	3,334.26	119.08	8.92	0:24:40	1,841.30	131.52	7.97	0:31:40	169.24	169.24	6.18
0:03:45	3,783.89	33.78	31.38	0:10:45	3,629.33	64.81	15.87	0:17:45	3,373.48	120.48	8.71	0:24:45	1,971.95	140.85	7.60	0:31:45	139.04	139.04	7.54
0:03:50	3,704.20	33.07	31.37	0:10:50	3,710.07	66.25	15.98	0:17:50	3,286.66	117.38	8.76	0:24:50	1,876.32	134.02	7.82	0:31:50	147.22	147.22	7.11
0:03:55	3,735.45	33.35	31.45	0:10:55	3,684.28	65.79	16.03	0:17:55	3,313.29	118.33	9.03	0:24:55	1,895.20	135.37	7.74	0:31:55	153.30	153.30	6.83
0:04:00	3,832.13	34.22	31.37	0:11:00	3,627.02	64.77	16.07	0:18:00	3,407.87	121.71	8.69	0:25:00	2,043.88	145.99	7.18	0:32:00	169.24	169.24	6.19
0:04:05	3,738.38	33.38	31.40	0:11:05	3,681.34	65.74	15.95	0:18:05	3,191.24	113.97	8.84	0:25:05	2,110.36	150.74	6.95	0:32:05	175.95	175.95	5.94
0:04:10	3,653.45	32.62	31.50	0:11:10	3,637.30	64.95	15.83	0:18:10	3,346.01	119.50	8.85	0:25:10	2,198.03	157.00	6.67	0:32:10	174.69	174.69	6.00
0:04:15	3,773.41	33.69	31.35	0:11:15	3,705.04	66.16	15.85	0:18:15	3,394.66	121.24	8.68	0:25:15	1,898.76	135.63	7.72	0:32:15	157.92	157.92	6.63
0:04:20	3,664.14	32.72	31.46	0:11:20	3,719.93	66.43	15.89	0:18:20	3,395.92	121.28	8.84	0:25:20	2,042.21	145.87	7.09	0:32:20	140.09	140.09	7.53
0:04:25	3,776.55	33.72	31.52	0:11:25	3,705.67	66.17	15.85	0:18:25	3,236.12	115.58	8.79	0:25:25	2,110.15	150.73	6.80	0:32:25	152.04	152.04	6.89
0:04:30	3,761.24	33.58	31.35	0:11:30	3,664.35	65.43	16.03	0:18:30	3,294.21	117.65	8.91	0:25:30	2,211.45	157.96	6.66	0:32:30	167.98	167.98	6.24
0:04:35	3,698.33	33.02	31.43	0:11:35	3,773.62	67.39	15.92	0:18:35	3,291.06	117.54	8.96	0:25:35	2,206.20	157.59	6.65	0:32:35	162.53	162.53	6.45
0:04:40	3,821.85	34.12	31.51	0:11:40	3,622.83	64.69	15.91	0:18:40	3,141.74	112.21	9.34	0:25:40	2,189.22	156.37	6.72	0:32:40	171.13	171.13	6.12
0:04:45	3,583.61	32.00	31.52	0:11:45	3,711.96	66.28	15.84	0:18:45	3,238.00	115.64	9.07	0:25:45	2,105.75	150.41	6.97	0:32:45	157.08	157.08	6.68
0:04:50	3,756.21	33.54	31.43	0:11:50	3,679.45	65.70	15.98	0:18:50	3,163.13	112.97	9.27	0:25:50	2,211.45	157.96	6.63	0:32:50	167.77	167.77	6.22
0:04:55	3,774.87	33.70	31.48	0:11:55	3,689.52	65.88	15.93	0:18:55	3,237.58	115.63	9.27	0:25:55	2,218.37	158.45	6.62	0:32:55	162.74	162.74	6.46
0:05:00	3,683.86	32.89	31.55	0:12:00	3,582.77	63.98	15.94	0:19:00	3,088.27	110.30	9.18	0:26:00	2,249.20	160.66	6.53	0:33:00	146.38	146.38	7.16
0:05:05	3,748.03	33.46	31.45	0:12:05	3,676.73	65.66	16.01	0:19:05	3,204.87	114.46	9.25	0:26:05	2,139.72	152.84	6.86	0:33:05	146.59	146.59	7.15
0:05:10	3,800.25	33.93	31.39	0:12:10	3,702.10	66.11	15.88	0:19:10	3,169.01	113.18	9.26	0:26:10	2,206.41	157.60	6.64	0:33:10	139.25	139.25	7.52
0:05:15	3,709.23	33.12	31.33	0:12:15	3,708.18	66.22	15.96	0:19:15	3,054.50	109.09	9.61	0:26:15	2,264.50	161.75	6.48	0:33:15	151.62	151.62	6.91
0:05:20	3,799.83	33.93	31.46	0:12:20	3,671.06	65.55	16.00	0:19:20	3,108.82	111.03	9.28	0:26:20	2,174.54	155.32	6.75	0:33:20	153.09	153.09	6.84
0:05:25	3,754.53	33.52	31.33	0:12:25	3,659.95	65.36	16.06	0:19:25	3,033.95	108.36	9.69	0:26:25	2,250.45	160.75	6.54	0:33:25	145.12	145.12	7.24
0:05:30	3,633.32	32.44	31.45	0:12:30	3,745.72	66.89	15.89	0:19:30	3,173.62	113.34	9.32	0:26:30	2,245.21	160.37	6.53	0:33:30	150.99	150.99	6.95
0:05:35	3,813.67	34.05	31.47	0:12:35	3,607.73	64.42	15.80	0:19:35	3,179.91	113.57	9.24	0:26:35	2,137.21	152.66	6.86	0:33:35	146.38	146.38	7.18
0:05:40	3,602.49	32.17	31.53	0:12:40	3,770.47	67.33	16.00	0:19:40	3,068.34	109.58	9.60	0:26:40	2,095.68	149.69	6.88	0:33:40	154.98	154.98	6.76
0:05:45	3,737.96	33.37	31.48	0:12:45	3,666.87	65.48	16.01	0:19:45	3,096.03	110.57	9.48	0:26:45	2,277.51	162.68	6.46	0:33:45	125.83	125.83	8.33
0:05:50	3,724.54	33.25	31.52	0:12:50	3,658.90	65.34	16.07	0:19:50	3,105.25	110.90	9.50	0:26:50	2,271.22	162.23	6.49	0:33:50	134.22	134.22	7.80
0:05:55	3,803.39	33.96	31.54	0:12:55	3,573.34	63.81	15.99	0:19:55	3,153.91	112.64	9.10	0:26:55	2,254.23	161.02	6.50	0:33:55	161.27	161.27	6.51
0:06:00	3,713.64	33.16	31.50	0:13:00	3,678.40	65.69	15.96	0:20:00	3,346.01	119.50	8.95	0:27:00	2,238.29	159.88	6.55	0:34:00	152.88	152.88	6.58
0:06:05	3,742.79	33.42	31.56	0:13:05	3,773.83	67.39	15.86	0:20:05	3,260.02	116.43	9.02	0:27:05	2,189.01	156.36	6.70	0:34:05	136.31	136.31	7.69
0:06:10	3,732.09	33.32	31.44	0:13:10	3,705.46	66.17	15.96	0:20:10	3,274.70	116.95	8.96	0:27:10	2,229.27	159.23	6.58	0:34:10	156.87	156.87	6.76
0:06:15	3,767.74	33.64	31.41	0:13:15	3,689.52	65.88	15.94	0:20:15	3,312.24	118.29	8.85	0:27:15	2,275.41	162.53	6.57	0:34:15	145.33	145.33	7.20
0:06:20	3,769.63	33.66	31.45	0:13:20	3,562.43	63.61	15.95	0:20:20	3,223.74	115.13	9.10	0:27:20	2,181.25	155.80	6.72	0:34:20	151.41	151.41	6.91
0:06:25	3,698.75	33.02	31.25	0:13:25	3,696.65	66.01	16.03	0:20:25	3,336.57	119.16	8.80	0:27:25	2,146.85	153.35	6.63	0:34:25	157.50	157.50	6.65
0:06:30	3,652.61	32.61	31.48	0:13:30	3,701.89	66.11	16.07	0:20:30	3,333.21	119.04	8.84	0:27:30	2,262.20	161.59	6.54	0:34:30	164.63	164.63	6.38
0:06:35	3,803.19	33.96	31.44	0:13:35	3,585.50	64.03	16.00	0:20:35	3,263.80	116.56	9.00	0:27:35	2,219.00	158.50	6.60	0:34:35	154.14	154.14	6.77
0:06:40	3,743.00	33.42	31.43	0:13:40	3,752.22	67.00	16.03	0:20:40	3,323.99	118.71	8.82	0:27:40	2,250.03	160.72	6.59	0:34:40	141.98	141.98	7.38
0:06:45	3,674.42	32.81	31.32	0:13:45	3,658.90	65.34	16.03	0:20:45	3,196.27	114.15	8.90	0:27:45	2,229.27	159.23	6.63	0:34:45	154.56	154.56	6.78
0:06:50	288.15	0.00	30.25	0:13:50	188.32	0.00	15.36	0:20:50	266.97	0.00	8.64	0:27:50	99.20	0.00	6.74	0:34:50	8.39	0.00	7.73
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					0:21:00	0.00	0.00	0.00					0:35:00	0.00	0.00	0.00

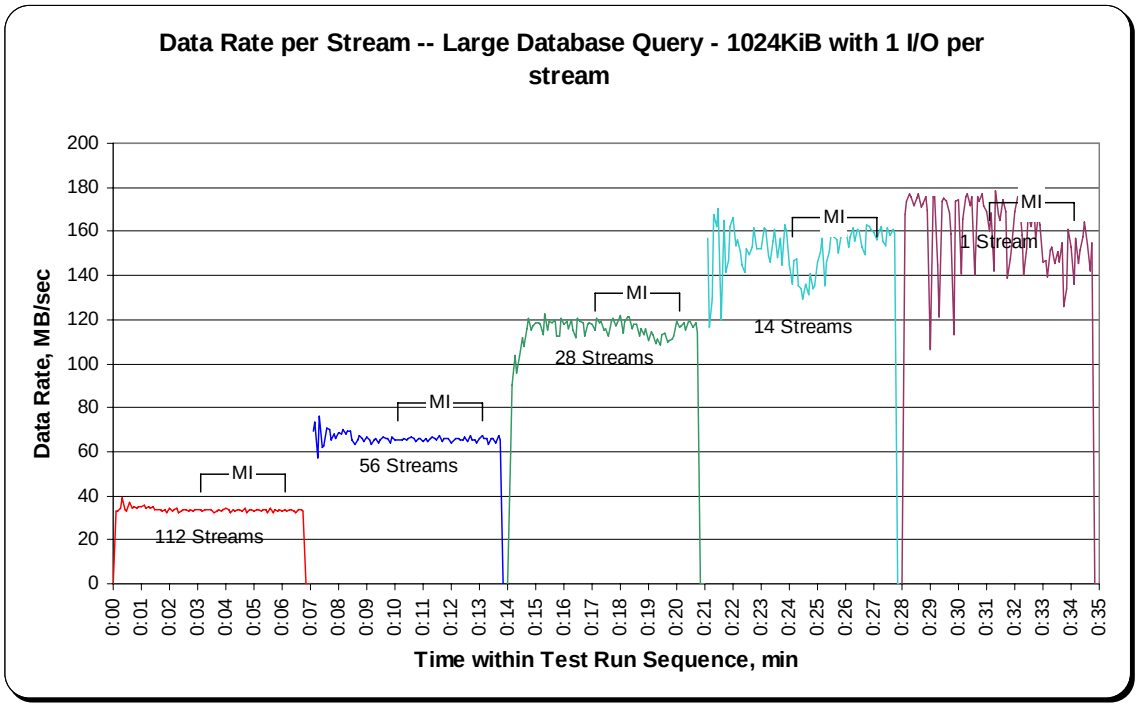
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



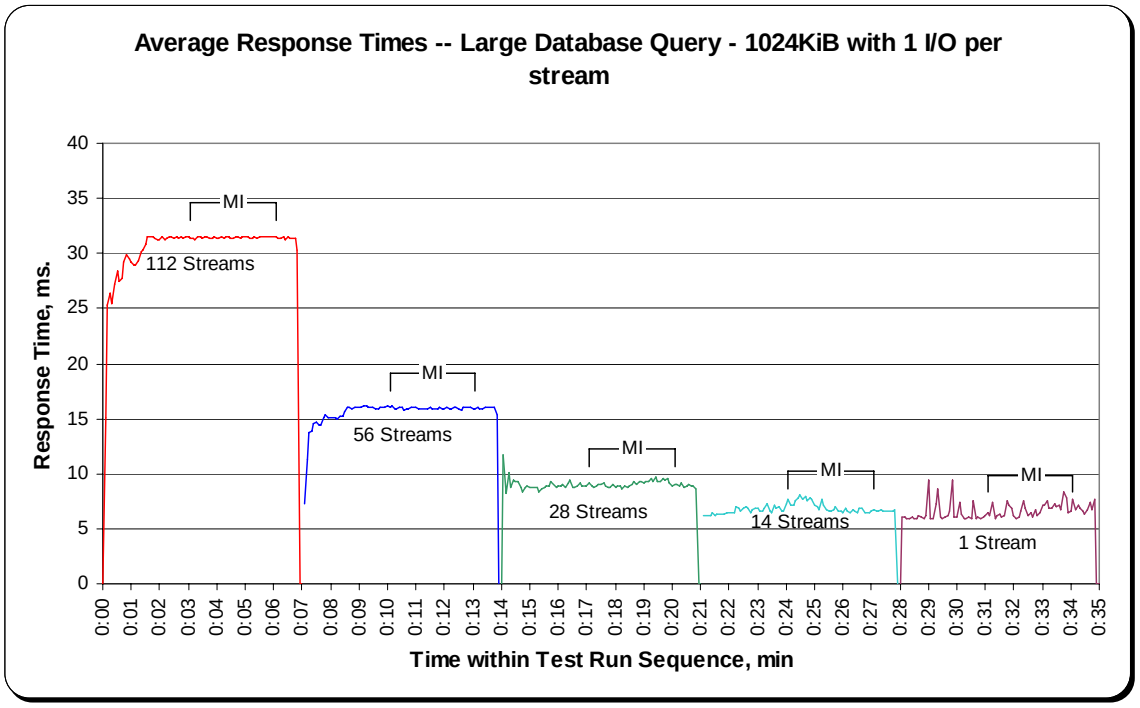
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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.

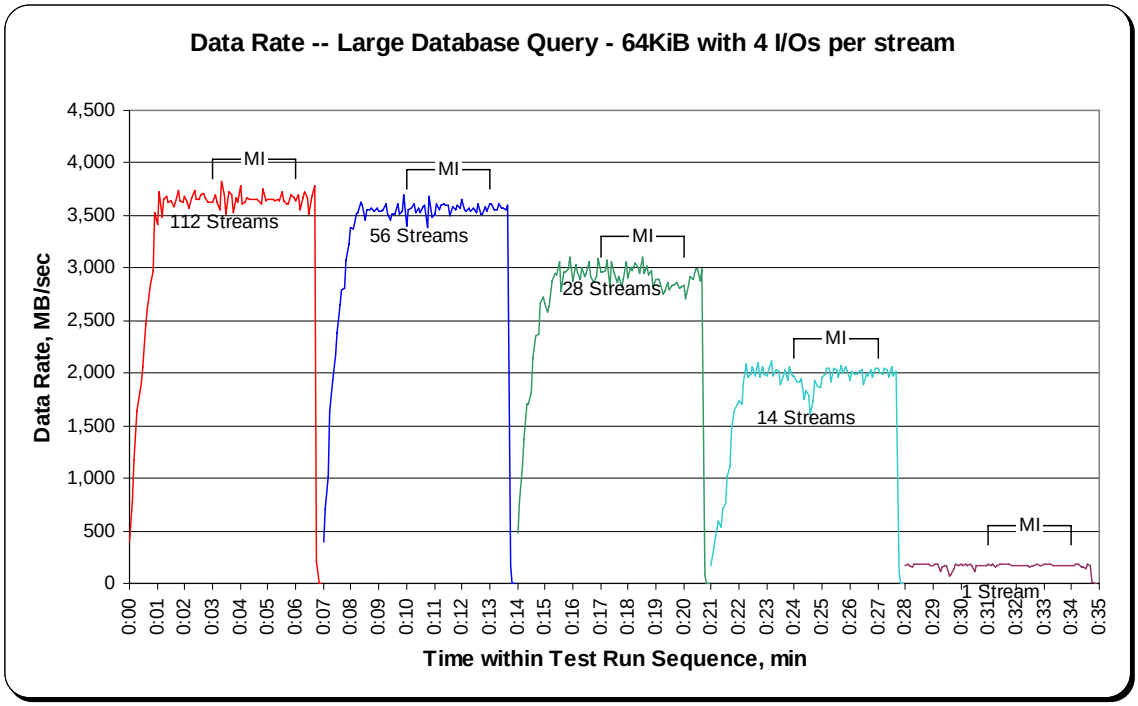
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR1	112 Streams			TR2	56 Streams			TR3	28 Streams			TR4	14 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	393.82	43.76	3.74	0:07:00	389.97	77.99	2.08	0:14:00	481.28	96.26	2.28	0:21:00	170.91	170.91	1.42	0:28:00	172.24	172.24	1.44
0:00:05	784.22	35.65	5.72	0:07:05	709.69	64.52	2.97	0:14:05	777.72	86.41	2.50	0:21:05	327.09	163.55	1.57	0:28:05	177.22	177.22	1.47
0:00:10	1,168.28	33.38	6.65	0:07:10	1,019.34	53.65	3.63	0:14:10	1,119.08	93.26	2.49	0:21:10	423.82	105.96	1.58	0:28:10	174.65	174.65	1.49
0:00:15	1,630.49	36.23	6.34	0:07:15	1,635.73	65.43	3.50	0:14:15	1,374.74	91.65	2.69	0:21:15	587.57	146.89	1.78	0:28:15	154.19	154.19	1.66
0:00:20	1,739.34	37.01	6.78	0:07:20	1,927.71	64.26	3.80	0:14:20	1,710.79	106.92	2.43	0:21:20	539.62	134.90	1.93	0:28:20	187.55	187.55	1.41
0:00:25	1,901.74	35.22	7.11	0:07:25	2,166.41	69.88	3.61	0:14:25	1,712.59	100.74	2.53	0:21:25	700.83	140.17	1.67	0:28:25	176.94	176.94	1.43
0:00:30	2,064.27	35.59	7.28	0:07:30	2,384.93	64.46	3.63	0:14:30	1,823.31	95.96	2.46	0:21:30	757.18	126.20	1.73	0:28:30	182.43	182.43	1.43
0:00:35	2,470.15	36.33	6.70	0:07:35	2,654.90	66.37	3.80	0:14:35	2,148.45	97.66	2.48	0:21:35	1,019.52	145.65	1.74	0:28:35	180.41	180.41	1.44
0:00:40	2,614.18	33.95	7.05	0:07:40	2,788.27	68.01	3.90	0:14:40	2,359.95	107.27	2.46	0:21:40	1,115.16	139.40	1.72	0:28:40	178.38	178.38	1.46
0:00:45	2,832.05	34.12	7.54	0:07:45	2,802.28	60.92	3.92	0:14:45	2,368.79	102.99	2.39	0:21:45	1,474.78	134.07	1.73	0:28:45	177.16	177.16	1.47
0:00:50	2,982.93	32.78	7.49	0:07:50	3,072.87	65.38	3.87	0:14:50	2,669.78	111.24	2.40	0:21:50	1,647.80	149.80	1.70	0:28:50	177.59	177.59	1.46
0:00:55	3,531.28	34.96	7.34	0:07:55	3,231.39	65.95	3.83	0:14:55	2,722.37	113.43	2.30	0:21:55	1,700.70	141.72	1.78	0:28:55	171.18	171.18	1.52
0:01:00	3,408.96	33.42	7.47	0:08:00	3,378.71	68.95	3.88	0:15:00	2,667.91	106.72	2.40	0:22:00	1,738.69	144.89	1.81	0:29:00	175.12	175.12	1.49
0:01:05	3,719.67	34.76	7.67	0:08:05	3,374.99	63.68	3.89	0:15:05	2,588.36	103.53	2.55	0:22:05	1,708.22	131.40	1.81	0:29:05	184.77	184.77	1.41
0:01:10	3,478.25	32.51	7.74	0:08:10	3,513.07	63.87	4.05	0:15:10	2,640.25	105.61	2.39	0:22:10	1,918.83	137.06	1.80	0:29:10	182.52	182.52	1.42
0:01:15	3,649.66	33.48	7.75	0:08:15	3,532.76	63.08	4.10	0:15:15	2,874.23	106.45	2.42	0:22:15	2,081.19	148.66	1.79	0:29:15	115.15	115.15	2.26
0:01:20	3,687.36	33.52	7.89	0:08:20	3,629.54	64.81	4.14	0:15:20	2,950.29	105.37	2.47	0:22:20	1,954.04	139.57	1.87	0:29:20	161.47	161.47	1.61
0:01:25	3,623.51	32.35	7.97	0:08:25	3,591.81	64.14	4.09	0:15:25	2,929.72	104.63	2.46	0:22:25	1,991.33	142.24	1.80	0:29:25	166.73	166.73	1.56
0:01:30	3,634.83	32.45	8.08	0:08:30	3,451.17	61.63	4.09	0:15:30	3,057.73	109.20	2.46	0:22:30	2,060.13	147.15	1.79	0:29:30	165.87	165.87	1.57
0:01:35	3,589.23	32.05	8.08	0:08:35	3,555.40	63.49	4.14	0:15:35	2,777.06	99.18	2.56	0:22:35	1,970.28	140.73	1.81	0:29:35	65.23	65.23	4.00
0:01:40	3,627.32	32.39	8.07	0:08:40	3,548.34	63.36	4.14	0:15:40	2,958.61	105.66	2.46	0:22:40	2,107.13	150.51	1.78	0:29:40	86.49	86.49	3.03
0:01:45	3,740.04	33.39	8.04	0:08:45	3,573.70	63.82	4.09	0:15:45	2,960.23	105.72	2.46	0:22:45	1,954.07	139.58	1.83	0:29:45	142.61	142.61	1.83
0:01:50	3,635.52	32.46	7.99	0:08:50	3,533.95	63.11	4.11	0:15:50	2,989.70	106.77	2.43	0:22:50	2,052.81	146.63	1.82	0:29:50	182.37	182.37	1.43
0:01:55	3,626.69	32.38	8.02	0:08:55	3,565.35	63.67	4.11	0:15:55	3,096.98	110.61	2.44	0:22:55	1,983.72	141.69	1.81	0:29:55	165.47	165.47	1.58
0:02:00	3,682.26	32.88	8.04	0:09:00	3,544.87	63.30	4.14	0:16:00	2,872.04	102.57	2.46	0:23:00	1,977.68	141.26	1.82	0:30:00	177.10	177.10	1.47
0:02:05	3,624.73	32.36	8.05	0:09:05	3,545.75	63.32	4.14	0:16:05	3,032.79	108.31	2.44	0:23:05	2,024.39	144.60	1.79	0:30:05	172.08	172.08	1.51
0:02:10	3,570.74	31.88	8.01	0:09:10	3,559.93	63.57	4.12	0:16:10	2,956.08	105.57	2.49	0:23:10	2,119.21	151.37	1.79	0:30:10	176.88	176.88	1.47
0:02:15	3,670.50	32.77	7.99	0:09:15	3,607.10	64.41	4.15	0:16:15	2,898.21	103.51	2.48	0:23:15	1,976.86	141.20	1.80	0:30:15	165.97	165.97	1.57
0:02:20	3,735.55	33.35	7.99	0:09:20	3,506.42	62.61	4.14	0:16:20	3,008.28	107.44	2.47	0:23:20	2,031.97	145.14	1.76	0:30:20	180.09	180.09	1.44
0:02:25	3,653.49	32.62	8.02	0:09:25	3,460.04	61.79	4.15	0:16:25	2,924.05	104.43	2.46	0:23:25	2,011.27	143.66	1.85	0:30:25	166.10	166.10	1.57
0:02:30	3,660.31	32.68	7.99	0:09:30	3,514.88	62.77	4.16	0:16:30	2,945.18	105.18	2.45	0:23:30	1,883.26	134.52	1.95	0:30:30	109.85	109.85	2.37
0:02:35	3,700.15	33.04	8.02	0:09:35	3,519.21	62.84	4.13	0:16:35	3,054.91	109.10	2.46	0:23:35	1,975.62	141.12	1.80	0:30:35	170.48	170.48	1.53
0:02:40	3,713.96	33.16	7.92	0:09:40	3,604.94	64.37	4.10	0:16:40	2,913.37	104.05	2.48	0:23:40	2,037.69	145.55	1.82	0:30:40	166.74	166.74	1.56
0:02:45	3,674.64	32.81	8.01	0:09:45	3,512.86	62.73	4.12	0:16:45	2,857.29	102.05	2.54	0:23:45	1,939.50	138.54	1.82	0:30:45	174.16	174.16	1.49
0:02:50	3,630.91	32.42	8.01	0:09:50	3,546.64	63.33	4.13	0:16:50	2,916.24	104.15	2.48	0:23:50	2,063.09	147.36	1.80	0:30:50	169.29	169.29	1.54
0:02:55	3,631.99	32.43	8.02	0:09:55	3,698.08	66.04	4.16	0:16:55	3,084.50	110.16	2.41	0:23:55	1,973.13	140.94	1.85	0:30:55	165.61	165.61	1.57

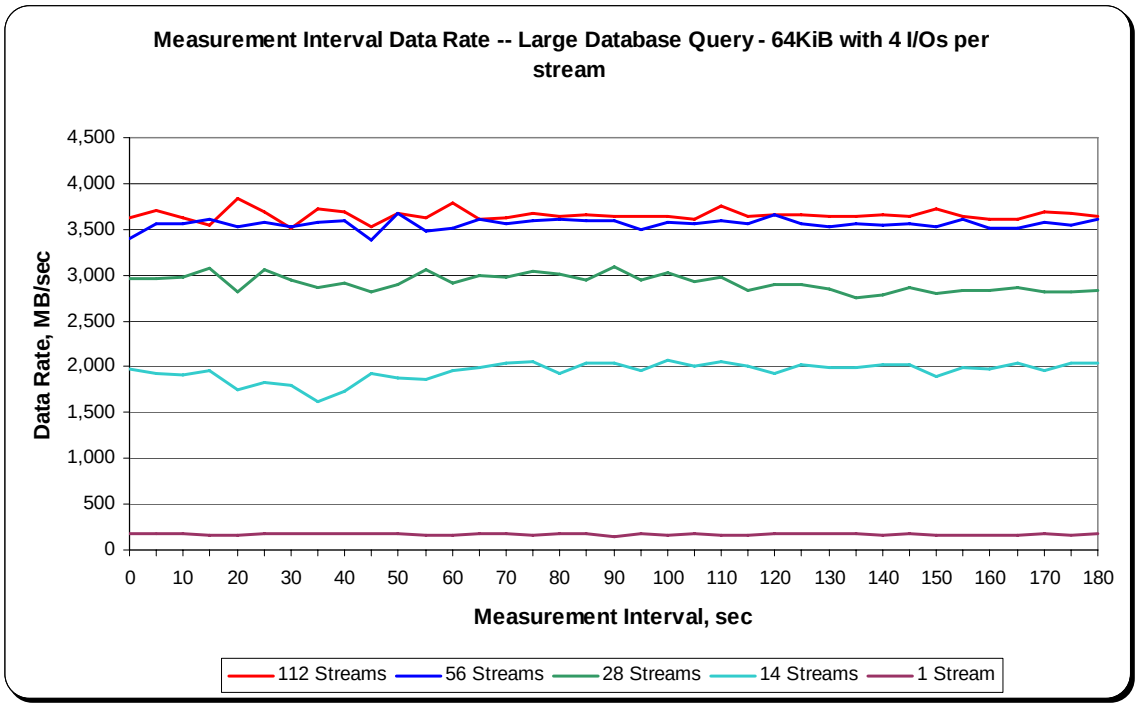
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	112 Streams			TR2	56 Streams			TR3	28 Streams			TR4	14 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	3,623.69	32.35	8.04	0:10:00	3,394.41	60.61	4.12	0:17:00	2,964.01	105.86	2.43	0:24:00	1,972.20	140.87	1.81	0:31:00	183.02	183.02	1.42
0:03:05	3,702.17	33.06	8.03	0:10:05	3,555.01	63.48	4.12	0:17:05	2,968.46	106.02	2.49	0:24:05	1,924.46	137.46	1.89	0:31:05	176.31	176.31	1.48
0:03:10	3,630.01	32.41	8.03	0:10:10	3,563.65	63.64	4.12	0:17:10	2,974.73	106.24	2.45	0:24:10	1,916.33	136.88	1.91	0:31:10	177.78	177.78	1.46
0:03:15	3,548.17	31.68	8.03	0:10:15	3,613.08	64.52	4.11	0:17:15	3,081.68	110.06	2.45	0:24:15	1,953.49	139.53	1.91	0:31:15	160.12	160.12	1.63
0:03:20	3,828.93	34.19	7.95	0:10:20	3,533.60	63.10	4.11	0:17:20	2,824.19	100.86	2.48	0:24:20	1,753.22	125.23	2.02	0:31:20	162.68	162.68	1.60
0:03:25	3,689.15	32.94	7.99	0:10:25	3,570.81	63.76	4.11	0:17:25	3,065.81	109.49	2.44	0:24:25	1,836.48	131.18	2.00	0:31:25	182.16	182.16	1.43
0:03:30	3,517.03	31.40	8.00	0:10:30	3,529.72	63.03	4.13	0:17:30	2,950.88	105.39	2.44	0:24:30	1,789.71	127.84	2.06	0:31:30	183.87	183.87	1.41
0:03:35	3,721.45	33.23	8.02	0:10:35	3,584.56	64.01	4.12	0:17:35	2,862.94	102.25	2.50	0:24:35	1,612.46	115.18	2.21	0:31:35	179.73	179.73	1.45
0:03:40	3,697.24	33.01	8.02	0:10:40	3,594.11	64.18	4.14	0:17:40	2,917.97	104.21	2.56	0:24:40	1,730.23	123.59	2.11	0:31:40	177.80	177.80	1.46
0:03:45	3,524.12	31.47	8.03	0:10:45	3,389.11	60.52	4.13	0:17:45	2,822.10	100.79	2.57	0:24:45	1,930.70	137.91	1.93	0:31:45	178.64	178.64	1.46
0:03:50	3,670.97	32.78	8.03	0:10:50	3,677.29	65.67	4.11	0:17:50	2,896.46	103.45	2.49	0:24:50	1,878.96	134.21	1.94	0:31:50	173.64	173.64	1.51
0:03:55	3,629.65	32.41	8.03	0:10:55	3,478.76	62.12	4.14	0:17:55	3,065.07	109.47	2.44	0:24:55	1,861.43	132.96	1.94	0:31:55	165.74	165.74	1.57
0:04:00	3,784.42	33.79	8.02	0:11:00	3,515.41	62.78	4.11	0:18:00	2,910.68	103.95	2.47	0:25:00	1,960.27	140.02	1.84	0:32:00	168.09	168.09	1.55
0:04:05	3,615.82	32.28	8.03	0:11:05	3,607.11	64.41	4.11	0:18:05	2,999.66	107.13	2.44	0:25:05	1,983.13	141.65	1.85	0:32:05	176.01	176.01	1.48
0:04:10	3,625.45	32.37	8.02	0:11:10	3,560.85	63.59	4.12	0:18:10	2,973.99	106.21	2.45	0:25:10	2,047.34	146.24	1.79	0:32:10	175.58	175.58	1.48
0:04:15	3,673.71	32.80	8.03	0:11:15	3,595.21	64.20	4.08	0:18:15	3,047.25	108.83	2.42	0:25:15	2,049.59	146.40	1.82	0:32:15	169.35	169.35	1.53
0:04:20	3,650.10	32.59	8.03	0:11:20	3,614.45	64.54	4.05	0:18:20	3,004.23	107.29	2.43	0:25:20	1,918.63	137.05	1.85	0:32:20	173.07	173.07	1.50
0:04:25	3,650.45	32.59	8.05	0:11:25	3,598.39	64.26	4.08	0:18:25	2,941.82	105.07	2.44	0:25:25	2,043.16	145.94	1.82	0:32:25	172.17	172.17	1.51
0:04:30	3,648.30	32.57	8.03	0:11:30	3,592.92	64.16	4.09	0:18:30	3,097.12	110.61	2.42	0:25:30	2,035.72	145.41	1.80	0:32:30	151.47	151.47	1.72
0:04:35	3,649.44	32.58	8.03	0:11:35	3,492.83	62.37	4.10	0:18:35	2,948.82	105.31	2.44	0:25:35	1,959.10	139.94	1.82	0:32:35	174.71	174.71	1.49
0:04:40	3,636.37	32.47	8.01	0:11:40	3,583.25	63.99	4.08	0:18:40	3,021.90	107.93	2.45	0:25:40	2,079.60	148.54	1.79	0:32:40	166.31	166.31	1.56
0:04:45	3,615.03	32.28	8.01	0:11:45	3,558.81	63.55	4.11	0:18:45	2,927.83	104.57	2.47	0:25:45	2,008.63	143.47	1.77	0:32:45	178.77	178.77	1.46
0:04:50	3,758.98	33.56	8.01	0:11:50	3,591.31	64.13	4.09	0:18:50	2,971.33	106.12	2.49	0:25:50	2,062.67	147.33	1.76	0:32:50	163.49	163.49	1.59
0:04:55	3,639.07	32.49	8.02	0:11:55	3,564.05	63.64	4.12	0:18:55	2,827.37	100.98	2.57	0:25:55	2,014.90	143.92	1.87	0:32:55	168.36	168.36	1.55
0:05:00	3,650.55	32.59	8.03	0:12:00	3,652.28	65.22	4.11	0:19:00	2,890.09	103.22	2.56	0:26:00	1,926.35	137.60	1.87	0:33:00	178.35	178.35	1.45
0:05:05	3,651.76	32.61	8.01	0:12:05	3,558.47	63.54	4.10	0:19:05	2,896.82	103.46	2.52	0:26:05	2,019.09	144.22	1.82	0:33:05	180.45	180.45	1.44
0:05:10	3,649.74	32.59	8.02	0:12:10	3,536.47	63.15	4.10	0:19:10	2,852.06	101.86	2.60	0:26:10	1,994.12	142.44	1.83	0:33:10	182.96	182.96	1.42
0:05:15	3,634.74	32.45	8.01	0:12:15	3,564.74	63.66	4.10	0:19:15	2,744.07	98.00	2.58	0:26:15	1,988.69	142.05	1.82	0:33:15	176.79	176.79	1.47
0:05:20	3,657.23	32.65	7.99	0:12:20	3,546.38	63.33	4.12	0:19:20	2,781.71	99.35	2.65	0:26:20	2,018.26	144.16	1.82	0:33:20	164.89	164.89	1.58
0:05:25	3,637.36	32.48	8.02	0:12:25	3,563.27	63.63	4.11	0:19:25	2,865.17	102.33	2.56	0:26:25	2,026.54	144.75	1.82	0:33:25	173.18	173.18	1.50
0:05:30	3,729.70	33.30	8.03	0:12:30	3,528.13	63.00	4.11	0:19:30	2,798.95	99.96	2.58	0:26:30	1,889.64	134.97	1.89	0:33:30	168.87	168.87	1.54
0:05:35	3,645.07	32.55	8.03	0:12:35	3,606.56	64.40	4.09	0:19:35	2,829.33	101.05	2.56	0:26:35	1,986.38	141.88	1.79	0:33:35	169.76	169.76	1.53
0:05:40	3,617.19	32.30	8.02	0:12:40	3,514.32	62.76	4.10	0:19:40	2,833.15	101.18	2.57	0:26:40	1,971.66	140.83	1.87	0:33:40	165.25	165.25	1.57
0:05:45	3,609.51	32.23	8.02	0:12:45	3,515.34	62.77	4.11	0:19:45	2,870.36	102.51	2.61	0:26:45	2,037.51	145.54	1.83	0:33:45	164.19	164.19	1.59
0:05:50	3,690.66	32.95	8.02	0:12:50	3,583.13	63.98	4.11	0:19:50	2,813.53	100.48	2.57	0:26:50	1,961.74	140.12	1.82	0:33:50	171.63	171.63	1.52
0:05:55	3,671.01	32.78	8.02	0:12:55	3,538.16	63.18	4.13	0:19:55	2,818.98	100.68	2.56	0:26:55	2,039.11	145.65	1.80	0:33:55	165.70	165.70	1.54
0:06:00	3,642.40	32.52	8.03	0:13:00	3,604.95	64.37	4.09	0:20:00	2,832.16	101.15	2.58	0:27:00	2,040.45	145.75	1.79	0:34:00	175.20	175.20	1.49
0:06:05	3,693.29	32.98	8.03	0:13:05	3,611.98	64.50	4.07	0:20:05	2,701.80	96.49	2.68	0:27:05	2,000.67	142.91	1.83	0:34:05	175.18	175.18	1.46
0:06:10	3,557.71	31.77	8.02	0:13:10	3,556.36	63.51	4.11	0:20:10	2,831.10	101.11	2.64	0:27:10	1,994.51	142.46	1.79	0:34:10	187.60	187.60	1.40
0:06:15	3,670.01	32.77	8.02	0:13:15	3,551.22	63.41	4.11	0:20:15	2,916.78	104.17	2.47	0:27:15	2,041.25	145.80	1.80	0:34:15	183.56	183.56	1.45
0:06:20	3,723.60	33.25	8.01	0:13:20	3,615.64	64.56	4.10	0:20:20	2,897.40	103.48	2.51	0:27:20	2,026.32	144.74	1.83	0:34:20	157.01	157.01	1.62
0:06:25	3,670.41	32.77	8.00	0:13:25	3,567.57	63.71	4.13	0:20:25	2,992.74	106.88	2.45	0:27:25	1,967.29	140.52	1.82	0:34:25	152.40	152.40	1.71
0:06:30	3,518.73	31.42	8.03	0:13:30	3,561.96	63.61	4.11	0:20:30	2,994.16	106.93	2.45	0:27:30	2,066.02	147.57	1.80	0:34:30	140.46	140.46	1.88
0:06:35	3,688.80	32.94	8.01	0:13:35	3,554.71	63.48	4.10	0:20:35	2,876.40	102.73	2.52	0:27:35	1,968.37	140.60	1.84	0:34:35	184.46	184.46	1.42
0:06:40	3,777.86	33.73	7.99	0:13:40	3,592.26	64.15	4.11	0:20:40	2,985.90	106.64	2.52	0:27:40	2,020.27	144.31	1.77	0:34:40	171.08	171.08	1.46
0:06:45	208.33	0.00	6.64	0:13:45	174.79	0.00	3.66	0:20:45	87.26	0.00	2.45	0:27:45	117.57	0.00	2.41	0:34:45	13.36	0.00	1.41
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

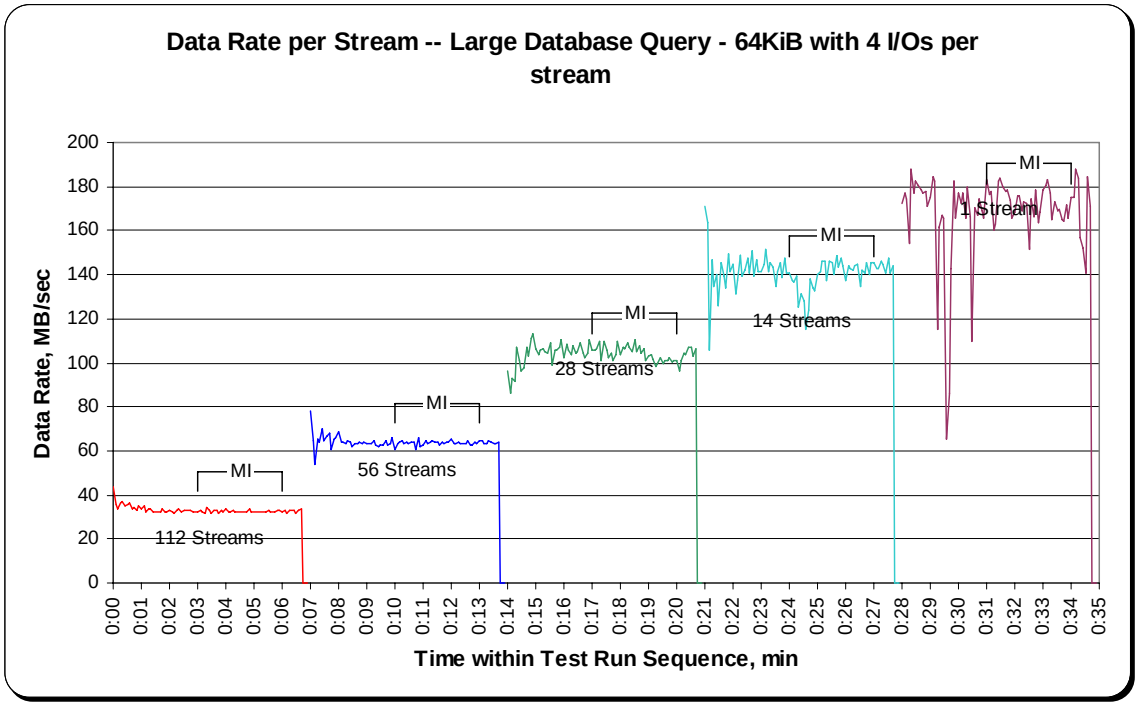
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



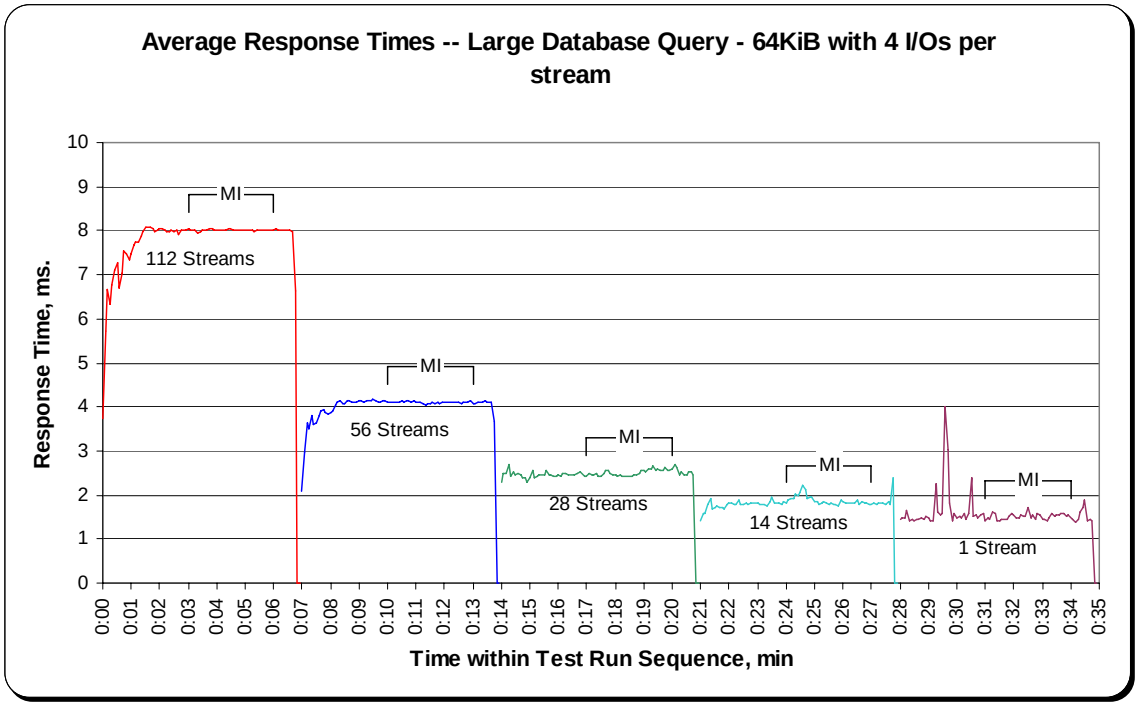
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



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



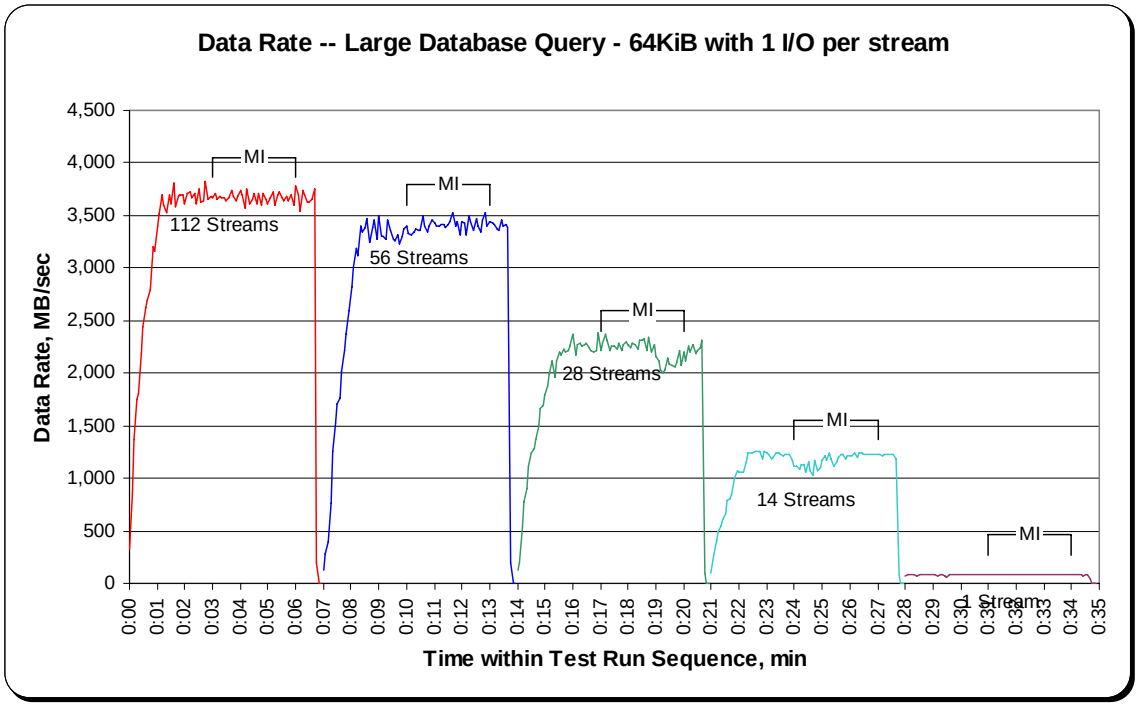
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR6	112 Streams			TR7	56 Streams			TR8	28 Streams			TR9	14 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	325.96	29.63	1.05	0:07:00	131.68	65.84	0.71	0:14:00	121.45	60.72	0.74	0:21:00	91.84	30.61	0.71	0:28:00	76.43	76.43	0.79
0:00:05	846.03	28.20	1.57	0:07:05	277.79	69.45	0.80	0:14:05	200.17	66.72	0.78	0:21:05	263.70	87.90	0.74	0:28:05	81.54	81.54	0.79
0:00:10	1,364.51	32.49	1.67	0:07:10	396.16	49.52	0.87	0:14:10	531.21	59.02	0.85	0:21:10	405.69	81.14	0.72	0:28:10	78.66	78.66	0.82
0:00:15	1,743.38	35.58	1.68	0:07:15	766.45	58.96	0.90	0:14:15	772.80	70.25	0.87	0:21:15	490.96	81.83	0.71	0:28:15	80.65	80.65	0.80
0:00:20	1,801.31	32.75	1.81	0:07:20	1,248.86	56.77	0.99	0:14:20	903.66	64.55	0.91	0:21:20	551.08	78.73	0.73	0:28:20	81.10	81.10	0.80
0:00:25	2,184.24	34.67	1.82	0:07:25	1,528.64	63.69	0.98	0:14:25	1,113.74	74.25	0.83	0:21:25	610.42	87.20	0.73	0:28:25	77.11	77.11	0.84
0:00:30	2,435.96	35.30	1.76	0:07:30	1,706.24	68.25	0.95	0:14:30	1,242.45	73.09	0.83	0:21:30	669.73	83.72	0.72	0:28:30	80.70	80.70	0.80
0:00:35	2,620.31	35.41	1.76	0:07:35	1,756.98	62.75	0.97	0:14:35	1,284.48	75.56	0.85	0:21:35	784.87	87.21	0.72	0:28:35	82.00	82.00	0.79
0:00:40	2,687.42	34.90	1.80	0:07:40	2,020.52	61.23	0.98	0:14:40	1,367.83	71.99	0.86	0:21:40	805.33	89.48	0.72	0:28:40	79.47	79.47	0.81
0:00:45	2,787.73	32.42	1.88	0:07:45	2,220.02	63.43	0.99	0:14:45	1,491.86	71.04	0.87	0:21:45	842.34	76.58	0.73	0:28:45	82.56	82.56	0.78
0:00:50	3,201.07	35.57	1.86	0:07:50	2,373.51	62.46	0.99	0:14:50	1,670.91	75.95	0.84	0:21:50	1,006.09	83.84	0.73	0:28:50	81.58	81.58	0.79
0:00:55	3,155.01	33.92	1.83	0:07:55	2,599.88	63.41	1.00	0:14:55	1,699.53	73.89	0.82	0:21:55	1,070.81	89.23	0.72	0:28:55	81.52	81.52	0.79
0:01:00	3,397.13	35.39	1.83	0:08:00	2,817.82	59.95	1.03	0:15:00	1,787.39	77.71	0.83	0:22:00	1,063.95	88.66	0.73	0:29:00	80.90	80.90	0.80
0:01:05	3,515.77	33.81	1.85	0:08:05	3,010.42	60.21	1.03	0:15:05	1,878.73	78.28	0.84	0:22:05	1,062.29	88.52	0.73	0:29:05	82.33	82.33	0.79
0:01:10	3,690.69	35.15	1.90	0:08:10	3,188.01	63.76	1.02	0:15:10	1,984.05	76.31	0.80	0:22:10	1,053.18	87.76	0.74	0:29:10	64.59	64.59	1.00
0:01:15	3,600.71	33.97	1.91	0:08:15	3,124.60	60.09	1.02	0:15:15	2,112.47	81.25	0.81	0:22:15	1,161.72	82.98	0.74	0:29:15	80.73	80.73	0.80
0:01:20	3,526.94	32.66	1.91	0:08:20	3,396.02	64.08	1.03	0:15:20	1,966.50	75.63	0.83	0:22:20	1,236.02	88.29	0.73	0:29:20	77.79	77.79	0.83
0:01:25	3,691.88	32.96	1.95	0:08:25	3,339.19	59.63	1.05	0:15:25	2,114.12	75.50	0.84	0:22:25	1,236.91	88.35	0.73	0:29:25	69.79	69.79	0.93
0:01:30	3,616.17	32.29	1.99	0:08:30	3,389.61	60.53	1.07	0:15:30	2,204.65	78.74	0.82	0:22:30	1,236.43	88.32	0.73	0:29:30	52.81	52.81	1.23
0:01:35	3,809.80	34.02	1.98	0:08:35	3,463.43	61.85	1.06	0:15:35	2,172.90	77.60	0.82	0:22:35	1,249.44	89.25	0.74	0:29:35	81.36	81.36	0.80
0:01:40	3,582.87	31.99	1.98	0:08:40	3,238.63	57.83	1.07	0:15:40	2,232.85	79.74	0.83	0:22:40	1,254.00	89.57	0.72	0:29:40	78.54	78.54	0.82
0:01:45	3,676.14	32.82	1.99	0:08:45	3,383.29	60.42	1.08	0:15:45	2,202.75	78.67	0.82	0:22:45	1,254.64	89.62	0.73	0:29:45	81.17	81.17	0.80
0:01:50	3,701.41	33.05	1.98	0:08:50	3,457.11	61.73	1.08	0:15:50	2,216.90	79.17	0.80	0:22:50	1,188.52	84.89	0.74	0:29:50	78.29	78.29	0.83
0:01:55	3,699.26	33.03	1.98	0:08:55	3,276.40	58.51	1.08	0:15:55	2,255.12	80.54	0.80	0:22:55	1,257.54	89.82	0.74	0:29:55	82.67	82.67	0.78
0:02:00	3,609.31	32.23	1.99	0:09:00	3,501.20	62.52	1.07	0:16:00	2,366.03	84.50	0.79	0:23:00	1,235.75	88.27	0.73	0:30:00	81.07	81.07	0.80
0:02:05	3,705.03	33.08	1.98	0:09:05	3,301.57	58.96	1.08	0:16:05	2,172.92	77.60	0.81	0:23:05	1,231.96	88.00	0.74	0:30:05	80.22	80.22	0.81
0:02:10	3,727.69	33.28	1.97	0:09:10	3,301.03	58.95	1.09	0:16:10	2,269.76	81.06	0.82	0:23:10	1,186.65	84.76	0.76	0:30:10	80.44	80.44	0.80
0:02:15	3,672.11	32.79	1.98	0:09:15	3,273.88	58.46	1.09	0:16:15	2,279.28	81.40	0.79	0:23:15	1,205.66	86.12	0.73	0:30:15	80.43	80.43	0.80
0:02:20	3,709.57	33.12	1.99	0:09:20	3,458.90	61.77	1.08	0:16:20	2,251.21	80.40	0.79	0:23:20	1,238.57	88.47	0.74	0:30:20	82.09	82.09	0.79
0:02:25	3,616.66	32.29	1.99	0:09:25	3,352.86	59.87	1.09	0:16:25	2,272.63	81.17	0.79	0:23:25	1,237.85	88.42	0.75	0:30:25	79.10	79.10	0.82
0:02:30	3,747.78	33.46	1.98	0:09:30	3,272.97	58.45	1.10	0:16:30	2,289.48	81.77	0.79	0:23:30	1,224.97	87.50	0.74	0:30:30	81.53	81.53	0.79
0:02:35	3,629.74	32.41	1.99	0:09:35	3,263.01	58.27	1.11	0:16:35	2,245.05	80.18	0.81	0:23:35	1,215.43	86.82	0.74	0:30:35	80.66	80.66	0.80
0:02:40	3,645.78	32.55	1.99	0:09:40	3,319.56	59.28	1.10	0:16:40	2,209.98	78.93	0.83	0:23:40	1,225.83	87.56	0.74	0:30:40	80.34	80.34	0.81
0:02:45	3,820.33	34.11	1.99	0:09:45	3,225.83	57.60	1.09	0:16:45	2,196.43	78.44	0.83	0:23:45	1,223.15	87.37	0.74	0:30:45	79.91	79.91	0.81
0:02:50	3,648.71	32.58	1.98	0:09:50	3,300.90	58.94	1.09	0:16:50	2,213.50	79.05	0.80	0:23:50	1,234.18	88.16	0.74	0:30:50	80.32	80.32	0.81
0:02:55	3,685.12	32.90	1.98	0:09:55	3,375.66	60.28	1.08	0:16:55	2,383.50	85.12	0.79	0:23:55	1,163.97	83.14	0.76	0:30:55	78.83	78.83	0.82

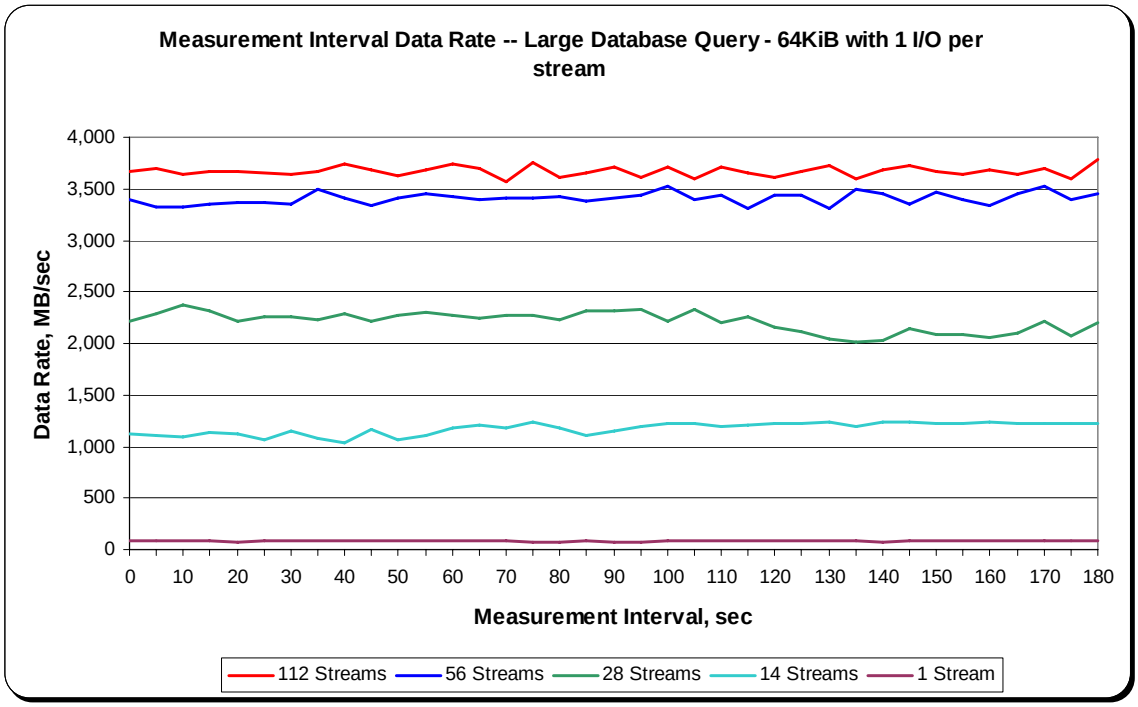
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Period

TR6	112 Streams			TR7	56 Streams			TR8	28 Streams			TR9	14 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	3,670.41	32.77	1.98	0:10:00	3,394.04	60.61	1.09	0:17:00	2,215.12	79.11	0.79	0:24:00	1,119.84	79.99	0.81	0:31:00	81.90	81.90	0.79
0:03:05	3,703.16	33.06	1.99	0:10:05	3,328.52	59.44	1.09	0:17:05	2,291.83	81.85	0.79	0:24:05	1,110.13	79.29	0.82	0:31:05	81.33	81.33	0.80
0:03:10	3,647.24	32.56	1.99	0:10:10	3,316.74	59.23	1.09	0:17:10	2,369.15	84.61	0.79	0:24:10	1,090.89	77.92	0.83	0:31:10	80.31	80.31	0.81
0:03:15	3,675.01	32.81	1.97	0:10:15	3,345.73	59.75	1.08	0:17:15	2,311.31	82.55	0.79	0:24:15	1,134.39	81.03	0.80	0:31:15	80.40	80.40	0.81
0:03:20	3,662.69	32.70	1.98	0:10:20	3,364.68	60.08	1.08	0:17:20	2,219.02	79.25	0.80	0:24:20	1,124.90	80.35	0.81	0:31:20	79.06	79.06	0.82
0:03:25	3,660.95	32.69	1.99	0:10:25	3,363.68	60.07	1.08	0:17:25	2,261.77	80.78	0.80	0:24:25	1,058.38	75.60	0.86	0:31:25	81.85	81.85	0.79
0:03:30	3,644.42	32.54	1.99	0:10:30	3,358.16	59.97	1.07	0:17:30	2,258.70	80.67	0.79	0:24:30	1,150.06	82.15	0.79	0:31:30	80.17	80.17	0.81
0:03:35	3,664.66	32.72	1.99	0:10:35	3,495.69	62.42	1.07	0:17:35	2,226.99	79.54	0.81	0:24:35	1,075.05	76.79	0.86	0:31:35	79.99	79.99	0.81
0:03:40	3,741.99	33.41	1.98	0:10:40	3,405.04	60.80	1.06	0:17:40	2,283.30	81.55	0.81	0:24:40	1,035.32	73.95	0.86	0:31:40	80.76	80.76	0.80
0:03:45	3,676.84	32.83	1.98	0:10:45	3,336.90	59.59	1.07	0:17:45	2,211.50	78.98	0.80	0:24:45	1,167.78	83.41	0.76	0:31:45	81.58	81.58	0.79
0:03:50	3,633.04	32.44	1.98	0:10:50	3,405.37	60.81	1.07	0:17:50	2,275.07	81.25	0.80	0:24:50	1,071.75	76.55	0.85	0:31:50	79.82	79.82	0.81
0:03:55	3,679.72	32.85	1.98	0:10:55	3,458.77	61.76	1.07	0:17:55	2,296.40	82.01	0.81	0:24:55	1,100.78	78.63	0.85	0:31:55	82.21	82.21	0.79
0:04:00	3,735.39	33.35	1.99	0:11:00	3,427.57	61.21	1.06	0:18:00	2,274.04	81.22	0.79	0:25:00	1,175.29	83.95	0.75	0:32:00	81.63	81.63	0.79
0:04:05	3,694.65	32.99	1.99	0:11:05	3,393.95	60.61	1.06	0:18:05	2,248.87	80.32	0.79	0:25:05	1,207.92	86.28	0.75	0:32:05	81.28	81.28	0.80
0:04:10	3,571.58	31.89	1.99	0:11:10	3,406.49	60.83	1.07	0:18:10	2,279.06	81.39	0.79	0:25:10	1,177.57	84.11	0.77	0:32:10	82.46	82.46	0.78
0:04:15	3,757.77	33.55	1.99	0:11:15	3,408.49	60.87	1.06	0:18:15	2,277.95	81.36	0.80	0:25:15	1,238.03	88.43	0.73	0:32:15	78.37	78.37	0.83
0:04:20	3,604.74	32.19	1.99	0:11:20	3,418.78	61.05	1.06	0:18:20	2,223.38	79.41	0.81	0:25:20	1,178.06	84.15	0.77	0:32:20	78.44	78.44	0.83
0:04:25	3,655.78	32.64	1.99	0:11:25	3,380.98	60.37	1.06	0:18:25	2,312.66	82.59	0.79	0:25:25	1,113.79	79.56	0.81	0:32:25	80.07	80.07	0.81
0:04:30	3,714.17	33.16	1.99	0:11:30	3,414.08	60.97	1.07	0:18:30	2,318.82	82.82	0.80	0:25:30	1,149.82	82.13	0.79	0:32:30	78.94	78.94	0.82
0:04:35	3,616.41	32.29	1.99	0:11:35	3,435.02	61.34	1.05	0:18:35	2,328.31	83.15	0.78	0:25:35	1,198.11	85.58	0.76	0:32:35	78.92	78.92	0.82
0:04:40	3,711.73	33.14	1.99	0:11:40	3,531.51	63.06	1.06	0:18:40	2,221.29	79.33	0.78	0:25:40	1,226.05	87.57	0.74	0:32:40	82.29	82.29	0.79
0:04:45	3,601.92	32.16	1.99	0:11:45	3,399.00	60.70	1.06	0:18:45	2,337.33	83.48	0.79	0:25:45	1,224.76	87.48	0.74	0:32:45	80.36	80.36	0.81
0:04:50	3,713.87	33.16	1.99	0:11:50	3,439.48	61.42	1.07	0:18:50	2,206.60	78.81	0.81	0:25:50	1,188.73	84.91	0.76	0:32:50	80.09	80.09	0.81
0:04:55	3,656.71	32.65	1.99	0:11:55	3,313.34	59.17	1.07	0:18:55	2,264.42	80.87	0.83	0:25:55	1,211.95	86.57	0.75	0:32:55	79.18	79.18	0.82
0:05:00	3,611.10	32.24	1.99	0:12:00	3,438.32	61.40	1.07	0:19:00	2,165.09	77.32	0.82	0:26:00	1,218.02	87.00	0.74	0:33:00	81.57	81.57	0.79
0:05:05	3,668.34	32.75	1.99	0:12:05	3,434.95	61.34	1.07	0:19:05	2,120.95	75.75	0.86	0:26:05	1,217.73	86.98	0.74	0:33:05	83.09	83.09	0.78
0:05:10	3,728.38	33.29	1.99	0:12:10	3,313.91	59.18	1.06	0:19:10	2,037.03	72.75	0.89	0:26:10	1,235.48	88.25	0.73	0:33:10	82.75	82.75	0.78
0:05:15	3,595.61	32.10	1.98	0:12:15	3,500.23	62.50	1.06	0:19:15	2,009.93	71.78	0.90	0:26:15	1,192.02	85.14	0.76	0:33:15	82.52	82.52	0.78
0:05:20	3,690.21	32.95	1.99	0:12:20	3,447.76	61.57	1.06	0:19:20	2,034.53	72.66	0.87	0:26:20	1,241.03	88.65	0.73	0:33:20	77.80	77.80	0.83
0:05:25	3,725.42	33.26	1.99	0:12:25	3,350.79	59.84	1.08	0:19:25	2,139.12	76.40	0.87	0:26:25	1,236.05	88.29	0.73	0:33:25	80.73	80.73	0.80
0:05:30	3,665.92	32.73	1.99	0:12:30	3,472.77	62.01	1.07	0:19:30	2,083.46	74.41	0.88	0:26:30	1,229.31	87.81	0.74	0:33:30	81.26	81.26	0.80
0:05:35	3,643.36	32.53	1.99	0:12:35	3,398.54	60.69	1.06	0:19:35	2,080.57	74.31	0.87	0:26:35	1,226.73	87.62	0.74	0:33:35	81.85	81.85	0.79
0:05:40	3,682.85	32.88	1.99	0:12:40	3,336.47	59.58	1.06	0:19:40	2,055.04	73.39	0.87	0:26:40	1,233.57	88.11	0.73	0:33:40	83.03	83.03	0.78
0:05:45	3,633.85	32.45	1.99	0:12:45	3,459.66	61.78	1.06	0:19:45	2,107.31	75.26	0.84	0:26:45	1,223.52	87.39	0.74	0:33:45	82.30	82.30	0.79
0:05:50	3,695.23	32.99	1.99	0:12:50	3,525.00	62.95	1.06	0:19:50	2,217.99	79.21	0.84	0:26:50	1,224.06	87.43	0.74	0:33:50	80.27	80.27	0.81
0:05:55	3,596.15	32.11	1.99	0:12:55	3,393.08	60.59	1.06	0:19:55	2,074.88	74.10	0.85	0:26:55	1,226.85	87.63	0.74	0:33:55	82.42	82.42	0.79
0:06:00	3,776.98	33.72	1.99	0:13:00	3,448.45	61.58	1.06	0:20:00	2,194.30	78.37	0.84	0:27:00	1,226.93	87.64	0.74	0:34:00	81.90	81.90	0.79
0:06:05	3,693.44	32.98	1.99	0:13:05	3,431.44	61.28	1.06	0:20:05	2,118.40	75.66	0.84	0:27:05	1,229.55	87.82	0.74	0:34:05	78.39	78.39	0.83
0:06:10	3,536.45	31.58	1.99	0:13:10	3,409.47	60.88	1.07	0:20:10	2,256.44	80.59	0.82	0:27:10	1,215.50	86.82	0.74	0:34:10	80.95	80.95	0.80
0:06:15	3,738.57	33.38	1.99	0:13:15	3,372.03	60.21	1.07	0:20:15	2,197.66	78.49	0.82	0:27:15	1,233.99	88.14	0.73	0:34:15	81.94	81.94	0.79
0:06:20	3,699.46	33.03	1.99	0:13:20	3,362.42	60.04	1.07	0:20:20	2,276.50	81.30	0.79	0:27:20	1,229.48	87.82	0.74	0:34:20	79.91	79.91	0.81
0:06:25	3,621.79	32.34	2.00	0:13:25	3,462.49	61.83	1.06	0:20:25	2,184.92	78.03	0.82	0:27:25	1,230.69	87.91	0.74	0:34:25	67.48	67.48	0.96
0:06:30	3,621.61	32.34	1.99	0:13:30	3,394.13	60.61	1.06	0:20:30	2,213.38	79.05	0.83	0:27:30	1,230.39	87.88	0.74	0:34:30	81.11	81.11	0.80
0:06:35	3,652.20	32.61	1.99	0:13:35	3,413.43	60.95	1.07	0:20:35	2,249.05	80.32	0.82	0:27:35	1,233.64	88.12	0.73	0:34:35	82.36	82.36	0.79
0:06:40	3,747.84	33.46	1.99	0:13:40	3,386.44	60.47	1.07	0:20:40	2,312.55	82.59	0.78	0:27:40	1,191.27	85.09	0.75	0:34:40	38.73	38.73	1.68
0:06:45	200.93	0.00	1.91	0:13:45	199.65	0.00	1.05	0:20:45	100.52	0.00	0.79	0:27:45	77.85	0.00	0.75	0:34:45	1.46	0.00	2.14
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	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

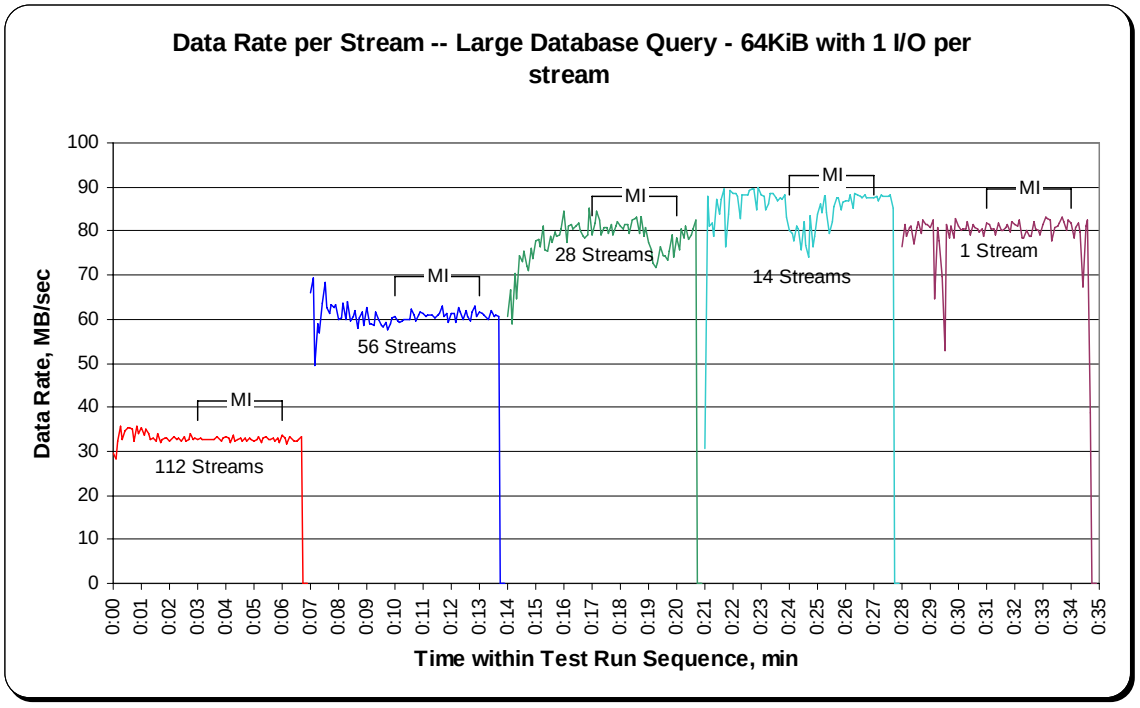
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



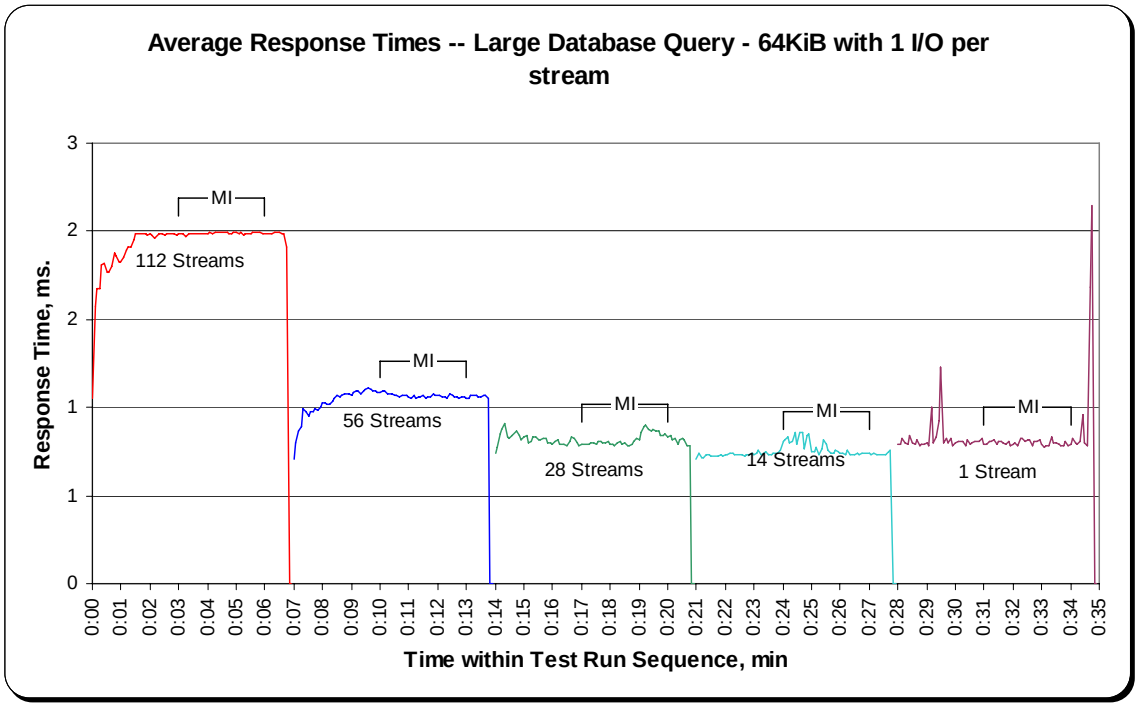
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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 102.

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.

Time	DR	DR/S	RT	MRT
0:20:00	3,559.00	0.83	3.26	76.07
0:20:00	3,736.29	0.87	3.41	79.70
1:20:00	3,736.29	0.87	3.41	79.70
2:20:00	3,736.29	0.87	3.41	79.70
2:20:00	3,559.00	0.83	3.26	76.07
RU length:	0:20:00		156	
MI length:	2:00:00	36	156	
Average:	3,381.70	0.79	3.10	72.45

Video on Demand Delivery Test – TEST RUN DATA BY INTERVAL

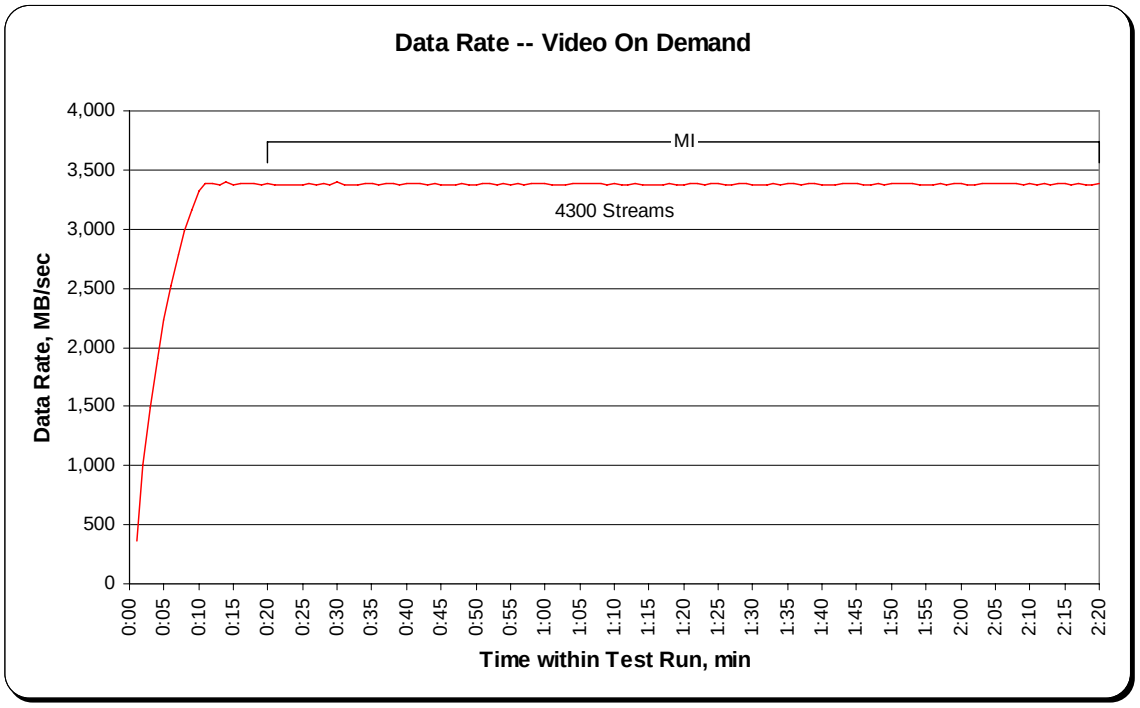
The SPC-2 Video on Demand Delivery Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate and average Data Rate per Stream produced by the same Test Runs. The table and graphs present the data at sixty second intervals.

TR1	4300 Streams			
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms
0:01:00	367.13	0.67	2.78	737.94
0:02:00	1,004.29	0.76	2.32	980.74
0:03:00	1,491.89	0.77	1.97	32.68
0:04:00	1,900.95	0.78	2.07	33.29
0:05:00	2,231.22	0.78	2.19	38.70
0:06:00	2,521.03	0.78	2.33	37.46
0:07:00	2,779.51	0.78	2.49	42.80
0:08:00	2,984.29	0.78	2.62	41.59
0:09:00	3,153.87	0.78	2.79	47.42
0:10:00	3,320.47	0.79	2.94	57.73
0:11:00	3,381.49	0.79	3.09	75.54
0:12:00	3,379.57	0.79	3.10	78.02
0:13:00	3,372.76	0.78	3.10	71.38
0:14:00	3,393.43	0.79	3.12	73.35
0:15:00	3,375.53	0.79	3.13	72.11
0:16:00	3,385.68	0.79	3.12	71.37
0:17:00	3,379.39	0.79	3.13	67.46
0:18:00	3,381.58	0.79	3.13	67.61
0:19:00	3,377.42	0.79	3.10	62.78
0:20:00	3,381.30	0.79	3.11	70.62
0:21:00	3,373.11	0.78	3.17	82.57
0:22:00	3,374.89	0.78	3.17	67.85
0:23:00	3,376.45	0.79	3.13	68.62
0:24:00	3,374.30	0.78	3.12	71.28
0:25:00	3,372.09	0.78	3.13	67.62
0:26:00	3,389.55	0.79	3.10	66.75
0:27:00	3,372.67	0.78	3.08	74.33
0:28:00	3,391.12	0.79	3.09	72.38
0:29:00	3,374.60	0.78	3.10	65.36
0:30:00	3,393.37	0.79	3.07	67.77
0:31:00	3,369.42	0.78	3.11	74.26
0:32:00	3,378.95	0.79	3.10	68.35
0:33:00	3,375.09	0.78	3.12	71.31
0:34:00	3,387.91	0.79	3.09	70.54
0:35:00	3,384.92	0.79	3.09	72.52
0:36:00	3,375.22	0.78	3.08	77.92
0:37:00	3,385.16	0.79	3.05	78.99
0:38:00	3,379.55	0.79	3.07	72.22
0:39:00	3,375.26	0.78	3.05	67.30
0:40:00	3,384.57	0.79	3.06	66.94
0:41:00	3,379.85	0.79	3.09	73.00
0:42:00	3,387.26	0.79	3.09	70.04
0:43:00	3,371.78	0.78	3.10	76.25
0:44:00	3,380.76	0.79	3.11	93.18
0:45:00	3,376.14	0.79	3.13	194.41
0:46:00	3,372.57	0.78	3.08	102.27
0:47:00	3,373.92	0.78	3.05	65.48
0:48:00	3,384.55	0.79	3.07	60.65
0:49:00	3,378.13	0.79	3.04	60.85
0:50:00	3,378.22	0.79	3.05	64.86

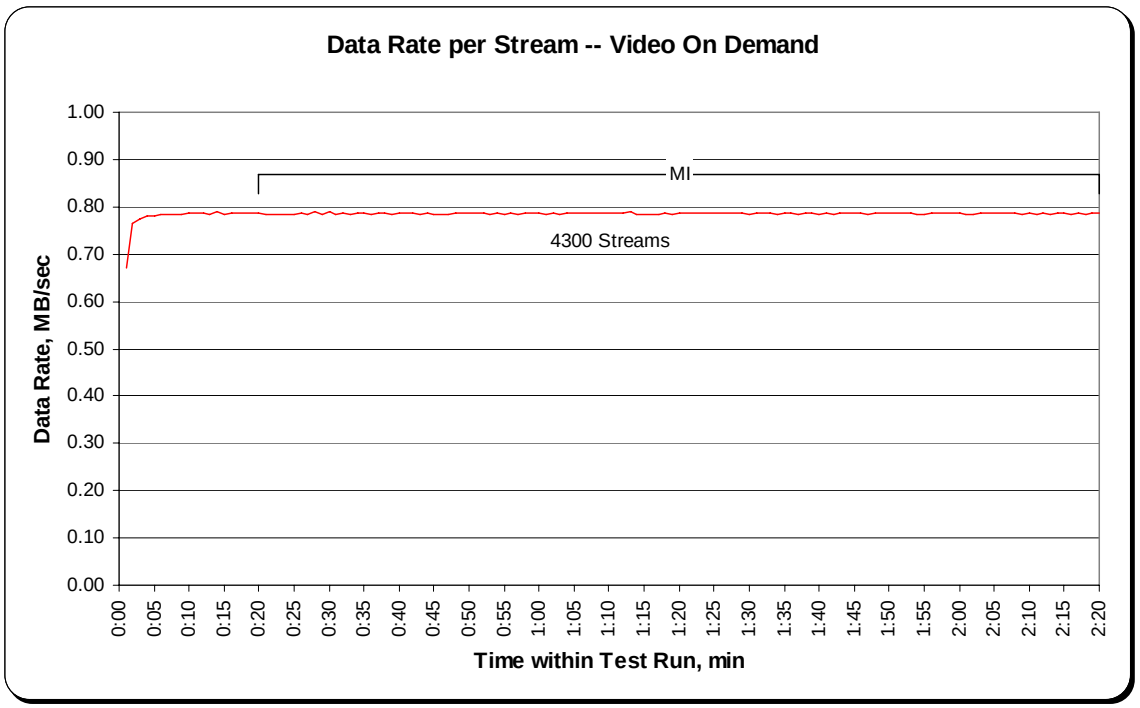
TR1	4300 Streams			
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms
0:51:00	3,386.48	0.79	3.11	68.39
0:52:00	3,379.58	0.79	3.11	70.31
0:53:00	3,375.36	0.78	3.09	66.86
0:54:00	3,386.92	0.79	3.09	69.94
0:55:00	3,374.82	0.78	3.05	64.60
0:56:00	3,383.30	0.79	3.08	63.84
0:57:00	3,373.98	0.78	3.06	66.37
0:58:00	3,382.32	0.79	3.08	70.90
0:59:00	3,380.12	0.79	3.07	71.38
1:00:00	3,381.54	0.79	3.04	66.10
1:01:00	3,371.81	0.78	3.12	84.02
1:02:00	3,378.98	0.79	3.10	72.74
1:03:00	3,372.27	0.78	3.11	72.62
1:04:00	3,380.48	0.79	3.09	67.24
1:05:00	3,382.23	0.79	3.10	70.58
1:06:00	3,382.96	0.79	3.11	70.22
1:07:00	3,386.01	0.79	3.10	73.34
1:08:00	3,384.27	0.79	3.08	69.64
1:09:00	3,377.88	0.79	3.10	67.31
1:10:00	3,381.46	0.79	3.09	67.85
1:11:00	3,378.27	0.79	3.15	67.92
1:12:00	3,377.91	0.79	3.11	71.20
1:13:00	3,390.37	0.79	3.10	80.95
1:14:00	3,370.01	0.78	3.07	71.18
1:15:00	3,371.32	0.78	3.08	71.66
1:16:00	3,375.87	0.79	3.06	66.23
1:17:00	3,373.39	0.78	3.04	62.38
1:18:00	3,389.08	0.79	3.07	62.83
1:19:00	3,375.20	0.78	3.03	64.51
1:20:00	3,378.44	0.79	3.04	63.53
1:21:00	3,382.06	0.79	3.13	71.04
1:22:00	3,379.82	0.79	3.10	69.74
1:23:00	3,376.65	0.79	3.10	78.02
1:24:00	3,379.99	0.79	3.10	73.45
1:25:00	3,384.94	0.79	3.08	75.39
1:26:00	3,377.62	0.79	3.10	81.07
1:27:00	3,377.65	0.79	3.10	71.36
1:28:00	3,383.87	0.79	3.09	67.23
1:29:00	3,380.53	0.79	3.06	61.79
1:30:00	3,374.15	0.78	3.09	64.29
1:31:00	3,378.68	0.79	3.13	73.75
1:32:00	3,376.76	0.79	3.13	69.68
1:33:00	3,379.77	0.79	3.12	83.20
1:34:00	3,374.52	0.78	3.13	74.16
1:35:00	3,384.03	0.79	3.15	75.93
1:36:00	3,380.57	0.79	3.15	71.62
1:37:00	3,374.25	0.78	3.12	75.20
1:38:00	3,382.89	0.79	3.12	71.52
1:39:00	3,383.33	0.79	3.12	69.03
1:40:00	3,372.87	0.78	3.10	70.29

TR1	4300 Streams			
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms
1:41:00	3,378.42	0.79	3.16	77.40
1:42:00	3,375.69	0.79	3.16	83.18
1:43:00	3,386.81	0.79	3.15	89.19
1:44:00	3,381.10	0.79	3.15	105.32
1:45:00	3,382.76	0.79	3.11	83.96
1:46:00	3,378.17	0.79	3.09	79.68
1:47:00	3,376.48	0.79	3.09	73.48
1:48:00	3,383.17	0.79	3.11	72.95
1:49:00	3,379.00	0.79	3.13	77.36
1:50:00	3,381.31	0.79	3.14	74.47
1:51:00	3,383.30	0.79	3.19	81.87
1:52:00	3,381.06	0.79	3.12	75.67
1:53:00	3,386.49	0.79	3.10	75.45
1:54:00	3,373.31	0.78	3.10	69.34
1:55:00	3,375.48	0.78	3.12	70.97
1:56:00	3,378.66	0.79	3.14	70.91
1:57:00	3,384.98	0.79	3.11	79.52
1:58:00	3,378.38	0.79	3.06	65.66
1:59:00	3,385.00	0.79	3.07	61.94
2:00:00	3,387.21	0.79	3.06	60.19
2:01:00	3,375.72	0.79	3.12	78.42
2:02:00	3,372.02	0.78	3.11	72.46
2:03:00	3,383.97	0.79	3.10	71.16
2:04:00	3,381.59	0.79	3.08	68.88
2:05:00	3,383.93	0.79	3.12	68.46
2:06:00	3,381.90	0.79	3.13	66.10
2:07:00	3,384.01	0.79	3.12	64.79
2:08:00	3,380.64	0.79	3.12	64.25
2:09:00	3,373.87	0.78	3.12	67.73
2:10:00	3,385.77	0.79	3.09	66.72
2:11:00	3,373.16	0.78	3.12	72.13
2:12:00	3,383.95	0.79	3.10	66.38
2:13:00	3,370.88	0.78	3.13	68.38
2:14:00	3,379.46	0.79	3.14	73.73
2:15:00	3,382.24	0.79	3.14	66.49
2:16:00	3,375.90	0.79	3.14	73.36
2:17:00	3,384.10	0.79	3.15	67.60
2:18:00	3,369.71	0.78	3.14	63.79
2:19:00	3,377.93	0.79	3.12	57.73
2:20:00	3,380.23	0.79	3.08	61.18

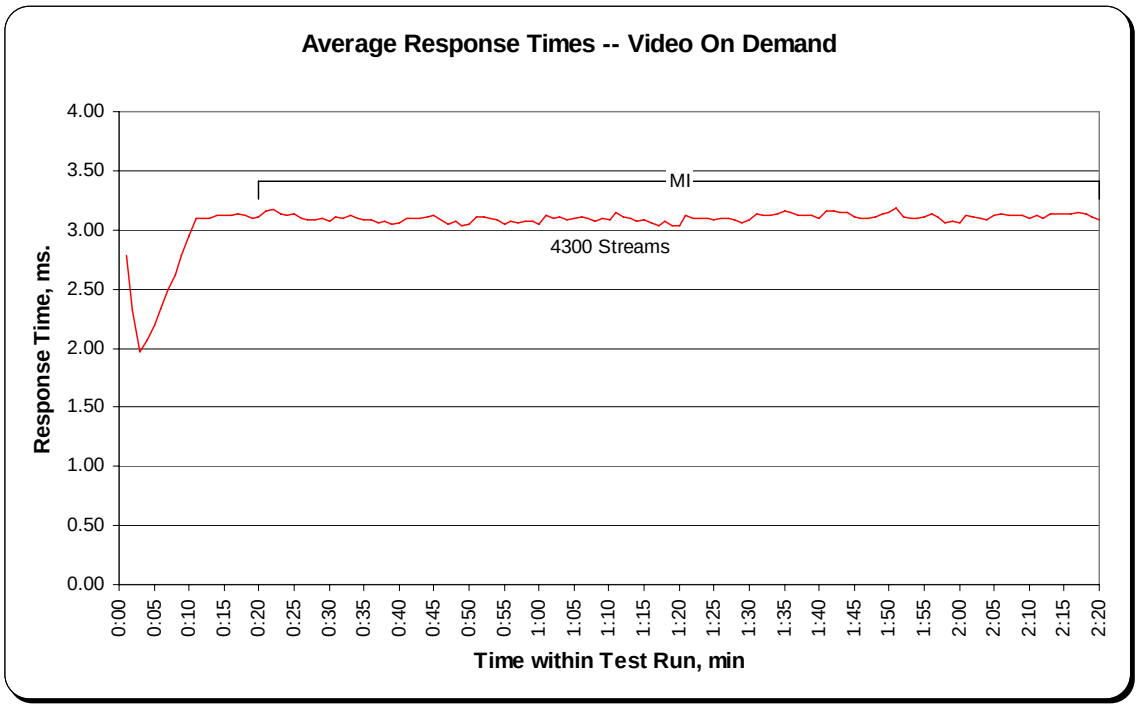
SPC-2 Video on Demand Delivery Average Data Rate Graph



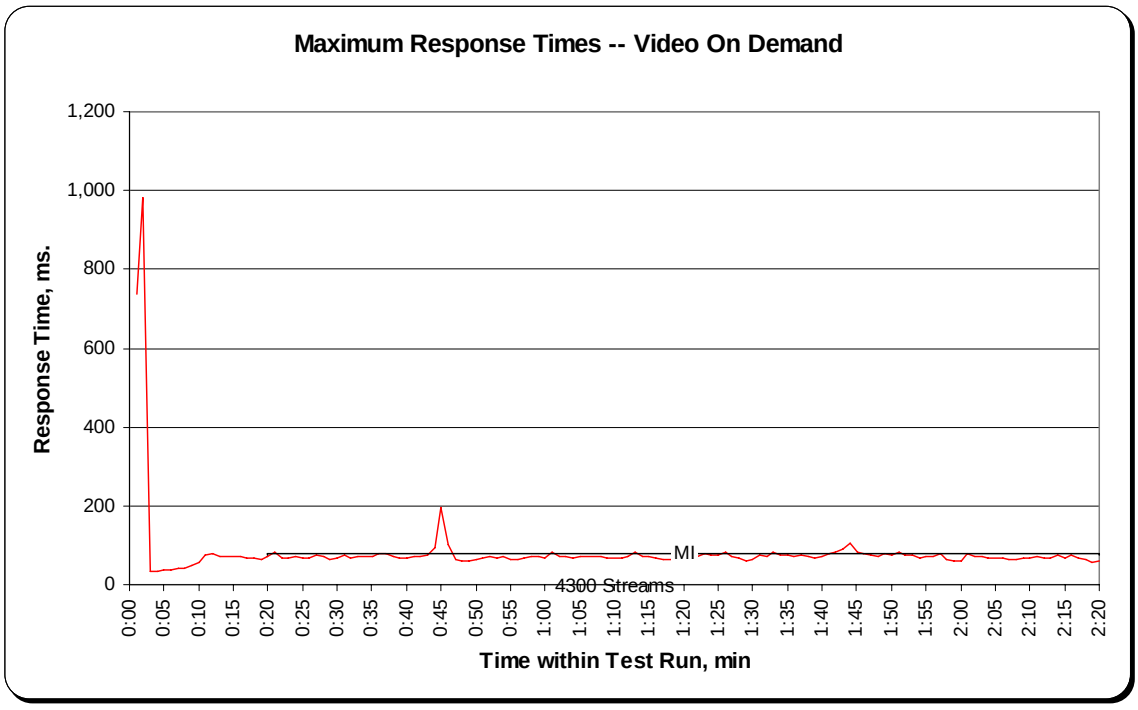
SPC-2 Video on Demand Delivery Average Data Rate per Stream Graph



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 102.

Data Persistence Test Results File

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

Persistence 1 Test Results File

Persistence 2 Test Results File

Data Persistence Test Results

Data Persistence Test Results	
Data Persistence Test Number: N	
Total Number of Logical Blocks Written	821,999
Total Number of Logical Blocks Re-referenced	23,189
Total Number of Logical Blocks Verified	821,999
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 TotalStorage® DS8300, as documented in this SPC-2 Full Disclosure Report is available currently available 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 Onsite Audit of the IBM TotalStorage® DS8300.

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:

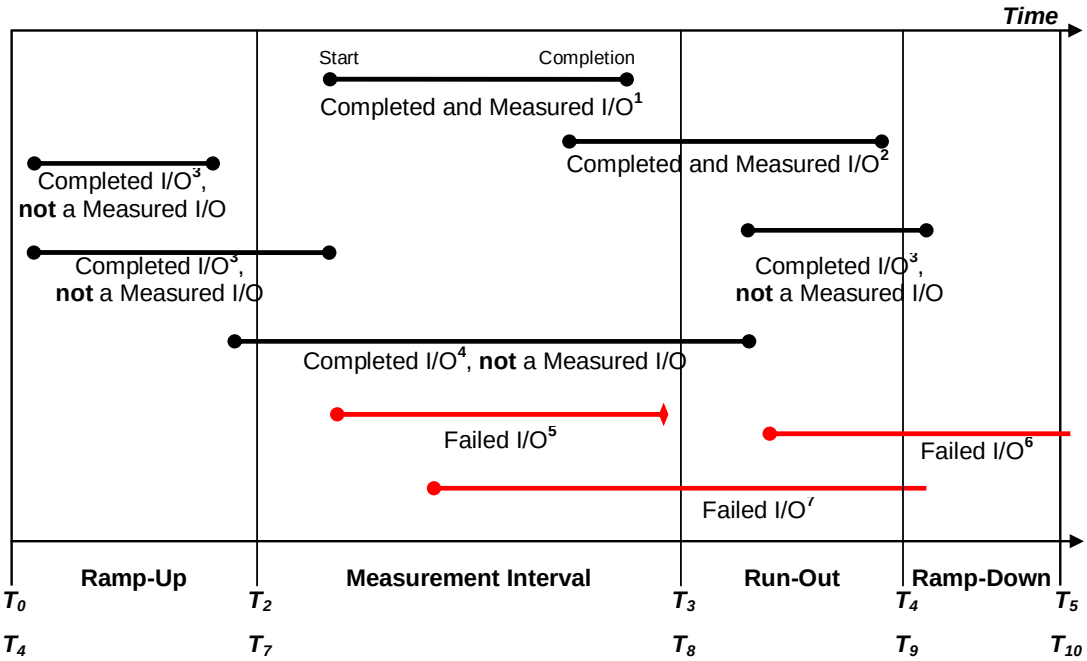
- Test Run 1: Maximum number of Streams, which is selected by the Test Sponsor
- Test Run 2: 50% of the maximum number of Streams used in Test Run 1.
- Test Run 3: 25% of the maximum number of Streams used in Test Run 1.
- Test Run 4: 12.5% of the maximum number of Streams used in Test Run 1.
- Test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

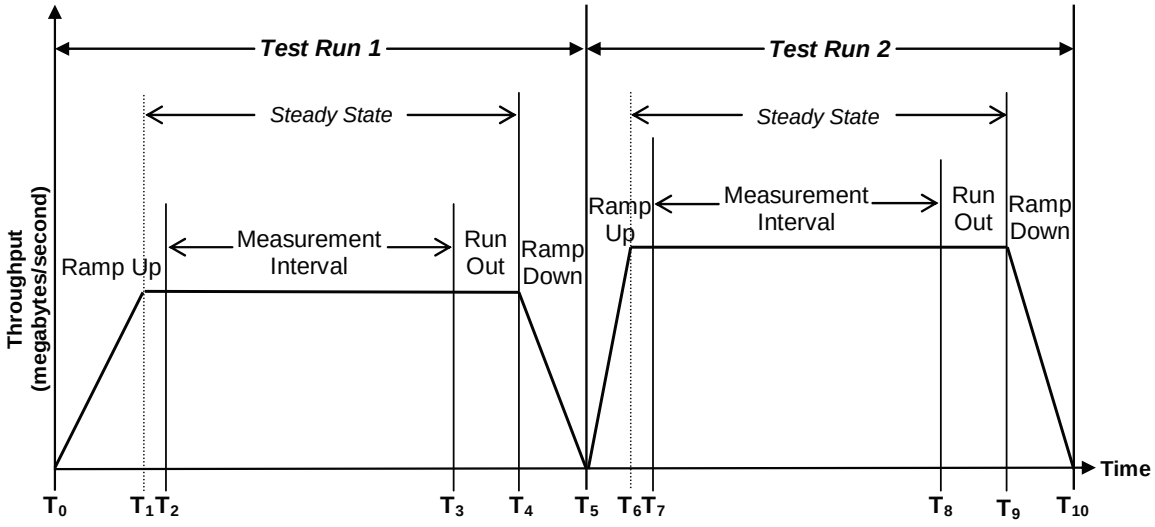
Transfer Size: The Transfer Size parameter specifies the number of bytes in KiB to transfer. *(Clause 3.4.7 of the SPC-2 Benchmark Specification)*

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

No customer tunable parameters or options were changed from their default values.

APPENDIX C: TESTED STORAGE CONFIGURATION (TSC) CREATION

Create the RAID-10 ranks

The first script, **step1_mkarray.txt**, groups the physical volumes into 64 RAID-10 arrays and the system automatically generates a set of array names, A0-A63. The next script, **step2_mkranks.txt**, defines the arrays, A0-A63, as 64 open system ranks, R0-R63. As in the previous script, the rank names are assigned by the system. The third script, **step3_rankpool.txt**, defines the ranks, R0-R63 to comprise a set of 64 "extent pools" (pools of available storage) with the names P0-P63.

step1_mkarray.txt

```
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S1
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S2
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S3
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S4
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S5
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S6
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S7
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S8
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S9
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S10
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S11
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S12
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S13
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S14
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S15
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S16
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S17
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S18
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S19
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S20
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S21
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S22
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S23
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S24
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S25
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S26
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S27
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S28
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S29
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S30
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S31
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S32
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S33
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S34
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S35
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S36
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S37
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S38
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S39
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S40
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S41
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S42
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S43
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S44
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S45
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S46
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S47
```

```
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S48
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S49
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S50
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S51
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S52
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S53
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S54
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S55
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S56
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S57
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S58
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S59
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S60
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S61
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S62
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S63
mkarray -dev IBM.2107-7580641 -raidtype 10 -arsite S64

lsarray -dev IBM.2107-7580641 –l
```

step2_mkranks.txt

```
# Make a rank (R0-R16 will be created)
mkrank -dev IBM.2107-7580641 -array A0 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A1 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A2 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A3 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A4 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A5 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A6 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A7 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A8 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A9 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A10 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A11 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A12 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A13 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A14 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A15 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A16 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A18 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A17 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A19 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A20 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A21 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A22 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A23 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A24 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A25 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A26 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A27 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A28 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A29 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A30 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A31 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A32 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A33 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A34 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A35 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A36 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A37 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A38 -stgtype fb
```

```
mkrank -dev IBM.2107-7580641 -array A39 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A40 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A41 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A42 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A43 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A44 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A45 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A46 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A47 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A48 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A60 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A50 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A51 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A49 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A61 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A62 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A63 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A52 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A53 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A54 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A55 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A56 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A57 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A58 -stgtype fb
mkrank -dev IBM.2107-7580641 -array A59 -stgtype fb
```

step3_rankpool.txt

```
chrank -dev IBM.2107-7580641 -extpool P0  R0
chrank -dev IBM.2107-7580641 -extpool P1  R1
chrank -dev IBM.2107-7580641 -extpool P2  R2
chrank -dev IBM.2107-7580641 -extpool P3  R3
chrank -dev IBM.2107-7580641 -extpool P4  R4
chrank -dev IBM.2107-7580641 -extpool P5  R5
chrank -dev IBM.2107-7580641 -extpool P6  R6
chrank -dev IBM.2107-7580641 -extpool P7  R7
chrank -dev IBM.2107-7580641 -extpool P8  R8
chrank -dev IBM.2107-7580641 -extpool P9  R9
chrank -dev IBM.2107-7580641 -extpool P10 R10
chrank -dev IBM.2107-7580641 -extpool P11 R11
chrank -dev IBM.2107-7580641 -extpool P12 R12
chrank -dev IBM.2107-7580641 -extpool P13 R13
chrank -dev IBM.2107-7580641 -extpool P14 R14
chrank -dev IBM.2107-7580641 -extpool P15 R15
chrank -dev IBM.2107-7580641 -extpool P16 R16
chrank -dev IBM.2107-7580641 -extpool P17 R17
chrank -dev IBM.2107-7580641 -extpool P18 R18
chrank -dev IBM.2107-7580641 -extpool P19 R19
chrank -dev IBM.2107-7580641 -extpool P20 R20
chrank -dev IBM.2107-7580641 -extpool P21 R21
chrank -dev IBM.2107-7580641 -extpool P22 R22
chrank -dev IBM.2107-7580641 -extpool P23 R23
chrank -dev IBM.2107-7580641 -extpool P24 R24
chrank -dev IBM.2107-7580641 -extpool P25 R25
chrank -dev IBM.2107-7580641 -extpool P26 R26
chrank -dev IBM.2107-7580641 -extpool P27 R27
chrank -dev IBM.2107-7580641 -extpool P28 R28
chrank -dev IBM.2107-7580641 -extpool P29 R29
chrank -dev IBM.2107-7580641 -extpool P30 R30
chrank -dev IBM.2107-7580641 -extpool P31 R31
chrank -dev IBM.2107-7580641 -extpool P32 R32
chrank -dev IBM.2107-7580641 -extpool P33 R33
```

```
chrank -dev IBM.2107-7580641 -extpool P34 R34
chrank -dev IBM.2107-7580641 -extpool P35 R35
chrank -dev IBM.2107-7580641 -extpool P36 R36
chrank -dev IBM.2107-7580641 -extpool P37 R37
chrank -dev IBM.2107-7580641 -extpool P38 R38
chrank -dev IBM.2107-7580641 -extpool P39 R39
chrank -dev IBM.2107-7580641 -extpool P40 R40
chrank -dev IBM.2107-7580641 -extpool P41 R41
chrank -dev IBM.2107-7580641 -extpool P42 R42
chrank -dev IBM.2107-7580641 -extpool P43 R43
chrank -dev IBM.2107-7580641 -extpool P44 R44
chrank -dev IBM.2107-7580641 -extpool P45 R45
chrank -dev IBM.2107-7580641 -extpool P46 R46
chrank -dev IBM.2107-7580641 -extpool P47 R47
chrank -dev IBM.2107-7580641 -extpool P48 R48
chrank -dev IBM.2107-7580641 -extpool P49 R49
chrank -dev IBM.2107-7580641 -extpool P50 R50
chrank -dev IBM.2107-7580641 -extpool P51 R51
chrank -dev IBM.2107-7580641 -extpool P52 R52
chrank -dev IBM.2107-7580641 -extpool P53 R53
chrank -dev IBM.2107-7580641 -extpool P54 R54
chrank -dev IBM.2107-7580641 -extpool P55 R55
chrank -dev IBM.2107-7580641 -extpool P56 R56
chrank -dev IBM.2107-7580641 -extpool P57 R57
chrank -dev IBM.2107-7580641 -extpool P58 R58
chrank -dev IBM.2107-7580641 -extpool P59 R59
chrank -dev IBM.2107-7580641 -extpool P60 R60
chrank -dev IBM.2107-7580641 -extpool P61 R61
chrank -dev IBM.2107-7580641 -extpool P62 R62
chrank -dev IBM.2107-7580641 -extpool P63 R63
```

Create the LUNs

The **step4_makevols.txt** script defines the 112 LUNs on the set of 64 RAID-10 ranks. The name of a rank identifies the DA to which the rank belongs and also assigns the rank a number, as illustrated by the Benchmark Configuration/Tested Storage Configuration Diagram on page 18. In ranks number 0 or 1, which contains spares, a single LUN of 128 GiB is defined. For all other ranks two LUNs of 128 GiB each are defined. After defining the LUNs, the script assigns each LUN to one of eight volume groups, V1-V8, so that paths can be assigned by groups of volumes.

step4_makevols.txt

```
mkfbvol -dev IBM.2107-7580641 -extpool P0  -type ds -cap 128 -name da0r0_#h 1000
mkfbvol -dev IBM.2107-7580641 -extpool P2  -type ds -cap 128 -name da0r2_#h 1020 1021
mkfbvol -dev IBM.2107-7580641 -extpool P4  -type ds -cap 128 -name da0r4_#h 1040 1041
mkfbvol -dev IBM.2107-7580641 -extpool P6  -type ds -cap 128 -name da0r6_#h 1060 1061
mkfbvol -dev IBM.2107-7580641 -extpool P1  -type ds -cap 128 -name da0r1_#h 1100
mkfbvol -dev IBM.2107-7580641 -extpool P3  -type ds -cap 128 -name da0r3_#h 1120 1121
mkfbvol -dev IBM.2107-7580641 -extpool P5  -type ds -cap 128 -name da0r5_#h 1140 1141
mkfbvol -dev IBM.2107-7580641 -extpool P7  -type ds -cap 128 -name da0r7_#h 1160 1161
mkfbvol -dev IBM.2107-7580641 -extpool P8  -type ds -cap 128 -name da1r0_#h 1200
mkfbvol -dev IBM.2107-7580641 -extpool P10 -type ds -cap 128 -name da1r2_#h 1220 1221
mkfbvol -dev IBM.2107-7580641 -extpool P12 -type ds -cap 128 -name da1r4_#h 1240 1241
mkfbvol -dev IBM.2107-7580641 -extpool P14 -type ds -cap 128 -name da1r6_#h 1260 1261
mkfbvol -dev IBM.2107-7580641 -extpool P9  -type ds -cap 128 -name da1r1_#h 1300
mkfbvol -dev IBM.2107-7580641 -extpool P11 -type ds -cap 128 -name da1r3_#h 1320 1321
mkfbvol -dev IBM.2107-7580641 -extpool P13 -type ds -cap 128 -name da1r5_#h 1340 1341
mkfbvol -dev IBM.2107-7580641 -extpool P15 -type ds -cap 128 -name da1r7_#h 1360 1361
```

```
mkfbvol -dev IBM.2107-7580641 -extpool P16 -type ds -cap 128 -name da2r0_#h 1400
mkfbvol -dev IBM.2107-7580641 -extpool P18 -type ds -cap 128 -name da2r2_#h 1420 1421
mkfbvol -dev IBM.2107-7580641 -extpool P20 -type ds -cap 128 -name da2r4_#h 1440 1441
mkfbvol -dev IBM.2107-7580641 -extpool P22 -type ds -cap 128 -name da2r6_#h 1460 1461
mkfbvol -dev IBM.2107-7580641 -extpool P17 -type ds -cap 128 -name da2r1_#h 1500
mkfbvol -dev IBM.2107-7580641 -extpool P19 -type ds -cap 128 -name da2r3_#h 1520 1521
mkfbvol -dev IBM.2107-7580641 -extpool P21 -type ds -cap 128 -name da2r5_#h 1540 1541
mkfbvol -dev IBM.2107-7580641 -extpool P23 -type ds -cap 128 -name da2r7_#h 1560 1561
mkfbvol -dev IBM.2107-7580641 -extpool P24 -type ds -cap 128 -name da3r0_#h 1600
mkfbvol -dev IBM.2107-7580641 -extpool P26 -type ds -cap 128 -name da3r2_#h 1620 1621
mkfbvol -dev IBM.2107-7580641 -extpool P28 -type ds -cap 128 -name da3r4_#h 1640 1641
mkfbvol -dev IBM.2107-7580641 -extpool P30 -type ds -cap 128 -name da3r6_#h 1660 1661
mkfbvol -dev IBM.2107-7580641 -extpool P25 -type ds -cap 128 -name da3r1_#h 1700
mkfbvol -dev IBM.2107-7580641 -extpool P27 -type ds -cap 128 -name da3r3_#h 1720 1721
mkfbvol -dev IBM.2107-7580641 -extpool P29 -type ds -cap 128 -name da3r5_#h 1740 1741
mkfbvol -dev IBM.2107-7580641 -extpool P31 -type ds -cap 128 -name da3r7_#h 1760 1761
mkfbvol -dev IBM.2107-7580641 -extpool P32 -type ds -cap 128 -name da4r0_#h 1800
mkfbvol -dev IBM.2107-7580641 -extpool P34 -type ds -cap 128 -name da4r2_#h 1820 1821
mkfbvol -dev IBM.2107-7580641 -extpool P36 -type ds -cap 128 -name da4r4_#h 1840 1841
mkfbvol -dev IBM.2107-7580641 -extpool P38 -type ds -cap 128 -name da4r6_#h 1860 1861
mkfbvol -dev IBM.2107-7580641 -extpool P33 -type ds -cap 128 -name da4r1_#h 1900
mkfbvol -dev IBM.2107-7580641 -extpool P35 -type ds -cap 128 -name da4r3_#h 1920 1921
mkfbvol -dev IBM.2107-7580641 -extpool P37 -type ds -cap 128 -name da4r5_#h 1940 1941
mkfbvol -dev IBM.2107-7580641 -extpool P39 -type ds -cap 128 -name da4r7_#h 1960 1961
mkfbvol -dev IBM.2107-7580641 -extpool P40 -type ds -cap 128 -name da5r0_#h 1A00
mkfbvol -dev IBM.2107-7580641 -extpool P42 -type ds -cap 128 -name da5r2_#h 1A20 1A21
mkfbvol -dev IBM.2107-7580641 -extpool P44 -type ds -cap 128 -name da5r4_#h 1A40 1A41
mkfbvol -dev IBM.2107-7580641 -extpool P46 -type ds -cap 128 -name da5r6_#h 1A60 1A61
mkfbvol -dev IBM.2107-7580641 -extpool P41 -type ds -cap 128 -name da5r1_#h 1B00
mkfbvol -dev IBM.2107-7580641 -extpool P43 -type ds -cap 128 -name da5r3_#h 1B20 1B21
mkfbvol -dev IBM.2107-7580641 -extpool P45 -type ds -cap 128 -name da5r5_#h 1B40 1B41
mkfbvol -dev IBM.2107-7580641 -extpool P47 -type ds -cap 128 -name da5r7_#h 1B60 1B61
mkfbvol -dev IBM.2107-7580641 -extpool P48 -type ds -cap 128 -name da6r0_#h 1C00
mkfbvol -dev IBM.2107-7580641 -extpool P50 -type ds -cap 128 -name da6r2_#h 1C20 1C21
mkfbvol -dev IBM.2107-7580641 -extpool P52 -type ds -cap 128 -name da6r4_#h 1C40 1C41
mkfbvol -dev IBM.2107-7580641 -extpool P54 -type ds -cap 128 -name da6r6_#h 1C60 1C61
mkfbvol -dev IBM.2107-7580641 -extpool P49 -type ds -cap 128 -name da6r1_#h 1D00
mkfbvol -dev IBM.2107-7580641 -extpool P51 -type ds -cap 128 -name da6r3_#h 1D20 1D21
mkfbvol -dev IBM.2107-7580641 -extpool P53 -type ds -cap 128 -name da6r5_#h 1D40 1D41
mkfbvol -dev IBM.2107-7580641 -extpool P55 -type ds -cap 128 -name da6r7_#h 1D60 1D61
mkfbvol -dev IBM.2107-7580641 -extpool P56 -type ds -cap 128 -name da7r0_#h 1E00
mkfbvol -dev IBM.2107-7580641 -extpool P58 -type ds -cap 128 -name da7r2_#h 1E20 1E21
mkfbvol -dev IBM.2107-7580641 -extpool P60 -type ds -cap 128 -name da7r4_#h 1E40 1E41
mkfbvol -dev IBM.2107-7580641 -extpool P62 -type ds -cap 128 -name da7r6_#h 1E60 1E61
mkfbvol -dev IBM.2107-7580641 -extpool P57 -type ds -cap 128 -name da7r1_#h 1F00
mkfbvol -dev IBM.2107-7580641 -extpool P59 -type ds -cap 128 -name da7r3_#h 1F20 1F21
mkfbvol -dev IBM.2107-7580641 -extpool P61 -type ds -cap 128 -name da7r5_#h 1F40 1F41
mkfbvol -dev IBM.2107-7580641 -extpool P63 -type ds -cap 128 -name da7r7_#h 1F60 1F61
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V1
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V2
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V3
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V4
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V5
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V6
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V7
mkvolgrp -dev IBM.2107-7580641 -hosttype pSeries V8
chvolgrp -dev IBM.2107-7580641 -name rio_port_A -action replace -volume
1000,1020,1021,1040,1041,1060,1061,1200,1220,1221,1240,1241,1260,1261 V1
chvolgrp -dev IBM.2107-7580641 -name rio_port_B -action replace -volume
1800,1820,1821,1840,1841,1860,1861,1A00,1A20,1A21,1A40,1A41,1A60,1A61 V2
chvolgrp -dev IBM.2107-7580641 -name rio_port_C -action replace -volume
1D00,1D20,1D21,1D40,1D41,1D60,1D61,1F00,1F20,1F21,1F40,1F41,1F60,1F61 V3
```

```
chvolgrp -dev IBM.2107-7580641 -name rio_port_D -action replace -volume
1500,1520,1521,1540,1541,1560,1561,1700,1720,1721,1740,1741,1760,1761 V4
chvolgrp -dev IBM.2107-7580641 -name rio_port_E -action replace -volume
1C00,1C20,1C21,1C40,1C41,1C60,1C61,1E00,1E20,1E21,1E40,1E41,1E60,1E61 V5
chvolgrp -dev IBM.2107-7580641 -name rio_port_F -action replace -volume
1400,1420,1421,1440,1441,1460,1461,1600,1620,1621,1640,1641,1660,1661 V6
chvolgrp -dev IBM.2107-7580641 -name rio_port_G -action replace -volume
1100,1120,1121,1140,1141,1160,1161,1300,1320,1321,1340,1341,1360,1361 V7
chvolgrp -dev IBM.2107-7580641 -name rio_port_H -action replace -volume
1900,1920,1921,1940,1941,1960,1961,1B00,1B20,1B21,1B40,1B41,1B60,1B61 V8
```

Define the LUN access paths

The next step is to define the paths by which each LUN can be accessed by the Host System. The path definitions are created by the **step5_define_paths.txt** script. Each host WWPN is assigned to one of the eight volume groups, V1-V8, so that each LUN is access via a set of four paths.

step5_define_paths.txt

```
# Make SCSI host ports and assign a volume group to them.
#Perfss10 Config:

mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C944431B -profile "IBM pSeries -
AIX" -volgrp V8  sh2d_fcs0_G1_fc0112
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9424FD5 -profile "IBM pSeries -
AIX" -volgrp V7  sh2d_fcs1_H1_fc0502
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94259CC -profile "IBM pSeries -
AIX" -volgrp V2  sh2d_fcs2_A1_fc0012
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C942518A -profile "IBM pSeries -
AIX" -volgrp V6  sh2d_fcs3_E1_fc0602
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94030FD -profile "IBM pSeries -
AIX" -volgrp V1  sh2d_fcs4_B1_fc0402
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C942498B -profile "IBM pSeries -
AIX" -volgrp V4  sh2d_fcs5_C1_fc0712
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94256F7 -profile "IBM pSeries -
AIX" -volgrp V5  sh2d_fcs6_F1_fc0212
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9427F7E -profile "IBM pSeries -
AIX" -volgrp V3  sh2d_fcs7_D1_fc0312
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444479 -profile "IBM pSeries -
AIX" -volgrp V8  sh2d_fcs8_G3_fc0142
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C944446C -profile "IBM pSeries -
AIX" -volgrp V7  sh2d_fcs9_H3_fc0542
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94443C8 -profile "IBM pSeries -
AIX" -volgrp V2 sh2d_fcs10_A3_fc0042
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444524 -profile "IBM pSeries -
AIX" -volgrp V6 sh2d_fcs11_E3_fc0642
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94440F4 -profile "IBM pSeries -
AIX" -volgrp V1 sh2d_fcs12_B3_fc0442
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9403183 -profile "IBM pSeries -
AIX" -volgrp V4 sh2d_fcs13_C3_fc0732
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9427A39 -profile "IBM pSeries -
AIX" -volgrp V5 sh2d_fcs14_F3_fc0242
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C942E674 -profile "IBM pSeries -
AIX" -volgrp V3 sh2d_fcs15_D3_fc0342
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C944454D -profile "IBM pSeries -
AIX" -volgrp V8 sh2d_fcs16_G4_fc0143
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94079D7 -profile "IBM pSeries -
AIX" -volgrp V7 sh2d_fcs17_H4_fc0543
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94443C9 -profile "IBM pSeries -
AIX" -volgrp V2 sh2d_fcs18_A4_fc0043
```

```
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9427DB5 -profile "IBM pSeries -
AIX" -volgrp V6 sh2d_fcs19_E4_fc0643
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94443C0 -profile "IBM pSeries -
AIX" -volgrp V1 sh2d_fcs20_B4_fc0443
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444199 -profile "IBM pSeries -
AIX" -volgrp V4 sh2d_fcs21_C4_fc0733
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C944425F -profile "IBM pSeries -
AIX" -volgrp V5 sh2d_fcs22_F4_fc0243
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94443DA -profile "IBM pSeries -
AIX" -volgrp V3 sh2d_fcs23_D4_fc0343
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C94441ED -profile "IBM pSeries -
AIX" -volgrp V8 sh2d_fcs24_G2_fc0113
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444428 -profile "IBM pSeries -
AIX" -volgrp V7 sh2d_fcs25_H2_fc0503
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9427F7F -profile "IBM pSeries -
AIX" -volgrp V2 sh2d_fcs26_A2_fc0013
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C944428C -profile "IBM pSeries -
AIX" -volgrp V6 sh2d_fcs27_E2_fc0603
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444204 -profile "IBM pSeries -
AIX" -volgrp V1 sh2d_fcs28_B2_fc0403
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9402F88 -profile "IBM pSeries -
AIX" -volgrp V4 sh2d_fcs29_C2_fc0713
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444156 -profile "IBM pSeries -
AIX" -volgrp V5 sh2d_fcs30_F2_fc0213
mkhostconnect -dev IBM.2107-7580641 -wwname 10000000C9444311 -profile "IBM pSeries -
AIX" -volgrp V3 sh2d_fcs31_D2_fc0313
```

Discover the LUNs and create multi-path hdisks

The **step6_discover.ksh** script performs discovery on each of the 32 Host System paths. In this configuration AIX MPIO capability is utilized creating one multi-path hdisk that corresponds to each LUN.

step6_discover.ksh

```
#Configure Host Adapters for RIO Ports A1 through A4
for i in 2 26 10 18; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports B1 through B4
for i in 4 28 12 20; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports C1 through C4
for i in 5 29 13 21; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports D1 through D4
for i in 7 31 15 23; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports E1 through E4
for i in 3 27 11 19; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports F1 through F4
for i in 6 30 14 22; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports G1 through G4
for i in 0 24 8 16; do cfgmgr -vl fcs$i|grep Comp; done
#
#Configure Host Adapters for RIO Ports H1 through H4
for i in 1 25 9 17; do cfgmgr -vl fcs$i|grep Comp; done
```

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

Storage Definition (sd) Parameter Values

The Storage Definition (sd) parameter values listed below are included where noted in each of the SPC-2 Workload Generator parameter files that follow.

```
sd=default,host=localhost,size=128g
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=sd97,lun=/dev/rhdisk100
  sd=sd98,lun=/dev/rhdisk101
  sd=sd99,lun=/dev/rhdisk102
  sd=sd100,lun=/dev/rhdisk103
  sd=sd101,lun=/dev/rhdisk104
  sd=sd102,lun=/dev/rhdisk105
  sd=sd103,lun=/dev/rhdisk106
  sd=sd104,lun=/dev/rhdisk107
  sd=sd105,lun=/dev/rhdisk108
  sd=sd106,lun=/dev/rhdisk109
  sd=sd107,lun=/dev/rhdisk110
  sd=sd108,lun=/dev/rhdisk111
  sd=sd109,lun=/dev/rhdisk112
  sd=sd110,lun=/dev/rhdisk113
  sd=sd111,lun=/dev/rhdisk114
  sd=sd112,lun=/dev/rhdisk115
```

Large File Processing Test *("lfp.cfg")*

```
maxlatestart=0
host=localhost,jvms=6,maxstreams=200
reportinginterval=5
segmentlength=512m
*
* Storage Definition (sd) parameter values inserted here
*
rd=default,rampup=180,measurement=180,runout=45,rampdown=15,buffers=1,periods=90
rd=default,rdpct=0,xfersize=1024k,streams=112
rd=TR1_SPC-2-FP2.0,streams=112
rd=TR2_SPC-2-FP2.0,streams=56
rd=TR3_SPC-2-FP2.0,streams=28
rd=TR4_SPC-2-FP2.0,streams=14
rd=TR5_SPC-2-FP2.0,streams=1
rd=default,rdpct=0,xfersize=256k,streams=112
rd=TR6_SPC-2-FP2.0,streams=112
rd=TR7_SPC-2-FP2.0,streams=56
rd=TR8_SPC-2-FP2.0,streams=28
rd=TR9_SPC-2-FP2.0,streams=14
rd=TR10_SPC-2-FP2.0,streams=1
rd=default,rdpct=50,xfersize=1024k,streams=112
rd=TR11_SPC-2-FP2.0,streams=112
rd=TR12_SPC-2-FP2.0,streams=56
rd=TR13_SPC-2-FP2.0,streams=28
rd=TR14_SPC-2-FP2.0,streams=14
rd=TR15_SPC-2-FP2.0,streams=1
rd=default,rdpct=50,xfersize=256k,streams=112
rd=TR16_SPC-2-FP2.0,streams=112
rd=TR17_SPC-2-FP2.0,streams=56
rd=TR18_SPC-2-FP2.0,streams=28
rd=TR19_SPC-2-FP2.0,streams=14
rd=TR20_SPC-2-FP2.0,streams=1
rd=default,rdpct=100,xfersize=1024k,streams=112
rd=TR21_SPC-2-FP2.0,streams=112
rd=TR22_SPC-2-FP2.0,streams=56
rd=TR23_SPC-2-FP2.0,streams=28
rd=TR24_SPC-2-FP2.0,streams=14
rd=TR25_SPC-2-FP2.0,streams=1
rd=default,rdpct=100,xfersize=256k,streams=112
rd=TR26_SPC-2-FP2.0,streams=112
rd=TR27_SPC-2-FP2.0,streams=56
rd=TR28_SPC-2-FP2.0,streams=28
rd=TR29_SPC-2-FP2.0,streams=14
rd=TR30_SPC-2-FP2.0,streams=1
```

Large Database Query Test *("ldq.cfg")*

```
maxlatestart=0
host=localhost,jvms=6,maxstreams=200
reportinginterval=5
segmentlength=512m
sd=default,host=localhost,size=128g
*
* Storage Definition (sd) parameter values inserted here
*
rd=default,rdpct=99,rampup=180,measurement=180,runout=45,rampdown=15,periods=90
rd=default,xfersize=1024k,buffers=4,streams=112
rd=TR11_SPC-2-DQ2.0,streams=112
rd=TR12_SPC-2-DQ2.0,streams=56
rd=TR13_SPC-2-DQ2.0,streams=28
rd=TR14_SPC-2-DQ2.0,streams=14
rd=TR15_SPC-2-DQ2.0,streams=1
rd=default,xfersize=1024k,buffers=1,streams=112
rd=TR16_SPC-2-DQ2.0,streams=112
rd=TR17_SPC-2-DQ2.0,streams=56
rd=TR18_SPC-2-DQ2.0,streams=28
rd=TR19_SPC-2-DQ2.0,streams=14
rd=TR20_SPC-2-DQ2.0,streams=1
rd=default,xfersize=64k,buffers=4,streams=112
rd=TR1_SPC-2-DQ2.0,streams=112
rd=TR2_SPC-2-DQ2.0,streams=56
rd=TR3_SPC-2-DQ2.0,streams=28
rd=TR4_SPC-2-DQ2.0,streams=14
rd=TR5_SPC-2-DQ2.0,streams=1
rd=default,xfersize=64k,buffers=1,streams=112
rd=TR6_SPC-2-DQ2.0,streams=112
rd=TR7_SPC-2-DQ2.0,streams=56
rd=TR8_SPC-2-DQ2.0,streams=28
rd=TR9_SPC-2-DQ2.0,streams=14
rd=TR10_SPC-2-DQ2.0,streams=1
```

Video on Demand Delivery Test *("vod.cfg")*

```
maxlatestart=0
host=localhost,jvms=24,maxstreams=400
reportinginterval=5
videosegmentduration=600
maxlatevod=0
sd=default,host=localhost,size=128g
*
* Storage Definition (sd) parameter values inserted here
*
rd=default,measurement=7200,rampup=1200,runout=45,rampdown=15,periods=600
rd=TR1_SPC-2-VOD11.0,streams=4300,buffers=8
```

Persistence Test Run 1 ("persistw.cfg")

```
* Persistence Test Run 1
host=localhost,jvms=2,maxstreams=500

sd=default,host=localhost,size=128g
*
* Storage Definition (sd) parameter values inserted here
*
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=112
```

Persistence Test Run 2 *("persistr.cfg")*

```
* Persistence Test Run 2

host=localhost,jvms=2,maxstreams=500

sd=default,host=localhost,size=128g
*
* Storage Definition (sd) parameter values inserted here
*
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

"javaopts.cfg"

```
-Xms384m -Xmx768m -Xss128k -Xgcpolicy:optavgpause
```

"runthem.sh

```
export PATH=$PATH:/usr/java14/bin
export SPC2HOME=/perform/spc2install
export CLASSPATH=$SPC2HOME
export LIBPATH=$SPC2HOME/aix
export IBM_JAVADUMP_OUTOFMEMORY=false
export IBM_HEAPDUMP_OUTOFMEMORY=false
java -Xoptionsfile=javaopts.cfg vdbench -f lfp.cfg -o lfp
java -Xoptionsfile=javaopts.cfg vdbench -f ldq.cfg -o ldq
java -Xoptionsfile=javaopts.cfg vdbench -f vod.cfg -o vod
java -Xoptionsfile=javaopts.cfg vdbench -f persistw.cfg -o persistw
```

"runpersist2.sh

```
export PATH=$PATH:/usr/java14/bin
export SPC2HOME=/perform/spc2install
export CLASSPATH=$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
```