SPC BENCHMARK 2™
FULL DISCLOSURE REPORT

FUJITSU LIMITED
FUJITSU STORAGE SYSTEMS ETERNUS DX80

SPC-2™ V1.3

Submitted for Review: March 15, 2010
Submission Identifier: B00050

First Edition – March 2010

Trademarks

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AUDIT CERTIFICATION

C. A. Wilson
Fujitsu Limited
1250 East Arques Ave.
P.O. Box 3470
Sunnyvale, CA 94088 3470

March 15, 2010

The SPC Benchmark 2™ results listed below for the Fujitsu Storage Systems ETERNUS DX80 produced in compliance with the SPC Benchmark 2™ V1.3 Remote Audit requirements.

SPC Benchmark 2™ V1.3 Results	
Tested Storage Product (TSP) Name: Fujitsu Storage Systems ETERNUS DX80	
Metric	**Reported Result**
SPC-2 MBPS™	1,357.55
SPC-2 Price-Performance	$26.70/SPC-2 MBPS™
ASU Capacity	4,681.514 GB
Data Protection Level	Protected *(Mirroring)*
Total Price (including three-year maintenance)	$36,246.40

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

- A Letter of Good Faith, signed by a senior executive.
- The following Data Repository storage items were verified by documentation supplied by Fujitsu Limited:
  - ✓ Physical Storage Capacity and related requirements.
  - ✓ Configured Storage Capacity and related requirements.
  - ✓ Addressable Storage Capacity and related requirements.
  - ✓ Capacity of each Logical Volume and related requirements.
  - ✓ Capacity of the Application Storage Unit (ASU) and related requirements.
- An appropriate diagram of the Benchmark Configuration (BC)/Tested Storage Configuration (TSC).
- Listings and commands used to create and configure the Benchmark Configuration/Tested Storage Configuration.

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

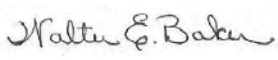
AUDIT CERTIFICATION *(CONT.)*

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

Audit Notes:

There were no audit notes or exceptions.

Respectfully,



Walter E. Baker
SPC Auditor

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

LETTER OF GOOD FAITH

FUJITSU

FUJITSU LIMITED
Kanagawa-ken, Kawasaki-shi, Nakahara-ku, Kamikodanaka,4-1-1,JAPAN 211-8588
TEL: 044-754-3240, FAX: 044-754-3719

Date: February 23, 2010

From: Fujitsu Limited, Test Sponsor

Submitted by: Yasuhito Arikawa,
General Manager, Storage Systems Division
1-1, Kamikodanaka 4–chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken
211-8588, Japan

Contact Information: Carrel A. (Sandy)Wilson
Fujitsu America, Inc.
1250 East Arques Ave. PO Box 3470
Sunnyvale, CA 94088, U.S.A.

To: Walter E. Baker, SPC Auditor
Gradient Systems, Inc.
643 Bair Island Road, Suite 103
Redwood City, CA 94063-2755. U.S.A.

Subject: SPC-2 Letter of Good Faith for the ETERNUS DX80

Fujitsu Limited 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 necessary to reproduce the reported results even if the items are not explicitly required to be disclosed by the SPC-2 benchmark specification.

Signed: Yasuhito Arikawa Date: 23/Feb./2010

EXECUTIVE SUMMARY

Test Sponsor and Contact Information

Test Sponsor and Contact Information	
Test Sponsor Primary Contact	Fujitsu Limited – http://www.fujitsu.com/services/computing/storage/ Fujitsu Computer Systems Corp. C.A. (Sandy) Wilson Sandy_Wilson@us.fujitsu.com 1250 East Arques Ave PO Box 3470 Sunnyvale, CA 94088-3470 Phone: (916) 434-8593
Test Sponsor Alternate Contact	Fujitsu Limited – http://www.fujitsu.com/services/computing/storage/ Fujitsu Computer Systems Corp. Kun Katsumata Kun_Katsumata@us.fujitsu.com 1250 East Arques Ave PO Box 3470 Sunnyvale, CA 94088-3470 Phone: (408) 746-6415
Test Sponsor Alternate Contact	Fujitsu Limited http://www.fujitsu.com/services/computing/storage/ Yasuhito Arikawa y.arikawa@jp.fujitsu.com 1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken 211-8588, Japan Phone: (044) 754-3632 FAX: (044) 754-3719
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	March 15, 2010
Date FDR was submitted to the SPC	March 15, 2010
Date the TSC will be available for shipment to customers	currently available
Date the TSC completed audit certification	March 15, 2010

Tested Storage Product (TSP) Description

The Fujitsu ETERNUS DX80 is a flexible, highly reliable storage array, equipped with redundant components to provide uncompromised availability to the SMB Market requirements. A mixture of 300GB, 450GB and 600GB 15krpm SAS drives, as well as 750GB and 1TB Nearline SAS drives may be used, up to a maximum of 120 drives. The drives may be arranged in a variety of RAID groups, including RAID1, RAID1+0(10), RAID5, RAID5+0(50), and RAID6. The product is offered with Fibre Channel (as tested), iSCSI, and SAS host connection versions, with 4 channels offered (2 channels per controller) in each version. SMI-S Version 1.2 is supported in the ETERNUS DX80 array. In addition, a number of different snapshot and replication facilities, native disk data encryption, MAID capabilities, and power consumption monitoring features are available.

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				
Fujitsu Storage Systems ETERNUS DX80				
SPC-2 MBPS™	**SPC-2 Price-Performance**	**ASU Capacity (GB)**	**Total Price**	**Data Protection Level**
1,357.55	$26.70	4,681.514	$36,246.40	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	1,077.88			$33.63
Write Only:				
1024 KiB Transfer	643.38	32	20.11	
256 KiB Transfer	646.64	32	20.21	
Read-Write:				
1024 KiB Transfer	961.21	32	30.04	
256 KiB Transfer	957.73	32	29.93	
Read Only:				
1024 KiB Transfer	1,637.30	32	51.17	
256 KiB Transfer	1,621.01	32	50.66	
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	1,618.51			$22.39
1024 KiB Transfer Size				
4 I/Os Outstanding	1,643.49	32	51.36	
1 I/O Outstanding	1,642.19	32	51.32	
64 KiB Transfer Size				
4 I/Os Outstanding	1,612.30	32	50.38	
1 I/O Outstanding	1,576.07	32	49.25	
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**
	1,376.26	1,750	0.79	$26.34

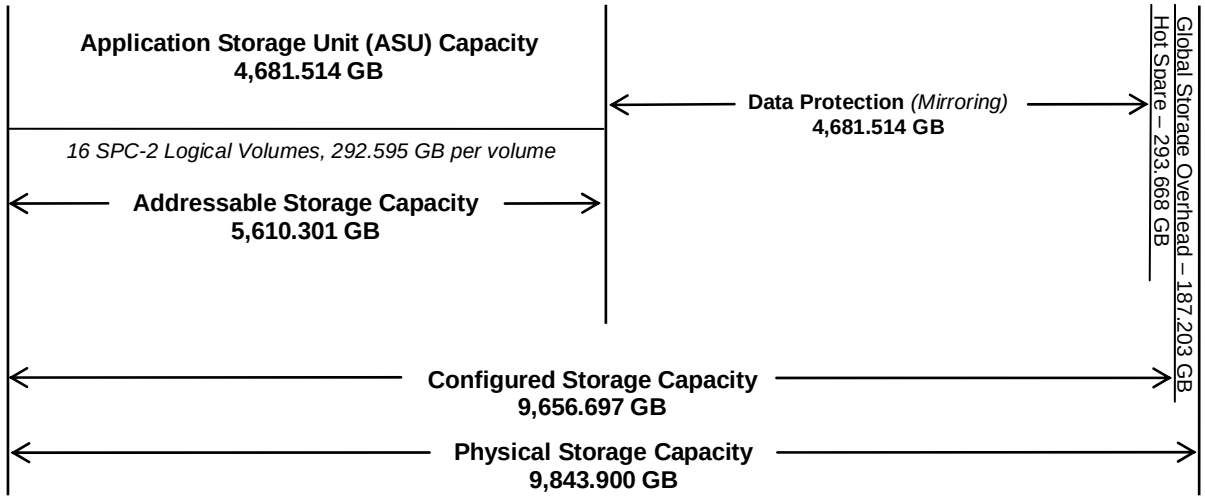
SPC-2 MBPS™ represents the aggregate data rate, in megabytes per second, of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand (VOD).

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	47.56%
Protected Application Utilization	95.12%
Unused Storage Ratio	0.00%

Application Utilization: Total ASU Capacity *(4,681.514 GB)* divided by Physical Storage Capacity *(9,843.900 GB)*.

Protected Application Utilization: (Total ASU Capacity *(4,681.514 GB)* plus total Data Protection Capacity *(4,681.514 GB)* minus unused Data Protection Capacity *(0.000 GB)*) divided by Physical Storage Capacity *(9,843.900 GB)*.

Unused Storage Ratio: Total Unused Capacity *(0.000 GB)* divided by Physical Storage Capacity *(9,843.900 GB)* and may not exceed 45%.

Detailed information for the various storage capacities and utilizations is available on pages 20-21 in the Full Disclosure Report.

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

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

Priced Storage Configuration Pricing

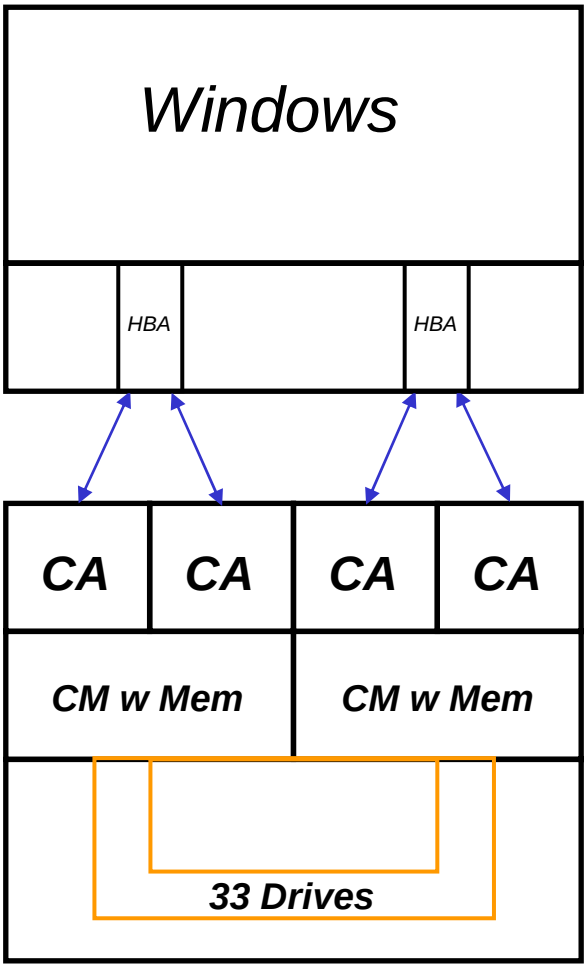
Product ID	Product name	Qty	Unit LP	Extended LP	Discount %	Discounted Price
ET08F22AU	ETERNUS DX80 Base unit (FC 4Gbps 4 ports)	1	$8,500.00	$8,500.00	30%	$5,950.00
ETLDE2AU	Additional drive enclosure for 2CM DX80	2	$3,000.00	$6,000.00	30%	$4,200.00
ETLSA3MAU	300GB/15KRPM (SAS) DISK DRIVES (SET OF 2) RAID1	16	$1,480.00	$23,680.00	30%	$16,576.00
ETLSA3HAU	300GB/15Krpm (SAS) disk drive (single)	1	$740.00	$740.00	30%	$518.00
ETLAC2U2U	Power distribution unit (2U)	1	$1,410.00	$1,410.00	30%	$987.00
LPE11002-M4	Emulex 4Gb PCIe 2.5GGhz Dual Channel Fibre Channel HBA	2	$2,565.00	$5,130.00	40%	$3,078.00
ETDX-EPLUPLT-BASE	ETDX2000, 1 Month; 24 x 7, 4-hour On-Site Resp.(Sev-1), Uplift Maintenance for Base Unit	36	$91.00	$3,276.00	35%	$2,129.40
ETDX-EPLUPLT-DE	ETDX2000, 1 Month; 24 x 7, 4-hour On-Site Resp.(Sev-1), Uplift Maintenance for DE	72	$60.00	$4,320.00	35%	$2,808.00
				Total		$36,246.40

Tested Storage Configuration (TSC) /Priced Storage Configuration Diagram

Fujitsu PRIMERGY RX600 S4

Fujitsu ETERNUS DX80

CA – Channel Adapter
CM – Control Module
Mem – Cache Memory
HBA – Host Bus Adapter



Tested Storage Configuration (TSC)/ Priced Configuration Components

Host System:	Tested Storage Configuration (TSC) / Priced Storage Configuration:
Fujitsu PRIMERGY RX600 S4 2 – Intel Xeon™ 2.93 GHz MP with 8 MB L2 cache	2 – Emulex LPe12002-M8 FC dual port HBAs *(8 Gbps)*
64 GB main memory	**Fujitsu Storage Systems ETERNUS DX80** 2 – Controller Modules, each with: 2 GB cache *(4 GB total)* 2 – Channel Adapter modules, each with 1 – Fibre Channel port *(4 ports total, 4 ports used)* 2 – SAS Expander Drive interfaces
Windows 2003 Enterprise Server (64-bit) with SP2	4 – Front side Fibre Channels *(set to 4 Gbit each)* 2 – Back side SAS channels
PCIe	3 – Drive Enclosure Modules, each with: dual SAS interfaces, 12 – Hot Swap drive slots
WG	33 – 300 GB 15K RPM disk drives *(32 drives in 32 RAID Groups and 1 Hot Spare)*

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 16.

Storage Network Configuration

Clause 10.6.6.1

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

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

Host System and Tested Storage Configuration Table

Clause 10.6.6.2

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

The components that comprise each Host System and the Tested Storage Configuration are listed in the table that appears on page 16.

Customer Tunable Parameters and Options

Clause 10.6.6.1

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

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

Tested Storage Configuration (TSC) Description

Clause 10.6.6.2

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

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

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

SPC-2 Workload Generator Storage Configuration

Clause 10.6.6.3

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

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

SPC-2 DATA REPOSITORY

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

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

SPC-2 Storage Capacities and Relationships

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

SPC-2 Storage Capacities

SPC-2 Storage Capacities		
Storage Hierarchy Component	**Units**	**Capacity**
Total ASU Capacity	Gigabytes (GB)	4,681.514
Addressable Storage Capacity	Gigabytes (GB)	4,681.514
Configured Storage Capacity	Gigabytes (GB)	9,656.697
Physical Storage Capacity	Gigabytes (GB)	9,843.900
Data Protection *(Mirroring)*	Gigabytes (GB)	4,681.514
Required Storage *(spares)*	Gigabytes (GB)	293.668
Global Storage Overhead	Gigabytes (GB)	187.203
Total Unused Storage	Gigabytes (GB)	0.000

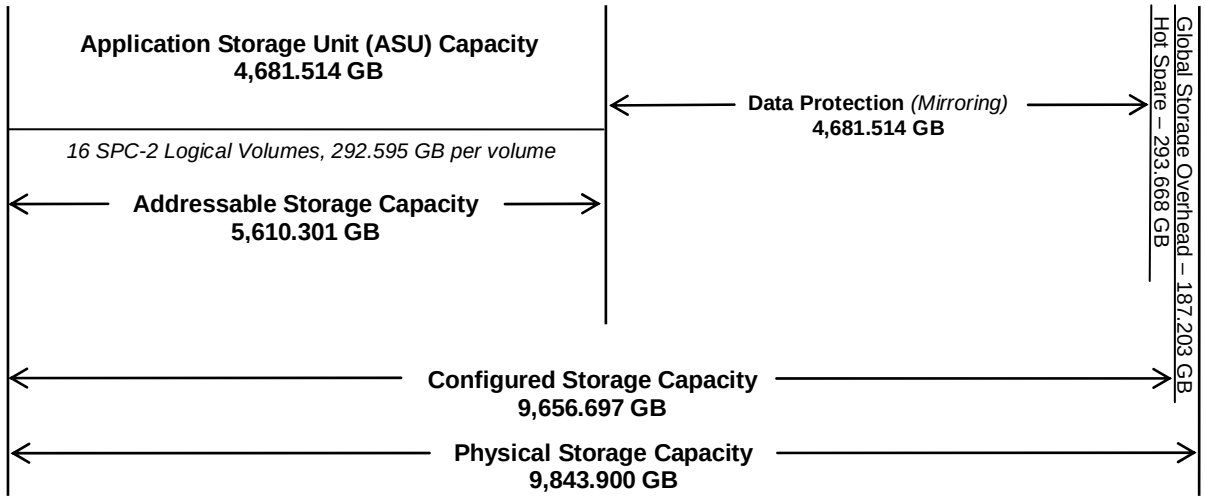
SPC-2 Storage Hierarchy Ratios

	Addressable Storage Capacity	Configured Storage Capacity	Physical Storage Capacity
Total ASU Capacity	100.00%	48.48%	47.56%
Data Protection *(Mirroring)*		48.48%	47.56%
Addressable Storage Capacity		48.48%	47.56%
Required Storage		3.04%	2.98%
Configured Storage Capacity			98.10%
Global Storage Overhead			1.90%
Unused Storage:			
Addressable	0.00%		
Configured		0.00%	
Physical			0.00%

The Physical Storage Capacity consisted of 9,843.900 GB distributed over 33 disk drives each with a formatted capacity of 298.300 GB. There was 0.000 GB (0.00%) of Unused Storage within the Physical Storage Capacity. Global Storage Overhead consisted of 187.203 GB (1.90%) of Physical Storage Capacity. There was 0.000 GB (0.00%) 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 4,681.514 GB of which 4,681.514 GB was utilized. The total Unused Storage was 0.000 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	47.56%
Protected Application Utilization	95.12%
Unused Storage Ratio	0.00%

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.

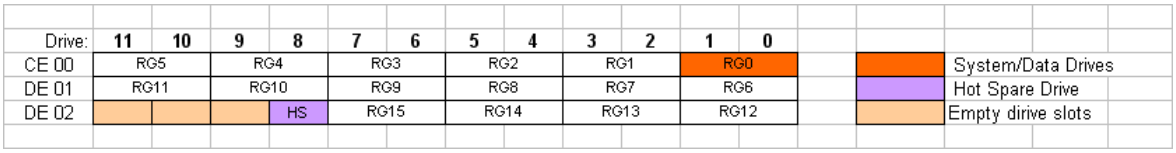
Logical Volume (LV) Capacity and Mapping			
ASU (4,681.514 GB)			
	Total Capacity *(GB)*	Capacity Used *(GB)*	Capacity Unused *(GB)*
Logical Volumes 1-16	292.595 per LV	292.595 per LV	0.000 per LV

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

Assignment of RAID Groups and LUNs

The 16 RAID Group Assignments are RAID1 (1+1) sets, each defined as a single LUN to the servers. Half of the LUNs (16) are presented through 2 Channel Adapter (CA) ports, and the other half presented through the other 2 CA ports.

The RAID Group assignments to drives in the array are illustrated by the following chart.



The RAID Groups and LUN assignments are set up through a series of actions on the GUI Management Interface (ETERNUSmgr) or optionally using an off-line configuration tool. The task of setting up the configuration for each customer is provided as part of the base system price by Fujitsu. Different techniques are applied, depending upon the needs of the customer. This configuration reflects the customary techniques that are applied when a high performance requirement dominates the customer environment. Other techniques are applied when the primary requirement is for maximum capacity. In the case of high performance sequential access demands, it is effective to define RAID Groups arranged in RAID1 configurations. In this configuration, all of the RAID1 Groups are 1+1 arrangements.

There are two (2) drives with some system use, and one (1) Hot Spare drive included in the configuration, with all of the drives set to the same usable capacity. There are three (3) empty drive slots in this configuration, as well.

The sixteen (16) LUNs, seen through the two HBAs are all presented to the Workload Generator to form the single ASU used by the SPC-2 benchmark. All the LUNs presented are the same size – 292,594.647 MB each.

Two optional facilities in the DX80 (SSC and Trace), which are used for collection information during operation, were turned off during this benchmark run. They are normally not enabled during operations. Two secondary enhanced reliability features (Patrol and sampled Read after Write compare), which may be optionally enabled by a customer, were also turned off during this benchmark run.

SPC-2 TEST EXECUTION RESULTS

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

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

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

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

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

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

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

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

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

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

Large File Processing Test

Clause 6.4.2.1

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

Clause 6.4.2.2

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

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

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

Clause 10.6.8.1

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

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

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Large File Processing Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 105.

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.

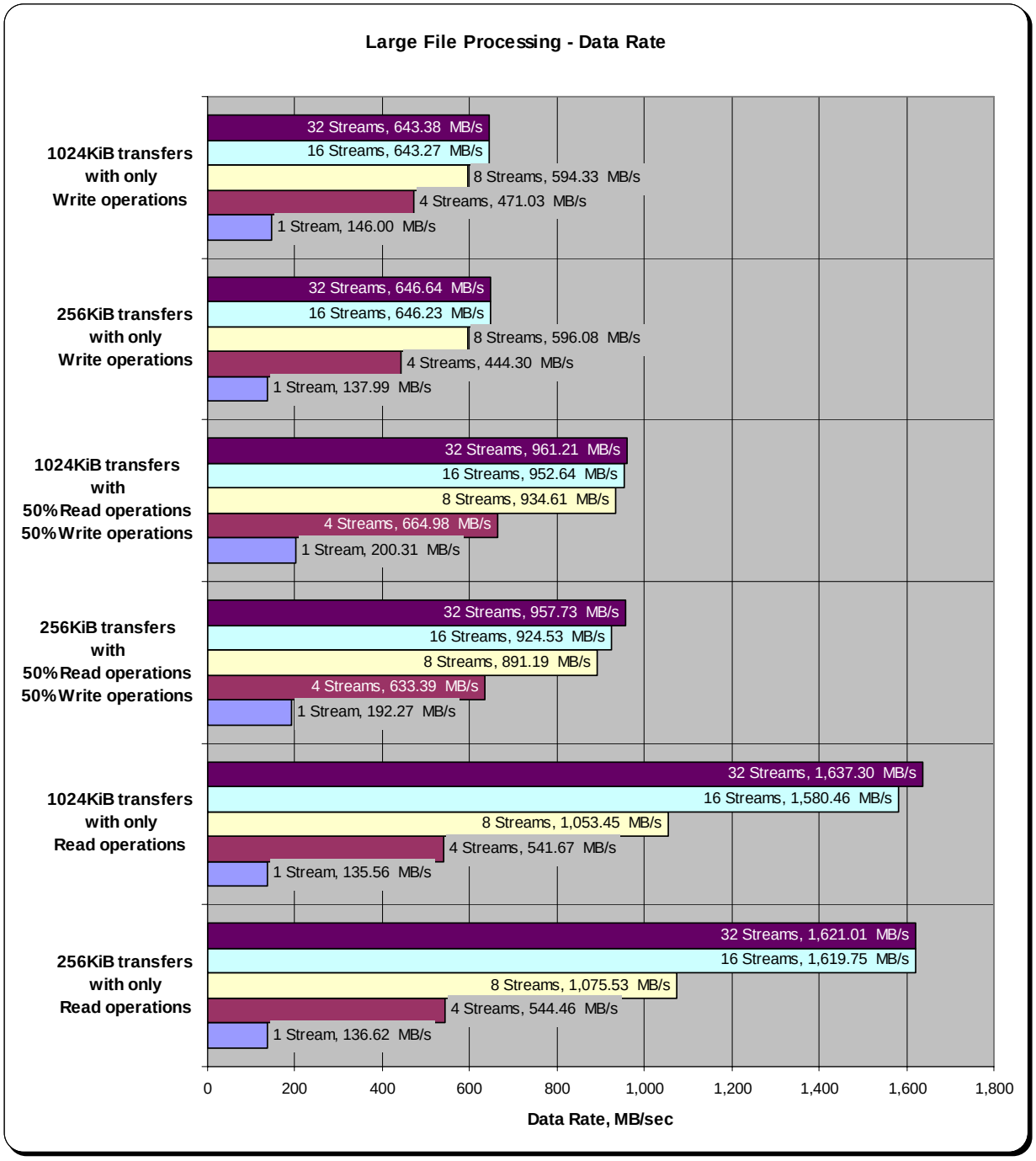
SPC-2 Large File Processing Test Results File

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	4 Streams	8 Streams	16 Streams	32 Streams
Write 1024KiB	146.00	471.03	594.33	643.27	643.38
Write 256KiB	137.99	444.30	596.08	646.23	646.64
Read/Write 1024KiB	200.31	664.98	934.61	952.64	961.21
Read/Write 256KiB	192.27	633.39	891.19	924.53	957.73
Read 1024KiB	135.56	541.67	1,053.45	1,580.46	1,637.30
Read 256KiB	136.62	544.46	1,075.53	1,619.75	1,621.01

SPC-2 Large File Processing Average Data Rates Graph

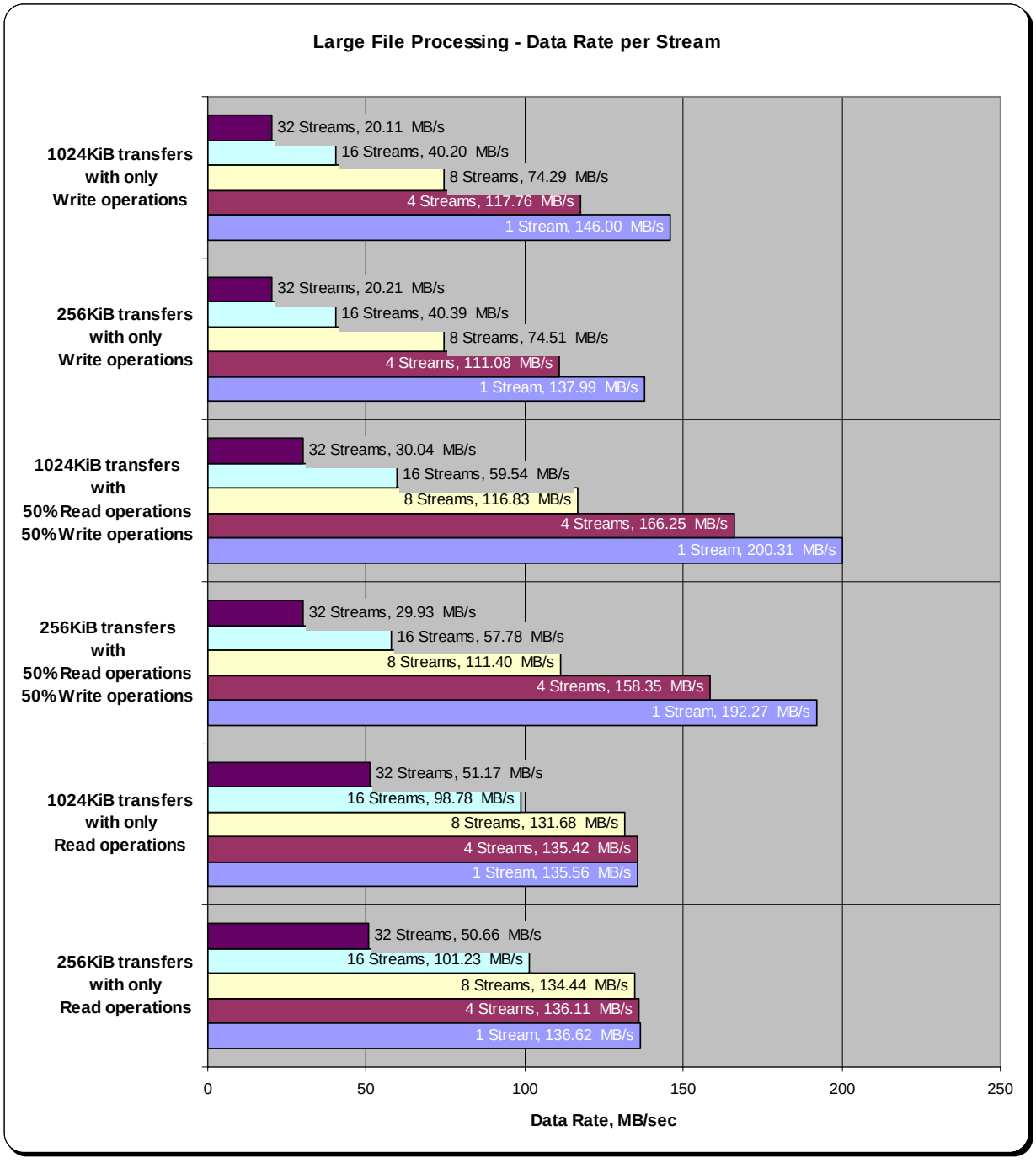


SPC-2 Large File Processing Average Data Rate per Stream

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	4 Streams	8 Streams	16 Streams	32 Streams
Write 1024KiB	146.00	117.76	74.29	40.20	20.11
Write 256KiB	137.99	111.08	74.51	40.39	20.21
Read/Write 1024KiB	200.31	166.25	116.83	59.54	30.04
Read/Write 256KiB	192.27	158.35	111.40	57.78	29.93
Read 1024KiB	135.56	135.42	131.68	98.78	51.17
Read 256KiB	136.62	136.11	134.44	101.23	50.66

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

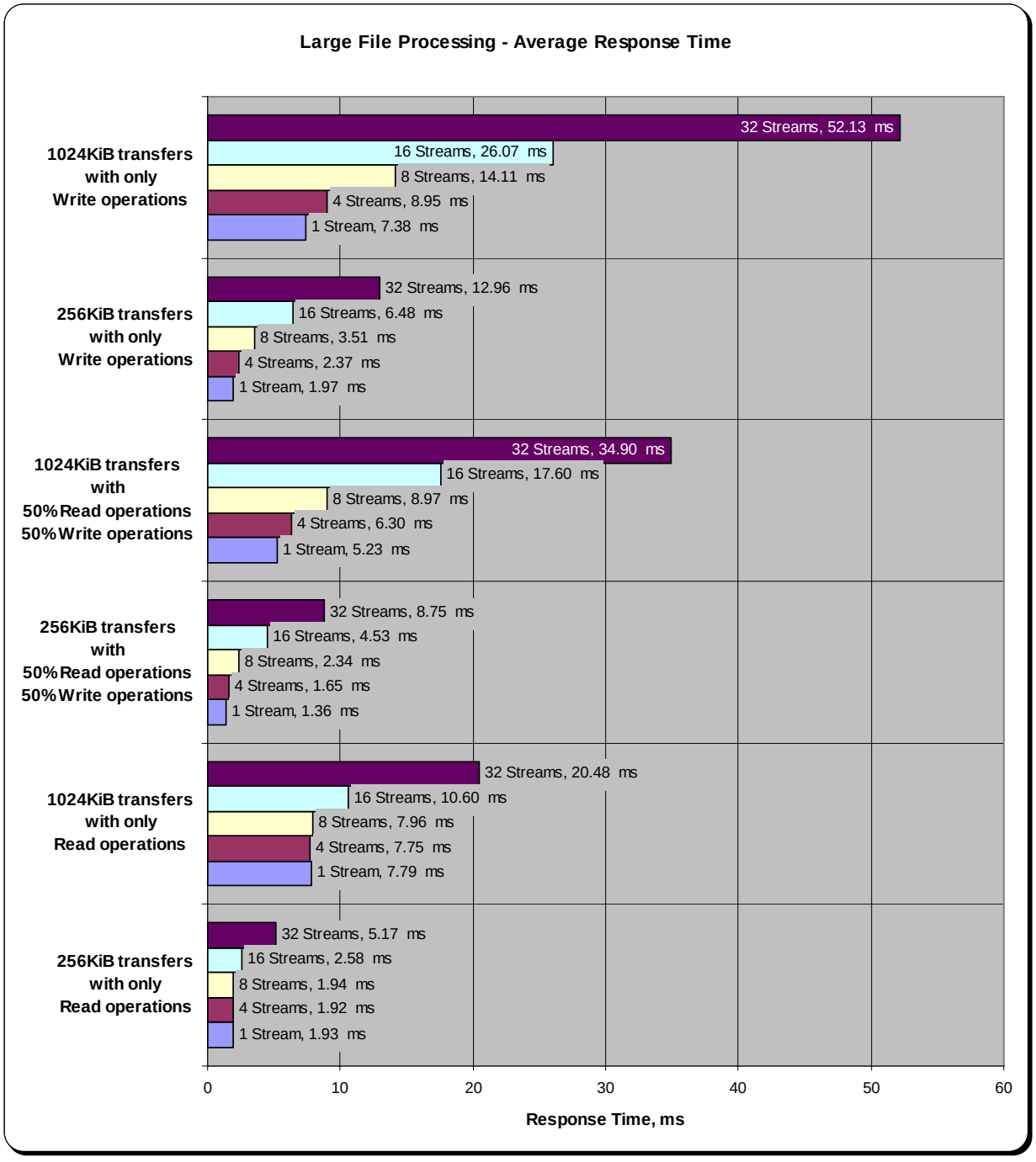


SPC-2 Large File Processing Average Response Time

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	4 Streams	8 Streams	16 Streams	32 Streams
Write 1024KiB	7.38	8.95	14.11	26.07	52.13
Write 256KiB	1.97	2.37	3.51	6.48	12.96
Read/Write 1024KiB	5.23	6.30	8.97	17.60	34.90
Read/Write 256KiB	1.36	1.65	2.34	4.53	8.75
Read 1024KiB	7.79	7.75	7.96	10.60	20.48
Read 256KiB	1.93	1.92	1.94	2.58	5.17

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.

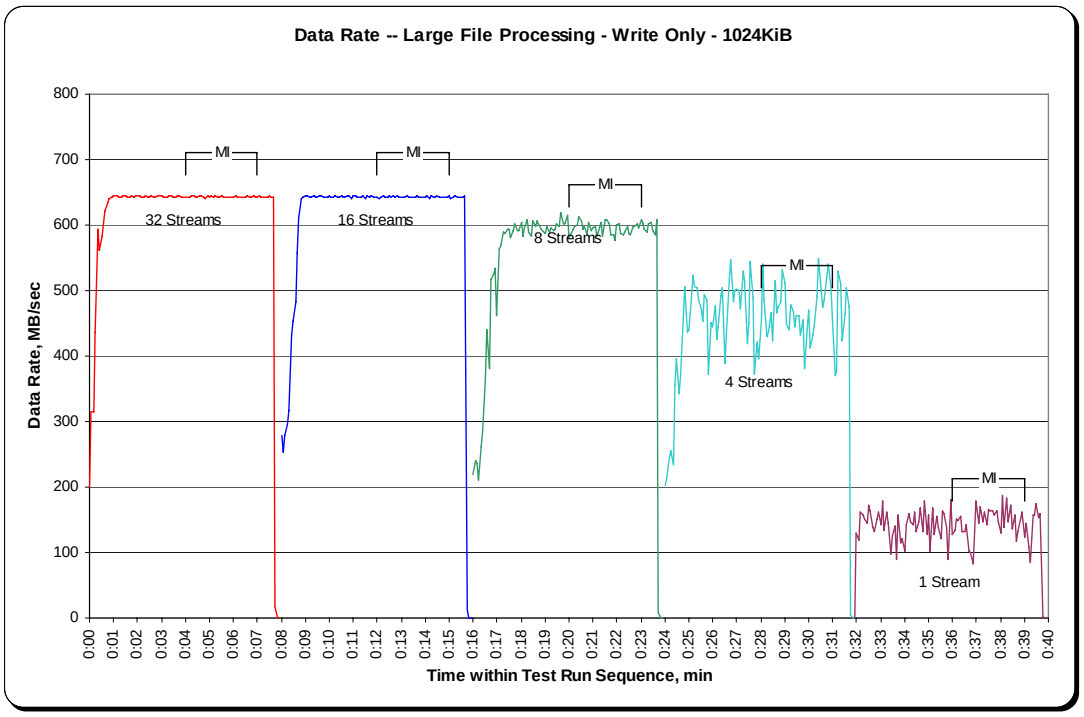
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR1	32 Streams			TR2	16 Streams			TR3	8 Streams			TR4	4 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	199.65	28.52	8.78	0:08:00	278.50	92.83	7.42	0:16:00	218.10	109.05	6.93	0:24:00	202.58	101.29	7.43	0:31:55	0.00	0.00	0.00
0:00:05	314.15	28.56	27.95	0:08:05	253.97	63.49	13.73	0:16:05	239.49	119.75	8.72	0:24:05	213.07	106.54	9.84	0:32:00	130.65	130.65	7.95
0:00:10	314.15	22.44	41.81	0:08:10	278.50	69.63	15.02	0:16:10	236.98	118.49	8.83	0:24:10	244.53	122.26	8.56	0:32:05	120.17	120.17	8.72
0:00:15	435.79	24.21	39.62	0:08:15	296.33	49.39	16.45	0:16:15	209.92	104.96	10.00	0:24:15	255.22	127.61	8.21	0:32:10	162.74	162.74	6.44
0:00:20	594.33	27.02	35.76	0:08:20	316.88	39.61	22.20	0:16:20	262.35	87.45	10.09	0:24:20	233.41	116.71	8.98	0:32:15	156.87	156.87	6.68
0:00:25	561.83	24.43	41.37	0:08:25	431.80	47.98	21.03	0:16:25	285.21	71.30	13.48	0:24:25	354.42	118.14	7.91	0:32:20	150.79	150.79	6.92
0:00:30	583.22	24.30	42.20	0:08:30	454.24	45.42	21.20	0:16:30	363.44	72.69	12.08	0:24:30	395.52	131.84	7.94	0:32:25	143.86	143.86	7.31
0:00:35	603.77	24.15	42.76	0:08:35	482.14	48.21	21.76	0:16:35	441.24	88.25	11.86	0:24:35	341.84	113.95	9.19	0:32:30	172.60	172.60	6.06
0:00:40	621.39	23.90	42.36	0:08:40	557.63	46.47	20.19	0:16:40	381.68	76.34	13.73	0:24:40	370.57	123.52	8.49	0:32:35	163.79	163.79	6.40
0:00:45	634.39	23.50	44.43	0:08:45	609.64	43.55	23.06	0:16:45	516.95	86.16	11.49	0:24:45	458.23	114.56	8.39	0:32:40	137.57	137.57	7.62
0:00:50	640.68	22.09	46.18	0:08:50	639.84	45.70	22.94	0:16:50	526.59	87.77	11.94	0:24:50	506.25	126.56	8.27	0:32:45	131.07	131.07	7.97
0:00:55	643.62	22.19	47.18	0:08:55	642.15	45.87	22.83	0:16:55	533.73	88.95	11.76	0:24:55	436.84	109.21	9.59	0:32:50	150.37	150.37	6.98
0:01:00	644.04	22.21	47.14	0:09:00	644.87	46.06	22.76	0:17:00	460.95	76.83	13.66	0:25:00	440.40	110.10	9.52	0:32:55	161.48	161.48	6.48
0:01:05	644.45	22.22	47.12	0:09:05	645.08	43.01	23.54	0:17:05	563.30	80.47	12.05	0:25:05	466.83	116.71	8.97	0:33:00	141.77	141.77	7.39
0:01:10	645.29	21.51	48.47	0:09:10	643.20	42.88	24.44	0:17:10	568.75	81.25	12.90	0:25:10	524.29	131.07	8.00	0:33:05	179.52	179.52	5.83
0:01:15	643.62	20.76	49.47	0:09:15	642.36	40.15	25.67	0:17:15	589.72	73.71	13.80	0:25:15	506.88	126.72	8.27	0:33:10	134.64	134.64	7.79
0:01:20	643.20	20.10	51.37	0:09:20	644.87	40.30	26.03	0:17:20	586.57	73.32	14.30	0:25:20	503.32	125.83	8.32	0:33:15	161.06	161.06	6.50
0:01:25	643.83	20.12	52.14	0:09:25	643.20	40.20	26.09	0:17:25	593.91	74.24	14.11	0:25:25	485.28	121.32	8.63	0:33:20	145.54	145.54	7.19
0:01:30	645.29	20.17	52.04	0:09:30	642.36	40.15	26.07	0:17:30	593.91	74.24	14.11	0:25:30	471.86	117.96	8.88	0:33:25	97.52	97.52	10.74
0:01:35	641.94	20.06	52.25	0:09:35	644.45	40.28	26.05	0:17:35	580.70	72.59	14.44	0:25:35	453.82	113.46	9.22	0:33:30	126.25	126.25	8.31
0:01:40	642.99	20.09	51.97	0:09:40	644.45	40.28	26.01	0:17:40	591.82	73.98	14.16	0:25:40	494.30	123.57	8.49	0:33:35	141.14	141.14	7.41
0:01:45	644.66	20.15	52.26	0:09:45	641.73	40.11	26.12	0:17:45	602.51	75.31	13.92	0:25:45	485.49	121.37	8.63	0:33:40	89.97	89.97	11.64
0:01:50	642.15	20.07	52.09	0:09:50	643.62	40.23	26.07	0:17:50	590.77	73.85	14.19	0:25:50	371.41	92.85	11.28	0:33:45	157.71	157.71	6.65
0:01:55	644.04	20.13	52.23	0:09:55	642.99	40.19	26.03	0:17:55	591.40	73.92	14.18	0:25:55	451.31	112.83	9.29	0:33:50	114.29	114.29	9.13
0:02:00	644.25	20.13	52.01	0:10:00	644.66	40.29	26.08	0:18:00	604.82	75.60	13.85	0:26:00	444.18	111.04	9.44	0:33:55	121.22	121.22	8.65
0:02:05	643.83	20.12	52.13	0:10:05	641.52	40.09	26.11	0:18:05	583.85	72.98	14.34	0:26:05	476.05	119.01	8.79	0:34:00	102.13	102.13	10.29
0:02:10	642.78	20.09	52.05	0:10:10	643.62	40.23	26.08	0:18:10	595.38	74.42	14.10	0:26:10	425.93	106.48	9.85	0:34:05	141.98	141.98	7.38
0:02:15	643.20	20.10	52.24	0:10:15	644.04	40.25	26.02	0:18:15	609.01	76.13	13.77	0:26:15	445.44	111.36	9.41	0:34:10	160.43	160.43	6.53
0:02:20	645.29	20.17	51.99	0:10:20	642.99	40.19	26.05	0:18:20	588.46	73.56	14.24	0:26:20	492.41	123.10	8.51	0:34:15	147.01	147.01	7.12
0:02:25	642.78	20.09	52.19	0:10:25	643.62	40.23	26.07	0:18:25	583.85	72.98	14.35	0:26:25	503.32	125.83	8.32	0:34:20	141.56	141.56	7.41
0:02:30	642.78	20.09	52.18	0:10:30	644.25	40.27	26.04	0:18:30	606.50	75.81	13.84	0:26:30	388.81	97.20	10.79	0:34:25	162.53	162.53	6.44
0:02:35	644.87	20.15	52.08	0:10:35	642.15	40.13	26.12	0:18:35	597.06	74.63	14.04	0:26:35	435.37	108.84	9.61	0:34:30	132.54	132.54	7.89
0:02:40	642.78	20.09	52.15	0:10:40	643.20	40.20	26.07	0:18:40	606.29	75.79	13.81	0:26:40	516.53	129.13	8.12	0:34:35	146.38	146.38	7.17
0:02:45	641.52	20.05	52.07	0:10:45	644.04	40.25	26.02	0:18:45	603.14	75.39	13.91	0:26:45	547.36	136.84	7.65	0:34:40	167.56	167.56	6.25
0:02:50	644.87	20.15	52.09	0:10:50	643.83	40.24	26.08	0:18:50	592.66	74.08	14.14	0:26:50	483.81	120.95	8.65	0:34:45	132.75	132.75	7.88
0:02:55	644.45	20.14	52.12	0:10:55	640.89	40.06	26.09	0:18:55	590.77	73.85	14.20	0:26:55	499.54	124.89	8.40	0:34:50	178.26	178.26	5.88
0:03:00	644.45	20.14	52.12	0:11:00	644.04	40.25	26.11	0:19:00	587.62	73.45	14.28	0:27:00	502.69	125.67	8.33	0:34:55	126.88	126.88	8.26
0:03:05	642.57	20.08	52.13	0:11:05	644.45	40.28	26.03	0:19:05	597.90	74.74	14.01	0:27:05	500.59	125.15	8.38	0:35:00	156.66	156.66	6.69
0:03:10	642.99	20.09	52.17	0:11:10	643.41	40.21	26.04	0:19:10	588.88	73.61	14.24	0:27:10	472.07	118.02	8.88	0:35:05	101.92	101.92	10.28
0:03:15	643.41	20.11	52.16	0:11:15	643.20	40.20	26.06	0:19:15	595.59	74.45	14.08	0:27:15	530.37	132.59	7.90	0:35:10	167.77	167.77	6.23
0:03:20	643.83	20.12	52.11	0:11:20	642.36	40.15	26.08	0:19:20	590.77	73.85	14.19	0:27:20	515.06	128.77	8.13	0:35:15	127.93	127.93	8.17
0:03:25	643.83	20.12	52.08	0:11:25	644.66	40.29	26.05	0:19:25	594.12	74.27	14.11	0:27:25	420.06	105.01	9.97	0:35:20	154.77	154.77	6.79
0:03:30	642.99	20.09	52.19	0:11:30	641.10	40.07	26.11	0:19:30	601.25	75.16	13.93	0:27:30	451.52	112.88	9.29	0:35:25	138.62	138.62	7.56
0:03:35	641.73	20.05	52.19	0:11:35	643.83	40.24	26.08	0:19:35	598.32	74.79	14.02	0:27:35	544.00	136.00	7.70	0:35:30	121.63	121.63	8.60
0:03:40	644.87	20.15	52.03	0:11:40	643.41	40.21	26.07	0:19:40	619.71	77.46	13.51	0:27:40	490.31	122.58	8.54	0:35:35	164.21	164.21	6.38
0:03:45	644.25	20.13	52.11	0:11:45	644.04	40.25	26.05	0:19:45	601.88	75.24	13.93	0:27:45	373.08	93.27	11.25	0:35:40	160.01	160.01	6.54
0:03:50	642.99	20.09	52.21	0:11:50	642.78	40.17	26.06	0:19:50	601.46	75.18	13.96	0:27:50	420.69	105.17	9.96	0:35:45	137.99	137.99	7.60
0:03:55	643.62	20.11	52.06	0:11:55	643.20	40.20	26.07	0:19:55	614.47	76.81	13.64	0:27:55	394.89	98.72	10.60	0:35:50	88.50	88.50	11.82
																0:35:55	181.40	181.40	5.78

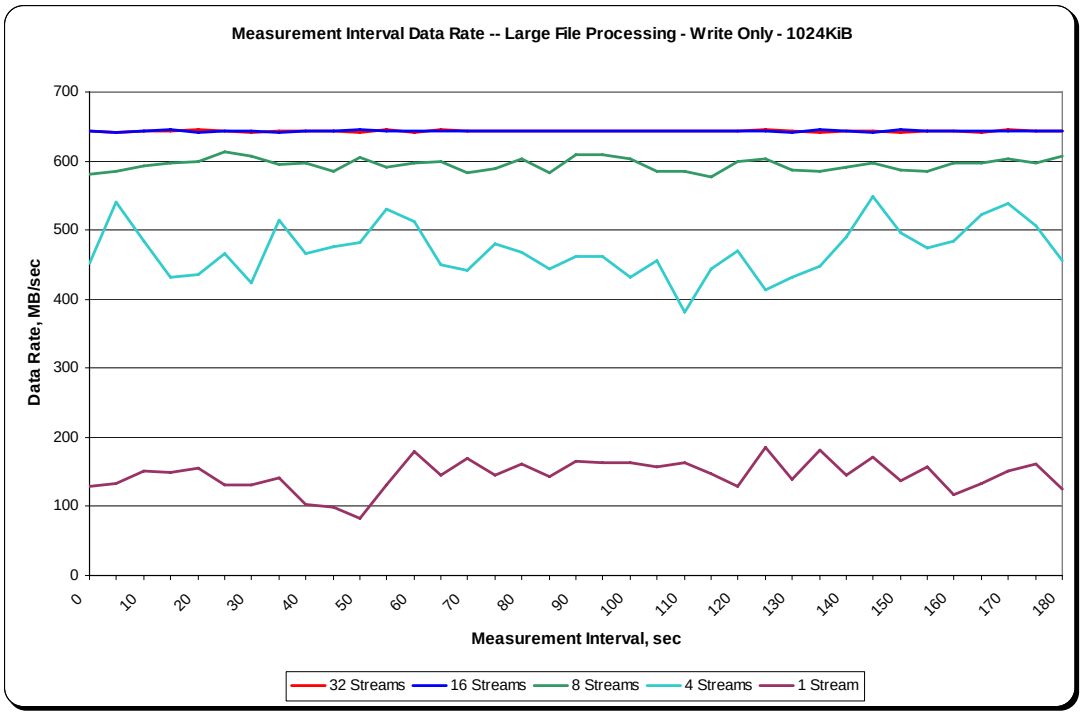
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR1	32 Streams			TR2	16 Streams			TR3	8 Streams			TR4	4 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
0:04:00	642.99	20.09	52.07	0:12:00	643.41	40.21	26.07	0:20:00	580.07	72.51	14.44	0:28:00	451.10	112.77	9.29	0:36:00	128.35	128.35	8.17
0:04:05	641.52	20.05	52.23	0:12:05	641.10	40.07	26.07	0:20:05	584.06	73.01	14.31	0:28:05	539.81	134.95	7.76	0:36:05	133.17	133.17	7.86
0:04:10	642.57	20.08	52.17	0:12:10	642.78	40.17	26.09	0:20:10	593.70	74.21	14.13	0:28:10	484.23	121.06	8.65	0:36:10	150.79	150.79	6.95
0:04:15	643.83	20.12	52.13	0:12:15	645.50	40.34	25.98	0:20:15	596.85	74.61	14.04	0:28:15	430.76	107.69	9.73	0:36:15	149.74	149.74	6.99
0:04:20	645.71	20.18	52.01	0:12:20	641.94	40.12	26.12	0:20:20	599.58	74.95	13.98	0:28:20	436.42	109.10	9.60	0:36:20	155.82	155.82	6.73
0:04:25	643.41	20.11	52.17	0:12:25	642.99	40.19	26.06	0:20:25	612.37	76.55	13.67	0:28:25	466.41	116.60	8.97	0:36:25	131.70	131.70	7.93
0:04:30	642.15	20.07	52.12	0:12:30	643.83	40.24	26.06	0:20:30	606.71	75.84	13.84	0:28:30	422.79	105.70	9.93	0:36:30	131.07	131.07	8.02
0:04:35	644.04	20.13	52.14	0:12:35	641.73	40.11	26.10	0:20:35	594.12	74.27	14.10	0:28:35	514.64	128.66	8.14	0:36:35	141.77	141.77	7.39
0:04:40	644.04	20.13	52.16	0:12:40	644.04	40.25	26.07	0:20:40	598.11	74.76	14.02	0:28:40	465.15	116.29	9.00	0:36:40	103.18	103.18	10.16
0:04:45	643.41	20.11	52.04	0:12:45	642.78	40.17	26.05	0:20:45	584.27	73.03	14.35	0:28:45	475.21	118.80	8.82	0:36:45	98.99	98.99	10.59
0:04:50	640.68	20.02	52.20	0:12:50	645.50	40.34	26.03	0:20:50	604.82	75.60	13.86	0:28:50	482.34	120.59	8.69	0:36:50	82.21	82.21	12.74
0:04:55	645.29	20.17	52.15	0:12:55	642.57	40.16	26.07	0:20:55	590.56	73.82	14.20	0:28:55	531.00	132.75	7.90	0:36:55	131.91	131.91	7.94
0:05:00	642.36	20.07	52.11	0:13:00	643.20	40.20	26.07	0:21:00	596.43	74.55	14.06	0:29:00	511.50	127.87	8.19	0:37:00	179.10	179.10	5.85
0:05:05	644.66	20.15	52.08	0:13:05	642.99	40.19	26.09	0:21:05	598.32	74.79	14.02	0:29:05	449.63	112.41	9.32	0:37:05	145.33	145.33	7.21
0:05:10	642.99	20.09	52.23	0:13:10	642.99	40.19	26.08	0:21:10	583.01	72.88	14.38	0:29:10	441.03	110.26	9.51	0:37:10	170.29	170.29	6.16
0:05:15	644.25	20.13	52.11	0:13:15	644.45	40.28	26.01	0:21:15	589.72	73.71	14.21	0:29:15	479.62	119.90	8.74	0:37:15	146.17	146.17	7.16
0:05:20	643.41	20.11	52.08	0:13:20	643.41	40.21	26.07	0:21:20	603.98	75.50	13.87	0:29:20	467.66	116.92	8.95	0:37:20	160.85	160.85	6.51
0:05:25	643.62	20.11	52.19	0:13:25	643.20	40.20	26.09	0:21:25	582.59	72.82	14.40	0:29:25	444.39	111.10	9.44	0:37:25	143.03	143.03	7.30
0:05:30	644.04	20.13	52.04	0:13:30	642.57	40.16	26.09	0:21:30	608.80	76.10	13.77	0:29:30	461.16	115.29	9.08	0:37:30	165.26	165.26	6.36
0:05:35	643.20	20.10	52.14	0:13:35	642.99	40.19	26.08	0:21:35	608.80	76.10	13.77	0:29:35	462.00	115.50	9.06	0:37:35	164.00	164.00	6.38
0:05:40	643.20	20.10	52.09	0:13:40	644.45	40.28	25.99	0:21:40	602.93	75.37	13.91	0:29:40	431.59	107.90	9.72	0:37:40	164.00	164.00	6.40
0:05:45	643.41	20.11	52.08	0:13:45	642.57	40.16	26.07	0:21:45	584.27	73.03	14.33	0:29:45	455.50	113.88	9.20	0:37:45	157.50	157.50	6.64
0:05:50	643.41	20.11	52.18	0:13:50	643.62	40.23	26.08	0:21:50	585.73	73.22	14.33	0:29:50	381.47	95.37	10.99	0:37:50	163.16	163.16	6.42
0:05:55	643.62	20.11	52.13	0:13:55	643.20	40.20	26.09	0:21:55	577.35	72.17	14.51	0:29:55	443.13	110.78	9.46	0:37:55	147.85	147.85	7.08
0:06:00	642.57	20.08	52.17	0:14:00	643.41	40.21	26.08	0:22:00	599.58	74.95	13.99	0:30:00	470.60	117.65	8.90	0:38:00	129.39	129.39	8.08
0:06:05	645.08	20.16	52.02	0:14:05	643.83	40.24	26.05	0:22:05	602.51	75.31	13.92	0:30:05	413.77	103.44	10.13	0:38:05	186.23	186.23	5.64
0:06:10	642.78	20.09	52.22	0:14:10	641.10	40.07	26.09	0:22:10	587.41	73.43	14.26	0:30:10	431.80	107.95	9.71	0:38:10	138.41	138.41	7.57
0:06:15	641.94	20.06	52.18	0:14:15	645.50	40.34	26.05	0:22:15	585.94	73.24	14.30	0:30:15	447.74	111.94	9.35	0:38:15	182.03	182.03	5.75
0:06:20	643.20	20.10	52.21	0:14:20	642.57	40.16	26.07	0:22:20	590.14	73.77	14.20	0:30:20	491.15	122.79	8.54	0:38:20	146.17	146.17	7.17
0:06:25	643.62	20.11	52.15	0:14:25	641.94	40.12	26.11	0:22:25	597.27	74.66	14.04	0:30:25	548.20	137.05	7.65	0:38:25	171.34	171.34	6.11
0:06:30	642.36	20.07	52.10	0:14:30	644.66	40.29	26.03	0:22:30	586.36	73.30	14.31	0:30:30	497.03	124.26	8.43	0:38:30	136.52	136.52	7.67
0:06:35	644.04	20.13	52.13	0:14:35	643.62	40.23	26.09	0:22:35	584.27	73.03	14.35	0:30:35	475.00	118.75	8.82	0:38:35	157.50	157.50	6.65
0:06:40	643.62	20.11	52.19	0:14:40	643.20	40.20	26.02	0:22:40	598.11	74.76	14.02	0:30:40	484.86	121.22	8.64	0:38:40	117.23	117.23	8.94
0:06:45	642.36	20.07	52.17	0:14:45	643.62	40.23	26.09	0:22:45	597.69	74.71	14.03	0:30:45	521.77	130.44	8.04	0:38:45	132.75	132.75	7.89
0:06:50	644.66	20.15	52.03	0:14:50	642.99	40.19	26.09	0:22:50	602.93	75.37	13.91	0:30:50	539.39	134.85	7.77	0:38:50	151.83	151.83	6.90
0:06:55	643.62	20.11	52.14	0:14:55	643.41	40.21	26.03	0:22:55	596.43	74.55	14.04	0:30:55	507.30	126.83	8.25	0:38:55	161.27	161.27	6.49
0:07:00	642.57	20.08	52.17	0:15:00	644.04	40.25	26.04	0:23:00	608.17	76.02	13.80	0:31:00	456.76	114.19	9.21	0:39:00	124.36	124.36	8.45
0:07:05	644.45	20.14	52.14	0:15:05	641.31	40.08	26.08	0:23:05	602.72	75.34	13.87	0:31:05	369.94	92.48	11.29	0:39:05	144.28	144.28	7.24
0:07:10	643.20	20.10	52.04	0:15:10	642.15	40.13	26.10	0:23:10	594.54	74.32	14.10	0:31:10	376.86	94.21	11.11	0:39:10	107.58	107.58	9.73
0:07:15	643.41	20.11	52.17	0:15:15	644.04	40.25	26.06	0:23:15	589.72	73.71	14.20	0:31:15	529.32	132.33	7.93	0:39:15	85.14	85.14	12.31
0:07:20	643.41	20.11	52.16	0:15:20	643.62	40.23	26.05	0:23:20	602.93	75.37	13.91	0:31:20	511.50	127.87	8.19	0:39:20	157.08	157.08	6.68
0:07:25	642.36	20.07	52.13	0:15:25	643.41	40.21	26.06	0:23:25	604.40	75.55	13.88	0:31:25	422.37	105.59	9.92	0:39:25	158.33	158.33	6.61
0:07:30	644.25	20.13	52.21	0:15:30	642.78	40.17	26.09	0:23:30	591.82	73.98	14.17	0:31:30	463.68	115.92	9.04	0:39:30	173.64	173.64	6.04
0:07:35	643.41	20.11	52.17	0:15:35	642.57	40.16	26.09	0:23:35	584.69	73.09	14.35	0:31:35	503.74	125.93	8.31	0:39:35	152.46	152.46	6.85
0:07:40	642.78	20.09	52.09	0:15:40	644.87	40.30	25.99	0:23:40	607.75	75.97	13.77	0:31:40	475.42	118.86	8.83	0:39:40	159.80	159.80	6.58
0:07:45	16.99	0.00	52.78	0:15:45	13.00	0.00	24.71	0:23:45	7.97	0.00	14.67	0:31:45	3.98	0.00	9.80	0:39:45	1.89	0.00	3.72
0:07:50	0.00	0.00	0.00	0:15:50	0.00	0.00	0.00	0:23:50	0.00	0.00	0.00	0:31:50	0.00	0.00	0.00	0:39:50	0.00	0.00	0.00
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00					0:39:55	0.00	0.00	0.00

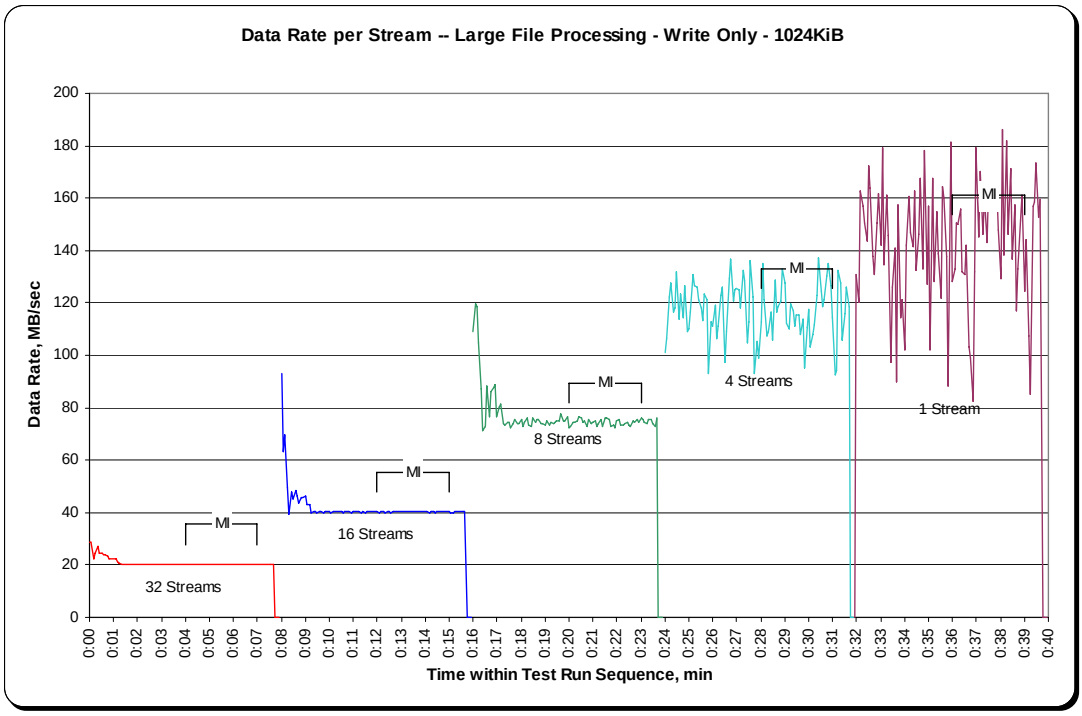
SPC-2 "Large File Processing/WRITE ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



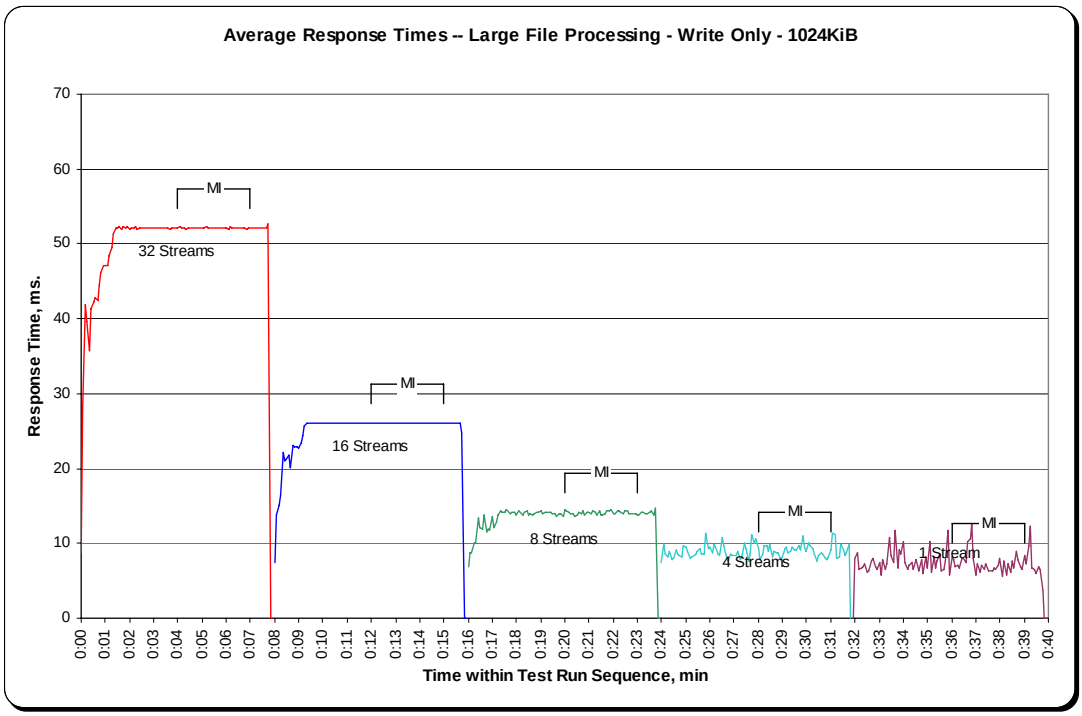
SPC-2 "Large File Processing/ WRITE ONLY /1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



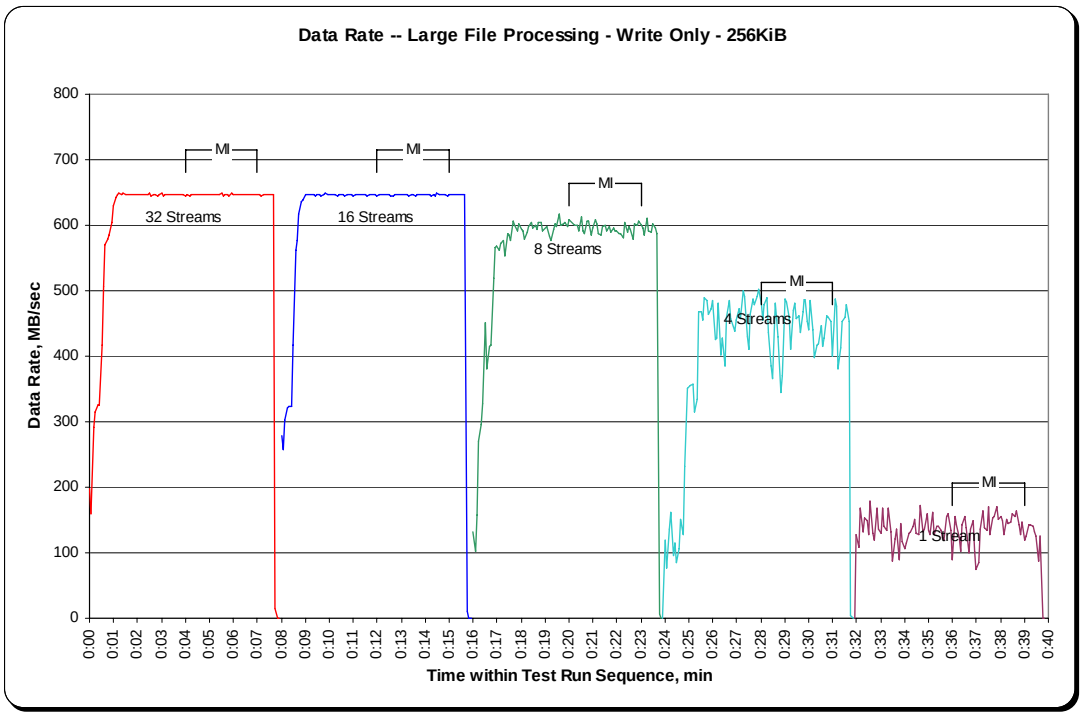
SPC-2 "Large File Processing/WRITE ONLY /256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR6	32 Streams			TR7	16 Streams			TR8	8 Streams			TR9	4 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	196.98	49.24	3.31	0:08:00	278.19	92.73	2.00	0:16:00	131.12	131.12	1.98	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00
0:00:05	160.01	32.00	6.61	0:08:05	257.37	64.34	3.09	0:16:05	102.50	102.50	2.55	0:24:00	118.17	118.17	2.20	0:32:00	127.30	127.30	2.04
0:00:10	291.71	24.31	7.40	0:08:10	301.26	37.66	5.72	0:16:10	158.49	158.49	1.65	0:24:05	76.70	76.70	3.41	0:32:05	108.79	108.79	2.40
0:00:15	315.10	26.26	9.98	0:08:15	321.49	40.19	6.50	0:16:15	271.16	90.39	2.04	0:24:10	136.16	136.16	1.92	0:32:10	168.09	168.09	1.55
0:00:20	324.69	23.19	10.95	0:08:20	323.17	40.40	6.48	0:16:20	295.33	73.83	3.01	0:24:15	161.38	161.38	1.62	0:32:15	131.91	131.91	1.98
0:00:25	325.01	20.31	11.64	0:08:25	322.96	40.37	6.48	0:16:25	328.36	65.67	3.29	0:24:20	95.94	95.94	2.72	0:32:20	152.57	152.57	1.71
0:00:30	416.23	24.48	10.42	0:08:30	417.54	46.39	5.36	0:16:30	451.52	90.30	2.90	0:24:25	115.61	115.61	2.26	0:32:25	149.37	149.37	1.75
0:00:35	506.41	26.65	9.37	0:08:35	562.19	51.11	4.72	0:16:35	379.95	75.99	3.44	0:24:30	85.51	85.51	3.06	0:32:30	127.19	127.19	2.05
0:00:40	570.79	24.82	9.55	0:08:40	576.09	44.31	5.24	0:16:40	414.50	82.90	3.16	0:24:35	105.49	105.49	2.48	0:32:35	179.10	179.10	1.46
0:00:45	579.65	25.20	10.38	0:08:45	617.93	47.53	5.51	0:16:45	417.91	83.58	3.13	0:24:40	151.52	151.52	1.72	0:32:40	130.55	130.55	2.00
0:00:50	585.32	24.39	10.56	0:08:50	635.38	48.88	5.35	0:16:50	519.25	86.54	2.91	0:24:45	128.45	128.45	2.04	0:32:45	118.86	118.86	2.19
0:00:55	604.92	24.20	10.56	0:08:55	637.64	45.55	5.49	0:16:55	566.65	80.95	3.13	0:24:50	230.90	115.45	2.01	0:32:50	167.77	167.77	1.56
0:01:00	629.04	23.30	10.84	0:09:00	646.03	43.07	5.84	0:17:00	568.17	81.17	3.22	0:24:55	352.01	117.34	2.09	0:32:55	136.73	136.73	1.91
0:01:05	641.57	22.91	11.10	0:09:05	647.23	43.15	6.06	0:17:05	561.20	80.17	3.26	0:25:00	353.58	117.86	2.22	0:33:00	129.18	129.18	2.02
0:01:10	646.60	22.30	11.39	0:09:10	647.65	43.18	6.07	0:17:10	571.74	81.68	3.20	0:25:05	354.42	118.14	2.21	0:33:05	167.20	167.20	1.56
0:01:15	648.18	21.61	11.73	0:09:15	647.23	43.15	6.06	0:17:15	576.72	82.39	3.18	0:25:10	357.93	119.31	2.19	0:33:10	140.82	140.82	1.86
0:01:20	647.34	20.23	12.18	0:09:20	647.29	40.46	6.11	0:17:20	553.60	69.20	3.32	0:25:15	314.31	104.77	2.50	0:33:15	134.22	134.22	1.95
0:01:25	648.18	20.26	12.94	0:09:25	644.87	40.30	6.48	0:17:25	587.25	73.41	3.55	0:25:20	334.39	83.60	2.37	0:33:20	167.04	167.04	1.56
0:01:30	647.71	20.24	12.94	0:09:30	646.76	40.42	6.48	0:17:30	585.68	73.21	3.57	0:25:25	468.87	117.22	2.23	0:33:25	131.70	131.70	1.98
0:01:35	647.08	20.22	12.96	0:09:35	647.08	40.44	6.47	0:17:35	575.98	72.00	3.63	0:25:30	468.19	117.05	2.23	0:33:30	88.24	88.24	2.96
0:01:40	646.39	20.20	12.96	0:09:40	645.45	40.34	6.49	0:17:40	606.81	75.85	3.45	0:25:35	455.29	113.82	2.30	0:33:35	121.43	121.43	2.15
0:01:45	647.55	20.24	12.94	0:09:45	647.50	40.47	6.47	0:17:45	599.58	74.95	3.49	0:25:40	490.00	122.50	2.13	0:33:40	136.42	136.42	1.92
0:01:50	646.92	20.22	12.96	0:09:50	648.33	40.52	6.46	0:17:50	592.08	74.01	3.53	0:25:45	485.18	121.29	2.15	0:33:45	88.45	88.45	2.96
0:01:55	647.13	20.22	12.95	0:09:55	646.76	40.42	6.47	0:17:55	601.57	75.20	3.48	0:25:50	463.79	115.95	2.25	0:33:50	145.33	145.33	1.80
0:02:00	647.44	20.23	12.95	0:10:00	646.50	40.41	6.48	0:18:00	594.65	74.33	3.52	0:25:55	473.38	118.34	2.21	0:33:55	116.44	116.44	2.24
0:02:05	647.02	20.22	12.94	0:10:05	645.87	40.37	6.48	0:18:05	591.71	73.96	3.54	0:26:00	485.70	121.43	2.15	0:34:00	105.96	105.96	2.47
0:02:10	646.71	20.21	12.97	0:10:10	646.60	40.41	6.48	0:18:10	577.71	72.21	3.62	0:26:05	424.99	106.25	2.46	0:34:05	115.55	115.55	2.26
0:02:15	647.65	20.24	12.94	0:10:15	647.76	40.48	6.47	0:18:15	588.30	73.54	3.56	0:26:10	426.88	106.72	2.45	0:34:10	130.65	130.65	2.00
0:02:20	646.24	20.19	12.97	0:10:20	645.35	40.33	6.49	0:18:20	597.43	74.68	3.50	0:26:15	480.41	120.10	2.18	0:34:15	131.54	131.54	1.98
0:02:25	646.29	20.20	12.97	0:10:25	646.97	40.44	6.48	0:18:25	604.98	75.62	3.46	0:26:20	402.50	100.62	2.60	0:34:20	141.35	141.35	1.85
0:02:30	648.07	20.25	12.93	0:10:30	647.02	40.44	6.47	0:18:30	595.22	74.40	3.51	0:26:25	427.45	106.86	2.45	0:34:25	151.73	151.73	1.72
0:02:35	645.40	20.17	12.99	0:10:35	647.86	40.49	6.47	0:18:35	601.04	75.13	3.48	0:26:30	385.56	96.39	2.71	0:34:30	130.29	130.29	2.01
0:02:40	646.45	20.20	12.96	0:10:40	645.61	40.35	6.49	0:18:40	592.97	74.12	3.53	0:26:35	458.75	114.69	2.28	0:34:35	128.08	128.08	2.04
0:02:45	646.92	20.22	12.96	0:10:45	646.55	40.41	6.48	0:18:45	605.08	75.64	3.46	0:26:40	484.81	121.20	2.16	0:34:40	171.44	171.44	1.52
0:02:50	645.61	20.18	12.98	0:10:50	646.39	40.40	6.48	0:18:50	603.56	75.45	3.47	0:26:45	457.91	114.48	2.28	0:34:45	131.23	131.23	1.99
0:02:55	646.39	20.20	12.97	0:10:55	646.92	40.43	6.48	0:18:55	590.87	73.86	3.54	0:26:50	444.02	111.00	2.35	0:34:50	135.27	135.27	1.93
0:03:00	648.07	20.25	12.93	0:11:00	645.56	40.35	6.49	0:19:00	595.75	74.47	3.51	0:26:55	438.04	109.51	2.39	0:34:55	160.38	160.38	1.63
0:03:05	645.71	20.18	12.98	0:11:05	647.08	40.44	6.48	0:19:05	597.48	74.68	3.50	0:27:00	454.45	113.61	2.30	0:35:00	133.59	133.59	1.95
0:03:10	646.92	20.22	12.96	0:11:10	645.98	40.37	6.48	0:19:10	582.75	72.84	3.59	0:27:05	472.28	118.07	2.21	0:35:05	127.66	127.66	2.05
0:03:15	646.76	20.21	12.97	0:11:15	646.92	40.43	6.48	0:19:15	577.61	72.20	3.62	0:27:10	456.55	114.14	2.29	0:35:10	162.58	162.58	1.61
0:03:20	646.71	20.21	12.96	0:11:20	646.71	40.42	6.48	0:19:20	593.55	74.19	3.52	0:27:15	500.28	125.07	2.09	0:35:15	128.24	128.24	2.04
0:03:25	647.23	20.23	12.95	0:11:25	645.77	40.36	6.48	0:19:25	602.62	75.33	3.47	0:27:20	490.58	122.64	2.13	0:35:20	139.83	139.83	1.87
0:03:30	646.71	20.21	12.96	0:11:30	646.45	40.40	6.48	0:19:30	598.89	74.86	3.49	0:27:25	429.08	107.27	2.44	0:35:25	140.14	140.14	1.86
0:03:35	646.34	20.20	12.97	0:11:35	645.71	40.36	6.49	0:19:35	616.09	77.01	3.40	0:27:30	411.36	102.84	2.54	0:35:30	133.06	133.06	1.96
0:03:40	646.60	20.21	12.96	0:11:40	645.82	40.36	6.48	0:19:40	599.58	74.95	3.49	0:27:35	464.47	116.12	2.25	0:35:35	123.26	123.26	2.12
0:03:45	646.60	20.21	12.96	0:11:45	647.18	40.45	6.47	0:19:45	601.46	75.18	3.48	0:27:40	486.96	121.74	2.15	0:35:40	118.96	118.96	2.19
0:03:50	646.24	20.19	12.96	0:11:50	645.87	40.37	6.49	0:19:50	604.61	75.58	3.46	0:27:45	478.62	119.66	2.18	0:35:45	155.92	155.92	1.68
0:03:55	647.50	20.23	12.95	0:11:55	647.18	40.45	6.47	0:19:55	596.90	74.61	3.51	0:27:50	492.41	123.10	2.12	0:35:50	158.75	158.75	1.64
												0:27:55	502.37	125.59	2.08	0:35:55	133.17	133.17	1.96

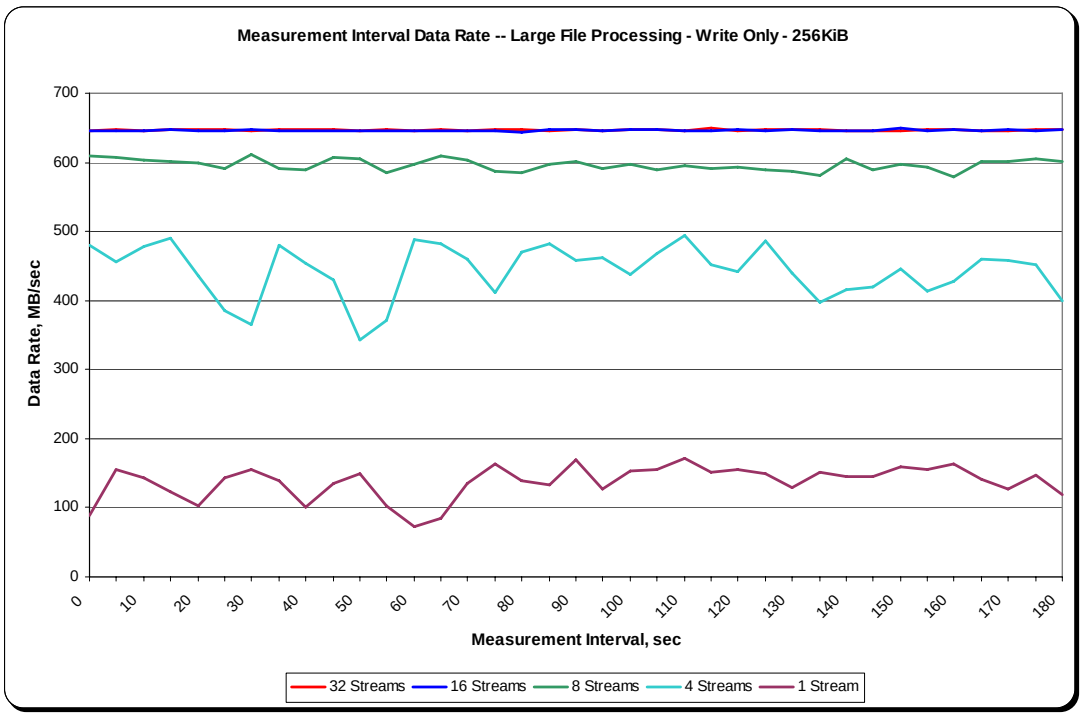
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Test Run Data
Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	32 Streams			TR7	16 Streams			TR8	8 Streams			TR9	4 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
0:04:00	644.98	20.16	12.99	0:12:00	644.66	40.29	6.50	0:20:00	609.22	76.15	3.43	0:28:00	479.88	119.97	2.18	0:36:00	89.71	89.71	2.92
0:04:05	646.55	20.20	12.94	0:12:05	645.92	40.37	6.48	0:20:05	607.23	75.90	3.45	0:28:05	455.19	113.80	2.30	0:36:05	155.14	155.14	1.68
0:04:10	645.40	20.17	12.98	0:12:10	645.87	40.37	6.48	0:20:10	603.04	75.38	3.47	0:28:10	478.20	119.55	2.19	0:36:10	142.50	142.50	1.83
0:04:15	646.55	20.20	12.97	0:12:15	646.81	40.43	6.48	0:20:15	600.26	75.03	3.49	0:28:15	489.79	122.45	2.13	0:36:15	122.68	122.68	2.13
0:04:20	647.13	20.22	12.95	0:12:20	646.13	40.38	6.48	0:20:20	599.00	74.87	3.49	0:28:20	436.52	109.13	2.40	0:36:20	102.76	102.76	2.55
0:04:25	646.81	20.21	12.96	0:12:25	646.50	40.41	6.48	0:20:25	591.29	73.91	3.54	0:28:25	386.14	96.53	2.71	0:36:25	143.45	143.45	1.82
0:04:30	646.29	20.20	12.96	0:12:30	647.02	40.44	6.48	0:20:30	611.95	76.49	3.42	0:28:30	365.64	91.41	2.86	0:36:30	156.24	156.24	1.67
0:04:35	647.02	20.22	12.96	0:12:35	644.82	40.30	6.50	0:20:35	591.29	73.91	3.54	0:28:35	480.20	120.05	2.18	0:36:35	139.36	139.36	1.87
0:04:40	647.29	20.23	12.95	0:12:40	645.66	40.35	6.48	0:20:40	588.20	73.52	3.56	0:28:40	454.61	113.65	2.30	0:36:40	100.30	100.30	2.61
0:04:45	647.34	20.23	12.95	0:12:45	646.08	40.38	6.49	0:20:45	606.65	75.83	3.45	0:28:45	429.50	107.37	2.43	0:36:45	135.79	135.79	1.93
0:04:50	646.45	20.20	12.96	0:12:50	646.13	40.38	6.48	0:20:50	605.40	75.67	3.46	0:28:50	343.93	85.98	3.04	0:36:50	150.00	150.00	1.74
0:04:55	647.39	20.23	12.95	0:12:55	646.50	40.41	6.48	0:20:55	585.68	73.21	3.57	0:28:55	370.78	92.69	2.82	0:36:55	103.13	103.13	2.54
0:05:00	645.82	20.18	12.98	0:13:00	645.77	40.36	6.48	0:21:00	596.64	74.58	3.50	0:29:00	487.69	121.92	2.14	0:37:00	73.56	73.56	3.56
0:05:05	647.65	20.24	12.94	0:13:05	646.03	40.38	6.49	0:21:05	608.75	76.09	3.44	0:29:05	482.66	120.66	2.17	0:37:05	84.46	84.46	3.10
0:05:10	646.08	20.19	12.98	0:13:10	646.34	40.40	6.48	0:21:10	602.67	75.33	3.47	0:29:10	459.91	114.98	2.27	0:37:10	135.32	135.32	1.93
0:05:15	646.81	20.21	12.96	0:13:15	646.08	40.38	6.48	0:21:15	586.63	73.33	3.57	0:29:15	411.15	102.79	2.54	0:37:15	163.94	163.94	1.59
0:05:20	647.13	20.22	12.95	0:13:20	644.04	40.25	6.50	0:21:20	585.32	73.16	3.57	0:29:20	470.18	117.55	2.22	0:37:20	138.57	138.57	1.89
0:05:25	645.87	20.18	12.97	0:13:25	647.44	40.47	6.47	0:21:25	596.95	74.62	3.50	0:29:25	481.35	120.34	2.17	0:37:25	133.59	133.59	1.96
0:05:30	648.02	20.25	12.94	0:13:30	646.81	40.43	6.48	0:21:30	600.57	75.07	3.49	0:29:30	457.60	114.40	2.28	0:37:30	169.61	169.61	1.54
0:05:35	645.03	20.16	12.99	0:13:35	645.50	40.34	6.49	0:21:35	591.03	73.88	3.54	0:29:35	462.37	115.59	2.26	0:37:35	126.67	126.67	2.06
0:05:40	647.76	20.24	12.95	0:13:40	647.34	40.46	6.47	0:21:40	597.58	74.70	3.50	0:29:40	437.20	109.30	2.39	0:37:40	153.83	153.83	1.70
0:05:45	647.55	20.24	12.94	0:13:45	647.02	40.44	6.47	0:21:45	589.25	73.66	3.55	0:29:45	467.40	116.85	2.24	0:37:45	156.13	156.13	1.67
0:05:50	645.66	20.18	12.99	0:13:50	646.24	40.39	6.48	0:21:50	594.91	74.36	3.52	0:29:50	495.14	123.78	2.11	0:37:50	170.50	170.50	1.53
0:05:55	648.81	20.28	12.92	0:13:55	646.34	40.40	6.48	0:21:55	591.13	73.89	3.54	0:29:55	452.15	113.04	2.31	0:37:55	150.94	150.94	1.73
0:06:00	646.18	20.19	12.97	0:14:00	646.76	40.42	6.48	0:22:00	592.29	74.04	3.53	0:30:00	441.24	110.31	2.37	0:38:00	155.50	155.50	1.68
0:06:05	646.92	20.22	12.96	0:14:05	645.77	40.36	6.49	0:22:05	588.20	73.52	3.56	0:30:05	485.81	121.45	2.15	0:38:05	149.53	149.53	1.74
0:06:10	646.55	20.20	12.96	0:14:10	646.60	40.41	6.48	0:22:10	587.52	73.44	3.56	0:30:10	440.56	110.14	2.37	0:38:10	128.35	128.35	2.04
0:06:15	646.55	20.20	12.97	0:14:15	645.08	40.32	6.49	0:22:15	580.65	72.58	3.60	0:30:15	396.83	99.21	2.64	0:38:15	150.94	150.94	1.73
0:06:20	646.45	20.20	12.97	0:14:20	646.39	40.40	6.48	0:22:20	604.35	75.54	3.46	0:30:20	416.23	104.06	2.51	0:38:20	145.49	145.49	1.80
0:06:25	646.34	20.20	12.97	0:14:25	645.66	40.35	6.49	0:22:25	588.83	73.60	3.56	0:30:25	419.27	104.82	2.49	0:38:25	146.17	146.17	1.79
0:06:30	646.13	20.19	12.97	0:14:30	648.60	40.54	6.46	0:22:30	597.16	74.65	3.50	0:30:30	446.48	111.62	2.34	0:38:30	158.75	158.75	1.64
0:06:35	646.55	20.20	12.96	0:14:35	646.39	40.40	6.48	0:22:35	593.55	74.19	3.52	0:30:35	413.87	103.47	2.53	0:38:35	155.08	155.08	1.68
0:06:40	646.71	20.21	12.97	0:14:40	647.55	40.47	6.47	0:22:40	578.29	72.29	3.62	0:30:40	427.92	106.98	2.44	0:38:40	164.05	164.05	1.59
0:06:45	646.18	20.19	12.96	0:14:45	646.08	40.38	6.48	0:22:45	601.57	75.20	3.48	0:30:45	460.74	115.19	2.27	0:38:45	141.98	141.98	1.84
0:06:50	646.18	20.19	12.97	0:14:50	647.23	40.45	6.47	0:22:50	600.41	75.05	3.48	0:30:50	458.54	114.64	2.28	0:38:50	127.30	127.30	2.05
0:06:55	647.02	20.22	12.96	0:14:55	645.19	40.32	6.49	0:22:55	605.50	75.69	3.46	0:30:55	452.20	113.05	2.31	0:38:55	146.38	146.38	1.79
0:07:00	646.87	20.21	12.96	0:15:00	646.71	40.42	6.48	0:23:00	600.15	75.02	3.49	0:31:00	399.66	99.92	2.63	0:39:00	119.59	119.59	2.19
0:07:05	646.87	20.21	12.95	0:15:05	645.77	40.36	6.48	0:23:05	596.74	74.59	3.50	0:31:05	487.80	121.95	2.14	0:39:05	125.10	125.10	2.08
0:07:10	644.66	20.15	13.01	0:15:10	646.50	40.41	6.48	0:23:10	585.68	73.21	3.57	0:31:10	476.21	119.05	2.19	0:39:10	143.55	143.55	1.82
0:07:15	646.66	20.21	12.95	0:15:15	646.39	40.40	6.48	0:23:15	610.64	76.33	3.43	0:31:15	380.79	95.20	2.75	0:39:15	143.39	143.39	1.82
0:07:20	647.08	20.22	12.96	0:15:20	647.44	40.47	6.47	0:23:20	591.82	73.98	3.54	0:31:20	412.93	103.23	2.53	0:39:20	139.88	139.88	1.87
0:07:25	646.34	20.20	12.97	0:15:25	646.29	40.39	6.48	0:23:25	590.03	73.75	3.54	0:31:25	453.09	113.27	2.31	0:39:25	132.80	132.80	1.96
0:07:30	646.60	20.21	12.96	0:15:30	646.66	40.42	6.48	0:23:30	602.93	75.37	3.47	0:31:30	458.54	114.64	2.28	0:39:30	124.78	124.78	2.10
0:07:35	647.34	20.23	12.95	0:15:35	646.39	40.40	6.48	0:23:35	595.28	74.41	3.51	0:31:35	477.89	119.47	2.19	0:39:35	86.40	86.40	3.03
0:07:40	647.18	20.22	12.96	0:15:40	645.92	40.37	6.48	0:23:40	588.20	73.52	3.56	0:31:40	452.46	113.12	2.31	0:39:40	125.83	125.83	2.08
0:07:45	13.84	0.00	11.53	0:15:45	10.59	0.00	5.07	0:23:45	6.29	0.00	3.61	0:31:45	3.25	0.00	2.73	0:39:45	0.47	0.00	4.20
0:07:50	0.00	0.00	0.00	0:15:50	0.00	0.00	0.00	0:23:50	0.00	0.00	0.00	0:31:50	0.00	0.00	0.00	0:39:50	0.00	0.00	0.00
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00												

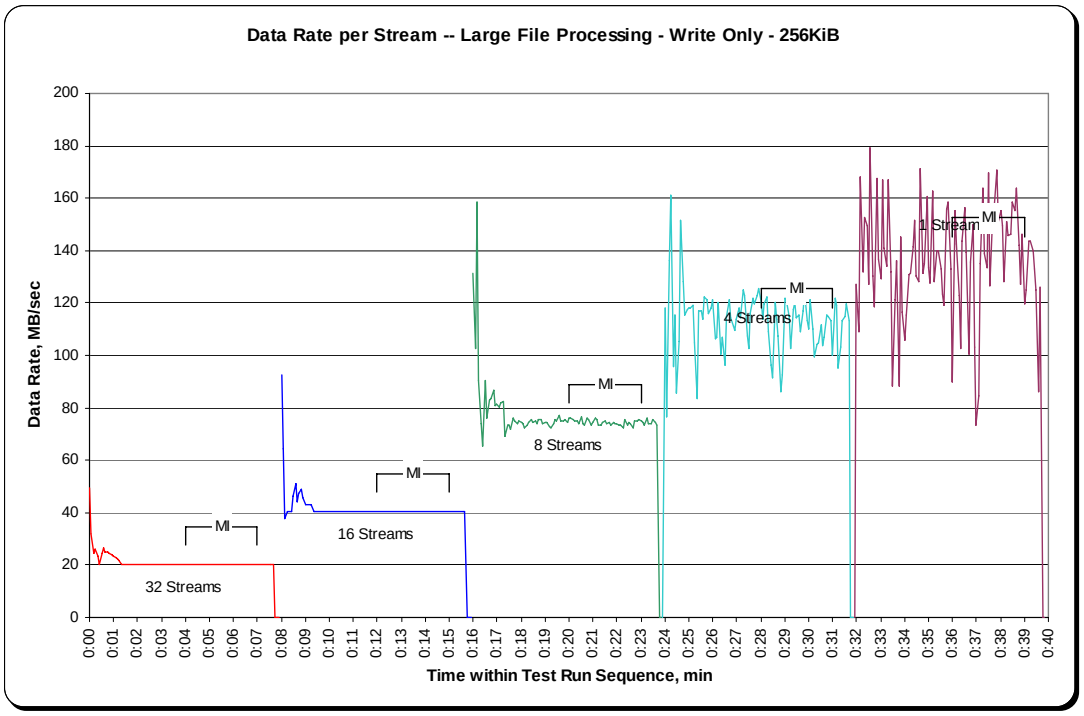
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



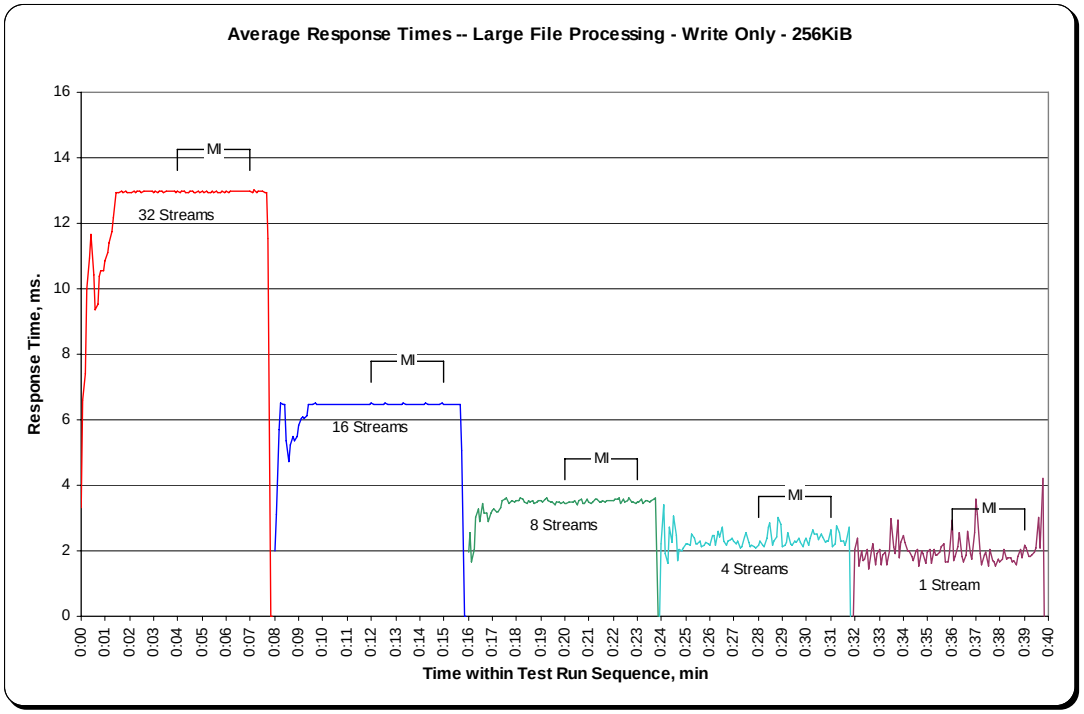
SPC-2 "Large File Processing/ WRITE ONLY /256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



Large File Processing Test – READ-WRITE Test Phase

Clause 10.6.8.1.2

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

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

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

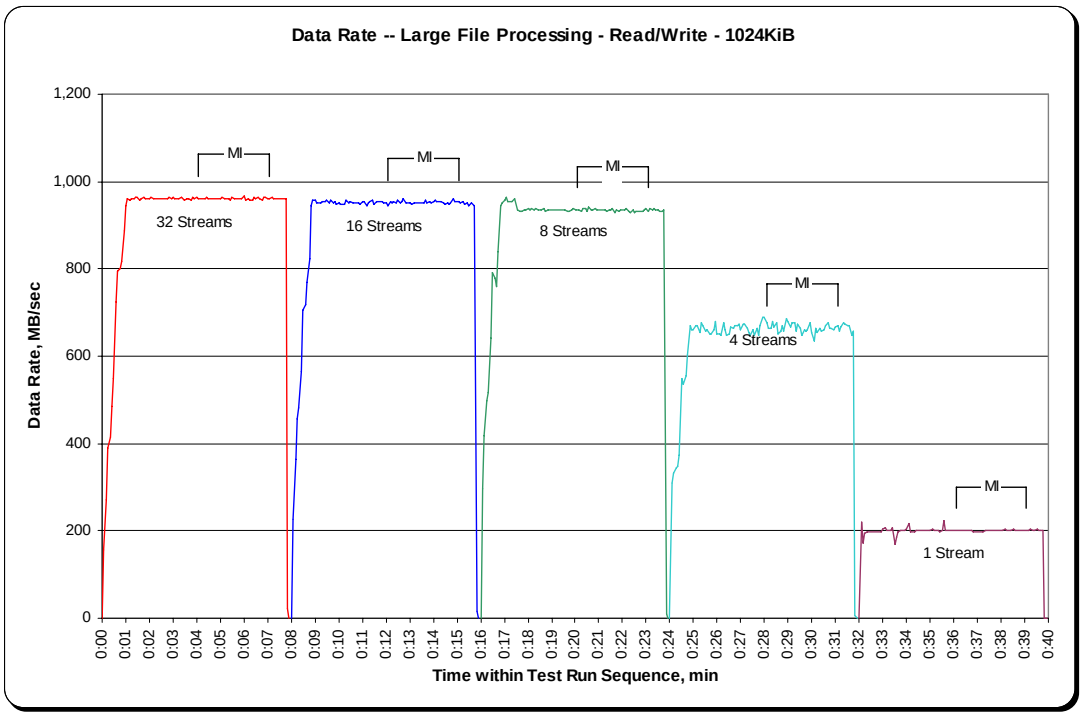
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR11	32 Streams			TR12	16 Streams			TR13	8 Streams			TR14	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	157.08	52.36	13.00	0:08:05	226.07	56.52	10.59	0:16:05	296.54	98.85	7.21	0:24:05	309.54	154.77	6.12	0:32:05	220.62	220.62	4.74
0:00:10	272.42	45.40	20.11	0:08:10	362.39	72.48	13.77	0:16:10	419.64	139.88	7.47	0:24:10	332.19	166.09	6.31	0:32:10	173.85	173.85	6.00
0:00:15	390.28	48.78	20.38	0:08:15	456.34	57.04	15.55	0:16:15	496.61	124.15	8.02	0:24:15	343.93	171.97	6.09	0:32:15	194.83	194.83	5.38
0:00:20	415.03	41.50	21.10	0:08:20	482.76	60.35	17.46	0:16:20	517.58	129.39	8.10	0:24:20	347.08	173.54	6.04	0:32:20	197.55	197.55	5.30
0:00:25	485.28	34.66	28.23	0:08:25	563.50	56.35	15.80	0:16:25	642.15	107.02	7.78	0:24:25	373.50	124.50	6.22	0:32:25	197.55	197.55	5.30
0:00:30	548.41	30.47	30.36	0:08:30	705.06	64.10	16.02	0:16:30	791.88	131.98	7.93	0:24:30	549.87	183.29	5.72	0:32:30	198.60	198.60	5.28
0:00:35	724.78	32.94	29.45	0:08:35	718.90	65.35	16.05	0:16:35	779.93	129.99	8.06	0:24:35	534.98	178.33	5.87	0:32:35	198.60	198.60	5.27
0:00:40	793.14	36.05	29.08	0:08:40	767.77	63.98	16.02	0:16:40	760.64	126.77	8.26	0:24:40	556.58	185.53	5.65	0:32:40	197.76	197.76	5.29
0:00:45	800.90	36.40	28.62	0:08:45	823.55	58.83	15.82	0:16:45	837.81	104.73	8.45	0:24:45	604.40	151.10	6.07	0:32:45	197.76	197.76	5.29
0:00:50	817.26	35.53	28.81	0:08:50	946.03	59.13	16.89	0:16:50	945.82	118.23	8.86	0:24:50	668.78	167.20	6.26	0:32:50	198.18	198.18	5.29
0:00:55	888.77	35.55	27.92	0:08:55	956.09	59.76	17.58	0:16:55	949.80	118.73	8.83	0:24:55	659.76	164.94	6.35	0:32:55	198.60	198.60	5.27
0:01:00	944.56	34.98	28.01	0:09:00	957.14	59.82	17.54	0:17:00	958.19	119.77	8.74	0:25:00	661.02	165.26	6.34	0:33:00	203.42	203.42	5.15
0:01:05	960.29	35.57	29.52	0:09:05	952.11	59.51	17.57	0:17:05	964.90	120.61	8.69	0:25:05	671.09	167.77	6.24	0:33:05	206.78	206.78	5.07
0:01:10	956.93	35.44	29.57	0:09:10	950.22	59.39	17.67	0:17:10	953.78	119.22	8.79	0:25:10	668.99	167.25	6.25	0:33:10	200.91	200.91	5.21
0:01:15	961.12	34.33	29.92	0:09:15	949.80	59.36	17.64	0:17:15	952.74	119.09	8.79	0:25:15	654.73	163.68	6.40	0:33:15	200.49	200.49	5.22
0:01:20	961.75	33.16	31.00	0:09:20	953.16	59.57	17.62	0:17:20	953.99	119.25	8.79	0:25:20	676.54	169.14	6.20	0:33:20	201.12	201.12	5.21
0:01:25	963.01	32.10	32.15	0:09:25	954.41	59.65	17.53	0:17:25	961.96	120.25	8.71	0:25:25	669.83	167.46	6.25	0:33:25	206.78	206.78	5.06
0:01:30	963.85	30.12	33.64	0:09:30	957.35	59.83	17.52	0:17:30	947.07	118.38	8.85	0:25:30	657.67	164.42	6.37	0:33:30	168.19	168.19	6.23
0:01:35	957.35	29.92	34.90	0:09:35	952.11	59.51	17.63	0:17:35	935.75	116.97	8.95	0:25:35	662.07	165.52	6.32	0:33:35	184.76	184.76	5.66
0:01:40	960.08	30.00	34.92	0:09:40	958.61	59.91	17.48	0:17:40	932.39	116.55	9.00	0:25:40	652.21	163.05	6.42	0:33:40	198.81	198.81	5.27
0:01:45	964.27	30.13	34.90	0:09:45	951.69	59.48	17.64	0:17:45	932.39	116.55	8.98	0:25:45	652.21	163.05	6.43	0:33:45	200.07	200.07	5.23
0:01:50	959.66	29.99	34.94	0:09:50	954.41	59.65	17.56	0:17:50	934.70	116.84	8.97	0:25:50	661.23	165.31	6.34	0:33:50	200.91	200.91	5.21
0:01:55	960.71	30.02	34.82	0:09:55	948.75	59.30	17.66	0:17:55	935.75	116.97	8.95	0:25:55	680.53	170.13	6.16	0:33:55	201.75	201.75	5.19
0:02:00	961.12	30.04	34.95	0:10:00	952.11	59.51	17.62	0:18:00	937.01	117.13	8.95	0:26:00	652.00	163.00	6.43	0:34:00	203.42	203.42	5.15
0:02:05	963.22	30.10	34.86	0:10:05	948.12	59.26	17.68	0:18:05	934.07	116.76	8.98	0:26:05	651.17	162.79	6.43	0:34:05	217.26	217.26	4.82
0:02:10	960.50	30.02	34.90	0:10:10	948.33	59.27	17.69	0:18:10	938.48	117.31	8.93	0:26:10	647.60	161.90	6.47	0:34:10	197.76	197.76	5.29
0:02:15	961.75	30.05	34.82	0:10:15	946.86	59.18	17.70	0:18:15	935.12	116.89	8.95	0:26:15	676.33	169.08	6.18	0:34:15	198.60	198.60	5.27
0:02:20	961.33	30.04	34.97	0:10:20	958.40	59.90	17.50	0:18:20	939.10	117.39	8.92	0:26:20	660.18	165.05	6.36	0:34:20	199.44	199.44	5.25
0:02:25	959.24	29.98	34.95	0:10:25	951.06	59.44	17.54	0:18:25	934.70	116.84	8.96	0:26:25	647.81	161.95	6.46	0:34:25	199.86	199.86	5.24
0:02:30	960.29	30.01	34.88	0:10:30	953.16	59.57	17.64	0:18:30	934.07	116.76	8.98	0:26:30	649.49	162.37	6.46	0:34:30	201.96	201.96	5.19
0:02:35	960.08	30.00	34.87	0:10:35	951.06	59.44	17.70	0:18:35	933.65	116.71	8.97	0:26:35	666.89	166.72	6.28	0:34:35	200.91	200.91	5.21
0:02:40	961.12	30.04	34.89	0:10:40	952.11	59.51	17.59	0:18:40	936.80	117.10	8.95	0:26:40	663.54	165.88	6.31	0:34:40	200.70	200.70	5.21
0:02:45	959.87	30.00	34.86	0:10:45	950.85	59.43	17.65	0:18:45	931.76	116.47	8.99	0:26:45	671.09	167.77	6.24	0:34:45	201.75	201.75	5.19
0:02:50	962.80	30.09	35.02	0:10:50	951.48	59.47	17.60	0:18:50	933.65	116.71	8.98	0:26:50	670.25	167.56	6.25	0:34:50	200.91	200.91	5.22
0:02:55	960.08	30.00	34.94	0:10:55	948.54	59.28	17.67	0:18:55	935.54	116.94	8.96	0:26:55	672.14	168.03	6.24	0:34:55	200.28	200.28	5.23
0:03:00	963.22	30.10	34.68	0:11:00	954.41	59.65	17.54	0:19:00	935.12	116.89	8.96	0:27:00	659.55	164.89	6.35	0:35:00	200.70	200.70	5.22
0:03:05	960.08	30.00	35.25	0:11:05	952.74	59.55	17.64	0:19:05	935.33	116.92	8.96	0:27:05	673.40	168.35	6.22	0:35:05	203.00	203.00	5.15
0:03:10	959.66	29.99	34.74	0:11:10	943.93	59.00	17.73	0:19:10	935.75	116.97	8.96	0:27:10	672.56	168.14	6.23	0:35:10	200.07	200.07	5.23
0:03:15	962.17	30.07	34.93	0:11:15	952.11	59.51	17.59	0:19:15	936.38	117.05	8.95	0:27:15	662.49	165.62	6.32	0:35:15	200.07	200.07	5.24
0:03:20	962.59	30.08	34.86	0:11:20	953.16	59.57	17.64	0:19:20	934.28	116.79	8.96	0:27:20	655.78	163.94	6.39	0:35:20	200.28	200.28	5.23
0:03:25	961.75	30.05	34.91	0:11:25	957.35	59.83	17.50	0:19:25	934.49	116.81	8.97	0:27:25	647.60	161.90	6.47	0:35:25	199.44	199.44	5.25
0:03:30	958.82	29.96	34.89	0:11:30	948.96	59.31	17.71	0:19:30	934.70	116.84	8.96	0:27:30	661.23	165.31	6.33	0:35:30	200.91	200.91	5.20
0:03:35	961.75	30.05	34.91	0:11:35	952.95	59.56	17.56	0:19:35	934.91	116.86	8.97	0:27:35	648.65	162.16	6.46	0:35:35	223.98	223.98	4.69
0:03:40	961.75	30.05	34.84	0:11:40	954.41	59.65	17.57	0:19:40	931.35	116.42	9.00	0:27:40	662.28	165.57	6.33	0:35:40	200.07	200.07	5.24
0:03:45	957.35	29.92	34.93	0:11:45	952.74	59.55	17.59	0:19:45	933.02	116.63	8.98	0:27:45	646.76	161.69	6.48	0:35:45	200.70	200.70	5.22
0:03:50	964.69	30.15	34.97	0:11:50	953.58	59.60	17.57	0:19:50	935.33	116.92	8.95	0:27:50	668.99	167.25	6.26	0:35:50	200.70	200.70	5.22
0:03:55	959.45	29.98	34.95	0:11:55	952.53	59.53	17.65	0:19:55	937.85	117.23	8.94	0:27:55	689.75	172.44	6.07	0:35:55	200.70	200.70	5.22
0:04:00	962.38	30.07	34.81	0:12:00	951.90	59.49	17.61	0:20:00	933.86	116.73	8.97	0:28:00	689.12	172.28	6.08	0:36:00	200.70	200.70	5.22

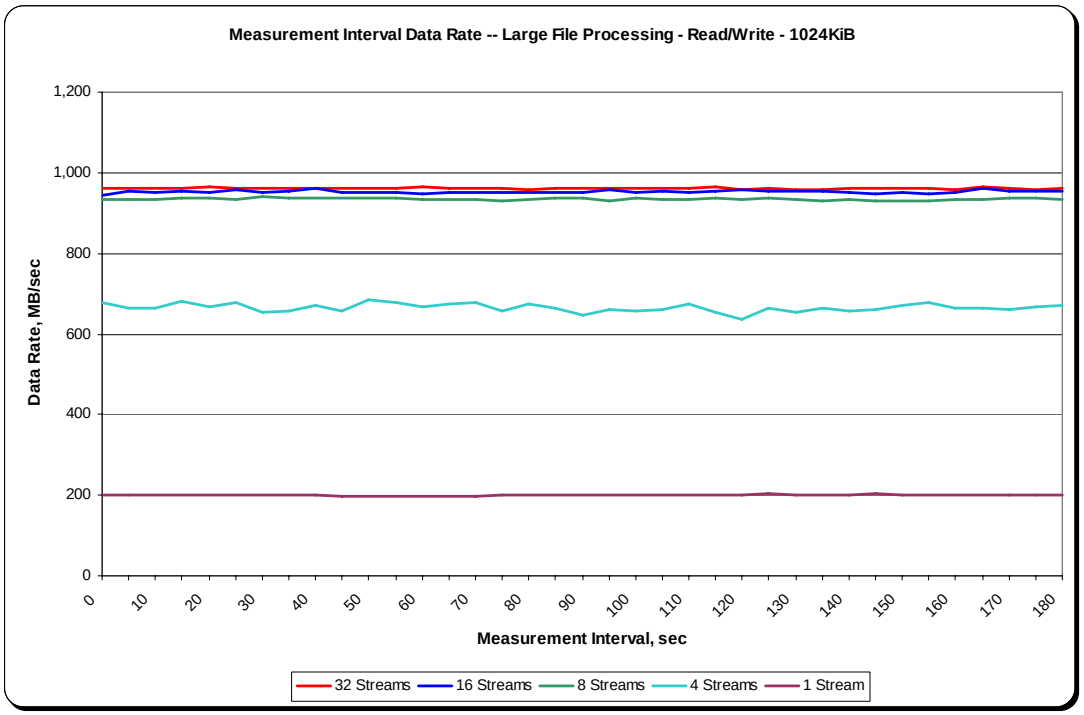
SPC-2 "Large File Processing/READ-WRITE/1024 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	32 Streams			TR12	16 Streams			TR13	8 Streams			TR14	4 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
0:04:05	960.29	30.01	34.98	0:12:05	945.40	59.09	17.72	0:20:05	934.70	116.84	8.97	0:28:05	676.33	169.08	6.18	0:36:05	201.75	201.75	5.21
0:04:10	960.92	30.03	34.89	0:12:10	952.95	59.56	17.59	0:20:10	933.65	116.71	8.95	0:28:10	663.96	165.99	6.31	0:36:10	200.28	200.28	5.21
0:04:15	960.92	30.03	34.81	0:12:15	950.01	59.38	17.61	0:20:15	933.44	116.68	8.97	0:28:15	665.22	166.30	6.30	0:36:15	200.49	200.49	5.21
0:04:20	960.50	30.02	34.99	0:12:20	955.46	59.72	17.57	0:20:20	938.48	117.31	8.93	0:28:20	680.11	170.03	6.16	0:36:20	199.86	199.86	5.23
0:04:25	963.85	30.12	34.81	0:12:25	951.06	59.44	17.56	0:20:25	938.27	117.28	8.93	0:28:25	667.10	166.78	6.28	0:36:25	201.54	201.54	5.20
0:04:30	959.66	29.99	35.01	0:12:30	958.82	59.93	17.57	0:20:30	933.44	116.68	8.98	0:28:30	676.96	169.24	6.19	0:36:30	200.49	200.49	5.22
0:04:35	960.71	30.02	34.86	0:12:35	951.06	59.44	17.61	0:20:35	940.78	117.60	8.91	0:28:35	652.63	163.16	6.42	0:36:35	200.91	200.91	5.21
0:04:40	961.12	30.04	34.74	0:12:40	953.16	59.57	17.52	0:20:40	936.17	117.02	8.96	0:28:40	658.30	164.57	6.36	0:36:40	201.12	201.12	5.20
0:04:45	961.12	30.04	34.90	0:12:45	960.08	60.00	17.50	0:20:45	935.54	116.94	8.95	0:28:45	669.41	167.35	6.26	0:36:45	200.07	200.07	5.23
0:04:50	961.33	30.04	34.89	0:12:50	951.27	59.45	17.64	0:20:50	937.43	117.18	8.94	0:28:50	657.88	164.47	6.37	0:36:50	198.18	198.18	5.29
0:04:55	960.08	30.00	34.99	0:12:55	952.53	59.53	17.61	0:20:55	936.38	117.05	8.95	0:28:55	685.77	171.44	6.11	0:36:55	197.76	197.76	5.29
0:05:00	961.54	30.05	34.89	0:13:00	952.11	59.51	17.60	0:21:00	935.54	116.94	8.95	0:29:00	679.48	169.87	6.17	0:37:00	198.39	198.39	5.27
0:05:05	963.64	30.11	34.91	0:13:05	948.33	59.27	17.65	0:21:05	934.49	116.81	8.97	0:29:05	667.31	166.83	6.28	0:37:05	196.29	196.29	5.34
0:05:10	960.29	30.01	34.94	0:13:10	952.11	59.51	17.63	0:21:10	934.07	116.76	8.97	0:29:10	675.28	168.82	6.20	0:37:10	197.13	197.13	5.31
0:05:15	961.75	30.05	34.82	0:13:15	950.85	59.43	17.62	0:21:15	933.65	116.71	8.98	0:29:15	676.12	169.03	6.20	0:37:15	198.39	198.39	5.28
0:05:20	961.96	30.06	34.85	0:13:20	951.48	59.47	17.67	0:21:20	931.97	116.50	8.99	0:29:20	657.46	164.36	6.37	0:37:20	200.91	200.91	5.21
0:05:25	958.82	29.96	35.01	0:13:25	950.85	59.43	17.66	0:21:25	935.12	116.89	8.96	0:29:25	673.61	168.40	6.22	0:37:25	200.28	200.28	5.23
0:05:30	963.01	30.09	34.77	0:13:30	950.01	59.38	17.59	0:21:30	936.38	117.05	8.95	0:29:30	664.38	166.09	6.31	0:37:30	200.49	200.49	5.22
0:05:35	961.54	30.05	34.97	0:13:35	950.43	59.40	17.68	0:21:35	937.22	117.15	8.94	0:29:35	648.23	162.06	6.46	0:37:35	200.70	200.70	5.22
0:05:40	960.92	30.03	34.83	0:13:40	956.30	59.77	17.50	0:21:40	930.09	116.26	9.02	0:29:40	661.02	165.26	6.33	0:37:40	200.91	200.91	5.21
0:05:45	961.54	30.05	35.00	0:13:45	950.64	59.41	17.64	0:21:45	935.96	116.99	8.95	0:29:45	656.83	164.21	6.38	0:37:45	200.91	200.91	5.21
0:05:50	960.92	30.03	34.92	0:13:50	954.83	59.68	17.62	0:21:50	932.81	116.60	8.99	0:29:50	661.86	165.47	6.33	0:37:50	200.07	200.07	5.23
0:05:55	960.08	30.00	34.69	0:13:55	950.85	59.43	17.60	0:21:55	933.86	116.73	8.97	0:29:55	675.91	168.98	6.19	0:37:55	200.07	200.07	5.24
0:06:00	965.95	30.19	34.95	0:14:00	955.04	59.69	17.55	0:22:00	935.54	116.94	8.96	0:30:00	653.26	163.32	6.42	0:38:00	200.49	200.49	5.22
0:06:05	958.40	29.95	34.85	0:14:05	956.72	59.80	17.51	0:22:05	934.70	116.84	8.97	0:30:05	635.86	158.96	6.58	0:38:05	201.33	201.33	5.20
0:06:10	962.17	30.07	34.91	0:14:10	955.25	59.70	17.58	0:22:10	938.06	117.26	8.93	0:30:10	662.28	165.57	6.33	0:38:10	205.31	205.31	5.10
0:06:15	958.82	29.96	34.96	0:14:15	954.62	59.66	17.60	0:22:15	932.60	116.58	8.98	0:30:15	654.73	163.68	6.39	0:38:15	199.65	199.65	5.25
0:06:20	958.82	29.96	35.00	0:14:20	953.37	59.59	17.55	0:22:20	930.30	116.29	9.01	0:30:20	662.70	165.68	6.32	0:38:20	200.70	200.70	5.21
0:06:25	962.59	30.08	34.86	0:14:25	951.69	59.48	17.64	0:22:25	934.49	116.81	8.97	0:30:25	656.62	164.15	6.38	0:38:25	200.28	200.28	5.23
0:06:30	961.54	30.05	34.85	0:14:30	948.75	59.30	17.69	0:22:30	930.30	116.29	9.01	0:30:30	661.44	165.36	6.33	0:38:30	203.21	203.21	5.15
0:06:35	963.01	30.09	34.87	0:14:35	952.32	59.52	17.60	0:22:35	930.51	116.31	9.00	0:30:35	670.67	167.67	6.25	0:38:35	200.07	200.07	5.23
0:06:40	962.17	30.07	34.96	0:14:40	947.07	59.19	17.66	0:22:40	931.14	116.39	9.00	0:30:40	676.96	169.24	6.19	0:38:40	200.70	200.70	5.22
0:06:45	957.77	29.93	34.93	0:14:45	950.64	59.41	17.63	0:22:45	932.60	116.58	8.99	0:30:45	662.91	165.73	6.32	0:38:45	200.49	200.49	5.22
0:06:50	963.85	30.12	34.84	0:14:50	961.12	60.07	17.46	0:22:50	932.39	116.55	8.99	0:30:50	663.54	165.88	6.32	0:38:50	200.70	200.70	5.22
0:06:55	962.59	30.08	34.78	0:14:55	953.99	59.62	17.57	0:22:55	936.59	117.07	8.95	0:30:55	660.18	165.05	6.34	0:38:55	200.28	200.28	5.23
0:07:00	959.45	29.98	35.03	0:15:00	953.78	59.61	17.55	0:23:00	937.22	117.15	8.94	0:31:00	667.10	166.78	6.28	0:39:00	201.12	201.12	5.20
0:07:05	960.08	30.00	34.93	0:15:05	955.46	59.72	17.58	0:23:05	933.23	116.65	8.98	0:31:05	671.09	167.77	6.26	0:39:05	201.33	201.33	5.22
0:07:10	964.06	30.13	34.76	0:15:10	950.22	59.39	17.70	0:23:10	938.69	117.34	8.93	0:31:10	657.04	164.26	6.35	0:39:10	199.65	199.65	5.23
0:07:15	960.08	30.00	34.99	0:15:15	953.99	59.62	17.54	0:23:15	933.65	116.71	8.98	0:31:15	666.06	166.51	6.29	0:39:15	203.84	203.84	5.14
0:07:20	962.17	30.07	34.82	0:15:20	948.12	59.26	17.70	0:23:20	936.80	117.10	8.94	0:31:20	676.54	169.14	6.19	0:39:20	202.58	202.58	5.17
0:07:25	961.12	30.04	34.98	0:15:25	952.11	59.51	17.60	0:23:25	935.75	116.97	8.96	0:31:25	674.44	168.61	6.21	0:39:25	200.70	200.70	5.22
0:07:30	961.12	30.04	34.81	0:15:30	944.77	59.05	17.71	0:23:30	935.75	116.97	8.96	0:31:30	671.72	167.93	6.23	0:39:30	202.79	202.79	5.17
0:07:35	959.45	29.98	34.92	0:15:35	952.11	59.51	17.67	0:23:35	933.02	116.63	8.98	0:31:35	671.72	167.93	6.23	0:39:35	200.91	200.91	5.20
0:07:40	962.17	30.07	34.88	0:15:40	949.17	59.32	17.65	0:23:40	933.44	116.68	8.98	0:31:40	648.02	162.00	6.47	0:39:40	201.33	201.33	5.21
0:07:45	961.96	30.06	34.93	0:15:45	943.93	59.00	17.71	0:23:45	936.38	117.05	8.95	0:31:45	658.93	164.73	6.36	0:39:45	201.33	201.33	5.19
0:07:50	22.86	0.00	48.03	0:15:50	17.41	0.00	21.49	0:23:50	10.07	0.00	8.82	0:31:50	5.87	0.00	6.92	0:39:50	1.47	0.00	5.53
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00

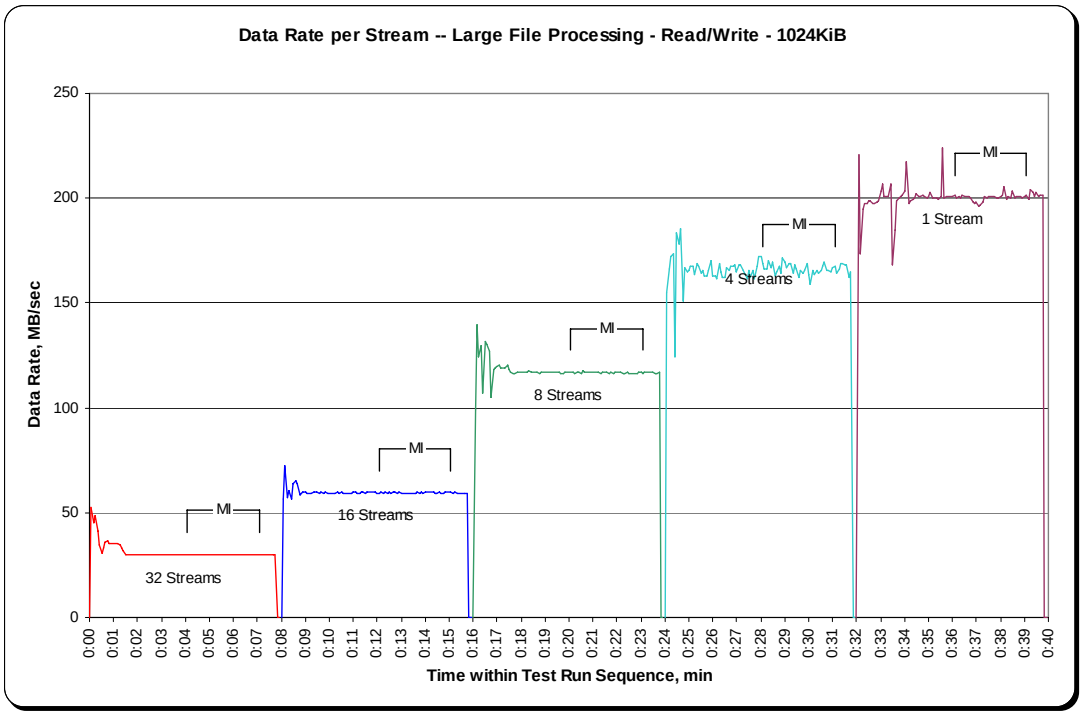
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



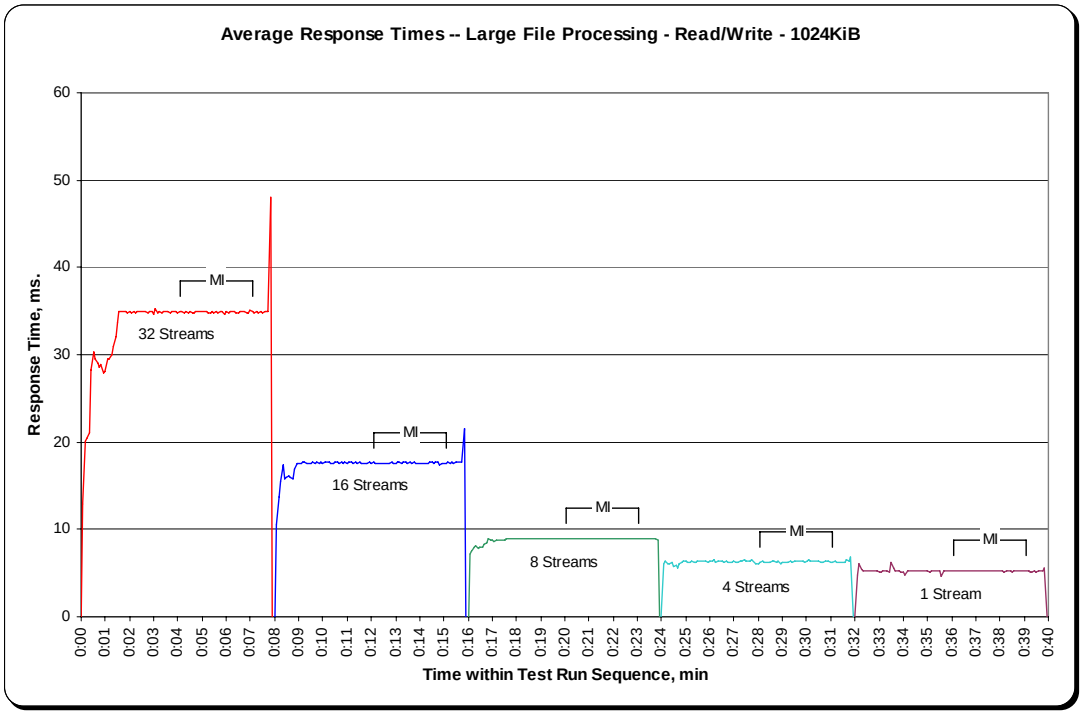
SPC-2 "Large File Processing/ READ-WRITE/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



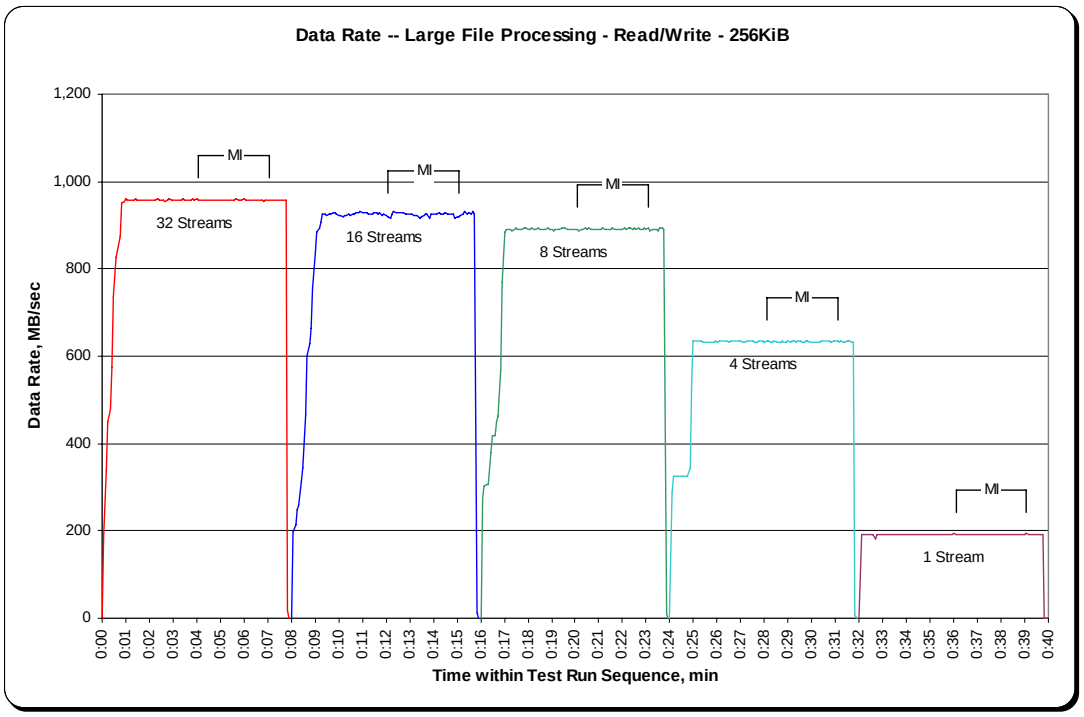
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR16	32 Streams			TR17	16 Streams			TR18	8 Streams			TR19	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	183.61	36.72	3.63	0:08:05	197.92	65.97	2.27	0:16:05	274.41	137.21	1.62	0:24:05	286.63	143.31	1.54	0:32:05	192.31	192.31	1.35
0:00:10	338.95	42.37	5.39	0:08:10	214.80	71.60	3.77	0:16:10	303.77	151.89	1.71	0:24:10	326.26	163.13	1.60	0:32:10	191.89	191.89	1.36
0:00:15	449.84	32.13	6.12	0:08:15	249.46	62.36	3.85	0:16:15	307.44	153.72	1.70	0:24:15	325.90	162.95	1.60	0:32:15	192.52	192.52	1.36
0:00:20	478.88	31.93	8.12	0:08:20	259.16	64.79	4.03	0:16:20	307.55	153.77	1.70	0:24:20	325.90	162.95	1.60	0:32:20	192.52	192.52	1.36
0:00:25	573.36	30.18	7.59	0:08:25	314.00	62.80	3.88	0:16:25	380.84	126.95	1.82	0:24:25	325.16	162.58	1.61	0:32:25	192.78	192.78	1.35
0:00:30	738.04	32.09	7.46	0:08:30	343.51	57.25	4.01	0:16:30	418.22	139.41	1.87	0:24:30	325.69	162.84	1.60	0:32:30	192.52	192.52	1.36
0:00:35	827.54	35.98	7.25	0:08:35	465.10	58.14	4.34	0:16:35	418.43	139.48	1.87	0:24:35	325.16	162.58	1.61	0:32:35	192.73	192.73	1.35
0:00:40	842.01	35.08	7.39	0:08:40	600.26	60.03	3.96	0:16:40	451.20	112.80	2.18	0:24:40	325.69	162.84	1.60	0:32:40	182.61	182.61	1.43
0:00:45	874.51	33.64	7.33	0:08:45	628.94	62.89	4.16	0:16:45	461.32	115.33	2.27	0:24:45	324.95	162.48	1.61	0:32:45	192.57	192.57	1.36
0:00:50	951.84	32.82	7.67	0:08:50	663.54	55.29	4.17	0:16:50	569.11	94.85	2.12	0:24:50	345.24	115.08	1.59	0:32:50	192.89	192.89	1.35
0:00:55	953.99	32.90	7.96	0:08:55	754.97	58.07	4.22	0:16:55	769.60	109.94	2.09	0:24:55	532.36	133.09	1.54	0:32:55	192.20	192.20	1.36
0:01:00	960.92	32.03	7.95	0:09:00	839.86	59.99	4.32	0:17:00	885.00	110.62	2.33	0:25:00	634.86	158.72	1.65	0:33:00	192.36	192.36	1.36
0:01:05	958.77	30.93	8.38	0:09:05	883.16	58.88	4.35	0:17:05	891.24	111.40	2.35	0:25:05	633.97	158.49	1.65	0:33:05	191.99	191.99	1.36
0:01:10	958.03	29.94	8.64	0:09:10	895.01	59.67	4.38	0:17:10	890.71	111.34	2.35	0:25:10	634.07	158.52	1.65	0:33:10	192.47	192.47	1.36
0:01:15	957.45	29.92	8.75	0:09:15	906.28	56.64	4.42	0:17:15	890.56	111.32	2.35	0:25:15	633.55	158.39	1.65	0:33:15	192.41	192.41	1.36
0:01:20	956.77	29.90	8.76	0:09:20	925.79	57.86	4.52	0:17:20	888.67	111.08	2.35	0:25:20	634.97	158.74	1.64	0:33:20	192.47	192.47	1.36
0:01:25	959.39	29.98	8.71	0:09:25	924.79	57.80	4.53	0:17:25	890.24	111.28	2.35	0:25:25	632.34	158.09	1.65	0:33:25	192.31	192.31	1.36
0:01:30	957.87	29.93	8.76	0:09:30	922.90	57.68	4.53	0:17:30	894.02	111.75	2.34	0:25:30	632.61	158.15	1.65	0:33:30	192.99	192.99	1.35
0:01:35	957.72	29.93	8.73	0:09:35	926.10	57.88	4.52	0:17:35	891.92	111.49	2.34	0:25:35	633.29	158.32	1.65	0:33:35	192.73	192.73	1.35
0:01:40	958.24	29.95	8.76	0:09:40	925.74	57.86	4.52	0:17:40	890.87	111.36	2.35	0:25:40	632.03	158.01	1.65	0:33:40	190.84	190.84	1.37
0:01:45	957.30	29.92	8.77	0:09:45	927.20	57.95	4.51	0:17:45	891.29	111.41	2.35	0:25:45	632.29	158.07	1.65	0:33:45	192.31	192.31	1.36
0:01:50	958.14	29.94	8.74	0:09:50	929.25	58.08	4.51	0:17:50	892.60	111.58	2.34	0:25:50	632.34	158.09	1.65	0:33:50	192.31	192.31	1.36
0:01:55	958.14	29.94	8.71	0:09:55	925.79	57.86	4.52	0:17:55	892.39	111.55	2.34	0:25:55	633.55	158.39	1.65	0:33:55	192.47	192.47	1.36
0:02:00	957.56	29.92	8.79	0:10:00	923.64	57.73	4.53	0:18:00	889.04	111.13	2.35	0:26:00	632.66	158.16	1.65	0:34:00	192.62	192.62	1.35
0:02:05	957.40	29.92	8.70	0:10:05	920.75	57.55	4.55	0:18:05	891.39	111.42	2.35	0:26:05	633.55	158.39	1.65	0:34:05	192.15	192.15	1.36
0:02:10	956.72	29.90	8.80	0:10:10	919.34	57.46	4.55	0:18:10	893.07	111.63	2.34	0:26:10	634.02	158.51	1.65	0:34:10	192.10	192.10	1.36
0:02:15	956.20	29.88	8.77	0:10:15	922.96	57.68	4.54	0:18:15	890.40	111.30	2.35	0:26:15	634.13	158.53	1.65	0:34:15	192.26	192.26	1.36
0:02:20	959.34	29.98	8.73	0:10:20	922.48	57.66	4.54	0:18:20	891.50	111.44	2.34	0:26:20	633.97	158.49	1.65	0:34:20	192.52	192.52	1.36
0:02:25	957.72	29.93	8.73	0:10:25	925.74	57.86	4.52	0:18:25	893.23	111.65	2.34	0:26:25	633.97	158.49	1.65	0:34:25	192.62	192.62	1.35
0:02:30	956.98	29.91	8.74	0:10:30	922.48	57.66	4.54	0:18:30	890.24	111.28	2.35	0:26:30	632.97	158.24	1.65	0:34:30	192.52	192.52	1.36
0:02:35	958.77	29.96	8.74	0:10:35	924.84	57.80	4.53	0:18:35	891.66	111.46	2.34	0:26:35	634.49	158.62	1.65	0:34:35	192.83	192.83	1.35
0:02:40	954.57	29.83	8.79	0:10:40	926.00	57.87	4.52	0:18:40	888.98	111.12	2.35	0:26:40	634.07	158.52	1.65	0:34:40	192.68	192.68	1.35
0:02:45	958.98	29.97	8.77	0:10:45	930.09	58.13	4.50	0:18:45	890.19	111.27	2.35	0:26:45	633.71	158.43	1.65	0:34:45	191.84	191.84	1.36
0:02:50	960.44	30.01	8.70	0:10:50	929.82	58.11	4.50	0:18:50	892.91	111.61	2.34	0:26:50	633.55	158.39	1.65	0:34:50	192.73	192.73	1.35
0:02:55	957.14	29.91	8.80	0:10:55	930.87	58.18	4.49	0:18:55	890.92	111.37	2.35	0:26:55	634.39	158.60	1.65	0:34:55	191.57	191.57	1.36
0:03:00	958.40	29.95	8.71	0:11:00	928.67	58.04	4.51	0:19:00	890.29	111.29	2.35	0:27:00	633.76	158.44	1.65	0:35:00	192.05	192.05	1.36
0:03:05	955.99	29.87	8.77	0:11:05	927.99	58.00	4.51	0:19:05	887.93	110.99	2.35	0:27:05	633.24	158.31	1.65	0:35:05	192.41	192.41	1.36
0:03:10	958.66	29.96	8.74	0:11:10	927.88	57.99	4.51	0:19:10	891.50	111.44	2.35	0:27:10	633.44	158.36	1.65	0:35:10	192.47	192.47	1.36
0:03:15	958.29	29.95	8.74	0:11:15	926.21	57.89	4.52	0:19:15	890.14	111.27	2.35	0:27:15	634.39	158.60	1.65	0:35:15	192.73	192.73	1.35
0:03:20	956.62	29.89	8.76	0:11:20	926.63	57.91	4.52	0:19:20	889.14	111.14	2.35	0:27:20	634.07	158.52	1.65	0:35:20	192.31	192.31	1.36
0:03:25	959.45	29.98	8.74	0:11:25	926.94	57.93	4.51	0:19:25	892.97	111.62	2.34	0:27:25	634.39	158.60	1.65	0:35:25	192.36	192.36	1.36
0:03:30	957.82	29.93	8.75	0:11:30	929.25	58.08	4.51	0:19:30	892.18	111.52	2.34	0:27:30	634.02	158.51	1.65	0:35:30	192.05	192.05	1.36
0:03:35	957.61	29.93	8.75	0:11:35	928.88	58.06	4.50	0:19:35	893.02	111.63	2.34	0:27:35	632.76	158.19	1.65	0:35:35	191.63	191.63	1.36
0:03:40	956.62	29.89	8.77	0:11:40	926.52	57.91	4.52	0:19:40	891.81	111.48	2.34	0:27:40	633.39	158.35	1.65	0:35:40	192.15	192.15	1.36
0:03:45	957.25	29.91	8.74	0:11:45	928.36	58.02	4.51	0:19:45	891.97	111.50	2.34	0:27:45	633.60	158.40	1.65	0:35:45	192.73	192.73	1.35
0:03:50	959.45	29.98	8.75	0:11:50	923.64	57.73	4.53	0:19:50	889.77	111.22	2.35	0:27:50	633.71	158.43	1.65	0:35:50	192.78	192.78	1.35
0:03:55	956.62	29.89	8.75	0:11:55	924.79	57.80	4.53	0:19:55	891.29	111.41	2.35	0:27:55	633.60	158.40	1.65	0:35:55	192.52	192.52	1.36
0:04:00	959.24	29.98	8.76	0:12:00	921.28	57.58	4.54	0:20:00	889.82	111.23	2.35	0:28:00	632.61	158.15	1.65	0:36:00	193.10	193.10	1.35

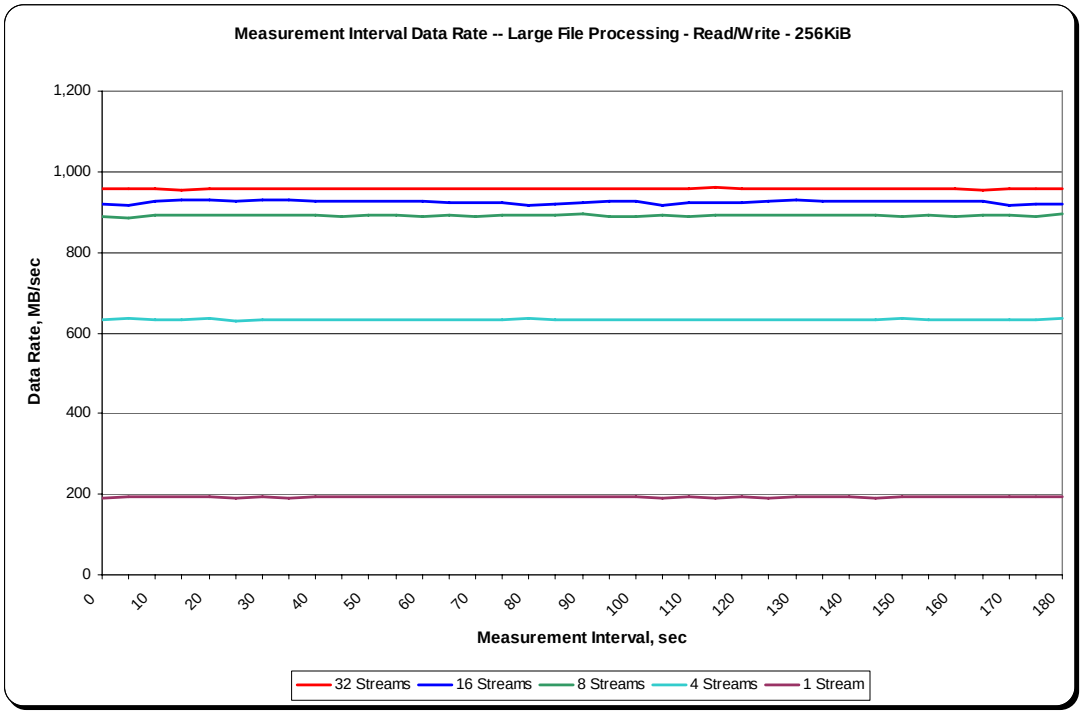
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR16	32 Streams			TR17	16 Streams			TR18	8 Streams			TR19	4 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
0:04:05	957.51	29.92	8.73	0:12:05	918.92	57.43	4.55	0:20:05	889.40	111.18	2.35	0:28:05	633.81	158.45	1.65	0:36:05	191.84	191.84	1.36
0:04:10	957.09	29.91	8.75	0:12:10	917.14	57.32	4.55	0:20:10	885.99	110.75	2.35	0:28:10	635.07	158.77	1.64	0:36:10	192.57	192.57	1.35
0:04:15	958.14	29.94	8.74	0:12:15	926.42	57.90	4.51	0:20:15	891.34	111.42	2.35	0:28:15	632.82	158.20	1.65	0:36:15	192.68	192.68	1.35
0:04:20	956.04	29.88	8.77	0:12:20	930.61	58.16	4.50	0:20:20	890.98	111.37	2.35	0:28:20	632.71	158.18	1.65	0:36:20	191.94	191.94	1.36
0:04:25	958.45	29.95	8.74	0:12:25	929.25	58.08	4.51	0:20:25	892.97	111.62	2.34	0:28:25	634.65	158.66	1.65	0:36:25	192.10	192.10	1.36
0:04:30	958.08	29.94	8.73	0:12:30	927.31	57.96	4.51	0:20:30	891.29	111.41	2.35	0:28:30	630.40	157.60	1.66	0:36:30	191.89	191.89	1.36
0:04:35	957.98	29.94	8.76	0:12:35	929.04	58.06	4.51	0:20:35	892.65	111.58	2.34	0:28:35	633.34	158.33	1.65	0:36:35	192.36	192.36	1.36
0:04:40	957.77	29.93	8.74	0:12:40	930.24	58.14	4.50	0:20:40	890.92	111.37	2.35	0:28:40	633.29	158.32	1.65	0:36:40	191.89	191.89	1.36
0:04:45	956.25	29.88	8.77	0:12:45	927.83	57.99	4.51	0:20:45	891.50	111.44	2.34	0:28:45	634.13	158.53	1.65	0:36:45	192.15	192.15	1.36
0:04:50	958.82	29.96	8.74	0:12:50	925.47	57.84	4.53	0:20:50	889.19	111.15	2.35	0:28:50	632.50	158.13	1.65	0:36:50	192.89	192.89	1.35
0:04:55	957.25	29.91	8.78	0:12:55	925.74	57.86	4.52	0:20:55	891.76	111.47	2.34	0:28:55	633.03	158.26	1.65	0:36:55	192.57	192.57	1.35
0:05:00	959.03	29.97	8.73	0:13:00	925.68	57.86	4.52	0:21:00	891.55	111.44	2.34	0:29:00	633.81	158.45	1.65	0:37:00	192.41	192.41	1.36
0:05:05	957.25	29.91	8.74	0:13:05	926.47	57.90	4.52	0:21:05	890.14	111.27	2.35	0:29:05	633.34	158.33	1.65	0:37:05	192.57	192.57	1.35
0:05:10	956.72	29.90	8.76	0:13:10	921.80	57.61	4.54	0:21:10	893.12	111.64	2.34	0:29:10	634.07	158.52	1.65	0:37:10	192.31	192.31	1.36
0:05:15	958.35	29.95	8.74	0:13:15	921.86	57.62	4.54	0:21:15	890.08	111.26	2.35	0:29:15	633.97	158.49	1.65	0:37:15	192.26	192.26	1.36
0:05:20	958.03	29.94	8.77	0:13:20	922.17	57.64	4.54	0:21:20	891.50	111.44	2.34	0:29:20	632.92	158.23	1.65	0:37:20	191.99	191.99	1.36
0:05:25	957.66	29.93	8.76	0:13:25	917.14	57.32	4.56	0:21:25	891.66	111.46	2.34	0:29:25	635.02	158.75	1.64	0:37:25	192.10	192.10	1.36
0:05:30	958.19	29.94	8.76	0:13:30	919.50	57.47	4.56	0:21:30	891.18	111.40	2.35	0:29:30	633.97	158.49	1.65	0:37:30	192.36	192.36	1.36
0:05:35	957.40	29.92	8.73	0:13:35	923.27	57.70	4.53	0:21:35	894.12	111.77	2.34	0:29:35	632.92	158.23	1.65	0:37:35	193.04	193.04	1.35
0:05:40	959.13	29.97	8.71	0:13:40	925.63	57.85	4.52	0:21:40	889.98	111.25	2.35	0:29:40	632.71	158.18	1.65	0:37:40	192.57	192.57	1.35
0:05:45	957.09	29.91	8.80	0:13:45	926.57	57.91	4.52	0:21:45	890.45	111.31	2.35	0:29:45	633.65	158.41	1.65	0:37:45	192.73	192.73	1.35
0:05:50	956.98	29.91	8.72	0:13:50	915.72	57.23	4.57	0:21:50	891.03	111.38	2.35	0:29:50	634.34	158.58	1.65	0:37:50	191.73	191.73	1.36
0:05:55	957.30	29.92	8.78	0:13:55	924.27	57.77	4.53	0:21:55	889.35	111.17	2.35	0:29:55	632.50	158.13	1.65	0:37:55	192.47	192.47	1.36
0:06:00	959.71	29.99	8.73	0:14:00	924.32	57.77	4.53	0:22:00	891.55	111.44	2.35	0:30:00	633.44	158.36	1.65	0:38:00	191.78	191.78	1.36
0:06:05	957.30	29.92	8.76	0:14:05	924.21	57.76	4.53	0:22:05	892.81	111.60	2.34	0:30:05	632.82	158.20	1.65	0:38:05	192.10	192.10	1.36
0:06:10	957.30	29.92	8.73	0:14:10	925.89	57.87	4.52	0:22:10	891.87	111.48	2.34	0:30:10	631.66	157.92	1.65	0:38:10	191.63	191.63	1.36
0:06:15	958.40	29.95	8.77	0:14:15	929.14	58.07	4.51	0:22:15	892.23	111.53	2.34	0:30:15	632.71	158.18	1.65	0:38:15	192.57	192.57	1.35
0:06:20	958.61	29.96	8.71	0:14:20	926.10	57.88	4.52	0:22:20	892.44	111.56	2.34	0:30:20	632.97	158.24	1.65	0:38:20	192.52	192.52	1.36
0:06:25	957.93	29.94	8.75	0:14:25	926.84	57.93	4.52	0:22:25	890.82	111.35	2.35	0:30:25	633.97	158.49	1.65	0:38:25	192.15	192.15	1.36
0:06:30	957.66	29.93	8.76	0:14:30	927.62	57.98	4.52	0:22:30	892.60	111.58	2.34	0:30:30	633.55	158.39	1.65	0:38:30	191.42	191.42	1.36
0:06:35	957.87	29.93	8.73	0:14:35	925.89	57.87	4.52	0:22:35	889.14	111.14	2.35	0:30:35	634.97	158.74	1.64	0:38:35	192.36	192.36	1.36
0:06:40	957.30	29.92	8.78	0:14:40	926.78	57.92	4.51	0:22:40	893.28	111.66	2.34	0:30:40	634.02	158.51	1.65	0:38:40	192.47	192.47	1.36
0:06:45	958.50	29.95	8.76	0:14:45	926.47	57.90	4.52	0:22:45	889.98	111.25	2.35	0:30:45	633.65	158.41	1.65	0:38:45	192.36	192.36	1.36
0:06:50	955.67	29.86	8.74	0:14:50	925.84	57.87	4.52	0:22:50	890.50	111.31	2.35	0:30:50	632.03	158.01	1.65	0:38:50	192.20	192.20	1.36
0:06:55	956.93	29.90	8.77	0:14:55	917.03	57.31	4.56	0:22:55	893.07	111.63	2.34	0:30:55	633.55	158.39	1.65	0:38:55	192.15	192.15	1.36
0:07:00	958.77	29.96	8.74	0:15:00	918.81	57.43	4.56	0:23:00	890.24	111.28	2.35	0:31:00	633.76	158.44	1.65	0:39:00	192.62	192.62	1.35
0:07:05	956.51	29.89	8.75	0:15:05	919.81	57.49	4.55	0:23:05	894.54	111.82	2.34	0:31:05	636.22	159.06	1.65	0:39:05	193.10	193.10	1.36
0:07:10	955.93	29.87	8.74	0:15:10	921.49	57.59	4.54	0:23:10	887.93	110.99	2.35	0:31:10	632.08	158.02	1.65	0:39:10	191.31	191.31	1.36
0:07:15	958.61	29.96	8.74	0:15:15	924.58	57.79	4.53	0:23:15	889.24	111.16	2.35	0:31:15	633.92	158.48	1.65	0:39:15	192.20	192.20	1.36
0:07:20	958.29	29.95	8.76	0:15:20	930.35	58.15	4.50	0:23:20	891.81	111.48	2.34	0:31:20	632.55	158.14	1.65	0:39:20	192.47	192.47	1.36
0:07:25	957.98	29.94	8.72	0:15:25	925.32	57.83	4.53	0:23:25	889.45	111.18	2.35	0:31:25	633.29	158.32	1.65	0:39:25	191.68	191.68	1.36
0:07:30	957.82	29.93	8.76	0:15:30	928.62	58.04	4.51	0:23:30	887.99	111.00	2.35	0:31:30	633.60	158.40	1.65	0:39:30	192.36	192.36	1.36
0:07:35	957.61	29.93	8.77	0:15:35	926.36	57.90	4.52	0:23:35	892.97	111.62	2.34	0:31:35	633.65	158.41	1.65	0:39:35	192.68	192.68	1.35
0:07:40	957.25	29.91	8.75	0:15:40	930.61	58.16	4.50	0:23:40	892.02	111.50	2.34	0:31:40	632.50	158.13	1.65	0:39:40	192.47	192.47	1.36
0:07:45	957.19	29.91	8.73	0:15:45	926.42	57.90	4.52	0:23:45	889.82	111.23	2.35	0:31:45	632.66	158.16	1.65	0:39:45	192.10	192.10	1.36
0:07:50	19.66	0.00	13.12	0:15:50	12.11	0.00	4.65	0:23:50	9.75	0.00	2.23	0:31:50	4.88	0.00	1.75	0:39:50	1.21	0.00	1.40
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00

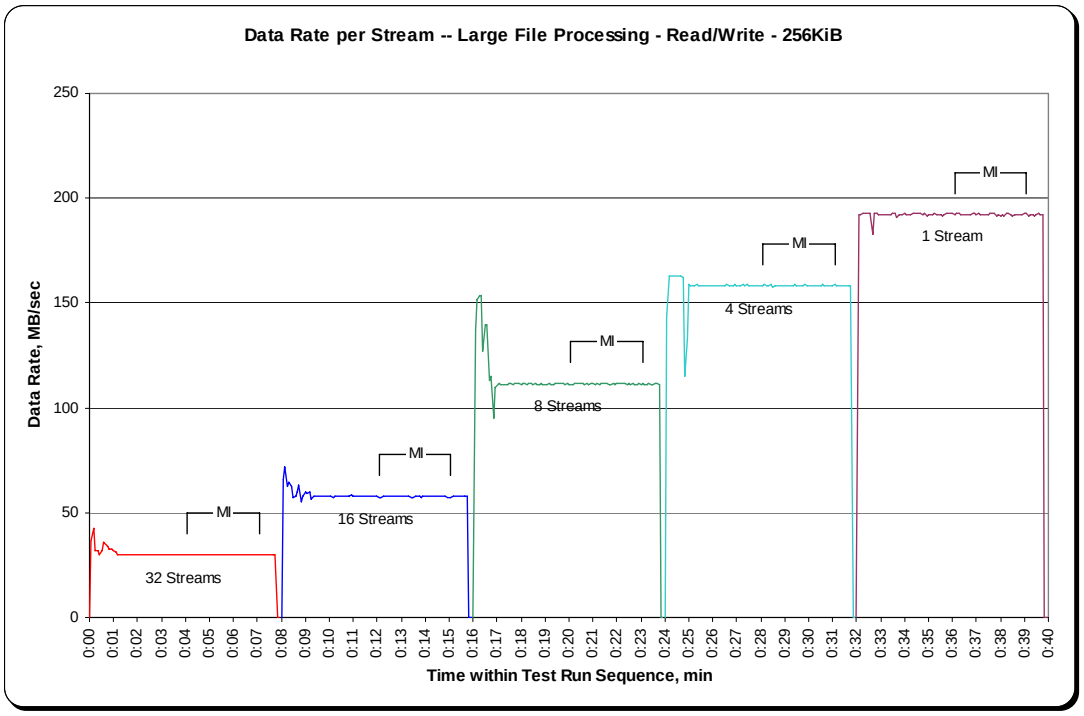
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



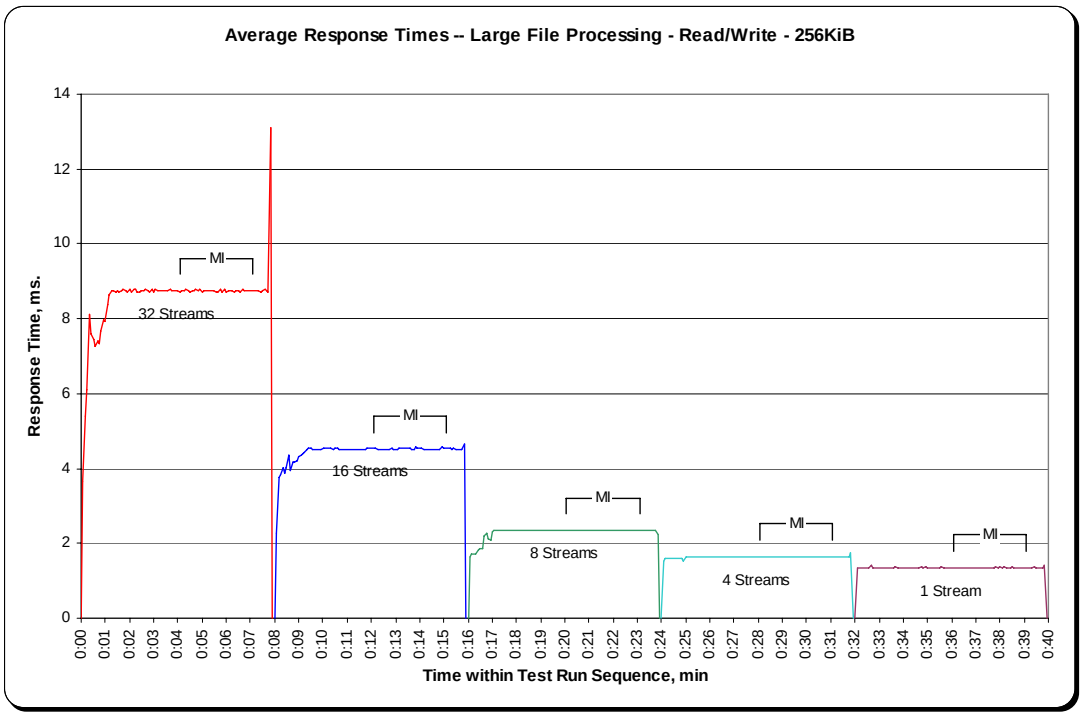
SPC-2 "Large File Processing/READ-WRITE/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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.

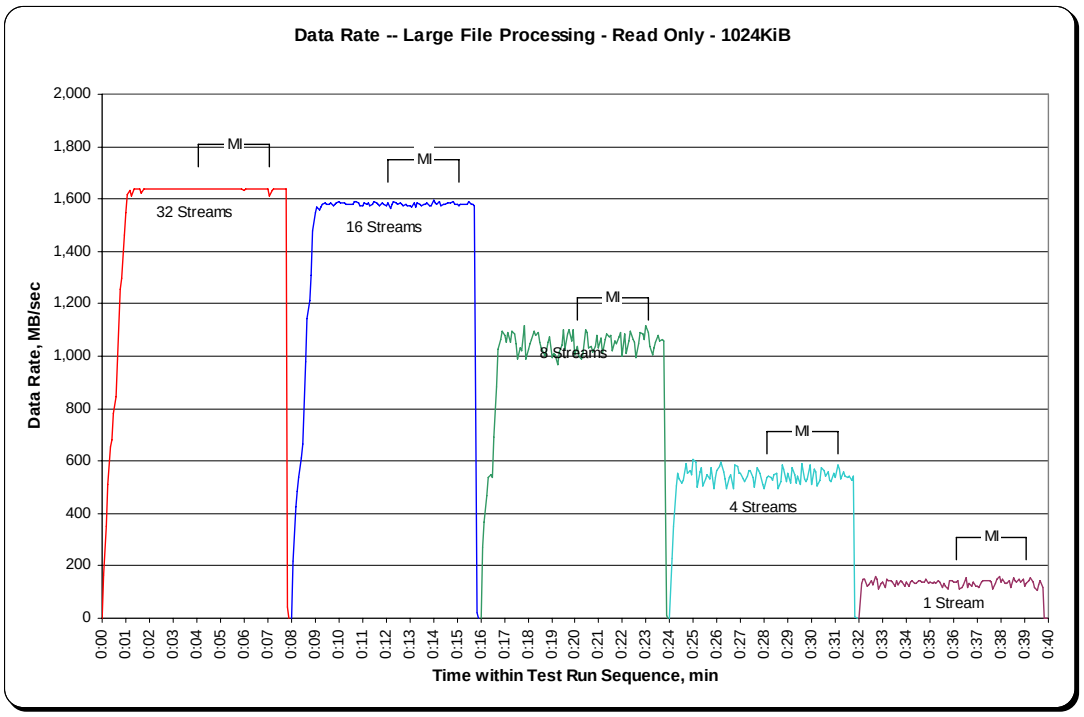
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data – Ramp Up Period

TR21	32 Streams			TR22	16 Streams			TR23	8 Streams			TR24	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	163.37	54.46	9.04	0:08:05	219.78	73.26	8.58	0:16:05	273.89	136.94	7.27	0:24:05	227.96	113.98	8.75	0:32:05	134.85	134.85	7.73
0:00:10	353.37	70.67	10.53	0:08:10	424.04	141.35	7.39	0:16:10	365.11	121.70	7.04	0:24:10	348.55	116.18	7.45	0:32:10	147.85	147.85	7.06
0:00:15	511.91	63.99	11.91	0:08:15	485.28	121.32	7.92	0:16:15	466.20	116.55	7.61	0:24:15	505.83	126.46	7.01	0:32:15	149.95	149.95	6.98
0:00:20	654.52	81.82	12.80	0:08:20	537.71	134.43	7.80	0:16:20	536.03	134.01	7.82	0:24:20	555.33	138.83	7.55	0:32:20	121.63	121.63	8.62
0:00:25	681.15	75.68	12.34	0:08:25	611.95	122.39	7.97	0:16:25	549.24	137.31	7.63	0:24:25	531.63	132.91	7.89	0:32:25	125.62	125.62	8.34
0:00:30	784.13	78.41	12.60	0:08:30	666.68	111.11	8.26	0:16:30	536.03	134.01	7.82	0:24:30	513.80	128.45	8.15	0:32:30	145.75	145.75	7.19
0:00:35	847.04	60.50	13.88	0:08:35	976.22	122.03	8.26	0:16:35	690.38	115.06	7.99	0:24:35	528.06	132.02	7.93	0:32:35	130.23	130.23	8.04
0:00:40	987.34	58.08	15.98	0:08:40	1,141.27	114.13	8.31	0:16:40	882.48	110.31	7.78	0:24:40	590.77	147.69	7.09	0:32:40	157.50	157.50	6.65
0:00:45	1,257.24	66.17	15.50	0:08:45	1,213.41	121.34	8.63	0:16:45	1,028.23	128.53	8.13	0:24:45	553.65	138.41	7.57	0:32:45	147.01	147.01	7.12
0:00:50	1,299.61	64.98	15.76	0:08:50	1,310.09	109.17	8.48	0:16:50	1,064.72	133.09	7.87	0:24:50	563.71	140.93	7.43	0:32:50	111.36	111.36	9.41
0:00:55	1,462.76	66.49	15.27	0:08:55	1,479.12	113.78	8.60	0:16:55	1,093.87	136.73	7.66	0:24:55	546.10	136.52	7.68	0:32:55	133.80	133.80	7.83
0:01:00	1,549.38	64.56	15.38	0:09:00	1,545.60	110.40	9.40	0:17:00	1,077.94	134.74	7.77	0:25:00	607.34	151.83	6.90	0:33:00	139.67	139.67	7.50
0:01:05	1,616.48	64.66	15.56	0:09:05	1,569.93	104.66	9.80	0:17:05	1,052.56	131.57	7.96	0:25:05	593.91	148.48	7.06	0:33:05	117.86	117.86	8.89
0:01:10	1,630.96	62.73	16.69	0:09:10	1,556.93	103.80	10.09	0:17:10	1,092.41	136.55	7.67	0:25:10	500.59	125.15	8.37	0:33:10	148.48	148.48	7.06
0:01:15	1,611.87	62.00	16.85	0:09:15	1,571.19	98.20	10.20	0:17:15	1,052.98	131.62	7.95	0:25:15	559.10	139.78	7.50	0:33:15	144.28	144.28	7.25
0:01:20	1,637.04	56.45	17.99	0:09:20	1,579.37	98.71	10.62	0:17:20	1,094.29	136.79	7.66	0:25:20	576.72	144.18	7.26	0:33:20	143.24	143.24	7.32
0:01:25	1,636.83	54.56	19.11	0:09:25	1,582.72	98.92	10.59	0:17:25	1,084.23	135.53	7.73	0:25:25	503.32	125.83	8.33	0:33:25	137.15	137.15	7.64
0:01:30	1,637.25	51.16	20.20	0:09:30	1,582.09	98.88	10.60	0:17:30	1,046.90	130.86	8.00	0:25:30	534.35	133.59	7.84	0:33:30	124.15	124.15	8.43
0:01:35	1,637.67	51.18	20.48	0:09:35	1,578.32	98.64	10.62	0:17:35	986.92	123.36	8.49	0:25:35	547.15	136.79	7.66	0:33:35	145.33	145.33	7.21
0:01:40	1,620.68	50.65	20.69	0:09:40	1,583.77	98.99	10.59	0:17:40	1,029.70	128.71	8.14	0:25:40	530.16	132.54	7.90	0:33:40	126.67	126.67	8.28
0:01:45	1,637.67	51.18	20.48	0:09:45	1,572.65	98.29	10.65	0:17:45	1,020.47	127.56	8.21	0:25:45	573.15	143.29	7.31	0:33:45	144.28	144.28	7.25
0:01:50	1,636.41	51.14	20.48	0:09:50	1,580.41	98.78	10.62	0:17:50	1,116.52	139.57	7.51	0:25:50	493.88	123.47	8.49	0:33:50	136.11	136.11	7.70
0:01:55	1,636.83	51.15	20.49	0:09:55	1,586.08	99.13	10.56	0:17:55	991.53	123.94	8.45	0:25:55	536.45	134.11	7.81	0:33:55	124.36	124.36	8.42
0:02:00	1,638.09	51.19	20.48	0:10:00	1,588.38	99.27	10.55	0:18:00	1,024.88	128.11	8.17	0:26:00	561.20	140.30	7.47	0:34:00	135.69	135.69	7.71
0:02:05	1,636.41	51.14	20.49	0:10:05	1,585.24	99.08	10.57	0:18:05	1,045.43	130.68	8.02	0:26:05	581.12	145.28	7.21	0:34:05	121.84	121.84	8.61
0:02:10	1,637.67	51.18	20.48	0:10:10	1,585.45	99.09	10.57	0:18:10	1,062.21	132.78	7.88	0:26:10	593.70	148.43	7.05	0:34:10	136.52	136.52	7.67
0:02:15	1,637.67	51.18	20.48	0:10:15	1,583.77	98.99	10.59	0:18:15	1,097.02	137.13	7.64	0:26:15	560.57	140.14	7.48	0:34:15	144.91	144.91	7.23
0:02:20	1,636.83	51.15	20.48	0:10:20	1,577.69	98.61	10.62	0:18:20	1,078.57	134.82	7.77	0:26:20	531.00	132.75	7.89	0:34:20	130.86	130.86	8.01
0:02:25	1,637.25	51.16	20.48	0:10:25	1,580.41	98.78	10.61	0:18:25	1,093.04	136.63	7.67	0:26:25	493.88	123.47	8.48	0:34:25	133.80	133.80	7.82
0:02:30	1,636.83	51.15	20.48	0:10:30	1,577.90	98.62	10.62	0:18:30	1,052.35	131.54	7.96	0:26:30	537.08	134.27	7.80	0:34:30	143.45	143.45	7.31
0:02:35	1,637.46	51.17	20.48	0:10:35	1,578.53	98.66	10.62	0:18:35	1,034.53	129.32	8.10	0:26:35	550.29	137.57	7.61	0:34:35	142.82	142.82	7.33
0:02:40	1,636.41	51.14	20.49	0:10:40	1,587.96	99.25	10.56	0:18:40	1,009.99	126.25	8.30	0:26:40	496.82	124.20	8.44	0:34:40	138.41	138.41	7.58
0:02:45	1,637.88	51.18	20.48	0:10:45	1,589.64	99.35	10.55	0:18:45	999.50	124.94	8.39	0:26:45	586.36	146.59	7.14	0:34:45	140.93	140.93	7.43
0:02:50	1,636.83	51.15	20.48	0:10:50	1,583.98	99.00	10.58	0:18:50	1,055.29	131.91	7.94	0:26:50	577.56	144.39	7.26	0:34:50	148.06	148.06	7.07
0:02:55	1,637.67	51.18	20.48	0:10:55	1,576.85	98.55	10.63	0:18:55	1,074.58	134.32	7.80	0:26:55	551.13	137.78	7.60	0:34:55	132.54	132.54	7.90
0:03:00	1,637.67	51.18	20.49	0:11:00	1,573.49	98.34	10.65	0:19:00	995.73	124.47	8.41	0:27:00	553.65	138.41	7.57	0:35:00	140.72	140.72	7.44
0:03:05	1,636.83	51.15	20.48	0:11:05	1,584.19	99.01	10.59	0:19:05	1,010.20	126.27	8.29	0:27:05	532.89	133.22	7.86	0:35:05	131.49	131.49	7.97
0:03:10	1,637.04	51.16	20.49	0:11:10	1,579.57	98.72	10.61	0:19:10	1,006.21	125.78	8.32	0:27:10	523.66	130.91	8.00	0:35:10	138.20	138.20	7.58
0:03:15	1,637.25	51.16	20.48	0:11:15	1,582.51	98.91	10.59	0:19:15	967.42	120.93	8.67	0:27:15	541.27	135.32	7.75	0:35:15	133.38	133.38	7.86
0:03:20	1,637.25	51.16	20.48	0:11:20	1,575.17	98.45	10.64	0:19:20	1,015.65	126.96	8.25	0:27:20	566.44	141.61	7.40	0:35:20	142.61	142.61	7.35
0:03:25	1,637.04	51.16	20.49	0:11:25	1,581.67	98.85	10.60	0:19:25	1,042.28	130.29	8.04	0:27:25	565.18	141.30	7.41	0:35:25	136.11	136.11	7.68
0:03:30	1,637.67	51.18	20.48	0:11:30	1,588.59	99.29	10.55	0:19:30	1,099.54	137.44	7.62	0:27:30	535.40	133.85	7.83	0:35:30	117.65	117.65	8.91
0:03:35	1,637.25	51.16	20.48	0:11:35	1,586.29	99.14	10.57	0:19:35	1,025.93	128.24	8.17	0:27:35	499.75	124.94	8.39	0:35:35	133.17	133.17	7.87
0:03:40	1,637.88	51.18	20.48	0:11:40	1,577.90	98.62	10.62	0:19:40	1,087.37	135.92	7.70	0:27:40	576.30	144.07	7.27	0:35:40	123.52	123.52	8.49
0:03:45	1,635.99	51.12	20.48	0:11:45	1,574.54	98.41	10.65	0:19:45	1,100.17	137.52	7.62	0:27:45	563.09	140.77	7.44	0:35:45	111.99	111.99	9.34
0:03:50	1,637.67	51.18	20.48	0:11:50	1,586.91	99.18	10.56	0:19:50	1,058.43	132.30	7.91	0:27:50	554.70	138.67	7.55	0:35:50	142.19	142.19	7.37
0:03:55	1,635.78	51.12	20.49	0:11:55	1,580.83	98.80	10.60	0:19:55	1,102.26	137.78	7.60	0:27:55	508.77	127.19	8.23	0:35:55	142.40	142.40	7.36
0:04:00	1,637.25	51.16	20.48	0:12:00	1,575.80	98.49	10.63	0:20:00	1,005.37	125.67	8.33	0:28:00	493.46	123.36	8.49	0:36:00	138.41	138.41	7.57

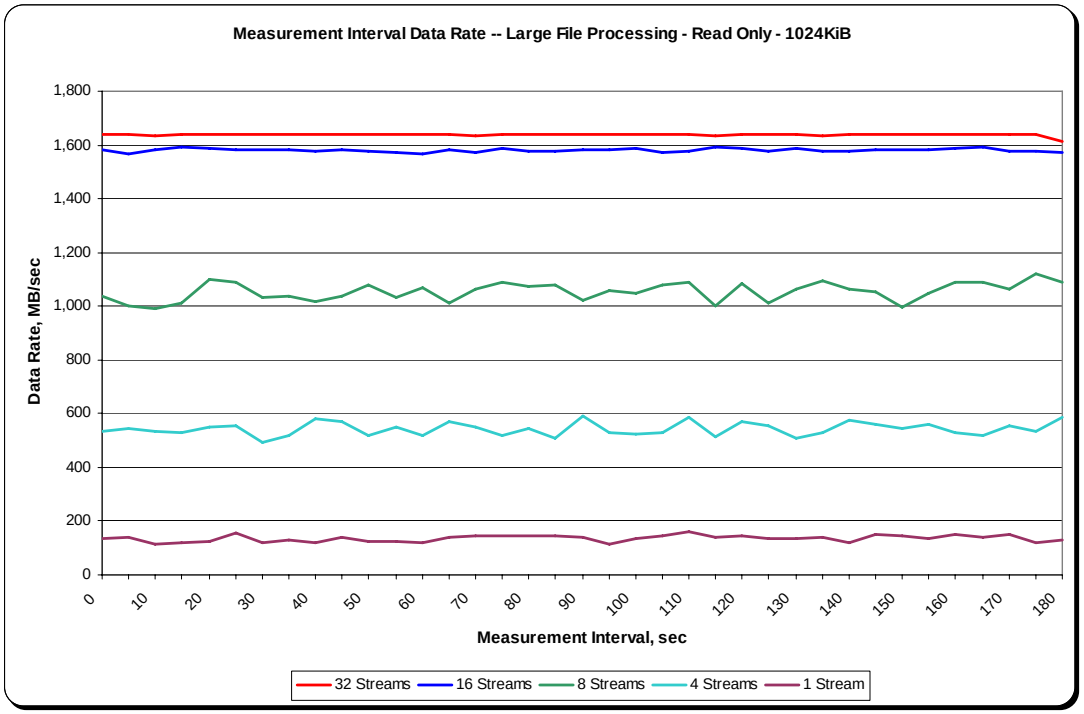
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Test Run Data
Measurement Interval, Run-Out, and Ramp-Down Periods

TR21	32 Streams			TR22	16 Streams			TR23	8 Streams			TR24	4 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
0:04:05	1,637.25	51.16	20.48	0:12:05	1,582.93	98.93	10.59	0:20:05	1,035.99	129.50	8.09	0:28:05	535.61	133.90	7.83	0:36:05	137.36	137.36	7.62
0:04:10	1,637.88	51.18	20.48	0:12:10	1,566.36	97.90	10.67	0:20:10	1,000.13	125.02	8.38	0:28:10	544.00	136.00	7.70	0:36:10	141.98	141.98	7.38
0:04:15	1,636.41	51.14	20.49	0:12:15	1,580.20	98.76	10.61	0:20:15	989.86	123.73	8.47	0:28:15	534.77	133.69	7.83	0:36:15	114.29	114.29	9.16
0:04:20	1,637.25	51.16	20.48	0:12:20	1,591.53	99.47	10.53	0:20:20	1,013.13	126.64	8.27	0:28:20	528.48	132.12	7.94	0:36:20	118.07	118.07	8.87
0:04:25	1,637.46	51.17	20.49	0:12:25	1,587.54	99.22	10.56	0:20:25	1,099.96	137.49	7.62	0:28:25	549.03	137.26	7.63	0:36:25	126.67	126.67	8.27
0:04:30	1,637.25	51.16	20.48	0:12:30	1,580.62	98.79	10.60	0:20:30	1,089.26	136.16	7.69	0:28:30	552.81	138.20	7.58	0:36:30	156.87	156.87	6.68
0:04:35	1,637.25	51.16	20.49	0:12:35	1,583.98	99.00	10.59	0:20:35	1,031.59	128.95	8.12	0:28:35	493.46	123.36	8.49	0:36:35	117.86	117.86	8.88
0:04:40	1,636.83	51.15	20.48	0:12:40	1,580.20	98.76	10.61	0:20:40	1,039.35	129.92	8.06	0:28:40	520.30	130.08	8.05	0:36:40	131.07	131.07	8.00
0:04:45	1,638.09	51.19	20.48	0:12:45	1,574.75	98.42	10.65	0:20:45	1,017.12	127.14	8.24	0:28:45	583.22	145.80	7.19	0:36:45	119.75	119.75	8.75
0:04:50	1,637.04	51.16	20.49	0:12:50	1,579.57	98.72	10.61	0:20:50	1,036.62	129.58	8.09	0:28:50	568.33	142.08	7.37	0:36:50	140.51	140.51	7.46
0:04:55	1,637.25	51.16	20.49	0:12:55	1,574.96	98.44	10.64	0:20:55	1,081.08	135.14	7.75	0:28:55	520.93	130.23	8.04	0:36:55	122.47	122.47	8.30
0:05:00	1,636.62	51.14	20.48	0:13:00	1,573.49	98.34	10.66	0:21:00	1,034.32	129.29	8.10	0:29:00	551.13	137.78	7.60	0:37:00	123.52	123.52	8.52
0:05:05	1,637.46	51.17	20.48	0:13:05	1,568.25	98.02	10.68	0:21:05	1,070.39	133.80	7.83	0:29:05	517.58	129.39	8.10	0:37:05	117.44	117.44	8.92
0:05:10	1,637.25	51.16	20.48	0:13:10	1,583.77	98.99	10.58	0:21:10	1,010.62	126.33	8.29	0:29:10	571.89	142.97	7.33	0:37:10	139.67	139.67	7.50
0:05:15	1,636.41	51.14	20.49	0:13:15	1,569.93	98.12	10.68	0:21:15	1,064.09	133.01	7.88	0:29:15	550.29	137.57	7.61	0:37:15	146.17	146.17	7.17
0:05:20	1,637.46	51.17	20.48	0:13:20	1,585.03	99.06	10.57	0:21:20	1,086.95	135.87	7.71	0:29:20	516.32	129.08	8.11	0:37:20	144.49	144.49	7.24
0:05:25	1,637.04	51.16	20.48	0:13:25	1,578.32	98.64	10.62	0:21:25	1,075.42	134.43	7.79	0:29:25	543.16	135.79	7.72	0:37:25	143.45	143.45	7.31
0:05:30	1,638.30	51.20	20.48	0:13:30	1,576.22	98.51	10.63	0:21:30	1,077.52	134.69	7.78	0:29:30	508.56	127.14	8.24	0:37:30	143.65	143.65	7.28
0:05:35	1,636.62	51.14	20.49	0:13:35	1,579.57	98.72	10.62	0:21:35	1,021.31	127.66	8.20	0:29:35	590.35	147.59	7.10	0:37:35	138.83	138.83	7.56
0:05:40	1,637.04	51.16	20.49	0:13:40	1,581.88	98.87	10.59	0:21:40	1,060.11	132.51	7.90	0:29:40	530.58	132.64	7.90	0:37:40	114.29	114.29	9.16
0:05:45	1,637.04	51.16	20.49	0:13:45	1,585.24	99.08	10.58	0:21:45	1,047.95	130.99	7.99	0:29:45	523.45	130.86	8.00	0:37:45	133.59	133.59	7.84
0:05:50	1,637.67	51.18	20.48	0:13:50	1,572.86	98.30	10.65	0:21:50	1,077.10	134.64	7.78	0:29:50	529.95	132.49	7.91	0:37:50	147.43	147.43	7.10
0:05:55	1,637.25	51.16	20.48	0:13:55	1,574.54	98.41	10.65	0:21:55	1,089.47	136.18	7.69	0:29:55	587.20	146.80	7.14	0:37:55	158.75	158.75	6.60
0:06:00	1,635.57	51.11	20.48	0:14:00	1,594.67	99.67	10.52	0:22:00	999.08	124.89	8.39	0:30:00	511.08	127.77	8.20	0:38:00	138.62	138.62	7.56
0:06:05	1,638.71	51.21	20.49	0:14:05	1,586.71	99.17	10.56	0:22:05	1,084.23	135.53	7.73	0:30:05	568.96	142.24	7.36	0:38:05	146.59	146.59	7.14
0:06:10	1,636.83	51.15	20.48	0:14:10	1,578.95	98.68	10.61	0:22:10	1,011.67	126.46	8.28	0:30:10	557.00	139.25	7.53	0:38:10	133.17	133.17	7.87
0:06:15	1,638.50	51.20	20.48	0:14:15	1,589.43	99.34	10.55	0:22:15	1,061.16	132.64	7.90	0:30:15	507.72	126.93	8.25	0:38:15	132.96	132.96	7.88
0:06:20	1,636.20	51.13	20.49	0:14:20	1,574.75	98.42	10.64	0:22:20	1,093.66	136.71	7.66	0:30:20	527.85	131.96	7.94	0:38:20	141.14	141.14	7.43
0:06:25	1,637.04	51.16	20.49	0:14:25	1,579.37	98.71	10.62	0:22:25	1,065.35	133.17	7.86	0:30:25	574.83	143.71	7.29	0:38:25	118.91	118.91	8.81
0:06:30	1,636.62	51.14	20.48	0:14:30	1,582.30	98.89	10.59	0:22:30	1,053.19	131.65	7.96	0:30:30	562.67	140.67	7.45	0:38:30	152.46	152.46	6.86
0:06:35	1,637.67	51.18	20.48	0:14:35	1,582.51	98.91	10.59	0:22:35	995.52	124.44	8.42	0:30:35	543.16	135.79	7.72	0:38:35	143.03	143.03	7.33
0:06:40	1,637.04	51.16	20.48	0:14:40	1,584.40	99.02	10.58	0:22:40	1,048.16	131.02	7.99	0:30:40	559.52	139.88	7.49	0:38:40	136.11	136.11	7.70
0:06:45	1,637.46	51.17	20.48	0:14:45	1,586.29	99.14	10.57	0:22:45	1,090.94	136.37	7.68	0:30:45	528.48	132.12	7.93	0:38:45	149.11	149.11	7.02
0:06:50	1,637.25	51.16	20.49	0:14:50	1,590.48	99.41	10.54	0:22:50	1,086.95	135.87	7.71	0:30:50	519.05	129.76	8.07	0:38:50	140.93	140.93	7.42
0:06:55	1,637.04	51.16	20.49	0:14:55	1,577.27	98.58	10.63	0:22:55	1,065.35	133.17	7.87	0:30:55	553.44	138.36	7.57	0:38:55	149.32	149.32	7.02
0:07:00	1,640.81	51.28	20.48	0:15:00	1,577.69	98.61	10.63	0:23:00	1,119.46	139.93	7.49	0:31:00	534.98	133.75	7.83	0:39:00	119.75	119.75	8.75
0:07:05	1,613.55	50.42	20.69	0:15:05	1,573.28	98.33	10.66	0:23:05	1,088.63	136.08	7.69	0:31:05	587.20	146.80	7.16	0:39:05	131.07	131.07	8.02
0:07:10	1,635.15	51.10	20.48	0:15:10	1,577.27	98.58	10.63	0:23:10	1,039.35	129.92	8.04	0:31:10	571.47	142.87	7.31	0:39:10	141.77	141.77	7.37
0:07:15	1,637.46	51.17	20.49	0:15:15	1,579.99	98.75	10.61	0:23:15	1,004.96	125.62	8.34	0:31:15	530.37	132.59	7.90	0:39:15	151.62	151.62	6.91
0:07:20	1,636.83	51.15	20.49	0:15:20	1,578.74	98.67	10.62	0:23:20	1,033.90	129.24	8.10	0:31:20	560.15	140.04	7.48	0:39:20	139.25	139.25	7.52
0:07:25	1,637.88	51.18	20.48	0:15:25	1,581.88	98.87	10.59	0:23:25	1,055.08	131.88	7.94	0:31:25	540.65	135.16	7.75	0:39:25	118.49	118.49	8.85
0:07:30	1,636.83	51.15	20.48	0:15:30	1,588.38	99.27	10.55	0:23:30	1,077.31	134.66	7.78	0:31:30	538.97	134.74	7.77	0:39:30	108.42	108.42	9.66
0:07:35	1,637.25	51.16	20.48	0:15:35	1,577.48	98.59	10.62	0:23:35	1,060.95	132.62	7.90	0:31:35	544.00	136.00	7.70	0:39:35	125.83	125.83	8.33
0:07:40	1,638.09	51.19	20.48	0:15:40	1,580.41	98.78	10.61	0:23:40	1,062.84	132.85	7.88	0:31:40	528.27	132.07	7.94	0:39:40	146.17	146.17	7.16
0:07:45	1,636.62	51.14	20.48	0:15:45	1,576.43	98.53	10.63	0:23:45	1,060.11	132.51	7.90	0:31:45	544.84	136.21	7.69	0:39:45	117.23	117.23	8.94
0:07:50	40.68	0.00	18.72	0:15:50	22.86	0.00	10.32	0:23:50	12.79	0.00	7.64	0:31:50	5.45	0.00	7.40	0:39:50	1.05	0.00	8.09
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00

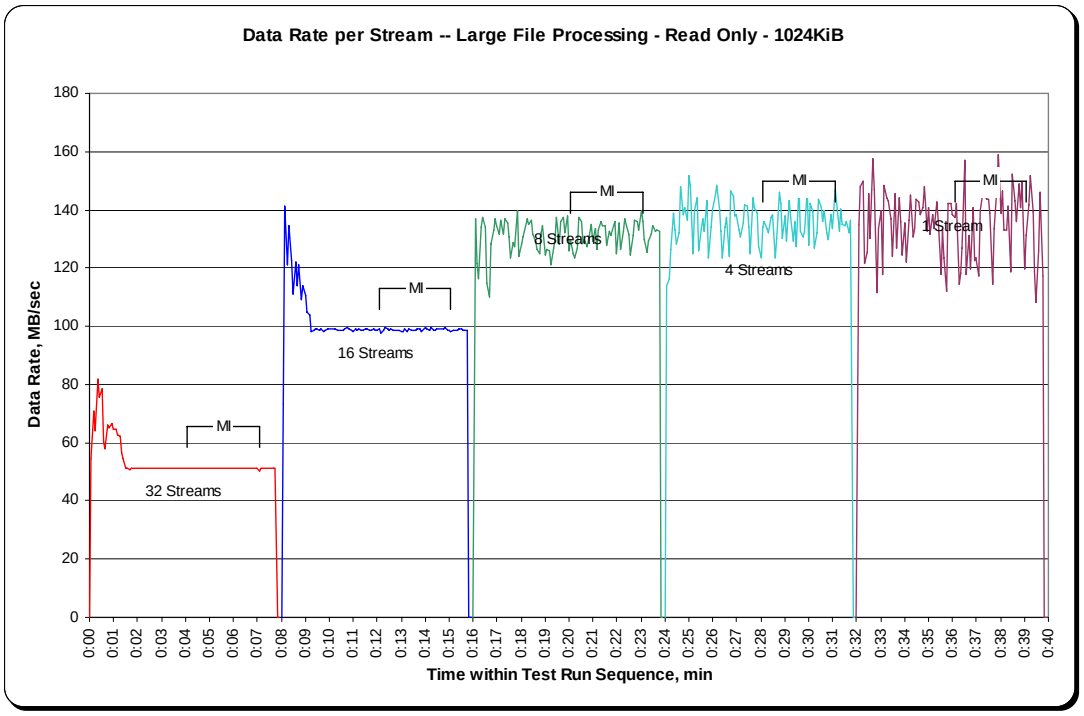
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



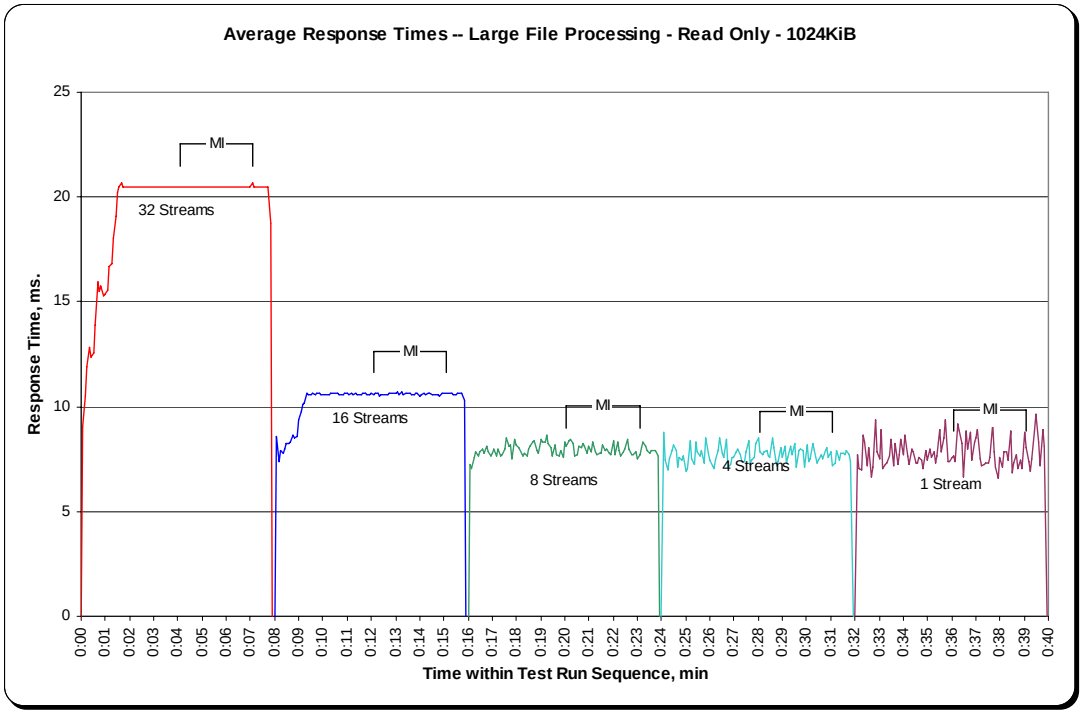
SPC-2 "Large File Processing/READ ONLY/1024 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



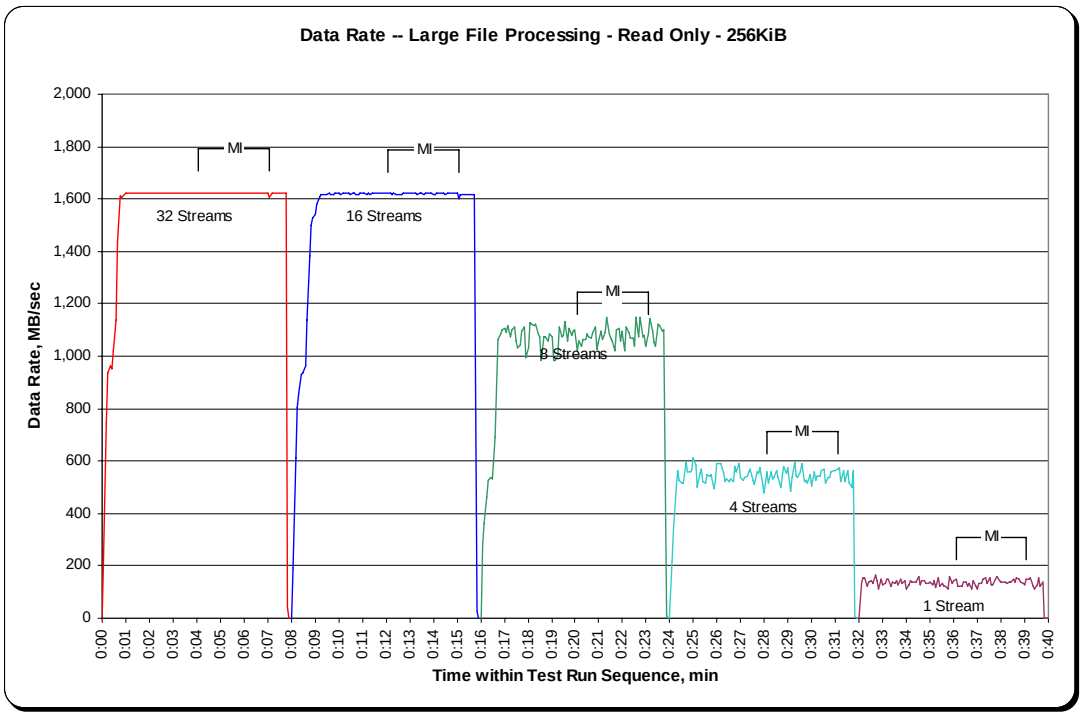
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data – Ramp-Up Period

TR26	32 Streams			TR27	16 Streams			TR28	8 Streams			TR29	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	244.32	48.86	2.28	0:08:05	189.63	47.41	2.13	0:16:05	277.45	138.73	1.79	0:24:05	220.04	110.02	2.26	0:32:05	137.42	137.42	1.90
0:00:10	747.32	106.76	2.14	0:08:10	609.22	121.84	2.01	0:16:10	362.23	120.74	1.78	0:24:10	341.52	113.84	1.88	0:32:10	155.87	155.87	1.67
0:00:15	933.76	93.38	2.68	0:08:15	801.22	133.54	1.85	0:16:15	462.63	115.66	1.91	0:24:15	505.20	126.30	1.75	0:32:15	153.93	153.93	1.70
0:00:20	961.12	60.07	3.53	0:08:20	856.79	107.10	2.01	0:16:20	526.91	131.73	1.98	0:24:20	562.77	140.69	1.86	0:32:20	124.15	124.15	2.10
0:00:25	952.47	59.53	4.38	0:08:25	930.35	116.29	2.25	0:16:25	538.34	134.58	1.94	0:24:25	528.85	132.21	1.98	0:32:25	135.79	135.79	1.92
0:00:30	1,021.21	60.07	4.21	0:08:30	937.37	117.17	2.23	0:16:30	531.68	132.92	1.97	0:24:30	517.63	129.41	2.02	0:32:30	144.97	144.97	1.80
0:00:35	1,139.96	60.00	3.98	0:08:35	962.17	106.91	2.22	0:16:35	693.27	115.54	1.99	0:24:35	516.69	129.17	2.02	0:32:35	134.53	134.53	1.94
0:00:40	1,437.28	68.44	3.57	0:08:40	1,137.23	103.38	2.21	0:16:40	881.70	110.21	1.94	0:24:40	595.38	148.85	1.75	0:32:40	166.36	166.36	1.57
0:00:45	1,613.86	67.24	3.70	0:08:45	1,385.38	106.57	2.25	0:16:45	1,063.83	132.98	1.96	0:24:45	561.04	140.26	1.86	0:32:45	142.13	142.13	1.84
0:00:50	1,605.79	64.23	4.05	0:08:50	1,499.52	115.35	2.27	0:16:50	1,084.70	135.59	1.93	0:24:50	557.32	139.33	1.87	0:32:50	111.10	111.10	2.35
0:00:55	1,619.53	64.78	4.04	0:08:55	1,527.41	117.49	2.22	0:16:55	1,102.53	137.82	1.89	0:24:55	563.82	140.95	1.85	0:32:55	151.20	151.20	1.73
0:01:00	1,619.89	64.80	4.04	0:09:00	1,543.40	118.72	2.20	0:17:00	1,107.56	138.44	1.89	0:25:00	609.80	152.45	1.71	0:33:00	126.88	126.88	2.06
0:01:05	1,620.10	62.31	4.15	0:09:05	1,578.37	112.74	2.27	0:17:05	1,090.26	136.28	1.92	0:25:05	584.16	146.04	1.79	0:33:05	132.85	132.85	1.97
0:01:10	1,620.21	60.01	4.32	0:09:10	1,608.52	114.89	2.27	0:17:10	1,116.16	139.52	1.87	0:25:10	501.48	125.37	2.08	0:33:10	148.95	148.95	1.75
0:01:15	1,621.41	57.91	4.47	0:09:15	1,615.33	107.69	2.38	0:17:15	1,075.05	134.38	1.94	0:25:15	552.34	138.08	1.89	0:33:15	147.90	147.90	1.77
0:01:20	1,620.89	57.89	4.52	0:09:20	1,618.11	107.87	2.42	0:17:20	1,098.70	137.34	1.90	0:25:20	566.86	141.72	1.84	0:33:20	124.99	124.99	2.09
0:01:25	1,621.10	52.29	4.86	0:09:25	1,619.47	101.22	2.58	0:17:25	1,109.87	138.73	1.88	0:25:25	522.03	130.51	2.00	0:33:25	139.72	139.72	1.87
0:01:30	1,621.57	50.67	5.15	0:09:30	1,619.47	101.22	2.58	0:17:30	1,060.01	132.50	1.97	0:25:30	516.42	129.11	2.02	0:33:30	132.28	132.28	1.98
0:01:35	1,621.36	50.67	5.16	0:09:35	1,620.10	101.26	2.58	0:17:35	1,030.02	128.75	2.03	0:25:35	547.15	136.79	1.91	0:33:35	141.77	141.77	1.84
0:01:40	1,620.26	50.63	5.17	0:09:40	1,619.26	101.20	2.58	0:17:40	1,044.80	130.60	2.00	0:25:40	545.10	136.28	1.92	0:33:40	126.30	126.30	2.07
0:01:45	1,620.99	50.66	5.17	0:09:45	1,619.53	101.22	2.58	0:17:45	1,098.12	137.27	1.90	0:25:45	549.98	137.49	1.90	0:33:45	151.05	151.05	1.73
0:01:50	1,620.94	50.65	5.17	0:09:50	1,620.05	101.25	2.58	0:17:50	1,111.28	138.91	1.88	0:25:50	496.24	124.06	2.11	0:33:50	132.23	132.23	1.98
0:01:55	1,620.84	50.65	5.17	0:09:55	1,620.42	101.28	2.58	0:17:55	995.57	124.45	2.10	0:25:55	527.85	131.96	1.98	0:33:55	144.97	144.97	1.80
0:02:00	1,620.89	50.65	5.17	0:10:00	1,619.79	101.24	2.58	0:18:00	1,031.75	128.97	2.03	0:26:00	588.20	147.05	1.78	0:34:00	113.46	113.46	2.30
0:02:05	1,621.05	50.66	5.17	0:10:05	1,619.58	101.22	2.58	0:18:05	1,125.54	140.69	1.86	0:26:05	591.13	147.78	1.77	0:34:05	129.13	129.13	2.02
0:02:10	1,620.89	50.65	5.17	0:10:10	1,620.21	101.26	2.58	0:18:10	1,123.92	140.49	1.86	0:26:10	589.88	147.47	1.77	0:34:10	145.07	145.07	1.80
0:02:15	1,621.31	50.67	5.17	0:10:15	1,620.00	101.25	2.58	0:18:15	1,118.04	139.76	1.87	0:26:15	553.96	138.49	1.89	0:34:15	139.83	139.83	1.87
0:02:20	1,621.05	50.66	5.17	0:10:20	1,620.26	101.27	2.58	0:18:20	1,121.35	140.17	1.86	0:26:20	518.68	129.67	2.02	0:34:20	139.04	139.04	1.88
0:02:25	1,621.57	50.67	5.16	0:10:25	1,619.79	101.24	2.58	0:18:25	1,085.54	135.69	1.93	0:26:25	532.10	133.02	1.96	0:34:25	139.36	139.36	1.87
0:02:30	1,621.05	50.66	5.17	0:10:30	1,619.58	101.22	2.58	0:18:30	1,075.84	134.48	1.94	0:26:30	520.36	130.09	2.01	0:34:30	157.23	157.23	1.66
0:02:35	1,621.52	50.67	5.16	0:10:35	1,620.42	101.28	2.58	0:18:35	983.56	122.95	2.13	0:26:35	534.51	133.63	1.96	0:34:35	126.88	126.88	2.06
0:02:40	1,621.26	50.66	5.17	0:10:40	1,619.68	101.23	2.58	0:18:40	1,074.79	134.35	1.94	0:26:40	520.88	130.22	2.01	0:34:40	146.01	146.01	1.79
0:02:45	1,620.68	50.65	5.17	0:10:45	1,619.58	101.22	2.58	0:18:45	1,073.48	134.18	1.95	0:26:45	581.54	145.39	1.80	0:34:45	142.82	142.82	1.83
0:02:50	1,620.68	50.65	5.17	0:10:50	1,619.32	101.21	2.58	0:18:50	1,057.54	132.19	1.98	0:26:50	556.01	139.00	1.88	0:34:50	134.69	134.69	1.94
0:02:55	1,621.15	50.66	5.17	0:10:55	1,619.79	101.24	2.58	0:18:55	1,085.07	135.63	1.93	0:26:55	590.45	147.61	1.77	0:34:55	134.90	134.90	1.94
0:03:00	1,620.68	50.65	5.17	0:11:00	1,619.74	101.23	2.58	0:19:00	1,074.32	134.29	1.94	0:27:00	538.81	134.70	1.94	0:35:00	135.69	135.69	1.93
0:03:05	1,621.31	50.67	5.17	0:11:05	1,620.10	101.26	2.58	0:19:05	982.83	122.85	2.13	0:27:05	525.07	131.27	1.99	0:35:05	125.99	125.99	2.07
0:03:10	1,621.10	50.66	5.17	0:11:10	1,619.47	101.22	2.58	0:19:10	981.68	122.71	2.13	0:27:10	536.61	134.15	1.95	0:35:10	143.60	143.60	1.82
0:03:15	1,620.99	50.66	5.17	0:11:15	1,619.95	101.25	2.58	0:19:15	1,007.00	125.87	2.07	0:27:15	543.95	135.99	1.92	0:35:15	115.71	115.71	2.26
0:03:20	1,621.57	50.67	5.16	0:11:20	1,619.47	101.22	2.58	0:19:20	1,110.07	138.76	1.88	0:27:20	559.63	139.91	1.87	0:35:20	153.04	153.04	1.71
0:03:25	1,621.05	50.66	5.17	0:11:25	1,620.05	101.25	2.58	0:19:25	1,075.84	134.48	1.94	0:27:25	571.00	142.75	1.83	0:35:25	122.26	122.26	2.14
0:03:30	1,620.78	50.65	5.17	0:11:30	1,619.74	101.23	2.58	0:19:30	1,077.25	134.66	1.94	0:27:30	524.13	131.03	1.99	0:35:30	132.38	132.38	1.97
0:03:35	1,621.31	50.67	5.17	0:11:35	1,620.05	101.25	2.58	0:19:35	1,133.93	141.74	1.84	0:27:35	507.98	127.00	2.06	0:35:35	121.16	121.16	2.15
0:03:40	1,621.52	50.67	5.16	0:11:40	1,619.74	101.23	2.58	0:19:40	1,057.07	132.13	1.98	0:27:40	561.15	140.29	1.86	0:35:40	120.11	120.11	2.18
0:03:45	1,621.31	50.67	5.17	0:11:45	1,619.95	101.25	2.58	0:19:45	1,106.20	138.27	1.89	0:27:45	552.44	138.11	1.89	0:35:45	113.40	113.40	2.30
0:03:50	1,620.21	50.63	5.17	0:11:50	1,620.31	101.27	2.58	0:19:50	1,077.83	134.73	1.94	0:27:50	576.24	144.06	1.81	0:35:50	159.33	159.33	1.64
0:03:55	1,621.26	50.66	5.16	0:11:55	1,619.68	101.23	2.58	0:19:55	1,095.34	136.92	1.91	0:27:55	508.61	127.15	2.05	0:35:55	133.17	133.17	1.96
0:04:00	1,620.94	50.65	5.17	0:12:00	1,620.42	101.28	2.58	0:20:00	1,099.85	137.48	1.90	0:28:00	476.89	119.22	2.19	0:36:00	143.92	143.92	1.81

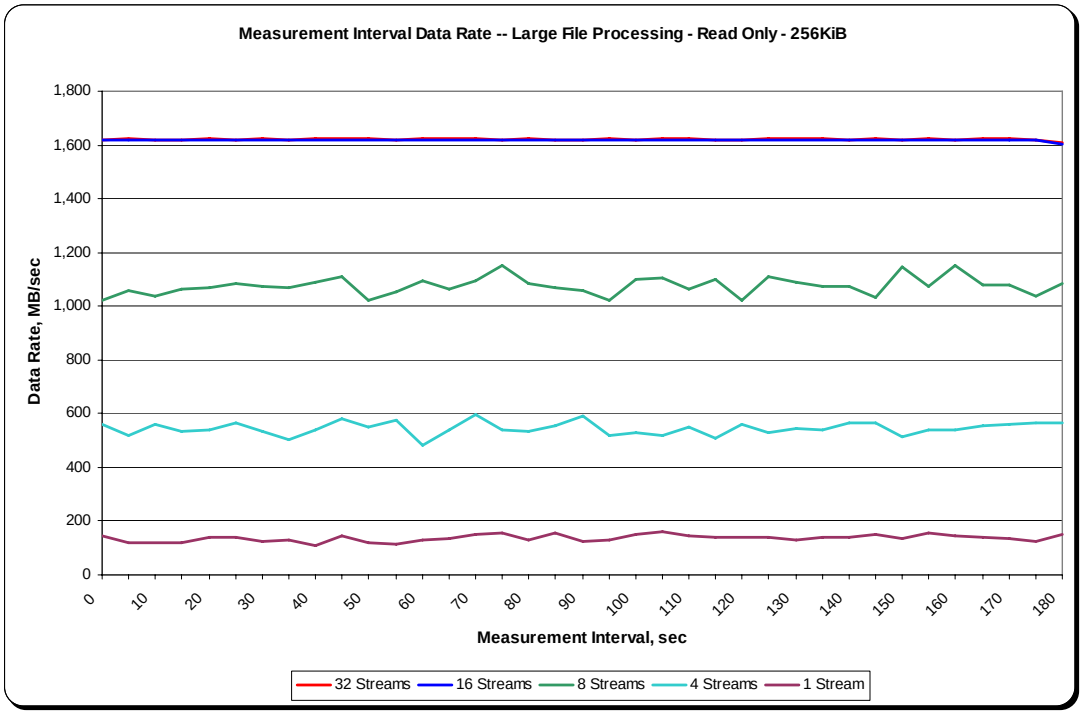
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR26	32 Streams			TR27	16 Streams			TR28	8 Streams			TR29	4 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
0:04:05	1,620.52	50.64	5.17	0:12:05	1,619.74	101.23	2.58	0:20:05	1,021.99	127.75	2.04	0:28:05	557.74	139.43	1.87	0:36:05	146.59	146.59	1.78
0:04:10	1,621.10	50.66	5.17	0:12:10	1,620.63	101.29	2.58	0:20:10	1,058.85	132.36	1.97	0:28:10	517.94	129.49	2.02	0:36:10	121.16	121.16	2.16
0:04:15	1,620.89	50.65	5.17	0:12:15	1,619.11	101.19	2.58	0:20:15	1,038.51	129.81	2.01	0:28:15	559.94	139.98	1.87	0:36:15	121.74	121.74	2.15
0:04:20	1,620.78	50.65	5.17	0:12:20	1,620.36	101.27	2.58	0:20:20	1,062.68	132.83	1.97	0:28:20	534.46	133.61	1.96	0:36:20	119.80	119.80	2.18
0:04:25	1,621.10	50.66	5.17	0:12:25	1,618.95	101.18	2.58	0:20:25	1,066.24	133.28	1.96	0:28:25	537.76	134.44	1.94	0:36:25	137.99	137.99	1.89
0:04:30	1,620.57	50.64	5.17	0:12:30	1,619.63	101.23	2.57	0:20:30	1,084.80	135.60	1.93	0:28:30	563.24	140.81	1.85	0:36:30	140.30	140.30	1.86
0:04:35	1,621.47	50.67	5.16	0:12:35	1,619.53	101.22	2.59	0:20:35	1,074.11	134.26	1.95	0:28:35	535.51	133.88	1.95	0:36:35	124.83	124.83	2.09
0:04:40	1,620.42	50.64	5.17	0:12:40	1,619.11	101.19	2.58	0:20:40	1,069.50	133.69	1.95	0:28:40	502.32	125.58	2.08	0:36:40	131.81	131.81	1.98
0:04:45	1,622.04	50.69	5.16	0:12:45	1,620.05	101.25	2.59	0:20:45	1,091.83	136.48	1.91	0:28:45	541.69	135.42	1.93	0:36:45	109.42	109.42	2.39
0:04:50	1,621.10	50.66	5.16	0:12:50	1,619.68	101.23	2.58	0:20:50	1,110.81	138.85	1.88	0:28:50	582.33	145.58	1.79	0:36:50	145.49	145.49	1.80
0:04:55	1,621.36	50.67	5.17	0:12:55	1,619.84	101.24	2.58	0:20:55	1,023.99	128.00	2.04	0:28:55	551.39	137.85	1.89	0:36:55	120.74	120.74	2.16
0:05:00	1,620.89	50.65	5.17	0:13:00	1,620.00	101.25	2.58	0:21:00	1,052.14	131.52	1.99	0:29:00	573.73	143.43	1.82	0:37:00	113.35	113.35	2.31
0:05:05	1,621.31	50.67	5.17	0:13:05	1,620.31	101.27	2.58	0:21:05	1,096.55	137.07	1.91	0:29:05	482.66	120.66	2.17	0:37:05	132.07	132.07	1.98
0:05:10	1,621.36	50.67	5.16	0:13:10	1,619.84	101.24	2.58	0:21:10	1,063.73	132.97	1.97	0:29:10	538.81	134.70	1.94	0:37:10	135.00	135.00	1.94
0:05:15	1,621.31	50.67	5.17	0:13:15	1,619.68	101.23	2.58	0:21:15	1,091.93	136.49	1.91	0:29:15	597.85	149.46	1.75	0:37:15	149.74	149.74	1.74
0:05:20	1,620.52	50.64	5.17	0:13:20	1,619.58	101.22	2.58	0:21:20	1,150.29	143.79	1.82	0:29:20	541.07	135.27	1.93	0:37:20	156.24	156.24	1.67
0:05:25	1,621.10	50.66	5.17	0:13:25	1,619.84	101.24	2.58	0:21:25	1,083.60	135.45	1.93	0:29:25	536.77	134.19	1.95	0:37:25	130.60	130.60	2.00
0:05:30	1,620.89	50.65	5.17	0:13:30	1,619.89	101.24	2.58	0:21:30	1,069.60	133.70	1.95	0:29:30	556.90	139.22	1.88	0:37:30	153.56	153.56	1.70
0:05:35	1,620.57	50.64	5.17	0:13:35	1,616.75	101.05	2.59	0:21:35	1,057.02	132.13	1.98	0:29:35	588.78	147.19	1.77	0:37:35	125.93	125.93	2.07
0:05:40	1,621.10	50.66	5.17	0:13:40	1,620.21	101.26	2.58	0:21:40	1,020.21	127.53	2.05	0:29:40	519.10	129.77	2.01	0:37:40	128.50	128.50	2.03
0:05:45	1,620.57	50.64	5.17	0:13:45	1,620.05	101.25	2.58	0:21:45	1,099.96	137.49	1.90	0:29:45	528.33	132.08	1.98	0:37:45	148.74	148.74	1.76
0:05:50	1,621.10	50.66	5.17	0:13:50	1,620.47	101.28	2.58	0:21:50	1,106.72	138.34	1.89	0:29:50	518.47	129.62	2.02	0:37:50	162.21	162.21	1.61
0:05:55	1,621.10	50.66	5.17	0:13:55	1,620.31	101.27	2.58	0:21:55	1,061.00	132.63	1.97	0:29:55	549.51	137.38	1.90	0:37:55	144.97	144.97	1.80
0:06:00	1,620.63	50.64	5.17	0:14:00	1,619.42	101.21	2.58	0:22:00	1,097.65	137.21	1.90	0:30:00	507.51	126.88	2.06	0:38:00	138.94	138.94	1.88
0:06:05	1,620.94	50.65	5.17	0:14:05	1,619.21	101.20	2.58	0:22:05	1,022.47	127.81	2.04	0:30:05	557.84	139.46	1.87	0:38:05	139.20	139.20	1.88
0:06:10	1,621.05	50.66	5.17	0:14:10	1,619.84	101.24	2.58	0:22:10	1,111.33	138.92	1.88	0:30:10	527.85	131.96	1.98	0:38:10	138.31	138.31	1.89
0:06:15	1,621.15	50.66	5.17	0:14:15	1,620.05	101.25	2.58	0:22:15	1,089.89	136.24	1.92	0:30:15	544.37	136.09	1.92	0:38:15	131.28	131.28	1.99
0:06:20	1,621.15	50.66	5.17	0:14:20	1,619.84	101.24	2.58	0:22:20	1,071.75	133.97	1.95	0:30:20	541.90	135.48	1.93	0:38:20	140.82	140.82	1.85
0:06:25	1,620.57	50.64	5.17	0:14:25	1,619.74	101.23	2.58	0:22:25	1,071.23	133.90	1.95	0:30:25	565.29	141.32	1.85	0:38:25	140.51	140.51	1.86
0:06:30	1,621.41	50.67	5.16	0:14:30	1,619.53	101.22	2.58	0:22:30	1,034.84	129.35	2.02	0:30:30	566.65	141.66	1.84	0:38:30	150.52	150.52	1.73
0:06:35	1,620.89	50.65	5.17	0:14:35	1,620.15	101.26	2.58	0:22:35	1,148.19	143.52	1.82	0:30:35	513.64	128.41	2.03	0:38:35	136.63	136.63	1.91
0:06:40	1,621.15	50.66	5.17	0:14:40	1,619.95	101.25	2.58	0:22:40	1,075.37	134.42	1.94	0:30:40	537.71	134.43	1.94	0:38:40	154.56	154.56	1.69
0:06:45	1,620.99	50.66	5.17	0:14:45	1,619.74	101.23	2.58	0:22:45	1,149.13	143.64	1.82	0:30:45	538.92	134.73	1.94	0:38:45	147.43	147.43	1.77
0:06:50	1,621.62	50.68	5.16	0:14:50	1,619.79	101.24	2.58	0:22:50	1,076.78	134.60	1.94	0:30:50	557.21	139.30	1.87	0:38:50	140.82	140.82	1.85
0:06:55	1,621.10	50.66	5.17	0:14:55	1,620.21	101.26	2.58	0:22:55	1,079.30	134.91	1.94	0:30:55	562.25	140.56	1.86	0:38:55	133.33	133.33	1.96
0:07:00	1,620.42	50.64	5.17	0:15:00	1,619.95	101.25	2.58	0:23:00	1,035.10	129.39	2.02	0:31:00	563.09	140.77	1.86	0:39:00	125.10	125.10	2.09
0:07:05	1,606.68	50.21	5.20	0:15:05	1,603.12	100.19	2.60	0:23:05	1,086.53	135.82	1.92	0:31:05	566.55	141.64	1.85	0:39:05	148.06	148.06	1.77
0:07:10	1,620.00	50.62	5.17	0:15:10	1,618.32	101.14	2.58	0:23:10	1,142.06	142.76	1.82	0:31:10	572.78	143.20	1.82	0:39:10	148.58	148.58	1.75
0:07:15	1,621.52	50.67	5.16	0:15:15	1,619.00	101.19	2.58	0:23:15	1,095.19	136.90	1.91	0:31:15	520.15	130.04	2.01	0:39:15	152.67	152.67	1.71
0:07:20	1,620.94	50.65	5.17	0:15:20	1,618.95	101.18	2.58	0:23:20	1,054.45	131.81	1.98	0:31:20	566.18	141.54	1.85	0:39:20	119.96	119.96	2.18
0:07:25	1,620.78	50.65	5.17	0:15:25	1,619.05	101.19	2.58	0:23:25	1,036.57	129.57	2.02	0:31:25	518.84	129.71	2.01	0:39:25	111.99	111.99	2.33
0:07:30	1,621.52	50.67	5.17	0:15:30	1,619.37	101.21	2.58	0:23:30	1,124.60	140.57	1.86	0:31:30	566.39	141.60	1.84	0:39:30	126.30	126.30	2.07
0:07:35	1,620.99	50.66	5.17	0:15:35	1,618.63	101.16	2.58	0:23:35	1,114.74	139.34	1.87	0:31:35	518.00	129.50	2.02	0:39:35	154.40	154.40	1.69
0:07:40	1,620.52	50.64	5.17	0:15:40	1,618.84	101.18	2.58	0:23:40	1,097.81	137.23	1.90	0:31:40	497.86	124.47	2.10	0:39:40	124.15	124.15	2.11
0:07:45	1,621.20	50.66	5.17	0:15:45	1,619.00	101.19	2.58	0:23:45	1,099.69	137.46	1.90	0:31:45	563.61	140.90	1.85	0:39:45	136.26	136.26	1.92
0:07:50	39.90	0.00	4.20	0:15:50	24.69	0.00	2.31	0:23:50	12.06	0.00	1.84	0:31:50	4.19	0.00	2.03	0:39:50	0.94	0.00	1.90
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00
																0:40:00	0.00	0.00	0.00

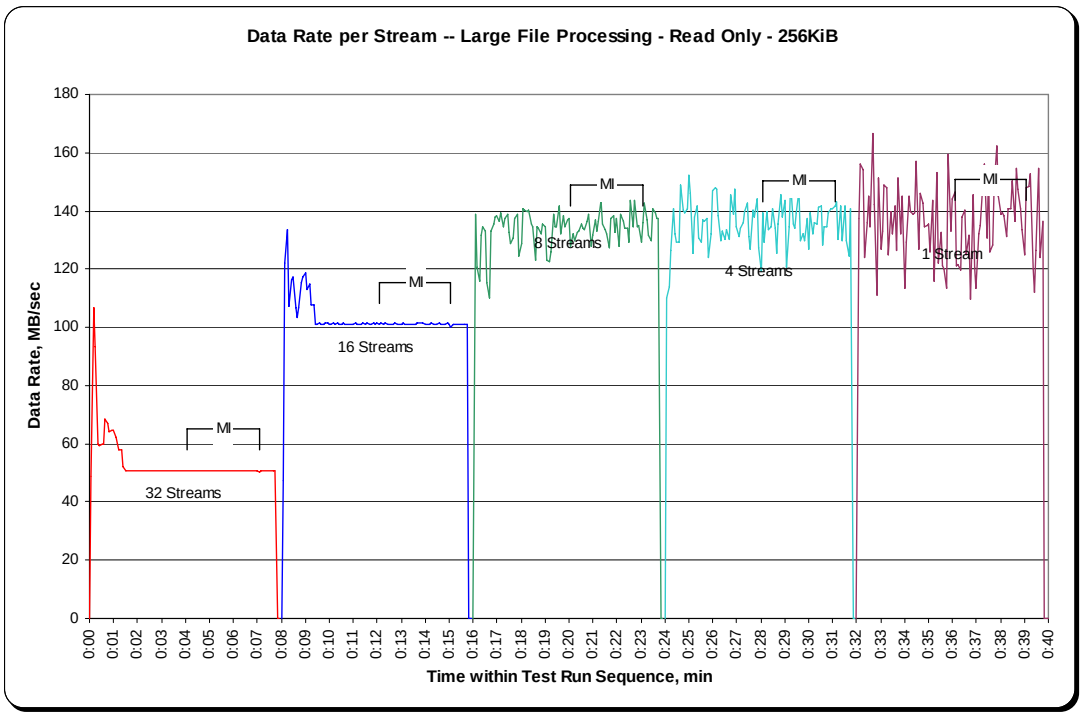
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Complete Test Run



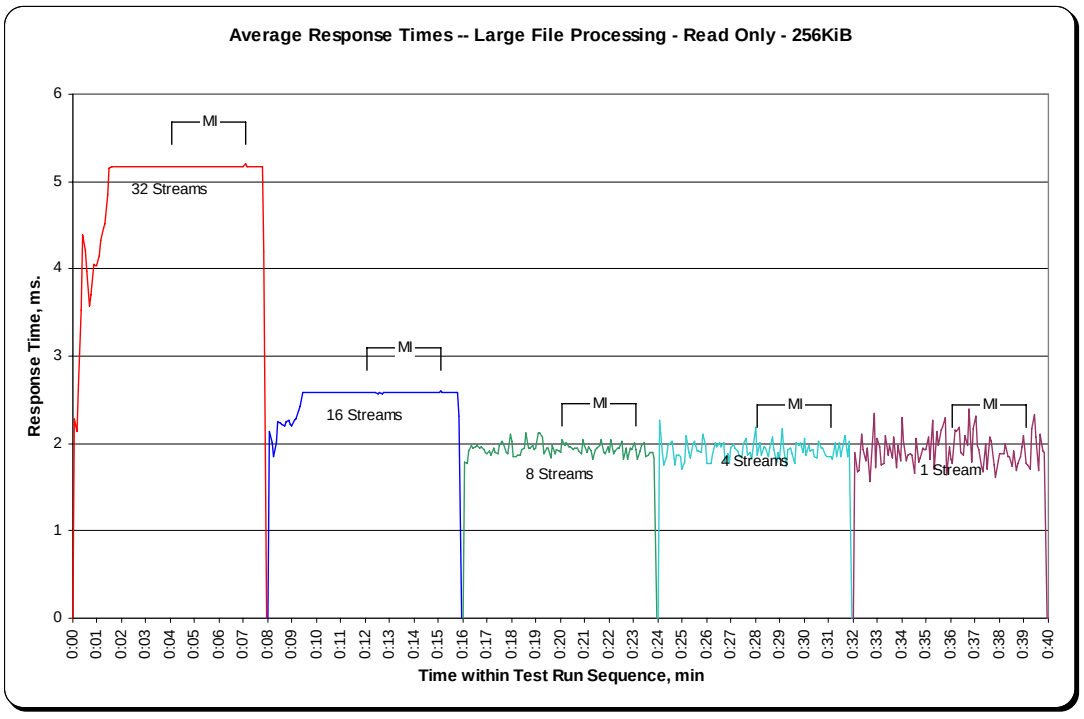
SPC-2 "Large File Processing/READ ONLY/256 KiB Transfer Size" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



Large Database Query Test

Clause 6.4.3.1

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

Clause 6.4.3.2

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

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

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

Clause 10.6.8.2

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

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

SPC-2 Workload Generator Commands and Parameters

The SPC-2 Workload Generator commands and parameters for the Large Database Query Test Runs are documented in "Appendix E: SPC-2 Workload Generator Execution Commands and Parameters" on Page 105.

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.

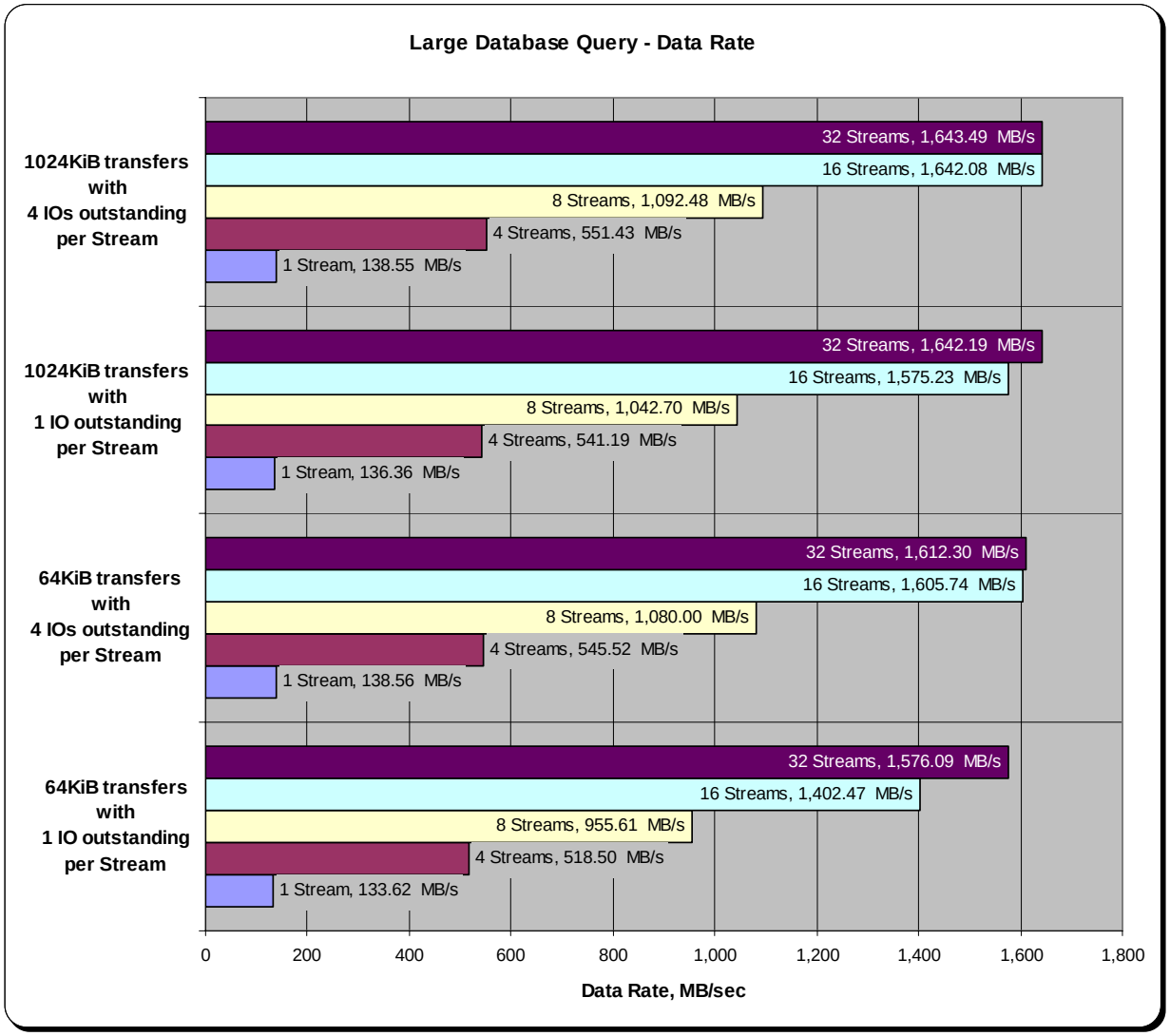
SPC-2 Large Database Query Test Results File

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	4 Streams	8 Streams	16 Streams	32 Streams
1024KiB w/ 4 IOs/Stream	138.55	551.43	1,092.48	1,642.08	1,643.49
1024KiB w/ 1 IO/Stream	136.36	541.19	1,042.70	1,575.23	1,642.19
64KiB w/ 4 IOs/Stream	138.56	545.52	1,080.00	1,605.74	1,612.30
64KiB w/ 1 IO/Stream	133.62	518.50	955.61	1,402.47	1,576.09

SPC-2 Large Database Query Average Data Rates Graph

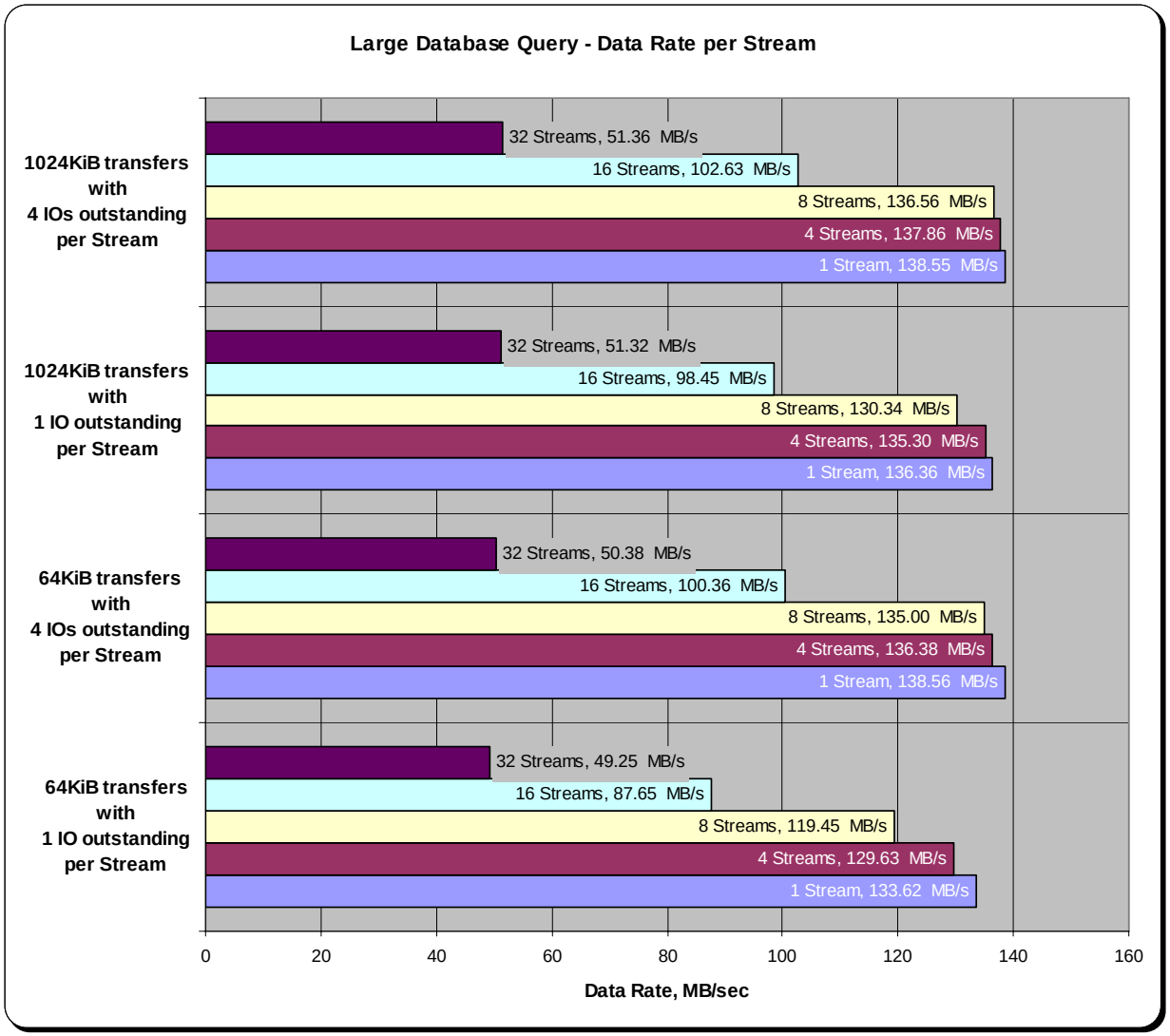


SPC-2 Large Database Query Average Data Rate per Stream

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	4 Streams	8 Streams	16 Streams	32 Streams
1024KiB w/ 4 IOs/Stream	138.55	137.86	136.56	102.63	51.36
1024KiB w/ 1 IO/Stream	136.36	135.30	130.34	98.45	51.32
64KiB w/ 4 IOs/Stream	138.56	136.38	135.00	100.36	50.38
64KiB w/ 1 IO/Stream	133.62	129.63	119.45	87.65	49.25

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

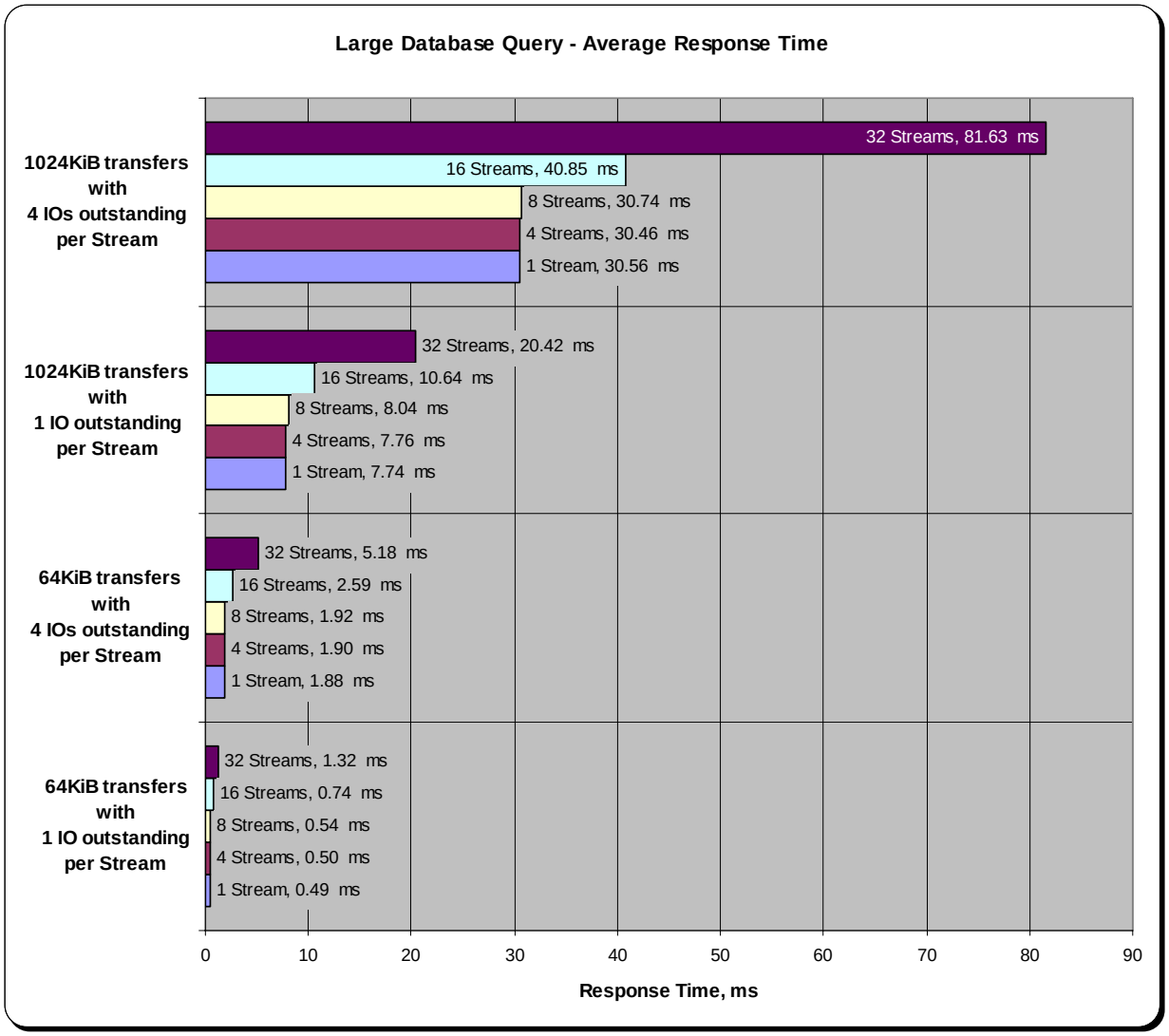


SPC-2 Large Database Query Average Response Time

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	4 Streams	8 Streams	16 Streams	32 Streams
1024KiB w/ 4 IOs/Stream	30.56	30.46	30.74	40.85	81.63
1024KiB w/ 1 IO/Stream	7.74	7.76	8.04	10.64	20.42
64KiB w/ 4 IOs/Stream	1.88	1.90	1.92	2.59	5.18
64KiB w/ 1 IO/Stream	0.49	0.50	0.54	0.74	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 DatabaseQuery/1024 KIB TRANSFER SIZE/4 Outstanding I/Os" Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate, average Data Rate per Stream, and average Response Time produced by the same Test Runs. The table and graphs present the data at five-second intervals.

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

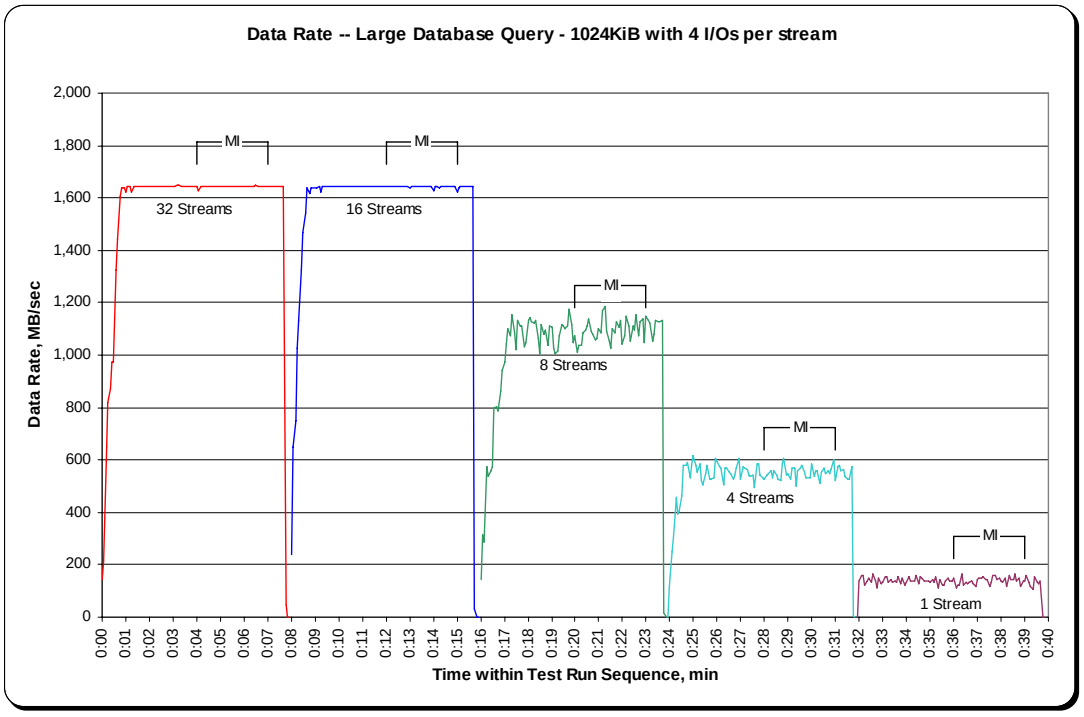
SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR1	32 Streams			TR2	16 Streams			TR3	8 Streams			TR4	4 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	145.75	145.75	28.25	0:08:00	238.24	79.41	33.25	0:16:00	141.56	70.78	29.36	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00
0:00:05	212.44	70.81	29.08	0:08:05	647.60	129.52	30.99	0:16:05	312.90	156.45	26.81	0:24:00	114.50	57.25	36.47	0:32:00	139.88	139.88	29.78
0:00:10	594.33	84.90	36.32	0:08:10	751.62	125.27	28.99	0:16:10	289.62	72.40	30.46	0:24:05	251.45	125.72	33.26	0:32:05	159.59	159.59	26.25
0:00:15	819.57	117.08	35.83	0:08:15	1,027.39	114.15	32.50	0:16:15	575.04	143.76	29.08	0:24:10	308.70	102.90	27.35	0:32:10	160.43	160.43	26.12
0:00:20	871.16	87.12	39.48	0:08:20	1,134.56	113.46	34.44	0:16:20	537.92	134.48	30.93	0:24:15	455.08	151.69	27.40	0:32:15	121.63	121.63	34.44
0:00:25	972.45	69.46	49.72	0:08:25	1,322.04	110.17	34.35	0:16:25	560.57	140.14	30.14	0:24:20	395.52	131.84	32.08	0:32:20	137.57	137.57	30.55
0:00:30	971.61	64.77	61.27	0:08:30	1,467.38	122.28	34.18	0:16:30	576.09	115.22	33.46	0:24:25	402.23	134.08	31.29	0:32:25	147.43	147.43	28.36
0:00:35	1,326.87	66.34	58.01	0:08:35	1,540.99	118.54	32.86	0:16:35	798.18	133.03	30.09	0:24:30	465.36	116.34	32.41	0:32:30	134.64	134.64	31.20
0:00:40	1,439.28	71.96	58.74	0:08:40	1,639.13	117.08	35.49	0:16:40	805.52	134.25	31.36	0:24:35	579.23	144.81	28.86	0:32:35	166.30	166.30	25.21
0:00:45	1,608.10	76.58	54.98	0:08:45	1,619.21	115.66	36.12	0:16:45	788.32	131.39	31.90	0:24:40	581.12	145.28	28.82	0:32:40	139.67	139.67	29.97
0:00:50	1,637.25	74.42	56.14	0:08:50	1,640.81	117.20	35.77	0:16:50	862.98	143.83	29.16	0:24:45	587.83	146.96	28.55	0:32:45	110.31	110.31	38.04
0:00:55	1,637.46	68.23	58.01	0:08:55	1,640.60	117.19	35.78	0:16:55	943.93	134.85	31.02	0:24:50	531.21	132.80	31.56	0:32:50	149.74	149.74	28.03
0:01:00	1,619.84	57.85	68.47	0:09:00	1,639.34	117.10	35.78	0:17:00	973.08	139.01	30.16	0:24:55	578.18	144.55	29.03	0:32:55	125.83	125.83	33.25
0:01:05	1,642.91	58.68	71.47	0:09:05	1,640.60	109.37	36.33	0:17:05	1,043.12	130.39	29.13	0:25:00	614.47	153.62	27.30	0:33:00	131.70	131.70	31.88
0:01:10	1,641.86	54.73	75.69	0:09:10	1,641.65	102.60	39.22	0:17:10	1,099.33	137.42	30.51	0:25:05	581.12	145.28	28.85	0:33:05	153.93	153.93	27.24
0:01:15	1,624.66	52.41	77.77	0:09:15	1,622.36	101.40	41.21	0:17:15	1,074.79	134.35	31.20	0:25:10	555.75	138.94	30.17	0:33:10	153.09	153.09	27.39
0:01:20	1,644.80	51.40	80.77	0:09:20	1,644.17	102.76	40.78	0:17:20	1,153.43	144.18	29.09	0:25:15	586.99	146.75	28.56	0:33:15	134.43	134.43	31.18
0:01:25	1,643.75	51.37	81.61	0:09:25	1,643.12	102.69	40.84	0:17:25	1,082.55	135.32	30.51	0:25:20	522.61	130.65	32.10	0:33:20	143.03	143.03	29.29
0:01:30	1,642.70	51.33	81.68	0:09:30	1,642.91	102.68	40.84	0:17:30	1,023.62	127.95	33.25	0:25:25	507.93	126.98	33.02	0:33:25	134.43	134.43	31.22
0:01:35	1,642.70	51.33	81.64	0:09:35	1,641.44	102.59	40.86	0:17:35	1,133.72	141.72	29.59	0:25:30	546.94	136.73	30.65	0:33:30	137.57	137.57	30.44
0:01:40	1,644.59	51.39	81.61	0:09:40	1,644.38	102.77	40.78	0:17:40	1,113.59	139.20	30.11	0:25:35	578.81	144.70	28.98	0:33:35	130.65	130.65	32.08
0:01:45	1,643.12	51.35	81.64	0:09:45	1,642.07	102.63	40.87	0:17:45	1,111.49	138.94	30.18	0:25:40	528.48	132.12	31.73	0:33:40	151.83	151.83	25.75
0:01:50	1,645.01	51.41	81.61	0:09:50	1,641.02	102.56	40.87	0:17:50	1,033.90	129.24	32.34	0:25:45	528.27	132.07	31.76	0:33:45	130.23	130.23	34.37
0:01:55	1,643.75	51.37	81.63	0:09:55	1,641.44	102.59	40.87	0:17:55	1,045.64	130.70	32.18	0:25:50	531.21	132.80	31.55	0:33:50	148.69	148.69	28.22
0:02:00	1,642.91	51.34	81.62	0:10:00	1,642.07	102.63	40.84	0:18:00	1,133.30	141.66	29.59	0:25:55	604.19	151.05	27.76	0:33:55	120.17	120.17	34.85
0:02:05	1,643.96	51.37	81.63	0:10:05	1,643.33	102.71	40.84	0:18:05	1,142.74	142.84	29.36	0:26:00	594.75	148.69	28.20	0:34:00	132.96	132.96	31.58
0:02:10	1,644.80	51.40	81.54	0:10:10	1,642.49	102.66	40.80	0:18:10	1,128.69	141.09	29.70	0:26:05	576.09	144.02	29.10	0:34:05	151.62	151.62	27.65
0:02:15	1,645.01	51.41	81.58	0:10:15	1,644.80	102.80	40.83	0:18:15	1,121.35	140.17	29.90	0:26:10	571.68	142.92	29.33	0:34:10	137.99	137.99	30.36
0:02:20	1,642.91	51.34	81.64	0:10:20	1,641.44	102.59	40.83	0:18:20	1,133.72	141.72	29.53	0:26:15	503.53	125.88	33.04	0:34:15	137.99	137.99	30.40
0:02:25	1,644.80	51.40	81.59	0:10:25	1,644.59	102.79	40.81	0:18:25	1,062.42	132.80	31.58	0:26:20	567.28	141.82	29.81	0:34:20	136.31	136.31	30.75
0:02:30	1,644.80	51.40	81.59	0:10:30	1,642.70	102.67	40.83	0:18:30	1,002.86	125.36	33.49	0:26:25	571.68	142.92	29.34	0:34:25	157.29	157.29	26.68
0:02:35	1,643.54	51.36	81.62	0:10:35	1,642.49	102.66	40.85	0:18:35	1,116.73	139.59	29.74	0:26:30	553.65	138.41	30.28	0:34:30	128.35	128.35	32.65
0:02:40	1,643.33	51.35	81.65	0:10:40	1,641.65	102.60	40.83	0:18:40	1,079.61	134.95	31.36	0:26:35	548.20	137.05	30.57	0:34:35	153.72	153.72	27.28
0:02:45	1,644.38	51.39	81.56	0:10:45	1,642.28	102.64	40.86	0:18:45	1,095.13	136.89	30.64	0:26:40	527.43	131.86	31.79	0:34:40	150.58	150.58	27.85
0:02:50	1,645.01	51.41	81.56	0:10:50	1,641.44	102.59	40.85	0:18:50	1,038.09	129.76	32.28	0:26:45	544.21	136.05	30.84	0:34:45	135.90	135.90	30.81
0:02:55	1,643.96	51.37	81.61	0:10:55	1,643.75	102.73	40.82	0:18:55	1,110.44	138.81	30.21	0:26:50	570.84	142.71	29.37	0:34:50	139.25	139.25	30.13
0:03:00	1,643.33	51.35	81.62	0:11:00	1,642.49	102.66	40.82	0:19:00	1,103.94	137.99	30.37	0:26:55	604.61	151.15	27.27	0:34:55	138.41	138.41	30.29
0:03:05	1,642.07	51.31	81.70	0:11:05	1,642.91	102.68	40.83	0:19:05	1,026.14	128.27	32.71	0:27:00	528.90	132.23	32.23	0:35:00	134.22	134.22	31.24
0:03:10	1,646.47	51.45	81.54	0:11:10	1,644.38	102.77	40.80	0:19:10	1,004.54	125.57	33.38	0:27:05	576.51	144.13	29.12	0:35:05	144.91	144.91	28.92
0:03:15	1,646.47	51.45	81.49	0:11:15	1,643.54	102.72	40.79	0:19:15	1,015.23	126.90	33.03	0:27:10	570.43	142.61	29.39	0:35:10	135.06	135.06	31.05
0:03:20	1,645.22	51.41	81.52	0:11:20	1,642.07	102.63	40.87	0:19:20	1,075.42	134.43	31.21	0:27:15	565.81	141.45	29.61	0:35:15	153.09	153.09	27.37
0:03:25	1,642.28	51.32	81.65	0:11:25	1,642.91	102.68	40.82	0:19:25	1,119.67	139.96	29.96	0:27:20	540.44	135.11	31.05	0:35:20	110.94	110.94	37.73
0:03:30	1,644.38	51.39	81.65	0:11:30	1,643.33	102.71	40.83	0:19:30	1,110.44	138.81	30.18	0:27:25	535.19	133.80	31.31	0:35:25	141.35	141.35	29.70
0:03:35	1,642.91	51.34	81.63	0:11:35	1,641.86	102.62	40.85	0:19:35	1,100.59	137.57	30.48	0:27:30	540.44	135.11	31.04	0:35:30	122.89	122.89	34.11
0:03:40	1,645.43	51.42	81.56	0:11:40	1,641.65	102.60	40.86	0:19:40	1,113.17	139.15	29.91	0:27:35	494.51	123.63	33.91	0:35:35	119.75	119.75	34.96
0:03:45	1,645.01	51.41	81.58	0:11:45	1,642.91	102.68	40.82	0:19:45	1,173.57	146.70	28.56	0:27:40	586.57	146.64	28.54	0:35:40	137.99	137.99	30.44
0:03:50	1,642.70	51.33	81.64	0:11:50	1,642.07	102.63	40.86	0:19:50	1,119.46	139.93	30.19	0:27:45	585.73	146.43	28.68	0:35:45	150.16	150.16	27.89
0:03:55	1,642.70	51.33	81.65	0:11:55	1,641.23	102.58	40.86	0:19:55	1,049.21	131.15	31.97	0:27:50	544.84	136.21	30.77	0:35:50	139.04	139.04	30.16
												0:27:55	529.53	132.38	31.65	0:35:55	139.46	139.46	30.10

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

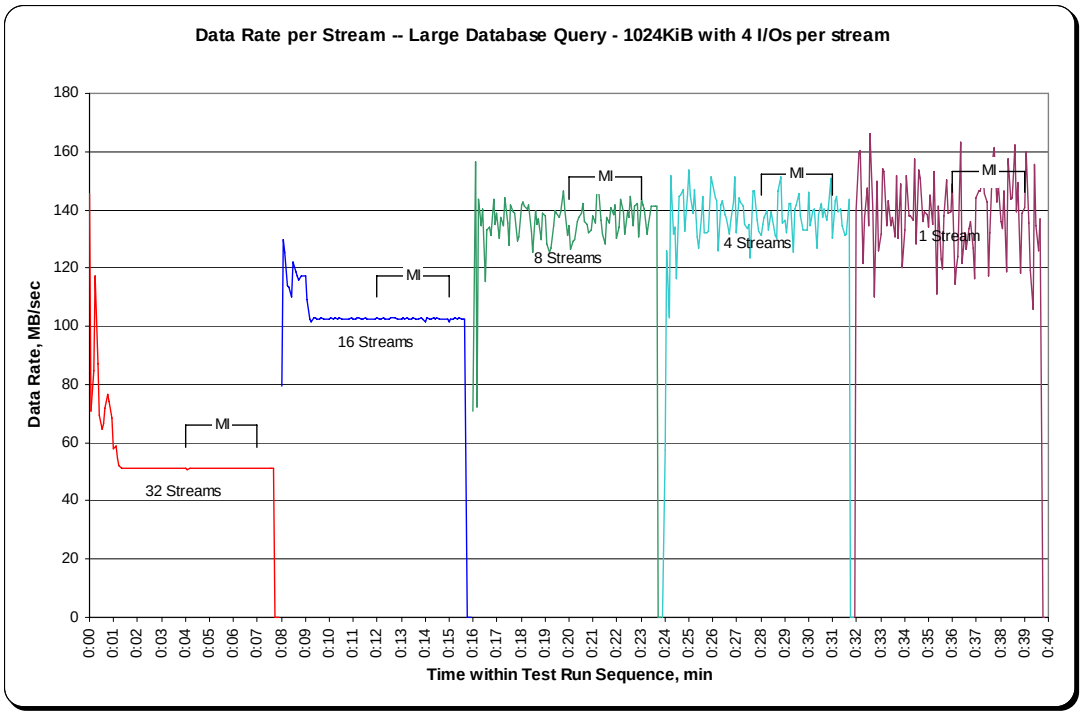
TR1	32 Streams			TR2	16 Streams			TR3	8 Streams			TR4	4 Streams			TR5	1 Stream		
Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / Stream, MB/sec	Response Time, ms	Test Run Sequence Time	Data Rate, MB/sec	Data Rate / 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
0:04:00	1,645.01	51.41	81.57	0:12:00	1,644.17	102.76	40.80	0:20:00	1,075.63	134.45	31.16	0:28:00	524.08	131.02	32.03	0:36:00	149.11	149.11	28.01
0:04:05	1,625.92	50.81	82.31	0:12:05	1,641.65	102.60	40.85	0:20:05	1,012.71	126.59	33.12	0:28:05	540.44	135.11	31.03	0:36:05	114.29	114.29	36.63
0:04:10	1,643.75	51.37	81.58	0:12:10	1,641.86	102.62	40.84	0:20:10	1,035.15	129.39	32.40	0:28:10	550.08	137.52	30.32	0:36:10	120.38	120.38	34.85
0:04:15	1,643.75	51.37	81.64	0:12:15	1,644.80	102.80	40.80	0:20:15	1,036.41	129.55	32.37	0:28:15	558.68	139.67	30.20	0:36:15	123.94	123.94	33.84
0:04:20	1,643.75	51.37	81.60	0:12:20	1,642.49	102.66	40.82	0:20:20	1,087.58	135.95	30.83	0:28:20	531.42	132.85	31.54	0:36:20	163.37	163.37	25.69
0:04:25	1,642.91	51.34	81.64	0:12:25	1,642.49	102.66	40.86	0:20:25	1,097.65	137.21	30.56	0:28:25	557.42	139.36	30.09	0:36:25	121.43	121.43	34.51
0:04:30	1,645.22	51.41	81.60	0:12:30	1,642.70	102.67	40.84	0:20:30	1,111.28	138.91	30.19	0:28:30	544.84	136.21	30.78	0:36:30	131.91	131.91	31.78
0:04:35	1,643.75	51.37	81.64	0:12:35	1,643.12	102.69	40.80	0:20:35	1,138.96	142.37	29.43	0:28:35	525.13	131.28	31.91	0:36:35	126.46	126.46	33.15
0:04:40	1,643.54	51.36	81.64	0:12:40	1,643.12	102.69	40.82	0:20:40	1,088.21	136.03	30.81	0:28:40	521.56	130.39	32.17	0:36:40	133.80	133.80	31.34
0:04:45	1,643.75	51.37	81.60	0:12:45	1,644.17	102.76	40.82	0:20:45	1,079.40	134.93	30.76	0:28:45	586.15	146.54	28.61	0:36:45	135.90	135.90	30.86
0:04:50	1,644.17	51.38	81.61	0:12:50	1,641.86	102.62	40.85	0:20:50	1,055.92	131.99	32.07	0:28:50	605.87	151.47	27.68	0:36:50	126.67	126.67	33.08
0:04:55	1,643.33	51.35	81.59	0:12:55	1,642.07	102.63	40.84	0:20:55	1,062.84	132.85	31.57	0:28:55	541.69	135.42	30.94	0:36:55	116.39	116.39	36.06
0:05:00	1,644.59	51.39	81.60	0:13:00	1,640.81	102.55	40.87	0:21:00	1,103.31	137.91	30.39	0:29:00	545.68	136.42	30.75	0:37:00	144.07	144.07	29.05
0:05:05	1,644.38	51.39	81.62	0:13:05	1,643.33	102.71	40.81	0:21:05	1,083.81	135.48	30.95	0:29:05	528.90	132.23	31.68	0:37:05	146.38	146.38	28.69
0:05:10	1,645.01	51.41	81.57	0:13:10	1,642.28	102.64	40.84	0:21:10	1,171.89	146.49	28.57	0:29:10	569.17	142.29	29.50	0:37:10	146.59	146.59	28.60
0:05:15	1,643.96	51.37	81.59	0:13:15	1,643.54	102.72	40.84	0:21:15	1,186.36	148.29	28.32	0:29:15	569.17	142.29	29.45	0:37:15	152.04	152.04	27.55
0:05:20	1,643.96	51.37	81.61	0:13:20	1,641.44	102.59	40.87	0:21:20	1,090.94	136.37	30.74	0:29:20	501.43	125.36	33.40	0:37:20	145.54	145.54	28.78
0:05:25	1,644.38	51.39	81.62	0:13:25	1,642.28	102.64	40.83	0:21:25	1,052.14	131.52	31.86	0:29:25	560.15	140.04	29.99	0:37:25	142.61	142.61	29.37
0:05:30	1,641.65	51.30	81.66	0:13:30	1,643.12	102.69	40.83	0:21:30	1,027.81	128.48	32.64	0:29:30	567.28	141.82	29.54	0:37:30	117.44	117.44	35.76
0:05:35	1,643.96	51.37	81.65	0:13:35	1,641.23	102.58	40.87	0:21:35	1,099.96	137.49	30.50	0:29:35	581.54	145.39	28.85	0:37:35	132.12	132.12	31.71
0:05:40	1,646.26	51.45	81.50	0:13:40	1,641.44	102.59	40.86	0:21:40	1,083.18	135.40	30.89	0:29:40	552.39	138.10	30.35	0:37:40	157.29	157.29	26.68
0:05:45	1,643.96	51.37	81.62	0:13:45	1,641.86	102.62	40.85	0:21:45	1,125.54	140.69	29.85	0:29:45	531.63	132.91	31.57	0:37:45	161.27	161.27	25.99
0:05:50	1,643.96	51.37	81.59	0:13:50	1,643.54	102.72	40.81	0:21:50	1,104.99	138.12	30.37	0:29:50	533.10	133.27	31.42	0:37:50	142.61	142.61	29.42
0:05:55	1,643.75	51.37	81.61	0:13:55	1,642.49	102.66	40.85	0:21:55	1,133.09	141.64	29.58	0:29:55	531.42	132.85	31.58	0:37:55	148.48	148.48	28.21
0:06:00	1,643.54	51.36	81.62	0:14:00	1,626.55	101.66	41.22	0:22:00	1,040.61	130.08	32.22	0:30:00	583.64	145.91	28.71	0:38:00	136.11	136.11	30.82
0:06:05	1,643.54	51.36	81.67	0:14:05	1,643.54	102.72	40.80	0:22:05	1,073.32	134.17	31.26	0:30:05	538.34	134.58	31.15	0:38:05	133.59	133.59	31.36
0:06:10	1,645.64	51.43	81.59	0:14:10	1,642.70	102.67	40.86	0:22:10	1,148.40	143.55	29.21	0:30:10	558.68	139.67	30.02	0:38:10	146.59	146.59	28.63
0:06:15	1,643.12	51.35	81.58	0:14:15	1,640.60	102.54	40.87	0:22:15	1,112.75	139.09	30.13	0:30:15	560.78	140.19	29.90	0:38:15	118.91	118.91	35.26
0:06:20	1,642.49	51.33	81.65	0:14:20	1,643.33	102.71	40.84	0:22:20	1,053.61	131.70	31.85	0:30:20	508.14	127.03	33.00	0:38:20	157.29	157.29	26.65
0:06:25	1,644.38	51.39	81.60	0:14:25	1,641.86	102.62	40.84	0:22:25	1,112.96	139.12	30.13	0:30:25	554.07	138.52	30.30	0:38:25	143.65	143.65	29.18
0:06:30	1,646.47	51.45	81.51	0:14:30	1,645.01	102.81	40.77	0:22:30	1,097.86	137.23	30.37	0:30:30	569.17	142.29	29.43	0:38:30	143.86	143.86	28.34
0:06:35	1,644.17	51.38	81.61	0:14:35	1,641.65	102.60	40.85	0:22:35	1,155.53	144.44	29.19	0:30:35	549.03	137.26	30.57	0:38:35	162.32	162.32	26.53
0:06:40	1,643.12	51.35	81.60	0:14:40	1,642.28	102.64	40.86	0:22:40	1,076.68	134.58	30.67	0:30:40	560.15	140.04	29.92	0:38:40	139.25	139.25	30.12
0:06:45	1,643.12	51.35	81.69	0:14:45	1,641.23	102.58	40.85	0:22:45	1,128.69	141.09	30.02	0:30:45	545.89	136.47	30.74	0:38:45	149.32	149.32	28.07
0:06:50	1,643.33	51.35	81.62	0:14:50	1,642.28	102.64	40.86	0:22:50	1,138.75	142.34	29.60	0:30:50	561.41	140.35	29.77	0:38:50	118.07	118.07	35.20
0:06:55	1,643.96	51.37	81.63	0:14:55	1,642.07	102.63	40.85	0:22:55	1,045.22	130.65	32.09	0:30:55	603.14	150.79	27.89	0:38:55	138.62	138.62	30.51
0:07:00	1,644.17	51.38	81.66	0:15:00	1,623.41	101.46	41.23	0:23:00	1,148.19	143.52	29.21	0:31:00	520.72	130.18	32.21	0:39:00	140.93	140.93	29.85
0:07:05	1,644.59	51.39	81.50	0:15:05	1,640.60	102.54	40.86	0:23:05	1,132.25	141.53	29.53	0:31:05	571.89	142.97	29.24	0:39:05	159.80	159.80	26.15
0:07:10	1,643.33	51.35	81.66	0:15:10	1,642.49	102.66	40.82	0:23:10	1,122.82	140.35	29.62	0:31:10	579.02	144.76	28.94	0:39:10	135.27	135.27	30.96
0:07:15	1,643.33	51.35	81.65	0:15:15	1,643.75	102.73	40.81	0:23:15	1,053.19	131.65	32.09	0:31:15	557.84	139.46	30.07	0:39:15	119.12	119.12	35.22
0:07:20	1,644.38	51.39	81.58	0:15:20	1,642.49	102.66	40.84	0:23:20	1,080.87	135.11	31.05	0:31:20	561.20	140.30	29.88	0:39:20	105.91	105.91	39.54
0:07:25	1,643.12	51.35	81.63	0:15:25	1,643.33	102.71	40.80	0:23:25	1,131.62	141.45	29.61	0:31:25	538.55	134.64	31.14	0:39:25	155.40	155.40	26.99
0:07:30	1,645.22	51.41	81.59	0:15:30	1,642.28	102.64	40.86	0:23:30	1,129.11	141.14	29.71	0:31:30	524.29	131.07	31.98	0:39:30	134.43	134.43	31.20
0:07:35	1,643.54	51.36	81.60	0:15:35	1,642.28	102.64	40.86	0:23:35	1,129.53	141.19	29.71	0:31:35	526.18	131.54	31.86	0:39:35	125.83	125.83	33.32
0:07:40	1,645.64	51.43	81.55	0:15:40	1,641.44	102.59	40.85	0:23:40	1,131.20	141.40	29.65	0:31:40	575.25	143.81	29.18	0:39:40	136.94	136.94	30.61
0:07:45	49.07	0.00	75.07	0:15:45	33.14	0.00	37.35	0:23:45	16.78	0.00	28.75	0:31:45	7.34	0.00	26.23	0:39:45	1.26	0.00	30.81
0:07:50	0.00	0.00	0.00	0:15:50	0.00	0.00	0.00	0:23:50	0.00	0.00	0.00	0:31:50	0.00	0.00	0.00	0:39:50	0.00	0.00	0.00
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00												

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

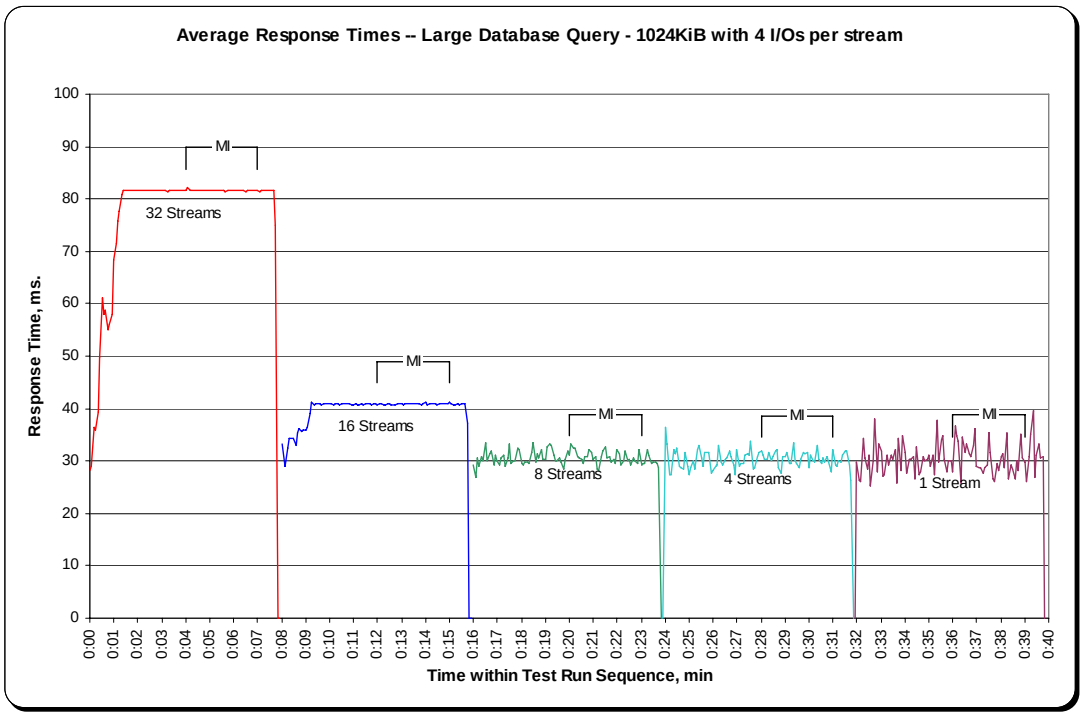


SPC-2 "Large Database Query/1024 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only

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



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



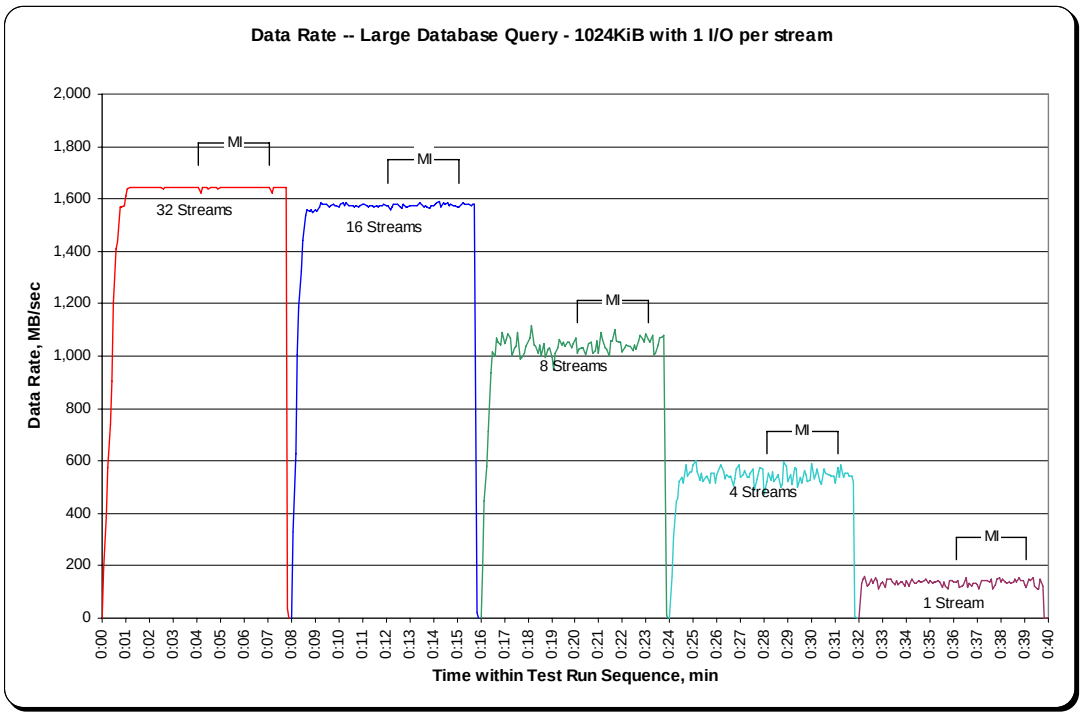
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR6	32 Streams			TR7	16 Streams			TR8	8 Streams			TR9	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	185.81	61.94	11.45	0:08:05	331.98	82.99	8.48	0:16:05	192.52	96.26	7.40	0:24:05	160.43	80.22	8.84	0:32:05	135.06	135.06	7.74
0:00:10	386.51	77.30	10.80	0:08:10	627.26	104.54	7.84	0:16:10	446.06	111.52	7.09	0:24:10	308.07	102.69	7.78	0:32:10	149.11	149.11	7.01
0:00:15	573.99	71.75	12.48	0:08:15	1,004.75	111.64	8.50	0:16:15	579.86	115.97	7.72	0:24:15	446.48	148.83	7.04	0:32:15	158.33	158.33	6.61
0:00:20	739.04	73.90	12.69	0:08:20	1,186.78	107.89	8.73	0:16:20	714.92	119.15	7.56	0:24:20	457.60	114.40	7.24	0:32:20	123.73	123.73	8.47
0:00:25	905.97	53.29	15.79	0:08:25	1,322.25	110.19	8.86	0:16:25	935.75	116.97	8.18	0:24:25	521.77	130.44	8.03	0:32:25	127.51	127.51	8.22
0:00:30	1,201.25	60.06	16.20	0:08:30	1,443.26	111.02	8.79	0:16:30	1,014.60	126.83	8.26	0:24:30	535.82	133.96	7.82	0:32:30	146.80	146.80	7.14
0:00:35	1,410.54	67.17	15.43	0:08:35	1,537.00	102.47	9.67	0:16:35	1,001.81	125.23	8.37	0:24:35	514.22	128.56	8.14	0:32:35	130.44	130.44	8.03
0:00:40	1,438.02	65.36	16.02	0:08:40	1,556.72	103.78	10.09	0:16:40	1,071.64	133.96	7.82	0:24:40	585.11	146.28	7.17	0:32:40	155.19	155.19	6.75
0:00:45	1,568.88	65.37	15.40	0:08:45	1,553.57	103.57	10.11	0:16:45	1,053.19	131.65	7.96	0:24:45	540.44	135.11	7.75	0:32:45	143.86	143.86	7.28
0:00:50	1,570.98	65.46	16.01	0:08:50	1,558.81	103.92	10.09	0:16:50	1,041.66	130.21	8.04	0:24:50	556.16	139.04	7.53	0:32:50	113.04	113.04	9.27
0:00:55	1,575.17	63.01	16.05	0:08:55	1,550.01	103.33	10.13	0:16:55	1,088.21	136.03	7.70	0:24:55	559.31	139.83	7.49	0:32:55	133.80	133.80	7.83
0:01:00	1,610.40	59.64	16.47	0:09:00	1,556.72	103.78	10.09	0:17:00	1,046.69	130.84	8.00	0:25:00	583.01	145.75	7.19	0:33:00	139.67	139.67	7.50
0:01:05	1,639.76	54.66	18.49	0:09:05	1,552.52	103.50	10.13	0:17:05	1,063.26	132.91	7.88	0:25:05	598.53	149.63	7.00	0:33:05	117.44	117.44	8.92
0:01:10	1,641.23	54.71	19.15	0:09:10	1,567.20	97.95	10.08	0:17:10	1,086.95	135.87	7.70	0:25:10	559.73	139.93	7.48	0:33:10	149.32	149.32	7.01
0:01:15	1,642.91	54.76	19.14	0:09:15	1,585.66	99.10	10.57	0:17:15	1,069.55	133.69	7.83	0:25:15	525.34	131.33	7.97	0:33:15	146.59	146.59	7.14
0:01:20	1,641.65	52.96	19.54	0:09:20	1,579.37	98.71	10.61	0:17:20	997.62	124.70	8.40	0:25:20	553.44	138.36	7.58	0:33:20	149.32	149.32	7.02
0:01:25	1,643.54	51.36	20.03	0:09:25	1,579.16	98.70	10.61	0:17:25	1,033.48	129.18	8.11	0:25:25	520.51	130.13	8.04	0:33:25	137.99	137.99	7.60
0:01:30	1,642.07	51.31	20.42	0:09:30	1,581.25	98.83	10.60	0:17:30	1,037.46	129.68	8.08	0:25:30	534.98	133.75	7.83	0:33:30	127.30	127.30	8.22
0:01:35	1,642.28	51.32	20.42	0:09:35	1,568.25	98.02	10.69	0:17:35	1,090.31	136.29	7.68	0:25:35	541.69	135.42	7.74	0:33:35	145.12	145.12	7.23
0:01:40	1,643.12	51.35	20.42	0:09:40	1,574.12	98.38	10.65	0:17:40	990.69	123.84	8.46	0:25:40	517.37	129.34	8.10	0:33:40	128.56	128.56	8.14
0:01:45	1,642.28	51.32	20.41	0:09:45	1,580.41	98.78	10.60	0:17:45	995.52	124.44	8.41	0:25:45	553.65	138.41	7.57	0:33:45	140.93	140.93	7.43
0:01:50	1,644.38	51.39	20.38	0:09:50	1,575.38	98.46	10.64	0:17:50	1,010.62	126.33	8.30	0:25:50	551.55	137.89	7.60	0:33:50	138.83	138.83	7.55
0:01:55	1,644.80	51.40	20.40	0:09:55	1,576.43	98.53	10.64	0:17:55	1,039.14	129.89	8.06	0:25:55	515.69	128.92	8.13	0:33:55	124.99	124.99	8.37
0:02:00	1,642.70	51.33	20.40	0:10:00	1,568.25	98.02	10.69	0:18:00	1,059.69	132.46	7.91	0:26:00	550.29	137.57	7.61	0:34:00	143.45	143.45	7.32
0:02:05	1,643.54	51.36	20.40	0:10:05	1,579.78	98.74	10.60	0:18:05	1,067.66	133.46	7.85	0:26:05	574.20	143.55	7.30	0:34:05	122.68	122.68	8.54
0:02:10	1,643.33	51.35	20.42	0:10:10	1,583.98	99.00	10.59	0:18:10	1,116.73	139.59	7.51	0:26:10	587.20	146.80	7.14	0:34:10	136.94	136.94	7.65
0:02:15	1,642.49	51.33	20.41	0:10:15	1,573.07	98.32	10.66	0:18:15	1,043.12	130.39	8.03	0:26:15	556.37	139.09	7.53	0:34:15	150.79	150.79	6.94
0:02:20	1,641.65	51.30	20.41	0:10:20	1,584.82	99.05	10.58	0:18:20	1,039.77	129.97	8.06	0:26:20	532.26	133.06	7.87	0:34:20	131.28	131.28	7.98
0:02:25	1,643.96	51.37	20.42	0:10:25	1,575.80	98.49	10.63	0:18:25	1,011.04	126.38	8.28	0:26:25	546.73	136.68	7.66	0:34:25	133.17	133.17	7.86
0:02:30	1,642.07	51.31	20.42	0:10:30	1,571.82	98.24	10.66	0:18:30	1,041.66	130.21	8.04	0:26:30	538.34	134.58	7.78	0:34:30	144.91	144.91	7.23
0:02:35	1,640.81	51.28	20.42	0:10:35	1,573.70	98.36	10.65	0:18:35	999.29	124.91	8.39	0:26:35	540.23	135.06	7.76	0:34:35	140.72	140.72	7.45
0:02:40	1,644.17	51.38	20.40	0:10:40	1,568.25	98.02	10.69	0:18:40	1,048.16	131.02	7.99	0:26:40	503.32	125.83	8.32	0:34:40	138.20	138.20	7.57
0:02:45	1,644.59	51.39	20.40	0:10:45	1,576.22	98.51	10.63	0:18:45	993.84	124.23	8.44	0:26:45	534.14	133.54	7.84	0:34:45	142.82	142.82	7.34
0:02:50	1,641.65	51.30	20.42	0:10:50	1,567.62	97.98	10.70	0:18:50	1,027.60	128.45	8.15	0:26:50	570.22	142.55	7.35	0:34:50	149.74	149.74	6.99
0:02:55	1,644.38	51.39	20.39	0:10:55	1,574.33	98.40	10.65	0:18:55	1,031.17	128.90	8.13	0:26:55	586.15	146.54	7.15	0:34:55	134.22	134.22	7.81
0:03:00	1,641.23	51.29	20.43	0:11:00	1,577.69	98.61	10.62	0:19:00	996.99	124.62	8.41	0:27:00	538.76	134.69	7.77	0:35:00	141.14	141.14	7.42
0:03:05	1,644.38	51.39	20.40	0:11:05	1,577.48	98.59	10.63	0:19:05	946.86	118.36	8.85	0:27:05	547.57	136.89	7.66	0:35:05	133.17	133.17	7.86
0:03:10	1,642.70	51.33	20.41	0:11:10	1,576.22	98.51	10.62	0:19:10	1,011.67	126.46	8.29	0:27:10	566.02	141.51	7.40	0:35:10	136.31	136.31	7.69
0:03:15	1,643.96	51.37	20.39	0:11:15	1,568.67	98.04	10.69	0:19:15	1,029.28	128.66	8.13	0:27:15	538.55	134.64	7.77	0:35:15	136.11	136.11	7.69
0:03:20	1,643.96	51.37	20.41	0:11:20	1,572.03	98.25	10.66	0:19:20	1,062.42	132.80	7.89	0:27:20	537.50	134.38	7.81	0:35:20	142.19	142.19	7.37
0:03:25	1,643.96	51.37	20.40	0:11:25	1,571.82	98.24	10.66	0:19:25	1,042.70	130.34	8.04	0:27:25	554.28	138.57	7.56	0:35:25	140.09	140.09	7.47
0:03:30	1,642.70	51.33	20.41	0:11:30	1,570.14	98.13	10.67	0:19:30	1,055.71	131.96	7.94	0:27:30	568.54	142.13	7.36	0:35:30	116.39	116.39	9.01
0:03:35	1,641.65	51.30	20.42	0:11:35	1,573.28	98.33	10.65	0:19:35	1,036.41	129.55	8.08	0:27:35	488.22	122.05	8.60	0:35:35	136.31	136.31	7.68
0:03:40	1,642.70	51.33	20.42	0:11:40	1,568.46	98.03	10.69	0:19:40	1,050.67	131.33	7.97	0:27:40	530.37	132.59	7.90	0:35:40	124.57	124.57	8.41
0:03:45	1,641.86	51.31	20.41	0:11:45	1,575.59	98.47	10.64	0:19:45	1,052.14	131.52	7.96	0:27:45	560.78	140.19	7.48	0:35:45	113.25	113.25	9.25
0:03:50	1,644.17	51.38	20.41	0:11:50	1,572.03	98.25	10.67	0:19:50	1,032.01	129.00	8.12	0:27:50	574.41	143.60	7.29	0:35:50	142.82	142.82	7.33
0:03:55	1,641.23	51.29	20.42	0:11:55	1,579.57	98.72	10.61	0:19:55	1,049.00	131.12	7.99	0:27:55	571.26	142.82	7.33	0:35:55	142.19	142.19	7.38
0:04:00	1,644.59	51.39	20.39	0:12:00	1,576.85	98.55	10.62	0:20:00	1,071.43	133.93	7.82	0:28:00	472.70	118.17	8.87	0:36:00	139.46	139.46	7.50

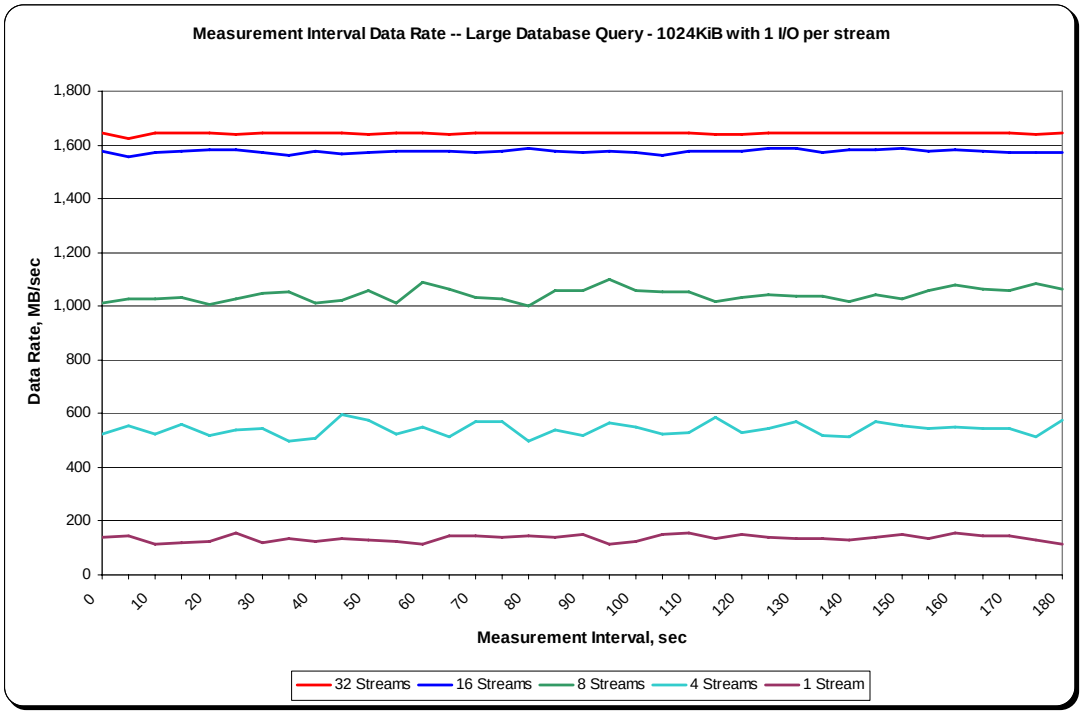
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR6	32 Streams			TR7	16 Streams			TR8	8 Streams			TR9	4 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
0:04:05	1,642.07	51.31	20.42	0:12:05	1,574.96	98.44	10.65	0:20:05	1,013.13	126.64	8.25	0:28:05	523.24	130.81	8.00	0:36:05	137.99	137.99	7.60
0:04:10	1,621.73	50.68	20.61	0:12:10	1,556.09	97.26	10.74	0:20:10	1,027.39	128.42	8.15	0:28:10	555.33	138.83	7.55	0:36:10	145.12	145.12	7.21
0:04:15	1,643.96	51.37	20.40	0:12:15	1,570.14	98.13	10.68	0:20:15	1,029.49	128.69	8.14	0:28:15	524.50	131.12	7.96	0:36:15	115.76	115.76	9.06
0:04:20	1,642.28	51.32	20.40	0:12:20	1,578.32	98.64	10.62	0:20:20	1,034.53	129.32	8.10	0:28:20	560.36	140.09	7.48	0:36:20	119.75	119.75	8.75
0:04:25	1,642.07	51.31	20.43	0:12:25	1,580.62	98.79	10.60	0:20:25	1,003.91	125.49	8.35	0:28:25	519.25	129.81	8.07	0:36:25	125.41	125.41	8.35
0:04:30	1,640.81	51.28	20.43	0:12:30	1,579.99	98.75	10.62	0:20:30	1,027.19	128.40	8.16	0:28:30	539.60	134.90	7.76	0:36:30	154.35	154.35	6.79
0:04:35	1,642.28	51.32	20.42	0:12:35	1,569.30	98.08	10.68	0:20:35	1,045.64	130.70	8.02	0:28:35	547.15	136.79	7.66	0:36:35	118.28	118.28	8.85
0:04:40	1,642.28	51.32	20.42	0:12:40	1,563.85	97.74	10.72	0:20:40	1,053.61	131.70	7.95	0:28:40	500.38	125.10	8.37	0:36:40	132.33	132.33	7.92
0:04:45	1,642.70	51.33	20.41	0:12:45	1,577.69	98.61	10.63	0:20:45	1,009.78	126.22	8.30	0:28:45	509.61	127.40	8.23	0:36:45	123.94	123.94	8.45
0:04:50	1,643.54	51.36	20.40	0:12:50	1,568.46	98.03	10.68	0:20:50	1,022.78	127.85	8.19	0:28:50	596.43	149.11	7.02	0:36:50	132.75	132.75	7.90
0:04:55	1,638.71	51.21	20.44	0:12:55	1,570.56	98.16	10.68	0:20:55	1,058.22	132.28	7.92	0:28:55	577.35	144.34	7.26	0:36:55	131.49	131.49	7.96
0:05:00	1,643.33	51.35	20.42	0:13:00	1,575.38	98.46	10.64	0:21:00	1,012.71	126.59	8.27	0:29:00	521.77	130.44	8.02	0:37:00	125.62	125.62	8.34
0:05:05	1,643.75	51.37	20.41	0:13:05	1,575.80	98.49	10.63	0:21:05	1,090.73	136.34	7.68	0:29:05	549.87	137.47	7.62	0:37:05	111.78	111.78	9.38
0:05:10	1,641.23	51.29	20.41	0:13:10	1,576.85	98.55	10.63	0:21:10	1,063.26	132.91	7.88	0:29:10	512.54	128.14	8.18	0:37:10	144.07	144.07	7.27
0:05:15	1,645.01	51.41	20.39	0:13:15	1,573.07	98.32	10.65	0:21:15	1,034.32	129.29	8.10	0:29:15	572.52	143.13	7.32	0:37:15	143.03	143.03	7.33
0:05:20	1,643.96	51.37	20.41	0:13:20	1,577.06	98.57	10.64	0:21:20	1,028.02	128.50	8.15	0:29:20	569.38	142.34	7.36	0:37:20	142.19	142.19	7.36
0:05:25	1,642.49	51.33	20.41	0:13:25	1,584.82	99.05	10.57	0:21:25	998.66	124.83	8.39	0:29:25	498.70	124.68	8.40	0:37:25	145.33	145.33	7.21
0:05:30	1,642.49	51.33	20.41	0:13:30	1,579.37	98.71	10.61	0:21:30	1,060.74	132.59	7.89	0:29:30	537.08	134.27	7.80	0:37:30	140.30	140.30	7.47
0:05:35	1,644.38	51.39	20.40	0:13:35	1,569.30	98.08	10.69	0:21:35	1,056.75	132.09	7.94	0:29:35	516.32	129.08	8.11	0:37:35	148.27	148.27	7.06
0:05:40	1,643.12	51.35	20.41	0:13:40	1,575.59	98.47	10.64	0:21:40	1,099.12	137.39	7.62	0:29:40	564.34	141.09	7.42	0:37:40	112.41	112.41	9.32
0:05:45	1,643.54	51.36	20.39	0:13:45	1,569.72	98.11	10.68	0:21:45	1,060.32	132.54	7.90	0:29:45	549.03	137.26	7.64	0:37:45	127.09	127.09	8.24
0:05:50	1,643.33	51.35	20.42	0:13:50	1,563.85	97.74	10.72	0:21:50	1,053.61	131.70	7.95	0:29:50	522.40	130.60	8.02	0:37:50	150.79	150.79	6.95
0:05:55	1,643.75	51.37	20.40	0:13:55	1,575.80	98.49	10.63	0:21:55	1,052.35	131.54	7.97	0:29:55	528.27	132.07	7.93	0:37:55	156.45	156.45	6.70
0:06:00	1,641.65	51.30	20.42	0:14:00	1,575.38	98.46	10.64	0:22:00	1,017.12	127.14	8.24	0:30:00	588.04	147.01	7.13	0:38:00	136.11	136.11	7.70
0:06:05	1,641.65	51.30	20.42	0:14:05	1,577.27	98.58	10.63	0:22:05	1,031.17	128.90	8.13	0:30:05	529.74	132.44	7.91	0:38:05	148.69	148.69	7.04
0:06:10	1,643.12	51.35	20.42	0:14:10	1,585.66	99.10	10.57	0:22:10	1,045.01	130.63	8.02	0:30:10	546.73	136.68	7.67	0:38:10	138.20	138.20	7.58
0:06:15	1,643.12	51.35	20.41	0:14:15	1,589.64	99.35	10.55	0:22:15	1,039.14	129.89	8.06	0:30:15	568.33	142.08	7.37	0:38:15	135.48	135.48	7.72
0:06:20	1,642.07	51.31	20.42	0:14:20	1,569.30	98.08	10.67	0:22:20	1,039.14	129.89	8.06	0:30:20	519.05	129.76	8.07	0:38:20	136.52	136.52	7.68
0:06:25	1,642.91	51.34	20.42	0:14:25	1,583.56	98.97	10.58	0:22:25	1,018.80	127.35	8.23	0:30:25	512.96	128.24	8.17	0:38:25	130.65	130.65	8.02
0:06:30	1,643.96	51.37	20.40	0:14:30	1,581.25	98.83	10.61	0:22:30	1,042.07	130.26	8.04	0:30:30	569.38	142.34	7.36	0:38:30	140.30	140.30	7.46
0:06:35	1,643.54	51.36	20.41	0:14:35	1,585.45	99.09	10.57	0:22:35	1,027.60	128.45	8.15	0:30:35	554.49	138.62	7.55	0:38:35	149.74	149.74	7.00
0:06:40	1,641.86	51.31	20.42	0:14:40	1,576.85	98.55	10.63	0:22:40	1,059.06	132.38	7.91	0:30:40	546.94	136.73	7.66	0:38:40	137.15	137.15	7.63
0:06:45	1,643.96	51.37	20.40	0:14:45	1,580.62	98.79	10.60	0:22:45	1,079.19	134.90	7.77	0:30:45	549.45	137.36	7.63	0:38:45	153.09	153.09	6.83
0:06:50	1,642.70	51.33	20.41	0:14:50	1,574.75	98.42	10.65	0:22:50	1,063.89	132.99	7.87	0:30:50	544.63	136.16	7.69	0:38:50	145.54	145.54	7.21
0:06:55	1,643.96	51.37	20.41	0:14:55	1,572.23	98.26	10.66	0:22:55	1,055.71	131.96	7.94	0:30:55	543.79	135.95	7.71	0:38:55	144.49	144.49	7.25
0:07:00	1,641.65	51.30	20.42	0:15:00	1,569.72	98.11	10.67	0:23:00	1,083.18	135.40	7.73	0:31:00	514.01	128.50	8.15	0:39:00	128.35	128.35	8.17
0:07:05	1,643.12	51.35	20.42	0:15:05	1,571.61	98.23	10.66	0:23:05	1,065.35	133.17	7.87	0:31:05	576.30	144.07	7.28	0:39:05	116.18	116.18	8.99
0:07:10	1,621.31	50.67	20.62	0:15:10	1,575.17	98.45	10.64	0:23:10	1,053.19	131.65	7.96	0:31:10	538.34	134.58	7.78	0:39:10	147.43	147.43	7.10
0:07:15	1,643.12	51.35	20.41	0:15:15	1,584.19	99.01	10.57	0:23:15	1,080.45	135.06	7.75	0:31:15	583.22	145.80	7.18	0:39:15	145.96	145.96	7.18
0:07:20	1,643.33	51.35	20.40	0:15:20	1,578.53	98.66	10.62	0:23:20	1,006.42	125.80	8.33	0:31:20	534.77	133.69	7.83	0:39:20	153.51	153.51	6.83
0:07:25	1,642.07	51.31	20.42	0:15:25	1,581.46	98.84	10.60	0:23:25	1,012.71	126.59	8.28	0:31:25	554.28	138.57	7.56	0:39:25	122.68	122.68	8.54
0:07:30	1,642.70	51.33	20.41	0:15:30	1,580.41	98.78	10.60	0:23:30	1,043.75	130.47	8.03	0:31:30	552.39	138.10	7.59	0:39:30	112.83	112.83	9.29
0:07:35	1,642.70	51.33	20.42	0:15:35	1,573.49	98.34	10.65	0:23:35	1,068.08	133.51	7.84	0:31:35	542.74	135.69	7.72	0:39:35	113.04	113.04	9.26
0:07:40	1,643.12	51.35	20.41	0:15:40	1,577.27	98.58	10.63	0:23:40	1,073.74	134.22	7.80	0:31:40	544.21	136.05	7.69	0:39:40	149.74	149.74	7.00
0:07:45	1,643.54	51.36	20.41	0:15:45	1,579.99	98.75	10.60	0:23:45	1,079.82	134.98	7.76	0:31:45	523.87	130.97	8.00	0:39:45	124.15	124.15	8.44
0:07:50	36.70	0.00	18.16	0:15:50	18.87	0.00	10.48	0:23:50	9.44	0.00	7.90	0:31:50	4.19	0.00	7.87	0:39:50	0.42	0.00	10.31
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00

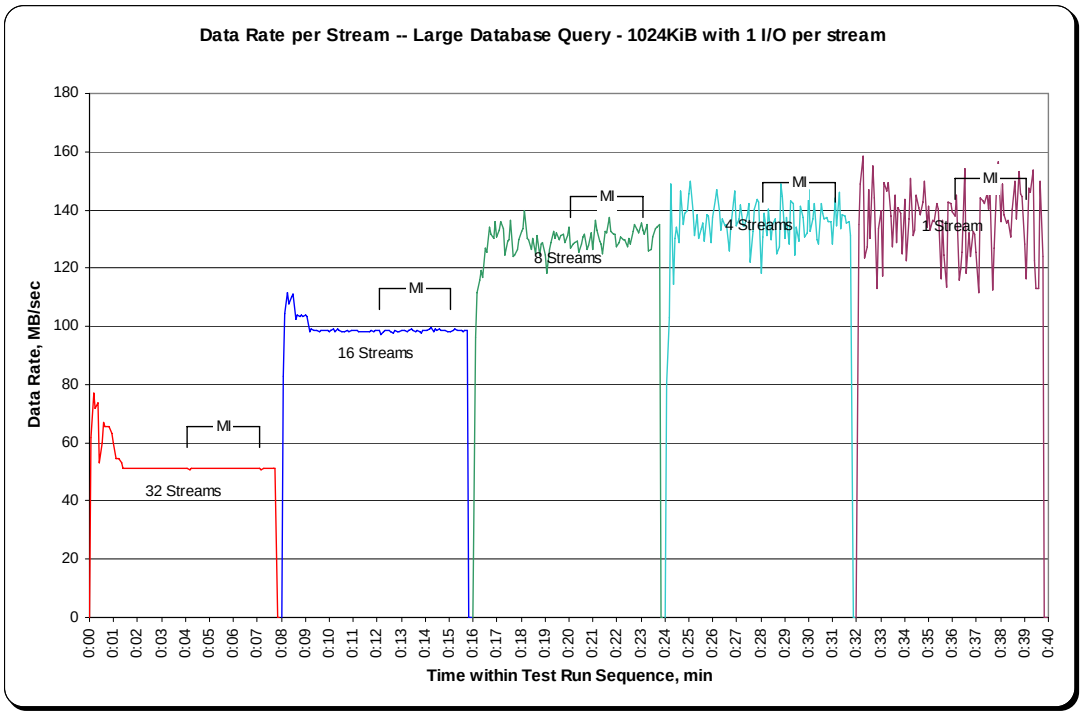
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



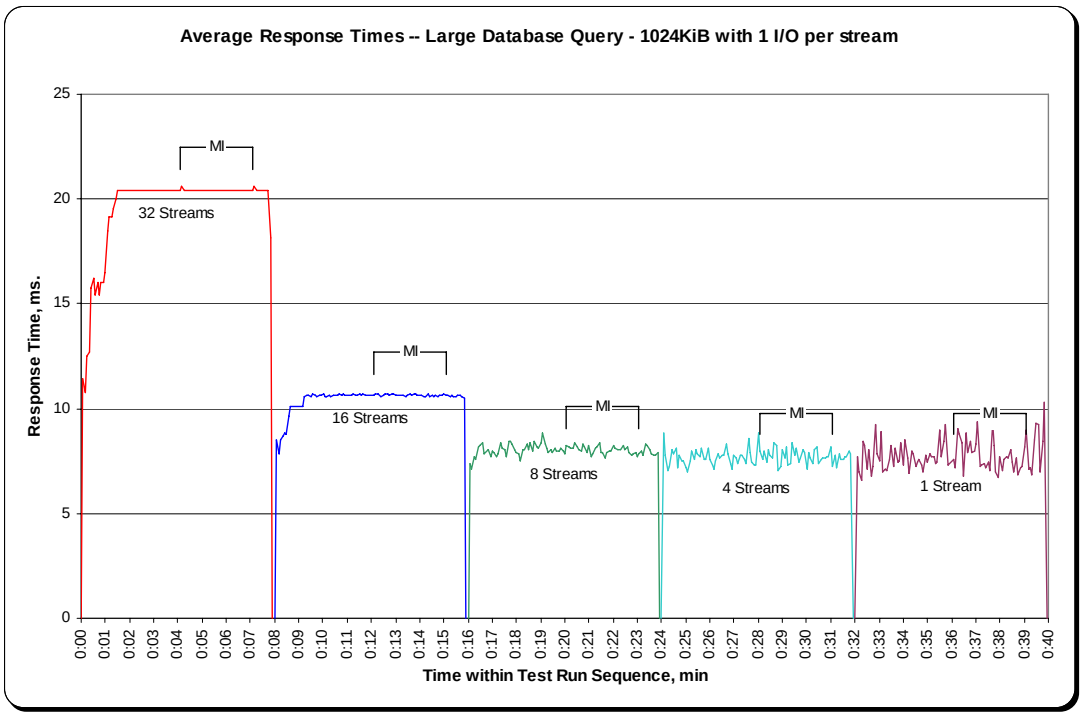
SPC-2 "Large Database Query/1024 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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



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



Large Database Query Test – 64 KIB TRANSFER SIZE Test Phase

Clause 10.6.8.2.1

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

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

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

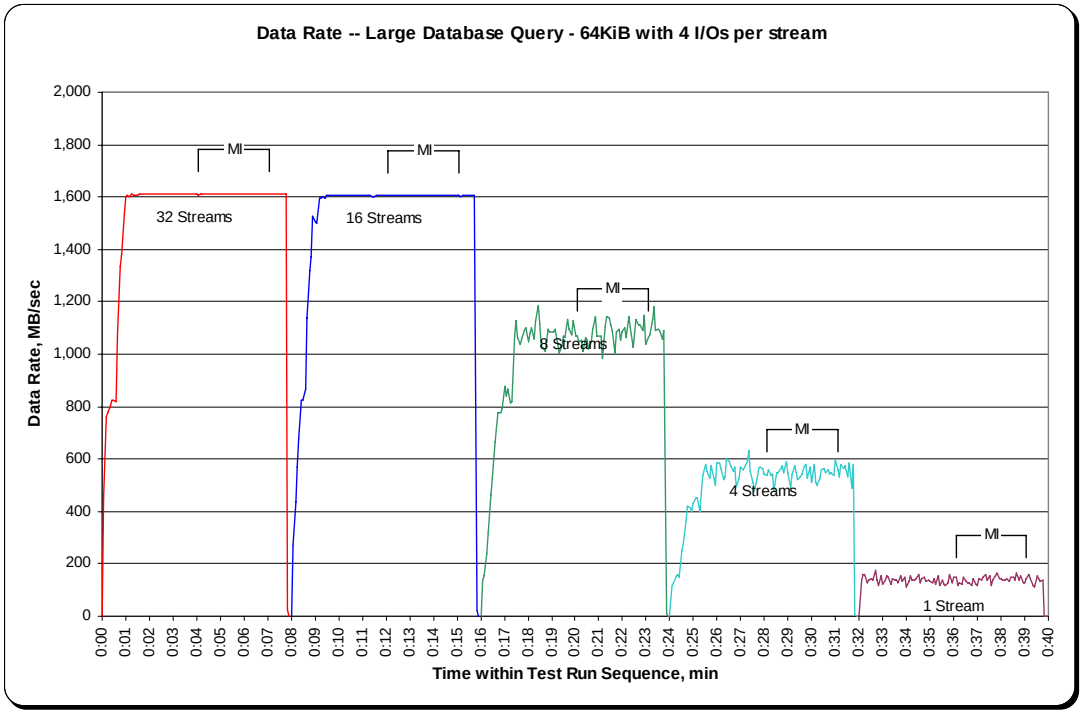
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data – Ramp-Up Period

TR11	32 Streams			TR12	16 Streams			TR13	8 Streams			TR14	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	454.34	75.72	1.99	0:08:05	272.92	90.97	2.08	0:16:05	140.47	140.47	1.83	0:24:05	114.41	114.41	2.26	0:32:05	139.14	139.14	1.85
0:00:10	760.65	126.77	2.04	0:08:10	433.59	144.53	1.79	0:16:10	154.04	154.04	1.67	0:24:10	126.79	126.79	2.03	0:32:10	158.59	158.59	1.62
0:00:15	775.32	96.91	2.38	0:08:15	567.99	113.60	2.03	0:16:15	238.96	119.48	1.83	0:24:15	155.24	155.24	1.66	0:32:15	160.08	160.08	1.61
0:00:20	801.34	100.17	2.60	0:08:20	677.29	112.88	1.93	0:16:20	318.93	106.31	1.66	0:24:20	156.92	156.92	1.64	0:32:20	125.49	125.49	2.06
0:00:25	822.92	74.81	2.98	0:08:25	824.29	117.76	1.99	0:16:25	462.95	115.74	1.84	0:24:25	149.31	74.65	2.27	0:32:25	138.47	138.47	1.87
0:00:30	824.85	58.92	3.99	0:08:30	822.90	117.56	2.21	0:16:30	530.64	106.13	1.95	0:24:30	252.60	126.30	2.04	0:32:30	146.02	146.02	1.77
0:00:35	821.65	51.35	4.72	0:08:35	865.87	96.21	2.46	0:16:35	663.44	132.69	1.95	0:24:35	278.55	139.28	1.85	0:32:35	138.60	138.60	1.86
0:00:40	1,081.42	54.07	4.28	0:08:40	1,138.04	94.84	2.38	0:16:40	724.44	120.74	1.93	0:24:40	366.27	122.09	1.69	0:32:40	173.12	173.12	1.49
0:00:45	1,334.27	66.71	3.91	0:08:45	1,320.31	110.03	2.36	0:16:45	776.73	129.46	2.00	0:24:45	420.00	140.00	1.85	0:32:45	138.37	138.37	1.87
0:00:50	1,384.80	65.94	3.78	0:08:50	1,374.56	105.74	2.31	0:16:50	777.57	129.60	2.00	0:24:50	416.59	138.86	1.86	0:32:50	115.20	115.20	2.25
0:00:55	1,538.39	66.89	3.71	0:08:55	1,528.51	117.58	2.20	0:16:55	793.86	132.31	1.96	0:24:55	398.58	132.86	1.95	0:32:55	154.36	154.36	1.67
0:01:00	1,600.14	69.57	3.74	0:09:00	1,507.44	115.96	2.24	0:17:00	875.69	145.95	1.77	0:25:00	431.81	143.94	1.80	0:33:00	123.96	123.96	2.09
0:01:05	1,605.29	69.80	3.74	0:09:05	1,501.54	107.25	2.27	0:17:05	841.02	140.17	1.85	0:25:05	449.63	149.88	1.72	0:33:05	138.32	138.32	1.87
0:01:10	1,603.39	64.14	3.94	0:09:10	1,597.80	114.13	2.28	0:17:10	865.58	144.26	1.79	0:25:10	452.12	150.71	1.71	0:33:10	151.99	151.99	1.70
0:01:15	1,611.16	64.45	4.05	0:09:15	1,598.26	114.16	2.28	0:17:15	813.80	135.63	1.91	0:25:15	401.55	133.85	1.93	0:33:15	150.00	150.00	1.72
0:01:20	1,607.45	57.41	4.27	0:09:20	1,599.13	106.61	2.35	0:17:20	820.66	117.24	2.04	0:25:20	473.11	118.28	1.90	0:33:20	122.10	122.10	2.12
0:01:25	1,607.15	50.22	4.89	0:09:25	1,598.04	99.88	2.54	0:17:25	1,066.84	133.36	1.85	0:25:25	536.30	134.08	1.92	0:33:25	141.97	141.97	1.82
0:01:30	1,604.26	50.13	5.19	0:09:30	1,605.41	100.34	2.59	0:17:30	1,125.90	140.74	1.84	0:25:30	577.47	144.37	1.79	0:33:30	138.11	138.11	1.87
0:01:35	1,613.33	50.42	5.18	0:09:35	1,604.34	100.27	2.60	0:17:35	1,063.15	132.89	1.95	0:25:35	555.16	138.79	1.86	0:33:35	140.21	140.21	1.84
0:01:40	1,612.37	50.39	5.18	0:09:40	1,604.59	100.29	2.60	0:17:40	1,038.92	129.86	1.99	0:25:40	527.23	131.81	1.96	0:33:40	127.11	127.11	2.03
0:01:45	1,612.93	50.40	5.18	0:09:45	1,605.95	100.37	2.59	0:17:45	1,057.58	132.20	1.96	0:25:45	574.18	143.54	1.80	0:33:45	155.56	155.56	1.66
0:01:50	1,611.95	50.37	5.19	0:09:50	1,606.44	100.40	2.59	0:17:50	1,090.51	136.31	1.90	0:25:50	529.03	132.26	1.96	0:33:50	131.07	131.07	1.97
0:01:55	1,612.27	50.38	5.18	0:09:55	1,605.85	100.37	2.59	0:17:55	1,100.91	137.61	1.88	0:25:55	499.48	124.87	2.07	0:33:55	148.94	148.94	1.73
0:02:00	1,612.51	50.39	5.18	0:10:00	1,606.54	100.41	2.59	0:18:00	1,050.16	131.27	1.97	0:26:00	584.10	146.02	1.77	0:34:00	111.14	111.14	2.33
0:02:05	1,612.73	50.40	5.19	0:10:05	1,605.43	100.34	2.58	0:18:05	1,082.39	135.30	1.91	0:26:05	586.63	146.66	1.76	0:34:05	133.39	133.39	1.94
0:02:10	1,611.82	50.37	5.19	0:10:10	1,604.53	100.28	2.60	0:18:10	1,098.95	137.37	1.88	0:26:10	565.85	141.46	1.83	0:34:10	152.27	152.27	1.69
0:02:15	1,611.13	50.35	5.19	0:10:15	1,606.32	100.40	2.59	0:18:15	1,060.82	132.60	1.95	0:26:15	522.84	130.71	1.98	0:34:15	135.78	135.78	1.90
0:02:20	1,611.93	50.37	5.19	0:10:20	1,606.90	100.43	2.60	0:18:20	1,125.04	140.63	1.84	0:26:20	533.26	133.32	1.94	0:34:20	140.76	140.76	1.83
0:02:25	1,613.72	50.43	5.18	0:10:25	1,605.45	100.34	2.59	0:18:25	1,187.41	148.43	1.74	0:26:25	599.91	149.98	1.72	0:34:25	142.41	142.41	1.81
0:02:30	1,612.37	50.39	5.18	0:10:30	1,605.77	100.36	2.60	0:18:30	1,119.50	139.94	1.85	0:26:30	592.45	148.11	1.74	0:34:30	160.75	160.75	1.60
0:02:35	1,611.05	50.35	5.19	0:10:35	1,605.64	100.35	2.59	0:18:35	1,032.31	129.04	2.01	0:26:35	572.20	143.05	1.81	0:34:35	130.32	130.32	1.98
0:02:40	1,612.58	50.39	5.19	0:10:40	1,606.02	100.38	2.59	0:18:40	1,022.95	127.87	2.02	0:26:40	555.81	138.95	1.86	0:34:40	142.70	142.70	1.81
0:02:45	1,612.71	50.40	5.18	0:10:45	1,604.28	100.27	2.60	0:18:45	1,008.09	126.01	2.06	0:26:45	569.94	142.49	1.81	0:34:45	150.79	150.79	1.71
0:02:50	1,612.12	50.38	5.19	0:10:50	1,606.73	100.42	2.59	0:18:50	1,096.83	137.10	1.89	0:26:50	496.63	124.16	2.08	0:34:50	131.47	131.47	1.96
0:02:55	1,612.81	50.40	5.18	0:10:55	1,604.63	100.29	2.60	0:18:55	1,085.53	135.69	1.91	0:26:55	526.71	131.68	1.96	0:34:55	138.33	138.33	1.87
0:03:00	1,613.44	50.42	5.18	0:11:00	1,604.78	100.30	2.60	0:19:00	1,085.33	135.67	1.91	0:27:00	566.77	141.69	1.81	0:35:00	135.17	135.17	1.91
0:03:05	1,612.30	50.38	5.19	0:11:05	1,607.31	100.46	2.59	0:19:05	1,087.54	135.94	1.90	0:27:05	557.43	139.36	1.86	0:35:05	127.14	127.14	2.03
0:03:10	1,611.78	50.37	5.19	0:11:10	1,608.56	100.53	2.59	0:19:10	1,095.47	136.93	1.89	0:27:10	566.49	141.62	1.82	0:35:10	144.07	144.07	1.79
0:03:15	1,612.23	50.38	5.18	0:11:15	1,605.71	100.36	2.60	0:19:15	1,035.22	129.40	2.00	0:27:15	589.36	147.34	1.75	0:35:15	124.79	124.79	2.07
0:03:20	1,612.00	50.37	5.19	0:11:20	1,606.10	100.38	2.59	0:19:20	1,006.19	125.77	2.06	0:27:20	632.21	158.05	1.63	0:35:20	152.77	152.77	1.69
0:03:25	1,613.05	50.41	5.18	0:11:25	1,603.37	100.21	2.60	0:19:25	1,031.71	128.96	2.01	0:27:25	552.52	138.13	1.87	0:35:25	115.92	115.92	2.23
0:03:30	1,612.31	50.38	5.19	0:11:30	1,602.62	100.16	2.60	0:19:30	1,070.06	133.76	1.94	0:27:30	511.02	127.76	2.03	0:35:30	138.71	138.71	1.86
0:03:35	1,612.77	50.40	5.18	0:11:35	1,606.50	100.41	2.59	0:19:35	1,063.30	132.91	1.95	0:27:35	476.25	119.06	2.18	0:35:35	121.17	121.17	2.14
0:03:40	1,612.27	50.38	5.19	0:11:40	1,606.10	100.38	2.59	0:19:40	1,134.12	141.76	1.82	0:27:40	528.08	132.02	1.96	0:35:40	119.32	119.32	2.17
0:03:45	1,613.11	50.41	5.18	0:11:45	1,604.26	100.27	2.60	0:19:45	1,095.54	136.94	1.89	0:27:45	565.14	141.29	1.83	0:35:45	125.19	125.19	2.06
0:03:50	1,612.61	50.39	5.18	0:11:50	1,604.33	100.27	2.60	0:19:50	1,075.78	134.47	1.92	0:27:50	570.30	142.57	1.81	0:35:50	159.49	159.49	1.62
0:03:55	1,612.45	50.39	5.18	0:11:55	1,605.78	100.36	2.59	0:19:55	1,127.12	140.89	1.84	0:27:55	562.18	140.55	1.84	0:35:55	129.14	129.14	2.00
0:04:00	1,611.28	50.35	5.19	0:12:00	1,605.96	100.37	2.59	0:20:00	1,071.38	133.92	1.93	0:28:00	544.97	136.24	1.90	0:36:00	146.76	146.76	1.76

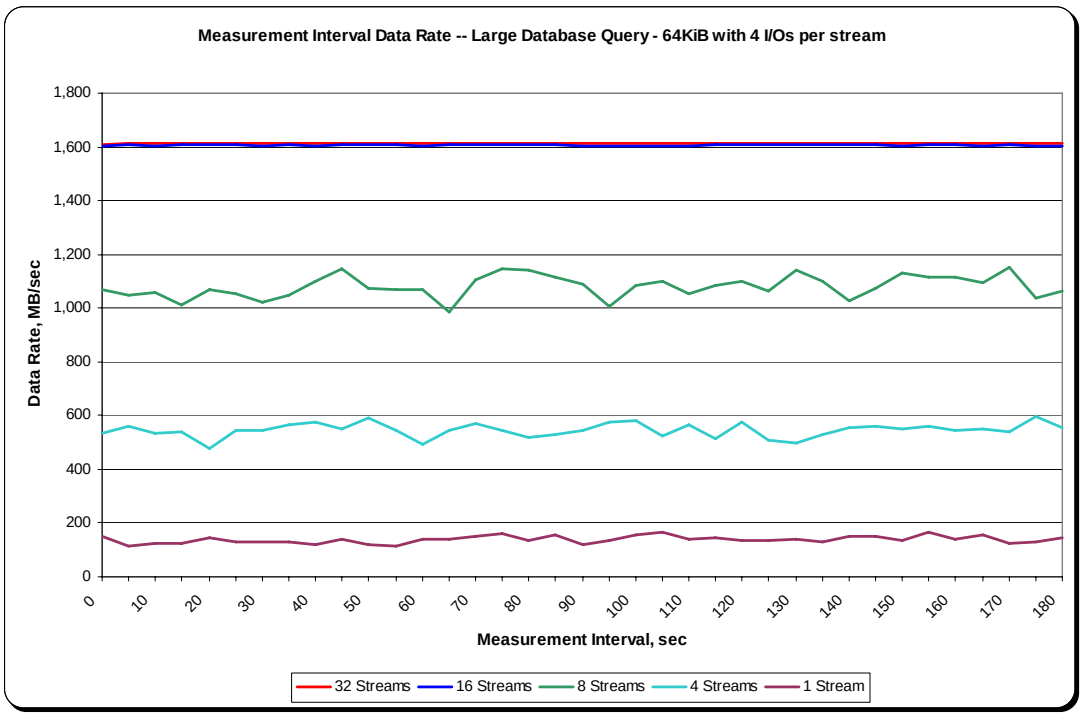
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Periods

TR11	32 Streams			TR12	16 Streams			TR13	8 Streams			TR14	4 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
0:04:05	1,607.49	50.23	5.19	0:12:05	1,605.35	100.33	2.60	0:20:05	1,070.66	133.83	1.93	0:28:05	536.47	134.12	1.93	0:36:05	150.80	150.80	1.71
0:04:10	1,611.40	50.36	5.19	0:12:10	1,606.52	100.41	2.59	0:20:10	1,045.79	130.72	1.97	0:28:10	558.39	139.60	1.85	0:36:10	115.32	115.32	2.25
0:04:15	1,613.33	50.42	5.18	0:12:15	1,605.15	100.32	2.60	0:20:15	1,055.77	131.97	1.96	0:28:15	535.67	133.92	1.93	0:36:15	125.20	125.20	2.06
0:04:20	1,611.65	50.36	5.19	0:12:20	1,605.84	100.37	2.59	0:20:20	1,011.12	126.39	2.05	0:28:20	540.31	135.08	1.91	0:36:20	123.11	123.11	2.10
0:04:25	1,611.71	50.37	5.19	0:12:25	1,605.64	100.35	2.60	0:20:25	1,066.08	133.26	1.94	0:28:25	478.02	119.51	2.17	0:36:25	147.14	147.14	1.76
0:04:30	1,612.25	50.38	5.18	0:12:30	1,606.09	100.38	2.59	0:20:30	1,052.35	131.54	1.97	0:28:30	546.22	136.56	1.89	0:36:30	132.18	132.18	1.96
0:04:35	1,612.52	50.39	5.18	0:12:35	1,605.45	100.34	2.59	0:20:35	1,023.74	127.97	2.02	0:28:35	545.25	136.31	1.90	0:36:35	128.16	128.16	2.02
0:04:40	1,612.97	50.41	5.18	0:12:40	1,605.67	100.35	2.60	0:20:40	1,050.38	131.30	1.97	0:28:40	563.00	140.75	1.84	0:36:40	129.83	129.83	1.99
0:04:45	1,612.67	50.40	5.18	0:12:45	1,604.58	100.29	2.60	0:20:45	1,098.23	137.28	1.88	0:28:45	576.11	144.03	1.79	0:36:45	118.70	118.70	2.18
0:04:50	1,612.88	50.40	5.18	0:12:50	1,605.83	100.36	2.59	0:20:50	1,145.58	143.20	1.81	0:28:50	549.96	137.49	1.88	0:36:50	141.75	141.75	1.82
0:04:55	1,612.20	50.38	5.18	0:12:55	1,606.37	100.40	2.59	0:20:55	1,071.41	133.93	1.93	0:28:55	590.91	147.73	1.75	0:36:55	120.05	120.05	2.15
0:05:00	1,612.63	50.39	5.18	0:13:00	1,605.95	100.37	2.60	0:21:00	1,066.70	133.34	1.94	0:29:00	546.99	136.75	1.89	0:37:00	114.40	114.40	2.26
0:05:05	1,612.38	50.39	5.18	0:13:05	1,605.06	100.32	2.59	0:21:05	1,068.80	133.60	1.94	0:29:05	491.53	122.88	2.11	0:37:05	141.61	141.61	1.82
0:05:10	1,612.23	50.38	5.18	0:13:10	1,607.78	100.49	2.59	0:21:10	983.03	122.88	2.11	0:29:10	542.65	135.66	1.91	0:37:10	138.46	138.46	1.87
0:05:15	1,612.56	50.39	5.19	0:13:15	1,606.38	100.40	2.59	0:21:15	1,106.18	138.27	1.87	0:29:15	572.05	143.01	1.81	0:37:15	149.83	149.83	1.72
0:05:20	1,611.87	50.37	5.19	0:13:20	1,606.01	100.38	2.59	0:21:20	1,146.26	143.28	1.80	0:29:20	546.53	136.63	1.89	0:37:20	160.75	160.75	1.60
0:05:25	1,612.21	50.38	5.18	0:13:25	1,605.81	100.36	2.60	0:21:25	1,138.67	142.33	1.82	0:29:25	518.98	129.75	1.99	0:37:25	137.03	137.03	1.89
0:05:30	1,612.63	50.39	5.18	0:13:30	1,605.54	100.35	2.59	0:21:30	1,113.43	139.18	1.86	0:29:30	529.80	132.45	1.95	0:37:30	154.51	154.51	1.67
0:05:35	1,611.64	50.36	5.19	0:13:35	1,605.36	100.33	2.60	0:21:35	1,090.35	136.29	1.90	0:29:35	543.25	135.81	1.90	0:37:35	117.17	117.17	2.21
0:05:40	1,611.49	50.36	5.19	0:13:40	1,605.41	100.34	2.59	0:21:40	1,005.43	125.68	2.06	0:29:40	575.45	143.86	1.80	0:37:40	136.06	136.06	1.90
0:05:45	1,612.33	50.39	5.18	0:13:45	1,605.36	100.33	2.59	0:21:45	1,085.79	135.72	1.91	0:29:45	580.41	145.10	1.78	0:37:45	155.20	155.20	1.66
0:05:50	1,612.56	50.39	5.18	0:13:50	1,604.89	100.31	2.60	0:21:50	1,097.31	137.16	1.89	0:29:50	523.95	130.99	1.97	0:37:50	166.71	166.71	1.54
0:05:55	1,612.23	50.38	5.19	0:13:55	1,604.69	100.29	2.60	0:21:55	1,052.78	131.60	1.97	0:29:55	567.79	141.95	1.82	0:37:55	142.39	142.39	1.81
0:06:00	1,612.58	50.39	5.18	0:14:00	1,606.59	100.41	2.59	0:22:00	1,085.28	135.66	1.91	0:30:00	511.91	127.98	2.02	0:38:00	144.13	144.13	1.79
0:06:05	1,612.67	50.40	5.18	0:14:05	1,606.23	100.39	2.59	0:22:05	1,100.18	137.52	1.88	0:30:05	578.07	144.52	1.79	0:38:05	136.73	136.73	1.89
0:06:10	1,611.95	50.37	5.19	0:14:10	1,606.20	100.39	2.59	0:22:10	1,064.25	133.03	1.95	0:30:10	508.16	127.04	2.04	0:38:10	137.10	137.10	1.88
0:06:15	1,613.14	50.41	5.18	0:14:15	1,605.98	100.37	2.59	0:22:15	1,141.78	142.72	1.81	0:30:15	497.39	124.35	2.08	0:38:15	142.39	142.39	1.81
0:06:20	1,613.72	50.43	5.18	0:14:20	1,605.96	100.37	2.59	0:22:20	1,100.01	137.50	1.88	0:30:20	529.24	132.31	1.96	0:38:20	131.50	131.50	1.97
0:06:25	1,612.13	50.38	5.19	0:14:25	1,606.11	100.38	2.59	0:22:25	1,027.29	128.41	2.02	0:30:25	557.12	139.28	1.86	0:38:25	150.83	150.83	1.71
0:06:30	1,612.55	50.39	5.18	0:14:30	1,605.75	100.36	2.59	0:22:30	1,074.18	134.27	1.93	0:30:30	562.12	140.53	1.84	0:38:30	149.88	149.88	1.72
0:06:35	1,612.28	50.38	5.18	0:14:35	1,605.14	100.32	2.60	0:22:35	1,131.90	141.49	1.82	0:30:35	547.98	136.99	1.89	0:38:35	136.47	136.47	1.89
0:06:40	1,612.86	50.40	5.18	0:14:40	1,605.87	100.37	2.59	0:22:40	1,113.54	139.19	1.87	0:30:40	558.41	139.60	1.85	0:38:40	165.26	165.26	1.56
0:06:45	1,613.09	50.41	5.18	0:14:45	1,605.68	100.36	2.59	0:22:45	1,112.98	139.12	1.86	0:30:45	543.62	135.91	1.90	0:38:45	139.03	139.03	1.86
0:06:50	1,612.49	50.39	5.18	0:14:50	1,605.46	100.34	2.60	0:22:50	1,092.22	136.53	1.89	0:30:50	549.10	137.27	1.88	0:38:50	153.08	153.08	1.69
0:06:55	1,612.61	50.39	5.18	0:14:55	1,605.69	100.36	2.59	0:22:55	1,150.75	143.84	1.80	0:30:55	539.80	134.95	1.92	0:38:55	125.26	125.26	2.06
0:07:00	1,613.03	50.41	5.18	0:15:00	1,605.08	100.32	2.60	0:23:00	1,039.66	129.96	1.99	0:31:00	596.23	149.06	1.73	0:39:00	130.18	130.18	1.99
0:07:05	1,613.21	50.41	5.18	0:15:05	1,604.99	100.31	2.60	0:23:05	1,061.48	132.69	1.95	0:31:05	557.61	139.40	1.85	0:39:05	143.24	143.24	1.81
0:07:10	1,613.51	50.42	5.18	0:15:10	1,599.88	99.99	2.60	0:23:10	1,073.62	134.20	1.93	0:31:10	530.81	132.70	1.94	0:39:10	159.96	159.96	1.60
0:07:15	1,612.14	50.38	5.19	0:15:15	1,605.68	100.36	2.59	0:23:15	1,132.35	141.54	1.83	0:31:15	581.18	145.30	1.78	0:39:15	142.31	142.31	1.81
0:07:20	1,612.90	50.40	5.18	0:15:20	1,606.69	100.42	2.59	0:23:20	1,180.26	147.53	1.75	0:31:20	561.68	140.42	1.84	0:39:20	119.55	119.55	2.16
0:07:25	1,610.87	50.34	5.19	0:15:25	1,604.78	100.30	2.60	0:23:25	1,092.62	136.58	1.89	0:31:25	575.14	143.79	1.80	0:39:25	109.63	109.63	2.36
0:07:30	1,612.67	50.40	5.18	0:15:30	1,605.67	100.35	2.59	0:23:30	1,095.05	136.88	1.89	0:31:30	532.66	133.16	1.94	0:39:30	152.21	152.21	1.69
0:07:35	1,611.65	50.36	5.19	0:15:35	1,605.57	100.35	2.60	0:23:35	1,088.05	136.01	1.90	0:31:35	583.16	145.79	1.77	0:39:35	141.68	141.68	1.82
0:07:40	1,613.35	50.42	5.18	0:15:40	1,605.15	100.32	2.60	0:23:40	1,056.95	132.12	1.96	0:31:40	491.74	122.94	2.11	0:39:40	131.13	131.13	1.97
0:07:45	1,613.14	50.41	5.18	0:15:45	1,605.71	100.36	2.59	0:23:45	1,089.10	136.14	1.90	0:31:45	577.95	144.49	1.79	0:39:45	136.72	136.72	1.89
0:07:50	27.66	0.00	4.53	0:15:50	22.18	0.00	2.30	0:23:50	8.18	0.00	1.88	0:31:50	3.96	0.00	1.83	0:39:50	0.47	0.00	2.00
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00

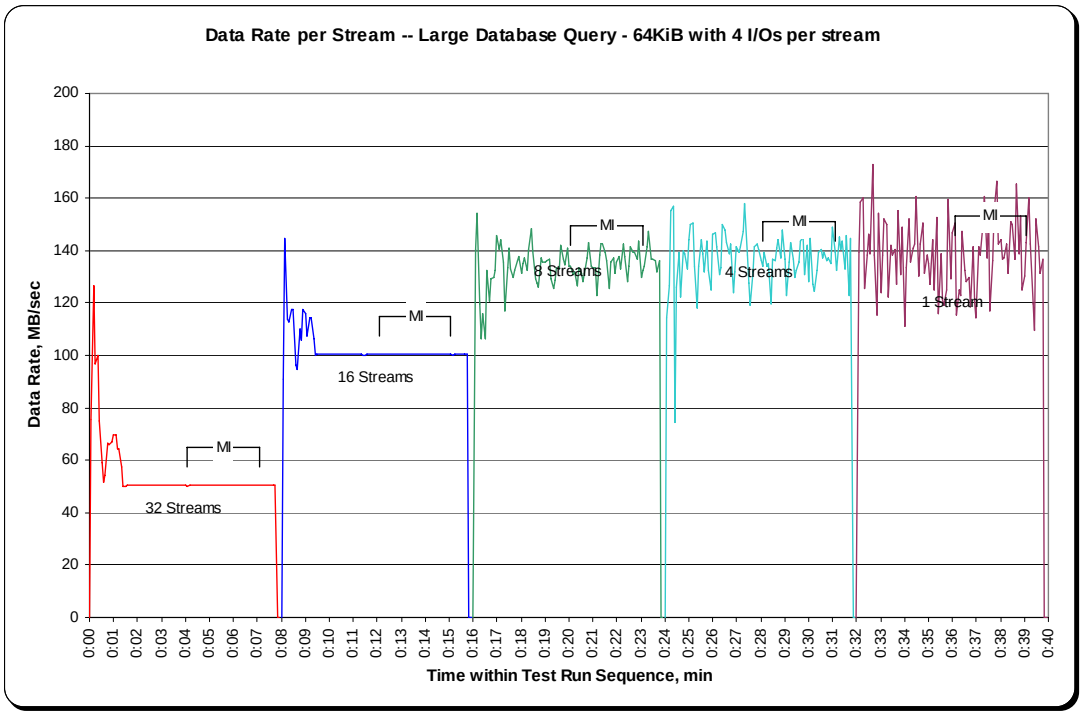
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Complete Test Run



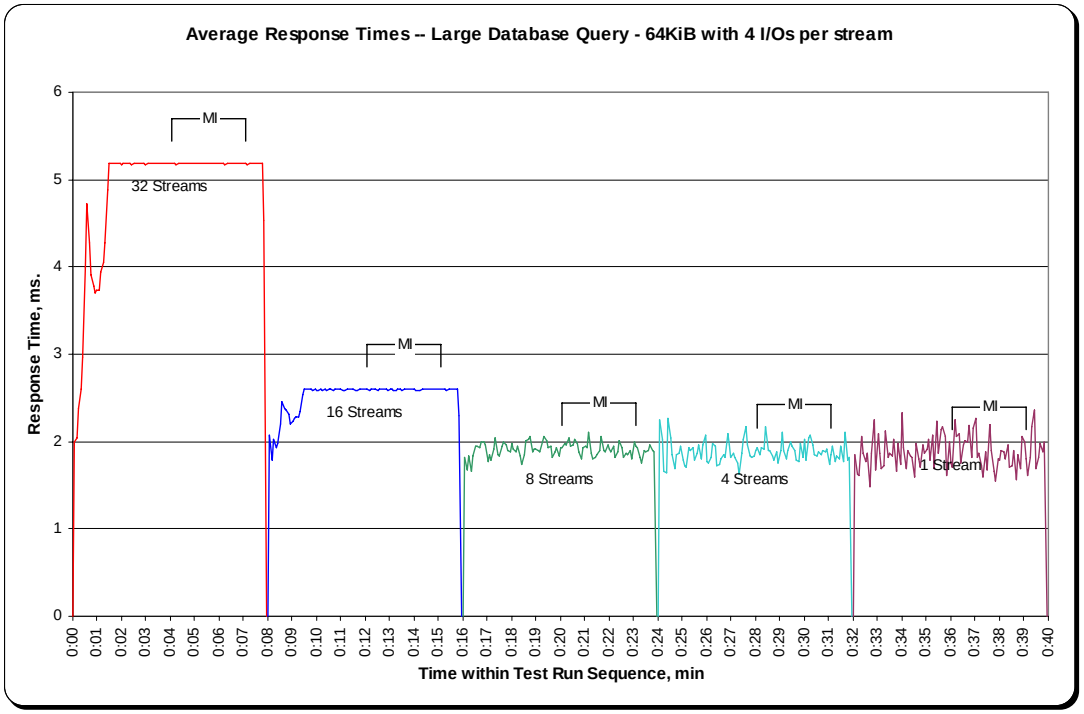
SPC-2 "Large Database Query/64 KiB Transfer Size/4 Outstanding I/Os" Average Data Rate Graph – Measurement Interval (MI) Only



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



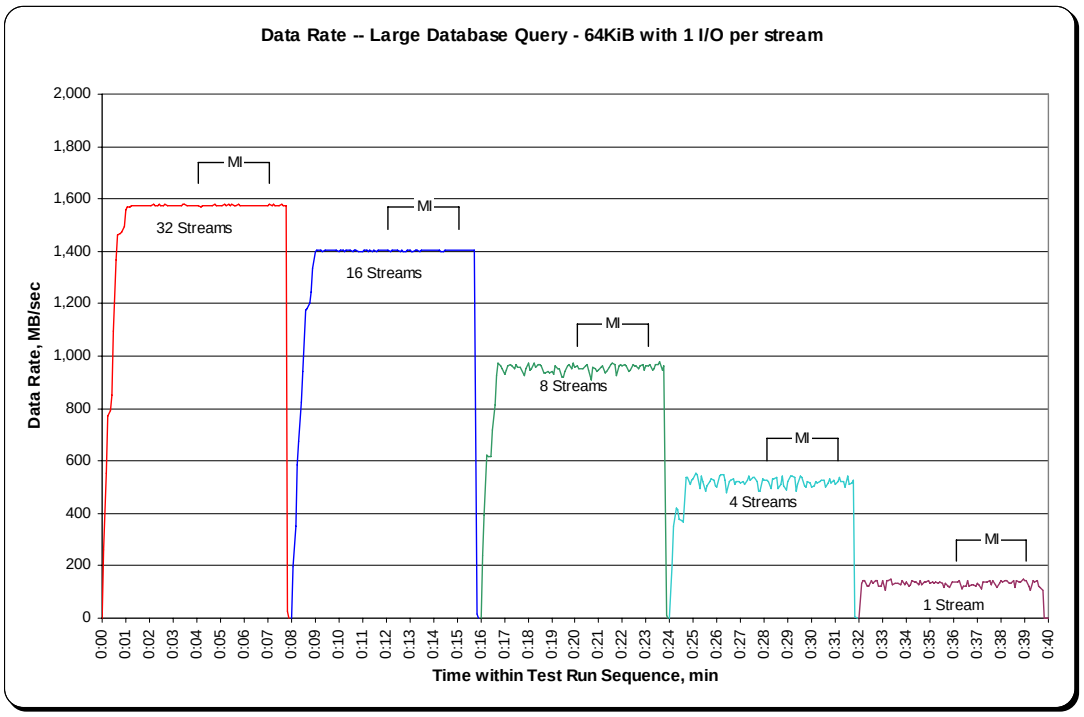
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data – Ramp-Up Period

TR16	32 Streams			TR17	16 Streams			TR18	8 Streams			TR19	4 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	0:08:00	0.00	0.00	0.00	0:16:00	0.00	0.00	0.00	0:24:00	0.00	0.00	0.00	0:32:00	0.00	0.00	0.00
0:00:05	258.05	51.61	0.52	0:08:05	199.43	99.71	0.53	0:16:05	240.95	120.48	0.48	0:24:05	202.27	101.14	0.57	0:32:05	135.35	135.35	0.48
0:00:10	554.85	69.36	0.66	0:08:10	350.85	87.71	0.53	0:16:10	392.34	78.47	0.51	0:24:10	349.68	116.56	0.50	0:32:10	143.25	143.25	0.45
0:00:15	771.75	59.37	0.90	0:08:15	584.18	83.45	0.61	0:16:15	621.39	124.28	0.52	0:24:15	417.73	139.24	0.46	0:32:15	145.97	145.97	0.44
0:00:20	793.92	49.62	1.26	0:08:20	676.33	96.62	0.67	0:16:20	615.85	123.17	0.53	0:24:20	413.19	137.73	0.47	0:32:20	124.90	124.90	0.52
0:00:25	852.74	47.37	1.26	0:08:25	826.48	91.83	0.68	0:16:25	617.05	102.84	0.53	0:24:25	377.33	125.78	0.51	0:32:25	122.27	122.27	0.53
0:00:30	1,098.29	54.91	1.10	0:08:30	941.93	85.63	0.69	0:16:30	717.27	119.54	0.54	0:24:30	372.87	124.29	0.52	0:32:30	142.33	142.33	0.45
0:00:35	1,367.83	56.99	1.05	0:08:35	1,174.43	97.87	0.66	0:16:35	813.13	116.16	0.54	0:24:35	365.10	121.70	0.53	0:32:35	133.46	133.46	0.48
0:00:40	1,463.64	60.99	1.07	0:08:40	1,183.09	98.59	0.66	0:16:40	926.27	115.78	0.56	0:24:40	536.87	134.22	0.48	0:32:40	141.51	141.51	0.46
0:00:45	1,465.91	61.08	1.06	0:08:45	1,200.21	92.32	0.65	0:16:45	970.83	121.35	0.53	0:24:45	537.31	134.33	0.48	0:32:45	145.40	145.40	0.44
0:00:50	1,472.62	58.90	1.08	0:08:50	1,246.69	95.90	0.68	0:16:50	962.27	120.28	0.54	0:24:50	511.66	127.92	0.51	0:32:50	121.47	121.47	0.53
0:00:55	1,495.77	53.42	1.11	0:08:55	1,336.16	89.08	0.70	0:16:55	951.67	118.96	0.54	0:24:55	526.93	131.73	0.49	0:32:55	124.78	124.78	0.52
0:01:00	1,557.14	53.69	1.18	0:09:00	1,397.97	87.37	0.74	0:17:00	931.89	116.49	0.56	0:25:00	533.37	133.34	0.49	0:33:00	144.77	144.77	0.45
0:01:05	1,568.63	54.09	1.20	0:09:05	1,401.79	87.61	0.74	0:17:05	947.12	118.39	0.55	0:25:05	552.58	138.14	0.47	0:33:05	108.16	108.16	0.60
0:01:10	1,569.73	54.13	1.20	0:09:10	1,402.36	87.65	0.74	0:17:10	963.14	120.39	0.54	0:25:10	545.85	136.46	0.47	0:33:10	141.82	141.82	0.46
0:01:15	1,573.27	52.44	1.24	0:09:15	1,403.47	87.72	0.74	0:17:15	969.05	121.13	0.53	0:25:15	494.05	123.51	0.52	0:33:15	142.51	142.51	0.45
0:01:20	1,575.08	52.50	1.24	0:09:20	1,401.34	87.58	0.74	0:17:20	964.69	120.59	0.54	0:25:20	540.81	135.20	0.48	0:33:20	146.80	146.80	0.44
0:01:25	1,574.08	49.19	1.29	0:09:25	1,403.11	87.69	0.74	0:17:25	951.37	118.92	0.54	0:25:25	521.26	130.31	0.50	0:33:25	128.92	128.92	0.50
0:01:30	1,577.12	49.29	1.32	0:09:30	1,403.23	87.70	0.74	0:17:30	965.54	120.69	0.54	0:25:30	485.33	121.33	0.53	0:33:30	134.06	134.06	0.48
0:01:35	1,576.64	49.27	1.32	0:09:35	1,403.08	87.69	0.74	0:17:35	957.33	119.67	0.54	0:25:35	503.74	125.93	0.51	0:33:35	131.27	131.27	0.49
0:01:40	1,574.70	49.21	1.32	0:09:40	1,402.77	87.67	0.74	0:17:40	955.03	119.38	0.54	0:25:40	519.89	129.97	0.50	0:33:40	132.55	132.55	0.49
0:01:45	1,576.75	49.27	1.32	0:09:45	1,402.31	87.64	0.74	0:17:45	944.24	118.03	0.55	0:25:45	532.00	133.00	0.49	0:33:45	129.81	129.81	0.50
0:01:50	1,576.39	49.26	1.32	0:09:50	1,402.46	87.65	0.74	0:17:50	924.12	115.52	0.56	0:25:50	524.83	131.21	0.49	0:33:50	142.67	142.67	0.45
0:01:55	1,577.11	49.28	1.32	0:09:55	1,404.57	87.79	0.74	0:17:55	952.94	119.12	0.54	0:25:55	506.51	126.63	0.51	0:33:55	130.32	130.32	0.50
0:02:00	1,576.00	49.25	1.32	0:10:00	1,401.48	87.59	0.74	0:18:00	976.01	122.00	0.53	0:26:00	501.75	125.44	0.52	0:34:00	136.69	136.69	0.47
0:02:05	1,574.88	49.21	1.32	0:10:05	1,401.94	87.62	0.74	0:18:05	945.87	118.23	0.55	0:26:05	541.22	135.31	0.48	0:34:05	122.53	122.53	0.53
0:02:10	1,578.86	49.34	1.32	0:10:10	1,404.35	87.77	0.74	0:18:10	952.30	119.04	0.54	0:26:10	549.68	137.42	0.47	0:34:10	127.86	127.86	0.51
0:02:15	1,575.97	49.25	1.32	0:10:15	1,398.18	87.39	0.74	0:18:15	974.94	121.87	0.53	0:26:15	549.14	137.28	0.47	0:34:15	143.86	143.86	0.45
0:02:20	1,576.59	49.27	1.32	0:10:20	1,403.98	87.75	0.74	0:18:20	959.02	119.88	0.54	0:26:20	526.19	131.55	0.49	0:34:20	136.83	136.83	0.47
0:02:25	1,577.21	49.29	1.32	0:10:25	1,402.98	87.69	0.74	0:18:25	967.50	120.94	0.53	0:26:25	476.77	119.19	0.54	0:34:25	136.36	136.36	0.47
0:02:30	1,575.86	49.25	1.32	0:10:30	1,402.26	87.64	0.74	0:18:30	966.25	120.78	0.54	0:26:30	519.77	129.94	0.50	0:34:30	125.04	125.04	0.52
0:02:35	1,576.60	49.27	1.32	0:10:35	1,401.58	87.60	0.74	0:18:35	963.37	120.42	0.54	0:26:35	523.96	130.99	0.49	0:34:35	142.61	142.61	0.45
0:02:40	1,577.48	49.30	1.32	0:10:40	1,402.68	87.67	0.74	0:18:40	937.32	117.17	0.55	0:26:40	533.57	133.39	0.49	0:34:40	128.91	128.91	0.50
0:02:45	1,574.85	49.21	1.32	0:10:45	1,402.85	87.68	0.74	0:18:45	936.07	117.01	0.55	0:26:45	510.80	127.70	0.51	0:34:45	137.11	137.11	0.47
0:02:50	1,576.70	49.27	1.32	0:10:50	1,400.73	87.55	0.74	0:18:50	938.94	117.37	0.55	0:26:50	521.88	130.47	0.50	0:34:50	137.26	137.26	0.47
0:02:55	1,577.11	49.28	1.32	0:10:55	1,398.26	87.39	0.74	0:18:55	938.04	117.25	0.55	0:26:55	523.26	130.82	0.49	0:34:55	142.87	142.87	0.45
0:03:00	1,577.06	49.28	1.32	0:11:00	1,401.47	87.59	0.74	0:19:00	943.99	118.00	0.55	0:27:00	513.55	128.39	0.50	0:35:00	134.21	134.21	0.48
0:03:05	1,576.20	49.26	1.32	0:11:05	1,403.99	87.75	0.74	0:19:05	930.67	116.33	0.56	0:27:05	521.72	130.43	0.50	0:35:05	140.38	140.38	0.46
0:03:10	1,574.90	49.22	1.32	0:11:10	1,403.11	87.69	0.74	0:19:10	961.23	120.15	0.54	0:27:10	510.12	127.53	0.51	0:35:10	132.50	132.50	0.49
0:03:15	1,576.81	49.28	1.32	0:11:15	1,398.81	87.43	0.74	0:19:15	953.78	119.22	0.54	0:27:15	524.31	131.08	0.49	0:35:15	137.17	137.17	0.47
0:03:20	1,575.85	49.25	1.32	0:11:20	1,402.80	87.67	0.74	0:19:20	953.16	119.14	0.54	0:27:20	541.11	135.28	0.48	0:35:20	131.11	131.11	0.49
0:03:25	1,577.17	49.29	1.32	0:11:25	1,401.04	87.57	0.74	0:19:25	919.30	114.91	0.56	0:27:25	524.45	131.11	0.49	0:35:25	137.93	137.93	0.47
0:03:30	1,577.67	49.30	1.32	0:11:30	1,402.32	87.65	0.74	0:19:30	922.66	115.33	0.56	0:27:30	537.62	134.40	0.48	0:35:30	135.63	135.63	0.48
0:03:35	1,575.71	49.24	1.32	0:11:35	1,401.38	87.59	0.74	0:19:35	941.37	117.67	0.55	0:27:35	535.31	133.83	0.48	0:35:35	116.34	116.34	0.56
0:03:40	1,576.76	49.27	1.32	0:11:40	1,403.23	87.70	0.74	0:19:40	960.19	120.02	0.54	0:27:40	519.93	129.98	0.50	0:35:40	133.65	133.65	0.48
0:03:45	1,575.33	49.23	1.32	0:11:45	1,402.72	87.67	0.74	0:19:45	970.19	121.27	0.53	0:27:45	485.36	121.34	0.53	0:35:45	123.59	123.59	0.52
0:03:50	1,576.65	49.27	1.32	0:11:50	1,402.46	87.65	0.74	0:19:50	954.67	119.33	0.54	0:27:50	481.90	120.48	0.54	0:35:50	115.60	115.60	0.56
0:03:55	1,576.62	49.27	1.32	0:11:55	1,406.10	87.88	0.74	0:19:55	971.31	121.41	0.53	0:27:55	529.73	132.43	0.49	0:35:55	137.63	137.63	0.47
0:04:00	1,575.49	49.23	1.32	0:12:00	1,402.06	87.63	0.74	0:20:00	957.44	119.68	0.54	0:28:00	528.95	132.24	0.49	0:36:00	136.57	136.57	0.47

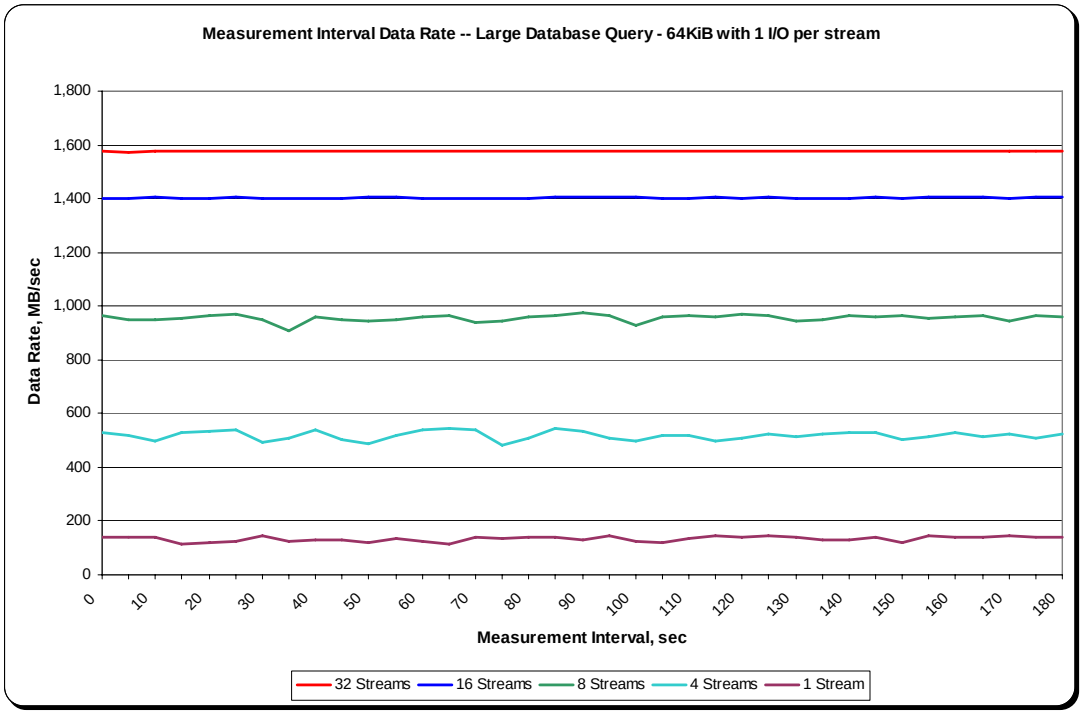
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Test Run Data Measurement Interval, Run-Out, and Ramp-Down Period

TR16	32 Streams			TR17	16 Streams			TR18	8 Streams			TR19	4 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
0:04:05	1,576.20	49.26	1.32	0:12:05	1,401.89	87.62	0.74	0:20:05	965.13	120.64	0.54	0:28:05	526.91	131.73	0.49	0:36:05	139.33	139.33	0.47
0:04:10	1,570.79	49.09	1.32	0:12:10	1,398.39	87.40	0.74	0:20:10	950.44	118.80	0.54	0:28:10	521.13	130.28	0.50	0:36:10	139.09	139.09	0.46
0:04:15	1,576.07	49.25	1.32	0:12:15	1,403.88	87.74	0.74	0:20:15	951.37	118.92	0.54	0:28:15	496.51	124.13	0.52	0:36:15	141.23	141.23	0.46
0:04:20	1,576.26	49.26	1.32	0:12:20	1,402.25	87.64	0.74	0:20:20	954.35	119.29	0.54	0:28:20	531.65	132.91	0.49	0:36:20	114.36	114.36	0.57
0:04:25	1,576.33	49.26	1.32	0:12:25	1,401.83	87.61	0.74	0:20:25	963.76	120.47	0.54	0:28:25	532.77	133.19	0.49	0:36:25	119.98	119.98	0.54
0:04:30	1,576.47	49.26	1.32	0:12:30	1,403.40	87.71	0.74	0:20:30	967.71	120.96	0.53	0:28:30	537.62	134.40	0.48	0:36:30	124.83	124.83	0.52
0:04:35	1,576.52	49.27	1.32	0:12:35	1,400.58	87.54	0.74	0:20:35	948.81	118.60	0.55	0:28:35	493.25	123.31	0.53	0:36:35	143.97	143.97	0.45
0:04:40	1,574.45	49.20	1.32	0:12:40	1,402.94	87.68	0.74	0:20:40	909.66	113.71	0.57	0:28:40	510.71	127.68	0.51	0:36:40	123.16	123.16	0.53
0:04:45	1,577.21	49.29	1.32	0:12:45	1,401.30	87.58	0.74	0:20:45	957.85	119.73	0.54	0:28:45	540.37	135.09	0.48	0:36:45	129.37	129.37	0.50
0:04:50	1,576.44	49.26	1.32	0:12:50	1,400.60	87.54	0.74	0:20:50	950.06	118.76	0.54	0:28:50	502.95	125.74	0.51	0:36:50	128.22	128.22	0.50
0:04:55	1,576.70	49.27	1.32	0:12:55	1,403.73	87.73	0.74	0:20:55	943.24	117.90	0.55	0:28:55	489.50	122.37	0.53	0:36:55	121.32	121.32	0.53
0:05:00	1,576.93	49.28	1.32	0:13:00	1,403.26	87.70	0.74	0:21:00	948.98	118.62	0.55	0:29:00	519.95	129.99	0.50	0:37:00	134.07	134.07	0.48
0:05:05	1,575.30	49.23	1.32	0:13:05	1,401.32	87.58	0.74	0:21:05	957.43	119.68	0.54	0:29:05	541.51	135.38	0.48	0:37:05	125.47	125.47	0.52
0:05:10	1,577.75	49.30	1.32	0:13:10	1,401.02	87.56	0.74	0:21:10	965.26	120.66	0.54	0:29:10	543.35	135.84	0.48	0:37:10	114.17	114.17	0.57
0:05:15	1,574.70	49.21	1.32	0:13:15	1,402.34	87.65	0.74	0:21:15	937.72	117.22	0.55	0:29:15	538.40	134.60	0.48	0:37:15	138.50	138.50	0.47
0:05:20	1,577.35	49.29	1.32	0:13:20	1,401.62	87.60	0.74	0:21:20	943.93	117.99	0.55	0:29:20	481.94	120.48	0.54	0:37:20	136.29	136.29	0.47
0:05:25	1,576.17	49.26	1.32	0:13:25	1,400.90	87.56	0.74	0:21:25	957.25	119.66	0.54	0:29:25	510.28	127.57	0.51	0:37:25	138.46	138.46	0.47
0:05:30	1,577.43	49.29	1.32	0:13:30	1,404.76	87.80	0.74	0:21:30	965.91	120.74	0.54	0:29:30	543.20	135.80	0.48	0:37:30	141.61	141.61	0.46
0:05:35	1,576.18	49.26	1.32	0:13:35	1,403.63	87.73	0.74	0:21:35	973.97	121.75	0.53	0:29:35	535.13	133.78	0.48	0:37:35	129.45	129.45	0.50
0:05:40	1,576.44	49.26	1.32	0:13:40	1,403.31	87.71	0.74	0:21:40	965.93	120.74	0.54	0:29:40	507.87	126.97	0.51	0:37:40	143.24	143.24	0.45
0:05:45	1,577.14	49.29	1.32	0:13:45	1,403.29	87.71	0.74	0:21:45	926.73	115.84	0.56	0:29:45	497.64	124.41	0.52	0:37:45	126.96	126.96	0.51
0:05:50	1,575.60	49.24	1.32	0:13:50	1,402.38	87.65	0.74	0:21:50	960.96	120.12	0.54	0:29:50	521.08	130.27	0.50	0:37:50	118.22	118.22	0.55
0:05:55	1,576.22	49.26	1.32	0:13:55	1,402.78	87.67	0.74	0:21:55	966.18	120.77	0.54	0:29:55	517.87	129.47	0.50	0:37:55	135.39	135.39	0.48
0:06:00	1,576.05	49.25	1.32	0:14:00	1,403.36	87.71	0.74	0:22:00	961.94	120.24	0.54	0:30:00	499.84	124.96	0.52	0:38:00	146.18	146.18	0.44
0:06:05	1,576.10	49.25	1.32	0:14:05	1,401.88	87.62	0.74	0:22:05	969.40	121.17	0.53	0:30:05	507.55	126.89	0.51	0:38:05	139.96	139.96	0.46
0:06:10	1,576.53	49.27	1.32	0:14:10	1,404.17	87.76	0.74	0:22:10	964.22	120.53	0.54	0:30:10	523.43	130.86	0.49	0:38:10	143.77	143.77	0.45
0:06:15	1,576.59	49.27	1.32	0:14:15	1,402.70	87.67	0.74	0:22:15	942.82	117.85	0.55	0:30:15	514.11	128.53	0.50	0:38:15	141.83	141.83	0.46
0:06:20	1,575.01	49.22	1.32	0:14:20	1,400.77	87.55	0.74	0:22:20	948.34	118.54	0.55	0:30:20	522.73	130.68	0.50	0:38:20	131.71	131.71	0.49
0:06:25	1,576.35	49.26	1.32	0:14:25	1,400.83	87.55	0.74	0:22:25	967.15	120.89	0.53	0:30:25	529.22	132.30	0.49	0:38:25	130.59	130.59	0.50
0:06:30	1,576.11	49.25	1.32	0:14:30	1,403.37	87.71	0.74	0:22:30	960.31	120.04	0.54	0:30:30	529.23	132.31	0.49	0:38:30	141.88	141.88	0.46
0:06:35	1,576.72	49.27	1.32	0:14:35	1,401.84	87.62	0.74	0:22:35	963.53	120.44	0.54	0:30:35	501.26	125.32	0.52	0:38:35	117.27	117.27	0.55
0:06:40	1,575.08	49.22	1.32	0:14:40	1,403.52	87.72	0.74	0:22:40	953.31	119.16	0.54	0:30:40	516.01	129.00	0.50	0:38:40	145.31	145.31	0.44
0:06:45	1,576.79	49.27	1.32	0:14:45	1,404.29	87.77	0.74	0:22:45	960.30	120.04	0.54	0:30:45	530.64	132.66	0.49	0:38:45	139.88	139.88	0.46
0:06:50	1,576.97	49.28	1.32	0:14:50	1,405.09	87.82	0.74	0:22:50	967.09	120.89	0.54	0:30:50	515.08	128.77	0.50	0:38:50	137.48	137.48	0.47
0:06:55	1,575.28	49.23	1.32	0:14:55	1,402.03	87.63	0.74	0:22:55	946.04	118.25	0.55	0:30:55	524.93	131.23	0.49	0:38:55	146.55	146.55	0.44
0:07:00	1,575.18	49.22	1.32	0:15:00	1,403.51	87.72	0.74	0:23:00	964.78	120.60	0.54	0:31:00	510.44	127.61	0.51	0:39:00	141.03	141.03	0.46
0:07:05	1,577.69	49.30	1.32	0:15:05	1,404.56	87.78	0.74	0:23:05	961.95	120.24	0.54	0:31:05	522.78	130.69	0.50	0:39:05	142.24	142.24	0.46
0:07:10	1,574.92	49.22	1.32	0:15:10	1,402.58	87.66	0.74	0:23:10	966.30	120.79	0.53	0:31:10	536.56	134.14	0.48	0:39:10	122.32	122.32	0.53
0:07:15	1,578.58	49.33	1.32	0:15:15	1,403.09	87.69	0.74	0:23:15	946.56	118.32	0.55	0:31:15	519.98	129.99	0.50	0:39:15	107.68	107.68	0.60
0:07:20	1,575.40	49.23	1.32	0:15:20	1,401.68	87.61	0.74	0:23:20	951.91	118.99	0.54	0:31:20	523.32	130.83	0.49	0:39:20	141.10	141.10	0.46
0:07:25	1,575.74	49.24	1.32	0:15:25	1,403.06	87.69	0.74	0:23:25	966.64	120.83	0.54	0:31:25	498.93	124.73	0.52	0:39:25	140.09	140.09	0.46
0:07:30	1,576.07	49.25	1.32	0:15:30	1,401.96	87.62	0.74	0:23:30	967.48	120.93	0.54	0:31:30	541.21	135.30	0.48	0:39:30	146.17	146.17	0.44
0:07:35	1,577.17	49.29	1.32	0:15:35	1,404.37	87.77	0.74	0:23:35	978.17	122.27	0.53	0:31:35	510.99	127.75	0.51	0:39:35	122.57	122.57	0.53
0:07:40	1,575.53	49.24	1.32	0:15:40	1,402.55	87.66	0.74	0:23:40	949.13	118.64	0.55	0:31:40	518.48	129.62	0.50	0:39:40	115.23	115.23	0.56
0:07:45	1,577.00	49.28	1.32	0:15:45	1,403.16	87.70	0.74	0:23:45	965.40	120.68	0.54	0:31:45	527.74	131.93	0.49	0:39:45	106.14	106.14	0.61
0:07:50	24.68	0.00	1.19	0:15:50	13.52	0.00	0.71	0:23:50	8.56	0.00	0.55	0:31:50	3.37	0.00	0.51	0:39:50	0.41	0.00	0.52
0:07:55	0.00	0.00	0.00	0:15:55	0.00	0.00	0.00	0:23:55	0.00	0.00	0.00	0:31:55	0.00	0.00	0.00	0:39:55	0.00	0.00	0.00
																0:40:00	0.00	0.00	0.00

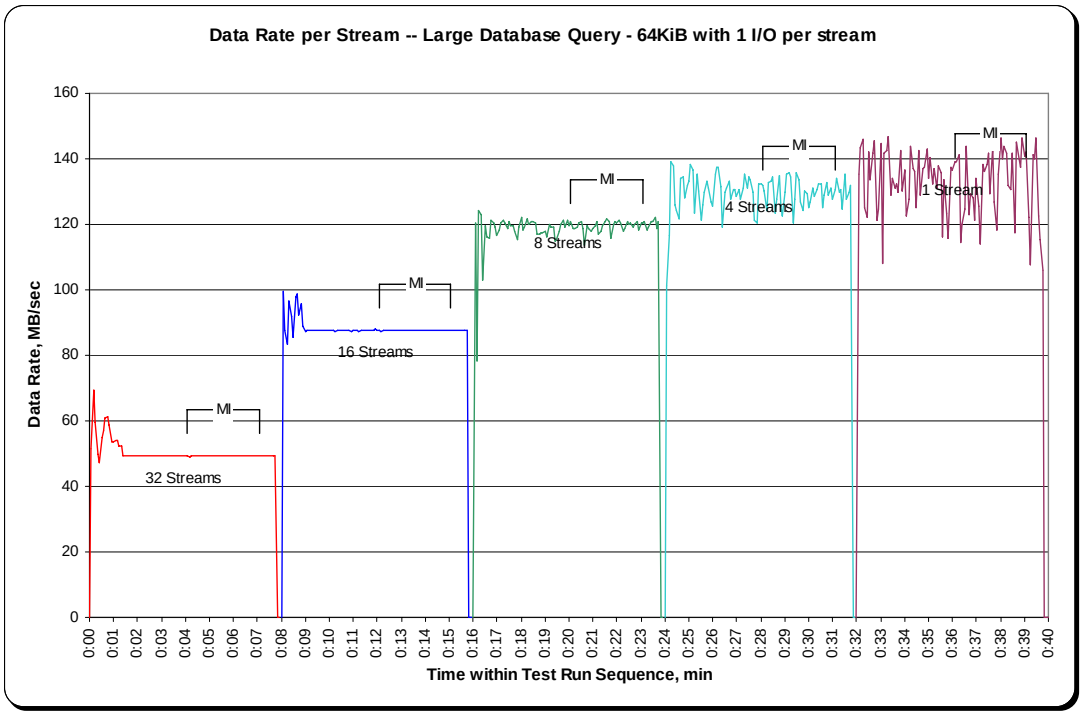
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Complete Test Run



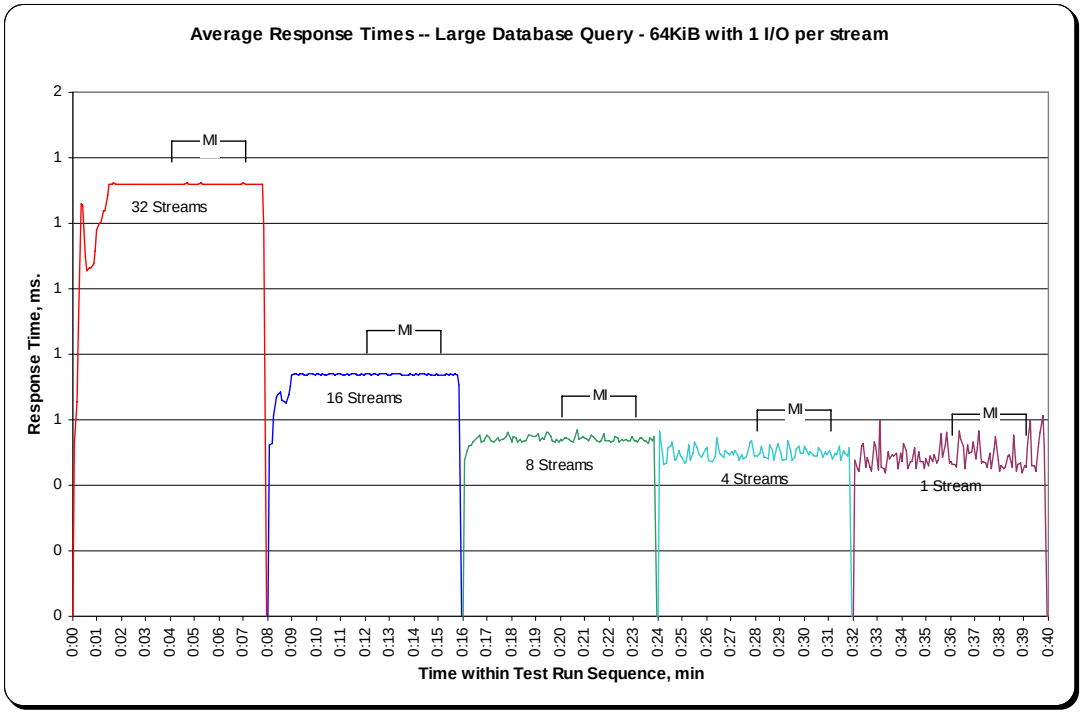
SPC-2 "Large Database Query/64 KiB Transfer Size/1 Outstanding I/O" Average Data Rate Graph – Measurement Interval (MI) Only



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 105.

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.

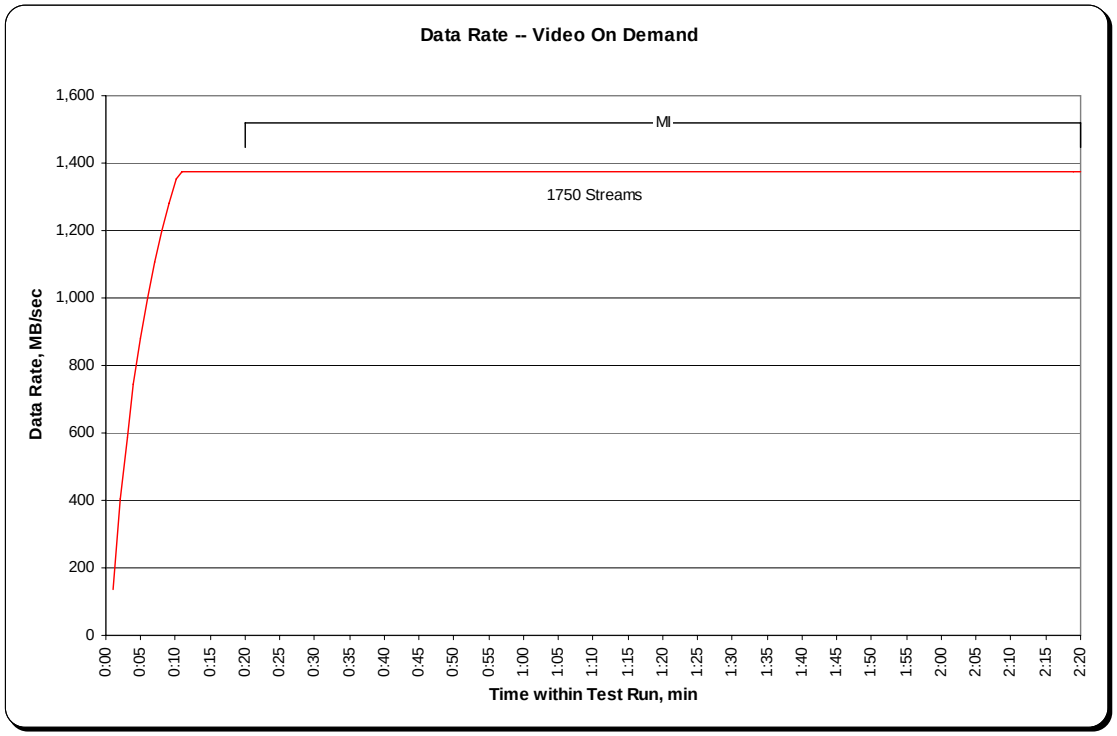
SPC-2-VOD	TR1
Number of Streams	1750
Ramp-up Time, sec	1,200
Measurement Interval, sec	7,200
Average Data Rate, MB/sec	1,376.26
Per Stream Data Rate, MB/sec	0.79
Average Response Time, ms	5.48
Average Max Response Time, ms	38.53

Video on Demand Delivery Test – TEST RUN DATA BY INTERVAL

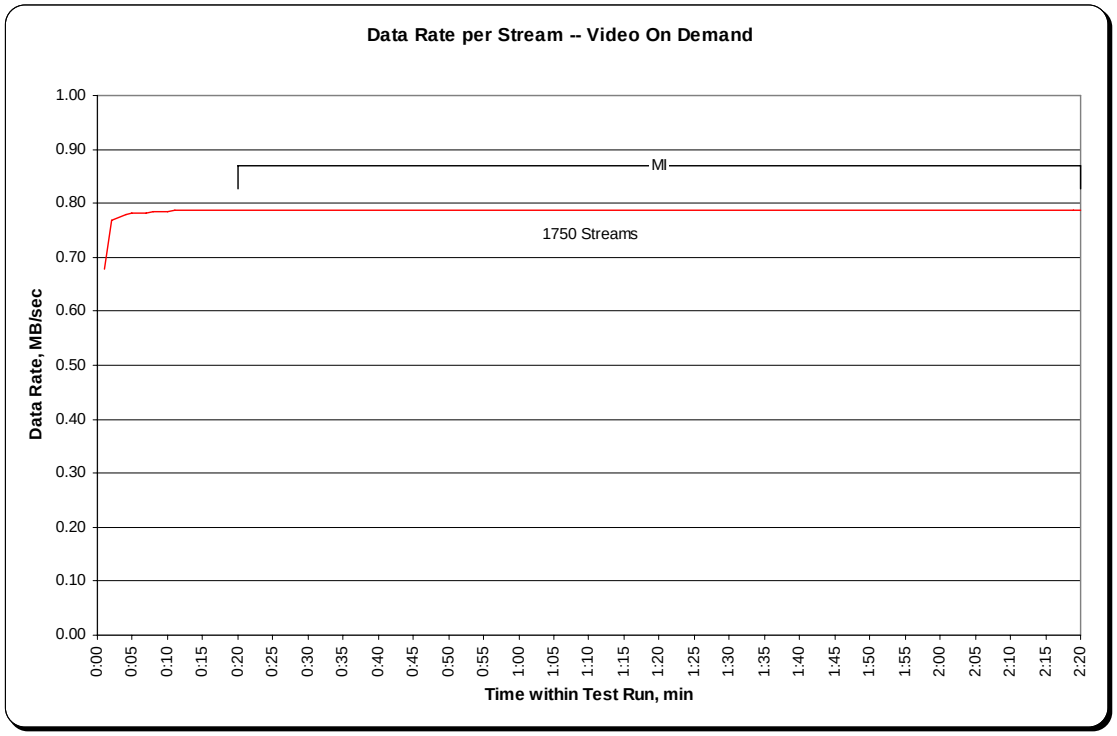
The SPC-2 Video on Demand Delivery Test Run data is contained in the table that appears on the next page. That table is followed by graphs illustrating the average Data Rate and average Data Rate per Stream produced by the same Test Runs. The table and graphs present the data at sixty second intervals.

TR1	1750 Streams				TR1	1750 Streams				TR1	1750 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	136.69	0.68	1.83	23.61	0:51:00	1,376.36	0.79	5.61	16.01	1:41:00	1,376.16	0.79	5.29	71.79
0:02:00	403.49	0.77	1.77	19.42	0:52:00	1,376.00	0.79	5.65	16.49	1:42:00	1,376.00	0.79	5.30	71.15
0:03:00	586.04	0.77	2.04	20.50	0:53:00	1,376.30	0.79	5.68	16.27	1:43:00	1,376.35	0.79	5.30	69.67
0:04:00	745.19	0.78	2.57	26.66	0:54:00	1,376.09	0.79	5.66	16.65	1:44:00	1,375.96	0.79	5.34	63.96
0:05:00	881.99	0.78	3.12	30.02	0:55:00	1,376.37	0.79	5.69	17.05	1:45:00	1,376.38	0.79	5.30	57.60
0:06:00	998.16	0.78	3.63	27.09	0:56:00	1,376.01	0.79	5.71	17.07	1:46:00	1,376.03	0.79	5.32	56.23
0:07:00	1,105.42	0.78	4.05	40.51	0:57:00	1,376.40	0.79	5.69	16.51	1:47:00	1,376.36	0.79	5.34	67.33
0:08:00	1,200.22	0.78	4.39	39.82	0:58:00	1,376.34	0.79	5.62	16.40	1:48:00	1,376.05	0.79	5.40	47.51
0:09:00	1,279.89	0.78	4.72	46.84	0:59:00	1,376.14	0.79	5.60	16.95	1:49:00	1,376.38	0.79	5.42	60.13
0:10:00	1,351.22	0.78	5.07	44.89	1:00:00	1,376.40	0.79	5.57	20.20	1:50:00	1,376.40	0.79	5.38	62.57
0:11:00	1,376.13	0.79	5.23	15.96	1:01:00	1,376.38	0.79	5.58	70.47	1:51:00	1,376.01	0.79	5.42	15.65
0:12:00	1,376.34	0.79	5.23	15.38	1:02:00	1,376.34	0.79	5.58	73.94	1:52:00	1,376.39	0.79	5.42	14.68
0:13:00	1,376.39	0.79	5.25	16.20	1:03:00	1,376.44	0.79	5.63	67.10	1:53:00	1,375.94	0.79	5.47	15.12
0:14:00	1,376.04	0.79	5.24	14.62	1:04:00	1,375.99	0.79	5.60	48.96	1:54:00	1,376.47	0.79	5.49	14.77
0:15:00	1,376.10	0.79	5.28	15.50	1:05:00	1,376.42	0.79	5.59	82.14	1:55:00	1,376.40	0.79	5.49	15.43
0:16:00	1,376.41	0.79	5.25	15.24	1:06:00	1,376.05	0.79	5.58	60.98	1:56:00	1,376.38	0.79	5.49	15.43
0:17:00	1,376.36	0.79	5.28	15.39	1:07:00	1,376.38	0.79	5.49	72.03	1:57:00	1,376.43	0.79	5.47	14.83
0:18:00	1,376.31	0.79	5.30	16.87	1:08:00	1,376.01	0.79	5.51	56.40	1:58:00	1,376.00	0.79	5.48	15.10
0:19:00	1,376.40	0.79	5.36	14.92	1:09:00	1,376.38	0.79	5.54	57.29	1:59:00	1,376.40	0.79	5.46	15.88
0:20:00	1,376.35	0.79	5.38	19.79	1:10:00	1,376.09	0.79	5.55	48.55	2:00:00	1,375.96	0.79	5.48	22.35
0:21:00	1,376.46	0.79	5.34	84.77	1:11:00	1,376.37	0.79	5.50	15.45	2:01:00	1,376.18	0.79	5.50	80.11
0:22:00	1,376.04	0.79	5.39	66.04	1:12:00	1,376.41	0.79	5.45	15.22	2:02:00	1,376.45	0.79	5.51	61.04
0:23:00	1,376.39	0.79	5.39	81.08	1:13:00	1,376.32	0.79	5.42	15.80	2:03:00	1,376.38	0.79	5.51	61.81
0:24:00	1,376.01	0.79	5.44	64.00	1:14:00	1,376.38	0.79	5.44	16.13	2:04:00	1,376.40	0.79	5.50	63.59
0:25:00	1,376.38	0.79	5.50	63.16	1:15:00	1,376.02	0.79	5.40	15.00	2:05:00	1,376.30	0.79	5.51	49.06
0:26:00	1,376.10	0.79	5.50	67.89	1:16:00	1,376.35	0.79	5.43	15.28	2:06:00	1,376.39	0.79	5.53	49.78
0:27:00	1,376.37	0.79	5.49	67.31	1:17:00	1,376.40	0.79	5.42	15.58	2:07:00	1,376.35	0.79	5.62	50.65
0:28:00	1,376.48	0.79	5.49	60.77	1:18:00	1,376.38	0.79	5.43	15.88	2:08:00	1,376.36	0.79	5.66	41.81
0:29:00	1,376.09	0.79	5.49	47.98	1:19:00	1,376.50	0.79	5.40	16.99	2:09:00	1,376.33	0.79	5.63	44.20
0:30:00	1,376.36	0.79	5.49	49.69	1:20:00	1,376.11	0.79	5.31	19.16	2:10:00	1,376.40	0.79	5.66	39.60
0:31:00	1,376.33	0.79	5.51	16.49	1:21:00	1,376.32	0.79	5.30	66.95	2:11:00	1,376.38	0.79	5.62	16.35
0:32:00	1,376.37	0.79	5.51	16.36	1:22:00	1,376.03	0.79	5.21	75.48	2:12:00	1,375.99	0.79	5.64	16.09
0:33:00	1,376.49	0.79	5.57	16.71	1:23:00	1,376.38	0.79	5.20	64.16	2:13:00	1,376.37	0.79	5.62	15.51
0:34:00	1,376.03	0.79	5.57	16.28	1:24:00	1,376.47	0.79	5.21	63.68	2:14:00	1,375.96	0.79	5.63	15.67
0:35:00	1,376.40	0.79	5.58	16.63	1:25:00	1,376.18	0.79	5.23	53.19	2:15:00	1,376.40	0.79	5.67	15.20
0:36:00	1,376.40	0.79	5.55	16.33	1:26:00	1,376.18	0.79	5.22	54.86	2:16:00	1,376.08	0.79	5.68	15.48
0:37:00	1,376.31	0.79	5.55	15.30	1:27:00	1,376.19	0.79	5.20	47.85	2:17:00	1,376.33	0.79	5.70	15.71
0:38:00	1,376.43	0.79	5.59	15.83	1:28:00	1,376.18	0.79	5.13	56.04	2:18:00	1,376.39	0.79	5.66	15.37
0:39:00	1,376.10	0.79	5.61	16.05	1:29:00	1,376.13	0.79	5.14	56.16	2:19:00	1,376.41	0.79	5.62	15.62
0:40:00	1,376.07	0.79	5.62	24.01	1:30:00	1,376.33	0.79	5.16	47.12	2:20:00	1,376.37	0.79	5.60	18.84
0:41:00	1,376.41	0.79	5.68	75.58	1:31:00	1,376.40	0.79	5.22	14.92					
0:42:00	1,376.08	0.79	5.65	61.82	1:32:00	1,376.32	0.79	5.21	14.81					
0:43:00	1,376.03	0.79	5.66	73.63	1:33:00	1,376.43	0.79	5.20	14.73					
0:44:00	1,376.41	0.79	5.65	75.27	1:34:00	1,375.98	0.79	5.18	15.01					
0:45:00	1,376.38	0.79	5.64	61.50	1:35:00	1,376.42	0.79	5.22	17.21					
0:46:00	1,376.34	0.79	5.70	51.83	1:36:00	1,376.42	0.79	5.21	15.42					
0:47:00	1,376.37	0.79	5.69	57.87	1:37:00	1,376.36	0.79	5.17	15.11					
0:48:00	1,376.04	0.79	5.69	54.37	1:38:00	1,376.01	0.79	5.18	15.37					
0:49:00	1,376.33	0.79	5.65	56.67	1:39:00	1,376.38	0.79	5.19	15.43					
0:50:00	1,376.04	0.79	5.63	54.40	1:40:00	1,376.41	0.79	5.25	19.58					

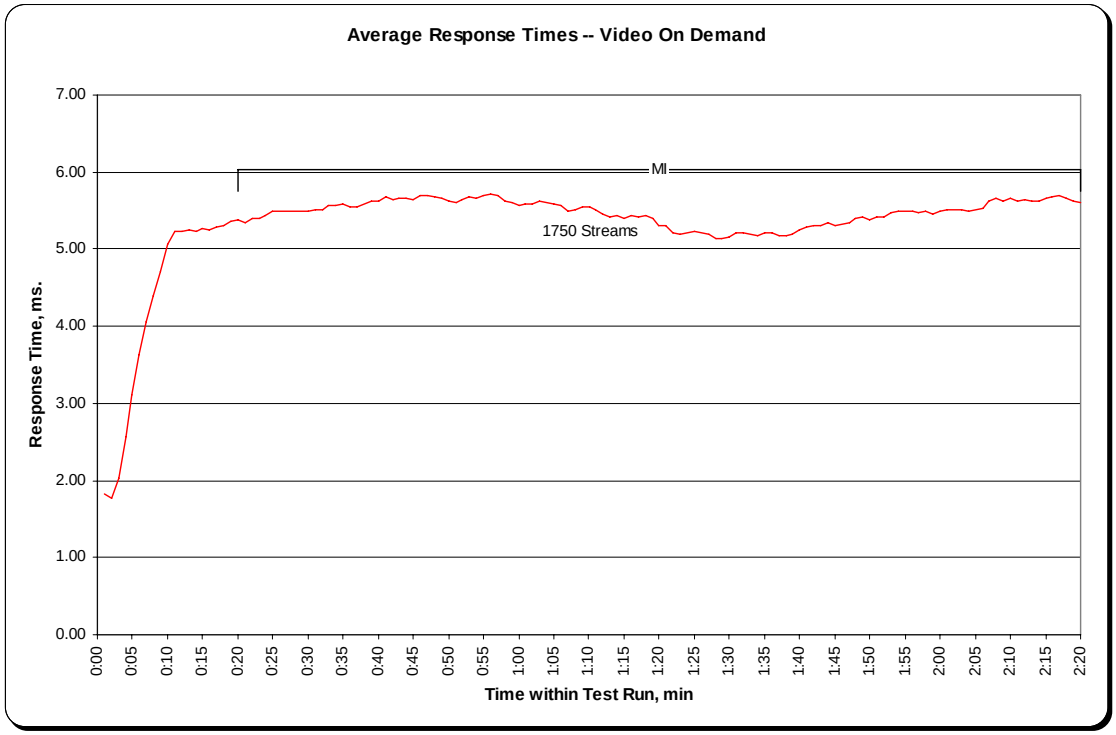
SPC-2 Video on Demand Delivery Average Data Rate Graph



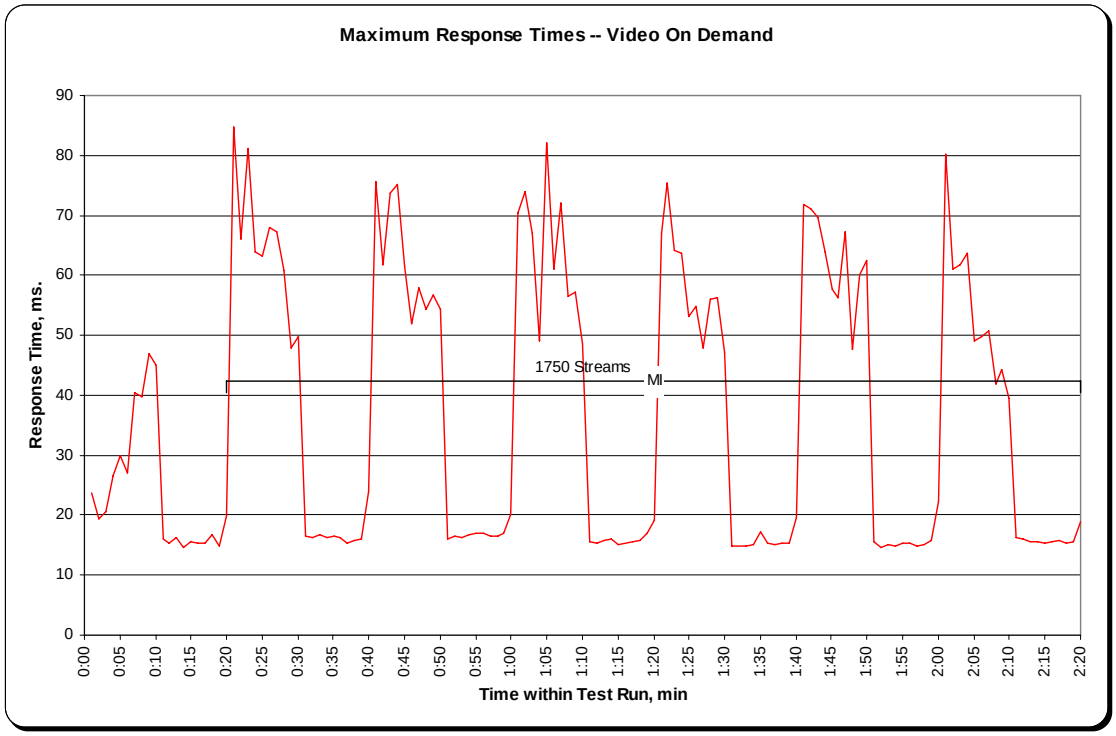
SPC-2 Video on Demand Delivery Average Data Rate per Stream Graph



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 105.

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	253,936
Total Number of Logical Blocks Re-referenced	7,224
Total Number of Logical Blocks Verified	253,936
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 Fujitsu Storage Systems *ETERNUS* DX80, 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 Remote Audit of the Fujitsu Storage Systems *ETERNUS* DX80.

APPENDIX A: SPC-2 GLOSSARY

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

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

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

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

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

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

SPC-2 Data Repository Definitions

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

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

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

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

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

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

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

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

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

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

SPC-2 Data Protection Levels

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

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

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

Unprotected: There is no data protection provided.

SPC-2 Test Execution Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

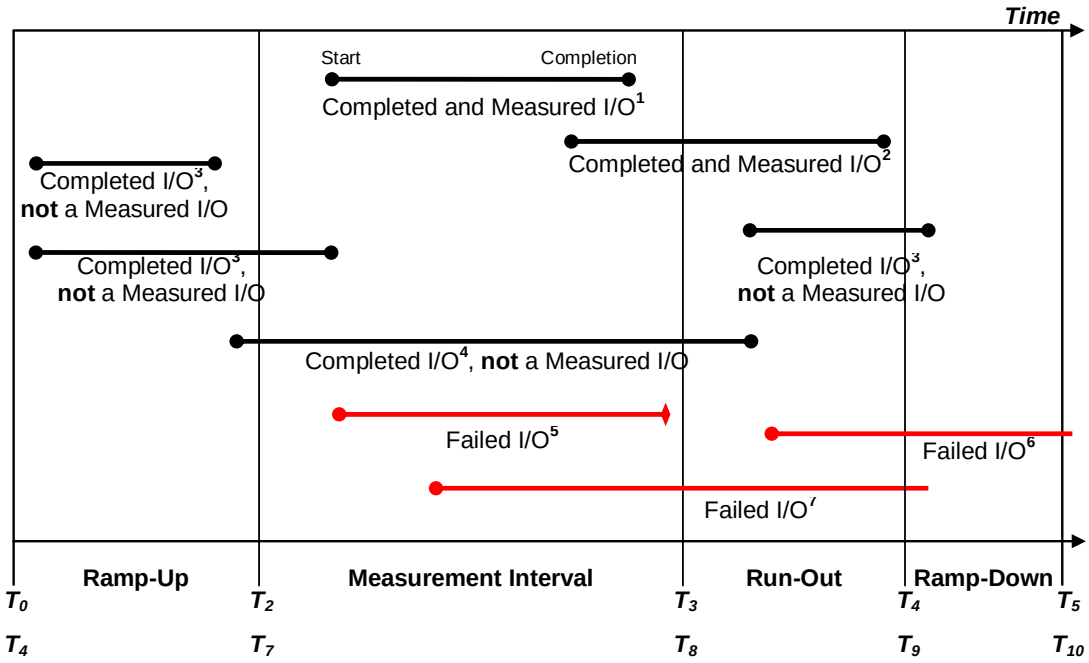
- Test Run 1: Maximum number of Streams, which is selected by the Test Sponsor
- Test Run 2: 50% of the maximum number of Streams used in Test Run 1.
- Test Run 3: 25% of the maximum number of Streams used in Test Run 1.
- Test Run 4: 12.5% of the maximum number of Streams used in Test Run 1.
- Test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

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

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

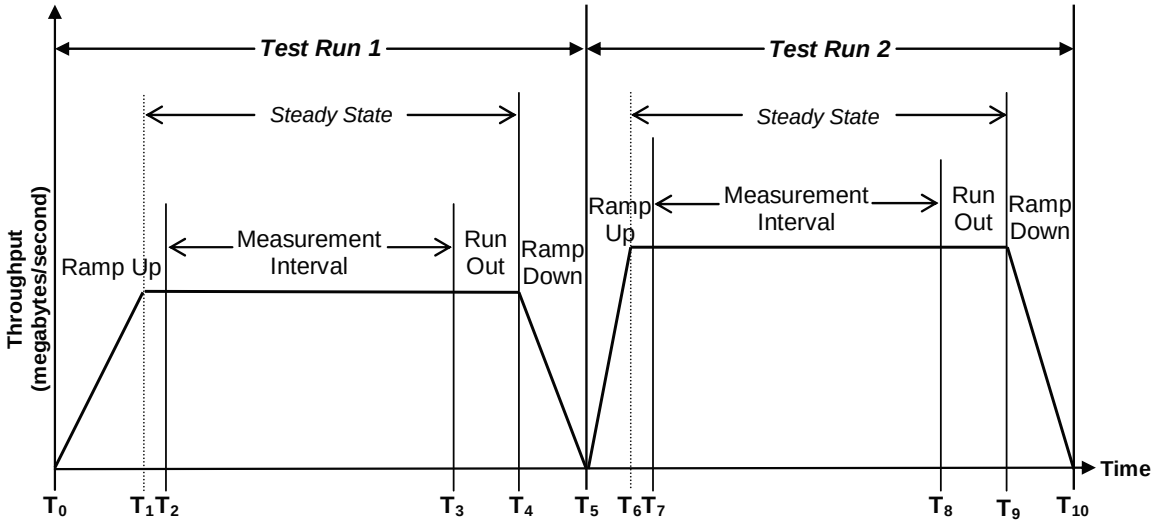
Transfer Size: The Transfer Size parameter specifies the number of bytes in KiB to transfer. *(Clause 3.4.7 of the SPC-2 Benchmark Specification)*

I/O Completion Types



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

SPC-2 Test Run Components



APPENDIX B: CUSTOMER TUNABLE PARAMETERS AND OPTIONS

The **QueueDepth** parameter for each of the four HBA Ports was set to 20 for the benchmark runs.

APPENDIX C: TESTED STORAGE CONFIGURATION (TSC) CREATION

Administrator. When an ETERNUS DX80 unit is delivered from the factory, there are a set of default RAID Groups and LUNs defined, and the tool is used to modify the configuration to that needed in the customer environment. The following paragraphs outline use of this tool to define the configuration outlined within this FDR. The primary definitions for use in making the configuration are provided through an Excel spreadsheet, called a Design Sheet. Note that the capacity calculations on the spreadsheet are an estimate, used to choose the sizes of the volumes used to make up the ASUs for the benchmark storage definitions. The Design sheet for the TSC is provided:

DX80_SPC2_config(091001)cw.xls

This design sheet is developed by the Fujitsu SE, in consultation with the customer, and is provided to the Fujitsu factory when the order for the system is placed. The factory will configure the system according to this design, using internal Fujitsu tools.

Should a customer need to change the delivered configuration, then a series of steps must be followed, using ETERNUS Administrator. The Web GUI User Guide for the ETERNUS Administrator on the DX80 is available for download from:

http://ts.fujitsu.com/support/manuals.html

Upon entry, select the ETERNUS Storage Product DX80 to reach the list of manuals. Select ETERNUS DX60/DX80 – Web GUI – User Guide, and then download the .pdf manual

To define a new RAID Group the following steps are used:

1. Assuming that there are available drives to assign to a new RAID Group, select "RAID Group Creation" tool in the main tool bar.
2. The Define RAID Groups screen will be presented. Select the RAID Group Creation tool. Use the Browse button to obtain a list of the drives. Select Free drives to be included in the RAID Group and the desired RAID Level, leaving the Assigned CM selection to Auto. You may optionally assign the RAID Group a name and click the "Next" button. A confirmation screen is provided before the action is committed. Click the "Finish" button to complete the definition of the RAID Group.
3. Additional RAID Groups can be defined by repeating the process.

It is necessary to define one or more Logical Volumes within each of the defined RAID Groups, using the following steps:

1. Select "Create Volume" Tool in the main tool bar.
2. The Create Logical Volume Screen (Volume Creation) screen will be presented, with a list of the RAID Groups defined, and the capacity of each (in MiB). Select the RAID Group in which a Logical Volume is to be defined, and click the "Next" button.
3. A blank name and default capacity of 1024 MB (1000 MiB) is presented. Up to the entire RAID Group may be used by putting in the capacity listed for the selected RAID Group. A number of like sized volumes can be defined by setting a value in the "Volumes" field. A name may be optionally assigned to the volume. Once you

have set the factors for the volume creation, click the "Create Volume" icon above the section of the screen where volumes to be created will be listed. Additional volumes may be included in the create operation by clicking the "Create Volume" icon again. When you have a list with all of the volumes you want to create, then click the "Next" button. A confirmation screen is provided before the action is committed. Click the "Finish" button on the configuration screen to create the volumes.

4. Additional Logical Volumes can be defined by repeating the process within the RAID group and for other RAID Groups.

The configuration plan for the SPC-2 Benchmark configuration has a PRIMERGY RX600 S4 server directly connected from the two dual ported HBAs to Channel Adapter ports, 4 CA port connections in all. Each port was set up using the following

1. Select "Volume Settings" Tool in the main tool bar.
2. Select "Host I/FManagement" Tool in the tool bar.
3. When the "Set FC_Port parameters" is clicked, the screen will be presented.
4. Select the "Ports" tab to review the CA Port parameters. Select a port from the tree on the left to access the settings for that port. As this is a direct connection from the server HBA port to the storage CA port, the default selection of FC-AL Connection, Loop-Id (Manual), 0x00, Class 3, and Affinity Mode Off with default Host Response apply. The only item that was changed for the benchmark was the selection of 4Gbit for the Transfer Rate. Click the "Apply" button to save the settings for the selected port.
5. With the selections complete, click the "OK" button to reach the confirmation dialog box – click "Yes" to complete the operations.
6. Each of the four ports are set up in the same manner.

The configuration plan for the SPC-2 Benchmark configuration assigns the 4 Logical Volumes as LUNs 0-3 on each of the Channel Adapter ports. There are 16 Logical Volumes in the defined configuration, 1 on each of the 16 RAID Groups, according to the configuration plan. The following steps are used to set the LUN mapping for each of the CA ports:

1. Select the "Host Affinity Groups" tab on the ETERNUS Administrator Window. This will list the various host affinity groups defined. Groups 00-03 apply to the ports with Host Affinity OFF, while group numbers 04 and greater apply to Host Affinity Groups associated with ports that have Host Affinity ON. Each port will show, under the Type column, "LUN Mapping", while the others will show "Host Affinity Group".
2. Select one of the port entries on the right side of the screen (not in the tree on the left side), which is going to have LUN mapping set up. This will enable the "Modify" button on the bottom of the screen.
3. Click the "Modify" button on the bottom of the screen and the Step 1 of 6: Host Affinity Group Name screen will be presented.

4. Enter a name to enable the "Next" button, and click the "Next" button. This will present the Step 3 of 6: Assign Volumes screen, which contains a list of the available volumes which may be assigned.
5. Select one or more of the Available Volumes for mapping, and click the "Add" button in the middle of the screen to include the volumes in the list for mapping. When all of the volumes to be mapped have been included in the list on the right for adding into the LUN Mapping list, click the "Next" button.
6. This presents the screen Step 4 of 6: LUN Mapping, which shows the list of the volumes selected, and default LUN assignments for each. The default LUN assignments may be changed by entry in the respective "SCSI LUN" column entries or using the spinner buttons on the respective LUN number entries. Select the "Next" button when all of the LUN assignments have been set, as required.
7. This presents the screen Step 6 of 6: Summary, which shows all of the LUN Mapping assignments for the selected Host Affinity Group (or Port in this case). If there are problems, use the "Back" button to return to previous screens to resolve the issues. In some cases, a Logical Volume may be included in more than one group mapping, and this is indicated in the "Duplicate Volume" section of the summary screen. Click the "Finish" button to complete the mapping configuration for the port.
8. The LUN mapping for each of the four ports are set up in the same manner.

The configuration plan also includes a Hot Spare drive, which are defined in much the same way as RAID Groups, using the following steps:

1. Select the "RAID Groups" tab on the ETERNUS Administrator Window. This will list the various RAID Groups that are defined, along with a family of buttons across the bottom of the pane.
2. Select the "Hot Spare" button, and the screen to "Select disks to register or delete HotSpare disk" will be displayed. This screen will show the current role of all of the disk drives installed in the system, by Drive Enclosure. Any drive that is in the "Free"state may be selected for assignment as a Hot Spare drive. Selecting a drive that is currently marked as a Hotspare, will change it to a pending Free state. Click the OK button, and after a confirming acknowledgment, the changes indicated will be made.

Each step along the way to completing the configuration does a small part, and the configuration plan provides the details of the specific entries that are defined, using the ETERNUS Administrator interface. For most customer systems, where the design sheets provide the complete configuration plan, the ETERNUS DX80 system is pre-configured at the factory. However, when the plan is not complete or not supplied with an order, a default configuration will be applied by the factory, based on the complement of components ordered.

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

Large File Processing Test *(LFP)*

```
* Large File Processing (LFP)

host=localhost,jvms=32,java=(java,"-Xmx1024m -Xms512m -Xss96k")

sd=default,host=localhost,size=272.50g
sd=sd1,lun=\\.\PhysicalDrive1
sd=sd2,lun=\\.\PhysicalDrive2
sd=sd3,lun=\\.\PhysicalDrive3
sd=sd4,lun=\\.\PhysicalDrive4
sd=sd5,lun=\\.\PhysicalDrive5
sd=sd6,lun=\\.\PhysicalDrive6
sd=sd7,lun=\\.\PhysicalDrive7
sd=sd8,lun=\\.\PhysicalDrive8
sd=sd9,lun=\\.\PhysicalDrive9
sd=sd10,lun=\\.\PhysicalDrive10
sd=sd11,lun=\\.\PhysicalDrive11
sd=sd12,lun=\\.\PhysicalDrive12
sd=sd13,lun=\\.\PhysicalDrive13
sd=sd14,lun=\\.\PhysicalDrive14
sd=sd15,lun=\\.\PhysicalDrive15
sd=sd16,lun=\\.\PhysicalDrive16

maxlatestart=1
reportinginterval=5
segmentlength=512m

rd=default,rampup=240,periods=90,measurement=180,runout=45,rampdown=15,buffers=1

* LFP, Write Phase

rd=default,rdpct=0,xfersize=1024k
rd=TR1_SPC-2-FP,streams=32
rd=TR2_SPC-2-FP,streams=16
rd=TR3_SPC-2-FP,streams=8
rd=TR4_SPC-2-FP,streams=4
rd=TR5_SPC-2-FP,streams=1

rd=default,rdpct=0,xfersize=256k
rd=TR6_SPC-2-FP,streams=32
rd=TR7_SPC-2-FP,streams=16
rd=TR8_SPC-2-FP,streams=8
rd=TR9_SPC-2-FP,streams=4
rd=TR10_SPC-2-FP,streams=1

* LFP, Read/Write Phase

rd=default,rdpct=50,xfersize=1024k
rd=TR11_SPC-2-FP,streams=32
rd=TR12_SPC-2-FP,streams=16
rd=TR13_SPC-2-FP,streams=8
rd=TR14_SPC-2-FP,streams=4
rd=TR15_SPC-2-FP,streams=1

rd=default,rdpct=50,xfersize=256k
rd=TR16_SPC-2-FP,streams=32
```

```
rd=TR17_SPC-2-FP,streams=16
rd=TR18_SPC-2-FP,streams=8
rd=TR19_SPC-2-FP,streams=4
rd=TR20_SPC-2-FP,streams=1

* LFP, Read Phase

rd=default,rdpct=100,xfersize=1024k
rd=TR21_SPC-2-FP,streams=32
rd=TR22_SPC-2-FP,streams=16
rd=TR23_SPC-2-FP,streams=8
rd=TR24_SPC-2-FP,streams=4
rd=TR25_SPC-2-FP,streams=1

rd=default,rdpct=100,xfersize=256k
rd=TR26_SPC-2-FP,streams=32
rd=TR27_SPC-2-FP,streams=16
rd=TR28_SPC-2-FP,streams=8
rd=TR29_SPC-2-FP,streams=4
rd=TR30_SPC-2-FP,streams=1
```

Large Database Query Test *(LDQ)*

```
* Large Database Query Test (LDQ)

host=localhost,jvms=32,java=(java,"-Xmx1024m -Xms512m -Xss96k")

sd=default,host=localhost,size=272.50g
sd=sd1,lun=\\.\PhysicalDrive1
sd=sd2,lun=\\.\PhysicalDrive2
sd=sd3,lun=\\.\PhysicalDrive3
sd=sd4,lun=\\.\PhysicalDrive4
sd=sd5,lun=\\.\PhysicalDrive5
sd=sd6,lun=\\.\PhysicalDrive6
sd=sd7,lun=\\.\PhysicalDrive7
sd=sd8,lun=\\.\PhysicalDrive8
sd=sd9,lun=\\.\PhysicalDrive9
sd=sd10,lun=\\.\PhysicalDrive10
sd=sd11,lun=\\.\PhysicalDrive11
sd=sd12,lun=\\.\PhysicalDrive12
sd=sd13,lun=\\.\PhysicalDrive13
sd=sd14,lun=\\.\PhysicalDrive14
sd=sd15,lun=\\.\PhysicalDrive15
sd=sd16,lun=\\.\PhysicalDrive16

maxlatestart=1
reportinginterval=5
segmentlength=512m

rd=default,rampup=240,periods=90,measurement=180,runout=45,rampdown=15,rdpct=99

* LDQ, 1024KiB Phase

rd=default,buffers=4,xfersize=1024k
rd=TR1_SPC-2-DQ,streams=32
rd=TR2_SPC-2-DQ,streams=16
rd=TR3_SPC-2-DQ,streams=8
rd=TR4_SPC-2-DQ,streams=4
rd=TR5_SPC-2-DQ,streams=1

rd=default,buffers=1,xfersize=1024k
rd=TR6_SPC-2-DQ,streams=32
```

```
rd=TR7_SPC-2-DQ,streams=16
rd=TR8_SPC-2-DQ,streams=8
rd=TR9_SPC-2-DQ,streams=4
rd=TR10_SPC-2-DQ,streams=1

* LDQ, 64KiB Phase

rd=default,buffers=4,xfersize=64k
rd=TR11_SPC-2-DQ,streams=32
rd=TR12_SPC-2-DQ,streams=16
rd=TR13_SPC-2-DQ,streams=8
rd=TR14_SPC-2-DQ,streams=4
rd=TR15_SPC-2-DQ,streams=1

rd=default,buffers=1,xfersize=64k
rd=TR16_SPC-2-DQ,streams=32
rd=TR17_SPC-2-DQ,streams=16
rd=TR18_SPC-2-DQ,streams=8
rd=TR19_SPC-2-DQ,streams=4
rd=TR20_SPC-2-DQ,streams=1
```

Video on Demand Delivery Test (VOD)

```
* Video On Demand Test (VOD)

host=localhost,jvms=32,java=(java,"-Xmx1024m -Xms512m -Xss96k")

sd=default,host=localhost,size=272.50g
sd=sd1,lun=\\.\PhysicalDrive1
sd=sd2,lun=\\.\PhysicalDrive2
sd=sd3,lun=\\.\PhysicalDrive3
sd=sd4,lun=\\.\PhysicalDrive4
sd=sd5,lun=\\.\PhysicalDrive5
sd=sd6,lun=\\.\PhysicalDrive6
sd=sd7,lun=\\.\PhysicalDrive7
sd=sd8,lun=\\.\PhysicalDrive8
sd=sd9,lun=\\.\PhysicalDrive9
sd=sd10,lun=\\.\PhysicalDrive10
sd=sd11,lun=\\.\PhysicalDrive11
sd=sd12,lun=\\.\PhysicalDrive12
sd=sd13,lun=\\.\PhysicalDrive13
sd=sd14,lun=\\.\PhysicalDrive14
sd=sd15,lun=\\.\PhysicalDrive15
sd=sd16,lun=\\.\PhysicalDrive16

maxlatestart=1
reportinginterval=5
maxlatevod=0
videosegmentduration=1200

rd=default,rampup=1200,periods=600,measurement=7200,runout=45,rampdown=15,buffers=8

rd=TR1_SPC-2-VOD,streams=1750
```

Persistence Test Run 1 *(write phase)*

```
* Persistence Test - Write Phase

host=localhost,jvms=2,java=(java,"-Xmx1024m -Xms512m -Xss96k")

sd=default,host=localhost,size=272.50g
sd=sd1,lun=\\.\PhysicalDrive1
sd=sd2,lun=\\.\PhysicalDrive2
sd=sd3,lun=\\.\PhysicalDrive3
sd=sd4,lun=\\.\PhysicalDrive4
sd=sd5,lun=\\.\PhysicalDrive5
sd=sd6,lun=\\.\PhysicalDrive6
sd=sd7,lun=\\.\PhysicalDrive7
sd=sd8,lun=\\.\PhysicalDrive8
sd=sd9,lun=\\.\PhysicalDrive9
sd=sd10,lun=\\.\PhysicalDrive10
sd=sd11,lun=\\.\PhysicalDrive11
sd=sd12,lun=\\.\PhysicalDrive12
sd=sd13,lun=\\.\PhysicalDrive13
sd=sd14,lun=\\.\PhysicalDrive14
sd=sd15,lun=\\.\PhysicalDrive15
sd=sd16,lun=\\.\PhysicalDrive16

maxlatestart=1
reportinginterval=5
segmentlength=512m

rd=default,rampup=240,periods=90,measurement=300,runout=0,rampdown=0
rd=default,buffers=1,rdpct=0,xfersize=1024k

rd=TR1_SPC-2-persist-w,streams=32
```

Persistence Test Run 2 (read phase)

```
* Persistence Test - Read Phase

host=localhost,jvms=2,java=(java,"-Xmx1024m -Xms512m -Xss96k")

sd=default,host=localhost,size=272.50g
sd=sd1,lun=\\.\PhysicalDrive1
sd=sd2,lun=\\.\PhysicalDrive2
sd=sd3,lun=\\.\PhysicalDrive3
sd=sd4,lun=\\.\PhysicalDrive4
sd=sd5,lun=\\.\PhysicalDrive5
sd=sd6,lun=\\.\PhysicalDrive6
sd=sd7,lun=\\.\PhysicalDrive7
sd=sd8,lun=\\.\PhysicalDrive8
sd=sd9,lun=\\.\PhysicalDrive9
sd=sd10,lun=\\.\PhysicalDrive10
sd=sd11,lun=\\.\PhysicalDrive11
sd=sd12,lun=\\.\PhysicalDrive12
sd=sd13,lun=\\.\PhysicalDrive13
sd=sd14,lun=\\.\PhysicalDrive14
sd=sd15,lun=\\.\PhysicalDrive15
sd=sd16,lun=\\.\PhysicalDrive16

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

```
maxpersistenceerrors=10

rd=default,buffers=1,rdpct=100,xfersize=1024k

rd=TR1_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.

```
timeout /t 10800 /nobreak

@echo off

rem Windows: start vdbench

rem Directory where this is executed from
set dir=c:\SPC2

set java=c:\"Program Files (x86)"\Java\jre6\bin\java

c:\"Program Files (x86)"\Java\jre6\bin\java -Xmx1024m -Xms512m -Xss96k vdbench -d128
-f dx80_audit-parms-lfp.txt -o c:\output\dx80_audit-lfp
timeout /t 120 /nobreak

c:\"Program Files (x86)"\Java\jre6\bin\java -Xmx1024m -Xms512m -Xss96k vdbench -d128
-f dx80_audit-parms-ldq.txt -o c:\output\dx80_audit-ldq
timeout /t 120 /nobreak

c:\"Program Files (x86)"\Java\jre6\bin\java -Xmx1024m -Xms512m -Xss96k vdbench -d128
-f dx80_audit-parms-vod.txt -o c:\output\dx80_audit-vod
timeout /t 120 /nobreak

c:\"Program Files (x86)"\Java\jre6\bin\java -Xmx1024m -Xms512m -Xss96k vdbench -d128
-f dx80_audit-parms-pers-w.txt -o c:\output\dx80_audit-pers-w
```

Persistence Test Run 2

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

```
@echo off

rem Windows: start Vdbench

rem Directory where this is executed from
set dir=c:\SPC2

rem set current class path
set cp=c:\SPC2\windows

set java=c:\"Program Files (x86)"\Java\jre6\bin\java

c:\"Program Files (x86)"\Java\jre6\bin\java -Xmx1024m -Xms512m -Xss96k vdbench -d128
-f dx80_audit-parms-pers-r.txt -o c:\output\dx80_audit-pers-r
```