# Test-SRTopology

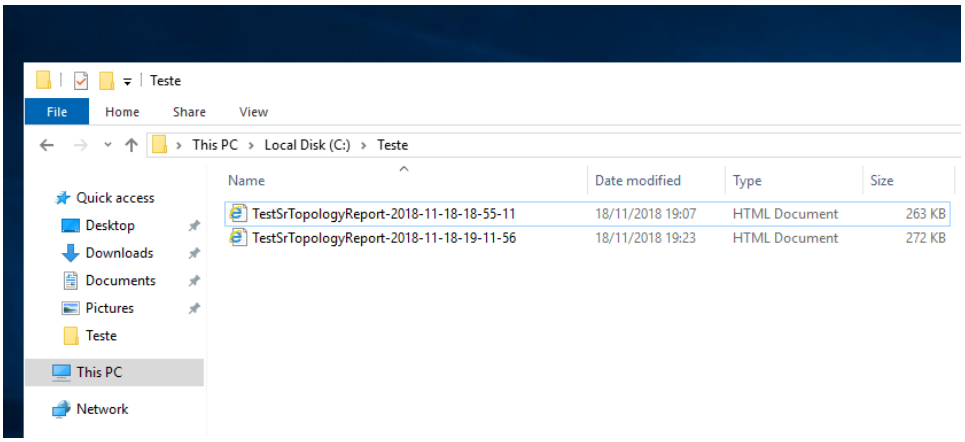
Vamos aprender a executar de forma correta o comando **Test-SRTopology.**

**O comando Test-SRTopology teste de forma eficiente se seus servidores, rede e discos atende os requisitos para implantação do Storage Replica (Réplica de Armazenamento).**

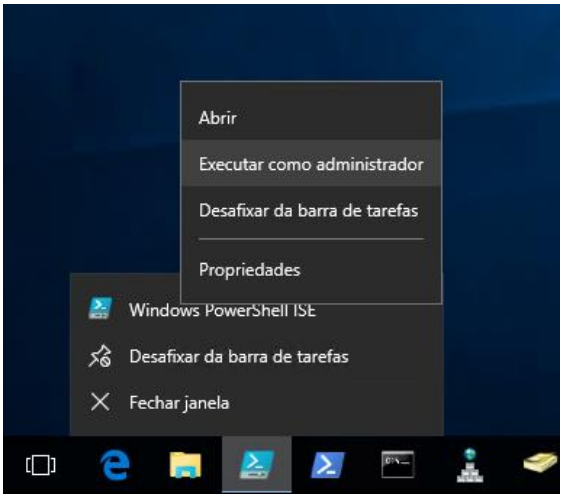
Para isso criei o script para automatizar essa tarefa.

Baixe o script que se encontra no meu GitHub e seguia o tutorial.

**1.** Crie uma pasta na raiz do **C:** com o nome **Teste**. Nesta pasta que o **Test-SRTopology** vai armazenar os resultados dos testes realizados.




Abra o "**PowerShell SE"** como **Administrador** recorte e cole o comando abaixo alterando de acordo com seu ambiente.



Execute o seguinte comando:

```
Test-SRTopology -SourceComputerName SR1 -SourceVolumeName E: -SourceLogVolumeName L: -DestinationComputerName SR2 -DestinationVolumeName E: -DestinationLogVolumeName L: -DurationInMinutes 5 -ResultPath "C:\Teste"
```

Explicação do comando, para melhor compreensão:

Test-SRTopology ## Teste de Topologia.

-SourceComputerName SR1 ## Computador de origem.

-SourceVolumeName E: ## Volume de origem que será replicado.

-SourceLogVolumeName L:  ## Volume de log de origem.

-DestinationComputerName SR2 ## Computador destino da replicação.

-DestinationVolumeName E: ## Volume de destino que recebera a replicação.

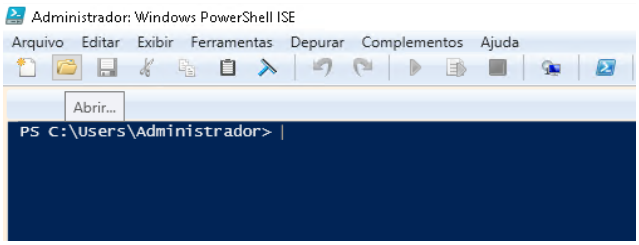
-DestinationLogVolumeName L:  ## Volume de log de destino.

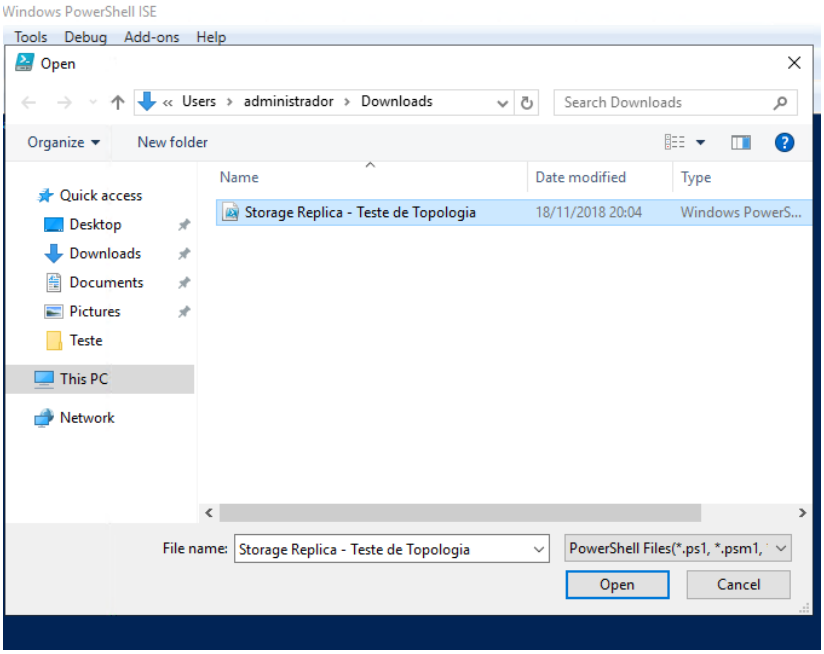
-DurationInMinutes 5 ## Duração do teste.

-ResultPath "C:\Teste" ## Local aonde será salvo o teste.

Também é possível fazer executar através do script baixado no GitHub.

Para isso basta clicar em **Abrir** no **Windows Powershell ISE**.






**2.** Baixe o **DISKSPD** clicando **aqui**.

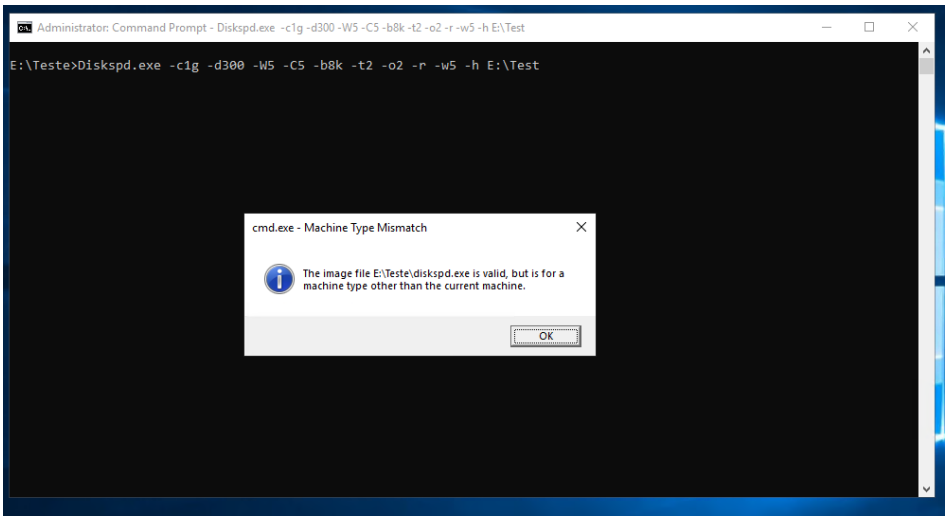
Importante: Fazer a teste sem gravação de carga IO no volume de origem especificado durante o período de avaliação, considerar a adição de uma carga de trabalho ou não vai gerar um relatório consistente. Você deve testar com cargas de trabalho de produção semelhantes, a fim de ver números reais e tamanhos de log recomendadas. Em alternativa, basta copiar alguns arquivos para o volume de origem durante o teste ou baixar e executar **DISKPD** para gerar gravação de cargas IO. Por exemplo, uma amostra com uma gravação de carga IO por cinco minutos para o volume **E:**.

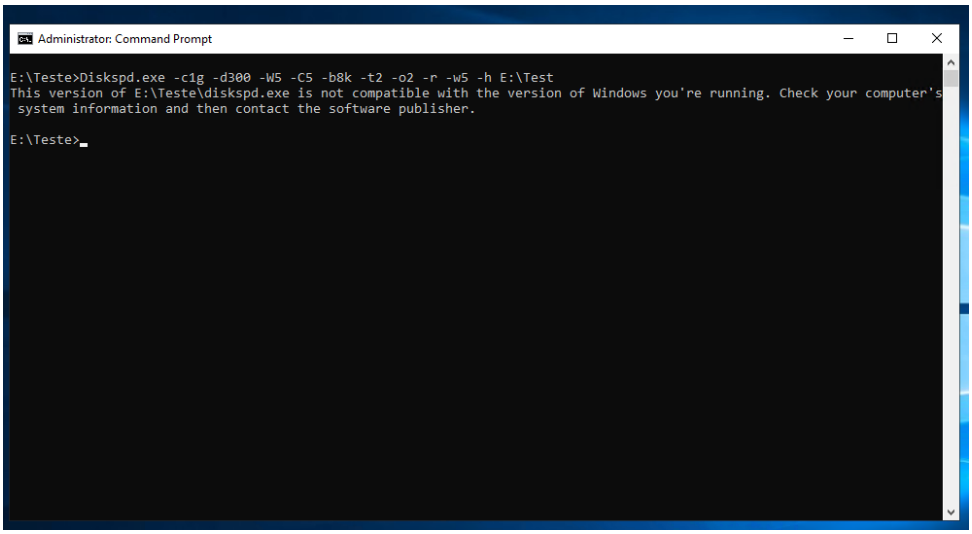
Antes da execução do comando, acima será necessária baixa e descompactar o programa **DISKPD**, em seguida copiar o executável, a versão correta para o disco será analisado.

No meu laboratório foi utilizado o seguinte executável da seguinte pasta **amd64fre**, **diskspd.exe**

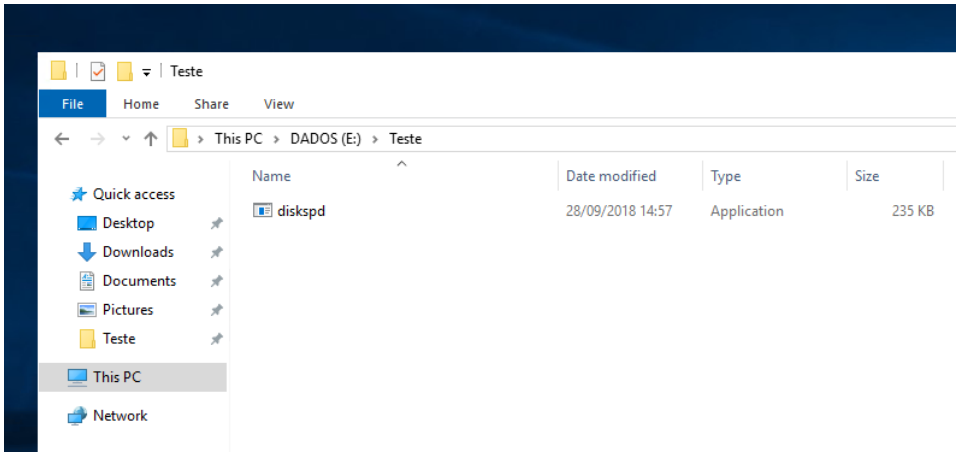
Pois tenho um processador **Intel I5 modelo 3570 K, 64 bits**.

Se copia o executável errado, do seu processador receberá a seguinte mensagem:



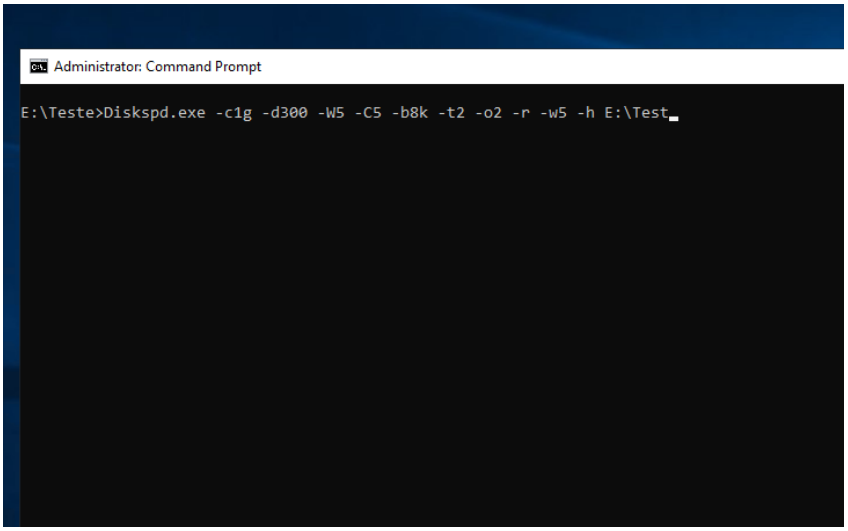

**A.** Crie uma pasta com o nome **Teste** dentro do disco que será analisado e copie o executável **diskspd.exe** correspondente ao seu processador.



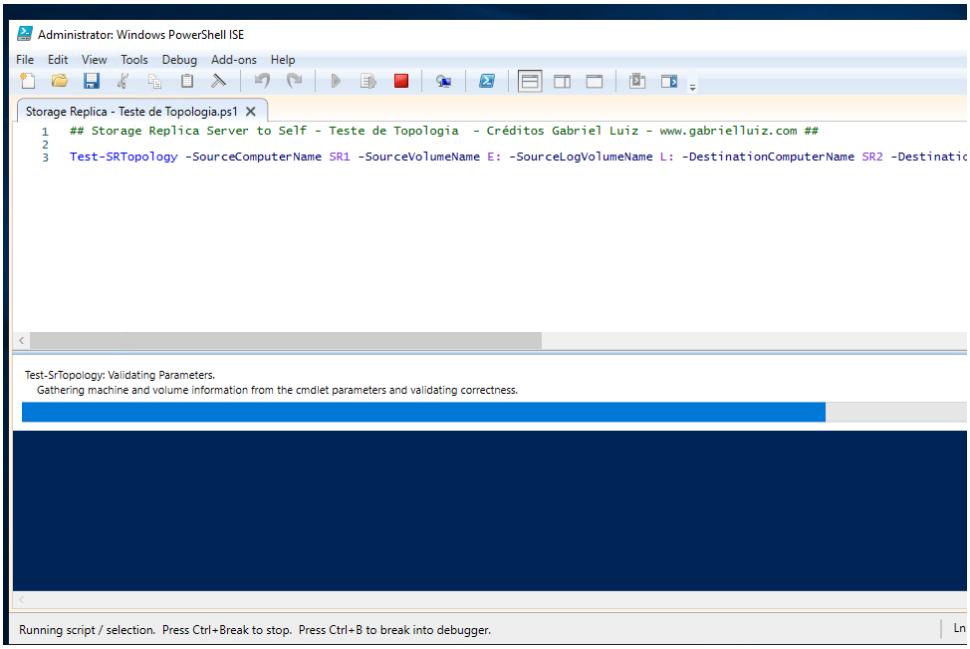
**B.** Abra o **Prompt de Comando** e execute o seguinte comando:

```
Diskspd.exe -c1g -d300 -W5 -C5 -b8k -t2 -o2 -r -w5 -h E:\Test
```

Para aumentar o tempo de execução da carga de trabalho altere o campo **-d300** para **-d600**. O tempo em contado em segundos, o valor 300 e minutos serão **5 minutos**.

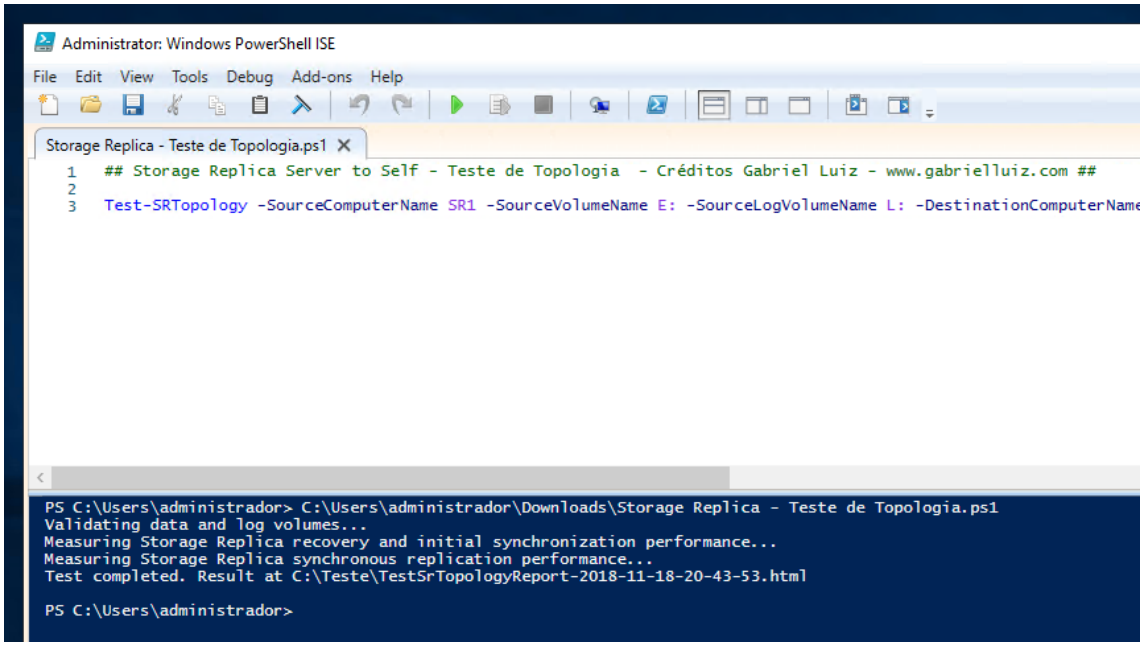


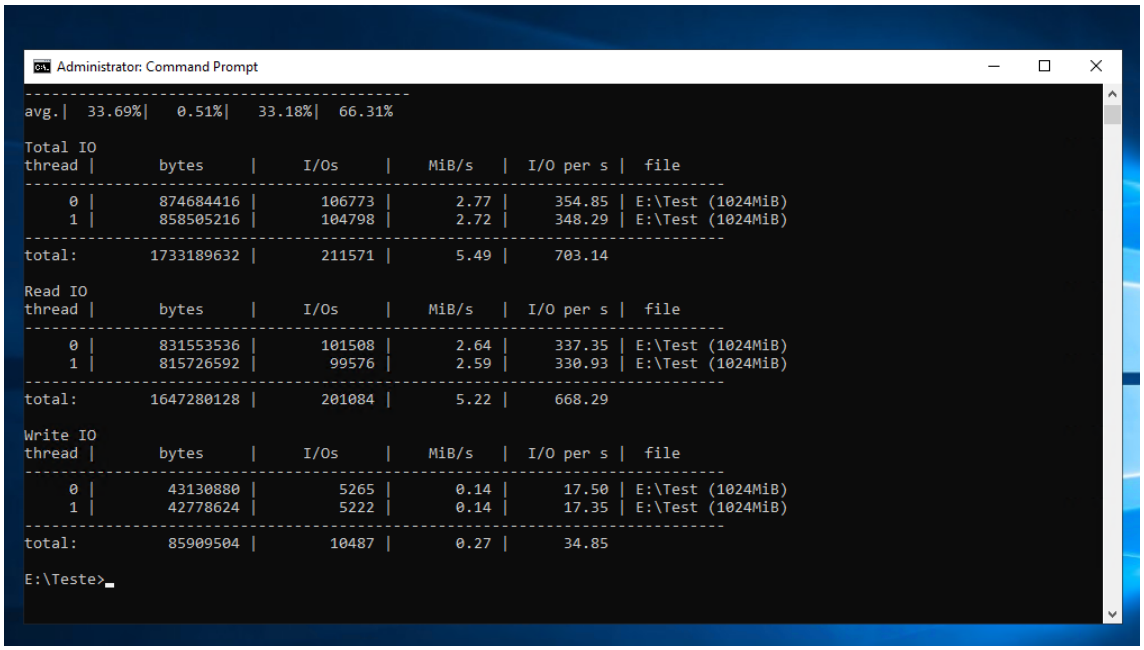

Agora você pode executar também o **script Powershell** do **Storage Replica - Teste de Topologia**.



**Agora é só aguardar a conclusão do teste.**

Após o término do teste, acesse a pasta **C:\Teste** e abra o arquivo **HTML** gerado.



Microsoft

# Storage Replica Test Report

**Test Results**
**Requirements Tests** **Initial Synchronization Performance Tests** **Replication Performance Tests**

## Overview

This report was generated from Test-SRTopology cmdlet that was run on SR1 with the following parameters:

| |
|---|
| Source Computer: SR1 |
| Source Volume: E: |
| Source Log Volume: L: |
| Destination Computer: SR2 |
| Destination Volume: E: |
| Destination Log Volume: L: |

| | Tests Run | Errors | Warnings | Messages |
|---|---|---|---|---|
| ℹ | **20** | 0 | 0 | 20 |

## Test Results

### Requirements Tests

*The following tests were attempted. Hover over each test below to get more details.*

| | Test |
|---|---|
| ℹ | **Volume Availability Test:** Volume **E:** exists on **SR1** |
| ℹ | **Volume Availability Test:** Volume **L:** exists on **SR1** |
| ℹ | **Volume Availability Test:** Volume **E:** exists on **SR2** |
| ℹ | **Volume Availability Test:** Volume **L:** exists on **SR2** |
| ℹ | **Partition Style Test:** Partition **E:** on **SR1** is a GPT-style partition |
| ℹ | **Partition Style Test:** Partition **L:** on **SR1** is a GPT-style partition |
| ℹ | **Partition Style Test:** Partition **E:** on **SR2** is a GPT-style partition |
| ℹ | **Partition Style Test:** Partition **L:** on **SR2** is a GPT-style partition |
| ℹ | **Volume Size Test:** Volume **E:** on **SR1** and **E:** on **SR2** are identical in size |
| ℹ | **File System Test:** File system on volume **L:** on **SR1** is **ReFS** |
| ℹ | **File System Test:** File system on volume **L:** on **SR2** is **ReFS** |
| ℹ | **Disk Sector Size Test:** Sector size of the volume **E:** on **SR1** and **E:** on **SR2** is identical |
| ℹ | **Log Disk Sector Size Test:** Sector size of the volume **L:** on **SR1** and **L:** on **SR2** is identical |
| ℹ | **Log Volume Free Disk Space Test:** The log volume **L:** in **SR1** has enough free space to hold the recommended log volume size of **8**GB |
| ℹ | **Log Volume Free Disk Space Test:** The log volume **L:** in **SR2** has enough free space to hold the recommended log volume size of **8**GB |
| ℹ | **Remote Server Management Test:** Target server **SR2** can be managed remotely using WMI |
| ℹ | **SMB Connectivity Test:** Firewalls are configured to allow SMB protocol traffic to and from **SR2** |
| ℹ | **Network Latency Test:** The roundtrip average latency between the source server **SR1** and target server **SR2** is within the recommended latency threshold of **5** milliseconds |
| ℹ | **Physical Memory Requirement Test:** **SR1** meets the physical memory requirement to deploy Storage Replica |
| ℹ | **Physical Memory Requirement Test:** **SR2** meets the physical memory requirement to deploy Storage Replica |

## Initial Synchronization Performance Tests

### INITIAL SYNC TIME

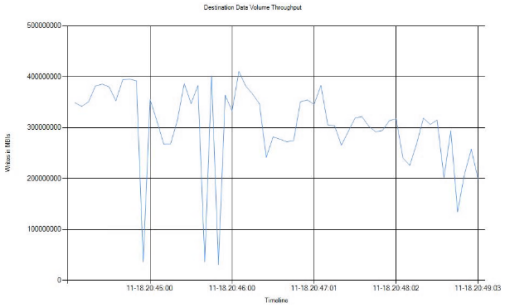
*This test simulated writing a series of 2MB IOs over SMB protocol from the source computer to the destination data disk. The test measured the time required for the write requests to complete at the destination data volume, thereby obtaining an estimation of the time required for initial synchronization of the entire source data volume. This is only an estimate and actual data transfer time may vary. Factors that affect the test results include network performance, packet loss, resources available on source and destination computers, storage performance, firewalls and security software. Note: If you have thinly-provisioned storage, the initial sync time may decrease significantly from the estimated time.*

Average Recovery Traffic Throughput To Destination: 323,15 MB/s

| Partition | Size | Time To Initial Sync |
|---|---|---|
| E: | 99,98 GB | 5 minutes, 16 seconds |

### DESTINATION DATA DISK INITIAL SYNC PERFORMANCE

*Shows a pictorial view of the performance counters obtained from the destination computer for the initial sync time estimation test.*




## Replication Performance Tests

### REPLICATION LOG SIZE

*This test simulated a sequence of remote write requests over SMB to the destination log disk. The rate of remote write requests were coordinated to be exact number of data bytes as measured at the source data volume. If there are no writes on the source volume during the duration of the test, you might see zero MB/s change rate.*

Average Replication Traffic Throughput To Destination: 0 MB/s

Source Data Set Change Rate: 0 MB/s

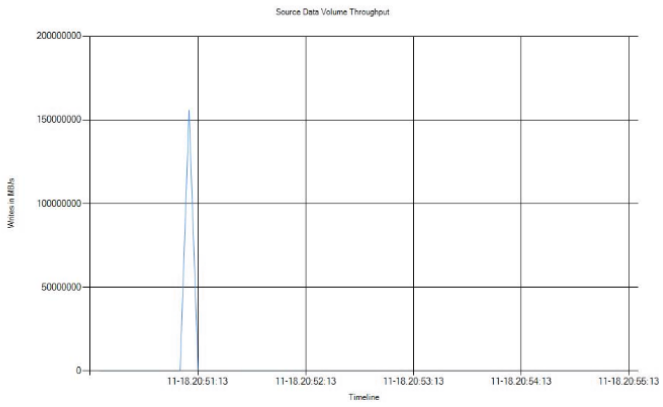
| Replication Log Size | Time to Log Wrap |
|---|---|
| **8 GB** | 296 days, 15 hours, 57 minutes, 37 seconds |
| **16 GB** | 593 days, 7 hours, 55 minutes, 15 seconds |
| **32 GB** | 1186 days, 15 hours, 50 minutes, 31 seconds |
| **64 GB** | 2373 days, 7 hours, 41 minutes, 2 seconds |
| **128 GB** | 4746 days, 15 hours, 22 minutes, 4 seconds |
| **256 GB** | 9493 days, 6 hours, 44 minutes, 8 seconds |

## REPLICATION WRITE IO LATENCY

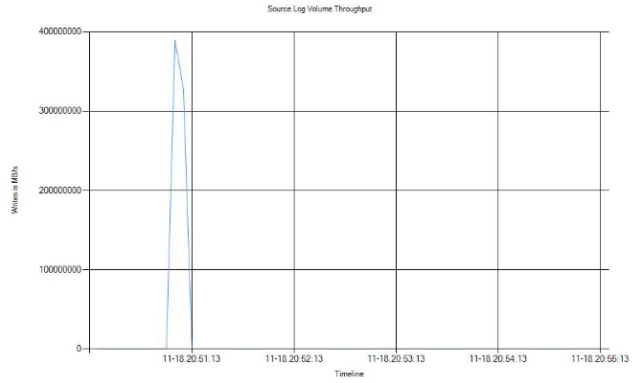
*The table below shows the distribution of average write latencies as measured from the source computer for all simulated writes to source log and destination log.*

| Write IO Time | Percentage Completed IO |
|---|---|
| **<1 ms** | 99,66 |
| **1 - 2 ms** | 0 |
| **2 - 3 ms** | 0 |
| **3 - 5 ms** | 0 |
| **5 - 7 ms** | 0 |
| **7 - 10 ms** | 0 |
| **10 - 100 ms** | 0,34 |
| **100 ms - 1 second** | 0 |
| **>1 second** | 0 |

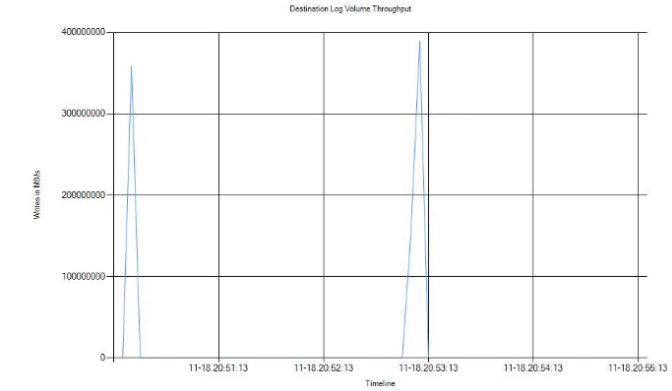
### SOURCE DATA DISK CHANGE RATE



SOURCE LOG DISK PERFORMANCE




DESTINATION LOG DISK PERFORMANCE




**Em nosso teste, o resultado foi positivo, ou seja, todos os requisitos atendidos.**

Acompanhe meu blog e portal Cooperati, onde compartilho meus conhecimentos.

Acesse: www.gabrielluiz.com e www.cooperati.com.br

Att.

UM CONHECIMENTO SÓ É VÁLIDO QUANDO COMPARTILHADO

GABRIEL LUIZ

cooperaTI