ORACLE

SPC BENCHMARK 2™
FULL DISCLOSURE REPORT

ORACLE CORPORATION
SUN ZFS STORAGE 7420 APPLIANCE

SPC-2™ V1.3

Submitted for Review: April 12, 2012
Submission Identifier: B00058

First Edition – April 2012

Trademarks

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AUDIT CERTIFICATION

Steve Johnson
Oracle Corporation
500 Eldorado Blvd.
Roseville, CA 95757-5785

March 12, 2012

The SPC Benchmark 2™ results listed below for the Sun ZFS Storage 7420 Appliance produced in compliance with the SPC Benchmark 2™ V1.3 Onsite Audit requirements.

SPC Benchmark 2™ V1.3 Reported Data	
Tested Storage Product (TSP) Name: Sun ZFS Storage 7420 Appliance	
Metric	**Reported Result**
SPC-2 MBPS™	10,703.69
SPC-2 Price-Performance	$35.24/SPC-2 MBPS™
ASU Capacity	31,883.652 GB
Data Protection Level	Protected *(Mirroring)*
Total Price (including three-year maintenance)	$377,225.38

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

- A Letter of Good Faith, signed by a senior executive.
- The following Data Repository storage items were verified by physical inspection and documentation supplied by Oracle 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.
- The Application Storage Unit (ASU) Capacity was filled with random data using Vdbench 5.03 prior to the execution of the SPC-2 Tests.
- 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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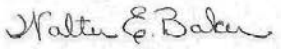
AUDIT CERTIFICATION *(CONT.)*

- Listings and commands used to create and configure the Benchmark Configuration/Tested Storage Configuration.
- Documentation of the customer tunable parameter and option that were changed from their default values.
- The following Host System items were verified by physical inspection and documentation supplied by Oracle Corporation:
  - ✓ Required Host System configuration information.
  - ✓ The TSC boundary within the Host System.
- The following SPC-2 Workload Generator information was verified by documentation supplied by Oracle 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 6 and 7 of the SPC-2 Benchmark Specification.
- The Test Results Files and resultant Summary Results Files received from Oracle Corporation for each of the following were authentic, accurate, and compliant with all of the requirements and constraints of Clauses 6 and 7 of the SPC-2 Benchmark Specification:
  - ✓ Data Persistence Test
  - ✓ Large File Processing Test
  - ✓ Large Database Query Test
  - ✓ Video on Demand Delivery Test
- The difference between the Tested Storage Configuration and Priced Storage Configuration was documented. That difference, if applied to the Tested Storage Configuration, would not have a measureable impact on the reported SPC-2 performance data.
- The submitted pricing information met all of the requirements and constraints of Clause 9 of the SPC-2 Benchmark Specification.
- The Full Disclosure Report (FDR) met all of the requirements in Clause 10 of the SPC-2 Benchmark Specification.
- This successfully audited SPC measurement is not subject to an SPC Confidential Review.

Audit Notes:

There were no audit notes or exceptions.

Respectfully,



Walter E. Baker
SPC Auditor

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LETTER OF GOOD FAITH

ORACLE

Oracle America, Inc. 500 Eldorado Boulevard Broomfield Colorado 80021 phone +1.303.464.4000 oracle.com

April 11, 2012
From:
Oracle Corporation
Steven A. Johnson
500 Eldorado Blvd.
Broomfield, CO 80021

To: Walter Baker
Gradient System
643 Blair Island road, Suite 103
Redwood City, CA 94063

Subject: SPC-2 Letter of Good Faith for the **Oracle's Sun ZFS Storage 7420**

Oracle 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 **V1.3** of the SPC-2 benchmark specification.

In addition, we have reported any items in the Benchmark Configuration and execution of the benchmark that affected the reported results even if the items are not explicitly required to be disclosed by the SPC-2 benchmark specification.

Sincerely,

Phil Bullinger - Senior VP

4-11-12
Date of Signature

EXECUTIVE SUMMARY

Test Sponsor and Contact Information

Test Sponsor and Contact Information	
Test Sponsor Primary Contact	Oracle Corporation – http://www.oracle.com Steven Johnson – Steven.A.Johnson@oracle.com 500 Eldorado Blvd. Broomfield, CO 80021 Phone: (303) 272-9476
Test Sponsor Alternate Contact	Oracle Corporation – http://www.oracle.com Jason Schaffer – Jason.Schaffer@oracle.com 500 Eldorado Blvd. Broomfield, CO 80021 Phone: (303) 272-4743 FAX: (303) 272-9704
Auditor	Storage Performance Council – http://www.storageperformance.org Walter E. Baker – AuditService@StoragePerformance.org 643 Bair Island Road, Suite 103 Redwood City, CA 94063 Phone: (650) 556-9384 FAX: (650) 556-9385

Revision Information and Key Dates

Revision Information and Key Dates	
SPC-2 Specification revision number	V1.3
SPC-2 Workload Generator revision number	V1.0
Date Results were first used publicly	April 12, 2012
Date FDR was submitted to the SPC	April 12, 2012
Date the TSC will be available for shipment to customers	currently available
Date the TSC completed audit certification	April 12, 2012

Tested Storage Product (TSP) Description

The Sun ZFS Storage appliances are Oracle's preferred storage appliance for Enterprise Tier 1 environments. The Sun ZFS Storage 7420 Appliance offers innovations in storage, including fully-integrated enterprise class data services, hybrid columnar compression support for Oracle Database, and exceptional performance, all while delivering significant cost savings. These systems feature a common, easy-to-use management interface that requires no additional training, and have the industry's most comprehensive analytics environment to help isolate and resolve issues to minimize impact to your business.

SPC-2 Reported Data

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

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

SPC-2 Reported Data				
Sun ZFS Storage 7420 Appliance				
SPC-2 MBPS™	**SPC-2 Price-Performance**	**ASU Capacity (GB)**	**Total Price**	**Data Protection Level**
10,703.69	$35.24	31,883.652	$377,225.38	Protected *(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	8,457.39			$44.60
Write Only:				
1024 KiB Transfer	6,120.33	256	23.91	
256 KiB Transfer	3,418.79	256	13.35	
Read-Write:				
1024 KiB Transfer	8,985.03	256	35.10	
256 KiB Transfer	4,673.62	256	18.26	
Read Only:				
1024 KiB Transfer	13,721.68	256	53.60	
256 KiB Transfer	13,824.88	256	54.00	
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	13,036.53			$28.94
1024 KiB Transfer Size				
4 I/Os Outstanding	14,284.67	256	55.80	
1 I/O Outstanding	13,963.39	256	54.54	
64 KiB Transfer Size				
4 I/Os Outstanding	11,247.98	256	43.94	
1 I/O Outstanding	12,650.06	256	49.41	
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**
	10,617.15	13,500	0.79	$35.53

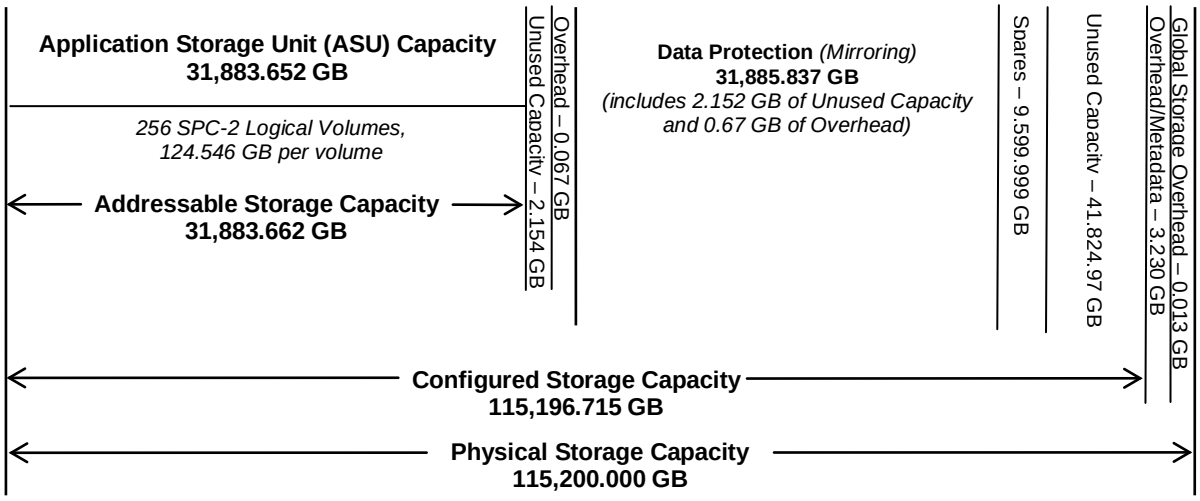
SPC-2 MBPS™ represents the aggregate data rate, in megabytes per second, of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand (VOD).

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

A **Data Protection Level** of **Protected** using ***Mirroring*** configures two or more identical copies of user data.

Storage Capacities and Relationships

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



SPC-1 Storage Capacity Utilization	
Application Utilization	27.68%
Protected Application Utilization	55.35%
Unused Storage Ratio	36.31%

Application Utilization: Total ASU Capacity *(31,883.653 GB)* divided by Physical Storage Capacity *(115,200.000 GB)*

Protected Application Utilization: Total ASU Capacity *(31,883.653 GB)* plus total Data Protection Capacity *(31,883.652 GB)* minus unused Data Protection Capacity *(2.152 GB)* divided by Physical Storage Capacity *(115,200.000 GB)*.

Unused Storage Ratio: Total Unused Capacity *(41,829.278 GB)* divided by Physical Storage Capacity *(115,200.000 GB)* and may not exceed 45%.

Detailed information for the various storage capacities and utilizations is available on pages 23-24 in the Full Disclosure Report.

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

The TSC was configured with dual-ported HBAs with one port per HBA in use for the SPC-2 measurements. The Priced Storage Configuration substituted single port HBAs for the dual-ported HBAs. That difference, if applied to the TSC, would not have a measureable impact on the reported SPC-2 performance data.

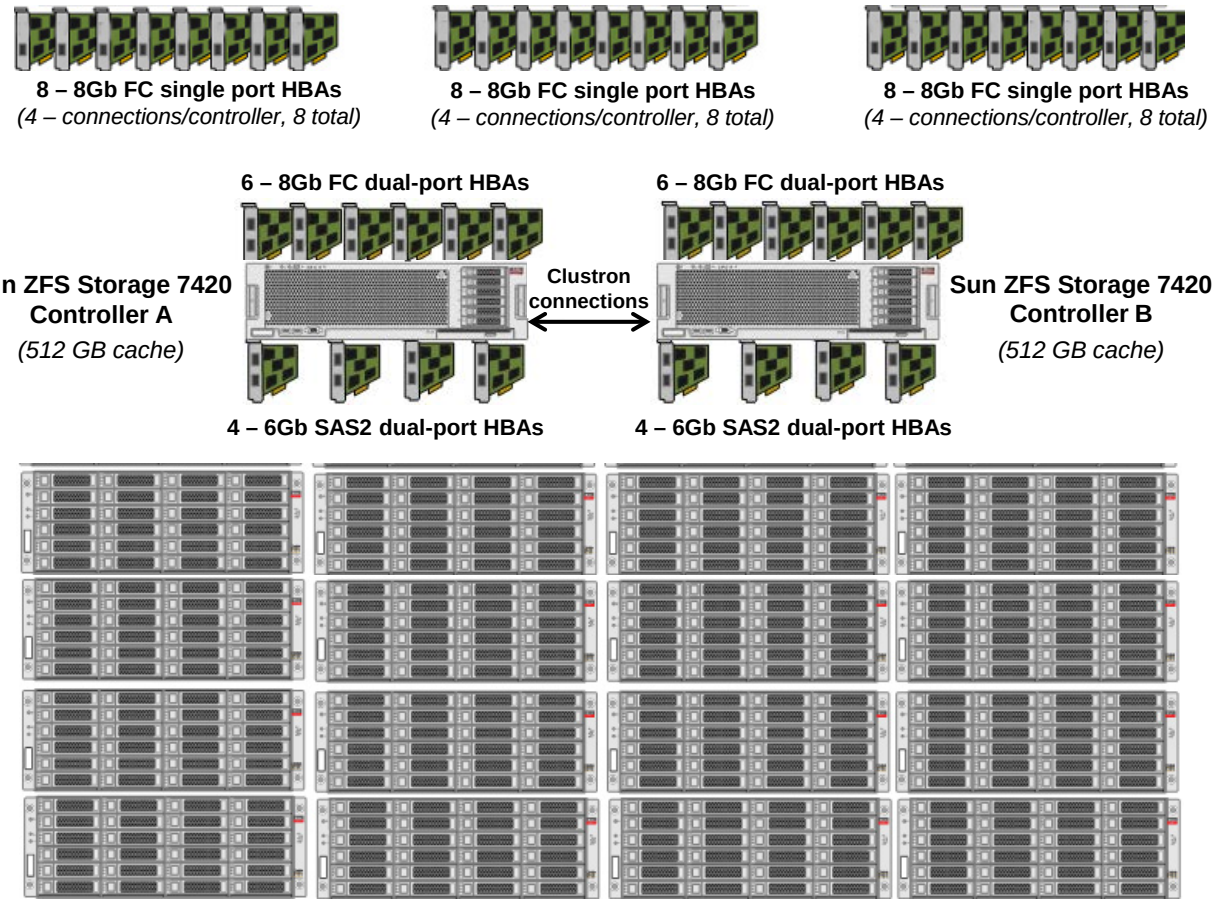
Priced Storage Configuration Pricing

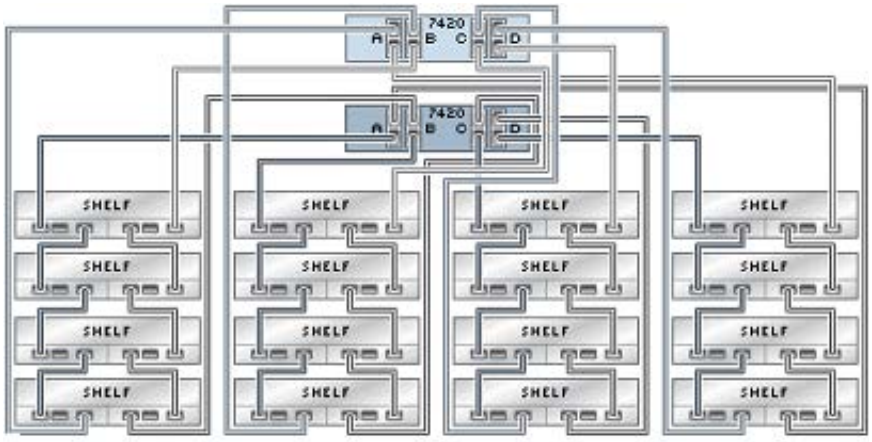
Part Number	Description	Quantity	US List	Total List	Discount	Net Price
TA7420-28A-HA	Sun ZFS Storage 7420: controller for cluster configuration with 2 Intel(R) Xeon(R) X7550 8-core 2.0 GHz processors and 2 SAS- 2 HBAs (for factory installation)	2	$24,493	$48,986	40.00%	$29,392
8505A	Sun Fire X4470 server: 16 GB memory kit with two 8 GB 1066 MHz DDR3 DIMMs (for factory installation)	64	$799	$51,136	20.00%	$40,909
SG-PCIE2FC-QF8-Z	StorageTek 8 Gb Fibre Channel PCIe HBA dual port QLogic (for factory Installation - includes SFPs)	12	$2,399	$28,788	40.00%	$17,273
SG-PCIESAS-GEN2-Z	SAS PCIE 6Gbs dual port	4	$679	$2,716	40.00%	$1,630
TA-2.0M-SAS	2m, Mini, shielded, SAS cable	8	$150	$1,200	40.00%	$720
2350A	Two 8-DIMM riser card (for factory installation)	4	$499	$1,996	20.00%	$1,597
2342A	2x Intel® Xeon® X7550 8-Core 2.00 GHz CPUs (for factory installation)	2	$10,699	$21,398	20.00%	$17,118
SR-JUMP-1MC13	Power cord: Sun Rack 2 jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	4	$29	$116	40.00%	$70
DS2-0BASE	Sun disk shelf: base chassis with 2 SAS-2 I/O modules, 2 AC PSUs and 2 cooling fans (for factory installation)	16	$4,905	$78,480	40.00%	$47,088
DS2-4URK-19U	Sun disk shelf: universal rail kit for 19-inch depth racks (for factory installation)	16	$230	$3,680	40.00%	$2,208
7101274	300GB 15K RPM disk	384	$411	$157,824	40.00%	$94,694
SR-JUMP-1MC13	Power cord: Sun Rack 2 jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	32	$29	$928	40.00%	$557
SR-1242-N	Sun Rack II, 42U, 1200mm depth, 600mm width, empty shipping only (do not install product inside the rack while it is on this pallet)	2	$2,149	$4,298	20.00%	$3,438
SR-10K-L630-N	Sun Rack II 10kVA PDU, Single Phase, 48 Supplied Amps Max, NEMA L6-30P on 4m captive cords, Data Center Two 30A NEMA L6-30R (30A breakers), 42 C13 and 6 C19 Outlets in 6 Groups, Current Metering.	2	$900	$1,800	20.00%	$1,440
SR-JUMPKIT-N	Jumper Cable Start Up Kit: qty 10 of 1 meter C13 plugs + qty 10 of 2 meter C13 plugs + qty 2 1 meter C19 plugs + Qty 2 2meter C19 plugs	2	$198	$396	20.00%	$317
SG-XPCIE1FC-QF8-N	Sun StorageTek 8 Gb FC PCIe Host Bus Adapter, Single Port Includes Standard and Low Profile Brackets, Low Profile Form Factor, QLogic, RoHS-6 Compliant (includes SFP)	24	$1,249	$29,976	40.00%	$17,986
X9732A-Z-N	2M LC to LC FC Optical Cable RoHS-6 compliant	24	$65.00	$1,560	40.00%	$936
	Oracle Premium Support for Systems: 1-Year 7/24, 2 hour response time.	3		$156,700		$99,854
	TOTALS			***$591,978***		**$377,225**

The above pricing includes the following:

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

Priced Storage Configuration Diagram





Back-end SAS wiring diagram

Priced Storage Configuration Components

Priced Storage Configuration Components:
24 – Sun StorageTek 8Gb Fibre Channel PCIe single port HBAs *(includes SFPs)*
Oracle Sun ZFS Storage 7420 Appliance 2 – Sun ZFS 7420 controllers *(cluster configuration)* 512 GB cache/memory per controller *(1024 GB total)* 12 – Sun StorageTek 8Gb Fibre Channel dual-port PCIe HBAs *(includes SFPs)* 8 – dual-ported SAS-2 HBAs 24 – 8 Gb FC front-end connections *(12 used)* 16 – SAS-2 backend connections *(16 used)*
24 – 2m LC to LC FC Optical Cables RoHS-6 compliant
8 – 2m, Mini, shielded, SAS cables
2 – Sun Rack II, 42U with 10KVA PDU, single phase
16 – Sun disk shelf: base chassis each with 2 SAS-2 IO modules, 2 AC PSUs and 2 cooling fans
384 – 300 GB 15K RPM SAS-2 disk drives

CONFIGURATION INFORMATION

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

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

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

Clause 10.6.6

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

The Benchmark Configuration (BC)/Tested Storage Configuration (TSC) is illustrated on page 20.

Storage Network Configuration

Clause 10.6.6.1

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

The Benchmark Configuration (BC)/Tested Storage Configuration (TSC) utilized direct attached storage.

Host System and Tested Storage Configuration Table

Clause 10.6.6.2

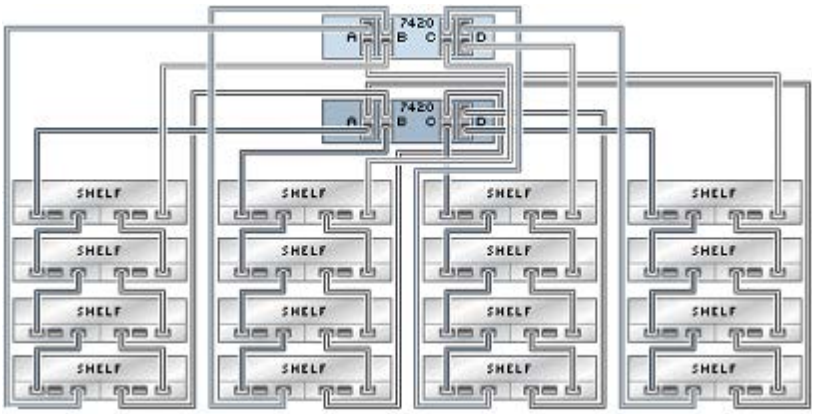
The FDR will contain a table that lists the major components of each Host System and the Tested Storage Configuration.

The components that comprise each Host System and the Tested Storage Configuration are listed in the table that appears on page 21.

Benchmark Configuration/Tested Storage Configuration Diagram

Oracle Sun ZFS Storage 7420 Appliance

384 – 300 GB, 15K RPM SAS Disk Drives



Back-end SAS wiring diagram

Host System and Tested Storage Configuration Components

Host Systems:	Tested Storage Configuration (TSC):
3 – Oracle Sun Fire x4470 M2 servers each with: 4 – Intel® Xeon® E7-4870 2.40 Ghz Processors, 256 KB unified L2 cache, 30 MB shared inclusive L3 cache 512 GB main memory in one server 256 GB main memory in two servers Solaris 5.11 11.0 *(x86)* PCIe Gen2	24 – Sun StorageTek 8Gb Fibre Channel PCIe dual-port HBAs
	Oracle Sun ZFS Storage 7420 Appliance 2 – Sun ZFS 7420 controllers *(cluster configuration)* 512 GB cache/memory per controller *(1024 GB total)* 12 – Sun StorageTek 8Gb Fibre Channel PCIe dual-port HBAs 8 – dual-ported SAS-2 HBAs 48 – 8 Gb FC front-end connections *(24 used)* 16 – SAS-2 backend connections *(16 used)*
	24 – 2m LC to LC FC Optical Cables RoHS-6 compliant
	8 – 2m, Mini, shielded, SAS cables
	2 – power distribution units and associated power cables
	2 – Sun Rack II, 42U with 10KVA PDU, single phase
	16 – Sun disk shelf: base chassis each with 2 SAS-2 IO modules, 2 AC PSUs and 2 cooling fans
	384 – 300 GB 15K RPM SAS-2 disk drives

Customer Tunable Parameters and Options

Clause 10.6.6.1

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

"Appendix B: Customer Tunable Parameters and Options" on page 98 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 99 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 115.

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 93 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)	31,883.652
Addressable Storage Capacity	Gigabytes (GB)	31,883.652
Configured Storage Capacity	Gigabytes (GB)	115,196.715
Physical Storage Capacity	Gigabytes (GB)	115,200.000
Data Protection *(Mirroring)*	Gigabytes (GB)	31,883.652
Required Storage *(spares/metadata/overhead)*	Gigabytes (GB)	9,603.338
Global Storage Overhead	Gigabytes (GB)	0.013
Total Unused Storage	Gigabytes (GB)	41,829.278

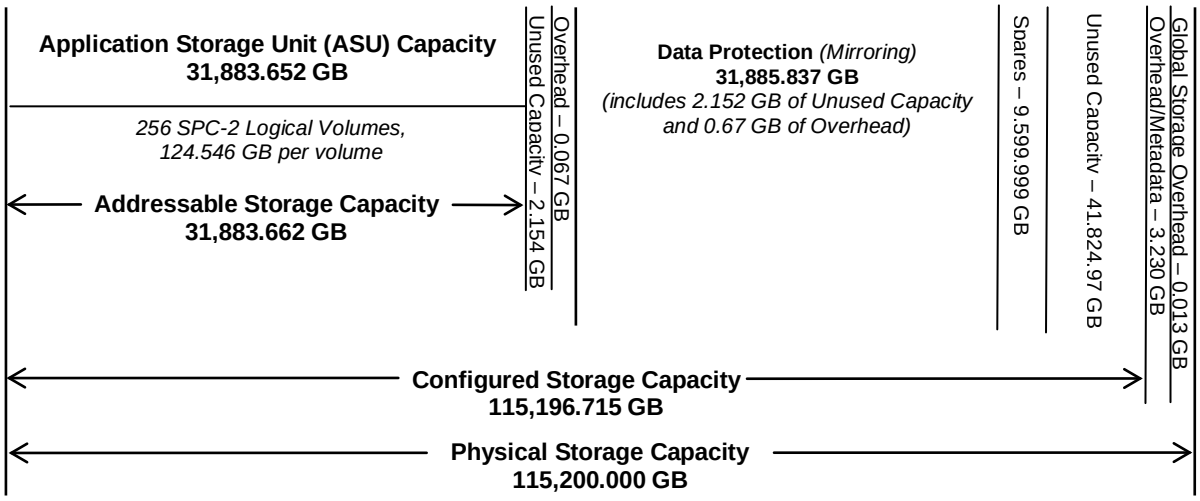
SPC-2 Storage Hierarchy Ratios

	Addressable Storage Capacity	Configured Storage Capacity	Physical Storage Capacity
Total ASU Capacity	100.00%	27.68%	27.68%
Data Protection *(Mirroring)*		27.68%	27.68%
Addressable Storage Capacity		26.68%	27.68%
Required Storage *(spares/metadata/overhead)*		8.34%	8.34%
Configured Storage Capacity			100.00%
Global Storage Overhead			0.00%
Unused Storage:			
Addressable	0.00%		
Configured		36.31%	
Physical			0.00%

The Physical Storage Capacity consisted of 115,200.00 GB distributed over 384 disk drives each with a formatted capacity of 300.00 GB. There was 0.000 GB (0.00%) of Unused Storage within the Physical Storage Capacity. Global Storage Overhead consisted of 0.013 GB (0.00%) of the Physical Storage Capacity. There was 41,824.974 GB (36.31%) of Unused Storage within the Configured Storage Capacity. The Total ASU Capacity utilized 100% of the Addressable Storage Capacity resulting in 0.000 GB (0.00%) of Unused Storage within the Addressable Storage Capacity. The Data Protection *(Mirroring)* capacity was 31,883.652 GB of which 31,881.500 GB was utilized. The total Unused Storage was 41,829.278 GB.

SPC-2 Storage Capacities and Relationships Illustration

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



Storage Capacity Utilization

Clause 10.6.8.2

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

Clause 2,8.1

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

Clause 2,8.2

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

Clause 2,8.3

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

SPC-1 Storage Capacity Utilization	
Application Utilization	27.68%
Protected Application Utilization	55.35%
Unused Storage Ratio	36.31%

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 (31,883.652 GB)			
	Total Capacity *(GB)*	Capacity Used *(GB)*	Capacity Unused *(GB)*
Logical Volumes 1-256	124.546 per LV	124.546 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 115 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 94 contains definitions of terms specific to the SPC-2 Data Repository.

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

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

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

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

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

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

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

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

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

Large File Processing Test

Clause 6.4.2.1

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

Clause 6.4.2.2

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

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

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

Clause 10.6.8.1

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

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

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Large File Processing Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 131.

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.

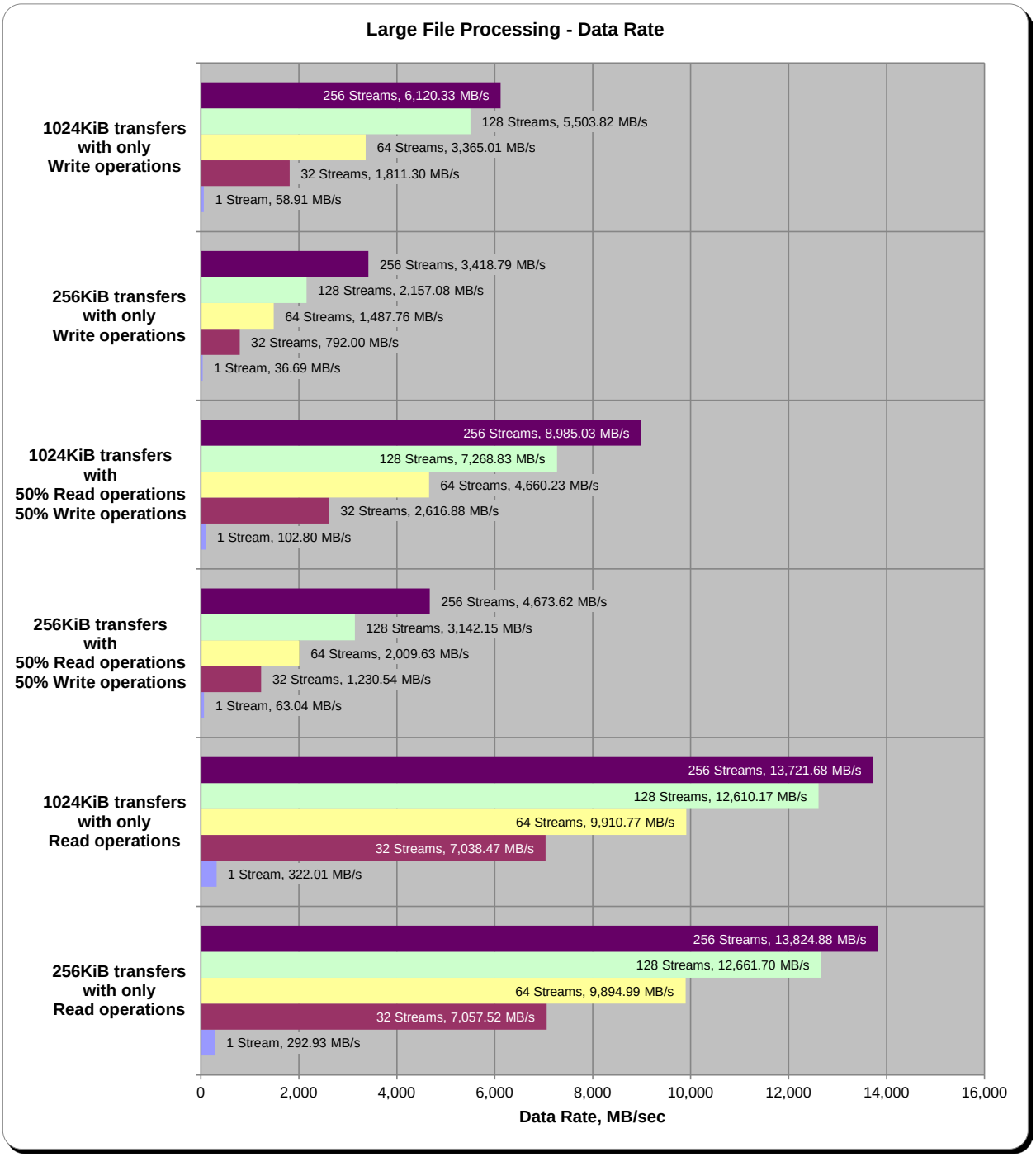
SPC-2 Large File Processing Test Results File

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	32 Streams	64 Streams	128 Streams	256 Streams
Write 1024KiB	58.91	1,811.30	3,365.01	5,503.82	6,120.33
Write 256KiB	36.69	792.00	1,487.76	2,157.08	3,418.79
Read/Write 1024KiB	102.80	2,616.88	4,660.23	7,268.83	8,985.03
Read/Write 256KiB	63.04	1,230.54	2,009.63	3,142.15	4,673.62
Read 1024KiB	322.01	7,038.47	9,910.77	12,610.17	13,721.68
Read 256KiB	292.93	7,057.52	9,894.99	12,661.70	13,824.88

SPC-2 Large File Processing Average Data Rates Graph

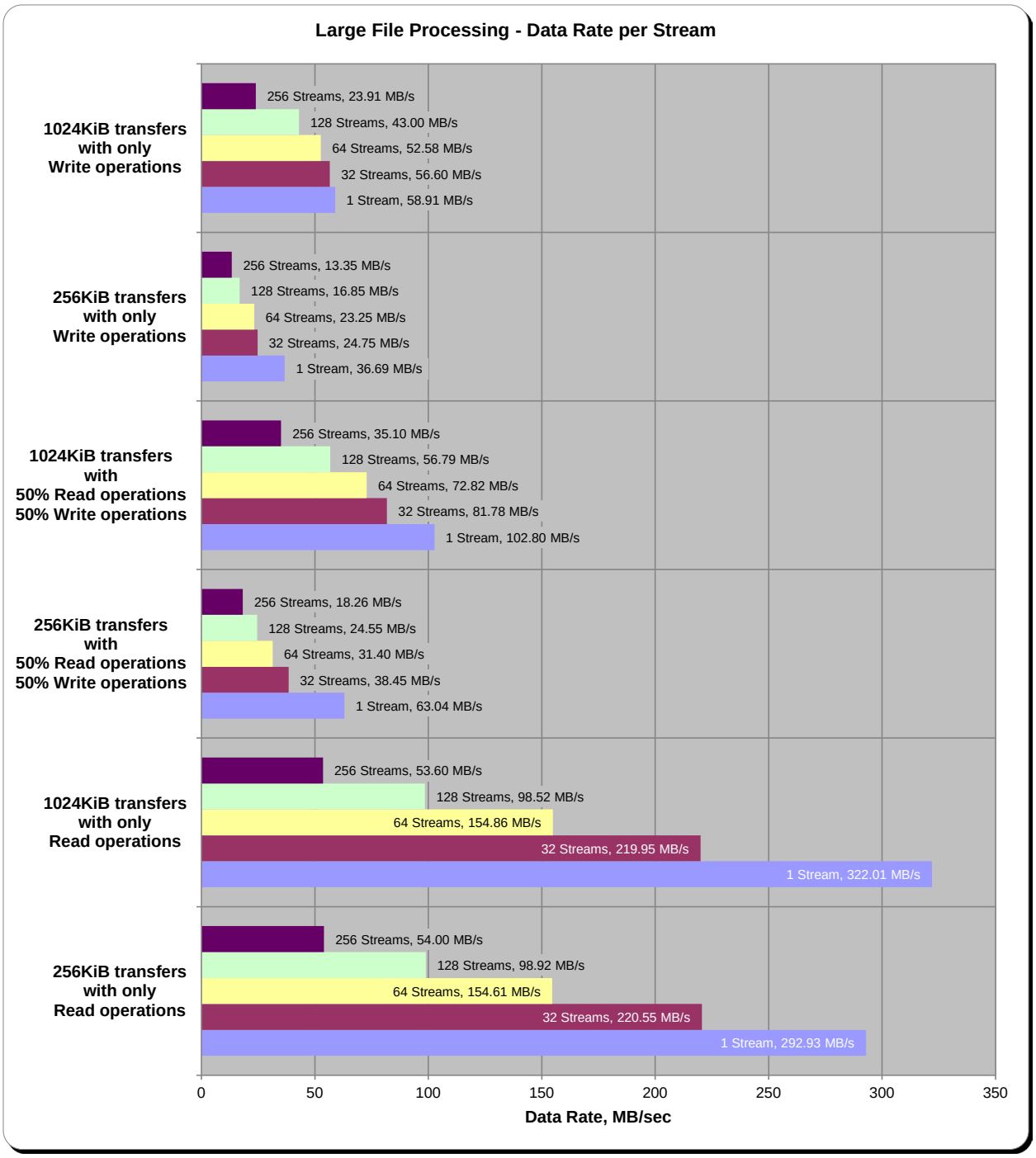


SPC-2 Large File Processing Average Data Rate per Stream

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	32 Streams	64 Streams	128 Streams	256 Streams
Write 1024KiB	58.91	56.60	52.58	43.00	23.91
Write 256KiB	36.69	24.75	23.25	16.85	13.35
Read/Write 1024KiB	102.80	81.78	72.82	56.79	35.10
Read/Write 256KiB	63.04	38.45	31.40	24.55	18.26
Read 1024KiB	322.01	219.95	154.86	98.52	53.60
Read 256KiB	292.93	220.55	154.61	98.92	54.00

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

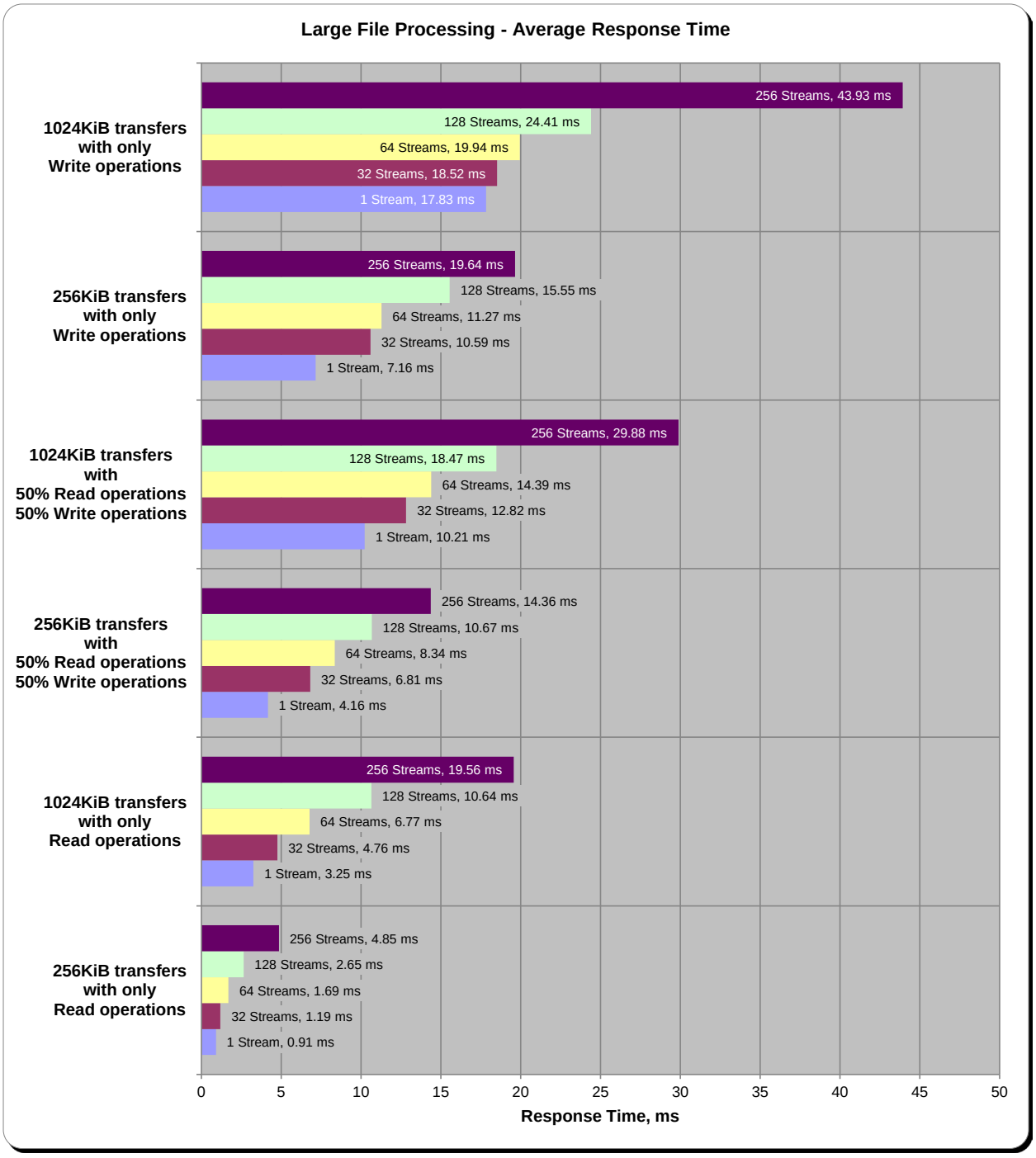


SPC-2 Large File Processing Average Response Time

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

Test Run Sequence	1 Stream	32 Streams	64 Streams	128 Streams	256 Streams
Write 1024KiB	17.83	18.52	19.94	24.41	43.93
Write 256KiB	7.16	10.59	11.27	15.55	19.64
Read/Write 1024KiB	10.21	12.82	14.39	18.47	29.88
Read/Write 256KiB	4.16	6.81	8.34	10.67	14.36
Read 1024KiB	3.25	4.76	6.77	10.64	19.56
Read 256KiB	0.91	1.19	1.69	2.65	4.85

SPC-2 Large File Processing Average Response Time Graph



Large File Processing Test – WRITE ONLY Test Phase

Clause 10.6.8.1.1

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

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

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

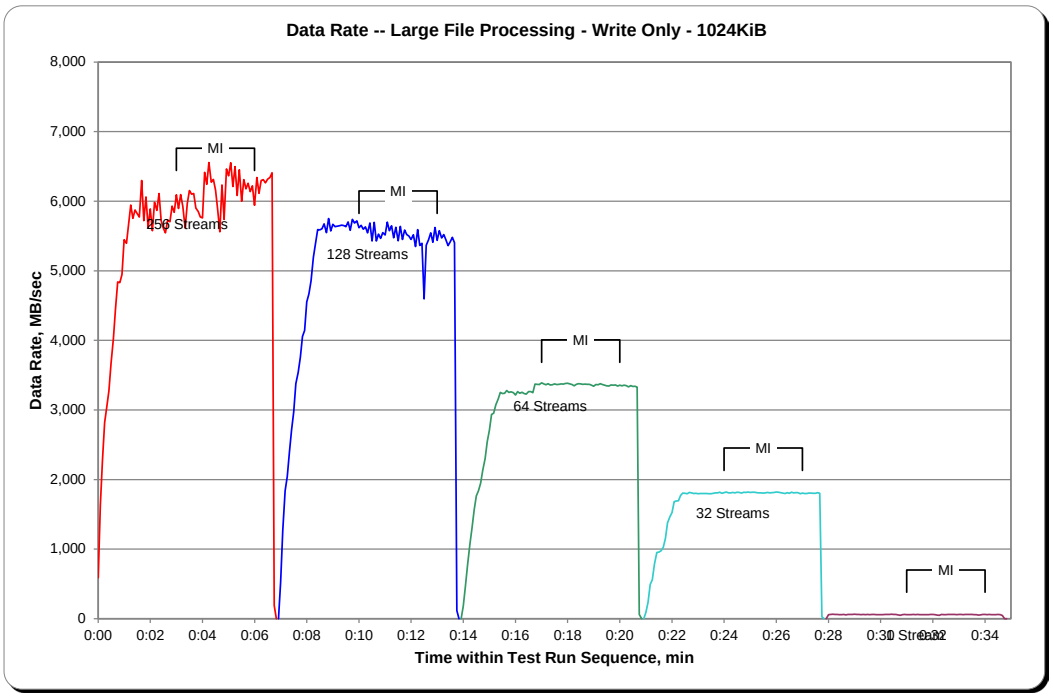
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR1	256 Streams			TR2	128 Streams			TR3	64 Streams			TR4	32 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	587.83	17.29	30.82	0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00
0:00:05	1,632.21	27.66	30.94	0:07:00	528.90	31.11	20.46	0:14:00	182.24	30.37	21.23	0:21:00	92.27	46.14	18.35	0:28:00	57.88	57.88	17.79
0:00:10	2,282.96	30.44	30.96	0:07:05	1,271.29	41.01	20.82	0:14:05	467.46	31.16	23.91	0:21:05	237.61	29.70	18.62	0:28:05	60.82	60.82	17.24
0:00:15	2,819.41	30.65	31.34	0:07:10	1,837.52	47.12	21.06	0:14:10	771.12	42.84	22.17	0:21:10	490.10	54.46	18.48	0:28:10	62.91	62.91	16.61
0:00:20	3,041.92	28.97	33.40	0:07:15	2,043.46	43.48	21.43	0:14:15	1,071.02	41.19	22.21	0:21:15	562.46	46.87	18.36	0:28:15	61.24	61.24	17.17
0:00:25	3,277.22	25.40	37.18	0:07:20	2,390.75	43.47	21.94	0:14:20	1,308.62	45.12	22.40	0:21:20	785.38	46.20	18.41	0:28:20	60.82	60.82	17.19
0:00:30	3,671.06	24.97	39.28	0:07:25	2,711.62	43.74	22.35	0:14:25	1,564.48	47.41	21.17	0:21:25	950.43	55.91	18.75	0:28:25	56.83	56.83	18.49
0:00:35	4,028.84	25.02	40.09	0:07:30	2,968.10	42.40	23.52	0:14:30	1,766.64	50.48	20.01	0:21:30	958.40	56.38	18.61	0:28:30	58.51	58.51	17.87
0:00:40	4,465.68	26.12	38.84	0:07:35	3,377.46	44.44	22.62	0:14:35	1,839.62	47.17	20.83	0:21:35	976.22	54.23	18.84	0:28:35	60.19	60.19	17.44
0:00:45	4,838.55	26.15	38.34	0:07:40	3,540.20	44.25	22.97	0:14:40	1,946.79	46.35	21.83	0:21:40	1,025.72	51.29	18.89	0:28:40	56.62	56.62	18.53
0:00:50	4,831.21	25.43	40.79	0:07:45	3,755.58	43.67	23.20	0:14:45	2,134.90	48.52	21.35	0:21:45	1,150.08	50.00	18.80	0:28:45	61.45	61.45	17.04
0:00:55	4,945.08	24.98	41.04	0:07:50	4,056.94	45.58	22.60	0:14:50	2,298.27	48.90	20.60	0:21:50	1,379.30	55.17	18.63	0:28:50	61.24	61.24	17.10
0:01:00	5,446.93	26.06	39.30	0:07:55	4,142.08	43.60	23.05	0:14:55	2,546.15	49.92	20.52	0:21:55	1,464.02	56.31	18.58	0:28:55	60.40	60.40	17.37
0:01:05	5,396.18	24.31	41.93	0:08:00	4,552.71	44.63	22.96	0:15:00	2,708.68	47.52	20.55	0:22:00	1,524.63	54.45	18.58	0:29:00	64.38	64.38	16.29
0:01:10	5,672.38	24.56	41.93	0:08:05	4,667.84	44.46	23.26	0:15:05	2,935.59	50.61	20.50	0:22:05	1,683.80	56.13	18.56	0:29:05	61.03	61.03	17.16
0:01:15	5,943.12	25.08	41.58	0:08:10	4,854.70	43.74	23.25	0:15:10	2,953.84	50.07	20.60	0:22:10	1,692.19	56.41	18.58	0:29:10	61.45	61.45	17.10
0:01:20	5,755.21	23.21	44.08	0:08:15	5,194.44	43.65	23.14	0:15:15	3,074.63	50.40	20.44	0:22:15	1,695.76	56.53	18.54	0:29:15	59.35	59.35	17.64
0:01:25	5,874.33	22.95	44.75	0:08:20	5,394.92	43.16	23.60	0:15:20	3,155.79	50.09	20.51	0:22:20	1,770.00	55.31	18.47	0:29:20	61.45	61.45	17.07
0:01:30	5,822.95	22.75	46.12	0:08:25	5,590.59	43.68	23.70	0:15:25	3,249.96	50.78	20.59	0:22:25	1,804.18	56.38	18.59	0:29:25	59.56	59.56	17.59
0:01:35	5,772.62	22.55	46.46	0:08:30	5,586.81	43.65	24.02	0:15:30	3,236.53	50.57	20.72	0:22:30	1,802.50	56.33	18.61	0:29:30	60.61	60.61	17.27
0:01:40	6,297.75	24.60	42.60	0:08:35	5,602.12	43.77	23.93	0:15:35	3,240.73	50.64	20.70	0:22:35	1,796.00	56.13	18.67	0:29:35	59.56	59.56	17.59
0:01:45	5,718.93	22.34	46.99	0:08:40	5,674.68	44.33	23.68	0:15:40	3,278.90	51.23	20.48	0:22:40	1,815.71	56.74	18.48	0:29:40	60.61	60.61	17.30
0:01:50	6,060.77	23.67	44.28	0:08:45	5,546.76	43.33	24.18	0:15:45	3,252.89	50.83	20.61	0:22:45	1,809.84	56.56	18.53	0:29:45	61.87	61.87	16.98
0:01:55	5,626.45	21.98	47.73	0:08:50	5,749.76	44.92	23.34	0:15:50	3,260.65	50.95	20.56	0:22:50	1,800.40	56.26	18.64	0:29:50	59.14	59.14	17.69
0:02:00	5,887.54	23.00	45.54	0:08:55	5,573.81	43.55	24.07	0:15:55	3,247.86	50.75	20.68	0:22:55	1,802.50	56.33	18.60	0:29:55	58.09	58.09	18.06
0:02:05	5,574.65	21.78	48.16	0:09:00	5,667.55	44.28	23.67	0:16:00	3,213.26	50.21	20.86	0:23:00	1,795.37	56.11	18.69	0:30:00	57.67	57.67	18.19
0:02:10	5,983.38	23.37	44.83	0:09:05	5,634.63	44.02	23.80	0:16:05	3,264.64	51.01	20.56	0:23:05	1,799.78	56.24	18.64	0:30:05	58.51	58.51	17.92
0:02:15	5,868.88	22.93	45.76	0:09:10	5,640.08	44.06	23.80	0:16:10	3,239.89	50.62	20.72	0:23:10	1,800.20	56.26	18.64	0:30:10	60.82	60.82	17.20
0:02:20	6,110.26	23.87	43.93	0:09:15	5,645.32	44.10	23.78	0:16:15	3,254.36	50.85	20.60	0:23:15	1,800.20	56.26	18.63	0:30:15	59.77	59.77	17.52
0:02:25	5,721.03	22.35	46.63	0:09:20	5,657.07	44.20	23.71	0:16:20	3,236.74	50.57	20.71	0:23:20	1,799.15	56.22	18.65	0:30:20	60.40	60.40	17.38
0:02:30	5,613.87	21.93	48.14	0:09:25	5,650.78	44.15	23.77	0:16:25	3,226.05	50.41	20.79	0:23:25	1,797.26	56.16	18.66	0:30:25	63.54	63.54	16.51
0:02:35	5,544.24	21.66	48.35	0:09:30	5,633.16	44.01	23.82	0:16:30	3,263.80	51.00	20.59	0:23:30	1,797.26	56.16	18.67	0:30:30	60.40	60.40	17.33
0:02:40	5,725.22	22.36	46.87	0:09:35	5,701.32	44.54	23.53	0:16:35	3,264.22	51.00	20.54	0:23:35	1,802.08	56.32	18.62	0:30:35	62.08	62.08	16.89
0:02:45	5,705.30	22.29	47.05	0:09:40	5,581.15	43.60	24.04	0:16:40	3,249.33	50.77	20.66	0:23:40	1,807.95	56.50	18.56	0:30:40	56.20	56.20	18.70
0:02:50	5,928.44	23.16	45.27	0:09:45	5,739.91	44.84	23.38	0:16:45	3,372.22	52.69	19.90	0:23:45	1,809.63	56.55	18.53	0:30:45	49.91	49.91	20.96
0:02:55	5,839.73	22.81	45.96	0:09:50	5,686.64	44.43	23.58	0:16:50	3,367.19	52.61	19.93	0:23:50	1,817.18	56.79	18.47	0:30:50	58.72	58.72	17.88
				0:09:55	5,716.42	44.66	23.49	0:16:55	3,366.14	52.60	19.93	0:23:55	1,802.50	56.33	18.60	0:30:55	59.98	59.98	17.44

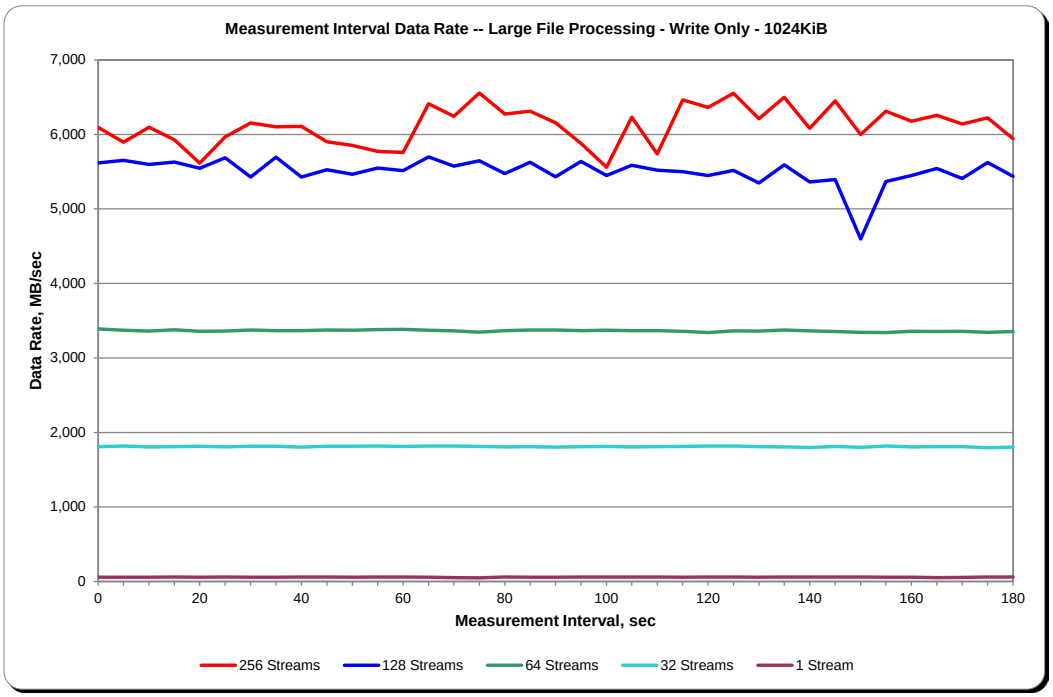
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	256 Streams			TR2	128 Streams			TR3	64 Streams			TR4	32 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:00	6,092.86	23.80	44.09	0:10:00	5,618.48	43.89	23.84	0:17:00	3,390.68	52.98	19.80	0:24:00	1,810.89	56.59	18.53	0:31:00	57.04	57.04	18.40
0:03:05	5,896.14	23.03	45.49	0:10:05	5,653.29	44.17	23.76	0:17:05	3,372.85	52.70	19.88	0:24:05	1,819.70	56.87	18.43	0:31:05	59.35	59.35	17.68
0:03:10	6,095.37	23.81	44.04	0:10:10	5,597.30	43.73	23.98	0:17:10	3,361.52	52.52	19.96	0:24:10	1,808.16	56.51	18.56	0:31:10	59.35	59.35	17.63
0:03:15	5,927.81	23.16	45.21	0:10:15	5,630.01	43.98	23.83	0:17:15	3,377.46	52.77	19.86	0:24:15	1,809.42	56.54	18.54	0:31:15	60.82	60.82	17.26
0:03:20	5,615.54	21.94	47.91	0:10:20	5,546.34	43.33	24.18	0:17:20	3,357.75	52.46	19.98	0:24:20	1,815.09	56.72	18.48	0:31:20	58.51	58.51	17.86
0:03:25	5,966.61	23.31	44.94	0:10:25	5,686.22	44.42	23.61	0:17:25	3,361.94	52.53	19.95	0:24:25	1,807.95	56.50	18.55	0:31:25	60.19	60.19	17.44
0:03:30	6,154.30	24.04	43.64	0:10:30	5,429.32	42.42	24.71	0:17:30	3,374.95	52.73	19.89	0:24:30	1,816.13	56.75	18.47	0:31:30	59.14	59.14	17.73
0:03:35	6,101.45	23.83	43.98	0:10:35	5,695.66	44.50	23.55	0:17:35	3,366.56	52.60	19.92	0:24:35	1,814.46	56.70	18.49	0:31:35	58.51	58.51	17.96
0:03:40	6,109.21	23.86	43.94	0:10:40	5,429.11	42.41	24.73	0:17:40	3,366.77	52.61	19.94	0:24:40	1,805.23	56.41	18.57	0:31:40	59.56	59.56	17.55
0:03:45	5,901.18	23.05	45.42	0:10:45	5,527.04	43.18	24.24	0:17:45	3,375.79	52.75	19.86	0:24:45	1,816.55	56.77	18.46	0:31:45	59.56	59.56	17.59
0:03:50	5,852.52	22.86	45.92	0:10:50	5,466.44	42.71	24.57	0:17:50	3,372.01	52.69	19.91	0:24:50	1,815.92	56.75	18.47	0:31:50	58.51	58.51	17.98
0:03:55	5,773.67	22.55	46.48	0:10:55	5,548.02	43.34	24.20	0:17:55	3,380.82	52.83	19.83	0:24:55	1,819.70	56.87	18.44	0:31:55	60.82	60.82	17.21
0:04:00	5,758.99	22.50	46.56	0:11:00	5,513.41	43.07	24.32	0:18:00	3,382.71	52.85	19.83	0:25:00	1,813.62	56.68	18.49	0:32:00	60.82	60.82	17.25
0:04:05	6,412.88	25.05	41.88	0:11:05	5,699.22	44.53	23.55	0:18:05	3,372.85	52.70	19.90	0:25:05	1,819.07	56.85	18.45	0:32:05	58.30	58.30	17.97
0:04:10	6,241.96	24.38	43.04	0:11:10	5,575.07	43.56	24.07	0:18:10	3,364.25	52.57	19.94	0:25:10	1,819.07	56.85	18.43	0:32:10	53.06	53.06	19.74
0:04:15	6,555.28	25.61	40.90	0:11:15	5,645.74	44.11	23.74	0:18:15	3,346.01	52.28	20.06	0:25:15	1,811.73	56.62	18.52	0:32:15	48.86	48.86	21.44
0:04:20	6,273.00	24.50	42.82	0:11:20	5,473.78	42.76	24.54	0:18:20	3,366.98	52.61	19.90	0:25:20	1,806.91	56.47	18.56	0:32:20	60.40	60.40	17.37
0:04:25	6,312.43	24.66	42.49	0:11:25	5,626.03	43.95	23.83	0:18:25	3,376.41	52.76	19.89	0:25:25	1,809.21	56.54	18.54	0:32:25	58.93	58.93	17.81
0:04:30	6,157.87	24.05	43.61	0:11:30	5,431.20	42.43	24.73	0:18:30	3,374.53	52.73	19.88	0:25:30	1,803.76	56.37	18.60	0:32:30	59.14	59.14	17.73
0:04:35	5,877.27	22.96	45.65	0:11:35	5,638.19	44.05	23.77	0:18:35	3,367.40	52.62	19.93	0:25:35	1,809.84	56.56	18.54	0:32:35	60.19	60.19	17.39
0:04:40	5,561.23	21.72	48.25	0:11:40	5,448.82	42.57	24.66	0:18:40	3,372.43	52.69	19.90	0:25:40	1,813.83	56.68	18.49	0:32:40	60.40	60.40	17.40
0:04:45	6,231.90	24.34	43.07	0:11:45	5,586.18	43.64	23.99	0:18:45	3,367.82	52.62	19.91	0:25:45	1,808.16	56.51	18.55	0:32:45	60.82	60.82	17.20
0:04:50	5,738.86	22.42	46.82	0:11:50	5,520.54	43.13	24.32	0:18:50	3,367.61	52.62	19.93	0:25:50	1,810.26	56.57	18.54	0:32:50	60.40	60.40	17.37
0:04:55	6,462.37	25.24	41.51	0:11:55	5,499.57	42.97	24.36	0:18:55	3,356.91	52.45	19.98	0:25:55	1,813.41	56.67	18.49	0:32:55	58.72	58.72	17.85
0:05:00	6,364.23	24.86	42.20	0:12:00	5,449.03	42.57	24.66	0:19:00	3,341.18	52.21	20.08	0:26:00	1,819.49	56.86	18.44	0:33:00	60.19	60.19	17.40
0:05:05	6,551.50	25.59	40.91	0:12:05	5,516.56	43.10	24.33	0:19:05	3,364.25	52.57	19.96	0:26:05	1,817.39	56.79	18.46	0:33:05	62.29	62.29	16.87
0:05:10	6,210.30	24.26	43.27	0:12:10	5,349.21	41.79	25.09	0:19:10	3,360.90	52.51	19.95	0:26:10	1,810.26	56.57	18.53	0:33:10	59.14	59.14	17.71
0:05:15	6,498.24	25.38	41.32	0:12:15	5,592.48	43.69	23.97	0:19:15	3,376.62	52.76	19.87	0:26:15	1,806.07	56.44	18.57	0:33:15	59.77	59.77	17.55
0:05:20	6,083.42	23.76	44.10	0:12:20	5,363.05	41.90	25.05	0:19:20	3,364.88	52.58	19.94	0:26:20	1,798.94	56.22	18.65	0:33:20	61.45	61.45	17.03
0:05:25	6,450.00	25.20	41.63	0:12:25	5,393.87	42.14	24.85	0:19:25	3,355.44	52.43	19.99	0:26:25	1,812.15	56.63	18.50	0:33:25	60.82	60.82	17.23
0:05:30	5,998.48	23.43	44.71	0:12:30	4,596.96	35.91	29.08	0:19:30	3,345.17	52.27	20.06	0:26:30	1,801.45	56.30	18.63	0:33:30	60.19	60.19	17.41
0:05:35	6,310.54	24.65	42.56	0:12:35	5,367.03	41.93	25.10	0:19:35	3,342.23	52.22	20.08	0:26:35	1,818.44	56.83	18.44	0:33:35	58.93	58.93	17.79
0:05:40	6,176.53	24.13	43.42	0:12:40	5,447.14	42.56	24.65	0:19:40	3,357.54	52.46	19.98	0:26:40	1,808.16	56.51	18.55	0:33:40	57.88	57.88	18.12
0:05:45	6,257.06	24.44	42.92	0:12:45	5,544.45	43.32	24.19	0:19:45	3,355.86	52.44	19.99	0:26:45	1,810.68	56.58	18.52	0:33:45	52.43	52.43	20.00
0:05:50	6,138.99	23.98	43.67	0:12:50	5,409.60	42.26	24.80	0:19:50	3,357.75	52.46	19.98	0:26:50	1,810.05	56.56	18.54	0:33:50	55.78	55.78	18.82
0:05:55	6,222.04	24.30	43.21	0:12:55	5,623.09	43.93	23.85	0:19:55	3,343.49	52.24	20.07	0:26:55	1,795.58	56.11	18.68	0:33:55	60.61	60.61	17.25
0:06:00	5,941.86	23.21	45.14	0:13:00	5,437.29	42.48	24.69	0:20:00	3,356.49	52.45	19.99	0:27:00	1,804.60	56.39	18.59	0:34:00	61.66	61.66	17.02
0:06:05	6,340.53	24.77	42.35	0:13:05	5,575.70	43.56	24.06	0:20:05	3,346.01	52.28	20.02	0:27:05	1,798.73	56.21	18.65	0:34:05	59.14	59.14	17.70
0:06:10	6,114.67	23.89	43.90	0:13:10	5,471.26	42.74	24.55	0:20:10	3,356.91	52.45	20.02	0:27:10	1,799.57	56.24	18.64	0:34:10	60.19	60.19	17.46
0:06:15	6,296.70	24.60	42.62	0:13:15	5,521.80	43.14	24.27	0:20:15	3,350.20	52.35	20.02	0:27:15	1,805.23	56.41	18.57	0:34:15	59.14	59.14	17.69
0:06:20	6,310.33	24.65	42.50	0:13:20	5,442.32	42.52	24.67	0:20:20	3,331.96	52.06	20.15	0:27:20	1,806.49	56.45	18.58	0:34:20	57.67	57.67	18.21
0:06:25	6,262.93	24.46	42.90	0:13:25	5,360.74	41.88	25.04	0:20:25	3,349.36	52.33	20.02	0:27:25	1,802.92	56.34	18.60	0:34:25	59.14	59.14	17.68
0:06:30	6,315.15	24.67	42.45	0:13:30	5,416.52	42.32	24.74	0:20:30	3,338.67	52.17	20.09	0:27:30	1,803.55	56.36	18.60	0:34:30	61.24	61.24	17.15
0:06:35	6,341.79	24.77	42.35	0:13:35	5,479.65	42.81	24.50	0:20:35	3,340.34	52.19	20.08	0:27:35	1,810.05	56.56	18.55	0:34:35	57.67	57.67	18.15
0:06:40	6,409.11	25.04	41.90	0:13:40	5,402.68	42.21	24.81	0:20:40	3,327.13	51.99	20.17	0:27:40	1,801.24	56.29	18.61	0:34:40	46.98	46.98	22.35
0:06:45	190.42	0.00	37.87	0:13:45	117.44	0.00	26.05	0:20:45	62.29	0.00	19.63	0:27:45	27.05	0.00	17.94	0:34:45	0.84	0.00	24.00
0:06:50	0.00	0.00	0.00	0:13:50	0.00	0.00	0.00	0:20:50	0.00	0.00	0.00	0:27:50	0.00	0.00	0.00	0:34:50	0.00	0.00	0.00

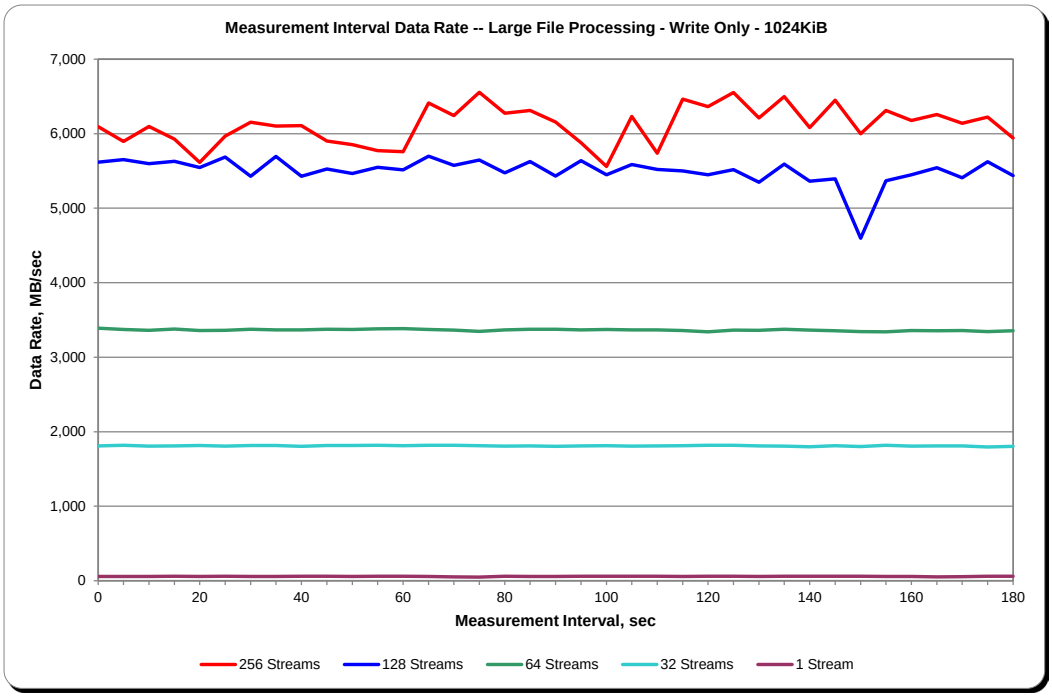
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



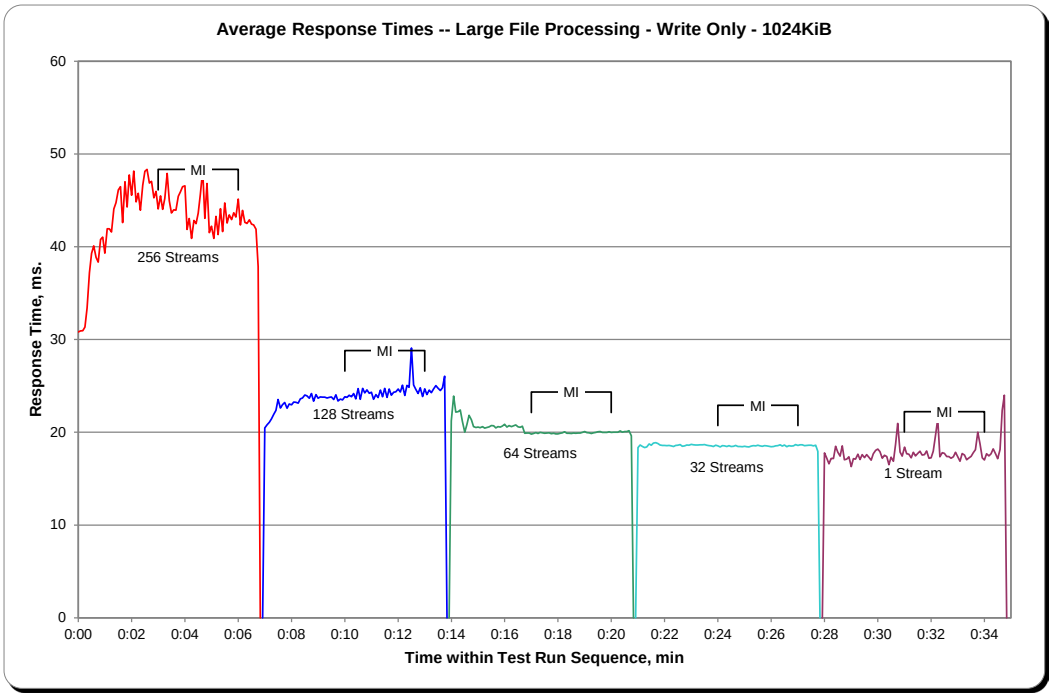
SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



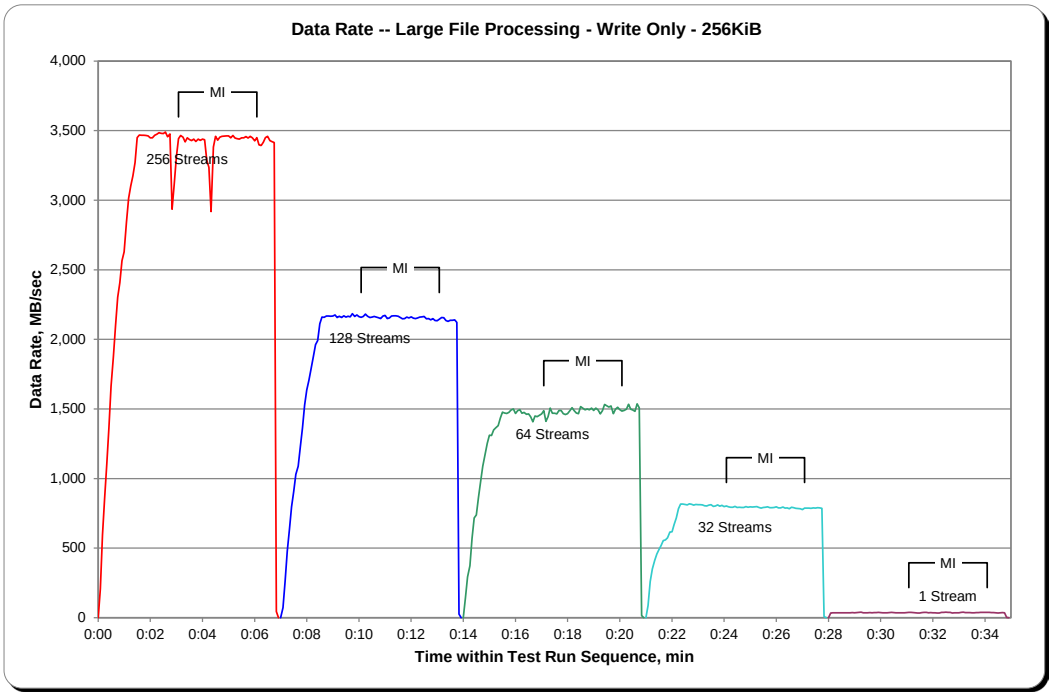
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR6	256 Streams			TR7	128 Streams			TR8	64 Streams			TR9	32 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	207.15	7.67	16.64	0:07:05	72.82	8.09	12.31	0:14:05	141.72	15.75	11.02	0:21:05	87.61	12.52	9.95	0:28:05	34.13	34.13	7.54
0:00:10	595.17	11.67	18.00	0:07:10	263.25	13.86	14.66	0:14:10	293.55	20.97	10.79	0:21:10	259.68	21.64	10.03	0:28:10	35.44	35.44	7.39
0:00:15	858.99	12.27	18.15	0:07:15	478.41	14.50	14.89	0:14:15	372.56	18.63	11.28	0:21:15	349.65	24.97	10.16	0:28:15	35.49	35.49	7.38
0:00:20	1,102.05	12.81	18.45	0:07:20	633.18	15.44	14.99	0:14:20	570.58	21.13	11.06	0:21:20	411.78	22.88	10.03	0:28:20	34.81	34.81	7.53
0:00:25	1,365.19	12.76	18.69	0:07:25	797.08	16.27	15.14	0:14:25	717.33	22.42	10.98	0:21:25	457.28	25.40	10.31	0:28:25	35.86	35.86	7.30
0:00:30	1,664.72	12.90	18.84	0:07:30	906.23	15.90	15.05	0:14:30	738.30	21.71	11.38	0:21:30	489.21	25.75	10.07	0:28:30	35.23	35.23	7.44
0:00:35	1,877.79	13.13	18.88	0:07:35	1,030.38	16.89	15.08	0:14:35	865.02	22.18	11.06	0:21:35	519.46	24.74	10.00	0:28:35	34.92	34.92	7.48
0:00:40	2,099.67	13.12	18.84	0:07:40	1,088.84	16.25	15.25	0:14:40	977.95	22.23	11.21	0:21:40	554.91	25.22	10.02	0:28:40	34.66	34.66	7.57
0:00:45	2,302.10	13.54	18.87	0:07:45	1,228.46	15.95	15.20	0:14:45	1,088.84	21.78	11.29	0:21:45	559.00	25.41	10.32	0:28:45	34.71	34.71	7.55
0:00:50	2,406.69	13.37	18.97	0:07:50	1,363.78	16.24	15.32	0:14:50	1,174.77	22.17	11.42	0:21:50	574.31	24.97	10.19	0:28:50	34.66	34.66	7.56
0:00:55	2,564.71	13.57	18.89	0:07:55	1,527.30	16.60	15.26	0:14:55	1,253.00	22.78	11.24	0:21:55	616.30	25.68	10.19	0:28:55	36.12	36.12	7.25
0:01:00	2,628.68	13.34	19.11	0:08:00	1,635.83	16.69	15.35	0:15:00	1,311.77	23.42	11.13	0:22:00	617.72	24.71	10.20	0:29:00	35.86	35.86	7.31
0:01:05	2,843.42	13.29	18.98	0:08:05	1,706.14	17.06	15.26	0:15:05	1,309.46	22.97	11.35	0:22:05	670.41	24.83	10.29	0:29:05	36.23	36.23	7.23
0:01:10	3,013.87	13.58	18.92	0:08:10	1,786.35	16.54	15.45	0:15:10	1,349.46	23.27	11.13	0:22:10	717.07	23.90	10.38	0:29:10	38.74	38.74	6.77
0:01:15	3,102.26	13.49	19.14	0:08:15	1,876.95	16.61	15.42	0:15:15	1,364.72	22.75	11.33	0:22:15	783.44	24.48	10.28	0:29:15	39.16	39.16	6.68
0:01:20	3,174.67	13.57	19.11	0:08:20	1,962.72	16.78	15.41	0:15:20	1,379.45	22.61	11.45	0:22:20	817.42	25.54	10.26	0:29:20	35.28	35.28	7.43
0:01:25	3,269.62	13.29	19.22	0:08:25	1,991.51	16.74	15.54	0:15:25	1,433.25	22.75	11.32	0:22:25	817.10	25.53	10.26	0:29:25	35.60	35.60	7.35
0:01:30	3,449.92	13.48	19.18	0:08:30	2,111.94	16.50	15.41	0:15:30	1,476.76	23.07	11.28	0:22:30	814.27	25.45	10.30	0:29:30	34.71	34.71	7.55
0:01:35	3,467.48	13.54	19.35	0:08:35	2,159.54	16.87	15.52	0:15:35	1,470.68	22.98	11.40	0:22:35	810.23	25.32	10.35	0:29:35	36.23	36.23	7.23
0:01:40	3,466.38	13.54	19.36	0:08:40	2,159.12	16.87	15.56	0:15:40	1,467.64	22.93	11.42	0:22:40	818.15	25.57	10.25	0:29:40	35.91	35.91	7.30
0:01:45	3,466.28	13.54	19.35	0:08:45	2,167.30	16.93	15.47	0:15:45	1,476.03	23.06	11.37	0:22:45	815.16	25.47	10.28	0:29:45	36.49	36.49	7.18
0:01:50	3,465.02	13.54	19.36	0:08:50	2,167.77	16.94	15.48	0:15:50	1,492.54	23.32	11.23	0:22:50	808.35	25.26	10.38	0:29:50	37.01	37.01	7.07
0:01:55	3,461.19	13.52	19.38	0:08:55	2,165.73	16.92	15.46	0:15:55	1,500.51	23.45	11.18	0:22:55	812.86	25.40	10.32	0:29:55	38.01	38.01	6.89
0:02:00	3,447.51	13.47	19.46	0:09:00	2,168.35	16.94	15.49	0:16:00	1,467.90	22.94	11.42	0:23:00	811.39	25.36	10.33	0:30:00	37.22	37.22	7.04
0:02:05	3,448.82	13.47	19.45	0:09:05	2,176.06	17.00	15.42	0:16:05	1,488.03	23.25	11.27	0:23:05	811.86	25.37	10.33	0:30:05	34.50	34.50	7.58
0:02:10	3,465.91	13.54	19.35	0:09:10	2,156.76	16.85	15.54	0:16:10	1,494.90	23.36	11.22	0:23:10	810.60	25.33	10.34	0:30:10	34.97	34.97	7.50
0:02:15	3,474.67	13.57	19.32	0:09:15	2,166.78	16.93	15.48	0:16:15	1,468.64	22.95	11.42	0:23:15	803.73	25.12	10.43	0:30:15	35.28	35.28	7.42
0:02:20	3,484.89	13.61	19.24	0:09:20	2,157.50	16.86	15.54	0:16:20	1,475.24	23.05	11.36	0:23:20	803.42	25.11	10.44	0:30:20	36.86	36.86	7.10
0:02:25	3,479.80	13.59	19.28	0:09:25	2,169.40	16.95	15.48	0:16:25	1,461.51	22.84	11.48	0:23:25	809.29	25.29	10.36	0:30:25	38.74	38.74	6.76
0:02:30	3,479.44	13.59	19.28	0:09:30	2,160.43	16.88	15.52	0:16:30	1,463.92	22.87	11.46	0:23:30	811.60	25.36	10.33	0:30:30	37.28	37.28	7.03
0:02:35	3,489.98	13.63	19.22	0:09:35	2,166.36	16.92	15.47	0:16:35	1,443.73	22.56	11.61	0:23:35	800.38	25.01	10.47	0:30:35	35.76	35.76	7.33
0:02:40	3,455.01	13.50	19.42	0:09:40	2,161.80	16.89	15.53	0:16:40	1,408.34	22.01	11.91	0:23:40	802.84	25.09	10.44	0:30:40	35.49	35.49	7.38
0:02:45	3,475.09	13.57	19.31	0:09:45	2,184.66	17.07	15.36	0:16:45	1,449.18	22.64	11.58	0:23:45	809.92	25.31	10.35	0:30:45	35.39	35.39	7.40
0:02:50	2,935.54	11.47	22.78	0:09:50	2,165.05	16.91	15.49	0:16:50	1,443.84	22.56	11.61	0:23:50	801.16	25.04	10.47	0:30:50	35.02	35.02	7.49
0:02:55	3,114.38	12.17	21.61	0:09:55	2,175.06	16.99	15.41	0:16:55	1,453.43	22.71	11.54	0:23:55	807.98	25.25	10.38	0:30:55	35.76	35.76	7.32
0:03:00	3,309.73	12.93	20.26	0:10:00	2,162.43	16.89	15.48	0:17:00	1,464.13	22.88	11.41	0:24:00	797.49	24.92	10.45	0:31:00	36.86	36.86	7.11

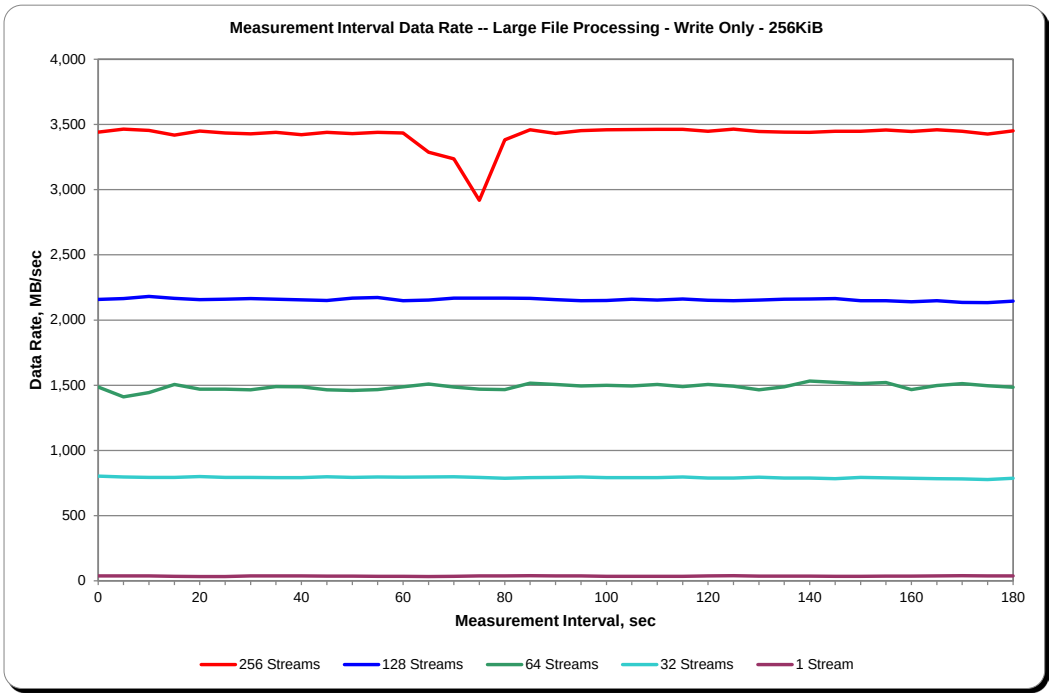
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	256 Streams			TR7	128 Streams			TR8	64 Streams			TR9	32 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	3,441.27	13.44	19.51	0:10:05	2,158.55	16.86	15.58	0:17:05	1,486.83	23.23	11.33	0:24:05	802.95	25.09	10.50	0:31:05	37.64	37.64	6.97
0:03:10	3,464.29	13.53	19.36	0:10:10	2,164.73	16.91	15.47	0:17:10	1,410.70	22.04	11.88	0:24:10	796.60	24.89	10.53	0:31:10	38.48	38.48	6.80
0:03:15	3,453.38	13.49	19.43	0:10:15	2,180.83	17.04	15.40	0:17:15	1,444.20	22.57	11.61	0:24:15	793.82	24.81	10.56	0:31:15	37.28	37.28	7.02
0:03:20	3,418.62	13.35	19.62	0:10:20	2,165.73	16.92	15.48	0:17:20	1,505.70	23.53	11.14	0:24:20	793.82	24.81	10.56	0:31:20	34.97	34.97	7.49
0:03:25	3,448.71	13.47	19.46	0:10:25	2,156.40	16.85	15.56	0:17:25	1,469.26	22.96	11.41	0:24:25	799.91	25.00	10.48	0:31:25	33.76	33.76	7.77
0:03:30	3,435.19	13.42	19.53	0:10:30	2,159.70	16.87	15.53	0:17:30	1,469.58	22.96	11.41	0:24:30	792.57	24.77	10.58	0:31:30	33.82	33.82	7.74
0:03:35	3,428.21	13.39	19.57	0:10:35	2,164.99	16.91	15.50	0:17:35	1,464.60	22.88	11.45	0:24:35	793.09	24.78	10.57	0:31:35	37.43	37.43	6.99
0:03:40	3,439.17	13.43	19.51	0:10:40	2,160.28	16.88	15.52	0:17:40	1,489.55	23.27	11.26	0:24:40	791.73	24.74	10.59	0:31:40	38.33	38.33	6.84
0:03:45	3,421.92	13.37	19.61	0:10:45	2,154.98	16.84	15.57	0:17:45	1,488.40	23.26	11.27	0:24:45	791.88	24.75	10.58	0:31:45	37.85	37.85	6.91
0:03:50	3,439.49	13.44	19.50	0:10:50	2,149.79	16.80	15.61	0:17:50	1,465.70	22.90	11.44	0:24:50	797.65	24.93	10.52	0:31:50	35.97	35.97	7.29
0:03:55	3,429.42	13.40	19.56	0:10:55	2,168.30	16.94	15.46	0:17:55	1,459.57	22.81	11.49	0:24:55	793.20	24.79	10.57	0:31:55	36.18	36.18	7.24
0:04:00	3,438.80	13.43	19.51	0:11:00	2,172.18	16.97	15.44	0:18:00	1,466.12	22.91	11.44	0:25:00	796.71	24.90	10.52	0:32:00	35.60	35.60	7.36
0:04:05	3,433.98	13.41	19.53	0:11:05	2,148.90	16.79	15.62	0:18:05	1,487.72	23.25	11.27	0:25:05	795.24	24.85	10.55	0:32:05	34.97	34.97	7.49
0:04:10	3,286.34	12.84	20.41	0:11:10	2,153.30	16.82	15.58	0:18:10	1,508.95	23.58	11.11	0:25:10	796.81	24.90	10.52	0:32:10	33.71	33.71	7.77
0:04:15	3,236.69	12.64	20.70	0:11:15	2,167.62	16.93	15.46	0:18:15	1,487.20	23.24	11.28	0:25:15	797.55	24.92	10.51	0:32:15	34.29	34.29	7.64
0:04:20	2,917.77	11.40	23.03	0:11:20	2,168.61	16.94	15.46	0:18:20	1,470.79	22.98	11.40	0:25:20	792.57	24.77	10.58	0:32:20	38.17	38.17	6.87
0:04:25	3,381.81	13.21	19.86	0:11:25	2,168.51	16.94	15.47	0:18:25	1,466.38	22.91	11.44	0:25:25	787.22	24.60	10.65	0:32:25	37.96	37.96	6.90
0:04:30	3,459.36	13.51	19.39	0:11:30	2,166.46	16.93	15.48	0:18:30	1,516.56	23.70	11.06	0:25:30	791.78	24.74	10.59	0:32:30	39.79	39.79	6.58
0:04:35	3,430.63	13.40	19.56	0:11:35	2,156.19	16.85	15.57	0:18:35	1,505.91	23.53	11.14	0:25:35	793.72	24.80	10.56	0:32:35	38.06	38.06	6.88
0:04:40	3,452.33	13.49	19.43	0:11:40	2,148.06	16.78	15.60	0:18:40	1,494.17	23.35	11.22	0:25:40	797.23	24.91	10.52	0:32:40	38.74	38.74	6.76
0:04:45	3,459.57	13.51	19.40	0:11:45	2,149.74	16.79	15.60	0:18:45	1,499.10	23.42	11.19	0:25:45	791.05	24.72	10.60	0:32:45	34.29	34.29	7.64
0:04:50	3,460.56	13.52	19.39	0:11:50	2,160.64	16.88	15.53	0:18:50	1,494.27	23.35	11.22	0:25:50	790.94	24.72	10.60	0:32:50	35.60	35.60	7.36
0:04:55	3,462.66	13.53	19.37	0:11:55	2,153.88	16.83	15.57	0:18:55	1,506.07	23.53	11.13	0:25:55	791.99	24.75	10.59	0:32:55	34.66	34.66	7.55
0:05:00	3,462.56	13.53	19.37	0:12:00	2,161.27	16.88	15.52	0:19:00	1,488.98	23.27	11.27	0:26:00	796.29	24.88	10.52	0:33:00	35.34	35.34	7.41
0:05:05	3,448.45	13.47	19.45	0:12:05	2,152.36	16.82	15.58	0:19:05	1,506.49	23.54	11.13	0:26:05	788.79	24.65	10.64	0:33:05	38.27	38.27	6.85
0:05:10	3,464.81	13.53	19.36	0:12:10	2,148.90	16.79	15.60	0:19:10	1,492.60	23.32	11.23	0:26:10	789.11	24.66	10.63	0:33:10	39.32	39.32	6.65
0:05:15	3,446.46	13.46	19.47	0:12:15	2,153.41	16.82	15.59	0:19:15	1,464.44	22.88	11.45	0:26:15	794.93	24.84	10.55	0:33:15	37.22	37.22	7.04
0:05:20	3,441.69	13.44	19.49	0:12:20	2,159.28	16.87	15.53	0:19:20	1,487.93	23.25	11.27	0:26:20	787.85	24.62	10.64	0:33:20	36.18	36.18	7.24
0:05:25	3,439.12	13.43	19.51	0:12:25	2,161.85	16.89	15.52	0:19:25	1,532.34	23.94	10.94	0:26:25	788.27	24.63	10.64	0:33:25	37.07	37.07	7.06
0:05:30	3,447.40	13.47	19.46	0:12:30	2,165.10	16.91	15.49	0:19:30	1,522.53	23.79	11.01	0:26:30	783.60	24.49	10.70	0:33:30	35.13	35.13	7.46
0:05:35	3,448.35	13.47	19.45	0:12:35	2,147.80	16.78	15.62	0:19:35	1,512.94	23.64	11.08	0:26:35	793.04	24.78	10.57	0:33:35	35.34	35.34	7.41
0:05:40	3,457.84	13.51	19.40	0:12:40	2,149.16	16.79	15.61	0:19:40	1,521.43	23.77	11.02	0:26:40	790.89	24.72	10.60	0:33:40	36.12	36.12	7.26
0:05:45	3,446.72	13.46	19.47	0:12:45	2,139.46	16.71	15.68	0:19:45	1,466.38	22.91	11.43	0:26:45	786.38	24.57	10.66	0:33:45	37.07	37.07	7.06
0:05:50	3,458.41	13.51	19.40	0:12:50	2,148.85	16.79	15.61	0:19:50	1,498.47	23.41	11.19	0:26:50	784.18	24.51	10.69	0:33:50	38.33	38.33	6.84
0:05:55	3,448.24	13.47	19.46	0:12:55	2,135.90	16.69	15.70	0:19:55	1,512.05	23.63	11.09	0:26:55	782.19	24.44	10.72	0:33:55	38.95	38.95	6.73
0:06:00	3,426.27	13.38	19.56	0:13:00	2,133.17	16.67	15.67	0:20:00	1,495.64	23.37	11.16	0:27:00	776.52	24.27	10.71	0:34:00	38.85	38.85	6.74
0:06:05	3,450.34	13.48	19.46	0:13:05	2,144.65	16.76	15.69	0:20:05	1,484.10	23.19	11.35	0:27:05	786.75	24.59	10.74	0:34:05	38.80	38.80	6.75
0:06:10	3,397.39	13.27	19.75	0:13:10	2,156.92	16.85	15.55	0:20:10	1,488.98	23.27	11.26	0:27:10	787.06	24.60	10.65	0:34:10	37.75	37.75	6.94
0:06:15	3,392.41	13.25	19.78	0:13:15	2,155.66	16.84	15.56	0:20:15	1,498.47	23.41	11.19	0:27:15	788.16	24.63	10.64	0:34:15	36.12	36.12	7.25
0:06:20	3,415.84	13.34	19.65	0:13:20	2,135.63	16.68	15.70	0:20:20	1,532.91	23.95	10.94	0:27:20	785.28	24.54	10.68	0:34:20	36.60	36.60	7.16
0:06:25	3,449.76	13.48	19.44	0:13:25	2,129.55	16.64	15.76	0:20:25	1,498.57	23.42	11.19	0:27:25	788.42	24.64	10.63	0:34:25	34.81	34.81	7.53
0:06:30	3,458.94	13.51	19.40	0:13:30	2,137.68	16.70	15.69	0:20:30	1,492.70	23.32	11.24	0:27:30	787.43	24.61	10.65	0:34:30	34.45	34.45	7.60
0:06:35	3,427.43	13.39	19.57	0:13:35	2,136.68	16.69	15.70	0:20:35	1,482.79	23.17	11.31	0:27:35	790.31	24.70	10.61	0:34:35	35.76	35.76	7.33
0:06:40	3,420.61	13.36	19.62	0:13:40	2,140.30	16.72	15.67	0:20:40	1,536.64	24.01	10.91	0:27:40	788.90	24.65	10.63	0:34:40	36.75	36.75	7.13
0:06:45	3,413.90	14.17	19.62	0:13:45	2,122.00	44.21	15.75	0:20:45	1,507.22	62.80	11.07	0:27:45	785.80	65.48	10.59	0:34:45	35.23	35.23	7.43
0:06:50	44.72	0.00	17.95	0:13:50	25.69	0.00	14.17	0:20:50	15.83	0.00	10.77	0:27:50	7.44	0.00	10.31	0:34:50	0.73	0.00	6.70
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

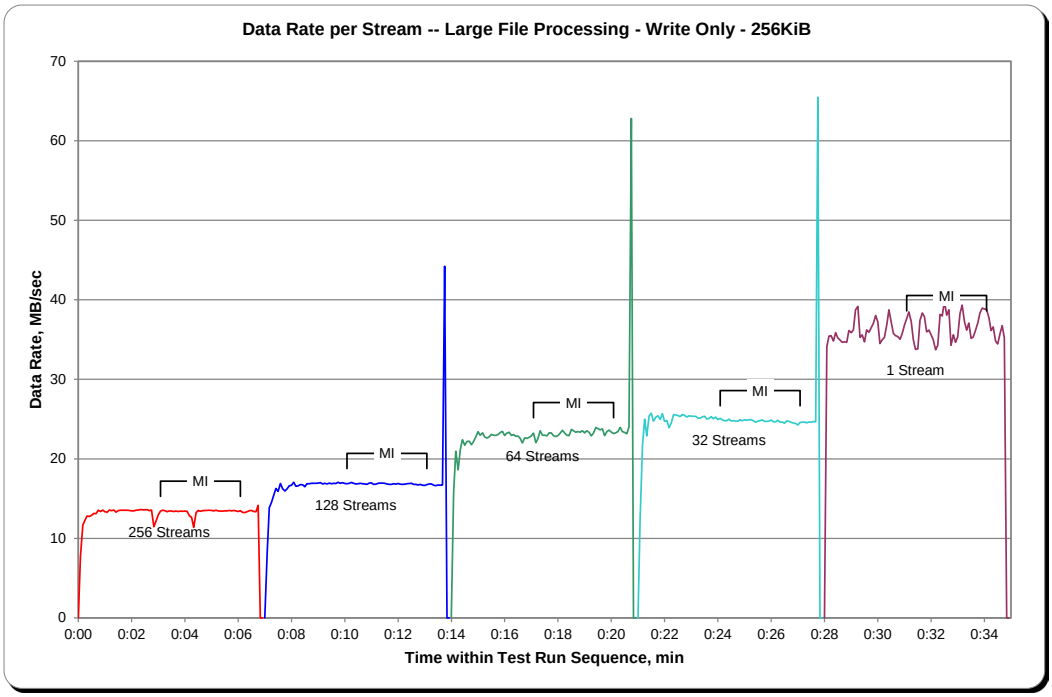
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



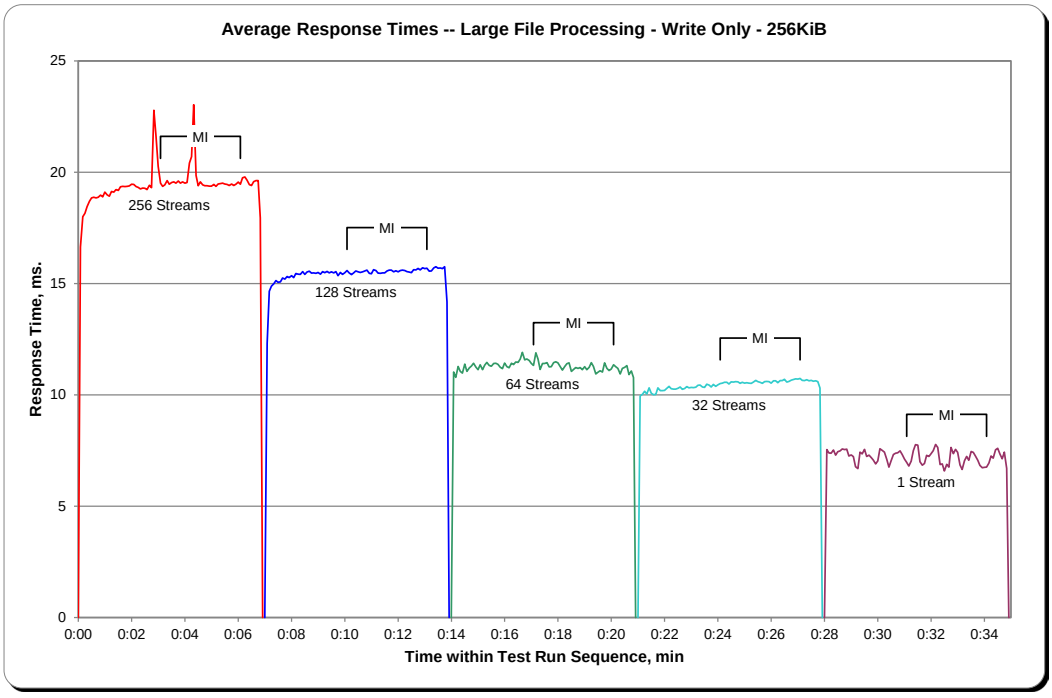
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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

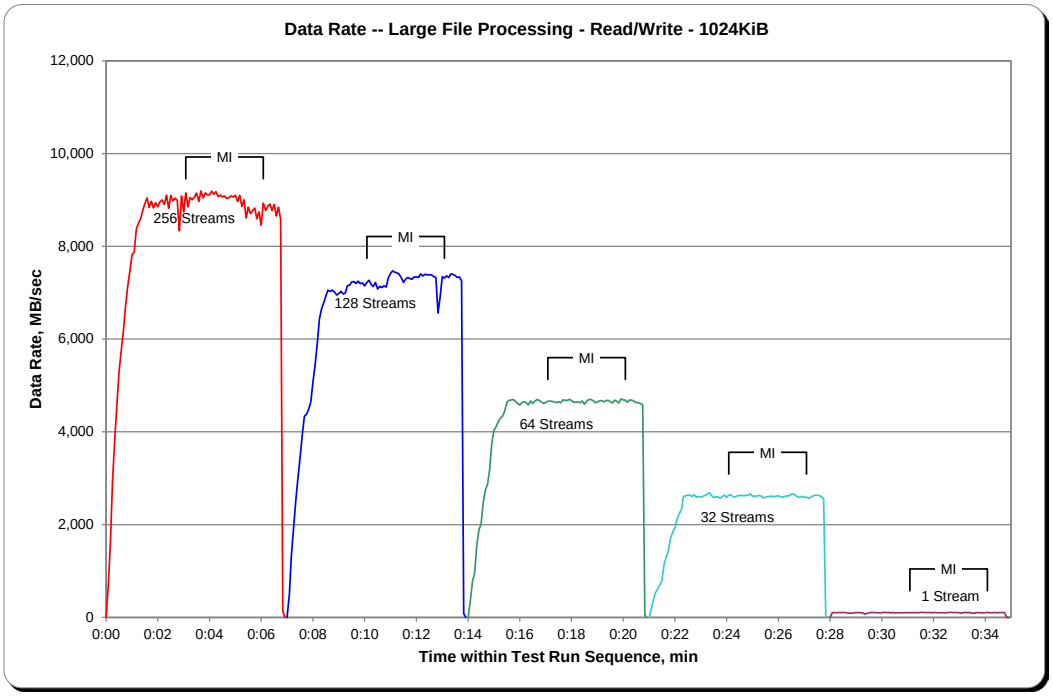
Test Run Sequence - Ramp-Up Interval

TR11	256 Streams			TR12	128 Streams			TR13	64 Streams			TR14	32 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	687.03	25.45	24.13	0:07:05	508.98	28.28	16.57	0:14:05	360.08	40.01	13.95	0:21:05	175.32	43.83	11.98	0:28:05	99.61	99.61	10.33
0:00:10	1,611.66	27.32	26.72	0:07:10	1,327.08	45.76	18.02	0:14:10	777.62	64.80	14.03	0:21:10	377.49	75.50	12.35	0:28:10	107.79	107.79	9.72
0:00:15	2,952.16	31.74	27.19	0:07:15	1,902.12	43.23	19.63	0:14:15	955.67	63.71	13.88	0:21:15	534.14	76.31	12.51	0:28:15	100.24	100.24	10.46
0:00:20	3,820.59	34.11	27.60	0:07:20	2,481.56	45.95	20.74	0:14:20	1,545.60	67.20	13.76	0:21:20	617.61	77.20	12.73	0:28:20	104.44	104.44	10.01
0:00:25	4,556.06	33.75	28.13	0:07:25	2,965.37	48.61	19.87	0:14:25	1,889.95	72.69	14.03	0:21:25	703.38	78.15	12.62	0:28:25	104.02	104.02	10.09
0:00:30	5,280.42	36.17	28.08	0:07:30	3,454.01	50.06	19.83	0:14:30	2,006.14	66.87	14.06	0:21:30	792.93	72.08	12.49	0:28:30	106.12	106.12	9.87
0:00:35	5,729.63	35.15	28.45	0:07:35	3,933.84	53.89	18.73	0:14:35	2,472.96	70.66	14.15	0:21:35	1,146.93	76.46	12.41	0:28:35	105.28	105.28	9.97
0:00:40	6,190.16	34.78	28.78	0:07:40	4,336.91	54.90	18.67	0:14:40	2,742.45	70.32	14.09	0:21:40	1,303.80	76.69	12.76	0:28:40	96.47	96.47	10.87
0:00:45	6,678.59	35.15	28.62	0:07:45	4,379.69	53.41	19.24	0:14:45	2,864.50	71.61	14.28	0:21:45	1,435.29	79.74	12.97	0:28:45	93.53	93.53	11.17
0:00:50	7,112.07	35.38	28.88	0:07:50	4,491.26	52.22	19.63	0:14:50	3,176.14	64.82	14.24	0:21:50	1,709.18	77.69	12.91	0:28:50	92.27	92.27	11.38
0:00:55	7,437.76	35.93	28.60	0:07:55	4,646.03	51.62	19.54	0:14:55	3,742.16	69.30	14.33	0:21:55	1,846.96	80.30	12.90	0:28:55	100.66	100.66	10.43
0:01:00	7,820.91	36.04	28.59	0:08:00	5,079.93	52.37	19.23	0:15:00	4,028.00	71.93	14.34	0:22:00	1,939.45	77.58	12.61	0:29:00	102.55	102.55	10.22
0:01:05	7,871.45	35.14	29.42	0:08:05	5,440.22	52.82	19.17	0:15:05	4,107.48	72.06	14.36	0:22:05	2,133.85	79.03	12.82	0:29:05	105.49	105.49	9.94
0:01:10	8,366.38	35.91	28.85	0:08:10	5,901.39	51.77	19.15	0:15:10	4,212.55	72.63	14.23	0:22:10	2,235.14	79.83	12.88	0:29:10	101.29	101.29	10.29
0:01:15	8,498.50	35.56	29.13	0:08:15	6,427.77	55.41	18.69	0:15:15	4,291.82	74.00	14.16	0:22:15	2,336.44	75.37	12.85	0:29:15	99.61	99.61	10.54
0:01:20	8,593.71	35.51	29.37	0:08:20	6,651.54	54.97	18.81	0:15:20	4,341.52	72.36	14.39	0:22:20	2,610.74	81.59	12.65	0:29:20	73.40	73.40	14.06
0:01:25	8,772.18	35.23	29.32	0:08:25	6,780.51	54.24	19.10	0:15:25	4,457.71	73.08	14.16	0:22:25	2,622.07	81.94	12.80	0:29:25	82.42	82.42	12.96
0:01:30	8,920.87	34.85	29.60	0:08:30	6,926.47	54.11	19.08	0:15:30	4,635.75	72.43	14.24	0:22:30	2,639.89	82.50	12.69	0:29:30	100.45	100.45	10.43
0:01:35	9,046.90	35.34	29.64	0:08:35	7,055.66	55.12	19.03	0:15:35	4,679.38	73.12	14.34	0:22:35	2,633.81	82.31	12.74	0:29:35	106.95	106.95	9.78
0:01:40	8,836.56	34.52	30.38	0:08:40	7,030.07	54.92	19.08	0:15:40	4,687.97	73.25	14.30	0:22:40	2,604.45	81.39	12.88	0:29:40	104.02	104.02	10.06
0:01:45	8,970.36	35.04	29.94	0:08:45	7,057.97	55.14	19.02	0:15:45	4,695.94	73.37	14.29	0:22:45	2,644.09	82.63	12.69	0:29:45	104.02	104.02	10.08
0:01:50	8,828.80	34.49	30.40	0:08:50	7,009.52	54.76	19.16	0:15:50	4,654.21	72.72	14.40	0:22:50	2,588.93	80.90	12.95	0:29:50	102.76	102.76	10.22
0:01:55	8,938.69	34.92	30.01	0:08:55	6,948.28	54.28	19.30	0:15:55	4,608.91	72.01	14.56	0:22:55	2,604.87	81.40	12.88	0:29:55	101.08	101.08	10.36
0:02:00	8,849.77	34.57	30.31	0:09:00	6,983.94	54.56	19.20	0:16:00	4,576.20	71.50	14.68	0:23:00	2,592.29	81.01	12.94	0:30:00	102.76	102.76	10.18
0:02:05	8,956.10	34.98	30.00	0:09:05	7,027.77	54.90	19.11	0:16:05	4,631.77	72.37	14.47	0:23:05	2,606.76	81.46	12.86	0:30:05	109.05	109.05	9.62
0:02:10	8,997.62	35.15	29.82	0:09:10	6,974.71	54.49	19.24	0:16:10	4,649.81	72.65	14.43	0:23:10	2,639.48	82.48	12.71	0:30:10	103.60	103.60	10.13
0:02:15	8,900.52	34.77	30.17	0:09:15	6,989.18	54.60	19.19	0:16:15	4,630.09	72.35	14.48	0:23:15	2,652.06	82.88	12.64	0:30:15	105.70	105.70	9.91
0:02:20	9,100.80	35.55	29.48	0:09:20	7,152.76	55.88	18.76	0:16:20	4,580.39	71.57	14.64	0:23:20	2,690.23	84.07	12.47	0:30:20	103.18	103.18	10.16
0:02:25	8,819.36	34.45	30.44	0:09:25	7,163.45	55.96	18.72	0:16:25	4,663.44	72.87	14.41	0:23:25	2,623.12	81.97	12.78	0:30:25	106.54	106.54	9.83
0:02:30	9,093.88	35.52	29.50	0:09:30	7,230.98	56.49	18.56	0:16:30	4,616.46	72.13	14.51	0:23:30	2,581.38	80.67	13.00	0:30:30	96.05	96.05	10.93
0:02:35	8,980.63	35.08	29.88	0:09:35	7,238.53	56.55	18.54	0:16:35	4,658.82	72.79	14.40	0:23:35	2,601.10	81.28	12.89	0:30:35	101.08	101.08	10.36
0:02:40	9,036.00	35.30	29.69	0:09:40	7,198.05	56.23	18.64	0:16:40	4,695.52	73.37	14.29	0:23:40	2,598.37	81.20	12.92	0:30:40	101.08	101.08	10.35
0:02:45	8,994.06	35.13	29.84	0:09:45	7,249.64	56.64	18.50	0:16:45	4,680.42	73.13	14.33	0:23:45	2,568.17	80.26	13.04	0:30:45	102.76	102.76	10.23
0:02:50	8,334.92	32.56	32.19	0:09:50	7,192.18	56.19	18.67	0:16:50	4,643.93	72.56	14.46	0:23:50	2,609.28	81.54	12.87	0:30:50	103.18	103.18	10.15
0:02:55	9,080.46	35.47	29.58	0:09:55	7,210.43	56.33	18.61	0:16:55	4,615.41	72.12	14.54	0:23:55	2,633.81	82.31	12.73	0:30:55	102.97	102.97	10.18
0:03:00	8,748.27	34.17	30.43	0:10:00	7,146.46	55.83	18.71	0:17:00	4,633.03	72.39	14.47	0:24:00	2,589.14	80.91	12.94	0:31:00	104.65	104.65	10.00

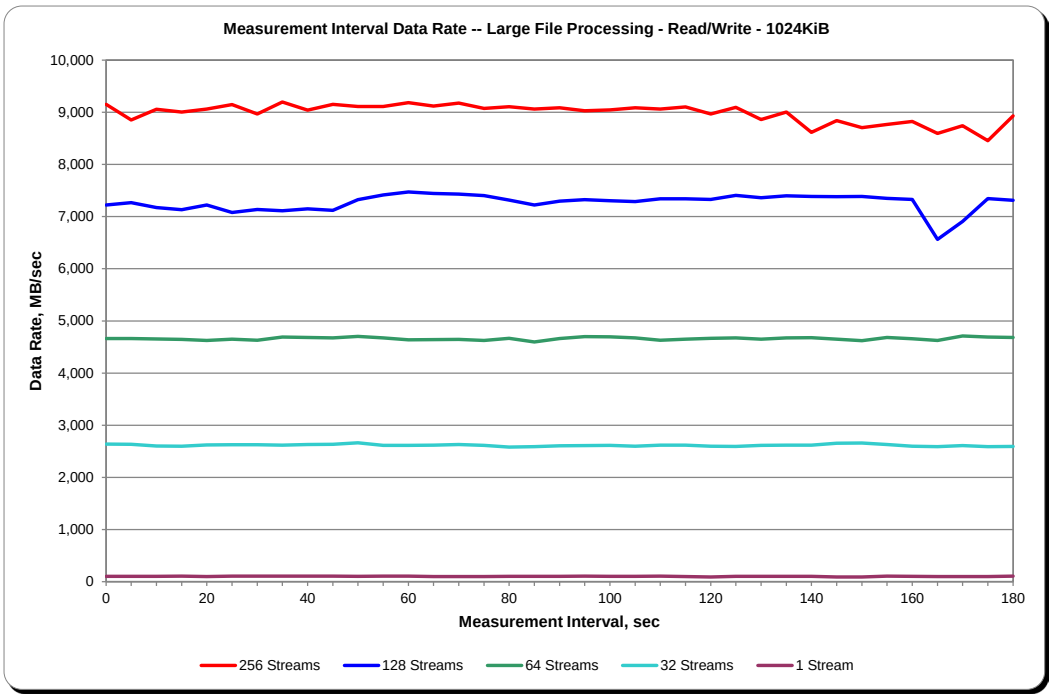
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	256 Streams			TR12	128 Streams			TR13	64 Streams			TR14	32 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	9,152.60	35.75	29.55	0:10:05	7,221.12	56.42	18.65	0:17:05	4,662.60	72.85	14.39	0:24:05	2,638.43	82.45	12.72	0:31:05	103.18	103.18	10.17
0:03:10	8,850.82	34.57	30.32	0:10:10	7,267.89	56.78	18.43	0:17:10	4,663.44	72.87	14.38	0:24:10	2,636.54	82.39	12.72	0:31:10	105.28	105.28	9.95
0:03:15	9,055.92	35.37	29.63	0:10:15	7,174.78	56.05	18.72	0:17:15	4,654.84	72.73	14.41	0:24:15	2,603.61	81.36	12.89	0:31:15	101.92	101.92	10.28
0:03:20	9,004.33	35.17	29.83	0:10:20	7,133.67	55.73	18.80	0:17:20	4,647.71	72.62	14.43	0:24:20	2,597.32	81.17	12.91	0:31:20	105.70	105.70	9.93
0:03:25	9,060.95	35.39	29.59	0:10:25	7,220.91	56.41	18.60	0:17:25	4,627.16	72.30	14.49	0:24:25	2,621.86	81.93	12.80	0:31:25	99.41	99.41	10.54
0:03:30	9,147.36	35.73	29.36	0:10:30	7,077.47	55.29	18.97	0:17:30	4,649.81	72.65	14.43	0:24:30	2,628.36	82.14	12.74	0:31:30	108.21	108.21	9.67
0:03:35	8,967.21	35.03	29.92	0:10:35	7,136.61	55.75	18.78	0:17:35	4,630.51	72.35	14.49	0:24:35	2,628.57	82.14	12.76	0:31:35	105.70	105.70	9.91
0:03:40	9,194.96	35.92	29.20	0:10:40	7,111.65	55.56	18.88	0:17:40	4,690.28	73.29	14.30	0:24:40	2,620.18	81.88	12.80	0:31:40	106.12	106.12	9.86
0:03:45	9,042.50	35.32	29.68	0:10:45	7,149.61	55.86	18.75	0:17:45	4,683.57	73.18	14.32	0:24:45	2,632.14	82.25	12.74	0:31:45	105.70	105.70	9.95
0:03:50	9,153.02	35.75	29.30	0:10:50	7,121.93	55.64	18.85	0:17:50	4,674.97	73.05	14.36	0:24:50	2,633.18	82.29	12.74	0:31:50	107.37	107.37	9.75
0:03:55	9,108.77	35.58	29.48	0:10:55	7,323.46	57.21	18.33	0:17:55	4,701.81	73.47	14.27	0:24:55	2,661.71	83.18	12.60	0:31:55	103.18	103.18	10.15
0:04:00	9,111.71	35.59	29.47	0:11:00	7,415.53	57.93	18.11	0:18:00	4,676.23	73.07	14.34	0:25:00	2,613.47	81.67	12.83	0:32:00	105.91	105.91	9.92
0:04:05	9,185.95	35.88	29.20	0:11:05	7,472.15	58.38	17.94	0:18:05	4,637.43	72.46	14.46	0:25:05	2,615.57	81.74	12.82	0:32:05	105.70	105.70	9.92
0:04:10	9,117.58	35.62	29.45	0:11:10	7,443.42	58.15	18.02	0:18:10	4,643.72	72.56	14.45	0:25:10	2,616.41	81.76	12.82	0:32:10	99.20	99.20	10.55
0:04:15	9,177.35	35.85	29.25	0:11:15	7,430.00	58.05	18.06	0:18:15	4,646.03	72.59	14.44	0:25:15	2,630.46	82.20	12.75	0:32:15	100.66	100.66	10.40
0:04:20	9,074.17	35.45	29.56	0:11:20	7,403.16	57.84	18.14	0:18:20	4,624.64	72.26	14.51	0:25:20	2,614.10	81.69	12.83	0:32:20	99.82	99.82	10.50
0:04:25	9,106.88	35.57	29.46	0:11:25	7,316.96	57.16	18.32	0:18:25	4,667.42	72.93	14.36	0:25:25	2,581.59	80.67	12.99	0:32:25	102.76	102.76	10.23
0:04:30	9,062.63	35.40	29.62	0:11:30	7,221.54	56.42	18.58	0:18:30	4,596.12	71.81	14.59	0:25:30	2,589.77	80.93	12.96	0:32:30	102.76	102.76	10.20
0:04:35	9,085.70	35.49	29.53	0:11:35	7,295.99	57.00	18.39	0:18:35	4,662.81	72.86	14.39	0:25:35	2,607.18	81.47	12.87	0:32:35	104.86	104.86	9.98
0:04:40	9,030.34	35.27	29.73	0:11:40	7,325.35	57.23	18.32	0:18:40	4,698.04	73.41	14.28	0:25:40	2,608.44	81.51	12.85	0:32:40	109.47	109.47	9.57
0:04:45	9,044.18	35.33	29.67	0:11:45	7,305.22	57.07	18.36	0:18:45	4,696.15	73.38	14.28	0:25:45	2,615.78	81.74	12.83	0:32:45	104.44	104.44	10.04
0:04:50	9,086.33	35.49	29.52	0:11:50	7,288.86	56.94	18.40	0:18:50	4,673.50	73.02	14.36	0:25:50	2,596.27	81.13	12.92	0:32:50	104.44	104.44	10.03
0:04:55	9,062.00	35.40	29.65	0:11:55	7,342.97	57.37	18.28	0:18:55	4,629.67	72.34	14.49	0:25:55	2,616.62	81.77	12.81	0:32:55	107.79	107.79	9.72
0:05:00	9,102.90	35.56	29.48	0:12:00	7,339.19	57.34	18.29	0:19:00	4,648.34	72.63	14.42	0:26:00	2,619.13	81.85	12.80	0:33:00	100.66	100.66	10.40
0:05:05	8,969.31	35.04	29.89	0:12:05	7,328.71	57.26	18.31	0:19:05	4,667.00	72.92	14.38	0:26:05	2,597.11	81.16	12.92	0:33:05	90.60	90.60	11.56
0:05:10	9,095.77	35.53	29.51	0:12:10	7,405.25	57.85	18.11	0:19:10	4,673.71	73.03	14.36	0:26:10	2,594.81	81.09	12.92	0:33:10	104.02	104.02	10.10
0:05:15	8,861.73	34.62	30.30	0:12:15	7,361.00	57.51	18.23	0:19:15	4,648.34	72.63	14.43	0:26:15	2,612.42	81.64	12.85	0:33:15	104.86	104.86	10.01
0:05:20	9,005.17	35.18	29.78	0:12:20	7,396.66	57.79	18.14	0:19:20	4,674.34	73.04	14.35	0:26:20	2,618.29	81.82	12.81	0:33:20	103.18	103.18	10.13
0:05:25	8,614.26	33.65	31.16	0:12:25	7,385.33	57.70	18.17	0:19:25	4,678.96	73.11	14.33	0:26:25	2,619.34	81.85	12.81	0:33:25	105.28	105.28	9.97
0:05:30	8,842.01	34.54	30.33	0:12:30	7,381.98	57.67	18.18	0:19:30	4,648.34	72.63	14.44	0:26:30	2,656.25	83.01	12.63	0:33:30	91.02	91.02	11.51
0:05:35	8,704.86	34.00	30.83	0:12:35	7,385.75	57.70	18.17	0:19:35	4,622.12	72.22	14.52	0:26:35	2,660.03	83.13	12.61	0:33:35	92.69	92.69	11.29
0:05:40	8,767.98	34.25	30.65	0:12:40	7,350.31	57.42	18.25	0:19:40	4,683.99	73.19	14.32	0:26:40	2,631.30	82.23	12.75	0:33:40	107.58	107.58	9.76
0:05:45	8,822.51	34.46	30.38	0:12:45	7,328.08	57.25	18.32	0:19:45	4,659.24	72.80	14.40	0:26:45	2,599.63	81.24	12.90	0:33:45	101.71	101.71	10.29
0:05:50	8,595.39	33.58	31.22	0:12:50	6,562.62	51.27	20.42	0:19:50	4,623.80	72.25	14.51	0:26:50	2,590.40	80.95	12.95	0:33:50	99.82	99.82	10.50
0:05:55	8,742.19	34.15	30.70	0:12:55	6,907.18	53.96	19.45	0:19:55	4,712.72	73.64	14.23	0:26:55	2,610.74	81.59	12.84	0:33:55	100.66	100.66	10.41
0:06:00	8,453.62	33.02	31.54	0:13:00	7,345.69	57.39	18.28	0:20:00	4,689.02	73.27	14.31	0:27:00	2,590.82	80.96	12.94	0:34:00	98.99	98.99	10.61
0:06:05	8,931.98	34.89	30.25	0:13:05	7,314.24	57.14	18.34	0:20:05	4,682.31	73.16	14.34	0:27:05	2,593.13	81.04	12.93	0:34:05	109.05	109.05	9.59
0:06:10	8,772.39	34.27	30.57	0:13:10	7,362.89	57.52	18.22	0:20:10	4,639.11	72.49	14.45	0:27:10	2,573.42	80.42	13.04	0:34:10	103.18	103.18	10.17
0:06:15	8,862.77	34.62	30.31	0:13:15	7,323.25	57.21	18.32	0:20:15	4,688.39	73.26	14.31	0:27:15	2,581.59	80.67	12.99	0:34:15	103.18	103.18	10.15
0:06:20	8,910.38	34.81	30.10	0:13:20	7,403.58	57.84	18.12	0:20:20	4,685.25	73.21	14.32	0:27:20	2,619.97	81.87	12.80	0:34:20	104.02	104.02	10.08
0:06:25	8,772.39	34.27	30.62	0:13:25	7,397.28	57.79	18.15	0:20:25	4,659.45	72.80	14.39	0:27:25	2,634.44	82.33	12.73	0:34:25	104.44	104.44	10.03
0:06:30	8,903.04	34.78	30.13	0:13:30	7,370.02	57.58	18.21	0:20:30	4,635.13	72.42	14.48	0:27:30	2,636.33	82.39	12.72	0:34:30	101.92	101.92	10.29
0:06:35	8,654.95	33.81	31.02	0:13:35	7,328.71	57.26	18.30	0:20:35	4,627.79	72.31	14.49	0:27:35	2,623.33	81.98	12.79	0:34:35	105.28	105.28	9.95
0:06:40	8,843.48	34.54	30.36	0:13:40	7,340.45	57.35	18.28	0:20:40	4,612.06	72.06	14.53	0:27:40	2,606.55	81.45	12.85	0:34:40	104.44	104.44	10.03
0:06:45	8,583.85	97.54	31.03	0:13:45	7,257.61	164.95	18.28	0:20:45	4,584.16	191.01	14.42	0:27:45	2,556.85	213.07	12.89	0:34:45	106.12	106.12	9.87
0:06:50	131.91	0.00	27.37	0:13:50	80.74	0.00	15.22	0:20:50	45.30	0.00	14.51	0:27:50	24.96	0.00	13.17	0:34:50	1.89	0.00	10.94
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

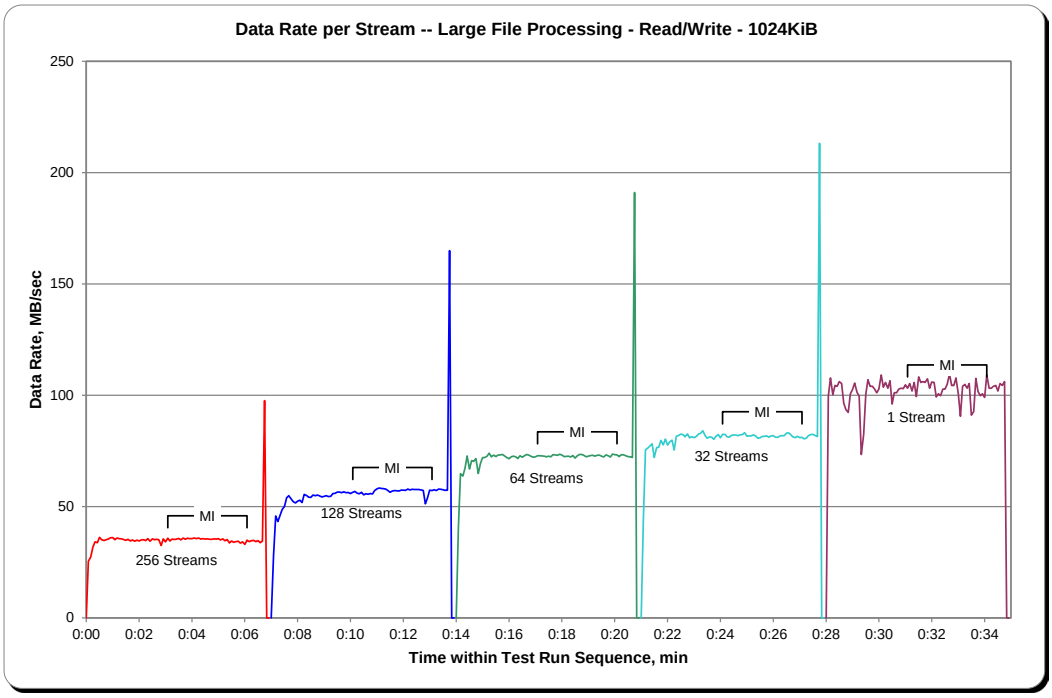
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



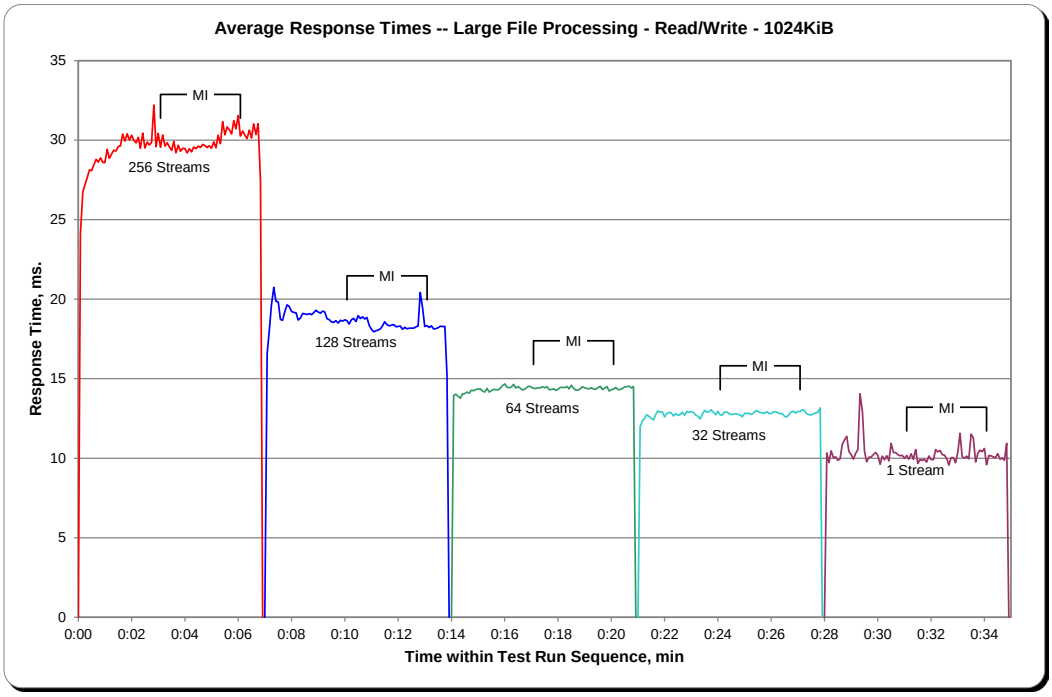
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



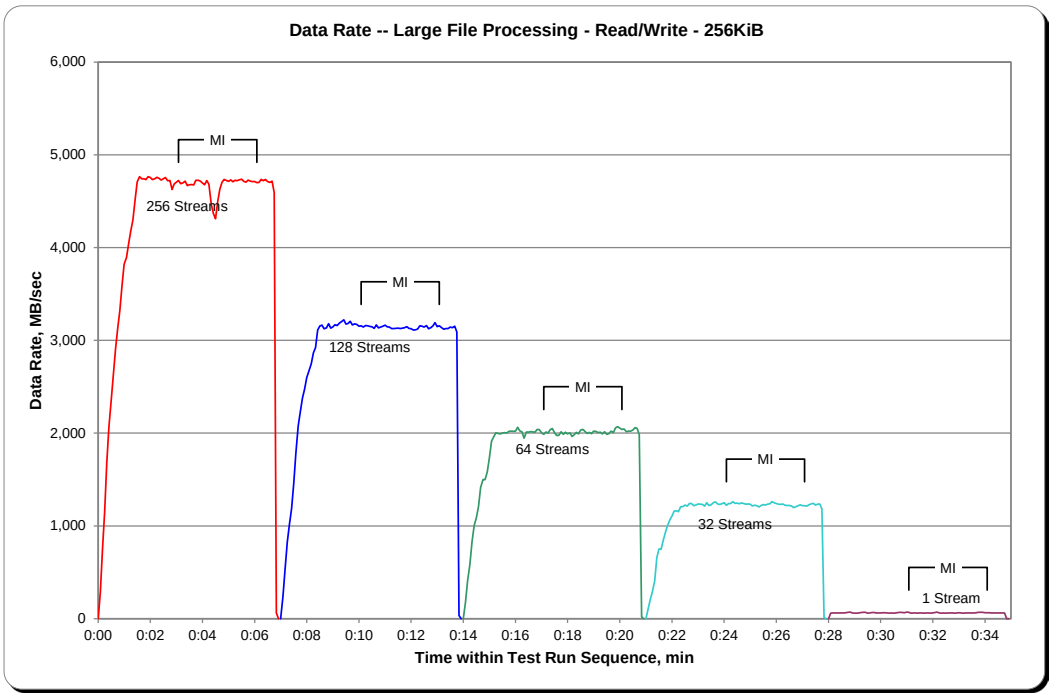
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR16	256 Streams			TR17	128 Streams			TR18	64 Streams			TR19	32 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	287.78	11.07	12.41	0:07:05	244.06	14.36	9.87	0:14:05	169.55	18.84	7.86	0:21:05	100.14	25.03	6.19	0:28:05	60.76	60.76	4.23
0:00:10	749.00	15.94	13.54	0:07:10	540.65	20.79	10.19	0:14:10	405.38	23.85	8.17	0:21:10	202.95	40.59	6.41	0:28:10	62.50	62.50	4.19
0:00:15	1,149.87	15.33	13.86	0:07:15	823.97	23.54	10.10	0:14:15	586.84	25.51	8.30	0:21:15	288.67	32.07	6.67	0:28:15	62.23	62.23	4.21
0:00:20	1,680.76	16.16	13.78	0:07:20	1,015.34	23.08	10.14	0:14:20	831.31	27.71	8.22	0:21:20	407.74	31.36	6.67	0:28:20	62.55	62.55	4.18
0:00:25	2,067.58	17.82	13.87	0:07:25	1,183.48	23.21	10.53	0:14:25	1,004.96	30.45	8.39	0:21:25	659.55	36.64	6.65	0:28:25	62.08	62.08	4.22
0:00:30	2,363.28	17.90	13.82	0:07:30	1,451.81	22.34	10.56	0:14:30	1,085.96	31.94	8.16	0:21:30	750.57	39.50	6.60	0:28:30	61.76	61.76	4.24
0:00:35	2,636.96	17.82	13.81	0:07:35	1,779.54	24.38	10.44	0:14:35	1,207.23	29.44	8.28	0:21:35	748.00	39.37	6.66	0:28:35	61.34	61.34	4.27
0:00:40	2,909.54	18.07	13.90	0:07:40	2,078.07	23.61	10.40	0:14:40	1,414.11	30.74	8.10	0:21:40	845.36	36.75	6.70	0:28:40	64.17	64.17	4.08
0:00:45	3,129.21	18.41	13.87	0:07:45	2,232.37	23.75	10.57	0:14:45	1,498.62	31.22	8.24	0:21:45	929.09	37.16	6.74	0:28:45	68.16	68.16	3.84
0:00:50	3,320.32	17.95	14.02	0:07:50	2,377.59	24.26	10.58	0:14:50	1,499.83	30.61	8.43	0:21:50	1,003.33	37.16	6.83	0:28:50	70.31	70.31	3.73
0:00:55	3,585.45	17.93	14.00	0:07:55	2,476.21	24.52	10.61	0:14:55	1,582.88	30.44	8.25	0:21:55	1,066.03	38.07	6.78	0:28:55	62.86	62.86	4.16
0:01:00	3,819.70	18.63	13.94	0:08:00	2,599.26	24.52	10.56	0:15:00	1,733.19	30.41	8.15	0:22:00	1,108.08	36.94	6.76	0:29:00	59.66	59.66	4.38
0:01:05	3,891.11	18.35	14.06	0:08:05	2,669.57	24.27	10.67	0:15:05	1,913.23	31.89	8.04	0:22:05	1,160.30	38.68	6.77	0:29:05	60.19	60.19	4.36
0:01:10	4,040.84	18.28	14.06	0:08:10	2,748.11	24.32	10.62	0:15:10	1,959.79	32.13	8.14	0:22:10	1,162.03	38.73	6.76	0:29:10	62.39	62.39	4.19
0:01:15	4,179.47	18.33	14.12	0:08:15	2,864.08	24.27	10.58	0:15:15	2,002.41	31.78	8.16	0:22:15	1,152.49	38.42	6.82	0:29:15	65.64	65.64	3.99
0:01:20	4,296.96	18.13	14.11	0:08:20	2,922.70	23.96	10.75	0:15:20	1,996.91	31.70	8.27	0:22:20	1,205.97	38.90	6.66	0:29:20	67.84	67.84	3.86
0:01:25	4,508.72	18.18	14.10	0:08:25	3,110.08	24.49	10.58	0:15:25	1,990.88	31.60	8.29	0:22:25	1,208.38	37.76	6.73	0:29:25	68.47	68.47	3.82
0:01:30	4,706.95	18.39	14.09	0:08:30	3,155.37	24.65	10.60	0:15:30	2,001.26	31.27	8.35	0:22:30	1,225.37	38.29	6.84	0:29:30	60.61	60.61	4.31
0:01:35	4,763.84	18.61	14.09	0:08:35	3,163.82	24.72	10.60	0:15:35	2,004.93	31.33	8.36	0:22:35	1,212.84	37.90	6.91	0:29:35	61.66	61.66	4.25
0:01:40	4,740.77	18.52	14.15	0:08:40	3,124.55	24.41	10.73	0:15:40	2,000.21	31.25	8.39	0:22:40	1,240.20	38.76	6.76	0:29:40	65.85	65.85	3.98
0:01:45	4,740.66	18.52	14.16	0:08:45	3,133.62	24.48	10.71	0:15:45	2,018.67	31.54	8.31	0:22:45	1,240.47	38.76	6.76	0:29:45	65.96	65.96	3.97
0:01:50	4,732.22	18.49	14.16	0:08:50	3,181.12	24.85	10.54	0:15:50	2,021.24	31.58	8.29	0:22:50	1,218.86	38.09	6.88	0:29:50	62.60	62.60	4.18
0:01:55	4,764.05	18.61	14.08	0:08:55	3,131.89	24.47	10.70	0:15:55	2,019.30	31.55	8.31	0:22:55	1,226.00	38.31	6.84	0:29:55	62.50	62.50	4.19
0:02:00	4,754.61	18.57	14.11	0:09:00	3,145.57	24.57	10.67	0:16:00	2,022.60	31.60	8.29	0:23:00	1,235.38	38.61	6.78	0:30:00	62.18	62.18	4.21
0:02:05	4,733.17	18.49	14.18	0:09:05	3,167.49	24.75	10.58	0:16:05	2,064.28	32.25	8.13	0:23:05	1,233.60	38.55	6.80	0:30:05	65.22	65.22	4.01
0:02:10	4,741.92	18.52	14.16	0:09:10	3,159.73	24.69	10.62	0:16:10	2,024.17	31.63	8.28	0:23:10	1,232.34	38.51	6.80	0:30:10	63.65	63.65	4.12
0:02:15	4,757.34	18.58	14.09	0:09:15	3,185.26	24.88	10.53	0:16:15	2,014.73	31.48	8.32	0:23:15	1,212.57	37.89	6.92	0:30:15	62.70	62.70	4.18
0:02:20	4,747.01	18.54	14.13	0:09:20	3,202.88	25.02	10.47	0:16:20	1,946.89	30.42	8.62	0:23:20	1,249.85	39.06	6.71	0:30:20	60.40	60.40	4.33
0:02:25	4,726.56	18.46	14.20	0:09:25	3,221.07	25.16	10.42	0:16:25	2,013.11	31.45	8.33	0:23:25	1,219.39	38.11	6.88	0:30:25	61.87	61.87	4.24
0:02:30	4,741.03	18.52	14.14	0:09:30	3,176.03	24.81	10.56	0:16:30	2,010.91	31.42	8.34	0:23:30	1,227.04	38.35	6.83	0:30:30	60.61	60.61	4.32
0:02:35	4,754.40	18.57	14.13	0:09:35	3,183.32	24.87	10.53	0:16:35	2,016.52	31.51	8.31	0:23:35	1,251.00	39.09	6.70	0:30:35	62.08	62.08	4.22
0:02:40	4,719.75	18.44	14.20	0:09:40	3,205.34	25.04	10.46	0:16:40	2,012.43	31.44	8.34	0:23:40	1,259.23	39.35	6.66	0:30:40	66.69	66.69	3.92
0:02:45	4,721.95	18.45	14.22	0:09:45	3,166.86	24.74	10.59	0:16:45	2,010.02	31.41	8.34	0:23:45	1,235.96	38.62	6.78	0:30:45	68.68	68.68	3.82
0:02:50	4,627.47	18.08	14.49	0:09:50	3,177.08	24.82	10.55	0:16:50	2,039.32	31.86	8.21	0:23:50	1,232.44	38.51	6.80	0:30:50	65.69	65.69	3.97
0:02:55	4,685.35	18.30	14.33	0:09:55	3,170.21	24.77	10.58	0:16:55	2,037.44	31.83	8.23	0:23:55	1,238.11	38.69	6.77	0:30:55	65.38	65.38	4.02
0:03:00	4,704.75	18.38	14.26	0:10:00	3,152.81	24.63	10.64	0:17:00	2,002.73	31.29	8.37	0:24:00	1,249.75	39.05	6.70	0:31:00	70.78	70.78	3.70

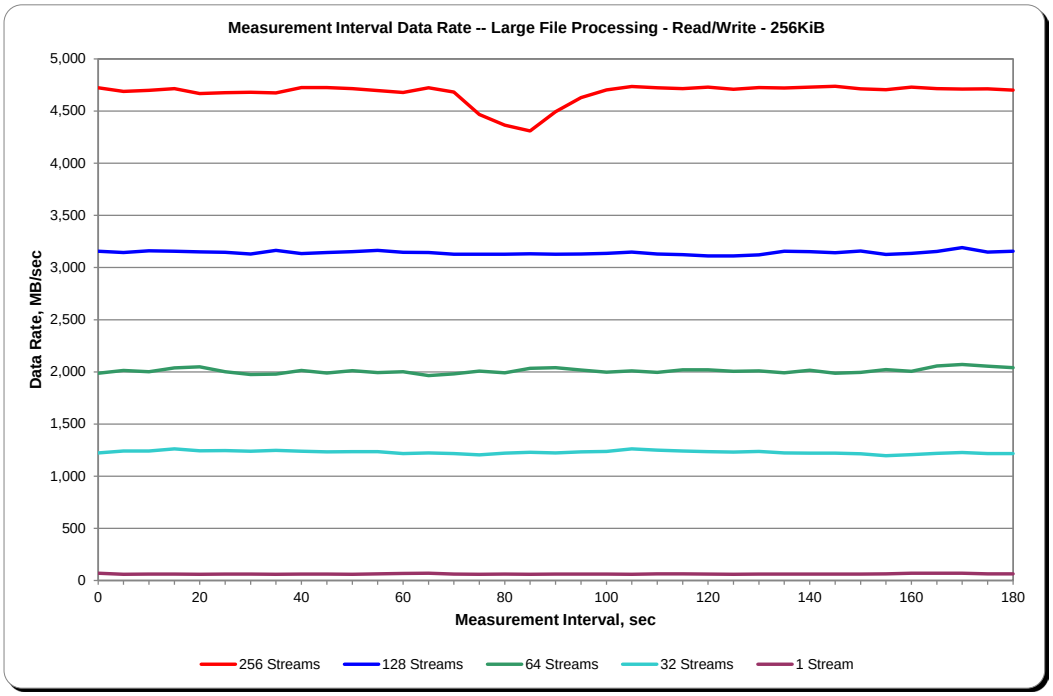
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR16	256 Streams			TR17	128 Streams			TR18	64 Streams			TR19	32 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	4,722.47	18.45	14.21	0:10:05	3,157.11	24.66	10.62	0:17:05	1,987.89	31.06	8.43	0:24:05	1,222.48	38.20	6.86	0:31:05	70.04	70.04	3.74
0:03:10	4,687.76	18.31	14.29	0:10:10	3,143.21	24.56	10.67	0:17:10	2,013.58	31.46	8.33	0:24:10	1,242.14	38.82	6.75	0:31:10	60.71	60.71	4.32
0:03:15	4,698.77	18.35	14.29	0:10:15	3,159.78	24.69	10.62	0:17:15	2,002.05	31.28	8.38	0:24:15	1,241.46	38.80	6.75	0:31:15	61.34	61.34	4.27
0:03:20	4,715.50	18.42	14.23	0:10:20	3,156.06	24.66	10.63	0:17:20	2,038.43	31.85	8.23	0:24:20	1,261.49	39.42	6.65	0:31:20	61.66	61.66	4.24
0:03:25	4,668.84	18.24	14.36	0:10:25	3,150.97	24.62	10.64	0:17:25	2,049.02	32.02	8.18	0:24:25	1,243.35	38.85	6.74	0:31:25	59.35	59.35	4.41
0:03:30	4,677.02	18.27	14.35	0:10:30	3,146.36	24.58	10.66	0:17:30	2,000.58	31.26	8.39	0:24:30	1,245.34	38.92	6.73	0:31:30	62.18	62.18	4.21
0:03:35	4,680.42	18.28	14.33	0:10:35	3,129.16	24.45	10.72	0:17:35	1,973.89	30.84	8.49	0:24:35	1,239.47	38.73	6.76	0:31:35	62.08	62.08	4.21
0:03:40	4,673.98	18.26	14.35	0:10:40	3,165.39	24.73	10.59	0:17:40	1,979.08	30.92	8.48	0:24:40	1,247.07	38.97	6.72	0:31:40	60.08	60.08	4.36
0:03:45	4,725.04	18.46	14.20	0:10:45	3,134.19	24.49	10.70	0:17:45	2,014.63	31.48	8.32	0:24:45	1,240.26	38.76	6.76	0:31:45	60.92	60.92	4.30
0:03:50	4,724.31	18.45	14.20	0:10:50	3,143.21	24.56	10.67	0:17:50	1,988.31	31.07	8.43	0:24:50	1,233.81	38.56	6.79	0:31:50	61.24	61.24	4.28
0:03:55	4,715.60	18.42	14.23	0:10:55	3,152.23	24.63	10.64	0:17:55	2,011.17	31.42	8.34	0:24:55	1,236.01	38.63	6.79	0:31:55	60.40	60.40	4.34
0:04:00	4,696.05	18.34	14.28	0:11:00	3,164.86	24.73	10.60	0:18:00	1,992.61	31.13	8.42	0:25:00	1,235.27	38.60	6.78	0:32:00	63.12	63.12	4.15
0:04:05	4,678.01	18.27	14.35	0:11:05	3,146.09	24.58	10.66	0:18:05	2,002.41	31.29	8.37	0:25:05	1,216.14	38.00	6.90	0:32:05	67.32	67.32	3.89
0:04:10	4,724.15	18.45	14.20	0:11:10	3,143.26	24.56	10.67	0:18:10	1,965.14	30.71	8.53	0:25:10	1,223.27	38.23	6.85	0:32:10	70.36	70.36	3.72
0:04:15	4,682.57	18.29	14.32	0:11:15	3,127.33	24.43	10.73	0:18:15	1,981.70	30.96	8.46	0:25:15	1,217.87	38.06	6.89	0:32:15	62.50	62.50	4.19
0:04:20	4,467.14	17.45	15.00	0:11:20	3,127.06	24.43	10.72	0:18:20	2,006.92	31.36	8.36	0:25:20	1,205.34	37.67	6.96	0:32:20	60.08	60.08	4.36
0:04:25	4,365.33	17.05	15.38	0:11:25	3,128.79	24.44	10.72	0:18:25	1,991.61	31.12	8.41	0:25:25	1,220.75	38.15	6.87	0:32:25	62.29	62.29	4.21
0:04:30	4,309.86	16.84	15.58	0:11:30	3,131.52	24.46	10.71	0:18:30	2,033.77	31.78	8.25	0:25:30	1,229.56	38.42	6.82	0:32:30	60.82	60.82	4.31
0:04:35	4,494.20	17.56	14.92	0:11:35	3,127.80	24.44	10.72	0:18:35	2,040.69	31.89	8.22	0:25:35	1,223.90	38.25	6.85	0:32:35	61.76	61.76	4.24
0:04:40	4,629.10	18.08	14.49	0:11:40	3,130.79	24.46	10.72	0:18:40	2,017.62	31.53	8.31	0:25:40	1,233.23	38.54	6.80	0:32:40	61.55	61.55	4.25
0:04:45	4,703.39	18.37	14.26	0:11:45	3,135.98	24.50	10.69	0:18:45	1,996.80	31.20	8.40	0:25:45	1,237.79	38.68	6.77	0:32:45	61.18	61.18	4.29
0:04:50	4,734.53	18.49	14.18	0:11:50	3,148.82	24.60	10.65	0:18:50	2,009.12	31.39	8.34	0:25:50	1,261.38	39.42	6.65	0:32:50	60.66	60.66	4.32
0:04:55	4,722.47	18.45	14.20	0:11:55	3,130.58	24.46	10.71	0:18:55	1,994.39	31.16	8.41	0:25:55	1,250.74	39.09	6.70	0:32:55	63.12	63.12	4.15
0:05:00	4,714.45	18.42	14.23	0:12:00	3,124.65	24.41	10.74	0:19:00	2,020.66	31.57	8.30	0:26:00	1,242.09	38.82	6.75	0:33:00	64.07	64.07	4.09
0:05:05	4,730.02	18.48	14.19	0:12:05	3,111.44	24.31	10.77	0:19:05	2,020.08	31.56	8.30	0:26:05	1,234.86	38.59	6.79	0:33:05	62.50	62.50	4.18
0:05:10	4,708.58	18.39	14.25	0:12:10	3,112.38	24.32	10.78	0:19:10	2,005.24	31.33	8.36	0:26:10	1,230.98	38.47	6.81	0:33:10	60.71	60.71	4.32
0:05:15	4,725.46	18.46	14.19	0:12:15	3,121.93	24.39	10.74	0:19:15	2,009.91	31.40	8.35	0:26:15	1,237.06	38.66	6.77	0:33:15	62.18	62.18	4.21
0:05:20	4,721.53	18.44	14.21	0:12:20	3,156.27	24.66	10.62	0:19:20	1,992.08	31.13	8.42	0:26:20	1,222.17	38.19	6.86	0:33:20	62.39	62.39	4.20
0:05:25	4,730.07	18.48	14.18	0:12:25	3,151.50	24.62	10.64	0:19:25	2,015.36	31.49	8.32	0:26:25	1,221.38	38.17	6.86	0:33:25	61.34	61.34	4.24
0:05:30	4,736.68	18.50	14.17	0:12:30	3,142.16	24.55	10.68	0:19:30	1,988.05	31.06	8.43	0:26:30	1,220.80	38.15	6.87	0:33:30	62.91	62.91	4.19
0:05:35	4,713.93	18.41	14.23	0:12:35	3,159.36	24.68	10.62	0:19:35	1,994.44	31.16	8.41	0:26:35	1,215.77	37.99	6.90	0:33:35	62.29	62.29	4.20
0:05:40	4,704.54	18.38	14.26	0:12:40	3,125.91	24.42	10.73	0:19:40	2,021.50	31.59	8.29	0:26:40	1,196.95	37.40	7.00	0:33:40	63.54	63.54	4.12
0:05:45	4,728.71	18.47	14.19	0:12:45	3,136.97	24.51	10.69	0:19:45	2,006.03	31.34	8.36	0:26:45	1,207.17	37.72	6.95	0:33:45	69.42	69.42	3.77
0:05:50	4,716.02	18.42	14.22	0:12:50	3,154.48	24.64	10.64	0:19:50	2,056.15	32.13	8.15	0:26:50	1,218.66	38.08	6.88	0:33:50	69.84	69.84	3.75
0:05:55	4,711.20	18.40	14.24	0:12:55	3,191.87	24.94	10.51	0:19:55	2,071.25	32.36	8.10	0:26:55	1,226.36	38.32	6.83	0:33:55	69.42	69.42	3.78
0:06:00	4,712.62	18.41	14.24	0:13:00	3,147.93	24.59	10.65	0:20:00	2,054.42	32.10	8.16	0:27:00	1,217.19	38.04	6.89	0:34:00	63.96	63.96	4.09
0:06:05	4,699.82	18.36	14.28	0:13:05	3,157.00	24.66	10.62	0:20:05	2,039.90	31.87	8.22	0:27:05	1,217.24	38.04	6.89	0:34:05	63.65	63.65	4.12
0:06:10	4,702.65	18.37	14.26	0:13:10	3,135.50	24.50	10.69	0:20:10	2,044.41	31.94	8.20	0:27:10	1,214.36	37.95	6.90	0:34:10	63.33	63.33	4.13
0:06:15	4,734.01	18.49	14.18	0:13:15	3,119.88	24.37	10.76	0:20:15	2,014.89	31.48	8.32	0:27:15	1,227.57	38.36	6.82	0:34:15	61.71	61.71	4.24
0:06:20	4,721.21	18.44	14.20	0:13:20	3,127.01	24.43	10.72	0:20:20	2,022.76	31.61	8.29	0:27:20	1,236.38	38.64	6.78	0:34:20	61.18	61.18	4.28
0:06:25	4,734.27	18.49	14.18	0:13:25	3,128.06	24.44	10.72	0:20:25	2,020.92	31.58	8.29	0:27:25	1,244.19	38.88	6.74	0:34:25	61.13	61.13	4.28
0:06:30	4,710.83	18.40	14.24	0:13:30	3,143.05	24.56	10.67	0:20:30	2,033.19	31.77	8.25	0:27:30	1,224.21	38.26	6.85	0:34:30	61.60	61.60	4.25
0:06:35	4,702.34	18.37	14.26	0:13:35	3,135.50	24.50	10.70	0:20:35	2,058.09	32.16	8.15	0:27:35	1,234.96	38.59	6.78	0:34:35	62.86	62.86	4.16
0:06:40	4,715.29	18.42	14.23	0:13:40	3,153.49	24.64	10.63	0:20:40	2,052.33	32.07	8.17	0:27:40	1,235.85	38.62	6.78	0:34:40	62.50	62.50	4.19
0:06:45	4,592.29	52.19	14.29	0:13:45	3,090.36	70.24	10.58	0:20:45	1,982.54	82.61	8.23	0:27:45	1,182.64	98.55	6.87	0:34:45	62.91	62.91	4.17
0:06:50	62.97	0.00	9.50	0:13:50	35.18	0.00	8.21	0:20:50	19.45	0.00	7.98	0:27:50	10.85	0.00	7.05	0:34:50	1.00	0.00	4.63
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

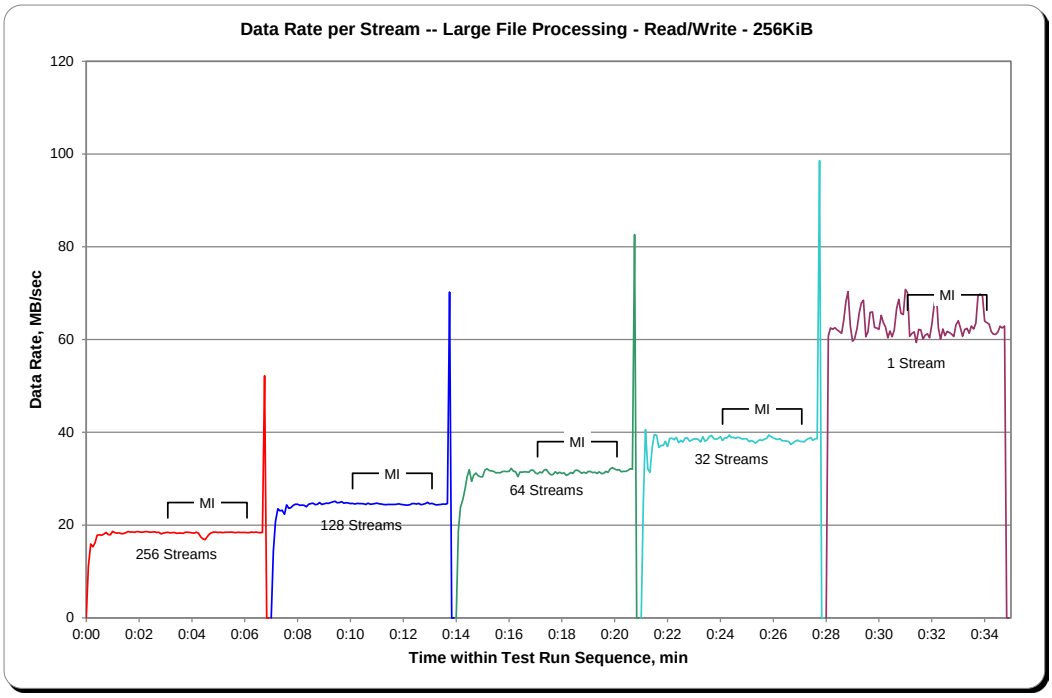
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



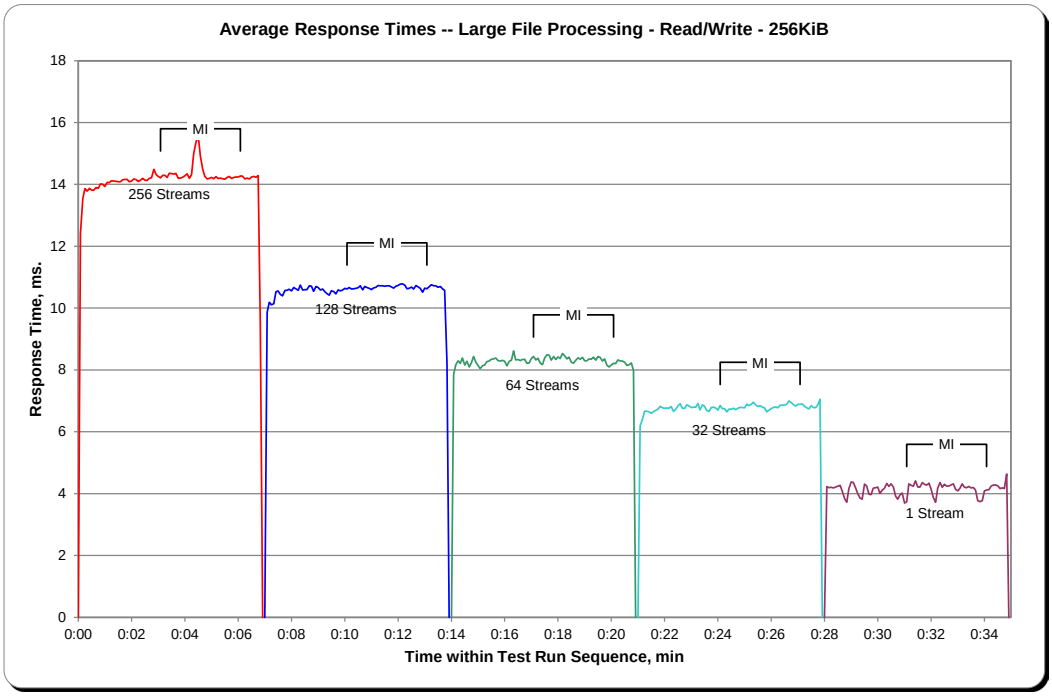
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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.

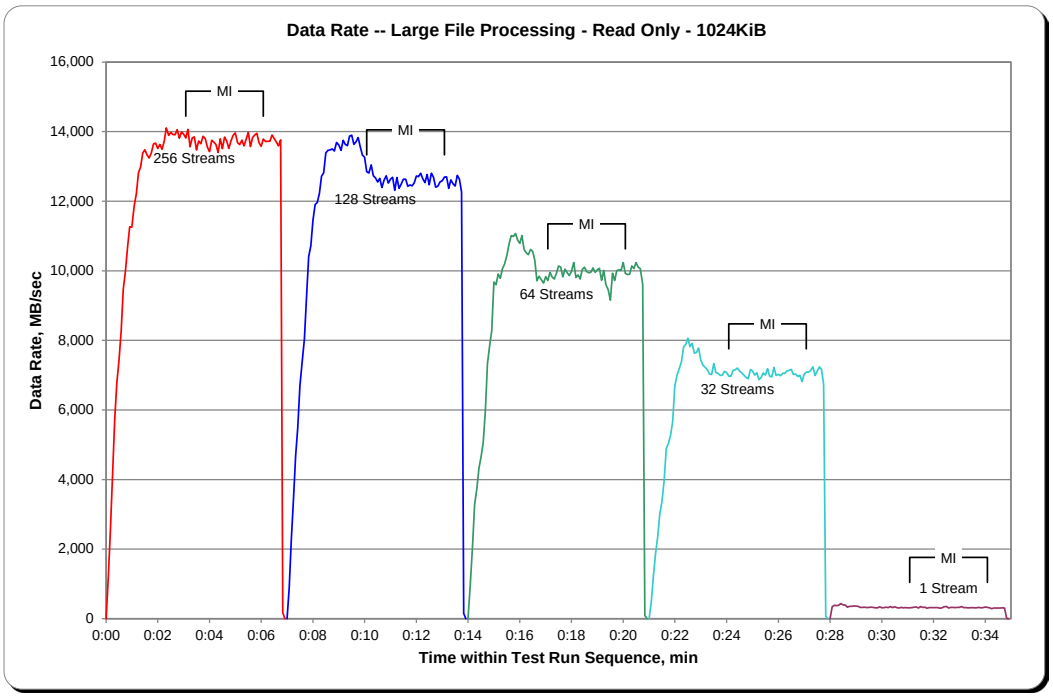
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data – Ramp Up Period

TR21	256 Streams			TR22	128 Streams			TR23	64 Streams			TR24	32 Streams			TR25	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	1,173.78	41.92	11.51	0:07:05	882.27	73.52	6.67	0:14:05	906.39	129.48	5.03	0:21:05	472.49	236.24	3.55	0:28:05	343.72	343.72	2.99
0:00:10	2,553.28	45.59	16.96	0:07:10	2,284.64	95.19	8.41	0:14:10	2,055.00	146.79	5.55	0:21:10	1,221.17	203.53	3.53	0:28:10	386.30	386.30	2.71
0:00:15	4,135.37	54.41	16.71	0:07:15	3,436.18	95.45	8.94	0:14:15	3,288.12	173.06	5.67	0:21:15	1,864.16	266.31	3.81	0:28:15	371.83	371.83	2.81
0:00:20	5,715.79	57.74	16.11	0:07:20	4,681.47	104.03	8.92	0:14:20	3,716.15	168.92	5.85	0:21:20	2,350.70	213.70	3.97	0:28:20	387.55	387.55	2.70
0:00:25	6,788.06	56.57	16.98	0:07:25	5,497.68	94.79	9.82	0:14:25	4,318.46	166.09	6.05	0:21:25	3,019.90	251.66	4.04	0:28:25	433.27	433.27	2.41
0:00:30	7,417.42	52.98	18.29	0:07:30	6,691.38	96.98	9.78	0:14:30	4,647.50	165.98	6.12	0:21:30	3,366.56	240.47	4.11	0:28:30	399.72	399.72	2.62
0:00:35	8,245.79	53.89	18.51	0:07:35	7,341.92	100.57	10.08	0:14:35	5,055.18	157.97	6.18	0:21:35	3,960.47	220.03	4.11	0:28:35	390.07	390.07	2.68
0:00:40	9,471.16	56.71	17.80	0:07:40	8,035.87	95.67	9.93	0:14:40	5,957.17	161.00	6.11	0:21:40	4,884.90	257.10	4.03	0:28:40	331.98	331.98	3.15
0:00:45	9,980.35	54.84	18.34	0:07:45	9,257.04	101.73	9.96	0:14:45	7,333.11	166.66	6.02	0:21:45	5,034.63	251.73	4.07	0:28:45	358.82	358.82	2.92
0:00:50	10,670.10	55.57	18.33	0:07:50	10,409.63	105.15	9.58	0:14:50	7,842.30	163.38	6.13	0:21:50	5,262.59	239.21	4.12	0:28:50	354.00	354.00	2.96
0:00:55	11,263.17	55.21	18.61	0:07:55	10,715.40	100.14	9.93	0:14:55	8,279.35	153.32	6.33	0:21:55	5,665.88	236.08	4.25	0:28:55	366.37	366.37	2.86
0:01:00	11,258.77	53.11	19.42	0:08:00	11,453.60	104.12	9.97	0:15:00	9,680.03	169.83	6.05	0:22:00	6,695.16	247.97	4.01	0:29:00	360.71	360.71	2.90
0:01:05	11,865.06	54.18	19.03	0:08:05	11,903.43	105.34	9.85	0:15:05	9,595.10	168.34	6.22	0:22:05	7,011.83	250.42	4.09	0:29:05	353.37	353.37	2.96
0:01:10	12,205.42	52.84	19.49	0:08:10	11,963.83	105.87	9.89	0:15:10	9,907.78	167.93	6.08	0:22:10	7,187.99	247.86	4.09	0:29:10	324.64	324.64	3.23
0:01:15	12,815.91	54.08	19.21	0:08:15	12,219.48	104.44	9.84	0:15:15	9,783.84	163.06	6.37	0:22:15	7,386.80	238.28	4.24	0:29:15	323.38	323.38	3.24
0:01:20	12,987.24	53.89	19.16	0:08:20	12,719.65	105.12	9.78	0:15:20	10,063.60	167.73	6.26	0:22:20	7,807.91	251.87	4.16	0:29:20	328.20	328.20	3.19
0:01:25	13,389.48	53.34	19.37	0:08:25	12,814.86	101.71	10.03	0:15:25	10,194.05	167.12	6.24	0:22:25	7,881.94	246.31	4.17	0:29:25	318.14	318.14	3.29
0:01:30	13,481.75	52.66	19.71	0:08:30	13,387.80	104.59	9.96	0:15:30	10,452.21	163.32	6.25	0:22:30	8,060.61	251.89	4.15	0:29:30	323.59	323.59	3.23
0:01:35	13,334.74	52.09	20.11	0:08:35	13,459.52	105.15	9.97	0:15:35	10,776.01	168.38	6.21	0:22:35	7,814.20	244.19	4.30	0:29:35	333.66	333.66	3.14
0:01:40	13,239.74	51.72	20.24	0:08:40	13,470.22	105.24	9.96	0:15:40	11,012.77	172.07	6.10	0:22:40	7,912.97	247.28	4.23	0:29:40	326.95	326.95	3.20
0:01:45	13,388.85	52.30	20.08	0:08:45	13,501.05	105.48	9.94	0:15:45	10,986.98	171.67	6.10	0:22:45	7,631.75	238.49	4.39	0:29:45	314.78	314.78	3.33
0:01:50	13,646.17	53.31	19.61	0:08:50	13,441.07	105.01	9.99	0:15:50	11,072.54	173.01	6.06	0:22:50	7,651.25	239.10	4.38	0:29:50	312.27	312.27	3.35
0:01:55	13,668.40	53.39	19.64	0:08:55	13,687.27	106.93	9.80	0:15:55	10,881.49	170.02	6.16	0:22:55	7,777.71	243.05	4.31	0:29:55	344.77	344.77	3.04
0:02:00	13,517.19	52.80	19.89	0:09:00	13,613.45	106.36	9.85	0:16:00	10,791.94	168.62	6.21	0:23:00	7,444.26	232.63	4.50	0:30:00	311.01	311.01	3.36
0:02:05	13,631.91	53.25	19.71	0:09:05	13,457.63	105.14	9.98	0:16:05	11,011.52	172.05	6.09	0:23:05	7,291.38	227.86	4.60	0:30:05	320.86	320.86	3.26
0:02:10	13,492.03	52.70	19.85	0:09:10	13,749.77	107.42	9.76	0:16:10	10,612.01	165.81	6.32	0:23:10	7,227.21	225.85	4.64	0:30:10	328.41	328.41	3.19
0:02:15	13,715.58	53.58	19.52	0:09:15	13,635.68	106.53	9.84	0:16:15	10,516.17	164.32	6.38	0:23:15	7,168.28	224.01	4.67	0:30:15	319.19	319.19	3.28
0:02:20	14,104.61	55.10	19.08	0:09:20	13,594.79	106.21	9.87	0:16:20	10,464.58	163.51	6.40	0:23:20	7,030.91	219.72	4.77	0:30:20	351.06	351.06	2.98
0:02:25	13,891.95	54.27	19.36	0:09:25	13,870.98	108.37	9.67	0:16:25	10,612.22	165.82	6.32	0:23:25	7,017.07	219.28	4.78	0:30:25	320.65	320.65	3.26
0:02:30	13,975.84	54.59	19.19	0:09:30	13,896.15	108.56	9.65	0:16:30	10,560.21	165.00	6.36	0:23:30	7,333.11	229.16	4.57	0:30:30	341.21	341.21	3.07
0:02:35	13,918.17	54.37	19.28	0:09:35	13,632.54	106.50	9.84	0:16:35	10,305.40	161.02	6.50	0:23:35	7,074.11	221.07	4.74	0:30:35	316.25	316.25	3.31
0:02:40	13,909.99	54.34	19.24	0:09:40	13,706.99	107.09	9.78	0:16:40	9,713.59	151.77	6.90	0:23:40	7,052.51	220.39	4.75	0:30:40	306.39	306.39	3.42
0:02:45	14,058.68	54.92	19.11	0:09:45	13,830.72	108.05	9.70	0:16:45	9,841.31	153.77	6.81	0:23:45	6,996.52	218.64	4.79	0:30:45	323.59	323.59	3.23
0:02:50	13,809.96	53.95	19.43	0:09:50	13,559.56	105.93	9.90	0:16:50	9,736.66	152.14	6.87	0:23:50	7,001.55	218.80	4.79	0:30:50	311.22	311.22	3.37
0:02:55	13,988.84	54.64	19.22	0:09:55	13,325.93	104.11	10.07	0:16:55	9,648.16	150.75	6.96	0:23:55	7,107.88	222.12	4.72	0:30:55	318.56	318.56	3.29
0:03:00	13,929.28	54.41	19.28	0:10:00	13,262.60	103.61	10.11	0:17:00	9,830.19	153.60	6.82	0:24:00	7,076.63	221.14	4.73	0:31:00	313.73	313.73	3.34

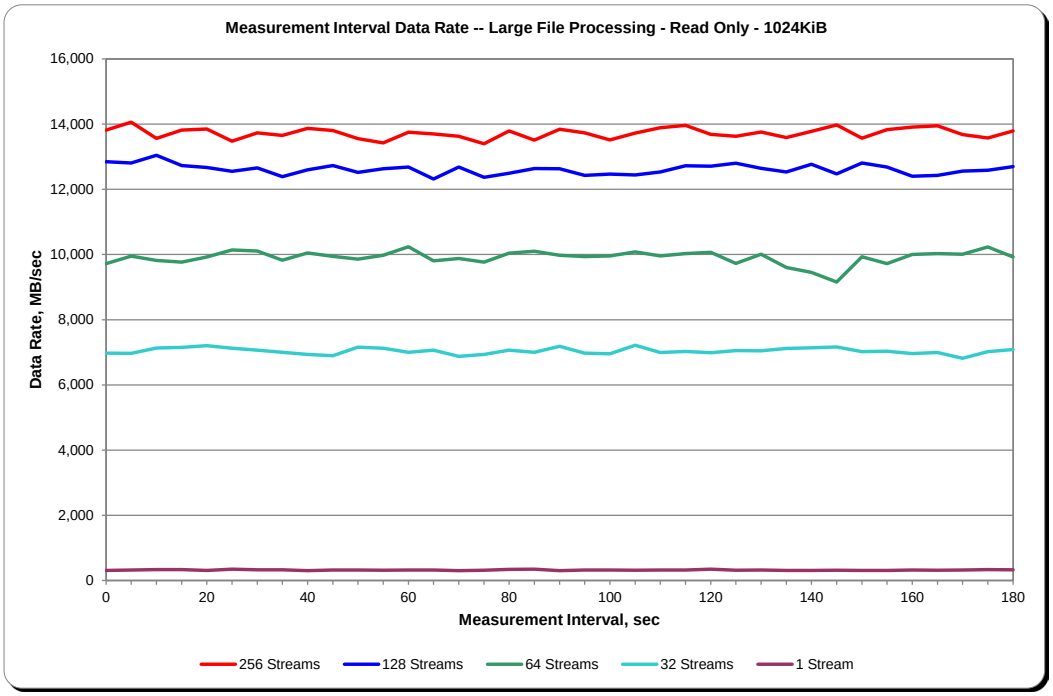
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR21	256 Streams			TR22	128 Streams			TR23	64 Streams			TR24	32 Streams			TR25	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	13,817.92	53.98	19.40	0:10:05	12,847.78	100.37	10.44	0:17:05	9,720.09	151.88	6.90	0:24:05	6,971.98	217.87	4.82	0:31:05	310.80	310.80	3.37
0:03:10	14,062.03	54.93	19.09	0:10:10	12,810.66	100.08	10.48	0:17:10	9,951.62	155.49	6.74	0:24:10	6,968.00	217.75	4.81	0:31:10	321.70	321.70	3.25
0:03:15	13,562.28	52.98	19.77	0:10:15	13,043.87	101.91	10.28	0:17:15	9,816.35	153.38	6.83	0:24:15	7,133.67	222.93	4.70	0:31:15	333.03	333.03	3.15
0:03:20	13,816.04	53.97	19.43	0:10:20	12,730.97	99.46	10.54	0:17:20	9,764.34	152.57	6.86	0:24:20	7,152.13	223.50	4.68	0:31:20	337.64	337.64	3.10
0:03:25	13,850.64	54.10	19.41	0:10:25	12,669.10	98.98	10.57	0:17:25	9,922.46	155.04	6.76	0:24:25	7,201.41	225.04	4.65	0:31:25	309.12	309.12	3.39
0:03:30	13,474.62	52.64	19.92	0:10:30	12,551.45	98.06	10.70	0:17:30	10,140.15	158.44	6.61	0:24:30	7,125.70	222.68	4.70	0:31:30	348.34	348.34	3.01
0:03:35	13,733.20	53.65	19.50	0:10:35	12,656.52	98.88	10.60	0:17:35	10,108.06	157.94	6.64	0:24:35	7,068.66	220.90	4.74	0:31:35	326.11	326.11	3.21
0:03:40	13,651.41	53.33	19.62	0:10:40	12,389.76	96.80	10.83	0:17:40	9,826.00	153.53	6.82	0:24:40	7,001.55	218.80	4.79	0:31:40	330.51	330.51	3.17
0:03:45	13,868.47	54.17	19.42	0:10:45	12,599.90	98.44	10.65	0:17:45	10,045.57	156.96	6.67	0:24:45	6,934.65	216.71	4.83	0:31:45	302.83	302.83	3.46
0:03:50	13,800.94	53.91	19.41	0:10:50	12,728.03	99.44	10.53	0:17:50	9,945.95	155.41	6.74	0:24:50	6,897.53	215.55	4.86	0:31:50	321.70	321.70	3.25
0:03:55	13,554.52	52.95	19.83	0:10:55	12,518.53	97.80	10.73	0:17:55	9,860.60	154.07	6.80	0:24:55	7,159.05	223.72	4.68	0:31:55	319.82	319.82	3.27
0:04:00	13,421.14	52.43	19.95	0:11:00	12,631.57	98.68	10.61	0:18:00	9,975.94	155.87	6.72	0:25:00	7,123.19	222.60	4.70	0:32:00	318.35	318.35	3.29
0:04:05	13,751.86	53.72	19.53	0:11:05	12,685.04	99.10	10.58	0:18:05	10,239.13	159.99	6.55	0:25:05	6,998.41	218.70	4.79	0:32:05	320.44	320.44	3.27
0:04:10	13,699.44	53.51	19.57	0:11:10	12,314.27	96.21	10.90	0:18:10	9,803.98	153.19	6.83	0:25:10	7,065.72	220.80	4.74	0:32:10	320.03	320.03	3.27
0:04:15	13,627.92	53.23	19.73	0:11:15	12,681.69	99.08	10.57	0:18:15	9,879.68	154.37	6.79	0:25:15	6,873.21	214.79	4.88	0:32:15	301.36	301.36	3.47
0:04:20	13,398.28	52.34	20.03	0:11:20	12,369.63	96.64	10.84	0:18:20	9,764.97	152.58	6.86	0:25:20	6,933.81	216.68	4.83	0:32:20	314.57	314.57	3.33
0:04:25	13,789.61	53.87	19.48	0:11:25	12,491.69	97.59	10.75	0:18:25	10,038.65	156.85	6.68	0:25:25	7,064.47	220.76	4.75	0:32:25	344.56	344.56	3.04
0:04:30	13,507.55	52.76	19.81	0:11:30	12,633.87	98.70	10.62	0:18:30	10,100.30	157.82	6.64	0:25:30	7,001.97	218.81	4.78	0:32:30	347.92	347.92	3.01
0:04:35	13,842.46	54.07	19.41	0:11:35	12,632.40	98.69	10.62	0:18:35	9,977.41	155.90	6.73	0:25:35	7,182.12	224.44	4.67	0:32:35	305.76	305.76	3.42
0:04:40	13,732.15	53.64	19.56	0:11:40	12,429.40	97.10	10.79	0:18:40	9,940.08	155.31	6.75	0:25:40	6,971.56	217.86	4.81	0:32:40	322.96	322.96	3.24
0:04:45	13,518.03	52.80	19.84	0:11:45	12,467.78	97.40	10.76	0:18:45	9,957.91	155.59	6.73	0:25:45	6,953.53	217.30	4.82	0:32:45	322.33	322.33	3.25
0:04:50	13,728.17	53.63	19.57	0:11:50	12,442.61	97.21	10.79	0:18:50	10,081.01	157.52	6.65	0:25:50	7,219.87	225.62	4.64	0:32:50	316.25	316.25	3.31
0:04:55	13,891.74	54.26	19.30	0:11:55	12,530.27	97.89	10.69	0:18:55	9,957.07	155.58	6.73	0:25:55	6,994.84	218.59	4.79	0:32:55	324.64	324.64	3.23
0:05:00	13,961.79	54.54	19.20	0:12:00	12,721.53	99.39	10.56	0:19:00	10,026.69	156.67	6.69	0:26:00	7,027.14	219.60	4.77	0:33:00	324.43	324.43	3.23
0:05:05	13,683.50	53.45	19.64	0:12:05	12,706.64	99.27	10.56	0:19:05	10,070.52	157.35	6.65	0:26:05	6,984.98	218.28	4.80	0:33:05	347.08	347.08	3.01
0:05:10	13,624.78	53.22	19.69	0:12:10	12,802.48	100.02	10.48	0:19:10	9,729.11	152.02	6.89	0:26:10	7,052.93	220.40	4.75	0:33:10	317.51	317.51	3.30
0:05:15	13,756.90	53.74	19.49	0:12:15	12,642.89	98.77	10.60	0:19:15	10,009.29	156.40	6.71	0:26:15	7,047.90	220.25	4.75	0:33:15	321.49	321.49	3.26
0:05:20	13,588.08	53.08	19.71	0:12:20	12,531.53	97.90	10.71	0:19:20	9,603.70	150.06	6.98	0:26:20	7,120.25	222.51	4.71	0:33:20	311.64	311.64	3.36
0:05:25	13,779.55	53.83	19.51	0:12:25	12,765.36	99.73	10.51	0:19:25	9,450.61	147.67	7.10	0:26:25	7,137.24	223.04	4.69	0:33:25	312.69	312.69	3.35
0:05:30	13,973.95	54.59	19.22	0:12:30	12,471.76	97.44	10.76	0:19:30	9,155.75	143.06	7.32	0:26:30	7,167.65	223.99	4.68	0:33:30	317.93	317.93	3.29
0:05:35	13,570.04	53.01	19.77	0:12:35	12,806.68	100.05	10.47	0:19:35	9,931.48	155.18	6.75	0:26:35	7,020.64	219.39	4.77	0:33:35	312.48	312.48	3.35
0:05:40	13,830.72	54.03	19.44	0:12:40	12,683.99	99.09	10.57	0:19:40	9,722.61	151.92	6.90	0:26:40	7,032.17	219.76	4.77	0:33:40	311.01	311.01	3.36
0:05:45	13,905.38	54.32	19.26	0:12:45	12,402.98	96.90	10.82	0:19:45	10,003.00	156.30	6.70	0:26:45	6,962.13	217.57	4.80	0:33:45	324.01	324.01	3.23
0:05:50	13,950.88	54.50	19.22	0:12:50	12,428.56	97.10	10.79	0:19:50	10,025.85	156.65	6.69	0:26:50	6,995.05	218.60	4.80	0:33:50	313.52	313.52	3.34
0:05:55	13,679.51	53.44	19.62	0:12:55	12,559.42	98.12	10.68	0:19:55	10,007.40	156.37	6.70	0:26:55	6,816.37	213.01	4.91	0:33:55	320.44	320.44	3.27
0:06:00	13,574.86	53.03	19.78	0:13:00	12,585.64	98.33	10.66	0:20:00	10,234.52	159.91	6.55	0:27:00	7,023.36	219.48	4.78	0:34:00	337.22	337.22	3.10
0:06:05	13,788.56	53.86	19.48	0:13:05	12,695.74	99.19	10.57	0:20:05	9,926.24	155.10	6.76	0:27:05	7,084.18	221.38	4.73	0:34:05	327.16	327.16	3.20
0:06:10	13,720.83	53.60	19.57	0:13:10	12,699.93	99.22	10.56	0:20:10	9,892.06	154.56	6.78	0:27:10	7,085.44	221.42	4.72	0:34:10	313.94	313.94	3.33
0:06:15	13,717.68	53.58	19.55	0:13:15	12,364.60	96.60	10.85	0:20:15	9,897.09	154.64	6.77	0:27:15	7,126.33	222.70	4.72	0:34:15	289.20	289.20	3.63
0:06:20	13,727.54	53.62	19.54	0:13:20	12,616.05	98.56	10.64	0:20:20	10,135.54	158.37	6.62	0:27:20	7,240.42	226.26	4.63	0:34:20	309.75	309.75	3.38
0:06:25	13,904.75	54.32	19.28	0:13:25	12,503.43	97.68	10.73	0:20:25	10,065.70	157.28	6.66	0:27:25	6,988.97	218.41	4.80	0:34:25	304.93	304.93	3.43
0:06:30	13,797.37	53.90	19.49	0:13:30	12,432.97	97.13	10.78	0:20:30	10,237.88	159.97	6.55	0:27:30	7,115.85	222.37	4.71	0:34:30	304.30	304.30	3.44
0:06:35	13,701.53	53.52	19.61	0:13:35	12,739.15	99.52	10.54	0:20:35	10,100.30	157.82	6.64	0:27:35	7,233.92	226.06	4.63	0:34:35	307.02	307.02	3.41
0:06:40	13,588.92	53.08	19.72	0:13:40	12,634.50	98.71	10.62	0:20:40	10,058.15	157.16	6.67	0:27:40	7,169.95	224.06	4.68	0:34:40	313.73	313.73	3.34
0:06:45	13,761.93	156.39	18.94	0:13:45	12,266.03	278.77	10.51	0:20:45	9,603.49	400.15	6.71	0:27:45	6,736.89	561.41	4.76	0:34:45	304.30	304.30	3.44
0:06:50	173.43	0.00	13.48	0:13:50	150.99	0.00	7.52	0:20:50	89.97	0.00	6.98	0:27:50	58.51	0.00	4.91	0:34:50	6.71	0.00	2.77
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

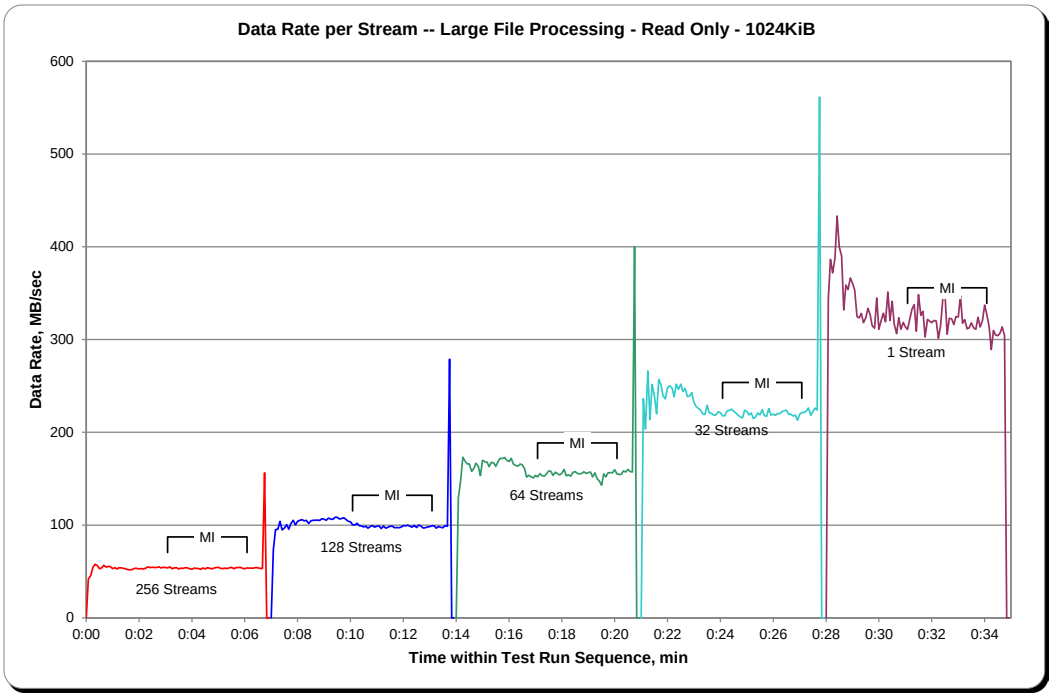
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



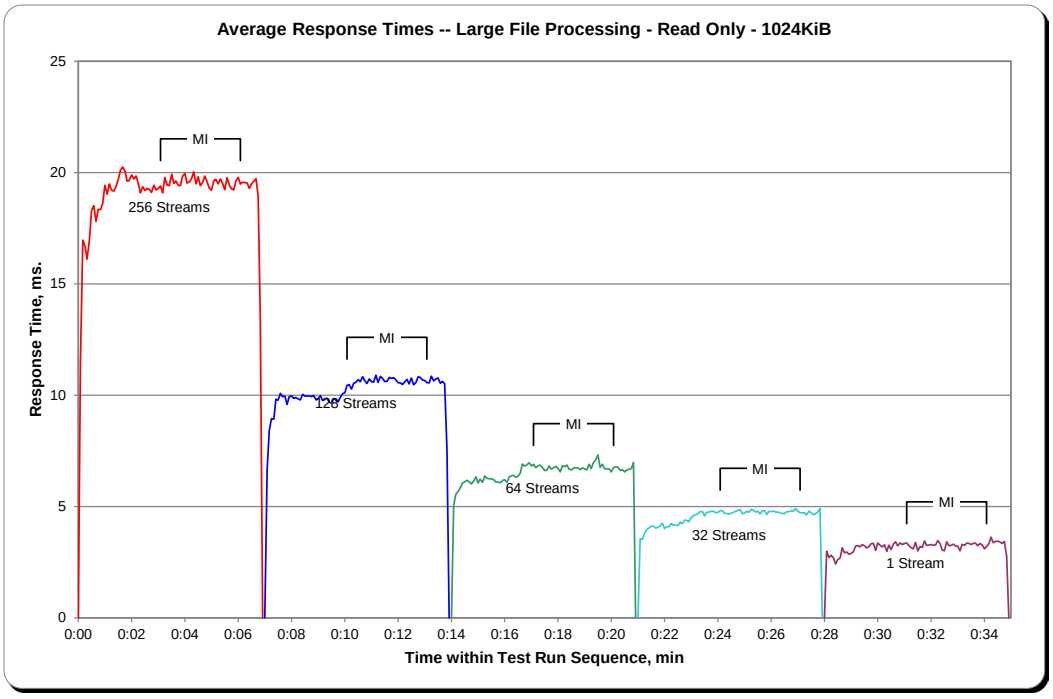
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



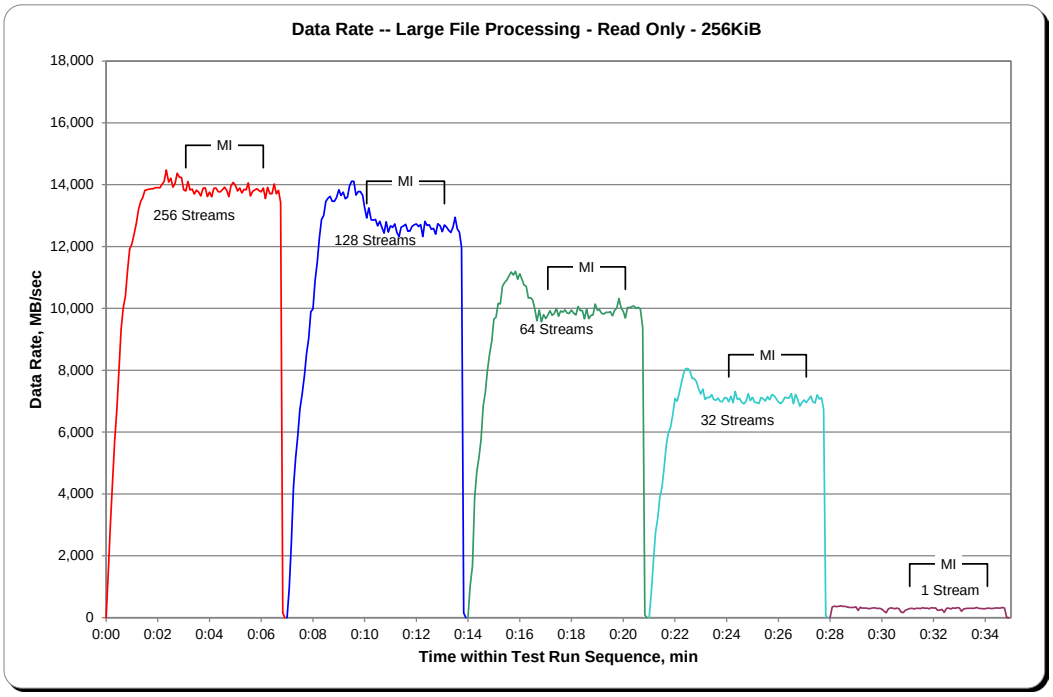
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR26	256 Streams			TR27	128 Streams			TR28	64 Streams			TR29	32 Streams			TR30	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	1,462.82	48.76	3.04	0:07:05	933.60	84.87	1.85	0:14:05	1,014.18	144.88	1.26	0:21:05	790.15	158.03	0.81	0:28:05	342.73	342.73	0.75
0:00:10	3,025.67	58.19	3.66	0:07:10	2,400.61	77.44	2.20	0:14:10	1,675.78	119.70	1.42	0:21:10	1,816.50	201.83	0.95	0:28:10	371.46	371.46	0.70
0:00:15	4,401.35	54.34	4.04	0:07:15	4,219.57	102.92	2.26	0:14:15	3,854.25	160.59	1.41	0:21:15	2,754.35	250.40	0.99	0:28:15	355.73	355.73	0.73
0:00:20	5,735.92	58.53	4.09	0:07:20	5,157.21	107.44	2.23	0:14:20	4,715.08	162.59	1.48	0:21:20	3,205.29	246.56	0.98	0:28:20	366.37	366.37	0.71
0:00:25	6,719.12	55.99	4.34	0:07:25	5,879.73	101.37	2.40	0:14:25	5,170.63	161.58	1.53	0:21:25	3,888.64	243.04	0.99	0:28:25	386.98	386.98	0.67
0:00:30	8,012.80	53.06	4.48	0:07:30	6,741.56	100.62	2.41	0:14:30	5,752.80	159.80	1.56	0:21:30	4,207.15	247.48	1.00	0:28:30	362.96	362.96	0.72
0:00:35	9,336.05	55.90	4.46	0:07:35	7,206.18	102.95	2.48	0:14:35	6,842.90	162.93	1.51	0:21:35	4,850.03	242.50	0.99	0:28:35	362.44	362.44	0.72
0:00:40	10,026.38	57.62	4.43	0:07:40	7,819.86	98.99	2.47	0:14:40	7,280.47	169.31	1.54	0:21:40	5,578.11	253.55	0.99	0:28:40	347.92	347.92	0.75
0:00:45	10,394.43	56.19	4.49	0:07:45	8,539.13	101.66	2.50	0:14:45	8,003.36	170.28	1.49	0:21:45	5,982.23	260.10	0.99	0:28:45	332.61	332.61	0.79
0:00:50	11,223.80	56.40	4.48	0:07:50	9,032.07	101.48	2.54	0:14:50	8,528.49	167.23	1.49	0:21:50	6,156.56	256.52	1.01	0:28:50	332.45	332.45	0.79
0:00:55	11,924.67	56.52	4.47	0:07:55	9,889.43	107.49	2.41	0:14:55	8,937.12	162.49	1.54	0:21:55	6,541.91	242.29	0.99	0:28:55	334.08	334.08	0.78
0:01:00	12,079.18	55.92	4.61	0:08:00	9,981.87	102.91	2.47	0:15:00	9,651.72	166.41	1.53	0:22:00	7,088.64	262.54	1.00	0:29:00	350.70	350.70	0.74
0:01:05	12,413.10	55.91	4.60	0:08:05	10,910.28	103.91	2.43	0:15:05	9,721.77	167.62	1.56	0:22:05	6,997.57	259.17	1.01	0:29:05	235.88	235.88	1.11
0:01:10	12,749.74	55.92	4.63	0:08:10	11,490.61	103.52	2.50	0:15:10	10,161.17	169.35	1.53	0:22:10	7,275.54	250.88	1.02	0:29:10	340.37	340.37	0.77
0:01:15	13,187.52	55.64	4.60	0:08:15	12,281.60	107.73	2.41	0:15:15	10,151.68	166.42	1.57	0:22:15	7,599.40	253.31	1.02	0:29:15	309.28	309.28	0.84
0:01:20	13,447.41	55.34	4.69	0:08:20	12,877.46	109.13	2.37	0:15:20	10,718.12	170.13	1.51	0:22:20	7,893.05	254.61	1.02	0:29:20	310.12	310.12	0.84
0:01:25	13,591.12	53.93	4.78	0:08:25	12,998.99	104.83	2.42	0:15:25	10,840.97	172.08	1.52	0:22:25	8,054.74	251.71	1.02	0:29:25	308.44	308.44	0.85
0:01:30	13,816.14	53.97	4.81	0:08:30	13,456.38	105.13	2.47	0:15:30	10,925.27	170.71	1.51	0:22:30	8,051.91	251.62	1.04	0:29:30	291.19	291.19	0.90
0:01:35	13,837.22	54.05	4.86	0:08:35	13,559.66	105.93	2.47	0:15:35	11,059.80	172.81	1.51	0:22:35	7,971.27	249.10	1.05	0:29:35	300.78	300.78	0.87
0:01:40	13,857.72	54.13	4.84	0:08:40	13,626.66	106.46	2.46	0:15:40	11,175.46	174.62	1.50	0:22:40	7,739.07	241.85	1.08	0:29:40	314.36	314.36	0.83
0:01:45	13,861.86	54.15	4.84	0:08:45	13,462.82	105.18	2.49	0:15:45	11,082.29	173.16	1.51	0:22:45	7,729.47	241.55	1.08	0:29:45	319.03	319.03	0.82
0:01:50	13,871.61	54.19	4.83	0:08:50	13,462.56	105.18	2.49	0:15:50	11,195.38	174.93	1.50	0:22:50	7,636.36	238.64	1.10	0:29:50	298.63	298.63	0.88
0:01:55	13,904.17	54.31	4.82	0:08:55	13,582.94	106.12	2.47	0:15:55	10,940.89	170.95	1.53	0:22:55	7,403.37	231.36	1.13	0:29:55	305.71	305.71	0.85
0:02:00	13,907.16	54.32	4.82	0:09:00	13,839.58	108.12	2.42	0:16:00	11,119.89	173.75	1.51	0:23:00	7,231.98	226.00	1.16	0:30:00	278.24	278.24	0.94
0:02:05	13,898.93	54.29	4.82	0:09:05	13,650.00	106.64	2.45	0:16:05	10,940.74	170.95	1.53	0:23:05	7,390.05	230.94	1.13	0:30:05	213.23	213.23	1.23
0:02:10	14,012.96	54.74	4.78	0:09:10	13,759.83	107.50	2.43	0:16:10	10,757.29	168.08	1.55	0:23:10	7,060.80	220.65	1.19	0:30:10	157.92	157.92	1.65
0:02:15	14,108.90	55.11	4.76	0:09:15	13,547.55	105.84	2.47	0:16:15	10,716.18	167.44	1.56	0:23:15	7,125.60	222.67	1.17	0:30:15	283.22	283.22	0.92
0:02:20	14,470.56	56.53	4.63	0:09:20	13,598.35	106.24	2.46	0:16:20	10,336.44	161.51	1.62	0:23:20	7,116.00	222.38	1.17	0:30:20	315.57	315.57	0.83
0:02:25	14,087.93	55.03	4.76	0:09:25	13,965.77	109.11	2.40	0:16:25	10,349.76	161.71	1.62	0:23:25	7,215.41	225.48	1.16	0:30:25	308.65	308.65	0.85
0:02:30	14,213.03	55.52	4.71	0:09:30	14,112.42	110.25	2.37	0:16:30	10,278.77	160.61	1.63	0:23:30	7,049.89	220.31	1.18	0:30:30	291.45	291.45	0.90
0:02:35	13,923.46	54.39	4.82	0:09:35	14,110.06	110.23	2.37	0:16:35	9,987.21	156.05	1.67	0:23:35	7,035.89	219.87	1.19	0:30:35	313.42	313.42	0.83
0:02:40	14,046.83	54.87	4.77	0:09:40	13,662.47	106.74	2.45	0:16:40	9,599.82	150.00	1.75	0:23:40	7,104.63	222.02	1.18	0:30:40	287.73	287.73	0.90
0:02:45	14,367.80	56.12	4.67	0:09:45	13,778.24	107.64	2.43	0:16:45	9,948.94	155.45	1.68	0:23:45	6,989.70	218.43	1.20	0:30:45	176.79	176.79	1.48
0:02:50	14,242.55	55.63	4.71	0:09:50	13,783.85	107.69	2.43	0:16:50	9,566.79	149.48	1.75	0:23:50	6,983.04	218.22	1.20	0:30:50	166.25	166.25	1.59
0:02:55	14,231.85	55.59	4.71	0:09:55	13,658.54	106.71	2.46	0:16:55	9,795.38	153.05	1.71	0:23:55	7,114.33	222.32	1.18	0:30:55	241.64	241.64	1.07
0:03:00	13,834.23	54.04	4.84	0:10:00	13,270.73	103.68	2.52	0:17:00	9,673.38	151.15	1.73	0:24:00	7,109.97	222.19	1.18	0:31:00	268.75	268.75	0.98

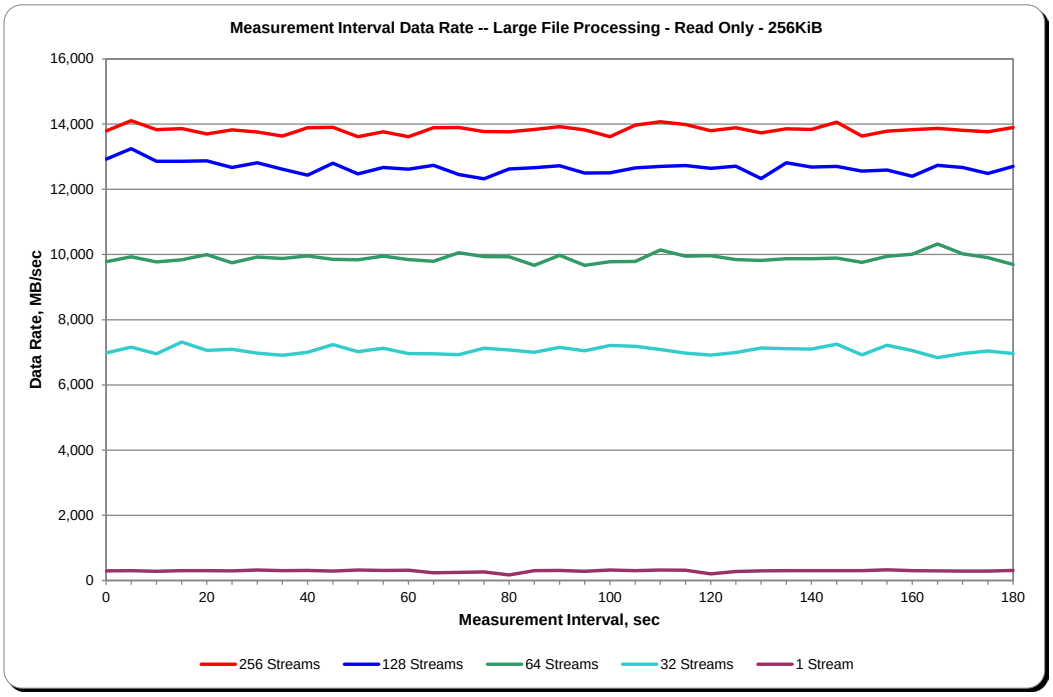
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR26	256 Streams			TR27	128 Streams			TR28	64 Streams			TR29	32 Streams			TR30	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	13,793.23	53.88	4.86	0:10:05	12,928.26	101.00	2.59	0:17:05	9,780.54	152.82	1.71	0:24:05	6,984.41	218.26	1.20	0:31:05	298.58	298.58	0.88
0:03:10	14,101.93	55.09	4.76	0:10:10	13,246.92	103.49	2.53	0:17:10	9,929.23	155.14	1.68	0:24:10	7,155.33	223.60	1.17	0:31:10	304.51	304.51	0.86
0:03:15	13,831.82	54.03	4.85	0:10:15	12,861.83	100.48	2.60	0:17:15	9,775.66	152.74	1.72	0:24:15	6,952.69	217.27	1.20	0:31:15	284.74	284.74	0.92
0:03:20	13,860.03	54.14	4.84	0:10:20	12,859.21	100.46	2.60	0:17:20	9,839.94	153.75	1.70	0:24:20	7,314.50	228.58	1.15	0:31:20	300.52	300.52	0.87
0:03:25	13,699.49	53.51	4.89	0:10:25	12,873.84	100.58	2.60	0:17:25	9,993.93	156.16	1.68	0:24:25	7,056.81	220.53	1.19	0:31:25	302.88	302.88	0.86
0:03:30	13,823.17	54.00	4.85	0:10:30	12,669.94	98.98	2.64	0:17:30	9,746.72	152.29	1.72	0:24:30	7,093.51	221.67	1.18	0:31:30	294.02	294.02	0.89
0:03:35	13,761.04	53.75	4.87	0:10:35	12,811.82	100.09	2.61	0:17:35	9,921.57	155.02	1.68	0:24:35	6,972.24	217.88	1.20	0:31:35	323.91	323.91	0.80
0:03:40	13,633.79	53.26	4.92	0:10:40	12,618.46	98.58	2.66	0:17:40	9,878.84	154.36	1.70	0:24:40	6,911.74	215.99	1.21	0:31:40	301.57	301.57	0.87
0:03:45	13,886.08	54.24	4.82	0:10:45	12,435.01	97.15	2.69	0:17:45	9,955.65	155.56	1.68	0:24:45	7,003.96	218.87	1.20	0:31:45	312.69	312.69	0.84
0:03:50	13,900.29	54.30	4.82	0:10:50	12,804.16	100.03	2.62	0:17:50	9,851.84	153.94	1.70	0:24:50	7,238.69	226.21	1.16	0:31:50	286.68	286.68	0.91
0:03:55	13,614.45	53.18	4.92	0:10:55	12,471.82	97.44	2.69	0:17:55	9,838.00	153.72	1.70	0:24:55	7,020.95	219.40	1.19	0:31:55	320.97	320.97	0.82
0:04:00	13,763.03	53.76	4.88	0:11:00	12,668.74	98.97	2.65	0:18:00	9,949.10	155.45	1.68	0:25:00	7,126.91	222.72	1.18	0:32:00	308.39	308.39	0.85
0:04:05	13,612.98	53.18	4.92	0:11:05	12,619.09	98.59	2.65	0:18:05	9,847.54	153.87	1.70	0:25:05	6,962.02	217.56	1.20	0:32:05	317.51	317.51	0.82
0:04:10	13,889.12	54.25	4.82	0:11:10	12,734.38	99.49	2.63	0:18:10	9,789.61	152.96	1.71	0:25:10	6,957.14	217.41	1.20	0:32:10	237.92	237.92	1.10
0:04:15	13,892.79	54.27	4.82	0:11:15	12,453.52	97.29	2.69	0:18:15	10,056.89	157.14	1.66	0:25:15	6,928.57	216.52	1.21	0:32:15	248.62	248.62	1.05
0:04:20	13,772.73	53.80	4.88	0:11:20	12,324.96	96.29	2.72	0:18:20	9,937.46	155.27	1.68	0:25:20	7,124.13	222.63	1.17	0:32:20	266.81	266.81	0.98
0:04:25	13,765.97	53.77	4.88	0:11:25	12,626.11	98.64	2.65	0:18:25	9,932.85	155.20	1.68	0:25:25	7,073.22	221.04	1.18	0:32:25	172.54	172.54	1.52
0:04:30	13,835.17	54.04	4.84	0:11:30	12,664.70	98.94	2.65	0:18:30	9,667.56	151.06	1.73	0:25:30	7,003.86	218.87	1.19	0:32:30	302.51	302.51	0.86
0:04:35	13,921.79	54.38	4.81	0:11:35	12,721.48	99.39	2.63	0:18:35	9,975.16	155.86	1.68	0:25:35	7,148.93	223.40	1.17	0:32:35	307.55	307.55	0.85
0:04:40	13,824.11	54.00	4.86	0:11:40	12,499.29	97.65	2.68	0:18:40	9,671.44	151.12	1.73	0:25:40	7,047.53	220.24	1.19	0:32:40	281.86	281.86	0.93
0:04:45	13,615.34	53.18	4.92	0:11:45	12,503.80	97.69	2.68	0:18:45	9,778.34	152.79	1.71	0:25:45	7,211.58	225.36	1.16	0:32:45	320.55	320.55	0.82
0:04:50	13,965.35	54.55	4.80	0:11:50	12,657.26	98.88	2.65	0:18:50	9,788.25	152.94	1.71	0:25:50	7,187.67	224.61	1.16	0:32:50	301.47	301.47	0.87
0:04:55	14,074.56	54.98	4.77	0:11:55	12,705.81	99.26	2.64	0:18:55	10,143.03	158.48	1.65	0:25:55	7,086.80	221.46	1.18	0:32:55	320.97	320.97	0.81
0:05:00	13,986.27	54.63	4.79	0:12:00	12,731.08	99.46	2.63	0:19:00	9,949.36	155.46	1.68	0:26:00	6,976.07	218.00	1.20	0:33:00	318.40	318.40	0.82
0:05:05	13,794.02	53.88	4.86	0:12:05	12,646.88	98.80	2.65	0:19:05	9,961.10	155.64	1.68	0:26:05	6,918.61	216.21	1.21	0:33:05	205.00	205.00	1.27
0:05:10	13,890.80	54.26	4.83	0:12:10	12,712.10	99.31	2.64	0:19:10	9,845.66	153.84	1.70	0:26:10	6,991.28	218.48	1.20	0:33:10	279.66	279.66	0.94
0:05:15	13,733.62	53.65	4.88	0:12:15	12,327.43	96.31	2.72	0:19:15	9,816.61	153.38	1.70	0:26:15	7,130.63	222.83	1.17	0:33:15	297.38	297.38	0.88
0:05:20	13,853.52	54.12	4.85	0:12:20	12,815.85	100.12	2.61	0:19:20	9,873.39	154.27	1.70	0:26:20	7,112.02	222.25	1.18	0:33:20	303.04	303.04	0.86
0:05:25	13,838.48	54.06	4.84	0:12:25	12,682.47	99.08	2.64	0:19:25	9,869.04	154.20	1.70	0:26:25	7,099.17	221.85	1.18	0:33:25	302.41	302.41	0.86
0:05:30	14,061.09	54.93	4.76	0:12:30	12,703.39	99.25	2.64	0:19:30	9,893.58	154.59	1.69	0:26:30	7,247.44	226.48	1.15	0:33:30	301.99	301.99	0.87
0:05:35	13,634.90	53.26	4.92	0:12:35	12,559.00	98.12	2.67	0:19:35	9,761.88	152.53	1.71	0:26:35	6,920.39	216.26	1.21	0:33:35	303.67	303.67	0.86
0:05:40	13,785.58	53.85	4.86	0:12:40	12,589.36	98.35	2.66	0:19:40	9,940.87	155.33	1.68	0:26:40	7,215.88	225.50	1.16	0:33:40	331.45	331.45	0.79
0:05:45	13,828.67	54.02	4.86	0:12:45	12,400.72	96.88	2.70	0:19:45	10,006.88	156.36	1.67	0:26:45	7,055.87	220.50	1.19	0:33:45	305.40	305.40	0.86
0:05:50	13,871.19	54.18	4.84	0:12:50	12,737.94	99.52	2.63	0:19:50	10,322.50	161.29	1.62	0:26:50	6,835.72	213.62	1.22	0:33:50	293.97	293.97	0.89
0:05:55	13,812.37	53.95	4.85	0:12:55	12,670.36	98.99	2.64	0:19:55	10,024.86	156.64	1.67	0:26:55	6,961.86	217.56	1.20	0:33:55	292.81	292.81	0.89
0:06:00	13,766.81	53.78	4.87	0:13:00	12,484.29	97.53	2.68	0:20:00	9,904.90	154.76	1.69	0:27:00	7,042.71	220.08	1.19	0:34:00	292.71	292.71	0.89
0:06:05	13,895.89	54.28	4.83	0:13:05	12,699.57	99.22	2.64	0:20:05	9,691.41	151.43	1.73	0:27:05	6,959.08	217.47	1.20	0:34:05	308.49	308.49	0.85
0:06:10	13,555.20	52.95	4.95	0:13:10	12,625.69	98.64	2.65	0:20:10	10,033.98	156.78	1.67	0:27:10	7,056.03	220.50	1.19	0:34:10	306.81	306.81	0.85
0:06:15	13,915.91	54.36	4.82	0:13:15	12,522.62	97.83	2.68	0:20:15	10,022.87	156.61	1.67	0:27:15	7,160.83	223.78	1.17	0:34:15	297.90	297.90	0.88
0:06:20	13,704.42	53.53	4.89	0:13:20	12,452.52	97.29	2.69	0:20:20	10,059.83	157.18	1.66	0:27:20	6,976.60	218.02	1.20	0:34:20	307.02	307.02	0.85
0:06:25	13,714.95	53.57	4.89	0:13:25	12,626.01	98.64	2.65	0:20:25	10,081.06	157.52	1.66	0:27:25	6,940.58	216.89	1.21	0:34:25	320.34	320.34	0.82
0:06:30	14,022.03	54.77	4.78	0:13:30	12,948.08	101.16	2.59	0:20:30	9,995.03	156.17	1.67	0:27:30	7,207.18	225.22	1.16	0:34:30	310.27	310.27	0.84
0:06:35	13,709.40	53.55	4.89	0:13:35	12,574.16	98.24	2.67	0:20:35	10,038.44	156.85	1.67	0:27:35	7,069.81	220.93	1.18	0:34:35	310.43	310.43	0.84
0:06:40	13,816.88	53.97	4.86	0:13:40	12,459.70	97.34	2.69	0:20:40	9,985.75	156.03	1.68	0:27:40	7,112.60	222.27	1.18	0:34:40	332.92	332.92	0.78
0:06:45	13,421.98	152.52	4.78	0:13:45	11,970.70	272.06	2.66	0:20:45	9,390.89	391.29	1.69	0:27:45	6,736.63	561.39	1.17	0:34:45	310.17	310.17	0.84
0:06:50	160.90	0.00	3.36	0:13:50	150.31	0.00	1.76	0:20:50	89.23	0.00	1.68	0:27:50	63.75	0.00	1.10	0:34:50	5.30	0.00	0.85
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

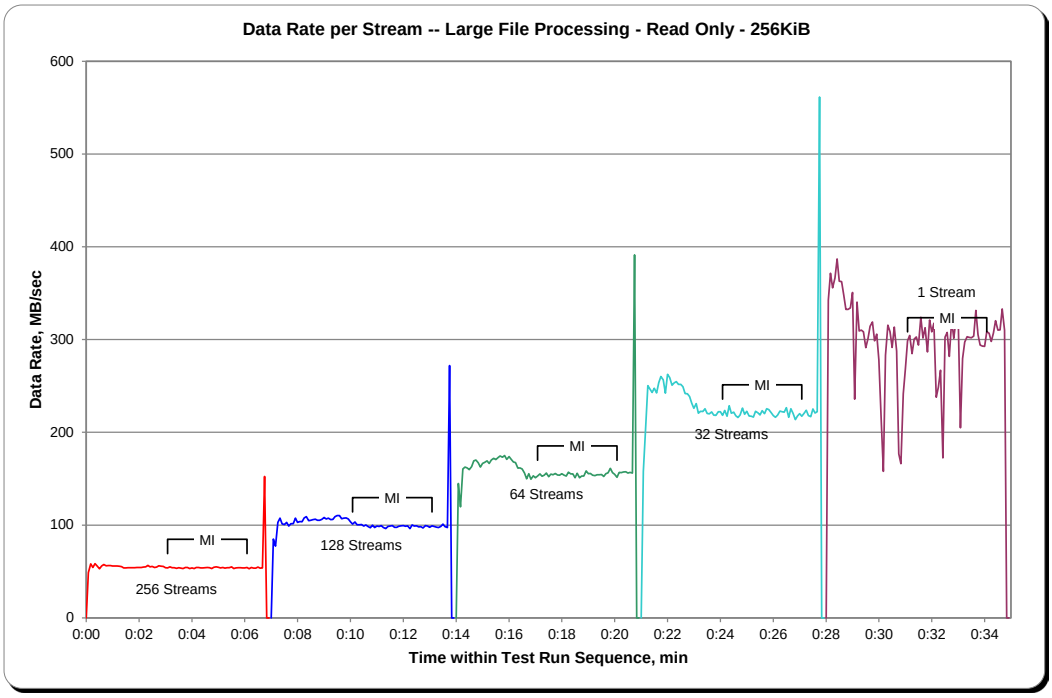
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



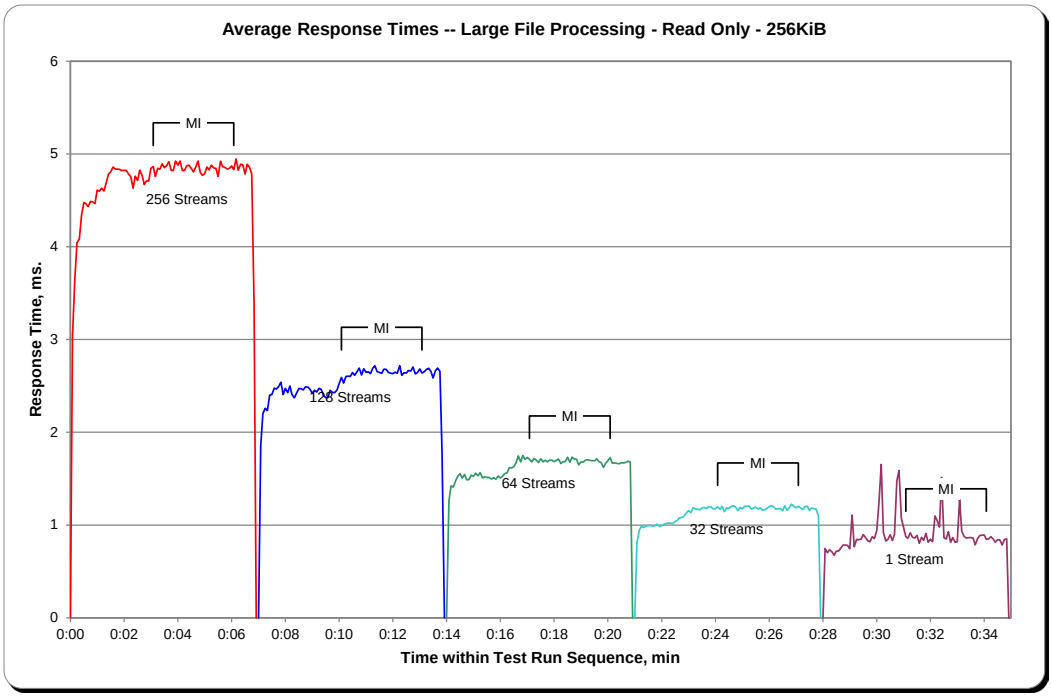
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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 131.

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.

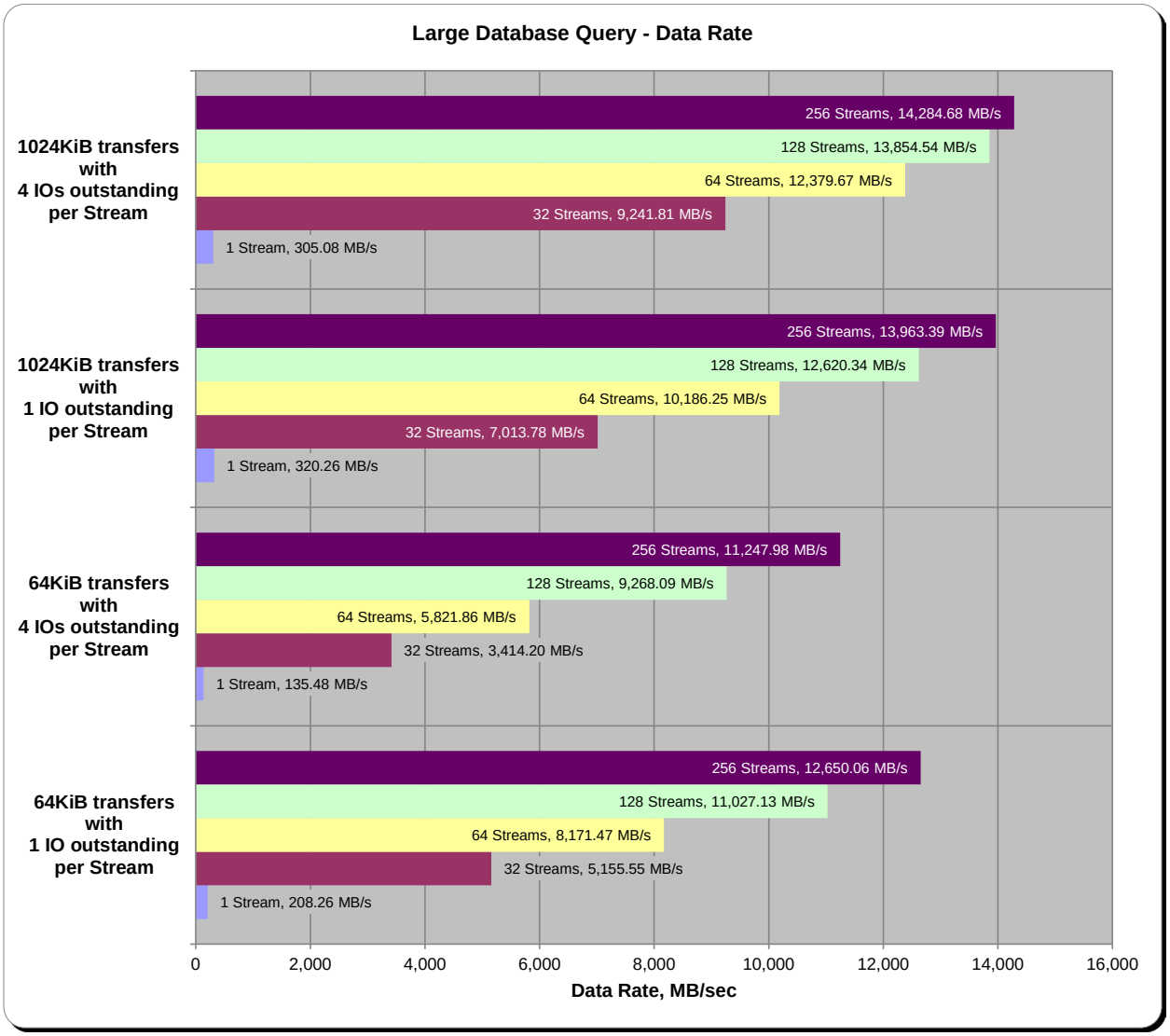
SPC-2 Large Database Query Test Results File

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	32 Streams	64 Streams	128 Streams	256 Streams
1024KiB w/ 4 IOs/Stream	305.08	9,241.81	12,379.67	13,854.54	14,284.68
1024KiB w/ 1 IO/Stream	320.26	7,013.78	10,186.25	12,620.34	13,963.39
64KiB w/ 4 IOs/Stream	135.48	3,414.20	5,821.86	9,268.09	11,247.98
64KiB w/ 1 IO/Stream	208.26	5,155.55	8,171.47	11,027.13	12,650.06

SPC-2 Large Database Query Average Data Rates Graph

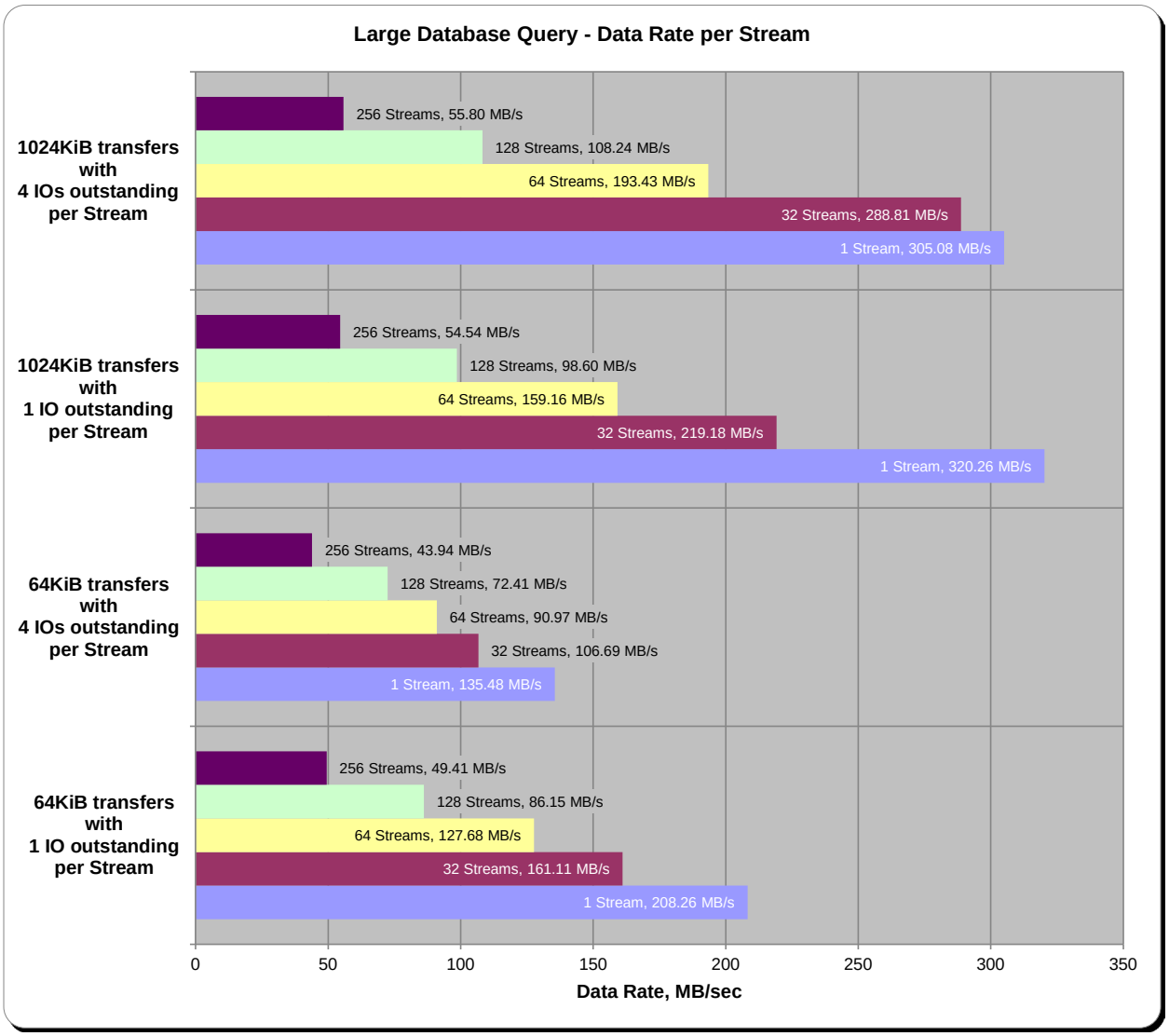


SPC-2 Large Database Query Average Data Rate per Stream

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	32 Streams	64 Streams	128 Streams	256 Streams
1024KiB w/ 4 IOs/Stream	305.08	288.81	193.43	108.24	55.80
1024KiB w/ 1 IO/Stream	320.26	219.18	159.16	98.60	54.54
64KiB w/ 4 IOs/Stream	135.48	106.69	90.97	72.41	43.94
64KiB w/ 1 IO/Stream	208.26	161.11	127.68	86.15	49.41

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

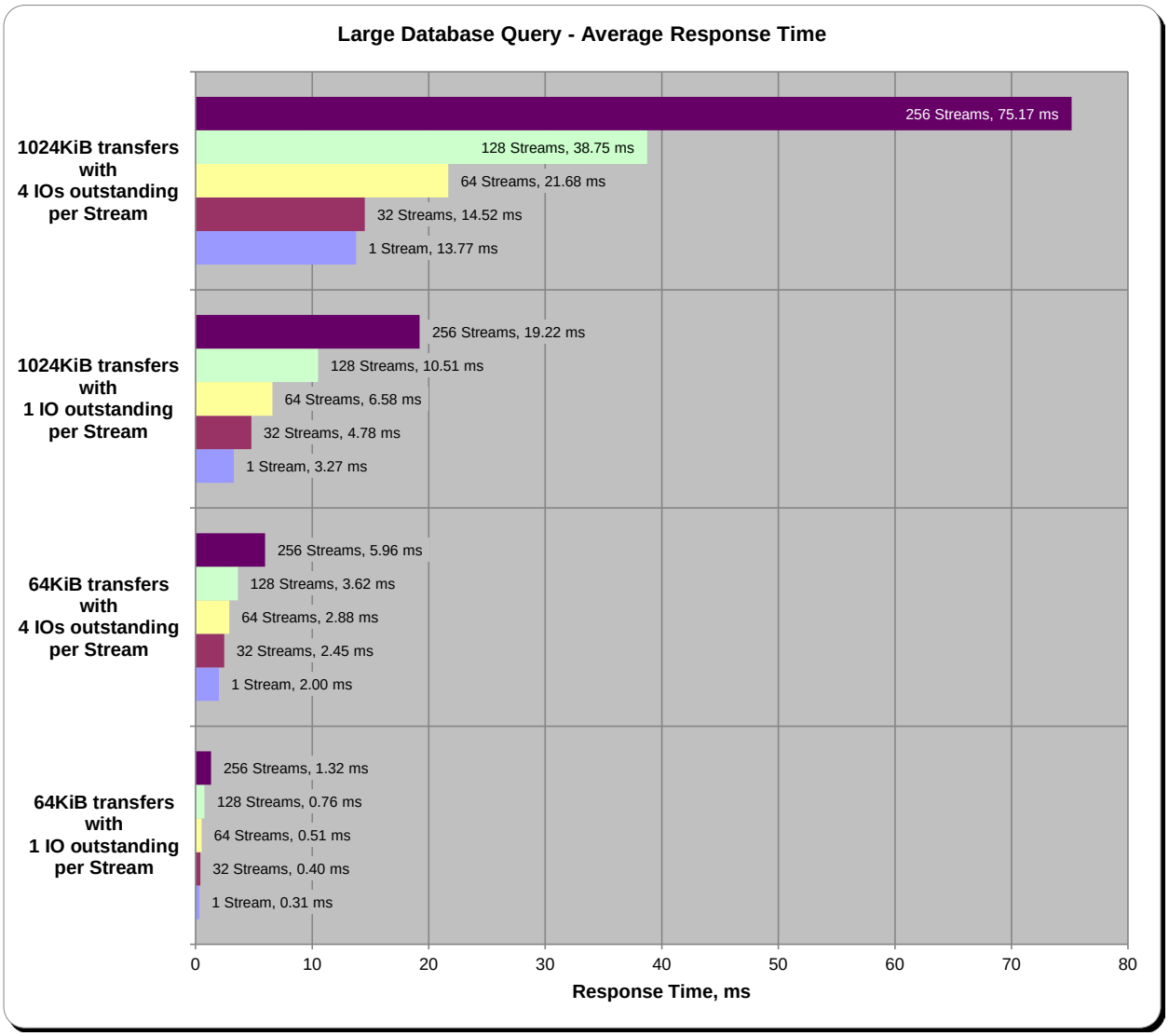


SPC-2 Large Database Query Average Response Time

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

Test Run Sequence	1 Stream	32 Streams	64 Streams	128 Streams	256 Streams
1024KiB w/ 4 IOs/Stream	13.77	14.52	21.68	38.75	75.17
1024KiB w/ 1 IO/Stream	3.27	4.78	6.58	10.51	19.22
64KiB w/ 4 IOs/Stream	2.00	2.45	2.88	3.62	5.96
64KiB w/ 1 IO/Stream	0.31	0.40	0.51	0.76	1.32

SPC-2 Large Database Query Average Response Time Graph



Large Database Query Test – 1024 KIB TRANSFER SIZE Test Phase

Clause 10.6.8.2.1

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

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

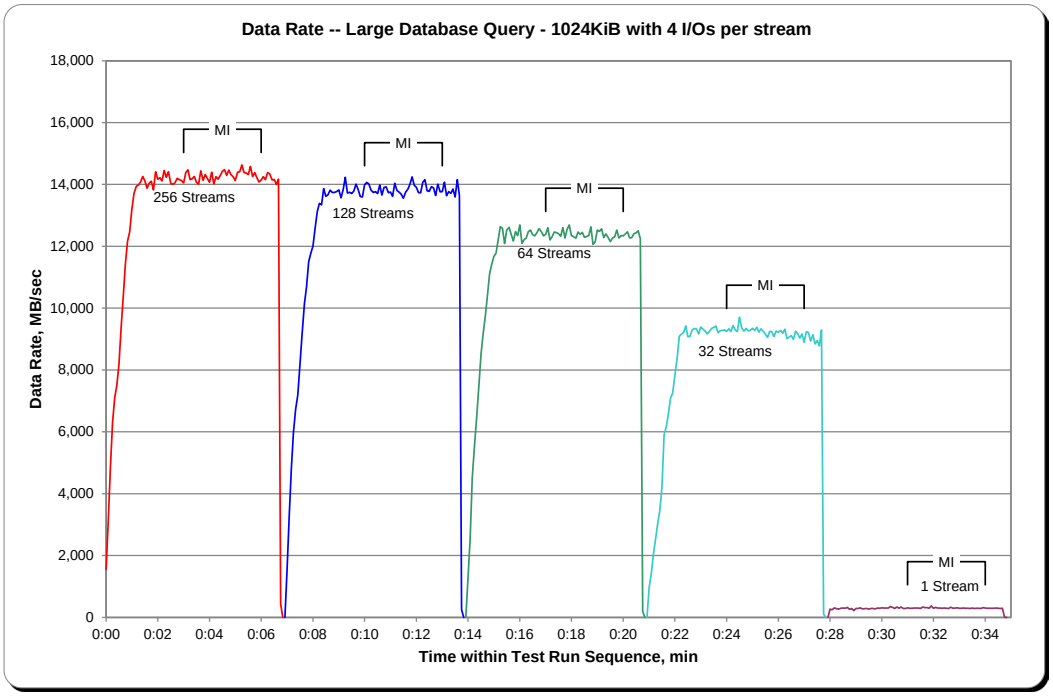
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR1	256 Streams			TR2	128 Streams			TR3	64 Streams			TR4	32 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	1,553.36	57.53	38.47	0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00
0:00:05	3,143.63	73.11	48.31	0:07:00	1,531.97	95.75	26.23	0:14:00	1,261.23	157.65	17.06	0:21:00	967.84	322.61	11.35	0:28:00	270.53	270.53	15.24
0:00:10	4,851.34	71.34	48.99	0:07:05	3,269.67	125.76	26.81	0:14:05	2,520.99	193.92	18.56	0:21:05	1,400.69	280.14	12.36	0:28:05	251.66	251.66	16.68
0:00:15	6,308.23	71.68	51.93	0:07:10	4,804.78	126.44	27.58	0:14:10	4,517.89	180.72	18.76	0:21:10	2,040.53	291.50	13.17	0:28:10	312.48	312.48	13.41
0:00:20	7,099.49	68.26	55.64	0:07:15	5,998.69	122.42	30.48	0:14:15	5,607.37	200.26	20.13	0:21:15	2,528.75	280.97	13.81	0:28:15	279.97	279.97	14.87
0:00:25	7,506.55	63.08	62.15	0:07:20	6,728.50	118.04	33.05	0:14:20	6,507.88	180.77	20.48	0:21:20	3,031.85	275.62	13.93	0:28:20	266.97	266.97	15.81
0:00:30	8,193.99	59.38	65.79	0:07:25	7,185.89	110.55	35.85	0:14:25	7,500.67	197.39	20.50	0:21:25	3,471.00	267.00	13.81	0:28:25	297.80	297.80	14.08
0:00:35	9,365.88	59.28	66.65	0:07:30	8,149.74	114.79	34.08	0:14:30	8,514.86	193.52	19.96	0:21:30	4,217.16	263.57	13.57	0:28:30	304.30	304.30	13.77
0:00:40	10,379.22	61.42	65.38	0:07:35	9,140.44	112.84	35.21	0:14:35	9,179.23	199.55	20.51	0:21:35	5,909.98	281.43	13.89	0:28:35	299.89	299.89	13.94
0:00:45	11,441.22	60.86	65.39	0:07:40	10,133.02	113.85	34.87	0:14:40	9,740.22	198.78	20.33	0:21:40	6,157.03	293.19	14.30	0:28:40	322.54	322.54	13.01
0:00:50	12,166.42	61.14	66.86	0:07:45	10,693.59	116.23	35.05	0:14:45	10,416.76	192.90	20.49	0:21:45	6,582.12	286.18	13.83	0:28:45	259.21	259.21	16.19
0:00:55	12,468.20	57.99	69.27	0:07:50	11,501.41	116.18	35.06	0:14:50	11,113.86	205.81	20.38	0:21:50	7,089.21	295.38	14.14	0:28:50	288.15	288.15	14.43
0:01:00	13,189.83	59.15	69.93	0:07:55	11,777.61	114.35	36.28	0:14:55	11,421.51	196.92	20.54	0:21:55	7,262.44	290.50	13.93	0:28:55	222.09	222.09	18.89
0:01:05	13,707.20	60.12	69.03	0:08:00	12,003.89	112.19	36.59	0:15:00	11,675.89	197.90	21.17	0:22:00	7,803.50	278.70	14.14	0:29:00	288.15	288.15	14.65
0:01:10	13,943.54	59.33	69.49	0:08:05	12,586.90	111.39	36.53	0:15:05	11,780.33	196.34	21.05	0:22:05	8,384.83	270.48	14.46	0:29:05	291.08	291.08	14.41
0:01:15	13,984.86	59.01	70.99	0:08:10	13,118.31	114.07	36.21	0:15:10	12,209.62	193.80	21.08	0:22:10	9,094.51	293.37	14.29	0:29:10	308.91	308.91	13.58
0:01:20	14,078.60	57.46	71.49	0:08:15	13,388.22	113.46	36.59	0:15:15	12,638.49	197.48	21.18	0:22:15	9,163.72	295.60	14.18	0:29:15	274.31	274.31	15.27
0:01:25	14,256.65	55.69	73.54	0:08:20	13,339.98	109.34	37.76	0:15:20	12,582.70	196.60	21.33	0:22:20	9,210.27	297.11	14.13	0:29:20	286.26	286.26	14.65
0:01:30	14,112.57	55.13	75.76	0:08:25	13,863.64	108.31	38.13	0:15:25	12,089.45	188.90	22.20	0:22:25	9,423.34	294.48	14.11	0:29:25	289.83	289.83	14.44
0:01:35	13,875.81	54.20	77.37	0:08:30	13,618.49	106.39	39.44	0:15:30	12,526.71	195.73	21.42	0:22:30	9,075.63	283.61	14.77	0:29:30	269.06	269.06	15.59
0:01:40	14,037.29	54.83	76.30	0:08:35	13,666.93	106.77	39.26	0:15:35	12,613.32	197.08	21.27	0:22:35	9,082.98	283.84	14.77	0:29:35	292.55	292.55	14.34
0:01:45	14,104.19	55.09	76.40	0:08:40	13,814.99	107.93	38.89	0:15:40	12,382.42	193.48	21.68	0:22:40	9,299.61	290.61	14.43	0:29:40	288.15	288.15	14.56
0:01:50	13,826.52	54.01	77.79	0:08:45	13,744.11	107.38	39.05	0:15:45	12,173.13	190.21	22.04	0:22:45	9,342.81	291.96	14.36	0:29:45	277.03	277.03	15.13
0:01:55	14,409.32	56.29	74.33	0:08:50	13,738.86	107.33	39.05	0:15:50	12,477.43	194.96	21.50	0:22:50	9,330.44	291.58	14.38	0:29:50	301.78	301.78	13.89
0:02:00	14,171.09	55.36	75.57	0:08:55	13,766.75	107.55	38.96	0:15:55	12,343.00	192.86	21.74	0:22:55	9,168.12	286.50	14.63	0:29:55	293.81	293.81	14.27
0:02:05	14,220.37	55.55	75.61	0:09:00	13,825.68	108.01	38.84	0:16:00	12,687.56	198.24	21.14	0:23:00	9,388.11	293.38	14.30	0:30:00	308.07	308.07	13.59
0:02:10	14,114.04	55.13	76.23	0:09:05	13,570.67	106.02	39.56	0:16:05	12,095.74	189.00	22.18	0:23:05	9,329.18	291.54	14.37	0:30:05	304.51	304.51	13.78
0:02:15	14,449.80	56.44	74.28	0:09:10	13,828.41	108.03	38.73	0:16:10	12,216.12	190.88	21.98	0:23:10	9,266.06	289.56	14.48	0:30:10	303.25	303.25	13.81
0:02:20	14,230.22	55.59	75.52	0:09:15	14,232.11	111.19	37.76	0:16:15	12,267.29	191.68	21.87	0:23:15	9,167.91	286.50	14.63	0:30:15	301.99	301.99	13.88
0:02:25	14,413.73	56.30	74.46	0:09:20	13,721.67	107.20	39.11	0:16:20	12,478.05	194.97	21.49	0:23:20	9,245.50	288.92	14.51	0:30:20	352.32	352.32	11.90
0:02:30	14,033.93	54.82	76.19	0:09:25	13,749.35	107.42	39.07	0:16:25	12,521.68	195.65	21.44	0:23:25	9,347.64	292.11	14.36	0:30:25	324.01	324.01	12.93
0:02:35	14,003.10	54.70	76.69	0:09:30	13,707.20	107.09	39.11	0:16:30	12,374.04	193.34	21.68	0:23:30	9,372.38	292.89	14.30	0:30:30	288.99	288.99	14.53
0:02:40	14,058.26	54.92	76.51	0:09:35	13,788.98	107.73	38.95	0:16:35	12,338.59	192.79	21.75	0:23:35	9,426.28	294.57	14.23	0:30:35	340.37	340.37	12.31
0:02:45	14,198.98	55.46	75.86	0:09:40	14,009.19	109.45	38.33	0:16:40	12,441.56	194.40	21.58	0:23:40	9,209.43	287.79	14.57	0:30:40	293.81	293.81	14.27
0:02:50	14,156.41	55.30	75.55	0:09:45	13,839.11	108.12	38.74	0:16:45	12,570.75	196.42	21.34	0:23:45	9,268.15	289.63	14.46	0:30:45	339.11	339.11	12.35
0:02:55	14,128.72	55.19	75.97	0:09:50	13,611.36	106.34	39.42	0:16:50	12,470.71	194.85	21.52	0:23:50	9,277.17	289.91	14.46	0:30:50	292.34	292.34	14.33
				0:09:55	13,592.69	106.19	39.58	0:16:55	12,339.43	192.80	21.74	0:23:55	9,296.67	290.52	14.43	0:30:55	288.99	288.99	14.50

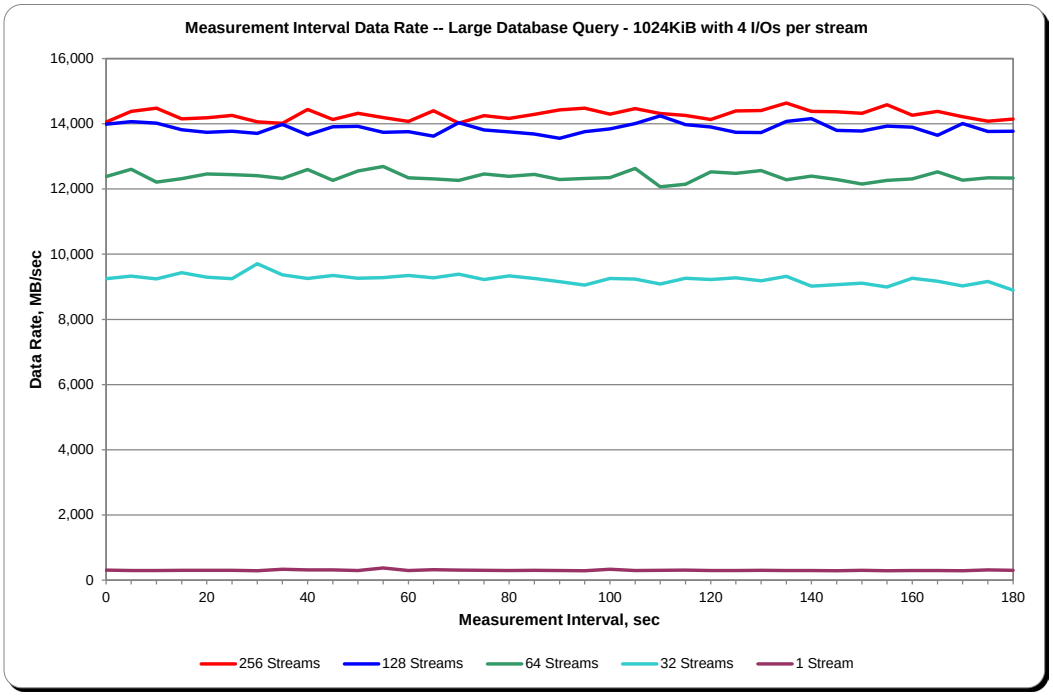
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	256 Streams			TR2	128 Streams			TR3	64 Streams			TR4	32 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	14,051.55	54.89	76.35	0:10:00	13,986.33	109.27	38.33	0:17:00	12,384.73	193.51	21.67	0:24:00	9,249.70	289.05	14.51	0:31:00	310.80	310.80	13.49
0:03:05	14,381.64	56.18	74.72	0:10:05	14,067.28	109.90	38.19	0:17:05	12,602.42	196.91	21.30	0:24:05	9,330.65	291.58	14.37	0:31:05	296.33	296.33	14.15
0:03:10	14,476.01	56.55	74.31	0:10:10	14,019.88	109.53	38.29	0:17:10	12,209.62	190.78	21.99	0:24:10	9,244.46	288.89	14.51	0:31:10	298.01	298.01	14.07
0:03:15	14,153.47	55.29	75.85	0:10:15	13,814.36	107.92	38.84	0:17:15	12,313.22	192.39	21.79	0:24:15	9,435.51	294.86	14.22	0:31:15	300.94	300.94	13.93
0:03:20	14,180.94	55.39	75.65	0:10:20	13,739.07	107.34	39.09	0:17:20	12,460.86	194.70	21.53	0:24:20	9,297.30	290.54	14.44	0:31:20	300.94	300.94	13.92
0:03:25	14,258.54	55.70	75.18	0:10:25	13,768.22	107.56	38.97	0:17:25	12,442.61	194.42	21.57	0:24:25	9,246.34	288.95	14.50	0:31:25	301.36	301.36	13.89
0:03:30	14,062.24	54.93	76.36	0:10:30	13,708.03	107.09	39.17	0:17:30	12,409.48	193.90	21.63	0:24:30	9,707.93	303.37	13.82	0:31:30	290.46	290.46	14.46
0:03:35	14,010.86	54.73	76.81	0:10:35	13,981.50	109.23	38.38	0:17:35	12,324.96	192.58	21.76	0:24:35	9,367.77	292.74	14.32	0:31:35	337.01	337.01	12.44
0:03:40	14,440.36	56.41	74.51	0:10:40	13,660.85	106.73	39.26	0:17:40	12,599.27	196.86	21.30	0:24:40	9,254.73	289.21	14.49	0:31:40	317.09	317.09	13.23
0:03:45	14,134.18	55.21	75.49	0:10:45	13,906.63	108.65	38.61	0:17:45	12,266.45	191.66	21.88	0:24:45	9,346.80	292.09	14.35	0:31:45	317.30	317.30	13.20
0:03:50	14,324.18	55.95	75.18	0:10:50	13,922.57	108.77	38.58	0:17:50	12,554.18	196.16	21.37	0:24:50	9,264.59	289.52	14.48	0:31:50	297.38	297.38	14.11
0:03:55	14,190.59	55.43	75.51	0:10:55	13,737.18	107.32	39.04	0:17:55	12,690.29	198.29	21.14	0:24:55	9,282.62	290.08	14.45	0:31:55	372.45	372.45	11.24
0:04:00	14,070.63	54.96	76.49	0:11:00	13,755.64	107.47	39.05	0:18:00	12,343.84	192.87	21.74	0:25:00	9,348.89	292.15	14.35	0:32:00	294.23	294.23	14.25
0:04:05	14,399.05	56.25	74.65	0:11:05	13,619.53	106.40	39.40	0:18:05	12,309.65	192.34	21.80	0:25:05	9,274.44	289.83	14.46	0:32:05	324.85	324.85	12.91
0:04:10	14,017.78	54.76	76.40	0:11:10	14,034.56	109.65	38.25	0:18:10	12,262.26	191.60	21.87	0:25:10	9,384.76	293.27	14.30	0:32:10	306.39	306.39	13.66
0:04:15	14,248.68	55.66	75.28	0:11:15	13,811.00	107.90	38.88	0:18:15	12,460.02	194.69	21.54	0:25:15	9,220.34	288.14	14.54	0:32:15	304.93	304.93	13.76
0:04:20	14,166.68	55.34	75.65	0:11:20	13,753.75	107.45	39.03	0:18:20	12,386.62	193.54	21.67	0:25:20	9,332.54	291.64	14.38	0:32:20	299.47	299.47	14.00
0:04:25	14,288.95	55.82	75.22	0:11:25	13,683.29	106.90	39.22	0:18:25	12,446.60	194.48	21.55	0:25:25	9,255.15	289.22	14.49	0:32:25	302.62	302.62	13.86
0:04:30	14,423.16	56.34	74.80	0:11:30	13,553.05	105.88	39.56	0:18:30	12,287.84	192.00	21.85	0:25:30	9,158.47	286.20	14.65	0:32:30	298.22	298.22	14.05
0:04:35	14,478.32	56.56	74.05	0:11:35	13,756.69	107.47	39.05	0:18:35	12,320.56	192.51	21.78	0:25:35	9,055.08	282.97	14.81	0:32:35	291.50	291.50	14.39
0:04:40	14,296.91	55.85	74.94	0:11:40	13,845.40	108.17	38.78	0:18:40	12,348.66	192.95	21.73	0:25:40	9,252.63	289.14	14.50	0:32:40	332.82	332.82	12.59
0:04:45	14,468.25	56.52	74.04	0:11:45	14,007.09	109.43	38.31	0:18:45	12,629.26	197.33	21.25	0:25:45	9,234.81	288.59	14.53	0:32:45	296.12	296.12	14.17
0:04:50	14,312.43	55.91	75.22	0:11:50	14,245.32	111.29	37.70	0:18:50	12,064.50	188.51	22.24	0:25:50	9,083.39	283.86	14.77	0:32:50	300.94	300.94	13.91
0:04:55	14,253.50	55.68	75.37	0:11:55	13,975.21	109.18	38.41	0:18:55	12,144.61	189.76	22.10	0:25:55	9,259.14	289.35	14.48	0:32:55	309.54	309.54	13.55
0:05:00	14,128.93	55.19	76.06	0:12:00	13,903.49	108.62	38.61	0:19:00	12,523.98	195.69	21.42	0:26:00	9,222.02	288.19	14.55	0:33:00	294.44	294.44	14.22
0:05:05	14,394.85	56.23	74.33	0:12:05	13,736.76	107.32	39.08	0:19:05	12,482.46	195.04	21.49	0:26:05	9,277.80	289.93	14.45	0:33:05	299.47	299.47	14.01
0:05:10	14,409.53	56.29	74.51	0:12:10	13,732.15	107.28	39.08	0:19:10	12,564.67	196.32	21.36	0:26:10	9,185.74	287.05	14.61	0:33:10	305.97	305.97	13.70
0:05:15	14,633.30	57.16	73.42	0:12:15	14,070.63	109.93	38.11	0:19:15	12,283.23	191.93	21.85	0:26:15	9,321.00	291.28	14.38	0:33:15	298.84	298.84	14.02
0:05:20	14,382.90	56.18	74.75	0:12:20	14,154.52	110.58	37.92	0:19:20	12,397.73	193.71	21.62	0:26:20	9,018.38	281.82	14.87	0:33:20	299.68	299.68	14.01
0:05:25	14,368.43	56.13	74.92	0:12:25	13,795.07	107.77	38.92	0:19:25	12,290.99	192.05	21.85	0:26:25	9,065.57	283.30	14.80	0:33:25	288.57	288.57	14.53
0:05:30	14,319.35	55.93	74.70	0:12:30	13,777.87	107.64	38.99	0:19:30	12,154.67	189.92	22.07	0:26:30	9,109.82	284.68	14.72	0:33:30	301.15	301.15	13.89
0:05:35	14,584.01	56.97	73.58	0:12:35	13,927.40	108.81	38.51	0:19:35	12,266.66	191.67	21.87	0:26:35	8,991.75	280.99	14.93	0:33:35	292.97	292.97	14.32
0:05:40	14,260.84	55.71	75.32	0:12:40	13,894.47	108.55	38.61	0:19:40	12,306.93	192.30	21.80	0:26:40	9,260.60	289.39	14.49	0:33:40	296.54	296.54	14.16
0:05:45	14,381.43	56.18	74.62	0:12:45	13,647.01	106.62	39.34	0:19:45	12,523.14	195.67	21.45	0:26:45	9,172.10	286.63	14.62	0:33:45	297.59	297.59	14.08
0:05:50	14,216.17	55.53	75.70	0:12:50	14,010.02	109.45	38.34	0:19:50	12,268.34	191.69	21.85	0:26:50	9,026.35	282.07	14.86	0:33:50	291.50	291.50	14.39
0:05:55	14,079.65	55.00	76.19	0:12:55	13,761.51	107.51	38.98	0:19:55	12,343.00	192.86	21.74	0:26:55	9,165.81	286.43	14.62	0:33:55	314.36	314.36	13.32
0:06:00	14,141.93	55.24	75.82	0:13:00	13,769.06	107.57	38.94	0:20:00	12,335.03	192.73	21.77	0:27:00	8,894.65	277.96	15.10	0:34:00	305.56	305.56	13.73
0:06:05	14,253.29	55.68	75.13	0:13:05	14,073.78	109.95	38.22	0:20:05	12,403.19	193.80	21.63	0:27:05	9,233.13	288.54	14.53	0:34:05	293.81	293.81	14.27
0:06:10	14,158.29	55.31	76.09	0:13:10	13,638.62	106.55	39.29	0:20:10	12,472.81	194.89	21.51	0:27:10	9,215.10	287.97	14.55	0:34:10	293.39	293.39	14.28
0:06:15	14,383.95	56.19	74.68	0:13:15	13,769.27	107.57	39.05	0:20:15	12,266.45	191.66	21.88	0:27:15	8,938.69	279.33	14.99	0:34:15	299.89	299.89	13.99
0:06:20	14,339.07	56.01	74.88	0:13:20	13,716.21	107.16	39.08	0:20:20	12,282.60	191.92	21.84	0:27:20	9,139.60	285.61	14.68	0:34:20	295.49	295.49	14.18
0:06:25	14,145.92	55.26	75.64	0:13:25	13,851.69	108.22	38.79	0:20:25	12,405.49	193.84	21.62	0:27:25	8,844.11	276.38	15.17	0:34:25	306.39	306.39	13.68
0:06:30	14,162.91	55.32	75.90	0:13:30	13,593.95	106.20	39.45	0:20:30	12,433.18	194.27	21.59	0:27:30	8,954.21	279.82	14.98	0:34:30	297.80	297.80	14.07
0:06:35	14,001.22	54.69	76.70	0:13:35	14,155.36	110.59	37.96	0:20:35	12,503.85	195.37	21.45	0:27:35	8,779.73	274.37	15.28	0:34:35	292.76	292.76	14.32
0:06:40	14,171.29	55.36	75.97	0:13:40	13,643.02	106.59	39.29	0:20:40	12,238.56	191.23	21.93	0:27:40	9,290.17	357.31	14.42	0:34:40	296.96	296.96	14.13
0:06:45	444.60	0.00	106.17	0:13:45	256.06	0.00	51.39	0:20:45	196.29	0.00	20.26	0:27:45	104.86	0.00	16.68	0:34:45	4.61	0.00	14.98
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

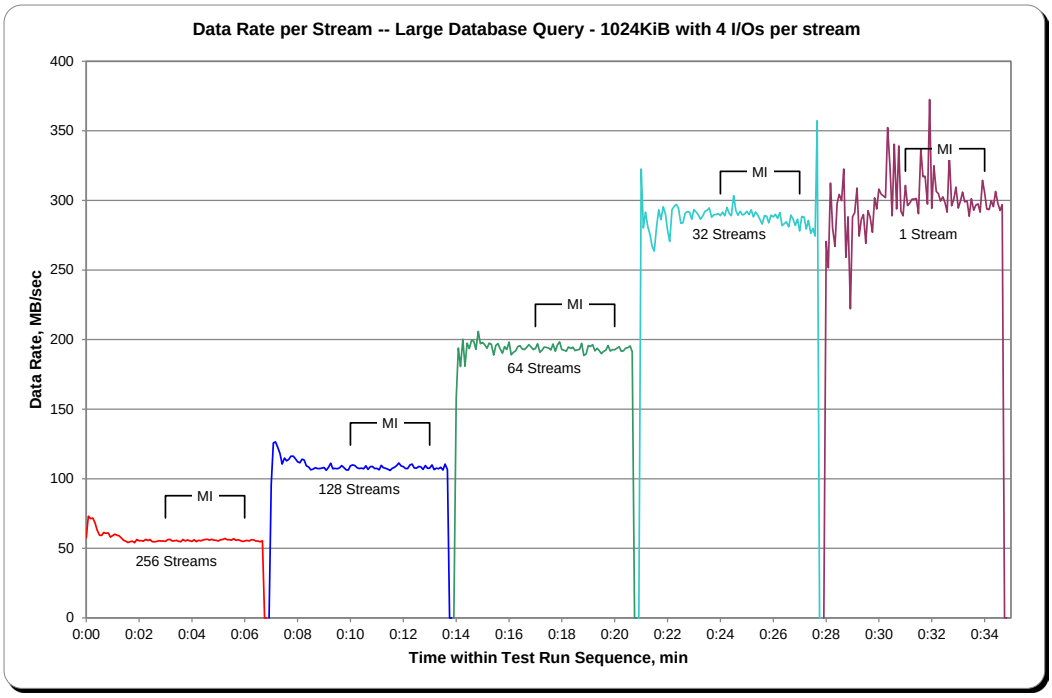
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



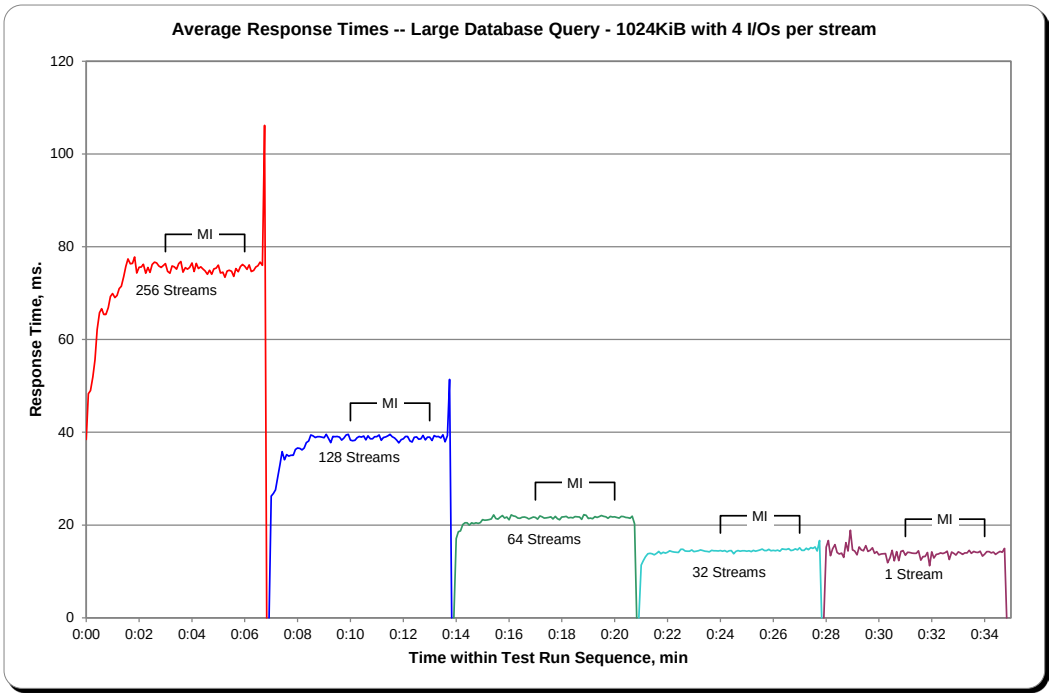
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



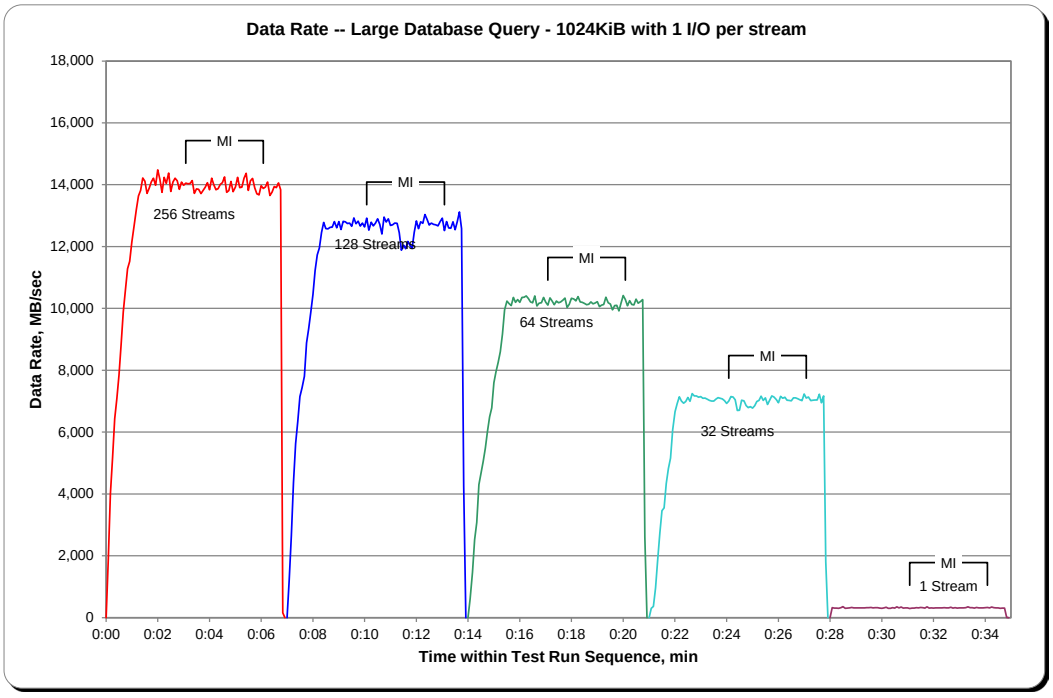
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR6	256 Streams			TR7	128 Streams			TR8	64 Streams			TR9	32 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	1,879.89	42.72	13.45	0:07:05	1,215.30	81.02	8.57	0:14:05	609.22	121.84	5.46	0:21:05	304.72	304.72	3.39	0:28:05	323.17	323.17	3.19
0:00:10	4,013.32	61.74	14.19	0:07:10	2,648.28	88.28	8.41	0:14:10	1,465.91	133.26	5.63	0:21:10	365.32	182.66	3.77	0:28:10	309.33	309.33	3.39
0:00:15	5,169.27	60.81	15.17	0:07:15	4,372.77	93.04	8.83	0:14:15	2,522.66	157.67	5.86	0:21:15	956.93	136.70	4.19	0:28:15	310.80	310.80	3.37
0:00:20	6,430.29	61.24	15.45	0:07:20	5,630.43	102.37	9.52	0:14:20	3,081.56	128.40	6.13	0:21:20	1,874.02	208.22	4.39	0:28:20	301.36	301.36	3.47
0:00:25	7,080.19	58.51	16.79	0:07:25	6,343.05	96.11	9.88	0:14:25	4,300.84	159.29	6.21	0:21:25	2,729.02	194.93	4.63	0:28:25	321.91	321.91	3.25
0:00:30	7,837.69	57.21	17.24	0:07:30	7,147.72	103.59	9.95	0:14:30	4,676.44	167.02	6.23	0:21:30	3,461.56	216.35	4.53	0:28:30	360.50	360.50	2.90
0:00:35	8,833.83	58.50	17.16	0:07:35	7,436.08	103.28	9.93	0:14:35	5,048.05	157.75	6.16	0:21:35	3,550.69	197.26	4.74	0:28:35	303.88	303.88	3.44
0:00:40	9,886.81	58.85	16.88	0:07:40	7,808.12	97.60	10.11	0:14:40	5,477.76	161.11	6.29	0:21:40	4,339.22	216.96	4.57	0:28:40	312.27	312.27	3.35
0:00:45	10,592.51	58.85	17.13	0:07:45	8,885.42	102.13	9.81	0:14:45	6,022.60	154.43	6.35	0:21:45	4,820.72	219.12	4.54	0:28:45	314.99	314.99	3.32
0:00:50	11,279.74	59.68	17.26	0:07:50	9,343.86	102.68	9.89	0:14:50	6,496.35	158.45	6.40	0:21:50	5,163.40	215.14	4.51	0:28:50	328.62	328.62	3.18
0:00:55	11,520.29	58.18	17.52	0:07:55	9,887.86	100.90	9.98	0:14:55	6,785.34	161.56	6.42	0:21:55	6,074.40	216.94	4.54	0:28:55	318.35	318.35	3.29
0:01:00	12,147.96	58.97	17.37	0:08:00	10,455.14	100.53	10.22	0:15:00	7,596.93	161.64	6.19	0:22:00	6,658.46	221.95	4.63	0:29:00	315.20	315.20	3.32
0:01:05	12,691.33	57.95	17.45	0:08:05	11,227.94	103.01	9.89	0:15:05	7,959.53	159.19	6.52	0:22:05	6,920.81	223.25	4.59	0:29:05	316.88	316.88	3.30
0:01:10	13,198.43	58.66	17.57	0:08:10	11,728.53	103.79	9.97	0:15:10	8,256.28	161.89	6.40	0:22:10	7,143.95	230.45	4.54	0:29:10	317.30	317.30	3.30
0:01:15	13,637.57	58.53	17.63	0:08:15	11,956.07	102.19	10.05	0:15:15	8,601.68	162.30	6.30	0:22:15	7,003.02	225.90	4.64	0:29:15	319.82	319.82	3.27
0:01:20	13,819.18	56.87	17.98	0:08:20	12,459.18	103.83	9.92	0:15:20	9,164.34	152.74	6.45	0:22:20	6,935.49	223.73	4.68	0:29:20	320.03	320.03	3.26
0:01:25	14,216.38	56.64	18.20	0:08:25	12,782.77	102.26	10.05	0:15:25	9,956.44	158.04	6.50	0:22:25	6,989.81	218.43	4.72	0:29:25	326.95	326.95	3.21
0:01:30	14,114.04	55.13	18.84	0:08:30	12,582.28	98.30	10.59	0:15:30	10,240.39	160.01	6.52	0:22:30	7,123.82	222.62	4.71	0:29:30	325.69	325.69	3.21
0:01:35	13,719.78	53.59	19.56	0:08:35	12,573.06	98.23	10.68	0:15:35	10,157.98	158.72	6.60	0:22:35	6,997.15	218.66	4.79	0:29:35	330.72	330.72	3.16
0:01:40	13,886.92	54.25	19.35	0:08:40	12,621.29	98.60	10.62	0:15:40	10,094.43	157.73	6.64	0:22:40	7,243.35	226.35	4.62	0:29:40	315.41	315.41	3.32
0:01:45	14,092.02	55.05	19.05	0:08:45	12,625.27	98.63	10.63	0:15:45	10,357.41	161.83	6.47	0:22:45	7,171.21	224.10	4.68	0:29:45	322.33	322.33	3.24
0:01:50	14,207.79	55.50	18.86	0:08:50	12,810.45	100.08	10.47	0:15:50	10,199.50	159.37	6.58	0:22:50	7,173.52	224.17	4.67	0:29:50	323.38	323.38	3.24
0:01:55	13,980.24	54.61	19.17	0:08:55	12,607.45	98.50	10.64	0:15:55	10,286.95	160.73	6.51	0:22:55	7,132.20	222.88	4.70	0:29:55	312.90	312.90	3.34
0:02:00	14,477.48	56.55	18.56	0:09:00	12,809.40	100.07	10.47	0:16:00	10,194.26	159.29	6.58	0:23:00	7,147.30	223.35	4.69	0:30:00	301.78	301.78	3.47
0:02:05	14,178.84	55.39	18.94	0:09:05	12,554.39	98.08	10.68	0:16:05	10,354.06	161.78	6.47	0:23:05	7,092.57	221.64	4.72	0:30:05	320.65	320.65	3.27
0:02:10	13,752.91	53.72	19.51	0:09:10	12,811.92	100.09	10.47	0:16:10	10,360.14	161.88	6.47	0:23:10	7,103.26	221.98	4.72	0:30:10	337.22	337.22	3.10
0:02:15	14,236.73	55.61	18.83	0:09:15	12,801.02	100.01	10.48	0:16:15	10,403.13	162.55	6.45	0:23:15	7,065.72	220.80	4.74	0:30:15	301.57	301.57	3.47
0:02:20	14,045.68	54.87	19.10	0:09:20	12,744.18	99.56	10.52	0:16:20	10,319.25	161.24	6.49	0:23:20	7,025.25	219.54	4.77	0:30:20	304.30	304.30	3.43
0:02:25	14,374.72	56.15	18.67	0:09:25	12,760.12	99.69	10.51	0:16:25	10,209.57	159.52	6.57	0:23:25	7,001.55	218.80	4.79	0:30:25	321.91	321.91	3.25
0:02:30	13,784.16	53.84	19.49	0:09:30	12,655.05	98.87	10.61	0:16:30	10,182.93	159.11	6.59	0:23:30	7,004.07	218.88	4.78	0:30:30	307.86	307.86	3.40
0:02:35	14,088.88	55.03	19.06	0:09:35	12,922.23	100.95	10.38	0:16:35	10,403.34	162.55	6.44	0:23:35	7,069.71	220.93	4.74	0:30:35	350.43	350.43	2.99
0:02:40	14,210.30	55.51	18.86	0:09:40	12,735.79	99.50	10.53	0:16:40	10,080.59	157.51	6.65	0:23:40	7,116.27	222.38	4.71	0:30:40	317.72	317.72	3.29
0:02:45	14,128.72	55.19	18.96	0:09:45	12,824.71	100.19	10.46	0:16:45	10,166.36	158.85	6.60	0:23:45	7,096.97	221.78	4.72	0:30:45	345.82	345.82	3.03
0:02:50	13,853.58	54.12	19.39	0:09:50	12,665.54	98.95	10.60	0:16:50	10,186.08	159.16	6.58	0:23:50	7,071.60	220.99	4.74	0:30:50	310.59	310.59	3.37
0:02:55	14,086.99	55.03	19.08	0:09:55	12,759.28	99.68	10.51	0:16:55	10,356.37	161.82	6.47	0:23:55	7,019.59	219.36	4.77	0:30:55	318.35	318.35	3.29
0:03:00	13,982.34	54.62	19.15	0:10:00	12,632.20	98.69	10.56	0:17:00	10,203.90	159.44	6.57	0:24:00	6,931.72	216.62	4.83	0:31:00	317.51	317.51	3.30

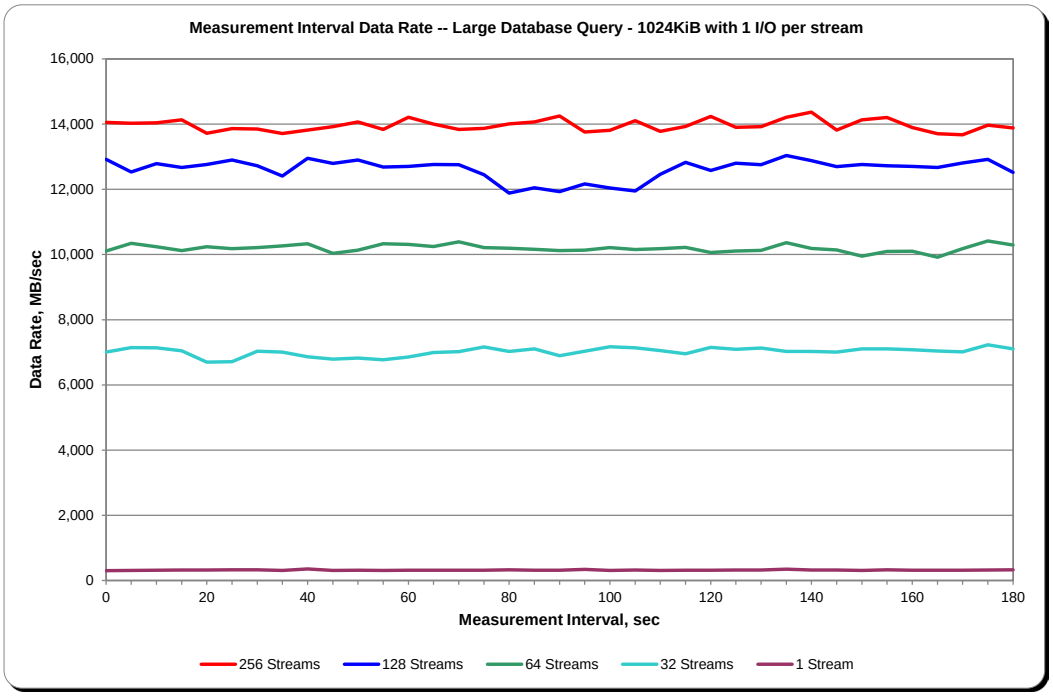
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	256 Streams			TR7	128 Streams			TR8	64 Streams			TR9	32 Streams			TR10	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	14,049.45	54.88	19.15	0:10:05	12,918.25	100.92	10.43	0:17:05	10,105.97	157.91	6.63	0:24:05	7,008.26	219.01	4.78	0:31:05	300.10	300.10	3.49
0:03:10	14,028.27	54.80	19.09	0:10:10	12,530.48	97.89	10.71	0:17:10	10,343.36	161.62	6.48	0:24:10	7,146.88	223.34	4.69	0:31:10	312.48	312.48	3.35
0:03:15	14,038.13	54.84	19.11	0:10:15	12,786.96	99.90	10.49	0:17:15	10,237.67	159.96	6.55	0:24:15	7,138.92	223.09	4.68	0:31:15	313.10	313.10	3.35
0:03:20	14,131.24	55.20	19.03	0:10:20	12,672.67	99.01	10.58	0:17:20	10,122.74	158.17	6.62	0:24:20	7,047.06	220.22	4.77	0:31:20	325.69	325.69	3.21
0:03:25	13,718.94	53.59	19.53	0:10:25	12,761.59	99.70	10.52	0:17:25	10,237.25	159.96	6.55	0:24:25	6,702.50	209.45	4.94	0:31:25	320.03	320.03	3.27
0:03:30	13,864.90	54.16	19.37	0:10:30	12,898.74	100.77	10.40	0:17:30	10,181.46	159.09	6.59	0:24:30	6,711.31	209.73	5.05	0:31:30	332.19	332.19	3.15
0:03:35	13,848.12	54.09	19.39	0:10:35	12,721.74	99.39	10.55	0:17:35	10,213.13	159.58	6.57	0:24:35	7,035.32	219.85	4.76	0:31:35	327.37	327.37	3.20
0:03:40	13,712.02	53.56	19.51	0:10:40	12,407.59	96.93	10.81	0:17:40	10,264.72	160.39	6.53	0:24:40	7,008.47	219.01	4.78	0:31:40	311.85	311.85	3.35
0:03:45	13,813.52	53.96	19.45	0:10:45	12,952.01	101.19	10.36	0:17:45	10,333.09	161.45	6.49	0:24:45	6,860.41	214.39	4.88	0:31:45	354.42	354.42	2.95
0:03:50	13,919.01	54.37	19.29	0:10:50	12,795.56	99.97	10.49	0:17:50	10,032.98	156.77	6.68	0:24:50	6,793.93	212.31	4.93	0:31:50	310.80	310.80	3.37
0:03:55	14,066.65	54.95	19.10	0:10:55	12,900.63	100.79	10.40	0:17:55	10,132.18	158.32	6.62	0:24:55	6,822.04	213.19	4.92	0:31:55	318.77	318.77	3.28
0:04:00	13,834.70	54.04	19.40	0:11:00	12,685.25	99.10	10.58	0:18:00	10,327.22	161.36	6.49	0:25:00	6,774.43	211.70	4.95	0:32:00	311.43	311.43	3.36
0:04:05	14,208.83	55.50	18.88	0:11:05	12,701.82	99.23	10.56	0:18:05	10,307.29	161.05	6.50	0:25:05	6,853.49	214.17	4.89	0:32:05	318.98	318.98	3.28
0:04:10	13,997.86	54.68	19.15	0:11:10	12,762.01	99.70	10.52	0:18:10	10,247.94	160.12	6.54	0:25:10	6,993.58	218.55	4.79	0:32:10	317.09	317.09	3.30
0:04:15	13,837.85	54.05	19.39	0:11:15	12,754.67	99.65	10.51	0:18:15	10,385.94	162.28	6.45	0:25:15	7,023.78	219.49	4.76	0:32:15	314.57	314.57	3.32
0:04:20	13,870.98	54.18	19.37	0:11:20	12,449.53	97.26	10.51	0:18:20	10,211.03	159.55	6.57	0:25:20	7,164.29	223.88	4.68	0:32:20	317.30	317.30	3.31
0:04:25	14,009.60	54.73	19.15	0:11:25	11,883.30	92.84	10.60	0:18:25	10,194.88	159.30	6.58	0:25:25	7,026.09	219.57	4.77	0:32:25	326.11	326.11	3.21
0:04:30	14,067.91	54.95	19.08	0:11:30	12,046.88	94.12	10.49	0:18:30	10,163.01	158.80	6.60	0:25:30	7,107.88	222.12	4.71	0:32:30	316.46	316.46	3.31
0:04:35	14,250.36	55.67	18.79	0:11:35	11,930.70	93.21	10.56	0:18:35	10,121.90	158.15	6.62	0:25:35	6,895.86	215.50	4.86	0:32:35	316.46	316.46	3.31
0:04:40	13,755.85	53.73	19.51	0:11:40	12,164.74	95.04	10.39	0:18:40	10,134.49	158.35	6.61	0:25:40	7,032.80	219.77	4.77	0:32:40	340.58	340.58	3.07
0:04:45	13,807.23	53.93	19.45	0:11:45	12,043.31	94.09	10.49	0:18:45	10,211.45	159.55	6.57	0:25:45	7,172.89	224.15	4.67	0:32:45	310.38	310.38	3.37
0:04:50	14,105.02	55.10	19.03	0:11:50	11,946.85	93.33	10.56	0:18:50	10,151.68	158.62	6.61	0:25:50	7,135.98	223.00	4.70	0:32:50	321.70	321.70	3.25
0:04:55	13,776.61	53.81	19.51	0:11:55	12,459.60	97.34	10.55	0:18:55	10,177.69	159.03	6.58	0:25:55	7,055.66	220.49	4.75	0:32:55	308.28	308.28	3.39
0:05:00	13,930.12	54.41	19.18	0:12:00	12,826.81	100.21	10.46	0:19:00	10,216.70	159.64	6.56	0:26:00	6,952.27	217.26	4.81	0:33:00	314.57	314.57	3.33
0:05:05	14,236.52	55.61	18.90	0:12:05	12,577.25	98.26	10.66	0:19:05	10,058.36	157.16	6.67	0:26:05	7,154.64	223.58	4.69	0:33:05	316.46	316.46	3.31
0:05:10	13,904.54	54.31	19.31	0:12:10	12,801.23	100.01	10.49	0:19:10	10,107.22	157.93	6.63	0:26:10	7,092.78	221.65	4.72	0:33:10	320.86	320.86	3.26
0:05:15	13,919.64	54.37	19.27	0:12:15	12,754.67	99.65	10.51	0:19:15	10,129.66	158.28	6.62	0:26:15	7,129.48	222.80	4.70	0:33:15	323.17	323.17	3.24
0:05:20	14,207.58	55.50	18.88	0:12:20	13,038.83	101.87	10.30	0:19:20	10,365.38	161.96	6.47	0:26:20	7,029.44	219.67	4.76	0:33:20	351.90	351.90	2.97
0:05:25	14,369.69	56.13	18.68	0:12:25	12,880.29	100.63	10.40	0:19:25	10,183.35	159.11	6.58	0:26:25	7,028.60	219.64	4.77	0:33:25	321.91	321.91	3.25
0:05:30	13,819.81	53.98	19.40	0:12:30	12,696.16	99.19	10.57	0:19:30	10,139.94	158.44	6.61	0:26:30	7,010.15	219.07	4.78	0:33:30	321.28	321.28	3.26
0:05:35	14,129.35	55.19	18.99	0:12:35	12,762.43	99.71	10.51	0:19:35	9,951.83	155.50	6.74	0:26:35	7,108.09	222.13	4.71	0:33:35	310.17	310.17	3.37
0:05:40	14,205.90	55.49	18.91	0:12:40	12,719.23	99.37	10.54	0:19:40	10,096.32	157.75	6.64	0:26:40	7,107.46	222.11	4.71	0:33:40	328.41	328.41	3.19
0:05:45	13,898.46	54.29	19.29	0:12:45	12,703.71	99.25	10.56	0:19:45	10,103.24	157.86	6.63	0:26:45	7,077.89	221.18	4.74	0:33:45	316.25	316.25	3.31
0:05:50	13,706.78	53.54	19.56	0:12:50	12,670.36	98.99	10.59	0:19:50	9,917.01	154.95	6.76	0:26:50	7,043.49	220.11	4.76	0:33:50	318.77	318.77	3.28
0:05:55	13,671.33	53.40	19.65	0:12:55	12,806.26	100.05	10.47	0:19:55	10,178.32	159.04	6.59	0:26:55	7,017.07	219.28	4.77	0:33:55	314.15	314.15	3.33
0:06:00	13,969.34	54.57	19.12	0:13:00	12,920.13	100.94	10.39	0:20:00	10,418.44	162.79	6.44	0:27:00	7,232.87	226.03	4.64	0:34:00	325.48	325.48	3.21
0:06:05	13,880.63	54.22	19.43	0:13:05	12,517.48	97.79	10.71	0:20:05	10,287.79	160.75	6.52	0:27:05	7,102.63	221.96	4.72	0:34:05	327.99	327.99	3.19
0:06:10	13,927.19	54.40	19.25	0:13:10	12,808.15	100.06	10.47	0:20:10	10,083.74	157.56	6.65	0:27:10	7,135.56	222.99	4.69	0:34:10	316.04	316.04	3.31
0:06:15	14,086.57	55.03	19.07	0:13:15	12,602.83	98.46	10.63	0:20:15	10,249.83	160.15	6.54	0:27:15	7,019.80	219.37	4.78	0:34:15	341.84	341.84	3.05
0:06:20	13,649.94	53.32	19.65	0:13:20	12,594.66	98.40	10.65	0:20:20	10,130.71	158.29	6.62	0:27:20	7,031.54	219.74	4.77	0:34:20	322.75	322.75	3.25
0:06:25	13,758.16	53.74	19.48	0:13:25	12,801.23	100.01	10.48	0:20:25	10,114.56	158.04	6.63	0:27:25	7,036.57	219.89	4.76	0:34:25	314.78	314.78	3.31
0:06:30	13,941.87	54.46	19.26	0:13:30	12,547.26	98.03	10.69	0:20:30	10,301.63	160.96	6.51	0:27:30	7,036.36	219.89	4.75	0:34:30	317.30	317.30	3.31
0:06:35	13,907.26	54.33	19.30	0:13:35	12,806.89	100.05	10.48	0:20:35	10,166.36	158.85	6.59	0:27:35	7,226.79	225.84	4.65	0:34:35	301.57	301.57	3.47
0:06:40	14,059.52	54.92	19.09	0:13:40	13,119.36	102.50	10.22	0:20:40	10,226.34	159.79	6.56	0:27:40	6,951.64	217.24	4.82	0:34:40	309.33	309.33	3.38
0:06:45	13,834.70	120.30	19.29	0:13:45	12,580.19	98.28	10.66	0:20:45	10,287.79	160.75	6.51	0:27:45	7,172.05	224.13	4.67	0:34:45	310.59	310.59	3.37
0:06:50	159.17	0.00	31.47	0:13:50	4,253.02	0.00	8.41	0:20:50	2,610.12	0.00	6.44	0:27:50	1,807.12	0.00	4.57	0:34:50	4.61	0.00	3.11
0:06:55	0.00	0.00	0.00	0:13:55	0.00	0.00	0.00	0:20:55	0.00	0.00	0.00	0:27:55	0.00	0.00	0.00	0:34:55	0.00	0.00	0.00

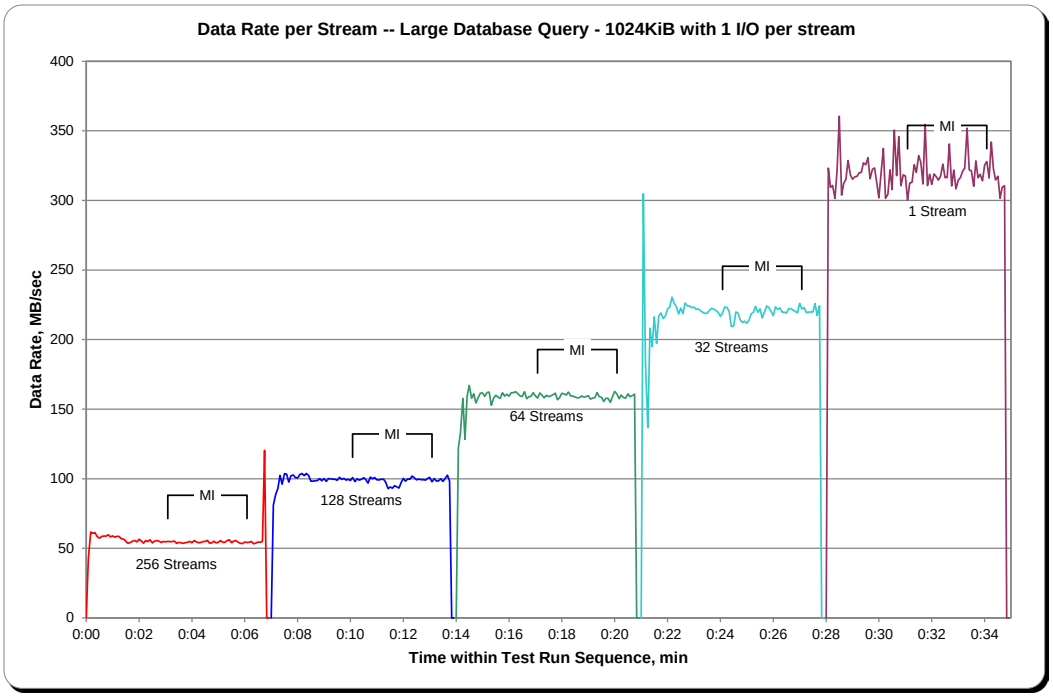
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



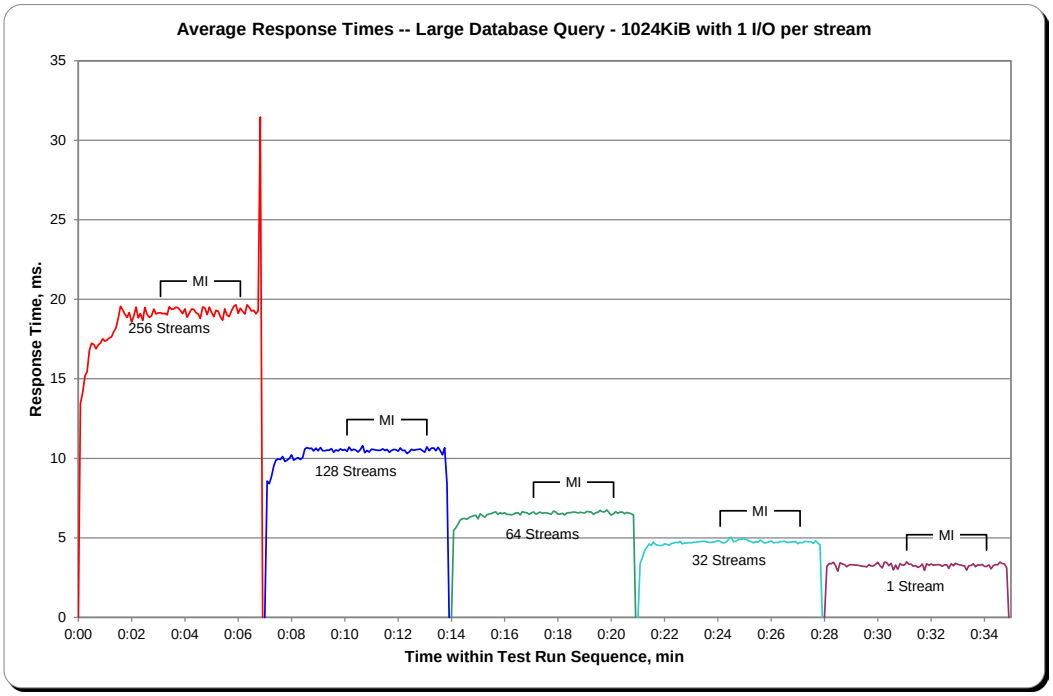
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



Large Database Query Test – 64 KIB TRANSFER SIZE Test Phase

Clause 10.6.8.2.1

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

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

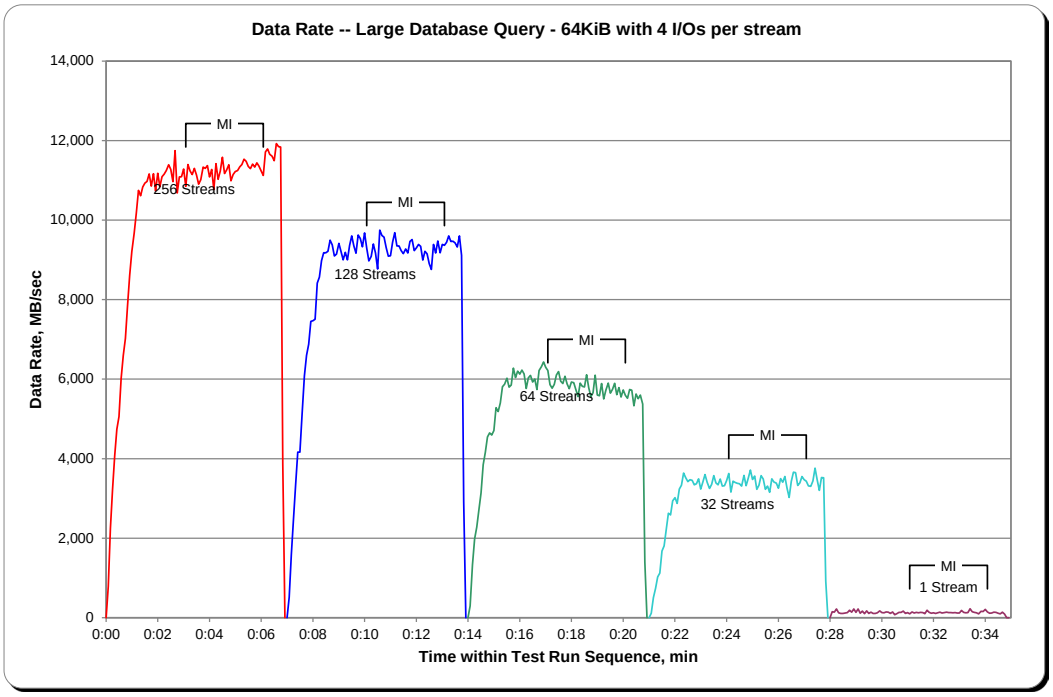
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR11	256 Streams			TR12	128 Streams			TR13	64 Streams			TR14	32 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	790.00	37.62	2.62	0:07:05	513.92	51.39	2.12	0:14:05	294.50	49.08	2.77	0:21:05	112.15	112.15	2.30	0:28:05	149.63	149.63	1.72
0:00:10	2,250.99	44.14	4.29	0:07:10	1,592.21	58.97	2.84	0:14:10	1,333.07	83.32	2.31	0:21:10	505.51	101.10	1.87	0:28:10	141.49	141.49	1.85
0:00:15	3,229.84	50.47	4.66	0:07:15	2,477.59	68.82	3.21	0:14:15	1,982.04	90.09	2.43	0:21:15	737.37	92.17	2.11	0:28:15	221.59	221.59	1.18
0:00:20	4,073.99	47.93	4.88	0:07:20	3,340.83	64.25	3.41	0:14:20	2,280.54	81.45	2.61	0:21:20	1,024.20	113.80	2.21	0:28:20	124.04	124.04	2.11
0:00:25	4,738.37	46.91	5.20	0:07:25	4,163.11	75.69	3.33	0:14:25	2,713.32	87.53	2.79	0:21:25	1,121.35	80.10	2.46	0:28:25	105.80	105.80	2.47
0:00:30	5,053.87	41.77	5.72	0:07:30	4,161.53	67.12	3.67	0:14:30	3,139.66	89.70	2.81	0:21:30	1,677.70	104.86	2.42	0:28:30	107.05	107.05	2.44
0:00:35	6,014.22	44.22	5.56	0:07:35	5,097.60	68.89	3.44	0:14:35	3,847.01	96.18	2.59	0:21:35	1,802.80	85.85	2.69	0:28:35	118.48	118.48	2.21
0:00:40	6,590.47	44.53	5.66	0:07:40	6,082.53	72.41	3.41	0:14:40	4,157.00	98.98	2.57	0:21:40	2,219.00	92.46	2.67	0:28:40	131.28	131.28	1.99
0:00:45	7,023.74	43.90	5.71	0:07:45	6,596.74	74.96	3.39	0:14:45	4,547.16	101.05	2.45	0:21:45	2,625.62	105.02	2.43	0:28:45	186.73	186.73	1.40
0:00:50	7,848.34	44.85	5.60	0:07:50	6,878.75	74.77	3.44	0:14:50	4,645.21	100.98	2.57	0:21:50	2,586.62	99.49	2.53	0:28:50	141.24	141.24	1.85
0:00:55	8,614.69	45.10	5.55	0:07:55	7,452.67	74.53	3.40	0:14:55	4,591.28	97.69	2.66	0:21:55	2,937.42	104.91	2.39	0:28:55	221.14	221.14	1.18
0:01:00	9,209.91	44.49	5.64	0:08:00	7,468.42	71.81	3.59	0:15:00	4,708.20	96.09	2.69	0:22:00	3,019.46	107.84	2.42	0:29:00	132.75	132.75	1.97
0:01:05	9,673.62	43.97	5.79	0:08:05	7,506.67	72.18	3.63	0:15:05	5,281.80	101.57	2.49	0:22:05	2,875.80	102.71	2.55	0:29:05	218.22	218.22	1.19
0:01:10	10,178.38	44.64	5.74	0:08:10	8,414.14	75.13	3.38	0:15:10	5,187.40	92.63	2.68	0:22:10	3,233.20	104.30	2.41	0:29:10	109.97	109.97	2.38
0:01:15	10,744.33	45.72	5.66	0:08:15	8,564.79	71.37	3.51	0:15:15	5,399.98	91.53	2.80	0:22:15	3,332.12	104.13	2.50	0:29:15	167.71	167.71	1.56
0:01:20	10,611.22	43.67	5.87	0:08:20	8,981.11	73.62	3.53	0:15:20	5,810.80	95.26	2.68	0:22:20	3,639.61	113.74	2.30	0:29:20	103.55	103.55	2.52
0:01:25	10,831.98	43.33	5.95	0:08:25	9,179.39	74.03	3.52	0:15:25	5,875.00	93.25	2.78	0:22:25	3,519.86	110.00	2.38	0:29:25	169.19	169.19	1.54
0:01:30	10,929.92	42.69	6.06	0:08:30	9,175.75	71.69	3.58	0:15:30	6,022.94	94.11	2.76	0:22:30	3,424.95	107.03	2.44	0:29:30	107.73	107.73	2.42
0:01:35	10,969.67	42.85	6.11	0:08:35	9,212.60	71.97	3.63	0:15:35	5,799.78	90.62	2.89	0:22:35	3,468.89	108.40	2.41	0:29:35	140.59	140.59	1.86
0:01:40	11,159.35	43.59	6.01	0:08:40	9,495.05	74.18	3.54	0:15:40	5,852.38	91.44	2.86	0:22:40	3,454.94	107.97	2.42	0:29:40	107.11	107.11	2.44
0:01:45	10,854.39	42.40	6.18	0:08:45	9,373.84	73.23	3.57	0:15:45	6,273.74	98.03	2.67	0:22:45	3,341.12	104.41	2.50	0:29:45	108.12	108.12	2.42
0:01:50	11,166.66	43.62	6.00	0:08:50	9,098.40	71.08	3.69	0:15:50	6,041.38	94.40	2.77	0:22:50	3,369.28	105.29	2.48	0:29:50	122.53	122.53	2.13
0:01:55	10,733.12	41.93	6.24	0:08:55	9,145.31	71.45	3.66	0:15:55	6,201.79	96.90	2.70	0:22:55	3,490.07	109.06	2.40	0:29:55	171.77	171.77	1.52
0:02:00	11,176.50	43.66	6.00	0:09:00	9,412.18	73.53	3.56	0:16:00	6,124.30	95.69	2.73	0:23:00	3,235.15	101.10	2.59	0:30:00	129.80	129.80	2.01
0:02:05	10,840.54	42.35	6.19	0:09:05	9,211.68	71.97	3.63	0:16:05	6,226.22	97.28	2.69	0:23:05	3,411.38	106.61	2.45	0:30:05	124.46	124.46	2.10
0:02:10	11,092.74	43.33	6.04	0:09:10	9,001.58	70.32	3.73	0:16:10	6,132.76	95.82	2.73	0:23:10	3,600.79	112.52	2.32	0:30:10	146.07	146.07	1.79
0:02:15	11,155.64	43.58	6.01	0:09:15	9,186.17	71.77	3.65	0:16:15	5,764.95	90.08	2.90	0:23:15	3,408.30	106.51	2.45	0:30:15	137.70	137.70	1.90
0:02:20	11,245.08	43.93	5.97	0:09:20	8,998.08	70.30	3.72	0:16:20	6,036.53	94.32	2.77	0:23:20	3,249.94	101.56	2.57	0:30:20	106.86	106.86	2.45
0:02:25	11,389.99	44.49	5.88	0:09:25	9,362.40	73.14	3.58	0:16:25	6,092.98	95.20	2.75	0:23:25	3,354.77	104.84	2.49	0:30:25	142.72	142.72	1.83
0:02:30	11,271.13	44.03	5.95	0:09:30	9,600.03	75.00	3.49	0:16:30	5,928.18	92.63	2.82	0:23:30	3,574.61	111.71	2.34	0:30:30	74.23	74.23	3.52
0:02:35	10,969.15	42.85	6.11	0:09:35	9,349.04	73.04	3.59	0:16:35	6,000.85	93.76	2.79	0:23:35	3,387.74	105.87	2.47	0:30:35	99.36	99.36	2.63
0:02:40	11,747.89	45.89	5.99	0:09:40	9,167.43	71.62	3.65	0:16:40	5,738.02	89.66	2.92	0:23:40	3,343.59	104.49	2.50	0:30:40	132.02	132.02	1.98
0:02:45	10,679.26	41.72	5.96	0:09:45	9,624.30	75.19	3.48	0:16:45	6,215.25	97.11	2.69	0:23:45	3,485.69	108.93	2.40	0:30:45	133.39	133.39	1.96
0:02:50	11,086.33	43.31	6.05	0:09:50	9,537.65	74.51	3.51	0:16:50	6,314.55	98.66	2.65	0:23:50	3,310.34	103.45	2.53	0:30:50	165.13	165.13	1.58
0:02:55	11,087.70	43.31	6.03	0:09:55	9,326.24	72.86	3.59	0:16:55	6,432.23	100.50	2.60	0:23:55	3,318.62	103.71	2.52	0:30:55	108.94	108.94	2.40
0:03:00	11,286.28	44.09	5.96	0:10:00	9,676.80	75.60	3.46	0:17:00	6,298.84	98.42	2.66	0:24:00	3,449.50	107.80	2.43	0:31:00	129.72	129.72	2.01

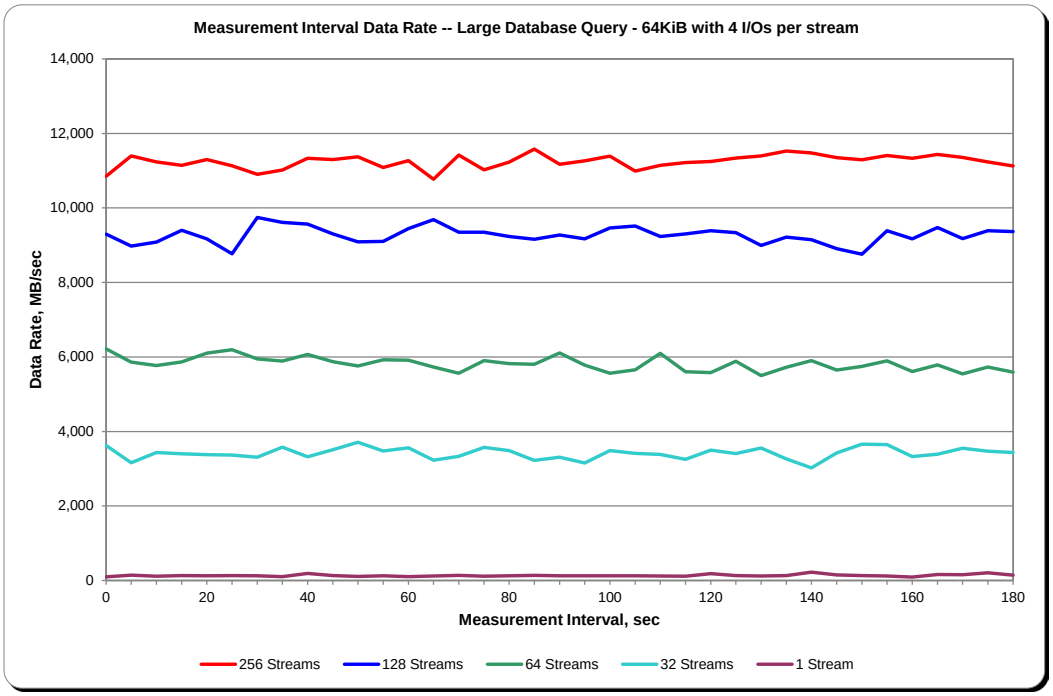
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	256 Streams			TR12	128 Streams			TR13	64 Streams			TR14	32 Streams			TR15	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:03:05	10,848.27	42.38	6.18	0:10:05	9,295.96	72.62	3.61	0:17:05	6,218.41	97.16	2.69	0:24:05	3,624.94	113.28	2.31	0:31:05	98.30	98.30	2.66
0:03:10	11,397.33	44.52	5.89	0:10:10	8,974.35	70.11	3.73	0:17:10	5,860.16	91.56	2.86	0:24:10	3,158.51	98.70	2.65	0:31:10	147.18	147.18	1.77
0:03:15	11,234.45	43.88	5.98	0:10:15	9,087.48	71.00	3.69	0:17:15	5,772.89	90.20	2.90	0:24:15	3,434.41	107.33	2.44	0:31:15	117.40	117.40	2.23
0:03:20	11,145.52	43.54	5.99	0:10:20	9,399.71	73.44	3.56	0:17:20	5,867.84	91.69	2.85	0:24:20	3,402.82	106.34	2.46	0:31:20	136.00	136.00	1.92
0:03:25	11,298.46	44.13	5.94	0:10:25	9,171.28	71.65	3.65	0:17:25	6,103.88	95.37	2.74	0:24:25	3,377.14	105.54	2.48	0:31:25	125.72	125.72	2.08
0:03:30	11,130.70	43.48	6.03	0:10:30	8,770.63	68.52	3.82	0:17:30	6,192.17	96.75	2.70	0:24:30	3,366.85	105.21	2.48	0:31:30	132.38	132.38	1.97
0:03:35	10,900.60	42.58	6.15	0:10:35	9,745.88	76.14	3.44	0:17:35	5,948.03	92.94	2.81	0:24:35	3,310.66	103.46	2.53	0:31:35	127.91	127.91	2.04
0:03:40	11,015.14	43.03	6.09	0:10:40	9,614.58	75.11	3.48	0:17:40	5,887.88	92.00	2.84	0:24:40	3,578.81	111.84	2.34	0:31:40	101.77	101.77	2.57
0:03:45	11,330.90	44.26	5.92	0:10:45	9,568.91	74.76	3.50	0:17:45	6,069.22	94.83	2.76	0:24:45	3,319.69	103.74	2.52	0:31:45	190.06	190.06	1.37
0:03:50	11,298.22	44.13	5.93	0:10:50	9,303.86	72.69	3.60	0:17:50	5,875.60	91.81	2.85	0:24:50	3,509.04	109.66	2.38	0:31:50	134.62	134.62	1.94
0:03:55	11,372.22	44.42	5.88	0:10:55	9,092.73	71.04	3.68	0:17:55	5,761.48	90.02	2.91	0:24:55	3,712.81	116.03	2.25	0:31:55	110.43	110.43	2.37
0:04:00	11,085.96	43.30	6.06	0:11:00	9,102.12	71.11	3.68	0:18:00	5,924.01	92.56	2.83	0:25:00	3,476.97	108.66	2.41	0:32:00	124.87	124.87	2.09
0:04:05	11,271.62	44.03	5.95	0:11:05	9,448.05	73.81	3.55	0:18:05	5,912.73	92.39	2.83	0:25:05	3,562.37	111.32	2.35	0:32:05	106.44	106.44	2.46
0:04:10	10,769.66	42.07	6.23	0:11:10	9,684.74	75.66	3.46	0:18:10	5,732.50	89.57	2.92	0:25:10	3,230.62	100.96	2.59	0:32:10	124.41	124.41	2.08
0:04:15	11,420.40	44.61	5.87	0:11:15	9,350.89	73.05	3.58	0:18:15	5,563.16	86.92	3.01	0:25:15	3,330.54	104.08	2.51	0:32:15	140.56	140.56	1.88
0:04:20	11,023.62	43.06	6.09	0:11:20	9,346.96	73.02	3.58	0:18:20	5,901.71	92.21	2.84	0:25:20	3,572.48	111.64	2.34	0:32:20	118.68	118.68	2.20
0:04:25	11,231.66	43.87	5.96	0:11:25	9,232.30	72.13	3.63	0:18:25	5,819.97	90.94	2.88	0:25:25	3,488.88	109.03	2.40	0:32:25	129.14	129.14	2.08
0:04:30	11,579.48	45.23	5.78	0:11:30	9,158.24	71.55	3.66	0:18:30	5,801.93	90.66	2.89	0:25:30	3,226.62	100.83	2.59	0:32:30	139.00	139.00	1.82
0:04:35	11,170.69	43.64	6.02	0:11:35	9,276.65	72.47	3.61	0:18:35	6,111.18	95.49	2.74	0:25:35	3,308.59	103.39	2.53	0:32:35	126.73	126.73	2.06
0:04:40	11,264.41	44.00	5.94	0:11:40	9,173.06	71.66	3.65	0:18:40	5,783.44	90.37	2.90	0:25:40	3,152.76	98.52	2.65	0:32:40	125.99	125.99	2.07
0:04:45	11,388.69	44.49	5.89	0:11:45	9,460.56	73.91	3.54	0:18:45	5,561.95	86.91	3.01	0:25:45	3,489.92	109.06	2.40	0:32:45	125.24	125.24	2.09
0:04:50	10,990.81	42.93	6.11	0:11:50	9,513.23	74.32	3.52	0:18:50	5,657.70	88.40	2.96	0:25:50	3,411.33	106.60	2.45	0:32:50	127.70	127.70	2.05
0:04:55	11,142.33	43.52	6.01	0:11:55	9,232.72	72.13	3.63	0:18:55	6,099.94	95.31	2.74	0:25:55	3,386.37	105.82	2.47	0:32:55	120.05	120.05	2.18
0:05:00	11,218.03	43.82	5.98	0:12:00	9,301.96	72.67	3.60	0:19:00	5,601.24	87.52	2.99	0:26:00	3,253.54	101.67	2.57	0:33:00	116.59	116.59	2.24
0:05:05	11,248.54	43.94	5.95	0:12:05	9,386.97	73.34	3.57	0:19:05	5,582.93	87.23	3.00	0:26:05	3,496.75	109.27	2.39	0:33:05	184.18	184.18	1.42
0:05:10	11,339.66	44.30	5.92	0:12:10	9,336.67	72.94	3.59	0:19:10	5,886.71	91.98	2.84	0:26:10	3,407.49	106.48	2.45	0:33:10	133.25	133.25	1.96
0:05:15	11,394.06	44.51	5.88	0:12:15	8,993.79	70.26	3.72	0:19:15	5,501.41	85.96	3.04	0:26:15	3,554.15	111.07	2.35	0:33:15	120.71	120.71	2.16
0:05:20	11,529.64	45.04	5.81	0:12:20	9,217.59	72.01	3.63	0:19:20	5,724.41	89.44	2.93	0:26:20	3,262.29	101.95	2.56	0:33:20	131.05	131.05	1.99
0:05:25	11,478.91	44.84	5.85	0:12:25	9,148.18	71.47	3.67	0:19:25	5,900.44	92.19	2.84	0:26:25	3,026.06	94.56	2.76	0:33:25	226.23	226.23	1.15
0:05:30	11,350.04	44.34	5.91	0:12:30	8,905.91	69.58	3.76	0:19:30	5,648.27	88.25	2.96	0:26:30	3,426.66	107.08	2.44	0:33:30	152.76	152.76	1.71
0:05:35	11,292.24	44.11	5.94	0:12:35	8,758.64	68.43	3.83	0:19:35	5,746.49	89.79	2.91	0:26:35	3,658.81	114.34	2.28	0:33:35	134.22	134.22	1.94
0:05:40	11,404.86	44.55	5.87	0:12:40	9,389.11	73.35	3.57	0:19:40	5,893.90	92.09	2.84	0:26:40	3,649.89	114.06	2.29	0:33:40	123.51	123.51	2.12
0:05:45	11,333.65	44.27	5.92	0:12:45	9,169.88	71.64	3.65	0:19:45	5,609.02	87.64	2.99	0:26:45	3,326.82	103.96	2.51	0:33:45	95.69	95.69	2.73
0:05:50	11,437.36	44.68	5.86	0:12:50	9,474.53	74.02	3.54	0:19:50	5,785.08	90.39	2.89	0:26:50	3,392.94	106.03	2.47	0:33:50	160.62	160.62	1.63
0:05:55	11,353.14	44.35	5.90	0:12:55	9,176.36	71.69	3.65	0:19:55	5,548.97	86.70	3.02	0:26:55	3,552.67	111.02	2.35	0:33:55	157.68	157.68	1.66
0:06:00	11,235.93	43.89	5.97	0:13:00	9,386.75	73.33	3.57	0:20:00	5,730.25	89.54	2.92	0:27:00	3,469.84	108.43	2.41	0:34:00	210.01	210.01	1.24
0:06:05	11,124.26	43.45	6.01	0:13:05	9,363.09	73.15	3.58	0:20:05	5,592.16	87.38	2.99	0:27:05	3,433.79	107.31	2.44	0:34:05	145.67	145.67	1.79
0:06:10	11,714.37	45.76	5.74	0:13:10	9,442.34	73.77	3.55	0:20:10	5,517.02	86.20	3.03	0:27:10	3,313.91	103.56	2.52	0:34:10	113.81	113.81	2.30
0:06:15	11,786.78	46.04	5.69	0:13:15	9,601.38	75.01	3.49	0:20:15	5,739.63	89.68	2.92	0:27:15	3,303.52	103.23	2.53	0:34:15	115.88	115.88	2.25
0:06:20	11,654.88	45.53	5.75	0:13:20	9,463.96	73.94	3.54	0:20:20	5,721.98	89.41	2.92	0:27:20	3,438.62	107.46	2.43	0:34:20	139.00	139.00	1.88
0:06:25	11,606.46	45.34	5.78	0:13:25	9,468.83	73.98	3.54	0:20:25	5,331.18	83.30	3.14	0:27:25	3,759.62	117.49	2.22	0:34:25	134.60	134.60	1.94
0:06:30	11,494.96	44.90	5.84	0:13:30	9,426.47	73.64	3.55	0:20:30	5,623.60	87.87	2.98	0:27:30	3,466.27	108.32	2.41	0:34:30	110.96	110.96	2.36
0:06:35	11,922.61	46.57	5.62	0:13:35	9,324.82	72.85	3.59	0:20:35	5,508.79	86.07	3.04	0:27:35	3,200.21	100.01	2.61	0:34:35	94.25	94.25	2.77
0:06:40	11,848.95	46.28	5.66	0:13:40	9,603.68	75.03	3.49	0:20:40	5,598.88	87.48	2.99	0:27:40	3,525.40	110.17	2.37	0:34:40	140.64	140.64	1.85
0:06:45	11,836.79	46.24	5.66	0:13:45	9,114.56	71.21	3.67	0:20:45	5,371.54	83.93	3.12	0:27:45	3,519.01	109.97	2.38	0:34:45	89.15	89.15	2.93
0:06:50	3,866.31	0.00	4.50	0:13:50	2,920.12	0.00	2.92	0:20:50	1,402.24	0.00	2.86	0:27:50	918.96	0.00	2.15	0:34:50	0.86	0.00	4.27
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

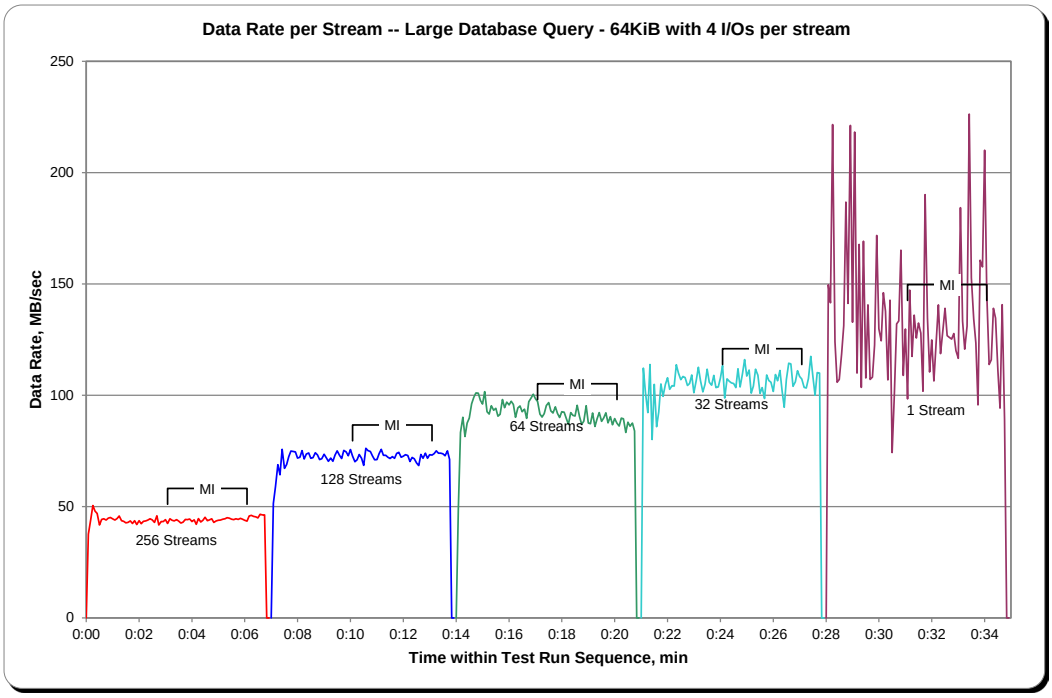
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



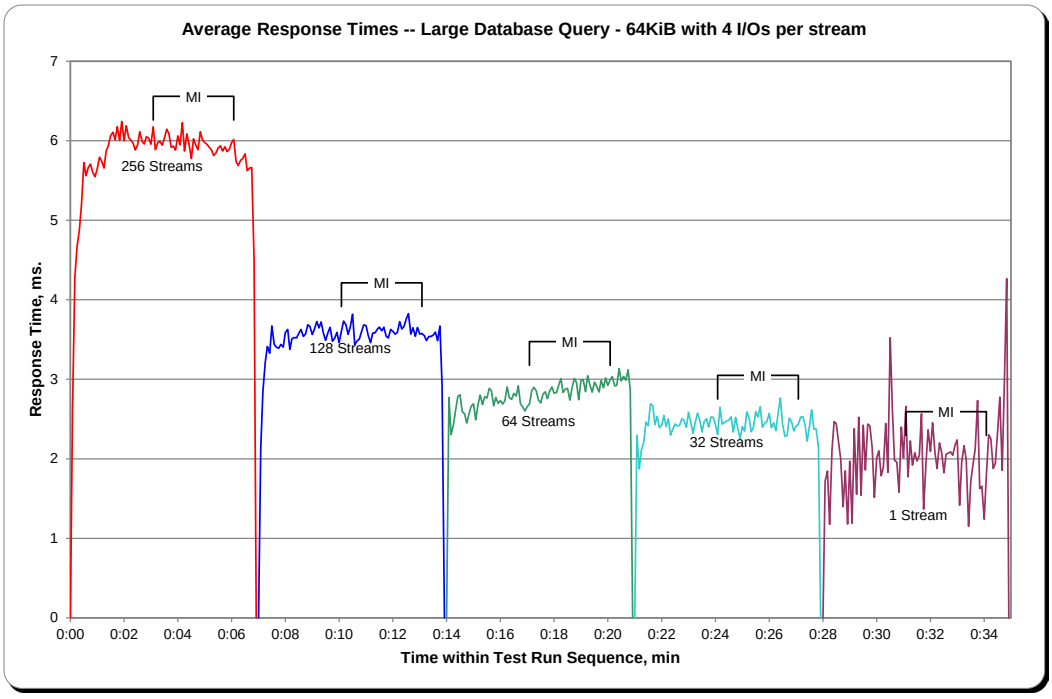
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



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



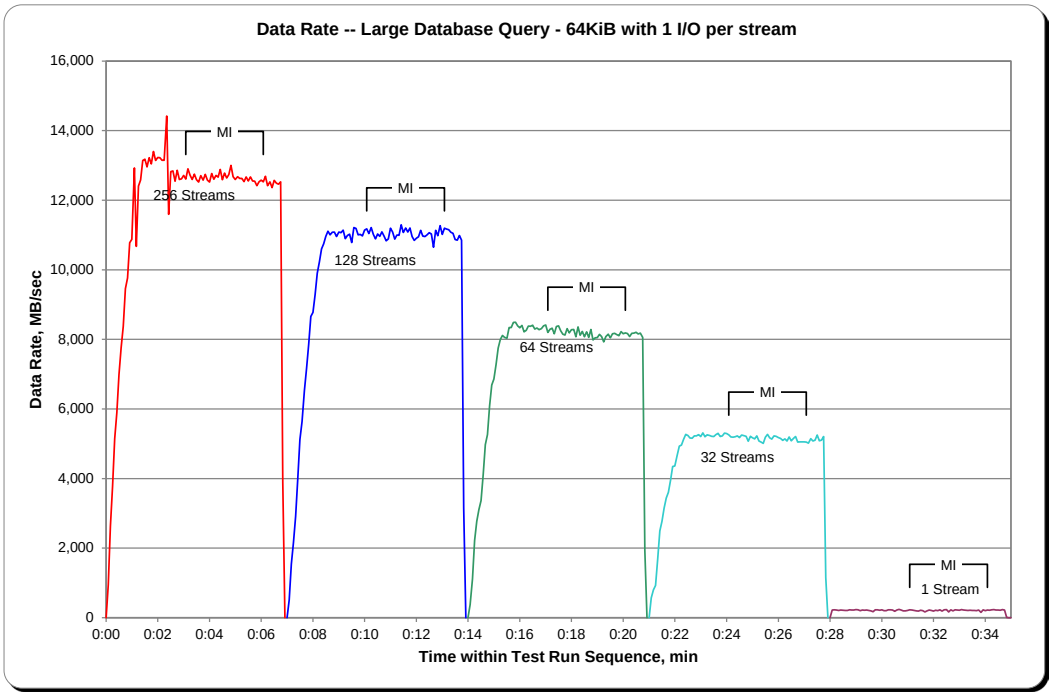
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR16	256 Streams			TR17	128 Streams			TR18	64 Streams			TR19	32 Streams			TR20	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms
0:00:00	0.00	0.00	0.00	0:07:00	0.00	0.00	0.00	0:14:00	0.00	0.00	0.00	0:21:00	0.00	0.00	0.00	0:28:00	0.00	0.00	0.00
0:00:05	953.21	34.04	0.75	0:07:05	510.05	63.76	0.51	0:14:05	371.93	92.98	0.44	0:21:05	567.74	141.94	0.36	0:28:05	220.03	220.03	0.29
0:00:10	2,636.92	50.71	0.98	0:07:10	1,541.93	81.15	0.65	0:14:10	1,109.41	79.24	0.46	0:21:10	795.26	159.05	0.39	0:28:10	228.80	228.80	0.28
0:00:15	3,768.85	50.25	1.07	0:07:15	2,165.67	80.21	0.64	0:14:15	2,224.43	117.08	0.47	0:21:15	927.30	103.03	0.38	0:28:15	223.24	223.24	0.29
0:00:20	5,144.83	51.45	1.09	0:07:20	2,913.28	80.92	0.67	0:14:20	2,770.92	120.47	0.47	0:21:20	1,685.19	153.20	0.37	0:28:20	208.83	208.83	0.31
0:00:25	5,895.98	49.13	1.21	0:07:25	3,990.24	79.80	0.69	0:14:25	3,104.69	124.19	0.48	0:21:25	2,495.07	146.77	0.39	0:28:25	222.36	222.36	0.29
0:00:30	6,989.37	51.02	1.21	0:07:30	5,119.38	83.92	0.70	0:14:30	3,364.69	112.16	0.54	0:21:30	2,772.02	163.06	0.40	0:28:30	217.26	217.26	0.30
0:00:35	7,753.85	52.39	1.21	0:07:35	5,635.10	85.38	0.74	0:14:35	4,110.27	117.44	0.49	0:21:35	3,149.20	157.46	0.39	0:28:35	207.87	207.87	0.31
0:00:40	8,373.74	50.44	1.23	0:07:40	6,525.08	84.74	0.72	0:14:40	4,974.47	124.36	0.50	0:21:40	3,440.05	156.37	0.40	0:28:40	210.72	210.72	0.31
0:00:45	9,457.48	53.43	1.20	0:07:45	7,161.09	83.27	0.75	0:14:45	5,264.44	125.34	0.50	0:21:45	3,601.87	156.60	0.40	0:28:45	229.31	229.31	0.28
0:00:50	9,765.70	52.22	1.22	0:07:50	7,853.25	86.30	0.73	0:14:50	6,089.88	129.57	0.48	0:21:50	3,949.03	151.89	0.40	0:28:50	222.97	222.97	0.29
0:00:55	10,775.54	54.70	1.17	0:07:55	8,660.42	87.48	0.72	0:14:55	6,687.65	128.61	0.49	0:21:55	4,347.63	167.22	0.39	0:28:55	217.84	217.84	0.30
0:01:00	10,878.15	51.56	1.24	0:08:00	8,773.42	87.73	0.74	0:15:00	6,856.64	129.37	0.50	0:22:00	4,361.44	161.53	0.40	0:29:00	233.74	233.74	0.28
0:01:06	12,925.91	57.96	1.23	0:08:05	9,287.19	85.99	0.73	0:15:05	7,269.92	127.54	0.50	0:22:05	4,669.47	155.65	0.40	0:29:05	225.09	225.09	0.29
0:01:10	10,674.80	46.01	1.23	0:08:10	9,896.51	88.36	0.73	0:15:10	7,748.36	127.02	0.50	0:22:10	4,932.18	164.41	0.40	0:29:10	204.87	204.87	0.32
0:01:15	12,402.77	52.33	1.23	0:08:15	10,226.08	88.16	0.73	0:15:15	7,992.39	128.91	0.50	0:22:15	4,959.09	159.97	0.40	0:29:15	220.68	220.68	0.29
0:01:20	12,583.83	51.57	1.25	0:08:20	10,599.82	89.07	0.72	0:15:20	8,111.66	130.83	0.50	0:22:20	5,128.64	165.44	0.39	0:29:20	217.12	217.12	0.30
0:01:25	13,140.17	52.56	1.22	0:08:25	10,744.78	86.65	0.74	0:15:25	8,056.16	129.94	0.50	0:22:25	5,266.56	164.58	0.39	0:29:25	218.09	218.09	0.30
0:01:30	13,180.56	51.49	1.26	0:08:30	10,963.49	86.33	0.75	0:15:30	8,031.26	125.49	0.51	0:22:30	5,238.28	163.70	0.40	0:29:30	206.98	206.98	0.31
0:01:35	12,956.60	50.61	1.29	0:08:35	11,110.19	86.80	0.75	0:15:35	8,336.41	130.26	0.50	0:22:35	5,167.05	161.47	0.40	0:29:35	193.90	193.90	0.33
0:01:40	13,219.90	51.64	1.27	0:08:40	11,002.97	85.96	0.76	0:15:40	8,336.68	130.26	0.50	0:22:40	5,156.41	161.14	0.40	0:29:40	171.25	171.25	0.38
0:01:45	13,041.68	50.94	1.28	0:08:45	11,079.99	86.56	0.75	0:15:45	8,484.26	132.57	0.49	0:22:45	5,222.90	163.22	0.40	0:29:45	224.21	224.21	0.29
0:01:50	13,401.28	52.35	1.25	0:08:50	11,081.71	86.58	0.75	0:15:50	8,493.48	132.71	0.49	0:22:50	5,225.81	163.31	0.40	0:29:50	224.52	224.52	0.29
0:01:55	13,140.87	51.33	1.28	0:08:55	10,953.38	85.57	0.76	0:15:55	8,390.33	131.10	0.50	0:22:55	5,261.70	164.43	0.40	0:29:55	213.05	213.05	0.30
0:02:00	13,229.98	51.68	1.27	0:09:00	11,086.22	86.61	0.75	0:16:00	8,332.08	130.19	0.50	0:23:00	5,207.02	162.72	0.40	0:30:00	226.32	226.32	0.29
0:02:05	13,223.51	51.65	1.27	0:09:05	11,067.14	86.46	0.75	0:16:05	8,398.99	131.23	0.50	0:23:05	5,314.40	166.08	0.39	0:30:05	202.82	202.82	0.32
0:02:10	13,148.33	51.36	1.27	0:09:10	11,139.56	87.03	0.75	0:16:10	8,217.91	128.40	0.51	0:23:10	5,198.67	162.46	0.40	0:30:10	199.29	199.29	0.33
0:02:15	13,148.88	51.36	1.27	0:09:15	10,891.66	85.09	0.77	0:16:15	8,258.57	129.04	0.51	0:23:15	5,255.34	164.23	0.40	0:30:15	226.40	226.40	0.29
0:02:21	14,419.26	56.33	1.30	0:09:20	10,983.42	85.81	0.76	0:16:20	8,383.95	131.00	0.50	0:23:20	5,236.58	163.64	0.40	0:30:20	226.93	226.93	0.29
0:02:25	11,594.30	45.29	1.27	0:09:25	11,025.38	86.14	0.76	0:16:25	8,373.94	130.84	0.50	0:23:25	5,214.88	162.97	0.40	0:30:25	219.24	219.24	0.30
0:02:30	12,819.52	50.08	1.31	0:09:30	10,784.92	84.26	0.77	0:16:30	8,405.86	131.34	0.50	0:23:30	5,205.95	162.69	0.40	0:30:30	182.61	182.61	0.36
0:02:35	12,838.02	50.15	1.30	0:09:35	11,211.80	87.59	0.75	0:16:35	8,298.49	129.66	0.50	0:23:35	5,262.28	164.45	0.40	0:30:35	222.09	222.09	0.29
0:02:40	12,546.21	49.01	1.33	0:09:40	11,188.35	87.41	0.75	0:16:40	8,324.03	130.06	0.50	0:23:40	5,298.99	165.59	0.39	0:30:40	236.15	236.15	0.27
0:02:45	12,859.11	50.23	1.30	0:09:45	11,003.39	85.96	0.76	0:16:45	8,280.25	129.38	0.50	0:23:45	5,206.80	162.71	0.40	0:30:45	220.40	220.40	0.29
0:02:50	12,596.17	49.20	1.33	0:09:50	11,016.66	86.07	0.76	0:16:50	8,311.43	129.87	0.50	0:23:50	5,226.79	163.34	0.40	0:30:50	195.24	195.24	0.33
0:02:55	12,613.68	49.27	1.33	0:09:55	10,970.93	85.71	0.76	0:16:55	8,390.85	131.11	0.50	0:23:55	5,303.97	165.75	0.39	0:30:55	196.86	196.86	0.33
0:03:00	12,713.63	49.66	1.32	0:10:00	11,139.54	87.03	0.75	0:17:00	8,411.38	131.43	0.50	0:24:00	5,292.98	165.41	0.39	0:31:00	207.89	207.89	0.31

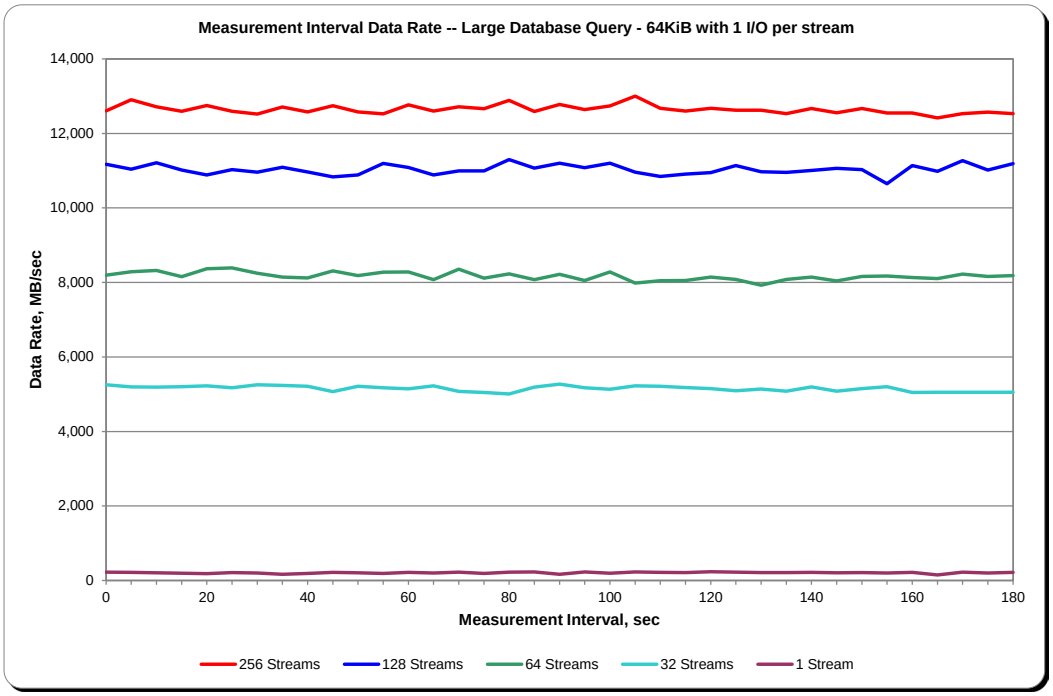
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Period

TR16	256 Streams			TR17	128 Streams			TR18	64 Streams			TR19	32 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	12,605.90	49.24	1.33	0:10:05	11,174.41	87.30	0.75	0:17:05	8,197.75	128.09	0.51	0:24:05	5,254.47	164.20	0.40	0:31:05	224.49	224.49	0.29
0:03:10	12,901.73	50.40	1.30	0:10:10	11,038.53	86.24	0.76	0:17:10	8,289.84	129.53	0.50	0:24:10	5,194.86	162.34	0.40	0:31:10	220.31	220.31	0.29
0:03:15	12,715.13	49.67	1.32	0:10:15	11,210.54	87.58	0.75	0:17:15	8,320.57	130.01	0.50	0:24:15	5,191.08	162.22	0.40	0:31:15	209.31	209.31	0.31
0:03:20	12,592.85	49.19	1.33	0:10:20	11,017.03	86.07	0.76	0:17:20	8,158.56	127.48	0.51	0:24:20	5,203.76	162.62	0.40	0:31:20	195.52	195.52	0.33
0:03:25	12,749.80	49.80	1.31	0:10:25	10,886.25	85.05	0.77	0:17:25	8,368.12	130.75	0.50	0:24:25	5,225.54	163.30	0.40	0:31:25	187.13	187.13	0.35
0:03:30	12,591.73	49.19	1.33	0:10:30	11,026.52	86.14	0.76	0:17:30	8,389.26	131.08	0.50	0:24:30	5,175.09	161.72	0.40	0:31:30	215.12	215.12	0.30
0:03:35	12,518.73	48.90	1.34	0:10:35	10,961.62	85.64	0.76	0:17:35	8,249.71	128.90	0.51	0:24:35	5,251.67	164.11	0.40	0:31:35	202.78	202.78	0.32
0:03:40	12,706.42	49.63	1.32	0:10:40	11,092.14	86.66	0.75	0:17:40	8,146.83	127.29	0.51	0:24:40	5,234.43	163.58	0.40	0:31:40	168.35	168.35	0.39
0:03:45	12,577.04	49.13	1.33	0:10:45	10,966.03	85.67	0.76	0:17:45	8,123.59	126.93	0.51	0:24:45	5,216.31	163.01	0.40	0:31:45	193.20	193.20	0.34
0:03:50	12,741.14	49.77	1.31	0:10:50	10,831.74	84.62	0.77	0:17:50	8,310.36	129.85	0.50	0:24:50	5,069.23	158.41	0.41	0:31:50	219.70	219.70	0.30
0:03:55	12,576.10	49.13	1.33	0:10:55	10,886.30	85.05	0.77	0:17:55	8,186.99	127.92	0.51	0:24:55	5,212.09	162.88	0.40	0:31:55	209.45	209.45	0.31
0:04:00	12,524.03	48.92	1.34	0:11:00	11,195.46	87.46	0.75	0:18:00	8,275.48	129.30	0.50	0:25:00	5,171.98	161.62	0.40	0:32:00	191.95	191.95	0.34
0:04:05	12,767.87	49.87	1.31	0:11:05	11,083.91	86.59	0.75	0:18:05	8,282.37	129.41	0.50	0:25:05	5,142.44	160.70	0.40	0:32:05	217.08	217.08	0.30
0:04:10	12,598.38	49.21	1.33	0:11:10	10,882.96	85.02	0.77	0:18:10	8,074.86	126.17	0.52	0:25:10	5,223.75	163.24	0.40	0:32:10	203.40	203.40	0.32
0:04:15	12,712.29	49.66	1.32	0:11:15	10,995.75	85.90	0.76	0:18:15	8,358.71	130.60	0.50	0:25:15	5,075.57	158.61	0.41	0:32:15	225.80	225.80	0.29
0:04:20	12,661.35	49.46	1.32	0:11:20	10,992.35	85.88	0.76	0:18:20	8,117.25	126.83	0.51	0:25:20	5,048.07	157.75	0.41	0:32:20	191.77	191.77	0.34
0:04:25	12,885.43	50.33	1.30	0:11:25	11,295.48	88.25	0.74	0:18:25	8,228.26	128.57	0.51	0:25:25	5,009.06	156.53	0.42	0:32:25	223.98	223.98	0.29
0:04:30	12,588.15	49.17	1.33	0:11:30	11,070.67	86.49	0.76	0:18:30	8,075.44	126.18	0.52	0:25:30	5,189.66	162.18	0.40	0:32:30	230.01	230.01	0.28
0:04:35	12,778.63	49.92	1.31	0:11:35	11,200.20	87.50	0.75	0:18:35	8,219.07	128.42	0.51	0:25:35	5,271.20	164.73	0.40	0:32:35	164.79	164.79	0.39
0:04:40	12,638.22	49.37	1.32	0:11:40	11,082.92	86.59	0.75	0:18:40	8,053.69	125.84	0.52	0:25:40	5,173.04	161.66	0.40	0:32:40	228.61	228.61	0.28
0:04:45	12,736.99	49.75	1.31	0:11:45	11,203.29	87.53	0.75	0:18:45	8,283.10	129.42	0.50	0:25:45	5,135.93	160.50	0.41	0:32:45	194.34	194.34	0.33
0:04:50	12,998.66	50.78	1.29	0:11:50	10,958.02	85.61	0.76	0:18:50	7,983.29	124.74	0.52	0:25:50	5,225.70	163.30	0.40	0:32:50	228.51	228.51	0.28
0:04:55	12,676.67	49.52	1.32	0:11:55	10,847.54	84.75	0.77	0:18:55	8,045.45	125.71	0.52	0:25:55	5,215.51	162.98	0.40	0:32:55	219.48	219.48	0.30
0:05:00	12,597.71	49.21	1.33	0:12:00	10,907.13	85.21	0.77	0:19:00	8,053.16	125.83	0.52	0:26:00	5,177.05	161.78	0.40	0:33:00	213.97	213.97	0.30
0:05:05	12,672.84	49.50	1.32	0:12:05	10,950.02	85.55	0.76	0:19:05	8,143.22	127.24	0.51	0:26:05	5,152.65	161.02	0.40	0:33:05	234.24	234.24	0.28
0:05:10	12,624.81	49.32	1.33	0:12:10	11,136.11	87.00	0.75	0:19:10	8,081.81	126.28	0.52	0:26:10	5,094.65	159.21	0.41	0:33:10	222.65	222.65	0.29
0:05:15	12,624.50	49.31	1.33	0:12:15	10,970.29	85.71	0.76	0:19:15	7,928.86	123.89	0.53	0:26:15	5,137.69	160.55	0.41	0:33:15	214.00	214.00	0.30
0:05:20	12,530.59	48.95	1.34	0:12:20	10,955.25	85.59	0.76	0:19:20	8,080.10	126.25	0.52	0:26:20	5,079.89	158.75	0.41	0:33:20	210.99	210.99	0.31
0:05:25	12,669.26	49.49	1.32	0:12:25	11,006.48	85.99	0.76	0:19:25	8,146.80	127.29	0.51	0:26:25	5,195.17	162.35	0.40	0:33:25	216.99	216.99	0.30
0:05:30	12,551.88	49.03	1.33	0:12:30	11,065.77	86.45	0.76	0:19:30	8,043.98	125.69	0.52	0:26:30	5,082.43	158.83	0.41	0:33:30	207.22	207.22	0.31
0:05:35	12,669.90	49.49	1.32	0:12:35	11,030.76	86.18	0.76	0:19:35	8,160.71	127.51	0.51	0:26:35	5,153.64	161.05	0.40	0:33:35	211.37	211.37	0.31
0:05:40	12,551.23	49.03	1.33	0:12:40	10,648.77	83.19	0.79	0:19:40	8,170.87	127.67	0.51	0:26:40	5,204.51	162.64	0.40	0:33:40	200.39	200.39	0.32
0:05:45	12,547.13	49.01	1.34	0:12:45	11,135.96	87.00	0.75	0:19:45	8,134.68	127.10	0.51	0:26:45	5,047.55	157.74	0.41	0:33:45	218.57	218.57	0.30
0:05:50	12,415.58	48.50	1.35	0:12:50	10,982.42	85.80	0.76	0:19:50	8,105.48	126.65	0.51	0:26:50	5,055.12	157.97	0.41	0:33:50	151.75	151.75	0.43
0:05:55	12,529.29	48.94	1.34	0:12:55	11,268.82	88.04	0.74	0:19:55	8,222.85	128.48	0.51	0:26:55	5,055.28	157.98	0.41	0:33:55	227.03	227.03	0.29
0:06:00	12,574.23	49.12	1.33	0:13:00	11,019.13	86.09	0.76	0:20:00	8,162.00	127.53	0.51	0:27:00	5,053.91	157.93	0.41	0:34:00	203.15	203.15	0.32
0:06:05	12,529.20	48.94	1.34	0:13:05	11,192.07	87.44	0.75	0:20:05	8,186.04	127.91	0.51	0:27:05	5,050.61	157.83	0.41	0:34:05	221.69	221.69	0.29
0:06:10	12,688.23	49.56	1.32	0:13:10	11,167.08	87.24	0.75	0:20:10	8,165.80	127.59	0.51	0:27:10	5,018.37	156.82	0.42	0:34:10	216.53	216.53	0.30
0:06:15	12,415.57	48.50	1.35	0:13:15	11,151.20	87.12	0.75	0:20:15	8,078.66	126.23	0.52	0:27:15	5,148.65	160.90	0.40	0:34:15	226.38	226.38	0.29
0:06:20	12,525.20	48.93	1.34	0:13:20	11,076.46	86.53	0.75	0:20:20	8,171.83	127.68	0.51	0:27:20	5,078.14	158.69	0.41	0:34:20	234.62	234.62	0.28
0:06:25	12,361.02	48.29	1.36	0:13:25	11,044.32	86.28	0.76	0:20:25	8,180.46	127.82	0.51	0:27:25	5,105.51	159.55	0.41	0:34:25	222.26	222.26	0.29
0:06:30	12,567.75	49.09	1.33	0:13:30	10,867.33	84.90	0.77	0:20:30	8,202.91	128.17	0.51	0:27:30	5,248.86	164.03	0.40	0:34:30	218.05	218.05	0.30
0:06:35	12,488.28	48.78	1.34	0:13:35	10,853.54	84.79	0.77	0:20:35	8,154.97	127.42	0.51	0:27:35	5,085.44	158.92	0.41	0:34:35	216.03	216.03	0.30
0:06:40	12,458.36	48.67	1.34	0:13:40	10,983.23	85.81	0.76	0:20:40	8,177.78	127.78	0.51	0:27:40	5,101.23	159.41	0.41	0:34:40	235.21	235.21	0.28
0:06:45	12,525.86	48.93	1.34	0:13:45	10,849.24	84.76	0.77	0:20:45	8,054.49	125.85	0.52	0:27:45	5,208.70	162.77	0.40	0:34:45	219.99	219.99	0.29
0:06:50	3,892.20	0.00	1.05	0:13:50	3,151.75	0.00	0.64	0:20:50	1,934.78	0.00	0.49	0:27:50	1,155.36	0.00	0.40	0:34:50	3.40	0.00	0.26
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
																0:35:00	0.00	0.00	0.00

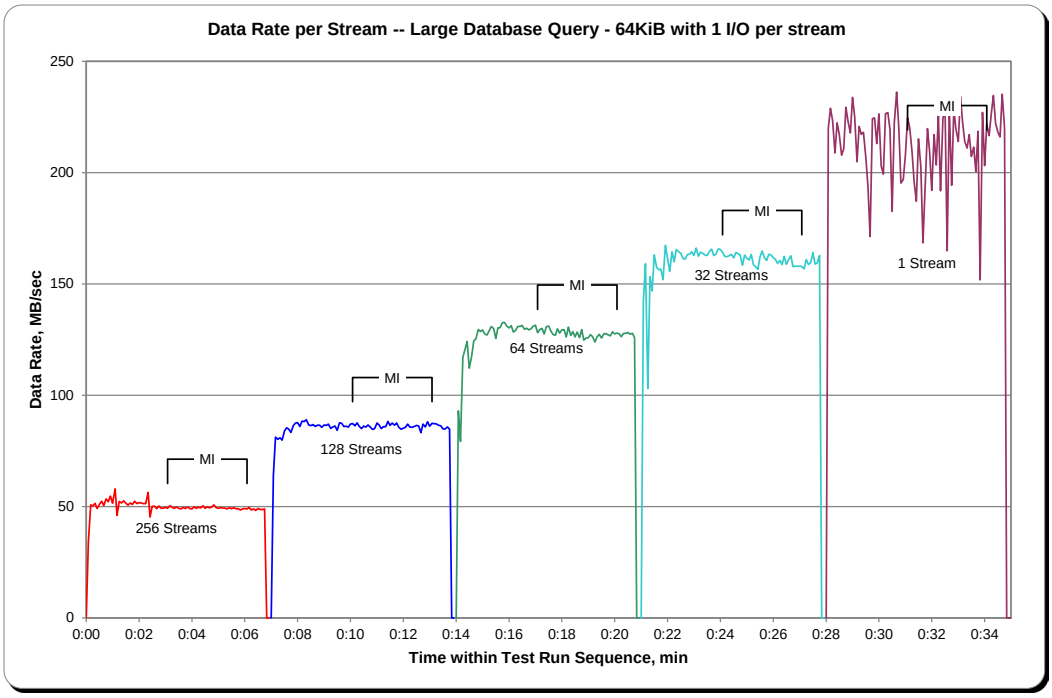
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



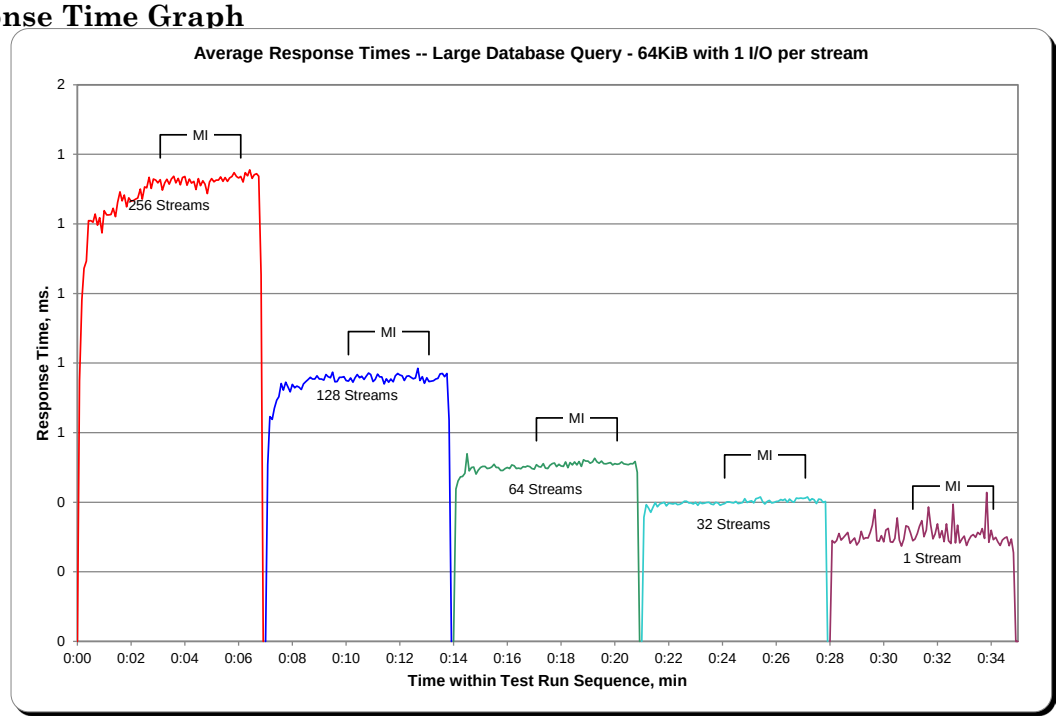
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



Video on Demand Delivery Test

Clause 6.4.4.1

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

Clause 6.4.2.2

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

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

Clause 10.6.8.3

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

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

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Video on Demand Delivery Test Run are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 131.

SPC-2 Test Results File

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

SPC-2 Video on Demand Delivery Test Results File

SPC-2 Video on Demand Delivery Test Run Data

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

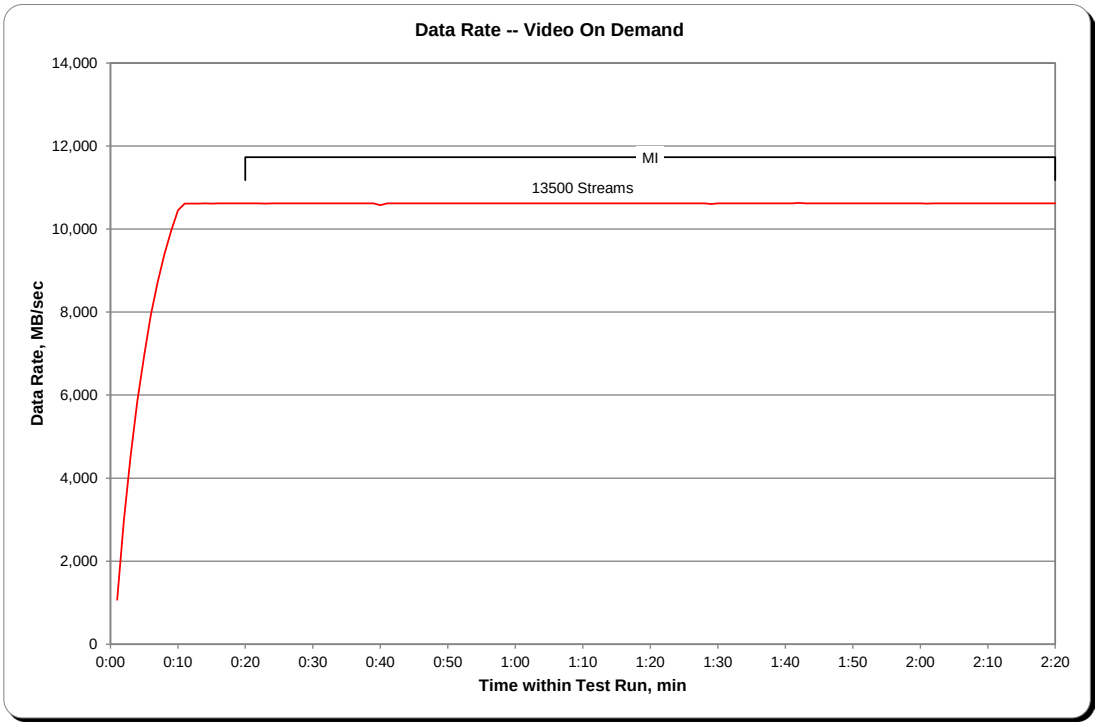
SPC-2-VOD	TR1
Number of Streams	13500
Ramp-up Time, sec	1200
Measurement Interval, sec	7200
Average Data Rate, MB/sec	10,617.15
Per Stream Data Rate, MB/sec	0.79
Average Response Time, ms	19.86
Average Max Response Time, ms	674.89

Video on Demand Delivery Test – TEST RUN DATA BY INTERVAL

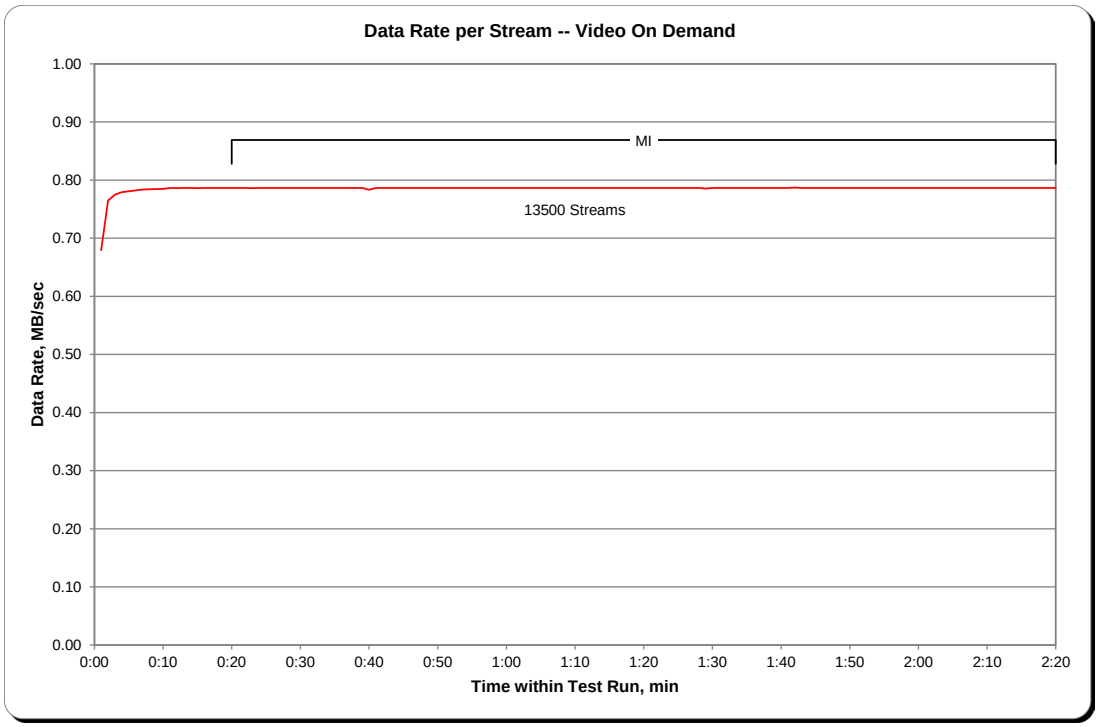
The SPC-2 Video on Demand Delivery Test Run data is contained in the table that appears below. That table is followed by graphs illustrating the average Data Rate and average Data Rate per Stream produced by the same Test Runs. The table and graphs present the data at sixty second intervals.

TR1	13500 Streams				TR1	13500 Streams				TR1	13500 Streams			
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Maximum Response Time, ms
0:01:00	1,068.25	0.68	4.34	42.25	0:51:00	10,617.17	0.79	17.46	464.26	1:41:00	10,618.18	0.79	19.55	614.76
0:02:00	2,983.50	0.76	6.79	143.58	0:52:00	10,617.15	0.79	17.47	415.42	1:42:00	10,627.62	0.79	20.18	829.95
0:03:00	4,526.17	0.77	8.69	233.95	0:53:00	10,617.39	0.79	17.60	574.02	1:43:00	10,617.62	0.79	20.88	900.73
0:04:00	5,844.18	0.78	10.19	267.09	0:54:00	10,617.02	0.79	17.42	494.76	1:44:00	10,617.24	0.79	21.12	898.53
0:05:00	6,960.40	0.78	11.69	336.66	0:55:00	10,617.05	0.79	17.48	507.32	1:45:00	10,617.08	0.79	21.52	937.05
0:06:00	7,941.64	0.78	13.78	337.75	0:56:00	10,617.34	0.79	17.50	543.91	1:46:00	10,617.20	0.79	21.84	927.15
0:07:00	8,717.87	0.78	17.74	417.74	0:57:00	10,616.99	0.79	17.45	488.52	1:47:00	10,617.55	0.79	21.38	992.29
0:08:00	9,385.24	0.78	19.96	415.67	0:58:00	10,617.32	0.79	17.45	492.19	1:48:00	10,617.26	0.79	20.85	928.10
0:09:00	9,945.64	0.78	21.98	604.16	0:59:00	10,616.49	0.79	17.48	486.30	1:49:00	10,617.10	0.79	20.45	733.86
0:10:00	10,452.24	0.78	26.79	698.45	1:00:00	10,617.18	0.79	17.45	435.11	1:50:00	10,617.31	0.79	20.10	719.82
0:11:00	10,614.53	0.79	27.69	722.13	1:01:00	10,617.58	0.79	17.97	559.53	1:51:00	10,617.35	0.79	20.23	618.53
0:12:00	10,612.09	0.79	28.72	802.77	1:02:00	10,616.82	0.79	18.75	587.80	1:52:00	10,617.20	0.79	20.23	661.83
0:13:00	10,614.47	0.79	28.45	780.93	1:03:00	10,616.65	0.79	19.33	613.84	1:53:00	10,616.85	0.79	20.39	726.08
0:14:00	10,617.11	0.79	27.74	752.85	1:04:00	10,616.88	0.79	19.70	686.04	1:54:00	10,617.59	0.79	20.29	678.50
0:15:00	10,612.21	0.79	27.69	722.39	1:05:00	10,617.54	0.79	20.07	710.40	1:55:00	10,616.79	0.79	20.28	661.67
0:16:00	10,618.08	0.79	27.34	736.12	1:06:00	10,616.99	0.79	20.49	755.68	1:56:00	10,616.68	0.79	20.39	672.63
0:17:00	10,617.35	0.79	26.21	686.88	1:07:00	10,617.47	0.79	20.63	685.90	1:57:00	10,617.72	0.79	20.24	674.26
0:18:00	10,617.56	0.79	27.32	734.96	1:08:00	10,617.25	0.79	20.62	706.13	1:58:00	10,616.47	0.79	20.33	645.77
0:19:00	10,617.19	0.79	27.43	685.51	1:09:00	10,617.03	0.79	20.60	712.67	1:59:00	10,617.83	0.79	20.32	659.14
0:20:00	10,618.62	0.79	27.22	699.37	1:10:00	10,616.70	0.79	20.69	800.24	2:00:00	10,616.98	0.79	20.34	663.41
0:21:00	10,616.27	0.79	27.90	775.57	1:11:00	10,615.74	0.79	20.63	697.38	2:01:00	10,614.06	0.79	20.17	626.73
0:22:00	10,615.55	0.79	29.69	711.16	1:12:00	10,617.27	0.79	20.82	746.06	2:02:00	10,616.80	0.79	19.89	676.09
0:23:00	10,613.92	0.79	30.10	782.23	1:13:00	10,617.40	0.79	20.72	732.10	2:03:00	10,618.43	0.79	19.88	687.83
0:24:00	10,617.43	0.79	23.20	765.81	1:14:00	10,617.55	0.79	20.62	685.03	2:04:00	10,618.27	0.79	19.82	657.09
0:25:00	10,616.98	0.79	18.88	660.95	1:15:00	10,617.33	0.79	20.68	721.71	2:05:00	10,617.11	0.79	19.73	760.31
0:26:00	10,617.00	0.79	18.82	560.87	1:16:00	10,617.56	0.79	20.72	782.63	2:06:00	10,617.30	0.79	19.87	732.60
0:27:00	10,617.14	0.79	18.83	620.71	1:17:00	10,616.87	0.79	20.57	666.90	2:07:00	10,616.62	0.79	19.66	759.04
0:28:00	10,616.96	0.79	18.77	610.14	1:18:00	10,617.21	0.79	20.54	679.97	2:08:00	10,616.85	0.79	19.39	703.25
0:29:00	10,617.07	0.79	18.87	595.50	1:19:00	10,617.12	0.79	20.56	661.91	2:09:00	10,617.27	0.79	19.22	619.80
0:30:00	10,616.95	0.79	18.70	650.06	1:20:00	10,617.15	0.79	20.57	645.00	2:10:00	10,617.00	0.79	19.11	630.00
0:31:00	10,617.10	0.79	18.64	703.25	1:21:00	10,617.32	0.79	20.43	656.01	2:11:00	10,617.12	0.79	19.13	606.39
0:32:00	10,617.20	0.79	18.68	566.56	1:22:00	10,617.91	0.79	20.08	600.34	2:12:00	10,617.24	0.79	19.12	661.04
0:33:00	10,617.49	0.79	18.78	569.17	1:23:00	10,617.15	0.79	19.99	711.31	2:13:00	10,617.12	0.79	19.33	710.37
0:34:00	10,616.83	0.79	18.71	584.50	1:24:00	10,617.25	0.79	20.75	743.17	2:14:00	10,617.26	0.79	19.30	633.00
0:35:00	10,617.12	0.79	18.68	599.86	1:25:00	10,617.27	0.79	19.88	696.42	2:15:00	10,617.06	0.79	19.22	649.86
0:36:00	10,617.38	0.79	18.74	582.51	1:26:00	10,617.38	0.79	19.57	549.06	2:16:00	10,616.99	0.79	19.05	594.22
0:37:00	10,616.85	0.79	19.35	815.77	1:27:00	10,617.21	0.79	19.65	717.00	2:17:00	10,617.09	0.79	19.15	654.49
0:38:00	10,617.26	0.79	19.41	840.91	1:28:00	10,617.16	0.79	19.59	657.93	2:18:00	10,617.17	0.79	19.15	637.68
0:39:00	10,617.44	0.79	20.08	937.01	1:29:00	10,600.64	0.79	20.11	589.71	2:19:00	10,617.19	0.79	19.18	705.09
0:40:00	10,575.77	0.78	20.22	908.01	1:30:00	10,617.71	0.79	19.72	688.53	2:20:00	10,617.10	0.79	19.14	630.26
0:41:00	10,617.32	0.79	20.58	956.21	1:31:00	10,617.01	0.79	19.61	671.42					
0:42:00	10,617.60	0.79	20.30	908.59	1:32:00	10,616.75	0.79	20.66	726.00					
0:43:00	10,617.02	0.79	20.21	988.55	1:33:00	10,615.73	0.79	19.77	579.56					
0:44:00	10,617.27	0.79	19.34	757.05	1:34:00	10,617.41	0.79	19.69	621.81					
0:45:00	10,617.20	0.79	18.64	608.55	1:35:00	10,617.23	0.79	19.77	640.97					
0:46:00	10,617.13	0.79	18.40	624.46	1:36:00	10,616.72	0.79	19.68	641.44					
0:47:00	10,617.27	0.79	17.86	580.42	1:37:00	10,615.80	0.79	21.43	745.33					
0:48:00	10,616.67	0.79	17.43	468.61	1:38:00	10,617.32	0.79	19.66	592.48					
0:49:00	10,616.95	0.79	17.55	533.56	1:39:00	10,617.88	0.79	19.57	609.91					
0:50:00	10,617.07	0.79	17.50	450.89	1:40:00	10,616.88	0.79	19.63	601.68					

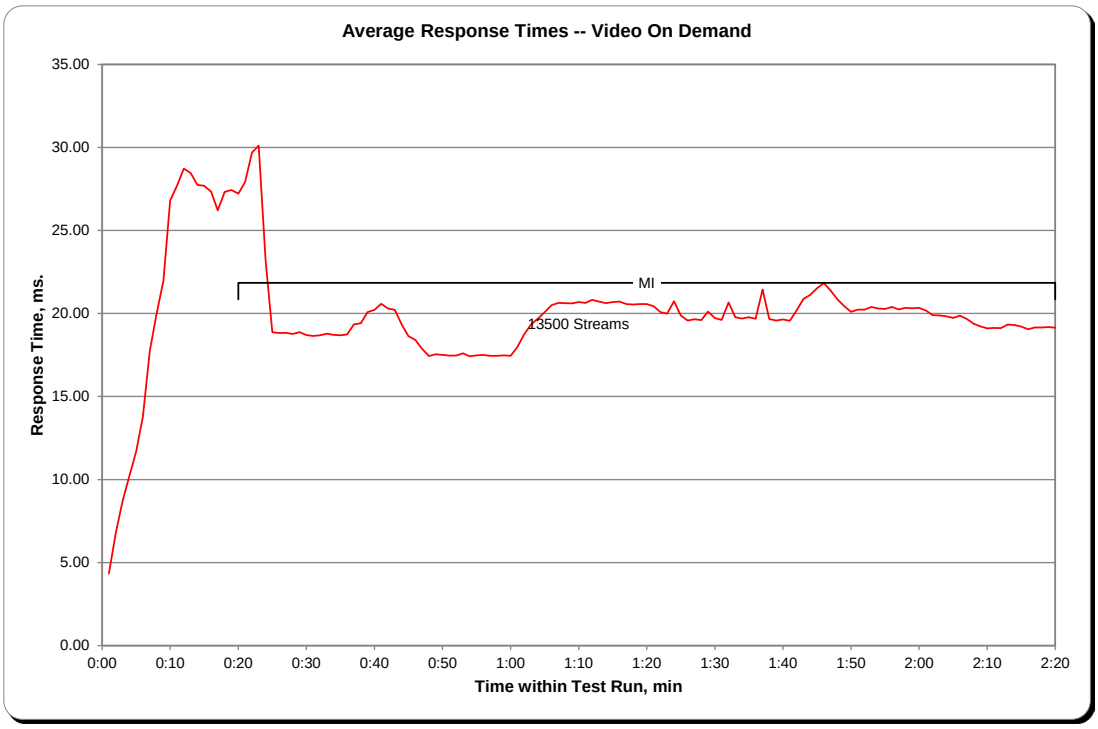
SPC-2 Video on Demand Delivery Average Data Rate Graph



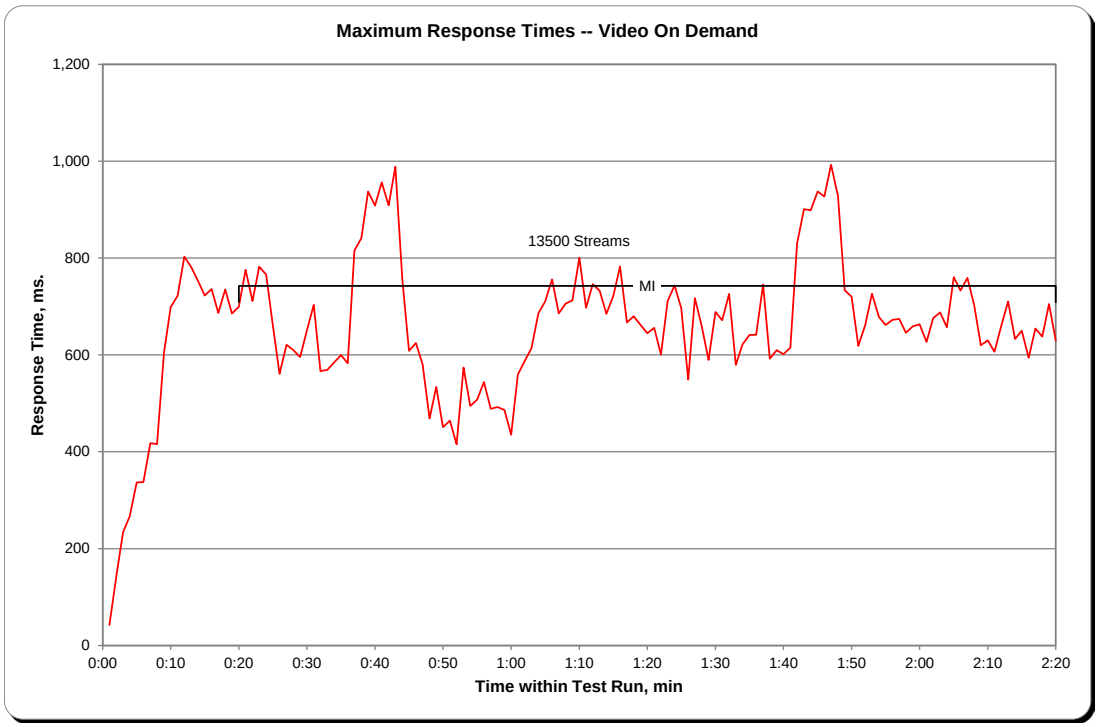
SPC-2 Video on Demand Delivery Average Data Rate per Stream Graph



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 131.

Data Persistence Test Results File

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

Persistence 1 Test Run Results File

Persistence 2 Test Run Results File

Data Persistence Test Results

Data Persistence Test Results	
Data Persistence Test Number: 1	
Total Number of Logical Blocks Written	2,658,733
Total Number of Logical Blocks Re-referenced	113,258
Total Number of Logical Blocks Verified	2,545,475
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 Sun ZFS Storage 7420 Appliance, as documented in this SPC-2 Full Disclosure Report, is 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 Sun ZFS Storage 7420 Appliance.

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:

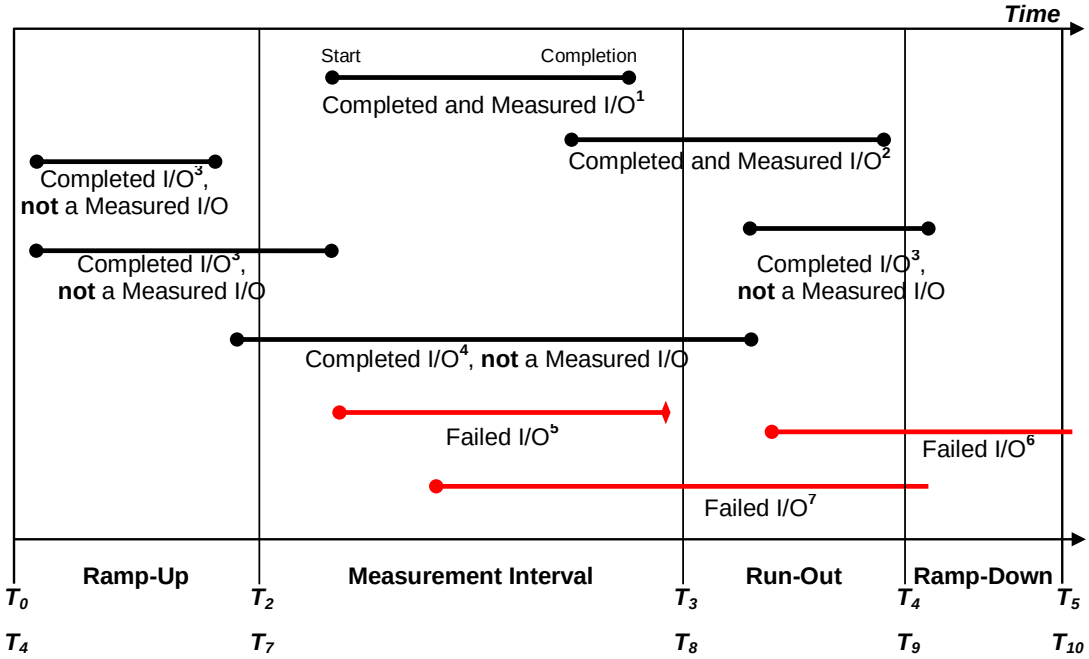
- Test Run 1: Maximum number of Streams, which is selected by the Test Sponsor
- Test Run 2: 50% of the maximum number of Streams used in Test Run 1.
- Test Run 3: 25% of the maximum number of Streams used in Test Run 1.
- Test Run 4: 12.5% of the maximum number of Streams used in Test Run 1.
- Test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

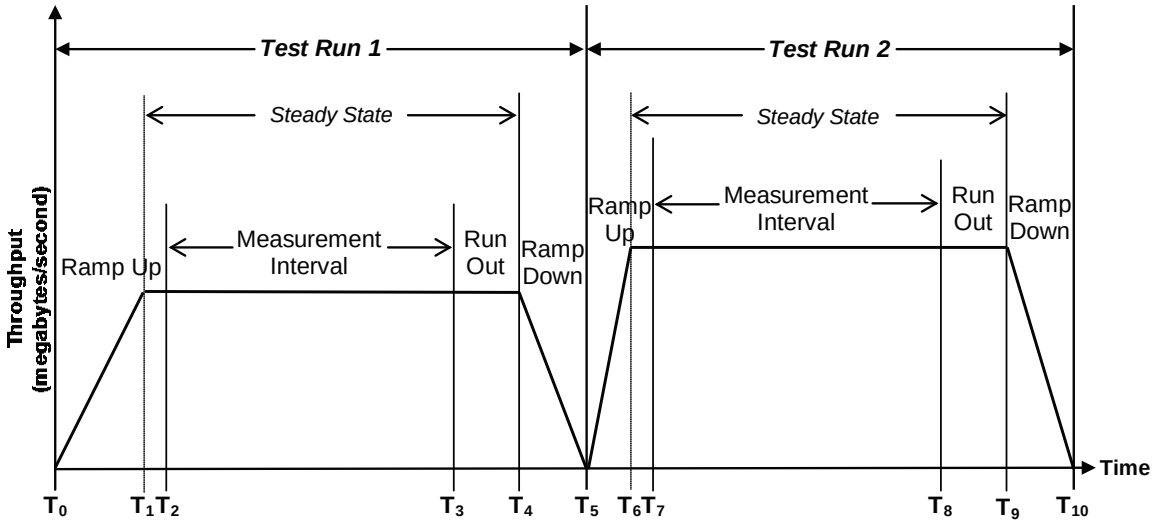
Transfer Size: The Transfer Size parameter specifies the number of bytes in KiB to transfer. *(Clause 3.4.7 of the SPC-2 Benchmark Specification)*

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

Solaris System Parameters

The following Solaris system parameter entries were changed in the **/etc/system** file for each Host System:

set maxpgio = 65536
Defines the max number of page IO requests that can be queued. Default 256

set fastscan = 65536
Defines the maximum number of pages per second that the system scans. The default is 67,108,864 pages per second.

set ufs:ufs_HW = 20971520

set ufs:ufs_LW = 15728640
*Description : **ufs_HW** specifies the number of bytes outstanding on a single file barrier value. **ufs_LW** is the barrier for the number of bytes outstanding on a single file below which the condition variable on which other sleeping processes are toggled. Default 8 x 1024 X 1024 for **ufs_LW** and 16 X 1024 X 1024 for **ufs_HW**.*

set autoup = 1024

set tune_t_fsflushr = 1
*Along with **tune_t_fsflushr**, **autoup** controls the amount of memory examined for dirty pages. Default 30 for **autoup** and 1 for **tune_t_fsflusher***

set sq_max_size = 100
Sets the depth of the syncq (number of messages) before STREAMS queue generates a QFULL message. The default is 10000.

set ssd:ssd_max_throttle=1000
defines the max queue depth per lun

set maxphys = 8388608
Defines the maximum physical write in bytes.

set sd:sd_max_throttle=1000
defines the max queue depth per lun

set sd:sd_xbuf_active_limit=2048
set ssd:ssd_xbuf_active_limit=2048
Two entries; one for SPARC and one for x86.
Limit the total request to the transport layer per device.
The default is 512.

set hires_tick=1
Improve the resolution of the clock for better IO driver resolution

HBA Parameter

The ***execution throttle*** value was changed to 256 from the default of 32 in the **/kernel/drv/qlc.conf** file for each Host System.

APPENDIX C: TESTED STORAGE CONFIGURATION (TSC) CREATION

Assign Host Names and IP Addresses

The Sun ZFS Storage 7420 Appliance is shipped with Quick Start instruction that provide details for assigning host names, IP addresses and Clustron cards. The Clustron cards support communication between storage controllers.

Configure the Tested Storage Configuration (TSC)

The Sun ZFS Storage 7420 Appliance includes two controllers, referenced below as **A** and **B**. The TSC will be configured using the scripts described below, which are performed on the Master Host System via the "**root**" user. All referenced scripts appear at the end of this section.

Build the 7420 Cluster

The script, **Build-16T-Cluster.sh**, will invoke scripts to:

- Build RAID pools on each controller
- Create 128 volumes on each controller, 16 per pool
- Format and align LUNS
- Create all disk listing and parameter files

Build RAID Pools

The script, **build_16Tray_16Pools.sh** will create eight RAID Mirror Pools per controller Each of the pools is a 11+11 with 2 spares

Create Volumes

The scripts, **A-Vols.sh** and **B-Vols.sh**, will each invoke the script **build-vols.sh** and will create128 volumes on each controller. All 256 volumes are accessible by both controllers.

Format and Align LUNs

The script, **label-64bit-multi-host.sh**, uses **ldq-256.txt** and **lfp-256.txt** to create SPC-2 parameter files and will invoke **Get_Hardware_list.sh** which will invoke **get_luns.sh** and **get_hw.sh** to create a volume listing from the two controllers in order to format and align the LUNs. In addition, this script is used to create various documentation listings and configuration files used in the benchmark execution.

Text files created by **label-64bit-multi-host.sh**:

- **A-head_hw_list.txt**: Physical hardware list from the A controller of the 7420 cluster
- **B-head_hw_list.txt**: Physical hardware list from the B controller of the 7420 cluster
- **7420_Cluster_Lun_List.txt**: Logical Volume listing from the 7420 cluster
- **disklist.txt**: Logical volume listing form the master client
- **prtvtoc.txt**: Logical volume prtvtoc listing from the master client
- **pre.txt**: Vdbench parameter file for pre-filling logical volumes

- **spc2-vod-SH.txt**: SPC-2 VOD parameter file
- **spc2-ldq-SH.txt**: SPC-2 LDQ parameter file
- **spc2-lfp-SH.txt**: SPC-2 LFP parameter file
- **spc2-persist1-SH.txt**: SPC-2 Persist 1 parameter file
- **spc2-persist2-SH.txt**: SPC-2 Persist 2 parameter file

Referenced Scripts

Build-16T-Cluster.sh

```
#!/bin/bash
#
# Builds SPC2 7420 a/b cluster 1-2-2012
#
#
clear
banner " Rebuilding"
echo " "
banner " SPC2 7420"
echo " "
banner " Cluster"
echo " "
echo " Please wait"
echo " "
# Remove all 16 pools from both 7420 heads and build new pools
build_16Tray_16Pools.sh
clear
echo " "
echo " Please wait"
echo " "

# Remove old volumes add new volumes
#cfgadm -la ;devfsadm -C ; devfsadm
clear
echo " "
echo " Please wait"
echo " "
#
# Create volumes on all 16 pools on Both heads
A-Vols.sh
clear
echo " "
echo " Please wait"
echo " "

B-Vols.sh
clear
echo "done "
echo " Please wait"
echo " "
#
#
# Remove old and add new volumes
cfgadm -la ;devfsadm -C ; devfsadm
clear
echo " "
echo " Please wait This next step can take up to ten minutes"
echo " "
```

```
#
# Label new volumes and create all Parameters files
#echo " Label all Volumes create all parm files and a prtvotoc list"
label-64bit-multi-host.sh
```

A-Vols.sh

```
#!/bin/bash
#
# 9-10-2010
#
#   # run as : #vols , volsize , volblocksize , pool
##       ./build-vols.sh 16 121g 128k pool# | ssh root@sbm-q112-7420a.us.oracle.com
./build-vols.sh 16 116g 128k pool3 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool4 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool5 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool7 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool9 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool11 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool12 | ssh root@sbm-q112-7420a
./build-vols.sh 16 116g 128k pool14 | ssh root@sbm-q112-7420a
```

B-Vols.sh

```
#!/bin/bash
#
# 9-10-2010
#
#   # run as : #vols , volsize , volblocksize , pool
##       ./build-vols.sh 16 121g 128k pool# | ssh root@sbm-q112-7420b.us.oracle.com
./build-vols.sh 16 116g 128k pool1 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool2 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool6 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool8 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool10 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool13 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool15 | ssh root@sbm-q112-7420b
./build-vols.sh 16 116g 128k pool16 | ssh root@sbm-q112-7420b
```

build-vols.sh

```
#!/bin/bash
#
# 9-10-2010
#
#   # run as : #vols , volsize , volblocksize , pool
##       ./build-vols.sh 16 121g 128k pool# | ssh root@sbm-q112-7420a.us.oracle.com
#
for ((i=1; $i <= $1; i=$i+1))
do
    echo "shares"
    echo "set pool=$4"
    echo "select default lun spc2-$i"
    echo "set volsize=$2"
    echo "set volblocksize=$3"
    echo "commit"
    echo "cd .."
done
#
# now we set logbias to throughput
#
        echo "shares"
        echo "set pool=$4"
```

```
        echo "select default"
        echo "set logbias=throughput"
        echo "commit"
exit
```

label-64bit-multi-host.sh

```
#!/bin/ksh
#
# This script was created on 11-7-11 to help label volumes for spc2 testing on x-86
# mytest file created with fdisk -W mytest /dev/rdsk/c0t600blblablad0p0
#
#
# SET Controller ID
Cid=c0t600

# Set lun size
export size=124545515008

# Set VOD streams
VOD=13500

# Global Stream count
STREAMS=256
#
# Do not edit below this line
#
# Streams Set for LDQ
LDQ=ldq-$STREAMS.txt
#
# Streams Set for LFP
LFP=lfp-$STREAMS.txt
#
# Set Output directory
mv -R /spc/config/spc2/q112-7420b /spc/config/spc2/q112-7420b-old
mkdir /spc/config/spc2/q112-7420b
export output=/spc/config/spc2/q112-7420b/
#
#
#set -x
export NOINUSE_CHECK=1
rm disk* p*.txt spc*.txt
clear
#
banner "    SPC2 "
banner "   Config "
sleep 2
echo " "
echo "   Please wait "
echo " "
devfsadm -C ; cfgadm -la ; devfsadm
clear
#

#
#
#
echo " "
echo "You are running this SPC2 script on `hostname` "
sleep 2
echo " "
echo "Master SPC-2 Client is set to `hostname` "
sleep 2
```

```
echo " "
echo "Slave SPC-2 Client is set to sbm-q212-4470b "
echo "Slave SPC-2 Client is set to sbm-q212-4470c "
sleep 2
echo " "
echo "You are configuring all devices on controller $Cid "
sleep 2
echo " "
echo "Volume size has been set to $size "
sleep 2
echo " "
echo "Output directory is $output "
sleep 2
echo " "
echo "Ldq is set for $LDQ "
sleep 2
echo " "
echo "LFP has been set to $LFP "
sleep 2
echo " "
echo "VOD is set to $VOD streams "
sleep 2
echo " "
echo "Kill me now to make changes or wait fifteen minutes "
sleep 5
echo " "
# Probe server and remove all old device links
devfsadm -C
devfsadm
echo " "
echo " "
echo " Configuring new disks with zpool"
echo " "
echo " Configuring `ls /dev/rdsk/$Cid*d0s2 | wc -l ` disks"
sleep 10
echo " "
ls /dev/rdsk/$Cid*d0s2 > disks
echo " "
echo " Starting to Label all new disks"
echo " "
# Now we move on to create label on all disks
cat disks | sed 's/d0s2/d0/g' > disk
#
C_disks=disk
#####
#:<<'COMMENT'
for f in `cat $C_disks`
do
zpool create z $f
zpool destroy z
done
sleep 2
# Now we move on to create label on all disks
# line below can be removed
###cat disks | sed 's/s2\@/s2/g' > disk1
#
C_disks=disks
#####
for f in `cat $C_disks`
do
format -e $f << EOFF
label
1
```

```
y
quit
quit
EOFF
done
clear
echo " "
#
echo " "
echo " "
echo " All `ls /dev/rdsk/$Cid*d0s2 | wc -l ` disks have been configured"
echo " "
sleep 3
#COMMENT
#
echo " Now we start building all parameter files"
sleep 1
echo " "
echo " VOD is being created"
echo " "
sleep 2
# We now use slice 0 instead of slice 2
cat disks | sed 's/s2/s0/g' > disk1
# Use when clients have different controller ID than the master
#
# Vod is first
touch v.txt
echo " " >> v.txt
echo " # Video on Demand Test (VOD) " >> v.txt
echo " " >> v.txt
#echo "host=localhost,jvms=24,java=(java,-Xmx2048m) " >> v.txt
echo "host=localhost,jvms=24,java=(java,-d64,-Xmx2048m) " >> v.txt
echo "host=(sbm-q212-4470b,4470b),jvms=24,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
v.txt
echo "host=(sbm-q212-4470c,4470c),jvms=24,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
v.txt
echo "sd=default,size=$size " >> v.txt
echo " " >> v.txt
#
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>v.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>v.txt
count=`expr $count + 1`
  done
done
#
#
```

```
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>v.txt
count=`expr $count + 1`
  done
done
#
#
echo " " >>v.txt
echo "maxlatestart=0" >>v.txt
echo "videosegmentduration=1200" >>v.txt
echo "maxlatevod=0" >>v.txt
echo "#reportinginterval=15" >>v.txt
echo "reportinginterval=5" >>v.txt
echo " " >>v.txt
echo
"rd=default,rampup=1200,periods=600,measurement=7200,runout=45,rampdown=15,buffers=8
" >>v.txt
echo "rd=TR1-"$VOD"s_SPC-2-VOD,streams=$VOD" >>v.txt

echo " " >>v.txt
#
# pre condition is next
touch pc.txt
echo " " >> pc.txt
echo " # Pre-Conditioning by sequential 1m writes " >> pc.txt
echo " " >> pc.txt
echo " " >> pc.txt
echo "compratio=1 " >> pc.txt

echo "sd=default,th=2" >> pc.txt
#
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,lun=$x " >>pc.txt
     count=`expr $count + 1`
  done
done
#
echo " " >>pc.txt
echo "wd=wd1,sd=sd*,seekpct=eof,rdpct=0,xfersize=1m" >>pc.txt
echo "rd=rd1,wd=wd*,elapsed=72h,interval=60,iorate=max" >>pc.txt
#
echo "#wd=fmt,sd=sd*,seekpct=eof,rdpct=0,xfersize=1m" >>pc.txt
echo "#rd=default,wd=fmt,elapsed=72h,interval=60,iorate=max" >>pc.txt
echo "#rd=rd1,sd=single " >>pc.txt

echo " " >>pc.txt
echo " " >>pc.txt
#
# Now we start building the persist files
#
# Persist 1 is first
echo " Persist 1 file is being created"
```

```
echo " "
sleep 3
touch p1.txt
echo " " >> p1.txt
echo " # Persist 1  " >> p1.txt
echo " " >> p1.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> p1.txt
#echo "host=localhost,jvms=4,java=(java,-Xmx2048m) " >> p1.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
p1.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
p1.txt
echo "sd=default,size=$size " >> p1.txt
echo " " >> p1.txt


counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>p1.txt
     count=`expr $count + 1`
  done
done
#:<<'COMMENT'
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>p1.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>p1.txt
count=`expr $count + 1`
  done
done
#COMMENT
#
echo " " >>p1.txt
echo "maxlatestart=1" >>p1.txt
echo "reportinginterval=5" >>p1.txt
echo "segmentlength=512m " >>p1.txt
echo " " >>p1.txt
echo
"rd=default,rampup=180,periods=90,measurement=300,runout=0,rampdown=0,buffers=1"
>>p1.txt
echo "rd=default,rdpct=0,xfersize=1024k" >>p1.txt
echo "rd=TR1-"$STREAMS"s_SPC-2-persist-w,streams=$STREAMS" >>p1.txt
#
# Now we start building the persist 2 file
#
```

```
# Persist 2 is first
echo " Persist 2 file is being created"
echo " "
sleep 3
touch p2.txt
echo " " >> p2.txt
echo " # Persistence Test Run 2  " >> p2.txt
echo " " >> p2.txt
#echo "host=localhost,jvms=4,java=(java,-Xmx2048m) " >> p2.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> p2.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
p2.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
p2.txt
echo "sd=default,size=$size " >> p2.txt
echo " " >> p2.txt

counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>p2.txt
     count=`expr $count + 1`
  done
done
echo " " >>p2.txt
#:<<'COMMENT'
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>p2.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>p2.txt
count=`expr $count + 1`
  done
done
#COMMENT
#
echo " " >>p2.txt
echo "maxlatestart=1" >>p2.txt
echo "reportinginterval=5" >>p2.txt
echo "segmentlength=512m " >>p2.txt
echo "maxpersistenceerrors=10" >>p2.txt
echo " " >>p2.txt
echo "*corruptstreams=3" >>p2.txt
echo "rd=default,buffers=1,rdpct=100,xfersize=1024k" >>p2.txt
echo "rd=TR1-"$STREAMS"s_SPC-2-persist-r" >>p2.txt
# Now we start building the LDQ file
#
```

```
#
#
#
# LDQ is next
echo " LDQ file is being created"
echo " "
sleep 3
touch ldq.txt
echo " " >> ldq.txt
echo " # * Large Database Query Test (LDQ)  " >> ldq.txt
echo " " >> ldq.txt
#echo "host=localhost,jvms=4,java=(java,-Xmx2048m) " >> ldq.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> ldq.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2" >>
ldq.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2" >>
ldq.txt
echo "sd=default,size=$size " >> ldq.txt
echo " " >> ldq.txt

counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>ldq.txt
     count=`expr $count + 1`
  done
done
echo " " >>ldq.txt
#:<<'COMMENT'
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>ldq.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>ldq.txt
count=`expr $count + 1`
  done
done
#COMMENT
#
echo " " >>ldq.txt
echo "maxlatestart=0" >>ldq.txt
echo "reportinginterval=5" >>ldq.txt
echo "segmentlength=512m " >>ldq.txt
echo " " >>ldq.txt
echo
"rd=default,rdpct=99,rampup=180,periods=90,measurement=180,runout=45,rampdown=15"
>>ldq.txt
```

```
echo "#
rd=default,rdpct=99,rampup=180,periods=90,measurement=600,runout=45,rampdown=15"
>>ldq.txt
cat $LDQ >>ldq.txt
echo " " >>ldq.txt
# Now we start building the LFP file
#
# LFP is next
echo " LFP file is being created"
echo " "
sleep 3
touch lfp.txt
echo " " >> lfp.txt
echo " # * Large File Processing Test (LFP) " >> lfp.txt
echo " " >> lfp.txt
#echo "host=localhost,jvms=4,java=(java,-Xmx2048m) " >> lfp.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> lfp.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
lfp.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
lfp.txt
echo "sd=default,size=$size " >> lfp.txt
echo " " >> lfp.txt


counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>lfp.txt
     count=`expr $count + 1`
  done
done
#:<<'COMMENT'
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>lfp.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>lfp.txt
count=`expr $count + 1`
  done
done
#COMMENT
sleep 2
echo " "
echo "DONE deal with the four parameter files "
sleep 2
#
```

```
echo " " >>lfp.txt
echo "maxlatestart=0" >>lfp.txt
echo "reportinginterval=5" >>lfp.txt
echo "segmentlength=512m " >>lfp.txt
echo " " >>lfp.txt
echo
"rd=default,rampup=180,periods=90,measurement=180,runout=45,rampdown=15,buffers=1"
>>lfp.txt
echo "#
rd=default,rampup=180,periods=90,measurement=600,runout=45,rampdown=15,buffers=1"
>>lfp.txt
cat $LFP >>lfp.txt
#
# LFP pre Power is next
echo " Pre Power LFP file is being created"
echo " "
sleep 3
touch pre-lfp.txt
echo " " >> pre-lfp.txt
echo " # * Large File Processing Test (LFP) " >> pre-lfp.txt
echo " " >> pre-lfp.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> pre-lfp.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2" >>
pre-lfp.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2" >>
pre-lfp.txt
echo "sd=default,size=$size " >> pre-lfp.txt
echo " " >> pre-lfp.txt

counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>pre-lfp.txt
     count=`expr $count + 1`
  done
done
echo " " >>pre-lfp.txt
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>pre-lfp.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>pre-lfp.txt
count=`expr $count + 1`
  done
done
#
echo " " >>pre-lfp.txt
```

```
echo "maxlatestart=0" >>pre-lfp.txt
echo "reportinginterval=5" >>pre-lfp.txt
echo "segmentlength=512m " >>pre-lfp.txt
echo " " >>pre-lfp.txt
echo
"rd=default,rampup=180,periods=90,measurement=600,runout=45,rampdown=15,buffers=1"
>>pre-lfp.txt
echo " " >>pre-lfp.txt
echo "rd=default,rdpct=50,xfersize=1024k" >>pre-lfp.txt
echo "rd=Pre_SPC-2-FP,streams=$STREAMS" >>pre-lfp.txt
#
#
# LFP Post Power is next
echo " Post Power LFP file is being created"
echo " "
sleep 3
touch post-lfp.txt
echo " " >> post-lfp.txt
echo " # * Large File Processing Test (LFP) " >> post-lfp.txt
echo " " >> post-lfp.txt
echo "host=localhost,jvms=4,java=(java,-d64,-Xmx2048m) " >> post-lfp.txt
echo "host=(sbm-q212-4470b,4470b),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
post-lfp.txt
echo "host=(sbm-q212-4470c,4470c),jvms=4,java=(java,-d64,-Xmx2048m),shell=spc2 " >>
post-lfp.txt
echo "sd=default,size=$size " >> post-lfp.txt
echo " " >> post-lfp.txt

counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=localhost,lun=$x " >>post-lfp.txt
     count=`expr $count + 1`
  done
done
echo " " >>post-lfp.txt
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470b,lun=$x " >>post-lfp.txt
     count=`expr $count + 1`
  done
done
#
counter=`ls /dev/rdsk/$Cid*d0s2 | wc -l`
count=1
while (test "$count" -lt "$counter")
do
  for x in `cat disk1`
  do
     echo "sd=sd$count,host=4470c,lun=$x " >>post-lfp.txt
count=`expr $count + 1`
  done
done
#
echo " " >>post-lfp.txt
echo "maxlatestart=0" >>post-lfp.txt
```

```
echo "reportinginterval=5" >>post-lfp.txt
echo "segmentlength=512m " >>post-lfp.txt
echo " " >>post-lfp.txt
echo
"rd=default,rampup=180,periods=90,measurement=600,runout=45,rampdown=15,buffers=1"
>>post-lfp.txt
echo " " >>post-lfp.txt
echo "rd=default,rdpct=50,xfersize=1024k" >>post-lfp.txt
echo "rd=Post_SPC-2-FP,streams=`expr $STREAMS / 4`" >>post-lfp.txt
#
# Now we rename all the new files
echo " All parameter files are being renamed"
echo " "
#
#
#
sleep 3
mv v.txt spc2-vod-SH.txt
mv pc.txt pre.txt
mv p1.txt spc2-persist1-SH.txt
mv p2.txt spc2-persist2-SH.txt
mv ldq.txt spc2-ldq-SH.txt
mv lfp.txt spc2-lfp-SH.txt
mv post-lfp.txt spc2-post-lfp-SH.txt
mv pre-lfp.txt spc2-pre-lfp-SH.txt
#
# Create  prtvtoc.txt file
cat disk1 | sed 's/s0/s2/g' > disk2
mv disk2 disk1
rm disk disks
echo " Prtvtoc file is being created"
echo " "
sleep 3
touch prtvtoc.txt
for x in `cat disk1`
do
prtvtoc $x >> prtvtoc.txt
done
mv disk1 disklist.txt
# Now we copy all files to the config directory
echo " "
echo " All files are being copied to $output"
echo " "
sleep 3
cp * $output
echo " "
# Get a hardware and volume listing from Cluster
echo " Create Hardware and Volume list"
Get_Hardware_list.sh
echo " "
echo " "
banner " Done Deal"
echo " "
echo " "
echo " "
echo " "
```

Get_Hardware_list.sh

```
#!/bin/bash

# To do: add split ASU4 LUNs for more stable precondition
# To do: test and debug this rough draft

AR_HOSTNAME_A=sbm-q112-7420a
AR_HOSTNAME_B=sbm-q112-7420b

echo "Volume listing from Head_A " > Lun_List_Head_A.txt
echo "Volume listing from Head_B " > Lun_List_Head_B.txt

for x in 3 4 5 7 9 11 12 14
do
echo "Volume listing from Pool$x " >> Lun_List_Head_A.txt
./get_luns.sh $AR_HOSTNAME_A $x >> Lun_List_Head_A.txt
echo " " >> Lun_List_Head_A.txt
done

for x in 1 2 6 8 10 13 15 16
do
echo "Volume listing from Pool$x " >> Lun_List_Head_B.txt
./get_luns.sh $AR_HOSTNAME_B $x >> Lun_List_Head_B.txt
echo " " >> Lun_List_Head_B.txt
done

#
cat Lun_List*.txt > 7420_Cluster_Lun_List.txt
rm Lun_List*.txt
#

./get_hw.sh $AR_HOSTNAME_A > A-head_hw_list.txt
./get_hw.sh $AR_HOSTNAME_B > B-head_hw_list.txt
#
#
```

get_luns.sh

```
#!/bin/bash

AR_HOSTNAME=$1
POOL=$2

ssh -T root@$AR_HOSTNAME <<EOF
script
   run('shares');
   run('set pool=pool$POOL');
   run('select default');
   print(run('list lun'))
   run('done');
EOF

exit
```

get_hw.sh

```
#!/bin/bash

AR_HOSTNAME=$1

# Check for proper input argument
if [ -z $AR_HOSTNAME ]
then
   echo "Error: Argument required"
   echo "Usage: $0 [Fishworks_appliance_hostname]"
   exit
fi

# Check that host is up
ping $AR_HOSTNAME > /dev/null
if [ $? = 1 ]
   then
     echo "Unable to contact appliance. Please check hostname and network
connectivity."
exit
fi

#echo "Determining appliance version info..."

ssh -T $AR_HOSTNAME <<EOF
script
   run('maintenance hardware');
   lines = run('show');

   for (i = 0; i < lines.length; i++) {
     printf("%s", lines[i])
     }

   run('done');
EOF
```

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

Common Command Lines

The following command lines were identical in all of the following command and parameter files, appearing as noted in each file.

```
host=localhost,jvms=24,java=(java,-d64,-Xmx2048m)
host=(sbm-q212-4470b,4470b),jvms=24,java=(java,-d64,-Xmx2048m),shell=spc2
host=(sbm-q212-4470c,4470c),jvms=24,java=(java,-d64,-Xmx2048m),shell=spc2
sd=default,size=124545515008

sd=sd1,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F790001d0s0
sd=sd2,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F790002d0s0
sd=sd3,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7A0003d0s0
sd=sd4,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7B0004d0s0
sd=sd5,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7C0005d0s0
sd=sd6,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7C0006d0s0
sd=sd7,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7E0007d0s0
sd=sd8,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7E0008d0s0
sd=sd9,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F7F0009d0s0
sd=sd10,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F80000Ad0s0
sd=sd11,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F81000Bd0s0
sd=sd12,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F82000Cd0s0
sd=sd13,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F83000Dd0s0
sd=sd14,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F83000Ed0s0
sd=sd15,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F85000Fd0s0
sd=sd16,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F850010d0s0
sd=sd17,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F880011d0s0
sd=sd18,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F890012d0s0
sd=sd19,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8A0013d0s0
sd=sd20,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8B0014d0s0
sd=sd21,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8B0015d0s0
sd=sd22,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8D0016d0s0
sd=sd23,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8D0017d0s0
sd=sd24,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8E0018d0s0
sd=sd25,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F8F0019d0s0
sd=sd26,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F90001Ad0s0
sd=sd27,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F91001Bd0s0
sd=sd28,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F92001Cd0s0
sd=sd29,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F92001Dd0s0
sd=sd30,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F93001Ed0s0
sd=sd31,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F94001Fd0s0
sd=sd32,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F950020d0s0
sd=sd33,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F970021d0s0
sd=sd34,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F980022d0s0
sd=sd35,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F990023d0s0
sd=sd36,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9A0024d0s0
sd=sd37,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9B0025d0s0
sd=sd38,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9B0026d0s0
sd=sd39,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9C0027d0s0
sd=sd40,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9D0028d0s0
sd=sd41,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9E0029d0s0
sd=sd42,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9E002Ad0s0
sd=sd43,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441F9F002Bd0s0
sd=sd44,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA1002Cd0s0
sd=sd45,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA1002Dd0s0
sd=sd46,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA2002Ed0s0
```

```
sd=sd47,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA3002Fd0s0
sd=sd48,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA40030d0s0
sd=sd49,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA70031d0s0
sd=sd50,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA70032d0s0
sd=sd51,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA80033d0s0
sd=sd52,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FA90034d0s0
sd=sd53,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAA0035d0s0
sd=sd54,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAB0036d0s0
sd=sd55,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAC0037d0s0
sd=sd56,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAD0038d0s0
sd=sd57,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAE0039d0s0
sd=sd58,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FAE003Ad0s0
sd=sd59,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB0003Bd0s0
sd=sd60,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB1003Cd0s0
sd=sd61,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB2003Dd0s0
sd=sd62,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB2003Ed0s0
sd=sd63,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB3003Fd0s0
sd=sd64,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB40040d0s0
sd=sd65,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB70041d0s0
sd=sd66,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB80042d0s0
sd=sd67,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FB90043d0s0
sd=sd68,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBA0044d0s0
sd=sd69,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBA0045d0s0
sd=sd70,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBB0046d0s0
sd=sd71,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBC0047d0s0
sd=sd72,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBD0048d0s0
sd=sd73,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBE0049d0s0
sd=sd74,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBF004Ad0s0
sd=sd75,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FBF004Bd0s0
sd=sd76,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC0004Cd0s0
sd=sd77,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC1004Dd0s0
sd=sd78,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC2004Ed0s0
sd=sd79,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC3004Fd0s0
sd=sd80,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC40050d0s0
sd=sd81,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC60051d0s0
sd=sd82,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC70052d0s0
sd=sd83,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FC90053d0s0
sd=sd84,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCA0054d0s0
sd=sd85,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCA0055d0s0
sd=sd86,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCB0056d0s0
sd=sd87,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCC0057d0s0
sd=sd88,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCD0058d0s0
sd=sd89,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCE0059d0s0
sd=sd90,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FCF005Ad0s0
sd=sd91,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD4005Bd0s0
sd=sd92,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD5005Cd0s0
sd=sd93,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD6005Dd0s0
sd=sd94,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD7005Ed0s0
sd=sd95,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD7005Fd0s0
sd=sd96,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FD90060d0s0
sd=sd97,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FDB0061d0s0
sd=sd98,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FDC0062d0s0
sd=sd99,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FDD0063d0s0
sd=sd100,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FDE0064d0s0
sd=sd101,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FDF0065d0s0
sd=sd102,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE00066d0s0
sd=sd103,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE10067d0s0
sd=sd104,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE10068d0s0
sd=sd105,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE30069d0s0
sd=sd106,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE3006Ad0s0
sd=sd107,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE4006Bd0s0
sd=sd108,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE5006Cd0s0
sd=sd109,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE6006Dd0s0
```

```
sd=sd110,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE7006Ed0s0
sd=sd111,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE8006Fd0s0
sd=sd112,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FE90070d0s0
sd=sd113,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FEB0071d0s0
sd=sd114,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FEC0072d0s0
sd=sd115,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FED0073d0s0
sd=sd116,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FEE0074d0s0
sd=sd117,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FEF0075d0s0
sd=sd118,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF00076d0s0
sd=sd119,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF00077d0s0
sd=sd120,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF20078d0s0
sd=sd121,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF30079d0s0
sd=sd122,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF3007Ad0s0
sd=sd123,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF4007Bd0s0
sd=sd124,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF5007Cd0s0
sd=sd125,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF6007Dd0s0
sd=sd126,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF7007Ed0s0
sd=sd127,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF8007Fd0s0
sd=sd128,host=localhost,lun=/dev/rdsk/c0t600144F084B772B200004F441FF90080d0s0
sd=sd129,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFB0001d0s0
sd=sd130,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFC0002d0s0
sd=sd131,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFD0003d0s0
sd=sd132,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFE0004d0s0
sd=sd133,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFE0005d0s0
sd=sd134,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F441FFF0006d0s0
sd=sd135,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420000007d0s0
sd=sd136,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420010008d0s0
sd=sd137,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420020009d0s0
sd=sd138,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442002000Ad0s0
sd=sd139,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442004000Bd0s0
sd=sd140,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442004000Cd0s0
sd=sd141,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442006000Dd0s0
sd=sd142,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442007000Ed0s0
sd=sd143,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442007000Fd0s0
sd=sd144,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420090010d0s0
sd=sd145,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44200D0011d0s0
sd=sd146,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44200E0012d0s0
sd=sd147,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44200F0013d0s0
sd=sd148,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420100014d0s0
sd=sd149,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420110015d0s0
sd=sd150,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420120016d0s0
sd=sd151,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420130017d0s0
sd=sd152,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420140018d0s0
sd=sd153,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420150019d0s0
sd=sd154,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442016001Ad0s0
sd=sd155,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442018001Bd0s0
sd=sd156,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442019001Cd0s0
sd=sd157,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44201A001Dd0s0
sd=sd158,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44201B001Ed0s0
sd=sd159,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44201B001Fd0s0
sd=sd160,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44201D0020d0s0
sd=sd161,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44201F0021d0s0
sd=sd162,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420200022d0s0
sd=sd163,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420210023d0s0
sd=sd164,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420220024d0s0
sd=sd165,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420230025d0s0
sd=sd166,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420240026d0s0
sd=sd167,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420250027d0s0
sd=sd168,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420270028d0s0
sd=sd169,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420270029d0s0
sd=sd170,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442029002Ad0s0
sd=sd171,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442029002Bd0s0
sd=sd172,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44202A002Cd0s0
```

```
sd=sd173,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44202B002Dd0s0
sd=sd174,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44202C002Ed0s0
sd=sd175,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44202E002Fd0s0
sd=sd176,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44202F0030d0s0
sd=sd177,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420310031d0s0
sd=sd178,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420320032d0s0
sd=sd179,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420330033d0s0
sd=sd180,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420340034d0s0
sd=sd181,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420360035d0s0
sd=sd182,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420360036d0s0
sd=sd183,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420370037d0s0
sd=sd184,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420380038d0s0
sd=sd185,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420390039d0s0
sd=sd186,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203B003Ad0s0
sd=sd187,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203C003Bd0s0
sd=sd188,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203C003Cd0s0
sd=sd189,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203D003Dd0s0
sd=sd190,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203E003Ed0s0
sd=sd191,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44203F003Fd0s0
sd=sd192,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420400040d0s0
sd=sd193,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420430041d0s0
sd=sd194,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420440042d0s0
sd=sd195,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420450043d0s0
sd=sd196,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420460044d0s0
sd=sd197,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420470045d0s0
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sd=sd199,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44204D0047d0s0
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sd=sd201,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44204F0049d0s0
sd=sd202,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442051004Ad0s0
sd=sd203,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442051004Bd0s0
sd=sd204,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442053004Cd0s0
sd=sd205,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442053004Dd0s0
sd=sd206,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442054004Ed0s0
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sd=sd208,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420570050d0s0
sd=sd209,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205A0051d0s0
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sd=sd213,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205E0055d0s0
sd=sd214,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205F0056d0s0
sd=sd215,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420600057d0s0
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sd=sd217,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420610059d0s0
sd=sd218,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442062005Ad0s0
sd=sd219,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442063005Bd0s0
sd=sd220,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442065005Cd0s0
sd=sd221,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442066005Dd0s0
sd=sd222,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442066005Ed0s0
sd=sd223,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442067005Fd0s0
sd=sd224,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420680060d0s0
sd=sd225,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206B0061d0s0
sd=sd226,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206C0062d0s0
sd=sd227,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206E0063d0s0
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sd=sd229,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420700065d0s0
sd=sd230,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420710066d0s0
sd=sd231,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420720067d0s0
sd=sd232,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420740068d0s0
sd=sd233,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420740069d0s0
sd=sd234,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442075006Ad0s0
sd=sd235,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442076006Bd0s0
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sd=sd236,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442077006Cd0s0
sd=sd237,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442078006Dd0s0
sd=sd238,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442079006Ed0s0
sd=sd239,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207A006Fd0s0
sd=sd240,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207B0070d0s0
sd=sd241,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207D0071d0s0
sd=sd242,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207E0072d0s0
sd=sd243,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207F0073d0s0
sd=sd244,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420800074d0s0
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sd=sd246,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420820076d0s0
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sd=sd249,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420850079d0s0
sd=sd250,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442086007Ad0s0
sd=sd251,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442087007Bd0s0
sd=sd252,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442088007Cd0s0
sd=sd253,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F442089007Dd0s0
sd=sd254,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208A007Ed0s0
sd=sd255,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208B007Fd0s0
sd=sd256,host=localhost,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208C0080d0s0
sd=sd1,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F790001d0s0
sd=sd2,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F790002d0s0
sd=sd3,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7A0003d0s0
sd=sd4,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7B0004d0s0
sd=sd5,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7C0005d0s0
sd=sd6,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7C0006d0s0
sd=sd7,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7E0007d0s0
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sd=sd9,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F7F0009d0s0
sd=sd10,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F80000Ad0s0
sd=sd11,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F81000Bd0s0
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sd=sd15,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F85000Fd0s0
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sd=sd38,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F9B0026d0s0
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sd=sd41,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F9E0029d0s0
sd=sd42,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F9E002Ad0s0
```

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sd=sd43,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441F9F002Bd0s0
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sd=sd45,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FA1002Dd0s0
sd=sd46,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FA2002Ed0s0
sd=sd47,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FA3002Fd0s0
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sd=sd80,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FC40050d0s0
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sd=sd92,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FD5005Cd0s0
sd=sd93,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FD6005Dd0s0
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sd=sd106,host=4470b,lun=/dev/rdsk/c0t600144F084B772B200004F441FE3006Ad0s0
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sd=sd36,host=4470c,lun=/dev/rdsk/c0t600144F084B772B200004F441F9A0024d0s0
sd=sd37,host=4470c,lun=/dev/rdsk/c0t600144F084B772B200004F441F9B0025d0s0
sd=sd38,host=4470c,lun=/dev/rdsk/c0t600144F084B772B200004F441F9B0026d0s0
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sd=sd211,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205C0053d0s0
sd=sd212,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205D0054d0s0
sd=sd213,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205E0055d0s0
sd=sd214,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44205F0056d0s0
sd=sd215,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420600057d0s0
sd=sd216,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420610058d0s0
sd=sd217,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420610059d0s0
sd=sd218,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442062005Ad0s0
sd=sd219,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442063005Bd0s0
sd=sd220,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442065005Cd0s0
sd=sd221,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442066005Dd0s0
sd=sd222,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442066005Ed0s0
sd=sd223,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442067005Fd0s0
sd=sd224,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420680060d0s0
sd=sd225,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206B0061d0s0
sd=sd226,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206C0062d0s0
sd=sd227,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206E0063d0s0
```

```
sd=sd228,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44206F0064d0s0
sd=sd229,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420700065d0s0
sd=sd230,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420710066d0s0
sd=sd231,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420720067d0s0
sd=sd232,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420740068d0s0
sd=sd233,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420740069d0s0
sd=sd234,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442075006Ad0s0
sd=sd235,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442076006Bd0s0
sd=sd236,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442077006Cd0s0
sd=sd237,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442078006Dd0s0
sd=sd238,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442079006Ed0s0
sd=sd239,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207A006Fd0s0
sd=sd240,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207B0070d0s0
sd=sd241,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207D0071d0s0
sd=sd242,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207E0072d0s0
sd=sd243,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44207F0073d0s0
sd=sd244,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420800074d0s0
sd=sd245,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420810075d0s0
sd=sd246,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420820076d0s0
sd=sd247,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420830077d0s0
sd=sd248,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420840078d0s0
sd=sd249,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F4420850079d0s0
sd=sd250,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442086007Ad0s0
sd=sd251,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442087007Bd0s0
sd=sd252,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442088007Cd0s0
sd=sd253,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F442089007Dd0s0
sd=sd254,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208A007Ed0s0
sd=sd255,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208B007Fd0s0
sd=sd256,host=4470c,lun=/dev/rdsk/c0t600144F0FA5F007600004F44208C0080d0s0
```

Video on Demand Delivery *(VOD)*

```
# Video on Demand Test (VOD)
```

Common Command Lines

```
maxlatestart=0
videosegmentduration=1200
maxlatevod=0
#reportinginterval=15
reportinginterval=5

rd=default,rampup=1200,periods=600,measurement=7200,runout=45,rampdown=15,buffers=8
rd=TR1-13500s_SPC-2-VOD,streams=13500
```

Large File Processing Test *(LFP)*

```
# * Large File Processing Test (LFP)
```

Common Command Lines

```
maxlatestart=0
reportinginterval=5
segmentlength=512m

rd=default,rampup=180,periods=90,measurement=180,runout=45,rampdown=15,buffers=1
#  rd=default,rampup=180,periods=90,measurement=600,runout=45,rampdown=15,buffers=1
```

```
* LFP, "write" Test Phase

* Test Run Sequence 1
rd=default,rdpct=0,xfersize=1024k
rd=TR1-s256_SPC-2-FP,streams=256
rd=TR2-s128_SPC-2-FP,streams=128
rd=TR3-s64_SPC-2-FP,streams=64
rd=TR4-s32_SPC-2-FP,streams=32
rd=TR5-s1_SPC-2-FP,streams=1

* Test Run Sequence 2
rd=default,xfersize=256k
rd=TR6-s256_SPC-2-FP,streams=256
rd=TR7-s128_SPC-2-FP,streams=128
rd=TR8-s64_SPC-2-FP,streams=64
rd=TR9-s32_SPC-2-FP,streams=32
rd=TR10-s1_SPC-2-FP,streams=1

* LFP, "read-write" Test Phase

* Test Run Sequence 3
rd=default,rdpct=50,xfersize=1024k
rd=TR11-s256_SPC-2-FP,streams=256
rd=TR12-s128_SPC-2-FP,streams=128
rd=TR13-s64_SPC-2-FP,streams=64
rd=TR14-s32_SPC-2-FP,streams=32
rd=TR15-s1_SPC-2-FP,streams=1

* Test Run Sequence 4
rd=default,xfersize=256k
rd=TR16-s256_SPC-2-FP,streams=256
rd=TR17-s128_SPC-2-FP,streams=128
rd=TR18-s64_SPC-2-FP,streams=64
rd=TR19-s32_SPC-2-FP,streams=32
rd=TR20-s1_SPC-2-FP,streams=1

* LFP, "read" Test Phase

* Test Run Sequence 5
rd=default,rdpct=100,xfersize=1024k
rd=TR21-s256_SPC-2-FP,streams=256
rd=TR22-s128_SPC-2-FP,streams=128
rd=TR23-s64_SPC-2-FP,streams=64
rd=TR24-s32_SPC-2-FP,streams=32
rd=TR25-s1_SPC-2-FP,streams=1

* Test Run Sequence 6
rd=default,xfersize=256k
rd=TR26-s256_SPC-2-FP,streams=256
rd=TR27-s128_SPC-2-FP,streams=128
rd=TR28-s64_SPC-2-FP,streams=64
rd=TR29-s32_SPC-2-FP,streams=32
rd=TR30-s1_SPC-2-FP,streams=1
```

Large Database Query Test *(LDQ)*

```
# * Large Database Query Test (LDQ)
```

Common Command Lines

```
maxlatestart=0
reportinginterval=5
segmentlength=512m

rd=default,rdpct=99,rampup=180,periods=90,measurement=180,runout=45,rampdown=15
# rd=default,rdpct=99,rampup=180,periods=90,measurement=600,runout=45,rampdown=15
* LDQ, 1024 KiB Test Phase
* Test Run Sequence 1
rd=default,xfersize=1024k,buffers=4
rd=TR1-s256_SPC-2-DQ,streams=256
rd=TR2-s128_SPC-2-DQ,streams=128
rd=TR3-s64_SPC-2-DQ,streams=64
rd=TR4-s32_SPC-2-DQ,streams=32
rd=TR5-s1_SPC-2-DQ,streams=1

* Test Run Sequence 2
rd=default,buffers=1
rd=TR6-s256_SPC-2-DQ,streams=256
rd=TR7-s128_SPC-2-DQ,streams=128
rd=TR8-s64_SPC-2-DQ,streams=64
rd=TR9-s32_SPC-2-DQ,streams=32
rd=TR10-s1_SPC-2-DQ,streams=1

* LDQ, 64 KiB Test Phase

* Test Run Sequence 3
rd=default,xfersize=64k,buffers=4
rd=TR11-s256_SPC-2-DQ,streams=256
rd=TR12-s128_SPC-2-DQ,streams=128
rd=TR13-s64_SPC-2-DQ,streams=64
rd=TR14-s32_SPC-2-DQ,streams=32
rd=TR15-s1_SPC-2-DQ,streams=1

* Test Run Sequence 4
rd=default,buffers=1
rd=TR16-s256_SPC-2-DQ,streams=256
rd=TR17-s128_SPC-2-DQ,streams=128
rd=TR18-s64_SPC-2-DQ,streams=64
rd=TR19-s32_SPC-2-DQ,streams=32
rd=TR20-s1_SPC-2-DQ,streams=1
```

Persistence Test Run 1 *(write phase)*

```
# Persist 1
```

Common Command Lines

```
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=TR1-256s_SPC-2-persist-w,streams=256
```

Persistence Test Run 2 *(read phase)*

```
# Persistence Test Run 2
```

Common Command Lines

```
maxlatestart=1
reportinginterval=5
segmentlength=512m
maxpersistenceerrors=10

*corruptstreams=3
rd=default,buffers=1,rdpct=100,xfersize=1024k
rd=TR1-256s_SPC-2-persist-r
```

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

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

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

```
#!/usr/bin/ksh
#
#
######################################################################
# SPC2 execution on q112-7420b and q112-7420a with 16 RW2 15K 6 8g FC links per head
via sbm-q212-4470a , b , and c
# 2-15-2012 Run-8 Three clients x86 16 pools 256-Vols  Pre-Audit run 256 13500 SPC2e
######################################################################

# Name of script Below and output directory

script=runspc2-audit-7420.sh
output=Pre-audit-Run-8
basedir=/spc/output/spc2/q112-7420-cluster/4470abc/PRE-AUDIT
outdir=$basedir/$output
config=/spc/config/spc2/q112-7420b
mkdir -p $outdir

#### Edit here when running Persist 2
# Uncomment these two if running persist 2
#hostdir=$outdir/HostP2
#cp $script $outdir/$script-P2
# Comment these two if running persist 2
cp $script $outdir
hostdir=$outdir/HostP1
mkdir -p $hostdir

#### Gather Master client info and tunables
cp /etc/system $hostdir
cp /kernel/drv/qlc.conf $hostdir
prtconf > $hostdir/prtconf.txt
prtdiag -v > $hostdir/prtdiag.txt

####
#:<<'COMMENT'
####

#### Get config files and prtvtoc
cp -r /spc/SPC2_V1.2/spc2-x86/Audit-16T-7420Clstr $outdir/
####

#### Pre-Fill via vdbench
/vdbench/vdbench503rc11/vdbench -f $config/pre.txt -o $outdir/pre-1/
####

#### INIT All Volumes via VOD parameter file
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f$config/spc2-vod-SH.txt -o$outdir/init -
init
####
```

```
#### Run- VOD 13500 LDQ 256 LFP 256
####
#### VOD
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-vod-SH.txt -o $outdir/vod-
SH13500/
####

#### LFP
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-lfp-SH.txt -o $outdir/lfp-
SH256/
####

#### LDQ
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-ldq-SH.txt -o $outdir/ldq-
SH256/
####

#### Persist 1
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-persist1-SH.txt -o
$outdir/persist1/
####

#COMMENT

#### Persist 2
:<<'COMMENT'
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-persist2-SH.txt -o
$outdir/persist2/
sleep 5
cp $config/spc2-persist2-SH.txt $outdir
sleep 5
COMMENT
####
#### Create Archive
cd $basedir ;/bin/chmod -R 777 $output ;mv $output.zip $output.zip-P1 ;/usr/bin/zip
-r $output.zip $output
touch $basedir/link ; echo " " >> $basedir/link
echo "  Use the link below to download the zipped file" >> $basedir/link
echo " " >> $basedir/link
echo http://sbm-240a.us.oracle.com/export/$basedir/$output.zip >> $basedir/link
echo " " >> $basedir/link
echo "  Use the link below to take a look at the output files" >> $basedir/link
echo " " >> $basedir/link
echo http://sbm-240a.us.oracle.com/export/$basedir >> $basedir/link
mailx -s $script-is-finished Javier.Chavez@oracle.com,Steven.A.Johnson@oracle.com <
$basedir/link
rm $basedir/link
```

Persistence Test Run 2

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

```
#!/usr/bin/ksh
#
#
######################################################################
# SPC2 execution on q112-7420b and q112-7420a with 16 RW2 15K 6 8g FC links per head
via sbm-q212-4470a , b , and c
# 2-21-2012 Audit Run  Three clients x86 16 pools 256-Vols  256 13500
######################################################################

# Name of script Below and output directory

script=runspc2-audit-7420.sh
output=7420C-SPC2
basedir=/spc/output/spc2/q112-7420-cluster/4470abc/AUDIT
outdir=$basedir/$output
config=/spc/config/spc2/q112-7420b
mkdir -p $outdir

#### Edit here when running Persist 2
# Uncomment these two if running persist 2
hostdir=$outdir/HostP2
cp $script $outdir/$script-P2
# Comment these two if running persist 2
#cp $script $outdir
#hostdir=$outdir/HostP1
mkdir -p $hostdir

#### Gather Master client info and tunables
#cp /etc/system $hostdir
#cp /kernel/drv/qlc.conf $hostdir
#prtconf > $hostdir/prtconf.txt
#prtdiag -v > $hostdir/prtdiag.txt

####
:<<'COMMENT'
####

#### Get config files and prtvtoc
cp -r /spc/SPC2_V1.2/spc2-x86/Audit-16T-7420Clstr $outdir/
####

#### Pre-Fill via vdbench
/vdbench/vdbench503rc11/vdbench -f $config/pre.txt -o $outdir/pre-1/
####

#### INIT All Volumes via VOD parameter file
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f$config/spc2-vod-SH.txt -o$outdir/init -
init
####

#### Run- VOD 13500 LDQ 256 LFP 256
####
#### VOD
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-vod-SH.txt -o $outdir/vod-
SH13500/
####
```

```
#### LDQ
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-ldq-SH.txt -o $outdir/ldq-
SH256/
####

#### LFP
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-lfp-SH.txt -o $outdir/lfp-
SH256/
####

#### Persist 1
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-persist1-SH.txt -o
$outdir/persist1/
####

COMMENT

#### Persist 2
#:<<'COMMENT'
java -d64 -Xmx8192m -cp . vdbench -wSPC2 -f $config/spc2-persist2-SH.txt -o
$outdir/persist2/
sleep 5
cp $config/spc2-persist2-SH.txt $outdir
sleep 5
#COMMENT
####
#### Create Archive
cd $basedir ;/bin/chmod -R 777 $output ;mv $output.zip $output.zip-P1 ;/usr/bin/zip
-r $output.zip $output
touch $basedir/link ; echo " " >> $basedir/link
echo "  Use the link below to download the zipped file" >> $basedir/link
echo " " >> $basedir/link
echo http://sbm-240a.us.oracle.com/export/$basedir/$output.zip >> $basedir/link
echo " " >> $basedir/link
echo "  Use the link below to take a look at the output files" >> $basedir/link
echo " " >> $basedir/link
echo http://sbm-240a.us.oracle.com/export/$basedir >> $basedir/link
mailx -s $script-is-finished Javier.Chavez@oracle.com,Steven.A.Johnson@oracle.com <
$basedir/link
rm $basedir/link
```